ECOZAM Sp. z o.o.
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BRASS BALL VALVES - BUTTERFLY VALVES - INDUSTRIAL VALVES

DYSTRYBUTOR W POLSCE:
ECOZAM Sp. z o.o.
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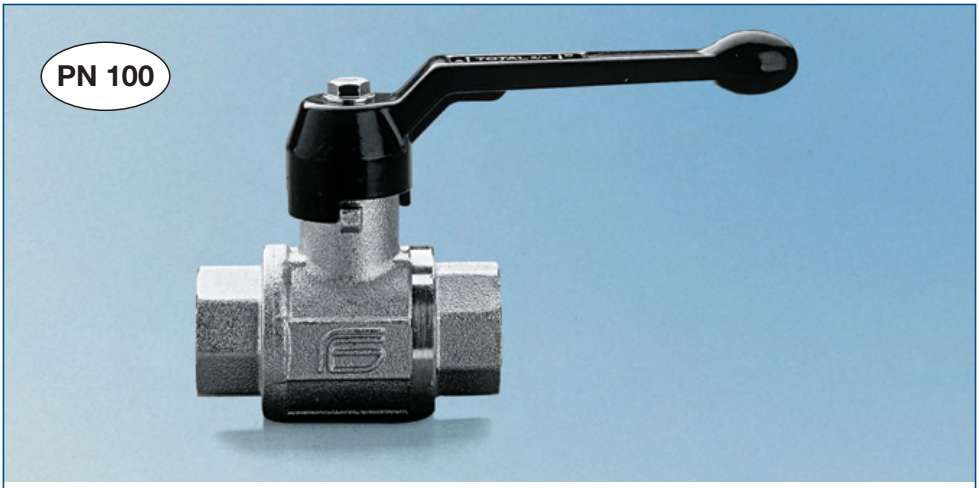
ICIM
UNI EN ISO 9001: 2000
Progettazione, Sviluppo, Fabbricazione
Certificato n° 0024/3

BRASS BALL VALVES

TOTAL

PN 100



Art. 0101 F/F with lever in al. Available range: from 1/8" to 3"
Art. 0102 M/F with lever in al. Available range: from 1/8"to 2" 1/2
Art. 0103 M/M with lever in al. Available range: from 1/8" to 2" 1/2

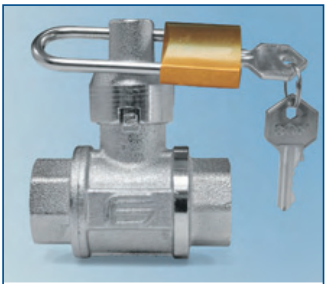
Art. 0121 F/F with T-handle in aluminium from 1/8" to 1"
Art. 0122 M/F with T-handle in aluminium from 1/8" to 1"
Art. 0123 M/M with T-handle in aluminium from 1/8" to 1"

Art. 0141 F/F with square cap from 3/8" to 2"
Art. 0142 M/F with square cap from 3/8" to 2"
Art. 0143 M/F with square cap from 3/8" to 2"

Art. 0151 F/F with underground adaptor from 3/8" to 3"
Art. 0152 M/F with underground adaptor from 3/8" to 2"1/2
Art. 0153 M/M with underground adaptor from 3/8" to 2"1/2

Art. 0161 F/F with sealing cap from 3/8" to 3"
Art. 0162 M/F with sealing cap from 3/8" to 2" 1/2
Art. 0163 M/M with sealing cap from 3/8" to 2" 1/2

Art. 0181 F/F with extension and lever from 3/8" to 3"



Art. 0161..L F/F Lockable from 3/4" to 3"

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BRASS BALL VALVES

TOTAL

TECHNICAL FEATURES:

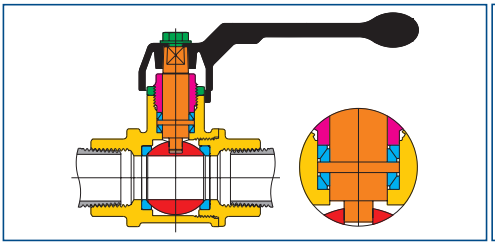
Temperature limits:	for fluids	from -20°C to +130°C (peak temperature +150°C)
	for gas	from -20°C to + 60°C
Pressure limits:	for fluids	from 100 bar to 40 bar
	for gas	MOP5

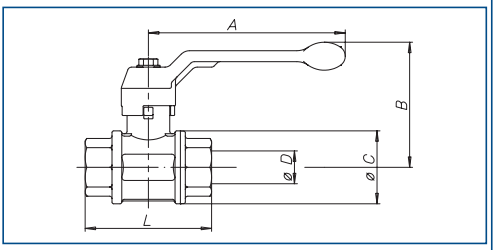
Application fields:
TOTAL series is used in presence of special performance requirements, for example in the installations of: gas and water distribution, industrial and civil heating, water plants at medium and high pressure, hydraulics, oil and petrochemical fields, non aggressive media, steam and vacuum. On request available in degreased version.

Threaded end connections:
- Standard female and male according to ISO 7/1
- On request NPT or BSPT

Operation devices:
aluminium lever and T-handle, square cap, underground adaptor, sealing cap.
Available colours: black, red, green, blue, yellow

SPECIFIC FEATURES:
- the TOTAL valve, with full bore, is an extremely robust product
- with perfect air bubble sealing
- does not need any maintenance, is equipped with wrapping seats ensuring long life cycles
- four self-adjusting cone-shaped seals, with PTFE-PTFE sliding, therefore without wear, form two sealings with automatic functioning
- an adjusting gland allows the sealing reset on the stem
- all valves are tested according to a strict procedure covering severe inspections on the entire production
- the valve is approved according to DIN-DVGW standards: such approval was obtained for the first time in 1974 and then always renewed up to the present one.
- tested for vacuum at $1x10^{-2}$ mbar
- on request the valve is available with ATEX certificate





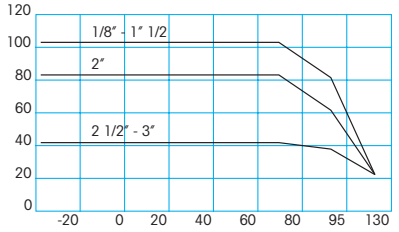
LIST OF COMPONENTS: description/materials/treatments

body and threaded end	yellow	hot stamped from bar	CW617N	UNI EN 12165
gland	violet	machined from bar	CW614N	UNI EN 12164
gland nut	green	machined from bar	CW614N	UNI EN 12164
stem	orange	machined from bar	CW617N	UNI EN 12164
chromium pl. polished ball	red	machined from bar	CW617N	UNI EN 12164
seals	blue	virgin PTFE		
operation device	black	die-cast alumin. alloy polyur c.		UNI 5076
fixing screw	green	zinc plated steel		
surface treatment	—	brilliant nickel-plating		

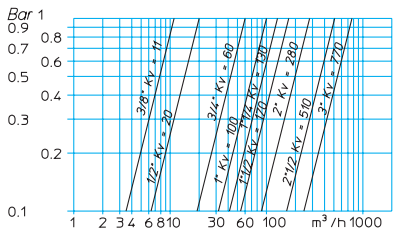
GENERAL TABLE: valve dimensions per type and size

nominal diameter			**6**	**8**	**10**	**15**	**20**	**25**	**32**	**40**	**50**	**65**	**80**
gas size in inch			**1/8"**	**1/4"**	**3/8"**	**1/2"**	**3/4"**	**1"**	**1"1/4**	**1"1/2**	**2"**	**2"1/2**	**3"**
Ø D bore mm			**8**	**8**	**10**	**15**	**20**	**25**	**32**	**40**	**50**	**65**	**80**
A mm			75	75	100	100	120	120	150	150	175	280	280
B mm			52	52	61	64	76	80	98	104	119	155	167
Ø C mm			23	23	29	36	45	54	65	79	96	119	144
female	**L**	**mm**	50	51	55	69	77	89	103	114	134	160	185
female	**weight**	**gr**	160	150	245	370	635	890	1555	2315	3630	5540	8440
male	**L**	**mm**	51	55	60	75	86	99	113	125	147	166	—
female	**weight**	**gr**	147	152	255	379	656	923	1650	2400	3910	5520	—
male	**L**	**mm**	52	58	66	82	95	108	124	136	161	172	—
male	**weight**	**gr**	150	152	267	381	675	953	1685	2532	4050	5700	—

PRESSURE/TEMPERATURE DIAGRAM
at each pressure level corresponds a specific admissible temperature level and viceversa



LOSS OF HEAD DIAGRAM:
the Kv value is the port capacity causing a pressure drop of 1 bar.



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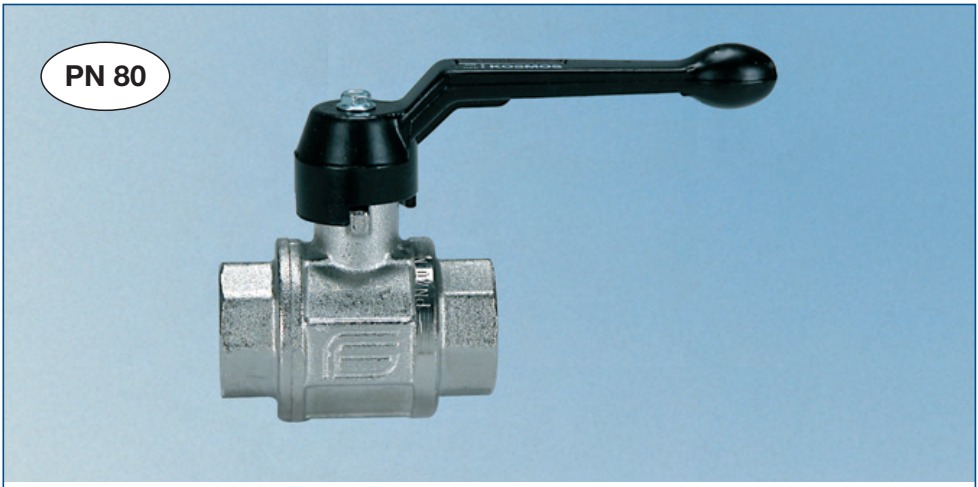
KOSMOS

PN 80



Art. 0301 F/F with lever in aluminium. Available range: from 1/8"to 3"

Art. 0302 M/F with lever in aluminium. Available range: from 1/8" to 2"

Art. 0321 F/F with T-handle in aluminium from 1/8" to 1"

Art. 0322 M/F with T-handle in aluminium from 1/8" to 1"

Art. 0381 F/F with extension and lever from 1/2" to 3"

Art. 0382 M/F with extension and lever from 1/2" to 2"

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BRASS BALL VALVES

KOSMOS

TECHNICAL FEATURES:
Temperature limits: for fluids from -20°C to +130°C (peak temperature +150°C)

Pressure limits: for fluids from 80 bar to 40 bar

Application fields:
KOSMOS series is recommended in the following installations: water distribution, industrial and civil heating, water plants at medium and high pressure, hydraulics and pneumatics, oil and petrochemical fields, non aggressive media.

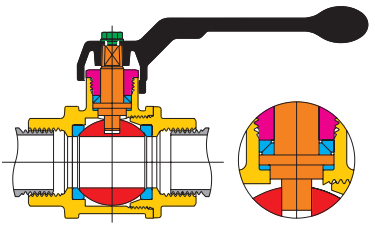
Threaded end connections:
• Standard Female and male according to ISO 228/1

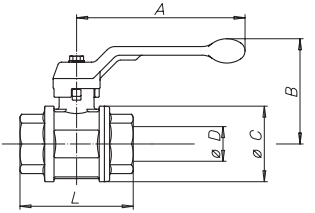
Operation devices:
Aluminium lever and T-handle.

Available colours:
black

SPECIFIC FEATURES:

- the KOSMOS valve, with full bore, is a well dimensioned product, to be used in all those cases when high safety is required, thanks to the excellent solidity features, good performance guarantee, sealing capacity at pressure and temperature variations and working endurance
- does not need any maintenance, is equipped with wrapping seats ensuring long life cycles
- two self-adjusting cone-shaped seals and an antifriction ring, with PTFE-PTFE sliding, therefore without wear, guarantee a safe sealing
- all valves are tested according to a strict procedure covering severe inspections on the entire production





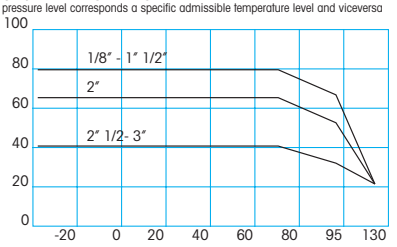
LIST OF COMPONENTS: description/materials/treatments

body and threaded end	yellow	hot stamped from bar	CW617N	UNI EN 12165
gland	violet	machined from bar	CW614N	UNI EN 12164
stem	orange	machined from bar	CW617N	UNI EN 12164
nickel chromium pl. polished ball	red	machined from bar	CW617N	UNI EN 12164
seals	blue	virgin PTFE		
operation device	black	die-cast alumin. alloy polyur c.		UNI 5076
fixing screw	green	zinc plated steel		
surface treatment	—	brilliant nickel-plating		

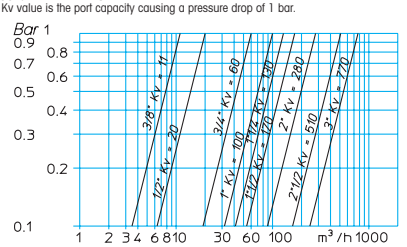
GENERAL TABLE: valve dimensions per type and size

nominal diameter		6	8	10	15	20	25	32	40	50	65	80
gas size in inch		1/8"	1/4"	3/8"	1/2"	3/4"	1"	1"1/4	1"1/2	2"	2"1/2	3"
Ø D bore mm		8	8	10	15	20	25	32	40	50	65	80
A mm		75	75	70	97	97	110	140	140	170	280	280
B mm		52	52	49	57	61	70	84	91	102	155	167
Ø C mm		23	23	28	35	43	52	64	78	95	119	144
female	L mm	50	41	46	56	65	76	86	103	120	146	172
female	weight gr	160	135	165	280	435	680	1165	1870	3070	5315	8210
male	L mm	52	47	56	66	76	87	97	115	134	159	—
female	weight gr	159	145	183	310	470	750	1270	1950	3160	5530	—

PRESSURE/TEMPERATURE DIAGRAM
at each pressure level corresponds a specific admissible temperature level and viceversa



LOSS OF HEAD DIAGRAM:
the Kv value is the port capacity causing a pressure drop of 1 bar.



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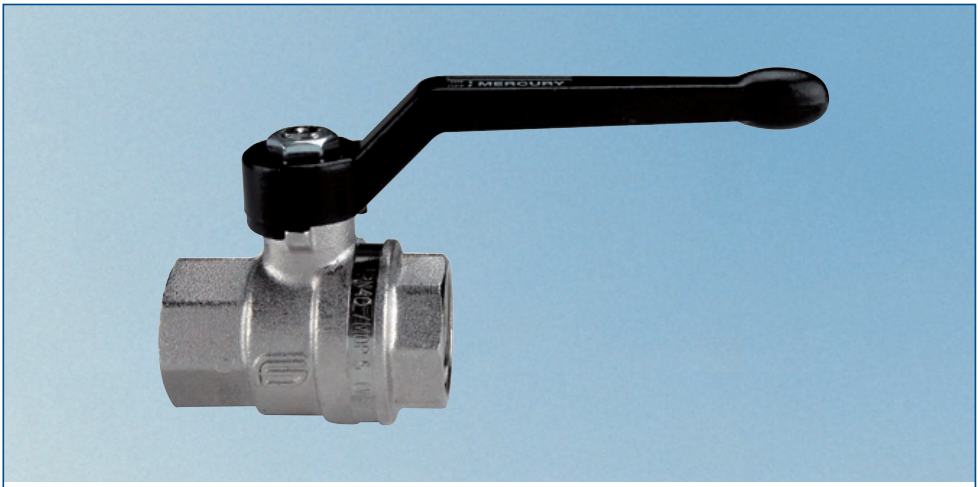
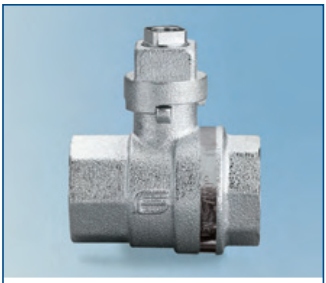
MERCURY



Art. 0401 F/F with lever in aluminium. Available range: from 1/4"to 4"
Art. 0402 M/F with lever in aluminium. Available range: from 1/4" to 2" 1/2

Art. 0411 F/F with lever in steel from 1/4" to 4"
Art. 0412 M/F with lever in steel from 1/4" to 2" 1/2

Art. 0421 F/F with T-handle in aluminium from 1/4" to 1"
Art. 0422 M/F with T-handle in aluminium from 1/4" to 1"



Art. 0441 F/F with square cap from 1/4" to 4"
Art. 0442 M/F with square cap from 1/4" to 2" 1/2

Art. 0461 F/F with sealing cap from 1/4" to 4"
Art. 0462 M/F with sealing cap from 1/4" to 2" 1/2

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MERCURY

TECHNICAL FEATURES:
Temperature limits: for fluids from -15°C to +120°C (peak temperature +150°C)

Pressure limits: for fluids from 63 bar to 40 bar

Application fields:
MERCURY series is frequently applied to the following installations: water distribution, industrial and civil heating, water plants at medium pressure, hydraulics and pneumatics, agriculture.

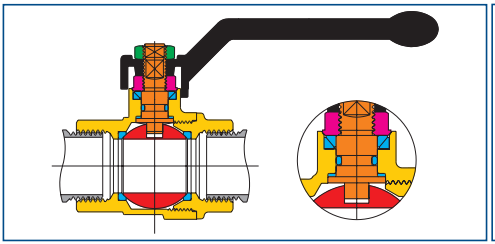
Threaded end connections:
• Standard Female and male according to ISO 228/1

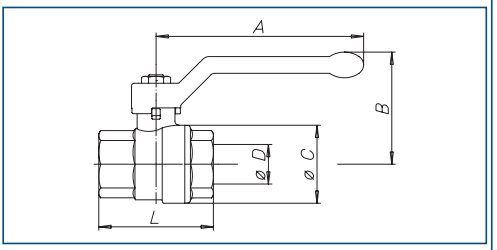
Operation devices:
Aluminium lever and T-handle, steel lever handle, square cap, sealing cap.

Available colours:
black.

SPECIFIC FEATURES:

- the MERCURY valve, with full bore, is a high reliability product, with remarkable versatily in the industrial and civil sector
- blow-out proof stem
- does not need any maintenance, is equipped with wrapping seats ensuring long life cycles
- an antifriction ring forms the first automatic sealing at high pressure
- two self-adjusting cone-shaped seals, with PTFE-PTFE sliding, therefore without wear, form the second sealing at low pressure
- 1 O-Ring in NBR for sealing at low pressure and vacuum.
- all valves are tested according to a strict procedure covering severe inspections on the entire production





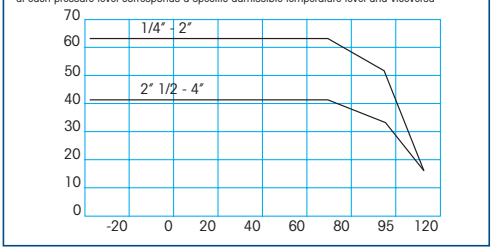
LIST OF COMPONENTS: description/materials/treatments

body and threaded end	yellow	hot stamped from bar	CW617N	UNI EN 12165
gland	violet	machined from bar	CW614N	UNI EN 12164
stem	orange	machined from bar	CW617N	UNI EN 12164
chromium pl. polished ball	red	machined from bar	CW617N	UNI EN 12164
seals	blue	virgin PTFE		
stem packing O-ring	blue	NBR		DIN 3535
operation device	black	die-cast alumin. alloy polyur c.		UNI 5076
fixing nut	green	zinc plated steel		
surface treatment	—	brilliant nickel-plating		

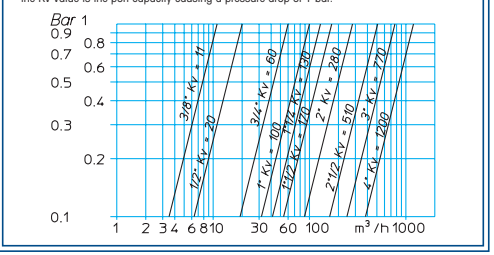
GENERAL TABLE: valve dimensions per type and size

nominal diameter		**8**	**10**	**15**	**20**	**25**	**32**	**40**	**50**	**65**	**80**	**100**
gas size in inch		**1/4"**	**3/8"**	**1/2"**	**3/4"**	**1"**	**1"1/4**	**1"1/2**	**2"**	**2"1/2**	**3"**	**4"**
Ø D bore mm		**8**	**10**	**15**	**20**	**25**	**32**	**40**	**50**	**65**	**80**	**100**
A mm		85	85	85	105	105	130	130	165	260	260	260
B mm		41	41	49	57	61	70	76	92	116	127	142
Ø C mm		23	24	32	40	48	60	72	88	111	135	167
female	**L mm**	37	42	50	58	69	81	93	110	133	156	192
female	**weight gr**	100	120	190	325	510	850	1310	2245	3350	5380	9280
male	**L mm**	43	50	60	70	79	92	104	121	147	—	—
female	**weight gr**	106	135	212	367	560	950	1480	2500	3550	—	—

PRESSURE/TEMPERATURE DIAGRAM
at each pressure level corresponds a specific admissible temperature level and viceversa



LOSS OF HEAD DIAGRAM:
the Kv value is the port capacity causing a pressure drop of 1 bar.



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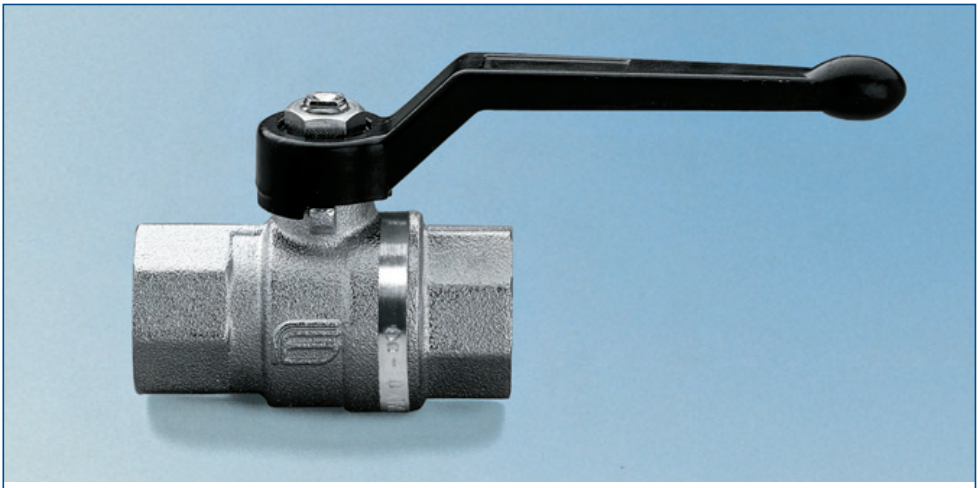
COMET



Art. 0901 F/F with lever in aluminium. Available range: from 1/4"to 4"
Art. 0902 M/F with lever in aluminium. Available range: from 1/4" to 2"1/2

Art. 0911 F/F with lever in steel from 1/4" to 4"
Art. 0912 M/F with lever in steel from 1/4" to 2"1/2

Art. 0921 F/F with T-handle from 1/4" to 1"
Art. 0922 M/F with T-handle from 1/4" to 1"

Art. 0941 F/F with square cap from 3/8" to 4"
Art. 0942 M/F with square cap from 3/8" to 2"1/2

Art. 0961 F/F with sealing cap from 3/8" to 4"
Art. 0962 M/F with sealing cap from 3/8" to 2"1/2

BRASS BALL VALVES

COMET

TECHNICAL FEATURES:
Temperature limits: for fluids from -15°C to +100°C (peak temperature +130°C)

Pressure limits: for fluids 40 bar

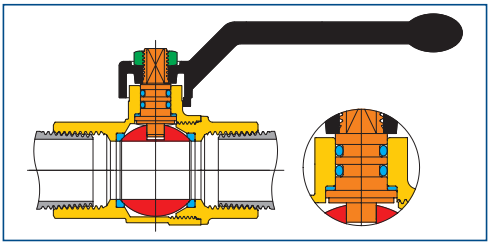
Application fields: COMET series is employed where the need of a safe valve, guaranteeing a faultless sealing in the industrial and civil heating, water plants, hydraulics and pneumatics, agriculture has to match a competitive price.

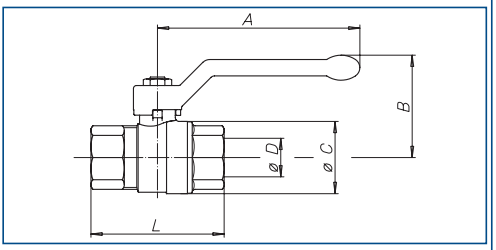
Threaded end connections:
- Standard Female according to ISO 7/1 Rp
  Male according to ISO 7/1R

Operation devices:
Aluminium lever and T-handle, steel lever handle.
Square cap, sealing cap.

Available colours:
black, red.

SPECIFIC FEATURES:
- the COMET valve, with full bore, is compact, flexible and easy for installing
- blow-out proof stem
- does not need any maintenance, is equipped with wrapping seats ensuring long life cycles
- the stem packing is composed of 3 seals: two O-rings for low pressures and an antifriction ring in PTFE for high pressure
- all valves are tested according to a strict procedure covering severe inspections on the entire production.





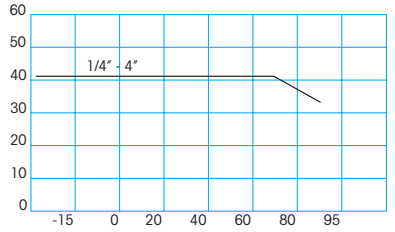
LIST OF COMPONENTS: description/materials/treatments

body and threaded end	yellow	hot stamped from bar	CW617N	UNI EN 12165
stem	orange	machined from bar	CW617N	UNI EN 12164
chromium pl. polished ball	red	machined from bar	CW617N	UNI EN 12164
seals	blue	virgin PTFE		
stem packing	blue	O-ring	NBR	DIN 3535
operation device	black	die-cast alumin. alloy polyur c.		UNI 5076
fixing nut	green	zinc plated steel		
surface treatment	—	brilliant nickel-plating		

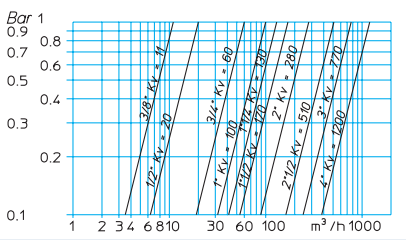
GENERAL TABLE: valve dimensions per type and size

nominal diameter		**8**	**10**	**15**	**20**	**25**	**32**	**40**	**50**	**65**	**80**	**100**
gas size in inch		**1/4"**	**3/8"**	**1/2"**	**3/4"**	**1"**	**1"1/4**	**1"1/2**	**2"**	**2"1/2**	**3"**	**4"**
Ø D bore mm		**10**	**10**	**15**	**20**	**25**	**32**	**40**	**50**	**65**	**80**	**100**
A mm		85	85	85	105	105	130	130	165	260	260	260
B mm		42	42	46	53	57	70	76	92	116	127	142
Ø C mm		23	24	30	38	46	58	70	86	111	135	167
female	**L mm**	49	50	61	70	84	98	108	130	159	182	219
female	**weight gr**	116	130	182	315	496	803	1150	1887	3770	5840	10130—
male	**L mm**	52	54	67	78	89	103	113	136	162	—	—
female	**weight gr**	113	140	200	350	530	850	1280	1967	3740	—	

PRESSURE/TEMPERATURE DIAGRAM
at each pressure level corresponds a specific admissible temperature level and viceversa



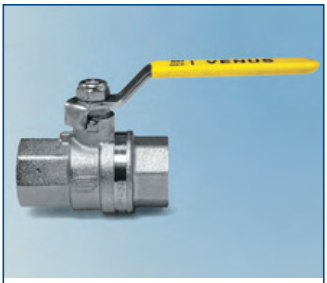
LOSS OF HEAD DIAGRAM:
the Kv value is the port capacity causing a pressure drop of 1 bar.



VENUS

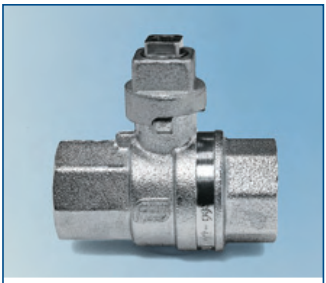
Art. 1001 f/f with lever in aluminium from 1/4" to 4"

Art. 1002 m/f with lever in aluminium from 1/4" to 2"1/2

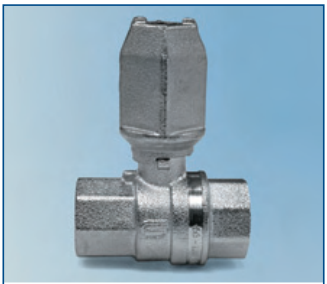


Art. 1011 f/f with lever in steel from 1/4" to 4"
Art. 1012 m/f with lever in steel from 1/4" to 2"1/2

Art. 1021 f/f with T-handle from 1/4" to 1"
Art. 1022 m/f with T-handle from 1/4" to 1"

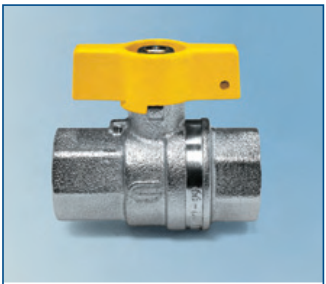


Art. 1041 f/f with square cap from 1/4" to 4"
Art. 1042 m/f with square cap from 1/4" to 2"1/2



Art. 1051 f/f with underground adaptor from 1/4" to 4"
Art. 1052 m/f with underground adaptor from 1/4" to 2"1/2

Art. 1061 f/f with sealing cap from 1/4" to 4"
Art. 1062 m/f with sealing cap from 1/4" to 2"1/2



Art. 1021..F f/f with sealing drilling from 1/4" to 1"
Art. 1022..F m/f with sealing drilling from 1/4" to 1"

DYSTRYBUTOR W POLSCE:
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UNI EN ISO 9001: 2000
Progettazione, Sviluppo, Fabbricazione
Certificato n° 0024/3

BRASS BALL VALVES FOR GAS

VENUS EN 331 NF ROB - GAZ - EN 331

TECHNICAL FEATURES:

Temperature limits:	for fluids	from -15°C to +120°C (peak temperature +150°C)
	for gas	from -20°C to + 60°C
Pressure limits:	for fluids	from 63 bar to 40 bar
	for gas	MOP5

Application fields:
VENUS series is particularly recommended in gas installations.

Threaded end connections:
- Standard female according to ISO 7/1 Rp
  male according to ISO 7/1

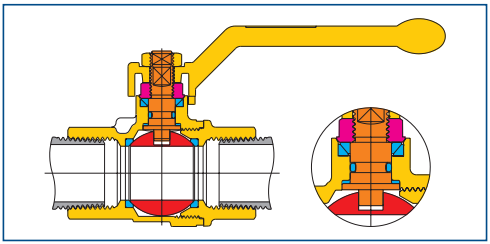
Operation devices:
aluminium lever and T-handle, steel lever handle, square cap, sealing cap, underground adaptor, sealing T-handle.

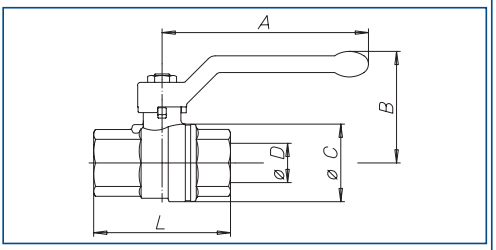
Available colours: yellow.

SPECIFIC FEATURES:

The VENUS valve, with full bore, has been designed to comply with the EN 331 European norm covering gas ball valves and is already certified. Thanks to its construction features it guarantees a high working reliability at low and very low pressures which are typical in gas installations.

- blow-out proof stem
- does not need any maintenance, is equipped with wrapping seats ensuring long life cycles
- an antifriction ring forms the first automatic sealing at high pressure
- two self-adjusting cone-shaped seals, with PTFE-PTFE sliding, therefore without wear, form the second sealing at low pressure
- 1 O-Ring in NBR for sealing at very low pressure and vacuum
- All valves are tested according to a strict procedure covering severe inspections on the entire production.
- on request the valve is available with ATEX certificate





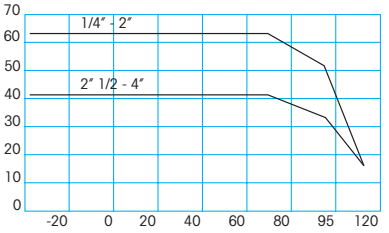
LIST OF COMPONENTS: description/materials/treatments

body and threaded end	yellow	hot stamped from bar	CW617N	UNI EN 12165
gland	violet	machined from bar	CW614N	UNI EN 12164
stem	orange	machined from bar	CW617N	UNI EN 12164
chromium pl. polished ball	red	machined from bar	CW617N	UNI EN 12164
seals	blue	virgin PTFE		
stem packing o-ring	blue	NBR		DIN 3535
operation device	yellow	die-cast alum. alloy polyur c.		UNI 5076
fixing nut	green	zinc plated steel		
surface treatment	—	brilliant nickel-plating		

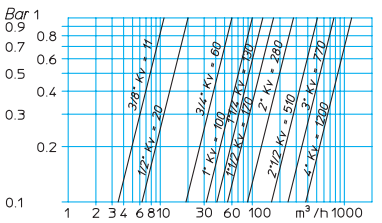
GENERAL TABLE: valve dimensions per type and size

nominal diameter		**8**	**10**	**15**	**20**	**25**	**32**	**40**	**50**	**65**	**80**	**100**
gas size in inch		**1/4"**	**3/8"**	**1/2"**	**3/4"**	**1"**	**1"1/4**	**1"1/2**	**2"**	**2"1/2**	**3"**	**4"**
Ø D bore mm		**8**	**10**	**15**	**20**	**25**	**32**	**40**	**50**	**65**	**80**	**100**
A mm		85	85	85	105	105	130	130	165	260	260	260
B mm		41	41	49	57	61	75	81	97	116	127	142
Ø C mm		23	24	32	40	48	60	72	88	111	135	167
female	**L mm**	49	50	61	70	84	98	108	130	159	182	219
female	**weight gr**	116	125	210	356	585	950	1400	2450	3770	5840	10130
male	**L mm**	52	54	67	78	89	104	114	136	162	—	—
female	**weight gr**	113	140	220	380	600	980	1490	2520	3740	—	—

PRESSURE/TEMPERATURE DIAGRAM
at each pressure level corresponds a specific admissible temperature level and viceversa



LOSS OF HEAD DIAGRAM:
the Kv value is the port capacity causing a pressure drop of 1 bar.



VENUS with nut

Art. 1021..XG f/nut + tail
Art. 1022..XG m/nut + tail

TECHNICAL FEATURES:

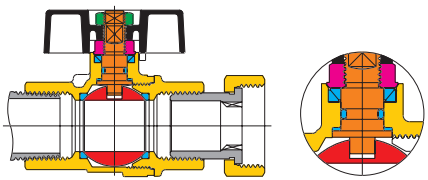
Temperature limits:	for fluids	from -15°C to +120°C (peak temperature +150°C)
	for gas	from -20°C to + 60°C
Pressure limits:	for fluids	63 bar
	for gas	MOP 5

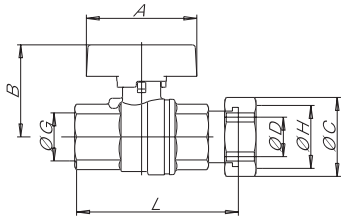
Operation devices:
Aluminium T-handle. Available colours: yellow.

Specific features:

The connections have sizes moved by one position. Nevertheless size 1/2" x 1/2" is also available. The valve body derives from VENUS, certified according to EN 331:

- blow-out proof stem
- does not need any maintenance, is equipped with wrapping seats ensuring long life cycles
- an antifriction ring forms the first automatic sealing at high pressure
- two self-adjusting cone-shaped seals with PTFE-PTFE sliding, therefore without wear, form the second sealing at low pressure
- 1 O-Ring in NBR for sealing at very low pressure and vacuum
- all valves are tested according to a strict procedure covering severe inspections on the entire production.





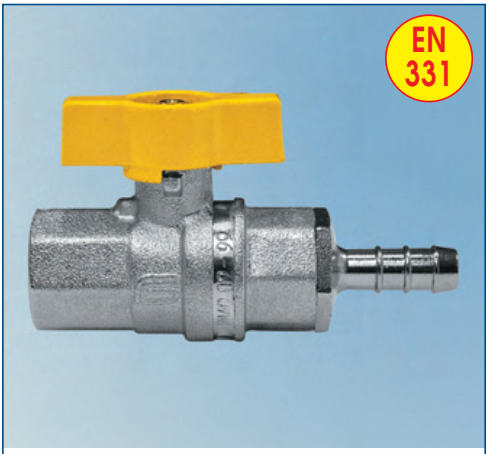
LIST OF COMPONENTS: description/materials/treatments

body and threaded end	yellow	hot stamped from bar	CW617N	UNI EN 12165
gland	violet	machined from bar	CW614N	UNI EN 12164
stem	orange	machined from bar	CW617N	UNI EN 12164
chromium pl. polished ball	red	machined from bar	CW617N	UNI EN 12164
nut	violet	hot stamped from bar	CW617N	UNI EN 12165
tail	yellow	hot stamped from bar	CW617N	UNI EN 12165
seals	blue	virgin PTFE		
stem packing o-ring	blue	NBR		DIN 3535
operation device	yellow	die-cast alum. alloy polyur c.		
fixing nut	green	zinc plated steel		
surface treatment	—	brilliant nickel-plating		

GENERAL TABLE: valve dimensions per type and size

nominal diameter	10	15	15	20	25	32					
gas size in inch	3/8"x1/2"	1/2"x1/2"	1/2"x3/4"	3/4"x1"	1"x1" 1/4"	1" 1/4x1" 1/2					
Ø D bore mm	10	10	15	20	25	32					
A mm	47	47	47	56	56	130					
B mm	30	30	38	46	50	78					
Ø C mm	28	28	33	41	50	56					
Ø G	3/8"	1/2"	1/2"	3/4"	1"	1" 1/4					
Ø H	1/2"	1/2"	3/4"	1"	1" 1/4	1"1/2					
female L mm	67	65	76	85	102	118					
male L mm	71	69	82	93	107	124					

VENUS with UNI hose union



Art. 1021..XA f/hose union UNI 7141-8
Art. 1021..XB f/hose union UNI 7141-13

TECHNICAL FEATURES:

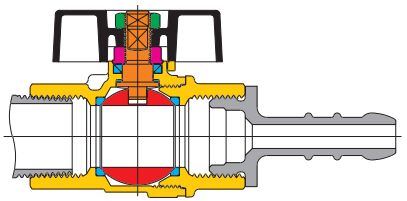
Temperature limits:	for fluids	from -15°C to +120°C (peak temperature +150°C)
	for gas	from -20°C to + 60°C
Pressure limits:	for fluids	63 bar
	for gas	MOP 5

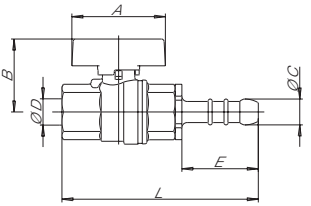
Operation devices:
Aluminium T-handle. Available colours: yellow.

Specific features:

The valve is available with hose union for gas tube according to UNI 7141-13 and with hose union for tube UNI 7141-8 which is particularly suitable for LPG.
The valve body derives from VENUS, certified according to EN 331:

- blow-out proof stem
- does not need any maintenance, is equipped with wrapping seats ensuring long life cycles
- an antifriction ring forms the first automatic sealing at high pressure
- two self-adjusting cone-shaped seals with PTFE-PTFE sliding, therefore without wear, form the second sealing at low pressure
- 1 O-Ring in NBR for sealing at very low pressure and vacuum
- all valves are tested according to a strict procedure covering severe inspections on the entire production.





LIST OF COMPONENTS: description/materials/treatments

body and threaded end	yellow	hot stamped from bar	CW617N	UNI EN 12165
gland	violet	machined from bar	CW614N	UNI EN 12164
stem	orange	machined from bar	CW617N	UNI EN 12164
chromium pl. polished ball	red	machined from bar	CW617N	UNI EN 12164
hose union	violet	machined from bar	CW614N	UNI EN 12164
seals	blue	virgin PTFE		
operation device	yellow	die-cast alum. alloy polyur c.		UNI 5076
fixing nut	green	zinc plated steel		
surface treatment	—	brilliant nickel-plating		

GENERAL TABLE: valve dimensions per type and size

nominal diameter	10	10	15	15							
gas size in inch	3/8"x8	3/8"x13	1/2"x8	1/2"x13							
Ø D bore mm	10	10	10	10							
A mm	47	47	47	47							
B mm	30	30	30	30							
Ø C mm	9,8	14	9,8	14							
E mm	29	44	29	44							
female L mm	79	94	83	98							
male L mm	83	98	87	102							

DYSTRYBUTOR W POLSCE:
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VENUS Angle

Art. 1071 f/f with T-handle from 1/2" to 1"

Art. 1072 m/f with T-handle from 1/2" to 1"

Art. 1073 m/m with T-handle from 1/2" to 1"

Art. 1074 f/m with T-handle from 1/2" to 1"

BRASS BALL VALVES FOR GAS

VENUS Angle

TECHNICAL FEATURES:

Temperature limits:	for fluids	from -15°C to +100°C
	for gas	from -15°C to + 60°C
Pressure limits:	for fluids	from 40 bar to 32 bar
	for gas	MOP 5

Application fields:
VENUS Angle series is particularly recommended in gas installations.

Threaded end connections:
• Standard female and male according to UNI ISO 7/1

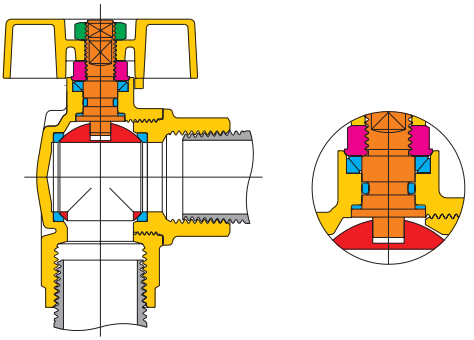
Operation devices:
aluminium T-handle.

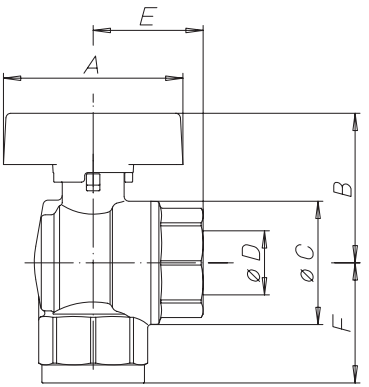
Available colours:
yellow.

SPECIFIC FEATURES:

The VENUS angle valve, with full bore, is heavy and well dimensioned. The VENUS stem packing guarantees a high reliability above all in applications with low and very low pressures, which are typical in domestic installations. The T-handle is in polyurethan coated aluminium and ensures solidity and durability.

- blow-out proof stem
- does not need any maintenance, is equipped with wrapping seats ensuring long life cycles
- an antifriction ring forms the first automatic sealing at high pressure
- two self-adjusting cone-shaped seals, with PTFE-PTFE sliding, therefore without wear, form the second sealing at low pressure
- 1 O-Ring in NBR for sealing at very low pressure and vacuum
- All valves are tested according to a strict procedure covering severe inspections on the entire production.





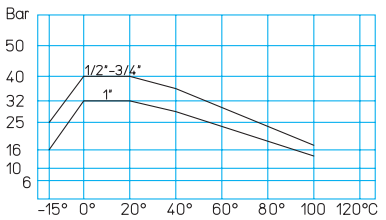
LIST OF COMPONENTS: description/materials/treatments

body and threaded end	yellow	hot stamped from bar	CW617N	UNI EN 12165
gland	violet	machined from bar	CW614N	UNI EN 12164
stem	orange	machined from bar	CW617N	UNI EN 12164
chromium pl. polished ball	red	machined from bar	CW617N	UNI EN 12164
seals	blue	virgin PTFE		
O-ring stem packing	blue	NBR		DIN 3535
operation device	yellow	die-cast alum. alloy polyur c.		UNI 5076
fixing nut	green	zinc plated steel		
surface treatment	—	brilliant nickel-plating		

GENERAL TABLE: valve dimensions per type and size

nominal diameter	15	20	25
gas size in inch	1/2"	3/4"	1"
Ø D bore mm	15	20	25
A mm	47	56	56
B mm	32	38	46
Ø C mm	32	40	48
E mm	38	46	50
F mm	33	38	46
weight gr	212	365	566

PRESSURE/TEMPERATURE DIAGRAM
at each pressure level corresponds a specific admissible temperature level and viceversa



VENUS Angle with nut

Art. 1076..XG f/nut + tail
Art. 1079..XG m/nut + tail

TECHNICAL FEATURES:

Temperature limits: for fluids from -15°C to +100°C
for gas from -15°C to + 60°C

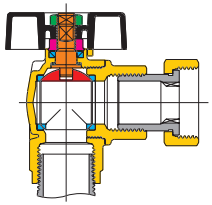
Pressure limits: for fluids from 40 bar to 32 bar
for gas MOP 5

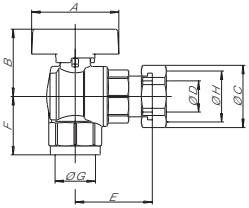
Operation devices:
Aluminium T-handle. Available colours: yellow.

SPECIFIC FEATURES:

The connections have sizes moved by one position. Nevertheless size 1/2" x 1/2" is also available. The valve body derives from VENUS Angle:

- blow-out proof stem
- does not need any maintenance, is equipped with wrapping seats ensuring long life cycles
- an antifriction ring forms the first automatic sealing at high pressure
- two self-adjusting cone-shaped seals with PTFE-PTFE sliding, therefore without wear, form the second sealing at low pressure
- all valves are tested according to a strict procedure covering severe inspections on the entire production.





LIST OF COMPONENTS: description/materials/treatments				
body and threaded end	yellow	hot stamped from bar	CW617N	UNI EN 12165
gland	violet	machined from bar	CW614N	UNI EN 12164
stem	orange	machined from bar	CW617N	UNI EN 12164
chromium pl. polished ball	red	machined from bar	CW617N	UNI EN 12164
nut	violet	hot stamped from bar	CW617N	UNI EN 12165
tail	yellow	hot stamped from bar	CW617N	UNI EN 12165
seals	blue	virgin PTFE		UNI 5076
operation device	yellow	die-cast alum. alloy polyur c.		
fixing nut	green	zinc plated steel		
surface treatment	—	brilliant nickel-plating		

GENERAL TABLE: valve dimensions per type and size											
nominal diameter	15	15									
gas size in inch	1/2"x1/2"	1/2"x3/4"									
Ø D bore mm	10	10									
A mm	47	47									
B mm	30	30									
Ø C mm	25	33									
Ø G	1/2"	1/2"									
Ø H	1/2"	3/4"									
E mm	42	46									
female L mm	31	31									
male L mm	28	28									

VENUS Angle with UNI hose union

Art. 1076..XA f/hose union UNI 7141-8
Art. 1076..XB f/hose union UNI 7141-13

TECHNICAL FEATURES:

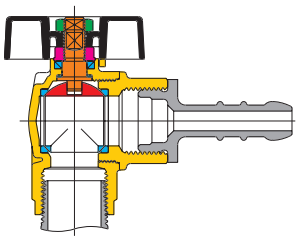
Temperature limits:	for fluids	from -15°C to +100°C
	for gas	from -15°C to + 60°C
Pressure limits:	for fluids	from 40 bar to 32 bar
	for gas	MOP 5

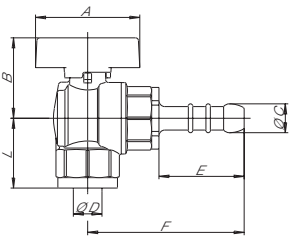
Operation devices:
Aluminium T-handle. Available colours: yellow.

SPECIFIC FEATURES:

The valve is available with hose union for gas tube according to UNI 7141-13 and with hose union for tube according to UNI 7141-8 which is particularly suitable for LPG. The valve body derives from VENUS Angle:

- blow-out proof stem
- does not need any maintenance, is equipped with wrapping seats ensuring long life cycles
- an antifriction ring forms the first automatic sealing at high pressure
- two self-adjusting cone-shaped seals with PTFE-PTFE sliding, therefore without wear, form the second sealing at low pressure
- all valves are tested according to a strict procedure covering severe inspections on the entire production.





LIST OF COMPONENTS: description/materials/treatments

body and threaded end	yellow	hot stamped from bar	CW617N	UNI EN 12165
gland	violet	machined from bar	CW614N	UNI EN 12164
stem	orange	machined from bar	CW617N	UNI EN 12164
chromium pl. polished ball	red	machined from bar	CW617N	UNI EN 12164
hose union	violet	machined from bar	CW614N	UNI EN 12164
seals	blue	virgin PTFE		
operation device	yellow	die-cast alum. alloy polyur c.		UNI 5076
fixing nut	green	zinc plated steel		
surface treatment	—	brilliant nickel-plating		

GENERAL TABLE: valve dimensions per type and size

nominal diameter	15	15									
gas size in inch	1/2"x8	1/2"x13									
Ø D bore mm	10	10									
A mm	47	47									
B mm	30	30									
Ø C mm	9,8	14									
E	29	44									
F	58	73									
female L mm	31	31									
male L mm	27	27									

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UNI EN ISO 9001: 2000
Progettazione, Sviluppo, Fabbricazione
Certificato n° 0024/3

SPECIAL BRASS BALL VALVE FOR GAS - HTB 650°

MINERVA

Art. 1111 t/f with steel lever handle from 1/2" to 2"

Art. 1112 f/m with steel lever handle from 1/2" to 2"

Art. 1121 t/f with t-handle from 1/2" to 1"

Art. 1122 f/m with t-handle from 1/2" to 1"

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UNI EN ISO 9001: 2000
Progettazione, Sviluppo, Fabbricazione
Certificato n° 0024/3

SPECIAL BRASS BALL VALVE FOR GAS - HTB 650°

MINERVA EN 331 - EN 1775 HTB

TECHNICAL FEATURES:

Temperature limits: for fluids from -15°C to +120°C
for gas from -20°C to +60°C

Pressure limits: for fluids 63 bar
for gas MOP 5

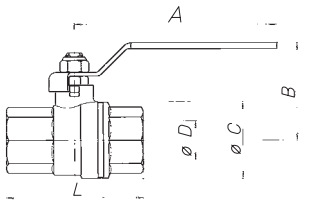
Application fields:
The MINERVA gas valve has been specifically developed for the gas installations after the meter, for a bigger safety and reliability into the house.

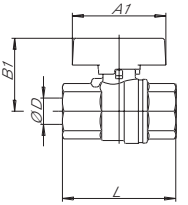
SPECIFIC FEATURES:

• MINERVA is a gas valve certified by DVGW - Germany, which guarantees the perfect agreement between the product and the regulations, according to EN 331 standards of '98, that establishes the constructive, dimensional and functional features of the gas valve in Europe, and according EN 1775 standards of 2000 (in addition to DIN 3537/1) that imposes the resistance of the gas plant to high temperatures in cases of fire - the HTB.

The valve, innovative for conception and realization, is tested and certified to resist at 650°C for one hour, the reasonable length of time for the assistance in case of fire. The normative establishes a lenght of 30 minutes, but the EFFEBI technology has allowed to double the required time. All the essential data of the valve (certifications, production date, ecc.) are indelibly engraved on the turned band directly on the body (EFFEBI patented system).

• blow-out proof stem
• does not need any maintenance, is equipped with wrapping seats ensuring long life cycles
• an antifriction ring forms the first automatic sealing at high pressure
• two self-adjusting cone-shaped seals, with PTFE-PTFE sliding, therefore without wear, form the second sealing at low pressure
• 1 O-Ring in NBR for sealing at very low pressure and vacuum
• all EFFEBI valves are tested according to a strict procedure covering severe inspections on the entire production.
• on request the valve is available with ATEX certificate

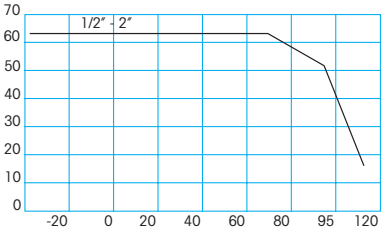




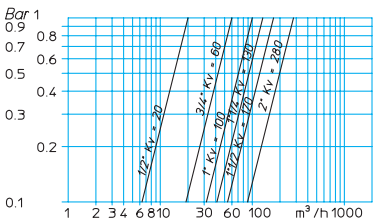
GENERAL TABLE: valve dimensions per type and size

nominal diameter		15	20	25	32	40	50					
gas size in inch		1/2"	3/4"	1"	1"1/4	1"1/2	2"					
Ø D passaggio mm		13/15	18/20	23/25	30/32	38/40	47,5/50					
A mm		85	105	105	130	130	165					
B mm		49	57	61	75	81	97					
A1		47	47	47	56	56	130					
B1		30	30	38	46	50	78					
Ø C mm		32	40	48	60	72	88					
emale	L mm	61	70	84	98	108	130					
female	weight gr	210	356	585	950	1400	2450					
male	L mm	67	78	89	104	114	136					
female	weight gr	220	380	600	980	1490	2520					

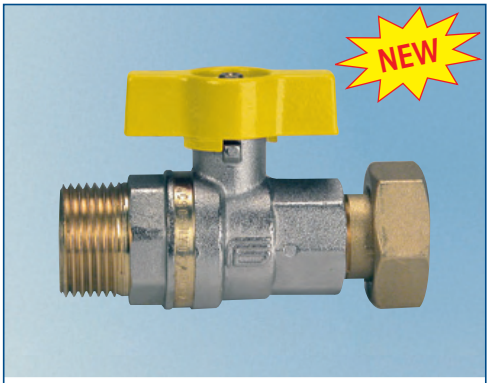
PRESSURE/TEMPERATURE DIAGRAM
at each pressure level corresponds a specific admissible temperature level and viceversa



LOSS OF HEAD DIAGRAM:
the Kv value is the port capacity causing a pressure drop of 1 bar.

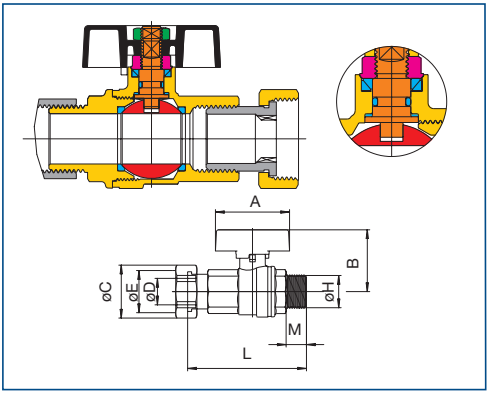


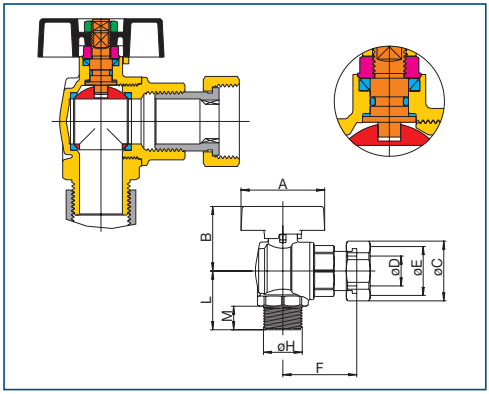
VENUS WITH NUT FOR GAS METERS



Art. 2162G424 male 1/2" ISO 228 / turnable nut 3/4"
Art. 2164G405 male 3/4" ISO 228 / turnable nut 3/4"

Art.2166G424 angle, male 1/2" ISO 228 / turnable nut 3/4"
Art. 2168G405 angle, male 3/4" ISO 228 / turnable nut 3/4"





TECHNICAL FEATURES

Temperature limits: for fluids from -15°C to +120°C
Pressure limits: for fluids PN 40 for gas MOP 5

Operation devices:

Aluminium T-handle.
Available colours: yellow or red.

SPECIFIC FEATURES

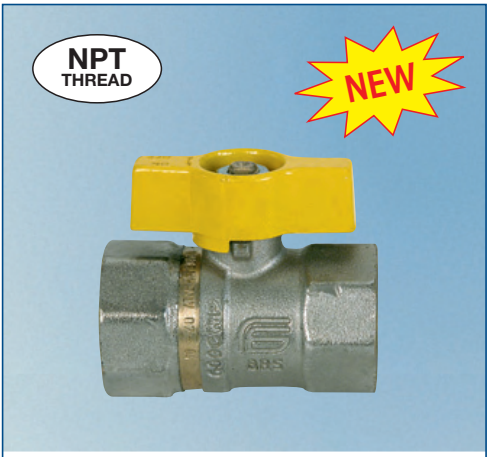
Models: male/turnable nut for water meters with sealing hole on nut. 1,5 mm bore.

- blow-out proof stem
- Does not need any maintenance as it is equipped with wrapping seats ensuring long-life cycles.
- 1 antifriction ring forms the first automatic sealing at high pressure
- 2 PTFE cone-shaped sliding seals without wear form the second sealing at low pressure
- 1 NBR O-Ring for sealing at very low pressure and vacuum
- All valves are tested according to a strict procedure covering severe inspections on the entire production.
- For pressure and temperature table refer to Aster.

LIST OF COMPONENTS description/materials/treatments				
Body and threaded end	yellow	hot-stamped from bar	CW617N	UNI EN 12165
Gland	violet	machined from bar	CW614N	UNI EN 12164
Stem	orange	machined from bar	CW614N	UNI EN 12164
Chromium-plated polished ball	red	machined from bar	CW614N	UNI EN 12164
Nut	yellow	hot-stamped from bar	CW617N	UNI EN 12165
Seals	blue	virgin PTFE	CW617N	UNI EN 12165
Stem o-ring	blue	NBR		
Operation device	black	die-cast aluminium alloy polyurethane c.		DIN 3535
Fixing screw	green	zinc-plated steel		UNI 5076
Surface treatment	--	brilliant nickel-plating		

GENERAL TABLE:	STRAIGHT		ANGLE	
nominal diameter	15	20	15	20
gas size in inch	1/2" x 3/4"	3/4" x 3/4"	1/2" x 3/4"	3/4" x 3/4"
Ø D bore mm	15	15	15	15
A mm	47	47	47	47
B mm	37,5	37,5	37,5	37,5
Ø C mm	34	34	34	34
Ø E	3/4"	3/4"	3/4"	3/4"
F mm			42,3	42,3
Ø H	1/2"	3/4"	1/2"	3/4"
L mm	75,8	79,3	31,5	35
M	11,7	15,2	12	16

LPG



Art. 4097 F/F NPT Available range from 3/8" to 3/4"

TECHNICAL FEATURES:

Temperature limits:	for fluids	from -15°C to +100°C
	for gas	from -15°C to +60°C
Pressure limits:	for fluids	40 bar
	for gas	MOP 10 (**UL**® and **CSA**® approved)

Application fields:

LPG valves are studied for Liquid Propane Gas applications, developed according to **UL**® and **CSA**® standard.

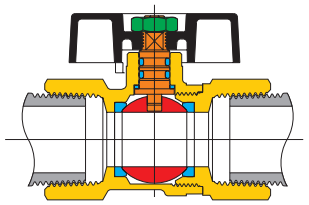
Threaded end connections:

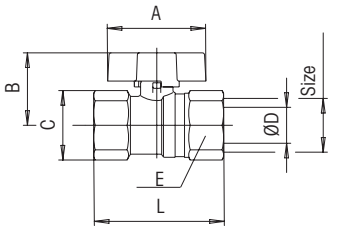
3/8" - 1/2" - 3/4" Female NPT threads

Operation devices: yellow aluminium T-handle

Specific features:

- The LPG valve is compact, versatile and easy to install.
- The Female-Female type is threaded according to NPT standard, as requested by the most important LPG application
- Blow-out proof stem.
- It does not need maintenance, it is equipped with wrapping lateral seats ensuring long life cycles
- The stem package system is composed of 3 seals: two NBR o-ring seals for low pressure and a PTFE ring for high pressure.
- All EFFEBI valves are 100% tested according to a strict procedure covering severe inspections on the entire production.



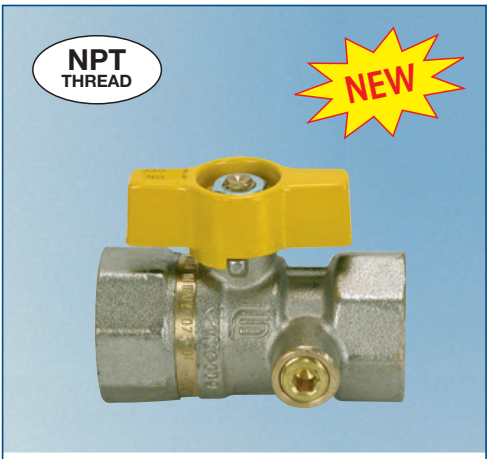


LIST OF COMPONENTS: description/materials/treatments				
body and threaded end	yellow	hot stamped from bar	CW617N	UNI EN 12165
stem	orange	machined from bar	CW614N	UNI EN 12164
chromium pl. polished ball	red	machined from bar	CW617N	UNI EN 12164
seals	blue	Reinforced PTFE with glass fiber		
stem packing	blue	NBR		DIN 3535
operation device	black	die-cast alumin. alloy polyur c.		UNI 5076
fixing nut	green	zinc plated steel		

GENERAL TABLE: valve dimensions per type and size										
nominal diameter	**10**	**15**	**20**							
size	**3/8" NPT**	**1/2" NPT**	**3/4" NPT**							
Ø D bore mm	**10**	**10**	**15**							
A mm	47	47	47							
B mm	30,8	30,8	34,7							
Ø C mm	24	26,4	32,7							
E wrench size	21	25	31							
L mm	47	55,8	66,2							
weight gr	128	163	246							

BRASS BALL VALVES

LPG



Art 4094 F/F NPT with sealed side tap. Available range from 3/8" to 3/4"

TECHNICAL FEATURES:

Temperature limits: for fluids from -15°C to +100°C
for gas from -15°C to +60°C

Pressure limits: for fluids 40 bar
for gas MOP 10 (**UL**® and **CSA**® approved)

Application fields:

LPG valves are studied for Liquid Propane Gas applications, developed according to **UL**® and **CSA**® standard.

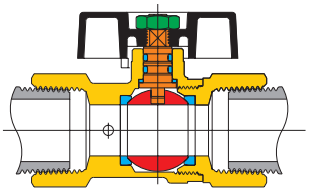
Threaded end connections:

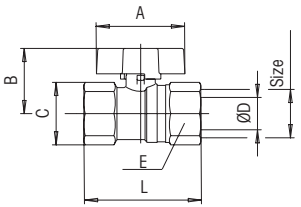
3/8" - 1/2" - 3/4" Female NPT threads

Operation devices: yellow aluminium T-handle

Specific features:

- The LPG valve is compact, versatile and easy to install.
- The Female-Female type is threaded according to NPT standard, as requested by the most important LPG application
- The valve is supplied with a sealed side tap allowing to run a leakage test or a pressure test, without dismantling the valve.
- Blow-out proof stem.
- It does not need maintenance, it is equipped with wrapping lateral seats that guarantee a high duration in the number of cycles.
- The stem package system is composed of 3 seals: two NBR o-ring seals for low pressure and a PTFE ring for high pressure.
- All EFFEBI valves are 100% tested according to a strict procedure covering severe inspections on the entire production.





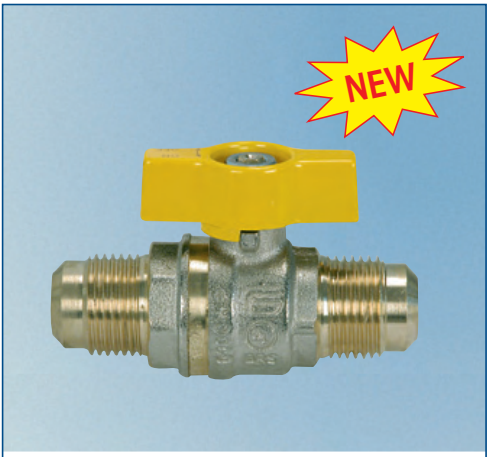
LIST OF COMPONENTS: description/materials/treatments				
body and threaded end	yellow	hot stamped from bar	CW617N	UNI EN 12165
stem	orange	machined from bar	CW614N	UNI EN 12164
chromium pl. polished ball	red	machined from bar	CW617N	UNI EN 12164
seals	blue	Reinforced PTFE with glass fiber		
stam packing	blue	NBR		DIN 3535
operation device	black	die-cast alumin. alloy polyur c.		UNI 5076
fixing nut	green	zinc plated steel		

GENERAL TABLE: valve dimensions per type and size										
nominal diameter	10	15	20							
size	3/8" NPT	1/2" NPT	3/4" NPT							
Ø D bore mm	10	10	15							
A mm	47	47	47							
B mm	30,8	30,8	34,7							
C mm	24	26,4	32,7							
E wrench size	21	25	31							
L mm	52	62,3	69							
weight gr	147	182	271							

DYSTRYBUTOR W POLSCE:
ECOZAM Sp. z o.o.
ul.Załogowa 17 80-557 Gdańsk
tel.:(+48 58) 522 03 80 fax.(+48 58) 342 20 10

UNI EN ISO 9001: 2000
Progettazione, Sviluppo, Fabbricazione
Certificato n° 0024/3

FLARE



Art. 4091 Flare/Flare SAE 45°. Available range from 3/8" to 5/8"

TECHNICAL FEATURES:

Temperature limits:	for fluids	from -15°C to +100°C
	for gas	from -15°C to +60°C
Pressure limits:	for fluids	from 40 bar to 32 bar
	for gas	MOP 10 (**UL**® and **CSA**® approved)

Application fields:

- FLARE is studied for Liquid Propane Gas applications, developed according to **UL**® and **CSA**® standards.

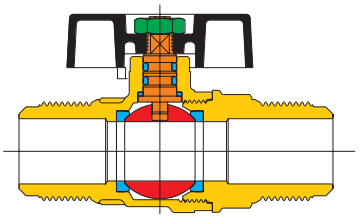
Threaded end connections:

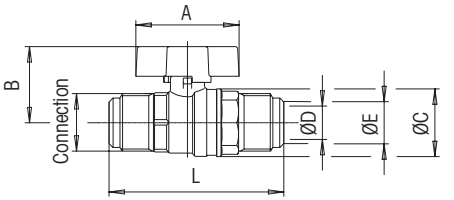
3/8" SAE - 1/2" SAE - 5/8" SAE Flare - Flare threads

Operation devices: yellow aluminium T-handle

Specific features:

- The FLARE valve is compact, versatile and easy to install.
- With "flare" connection, the pipe does not need to be threaded
- Blow-out proof stem.
- It does not need maintenance, it is equipped with wrapping lateral seats ensuring long life cycles
- The stem package system is composed of 3 seals: two NBR o-ring seals for low pressure and a PTFE ring for high pressure.
- All EFFEBI valves are 100% tested according to a strict procedure covering severe inspections on the entire production.

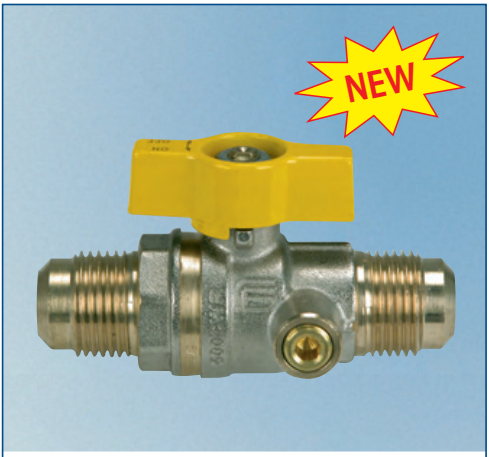




LIST OF COMPONENTS: description/materials/treatments				
body and threaded end	yellow	hot stamped from bar	CW617N	UNI EN 12165
stem	orange	machined from bar	CW614N	UNI EN 12164
chromium pl. polished ball	red	machined from bar	CW617N	UNI EN 12164
seals	blue	Reinforced PTFE with glass fiber		
stem packing	blue	NBR		DIN 3535
operation device	black	die-cast alumin. alloy polyur c.		UNI 5076
fixing nut	green	zinc plated steel		

GENERAL TABLE: valve dimensions per type and size										
connection	3/8" SAE	1/2" SAE	5/8" SAE							
thread	5/8" UNF	3/4" UNF	7/8"UNF							
Ø D bore mm	7,15	10,3	12,7							
A mm	47	47	47							
B mm	30,8	30,8	34,7							
Ø C mm	24	24	31							
ØE inches	3/8"	1/2"	5/8"							
ØE mm	9,5	12,7	15,9							
L mm	65,5	72	80,3							
weight gr	151	167	254							

FLARE



Art 4095 Flare/Flare SAE 45° with sealed side tap. Available range from 3/8" to 5/8"

TECHNICAL FEATURES:

Temperature limits:	for fluids	from -15°C to +100°C
	for gas	from -15°C to +60°C
Pressure limits:	for fluids	40 bar
	for gas	MOP 10 (**UL**® and **CSA**® approved)

Application fields:

- FLARE is studied for Liquid Propane Gas applications, developed according to **UL**® and **CSA**® standards.

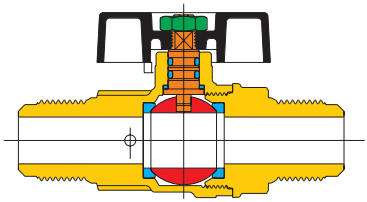
Threaded end connections:

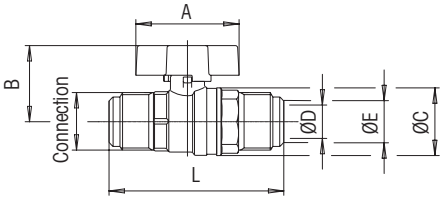
3/8" SAE - 1/2" SAE - 5/8" SAE Flare - Flare threads

Operation devices: yellow aluminium T-handle

Specific features:

- The FLARE valve is compact, versatile and easy to install.
- With "flare" connection, the pipe does not need to be threaded
- The valve is supplied with a sealed side tap allowing to run a leakage test or a pressure test, without dismantling the valve.
- Blow-out proof stem.
- It does not need maintenance, it is equipped with wrapping lateral seats ensuring long life cycles.
- The stem package system is composed of 3 seals: two NBR o-ring seals for low pressure and a PTFE ring for high pressure.
- All EFFEBI valves are 100% tested according to a strict procedure covering severe inspections on the entire production.





LIST OF COMPONENTS: description/materials/treatments

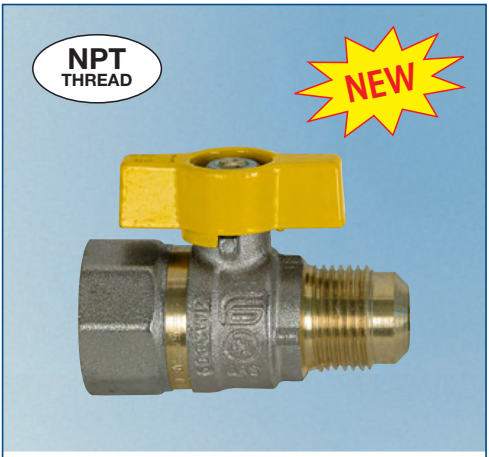
body and threaded end	yellow	hot stamped from bar	CW617N	UNI EN 12165
stem	orange	machined from bar	CW614N	UNI EN 12164
chromium pl. polished ball	red	machined from bar	CW617N	UNI EN 12164
seals	blue	Reinforced PTFE with glass fiber		
stem packing	blue	NBR		DIN 3535
operation device	black	die-cast alumin. alloy polyur c.		UNI 5076
fixing nut	green	zinc plated steel		

GENERAL TABLE: valve dimensions per type and size

connection	**3/8" SAE**	**1/2" SAE**	**5/8" SAE**							
thread	**5/8" UNF**	**3/4" UNF**	**7/8"UNF**							
Ø D bore mm	**7,15**	**10,3**	**12,7**							
A mm	47	47	47							
B mm	30,8	30,8	34,7							
Ø C mm	24	24	31							
ØE mm	9,5	12,7	15,9							
L mm	71	76,5	88,5							
weight gr	176	190	293							

UNI EN ISO 9001: 2000
Progettazione, Sviluppo, Fabbricazione
Certificato n° 0024/3

KOMBI



Art. 4092 - Art. 4093 Female NPT/SAE 45° copper end

TECHNICAL FEATURES:

Temperature limits: for fluids from -15°C to +100°C
for gas from -15°C to +60°C

Pressure limits: for fluids 40 bar
for gas MOP 10

Application fields:

• KOMBI valve is mainly studied for Liquid Propane Gas applications, developed according to **UL**® and **CSA**® standard.

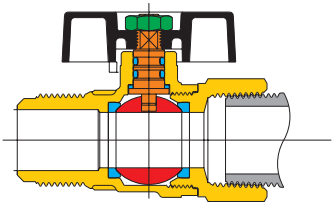
Threaded end connections:

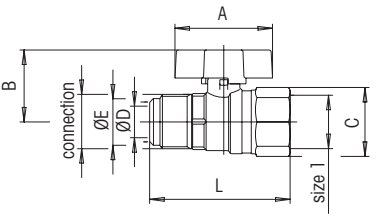
1/2" Female NPT – 3/8" SAE 45° copper end
1/2" Female NPT – 1/2" SAE 45° copper end
3/4" Female NPT – 5/8" SAE 45° copper end

Operation devices: yellow aluminium T-handle

Specific features:

- The KOMBI valve is compact, versatile and easy to install. It offers the possibility to combine two different connections without adding any fitting
- With "flare" connection, the pipe does not need to be threaded
- The Female connection is threaded according to NPT standard, as requested by the most important LPG applications
- Blow-out proof stem.
- It does not need maintenance, it is equipped with wrapping lateral seats ensuring long life cycles.
- The stem package system is composed of 3 seals: two NBR o-ring seals for low pressure and a PTFE ring for high pressure.
- All EFFEBI valves are 100% tested according to a strict procedure covering severe inspections on the entire production.





LIST OF COMPONENTS: description/materials/treatments

body and threaded end	yellow	hot stamped from bar	CW617N	UNI EN 12165
stem	orange	machined from bar	CW614N	UNI EN 12164
chromium pl. polished ball	red	machined from bar	CW617N	UNI EN 12164
seals	blue	Reinforced PTFE with glass fiber		
stem packing	blue	NBR		DIN 3535
operation device	black	die-cast alumin. alloy polyur c.		UNI 5076
fixing nut	green	zinc plated steel		

GENERAL TABLE: valve dimensions per type and size

connection	3/8" SAE 45°	1/2" SAE 45°	5/8" SAE 45°							
thread	5/8" UNF	3/4" UNF	7/8" UNF							
size 1	1/2" NPT	1/2" NPT	3/4" NPT							
Ø D bore mm	7,15	10,3	12,7							
A mm	47	47	47							
B mm	30,8	30,8	34,7							
Ø C mm	26,4	26,4	32,7							
ØE mm	9,5	12,7	15,9							
L mm	59,2	61,3	68,7							
weight gr	159	157	234							

UNI EN ISO 9001: 2000
Progettazione, Sviluppo, Fabbricazione
Certificato n° 0024/3

KOMBI

Art. 4949 (brass) Female ISO 7/1 Rp / Gas 60° copper end **Art. 4950** (DZR) Female ISO 7/1 Rp / Gas 60° copper end

TECHNICAL FEATURES:

Temperature limits: for fluids from -15°C to +100°C
for gas from -15°C to +60°C

Pressure limits: for fluids 40 bar (W = PN 16)
for gas MOP 10

Application fields:

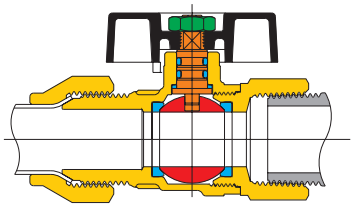
• KOMBI valve is studied for Gas applications, and Water applications sdeveloped according to **AGA**® standard (Art 4949 and 4950) and **Watermark**® standard (Art 4950)

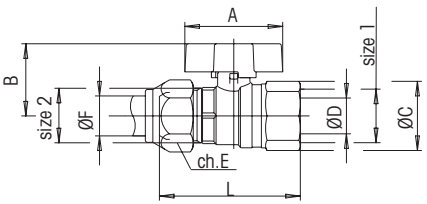
Threaded end connections:
Art 4949 - Art 4950
1/2" Female ISO 7/1 Rp – 1/2" Gas 60° copper end
3/4" Female ISO 7/1 Rp – 3/4" Gas 60° copper end

Operation devices: yellow aluminium T-handle (Art 4949)
green aluminium T-handle (Art 4950)

Specific features:

- The KOMBI valve is compact, versatile and easy to install. It offers the possibility to combine two different connections without adding any fitting
- With "flare" connection, the pipe does not need to be threaded
- Blow-out proof system.
- It does not need maintenance, it is equipped with wrapping lateral seats ensuring long life cycles.
- The stem package system is composed of 3 seals: two NBR o-ring seals for low pressure and a PTFE ring for high pressure.
- All EFFEBI valves are 100% tested according to a strict procedure covering severe inspections on the entire production.





LIST OF COMPONENTS: description/materials/treatments			4949	4950	
body and threaded end	yellow	hot stamped from bar	CW617N	CW602N	UNI EN 12165
stem	orange	machined from bar	CW614N	CW602N	UNI EN 12164
chromium pl. polished ball	red	machined from bar	CW617N	CW602N	UNI EN 12164
seals	blue	Reinforced PTFE with glass fiber			
stem packing	blue	NBR			DIN 3535
operation device	black	die-cast alumin. alloy polyur c.			UNI 5076
fixing nut	green	zinc plated steel			

GENERAL TABLE: valve dimensions per type and size										
size 1	1/2"Rp	3/4"Rp								
size 2	1/2" BSP 60°	3/4" BSP 60°								
Ø D bore mm	10	15								
A mm	47	47								
B mm	30,8	34,7								
Ø C mm	26,4	32,7								
E wrench size	24	30								
ØF inches	1/2"	3/4"								
L mm	63,1	70,2								
weight gr	193	300								

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Copper-Copper (CuxCu)

Art. 4946 - Art. 4947 - Art. 4948

TECHNICAL FEATURES:

Temperature and pressure limits:
For gas: -15°C + 60°C MOP 10 (**AGA** approved)
For fluids: -15°C + 100°C 40 bar (W = PN 16)

Application fields:

- The COPPER-COPPER (CuxCu) valve is studied particularly for water and gas installations with copper pipes.

Specific features:

- The COPPER-COPPER (CuxCu) valve is compact, versatile and easy to install.
- With "flare" connection, the pipe does not need to be threaded.
- The sealing with the copper pipe is without olives, but is obtained introducing the pipe into the nuts and screwing these on the ends of the valve. The particular flare shape of the ends guarantees a perfect metallic sealing.
- Blow-out proof stem.
- Does not need any maintenance, is equipped with wrapping seats ensuring long life cycles.
- The stem packing is composed of 3 seals: two O-rings for low pressures and an antifriction ring in PTFE for high pressure.
- Art 4948 is manufactured in DZR copper alloy (**Watermark®** approved)
- All EFFEBI valves are tested according to a strict procedure covering severe inspections on the entire production.

Sizes and end-connections (BRASS):

Art. 4946 3/8" - 9,5 copper 60°
1/2" - 13 copper 60°
3/4" - 19 copper 60°

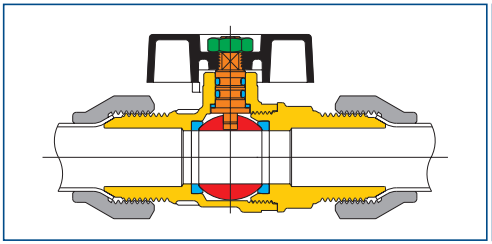
Sizes and end-connections (BRASS):

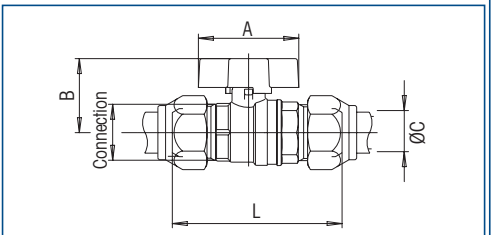
Art. 4947 3/8" UNF - 8 copper 45°
5/8" UNF - 9,5 copper 45°
3/4" UNF - 13 copper 45°

Sizes and end-connections (DZR):

Art. 4948 1/2"-13 copper 60°
3/4"-19 copper 60°

Operation devices:
Yellow (BRASS) or green (DZR) aluminium T-handle





LIST OF COMPONENTS: description/materials/treatments			4946/4947	4948	
body and threaded end	yellow	hot stamped from bar	CW617N	CW602N	UNI EN 12165
stem	orange	machined from bar	CW614N	CW602N	UNI EN 12164
chromium pl. polished ball	red	machined from bar	CW617N	CW602N	UNI EN 12164
seals	blue	Reinforced PTFE with glass fiber			
stem packing	blue	NBR			
operation device	black	die-cast alumin. alloy polyur c.			UNI 5076
fixing nut	green	zinc plated steel			

GENERAL TABLE: valve dimensions per type and size Art. 4946			
connection	3/8" BSP 60°	1/2" BSP 60°	3/4" BSP 60°
A mm	47	47	47
B mm	30,8	30,8	34,7
ØC inches	3/8"	1/2"	3/4"
ØC mm	9,5	13	19
L mm	67,5	71,3	79,4
weight gr	180	240	390

GENERAL TABLE: valve dimensions per type and size Art. 4947			
connection	5/16" SAE 45°	3/8" SAE 45°	1/2" SAE 45°
A mm	47	47	47
B mm	30,8	30,8	30,8
ØC inches	5/16"	3/8"	1/2"
ØC mm	8	9,5	12,7
L mm	62,9	66,5	67,5
weight gr	173	176	203

GENERAL TABLE: valve dimensions per type and size Art. 4948		
connection	1/2" BSP 60°	3/4" BSP 60°
A mm	47	47
B mm	30,8	34,7
ØC inches	1/2"	3/4"
ØC mm	13	19
L mm	71,3	79,4
weight gr	240	390

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TRIFLUX

Art. 1100 3-way L-ported with lever in aluminium. Available range: from 1/4" to 2"
Art. 1120 3-way L-ported with lever in aluminium. Available range: from 1/4" to 2"

TECHNICAL FEATURES:
Temperature limits: for fluids from -15°C to +100°C
Pressure limits: for fluids from 64 bar to 16 bar

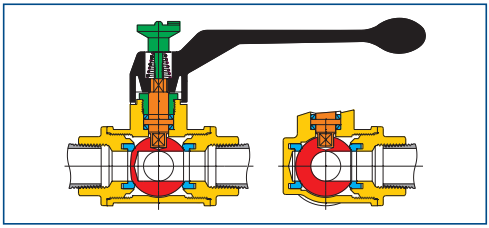
Application fields:
TRIFLUX series is available both with L and T bore and allows to divert the flow in all directions including the inlet shut off, applicable to each of the three threaded ends. It is suggested for gas and water distribution, industrial and civil heating, water plants at medium pressure, hydraulics and pneumatics, non aggressive media and vacuum.

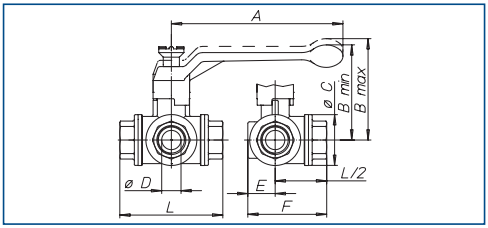
Threaded end connections:
• Standard Female to ISO 7/1 Rp

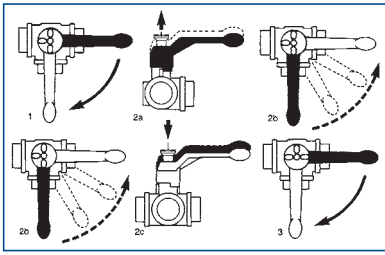
Operation devices:
Aluminium lever. Available colours: black.

SPECIFIC FEATURES:

- the TRIFLUX valve offers exceptional performances in the side and upper sealing in many applications
- the lever, thanks to an original device. Patented for the lever positioning all along 360°. Allows to perform all the operations with no need to be removed
- does not need any maintenance, is equipped with wrapping seats. According to a patented system. Ensuring long life cycles
- four self-adjusting cone-shaped seals, with PTFE-PTFE sliding, therefore without wear, form two sealings with automatic functioning
- an adjusting gland allows the sealing reset on the stem
- all valves are tested according to a strict procedure covering severe inspections on the entire production.



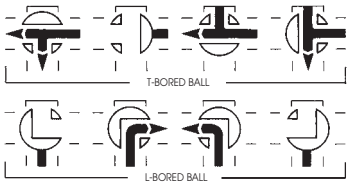




THE DIRECTION OF THE FLOW IS UNDERSTANDABLE FROM THE MARKING ON THE POSITION INDICATOR.

POSITION 1 and 3: active operations with rotation of the ball

POSITION 2a - 2b - 2c: passive operations with recovery of lever position with no ball rotation.



LIST OF COMPONENTS: description/materials/treatments				
body and threaded end	yellow	hot stamped from bar	CW617N	UNI EN 12165
gland	violet	machined from bar	CW614N	UNI EN 12164
stem	orange	machined from bar	CW617N	UNI EN 12164
chromium pl. polished ball	red	machined from bar	CW617N	UNI EN 12164
seals	blue	virgin PTFE		
operation device	black	die-cast alumin. alloy polyur c.		UNI 5076
position indicator	orange		CW614N	UNI EN 12164
spring + washer	violet	stainless steel		
screw	green	zinc plated steel		

GENERAL TABLE: valve dimensions per type and size								
nominal diameter	8	10	15	20	25	32	40	50
gas size in inch	1/4"	3/8"	1/2"	3/4"	1"	1"1/4	1"1/2	2"
Ø D bore mm	10	13	13	18	23	29	35	44
A mm	130	130	130	160	160	195	195	235
B min mm	77	77	77	89	93	110	115	129
B max mm	85	85	85	98	102	121	125	141
Ø C mm	38	38	38	48	58	67	78	95
E mm	21	21	21	26	31	34	40	47
F mm	56	56	61	74	88	99	114	132
L mm	71	71	80	96	113	130	147	169
weight with L ball gr	679	643	637	1100	1710	2660	3710	5880
weight with T ball gr	677	639	632	1090	1695	2610	3660	5820

DELTA

Art. 1150 3-way L-ported with lever in aluminium. Available range: from 1/4" to 2"

TECHNICAL FEATURES:
Temperature limits: for fluids from -10°C to +120°C
Pressure limits: for fluids 10 bar max

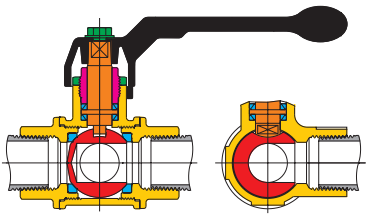
Application fields:
DELTA series is available with L bore and allows only the diversion of the flow without shutting off the flow with the typical operation of a standard two-way valve. It is suggested for gas and water distribution, industrial and civil heating, water plants at medium pressure, hydraulics and pneumatics, oil and petrochemical fields, non aggressive media.

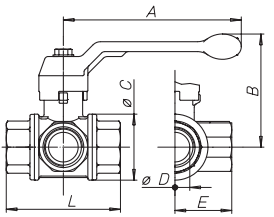
Threaded end connections:
• Standard Female to ISO 7/1 Rp

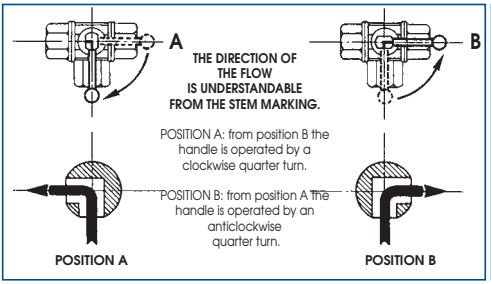
Operation devices:
Alluminium lever. Available colours: black.

Specific features:

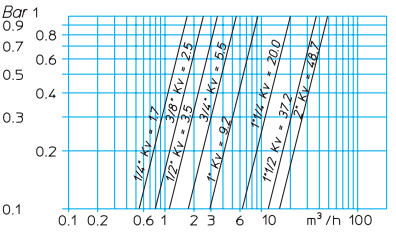
- the DELTA valve with full bore is a product of easy and safe utilization guaranteeing a long working endurance
- does not need any maintenance, is equipped with wrapping seats ensuring long life cycles
- four self-adjusting cone-shaped seals, with PTFE-PTFE sliding, therefore without wear, form two sealings with automatic functioning
- an adjusting gland allows the sealing reset on the stem
- all valves are tested according to a strict procedure covering severe inspections on the entire production.







LOSS OF HEAD DIAGRAM:
the Kv value is the port capacity causing a pressure drop of 1 bar.



LIST OF COMPONENTS: description/materials/treatments

body and threaded end	yellow	hot stamped from bar	CW617N	UNI EN 12165
gland	violet	machined from bar	CW614N	UNI EN 12164
gland nut	green	machined from bar	CW614N	UNI EN 12164
stem	orange	machined from bar	CW617N	UNI EN 12164
chromium pl. polished ball	red	virgin PTFE	CW617N	UNI EN 12164
seals	blue	die-cast alumin. alloy polyur c.		
operation device	black	stainless steel		UNI 5076
fixing screw	green	zinc plated steel		
surface treatment	–	brillant nickel-plating		

GENERAL TABLE: valve dimensions per type and size

nominal diameter	**8**	**10**	**15**	**20**	**25**	**32**	**40**	**50**
gas size in inch	**1/4"**	**3/8"**	**1/2"**	**3/4"**	**1"**	**1"1/4**	**1"1/2**	**2"**
Ø D bore mm	**10**	**10**	**14**	**19**	**24**	**30,5**	**38,5**	**48,5**
A mm	100	100	100	120	120	150	150	175
B mm	61	61	64	76	80	98	104	119
Ø C mm	29	29	36	45	54	65	79	96
E mm	26	27	33	38	46	54	61	73
L mm	52	55	69	77	89	103	114	134
weight gr	295	270	410	680	1000	1740	2490	4020

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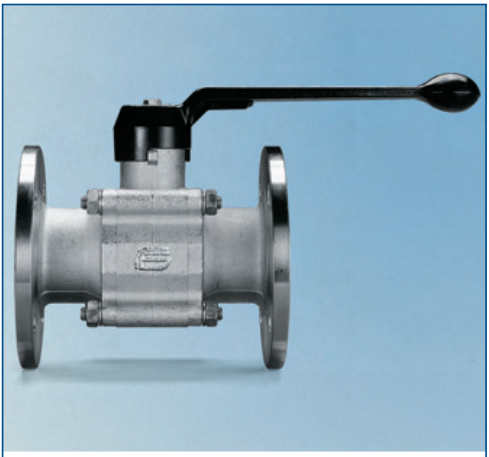
FLANGED BRASS BALL VALVES

OLYMPIC



Art. 1206 3-piece bolted and flanged with lever in alluminium. Available range: from DN 20 to DN 100

TECHNICAL FEATURES:
Temperature limits: for fluids from -15°C to +120°C
Pressure limits: for fluids 16 bar for all the sizes available

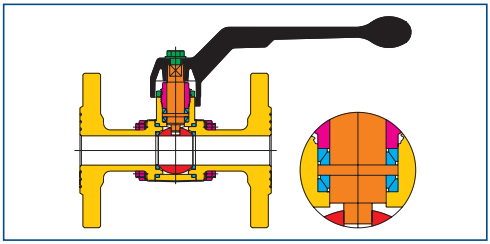
Application fields:
OLYMPIC series is suggested in the case of frequent interchangeability of components, e.g. for maintenance reasons.
It is usually employed for gas and water distribution, industrial and civil heating, water plants, hydraulics and pneumatics, oil and petrochemical fields, non aggressive media.

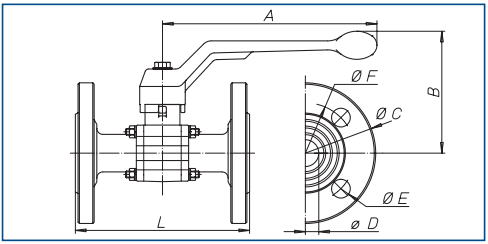
Connections:
• Standard Flanges to UNI 2240 and 2229 (sealing raised face PN 16) overall length to ISO 5752 (table 6 medium series PN 16)

Operation devices:
Aluminium lever. Available colours: black, yellow.

SPECIFIC FEATURES:

- the OLYMPIC valve with full bore, manufactured according to international standards, is of the type bolted with connection round flanges
- does not need any maintenance, is equipped with wrapping seats ensuring long life cycles
- four self-adjusting cone-shaped seals, with PTFE-PTFE sliding, therefore without wear, form two sealings with automatic functioning
- an adjusting gland allows the sealing reset on the stem
- all valves are tested according to a strict procedure covering severe inspections on the entire production.



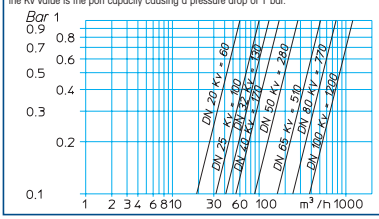


LIST OF COMPONENTS: description/materials/treatments				
body and threaded end	yellow	hot stamped from bar	CW617N	UNI EN 12165
gland	violet	machined from bar	CW614N	UNI EN 12164
gland nut	geen	machined from bar	CW614N	UNI EN 12164
stem	orange	machined from bar	CW617N	UNI EN 12164
chromium pl. polished ball	red	machined from bar	CW617N	UNI EN 12164
seals	blue	virgin PTFE		
O-Ring for flange sealing	blue	VITON		
operation device	black	die-cast alumin. alloy polyur c.		UNI 5076
tie rods, nuts and spring washers	violet	yellow zinc plated steel		
fixing screw	green	zinc plated steel		
surface treatment	—	brilliant nickel-plating		

GENERAL TABLE: valve dimensions per type and size

nominal diameter	20	25	32	40	50	65	80	100
size	DN 20	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80	DN 100
Ø D bore mm	20	25	32	40	50	65	80	100
A mm	160	160	195	195	235	280	280	280
B mm	91	95	112	118	132	155	167	180
Ø C mm	105	115	140	150	165	185	200	220
Ø E mm	14	14	18	18	18	18	18	18
number of holes	4	4	4	4	4	4	8	8
Ø F mm	75	85	100	110	125	145	160	180
L mm	130	140	165	165	203	222	241	305
weight gr	2390	3050	4800	6140	8720	12800	16520	24500

LOSS OF HEAD DIAGRAM:
the Kv value is the port capacity causing a pressure drop of 1 bar.



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FLANGED BRASS BALL VALVES

ROLLY

Art. 1216 with mobile flanges with lever in aluminium. Available range: from DN 15 to DN80

TECHNICAL FEATURES:
Temperature limits: for fluids from -20°C to +130°C
Pressure limits: for fluids 16 bar for all the sizes available

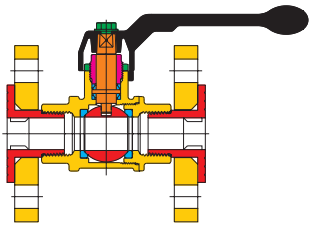
Application fields:
ROLLY series can be employed as an alternative to OLYMPIC. It is usually employed for gas and water distribution, industrial and civil heating, water plants, hydraulics and pneumatics, oil and petrochemical fields, non aggressive media.

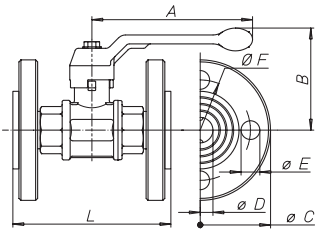
Connections:
• Standard Flanges to UNI 2278 (sealing raised face PN16)

Operation devices:
Aluminium lever. Available colours: black

SPECIFIC FEATURES:

- the ROLLY valve, with full bore, employs the TOTAL ball valve as the basic component
- the flanges in steel are revolving and allow the positioning of the valve with respect to pipe axis
- does not need any maintenance, is equipped with wrapping seats ensuring long life cycles
- four self-adjusting cone-shaped seals, with PTFE-PTFE sliding, therefore without wear, form two sealings with automatic functioning
- an adjusting gland allows the sealing reset on the stem
- all valves are tested according to a strict procedure covering severe inspections on the entire production.





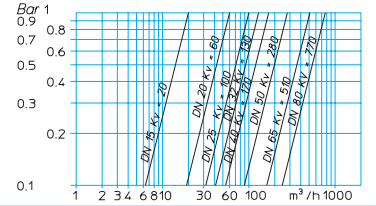
LIST OF COMPONENTS: description/materials/treatments

body and threaded end	yellow	hot stamped from bar	CW617N	UNI EN 12165
gland	violet	machined from bar	CW614N	UNI EN 12164
gland nut	geen	machined from bar	CW614N	UNI EN 12164
stem	orange	machined from bar	CW617N	UNI EN 12164
chromium pl. polished ball	red	machined from bar	CW617N	UNI EN 12164
seals	blue	virgin PTFE		
o-ring	blue	NBR		DIN 3535
operation device	black	die-cast alumin. alloy polyur c.		UNI 5076
turnable flanges	yellow	zinc plated steel		
threaded joint	red	hot stamped from bar	CW617N	UNI EN 12165
fixing screw	violet	zinc plated steel		
surface treatment	—	brilliant nickel-plating		

GENERAL TABLE: valve dimensions per type and size

nominal diameter	15	20	25	32	40	50	65	80
size	DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80
Ø D bore mm	15	20	25	32	40	50	65	80
A mm	100	160	160	195	195	235	280	280
B mm	64	92	96	113	120	135	155	167
Ø C mm	95	105	115	140	150	165	185	200
Ø E mm	14	14	14	18	18	18	18	18
number of holes	4	4	4	4	4	4	4	8
Ø F mm	65	75	85	100	110	125	145	160
L mm	105	118	135	149	161	181	209	238
weight gr	1635	2470	3280	5200	6700	9200	12550	17000

LOSS OF HEAD DIAGRAM:
the Kv value is the port capacity causing a pressure drop of 1 bar.



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MINIBALL

Art. 1501 F/F with little lever. Available range: from 1/8" to 1/2"

Art. 1502 M/F with little lever. Available range: from 1/8" to 1/2"

Art. 1503 M/F with little lever. Available range: from 1/8" to 1/2"

Art. 1511 F/F with driving screw from 1/8" to 1/2"
Art. 1512 M/F with driving screw from 1/8" to 1/2"
Art. 1513 M/M with driving screw from 1/8" to 1/2"

Art. 1521 C/F with little lever from 3/8" to 1/2"
Art. 1522 C/M with little lever from 3/8" to 1/2"
Art. 1523 C/C with little lever from 3/8" to 1/2"

Art. 1531 C/F with driving screw from 3/8" to 1/2"
Art. 1532 C/M with driving screw from 3/8" to 1/2"
Art. 1533 C/C with driving screw from 3/8" to 1/2"

Art. 1571 F/H with little lever from 1/8" to 1/2"
Art. 1572 M/H with little lever from 1/8" to 1/2"

Art. 1591 F/F with little lever chromium plated from 1/8" to 1/2"
Art. 1592 M/F with little lever chromium plated from 1/8" to 1/2"
Art. 1593 M/M with little lever chromium plated from 1/8" to 1/2"

MINIBALL

TECHNICAL FEATURES:
Temperature limits: for fluids from -10°C to +90°C
Pressure limits: for fluids 10 bar max.

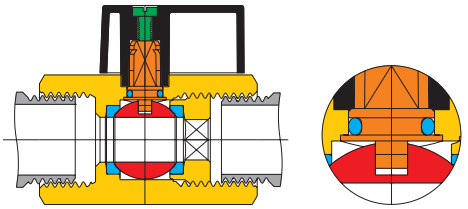
Application fields: MINIBALL series is mainly employed in combination with water exposed pipes, sanitation plants, civil heating, compressed air, tank discharge

Threaded end connections:
- Standard
- Female and male to ISO 228/1.

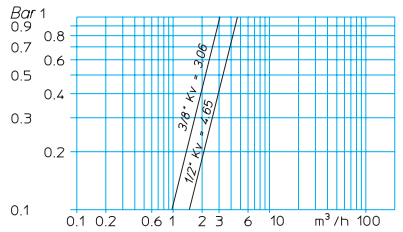
On request: Female and male ISO 7/1.

Operation devices: Glass filled nylon little lever chromium plated little lever, driving screw. Available colours: black.

SPECIFIC FEATURES:
- the MINIBALL valve, with reduced bore, covers a wide range allowing considerable applications, particularly where space is reduced
- all valves are tested according to a strict procedure covering severe inspections on the entire production.



LOSS OF HEAD DIAGRAM:
the Kv value is the port capacity causing a pressure drop of 1 bar.

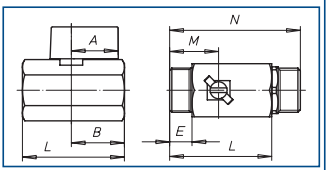


LIST OF COMPONENTS: description/materials/treatments

body and threaded end	yellow	machined from bar	CW617N	UNI EN 12164
stem	orange	machined from bar	CW617N	UNI EN 12164
chromium pl. polished ball	red	machined from bar	CW617N	UNI EN 12164
seals	blue	virgin PTFE		
stem packing	blue	O-ring		DIN 3535
operation device	black	glass filled nylon		
hose union	–	machined from bar	CW617N	UNI EN 12164
elastic pin	–	zinc plated steel		
nut for copper/copper version	–	machined from bar	CW614N	UNI EN 12164
olive for copper/copper version	–	virgin PTFE		
fixing screw	green	zinc plated steel		
surface treatment	–	brilliant nickel-plating		

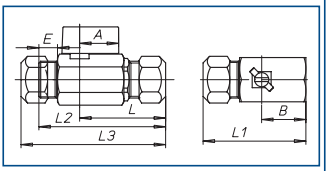
GENERAL TABLE: valve dimensions per type and size

Size gas	bore Ø D	A	B	C	E	ch F	G	L	M	N	Weight art.	art.	art.	art.	art.	art.
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	1501	1502	1503	1511	1512	1513
1/8"	5,5	19	19	22	9	19	15	36	17	48	78	63	73	78	58	72
1/4"	5,5	19	19	22	9	19	15	36	17	48	71	61	77	70	61	74
3/8"	8,0	19	21	23	9	21	17	41	20	53	86	83	104	81	80	99
1/2"	10,0	22	25	30	11	25	19	48	23	62	137	130	169	133	126	165



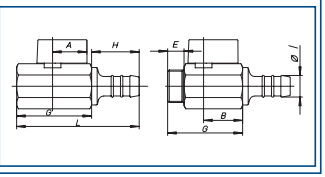
GENERAL TABLE: valve dimensions per type and size

Size gas	tube copper	bore Ø D	A	B	C	E	ch F	G	ch H	I	L1	L2	L3	Weight art.	art.	art.	art.	art.	art.
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	1521	1522	1523	1531	1532	1533
3/8" x	10	8	19	21	23	9	21	17	19	40	49	61	68	97	118	132	93	117	130
3/8" x	12	8	19	21	23	9	21	17	19	41	50	62	70	93	116	127	90	109	124
1/2" x	12	10	22	25	30	11	25	19	24	48	57	71	80	162	199	231	159	194	227
1/2" x	14	10	22	25	30	11	25	19	24	49	58	72	82	158	195	223	154	192	215



GENERAL TABLE: valve dimensions per type and size

Size gas	bore Ø D	A	B	C	E	ch F	G	H	Ø I	L	Weight art.	art.
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	1571	1572
1/8"	5,5	19	19	22	9	19	36	27	10,5	63	91	76
1/4"	5,5	19	19	23	9	19	36	29	10,5	65	87	79
3/8"	8,0	19	21	24	9	21	41	29	14,0	70	112	110
1/2"	10,0	22	25	30	11	25	48	30	14,0	78	177	170



HIPRESS

Art. 2321 for high pressure F/F with T-handle. Available range: from 3/8" to 1"

TECHNICAL FEATURES:
Temperature limits: for fluids from -20°C to +80°C
Pressure limits: for fluids 210 bar

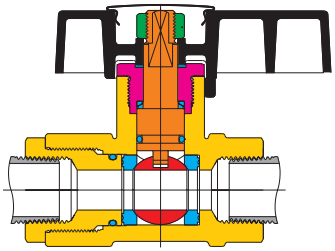
Application fields:
HIPRESS series is particularly recommended for hydraulic installations, pneumatics and industrial plants in general, in presence of high pressures

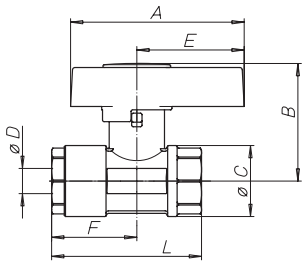
Threaded end connections:
• Standard Female to ISO 7/1 Rp

Operation devices:
Aluminium T-handle Available colours: black.

SPECIFIC FEATURES:

- The HIPRESS valve, with reduced bore, has been designed for high pressures in a monobloc piece of high sturdiness.
- does not need any maintenance, is equipped with special seals ensuring long life cycles.
- all valves are tested according to a strict procedure covering severe inspections on the entire production.

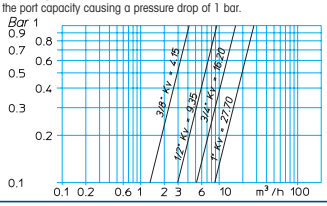




LIST OF COMPONENTS: description/materials/treatments				
body and threaded end	yellow	hot stamped from bar	CW617N	UNI EN 12165
gland	violet	machined from bar	CW614N	UNI EN 12164
stem	orange	machined from bar	CW617N	UNI EN 12164
chromium pl. polished ball	red	machined from bar	CW617N	UNI EN 12164
seals	blue	acetalic resin		
stempacking	blue	O-ring		
operation device	black	die-cast alumin. alloy polyur c.		UNI 5076
fixing nut	green	zinc plated steel		
T-handle cover	black	chromium plated brass		
surface treatment	–	brilliant nickel-plating		

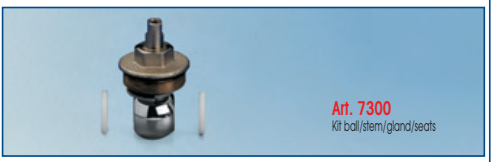
GENERAL TABLE: valve dimension per type and size				
nominal diameter	10	15	20	25
gas size in inch	3/8"	1/2"	3/4"	1"
Ø bore mm	8	12	16	20
A mm	73	73	110	110
B mm	54	56	75	77
Ø C mm	30	36	45	53
E mm	43	43	68	68
F mm	44	47	54	56
L mm	75	85	95	105
weight gr	482	637	1179	1536

LOSS OF HEAD DIAGRAM:
the Kv value is the port capacity causing a pressure drop of 1 bar.



TOTAL EXTRA

Art. 2330 F/F with extractable kit with lever in aluminium. Available range: 1/2" to 3/4"



Art. 7300
Kit ball/stem/gland/seats

TECHNICAL FEATURES:
Temperature limits: for fluids from -20°C to +100°C
Pressure limits: for fluids PN 16

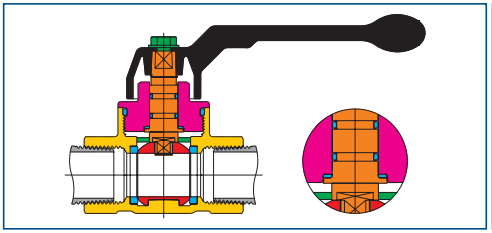
Application fields: TOTAL EXTRA series is particularly recommended for installations where the medium has a strong wearing power against the inside valve components with the consequent requirement for frequent and quick replacement of the interception device.

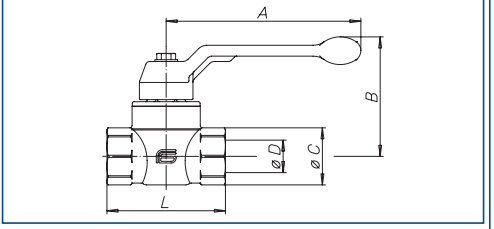
Threaded end connections: • Standard female/female to ISO 7/1 Rp

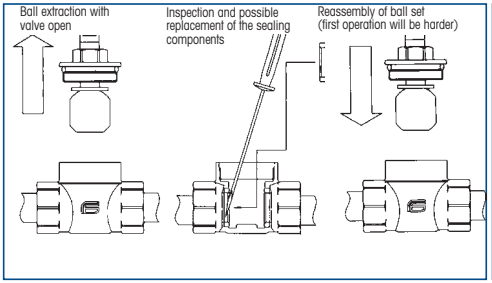
Operation devices: Aluminium lever. Available colours: black.

SPECIFIC FEATURES:

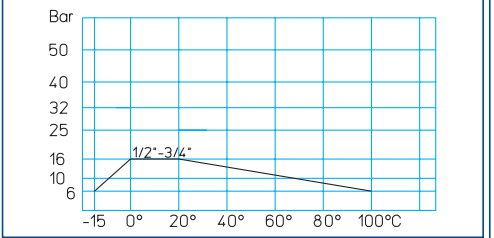
- the TOTAL EXTRA series, with full bore, is conceived in order to allow at all time to replace all the inside components without dismantling the valve from the installation: the body is a solid stamping without any connection, therefore without any possible leakage and is integral with the pipe where it is installed.
- safety: the valve is designed to cope with installation pressure up to 100° C temperature.
- working life: the ball rotates perfectly supported on its axis so as to avoid any stress on the seats, thus guaranteeing long life cycles in full safety.
- the possible inside worn components are easily replaceable by the relevant kits.







PRESSURE/TEMPERATURE DIAGRAM:
at each pressure level corresponds a specific admissible temperature level and viceversa



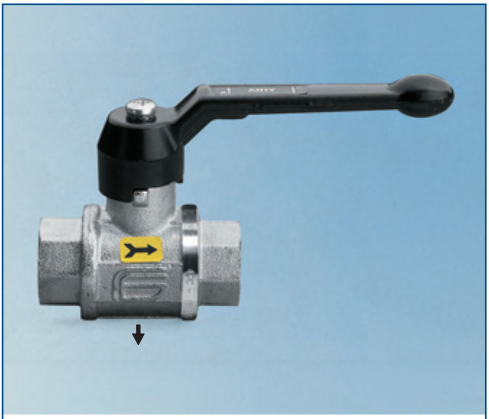
LIST OF COMPONENTS: description/materials/treatments

body	yellow	hot stamped from bar	CW617N	UNI EN 12165
gland	violet	machined from bar	CW614N	UNI EN 12164
stem	orange	machined from bar	CW617N	UNI EN 12164
chromium pl. ball	red	machined from bar	CW617N	UNI EN 12164
seals	blue	virgin PTFE		
stem packing o-rings	blue	NBR		DIN 3535
operation device	black	die-cast alumin. polyur c.		UNI 5076
fixing nut	geen	zinc plated steel		
washer	green	stainless steel Aisi 304		
surface treatment	–	brilliant nickel-plating		

GENERAL TABLE: valve dimensions per type and size

nominal diameter	**15**	**20**
gas size in inch	**1/2"**	**3/4"**
Ø D bore mm	**15**	**20**
A mm	120	120
B mm	71	74
Ø C mm	29	35
L mm	64	73
weight gr	400	565

AIRY



Art. 2351 F/F with lever in aluminium, with exhaust. Available range: from 1/4" to 2"

TECHNICAL FEATURES:
Temperature limits: for fluids from -0°C to +60°C
Pressure limits: for fluids 40 bar

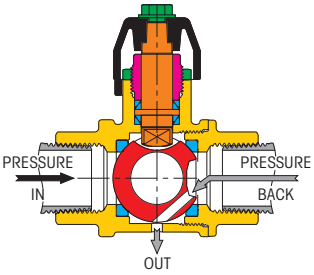
Application fields:
AIRY series is used specifically in compressed air installations

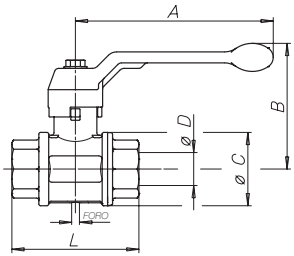
Threaded end connections:
• Standard Female to ISO 7/1 Rp

Operation devices:
Aluminium lever handle. Available colours: black.

SPECIFIC FEATURES:

- The AIRY valve, with full bore, is a product derived from TOTAL series. In order to exhaust the compressed air inside the downstream pipe section and avaid damages to the seats the ball is drilled transversally whereas the valve body is drilled at the bottom, as shown in the cross sectioned valve.
- does not need any maintenance, is equipped with wrapping seats ensuring high life cycles.
- Four self-adjusting cone-shaped seals, with PTFE-PTFE sliding, therefore without wear, form two sealings with automatic functioning.
- An adjusting gland allows the sealing reset on the stem.
- all valves are tested according to a strict procedure covering severe inspections on the entire production.





LIST OF COMPONENTS: description/materials/treatments

body and threaded end	yellow	hot stamped from bar	CW617N	UNI EN 12165
gland	violet	machined from bar	CW614N	UNI EN 12164
gland nut	green	machined from bar	CW614N	UNI EN 12164
stem	orange	machined from bar	CW617N	UNI EN 12164
chromium pl. polished ball	red	machined from bar	CW617N	UNI EN 12164
seals	blue	virgin PTFE		
operation device	black	die-cast alumin. alloy polyur c.		UNI 5076
fixing screw	green	zinc plated steel		
surface treatment	—	brilliant nickel-plating		

GENERAL TABLE: valve dimensions per type and size

nominal diameter	8	10	15	20	25	32	40	50			
gas size in inch	1/4"	3/8"	1/2"	3/4"	1"	1"1/4	1"1/2	2"			
Ø D bore mm	10	10	15	20	25	32	40	50			
A mm	100	100	100	120	120	150	150	175			
B mm	61	61	64	76	80	98	104	119			
Ø C mm	29	29	36	45	54	65	79	96			
L mm mm	52	55	69	77	89	103	114	134			
weight gr	245	245	370	635	890	1550	2300	3630			
vent	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5			

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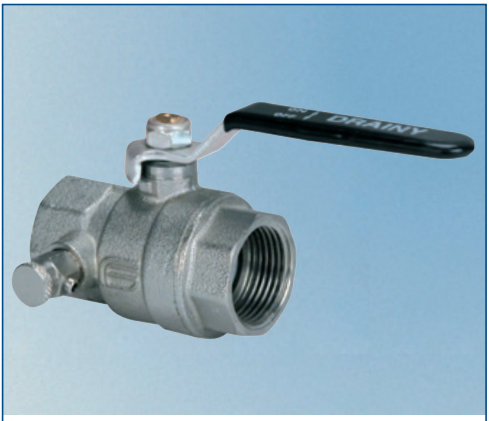
Certificato n° 0024/3

DRAINY



Art. 2371 F/F with drain cock and plug with steel lever. Available range: from 1/2" to 1"

TECHNICAL FEATURES:
Temperature limits: for fluids from -15°C to +100°C
Pressure limits: for fluids 40 bar

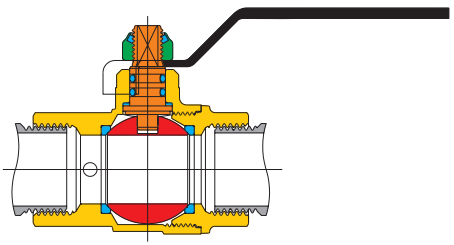
Application fields:
DRAINY series is employed in water and heating installations.

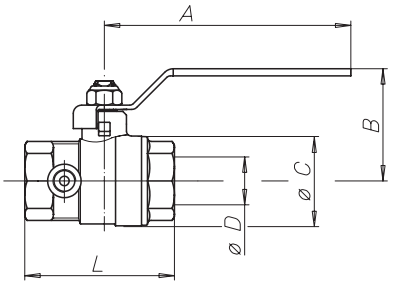
Threaded end connections:
• Standard. Female and male to ISO 228/1

Operation devices:
Steel lever handle. Available colours: black.

SPECIFIC FEATURES:

- The DRAINY valve, with full bore. Is provided with a side boiler discharge little valve and with a threaded drilling for the possible connection of a pressure gauge.
- blow-out proof stem.
- does not need any maintenance, is equipped with wrapping seats ensuring high life cycles
- all valves are tested according to a strict procedure covering severe inspections on the entire production





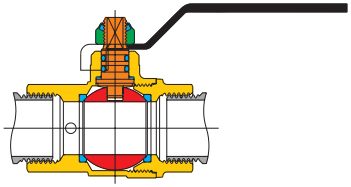
LIST OF COMPONENTS: description/materials/treatments				
body and threaded end	yellow	hot stamped from bar	CW617N	UNI EN 12165
stem	orange	machined from bar	CW617N	UNI EN 12164
chromium pl. polished ball	red	machined from bar	CW617N	UNI EN 12164
seals	blue	virgin PTFE		
stem packing	blue	O-ring in NBR		DIN 3535
operation device	black	zinc plated steel, PVC coated		
fixing nut	green	zinc plated steel		
surface treatment	—	brilliant nickel-plating		

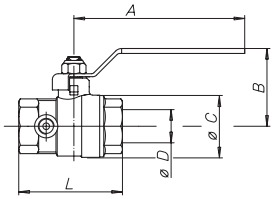
GENERAL TABLE: valve dimensions per type and size											
DN	15	20	25								
gas size in inch	1/2"	3/4"	1"								
Ø D mm	15	20	25								
A mm	85	105	105								
B mm	41	48	52								
Ø C mm	30	38	4 6								
female L mm	58	65	75								
female weight gr	247	373	548								

ASTER WITH DRAIN

Art. 2374 F/F with drain and aluminium lever from 1/2" to 2"

Art. 2375 F/F with turnable drain and aluminium lever from 1/2" to 2"





TECHNICAL FEATURES:
Temperature limits: for fluids from -15°C to +100°C
Pressure limits: for fluids PN40

Application fields:
The ASTER series with drain is mainly used for heating and water systems.

Threaded end connections:
• Standard female according to UNI ISO 228/1.

Operation devices:
Aluminium lever. Available colours: red.

SPECIFIC FEATURES

- Art. 2374 ASTER full bore ball valve is provided with a drain for liquids generally used for heating, air-conditioning and water systems and a threaded Tee branch for pressure or temperature source.
- Art. 2375 ASTER full bore ball valve is provided with a turnable drain for easy connection of a drainage pipe for liquids normally used in heating, air-conditioning and water systems. The drain is closed by a knurled knob.
- Does not need any maintenance as it is equipped with wrapping seats ensuring long-life cycles.
- All valves are tested according to a strict procedure covering severe inspections on the entire production.
- For pressure and temperature table refer to Aster.

LIST OF COMPONENTS description/materials/treatments

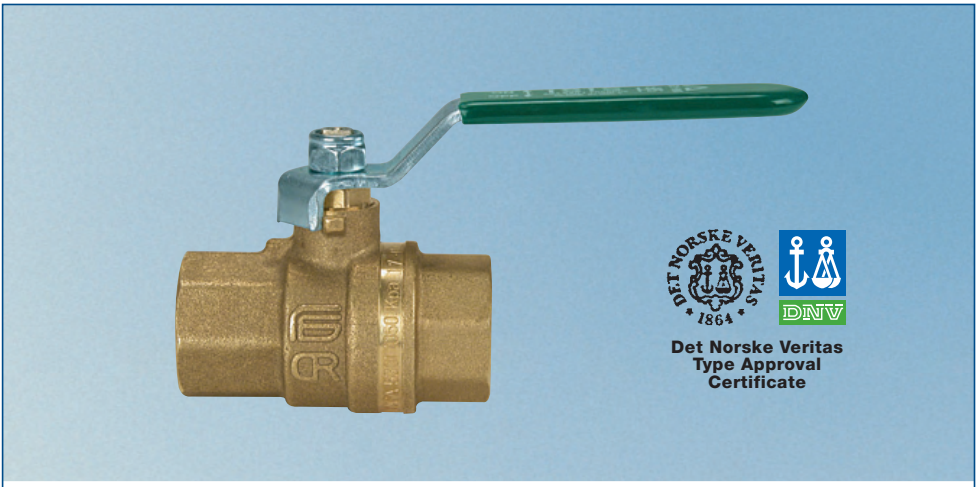
Body and threaded end	yellow	hot-stamped from bar	CW617N	UNI EN 12165
Stem	orange	machined from bar	CW614N	UNI EN 12164
Chromium-plated polished ball	red	machined from bar	CW614N	UNI EN 12164
Seals	blue	virgin PTFE		
Stem o-ring	blue	NBR		UNI 5076
Operation device	black	die-cast aluminium alloy polyurethane c.		
Fixing screw	green	zinc-plated steel		
Surface treatment	--	brilliant nickel-plating		

GENERAL TABLE: valve dimensions per type and size

nominal diameter	**15**	**20**	**25**	**32**	**40**	**50**					
gas size in inch	**1/2"**	**3/4"**	**1"**	**1"1/4**	**1"1/2**	**2"**					
Ø D bore mm	**15**	**20**	**25**	**32**	**40**	**50**					
A mm	85	105	105	130	130	165					
B mm	41	48	52	63	69	83					
Ø C mm	30	38	46	57,5	70	85,5					
L mm	58	65	75	86,5	98	116					
weight gr	247	373	568	886	1297	2149					

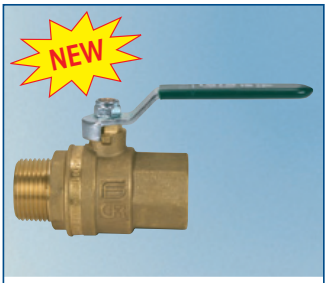
BRASS BALL VALVES

ISIS W



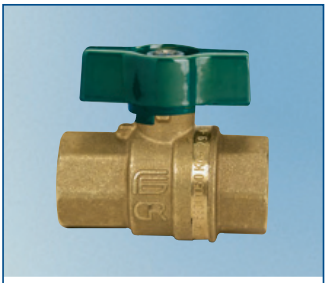
Det Norske Veritas
Type Approval
Certificate

Art. 2411 f/f "CR" alloy with steel lever from 1/4" to 4"

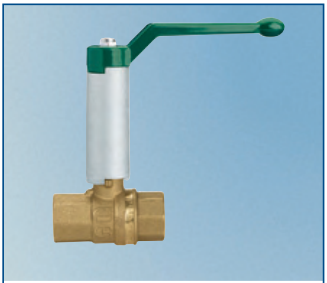


Art. 2412 M/F from 1/2" to 1"

Art. 2415 copper-copper ends "CR" alloy with steel lever from 15mm to 54 mm



Art. 2421 f/f "CR" alloy with t-handle from 1/4" to 1"



Art. 2481 f/f "CR" alloy with extension from 1/4" to 2"

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UNI EN ISO 9001: 2000
Progettazione, Sviluppo, Fabbricazione
Certificato n° 0024/3

ISIS

TECHNICAL FEATURES:
Temperature limits: for fluids from -15°C to +120°C
Pressure limits: for fluids from 25 bar to 20 bar

Application fields:
ISIS series is manufactured with DZR copper alloy, studied on purpose for environmental protection. It is particularly suitable for those installations where high aggressive water causes zinc leaking in the standard brass alloys and weakens the material molecular structure.

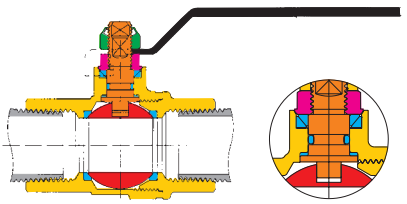
Threaded end connections:
- Standard Female according to ISO 7/1 Rp
- On request Female according to ISO 7/1 Rc Male ISO 7/1

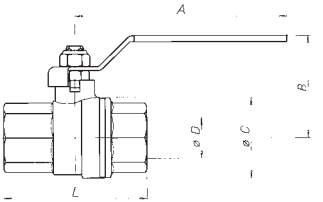
Operation devices:
Aluminium lever and T-handle, steel lever handle, Rallenty gear handle, extension.

Available colours:
green, black and yellow.

SPECIFIC FEATURES:

- The ISIS valve, with full bore, is a product particularly suitable for ensuring a high working reliability at medium pressure in water installations; it is certified by BRITISH GAS, by the WATER RESEARCH CENTRE, by DNV and by Watermark.
- blow-out proof stem.
- does not need any maintenance, is equipped with wrapping seats ensuring long life cycles.
- an antifriction ring forms the first automatic sealing at high pressure.
- Two self-adjusting cone-shaped seals, with PTFE-PTFE sliding, therefore without wear, form the second sealing at low pressure.
- 1 O-Ring in EPDM for sealing at low pressure and vacuum
- all valves are tested according to a strict procedure covering severe inspections on the entire production.





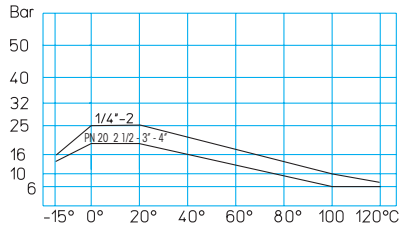
LIST OF COMPONENTS: description/materials/treatments

body and threaded end	yellow	hot stamped from bar	CW602N	UNI EN 12165
gland	violet	machined from bar	CW614N	UNI EN 12164
stem	orange	machined from bar	CW602N	UNI EN 12164
chromium pl. polished ball	red	machined from bar	CW602N	UNI EN 12164
seals	blue	virgin PTFE		
O-ring	blue	EPDM		
operation device	black	zinc plated steel, PVC coated		
fixing nut	green	zinc plated steel		

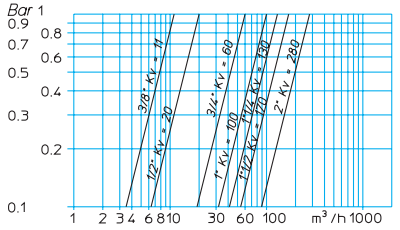
GENERAL TABLE: valve dimensions per type and size

nominal diameter		8	10	15	20	25	32	40	50	65	80	100
gas size in inch		**1/4"**	**3/8"**	**1/2"**	**3/4"**	**1"**	**1"1/4**	**1"1/2**	**2"**	**2"/2**	**3"**	**4"**
Ø bore mm		**10**	**10**	**15**	**20**	**25**	**32**	**40**	**50**	**65**	**80**	**100**
A mm		85	85	85	105	105	130	130	165	248	248	260
B mm		37	37	44	52	56	63	69	83	108	123	142
Ø C mm		27	27	32	40	48	60	72	88	135	167	167
female	**L mm**	49	50	61	70	84	98	108	130	182,5	219	219
female	**weight gr**	190	175	226	386	588	962	1520	2650	3900	5990	10130

PRESSURE/TEMPERATURE DIAGRAM
at each pressure level corresponds a specific admissible temperature level and viceversa



LOSS OF HEAD DIAGRAM:
the Kv value is the port capacity causing a pressure drop of 1 bar.



Y STRAINER VALVE

Art. 2435 F/F ISO 7/1 Rc "CR" alloy with t-handle from 1/2" to 1"

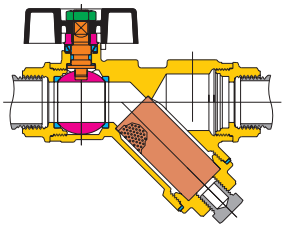
Temperature and pressure limits:
For fluids: from -15°C to +120°C
PN 25

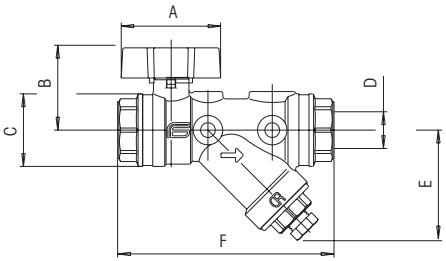
Application fields:

The Y STRAINER combined valve, is manufactured with DZR copper alloy, projected on purpose for environmental protection
Is particularly suitable for those installations where high aggressive water causes zinc leakage in the standard brass alloys and weakens the material molecular structure.
The incorporated strainer, makes the valve suitable for fluids with solid suspended particles.

Specific features:

- The Y STRAINER valve, with full bore, is an extremely robust product.
- Extremely compact because combines a ball valve with a Y strainer in a single product, therefore it allows to save space and time for installing
- The incorporated strainer is in stainless steel with perforated metal sheet, instead of a metal net, for a bigger reliability and endurance.
- The valve has many points that, after to be finished, may be used to insert gauging instruments.
- Unscrewing the 1/4" threaded plug, is possible to check the strainer and, if necessary, remove the deposited impurities. It's also possibie, unscrewing the nut, to draw out the whole strainer.
- The materials and the seats are WRC patented.
- Blow-out proof stem.
- Does not need any maintenance, is equipped with wrapping seats ensuring long life cycles.
- An antifriction ring forms the first automatic sealing at high pressure.
- Two self-adjusting cone-shaped seals, with PTFE-PTFE sliding, therefore without wear, form the second sealing at low pressure.
- O-Ring in EPDM for sealing at very low pressure and vacuum.
- Ali EFFEBI valves are tested according to a strict procedure covering severe inspections on the entire production.





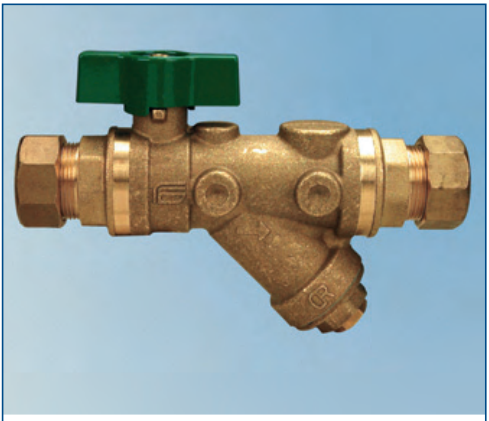
LIST OF COMPONENTS: description/materials/treatments

body and threaded end	yellow	hot stamped from bar	CW602N	UNI EN 12165
gland	violet	machined from bar	CW614N	UNI EN 12164
stem	orange	machined from bar	CW602N	UNI EN 12164
chromium pl. polished ball	red	machined from bar	CW602N	UNI EN 12164
seals	blue	virgin PTFE		
o-ring	blue	EPDM		
operation device	black	zinc plated steel, PVC coated		
fixing nut	green	zinc plated steel		
filter	brown	perforated metal sheet	AISI316	
filter plug	yellow	hot stamped from bar	CW602N	UNI EN 12165
drainage plug	grey	machined from bar	CW602N	UNI EN 12164

GENERAL TABLE: valve dimensions per type and size

nominal diameter	**15**	**20**	**25**								
gas size in inch	**1/2"**	**3/4"**	**1"**								
Ø D bore mm	**15**	**20**	**25**								
A mm	85	105	105								
B mm	43.8	52	55.8								
Ø C mm	34	42	49								
Ø E mm	44.5	56.3	59								
F mm	110	129	151.5								
weight gr	528	798	1180								

Y STRAINER VALVE



Art. 2435 Copper-Copper ends "CR" alloy with t-handle from 15 - 22 - 28 mm.

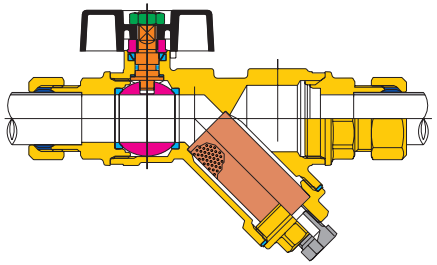
Temperature and pressure limits:
For fluids: from -15°C to +120°C
PN 25

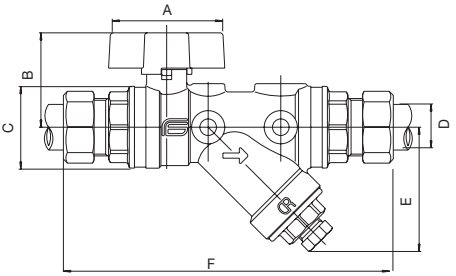
Application fields:

The Y STRAINER combined valve, is manufactured with DZR copper alloy, projected on purpose for environmental protection
Is particularly suitable for those installations where high aggressive water causes zinc leakage in the standard brass alloys and weakens the material molecular structure.
The incorporated strainer, makes the valve suitable for fluids with solid suspended particles.

Specific features:

- The Y STRAINER valve, with full bore, is an extremely robust product.
- Extremely compact because combines a ball valve with a Y strainer in a single product, therefore it allows to save space and time for installing
- The incorporated strainer is in stainless steel with perforated metal sheet, instead of a metal net, for a bigger reliability and endurance.
- The valve has many points that, after to be finished, may be used to insert gauging instruments.
- Unscrewing the 1/4" threaded plug, is possible to check the strainer and, if necessary, remove the deposited impurities. It's also possibie, unscrewing the nut, to draw out the whole strainer.
- The materials and the seats are WRC patented.
- Blow-out proof stem.
- Does not need any maintenance, is equipped with wrapping seats ensuring long life cycles.
- An antifriction ring forms the first automatic sealing at high pressure.
- Two self-adjusting cone-shaped seals, with PTFE-PTFE sliding, therefore without wear, form the second sealing at low pressure.
- O-Ring in EPDM for sealing at very low pressure and vacuum.
- Ali EFFEBI valves are tested according to a strict procedure covering severe inspections on the entire production.





LIST OF COMPONENTS: description/materials/treatments

body and threaded end	yellow	hot stamped from bar	CW602N	UNI EN 12165
gland	violet	machined from bar	CW614N	UNI EN 12164
stem	orange	machined from bar	CW602N	UNI EN 12164
chromium pl. polished ball	red	machined from bar	CW602N	UNI EN 12164
seals	blue	virgin PTFE		
o-ring	blue	EPDM		
operation device	black	zinc plated steel, PVC coated		
fixing nut	green	zinc plated steel		
filter	brown	perforated metal sheet	AISI316	
filter plug	yellow	hot stamped from bar	CW602N	UNI EN 12165
drainage plug	yellow	machined from bar	CW602N	UNI EN 12164

GENERAL TABLE: valve dimensions per type and size

nominal diameter	15	20	25								
gas size in inch	1/2"	3/4"	1"								
Ø D bore mm	15	22	28								
A mm	47	56	56								
B mm	37,5	45,5	49,5								
Ø C mm	34	42	49								
Ø E mm	48	60	59								
F mm	137	159	174								
weight gr	570	892	1357								

KRONOS

Art. E 101 metal tube joint nut-female. Available range 3/8" to 2"

Art. E 102 metal tube joint nut-male 3/8" to 2"

Art. E 103 metal tube joint nut-nut 3/8" to 2"

UNI EN ISO 9001: 2000
Progettazione, Sviluppo, Fabbricazione
Certificato n° 0024/3

BRASS JOINTS FOR METAL TUBES

KRONOS

TECHNICAL FEATURES: Temperature limits: for fluids from -20°C to +90°C
for gas from -20°C to + 60°C

Pressure limits: for fluids up to 50 bar
for gas PN 4

Application fields:
KRONOS metal tube joints are recommended for repairs in case of renovation of civil installations, in civil and industrial heating, in water distribution at medium pressure.

Threaded end connections:
• Standard female to ISO 7/1 Rp male to ISO 7/1 R

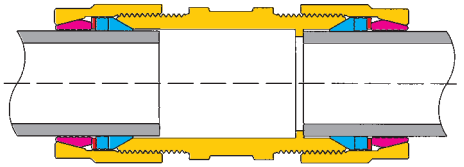
SPECIFIC FEATURES:

• Indispensable for a rapid intervention, easy and definitive on damaged pipes, the KRONOS metal tube joint is an ideal completion of the wide ball valve range produced by Effebi.

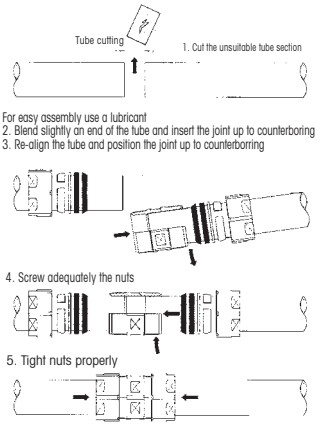
• In the three versions, nut-female, nut-male, nut-nut, KRONOS offers a complete possibility of intervention at low costs. The well-dimensioned body allows an easy assembly operation also in the most difficult cases. The sealing system by soft material seals (NBR) is designed in order to cover also a possible undersized tube diameter.

• The brass olive adheres also in presence of heavy surface tube deteriorations by means of a self-locking indent for a specific anti-sliding action and the surface chromium-plating guarantees big stoutness in the grip. The nuts are dimensioned to ensure a firmer grip.

• The KRONOS joint is tested for performances suitable for the widest applications, both for water (up to 50 bar) and for gas (4 bar).



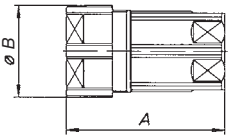
Installation instructions



LIST OF COMPONENTS: description/materials/treatments				
body	yellow	hot stamped from bar	CW617N	UNI EN 12165
outside nuts	yellow	hot stamped from bar	CW617N	UNI EN 12165
ring	red	machined from bar	CW617N	UNI EN 12165
conical seal	blue	NBR		DIN 3535
special seal	blue	NBR		DIN 3535
olive	violet	machined from bar	CW617N	UNI EN 12165
surface treatment	–	brilliant nickel-plating		

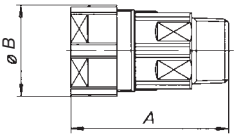
Art. E 101 FEMALE JOINT

GENERAL TABLE: dimensions per type and size							
nominal diameter	10	15	20	25	32	40	50
gas size in inch	3/8"	1/2"	3/4"	1"	1"1/4	1"1/2	2"
Ø bore mm	10	15	20	25	32	40	50
A mm	58	68	74	79	84	89	94
Ø B mm	29	33	40	47	58	64	77
weight gr	130	180	250	340	530	630	860



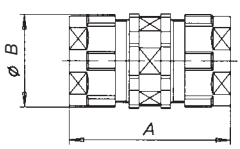
Art. E 102 MALE/NUT JOINT

GENERAL TABLE: dimensions per type and size							
nominal diameter	10	15	20	25	32	40	50
gas size in inch	3/8"	1/2"	3/4"	1"	1"1/4	1"1/2	2"
Ø bore mm	10	15	20	25	32	40	50
A mm	58	68	74	79	84	89	94
Ø C mm	29	33	40	47	58	64	77
weight gr	125	170	235	325	510	615	870



Art. E 103 NUT/NUT JOINT

GENERAL TABLE: dimensions per type and size							
nominal diameter	10	15	20	25	32	40	50
gas size in inch	3/8"	1/2"	3/4"	1"	1"1/4	1"1/2	2"
Ø bore mm	10	15	20	25	32	40	50
A mm	86	86	90	90	102	103	104
Ø B mm	29	33	40	47	58	64	77
weight gr	220	270	365	460	720	815	1020



WAFER-TYPE BUTTERFLY VALVE-SOFT SEATED

ATLANTIS

MAIN STANDARD FEATURES

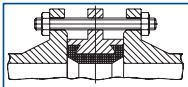
CONSTRUCTION :
BODY IN CAST IRON: GG25 / ASTM A126-B
DISC IN STAINLESS STEEL: ASTM A351 CF8 (AISI 304)

- General prescriptions: BS 5155 - MSS SP67 - API 609
- DIAMETER: from DN40 to DN600
- Connection with flanges:
  PN6-PN10-PN16-ANSI 150 from DN40 to DN300
  PN6-PN10 from DN350 to DN600
- Maximum working pressure (between flanges):
  PN16 from DN40 to DN300
  PN10 from DN350 to DN600
- TEMPERATURE LIMITS WITH SEALING SEATS IN:
  EPDM from -20°C to +110°C (with peaks up to +130°C)
  NBR from -20°C to + 90°C (with peaks up to +100°C)
  VITON from -10°C to +160°C
- Face to face dimensions in conformity with:
  BS5155 - ISO5752 - MSS SP67 - API609 - DIN3202/3-K1
- Top flange with ISO5211 connection
- Blow-out proof stem
- Operation device: lever handle from DN40 to DN200
  manual reduction gear from DN250 to DN600
- Tests: Hydraulic on body: 1.5 x nominal pressure
  Hydraulic for sealing: 1.1 x nominal pressure
  Pneumatic for sealing: 6 bar
- Locking device from DN40 to DN200
- Tested for vacuum at 1 -10^{-7} bar
- Polyurethanic coating

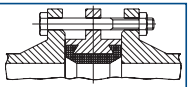
SPECIAL EXECUTIONS

- Yellow lever handle for gas
- Reduction gear with manual operation also for small DN
- Disc in AISI 316 or GGG40 nickel plated till DN200
- VITON seals
- For further special requests please consult our technical/commercial service

STANDARD PART NUMBERS Art. B101 WITH EPDM Art. B102 WITH NBR

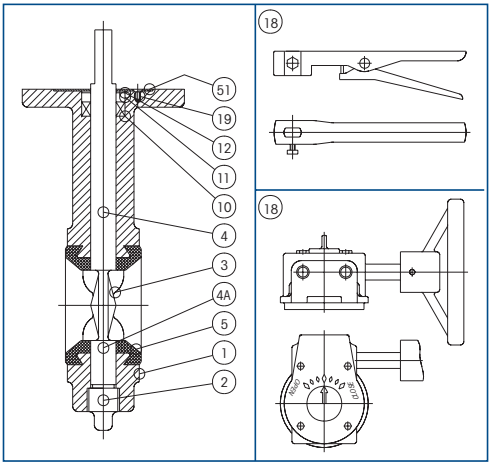


BOLTS AND TIE RODS DIMENSIONS



SIZE		PN10 Flanging		PN16 Flanging		SIZE		PN10 Flanging		PN16 Flanging	
		Ø x Length	holes	Ø x Length	holes			Ø x Length	holes	Ø x Length	holes
1 1/2"	40	M16x110	4	M16x110	4	1 1/2"	40	M16x90	4	M16x90	4
2"	50	M16x130	4	M16x130	4	2"	50	M16x100	4	M16x100	4
2 1/2"	65	M16x130	4	M16x130	4	2 1/2"	65	M16x100	4	M16x100	4
3"	80	M16x140	8	M16x140	8	3"	80	M16x100	8	M16x100	8
4"	100	M16x150	8	M16x150	8	4"	100	M16x110	8	M16x110	8
5"	125	M16x150	8	M16x150	8	5"	125	M16x120	8	M16x120	8
6"	150	M20x160	8	M20x160	8	6"	150	M20x120	8	M20x120	8
8"	200	M20x170	8	M20x170	12	8"	200	M20x130	8	M20x130	12
10"	250	M20x180	12	M24x190	12	10"	250	M20x140	12	M24x150	12
12"	300	M20x190	12	M24x200	12	12"	300	M20x160	12	M24x160	12
14"	350	M20x190	16	M24x220	16	14"	350	M20x160	16	M24x170	16
16"	400	M24x230	16	M27x240	16	16"	400	M24x190	16	M27x200	16
20"	500	M24x250	20	M30x280	20	20"	500	M24x200	20	M30x230	20
24"	600	M24x300	20	M33x300	20	24"	600	M24x260	20	M33x270	20

	APPLICATION FOR:	NOT RECOMMENDED FOR:
with EPDM	Water, sea water, steam, brine, esters, alcohols, ketones, caustic sodas, abrasive substances, food compounds, phosphates, inorganic acids, etc.	Hydrocarbons, oils, greases, dry air.
with NBR	Natural gas, air, water, sea water, pickle, oils and greases.	Solvents, benzene, xylol.
VITON	Mineral oil, benzene, oil for hydraulic purposes and high temperatures, sulphuric acid propane.	Not recommended for glycoetylic fluids, vegetable oil, acetone ethylic acetate, acetic acid.



LIST OF VALVE COMPONENTS AND MATERIALS

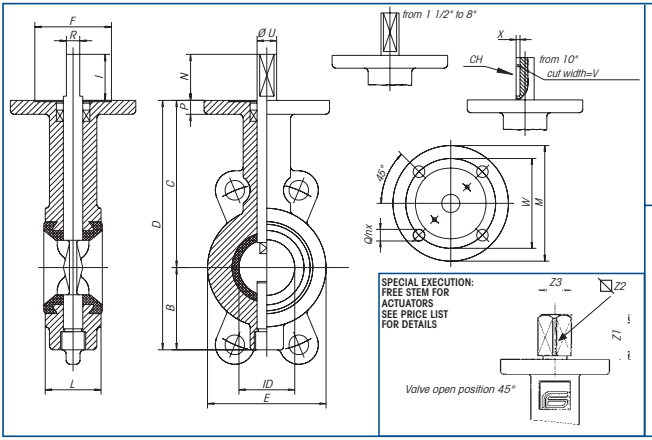
REF.	PART	Q.ty	MATERIAL
1	BODY	1	CAST IRON GG25/ASTM A126-B
2	PLUG	1	NICKEL PLATED C. STEEL
3	DISC	1	CF8 (AISI 304)
4	STEM	1	TYPE 410
4A	LOWER STEM	1	TYPE 410
5	SEAT	1	EPDM or NBR
10	UPPER SEAL	1	EPDM or NBR
11	BUSHING	1	DELRIN
12	RING	1	STEEL FOR SPRINGS
19	SCREW	2	NICKEL PLATED C. STEEL
51	WASHER	1	NICKEL PLATED C. STEEL
18	LEVER HANDLE	1	CARBON STEEL
18	REDUCTION GEAR	1	CAST IRON

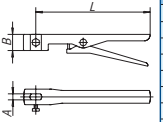
DYSTRYBUTOR W POLSCE:
ECOZAM Sp. z o.o.
ul.Załogowa 17 80-557 Gdańsk
tel.:(+48 58) 522 03 80 fax.(+48 58) 342 20 10

UNI EN ISO 9001: 2000
Progettazione, Sviluppo, Fabbricazione
Certificato n° 0024/3

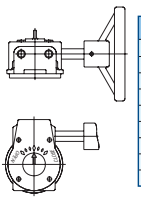
WAFER-TYPE BUTTERFLY VALVE — SOFT SEATED

ATLANTIS





SIZE		A	B	L	WEIGHT
1 1/2"	40	9.5	29	265	0,6
2"	50	9.5	29	265	0,6
2 1/2"	65	9.5	29	265	0,6
3"	80	12	29	265	0,6
4"	100	12	29	265	0,6
5"	125	15	29	265	0,6
6"	150	15	29	265	0,6
8"	200	15	29	315	0,7



SIZE DN			CODE
40	50	65	RDA1Y608
80	100		RDA1Y611
125	150	200	RDA1Y613
250			RDA1Y616
300			RDA1Y617
350			RDA1Y618
400			RDA1Y619
500			RDA1Y621
600			RDA1Y622

									STEM										ISO 5211 CONNEC.						*
SIZE		ID	L	B	C	D	E	P	N	I	R	U	X	V	Z1	Z2	Z3	CH	ISO CONN.	M	W	n	Q	F	WEIGHT
1 1/2"	40	40	40	59	120	179	85	10	33	30	9.5	14			16,5	11	14		F07	90	70	4	9	55	2.7
2"	50	50	43	64	130	194	92	11	33	30	9.5	14			16,5	11	14		F07	90	70	4	9	55	2.9
2 1/2"	65	63	46	72	137	209	107	11	33	30	9.5	14			16,5	11	14		F07	90	70	4	9	55	4.1
3"	80	77	46	85	156	241	122	11	33	30	11.8	16			17,5	11	14		F07	90	70	4	9	55	4.4
4"	100	100	52	95	170	265	150	11	33	30	11.8	16			17,5	11	14		F07	90	70	4	9	55	4.7
5"	125	125	56	110	185	295	179	12	33	30	14.5	19			17,5	14	18		F07	90	70	4	9	55	6.3
6"	150	147	56	123	203	326	206	12	33	30	14.5	19			22,5	14	18		F07	90	70	4	9	55	7.9
8"	200	198	60	168	238	406	257	13	33	30	14.5	19			22,5	17	22		F07	90	70	4	9	55	12.3
10"	250	244	68	203	270	473	316	15	65	60		22	4	8	27	22	28	8x7	F10	125	102	4	12	72	19.5
12"	300	298	78	242	310	552	370	15	65	60		28	4	8	27	22	28	8x7	F10	125	102	4	12	72	30.5
14"	350	337	78	290	330	620	410	15	65	60		28	4	8				8x7	F10	125	102	4	12	72	41
16"	400	387	102	330	375	705	468	20	75	70		38	5	12				12x8	F14	175	140	4	18	80	62
20"	500	487	127	400	440	840	578	20	100	95		45	5.5	14				14x9	F16	210	165	4	22	90	111
24"	600	575	154	460	510	970	680	22	100	95		55	5.5	14				14x9	F16	210	165	4	22	105	210

* WEIGHT REFERS TO VALVE WITH BARE SHAFT

BREAKAWAY TORQUES in Nm

PN - bar	DN size	40 1 1/2"	50 2"	65 2 1/2"	80 3"	100 4"	125 5"	150 6"	200 8"	250 10"	300 12"	350 14"	400 16"	500 20"	600 24"
	0	11	14	18	27	40	59	88	157	248	343	485	662	1142	2385
	6	11	20	25	32	41	62	92	173	275	382	549	766	1327	2787
	10	12	23	27	34	54	71	106	186	321	576	680	882	1634	3250
	16	14	25	29	37	56	86	123	262	392	551	1528	2035	3070	5670

The values in Nm may vary as a function of the seals material, temperature and type of medium. For a firm operation of the various types of actuators, in the different working conditions it is necessary to consider a safety factor of 1.5. During operation, with frequent open and close cycles, the operating torque can decrease considerably in comparison with the initial breakaway torque.

SIZE		Kv AND Cv VALUES AS A FUNCTION OF OPENING ANGLE															
		20°		30°		40°		50°		60°		70°		80°		90°	
		Kv	Cv	Kv	Cv	Kv	Cv	Kv	Cv	Kv	Cv	Kv	Cv	Kv	Cv	Kv	Cv
1 1/2"	40	2.6	3	4.3	5	9.5	11	16	18	22	26	39	45	60	70	69	80
2"	50	6.7	8	7.8	9	16	18	24	28	48	55	62	72	95	110	116	135
2 1/2"	65	8.6	10	13	15	23	27	38	44	73	85	95	110	145	168	181	210
3"	80	13	15	20	23	34	39	56	65	112	130	142	165	216	250	267	310
4"	100	23	27	35	41	61	71	99	115	198	230	259	300	401	465	466	540
5"	125	50	58	74	86	129	150	211	245	414	480	526	610	845	980	948	1100
6"	150	83	96	121	140	211	245	345	400	677	785	871	1010	1392	1615	1647	1910
8"	200	142	165	211	245	354	410	591	685	1099	1275	1478	1715	2302	2670	2746	3185
10"	250	220	255	328	380	560	650	974	1130	1810	2100	2328	2700	3664	4250	4224	4900
12"	300	319	370	466	540	819	950	1353	1570	2629	3050	3405	3950	5129	5950	6336	7350
14"	350	388	450	647	750	1120	1300	1905	2210	3517	4080	4836	5610	6964	8078	9655	11200
16"	400	552	640	776	900	1483	1720	2405	2790	4310	5000	6336	7650	9284	10770	11121	12900
20"	500	785	910	1375	1595	2457	2850	3991	4630	7414	8600	9914	11500	15121	17540	19310	22400
24"	600	1078	1250	1974	2290	3448	4000	5250	6090	10776	12500	14224	16500	20336	23590	24397	28300

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ATLANTIS 40

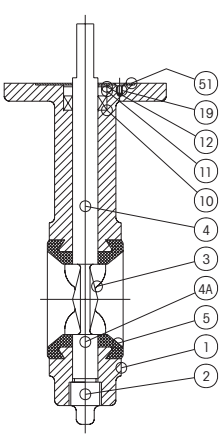
MAIN STANDARD FEATURES

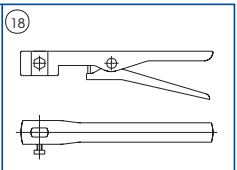
CONSTRUCTION :
BODY IN CAST IRON: GGG40 / ASTM A536
DISC IN STAINLESS STEEL: ASTM A351 CF8 (AISI 304)

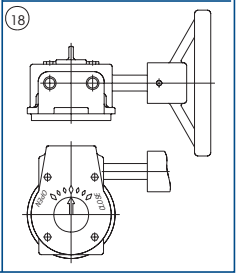
- General prescriptions: BS 5155 - MSS SP67 - API 609
- DVGW GAS CERTIFICATION
- DIAMETER: from DN40 to DN600
- Connection with flanges:
  PN6 - PN10 - PN16 from DN40 to DN300
  PN6 - PN10 from DN350 to DN600
  ANSI 150 from DN40 to DN300
- Maximum working pressure (between flanges):
  PN16 from DN40 to DN300
  PN10 from DN350 to DN600
- TEMPERATURE LIMITS WITH SEALING SEATS IN:
  NBR from -20°C to + 90°C (with peaks up to +100°C)
  VITON from -10 °C to + 160 °C
- EPDM seals
- Face to face dimensions in conformity with:
  BS5155 - ISO5752 - MSS SP67 - API609 - DIN3202/3-K1
- Top flange with ISO5211 connection
- Blow-out proof stem
- Operation device: lever handle from DN40 to DN200
  manual reduction gear from DN250 to DN600
- Tests: Hydraulic on body: 1.5 x nominal pressure
  Hydraulic for sealing: 1.1 x nominal pressure
  Pneumatic for sealing: 6 bar
- Locking device from DN40 to DN200
- Tested for vacuum at 1 -10^{-7} bar
- Polyurethanic coating

SPECIAL EXECUTIONS

- Black lever handle
- Reduction gear with manual operation also for small DN
- Disc in AISI 316
- VITON seals
- For further special requests please consult our technical/commercial service





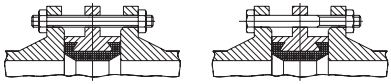


DVGW GAS
CERTIFICATION VALVE
NR NG-4313AU2364

STANDARD PART NUMBERS

Art. B302 with NBR

BOLTS AND TIE RODS DIMENSIONS



SIZE		PN10 Flanging Ø x Length	holes	PN16 Flanging Ø x Length	holes	SIZE		PN10 Flanging Ø x Length	holes	PN16 Flanging Ø x Length	holes
1 1/2"	40	M16x110	4	M16x110	4	1 1/2"	40	M16x90	4	M16x90	4
2"	50	M16x130	4	M16x130	4	2"	50	M16x100	4	M16x100	4
2 1/2"	65	M16x130	4	M16x130	4	2 1/2"	65	M16x100	4	M16x100	4
3"	80	M16x140	8	M16x140	8	3"	80	M16x100	8	M16x100	8
4"	100	M16x150	8	M16x150	8	4"	100	M16x110	8	M16x110	8
5"	125	M16x150	8	M16x150	8	5"	125	M16x120	8	M16x120	8
6"	150	M20x160	8	M20x160	8	6"	150	M20x120	8	M20x120	8
8"	200	M20x170	8	M20x170	12	8"	200	M20x130	8	M20x130	12
10"	250	M20x180	12	M24x190	12	10"	250	M20x140	12	M24x150	12
12"	300	M20x190	12	M24x200	12	12"	300	M20x160	12	M24x160	12
14"	350	M20x190	16	M24x220	16	14"	350	M20x160	16	M24x170	16
16"	400	M24x230	16	M27x240	16	16"	400	M24x190	16	M27x200	16
20"	500	M24x250	20	M30x280	20	20"	500	M24x200	20	M30x230	20
24"	600	M24x300	20	M33x300	20	24"	600	M24x260	20	M33x270	20

	APPLICATION FOR:	NOT RECOMMENDED FOR:
with NBR	Natural gas, air, oils and greases.	Solvents, benzene, xylol.

LIST OF VALVE COMPONENTS AND MATERIALS

REF.	PART	Q.ty	MATERIAL
1	BODY	1	DUCTILE IRON GGG40/ASTM A536
2	PLUG	1	NICKEL PLATED C. STEEL
3	DISC	1	CF8 (AISI 304)
4	STEM	1	TYPE 410
4A	LOWER STEM	1	TYPE 410
5	SEAT	1	EPDM or NBR
10	UPPER SEAL	1	EPDM or NBR
11	BUSHING	1	DELRIN
12	RING	1	STEEL FOR SPRINGS
19	SCREW	2	NICKEL PLATED C. STEEL
51	WASHER	1	NICKEL PLATED C. STEEL
18	LEVER HANDLE	1	CARBON STEEL
18	REDUCTION GEAR	1	CAST IRON

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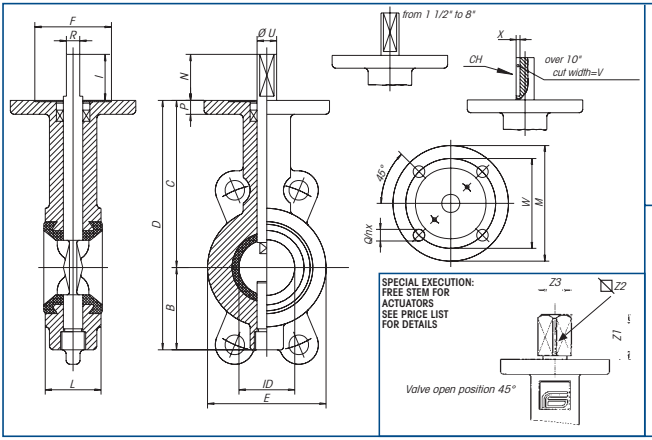
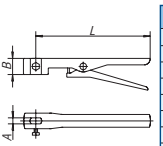
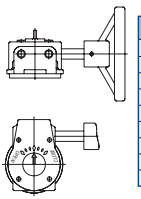
WAFER-TYPE BUTTERFLY VALVE — SOFT SEATED

ATLANTIS 40





SIZE	A	B	L	WEIGHT
1 1/2"	40	9.5	29	265	0,6
2"	50	9.5	29	265	0,6
2 1/2"	65	9.5	29	265	0,6
3"	80	12	29	265	0,6
4"	100	12	29	265	0,6
5"	125	15	29	265	0,6
6"	150	15	29	265	0,6
8"	200	15	29	315	0,7



SIZE DN			CODE
40	50	65	RDA1Y608
80	100		RDA1Y611
125	150	200	RDA1Y613
250			RDA1Y616
300			RDA1Y617
350			RDA1Y618
400			RDA1Y619
500			RDA1Y621
600			RDA1Y622

									STEM										ISO 5211 CONNEC.						*
SIZE		ID	L	B	C	D	E	P	N	I	R	U	X	V	Z1	Z2	Z3	CH	ISO CONN.	M	W	n	Q	F	WEIGHT
1 1/2"	40	40	40	59	120	179	85	10	33	30	9.5	14			16,5	11	14		F07	90	70	4	9	55	2.7
2"	50	50	43	64	130	194	92	11	33	30	9.5	14			16,5	11	14		F07	90	70	4	9	55	2.9
2 1/2"	65	63	46	72	137	209	107	11	33	30	9.5	14			16,5	11	14		F07	90	70	4	9	55	4.1
3"	80	77	46	85	156	241	122	11	33	30	11.8	16			17,5	11	14		F07	90	70	4	9	55	4.4
4"	100	100	52	95	170	265	150	11	33	30	11.8	16			17,5	11	14		F07	90	70	4	9	55	4.7
5"	125	125	56	110	185	295	179	12	33	30	14.5	19			17,5	14	18		F07	90	70	4	9	55	6.3
6"	150	147	56	123	203	326	206	12	33	30	14.5	19			22,5	14	18		F07	90	70	4	9	55	7.9
8"	200	198	60	168	238	406	257	13	33	30	14.5	19			22,5	17	22		F07	90	70	4	9	55	12.3
10"	250	244	68	203	270	473	316	15	65	60		22	4	8	27	22	28	8x7	F10	125	102	4	12	72	19.5
12"	300	298	78	242	310	552	370	15	65	60		28	4	8	27	22	28	8x7	F10	125	102	4	12	72	30.5
14"	350	337	78	290	330	620	410	15	65	60		28	4	8				8x7	F10	125	102	4	12	72	41
16"	400	387	102	330	375	705	468	20	75	70		38	5	12				12x8	F14	175	140	4	18	80	62
20"	500	487	127	400	440	840	578	20	100	95		45	5.5	14				14x9	F16	210	165	4	22	90	111
24"	600	575	154	460	510	970	680	22	100	95		55	5.5	14				14x9	F16	210	165	4	22	105	210

*** WEIGHT REFERS TO VALVE WITH BARE SHAFT**

BREAKAWAY TORQUES in Nm

PN - bar	DN size	40 1 1/2"	50 2"	65 2 1/2"	80 3"	100 4"	125 5"	150 6"	200 8"	250 10"	300 12"	350 14"	400 16"	500 20"	600 24"
	0	11	14	18	27	40	59	88	157	248	343	485	662	1142	2385
	6	11	20	25	32	41	62	92	173	275	382	549	766	1327	2787
	10	12	23	27	34	54	71	106	186	321	576	680	882	1634	3250
	16	14	25	29	37	56	86	123	262	392	551	1528	2035	3070	5670

The values in Nm may vary as a function of the seals material, temperature and type of medium. For a firm operation of the various types of actuators, in the different working conditions it is necessary to consider a safety factor of 1.5. During operation, with frequent open and close cycles, the operating torque can decrease considerably in comparison with the initial breakaway torque.

SIZE		Kv AND Cv VALUES AS A FUNCTION OF OPENING ANGLE															
		20°		30°		40°		50°		60°		70°		80°		90°	
		Kv	Cv	Kv	Cv	Kv	Cv	Kv	Cv	Kv	Cv	Kv	Cv	Kv	Cv	Kv	Cv
1 1/2"	40	2.6	3	4.3	5	9.5	11	16	18	22	26	39	45	60	70	69	80
2"	50	6.7	8	7.8	9	16	18	24	28	48	55	62	72	95	110	116	135
2 1/2"	65	8.6	10	13	15	23	27	38	44	73	85	95	110	145	168	181	210
3"	80	13	15	20	23	34	39	56	65	112	130	142	165	216	250	267	310
4"	100	23	27	35	41	61	71	99	115	198	230	259	300	401	465	466	540
5"	125	50	58	74	86	129	150	211	245	414	480	526	610	845	980	948	1100
6"	150	83	96	121	140	211	245	345	400	677	785	871	1010	1392	1615	1647	1910
8"	200	142	165	211	245	354	410	591	685	1099	1275	1478	1715	2302	2670	2746	3185
10"	250	220	255	328	380	560	650	974	1130	1810	2100	2328	2700	3664	4250	4224	4900
12"	300	319	370	466	540	819	950	1353	1570	2629	3050	3405	3950	5129	5950	6336	7350
14"	350	388	450	647	750	1120	1300	1905	2210	3517	4080	4836	5610	6964	8078	9655	11200
16"	400	552	640	776	900	1483	1720	2405	2790	4310	5000	6336	7650	9284	10770	11121	12900
20"	500	785	910	1375	1595	2457	2850	3991	4630	7414	8600	9914	11500	15121	17540	19310	22400
24"	600	1078	1250	1974	2290	3448	4000	5250	6090	10776	12500	14224	16500	20336	23590	24397	28300

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ATLANTIS

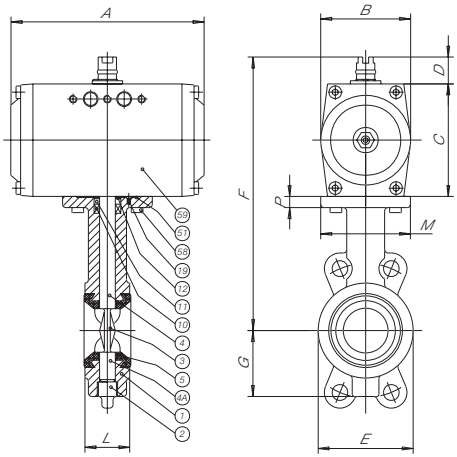
ACTUATOR FEATURES

- Rotation angle: 90°
- Standard version for temperature between –20°C and + 90°C
- Supply maximum pressure: 10 bar
- Nominal pressure: 5,62 bar
- Supply medium: dry filtered compressed air, not necessarily lubricated
- Lubrication: in such a case use a non-detergent or NBR compatible oil

STANDARD VALVE FEATURES

- General prescriptions: BS 5155, MSS SP67, API 609
- Temperature limits with sealing seats in:
  EPDM from –20 °C to +110 °C (with peaks up to +130 °C)
  NBR from –20 °C to + 90 °C (with peaks up to +100 °C)
  VITON from –10 °C to + 160 °C
- Maximum working pressure with actuator:
  PN 16 from DN 40 to DN 200, PN 10 from DN 250 to DN 300
- For general applications and special versions see technical table of manual valve
- In the below table the part number and the valve code refer to the standard valve in GG25, with seats in EPDM.

SIZE		PART NUMBER	weight in gr.	A	B	C	D	E	F	G	L	P	M	ACTUATOR code	VALVE code	MOUNTING KIT code
1 1/2"	40	**DB1AA60800**	4000	133	70	88	40	85	248	59	40	10	90	DGA063AX00	VB11Y608	KANX0008
2"	50	**DB1AA60900**	4200	133	70	88	40	92	258	64	43	11	90	DGA063AX00	VB11Y609	KANX0008
2 1/2"	65	**DB1AA61000**	5350	133	70	88	40	107	265	72	46	11	90	DGA063AX00	VB11Y610	KANX0008
3"	80	**DB1AA61100**	6250	132	83	100	40	122	296	85	46	11	90	DGA075AX00	VB11Y611	KANX0008
4"	100	**DB1AA61200**	7100	182	91	108	40	150	318	95	52	11	90	DGA083AX00	VB11Y612	KANX0008
5"	125	**DB1AA61300**	9500	203	100	117	40	179	342	110	56	12	90	DGA092AX00	VB11Y613	KANX0008
6"	150	**DB1AA61400**	12550	222	120	140	40	206	383	123	56	12	90	DNA110AX00	VB11Y614	KANX0008
8"	200	**DB1AA61500**	20650	300	137	127	40	257	405	168	60	13	90	DNA127AX00	VB11Y615	KANX0008
10"	250	**DB1AA61600**	26100	380	172	198	50	316	518	203	68	15	125	DNA160AX00	VB11Y616	KANX0016
12"	300	**DB1AA61700**	36100	380	172	198	50	370	558	242	78	15	125	DNA160AX00	VB11Y617	KANX0016



LIST OF VALVE COMPONENTS AND MATERIALS

REF.	PART	Q.ty	MATERIAL
1	BODY	1	CAST IRON GG25/ASTM A126-B
2	PLUG	1	NICKEL PLATED C.S.
3	DISC	1	CF8 (AISI 304)
4	STEM	1	TYPE 410
4A	LOWER STEM	1	TYPE 410
5	SEAT	1	EPDM or NBR
10	UPPER SEAL	1	EPDM or NBR
11	BUSHING	1	DELRIN
12	RING	1	STEEL FOR SPRINGS
19	SCREW	2	NICKEL PLATED C.S.
51	WASHER	1	NICKEL PLATED C.S.
58	ACTUATOR SCREW	4	8.8
59	ACTUATOR	1	

Actuator connections: 1/8" G. type from DGA052 to DGA092
1/4" G. Namur type from DNA110 to DNA255 and DNA045
For accessories see relevant catalogue sheet

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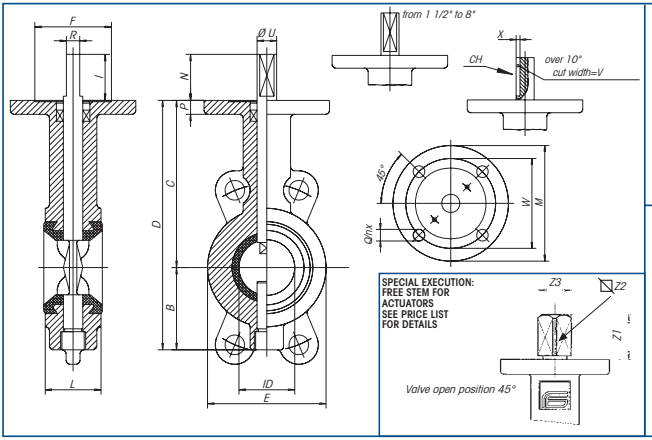
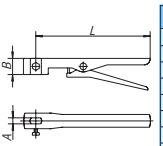
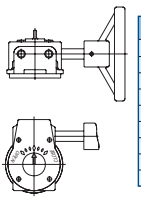
WAFER-TYPE BUTTERFLY VALVE — SOFT SEATED

ATLANTIS 40





SIZE	A	B	L	WEIGHT
1 1/2"	40	9.5	29	265	0,6
2"	50	9.5	29	265	0,6
2 1/2"	65	9.5	29	265	0,6
3"	80	12	29	265	0,6
4"	100	12	29	265	0,6
5"	125	15	29	265	0,6
6"	150	15	29	265	0,6
8"	200	15	29	315	0,7



SIZE DN			CODE
40	50	65	RDA1Y608
80	100		RDA1Y611
125	150	200	RDA1Y613
250			RDA1Y616
300			RDA1Y617
350			RDA1Y618
400			RDA1Y619
500			RDA1Y621
600			RDA1Y622

									STEM										ISO 5211 CONNEC.						*
SIZE		ID	L	B	C	D	E	P	N	I	R	U	X	V	Z1	Z2	Z3	CH	ISO CONN.	M	W	n	Q	F	WEIGHT
1 1/2"	40	40	40	59	120	179	85	10	33	30	9.5	14			16,5	11	14		F07	90	70	4	9	55	2.7
2"	50	50	43	64	130	194	92	11	33	30	9.5	14			16,5	11	14		F07	90	70	4	9	55	2.9
2 1/2"	65	63	46	72	137	209	107	11	33	30	9.5	14			16,5	11	14		F07	90	70	4	9	55	4.1
3"	80	77	46	85	156	241	122	11	33	30	11.8	16			17,5	11	14		F07	90	70	4	9	55	4.4
4"	100	100	52	95	170	265	150	11	33	30	11.8	16			17,5	11	14		F07	90	70	4	9	55	4.7
5"	125	125	56	110	185	295	179	12	33	30	14.5	19			17,5	14	18		F07	90	70	4	9	55	6.3
6"	150	147	56	123	203	326	206	12	33	30	14.5	19			22,5	14	18		F07	90	70	4	9	55	7.9
8"	200	198	60	168	238	406	257	13	33	30	14.5	19			22,5	17	22		F07	90	70	4	9	55	12.3
10"	250	244	68	203	270	473	316	15	65	60		22	4	8	27	22	28	8x7	F10	125	102	4	12	72	19.5
12"	300	298	78	242	310	552	370	15	65	60		28	4	8	27	22	28	8x7	F10	125	102	4	12	72	30.5
14"	350	337	78	290	330	620	410	15	65	60		28	4	8				8x7	F10	125	102	4	12	72	41
16"	400	387	102	330	375	705	468	20	75	70		38	5	12				12x8	F14	175	140	4	18	80	62
20"	500	487	127	400	440	840	578	20	100	95		45	5.5	14				14x9	F16	210	165	4	22	90	111
24"	600	575	154	460	510	970	680	22	100	95		55	5.5	14				14x9	F16	210	165	4	22	105	210

*** WEIGHT REFERS TO VALVE WITH BARE SHAFT**

BREAKAWAY TORQUES in Nm

PN - bar	DN size	40 1 1/2"	50 2"	65 2 1/2"	80 3"	100 4"	125 5"	150 6"	200 8"	250 10"	300 12"	350 14"	400 16"	500 20"	600 24"
	0	11	14	18	27	40	59	88	157	248	343	485	662	1142	2385
	6	11	20	25	32	41	62	92	173	275	382	549	766	1327	2787
	10	12	23	27	34	54	71	106	186	321	576	680	882	1634	3250
	16	14	25	29	37	56	86	123	262	392	551	1528	2035	3070	5670

The values in Nm may vary as a function of the seals material, temperature and type of medium. For a firm operation of the various types of actuators, in the different working conditions it is necessary to consider a safety factor of 1.5. During operation, with frequent open and close cycles, the operating torque can decrease considerably in comparison with the initial breakaway torque.

SIZE		Kv AND Cv VALUES AS A FUNCTION OF OPENING ANGLE															
		20°		30°		40°		50°		60°		70°		80°		90°	
		Kv	Cv	Kv	Cv	Kv	Cv	Kv	Cv	Kv	Cv	Kv	Cv	Kv	Cv	Kv	Cv
1 1/2"	40	2.6	3	4.3	5	9.5	11	16	18	22	26	39	45	60	70	69	80
2"	50	6.7	8	7.8	9	16	18	24	28	48	55	62	72	95	110	116	135
2 1/2"	65	8.6	10	13	15	23	27	38	44	73	85	95	110	145	168	181	210
3"	80	13	15	20	23	34	39	56	65	112	130	142	165	216	250	267	310
4"	100	23	27	35	41	61	71	99	115	198	230	259	300	401	465	466	540
5"	125	50	58	74	86	129	150	211	245	414	480	526	610	845	980	948	1100
6"	150	83	96	121	140	211	245	345	400	677	785	871	1010	1392	1615	1647	1910
8"	200	142	165	211	245	354	410	591	685	1099	1275	1478	1715	2302	2670	2746	3185
10"	250	220	255	328	380	560	650	974	1130	1810	2100	2328	2700	3664	4250	4224	4900
12"	300	319	370	466	540	819	950	1353	1570	2629	3050	3405	3950	5129	5950	6336	7350
14"	350	388	450	647	750	1120	1300	1905	2210	3517	4080	4836	5610	6964	8078	9655	11200
16"	400	552	640	776	900	1483	1720	2405	2790	4310	5000	6336	7650	9284	10770	11121	12900
20"	500	785	910	1375	1595	2457	2850	3991	4630	7414	8600	9914	11500	15121	17540	19310	22400
24"	600	1078	1250	1974	2290	3448	4000	5250	6090	10776	12500	14224	16500	20336	23590	24397	28300

DYSTRYBUTOR W POLSCE:
ECOZAM Sp. z o.o.
ul.Załogowa 17 80-557 Gdańsk
tel.:(+48 58) 522 03 80 fax.(+48 58) 342 20 10

WAFER -TYPE BUTTERFLY VALVE – SOFT SEATED WITH DOUBLE ACTING PNEUMATIC ACTUATOR

UNI EN ISO 9001: 2000
Progettazione, Sviluppo, Fabbricazione
Certificato n° 0024/3

ATLANTIS 40

ACTUATOR FEATURES

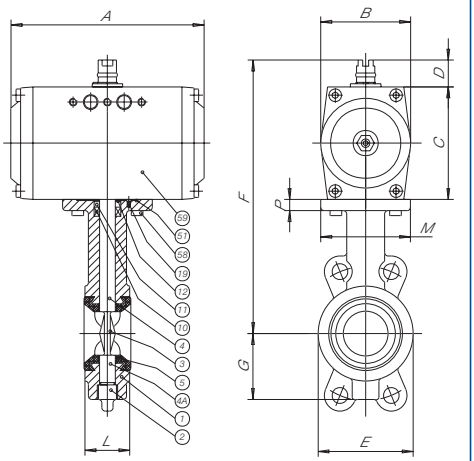
- Rotation angle: 90°
- Standard version for temperature between –20°C and + 90°C
- Supply maximum pressure: 10 bar
- Nominal pressure: 5,62 bar
- Supply medium: dry filtered compressed air, not necessarily lubricated
- Lubrication: in such a case use a non-detergent or NBR compatible oil

STANDARD VALVE FEATURES

- General prescriptions: BS 5155, MSS SP67, API 609
- Temperature limits with sealing seats in:
  EPDM from –20 °C to +110 °C (with peaks up to +130 °C)
  NBR from –20 °C to + 90 °C (with peaks up to +100 °C)
  VITON from –10 °C to + 160 °C
- Maximum working pressure with actuator:
  PN 16 from DN 40 to DN 200, PN 10 from DN 250 to DN 300
- For general applications and special versions see technical table of manual valve
- In the below table the part number and the valve code refer to the standard valve in GGG40, with seats in EPDM.

DVGW GAS
CERTIFICATION VALVE
NR NG-4313AU2364

SIZE		PART NUMBER	weight in gr.	A	B	C	D	E	F	G	L	P	M	ACTUATOR code	VALVE code	MOUNTING KIT code
1 1/2"	40	**DB7AA60800**	4000	133	70	88	40	85	248	59	40	10	90	DGA063AX00	VB326Y608	KANX0008
2"	50	**DB7AA60900**	4200	133	70	88	40	92	258	64	43	11	90	DGA063AX00	VB326Y609	KANX0008
2 1/2"	65	**DB7AA61000**	5350	133	70	88	40	107	265	72	46	11	90	DGA063AX00	VB326Y610	KANX0008
3"	80	**DB7AA61100**	6250	132	83	100	40	122	296	85	46	11	90	DGA075AX00	VB326Y611	KANX0008
4"	100	**DB7AA61200**	7100	182	91	108	40	150	318	95	52	11	90	DGA083AX00	VB326Y612	KANX0008
5"	125	**DB7AA61300**	9500	203	100	117	40	179	342	110	56	12	90	DGA092AX00	VB326Y613	KANX0008
6"	150	**DB7AA61400**	12550	222	120	140	40	206	383	123	56	12	90	DNA110AX00	VB326Y614	KANX0008
8"	200	**DB7AA61500**	20650	300	137	127	40	257	405	168	60	13	90	DNA127AX00	VB326Y615	KANX0008
10"	250	**DB7AA61600**	26100	380	172	198	50	316	518	203	68	15	125	DNA160AX00	VB326Y616	KANX0016
12"	300	**DB7AA61700**	36100	380	172	198	50	370	558	242	78	15	125	DNA160AX00	VB326Y617	KANX0016



LIST OF VALVE COMPONENTS AND MATERIALS

REF.	PART	Q.ty	MATERIAL
1	BODY	1	DUCTILE IRON GGG40/ASTM A536
2	PLUG	1	NICKEL PLATED C.S.
3	DISC	1	CF8 (AISI 304)
4	STEM	1	TYPE 410
4A	LOWER STEM	1	TYPE 410
5	SEAT	1	EPDM or NBR
10	UPPER SEAL	1	EPDM or NBR
11	BUSHING	1	DELRIN
12	RING	1	STEEL FOR SPRINGS
19	SCREW	2	NICKEL PLATED C.S.
51	WASHER	1	NICKEL PLATED C.S.
58	ACTUATOR SCREW	4	8.8
59	ACTUATOR	1	

Actuator connections: 1/8" G. type from DGA052 to DGA092
1/4" G. Namur type from DNA110 to DNA255 and DNA045

For accessories see relevant catalogue sheet

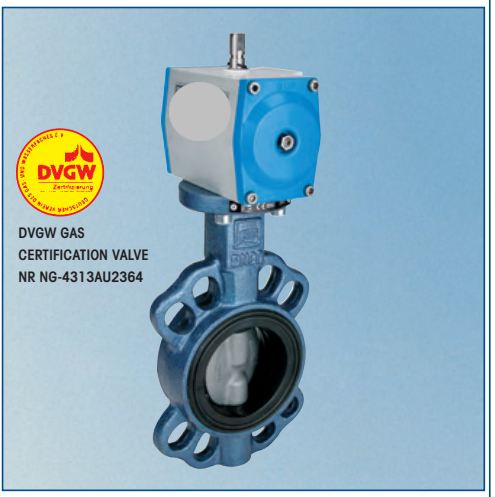
ATLANTIS 40

ACTUATOR FEATURES

- Rotation angle: 90°
- Standard version for temperature between –20°C and + 90°C
- Supply maximum pressure: 10 bar
- Nominal pressure: 5,62 bar
- Supply medium: dry filtered compressed air, not necessarily lubricated
- Lubrication: in such a case use a non-detergent or NBR compatible oil
- STANDARD: SPRING CLOSES/AIR OPENS, clockwise automatic closing

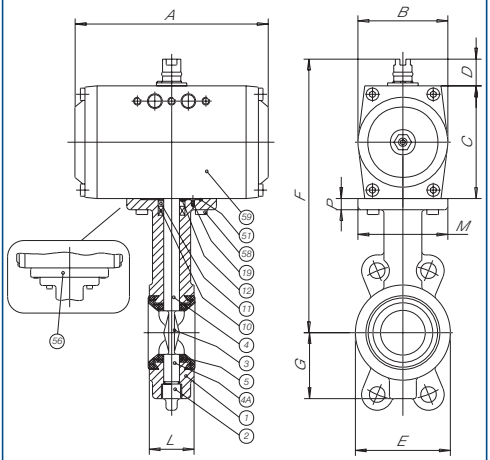
STANDARD VALVE FEATURES

- General prescriptions: BS 5155, MSS SP67, API 609
- Temperature limits with sealing seats in: EPDM from –20 °C to +110 °C (with peaks up to +130 °C)
  NBR from –20 °C to + 90 °C (with peaks up to +100 °C)
  VITON from –10 °C to + 160 °C
- Maximum working pressure with actuator:
  PN 16 from DN 40 to DN 200, PN 10 from DN 250 to DN 300
- For general applications and special versions see technical table of manual valve
- In the below table the part number and the valve code refer to the standard valve in GGG40, with seats in EPDM.



DVGW GAS
CERTIFICATION VALVE
NR NG-4313AU2364

SIZE		PART NUMBER	weight in gr.	A	B	C	D	E	F	G	L	P	M	ACTUATOR code	VALVE code	MOUNTING KIT code
1 1/2"	40	**SB7AA60800**	4835	132	83	100	40	85	260	59	40	10	90	SGA0754X00	VB32Y608	KANX0008
2"	50	**SB7AA60900**	5620	182	91	108	40	92	278	64	43	11	90	SGA0834X00	VB32Y609	KANX0008
2 1/2"	65	**SB7AA61000**	7650	203	100	117	40	107	294	72	46	11	90	SGA0924X00	VB32Y610	KANX0008
3"	80	**SB7AA61100**	9765	222	120	140	40	122	336	85	46	11	90	SNA1104X00	VB32Y611	KANX0008
4"	100	**SB7AA61200**	10070	222	120	140	40	150	350	95	52	11	90	SNA1104X00	VB32Y612	KANX0008
5"	125	**SB7AA61300**	15780	300	137	160	40	179	385	110	56	12	90	SNA1274X00	VB32Y613	KANX0008
6"	150	**SB7AA61400**	26385	380	172	198	50	206	451	123	56	12	90	SNA1604X00	VB32Y614	KAPX0014
8"	200	**SB7AA61500**	49250	450	224	255	50	257	543	168	60	13	90	SNA2104X00	VB32Y615	KAPX0015
10"	250	**SB7AA61600**	49700	450	224	255	50	316	575	203	68	15	125	SNA2104X00	VB32Y616	KAPX0016
12"	300	**SB7AA61700**	95770	603	272	302	50	370	662	242	78	15	125	SNA2544X00	VB32Y617	KAPX0017



LIST OF VALVE COMPONENTS AND MATERIALS

REF.	PART	Q.ty	MATERIAL
1	BODY	1	DUCTILE IRON GGG40/ASTM A536
2	PLUG	1	NICKEL PLATED C.S.
3	DISC	1	CF8 (AISI 304)
4	STEM	1	TYPE 410
4A	LOWER STEM	1	TYPE 410
5	SEAT	1	EPDM or NBR
10	UPPER SEAL	1	EPDM or NBR
11	BUSHING	1	DELRIN
12	RING	1	STEEL FOR SPRINGS
19	SCREW	2	NICKEL PLATED C.S.
51	WASHER	1	NICKEL PLATED C.S.
56	BRACKET	1	C.S.
57	BRACKET/VALVE SCREW	4	8.8
58	ACTUATOR SCREW	4	8.8
59	ACTUATOR	1	

Bracket with screws only from DN150 to DN300

Actuator connections: 1/8" G. type from SGA052 to SGA092
1/4" G. Namur type from SNA110 to SNA255 and SNA045

For accessories see relevant catalogue sheet

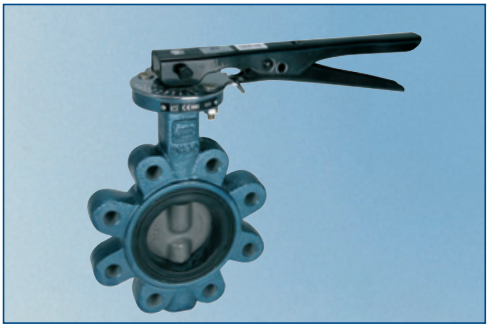
POLARIS

MAIN STANDARD FEATURES

- CONSTRUCTION :
  BODY IN CAST IRON: GG25/ASTM A 126-B
  DISC IN STAINLESS STEEL: ASTM A351 CF8 (AISI 304)
- General prescriptions: BS 5155 - MSS SP67 - API 609
- DIAMETER: from DN 40 to DN 600
- CONNECTION with flanges:
  PN10-PN16 from DN40 to DN150
  PN10 from DN200 to DN600
- Maximum working pressure (at pipe end):
  PN 16 from DN 40 to DN 150
  PN 10 from DN 200 to DN 600
- TEMPERATURE LIMITS WITH SEALING SEATS IN:
  EPDM from -20°C to +110°C (with peaks up to + 130 °C)
  NBR from -20°C to + 90°C (with peaks up to +100°C)
  VITON from -10°C to +160°C
- FACE TO FACE DIMENSIONS in conformity with:
  BS 5155 - ISO 5752 - MSS SP 67 - API 609 - DIN 3202/3-K1
- Top flange with ISO 5211 connection
- BLOW-OUT PROOF stem
- OPERATION device: lever handle from DN40 to DN200
  manual reduction gear from DN250 to DN600
- Tests: hydraulic on body: 1.5 x nominal pressure
  hydraulic for sealing: 1.1 x nominal pressure
  pneumatic for sealing: 6 bar
- Locking device from DN40 to DN200
- Tested for vacuum: 1 - 10^{-7} bar
- Polyurethanic coating

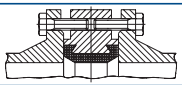
SPECIAL EXECUTIONS

- ANSI 150 from DN40 to DN600
- Carbon steel body ASTM A216 WCB DN40 ÷ 300
- Yellow lever handle for gas
- Reduction gear with manual operation also for small DN
- Disc in AISI 316
- Disco GGG40 nickel plated till DN300
- VITON seals
- For further special requests please consult our technical/commercial service



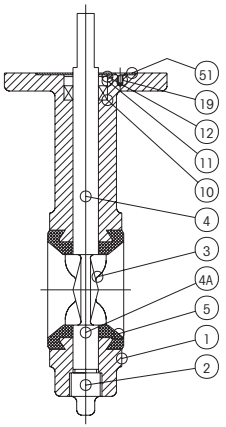
STANDARD PART NUMBERS **Art. B201** with EPDM **Art. B202** with NBR

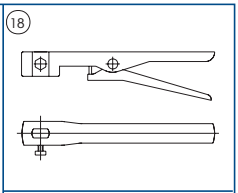
SCREWS DIMENSIONS

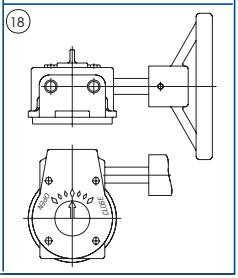


SIZE		PN10 Flanging		PN16 Flanging	
		Ø x Length	holes	Ø x Length	holes
1 1/2"	40	M16 x 30	4	M16 x 30	4
2"	50	M16 x 35	4	M16 x 35	4
2 1/2"	65	M16 x 35	4	M16 x 35	4
3"	80	M16 x 35	8	M16 x 35	8
4"	100	M16 x 40	8	M16 x 40	8
5"	125	M16 x 45	8	M16 x 45	8
6"	150	M20 x 45	8	M20 x 45	8
8"	200	M20 x 50	8	M20 x 50	12
10"	250	M20 x 55	12	M24 x 55	12
12"	300	M20 x 60	12	M24 x 60	12
14"	350	M20 x 60	16	M24 x 60	16
16"	400	M24 x 70	16	M27 x 70	16
20"	500	M24 x 80	20	M30 x 80	20
24"	600	M27 x 90	20	M33 x 90	20

	APPLICATION FOR:	NOT RECOMMENDED FOR:
with EPDM	Water, steam, brine, esters, alcohols, ketones, caustic sodas, abrasive substances, food compounds, phosphates, inorganic acids, etc.	Hydrocarbons, oils, greases, dry air.
with NBR	Natural gas, air, oils and greases.	Solvents, benzene, xylol.
VITON	Mineral oil, benzene, oil for hydraulic purposes and high temperatures, sulphuric acid propane.	Not recommended for glycoetylic fluids, vegetable oil, acetone ethylic acetate, acetic acid.







LIST OF VALVE COMPONENTS AND MATERIALS

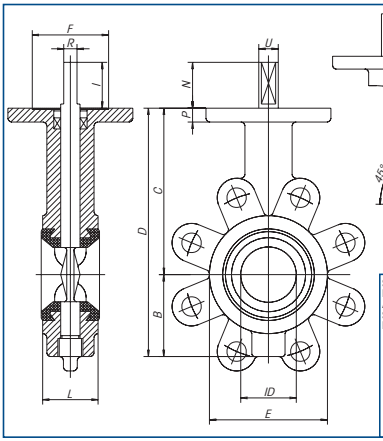
REF.	PART	Q.ty	MATERIAL
1	BODY	1	CAST IRON GG25/ASTM A126-B
2	PLUG	1	NICKEL PLATED C. STEEL
3	DISC	1	CF8 (AISI 304)
4	STEM	1	TYPE 410
4A	LOWER STEM	1	TYPE 410
5	SEAT	1	EPDM or NBR
10	UPPER SEAL	1	EPDM or NBR
11	BUSHING	1	DELRIN
12	RING	1	STEEL FOR SPRINGS
19	SCREW	2	NICKEL PLATED C. STEEL
51	WASHER	1	NICKEL PLATED C. STEEL
18	LEVER HANDLE	1	CARBON STEEL
18	REDUCTION GEAR	1	CAST IRON

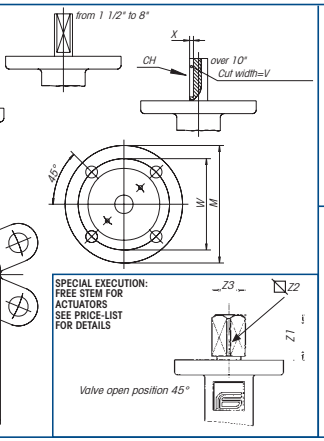
DYSTRYBUTOR W POLSCE:
ECOZAM Sp. z o.o.
ul.Załogowa 17 80-557 Gdańsk
tel.:(+48 58) 522 03 80 fax.(+48 58) 342 20 10

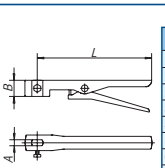
ICIM
UNI EN ISO 9001: 2000
Progettazione, Sviluppo, Fabbricazione
Certificato n° 0024/3

LUG-TYPE BUTTERFLY VALVE — SOFT SEATED

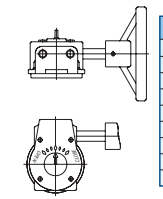
POLARIS







SIZE		A	B	L	WEIGHT
1 1/2"	40	9.5	29	265	0,6
2"	50	9.5	29	265	0,6
2 1/2"	65	9.5	29	265	0,6
3"	80	12	29	265	0,6
4"	100	12	29	265	0,6
5"	125	15	29	265	0,6
6"	150	15	29	265	0,6
8"	200	15	29	315	0,7



SIZE DN			CODE
40	50	65	RDA1Y608
80	100		RDA1Y611
125	150	200	RDA1Y613
250			RDA1Y616
300			RDA1Y617
350			RDA1Y618
400			RDA1Y619
500			RDA1Y621
600			RDA1Y622

									STEM										ISO 5211 CONNECT.						*
SIZE		ID	L	B	C	D	E	P	N	I	R	U	X	V	Z1	Z2	Z3	CH	ISO CONN.	M	W	n	Q	F	WEIGHT
1 1/2"	40	35	40	59	120	179	85	10	33	30	9.5	14			16,5	11	14		F07	90	70	4	9	55	2.7
2"	50	48	43	64	130	194	92	11	33	30	9.5	14			16,5	11	14		F07	90	70	4	9	55	2.9
2 1/2"	65	60	46	72	137	209	107	11	33	30	9.5	14			16,5	11	14		F07	90	70	4	9	55	4.1
3"	80	73	46	85	156	241	122	11	33	30	11.8	16			17,5	11	14		F07	90	70	4	9	55	4.4
4"	100	100	52	95	170	265	150	11	33	30	11.8	16			17,5	11	14		F07	90	70	4	9	55	4.7
5"	125	125	56	110	185	295	179	12	33	30	14.5	19			17,5	14	18		F07	90	70	4	9	55	6.3
6"	150	145	56	123	203	326	206	12	33	30	14.5	19			22,5	14	18		F07	90	70	4	9	55	7.9
8"	200	190	60	168	238	406	257	13	33	30	14.5	19			22,5	17	22		F07	90	70	4	9	55	12.3
10"	250	240	68	203	270	473	316	15	65	60		22	4	8	27	22	28	8x7	F10	125	102	4	12	72	19.5
12"	300	290	78	242	310	552	370	15	65	60		28	4	8	27	22	28	8x7	F10	125	102	4	12	72	30.5
14"	350	337	78	290	330	620	410	15	65	60		28	4	8				8x7	F10	125	102	4	12	72	41
16"	400	387	102	330	375	705	468	20	75	70		38	5	12				12x8	F14	175	140	4	18	80	62
20"	500	487	127	400	440	840	578	20	100	95		45	5.5	14				14x9	F16	210	165	4	22	90	111
24"	600	575	154	460	510	970	680	22	100	95		55	5.5	14				14x9	F16	210	165	4	22	105	210

*** WEIGHT REFERS TO VALVE WITH BARE SHAFT**

BREAKAWAY TORQUES in Nm

PN - bar	DN size	40 1 1/2"	50 2"	65 2 1/2"	80 3"	100 4"	125 5"	150 6"	200 8"	250 10"	300 12"	350 14"	400 16"	500 20"	600 24"
	0	11	14	18	27	40	59	88	157	248	343	485	662	1142	2385
	6	11	20	25	32	41	62	92	173	275	382	549	766	1327	2787
	10	12	23	27	34	54	71	106	186	321	576	680	882	1634	3250
	16	14	25	29	37	56	86	123	262	392	551	1528	2035	3070	5670

The values in Nm may vary as a function of the seals material, temperature and type of medium. For a firm operation of the various types of actuators, in the different working conditions it is necessary to consider a safety factor of 1.5. During operation, with frequent open and close cycles, the operating torque can decrease considerably in comparison with the initial breakaway torque.

SIZE		Kv AND Cv VALUES AS A FUNCTION OF OPENING ANGLE															
		20°		30°		40°		50°		60°		70°		80°		90°	
		Kv	Cv	Kv	Cv	Kv	Cv	Kv	Cv	Kv	Cv	Kv	Cv	Kv	Cv	Kv	Cv
1 1/2"	40	2.6	3	4.3	5	9.5	11	16	18	22	26	39	45	60	70	69	80
2"	50	6.7	8	7.8	9	16	18	24	28	48	55	62	72	95	110	116	135
2 1/2"	65	8.6	10	13	15	23	27	38	44	73	85	95	110	145	168	181	210
3"	80	13	15	20	23	34	39	56	65	112	130	142	165	216	250	267	310
4"	100	23	27	35	41	61	71	99	115	198	230	259	300	401	465	466	540
5"	125	50	58	74	86	129	150	211	245	414	480	526	610	845	980	948	1100
6"	150	83	96	121	140	211	245	345	400	677	785	871	1010	1392	1615	1647	1910
8"	200	142	165	211	245	354	410	591	685	1099	1275	1478	1715	2302	2670	2746	3185
10"	250	220	255	328	380	560	650	974	1130	1810	2100	2328	2700	3664	4250	4224	4900
12"	300	319	370	466	540	819	950	1353	1570	2629	3050	3405	3950	5129	5950	6336	7350
14"	350	388	450	647	750	1120	1300	1905	2210	3517	4080	4836	5610	6964	8078	9655	11200
16"	400	552	640	776	900	1483	1720	2405	2790	4310	5000	6336	7650	9284	10770	11121	12900
20"	500	785	910	1375	1595	2457	2850	3991	4630	7414	8600	9914	11500	15121	17540	19310	22400
24"	600	1078	1250	1974	2290	3448	4000	5250	6090	10776	12500	14224	16500	20336	23590	24397	28300

POLARIS 40

MAIN STANDARD FEATURES

- CONSTRUCTION :
  BODY IN CAST IRON: GGG40/ASTM 536
  DISC IN STAINLESS STEEL: ASTM A351 CF8 (AISI 304)
- General prescriptions: BS 5155 - MSS SP67 - API 609
- DVGW GAS CERTICATION
- DIAMETER: from DN 40 to DN 600
- CONNECTIONS with flanges:
  PN10-PN16 from DN40 to DN150
  PN10 from DN200 to DN600
- Maximum working pressure (at pipe end):
  PN 16 from DN 40 to DN 150
  PN 10 from DN 200 to DN 600
- TEMPERATURE LIMITS WITH SEALING SEATS IN:
  NBR from -20°C to + 90°C (with peaks up to + 100°C)
  VITON from -10°C to + 160°C
- EPDM seals
- FACE TO FACE DIMENSIONS in conformity with:
  BS 5155 - ISO 5752 - MSS SP 67 - API 609 - DIN 3202/3-K1
- Top flange with ISO 5211 connection
- BLOW-OUT PROOF stem
- OPERATION device: lever handle from DN40 to DN200
  manual reduction gear from DN250 to DN600
- Tests: hydraulic on body: 1.5 x nominal pressure
  hydraulic for sealing: 1.1 x nominal pressure
  pneumatic for sealing: 6 bar
- Locking device from DN40 to DN200
- Tested for vacuum: 1 -10⁻⁷ bar
- Polyurethanic coating

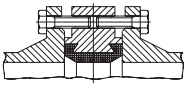
SPECIAL EXECUTIONS

- ANSI 150 from DN40 to DN600
- Black lever handle
- Reduction gear with manual operation also for small DN
- Disc in AISI 316
- VITON seals
- For further special requests please consult our technical/commercial service

DVGW GAS
CERTIFICATION VALVE
NR NG-4313AU2368

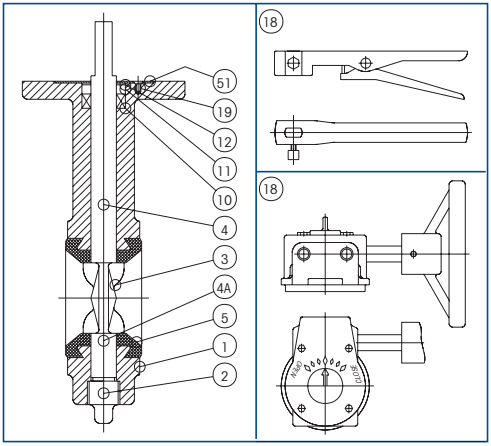
STANDARD PART NUMBERS **Art. B402** with NBR

SCREWS DIMENSIONS



SIZE		PN10 Flanging		PN16 Flanging	
		Ø x Length	holes	Ø x Length	holes
1 1/2"	40	M16 x 30	4	M16 x 30	4
2"	50	M16 x 35	4	M16 x 35	4
2 1/2"	65	M16 x 35	4	M16 x 35	4
3"	80	M16 x 35	8	M16 x 35	8
4"	100	M16 x 40	8	M16 x 40	8
5"	125	M16 x 45	8	M16 x 45	8
6"	150	M20 x 45	8	M20 x 45	8
8"	200	M20 x 50	8	M20 x 50	12
10"	250	M20 x 55	12	M24 x 55	12
12"	300	M20 x 60	12	M24 x 60	12
14"	350	M20 x 60	16	M24 x 60	16
16"	400	M24 x 70	16	M27 x 70	16
20"	500	M24 x 80	20	M30 x 80	20
24"	600	M27 x 90	20	M33 x 90	20

	APPLICATION FOR:	NOT RECOMMENDED FOR:
with NBR	Natural gas, air, oils and greases.	Solvents, benzene, xylol.



LIST OF VALVE COMPONENTS AND MATERIALS

REF.	PART	Q.ty	MATERIAL
1	BODY	1	DUCTILE IRON GGG40/ASTM A536
2	PLUG	1	NICKEL PLATED C. STEEL
3	DISC	1	CF8 (AISI 304)
4	STEM	1	TYPE 410
4A	LOWER STEM	1	TYPE 410
5	SEAT	1	EPDM or NBR
10	UPPER SEAL	1	EPDM or NBR
11	BUSHING	1	DELRIN
12	RING	1	STEEL FOR SPRINGS
19	SCREW	2	NICKEL PLATED C. STEEL
51	WASHER	1	NICKEL PLATED C. STEEL
18	LEVER HANDLE	1	CARBON STEEL
18	REDUCTION GEAR	1	CAST IRON

DYSTRYBUTOR W POLSCE:
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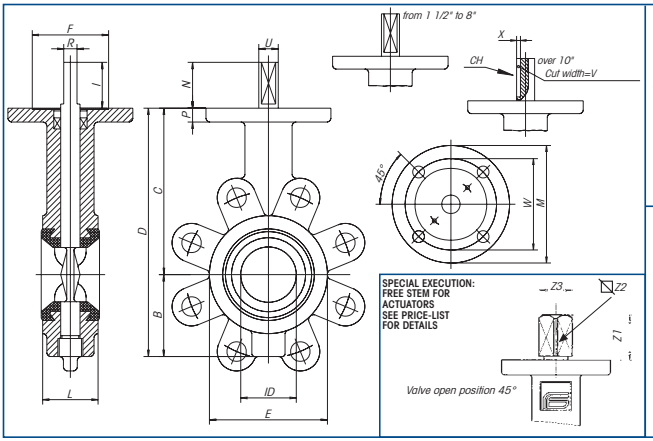
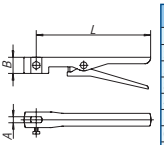
UNI EN ISO 9001: 2000
Progettazione, Sviluppo, Fabbricazione
Certificato n° 0024/3

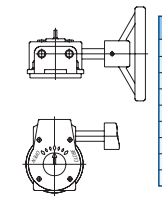
LUG-TYPE BUTTERFLY VALVE — SOFT SEATED

POLARIS 40





SIZE	A	B	L	WEIGHT
1 1/2"	40	9.5	29	265	0,6
2"	50	9.5	29	265	0,6
2 1/2"	65	9.5	29	265	0,6
3"	80	12	29	265	0,6
4"	100	12	29	265	0,6
5"	125	15	29	265	0,6
6"	150	15	29	265	0,6
8"	200	15	29	315	0,7



SIZE DN			CODE
40	50	65	RDA1Y608
80	100		RDA1Y611
125	150	200	RDA1Y613
250			RDA1Y616
300			RDA1Y617
350			RDA1Y618
400			RDA1Y619
500			RDA1Y621
600			RDA1Y622

									STEM										ISO 5211 CONNECT.						*
SIZE		ID	L	B	C	D	E	P	N	I	R	U	X	V	Z1	Z2	Z3	CH	ISO CONN.	M	W	n	Q	F	WEIGHT
1 1/2"	40	35	40	59	120	179	85	10	33	30	9.5	14			16,5	11	14		F07	90	70	4	9	55	2.7
2"	50	48	43	64	130	194	92	11	33	30	9.5	14			16,5	11	14		F07	90	70	4	9	55	2.9
2 1/2"	65	60	46	72	137	209	107	11	33	30	9.5	14			16,5	11	14		F07	90	70	4	9	55	4.1
3"	80	73	46	85	156	241	122	11	33	30	11.8	16			17,5	11	14		F07	90	70	4	9	55	4.4
4"	100	100	52	95	170	265	150	11	33	30	11.8	16			17,5	11	14		F07	90	70	4	9	55	4.7
5"	125	125	56	110	185	295	179	12	33	30	14.5	19			17,5	14	18		F07	90	70	4	9	55	6.3
6"	150	145	56	123	203	326	206	12	33	30	14.5	19			22,5	14	18		F07	90	70	4	9	55	7.9
8"	200	190	60	168	238	406	257	13	33	30	14.5	19			22,5	17	22		F07	90	70	4	9	55	12.3
10"	250	240	68	203	270	473	316	15	65	60		22	4	8	27	22	28	8x7	F10	125	102	4	12	72	19.5
12"	300	290	78	242	310	552	370	15	65	60		28	4	8	27	22	28	8x7	F10	125	102	4	12	72	30.5
14"	350	337	78	290	330	620	410	15	65	60		28	4	8				8x7	F10	125	102	4	12	72	41
16"	400	387	102	330	375	705	468	20	75	70		38	5	12				12x8	F14	175	140	4	18	80	62
20"	500	487	127	400	440	840	578	20	100	95		45	5.5	14				14x9	F16	210	165	4	22	90	111
24"	600	575	154	460	510	970	680	22	100	95		55	5.5	14				14x9	F16	210	165	4	22	105	210

*** WEIGHT REFERS TO VALVE WITH BARE SHAFT**

BREAKAWAY TORQUES in Nm

PN - bar	DN / size	40 / 1 1/2"	50 / 2"	65 / 2 1/2"	80 / 3"	100 / 4"	125 / 5"	150 / 6"	200 / 8"	250 / 10"	300 / 12"	350 / 14"	400 / 16"	500 / 20"	600 / 24"
	0	11	14	18	27	40	59	88	157	248	343	485	662	1142	2385
	6	11	20	25	32	41	62	92	173	275	382	549	766	1327	2787
	10	12	23	27	34	54	71	106	186	321	576	680	882	1634	3250
	16	14	25	29	37	56	86	123	262	392	551	1528	2035	3070	5670

The values in Nm may vary as a function of the seals material, temperature and type of medium. For a firm operation of the various types of actuators, in the different working conditions it is necessary to consider a safety factor of 1.5. During operation, with frequent open and close cycles, the operating torque can decrease considerably in comparison with the initial breakaway torque.

SIZE		Kv AND Cv VALUES AS A FUNCTION OF OPENING ANGLE															
		20°		30°		40°		50°		60°		70°		80°		90°	
		Kv	Cv	Kv	Cv	Kv	Cv	Kv	Cv	Kv	Cv	Kv	Cv	Kv	Cv	Kv	Cv
1 1/2"	40	2.6	3	4.3	5	9.5	11	16	18	22	26	39	45	60	70	69	80
2"	50	6.7	8	7.8	9	16	18	24	28	48	55	62	72	95	110	116	135
2 1/2"	65	8.6	10	13	15	23	27	38	44	73	85	95	110	145	168	181	210
3"	80	13	15	20	23	34	39	56	65	112	130	142	165	216	250	267	310
4"	100	23	27	35	41	61	71	99	115	198	230	259	300	401	465	466	540
5"	125	50	58	74	86	129	150	211	245	414	480	526	610	845	980	948	1100
6"	150	83	96	121	140	211	245	345	400	677	785	871	1010	1392	1615	1647	1910
8"	200	142	165	211	245	354	410	591	685	1099	1275	1478	1715	2302	2670	2746	3185
10"	250	220	255	328	380	560	650	974	1130	1810	2100	2328	2700	3664	4250	4224	4900
12"	300	319	370	466	540	819	950	1353	1570	2629	3050	3405	3950	5129	5950	6336	7350
14"	350	388	450	647	750	1120	1300	1905	2210	3517	4080	4836	5610	6964	8078	9655	11200
16"	400	552	640	776	900	1483	1720	2405	2790	4310	5000	6336	7650	9284	10770	11121	12900
20"	500	785	910	1375	1595	2457	2850	3991	4630	7414	8600	9914	11500	15121	17540	19310	22400
24"	600	1078	1250	1974	2290	3448	4000	5250	6090	10776	12500	14224	16500	20336	23590	24397	28300

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LUG-TYPE BUTTERFLY VALVE – SOFT SEATED WITH DOUBLE ACTING PNEUMATIC ACTUATOR

UNI EN ISO 9001: 2000
Progettazione, Sviluppo, Fabbricazione
Certificato n° 0024/3

POLARIS

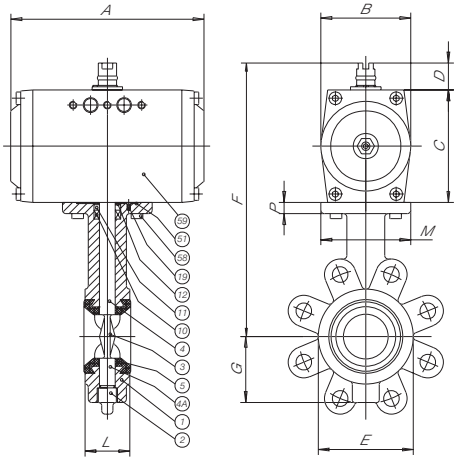
ACTUATOR FEATURES

- Rotation angle: 90°
- Standard version for temperature between –20°C and + 90°C
- Supply maximum pressure: 10 bar
- Nominal pressure: 5,62 bar
- Supply medium: dry filtered compressed air, not necessarily lubricated
- Lubrication: in such a case use a non-detergent or NBR compatible oil

STANDARD VALVE FEATURES

- General prescriptions: BS 5155, MSS SP67, API 609
- Temperature limits with sealing seats in:
  EPDM from –20 °C to +110 °C (with peaks up to +130 °C)
  NBR from –20 °C to + 90 °C (with peaks up to +100 °C)
  VITON from –10 °C to + 160 °C
- Maximum working pressure with actuator (at pipe end)
  PN 16 from DN 40 to DN 150, PN 10 from DN 200 to DN 300
- For general applications and special versions see technical table of manual valve
- In the below table the part number and the valve code refer to the standard valve in GG25, with seats in EPDM.

SIZE		PART NUMBER	weight in gr.	A	B	C	D	E	F	G	L	P	M	ACTUATOR code	VALVE code	MOUNTING KIT code
1 1/2"	40	**DB2AA60800**	5000	133	70	88	40	85	248	59	40	10	90	DGA063AX00	VB21Y608	KANX0008
2"	50	**DB2AA60900**	5500	133	70	88	40	92	258	64	43	11	90	DGA063AX00	VB21Y609	KANX0008
2 1/2"	65	**DB2AA61000**	6950	133	70	88	40	107	265	72	46	11	90	DGA063AX00	VB21Y610	KANX0008
3"	80	**DB2AA61100**	10550	132	83	100	40	122	296	85	46	11	90	DGA075AX00	VB21Y611	KANX0008
4"	100	**DB2AA61200**	11600	182	91	108	40	150	318	95	52	11	90	DGA083AX00	VB21Y612	KANX0008
5"	125	**DB2AA61300**	15900	203	100	117	40	179	342	110	56	12	90	DGA092AX00	VB21Y613	KANX0008
6"	150	**DB2AA61400**	18350	222	120	140	40	206	383	123	56	12	90	DNA110AX00	VB21Y614	KANX0008
8"	200	**DB2AA61500**	30350	300	137	127	40	257	405	168	60	13	90	DNA127AX00	VB21Y615	KANX0008
10"	250	**DB2AA61600**	36600	380	172	198	50	316	518	203	68	15	125	DNA160AX00	VB21Y616	KANX0016
12"	300	**DB2AA61700**	50600	380	172	198	50	370	558	242	78	15	125	DNA160AX00	VB21Y617	KANX0016



LIST OF VALVE COMPONENTS AND MATERIALS

REF.	PART	Q.ty	MATERIAL
1	BODY	1	CAST IRON GG25/ASTM A126-B
2	PLUG	1	NICKEL PLATED C.S.
3	DISC	1	CF8 (AISI 304)
4	STEM	1	TYPE 410
4A	LOWER STEM	1	TYPE 410
5	SEAT	1	EPDM or NBR
10	UPPER SEAL	1	EPDM or NBR
11	BUSHING	1	DELRIN
12	RING	1	STEEL FOR SPRINGS
19	SCREW	2	NICKEL PLATED C.S.
51	WASHER	1	NICKEL PLATED C.S.
58	ACTUATOR SCREW	4	8.8
59	ACTUATOR	1	

Actuator connections: 1/8" G. type from DGA052 to DGA092
1/4" G. Namur type from DNA110 to DNA255 and DNA045

For accessories see relevant catalogue sheet

LUG-TYPE BUTTERFLY VALVE – SOFT SEATED WITH SPRING RETURN PNEUMATIC ACTUATOR

POLARIS

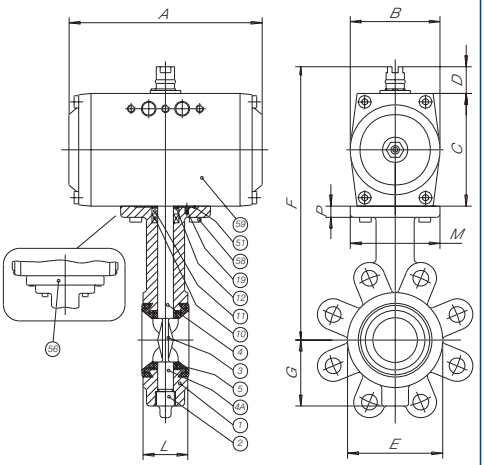
ACTUATOR FEATURES

- Rotation angle: 90°
- Standard version for temperature between –20°C and + 90°C
- Supply maximum pressure: 10 bar
- Nominal pressure: 5,62 bar
- Supply medium: dry filtered compressed air, not necessarily lubricated
- Lubrication: in such a case use a non-detergent or NBR compatible oil
- STANDARD: SPRING CLOSES/AIR OPENS, clockwise automatic closing

STANDARD VALVE FEATURES

- General prescriptions: BS 5155, MSS SP67, API 609
- Temperature limits with sealing seats in:
  EPDM from –20 °C to +110 °C (with peaks up to +130 °C)
  NBR from –20 °C to + 90 °C (with peaks up to +100 °C)
  VITON from –10 °C to + 160 °C
- Maximum working pressure with actuator (at pipe end)
  PN 16 from DN 40 to DN 150, PN 10 from DN 200 to DN 300
- For general applications and special versions see technical table of manual valve
- In the below table the part number and the valve code refer to the standard valve in GG25, with seats in EPDM.

SIZE		PART NUMBER	weight in gr.	A	B	C	D	E	F	G	L	P	M	ACTUATOR code	VALVE code	MOUNTING KIT code
1 1/2"	40	**SB2AA60800**	5835	132	83	100	40	85	260	59	40	10	90	SGA0754X00	VB21Y608	KANX0008
2"	50	**SB2AA60900**	6920	182	91	108	40	92	278	64	43	11	90	SGA0834X00	VB21Y609	KANX0008
2 1/2"	65	**SB2AA61000**	9250	203	100	117	40	107	294	72	46	11	90	SGA0924X00	VB21Y610	KANX0008
3"	80	**SB2AA61100**	14065	222	120	140	40	122	336	85	46	11	90	SNA1104X00	VB21Y611	KANX0008
4"	100	**SB2AA61200**	14570	222	120	140	40	150	350	95	52	11	90	SNA1104X00	VB21Y612	KANX0008
5"	125	**SB2AA61300**	22180	300	137	160	40	179	385	110	56	12	90	SNA1274X00	VS21Y613	KANX0008
6"	150	**SB2AA61400**	32185	380	172	198	50	206	451	123	56	12	90	SNA1604X00	VS21Y614	KAPX0014
8"	200	**SB2AA61500**	58950	450	224	255	50	257	543	168	60	13	90	SNA2104X00	VS21Y615	KAPX0015
10"	250	**SB2AA61600**	60200	450	224	255	50	316	575	203	68	15	125	SNA2104X00	VS21Y616	KAPX0016
12"	300	**SB2AA61700**	110270	603	272	302	50	370	662	242	78	15	125	SNA2544X00	VS21Y617	KAPX0017



LIST OF VALVE COMPONENTS AND MATERIALS

REF.	PART	Q.ty	MATERIAL
1	BODY	1	CAST IRON GG25/ASTM A126-B
2	PLUG	1	NICKEL PLATED C.S.
3	DISC	1	CF8 (AISI 304)
4	STEM	1	TYPE 410
4A	LOWER STEM	1	TYPE 410
5	SEAT	1	EPDM or NBR
10	UPPER SEAL	1	EPDM or NBR
11	BUSHING	1	DELRIN
12	RING	1	STEEL FOR SPRINGS
19	SCREW	2	NICKEL PLATED C.S.
51	WASHER	1	NICKEL PLATED C.S.
56	BRACKET	1	C.S.
57	BRACKET/VALVE SCREW	4	8.8
58	ACTUATOR SCREW	4	8.8
59	ACTUATOR	1	

Bracket with screws only from DN150 to DN300

Actuator connections: 1/8" G. type from SGA052 to SGA092
1/4" G. Namur type from SNA110 to SNA255, e SNA045

For accessories see relevant catalogue sheet

DYSTRYBUTOR W POLSCE:
ECOZAM Sp. z o.o.
ul.Załogowa 17 80-557 Gdańsk
tel.:(+48 58) 522 03 80 fax.(+48 58) 342 20 10

LUG-TYPE BUTTERFLY VALVE – SOFT SEATED WITH DOUBLE ACTING PNEUMATIC ACTUATOR

UNI EN ISO 9001: 2000
Progettazione, Sviluppo, Fabbricazione
Certificato n° 0024/3

POLARIS 40

ACTUATOR FEATURES

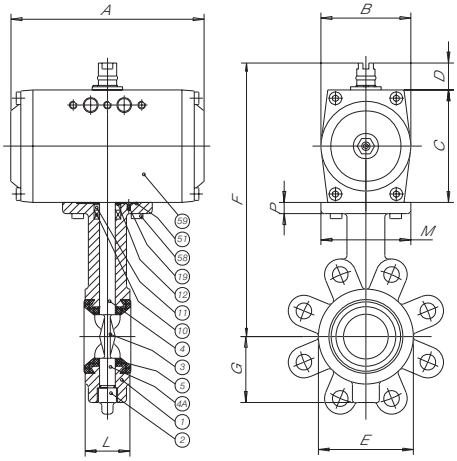
- Rotation angle: 90°
- Standard version for temperature between –20°C and + 90°C
- Supply maximum pressure: 10 bar
- Nominal pressure: 5,62 bar
- Supply medium: dry filtered compressed air, not necessarily lubricated
- Lubrication: in such a case use a non-detergent or NBR compatible oil

STANDARD VALVE FEATURES

- General prescriptions: BS 5155, MSS SP67, API 609
- Temperature limits with sealing seats in:
  EPDM from –20 °C to +110 °C (with peaks up to +130 °C)
  NBR from –20 °C to + 90 °C (with peaks up to +100 °C)
  VITON from –10 °C to + 160 °C
- Maximum working pressure with actuator (at pipe end)
  PN 16 from DN 40 to DN 150, PN 10 from DN 200 to DN 300
- For general applications and special versions see technical table of manual valve
- In the below table the part number and the valve code refer to the standard valve in GGG40, with seats in EPDM.

DVGW GAS
CERTIFICATION VALVE
NR NG-4313AU2368

SIZE		PART NUMBER	weight in gr.	A	B	C	D	E	F	G	L	P	M	ACTUATOR code	VALVE code	MOUNTING KIT code
1 1/2"	40	**DB8AA60800**	5000	133	70	88	40	85	248	59	40	10	90	DGA063AX00	VB42Y608	KANX0008
2"	50	**DB8AA60900**	5500	133	70	88	40	92	258	64	43	11	90	DGA063AX00	VB42Y609	KANX0008
2 1/2"	65	**DB8AA61000**	6950	133	70	88	40	107	265	72	46	11	90	DGA063AX00	VB42Y610	KANX0008
3"	80	**DB8AA61100**	10550	132	83	100	40	122	296	85	46	11	90	DGA075AX00	VB42Y611	KANX0008
4"	100	**DB8AA61200**	11600	182	91	108	40	150	318	95	52	11	90	DGA083AX00	VB42Y612	KANX0008
5"	125	**DB8AA61300**	15900	203	100	117	40	179	342	110	56	12	90	DGA092AX00	VB42Y613	KANX0008
6"	150	**DB8AA61400**	18350	222	120	140	40	206	383	123	56	12	90	DNA110AX00	VS42Y614	KANX0008
8"	200	**DB8AA61500**	30350	300	137	127	40	257	405	168	60	13	90	DNA127AX00	VS42Y615	KANX0008
10"	250	**DB8AA61600**	36600	380	172	198	50	316	518	203	68	15	125	DNA160AX00	VS42Y616	KANX0016
12"	300	**DB8AA61700**	50600	380	172	198	50	370	558	242	78	15	125	DNA160AX00	VS42Y617	KANX0016



LIST OF VALVE COMPONENTS AND MATERIALS

REF.	PART	Q.ty	MATERIAL
1	BODY	1	DUCTILE IRON GGG40/ASTM A536
2	PLUG	1	NICKEL PLATED C.S.
3	DISC	1	CF8 (AISI 304)
4	STEM	1	TYPE 410
4A	LOWER STEM	1	TYPE 410
5	SEAT	1	EPDM o NBR
10	UPPER SEAL	1	EPDM o NBR
11	BUSHING	1	DELRIN
12	RING	1	STEEL FOR SPRINGS
19	SCREW	2	NICKEL PLATED C.S.
51	WASHER	1	NICKEL PLATED C.S.
58	ACTUATOR SCREW	4	8.8
59	ACTUATOR	1	

Bracket with screws only from DN150 to DN300

Actuator connections: 1/8" G. type from SGA052 to SGA092
1/4" G. Namur type from SNA110 to SNA255, e SNA045

For accessories see relevant catalogue sheet

DYSTRYBUTOR W POLSCE:
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ul.Załogowa 17 80-557 Gdańsk
tel.:(+48 58) 522 03 80 fax.(+48 58) 342 20 10

LUG-TYPE BUTTERFLY VALVE – SOFT SEATED WITH SPRING RETURN PNEUMATIC ACTUATOR

UNI EN ISO 9001: 2000
Progettazione, Sviluppo, Fabbricazione
Certificato n° 0024/3

POLARIS 40

ACTUATOR FEATURES

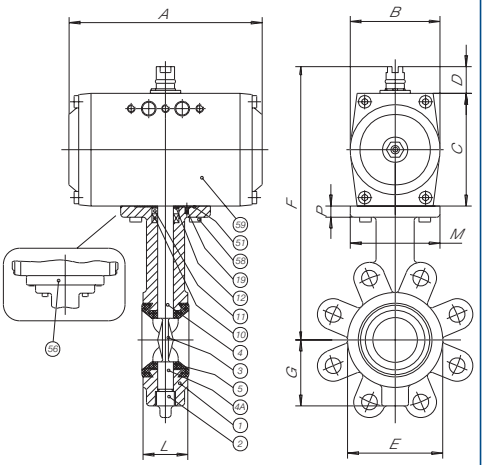
- Rotation angle: 90°
- Standard version for temperature between –20°C and + 90°C
- Supply maximum pressure: 10 bar
- Nominal pressure: 5,62 bar
- Supply medium: dry filtered compressed air, not necessarily lubricated
- Lubrication: in such a case use a non-detergent or NBR compatible oil
- STANDARD: SPRING CLOSES/AIR OPENS, clockwise automatic closing

STANDARD VALVE FEATURES

- General prescriptions: BS 5155, MSS SP67, API 609
- Temperature limits with sealing seats in:
  EPDM from –20 °C to +110 °C (with peaks up to +130 °C)
  NBR from –20 °C to + 90 °C (with peaks up to +100 °C)
  VITON from –10 °C to + 160 °C
- Maximum working pressure with actuator (at pipe end)
  PN 16 from DN 40 to DN 150, PN 10 from DN 200 to DN 300
- For general applications and special versions see technical table of manual valve
- In the below table the part number and the valve code refer to the standard valve in GGG40, with seats in EPDM.

DVGW GAS CERTIFICATION VALVE NR NG-4313AU2368

SIZE		PART NUMBER	weight in gr.	A	B	C	D	E	F	G	L	P	M	ACTUATOR code	VALVE code	MOUNTING KIT code
1 1/2"	40	**SB8AA60800**	5835	132	83	100	40	85	260	59	40	10	90	aGA0754X00	VB42Y608	KANX0008
2"	50	**SB8AA60900**	6920	182	91	108	40	92	278	64	43	11	90	SGA0834X00	VB42Y609	KANX0008
2 1/2"	65	**SB8AA61000**	9250	203	100	117	40	107	294	72	46	11	90	SGA0924X00	VB42Y610	KANX0008
3"	80	**SB8AA61100**	14065	222	120	140	40	122	336	85	46	11	90	SNA1104X00	VB42Y611	KANX0008
4"	100	**SB8AA61200**	14570	222	120	140	40	150	350	95	52	11	90	SNA1104X00	VB42Y612	KANX0008
5"	125	**SB8AA61300**	22180	300	137	160	40	179	385	110	56	12	90	SNA1274X00	VB42Y613	KANX0008
6"	150	**SB8AA61400**	32185	380	172	198	50	206	451	123	56	12	90	SNA1604X00	VB42Y614	KAPX0014
8"	200	**SB8AA61500**	58950	450	224	255	50	257	543	168	60	13	90	SNA2104X00	VB42Y615	KAPX0015
10"	250	**SB8AA61600**	60200	450	224	255	50	316	575	203	68	15	125	SNA2104X00	VB42Y616	KAPX0016
12"	300	**SB8AA61700**	110270	603	272	302	50	370	662	242	78	15	125	SNA2544X00	VS42Y617	KAPX0017



LIST OF VALVE COMPONENTS AND MATERIALS

REF.	PART	Q.ty	MATERIAL
1	BODY	1	DUCTILE IRON GGG40/ASTM A536
2	PLUG	1	NICKEL PLATED C.S.
3	DISC	1	CF8 (AISI 304)
4	STEM	1	TYPE 410
4A	LOWER STEM	1	TYPE 410
5	SEAT	1	EPDM or NBR
10	UPPER SEAL	1	EPDM or NBR
11	BUSHING	1	DELRIN
12	RING	1	STEEL FOR SPRINGS
19	SCREW	2	NICKEL PLATED C.S.
51	WASHER	1	NICKEL PLATED C.S.
56	BRACKET	1	C.S.
57	BRACKET/VALVE SCREW	4	8.8
58	ACTUATOR SCREW	4	8.8
59	ACTUATOR	1	

Bracket with screws only from DN150 to DN300

Actuator connections: 1/8" G. type from SGA052 to SGA092
1/4" G. Namur type from SNA110 to SNA255, e SNA045

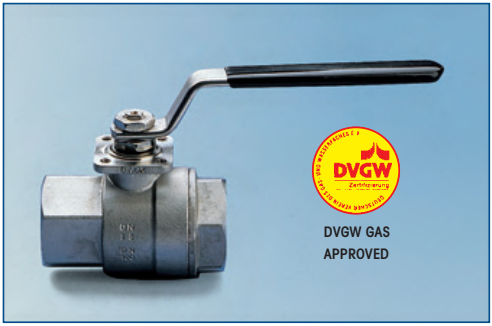
For accessories see relevant catalogue sheet

SUN WP

2-PIECE BALL VALVE—FULL BORE

MAIN STANDARD FEATURES

- CONSTRUCTION: AISI 316
- CERTIFICATIONS: DVGW for gas
  TÜV for TA Luft
- DIAMETER: from DN10 - 3/8" to DN 50 - 2"
- PRESSURES: from 160 BAR to 40 BAR
- TEMPERATURE LIMITS: from –20°C to +150°C
- ISO 5211 mounting plate
- BLOW-OUT PROOF stem from 3/4" to 2"
- CONNECTIONS: F/F UNI-ISO 7/1 Rp – DIN 2999 parallel
  M/F (male UNI-ISO 7/1 R taper, female parallel)
- WRAPPING SEATS
- TRIPLE stem-packing with labyrinth effect and automatic adjustment by Belleville washers
- NON-WETTED parts in stainless steel
- OPERATION devices: lever
- Tested for vacuum $1\text{-}10^{-3}$ STD CC/SEC



STANDARD PART NUMBERS

Art. 2551
female/female

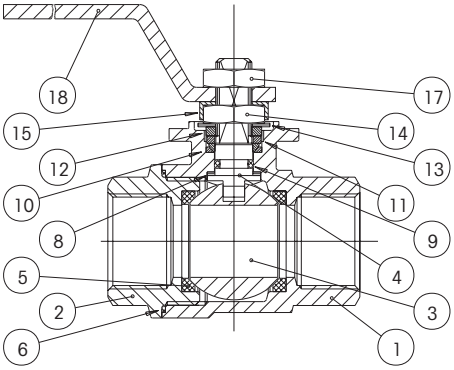
Art. 2552
male/female

SPECIAL EXECUTIONS

- 15% GLASS-FILLED PTFE. Temperature limits –20°C + 175°C
- PTFE+CARBOGRAPHITE: use up to 195°C, for steam up to 180°C
- FEMALE CONNECTIONS: NPT ANSI B1.20.1
- Stems with antistatic device from 3/4" to 2"
- Degreased version
- SUNNY WP valve (SUN WP polished)
- On request the valve is available with ATEX certificate (from 3/4" to 2")
- For further special requests please consult our technical/commercial service

GENERAL APPLICATIONS

Use as an ON-OFF valve for: chemical products, for water and pneumatic installations, gas, water, vacuum. For steam within limited working conditions and with special seals. All parts have to be adequately degreased if the valves have to be used for oxygen.
For special utilizations ascertain the compatibility with process features and the corrosion resistance also by the relevant table.



LIST OF COMPONENTS AND MATERIALS

REF.	PART	MATERIAL	DIN MAT.	QTY
1	BODY	AISI 316	1.4408	1
2	FEMALE END	AISI 316	1.4408	1
3	BALL	AISI 316	1.4401	1
4	STEM	AISI 316	1.4401	1
5	SEAT	PTFE	-	2
6	SIDE SEALING RING	PTFE	-	1
8	UPPER SEALING RING	PTFE	-	2
9	STEM O-RING	VITON	-	1
10	UPPER SEALING COUPLE	PTFE	-	1
11	PACKING GLAND	AISI 304	1.4301	1
12	OPERATION STOP	AISI 304	1.4301	1
13	BELLEVILLE WASHERS	AISI 301	1.4310	2
14	STEM RETAINING NUT	AISI 304	1.4301	1
15	FIXING NUT PLATE	AISI 304	1.4301	1
17	LOCKING NUT	AISI 304	1.4301	1
18	LEVER HANDLE	AISI 304	1.4301	1

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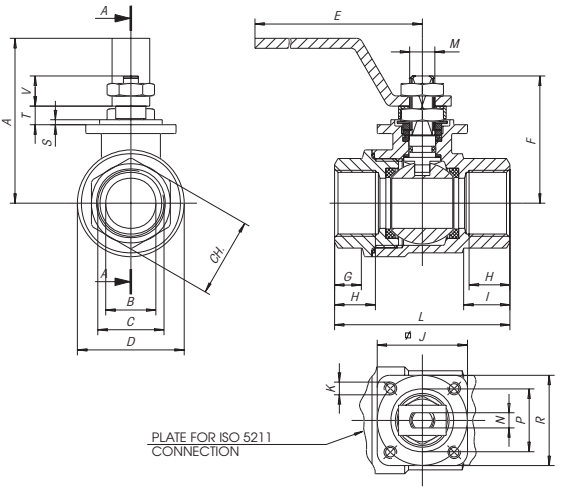
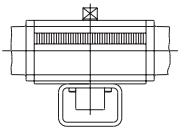
Progettazione, Sviluppo, Fabbricazione
Certificato n° 0024/3

SUN WP

2-PIECE BALL VALVE—FULL BORE





By removing the lever handle, the SUN WP valve can be directly mounted on an actuator by the special bracket with screws, the stem adapter and by replacing the operation stop (part 12) of the valve (kit supplied upon request).

C (inch)	A	B	D	E	F	G	H	I	J	K	L	M	N	P	R	S	T	V	hex. key	oct. key	ISO conn.	weight in gr MF	weight in gr MF
3/8"	52	10	29	110	37	8.5	11.4	13.5	36	M5	50	M8	4	25	36	2	6	9.5	21.5	-	F03	250	235
1/2"	55	15	34	110	42	10	15	18	36	M5	60	M8	4	25	36	2	6	9.5	26.5	-	F03	350	315
3/4"	66	20	42.5	140	52	11.5	16.3	18	36	M5	70	M10	6	25	36	2	7.5	12	31.5	-	F03	565	510
1"	70	25	50.5	140	56	14	19.1	27.5	36	M5	85	M10	6	25	36	2	7.5	12	40.5	-	F03	855	765
1 1/4"	85	32	63	180	68	15.5	21.4	28.5	42	M5	95	M12	8	30	42	3	9.5	13.5	-	49.5	F04	1395	1270
1 1/2"	91	40	75.5	180	74	18.5	21.4	23	42	M5	105	M12	8	30	42	3	9.5	13.5	-	54.5	F04	1945	1810
2"	105	50	91	230	87	22.5	25.7	35	50	M6	125	M16	10	35	50	3	11.3	17.8	-	69.5	F05	3320	3160

BREAKAWAY TORQUES in Nm

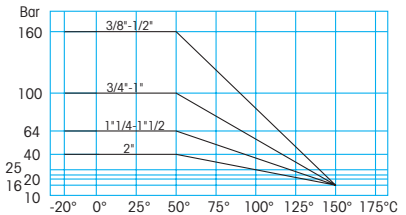
PN - bar	DN	10	15	20	25	32	40	50
	size	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	0	1.6	3.2	3.6	4.6	11.5	19	27.5
	16	1.8	4.3	4.9	5.9	15	24	38
	40	2.5	5.1	6	6.9	16.7	28.6	42
	64	3.2	5.6	6.8	8	18.4	32	
	100	3.8	6.5	8.5	10			
	160	5	8					

Nm

The values in Nm may vary as a function of the seals material, temperature and type of medium. For a firm operation of the various types of actuators, in the different working conditions it is necessary to consider a safety factor of 1.5. During operation, with frequent open and close cycles, the operating torque can decrease considerably in comparison with the initial breakaway torque.

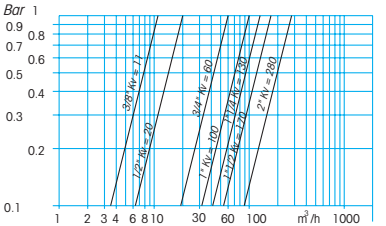
PRESSURE/TEMPERATURE DIAGRAM

At each pressure level corresponds the admissible temperature level.



LOSS OF HEAD DIAGRAM/FLOW RATE

The Kv value is the flow rate causing a pressure drop of 1 bar



SUN WP

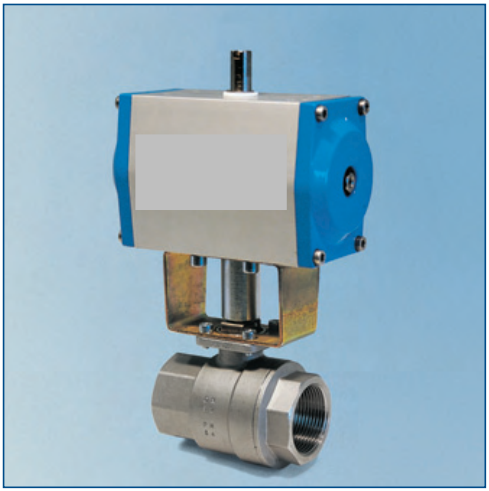
2-PIECE BALL VALVE - FULL BORE WITH **DOUBLE ACTING** PNEUMATIC ACTUATOR

ACTUATOR FEATURES

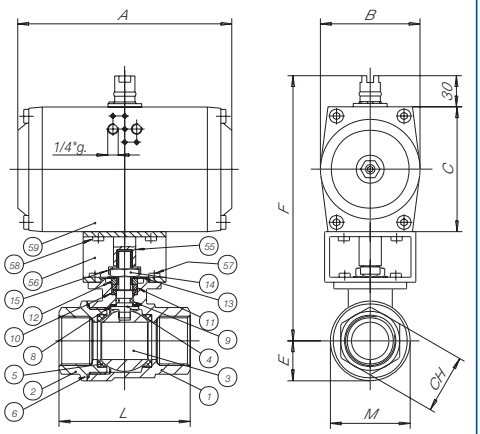
- Rotation angle: 90°
- Standard version for temperature between –20°C and + 90°C
- Supply maximum pressure: 10 bar (8bar for DNA045)
- Nominal pressure: 5,62 bar
- Supply medium: dry filtered compressed air, not necessarily lubricated
- Lubrication: in such a case use a non-detergent or NBR compatible oil

STANDARD VALVE FEATURES

- Working temperature: from –20°C to +150°C
- Maximum working pressure with actuator: from 160 bar to 40 bar
- CONNECTIONS: F/F UNI-ISO 7/1 Rp – DIN 2999 parallel
  M/F (male UNI-ISO 7/1 R taper, female parallel)
- BLOW-OUT PROOF stem from 3/4" to 2"
- ISO 5211 mounting plate
- For general applications and special versions see technical table of manual valve
- In the below table the part number and the valve code refer to the standard valve female/female



SIZE	PART NUMBER	weight in gr.	A	B	C	E	F	CH hexa.	CH octo.	L	M	ACTUATOR code	VALVE code	MOUNTING KIT code
3/8"	D31AA20300	808	110	53	68	14.5	157.5	21.5	-	50	29	DNA045AZ00	V400H203	K1GA0003
1/2"	D31AA20400	895	110	53	68	17	162.5	26.5	-	60	34	DNA045AZ00	V400H204	K1GA0003
3/4"	D31AA20500	1110	110	53	68	21.5	168.5	31.5	-	70	42.5	DNA045AZ00	V400H205	K1GA0105
1"	D31AA20600	1720	127	59	74	25.5	188.5	40.5	-	85	50.5	DGA052AX00	V400H206	K1GA0206
1 1/4"	D31AA20700	2880	133	70	88	31.5	220	-	49.5	95	63	DGA063AX00	V400H207	K1GA0207
1 1/2"	D31AA20800	4135	132	83	100	38	238	-	54.5	105	75.5	DGA075AX00	V400H208	K1GA0208
2"	D31AA20900	5620	132	83	100	46	245	-	69.5	125	91	DGA075AX00	V400H209	K1GA0009



LIST OF VALVE COMPONENTS AND MATERIALS

REF.	PART	QTY	MATERIAL
1	BODY	1	AISI 316
2	FEMALE END	1	AISI 316
3	BALL	1	AISI 316
4	STEM	1	AISI 316
5	SEAT	2	PTFE
6	SIDE SEALING RING	1	PTFE
8	UPPER SEALING RING	1	PTFE
9	STEM O-RING	1	VITON
10	UPPER SEALING COUPLE	1	PTFE
11	PACKING GLAND	1	AISI 304
12	WASHER	1	AISI 304
13	BELLEVILLE WASHERS	2	AISI 301
14	STEM RETAINING NUT	1	AISI 304
15	FIXING NUT PLATE	1	AISI 304
55	ACTUATOR SHAFT	1	C.S.
56	BRACKET	1	C.S.
57	BRACKET/VALVE SCREW	4	8.8
58	BRACKET/ACTUATOR SCREW	4	8.8
59	ACTUATOR	1	

For accessories see relevant catalogue sheet

SUN WP

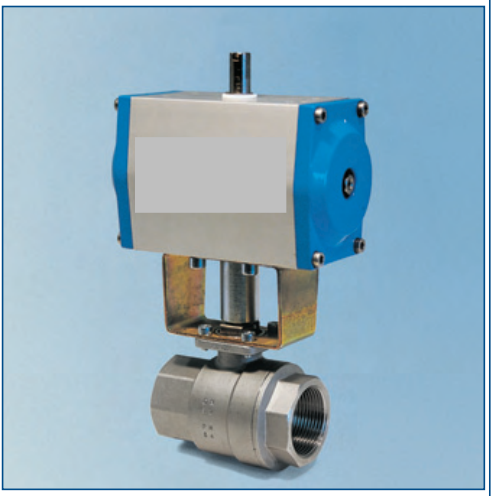
2-PIECE BALL VALVE - FULL BORE WITH **SPRING RETURN** PNEUMATIC ACTUATOR

ACTUATOR FEATURES

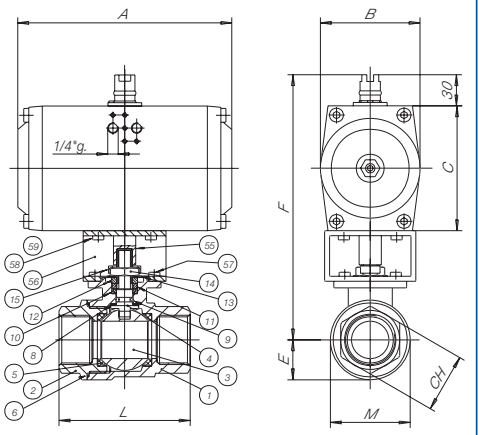
- Rotation angle: 90°
- Standard version for temperature between –20°C and + 90°C
- Supply maximum pressure: 10 bar (8bar for SNA045)
- Nominal pressure: 5,62 bar
- Supply medium: dry filtered compressed air, not necessarily lubricated
- Lubrication: in such a case use a non-detergent or NBR compatible oil
- STANDARD: **SPRING CLOSES/AIR OPENS**, clockwise automatic closing

STANDARD VALVE FEATURES

- Temperature limits: from –20°C to +150°C
- Maximum working pressure with actuator: from 160 bar to 40 bar
- CONNECTIONS: F/F UNI-ISO 7/1 Rp – DIN 2999 parallel
  M/F (male UNI-ISO 7/1 R taper, female parallel)
- BLOW-OUT PROOF stem from 3/4" to 2"
- ISO 5211 mounting plate
- For general applications and special versions see technical table of manual valve
- In the below table the part number and the valve code refer to the standard valve female/female



SIZE	PART NUMBER	weight in gr.	A	B	C	E	F	CH hexa.	CH octo.	L	M	ACTUATOR code	VALVE code	MOUNTING KIT code
3/8"	S31AA20300	880	110	53	68	14.5	157.5	21.5	-	50	29	SNA0452W00	V400H203	K1GA0003
1/2"	S31AA20400	1375	127	59	74	17	178.5	26.5	-	60	34	SGA0524X00	V400H204	K1GA0204
3/4"	S31AA20500	1590	127	59	74	21.5	184.5	31.5	-	70	42.5	SGA0524X00	V400H205	K1GA0205
1"	S31AA20600	2475	133	70	88	25.5	202.5	40.5	-	85	50.5	SGA0634X00	V400H206	K1GA0306
1 1/4"	S31AA20700	3800	132	83	100	31.5	232	-	49.5	95	63	SGA0754X00	V400H207	K1GA0307
1 1/2"	S31AA20800	6000	203	100	117	38	255	-	54.5	105	75.5	SGA0924X00	V400H208	K1GA0208
2"	S31AA20900	9490	222	120	140	46	285	-	69.5	125	91	SGA1104X00	V400H209	K1GA0109



LIST OF VALVE COMPONENTS AND MATERIALS

REF.	PART	QTY	MATERIAL
1	BODY	1	AISI 316
2	FEMALE END	1	AISI 316
3	BALL	1	AISI 316
4	STEM	1	AISI 316
5	SEAT	2	PTFE
6	SIDE SEALING RING	1	PTFE
8	UPPER SEALING RING	1	PTFE
9	STEM O-RING	1	VITON
10	UPPER SEALING COUPLE	1	PTFE
11	PACKING GLAND	1	AISI 304
12	WASHER	1	AISI 304
13	BELLEVILLE WASHERS	2	AISI 301
14	STEM RETAINING NUT	1	AISI 304
15	FIXING NUT PLATE	1	AISI 304
55	ACTUATOR SHAFT	1	C.S.
56	BRACKET	1	C.S.
57	BRACKET/VALVE SCREW	4	8.8
58	BRACKET/ACTUATOR SCREW	4	8.8
59	ACTUATOR	1	

For accessories see relevant catalogue sheet

VEGA

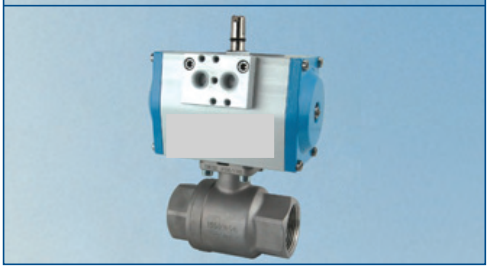
2-PIECE BALL VALVE - FULL BORE WITH ISO TOP, WITH **DOUBLE ACTING** PNEUMATIC ACTUATOR

ACTUATOR FEATURES

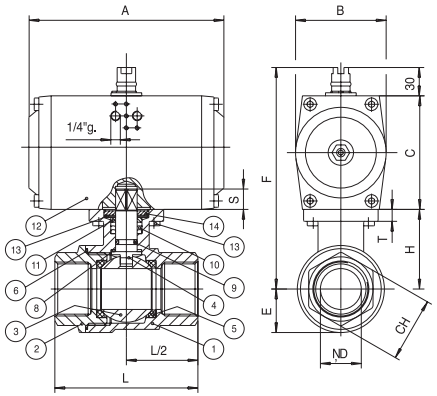
- Rotation angle: 90°
- Standard version for temperature between –20°C and + 90°C
- Supply maximum pressure: 10 bar (8bar for DNA045)
- Nominal pressure: 5,62 bar
- Supply medium: dry filtered compressed air, not necessarily lubricated
- Lubrication: in such a case use a non-detergent or NBR compatible oil

STANDARD VALVE FEATURES

- Temperature limits: from –20°C to +150°C
- Maximum working pressure: from 1/4" to 1" PN 140
  from 1"1/4 to 2" PN 100
  from 2"1/2 to 3" PN 64
- CONNECTIONS: F/F ISO 7/1 Rp – DIN 2999 parallel
- BLOW-OUT PROOF stem from 1/4" to 3"
- ISO 5211 mounting plate
- In the below table the part number and the valve code refer to the standard valve female/female



SIZE	PART NUMBER	weight in gr.	A	B	C	D	E	F	H	L	CH	S	T	STEM SQUARE	ISO TOP DRILLING	TORQUE	ACTUATOR code	VALVE code	MOUNTING KIT code
1/4"	D46AA20200	1038	110	53	68	11	19,5	138	40	65	27	7	9	9	F03-F04	4Nm	DNA045AY00	V4608202	KANX0X02
3/8"	D46AA20300	1028	110	53	68	13	19,5	138	40	75	27	7	9	9	F03-F04	4Nm	DNA045AY00	V4608203	KANX0X02
1/2"	D46AA20400	976	110	53	68	16	19,5	138	40	75	27	7	9	9	F03-F04	4Nm	DNA045AY00	V4608204	KANX0X02
3/4"	D46AA20500	1090	110	53	68	20	22	142	44	80	33	9	9	9	F03-F04	6Nm	DNA045AY00	V4608205	KANX0X02
1"	D46AA20600	1510	110	53	68	25	27	150	52	90	41	12	10	11	F04-F05	8Nm	DNA045AW00	V4608206	KANX0X02
1"1/4	D46AA20700	2365	127	59	74	32	33	162	58	110	50	12	10	11	F04-F05	12Nm	DGA052AX00	V4606207	KANX0X07
1"1/2	D46AA20800	3781	133	70	88	40	39	186	68	120	58	16	13	14	F05-F07	19Nm	DGA063AX00	V4606208	KANX0X08
2"	D46AA20900	5926	132	83	100	50	48	207	77	140	70	16	13	14	F05-F07	40Nm	DGA075AX00	V4606209	KANX0X09
2"1/2	D46AA21000	11050	203	100	117	65	60	245	98	185	87	19	13	17	F07-F10	70Nm	DGA092AX00	V4605210	KANX0X10
3"	D46AA21100	16270	222	120	140	80	70	280	110	205	104	19	13	17	F07-F10	90Nm	DNA110AX00	V4605211	KANX0X11



LIST OF VALVE COMPONENTS AND MATERIALS

REF.	PART	QTY	MATERIAL
1	BODY	1	AISI 316
2	FEMALE END	1	AISI 316
3	BALL	1	AISI 316
4	STEM	1	AISI 316
5	SEAT	2	PTFE
6	SIDE SEALING RING	1	PTFE
8	UPPER SEALING RING	1	PTFE
9	STEM O-RING	1	VITON
10	UPPER SEALING	1	PTFE
11	GLAND WASHER	1	AISI 304
13	BELLEVILLE WASHERS	2	AISI 301
14	BLOCKING DISC	1	AISI 304
58	ACTUATOR SCREW	4	8.8
59	ACTUATOR	1	

For accessories see relevant catalogue sheet

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VEGA

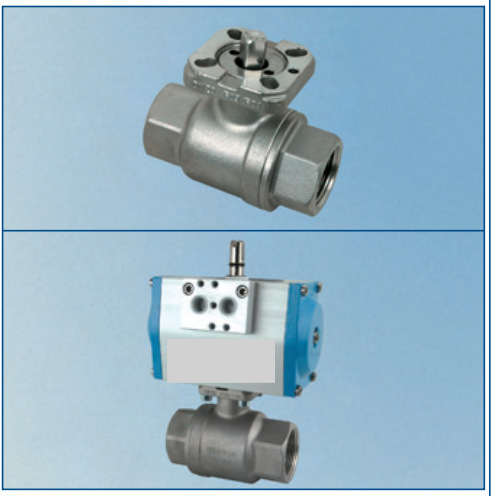
2-PIECE BALL VALVE - FULL BORE WITH ISO TOP, WITH **SPRING RETURN** PNEUMATIC ACTUATOR

ACTUATOR FEATURES

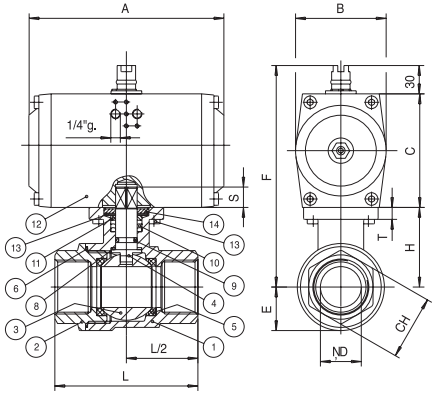
- Rotation angle: 90°
- Standard version for temperature between –20°C and + 90°C
- Supply maximum pressure: 10 bar (8bar for DNA045)
- Nominal pressure: 5,62 bar
- Supply medium: dry filtered compressed air, not necessarily lubricated
- Lubrication: in such a case use a non-detergent or NBR compatible oil
- STANDARD: SPRING CLOSES/AIR OPENS, clockwise automatic closing

STANDARD VALVE FEATURES

- Temperature limits: from –20°C to +150°C
- Maximum working pressure: from 1/4" to 1" PN 140
  from 1"1/4 to 2" PN 100
  from 2"1/2 to 3" PN 64
- CONNECTIONS: F/F ISO 7/1 Rp – DIN 2999 parallel
- BLOW-OUT PROOF stem from 1/4" to 3"
- ISO 5211 mounting plate
- In the below table the part number and the valve code refer to the standard valve female/female



SIZE	PART NUMBER	weight in gr.	A	B	C	D	E	F	H	L	CH	S	T	STEM SQUARE	ISO TOP DRILLING	TORQUE	ACTUATOR code	VALVE code	MOUNTING KIT code
1/4"	S46AA20200	1503	127	59	74	11	19,5	144	40	75	27	7	9	9	F03-F04	4Nm	SGA0524X00	V4608202	KANXBX02
3/8"	S46AA20300	1493	127	59	74	13	19,5	144	40	75	27	7	9	9	F03-F04	4Nm	SGA0524X00	V4608203	KANXBX02
1/2"	S46AA20400	1441	127	59	74	16	19,5	144	40	75	27	7	9	9	F03-F04	4Nm	SGA0524X00	V4608204	KANXBX02
3/4"	S46AA20500	1545	127	59	74	20	22	148	44	80	33	9	9	9	F03-F04	6Nm	SGA0524X00	V4608205	KANXBX02
1"	S46AA20600	2519	133	70	88	25	27	170	52	90	41	12	10	11	F04-F05	8Nm	SGA0634X00	V4608206	KANX0X06
1"1/4	S46AA20700	3778	132	83	100	32	33	188	58	110	50	12	10	11	F04-F05	12Nm	SGA0754X00	V4606207	KANXBX07
1"1/2	S46AA20800	5283	182	91	108	40	39	206	68	120	58	16	13	14	F05-F07	19Nm	SGA0834X00	V4606208	KANXBX08
2"	S46AA20900	9511	222	120	140	50	48	247	77	140	70	16	13	14	F05-F07	40Nm	SNA1104X00	V4606209	KANXBX09
2"1/2	S46AA21000	15441	294	120	140	65	60	268	98	185	87	19	13	17	F07-F10	70Nm	SNA1184X00	V4605210	KANXBX10
3"	S46AA21100	21167	300	137	160	80	70	300	110	205	104	19	13	17	F07-F10	90Nm	SNA1274X00	V4605211	KANXBX11



LIST OF VALVE COMPONENTS AND MATERIALS

REF.	PART	QTY	MATERIAL
1	BODY	1	AISI 316
2	FEMALE END	1	AISI 316
3	BALL	1	AISI 316
4	STEM	1	AISI 316
5	SEAT	2	PTFE
6	SIDE SEALING RING	1	PTFE
8	UPPER SEALING RING	1	PTFE
9	STEM O-RING	1	VITON
10	UPPER SEALING	1	PTFE
11	GLAND WASHER	1	AISI 304
13	BELLEVILLE WASHERS	2	AISI 301
14	BLOCKING DISC	1	AISI 304
58	ACTUATOR SCREW	4	8.8
59	ACTUATOR	1	

For accessories see relevant catalogue sheet

ALBA

2-PIECE BALL VALVE—FULL BORE

MAIN STANDARD FEATURES

- CONSTRUCTION: AISI 316
- CERTIFICATIONS: DVGW for gas up to 2"
  TÜV for TA Luft up to 2"
- DIAMETER: from DN08 - 1/4" to DN 80 - 3"
- PRESSURES: from 100 BAR to 40 BAR
- TEMPERATURE LIMITS: from –20°C to +150°C
- BLOW-OUT PROOF stem
- CONNECTIONS: F/F UNI-ISO 7/1 Rp – DIN 2999 parallel
  M/F up to 2" (male UNI-ISO 7/1 R taper, female parallel)
- WRAPPING SEATS
- TRIPLE stem-packing with labyrinth effect and automatic adjustment by Belleville washers
- NON-WETTED parts in stainless steel
- OPERATION devices: lever or T-handle
- Tested for vacuum: $1\text{-}10^{-3}$ STD CC/SEC

DVGW GAS APPROVED

STANDARD PART NUMBERS

Art. 2601
female/female w/lever

Art. 2611
female/female w/T-handle up to 1"

Art. 2602
male/female w/lever

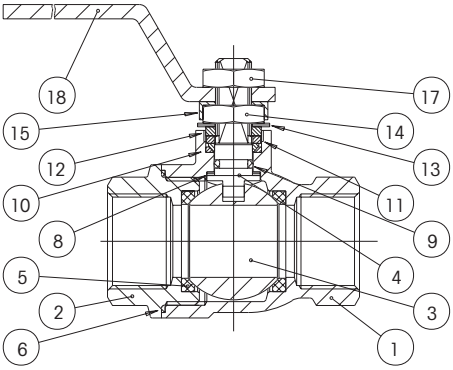
Art. 2612
male/female w/T-handle up to 1"

SPECIAL EXECUTIONS

- 15% GLASS-FILLED PTFE. Temperaure limits –20°C + 175°C
- PTFE+CARBOGRAPHITE: use up to 195°C, for steam up to 180°C
- FEMALE CONNECTIONS: NPT ANSI B1.20.1
- Stems with antistatic device from 3/4" to 2"
- Degreased version
- 50 mm stem extension up to 2"
- On request the valve is available with ATEX certificate (from 3/4" to 2")
- For further special requests please consult our technical/commercial service

GENERAL APPLICATIONS

Use as an ON-OFF valve for: chemical products, for water and pneumatic installations, gas, water, vacuum. For steam within limited working conditions and with special seals. All parts have to be adequately degreased if the valves have to be used for oxygen.
For special utilizations ascertain the compatibility with process features and the corrosion resistance also by the relevant table.



LIST OF COMPONENTS AND MATERIALS

REF.	PART	MATERIAL	DIN MAT.	QTY
1	BODY	AISI 316	1.4408	1
2	FEMALE END	AISI 316	1.4408	1
3	BALL	AISI 316	1.4401	1
4	STEM	AISI 316	1.4401	1
5	SEAT	PTFE	-	2
6	SIDE SEALING RING	PTFE	-	1
8	UPPER SEALING RING	PTFE	-	2
9	STEM O-RING	VITON	-	1
10	UPPER SEALING COUPLE	PTFE	-	1
11	PACKING GLAND	AISI 304	1.4301	1
12	OPERATION STOP	AISI 304	1.4301	1
13	BELLEVILLE WASHERS	AISI 301	1.4310	2
14	STEM RETAINING NUT	AISI 304	1.4301	1
15	FIXING NUT PLATE	AISI 304	1.4301	1
17	LOCKING NUT	AISI 304	1.4301	1
18	LEVER HANDLE	AISI 304	1.4301	1

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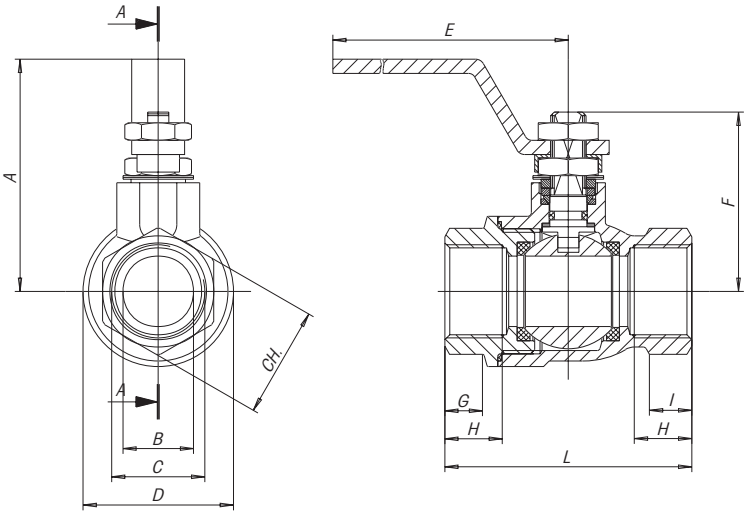
ALBA

2-PIECE BALL VALVE—FULL BORE



C (inch)	A	B	D	E	F	G	H	I	L	hex. key	oct. key	weight in gr MF	weight in gr F/F
1/4"	52	8	29	110	37	8.5	11.4	8	50	21.5	-	230	220
3/8"	52	10	29	110	37	8.5	11.4	8	50	21.5	-	230	205
1/2"	55	15	34	110	42	10	15	9.5	60	26.5	-	315	275
3/4"	66	20	42.5	140	52	11.5	16.3	11.5	70	31.5	-	535	465
1"	70	25	50.5	140	56	14	19.1	13.5	85	40.5	-	805	710
1 1/4"	85	32	63	180	68	15.5	21.4	16	95	-	49.5	1320	1180
1 1/2"	91	40	75.5	180	74	18.5	21.4	16	105	-	54.5	1875	1740
2"	105	50	91	230	87	22.5	25.7	23.5	125	-	69.5	3130	2930
2 1/2"	140	65	116	270	110	27	32.5	30	162	86	-		6200
3"	148	80	139	270	125	27	32.5	30	178	101	-		9000

BREAKAWAY TORQUES in Nm

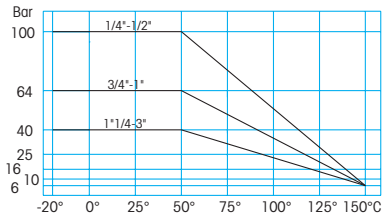
PN - bar	DN size	10 1/4-3/8"	15 1/2"	20 3/4"	25 1"	32 1 1/4"	40 1 1/2"	50 2"	65 2 1/2"	80 3"
	0	1.6	3.2	3.6	4.6	11.5	19	27.5	65	78
	16	1.8	4.3	4.9	5.9	15	24	38	74	87
	40	2.5	5.1	6	6.9	16.7	28.6	42	84	97
	64	3.2	5.6	6.8	8					
	100	3.8	6.5							

Nm

The values in Nm may vary as a function of the seals material, temperature and type of medium. For a firm operation of the various types of actuators, in the different working conditions it is necessary to consider a safety factor of 1.5. During operation, with frequent open and close cycles, the operating torque can decrease considerably in comparison with the initial breakaway torque.

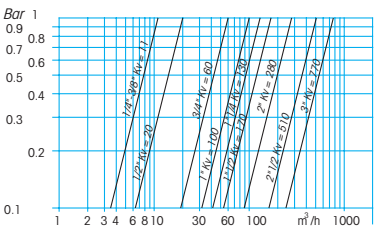
PRESSURE/TEMPERATURE DIAGRAM

At each pressure level corresponds the admissible temperature level.



LOSS OF HEAD DIAGRAM/FLOW RATE

The Kv value is the flow rate causing a pressure drop of 1 bar

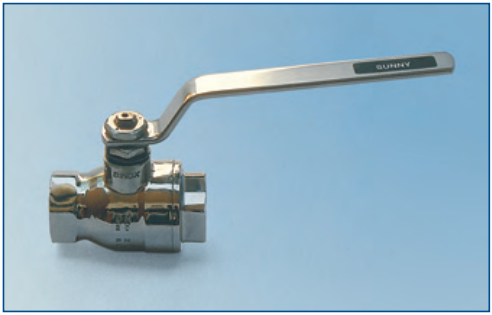


SUNNY

2-PIECE BALL VALVE—FULL BORE

MAIN STANDARD FEATURES

- CONSTRUCTION: AISI 316
- DIAMETER: from DN08 - 1/4" to DN 50 - 2"
- PRESSURES: from 100 BAR to 40 BAR
- TEMPERATURE LIMITS: from –20°C to +150°C
- BLOW-OUT PROOF stem
- CONNECTIONS: F/F UNI-ISO 7/1 Rp – DIN 2999 parallel
  M/F (male UNI-ISO 7/1 R taper, female parallel)
- WRAPPING SEATS
- TRIPLE stem-packing with labyrinth effect and automatic adjustment by Belleville washers
- NON-WETTED parts in stainless steel
- OPERATION devices: lever or T-handle
- Tested for vaccum: 1-10^{-3} STD CC/SEC



STANDARD PART NUMBERS

Art. 2621
female/female w/lever

Art. 2631
female/female w/T-handle up to 1"

Art. 2622
male/female w/lever

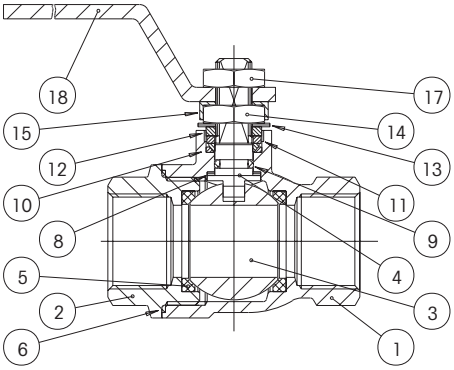
Art. 2632
male/female w/T-handle up to 1"

SPECIAL EXECUTIONS

- 15% GLASS-FILLED PTFE. Temperaure limits –20°C + 175°C
- PTFE+CARBOGRAPHITE: use up to 195°C, for steam up to 180°C
- FEMALE CONNECTIONS: NPT ANSI B1.20.1
- Stems with antistatic device from 3/4" to 2"
- Degreased version
- Available also in SUNNY WP version, abtained from SUN WP series
- On request the valve is available with ATEX certificate (from 3/4" to 2")

GENERAL APPLICATIONS

Use as an ON-OFF valve for: chemical, sanitation and food products, for water and pneumatic installations, gas, water, vacuum. For steam within limited working conditions and with special seals. All parts have to be adequately degreased if the valves have to be used for oxygen. For special utilizations ascertain the compatibility with process features and the corrosion resistance also by the relevant table.



LIST OF COMPONENTS AND MATERIALS

REF.	PART	MATERIAL	DIN MAT.	QTY
1	BODY	AISI 316	1.4408	1
2	FEMALE END	AISI 316	1.4408	1
3	BALL	AISI 316	1.4401	1
4	STEM	AISI 316	1.4401	1
5	SEAT	PTFE	-	2
6	SIDE SEALING RING	PTFE	-	1
8	UPPER SEALING RING	PTFE	-	2
9	STEM O-RING	VITON	-	1
10	UPPER SEALING COUPLE	PTFE	-	1
11	PACKING GLAND	AISI 304	1.4301	1
12	OPERATION STOP	AISI 304	1.4301	1
13	BELLEVILLE WASHERS	AISI 304	1.4301	2
14	STEM RETAINING NUT	AISI 304	1.4301	1
15	FIXING NUT PLATE	AISI 304	1.4301	1
17	LOCKING NUT	AISI 304	1.4301	1
18	LEVER HANDLE	AISI 304	1.4301	1

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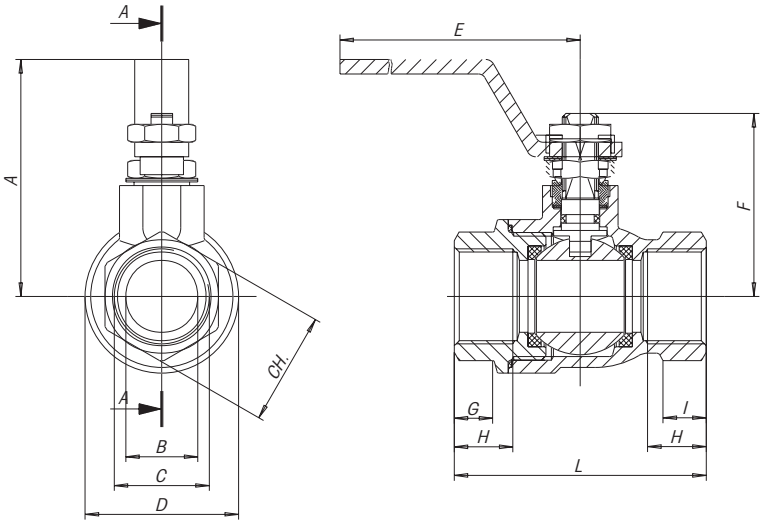
SUNNY

BALL VALVE—REDUCED BORE



C (inch)	A	B	D	E	F	G	H	I	L	hex. key	oct. key	weight in gr MF	weight in gr F/F
1/4"	52	8	29	110	37	8.5	11.4	8	50	21.5	-	230	220
3/8"	52	10	29	110	37	8.5	11.4	8	50	21.5	-	230	205
1/2"	55	15	34	110	42	10	15	9.5	60	26.5	-	315	275
3/4"	66	20	42.5	140	52	11.5	16.3	11.5	70	31.5	-	535	465
1"	70	25	50.5	140	56	14	19.1	13.5	85	40.5	-	805	710
1 1/4"	85	32	63	180	68	15.5	21.4	16	95	-	49.5	1320	1180
1 1/2"	91	40	75.5	180	74	18.5	21.4	16	105	-	54.5	1875	1740
2"	105	50	91	230	87	22.5	25.7	23.5	125	-	69.5	3130	2930

BREAKAWAY TORQUES in Nm

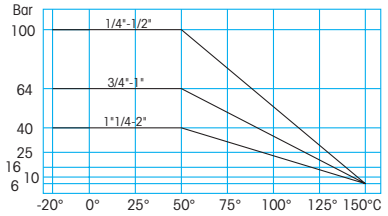
PN - bar	DN / size	10 1/4-3/8"	15 1/2"	20 3/4"	25 1"	32 1 1/4"	40 1 1/2"	50 2"
	0	1.6	3.2	3.6	4.6	11.5	19	27.5
	16	1.8	4.3	4.9	5.9	15	24	38
	40	2.5	5.1	6	6.9	16.7	28.6	42
	64	3.2	5.6	6.8	8			
	100	3.8	6.5					

Nm

The values in Nm may vary as a function of the seals material, temperature and type of medium. For a firm operation of the various types of actuators, in the different working conditions it is necessary to consider a safety factor of 1.5. During operation, with frequent open and close cycles, the operating torque can decrease considerably in comparison with the initial breakaway torque.

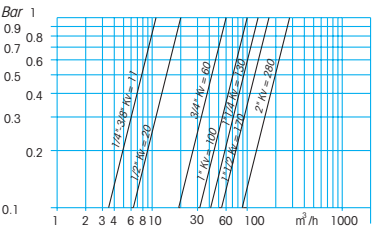
PRESSURE/TEMPERATURE DIAGRAM

At each pressure level corresponds the admissible temperature level.



LOSS OF HEAD DIAGRAM/FLOW RATE

The Kv value is the flow rate causing a pressure drop of 1 bar



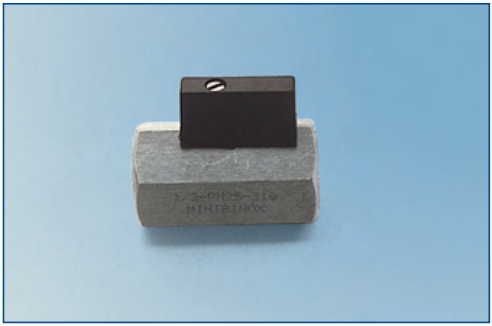
DYSTRYBUTOR W POLSCE:
ECOZAM Sp. z o.o.
ul.Załogowa 17 80-557 Gdańsk
tel.:(+48 58) 522 03 80 fax.(+48 58) 342 20 10

MINIBINOX

BALL VALVE—REDUCED BORE

MAIN STANDARD FEATURES

- CONSTRUCTION: AISI 316
- DIAMETER: from DN06 - 1/8" to DN 15 - 1/2"
- PRESSURES: 25 bar max.
- TEMPERATURE LIMITS: from –20°C to +150°C
- BLOW-OUT PROOF stem
- CONNECTIONS: F/F UNI-ISO 228 (gas parallel)
  M/F UNI-ISO 228 (gas parallel)
- NON-WETTED parts in stainless steel
- OPERATION devices: little lever handle
- FINISH: glazing



STANDARD PART NUMBERS

Art. 2641
female/female

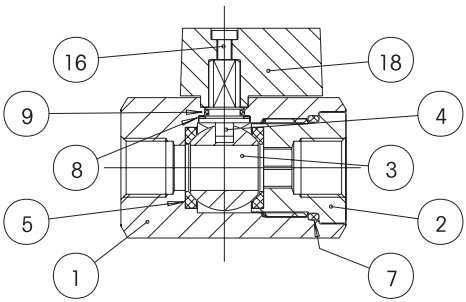
Art. 2642
male/female

SPECIAL EXECUTIONS

- BODY finish: polishing
- For further special requests please consult our technical/commercial service

GENERAL APPLICATIONS

Use as an ON-OFF valve for: in sight segments in industrial installations, heating, ventilation, air conditioning, compressed air, as tank discharger and especially in instrumentation.
For special utilisations ascertain the compatibility with process features and the corrosion resistance also by the relevant table.



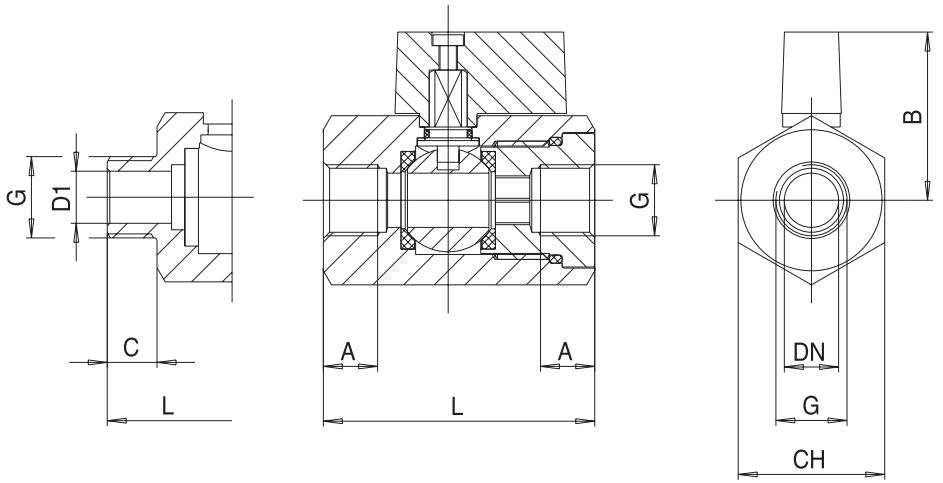
LIST OF COMPONENTS AND MATERIALS

REF.	PART	MATERIAL	DIN MAT.	QTY
1	BODY	AISI 316	1.4408	1
2	FEMALE END	AISI 316	1.4408	1
3	BALL	AISI 316	1.4401	1
4	STEM	AISI 316	1.4401	1
5	SEAT	PTFE	-	2
7	END O-RING	VITON	-	1
8	UPPER SEALING RING	PTFE	-	2
9	STEM O-RING	VITON	-	1
16	LOCKING SCREW	AISI 304	1.4301	
18	LITTLE LEVER HANDLE	NYLON	-	1

DYSTRYBUTOR W POLSCE:
ECOZAM Sp. z o.o.
ul.Załogowa 17 80-557 Gdańsk
tel.:(+48 58) 522 03 80 fax.(+48 58) 342 20 10

MINIBINOX

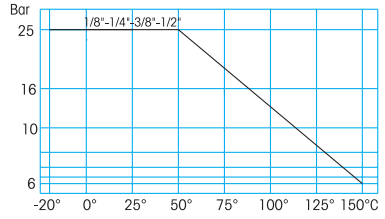
BALL VALVE—REDUCED BORE



G (inch)	DN	A	B	C	L	D1 (MH)	CH	weight in gr FF	weight in gr FF
1/8"	6	10	30	9	50	5.5	27	210	175
1/4"	8	10	30	11	50	8	27	200	170
3/8"	10	10	30	11	50	10	27	190	165
1/2"	10	10	30	11	50	10	27	175	160

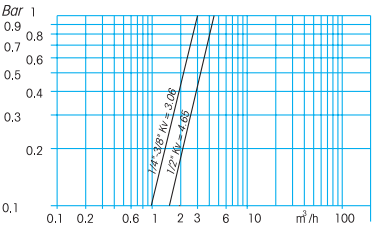
PRESSURE/TEMPERATURE DIAGRAM

At each pressure level corresponds the admissible temperature level.



LOSS OF HEAD DIAGRAM/FLOW RATE

The Kv value is the flow rate causing a pressure drop of 1 bar



MONOBLOCK AISI 316

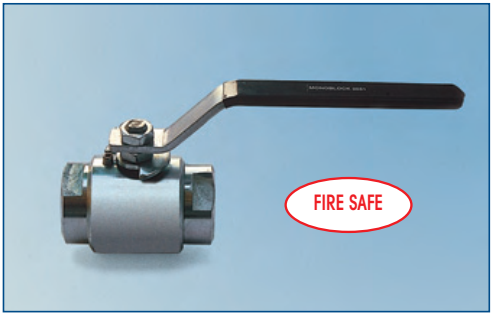
2-PIECE BALL VALVE—FULL BORE

MAIN STANDARD FEATURES

- CONSTRUCTION: AISI 316
- General prescriptions: BS 5351
- Valves certified FIRE SAFE to: BS 6755 - API 6 FA - API 607
- DIAMETER: from DN 8-1/4" to DN 100-4"
- PRESSURES:

series	800	PN64	1/4"	÷ 4" PTFE
series	1500	PN100	1"1/4	÷ 2" PTFE
series	3000	PN64	1/4"	÷ 4" CARBOGRAPHITE
series	3000	PN210	1/4"	÷ 2" DELRIN

- TEMPERATURE LIMITS
  -20°C+ 180°C with PTFE
  + 210°C with PTFE+CARBOGRAPHITE
  + 80°C with DELRIN
- BLOW-OUT PROOF stem with antistatic device
- CONNECTIONS: F/F UNI-ISO 7/1 Rp - DIN 2999 parallel
  SWB ANSI B 16.11 socket weld
  BW ANSI B 16.25 butt weld sch 40
- OPERATION device: lever handle



STANDARD PART NUMBERS

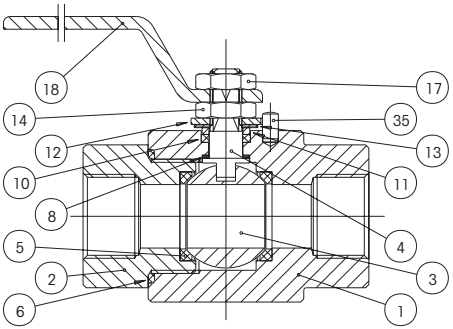
Class 800-1500	Class 3000	Connection	
Art. 2660	Art. 2655	female/female	GAS
Art. 2662	Art. 2656	socket weld	SW
Art. 2663	Art. 2657	butt weld	BW

SPECIAL EXECUTIONS

- Integral weld-on extension nipples SW or BW up to 2" (see separate data sheet)
- FEMALE CONNECTIONS: NPT ANSI B1.20.1
- Degreased version
- Locking device
- On request the valve is available with ATEX certificate
- For further special requests please consult our technical/commercial service

GENERAL APPLICATIONS

Use as an ON-OFF valve for: industrial plants at high pressure and temperature, chemical and petrochemical installations, water and pneumatic installations, for steam up to 195°C. All parts have to be adequately degreased if the valves have to be used for oxygen.
For special utilizations ascertain the compatibility with process features and the corrosion resistance also by the relevant table.

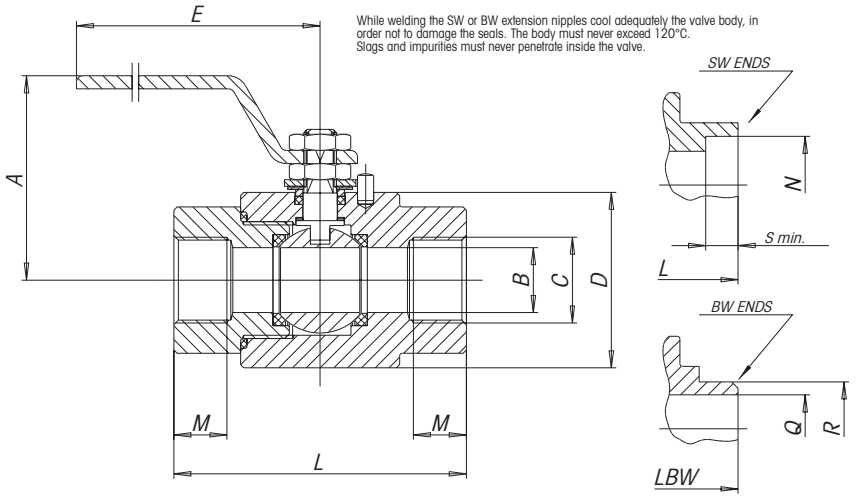


LIST OF COMPONENTS AND MATERIALS

REF.	PART	MATERIAL	DIN MAT.	QTY
1	BODY	AISI 316	1.4401	1
2	FEMALE END	AISI 316	1.4401	1
3	BALL	AISI 316	1.4401	1
4	STEM	AISI 316	1.4401	1
5	SEAT	PTFE		2
6	SIDE SEALING RING	PTFE		1
8	UPPER RING	PTFE		2
10	UPPER SEAL	PTFE		1
11	PACKING GLAND	S.S.		1
12	OPERATION STOP	S.S.		1
13	BELLEVILLE WASHERS	S.S.		2
14	STEM RETAINING NUT	A2		1
17	LOCKING NUT	A2		1
18	LEVER HANDLE	S.S.		1
35	PIN	S.S.		1

MONOBLOCK AISI 316

2-PIECE BALL VALVE—FULL BORE



C (Inch)	A	B	D	E	L	LBW	M	N	S	R	Q	weight in gr. GAS	weight in gr. SW	weight in gr. BW
1/4"	72	10	42	148	67	95	11	14.3	9.53	13.7	9.3	610	610	630
3/8"	72	10	42	148	67	95	11.4	17.8	9.53	17.5	12.5	615	615	650
1/2"	75	15	50	148	75	105	15	22	9.53	21.3	16	930	930	1050
3/4"	85	20	60	180	90	125	16.3	27.3	12.7	26.7	21	1550	1550	1600
1"	95	25	68	180	105	140	19.1	34	12.7	33.4	27	2265	2265	2350
1 1/4"	100	30	81	240	120	160	21.4	42.8	12.7	43	35	3300	3300	3400
2 1/2"	105	38	94	240	135	180	21.4	48.9	12.7	48.3	41	4850	4850	5400
2"	115	48	105	280	155	220	25.7	61.4	15.88	60.3	53	6490	6490	6800
3"	145	73	150	380	205	280	33.3	90	15.88	88.9	78	17000	17000	17500
4"	200	94	185	470	230	330	39.3	115.7	19.1	114.3	103	24000	24000	24500
2 1/2"	130	65	130	380	190	250	30.2	73.81	15.22	73.1	65	13000	13000	13400

BREAKAWAY TORQUES in Nm

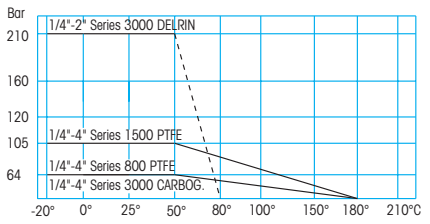
PN - bar	DN	10	15	20	25	32	40	50	80	100
	size	1/4"-3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	3"	4"
	0	10	12	16	21	54	65	86	183	270
	64	15	18.6	23	27	80	83.6	126.6	240	350
	105	17	22.6	25.2	29.6	88	92.9	131	260	389
	160	19.5	24.7	26.6	31.3					
	210	23.4	27.6	30	34.8					

Nm

The values in Nm may vary as a function of the seals material, temperature and type of medium. For a firm operation of the various types of actuators, in the different working conditions it is necessary to consider a safety factor of 1.5. During operation, with frequent open and close cycles, the operating torque can decrease considerably in comparison with the initial breakaway torque.

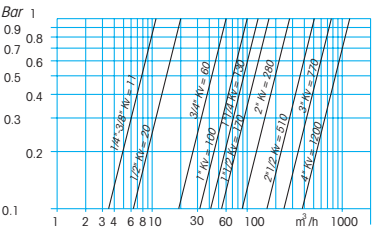
PRESSURE/TEMPERATURE DIAGRAM

At each pressure level corresponds the admissible temperature level.



LOSS OF HEAD DIAGRAM/FLOW RATE

The Kv value is the flow rate causing a pressure drop of 1 bar

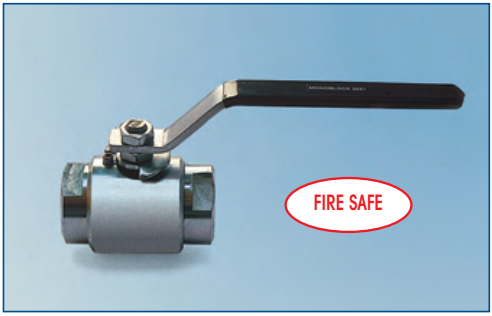


MONOBLOCK A 105

2-PIECE BALL VALVE—FULL BORE

MAIN STANDARD FEATURES

- CONSTRUCTION: ASTM A 105
- General prescriptions: BS 5351
- Valves certified FIRE SAFE to: BS 6755 - API 6 FA - API 607
- DIAMETER: from DN 8-1/4" to DN 100-4"
- PRESSURES:
  series 800 PN 64 1/4" ÷ 4" PTFE
  series 1500 PN 100 1"1/4 ÷ 2" PTFE
  series 3000 PN 64 1/4" ÷ 4" CARBOGRAPHITE
  series 3000 PN 210 1/4" ÷ 2" DELRIN
- TEMPERATURE LIMITS
  -20°C + 180°C with PTFE
  + 210°C with PTFE+CARBOGRAPHITE
  + 80°C with DELRIN
- BLOW-OUT PROOF stem with antistatic device
- CONNECTIONS: F/F UNI-ISO 7/1 Rp - DIN 2999 parallel
  SWB ANSI B 16.11 socket weld
  BW ANSI B 16.25 butt weld sch 40
- OPERATION device: lever handle



STANDARD PART NUMBERS

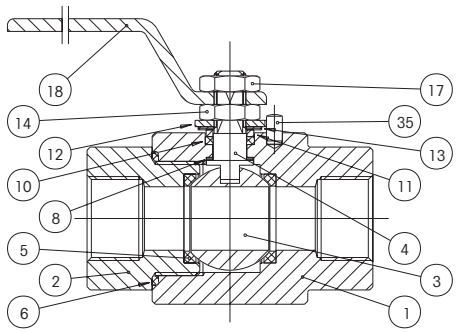
Class 800-1500	Class 3000	Connection	
Art. 2651	Art. 2685	female/female	GAS
Art. 2652	Art. 2686	socket weld	SW
Art. 2653	Art. 2687	butt weld	BW

SPECIAL EXECUTIONS

- Integral weld-on extension nipple SW or BW up to 2" (see separate data sheet)
- FEMALE CONNECTIONS: NPT ANSI B1.20.1
- Locking device
- On request the valve is available with ATEX certificate
- For further special requests please consult our technical/commercial service

GENERAL APPLICATIONS

Use as an ON-OFF valve for: industrial plants at high pressure and temperature, refineries, water and pneumatic installations, for steam up to 195°C.
For special utilizations ascertain the compatibility with process features and the corrosion resistance also by the relevant table.



LIST OF COMPONENTS AND MATERIALS

REF.	PART	MATERIAL	DIN MAT.	QTY
1	BODY	ASTM A105		1
2	FEMALE END	ASTM A105		1
3	BALL	AISI 304	1.4301	1
4	STEM	AISI 304/F6		1
5	SEAT	PTFE		2
6	SIDE SEALING RING	PTFE		1
8	UPPER RING	PTFE		2
10	UPPER SEAL	PTFE		1
11	PACKING GLAND	S.S.		1
12	OPERATION STOP	S.S.		1
13	BELLEVILLE WASHERS	50CrV4		2
14	STEM RETAINING NUT	S.S.		1
17	LOCKING NUT	S.S.		1
18	LEVER HANDLE	S.S.		1
35	PIN	S.S.		1

DYSTRYBUTOR W POLSCE:
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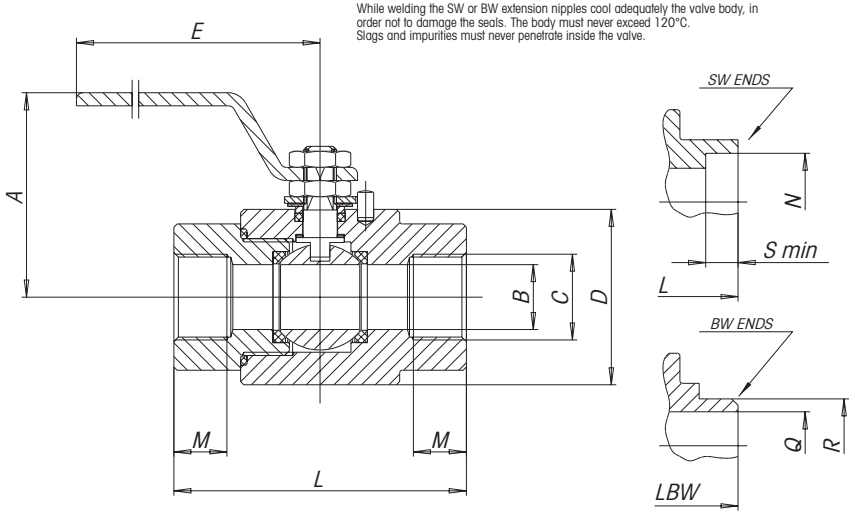
UNI EN ISO 9001: 2000
Progettazione, Sviluppo, Fabbricazione
Certificato n° 0024/3

MONOBLOCK A 105

2-PIECE BALL VALVE—FULL BORE

While welding the SW or BW extension nipples cool adequately the valve body, in order not to damage the seals. The body must never exceed 120°C. Slags and impurities must never penetrate inside the valve.



C (Inch)	A	B	D	E	L	LBW	M	N	S	R	Q	weight in gr. GAS	weight in gr. SW	weight in gr. BW
1/4"	72	10	42	148	67	95	11	14.3	9.53	13.7	9.3	610	610	630
3/8"	72	10	42	148	67	95	11.4	17.8	9.53	17.5	12.5	615	615	650
1/2"	75	15	50	148	75	105	15	22	9.53	21.3	16	930	930	1050
3/4"	85	20	60	180	90	125	16.3	27.3	12.7	26.7	21	1550	1550	1600
1"	95	25	68	180	105	140	19.1	34	12.7	33.4	27	2265	2265	2350
1 1/4"	100	30	81	240	120	160	21.4	42.8	12.7	43	35	3300	3300	3400
2 1/2"	105	38	94	240	135	180	21.4	48.9	12.7	48.3	41	4850	4850	5400
2"	115	48	105	280	155	220	25.7	61.4	15.88	60.3	53	6490	6490	6800
3"	145	73	150	380	205	280	33.3	90	15.88	88.9	78	17000	17000	17500
4"	200	94	185	470	230	330	39.3	115.7	19.1	114.3	103	24000	24000	24500

BREAKAWAY TORQUES in Nm

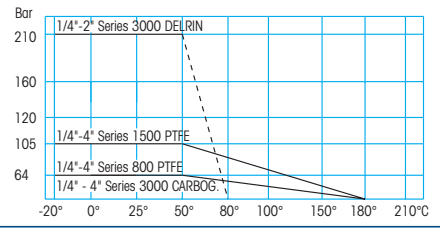
PN - bar	DN	10	15	20	25	32	40	50	80	100
	size	1/4"-3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	3"	4"
	0	10	12	16	21	54	65	86	183	270
	64	15	18.6	23.8	27	80	83.6	126.6	240	350
	105	17	22.6	25.2	29.6	88	92.9	131	260	389
	160	19.5	24.7	26.6	31.3					
	210	23.4	27.6	30	34.8					

Nm

The values in Nm may vary as a function of the seals material, temperature and type of medium. For a firm operation of the various types of actuators, in the different working conditions it is necessary to consider a safety factor of 1.5. During operation, with frequent open and close cycles, the operating torque can decrease considerably in comparison with the initial breakaway torque.

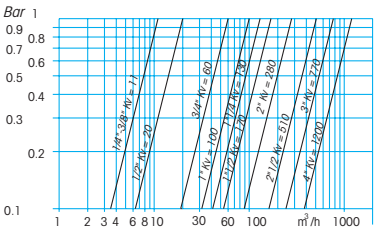
PRESSURE/TEMPERATURE DIAGRAM

At each pressure level corresponds the admissible temperature level.



LOSS OF HEAD DIAGRAM/FLOW RATE

The Kv value is the flow rate causing a pressure drop of 1 bar

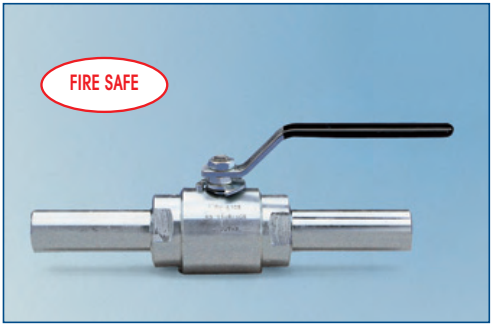


MONOBLOCK TI

2-PIECE BALL VALVE—FULL BORE

MAIN STANDARD FEATURES

- CONSTRUCTION: AISI 316 and ASTM A 105
- General prescriptions: BS 5351
- DIAMETER: from DN 8-1/4" to DN 50-2"
- PRESSURES: series 800 - 1500 (64-105 bar)
- TEMPERATURE LIMITS
  -20°C + 210°C with PTFE+CARBOGRAPHITE
- BLOW-OUT PROOF stem with antistatic device
- CONNECTIONS SWB ANSI B 16.11 socket weld
  BW ANSI B 16.25 butt weld sch 40
- OPERATION device: lever handle



STANDARD PART NUMBERS

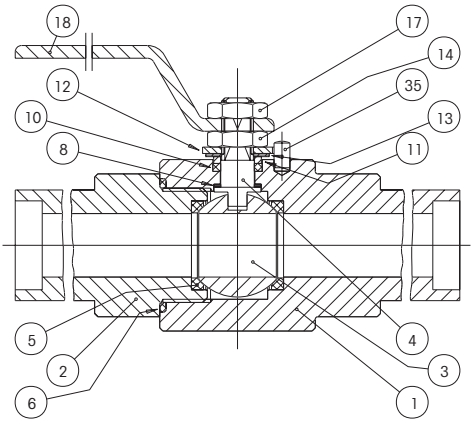
Art. 2679	socket weld	SW AISI 316
Art. 2680	butt weld	BW AISI 316
Art. 2682	socket weld	SW A 105
Art. 2683	butt weld	BW A 105

SPECIAL EXECUTIONS

- PTFE seals with temperature limits from -20°C to +180°C
- BW sch 80 for series 1500 lbs
- On request the valve is available with ATEX certificate
- For further special requests please consult our technical/commercial service

GENERAL APPLICATIONS

Use as an ON-OFF valve for: installations with the features described for MONOBLOCK ball valves in AISI 316 and ASTM A105. For special utilizations ascertain the compatibility with process features and the corrosion resistance also by the relevant table.



LIST OF COMPONENTS AND MATERIALS

REF.	PART	MATERIAL	DIN MAT.	QTY
1	BODY	AISI 316	1.4401	1
2	EXTENSION NIPPLE	AISI 316	1.4401	1
3	BALL	AISI 316	1.4401	1
4	STEM	AISI 316	1.4401	1
5	SEAT	#		2
6	SIDE SEALING RING	#		1
8	UPPER RING	#		2
10	UPPER SEAL	#		1
11	PACKING GLAND	S.S.		1
12	OPERATION STOP	S.S.		1
13	BELLEVILLE WASHERS	S.S.		2
14	STEM RETAINING NUT	A2		1
17	LOCKING NUT	A2		1
18	LEVER HANDLE	S.S.		1
35	PIN	S.S.		1

: PTFE+CARBOGRAPHITE

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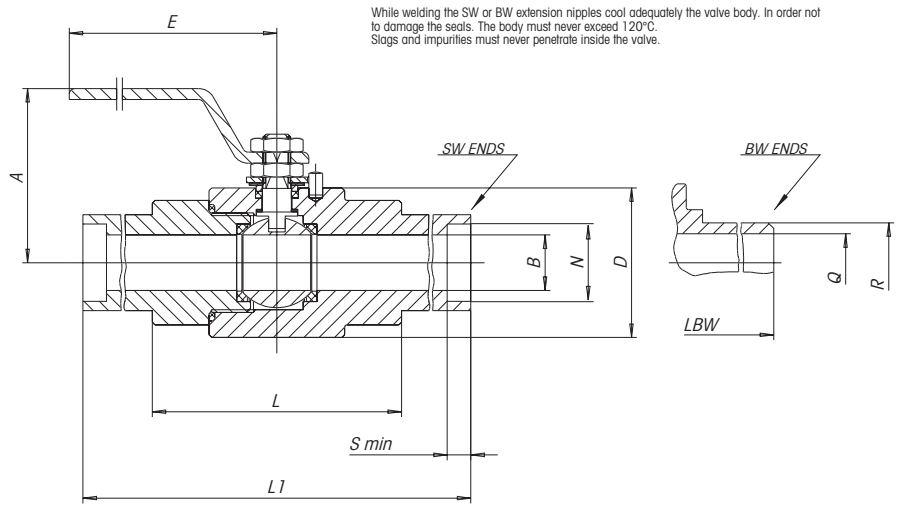
UNI EN ISO 9001: 2000
Progettazione, Sviluppo, Fabbricazione
Certificato n° 0024/3

MONOBLOCK TI

2-PIECE BALL VALVE—FULL BORE



MISURA	A	B	D	E	L	L1	N	S	R	Q	peso in gr. SW	peso in gr. BW
1/4"	72	10	42	148	67	267	14.3	9.53	13.7	9.3	900	750
3/8"	72	10	42	148	67	267	17.8	9.53	17.5	12.5	1050	800
1/2"	75	15	50	148	75	275	22	9.53	21.3	16	1600	1200
3/4"	85	20	60	180	90	290	27.3	12.7	26.7	21	2400	1900
1"	95	25	68	180	105	305	34	12.7	33.4	27	3700	2800
1 1/4"	100	30	81	240	120	320	42.8	12.7	43	35	5500	4000
1 1/2"	105	38	94	240	135	335	48.9	12.7	48.3	41	7200	5700
2"	115	48	105	280	155	355	61.4	15.88	60.3	53	9900	7600

BREAKAWAY TORQUES in Nm

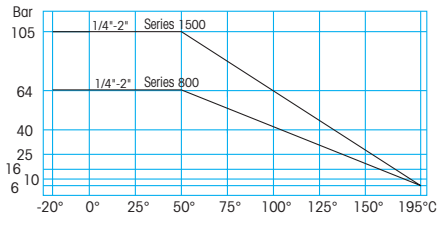
PN - bar	DN size	10 1/4"-3/8"	15 1/2"	20 3/4"	25 1"	32 1 1/4"	40 1 1/2"	50 2"
	0	10	12	16	21	54	65	86
	64	15	18.6	23	27	80	83.6	126.6
	105	17	22.6	25.2	29.6	88	92.9	131

Nm

The values in Nm may vary as a function of the seals material, temperature and type of medium. For a firm operation of the various types of actuators, in the different working conditions it is necessary to consider a safety factor of 1.5. During operation, with frequent open and close cycles, the operating torque can decrease considerably in comparison with the initial breakaway torque.

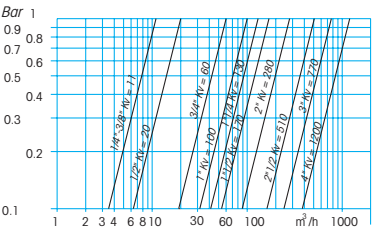
PRESSURE/TEMPERATURE DIAGRAM

At each pressure level corresponds the admissible temperature level.



LOSS OF HEAD DIAGRAM/FLOW RATE

The Kv value is the flow rate causing a pressure drop of 1 bar



TITAN

3-PIECE BALL VALVE—FULL BORE

MAIN STANDARD FEATURES

- CONSTRUCTION: ASTM A351 CF8M (AISI 316)
- DIAMETER: from DN08 - 1/4" to DN 50 - 2"
- PRESSURES: PN 140 from 1/4" to 1"
  PN 100 from 1"1/4 to 2"
- TEMPERATURE LIMITS: from –20°C to +150°C
- BLOW-OUT PROOF stem with antistatic device
- CONNECTIONS: F/F UNI-ISO 7/1 Rp – DIN 2999 parallel Gas
  SW ANSI B 16.11 socket weld
  BW ANSI B 16.25 butt weld sch 40
  F/F NPT ANSI B 1.20.1
- WRAPPING seats
- Stem-packing with labyrinth effect
- Non wetted parts in stainless steel
- OPERATION device: lever handle
- Iso 5211 mounting plate
- Locking device

STANDARD PART NUMBERS

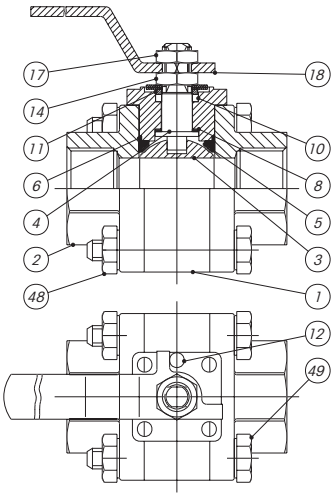
Art. 2805	female/female w/lever GAS and NPT
Art. 2810	SW ANSI B 16.11 w/lever
Art. 2815	BW ANSI B 16.25 w/lever

SPECIAL EXECUTIONS

- 2" 1/2 - 3" SW and GAS with reduced bore
- PTFE + CARBOGRAPHITE up to 180°C
- Degreased version
- On request the valve is available with ATEX certificate
- For further special requests please consult our technical/commercial service

GENERAL APPLICATIONS

Use as an ON-OFF valve for: chemical, water and pneumatic installations, for plants with high interchangeability of components and for steam up to 10 bar. The valves are designed and manufactured in order to allow inspections and maintenances on line by extracting only the body. For special utilizations ascertain the compatibility with process features and the corrosion resistance also by the relevant table.



LIST OF COMPONENTS AND MATERIALS

REF.	PART	MATERIAL	DIN MAT.	QTY
1	BODY	A351-CF8M	1.4401	1
2	FEMALE END	A351-CF8M	1.4401	2
3	BALL	AISI 316	1.4401	1
4	STEM	AISI 316	1.4401	1
5	SEAT	PTFE		2
6	SIDE SEALING RING	PTFE		2
8	UPPER RING	PTFE		1
10	UPPER SEAL	PTFE		1
11	PACKING GLAND	AISI 316	1.4401	1
12	OPERATION STOP	AISI 304	1.4301	1
14	STEM RETAINING NUT	AISI 304	1.4301	1
17	LOCKING NUT	AISI 304	1.4301	1
18	LEVER HANDLE	AISI 304	1.4301	1
48	BOLT	S.S.		4
49	NUT	S.S.		4

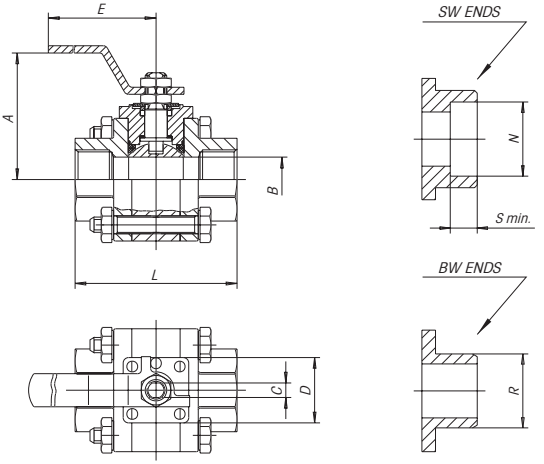
DYSTRYBUTOR W POLSCE:
ECOZAM Sp. z o.o.
ul.Załogowa 17 80-557 Gdańsk
tel.:(+48 58) 522 03 80 fax.(+48 58) 342 20 10

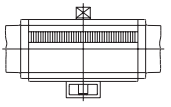
UNI EN ISO 9001: 2000
Progettazione, Sviluppo, Fabbricazione
Certificato n° 0024/3

TITAN

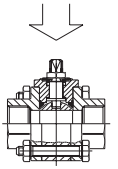
3-PIECE BALL VALVE—FULL BORE

While welding the SW or BW extension nipples cool adequately the valve body. In order not to damage the seals. The body must never exceed 120°C.
Slags and impurities must never penetrate inside the valve.





By removing the lever handle, the TITAN valve can be assembled directly with an actuator by means of a bracket, the stem adapter (kit supplied on request) and by eliminating the operation stop (part. 12).



C (Inch)	A	B	C	D	E	L	N	R	S	ISO 5211	weight in gr. FF
1/4"	49	10.9	4,7	36	95.5	61	17.8	18	9.7	F03	630
3/8"	49	12.7	4,7	36	95.5	61	17.8	18	9.7	F03	630
1/2"	63	16	5	36	120.5	71	22	22.5	12.7	F03	860
3/4"	63	19.6	5	36	120.5	81.5	27.3	28	12.7	F03	1450
1"	68	25	8	42	162.5	91.5	34	34.5	12.7	F04	2810
1 1/4"	80.5	32	8	42	162.5	114.5	42.8	43.5	12.7	F04	3810
1 1/2"	85	38.1	9,5	50	203	122	48.9	49.5	12.7	F05	5080
2"	97.5	50.8	9,5	50	203	142.7	61.4	61.5	15.8	F05	6580

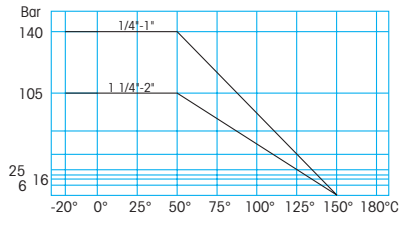
BREAKAWAY TORQUES in Nm

PN - bar	DN / size	10 1/4"	10 3/8"	15 1/2"	20 3/4"	25 1"	32 1 1/4"	40 1 1/2"	50 2"
	0	10	10	12	16	20	32	38	55
	64	15	15	20	24	27	52	70	98
	105	18	18	23	25	29	80	90	125
	140	19	19	24.5	26	31			
						Nm			

The values in Nm may vary as a function of the seals material, temperature and type of medium. For a firm operation of the various types of actuators, in the different working conditions it is necessary to consider a safety factor of 1.5. During operation, with frequent open and close cycles, the operating torque can decrease considerably in comparison with the initial breakaway torque.

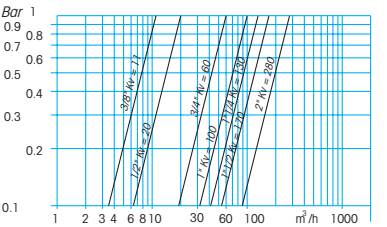
PRESSURE/TEMPERATURE DIAGRAM

At each pressure level corresponds the admissible temperature level.



LOSS OF HEAD DIAGRAM/FLOW RATE

The Kv value is the flow rate causing a pressure drop of 1 bar



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Progettazione, Sviluppo, Fabbricazione
Certificato n° 0024/3

TITAN

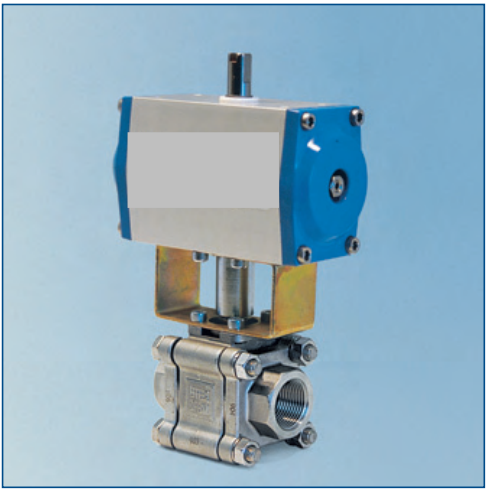
3-PIECE BALL VALVE - FULL BORE WITH **DOUBLE ACTING** PNEUMATIC ACTUATOR

ACTUATOR FEATURES

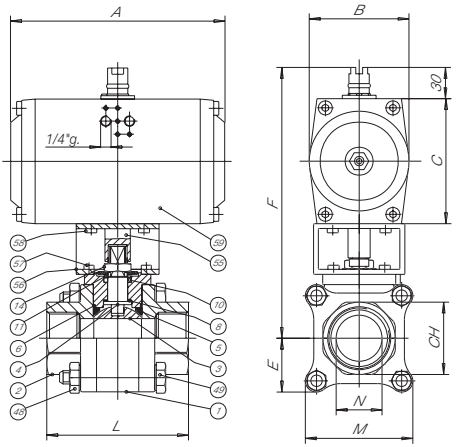
- Rotation angle: 90°
- Standard version for temperature between –20°C and + 90°C
- Supply maximum pressure: 10 bar (8bar for DNA045)
- Nominal pressure: 5,62 bar
- Supply medium: dry filtered compressed air, not necessarily lubricated
- Lubrication: in such a case use a non-detergent or NBR compatible oil

STANDARD VALVE FEATURES

- Working temperature: from –20°C to +150°C
- Working pressure: PN140 from 1/4" to 1", PN100 from 1"1/4 to 2"
- CONNECTIONS: F/F UNI-ISO 7/1 Rp – DIN 2999 parallel GAS
  F/F NPT
  SW ANSI B16.11 socket weld
  BW ANSI B16.25 butt weld sch.40
- BLOW-OUT PROOF stem with antistatic device
- For general applications and special versions see technical table of manual valve
- In the below table the part number and the valve code refer to the standard valve version F/F UNI ISO 7/1 Rp - DIN 2999 parallel GAS



SIZE	PART NUMBER	weight in gr.	A	B	C	E	F	CI oct.	L	M	N	ACTUATOR code	VALVE code	MOUNTING KIT code
1/4"	D61AA20200	1240	110	53	68	21	153	20.5	61	42	10.9	DNA045AZ00	3805X202	K1GA0002
3/8"	D61AA20300	1240	110	53	68	21	153	23.5	61	42	12.7	DNA045AZ00	3805X203	K1GA0002
1/2"	D61AA20400	1825	127	59	74	26	173.5	29.5	71	52	16	DGA052AX00	3805X204	K1GA0304
3/4"	D61AA20500	2475	127	59	74	30	178.5	35	81.5	59.5	19.6	DGA052AX00	3805X205	K1GA0305
1"	D61AA20600	4575	133	70	88	36	198.5	43	91.5	72	25	DGA063AX00	3805X206	K1GA0406
1 1/4"	D61AA20700	5675	133	70	88	40	202	53	114.5	79.5	32	DGA063AX00	3805X207	K1GA0407
1 1/2"	D61AA20800	7730	132	83	100	45	227	61	122	90	38.1	DGA075AX00	3805X208	K1GA0308
2"	D61AA20900	9985	182	91	108	50.5	243.5	76	142.7	101	50.8	DGA083AX00	3805X209	K1GA0308



LIST OF VALVE COMPONENTS AND MATERIALS

REF.	PART	QTY	MATERIAL
1	BODY	1	A351-CF8M
2	FEMALE END	2	A351-CF8M
3	BALL	1	AISI 316
4	STEM	1	AISI 316
5	SEAT	2	PTFE
6	SIDE SEALING RING	2	PTFE
8	UPPER RING	1	PTFE
10	UPPER SEAL	1	PTFE
11	PACKING GLAND	1	AISI 316
14	STEM RETAINING NUT	1	AISI 304
48	BOLT	4	S.S.
49	NUT	4	S.S.
55	ACTUATOR SHAFT	1	C.S.
56	BRACKET	1	C.S.
57	BRACKET/VALVE SCREW	4	8.8
58	BRACKET/ACTUATOR SCREW	4	8.8
59	ACTUATOR	1	

For accessories see relevant catalogue sheet

TITAN

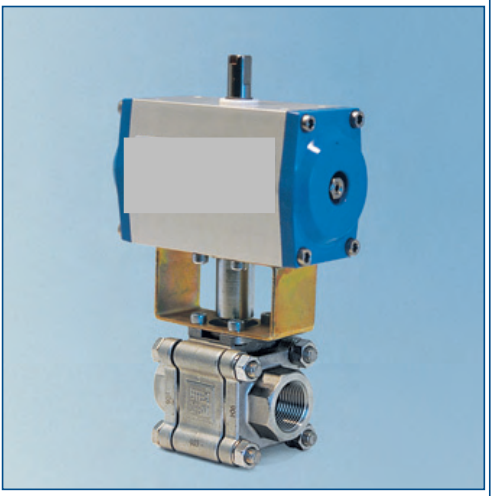
3-PIECE BALL VALVE - FULL BORE WITH **SPRING RETURN** PNEUMATIC ACTUATOR

ACTUATOR FEATURES

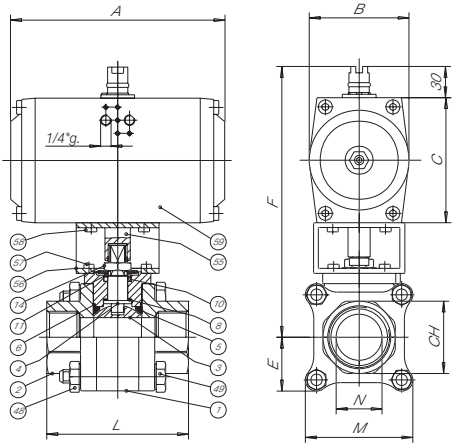
- Rotation angle: 90°
- Standard version for temperature between –20°C and + 90°C
- Supply maximum pressure: 10 bar
- Nominal pressure: 5,62 bar
- Supply medium: dry filtered compressed air, not necessarily lubricated
- Lubrication: in such a case use a non-detergent or NBR compatible oil

STANDARD VALVE FEATURES

- Working temperature: from –20°C to +150°C
- Working pressure: PN140 from 1/4" to 1", PN100 from 1"1/4 to 2"
- CONNECTIONS: F/F UNI-ISO 7/1 Rp – DIN 2999 parallel GAS
  F/F NPT
  SW ANSI B16.11 socket weld
  BW ANSI B16.25 butt weld sch.40
- BLOW-OUT PROOF stem with antistatic device
- For general applications and special versions see technical table of manual valve
- In the below table the part number and the valve code refer to the standard valve version F/F UNI ISO 7/1 Rp - DIN 2999 parallel GAS



SIZE	PART NUMBER	weight in gr.	A	B	C	E	F	CI oct.	L	M	N	ACTUATOR code	VALVE code	MOUNTING KIT code
1/4"	S61AA20200	2320	133	70	88	21	183	20.5	61	42	10.9	SGA0634X00	3805X202	K1GA0102
3/8"	S61AA20300	2320	133	70	88	21	183	23.5	61	42	12.7	SGA0634X00	3805X203	K1GA0102
1/2"	S61AA20400	3345	132	83	100	26	199.5	29.5	71	52	16	SGA0754X00	3805X204	K1GA0404
3/4"	S61AA20500	3995	132	83	100	30	204.5	35	81.5	59.5	19.6	SGA0754X00	3805X205	K1GA0405
1"	S61AA20600	6135	182	91	108	36	218.5	43	91.5	72	25	SGA0834X00	3805X206	K1GA0506
1 1/4"	S61AA20700	7235	182	91	108	40	222	53	114.5	79.5	32	SGA0834X00	3805X207	K1GA0507
1 1/2"	S61AA20800	11600	222	120	140	45	267	61	122	90	38.1	SNA1104X00	3805X208	K1GA0408
2"	S61AA20900	13250	222	120	140	50.5	275.5	76	142.7	101	50.8	SNA1104X00	3805X209	K1GA0408



LIST OF VALVE COMPONENTS AND MATERIALS

REF.	PART	QTY	MATERIAL
1	BODY	1	A351-CF8M
2	FEMALE END	2	A351-CF8M
3	BALL	1	AISI 316
4	STEM	1	AISI 316
5	SEAT	2	PTFE
6	SIDE SEALING RING	2	PTFE
8	UPPER RING	1	PTFE
10	UPPER SEAL	1	PTFE
11	PACKING GLAND	1	AISI 316
14	STEM RETAINING NUT	1	AISI 304
48	BOLT	4	S.S.
49	NUT	4	S.S.
55	ACTUATOR SHAFT	1	C.S.
56	BRACKET	1	C.S.
57	BRACKET/VALVE SCREW	4	8.8
58	BRACKET/ACTUATOR SCREW	4	8.8
59	ACTUATOR	1	

For accessories see relevant catalogue sheet

ARGOS

3-PIECE BALL VALVE—FULL BORE

MAIN STANDARD FEATURES

- CONSTRUCTION: ASTM A105 (A216 WCB)
- DIAMETER: from DN08 - 1/4" to DN 50 - 2"
- PRESSURES: PN 140 from 1/4" to 1"
  PN 100 from 1"1/4 to 2"
- TEMPERATURE LIMITS: from –20°C to +150°C
- BLOW-OUT PROOF stem with antistatic device
- CONNECTIONS: F/F UNI-ISO 7/1 Rp – DIN 2999 parallel Gas
  SW ANSI B 16.11 socket weld
  BW ANSI B 16.25 butt weld sch 40
  F/F NPT ANSI B1.20.1
- WRAPPING seats
- Stem-packing with labyrinth effect
- OPERATION device: lever handle
- ISO 5211 mounting plate
- NON-WETTED parts in stainless steel
- Preset for lever locking

STANDARD PART NUMBERS

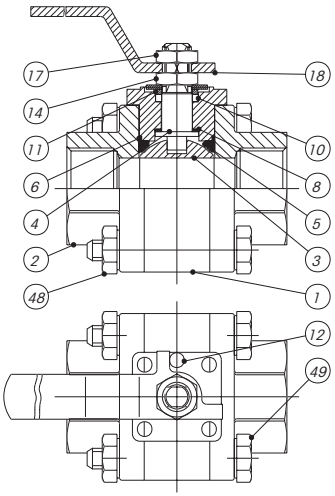
Art. 2806 female/female Gas
Art. 2812 SW ANSI B 16.11
Art. 2816 BW ANSI B 16.25

SPECIAL EXECUTIONS

- PFTE + CARBOGRAPHITE suitable up to 180°C
- On request the valve is available with ATEX certificate
- For further special requests please consult our technical/commercial service

GENERAL APPLICATIONS

Use as an ON-OFF valve for: chemical, water and pneumatic installations, for plants with high interchangeability of componentsand for steam up to 10 bar. The valves are designed and manufactured in order to allow inspections and maintenances on line by extracting only the body. For special utilizations ascertain the compatibility with process features and the corrosion resistance also by the relevant table.



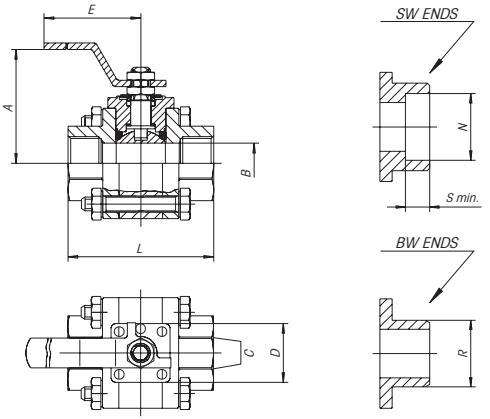
LIST OF COMPONENTS AND MATERIALS

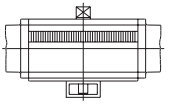
REF.	PART	MATERIAL	DIN MAT.	QTY
1	BODY	A216-WCB		1
2	FEMALE END	A216-WCB		2
3	BALL	AISI 304	1.4301	1
4	STEM	AISI 304	1.4301	1
5	SEAT	PTFE		2
6	SIDE SEALING RING	PTFE		2
8	UPPER RING	PTFE		1
10	UPPER SEAL	PTFE		1
11	PACKING GLAND	AISI 304	1.4401	1
12	OPERATION STOP	AISI 304	1.4301	1
14	STEM RETAINING NUT	AISI 304	1.4301	1
17	LOCKING NUT	AISI 304	1.4301	1
18	LEVER HANDLE	AISI 304	1.4301	1
48	BOLT	S.S.		4
49	NUT	S.S.		4

ARGOS

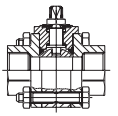
3-PIECE BALL VALVE—FULL BORE

While welding the SW or BW extension nipples cool adequately the valve body. In order not to damage the seals. The body must never exceed 120°C. Slags and impurities must never penetrate inside the valve.





By removing the lever handle, the TITAN valve can be assembled directly with an actuator by means of a bracket, the stem adapter (kit supplied on request) and by eliminating the operation stop (part. 12).



C (Inch)	A	B	C	D	E	L	N	R	S	ISO 5211	weight in gr. FF
1/4"	49	10.9	4,7	36	95.5	61	17.8	18	9.7	F03	630
3/8"	49	12.7	4,7	36	95.5	61	17.8	18	9.7	F03	630
1/2"	63	16	5	36	120.5	71	22	22.5	12.7	F03	860
3/4"	63	19.6	5	36	120.5	81.5	27.3	28.2	12.7	F03	1450
1"	68	25	8	42	162.5	91.5	34	34.5	12.7	F04	2810
1 1/4"	80.5	32	8	42	162.5	114.5	42.8	43.5	12.7	F04	3810
1 1/2"	85	38.1	9,5	50	203	122	48.9	49.5	12.7	F05	5080
2"	97.5	50.8	9,5	50	203	142.7	61.4	61.5	15.8	F05	6580

BREAKAWAY TORQUES in Nm

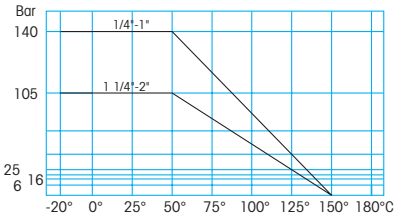
PN - bar	DN	10	10	15	20	25	32	40	50
	size	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
0		10	10	12	16	20	32	38	55
64		15	15	20	24	27	52	70	98
105		18	18	23	25	29	80	90	125
140		19	19	24.5	26	31			

Nm

The values in Nm may vary as a function of the seals material, temperature and type of medium. For a firm operation of the various types of actuators, in the different working conditions it is necessary to consider a safety factor of 1.5. During operation, with frequent open and close cycles, the operating torque can decrease considerably in comparison with the initial breakaway torque.

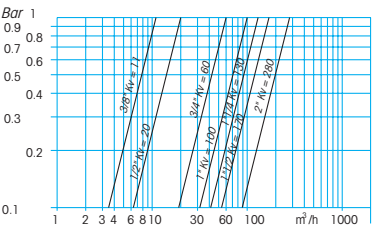
PRESSURE/TEMPERATURE DIAGRAM

At each pressure level corresponds the admissible temperature level.



LOSS OF HEAD DIAGRAM/FLOW RATE

The Kv value is the flow rate causing a pressure drop of 1 bar



ARGOS

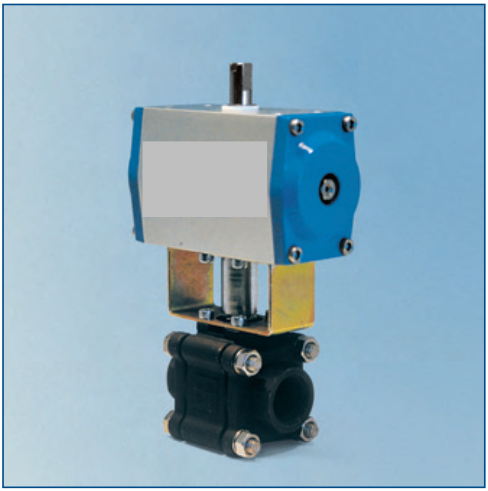
3-PIECE BALL VALVE – FULL BORE WITH **DOUBLE ACTING** PNEUMATIC ACTUATOR

ACTUATOR FEATURES

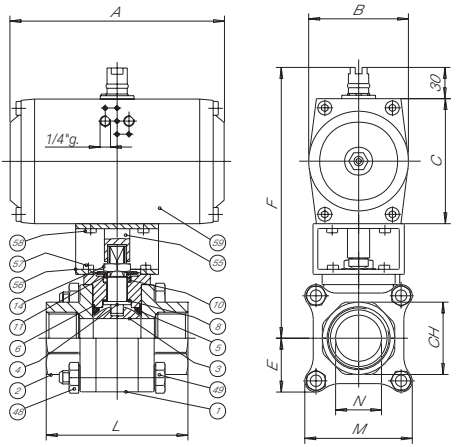
- Rotation angle: 90°
- Standard version for temperature between –20°C and + 90°C
- Supply maximum pressure: 10 bar (8bar for DNA045)
- Nominal pressure: 5,62 bar
- Supply medium: dry filtered compressed air, not necessarily lubricated
- Lubrication: in such a case use a non-detergent or NBR compatible oil

STANDARD VALVE FEATURES

- Working temperature: from –20°C to +150°C
- Working pressure: PN140 from 1/4" to 1", PN100 from 1"1/4 to 2"
- CONNECTIONS: F/F UNI-ISO 7/1 Rp – DIN 2999 parallel GAS
  F/F NPT
  SW ANSI B16.11 socket weld
  BW ANSI B16.25 butt weld sch. 40
- BLOW-OUT PROOF stem with antistatic device
- For general applications and special versions see technical table of manual valve
- In the below table the part number and the valve code refer to the standard valve version F/F UNI ISO 7/1 Rp – DIN 2999 parallel GAS



SIZE	PART NUMBER	weight in gr.	A	B	C	E	F	CI act.	L	M	N	ACTUATOR code	VALVE code	MOUNTING KIT code
1/4"	D71AA20200	1240	110	53	68	21	153	20.5	61	42	10.9	DNA045AZ00	3806X202	K1GA0002
3/8"	D71AA20300	1240	110	53	68	21	153	23.5	61	42	12.7	DNA045AZ00	3806X203	K1GA0002
1/2"	D71AA20400	1825	127	59	74	26	173.5	29.5	71	52	16	DGA052AX00	3806X204	K1GA0304
3/4"	D71AA20500	2475	127	59	74	30	178.5	35	81.5	59.5	19.6	DGA052AX00	3806X205	K1GA0305
1"	D71AA20600	4575	133	70	88	36	198.5	43	91.5	72	25	DGA063AX00	3806X206	K1GA0406
1 1/4"	D71AA20700	5675	133	70	88	40	202	53	114.5	79.5	32	DGA063AX00	3806X207	K1GA0407
1 1/2"	D71AA20800	7730	132	83	100	45	227	61	122	90	38.1	DGA075AX00	3806X208	K1GA0308
2"	D71AA20900	9985	182	91	108	50,5	243.5	76	142.7	101	50.8	DGA083AX00	3806X209	K1GA0308



LIST OF VALVE COMPONENTS AND MATERIALS

REF.	PART	QTY	MATERIAL
1	BODY	1	A216-WCB
2	FEMALE END	2	A216-WCB
3	BALL	1	AISI 316
4	STEM	1	AISI 316
5	SEAT	2	PTFE
6	SIDE SEALING RING	2	PTFE
8	UPPER RING	1	PTFE
10	UPPER SEAL	1	PTFE
11	PACKING GLAND	1	AISI 316
14	STEM RETAINING NUT	1	AISI 304
48	BOLT	4	S.S.
49	NUT	4	S.S.
55	ACTUATOR SHAFT	1	C.S.
56	BRACKET	1	C.S.
57	BRACKET/VALVE SCREW	4	8.8
58	BRACKET/ACTUATOR SCREW	4	8.8
59	ACTUATOR	1	

For accessories see relevant catalogue sheet

ARGOS

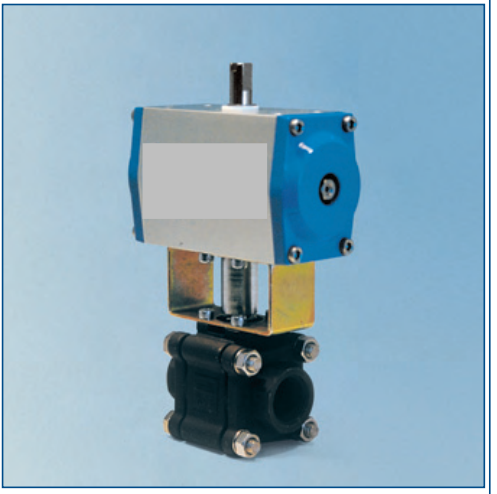
3-PIECE BALL VALVE – FULL BORE WITH **SPRING RETURN** PNEUMATIC ACTUATOR

ACTUATOR FEATURES

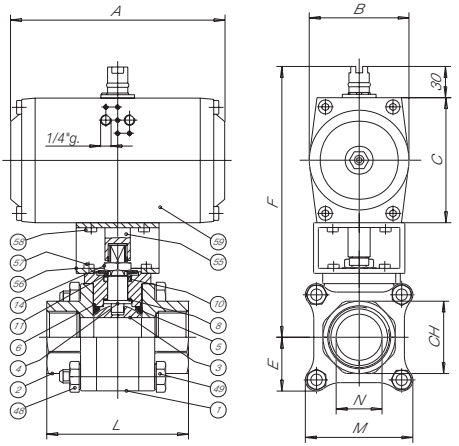
- Rotation angle: 90°
- Standard version for temperature between –20°C and + 90°C
- Supply maximum pressure: 10 bar
- Nominal pressure: 5,62 bar
- Supply medium: dry filtered compressed air, not necessarily lubricated
- Lubrication: in such a case use a non-detergent or NBR compatible oil
- STANDARD: **SPRING CLOSES/AIR OPENS**, clockwise automatic closing

STANDARD VALVE FEATURES

- Working temperature: from –20°C to +150°C
- Working pressure: PN140 from 1/4" to 1", PN100 from 1"1/4 to 2"
- CONNECTIONS: F/F UNI-ISO 7/1 Rp – DIN 2999 parallel GAS
  F/F NPT
  SW ANSI B16.11 socket weld
  BW ANSI B16.25 butt weld sch. 40
- BLOW-OUT PROOF stem with antistatic device
- For general applications and special versions see technical table of manual valve
- In the below table the part number and the valve code refer to the standard valve version F/F UNI ISO 7/1 Rp – DIN 2999 parallel GAS



SIZE	PART NUMBER	weight in gr.	A	B	C	E	F	CI oct.	L	M	N	ACTUATOR code	VALVE code	MOUNTING KIT code
1/4"	S71AA20200	2320	133	70	88	21	183	20.5	61	42	10.9	SGA0634X00	3806X202	K1GA0102
3/8"	S71AA20300	2320	133	70	88	21	183	23.5	61	42	12.7	SGA0634X00	3806X203	K1GA0102
1/2"	S71AA20400	3345	132	83	100	26	199.5	29.5	71	52	16	SGA0754X00	3806X204	K1GA0404
3/4"	S71AA20500	3995	132	83	100	30	204.5	35	81.5	59.5	19.6	SGA0754X00	3806X205	K1GA0405
1"	S71AA20600	6135	182	91	108	36	218.5	43	91.5	72	25	SGA0834X00	3806X206	K1GA0506
1 1/4"	S71AA20700	7235	182	91	108	40	222	53	114.5	79.5	32	SGA0834X00	3806X207	K1GA0507
1 1/2"	S71AA20800	11600	222	120	140	45	267	61	122	90	38.1	SNA1104X00	3806X208	K1GA0408
2"	S71AA20900	13250	222	120	140	50,5	275.5	76	142.7	101	50.8	SNA1104X00	3806X209	K1GA0408



LIST OF VALVE COMPONENTS AND MATERIALS

REF.	PART	QTY	MATERIAL
1	BODY	1	A216-WCB
2	FEMALE END	2	A216-WCB
3	BALL	1	AISI 316
4	STEM	1	AISI 316
5	SEAT	2	PTFE
6	SIDE SEALING RING	2	PTFE
8	UPPER RING	1	PTFE
10	UPPER SEAL	1	PTFE
11	PACKING GLAND	1	AISI 316
14	STEM RETAINING NUT	1	AISI 304
48	BOLT	4	S.S.
49	NUT	4	S.S.
55	ACTUATOR SHAFT	1	C.S.
56	BRACKET	1	C.S.
57	BRACKET/VALVE SCREW	4	8.8
58	BRACKET/ACTUATOR SCREW	4	8.8
59	ACTUATOR	1	

For accessories see relevant catalogue sheet

MOON AISI 316

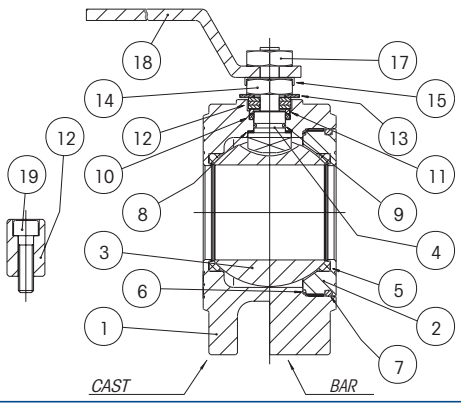
WAFER BALL VALVE – FULL BORE

MAIN STANDARD FEATURES

- CONSTRUCTION: AISI 316
- General prescriptions: BS 5351
- Certifications: FIRE SAFE to: BS 6755 - API 6 FA - API 607
  DVGW for gas
  TÜV for TA Luft
- DIAMETER: from DN 15- to DN 100
  (for DN 100 to DN 200 see SELENE valve)
- PRESSURES: PN 16/40 from DN 15 to DN 32 body machined from bar
  PN 16 from DN 40 to DN 100 body from casting
- TEMPERATURE LIMITS: from –20°C to +180°C
- CONNECTIONS with flanges: UNI 2223-2229 and DIN 2501 BL.1
- FLANGE DRILLING: METRIC
- With contained ball up to DN25
- BLOW-OUT PROOF stem with antistatic device (from DN40)
- WRAPPING SEATS
- TRIPLE stem-packing with labyrinth effect and automatic adjustment by Belleville washers
- ISO 5211 mounting plate for actuators
- NON-WETTED parts in stainless steel
- OPERATION device: lever handle

SPECIAL EXECUTIONS

- 15% GLASS-FILLED PTFE with temperature limits –20°C + 195°C
- PTFE+CARBOGRAPHITE with temperature limits –20°C + 210°C
- Integral seats in PTFE from DN15 to DN100
- From DN 40 to DN 100 PN 25/40 from bar
- From 1/2" to 4" ANSI 150: through drilled flanges
- Reduction gear with manual operation
- Stem extensions: 50 mm or 100 mm
- Yellow lever handle for gas
- Heating jacket (see MOON CR series)
- Drilled ball and unidirectional valve
- Degreased version
- Antistatic device from DN15 to DN32
- On request the valve is available with ATEX certificate
- For further special requests please consult our technical/commercial service



STANDARD PART NUMBERS

Art. 2871

standard

GENERAL APPLICATIONS

Use as an ON-OFF valve for: chemical products, food plants, distribution lines for gas, air, water. Suitable for vacuum $1 \cdot 10^{-3}$ STD CC, steam up to +195°C with PTFE+CARBOGRAPHITE and for industrial installations in general.
Thanks to its reduced face to face dimensions and its intrinsic features it offers wide applications in new projects also as an alternative to the split body valve.
For special utilizations ascertain the compatibility with process features and the corrosion resistance also by the relevant table.

LIST OF COMPONENTS AND MATERIALS

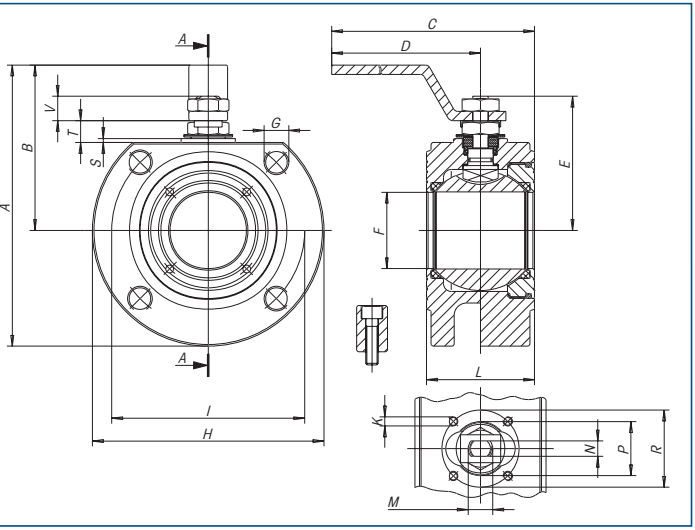
REF.	PART	MATERIAL	DIN MAT.	QTY
1	BODY	AISI 316/CF8M	1.4408/1.4401	1
2	THREADED LOCKING RING	AISI 316	1.4401	1
3	BALL	AISI 316	1.4401	1
4	STEM	AISI 316	1.4401	1
5	SEAT	PTFE		2
6	SIDE SEALING RING	PTFE		1
7	O-RING	NBR		1
8	UPPER RING	PTFE		2
9	STEM O-RING	VITON		1
10	UPPER SEALING COUPLE	PTFE		1
11	PACKING GLAND	AISI 304	1.4301	1
12	OPERATION STOP	S.S.		1
13	BELLEVILLE WASHERS	50CrV4		2
14	STEM RETAINING NUT	S.S.		1
15	FIXING NUT PLATE	AISI 304	1.4301	1
17	LOCKING NUT	S.S.		1
18	LEVER HANDLE	S.S.		1
19	OPERATION STOP SCREW	S.S.		1

DYSTRYBUTOR W POLSCE:
ECOZAM Sp. z o.o.
ul.Załogowa 17 80-557 Gdańsk
tel.:(+48 58) 522 03 80 fax.(+48 58) 342 20 10

UNI EN ISO 9001: 2000
Progettazione, Sviluppo, Fabbricazione
Certificato n° 0024/3

MOON AISI 316

WAFER BALL VALVE – FULL BORE

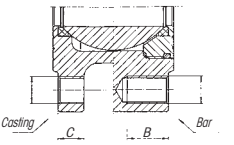


FLANGE DRILLINGS UNI2223-67

SIZE	A	B (PN40)	C (PN16
DN15	M12	14	0
DN20	M12	16	0
DN25	M12	16	0
DN32	M16	18	0
DN40	M16	18	13
DN50	M16	18	15
DN65	M16	20	15
DN80	M16	24	17
DN100	M16	20	17
DN100	M20	24	0

FLANGE DRILLINGS ANSI 150

SIZE	A	B (PN40)	C (PN16
DN15	1/2"	13	0
DN20	1/2"	14	0
DN25	1/2"	16	0
DN32	1/2"	17	0
DN40	1/2"	19	0
DN50	5/8"	20	(*) 16.4 (17.4)
DN65	5/8"	24	(*) 16.4 (20.6)
DN80	5/8"	24	(*) 18.4 (22.2)
DN100	5/8"	24	(*) 18.4 (22.2)



SIZE	A	B	C	D	E	F	G	H	K	I	L	M	N	P	R	S	T	V	N. Holes	PN	ISO	Weight in gr.
DN15	110	65	160	140	48	15	M12	90	M5	65	35	M10	6	25	36	2	8	9	4	40	F03	1345
DN20	120	70	160	140	51	20	M12	100	M5	75	38	M10	6	25	36	2	8	9	4	40	F03	1810
DN25	137	82	200	180	62.5	25	M12	110	M5	85	43	M12	8	30	42	2	11.5	11.5	4	40	F04	2505
DN32	150	85	205	180	67	32	M16	130	M5	100	50	M12	8	30	42	2	9.5	11.5	4	40	F04	3995
DN40	172	102	260	230	80	40	M16	140	M6	110	60	M16	10	35	50	2.5	14	16	4	16	F05	4190
DN50	185	110	265	230	87	50	M16	165	M6	125	70	M16	10	35	50	2.5	14	16	4	16	F05	5790
DN65	225	137.5	400	350	119.5	65	M16	185	M8	145	95	M22	14	55	70	3	18.7	20.8	4	16	F07	10200
DN80	245	150	410	350	129.5	78	M16	200	M8	160	118	M22	14	55	70	3	18.7	20.8	8	16	F07	13700
DN100	275	165	580	508	148.5	96	M16	220	M10	180	140	M27	16	70	102	3	22.2	25.3	8	16	F10	20000

For DN 125 to DN 200 see "SELENE" split body wafer valve

BREAKAWAY TORQUES in Nm

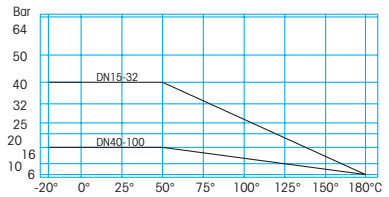
PN - bar \ DN size	15	20	25	32	40	50	65	80	100
0	4	7	10	16	25	35	55	75	150
16	4.8	8.5	11.3	19	28	39	59	84.5	168
25	5.2	9.1	12	20.5	29.5	41.5	62.5	92	180
40	6	10.5	13	22.5	31.5	44	67	99	195

Nm

The values in Nm may vary as a function of the seals material, temperature and type of medium. For a firm operation of the various types of actuators, in the different working conditions it is necessary to consider a safety factor of 1.5. During operation, with frequent open and close cycles, the operating torque can decrease considerably in comparison with the initial breakaway torque.

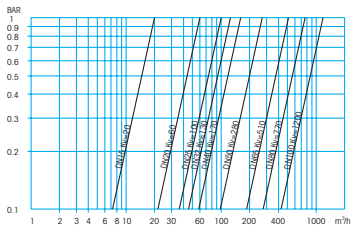
PRESSURE/TEMPERATURE DIAGRAM

At each pressure level corresponds the admissible temperature level.



LOSS OF HEAD DIAGRAM/FLOW RATE

The Kv value is the flow rate causing a pressure drop of 1 bar



MOON AISI 316

WAFER BALL VALVE – FULL BORE WITH **DOUBLE ACTING** PNEUMATIC ACTUATOR

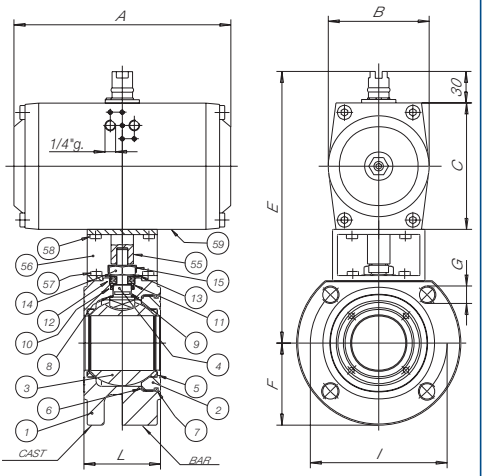
ACTUATOR FEATURES

- Rotation angle: 90°
- Standard version for temperature between –20°C and + 90°C
- Supply maximum pressure: 10 bar (8bar for DNA045)
- Nominal pressure: 5,62 bar
- Supply medium: dry filtered compressed air, not necessarily lubricated
- Lubrication: in such a case use a non-detergent or NBR compatible oil

STANDARD VALVE FEATURES

- General prescriptions: BS 5351, Fire safe BS 6755-API 6 FA- API 607
- Working temperature: from –20°C to +180°C
- Maximum working pressure with actuator: **PN 16** (PN 25 and 40 on request)
- CONNECTIONS with flanges: UNI 2223-2229 AND DIN 2501 BL.1
- FLANGE DRILLING: METRIC
- BLOW-OUT PROOF stem with antistatic device
- For general applications and special versions see technical table of manual valve
- In the below table the part number and the valve code refer to the standard valve **PN 16** and PN 40 where applicable

SIZE	PART NUMBER	weight in gr.	A	B	C	E	F	G	I	L	PN	ACTUATOR code	VALVE code	MOUNTING KIT code
DN15	D41AA60400	1880	110	53	68	167	45	M12	65	35	40	DNA045AZ00	V415X604	K1GA0004
DN20	D41AA60500	2360	110	53	68	170	50	M12	75	38	40	DNA045AZ00	V415X605	K1GA0004
DN25	D41AA60600	3370	127	59	74	202	55	M12	85	43	40	DGA052AX00	V415X606	K1GA0006
DN32	D41AA60700	5450	133	70	88	222	65	M16	100	50	40	DGA063AX00	V415X607	K1GA0007
DN40	D41AA60800	7640	132	83	100	238	70	M16	110	60	16	DGA075AX00	V415X608	K1GA0008
DN50	D41AA60900	10000	182	91	108	253	75	M16	125	70	16	DGA083AX00	V415X609	K1GA0008
DN65	D41AA61000	18715	203	100	117	294	87.5	M16	145	95	16	DGA092AX00	V415X610	K1GA0010
DN80	D41AA61100	24785	222	120	140	327	95	M16	160	118	16	DNA110AX00	V415X611	K1GA0011
DN100	D41AA61200	40800	300	137	160	378	110	M16	180	140	16	DNA127AX00	V415X612	K1GA0012



LIST OF VALVE COMPONENTS AND MATERIALS

REF.	PART	QTY	MATERIAL
1	BODY	1	AISI 316/CF8M
2	THREADED LOCKING RING	1	AISI 316
3	BALL	1	AISI 316
4	STEM	1	AISI 316
5	SEAT	2	PTFE
6	SIDE SEALING RING	1	PTFE
7	O-RING	1	NBR
8	UPPER SEALING RING	2	PTFE
9	STEM O-RING	1	VITON
10	UPPER SEALING COUPLE	1	PTFE
11	PACKING GLAND	1	AISI 304
12	WASHER	1	S.S.
13	BELLEVILLE WASHERS	2	50CrV4
14	STEM RETAINING NUT	1	S.S.
15	FIXING NUT PLATE	1	AISI 304
55	ACTUATOR SHAFT	1	C.S.
56	BRACKET	1	C.S.
57	BRACKET/VALVE SCREW	4	8.8
58	BRACKET/ACTUATOR SCREW	4	8.8
59	ACTUATOR	1	

For accessories see relevant catalogue sheet

MOON AISI 316

WAFER BALL VALVE – FULL BORE WITH **SPRING RETURN** PNEUMATIC ACTUATOR

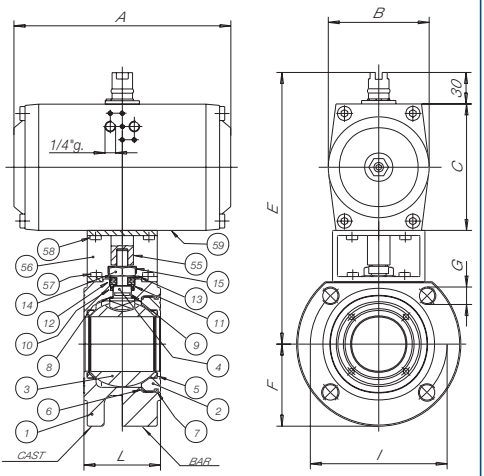
ACTUATOR FEATURES

- Rotation angle: 90°
- Standard version for temperature between –20°C and + 90°C
- Supply maximum pressure: 10 bar (8bar for DNA045)
- Nominal pressure: 5,62 bar
- Supply medium: dry filtered compressed air, not necessarily lubricated
- Lubrication: in such a case use a non-detergent or NBR compatible oil

STANDARD VALVE FEATURES

- General prescriptions: BS 5351, Fire safe BS 6755-API 6 FA- API 607
- Working temperature: from –20°C to +180°C
- Maximum working pressure with actuator: **PN 16** (PN 25 and 40 on request)
- CONNECTIONS with flanges: UNI 2223-2229 AND DIN 2501 BL.1
- FLANGE DRILLING: METRIC
- BLOW-OUT PROOF stem with antistatic device
- For general applications and special versions see technical table of manual valve
- In the below table the part number and the valve code refer to the standard valve **PN 16** and PN 40 where applicable

SIZE	PART NUMBER	weight in gr.	A	B	C	E	F	G	I	L	PN	ACTUATOR code	VALVE code	CÓD. KIT
DN15	S41AA60400	2320	127	59	74	183	45	M12	65	35	40	SGA0524X00	V415X604	K1GA0104
DN20	S41AA60500	3360	133	70	88	200	50	M12	75	38	40	SGA0634X00	V415X605	K1GA0005
DN25	S41AA60600	4780	132	83	100	228	55	M12	85	43	40	SGA0754X00	V415X606	K1GA0106
DN32	S41AA60700	6900	182	91	108	242	65	M16	100	50	40	SGA0834X00	V415X607	K1GA0107
DN40	S41AA60800	9370	203	100	117	255	70	M16	110	60	16	SGA0924X00	V415X608	K1GA0108
DN50	S41AA60900	13020	222	120	140	285	75	M16	125	70	16	SNA1104X00	V415X609	K1GA0108
DN65	S41AA61000	25120	300	137	160	337	87.5	M16	145	95	16	SNA1274X00	V415X610	K1GA0110
DN80	S41AA61100	38390	380	172	198	395	95	M16	160	118	16	SNA1604X00	V415X611	K1GA0111
DN100	S41AA61200	51270	380	172	198	426	110	M16	180	140	16	SNA1605X00	V415X612	K1GA0112



LIST OF VALVE COMPONENTS AND MATERIALS

REF.	PART	QTY	MATERIAL
1	BODY	1	AISI 316/CF8M
2	THREADED LOCKING RING	1	AISI 316
3	BALL	1	AISI 316
4	STEM	1	AISI 316
5	SEAT	2	PTFE
6	SIDE SEALING RING	1	PTFE
7	O-RING	1	NBR
8	UPPER SEALING RING	2	PTFE
9	STEM O-RING	1	VITON
10	UPPER SEALING COUPLE	1	PTFE
11	PACKING GLAND	1	AISI 304
12	WASHER	1	S.S.
13	BELLEVILLE WASHERS	2	50CrV4
14	STEM RETAINING NUT	1	S.S.
15	FIXING NUT PLATE	1	AISI 304
55	ACTUATOR SHAFT	1	C.S.
56	BRACKET	1	C.S.
57	BRACKET/VALVE SCREW	4	8.8
58	BRACKET/ACTUATOR SCREW	4	8.8
59	ACTUATOR	1	

For accessories see relevant catalogue sheet

MOON AISI 304

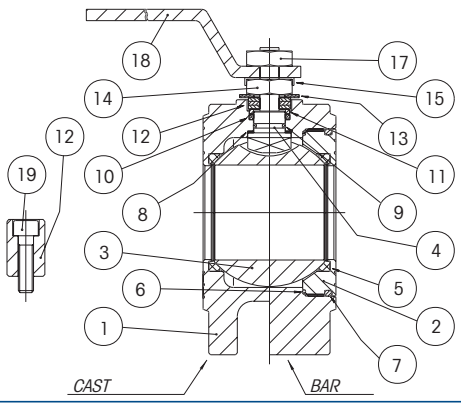
WAFER BALL VALVE – FULL BORE

MAIN STANDARD FEATURES

- CONSTRUCTION: AISI 304
- General prescriptions: BS 5351
- Certifications: FIRE SAFE to: BS 6755 - API 6 FA - API 607
  DVGW for gas
  TÜV for TA Luft
- DIAMETER: from DN 15 to DN 100
- PRESSURES: PN 16/40 from DN 15 to DN 32 body machined from bar
  PN 16 from DN 40 to DN 100 body from casting
- TEMPERATURE LIMITS: from –20°C to +180°C
- CONNECTIONS with flanges: UNI 2223-2229 and DIN 2501 BL.1
- FLANGE DRILLING: METRIC
- With contained ball up to DN25
- BLOW-OUT PROOF stem with antistatic device (from DN40)
- WRAPPING SEATS
- TRIPLE stem-packing with labyrinth effect and automatic adjustment by Belleville washers
- ISO 5211 mounting plate for actuators
- NON-WETTED parts in stainless steel
- OPERATION device: lever handle

SPECIAL EXECUTIONS

- 15% GLASS-FILLED PTFE with temperature limits –20°C + 195°C
- PTFE+CARBOGRAPHITE with temperature limits –20°C + 210°C
- Integral seats in PTFE from DN15 TO DN100
- From DN40 to DN100 PN25/40 from bar
- From 1/2" to 4" ANSI 150: through drilled flanges
- Reduction gear with manual operation
- Stem extensions: 50 mm or 100 mm
- Yellow lever handle for gas
- Heating jacket (see MOON CR series)
- Drilled ball and unidirectional valve
- Degreased version
- Antistatic device from DN15 to DN32
- On request the valve is available with ATEX certificate
- For further special requests please consult our technical/commercial service



STANDARD PART NUMBERS

Art. 2861

standard

GENERAL APPLICATIONS

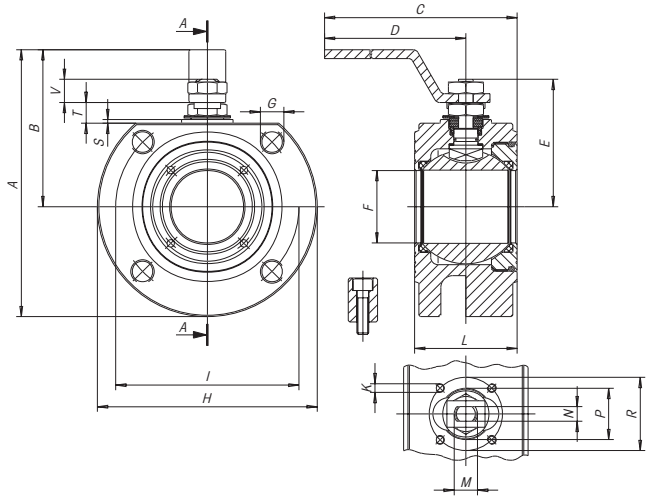
Use as an ON-OFF valve for: chemical products, food plants, distribution lines for gas, air, water. Suitable for vacuum $1 \cdot 10^{-3}$ STD CC, steam up to +195°C with PTFE+CARBOGRAPHITE and for industrial installations in general.
Thanks to its reduced face to face dimensions and its intrinsic features it offers wide applications in new projects also as an alternative to the split body valve.
For special utilizations ascertain the compatibility with process features and the corrosion resistance also by the relevant table.

LIST OF COMPONENTS AND MATERIALS

REF.	PART	MATERIAL	DIN MAT.	QTY
1	BODY	AISI 304/CF8	1.4308	1
2	THREADED LOCKING RING	AISI 304	1.4301	1
3	BALL	AISI 304	1.4301	1
4	STEM	AISI 304	1.4301	1
5	SEAT	PTFE		2
6	SIDE SEALING RING	PTFE		1
7	O-RING	NBR		1
8	UPPER RING	PTFE		2
9	STEM O-RING	VITON		1
10	UPPER SEALING COUPLE	PTFE		1
11	PACKING GLAND	AISI 304	1.4301	1
12	OPERATION STOP	AISI 304	1.4301	1-3
13	BELLEVILLE WASHERS	AISI 301	1.4310	2
14	STEM RETAINING NUT	AISI 304	1.4301	1
15	FIXING NUT PLATE	AISI 304	1.4301	1
17	LOCKING NUT	AISI 304	1.4301	1
18	LEVER HANDLE	AISI 304	1.4301	1
19	OPERATION STOP SCREW	AISI 304	1.4301	1

MOON AISI 304

WAFER BALL VALVE – FULL BORE

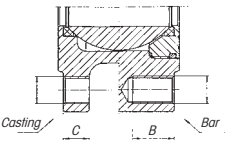


FLANGE DRILLINGS UNI2223-67

SIZE	A	B (PN40)	C (PN16
DN15	M12	14	0
DN20	M12	16	0
DN25	M12	16	0
DN32	M16	18	0
DN40	M16	18	13
DN50	M16	18	15
DN65	M16	20	15
DN80	M16	24	17
DN100	M16	20	17
DN100	M20	24	0

FLANGE DRILLINGS ANSI 150

SIZE	A	B (PN40)	C (PN16
DN15	1/2"	13	0
DN20	1/2"	14	0
DN25	1/2"	16	0
DN32	1/2"	17	0
DN40	1/2"	19	0
DN50	5/8"	20	(*) 16.4 (17.4)
DN65	5/8"	24	(*) 16.4 (20.6)
DN80	5/8"	24	(*) 18.4 (22.2)
DN100	5/8"	24	(*) 18.4 (22.2)



SIZE	A	B	C	D	E	F	G	H	K	I	L	M	N	P	R	S	T	V	N. Holes	PN	ISO	Weight in gr.
DN15	110	65	160	140	48	15	M12	90	M5	65	35	M10	6	25	36	2	8	9	4	40	F03	1345
DN20	120	70	160	140	51	20	M12	100	M5	75	38	M10	6	25	36	2	8	9	4	40	F03	1810
DN25	137	82	200	180	62.5	25	M12	110	M5	85	43	M12	8	30	42	2	11.5	11.5	4	40	F04	2505
DN32	150	85	205	180	67	32	M16	130	M5	100	50	M12	8	30	42	2	9.5	11.5	4	40	F04	3995
DN40	172	102	260	230	80	40	M16	140	M6	110	60	M16	10	35	50	2.5	14	16	4	16	F05	4190
DN50	185	110	265	230	87	50	M16	165	M6	125	70	M16	10	35	50	2.5	14	16	4	16	F05	5790
DN65	225	137.5	400	350	119.5	65	M16	185	M8	145	95	M22	14	55	70	3	18.7	20.8	4	16	F07	10200
DN80	245	150	410	350	129.5	78	M16	200	M8	160	118	M22	14	55	70	3	18.7	20.8	8	16	F07	13700
DN100	275	165	580	508	148.5	96	M16	220	M10	180	140	M27	16	70	102	3	22.2	25.3	8	16	F10	20000

BREAKAWAY TORQUES in Nm

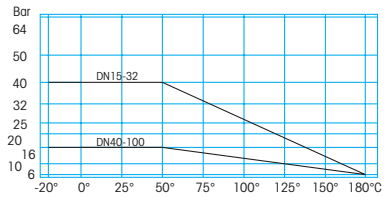
PN - bar \ DN size	15	20	25	32	40	50	65	80	100
0	4	7	10	16	25	35	55	75	150
16	4.8	8.5	11.3	19	28	39	59	84.5	168
25	5.2	9.1	12	20.5	29.5	41.5	62.5	92	180
40	6	10.5	13	22.5	31.5	44	67	99	195

Nm

The values in Nm may vary as a function of the seals material, temperature and type of medium. For a firm operation of the various types of actuators, in the different working conditions it is necessary to consider a safety factor of 1.5. During operation, with frequent open and close cycles, the operating torque can decrease considerably in comparison with the initial breakaway torque.

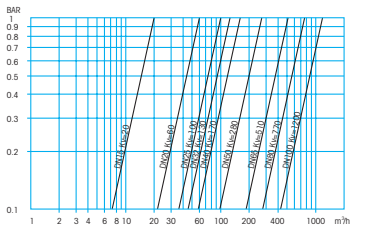
PRESSURE/TEMPERATURE DIAGRAM

At each pressure level corresponds the admissible temperature level.



LOSS OF HEAD DIAGRAM/FLOW RATE

The Kv value is the flow rate causing a pressure drop of 1 bar



MOON AISI 304

WAFER BALL VALVE – FULL BORE WITH **DOUBLE ACTING** PNEUMATIC ACTUATOR

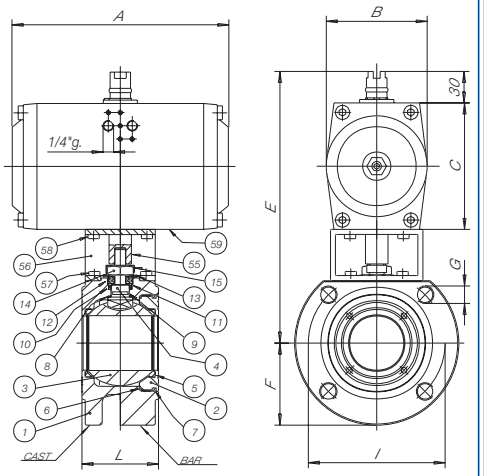
ACTUATOR FEATURES

- Rotation angle: 90°
- Standard version for temperature between –20°C and + 90°C
- Supply maximum pressure: 10 bar (8bar for DNA045)
- Nominal pressure: 5,62 bar
- Supply medium: dry filtered compressed air, not necessarily lubricated
- Lubrication: in such a case use a non-detergent or NBR compatible oil

STANDARD VALVE FEATURES

- General prescriptions: BS 5351, Fire safe BS 6755-API 6 FA- API 607
- Working temperature: from –20°C to +180°C
- Maximum working pressure with actuator: **PN 16** (PN 25 and 40 on request)
- CONNECTIONS with flanges: UNI 2223-2229 AND DIN 2501 BL.1
- FLANGE DRILLING: METRIC
- BLOW-OUT PROOF stem with antistatic device
- For general applications and special versions see technical table of manual valve
- In the below table the part number and the valve code refer to the standard valve **PN 16** and PN 40 where applicable

SIZE	PART NUMBER	weight in gr.	A	B	C	E	F	G	I	L	PN	ACTUATOR code	VALVE code	MOUNTING KIT code
DN15	D81AA60400	1880	110	53	68	167	45	M12	65	35	40	DNA045AZ00	V861X604	K1GA0004
DN20	D81AA60500	2360	110	53	68	170	50	M12	75	38	40	DNA045AZ00	V861X605	K1GA0004
DN25	D81AA60600	3370	127	59	74	202	55	M12	85	43	40	DGA052AX00	V861X606	K1GA0006
DN32	D81AA60700	5450	133	70	88	222	65	M16	100	50	40	DGA063AX00	V861X607	K1GA0007
DN40	D81AA60800	7640	132	83	100	238	70	M16	110	60	16	DGA075AX00	V861X608	K1GA0008
DN50	D81AA60900	10000	182	91	108	253	75	M16	125	70	16	DGA083AX00	V861X609	K1GA0008
DN65	D81AA61000	18715	203	100	117	294	87.5	M16	145	95	16	DGA092AX00	V861X610	K1GA0010
DN80	D81AA61100	24785	222	120	140	327	95	M16	160	118	16	DNA110AX00	V861X611	K1GA0011
DN100	D81AA61200	40800	300	137	160	378	110	M16	180	140	16	DNA127AX00	V861X612	K1GA0012



LIST OF VALVE COMPONENTS AND MATERIALS

REF.	PART	QTY	MATERIAL
1	BODY	1	AISI 304/CF8
2	THREADED LOCKING RING	1	AISI 304
3	BALL	1	AISI 304
4	STEM	1	AISI 304
5	SEAT	2	PTFE
6	SIDE SEALING RING	1	PTFE
7	O-RING	1	NBR
8	UPPER SEALING RING	2	PTFE
9	STEM O-RING	1	VITON
10	UPPER SEALING COUPLE	1	PTFE
11	PACKING GLAND	1	AISI 304
12	WASHER	1	AISI 304
13	BELLEVILLE WASHERS	2	AISI 301
14	STEM RETAINING NUT	1	AISI 304
15	FIXING NUT PLATE	1	AISI 304
55	ACTUATOR SHAFT	1	C.S.
56	BRACKET	1	C.S.
57	BRACKET/VALVE SCREW	4	8.8
58	BRACKET/ACTUATOR SCREW	4	8.8
59	ACTUATOR	1	

For accessories see relevant catalogue sheet

MOON AISI 304

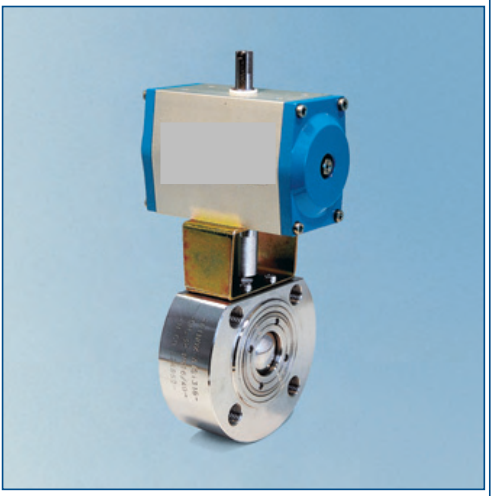
WAFER BALL VALVE – FULL BORE WITH **SPRING RETURN** PNEUMATIC ACTUATOR

ACTUATOR FEATURES

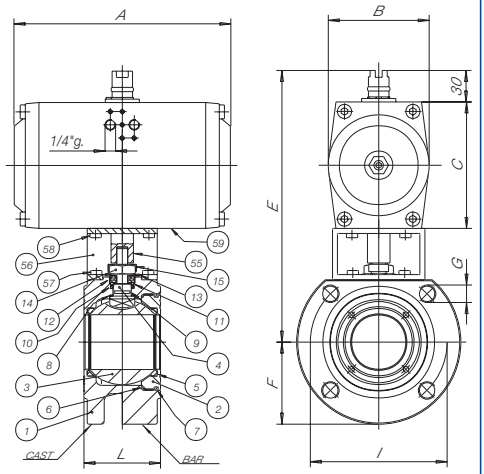
- Rotation angle: 90°
- Standard version for temperature between –20°C and + 90°C
- Supply maximum pressure: 10 bar
- Nominal pressure: 5,62 bar
- Supply medium: dry filtered compressed air, not necessarily lubricated
- Lubrication: in such a case use a non-detergent or NBR compatible oil
- STANDARD: **SPRING CLOSES/AIR OPENS**, clockwise automatic closing

STANDARD VALVE FEATURES

- General prescriptions: BS 5351, Fire safe BS 6755-API 6 FA- API 607
- Working temperature: from –20°C to +180°C
- Maximum working pressure with actuator: **PN 16** (PN 25 and 40 on request)
- CONNECTIONS with flanges: UNI 2223-2229 AND DIN 2501 BL.1
- FLANGE DRILLING: METRIC
- BLOW-OUT PROOF stem with antistatic device
- For general applications and special versions see technical table of manual valve
- In the below table the part number and the valve code refer to the standard valve **PN 16** and PN 40 where applicable



SIZE	PART NUMBER	weight in gr.	A	B	C	E	F	G	I	L	PN	ACTUATOR code	VALVE code	MOUNTING KIT code
DN15	S81AA60400	2320	127	59	74	183	45	M12	65	35	40	SGA0524X00	V861X604	K1GA0104
DN20	S81AA60500	3360	133	70	88	200	50	M12	75	38	40	SGA0634X00	V861X605	K1GA0005
DN25	S81AA60600	4780	132	83	100	228	55	M12	85	43	40	SGA0754X00	V861X606	K1GA0106
DN32	S81AA60700	6900	182	91	108	242	65	M16	100	50	40	SGA0834X00	V861X607	K1GA0107
DN40	S81AA60800	9370	203	100	117	255	70	M16	110	60	16	SGA0924X00	V861X608	K1GA0108
DN50	S81AA60900	13020	222	120	140	285	75	M16	125	70	16	SNA1104X00	V861X609	K1GA0108
DN65	S81AA61000	25120	300	137	160	337	87.5	M16	145	95	16	SNA1274X00	V861X610	K1GA0110
DN80	S81AA61100	38390	380	172	198	395	95	M16	160	118	16	SNA1604X00	V861X611	K1GA0111
DN100	S81AA61200	51270	380	172	198	426	110	M16	180	140	16	SNA1605X00	V861X612	K1GA0112



LIST OF VALVE COMPONENTS AND MATERIALS

REF.	PART	QTY	MATERIAL
1	BODY	1	AISI 304/CF8
2	THREADED LOCKING RING	1	AISI 304
3	BALL	1	AISI 304
4	STEM	1	AISI 304
5	SEAT	2	PTFE
6	SIDE SEALING RING	1	PTFE
7	O-RING	1	NBR
8	UPPER SEALING RING	2	PTFE
9	STEM O-RING	1	VITON
10	UPPER SEALING COUPLE	1	PTFE
11	PACKING GLAND	1	AISI 304
12	WASHER	1	AISI 304
13	BELLEVILLE WASHERS	2	AISI 301
14	STEM RETAINING NUT	1	AISI 304
15	FIXING NUT PLATE	1	AISI 304
55	ACTUATOR SHAFT	1	C.S.
56	BRACKET	1	C.S.
57	BRACKET/VALVE SCREW	4	8.8
58	BRACKET/ACTUATOR SCREW	4	8.8
59	ACTUATOR	1	

For accessories see relevant catalogue sheet

MOON A 105

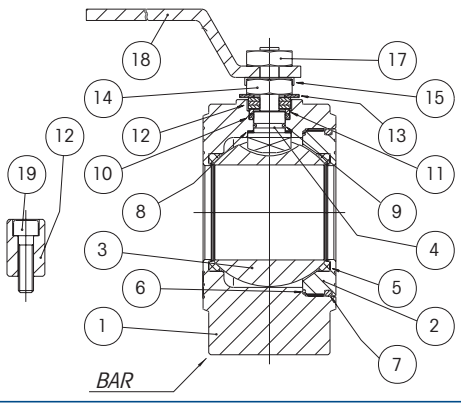
WAFER BALL VALVE – FULL BORE

MAIN STANDARD FEATURES

- CONSTRUCTION: ASTM A 105
- General prescriptions: BS 5351
- Certifications FIRE SAFE to: BS 6755 - API 6 FA - API 607
  DVGW for gas
  TÜV for TA Luff
- DIAMETER: from DN 15 to DN 100
  (for DN 125 to DN 200 see SELENE valve)
- PRESSURES: PN 16/40 from DN 15 to DN 50 and DN 80
  PN 16 for DN 65 and DN 100
- TEMPERATURE LIMITS: from –10°C to +180°C
- CONNECTIONS with flanges: UNI 2223-2229 and DIN 2501 BL.1
- FLANGE DRILLING: METRIC
- With contained ball up to DN25
- BLOW-OUT PROOF stem with antistatic device (from DN40)
- WRAPPING SEATS
- TRIPLE stem-packing with labyrinth effect and automatic adjustment by Belleville washers
- ISO 5211 mounting plate for actuators
- OPERATION device: lever handle

SPECIAL EXECUTIONS

- 15% GLASS-FILLED PTFE with temperature limits –10°C + 195°C
- PTFE+CARBOGRAPHITE with temperature limits –10°C + 210°C
- Integral seats in PTFE from DN 15 to DN 100
- DN 65 and DN 100 PN 25/40: metric drilled flanges
- From 1/2" to 4" ANSI 150: through drilled flanges
- Reduction gear with manual operation
- Stem extensions: 50 mm or 100 mm
- Yellow lever handle for gas
- Heating jacket (see MOON CR series)
- Drilled ball and unidirectional valve
- Antistatic device from DN15 to DN32
- On request the valve is available with ATEX certificate
- Body in LF2 up to -20°C
- For further special requests please consult our technical/commercial service



STANDARD PART NUMBERS

Art. 2881	Art. 2891 (PN16)
standard	with ball in brass

GENERAL APPLICATIONS

Use as an ON-OFF valve for: distribution lines for gas, air, water. Suitable for vacuum $1 \cdot 10^{-3}$ STD CC, steam up to +195°C with PTFE+CARBOGRAPHITE and for industrial installations in general. Thanks to its reduced face to face dimensions and its intrinsic features it offers wide applications in new projects also as an alternative to the split body valve.
For special utilizations ascertain the compatibility with process features and the corrosion resistance also by the relevant table.

LIST OF COMPONENTS AND MATERIALS

REF.	PART	MATERIAL	DIN MAT.	QTY
1	BODY	ASTM		1
2	THREADED LOCKING RING	ASTM A105		1
3	BALL	See below		1
4	STEM	AISI 304	1.4301	1
5	SEAT	PTFE		2
6	SIDE SEALING RING	PTFE		1
7	O-RING	NBR		1
8	UPPER RING	PTFE		2
9	STEM O-RING	VITON		1
10	UPPER SEALING COUPLE	PTFE		1
11	PACKING GLAND	AISI 304	1.4301	1
12	OPERATION STOP	AISI 304		1
13	BELLEVILLE WASHERS	50CrV4		2
14	STEM RETAINING NUT	C.S.		1
15	FIXING NUT PLATE	AISI 304	1.4301	1
17	LOCKING NUT	C.S.		1
18	LEVER HANDLE	C.S.		1
19	OPERATION STOP SCREW	C.S.		1

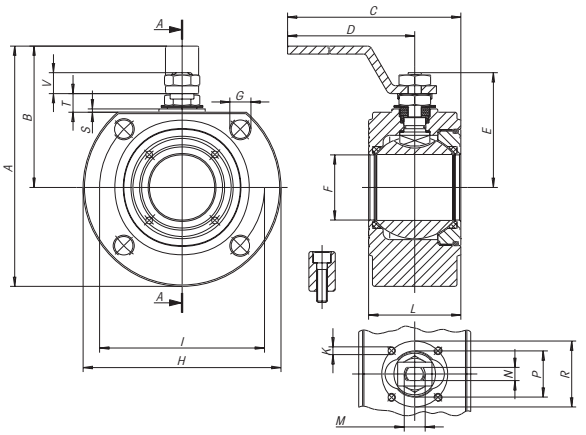
Ball: Art. 2881 DN15-32 AISI 316; DN 40-100 AISI 304
Art. 2891 DN15-100 with ball in brass

DYSTRYBUTOR W POLSCE:
ECOZAM Sp. z o.o.
ul.Załogowa 17 80-557 Gdańsk
tel.:(+48 58) 522 03 80 fax.(+48 58) 342 20 10

UNI EN ISO 9001: 2000
Progettazione, Sviluppo, Fabbricazione
Certificato n° 0024/3

MOON A 105

WAFER BALL VALVE – FULL BORE

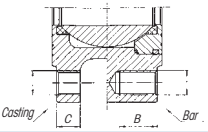


FLANGE DRILLINGS UNI2223-67

SIZE	A	B (PN40)	C (PN16
DN15	M12	14	0
DN20	M12	16	0
DN25	M12	16	0
DN32	M16	18	0
DN40	M16	18	13
DN50	M16	18	15
DN65	M16	20	15
DN80	M16	24	17
DN100	M16	20	17
DN100	M20	24	0

FLANGE DRILLINGS ANSI 150

SIZE	A	B (PN40)	C (PN16
DN15	1/2"	13	0
DN20	1/2"	14	0
DN25	1/2"	16	0
DN32	1/2"	17	0
DN40	1/2"	19	0
DN50	5/8"	20	(*) 16.4 (17.4)
DN65	5/8"	24	(*) 16.4 (20.6)
DN80	5/8"	24	(*) 18.4 (22.2)
DN100	5/8"	24	(*) 18.4 (22.2)



SIZE	A	B	C	D	E	F	G	H	K	I	L	M	N	P	R	S	T	V	N. Holes	PN	ATT.	Weight in gr.
DN15	110	65	160	140	48	15	M12	90	M5	65	35	M10	6	25	36	2	8	9	4	40	F03	1345
DN20	120	70	160	140	51	20	M12	100	M5	75	38	M10	6	25	36	2	8	9	4	40	F03	1810
DN25	137	82	200	180	62.5	25	M12	110	M5	85	43	M12	8	30	42	2	11.5	11.5	4	40	F04	2505
DN32	150	85	205	180	67	32	M16	130	M5	100	50	M12	8	30	42	2	9.5	11.5	4	40	F04	3995
DN40	172	102	260	230	80	40	M16	140	M6	110	60	M16	10	35	50	2.5	14	16	4	40	F05	5540
DN50	185	110	265	230	87	50	M16	150	M6	125	70	M16	10	35	50	2.5	14	16	4	40	F05	7300
DN65	225	137.5	400	350	119.5	65	M16	175	M8	145	95	M22	14	55	70	3	18.7	20.8	4	16	F07	15000
DN65	225	137.5	400	350	119.5	65	M16	175	M8	145	95	M22	14	55	70	3	18.7	20.8	8	40	F07	15000
DN80	245	150	410	350	129.5	78	M16	190	M8	160	118	M22	14	55	70	3	18.7	20.8	8	40	F07	19500
DN100	275	165	580	508	148.5	96	M16	220	M10	180	140	M27	16	70	102	3	22.2	25.3	8	16	F10	31500
DN100	291	173	580	508	156.5	96	M20	235	M10	190	140	M27	16	70	102	3	22.2		8	40	F10	37000

For DN 125 to DN 200 see "SELENE" split body wafer valve

BREAKAWAY TORQUES in Nm

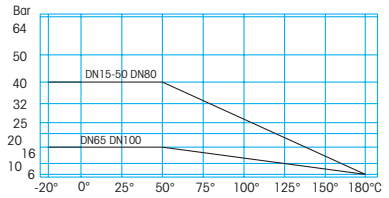
PN - bar \ DN size	15	20	25	32	40	50	65	80	100
0	4	7	10	16	25	35	55	75	150
16	4.8	8.5	11.3	19	28	39	59	84.5	168
25	5.2	9.1	12	20.5	29.5	41.5	62.5	92	180
40	6	10.5	13	22.5	31.5	44	67	99	195

Nm

The values in Nm may vary as a function of the seals material, temperature and type of medium. For a firm operation of the various types of actuators, in the different working conditions it is necessary to consider a safety factor of 1.5. During operation, with frequent open and close cycles, the operating torque can decrease considerably in comparison with the initial breakaway torque.

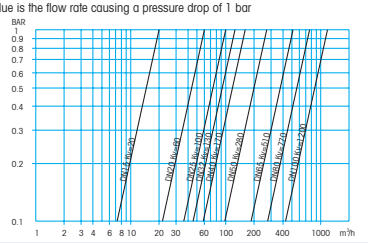
PRESSURE/TEMPERATURE DIAGRAM

At each pressure level corresponds the admissible temperature level.



LOSS OF HEAD DIAGRAM/FLOW RATE

The Kv value is the flow rate causing a pressure drop of 1 bar



MOON A105

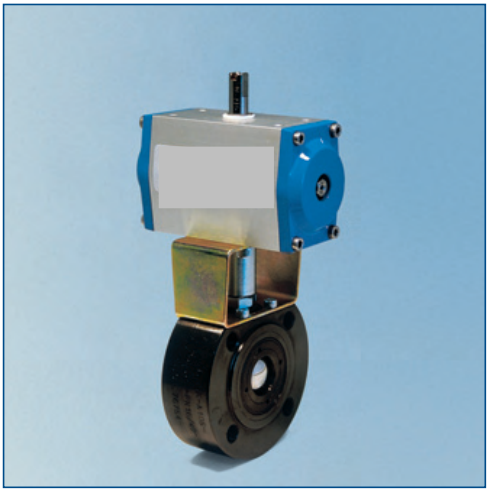
WAFER BALL VALVE – FULL BORE WITH **DOUBLE ACTING** PNEUMATIC ACTUATOR

ACTUATOR FEATURES

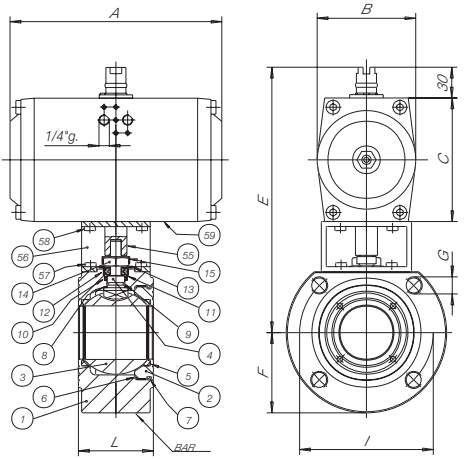
- Rotation angle: 90°
- Standard version for temperature between –20°C and + 90°C
- Supply maximum pressure: 10 bar (8bar for DNA045)
- Nominal pressure: 5,62 bar
- Supply medium: dry filtered compressed air, not necessarily lubricated
- Lubrication: in such a case use a non-detergent or NBR compatible oil

STANDARD VALVE FEATURES

- General prescriptions: BS 5351, Fire safe BS 6755-API 6 FA- API 607
- Working temperature: from –20°C to +180°C
- Maximum working pressure with actuator: **PN 16** (PN 25 and 40 on request)
- CONNECTIONS with flanges: UNI 2223-2229 AND DIN 2501 BL.1
- FLANGE DRILLING: METRIC
- BLOW-OUT PROOF stem with antistatic device
- For general applications and special versions see technical table of manual valve
- In the below table the part number and the valve code refer to the standard valve **PN 16** and PN 40 where applicable



SIZE	PART NUMBER	weight in gr.	A	B	C	E	F	G	I	L	PN	ACTUATOR code	VALVE code	MOUNTING KIT code
DN15	D51AA60400	1880	110	53	68	167	45	M12	65	35	40	DNA045AZ00	V515X604	K1GA0004
DN20	D51AA60500	2360	110	53	68	170	50	M12	75	38	40	DNA045AZ00	V515X605	K1GA0004
DN25	D51AA60600	3370	127	59	74	202	55	M12	85	43	40	DGA052AX00	V515X606	K1GA0006
DN32	D51AA60700	5450	133	70	88	222	65	M16	100	50	40	DGA063AX00	V515X607	K1GA0007
DN40	D51AA60800	7640	132	83	100	238	70	M16	110	60	40	DGA075AX00	V515X608	K1GA0008
DN50	D51AA60900	10000	182	91	108	253	75	M16	125	70	40	DGA083AX00	V515X609	K1GA0008
DN65	D51AA61000	18715	203	100	117	294	87.5	M16	145	95	16	DGA092AX00	V515X610	K1GA0010
DN65	D52AA61000	18715	203	100	117	294	87.5	M16	145	95	40	DGA092AX00	V886X610	K1GA0010
DN80	D51AA61100	24785	222	120	140	327	95	M16	160	118	40	DNA110AX00	V515X611	K1GA0011
DN100	D51AA61200	40800	300	137	160	378	110	M16	180	140	16	DNA127AX00	V515X612	K1GA0012
DN100	D52AA61200	47300	300	137	160	386	118	M20	190	140	40	DNA127AX00	V886X612	K1GA0012



LIST OF VALVE COMPONENTS AND MATERIALS

REF.	PART	QTY	MATERIAL
1	BODY	1	ASTM A105
2	THREADED LOCKING RING	1	ASTM A105
3	BALL	1	AISI 316/AISI 304
4	STEM	1	AISI 304
5	SEAT	2	PTFE
6	SIDE SEALING RING	1	PTFE
7	O-RING	1	NBR
8	UPPER SEALING RING	2	PTFE
9	STEM O-RING	1	VITON
10	UPPER SEALING COUPLE	1	PTFE
11	PACKING GLAND	1	AISI 304
12	WASHER	1	AISI 304
13	BELLEVILLE WASHERS	2	50CrV4
14	STEM RETAINING NUT	1	C.S.
15	FIXING NUT PLATE	1	AISI 304
55	ACTUATOR SHAFT	1	C.S.
56	BRACKET	1	C.S.
57	BRACKET/VALVE SCREW	4	8.8
58	BRACKET/ACTUATOR SCREW	4	8.8
59	ACTUATOR	1	

For accessories see relevant catalogue sheet

MOON A105

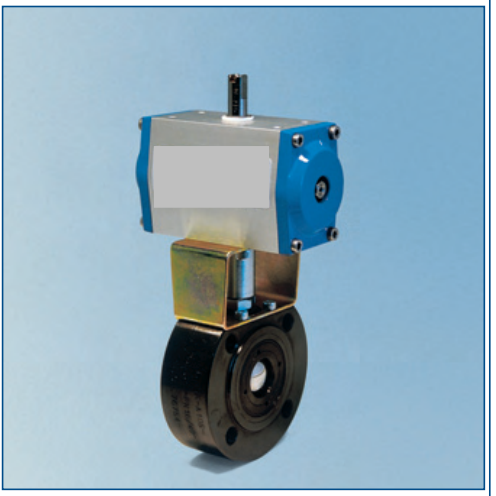
WAFER BALL VALVE – FULL BORE WITH **SPRING RETURN** PNEUMATIC ACTUATOR

ACTUATOR FEATURES

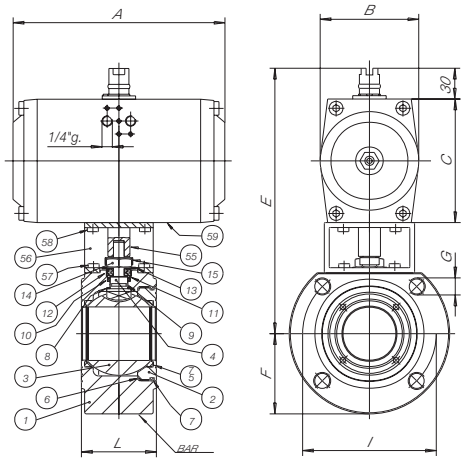
- Rotation angle: 90°
- Standard version for temperature between –20°C and + 90°C
- Supply maximum pressure: 10 bar
- Nominal pressure: 5,62 bar
- Supply medium: dry filtered compressed air, not necessarily lubricated
- Lubrication: in such a case use a non-detergent or NBR compatible oil
- STANDARD: **SPRING CLOSES/AIR OPENS**, clockwise automatic closing

STANDARD VALVE FEATURES

- General prescriptions: BS 5351, Fire safe BS 6755-API 6 FA- API 607
- Working temperature: from –20°C to +180°C
- Maximum working pressure with actuator: **PN 16** (PN 25 and 40 on request)
- CONNECTIONS with flanges: UNI 2223-2229 AND DIN 2501 BL.1
- FLANGE DRILLING: METRIC
- BLOW-OUT PROOF stem with antistatic device
- For general applications and special versions see technical table of manual valve
- In the below table the part number and the valve code refer to the standard valve **PN 16** and PN 40 where applicable



SIZE	PART NUMBER	weight in gr.	A	B	C	E	F	G	I	L	PN	ACTUATOR code	VALVE code	MOUNTING KIT code
DN15	S51AA60400	2320	127	59	74	183	45	M12	65	35	40	SGA0524X00	V515X604	K1GA0104
DN20	S51AA60500	3360	133	70	88	200	50	M12	75	38	40	SGA0634X00	V515X605	K1GA0005
DN25	S51AA60600	4780	132	83	100	228	55	M12	85	43	40	SGA0754X00	V515X606	K1GA0106
DN32	S51AA60700	6900	182	91	108	242	65	M16	100	50	40	SGA0834X00	V515X607	K1GA0107
DN40	S51AA60800	9370	203	100	117	255	70	M16	110	60	40	SGA0924X00	V515X608	K1GA0108
DN50	S51AA60900	13020	222	83	140	285	75	M16	125	70	40	SNA1104X00	V515X609	K1GA0108
DN65	S51AA61000	25120	300	137	160	337	87.5	M16	145	95	16	SNA1274X00	V515X610	K1GA0110
DN65	S52AA61000	25120	300	137	160	337	87.5	M16	145	95	40	SNA1274X00	V886X610	K1GA0110
DN80	S51AA61100	38390	380	172	198	395	95	M16	160	118	40	SNA1604X00	V515X611	K1GA0111
DN100	S51AA61200	51270	380	172	198	426	110	M16	180	140	16	SNA1605X00	V515X612	K1GA0112
DN100	S52AA61200	56880	380	172	198	434	118	M20	190	140	40	SNA1605X00	V886X612	K1GA0112



LIST OF VALVE COMPONENTS AND MATERIALS

REF.	PART	QTY	MATERIAL
1	BODY	1	ASTM A105
2	THREADED LOCKING RING	1	ASTM A105
3	BALL	1	AISI 316/AISI 304
4	STEM	1	AISI 304
5	SEAT	2	PTFE
6	SIDE SEALING RING	1	PTFE
7	O-RING	1	NBR
8	UPPER SEALING RING	2	PTFE
9	STEM O-RING	1	VITON
10	UPPER SEALING COUPLE	1	PTFE
11	PACKING GLAND	1	AISI 304
12	WASHER	1	AISI 304
13	BELLEVILLE WASHERS	2	50CrV4
14	STEM RETAINING NUT	1	C.S.
15	FIXING NUT PLATE	1	AISI 304
55	ACTUATOR SHAFT	1	C.S.
56	BRACKET	1	C.S.
57	BRACKET/VALVE SCREW	4	8.8
58	BRACKET/ACTUATOR SCREW	4	8.8
59	ACTUATOR	1	

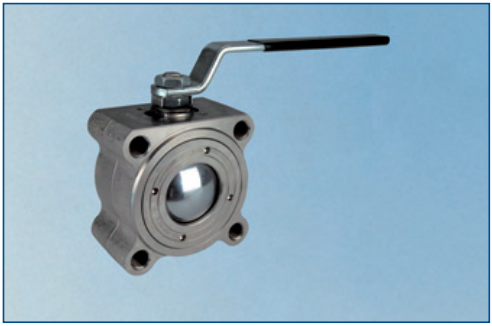
For accessories see relevant catalogue sheet

MOON OT58

WAFER BALL VALVE - FULL BORE

MAIN STANDARD FEATURES

- CONSTRUCTION: OT58 CW617
- DIAMETER: from DN15 to DN50
- PRESSURES: PN16
- TEMPERATURE LIMITS: from -20°C to +150°C for fluids
  from -20°C to +60°C for gas
- CONNECTIONS with flanges: UNI 2223-2229 and DIN 2501 BL.1
- FLANGE DRILLING: METRIC
- BLOW-OUT PROOF stem with antistatic device
- WRAPPING SEATS
- TRIPLE stem-packing with labyrinth effect and automatic adjustement by Belleville washers
- ISO 5211 mounting plate for actuators
- OPERATION device: lever handle



STANDARD PART NUMBERS

Art. T10
standard

SPECIAL EXECUTIONS

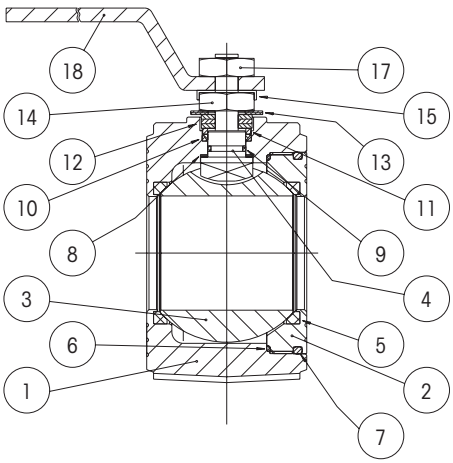
- Yellow lever handle for gas
- Drilled ball and unidirectional valve
- On request the valve is available with ATEX certificate
- For further special requests please consult our technical/commercial service

GENERAL APPLICATIONS

Use as an ON-OFF valve for: distribution lines for gas, air, water. Thanks to its reduced face to face dimensions and its intrinsic features it offers wide applications in new projects also as an alternative to the split body valve.

For special utilizations ascertain the compatibility with process features and the corrosion resistance also by the relevant table.

For a line assembly we recommend the use of raised face flanges to UNI 2229 and relevant flat seals.

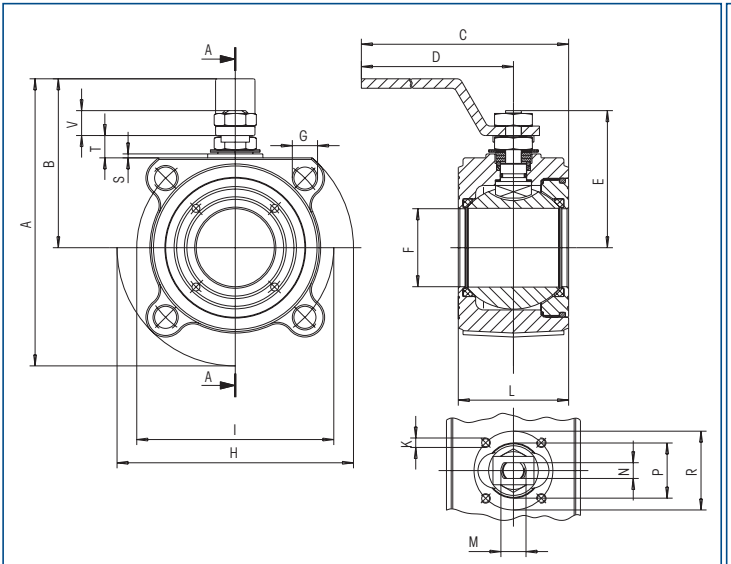


LIST OF COMPONENTS AND MATERIALS

REF.	PART	MATERIAL	DIN MAT.	QTY
1	BODY	OT58		1
2	THREADED LOCKING RING	OT58		1
3	BALL	OT58		1
4	STEM	AISI 304	1.4301	1
5	SEAT	PTFE		2
6	SIDE SEALING RING	PTFE		1
8	UPPER RING	PTFE		2
9	STEM O-RING	VITON		1
10	UPPER SEALING COUPLE	PTFE		1
11	GLAND WASHER	AISI 304	1.4301	1
12	OPERATION STOP	AISI 304	1.4301	3
13	BELLEVILLE WASHERS	50CrV4		2
14	STEM RETAINING NUT	C.S.		1
15	FIXING NUT PLATE	AISI 304	1.4301	1
17	LOCKING NUT	C.S.		1
18	LEVER HANDLE	C.S.		1

MOON OT58

WAFER BALL VALVE - FULL BORE

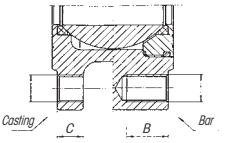


FLANGE DRILLINGS UNI2223-67

SIZE	A	B (PN40)	C (PN16
DN15	M12	14	0
DN20	M12	16	0
DN25	M12	16	0
DN32	M16	18	0
DN40	M16	18	13
DN50	M16	18	15
DN65	M16	20	15
DN80	M16	24	17
DN100	M16	20	17
DN100	M20	24	0

FLANGE DRILLINGS ANSI 150

SIZE	A	B (PN40)	C (PN16
DN15	1/2"	13	0
DN20	1/2"	14	0
DN25	1/2"	16	0
DN32	1/2"	17	0
DN40	1/2"	19	0
DN50	5/8"	20	(*) 16.4 (17.4)
DN65	5/8"	24	(*) 16.4 (20.6)
DN80	5/8"	24	(*) 18.4 (22.2)
DN100	5/8"	24	(*) 18.4 (22.2)



SIZE	A	B	C	D	E	F	G	H	K	I	L	M	N	P	R	S	T	V	N° HOLES	PN	ISO CONN.	WEIGHT IN GR.
DN15	110	65	160	140	48	15	M12	90	M5	65	35	M10	6	25	36	2	8	9	4	16	F03	845
DN20	120	70	160	140	51	20	M12	100	M5	75	38	M10	6	25	36	2	8	9	4	16	F03	1210
DN25	137	82	200	180	62.5	25	M12	110	M5	85	43	M12	8	30	42	2	11.5	11.5	4	16	F04	1715
DN32	150	85	205	180	67	32	M16	130	M5	100	50	M12	8	30	42	2	9.5	11.5	4	16	F04	2785
DN40	172	102	260	230	80	40	M16	140	M6	110	60	M16	10	35	50	2.5	14	16	4	16	F05	3655
DN50	185	110	265	230	87	50	M16	150	M6	125	70	M16	10	35	50	2.5	14	16	4	16	F05	5055

BREAKAWAY TORQUES in Nm

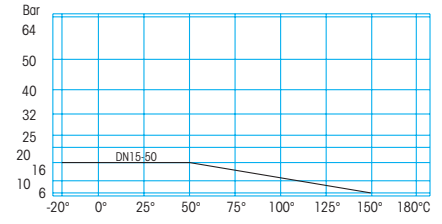
PN - bar \ DN size	15	20	25	32	40	50
0	4	7	10	16	25	35
16	4.8	8.5	11.3	19	28	39

Nm

The values in Nm may vary as a function of the seals material, temperature and type of medium. For a firm operation of the various types of actuators, in the different working conditions it is necessary to consider a safety factor of 1.5. During operation, with frequent open and close cycles, the operating torque can decrease considerably in comparison with the initial breakaway torque.

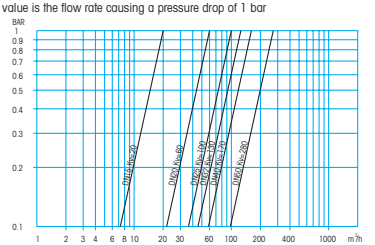
PRESSURE/TEMPERATURE DIAGRAM

At each pressure level corresponds the admissible temperature level.



LOSS OF HEAD DIAGRAM/FLOW RATE

The Kv value is the flow rate causing a pressure drop of 1 bar



AUTOMATED INDUSTRIAL BRASS VALVES

MOON OT58

WAFER BALL VALVE - FULL BORE WITH **DOUBLE ACTING** PNEUMATIC ACTUATOR

ACTUATOR FEATURES

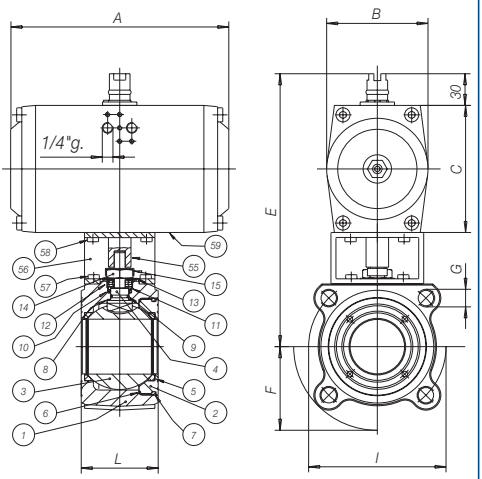
- Rotation angle: 90°
- Standard version for temperature between –20°C and + 90°C
- Supply maximum pressure: 10 bar (8bar for DNA045)
- Nominal pressure: 5,62 bar
- Supply medium: dry filtered compressed air, not necessarily lubricated
- Lubrication: in such a case use a non-detergent or NBR compatible oil

STANDARD VALVE FEATURES

- Working temperature: from –20°C to +150°C for fluids
  from -20°C to + 60°C for gas
- Maximum working pressure with actuator: **PN16**
- CONNECTIONS with flanges: UNI 2223-2229 AND DIN 2501 BL.1
- FLANGE DRILLING: METRIC
- BLOW-OUT PROOF stem with antistatic device
- For general applications and special versions see technical table of manual valve
- In the below table the part number and the valve code refer to the standard valve **PN16**

SIZE	Part Number	Weight in gr.	A	B	C	E	F	G	I	L	PN	ACTUATOR code	VALVE code	MOUNTING KIT code
DN15	DT1AA60400	1380	110	53	68	167	45	M12	65	35	16	DNA045AZ00	VT102604	K1GA0004
DN20	DT1AA60500	1760	110	53	68	170	50	M12	75	38	16	DNA045AZ00	VT102605	K1GA0004
DN25	DT1AA60600	2580	127	59	74	202	55	M12	85	43	16	DGA052AX00	VT102606	K1GA0006
DN32	DT1AA60700	4240	133	70	88	222	65	M16	100	50	16	DGA063AX00	VT102607	K1GA0007
DN40	DT1AA60800	6345	132	83	100	238	70	M16	110	60	16	DGA075AX00	VT102608	K1GA0008
DN50	DT1AA60900	6200	182	91	108	253	75	M16	125	70	16	DGA083AX00	VT102609	K1GA0008

For a line assembly we recommend the use of raised face flanges to UNI 2229 and relevant flat seals



LIST OF VALVE COMPONENTS AND MATERIALS

REF.	PART	Qty	MATERIAL
1	BODY	1	OT58
2	THREADED LOCKING RING	1	OT58
3	BALL	1	OT58
4	STEM	1	AISI 304
5	SEAT	2	PTFE
6	SIDE SEALING RING	1	PTFE
7	O-RING	1	NBR
8	UPPER SEALING RING	2	PTFE
9	STEM O-RING	1	VITON
10	UPPER SEALING COUPLE	1	PTFE
11	GLAND WASHER	1	AISI 304
12	WASHER	1	AISI 304
13	BELLEVILLE WASHERS	2	50CrV4
14	STEM RETAINING NUT	1	ACIER INOX
15	FIXING NUT PLATE	1	AISI 304
55	ACTUATOR SHAFT	1	C.S.
56	BRACKET	1	C.S.
57	BRACKET/VALVE SCREW	4	8.8
58	BRACKET/ACTUATOR SCREW	4	8.8
59	ACTUATOR	1	

For accessories see relevant catalogue sheet

MOON OT58

WAFER BALL VALVE - FULL BORE WITH **SPRING RETURN** PNEUMATIC ACTUATOR

ACTUATOR FEATURES

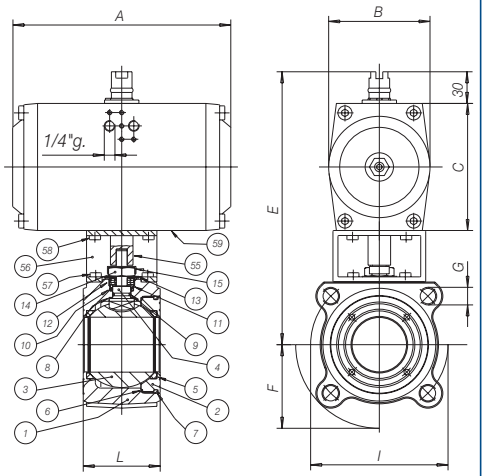
- Rotation angle: 90°
- Standard version for temperature between –20°C and + 90°C
- Supply maximum pressure: 10 bar (8bar for DNA045)
- Nominal pressure: 5,62 bar
- Supply medium: dry filtered compressed air, not necessarily lubricated
- Lubrication: in such a case use a non-detergent or NBR compatible oil
- STANDARD: SPRING CLOSES/AIR OPENS, clockwise automatic closing

STANDARD VALVE FEATURES

- Working temperature: from –20°C to +150°C for fluids
  from -20°C to + 60°C for gas
- Maximum working pressure with actuator: **PN16**
- CONNECTIONS with flanges: UNI 2223-2229 AND DIN 2501 BL.1
- FLANGE DRILLING: METRIC
- BLOW-OUT PROOF stem with antistatic device
- For general applications and special versions see technical table of manual valve
- In the below table the part number and the valve code refer to the standard valve **PN16**

SIZE	Part Number	Weight in gr.	A	B	C	E	F	G	I	L	PN	ACTUATOR code	VALVE code	MOUNTING KIT code
DN15	ST1AA60400	1820	127	59	74	183	45	M12	65	35	16	SGA0524X00	VT102604	K1GA0104
DN20	ST1AA60500	2760	133	70	88	200	50	M12	75	38	16	SGA0634X00	VT102605	K1GA0005
DN25	ST1AA60600	3990	132	83	100	228	55	M12	85	43	16	SGA0754X00	VT102606	K1GA0106
DN32	ST1AA60700	5690	182	91	108	242	65	M16	100	50	16	SGA0834X00	VT102607	K1GA0107
DN40	ST1AA60800	8075	203	100	117	255	70	M16	110	60	16	SGA0924X00	VT102608	K1GA0108
DN50	ST1AA60900	12030	222	83	140	285	75	M16	125	70	16	SNA1104X00	VT102609	K1GA0108

For a line assembly we recommend the use of raised face flanges to UNI 2229 and relevant flat seals



LIST OF VALVE COMPONENTS AND MATERIALS

REF.	PART	Qty	MATERIAL
1	BODY	1	OT58
2	THREADED LOCKING RING	1	OT58
3	BALL	1	OT58
4	STEM	1	AISI 304
5	SEAT	2	PTFE
6	SIDE SEALING RING	1	PTFE
7	O-RING	1	NBR
8	UPPER SEALING RING	2	PTFE
9	STEM O-RING	1	VITON
10	UPPER SEALING COUPLE	1	PTFE
11	GLAND WASHER	1	AISI 304
12	WASHER	1	AISI 304
13	BELLEVILLE WASHERS	2	50CrV4
14	STEM RETAINING NUT	1	ACIER INOX
15	FIXING NUT PLATE	1	AISI 304
55	ACTUATOR SHAFT	1	C.S.
56	BRACKET	1	C.S.
57	BRACKET/VALVE SCREW	4	8.8
58	BRACKET/ACTUATOR SCREW	4	8.8
59	ACTUATOR	1	

For accessories see relevant catalogue sheet

MOON ND AISI 316

WAFER BALL VALVE - FULL BORE WITH **CONTAINED BALL**

MAIN STANDARD FEATURES

- CONSTRUCTION: AISI 316
- General prescriptions: BS 5351
- Certifications: FIRE SAFE to: BS 6755 - API 6 FA - API 607
  DVGW for gas
  TÜV for TA Luft
- DIAMETER: from DN15 to DN100
- PRESSURES: PN16/40 from DN15 to DN40 and DN80
  PN16 for DN50, DN65 and DN100
- TEMPERATURE LIMITS: from -20°C to +180°C
- CONNECTIONS with flanges: UNI 2223-2229 and DIN 2501 BL.1
- FLANGE DRILLING: METRIC
- BLOW-OUT PROOF stem with antistatic device (from DN40)
- WRAPPING SEATS
- TRIPLE stem-packing with labyrinth effect and automatic adjustement by Belleville washers
- ISO 5211 mounting plate for actuators
- Non wetted parts in stainless steel
- OPERATION device: lever handle

STANDARD PART NUMBERS

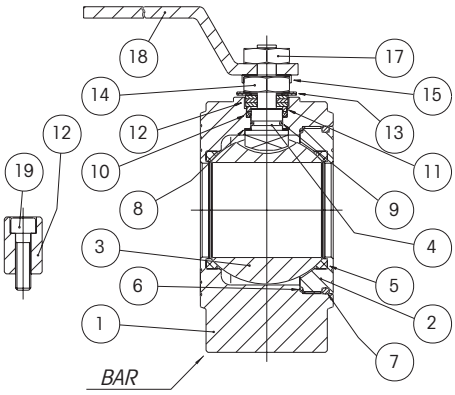
Art. 2871 DN15÷25 **Art. N10 DN32÷100**

GENERAL APPLICATIONS

Use as an ON-OFF valve for: chemical products, food, distribution lines for gas, air water. Suitable for vacuum $1 \cdot 10^{-3}$ STD CC, steam up to +195°C with PTFE+CARBOGRAPHITE and for industrial installations in general Thanks to its reduced face to face dimensions and its intrinsic features it offers wide applications in new projects also as an alternative to the split body valve.
For special utilizations ascertain the compatibility with process features and the corrosion resistance also by the relevant table.

SPECIAL EXECUTIONS

- 15% GLASS-FILLED PTFE with temperature limits -20°C +195°C
- PTFE+CARBOGRAPHITE with temperature limits -20°C +210°C
- Integral sealing in PTFE from DN15 to DN100
- DN50, DN65 and DN100 PN25/40: metric drilled flanges
- From 1/2" to 4" ANSI 150: through drilled flanges
- Reduction gear with manual operation
- Stem extensions: 50mm or 100mm
- Yellow lever handle for gas
- Heating jacket (see MOON CR series)
- Drilled ball and unidirectional valve
- Degreased version
- Antistatic device from DN15 to DN32
- On request the valve is available with ATEX certificate
- For further special requests please consult our technical/commercial service



LIST OF COMPONENTS AND MATERIALS

REF.	PART	MATERIAL	DIN MAT.	QTY
1	BODY	AISI 316	1.4401	1
2	THREADED LOCKING RING	AISI 316	1.4401	1
3	BALL	AISI 316	1.4401	1
4	STEM	AISI 316	1.4401	1
5	SEAT	PTFE		2
6	SIDE SEALING RING	PTFE		1
7	O-RING	NBR		1
8	UPPER RING	PTFE		2
9	STEM O-RING	VITON		1
10	UPPER SEALING COUPLE	PTFE		1
11	PACKING GLAND	AISI 304	1.4301	1
12	OPERATION STOP	AISI 316		1
13	BELLEVILLE WASHERS	50CrV4		2
14	STEM RETAINING NUT	S.S.		1
15	FIXING NUT PLATE	AISI 304	1.4301	1
17	LOCKING NUT	S.S.		1
18	LEVER HANDLE	S.S.		1
19	OPERATION STOP SCREW	S.S.		1

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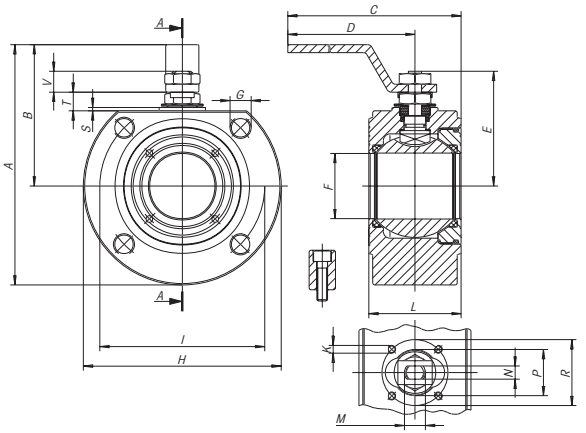
Progettazione, Sviluppo, Fabbricazione
Certificato n° 0024/3

MOON ND AISI 316

WAFER BALL VALVE - FULL BORE WITH **CONTAINED BALL**

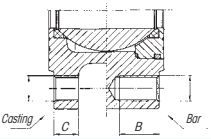


FLANGE DRILLINGS UNI2223-67

SIZE	A	B (PN40)	C (PN16
DN15	M12	14	0
DN20	M12	16	0
DN25	M12	16	0
DN32	M16	18	0
DN40	M16	18	13
DN50	M16	18	15
DN65	M16	20	15
DN80	M16	24	17
DN100	M16	20	17
DN100	M20	24	0

FLANGE DRILLINGS ANSI 150

SIZE	A	B (PN40)	C (PN16
DN15	1/2"	13	0
DN20	1/2"	14	0
DN25	1/2"	16	0
DN32	1/2"	17	0
DN40	1/2"	19	0
DN50	5/8"	20	(*) 16.4 (17.4)
DN65	5/8"	24	(*) 16.4 (20.6)
DN80	5/8"	24	(*) 18.4 (22.2)
DN100	5/8"	24	(*) 18.4 (22.2)



SIZE	A	B	C	D	E	F	G	H	K	I	L	M	N	P	R	S	T	V	N° HOLES	PN	ISO CONN.	WEIGHT IN GR.
DN15	110	65	160	140	48	15	M12	90	M5	65	35	M10	6	25	36	2	8	9	4	40	F03	1345
DN20	120	70	160	140	51	20	M12	100	M5	75	38	M10	6	25	36	2	8	9	4	40	F03	1810
DN25	137	82	200	180	62.5	25	M12	110	M5	85	43	M12	8	30	42	2	11.5	11.5	4	40	F04	2505
DN32	150	85	205	180	67	32	M16	130	M5	100	54	M12	8	30	42	2	9.5	11.5	4	40	F04	4420
DN40	172	102	260	230	80	40	M16	140	M6	110	66	M16	10	35	50	2.5	14	16	4	40	F05	6130
DN50	185	110	265	230	87	50	M16	150	M6	125	83	M16	10	35	50	2.5	14	16	4	16	F05	8555
DN65	225	137.5	400	350	119.5	65	M16	175	M8	145	103	M22	14	55	70	3	18.7	20.8	4	16	F07	15900
DN65	225	137.5	400	350	119.5	65	M16	175	M8	145	103	M22	14	55	70	3	18.7	20.8	8	40	F07	15900
DN80	245	150	410	350	129.5	78	M16	190	M8	160	122	M22	14	55	70	3	18.7	20.8	8	40	F07	20610
DN100	275	165	580	508	148.5	96	M16	220	M10	180	153	M27	16	70	102	3	22.2	25.3	8	16	F10	34230
DN100	291	173	580	508	156.5	96	M20	235	M10	190	153	M27	16	70	102	3	22.2	-	8	40	F10	39500

BREAKAWAY TORQUES in Nm

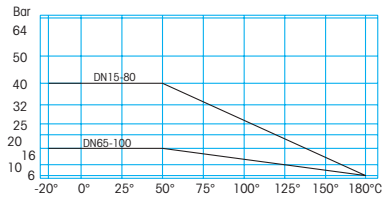
PN - bar \ DN size	15	20	25	32	40	50	65	80	100
0	4	7	10	16	25	35	55	75	150
16	4.8	8.5	11.3	19	28	39	59	84.5	168
25	5.2	9.1	12	20.5	29.5	41.5	62.5	92	180
40	6	10.5	13	22.5	31.5	44	37	99	195

Nm

The values in Nm may vary as a function of the seals material, temperature and type of medium. For a firm operation of the various types of actuators, in the different working conditions it is necessary to consider a safety factor of 1.5. During operation, with frequent open and close cycles, the operating torque can decrease considerably in comparison with the initial breakaway torque.

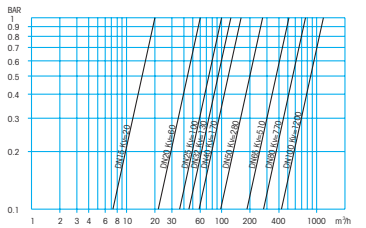
PRESSURE/TEMPERATURE DIAGRAM

At each pressure level corresponds the admissible temperature level.



LOSS OF HEAD DIAGRAM/FLOW RATE

The Kv value is the flow rate causing a pressure drop of 1 bar



MOON ND AISI 316

WAFER BALL VALVE - FULL BORE WITH **CONTAINED BALL** WITH **DOUBLE ACTING** PNEUMATIC ACTUATOR

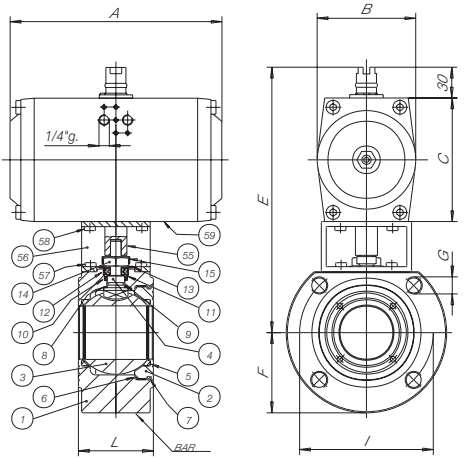
ACTUATOR FEATURES

- Rotation angle: 90°
- Standard version for temperature between –20°C and + 90°C
- Supply maximum pressure: 10 bar (8bar for DNA045)
- Nominal pressure: 5,62 bar
- Supply medium: dry filtered compressed air, not necessarily lubricated
- Lubrication: in such a case use a non-detergent or NBR compatible oil

STANDARD VALVE FEATURES

- General prescriptions: BS5351, Fire safe to: BS6755 - API 6 FA - API 607
- Working temperature: from –20°C to +180°C
- Maximum working pressure with actuator: **PN16** (PN25 and 40 on request)
- CONNECTIONS with flanges: UNI 2223-2229 and DIN 2501 BL.1
- FLANGE DRILLING: METRIC
- BLOW-OUT PROOF stem with antistatic device
- For general applications and special versions see technical table of manual valve
- In the below table the part number and the valve code refer to the standard valve **PN16** and PN40 where applicable

SIZE	Part Number	Weight in gr.	A	B	C	E	F	G	I	L	PN	ACTUATOR code	VALVE code	MOUNTING KIT code
DN15	D41AA60400	1880	110	53	68	167	45	M12	65	35	40	DNA045AZ00	V415X604	K1GA0004
DN20	D41AA60500	2360	110	53	68	170	50	M12	75	38	40	DNA045AZ00	V415X605	K1GA0004
DN25	D41AA60600	3370	127	59	74	202	55	M12	85	43	40	DGA052AX00	V415X606	K1GA0006
DN32	D4DAA60700	5875	133	70	88	222	65	M16	100	54	40	DGA063AX00	VN104607	K1GA0007
DN40	D4DAA60800	8230	132	83	100	238	70	M16	110	66	40	DGA075AX00	VN104608	K1GA0008
DN50	D4DAA60900	11255	182	91	108	253	75	M16	125	83	40	DGA083AX00	VN104609	K1GA0008
DN65	D4DAA61000	19615	203	100	117	294	87.5	M16	145	103	16	DGA092AX00	VN102610	K1GA0010
DN65	D4FAA61000	19615	203	100	117	294	87.5	M16	145	103	40	DGA092AX00	VN104610	K1GA0010
DN80	D4DAA61100	25895	222	120	140	327	95	M16	160	122	40	DNA110AX00	VN104611	K1GA0011
DN100	D4DAA61200	43530	294	137	160	378	110	M16	180	153	16	DNA127AX00	VN102612	K1GA0012
DN100	D4FAA61200	49800	294	137	160	386	118	M20	190	153	40	DNA127AX00	VN104612	K1GA0012



LIST OF VALVE COMPONENTS AND MATERIALS

REF.	PART	Qty	MATERIAL
1	BODY	1	AISI 316/CF8M
2	THREADED LOCKING RING	1	AISI 316
3	BALL	1	AISI 316
4	STEM	1	AISI 316
5	SEAT	2	PTFE
6	SIDE SEALING RING	1	PTFE
7	O-RING	1	NBR
8	UPPER RING	2	PTFE
9	STEM O-RING	1	VITON
10	UPPER SEALING COUPLE	1	PTFE
11	GLAND WASHER	1	AISI 304
12	WASHER	1	AISI 304
13	BELLEVILLE WASHERS	2	50CrV4
14	STEM RETAINING NUT	1	S.S.
15	FIXING NUT PLATE	1	AISI 304
55	ACTUATOR SHAFT	1	C.S.
56	BRACKET	1	C.S.
57	BRACKET/VALVE SCREW	4	8.8
58	BRACKET/ACTUATOR SCREW	4	8.8
59	ACTUATOR	1	

For accessories see relevant catalogue sheet

MOON ND AISI 316

WAFER BALL VALVE - FULL BORE WITH **CONTAINED BALL** WITH **SPRING RETURN** PNEUMATIC ACTUATOR

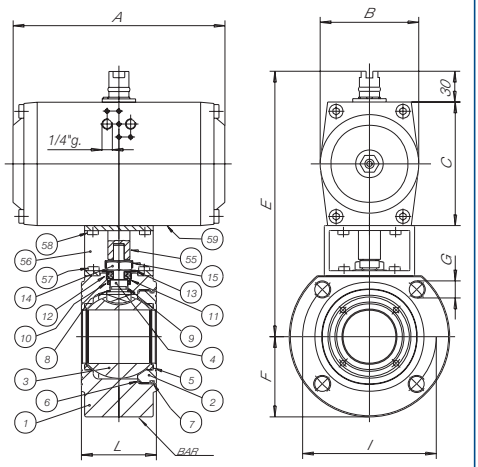
ACTUATOR FEATURES

- Rotation angle: 90°
- Standard version for temperature between –20°C and + 90°C
- Supply maximum pressure: 10 bar (8bar for DNA045)
- Nominal pressure: 5,62 bar
- Supply medium: dry filtered compressed air, not necessarily lubricated
- Lubrication: in such a case use a non-detergent or NBR compatible oil
- STANDARD: SPRING CLOSE/AIR OPENS, clockwise automatic closing

STANDARD VALVE FEATURES

- General prescriptions: BS5351, Fire safe to: BS6755 - API 6 FA - API 607
- Working temperature: from –20°C to +180°C
- Maximum working pressure with actuator: **PN16** (PN25 and 40 on request)
- CONNECTIONS with flanges: UNI 2223-2229 and DIN 2501 BL.1
- FLANGE DRILLING: METRIC
- BLOW-OUT PROOF stem with antistatic device
- For general applications and special versions see technical table of manual valve
- In the below table the part number and the valve code refer to the standard valve **PN16** and PN40 where applicable

SIZE	Part Number	Weight in gr.	A	B	C	E	F	G	I	L	PN	ACTUATOR code	VALVE code	MOUNTING KIT code
DN15	S41AA60400	2320	127	59	74	183	45	M12	65	35	40	SGA0524X00	V415X604	K1GA0104
DN20	S41AA60500	3360	133	70	88	200	50	M12	75	38	40	SGA0634X00	V415X605	K1GA0005
DN25	S41AA60600	4780	132	83	100	228	55	M12	85	43	40	SGA0754X00	V415X606	K1GA0106
DN32	S4DAA60700	7325	182	91	108	242	65	M16	100	54	40	SGA0834X00	VN104607	K1GA0107
DN40	S4DAA60800	9960	203	100	117	255	70	M16	110	66	40	SGA0924X00	VN104608	K1GA0108
DN50	S4DAA60900	14275	222	83	140	285	75	M16	125	83	40	SNA1104X00	VN104609	K1GA0108
DN65	S4DAA61000	26020	300	137	160	337	87.5	M16	145	103	16	SNA1274X00	VN102610	K1GA0110
DN65	S4FAA61000	26020	300	137	160	337	87.5	M16	145	103	40	SNA1274X00	VN104610	K1GA0110
DN80	S4DAA61100	39500	380	172	198	395	95	M16	160	122	40	SNA1604X00	VN104611	K1GA0111
DN100	S4DAA61200	54000	380	172	198	426	110	M16	180	153	16	SNA1605X00	VN102612	K1GA0112
DN100	S4FAA61200	59380	380	172	198	434	118	M20	190	153	40	SNA1605X00	VN104612	K1GA0112



LIST OF VALVE COMPONENTS AND MATERIALS

REF.	PART	Qty	MATERIAL
1	BODY	1	AISI 316/CF8M
2	THREADED LOCKING RING	1	AISI 316
3	BALL	1	AISI 316
4	STEM	1	AISI 316
5	SEAT	2	PTFE
6	SIDE SEALING RING	1	PTFE
7	O-RING	1	NBR
8	UPPER RING	2	PTFE
9	STEM O-RING	1	VITON
10	UPPER SEALING COUPLE	1	PTFE
11	GLAND WASHER	1	AISI 304
12	WASHER	1	AISI 304
13	BELLEVILLE WASHERS	2	50CrV4
14	STEM RETAINING NUT	1	S.S.
15	FIXING NUT PLATE	1	AISI 304
55	ACTUATOR SHAFT	1	C.S.
56	BRACKET	1	C.S.
57	BRACKET/VALVE SCREW	4	8.8
58	BRACKET/ACTUATOR SCREW	4	8.8
59	ACTUATOR	1	

For accessories see relevant catalogue sheet

MOON ND A105

WAFER BALL VALVE - FULL BORE **WITH CONTAINED BALL**

MAIN STANDARD FEATURES

- CONSTRUCTION: ASTM A 105
- General prescriptions: BS 5351
- CERTIFICATIONS: FIRE SAFE to: BS 6755 - API 6 FA - API 607
  DVGW for gas
  TÜV for TA Luft
- DIAMETER: from DN15 to DN100
- PRESSURES: PN16/40 from DN15 to DN50 and DN80
  PN16 for DN65 and DN100
- TEMPERATURE LIMITS: from –10°C to +180°C
- CONNECTIONS with flanges:
  UNI 2223-2229 and DIN 2501 BL.1
- FLANGE DRILLING: METRIC
- BLOW-OUT PROOF stem with antistatic device (from DN40)
- WRAPPING SEATS
- TRIPLE stem-packing with labyrinth effect and automatic adjustment by Belleville washers
- ISO 5211 mounting plate for actuators
- OPERATION devices: lever handle

STANDARD PART NUMBERS

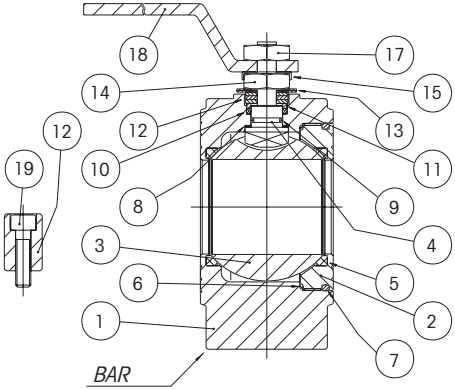
Art. 2881 DN15÷25
Art. N50 DN32
Art. N70 DN40÷100
with stainless steel ball

SPECIAL EXECUTIONS

- 15% GLASS-FILLED PTFE with temperature limits –10°C + 195°C
- PTFE+CARBOGRAPHITEwith temperature limits –20°C + 210°C
- Integral sealing in PTFE from DN15 to DN100
- DN65 and DN100 PN25/40: metric drilled flanges
- From 1/2" to 4" ANSI 150: through drilled flanges
- Reduction gear with manual operation
- Stem extensions; 50mm or 100mm
- Yellow lever handle for gas
- Heating jacket (see MOON CR series)
- Drilled ball and unidirection valve
- Body in LF2 up to -20°C
- Antistatic device from DN15 to DN32
- On request the valve is available with ATEX certificate
- For further special requests please consult our technical/commercial service

GENERAL APPLICATIONS

Use as an ON-OFF valve for: distribution lines for gas, air, water. Suitable for vacuum $1 \cdot 10^{-3}$ STD CC, steam up to +195°C with PTFE+CARBOGRAPHITE and for industrial installations in general. Tanks to its reduced face to face dimensions and its intrinsic features it offers wide applications in new projects also as an alternative to the split body valve.
For special utilizations ascertain the compatibility with process features and the corrosion resistance also by the relevant table.



LIST OF COMPONENTS AND MATERIALS

REF.	PART	MATERIAL	DIN MAT.	QTY
1	BODY	ASTM A105		1
2	THREADED LOCKING RING	ASTM A105		1
3	BALL	See below		1
4	STEM	AISI 304	1.4301	1
5	SEAT	PTFE		2
6	SIDE SEALING RING	PTFE		1
7	O-RING	NBR		1
8	UPPER RING	PTFE		2
9	STEM O-RING	VITON		1
10	UPPER SEALING COUPLE	PTFE		1
11	PACKING GLAND	AISI 304	1.4301	1
12	OPERATION STOP	AISI 304		1
13	BELLEVILLE WASHERS	50CrV4		2
14	STEM RETAINING NUT	C.S.		1
15	FIXING NUT PLATE	AISI 304	1.4301	1
17	LOCKING NUT	C.S.		1
18	LEVER HANDLE	C.S.		1
19	OPERATION STOP SCREW	C.S.		1

Ball: in AISI304 da DN15 to DN32 (Art. 2881 and N50)
in AISI316 da DN40 to DN100 (Art. N70)

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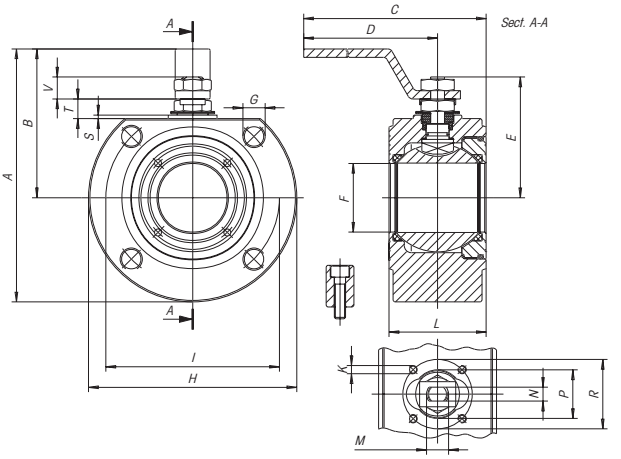
UNI EN ISO 9001: 2000
Progettazione, Sviluppo, Fabbricazione
Certificato n° 0024/3

MOON ND A105

WAFER BALL VALVE - FULL BORE **WITH CONTAINED BALL**

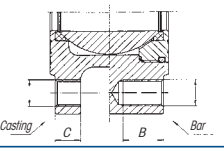


FLANGE DRILLINGS UNI2223-67

SIZE	A	B (PN40)	C (PN16
DN15	M12	14	0
DN20	M12	16	0
DN25	M12	16	0
DN32	M16	18	0
DN40	M16	18	13
DN50	M16	18	15
DN65	M16	20	15
DN80	M16	24	17
DN100	M16	20	17
DN100	M20	24	0

FLANGE DRILLINGS ANSI 150

SIZE	A	B (PN40)	C (PN16
DN15	1/2"	13	0
DN20	1/2"	14	0
DN25	1/2"	16	0
DN32	1/2"	17	0
DN40	1/2"	19	0
DN50	5/8"	20	(*) 16.4 (17.4)
DN65	5/8"	24	(*) 16.4 (20.6)
DN80	5/8"	24	(*) 16.4 (22.2)
DN100	5/8"	24	(*) 16.4 (22.2)



SIZE	A	B	C	D	E	F	G	H	K	I	L	M	N	P	R	S	T	V	N. HOLES	PN	ISO	WEIGHT in gr.
DN15	110	65	160	140	48	15	M12	90	M5	65	35	M10	6	25	36	2	8	9	4	40	F03	1345
DN20	120	70	160	140	51	20	M12	100	M5	75	38	M10	6	25	36	2	8	9	4	40	F03	1810
DN25	137	82	200	180	62.5	25	M12	110	M5	85	43	M12	8	30	42	2	11.5	11.5	4	40	F04	2505
DN32	150	85	205	180	67	32	M16	130	M5	100	54	M12	8	30	42	2	9.5	11.5	4	40	F04	4420
DN40	172	102	260	230	80	40	M16	140	M6	110	66	M16	10	35	50	2.5	14	16	4	40	F05	6130
DN50	185	110	265	230	87	50	M16	150	M6	125	83	M16	10	35	50	2.5	14	16	4	40	F05	8555
DN65	225	137.5	400	350	119.5	65	M16	175	M8	145	103	M22	14	55	70	3	18.7	20.8	4	16	F07	15900
DN65	225	137.5	400	350	119.5	65	M16	175	M8	145	103	M22	14	55	70	3	18.7	20.8	8	40	F07	15900
DN80	245	150	410	350	129.5	78	M16	190	M8	160	122	M22	14	55	70	3	18.7	20.8	8	40	F07	20610
DN100	275	165	580	508	148.5	96	M16	220	M10	180	153	M27	16	70	102	3	22.2	25.3	8	16	F10	34230
DN100	291	173	580	508	156.5	96	M20	235	M10	190	153	M27	16	70	102	3	22.2		8	40	F10	39500

BREAKAWAY TORQUES in Nm

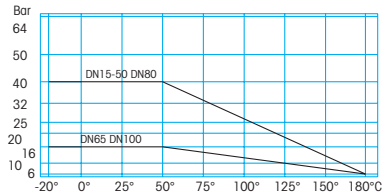
PN - bar \ DN size	15	20	25	32	40	50	65	80	100
0	4	7	10	16	25	35	55	75	150
16	4.8	8.5	11.3	19	28	39	59	84.5	168
25	5.2	9.1	12	20.5	29.5	41.5	62.5	92	180
40	6	10.5	13	22.5	31.5	44	67	99	195

Nm

The values in Nm may vary as a function of the seals material, temperature and type of medium. For a firm operation of the various types of actuators, in the different working conditions it is necessary to consider a safety factor of 1.5. During operation, with frequent open and close cycles, the operating torque can decrease considerably in comparison with the initial breakaway torque.

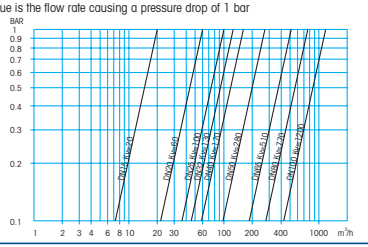
PRESSURE/TEMPERATURE DIAGRAM

At each pressure level corresponds the admissible temperature level.



LOSS OF HEAD DIAGRAM/FLOW RATE

The Kv value is the flow rate causing a pressure drop of 1 bar



MOON ND A105

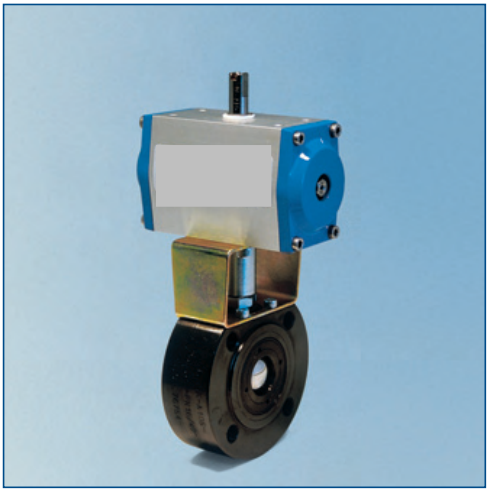
WAFER BALL VALVE - FULL BORE WITH CONTAINED BALL WITH **DOUBLE ACTING** PNEUMATIC ACTUATOR

ACTUATOR FEATURES

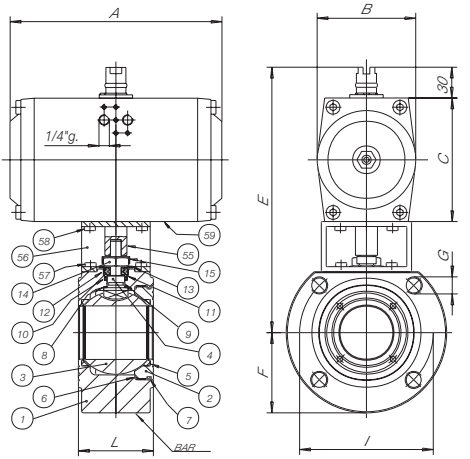
- Rotation angle: 90°
- Standard version for temperature between –20°C and + 90°C
- Supply maximum pressure: 10 bar (8bar for DNA045)
- Nominal pressure: 5,62 bar
- Supply medium: dry filtered compressed air, not necessarily lubricated
- Lubrication: in such a case use a non-detergent or NBR compatible oil

STANDARD VALVE FEATURES

- General prescriptions: BS 5351, Fire safe BS 6755-API 6 FA- API 607
- Working temperature: from –20°C to +180°C
- Maximum working pressure with actuator: **PN 16** (PN 25 and 40 on request)
- CONNECTIONS with flanges: UNI 2223-2229 AND DIN 2501 BL.1
- FLANGE DRILLING: METRIC
- BLOW-OUT PROOF stem with antistatic device
- For general applications and special versions see technical table of manual valve
- In the below table the part number and the valve code refer to the standard valve **PN 16** and PN 40 where applicable



SIZE	PART NUMBER	weight in gr.	A	B	C	E	F	G	I	L	PN	ACTUATOR code	VALVE code	MOUNTING KIT code
DN15	D51AA60400	1880	110	53	68	167	45	M12	65	35	40	DNA045AZ00	V515X604	K1GA0004
DN20	D51AA60500	2360	110	53	68	170	50	M12	75	38	40	DNA045AZ00	V515X605	K1GA0004
DN25	D51AA60600	3370	127	59	74	202	55	M12	85	43	40	DGA052AX00	V515X606	K1GA0006
DN32	D5DAA60700	5875	133	70	88	222	65	M16	100	54	40	DGA063AX00	VN504607	K1GA0007
DN40	D5DAA60800	8230	132	83	100	238	70	M16	110	66	40	DGA075AX00	VN704608	K1GA0008
DN50	D5DAA60900	11255	182	91	108	253	75	M16	125	83	40	DGA083AX00	VN704609	K1GA0008
DN65	D5DAA61000	19615	203	100	117	294	87.5	M16	145	103	16	DGA092AX00	VN704610	K1GA0010
DN65	D5FAA61000	19615	203	100	117	294	87.5	M16	145	103	40	DGA092AX00	VN702611	K1GA0010
DN80	D5DAA61100	25895	222	120	140	327	95	M16	160	122	40	DNA110AX00	VN704611	K1GA0011
DN100	D5DAA61200	43530	300	137	160	378	110	M16	180	153	16	DNA127AX00	VN702612	K1GA0012
DN100	D5FAA61200	49800	300	137	160	386	118	M20	190	153	40	DNA127AX00	VN704612	K1GA0012



LIST OF VALVE COMPONENTS AND MATERIALS

REF.	PART	QTY	MATERIAL
1	BODY	1	ASTM A105
2	THREADED LOCKING RING	1	ASTM A105
3	BALL	1	AISI 316/AISI 304
4	STEM	1	AISI 304
5	SEAT	2	PTFE
6	SIDE SEALING RING	1	PTFE
7	O-RING	1	NBR
8	UPPER SEALING RING	2	PTFE
9	STEM O-RING	1	VITON
10	UPPER SEALING COUPLE	1	PTFE
11	PACKING GLAND	1	AISI 304
12	WASHER	1	AISI 304
13	BELLEVILLE WASHERS	2	50CrV4
14	STEM RETAINING NUT	1	C.S.
15	FIXING NUT PLATE	1	AISI 304
55	ACTUATOR SHAFT	1	C.S.
56	BRACKET	1	C.S.
57	BRACKET/VALVE SCREW	4	8.8
58	BRACKET/ACTUATOR SCREW	4	8.8
59	ACTUATOR	1	

For accessories see relevant catalogue sheet

MOON ND A105

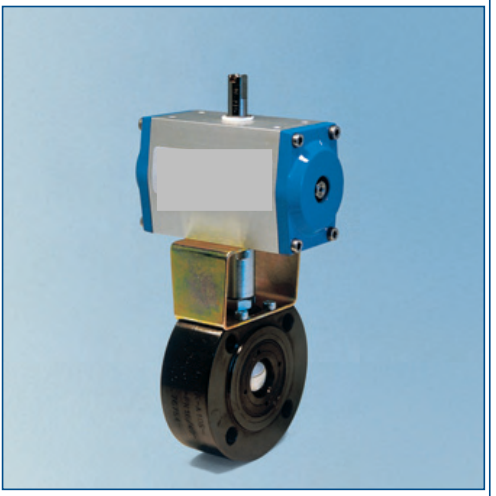
WAFER BALL VALVE - FULL BORE WITH CONTAINED BALL WITH **SPRING RETURN** PNEUMATIC ACTUATOR

ACTUATOR FEATURES

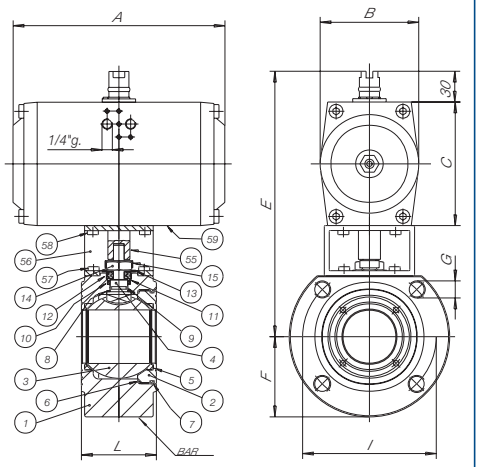
- Rotation angle: 90°
- Standard version for temperature between –20°C and + 90°C
- Supply maximum pressure: 10 bar
- Nominal pressure: 5,62 bar
- Supply medium: dry filtered compressed air, not necessarily lubricated
- Lubrication: in such a case use a non-detergent or NBR compatible oil
- STANDARD: **SPRING CLOSES/AIR OPENS**, clockwise automatic closing

STANDARD VALVE FEATURES

- General prescriptions: BS 5351, Fire safe BS 6755-API 6 FA- API 607
- Working temperature: from –20°C to +180°C
- Maximum working pressure with actuator: **PN 16** (PN 25 and 40 on request)
- CONNECTIONS with flanges: UNI 2223-2229 AND DIN 2501 BL.1
- FLANGE DRILLING: METRIC
- BLOW-OUT PROOF stem with antistatic device
- For general applications and special versions see technical table of manual valve
- In the below table the part number and the valve code refer to the standard valve **PN 16** and PN 40 where applicable



SIZE	PART NUMBER	weight in gr.	A	B	C	E	F	G	I	L	PN	ACTUATOR code	VALVE code	MOUNTING KIT code
DN15	S51AA60400	2320	127	59	74	183	45	M12	65	35	40	SGA0524X00	V515X604	K1GA0104
DN20	S51AA60500	3360	133	70	88	200	50	M12	75	38	40	SGA0634X00	V515X605	K1GA0005
DN25	S51AA60600	4780	132	83	100	228	55	M12	85	43	40	SGA0754X00	V515X606	K1GA0106
DN32	S5DAA60700	7325	182	91	108	242	65	M16	100	54	40	SGA0834X00	VN504607	K1GA0107
DN40	S5DAA60800	9960	203	100	117	255	70	M16	110	66	40	SGA0924X00	VN704608	K1GA0108
DN50	S5DAA60900	14275	222	83	140	285	75	M16	125	83	40	SNA1104X00	VN704609	K1GA0108
DN65	S5DAA61000	26020	300	137	160	337	87.5	M16	145	103	16	SNA1274X00	VN704610	K1GA0110
DN65	S5FAA61000	26020	300	137	160	337	87.5	M16	145	103	40	SNA1274X00	VN702611	K1GA0110
DN80	S5DAA61100	39500	380	172	198	395	95	M16	160	122	40	SNA1604X00	VN704611	K1GA0111
DN100	S5DAA61200	54000	380	172	198	426	110	M16	180	153	16	SNA1605X00	VN702612	K1GA0112
DN100	S5FAA61200	59380	380	172	198	434	118	M20	190	153	40	SNA1605X00	VN704612	K1GA0112



LIST OF VALVE COMPONENTS AND MATERIALS

REF.	PART	QTY	MATERIAL
1	BODY	1	ASTM A105
2	THREADED LOCKING RING	1	ASTM A105
3	BALL	1	AISI 316/AISI 304
4	STEM	1	AISI 304
5	SEAT	2	PTFE
6	SIDE SEALING RING	1	PTFE
7	O-RING	1	NBR
8	UPPER SEALING RING	2	PTFE
9	STEM O-RING	1	VITON
10	UPPER SEALING COUPLE	1	PTFE
11	PACKING GLAND	1	AISI 304
12	WASHER	1	AISI 304
13	BELLEVILLE WASHERS	2	50CrV4
14	STEM RETAINING NUT	1	C.S.
15	FIXING NUT PLATE	1	AISI 304
55	ACTUATOR SHAFT	1	C.S.
56	BRACKET	1	C.S.
57	BRACKET/VALVE SCREW	4	8.8
58	BRACKET/ACTUATOR SCREW	4	8.8
59	ACTUATOR	1	

For accessories see relevant catalogue sheet

MOON PN64 E ANSI 300

WAFER BALL VALVE - FULL BORE

MAIN STANDARD FEATURES

- CONSTRUCTION: AISI 316 and A105
- General prescriptions: BS 5351
- DIAMETER: PN64 from DIN15 to DN50
  ANSI 300 from 1/2" to 2"
- PRESSURES: PN64 and ANSI 300
- TEMPERATURE LIMITS: from –20°C to +180°C
- CONNECTIONS with flanges:
  UNI 2223-2229 and DIN 2501 BL.1
  ANSI 300 RF - ANSI B16.5
- FLANGE DRILLING: PN64 METRIC
  ANSI 300 through drilled
- BLOW-OUT PROOF stem with antistatic device (from DN40)
- WRAPPING SEATS
- TRIPLE stem-packing with labyrinth effect and automatic adjustment by Belleville washers
- ISO 5211 mounting plate for actuators
- NON-WETTED parts in stainless steel
- OPERATION devices: lever handle

STANDARD PART NUMBERS

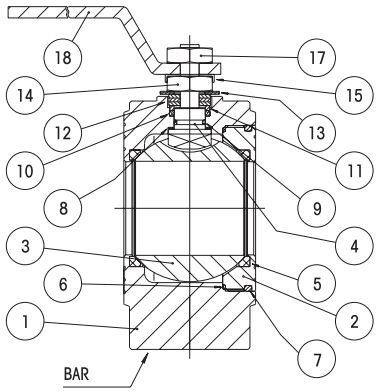
Art. N105 PN64 AISI316	**Art. N505** PN64 A105 up to DN32	**Art. N705** PN64 A105 beyond DN32
Art. N10B ANSI 300 AISI316	**Art. N50B** ANSI 300 A105 up to DN32	**Art. N70B** ANSI 300 A105 beyond DN 32

SPECIAL EXECUTIONS

- 15% GLASS-FILLED PTFE with temperaure limits –20°C + 195°C
- PTFE+CARBOGRAPHITEwith temperaure limits –20°C + 210°C
- Integral sealing in PTFE from DN15 to DN100
- Flange drilling: ANSI 300 METRIC or WHITWORTH (to be specified)
- Reduction gear with manual operation
- Stem extensions; 50mm or 100mm
- Yellow lever handle for gas
- Heating jacket (see MOON CR series)
- Drilled ball and unidirection valve
- Degreased version
- Antistatic device from DN15 to DN32
- On request the valve is available with ATEX certificate
- For further special requests please consult our technical/commercial service

GENERAL APPLICATIONS

Use as an ON-OFF valve for: chemical products, food plants, distribution lines for gas, air, water. Suitable for vacuum $1 \cdot 10^{-3}$ STD CC, steam up to +195°C with PTFE+CARBOGRAPHITE and for industrial installations in general.
Tanks to its reduced face to face dimensions and its intrinsic features it offers wide applications in new projects also as an alternative to the split body valve.
For special utilizations ascertain the compatibility with process features and the corrosion resistance also by the relevant table.



LIST OF COMPONENTS AND MATERIALS

REF.	PART	MATERIAL AISI 316 Vers.	DIN MAT. A 105 Vers.	QTY
1	BODY	AISI 316	ASTM A105	1
2	THREADED LOCKING RING	AISI 316	ASTM A105	1
3	BALL	AISI 316	See below	1
4	STEM	AISI 316	AISI 304	1
5	SEAT	PTFE	PTFE	2
6	SIDE SEALING RING	PTFE	PTFE	1
7	O-RING	NBR	NBR	1
8	UPPER RING	PTFE	PTFE	2
9	STEM O-RING	VITON	VITON	1
10	UPPER SEALING COUPLE	PTFE	PTFE	1
11	GLAND WASHER	AISI 304	AISI 304	1
12	OPERATION STOP	AISI 304	AISI 304	1-3
13	BELLEVILLE WASHERS	AISI 301	50CrV4	2
14	STEM RETAINING NUT	AISI 304	C.S.	1
15	FIXING NUT PLATE	AISI 304	AISI 304	1
17	LOCKING NUT	AISI 304	C.S.	1
18	LEVER HANDLE	AISI 304	C.S.	1

Ball for A105 version: AISI316 up to DN32
AISI304 beyond DN32

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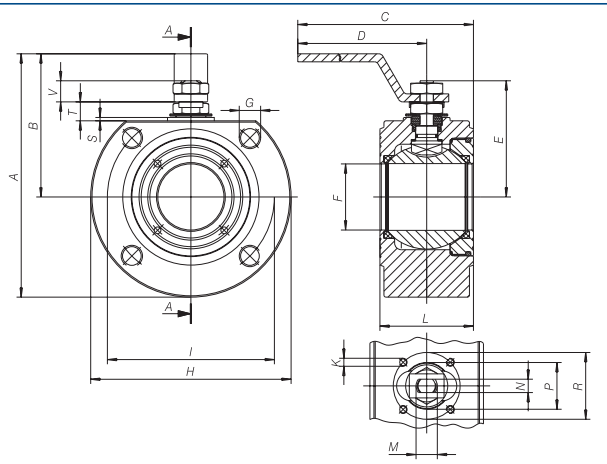
UNI EN ISO 9001: 2000
Progettazione, Sviluppo, Fabbricazione
Certificato n° 0024/3

MOON PN64 E ANSI 300

WAFER BALL VALVE - FULL BORE

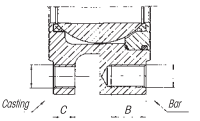


FLANGE DRILLINGS UNI2223-67

SIZE	A	B (PN40)	C (PN16
DN15	M12	14	0
DN20	M12	16	0
DN25	M12	16	0
DN32	M16	18	0
DN40	M16	18	13
DN50	M16	18	15
DN65	M16	20	15
DN80	M16	24	17
DN100	M16	20	17
DN100	M20	24	0

FLANGE DRILLINGS ANSI 150

SIZE	A	B (PN40)	C (PN16
DN15	1/2"	13	0
DN20	1/2"	14	0
DN25	1/2"	16	0
DN32	1/2"	17	0
DN40	1/2"	19	0
DN50	5/8"	20	(*) 16,4 (17,4)
DN65	5/8"	24	(*) 16,4 (20,6)
DN80	5/8"	24	(*) 18,4 (22,2)
DN100	5/8"	24	(*) 18,4 (22,2)



	SIZE	A	B	C	D	E	F	G	H	K	I	L	M	N	P	R	S	T	V	N. HOLES	ISO conn.	Weight in gr.
PN64	DN15	119	66	161	140	48	15	M12	105	M5	75	42	M10	6	25	36	2	8	9	4	F03	2310
	DN20	138	73	163	140	55.5	20	M16	130	M5	90	46	M10	6	25	36	2	8	9	4	F03	3660
	DN25	160	90	205	180	70.5	25	M16	140	M5	100	50	M12	8	30	42	2	11.5	11.5	4	F04	4750
	DN32	173	95	207	180	75	32	M20	155	M5	110	54	M12	8	30	42	2	9.5	11.5	4	F04	6050
	DN40	194	109	263	230	87.5	40	M20	170	M6	125	66	M16	10	35	50	2.5	14	16	4	F05	8950
	DN50	206	116	272	230	94.5	50	M20	180	M6	135	83	M16	10	35	50	2.5	14	16	4	F05	12620
ANSI 300	1/2"	114	66	161	140	48	15	1/2"	95	M5	67	42	M10	6	25	36	2	8	9	4	F03	2100
	3/4"	130	73	163	140	55.5	20	5/8"	114	M5	82.5	46	M10	6	25	36	2	8	9	4	F03	2900
	1"	152	90	205	180	70.5	25	5/8"	124	M5	88.9	50	M12	8	30	42	2	11.5	11.5	4	F04	3670
	1" 1/4	162	95	207	180	75	32	5/8"	133	M5	99	54	M12	8	30	42	2	9.5	11.5	4	F04	5200
	1" 1/2	187	109	263	230	87.5	40	3/4"	156	M6	114	66	M16	10	35	50	2.5	14	16	4	F05	8210
	2"	198.5	116	272	230	94.5	50	5/8"	165	M6	127	83	M16	10	35	50	2.5	14	16	8	F05	11570

BREAKAWAY TORQUES in Nm

PN - bar

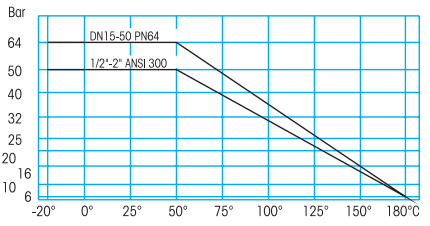
DN size	15 1/2"	20 3/4"	25 1"	32 1"1/4	40 1"1/2	50 2"
0	4	7	10	16	25	35
PN64	7	12	16	26.5	37	51
ANSI 300	6.5	11	14	24	34	47

Nm

The values in Nm may vary as a function of the seals material, temperature and type of medium. For a firm operation of the various types of actuators, in the different working conditions it is necessary to consider a safety factor of 1.5. During operation, with frequent open and close cycles, the operating torque can decrease considerably in comparison with the initial breakaway torque.

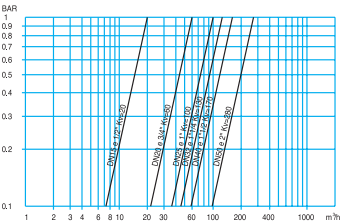
PRESSURE/TEMPERATURE DIAGRAM

At each pressure level corresponds the admissible temperature level.



LOSS OF HEAD DIAGRAM/FLOW RATE

The Kv value is the flow rate causing a pressure drop of 1 bar



MOON CR

WAFER BALL VALVE — FULL BORE

MAIN STANDARD FEATURES

- CONSTRUCTION:
- wafer ball valve both standard and ND
  MOON type in ASTM A 105
  MOON in AISI 304 and
  MOON in AISI 316 with
  heating jacket in carbon steel and flanges PN 16 or gas parallel threaded ends
- For construction features please refer to relevant technical tables

STANDARD PART NUMBERS

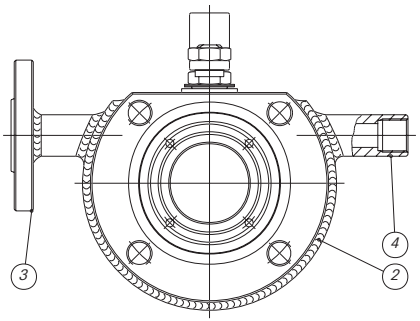
valve	ASTM A105	AISI 304	AISI 316
Moon Standard	Art. L60/L70	Art. L40	Art. L20
Moon ND	Art. P60/P70	Art. P40	Art. P20

SPECIAL EXECUTIONS

- Heating jackets in stainless steel AISI 304
- End connections NPT to ANSI B 1.20.1 (taper threads)
- On request the valve is available with ATEX certificate
- For further special requests please consult our technical/commercial service

GENERAL APPLICATIONS

Use as an ON-OFF valve for: applications requiring the constant maintenance of the process fluid within the valve by means of hot water, oil or other medium circulating inside the jacket applied directly on the outside valve body.
For special utilizations ascertain the compatibility with process features and the corrosion resistance also by the relevant table.



LIST OF COMPONENTS AND MATERIALS

REF.	PART.	MATERIAL	MATERIAL	MATERIAL	QTY
1	VALVE CONSTRUCTION	ASTM A105	AISI 304	AISI 316	1
2	JACKET	C.S.	C.S.	C.S.	1
3	FLANGES	ASTM A105	ASTM A105	ASTM A105	2
4	THREADED END CONNECTIONS	ASTM A105	ASTM A105	ASTM A105	2

DYSTRYBUTOR W POLSCE:
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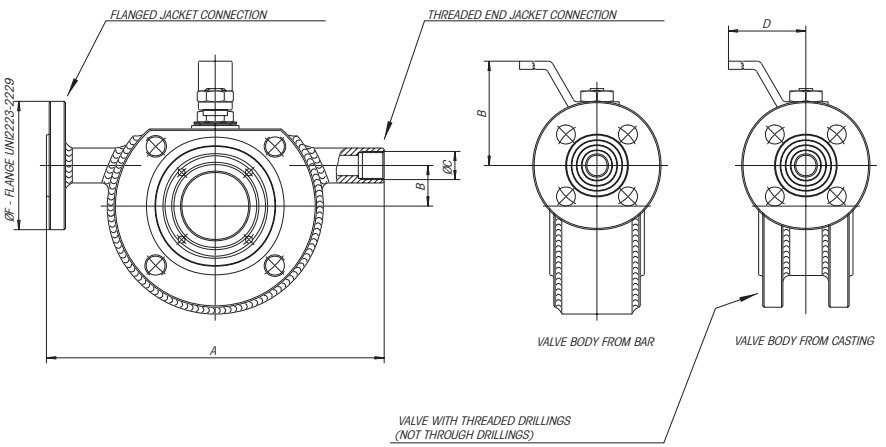
tel.:(+48 58) 522 03 80 fax.(+48 58) 342 20 10

UNI EN ISO 9001: 2000
Progettazione, Sviluppo, Fabbricazione
Certificato n° 0024/3

MOON CR

WAFER BALL VALVE — FULL BORE



DN	15	20	25	32	40	50	65	80	100
A	160	160	190	210	230	250	270	300	340
B	0	0	0	25	30	40	45	50	70
ØC	G. 1/2"	G. 1/2"	G. 1/2"	G. 1/2"	G. 1/2"	G. 1/2"	G. 1/2"	G. 1/2"	G. 1"
D	140	140	180	180	230	230	350	350	508
E	65	70	82	85	102	110	137.5	150	165
ØF	DN15	DN15	DN15	DN15	DN15	DN15	DN15	DN15	DN25

BREAKAWAY TORQUES in Nm

PN - bar	DN size	15	20	25	32	40	50	65	80	100
	0	4	7	10	16	25	35	55	75	150
	16	4.8	8.5	11.3	19	28	39	59	84.5	168
	25	5.2	9.1	12	20.5	29.5	41.5	62.5	92	180
	40	6	10.5	13	22.5	31.5	44	67	99	195

Nm

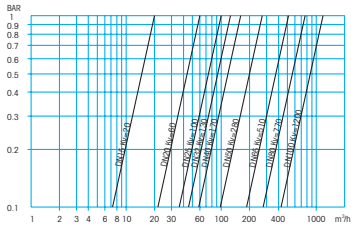
The values in Nm may vary as a function of the seals material, temperature and type of medium. For a firm operation of the various types of actuators, in the different working conditions it is necessary to consider a safety factor of 1.5. During operation, with frequent open and close cycles, the operating torque can decrease considerably in comparison with the initial breakaway torque.

PRESSURE/TEMPERATURE DIAGRAM

SEE TABLES OF THE INDIVIDUAL CONSTRUCTIONS

LOSS OF HEAD DIAGRAM/FLOW RATE

The Kv value is the flow rate causing a pressure drop of 1 bar



MOON 3W

WAFER BALL VALVE - 3-WAY, "L" OR "T" BORED, REDUCED BORE

MAIN STANDARD FEATURES

- CONSTRUCTION: AISI 316 and ASTM A105
- General prescriptions: BS 5351
- DIAMETER: from DN15 to DN100
- PRESSURES: PN16/40 from DN15 to DN50 and DN80
  PN16 for DN65 and DN100
- TEMPERATURE LIMITS: from -20°C to +180°C
- CONNECTIONS with flanges: UNI 2223-2229 and DIN 2501 BL.1
- FLANGE DRILLING: METRIC
- BLOW-OUT PROOF stem with antistatic device (from DN40)
- WRAPPING SIDE SEALING composed of 2 seats
- TRIPLE stem-packing with labyrinth effect and automatic adjustement by Belleville washers
- ISO 5211 mounting plate for actuators
- OPERATION device: lever handle

STANDARD PART NUMBERS

Art. NA02 A 316-PN16,L ball	**Art. NF02** A 316-PN16,T ball	**Art. NC02** A 105-PN16,L ball	**Art. NH02** A 105-PN16,T ball
Art. NA04 A 316-PN40,L ball	**Art. NF04** A 316-PN40,T ball	**Art. NC04** A 105-PN40,L ball	**Art. NH04** A 105-PN40,T ball

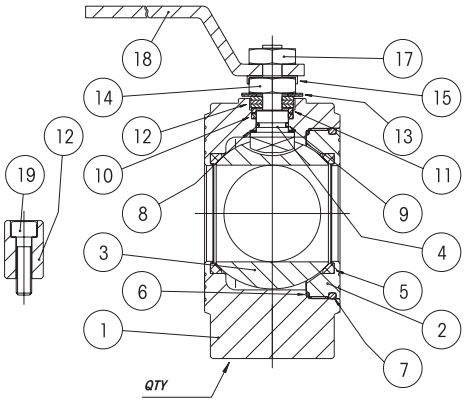
SPECIAL EXECUTIONS

- 15% GLASS-FILLED PTFE with temperature limits -20°C +195°C
- PTFE + CARBOGRAPHITE with temperature limits -20°C +210°C
- DN65 and DN100 PN25/40: metric flange drilling
- VALVE with pneumatic actuator
- Reduction gear with manual operation
- Stem extensions: 50mm or 100mm
- Antistatic device from DN15 to DN32
- On request the valve is available with ATEX certificate
- For further special requests please consult our technical/commercial service

GENERAL APPLICATIONS

Use as an ON-OFF valve for deviation or mixing of fluids and gases in general installation.

For special utilizations ascertain the compatibility with process features and the corrosion resistance also by the relevant table.

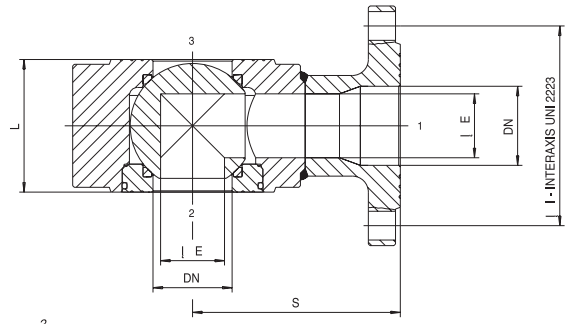


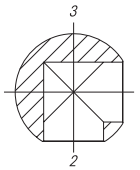
LIST OF COMPONENTS AND MATERIALS

REF.	PART	MATERIAL AISI 316 Vers	MATERIAL A 105 Vers	QTY
1	BODY	AISI 316	ASTM A105	1
2	THREADED LOCKING RING	AISI 316	ASTM A105	1
3	BALL	AISI 316	AISI 316	1
4	STEM	AISI 316	AISI 304	1
5	SEAT	PTFE	PTFE	2
6	SIDE SEALING RING	PTFE	PTFE	1
7	O-RING	NBR	NBR	1
8	UPPER RING	PTFE	PTFE	2
9	STEM O-RING	VITON	VITON	1
10	UPPER SEALING COUPLE	PTFE	PTFE	1
11	GLAND WASHER	AISI 304	AISI 304	1
12	OPERATION STOP	AISI 304	AISI 304	1
13	BELLEVILLE WASHERS	50CrV4	50CrV4	2
14	STEM RETAINING NUT	ACIER INOX	IDEM	1
15	FIXING NUT PLATE	AISI 304	AISI 304	1
17	LOCKING NUT	ACIER INOX	IDEM	1
18	LEVER HANDLE	ACIER INOX	IDEM	1
19	OPERATION STOP SCREW	ACIER INOX	IDEM	1

MOON 3W

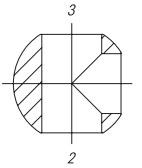
WAFER BALL VALVE - 3-WAY, "L" OR "T" BORED, REDUCED BORE





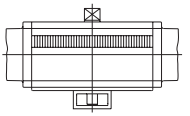
"L" BALL

Possible operations: 1-2; 1-3

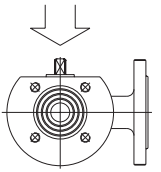


"T" BALL

Possible operations: 1-2-3; 1-2; 1-3



By removing the lever handle, the Moon valve can be assembled directly on an actuator by means of a bracket with screws, the stem adapter and by replacing the operation stop (part 12) of the valve (kit supplied upon sequest).



SIZE	øE	øI	L	S	N° HOLES	PN	ISO conn	weight in gr°.
DN15	10	65	35	85	4	40	F03	2140
DN20	15	75	38	90	4	40	F03	2892
DN25	20	85	43	90	4	40	F04	3690
DN32	25	100	54	105	4	40	F04	6125
DN40	32	110	66	120	4	40	F05	8085
DN50	40	125	83	130	4	40	F05	11180
DN65	50	145	103	150	4	16	F07	19470
DN65	50	145	103	150	8	40	F07	19470
DN80	65	160	122	175	8	40	F07	25080
DN100	78	180	153	185	8	16	F10	38565
DN100	78	190	153	195	8	40	F10	45315

For the missing dimensions please refer to the tables concerning MOON ND.

BREAKAWAY TORQUES in Nm

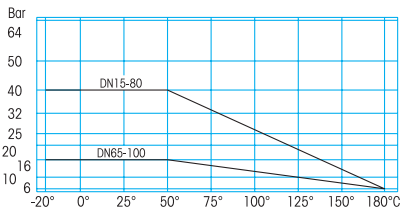
PN - bar

DIN size	15	20	25	32	40	50	65	80	100
0	4	7	10	16	25	35	55	75	150
16	4.8	8.5	11.3	19	28	39	59	84.5	168
25	5.2	9.1	12	20.5	29.5	41.5	62.5	92	180
40	6	10.5	13	22.5	31.5	44	67	99	195

Nm

The values in Nm may vary as a function of the seals material, temperature and type of medium.
For a firm operation of the various types of actuators, in the different working conditions it is necessary to consider a safety factor of 1.5. During operation, with frequent open and close cycles, the operating torque can decrease considerably in comparison with the initial breakaway torque.

PRESSURE/TEMPERATURE DIAGRAM, At each pressure level corresponds the admissible temperature level.



SELENE AISI 316

WAFER SPLIT BODY BALL VALVE – FULL BORE

MAIN STANDARD FEATURES

- CONSTRUCTION: AISI 316
- General prescriptions: BS 5351
- Certifications to FIRE SAFE to: BS 6755 - API 6 FA - API 607 up to DN100
  STÜV for TA Luft up to DN100
- DIAMETER: from DN 50 to DN 200
- PRESSURES: PN 16/40 from DN 50 to DN 100
  PN 16 DN 125, 150, 200
- TEMPERATURE LIMITS: from –20°C to +180°C
- CONNECTIONS with flanges: UNI 2223-2229 and DIN 2501 BL.1
- FLANGE DRILLING: METRIC
- BLOW-OUT PROOF stem with antistatic device
- WRAPPING SEATS
- ISO 5211 mounting plate for actuators
- OPERATION device: lever handle
- BOLTED flange for ball retaining
- With contained ball

STANDARD PART NUMBERS

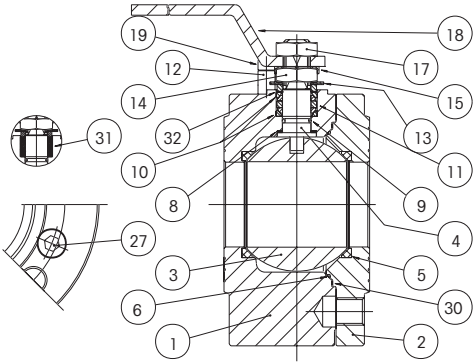
Art. 2901	Art. 2902
PN16	PN40

SPECIAL EXECUTIONS

- 15% GLASS-FILLED PTFE with temperaure limits –20°C + 195°C
- PTFE+CARBOGRAPHITE with temperaure limits –20°C + 210°C
- Integral seats in PTFE up to DN100
- DN 125 to DN 200 PN 25/40
- Reduction gear with manual operation
- Stem extensions: 50 mm or 100 mm up to DN 100
- Yellow lever handle for gas
- Degreased version
- For further special requests please consult our technical/commercial service

GENERAL APPLICATIONS

Use as an ON-OFF valve for: installations for gas, water, air distribution. Suitable for vacuum $1 \cdot 10^{-3}$ STD CC, steam up to +195°C with PTFE+CARBOGRAPHITE and for industrial plants in general.Thanks to its reduced face to face dimensions and its intrinsic features it offers wide applications in new projects also as an alternative to the standard split body valve. For special utilizations ascertain the compatibility with process features and the corrosion resistance also by the relevant table.



LIST OF COMPONENTS AND MATERIALS

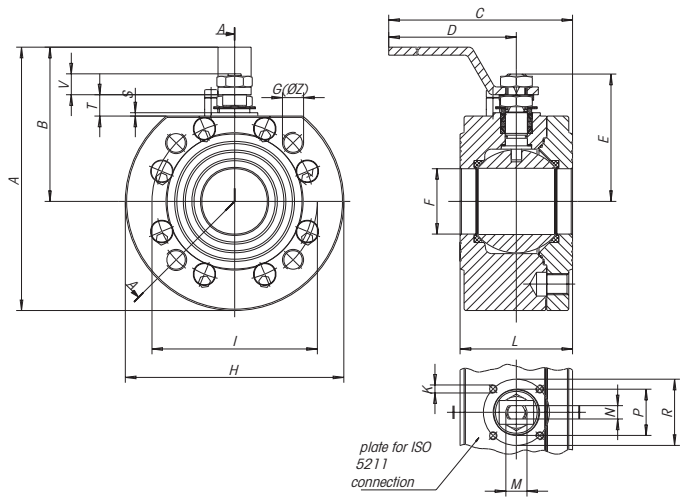
REF.	PART	MATERIAL	DIN MAT.	QTY
1	BODY	AISI 316	1.4401	1
2	FLANGE	AISI 316	1.4401	1
3	BALL	AISI 316	1.4401	1
4	STEM	AISI 316	1.4401	1
5	SEAT	PTFE		2
6	SIDE SEALING RING	PTFE		1
8	UPPER RING	PTFE		3
9	STEM O-RING	VITON		1
10	UPPER SEALING COUPLE	PTFE		2
11	PACKING GLAND	AISI 304	1.4301	2
12	OPERATION STOP	AISI 304	1.4301	1
13	BELLEVILLE WASHERS	AISI 301	1.4310	2
14	STEM RETAINING NUT	AISI 304	1.4301	1
15	FIXING NUT PLATE	AISI 304	1.4301	1
17	LOCKING NUT	AISI 304	1.4301	1
18	LEVER HANDLE	AISI 304	1.4301	1
19	OPERATION STOP SCREW	AISI 304	1.4301	1
27	FLANGE LOCKING SCREW	AISI 304	1.4301	1
30	SIDE SEALING RING	GRAFITO PURO		1
31	V SHAPED CHEVRON TYPE	PTFE+GRAFITO		1
32	UPPER RING	PTFE		1

DYSTRYBUTOR W POLSCE:
ECOZAM Sp. z o.o.
ul.Załogowa 17 80-557 Gdańsk
tel.:(+48 58) 522 03 80 fax.(+48 58) 342 20 10

UNI EN ISO 9001: 2000
Progettazione, Sviluppo, Fabbricazione
Certificato n° 0024/3

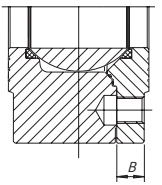
SELENE AISI 316

WAFER SPLIT BODY BALL VALVE – FULL BORE



FLANGE DRILLINGS UNI2223-67

SIZE	A	B
DN65	M16	20
DN80	M16	24
DN100	M16	20
DN100	M20	24
DN125	M16	22
DN150	M20	22
DN200	M20	24



SIZE	A	B	C	D	E	F	G	H	K	I	L	M	N	P	R	S	T	V	N. Holes	PN	ISO	Weight in gr.
DN40	183	108	273	230	87	40	M16	150	M6	110	76	M16	10	-	50	-	10	14	4	40	F05	8750
DN50	199	117	273	230	94.5	49.5	M16	165	M6	125	85	M16	10	35	50	2.5	16	14	4	40	F05	11000
DN65	232	139	372	320	119.5	65	M16	185	M8	145	103	M22	14	55	70	3	19	20.5	4	16	F07	17500
DN65	232	139	372	320	119.5	65	M16	185	M8	145	103	M22	14	55	70	3	19	20.5	8	40	F07	17300
DN80	249	149	381	320	129.5	78	M16	200	M8	160	122	M22	14	55	70	3	19	20.5	8	40	F07	22800
DN100	277	167	448	370	148.5	96	M16	220	M10	180	155	M27	16	70	102	3	22.2	25.3	8	16	F10	34500
DN100	284	167	448	370	148.5	96	M20	235	M10	190	155	M27	16	70	102	3	22.2	25.3	8	40	F10	39000
DN125	309	181	455	370	166.5	118	M16	255	M10	210	170*	M27	16	70	102	3	22.2	25.3	8	16	F10	51220
DN150	388	241	500	395	197.5	144	M20	259	M12	240	210*	M42	26	-	125	-	4	29	8	16	F12	80960
DN200	458	276	829	674	232.5	192	M20	365	M12	295	310*	M42	26	-	125	-	4	29	12	16	F12	177060

*** from 2005 DN125 : L 185 DN150 : L 235 DN200 : L 315**

BREAKAWAY TORQUES in Nm

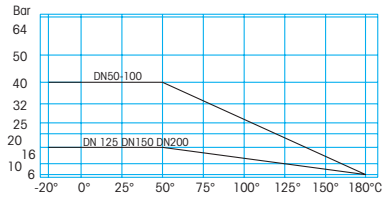
PN - bar \ DN size	50	65	80	100	125	150	200
0	35	55	75	150	240	310	600
16	39	59	84.5	168	300	400	800
25	41.5	62.5	92	180			
40	44	67	99	195			

Nm

The values in Nm may vary as a function of the seals material, temperature and type of medium. For a firm operation of the various types of actuators, in the different working conditions it is necessary to consider a safety factor of 1.5. During operation, with frequent open and close cycles, the operating torque can decrease considerably in comparison with the initial breakaway torque.

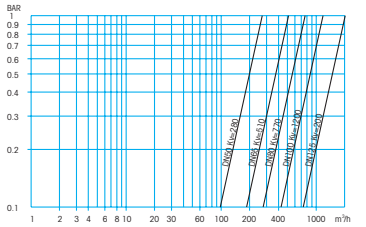
PRESSURE/TEMPERATURE DIAGRAM

At each pressure level corresponds the admissible temperature level.



LOSS OF HEAD DIAGRAM/FLOW RATE

The Kv value is the flow rate causing a pressure drop of 1 bar



SELENE AISI 316

WAFER SPLIT BODY BALL VALVE - FULL BORE WITH **DOUBLE ACTING** PNEUMATIC ACTUATOR

ACTUATOR FEATURES

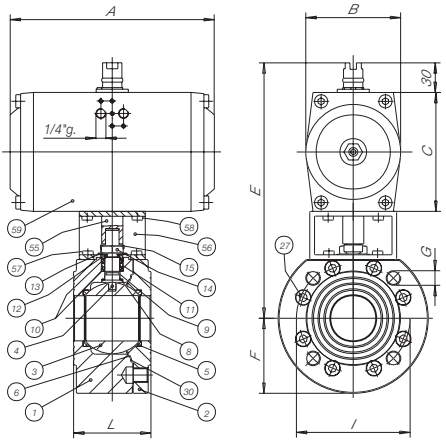
- Rotation angle: 90°
- Standard version for temperature between –20°C and + 90°C
- Supply maximum pressure: 10 bar (8bar for DNA045)
- Nominal pressure: 5,62 bar
- Supply medium: dry filtered compressed air, not necessarily lubricated
- Lubrication: in such a case use a non-detergent or NBR compatible oil

STANDARD VALVE FEATURES

- General prescriptions: BS 5351, Fire safe to: BS 6755-API 6 FA- API 607
- Working temperature: from –20°C to +180°C
- Maximum working pressure with actuator: **PN 16** (PN 25 and 40 on request)
- CONNECTIONS with flanges: UNI 2223-2229 AND DIN 2501 BL.1
- FLANGE DRILLING: METRIC
- BLOW-OUT PROOF stem with antistatic device
- For general applications and special versions see technical table of manual valve
- In the below table the part number and the valve code refer to the standard valve **PN 16** and PN 40 where applicable

SIZE	PART NUMBER	weight in gr.	A	B	C	E	F	G	I	L	PN	ACTUATOR code	VALVE code	MOUNTING KIT code
DN50	D91AA60900	13700	182	91	108	260.5	82.5	M16	125	85	40	DGA083AX00	V901X609	K1GA0008
DN65	D91AA61000	21215	203	100	117	294	92.5	M16	145	103	16	DGA092AX00	V901X610	K1GA0010
DN65	D92AA61000	21015	203	100	117	294	92.5	M16	145	103	40	DGA092AX00	V902X610	K1GA0010
DN80	D91AA61100	28085	222	120	140	327	100	M16	160	122	40	DNA110AX00	V901X611	K1GA0011
DN100	D91AA61200	43800	300	137	160	382	110	M16	180	155	16	DNA127AX00	V901X612	K1GA0012
DN100	D92AA61200	48300	300	137	160	382	117.5	M20	190	155	40	DNA127AX00	V902X612	K1GA0012
DN125	D91AA61300	77000	380	172	198	430	128	M16	210	170*	16	DNA160AX00	V901X613	K1GA0013
DN150	D91AA61400	114000	450	224	255	542	148	M20	240	210*	16	DNA160AX00	V901X614	K1GA0014
DN200	D91AA61500	224000	450	224	255	564	183	M20	295	310*	16	DNA210AX00	V901X615	K1GA0015

*** from 2005 DN125 : L 185 DN150 : L 235 DN200 : L 315**



LIST OF VALVE COMPONENTS AND MATERIALS

REF.	PART	QTY	MATERIAL
1	BODY	1	AISI 316/CF8M
2	FLANGE	1	AISI 316
3	BALL	1	AISI 316
4	STEM	1	AISI 316
5	SEAT	2	PTFE
6	SIDE SEALING RING	1	PTFE
8	UPPER RING	3	PTFE
9	STEM O-RING	1	VITON
10	UPPER SEALING COUPLE	1	PTFE
11	PACKING GLAND	1	AISI 304
12	WASHER	1	AISI 304
13	BELLEVILLE WASHERS	2	AISI 301
14	STEM RETAINING NUT	1	AISI 304
15	FIXING NUT PLATE	1	AISI 304
27	FLANGE LOCKING SCREW	8	AISI 304
30	SIDE SEALING RING	1	GRAPHITE
55	ACTUATOR SHAFT	1	C.S.
56	BRACKET	1	C.S.
57	BRACKET/VALVE SCREW	4	8.8
58	BRACKET/ACTUATOR SCREW	4	8.8
59	ACTUATOR	1	

For accessories see relevant catalogue sheet

SELENE AISI 316

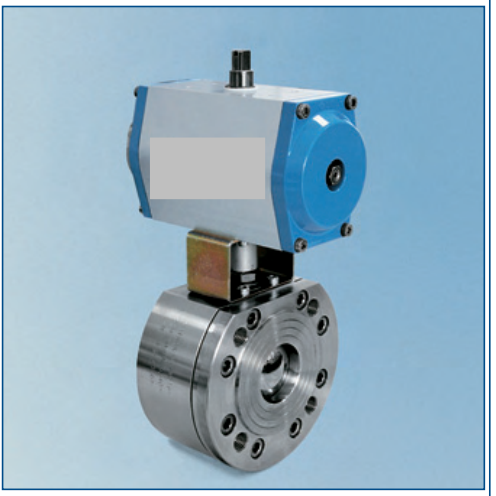
WAFER SPLIT BODY BALL VALVE - FULL BORE WITH **SPRING RETURN** PNEUMATIC ACTUATOR

ACTUATOR FEATURES

- Rotation angle: 90°
- Standard version for temperature between –20°C and + 90°C
- Supply maximum pressure: 10 bar
- Nominal pressure: 5,62 bar
- Supply medium: dry filtered compressed air, not necessarily lubricated
- Lubrication: in such a case use a non-detergent or NBR compatible oil
- STANDARD: **SPRING CLOSES/AIR OPENS**, clockwise automatic closing

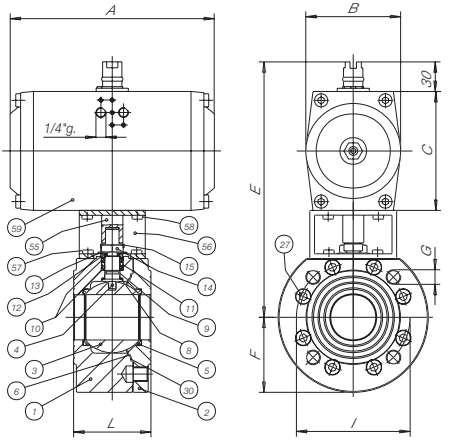
STANDARD VALVE FEATURES

- General prescriptions: BS 5351, Fire safe BS 6755-API 6 FA- API 607
- Working temperature: from –20°C to +180°C
- Maximum working pressure with actuator: **PN 16** (PN 25 and 40 on request)
- CONNECTIONS with flanges: UNI 2223-2229 AND DIN 2501 BL.1
- FLANGE DRILLING: METRIC
- BLOW-OUT PROOF stem with antistatic device
- For general applications and special versions see technical table of manual valve
- In the below table the part number and the valve code refer to the standard valve **PN 16** and PN 40 where applicable



SIZE	PART NUMBER	weight in gr.	A	B	C	E	F	G	I	L	PN	ACTUATOR code	VALVE code	MOUNTING KIT code
DN50	S91AA60900	16720	222	120	140	292,5	82.5	M16	125	85	40	SNA1104X00	V901X609	K1GA0108
DN65	S91AA61000	27620	300	137	160	337	92.5	M16	145	103	16	SNA1274X00	V901X610	K1GA0110
DN65	S92AA61000	27420	300	137	160	337	92.5	M16	145	103	40	SNA1274X00	V902X610	K1GA0110
DN80	S91AA61100	41690	380	172	198	395	100	M16	160	122	40	SNA1604X00	V901X611	K1GA0111
DN100	S91AA61200	54270	380	172	198	430	110	M16	180	155	16	SNA1605X00	V901X612	K1GA0112
DN100	S92AA61200	58770	380	172	198	430	117.5	M20	190	155	40	SNA1605X00	V902X612	K1GA0112
DN125	S91AA61300	93000	450	224	255	492	128	M16	210	170*	16	SNA2104X00	V901X613	K1GA0113
DN150	S91AA61400	171000	683	272	302	594	148	M20	240	210*	16	SNA2544X00	V901X614	K1GA0114
DN200	S91AA61500	261000	603	272	302	634	183	M20	295	310*	16	SNA2554X00	V901X615	K1GA0115

*** from 2005 DN125 : L 185 DN150 : L 235 DN200 : L 315**



LIST OF VALVE COMPONENTS AND MATERIALS

REF.	PART	QTY	MATERIAL
1	BODY	1	AISI 316/CF8M
2	FLANGE	1	AISI 316
3	BALL	1	AISI 316
4	STEM	1	AISI 316
5	SEAT	2	PTFE
6	SIDE SEALING RING	1	PTFE
8	UPPER RING	3	PTFE
9	STEM O-RING	1	VITON
10	UPPER SEALING COUPLE	1	PTFE
11	PACKING GLAND	1	AISI 304
12	WASHER	1	AISI 304
13	BELLEVILLE WASHERS	2	AISI 301
14	STEM RETAINING NUT	1	AISI 304
15	FIXING NUT PLATE	1	AISI 304
27	FLANGE LOCKING SCREW	8	AISI 304
30	SIDE SEALING RING	1	GRAPHITE
55	ACTUATOR SHAFT	1	C.S
56	BRACKET	1	C.S.
57	BRACKET/VALVE SCREW	4	8.8
58	BRACKET/ACTUATOR SCREW	4	8.8
59	ACTUATOR	1	

For accessories see relevant catalogue sheet

SELENE A 105

WAFER SPLIT BODY BALL VALVE – FULL BORE

MAIN STANDARD FEATURES

- CONSTRUCTION: ASTM A 105
- General prescriptions: BS 5351
- Certifications: FIRE SAFE to: BS 6755 - API 6 FA - API 607 up to DN100
  TÜV for TA Luft up to DN100
- DIAMETER: from DN 50 to DN 200
- PRESSURES: PN 16/40 from DN 50 to DN 100
  PN 16 from DN 125 to DN 200
- TEMPERATURE LIMITS: from –10°C to +180°C
- CONNECTIONS with flanges: UNI 2223-2229 and DIN 2501 BL.1
- FLANGE DRILLING: METRIC
- BLOW-OUT PROOF stem with antistatic device
- WRAPPING SEATS
- ISO 5211 mounting plate for actuators
- OPERATION device: lever handle
- BOLTED flange for ball retaining

STANDARD PART NUMBERS

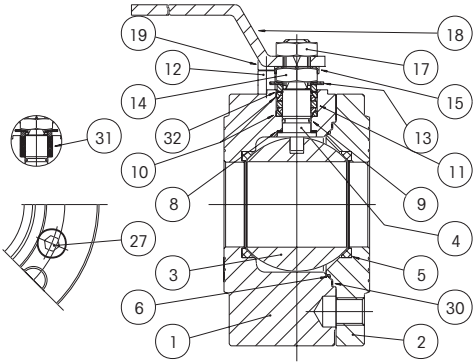
Art. 2903	Art. 2904
PN16	PN40

GENERAL APPLICATIONS

Use as an ON-OFF valve for: installations for gas, water, air distribution. Suitable for vacuum $1 \cdot 10^{-3}$ STD CC, steam up to +195°C with PTFE+CARBOGRAPHITE and for industrial plants in general.Thanks to its reduced face to face dimensions and its intrinsic features it offers wide applications in new projects also as an alternative to the standard split body valve. For special utilizations ascertain the compatibility with process features and the corrosion resistance also by the relevant table.

SPECIAL EXECUTIONS

- 15% GLASS-FILLED PTFE with temperaure limits –10°C + 195°C
- PTFE+CARBOGRAPHITE with temperaure limits –10°C + 210°C
- Integral seats in PTFE up to DN100
- DN 125 to DN 200 PN 25/40
- Reduction gear with manual operation
- Stem extensions: 50 mm or 100 mm up to DN 100
- Yellow lever handle for gas up to DN100
- Body in LF2 up to -20°C
- On request the valve is available with ATEX certificate
- For further special requests please consult our technical/commercial service



LIST OF COMPONENTS AND MATERIALS

REF.	PART	MATERIAL	DIN MAT.	QTY
1	BODY	ASTM A105		1
2	FLANGE	ASTM A105		1
3	BALL	AISI 304	1.4301	1
4	STEM	AISI 304	1.4301	1
5	SEAT	PTFE		2
6	SIDE SEALING RING	PTFE		1
8	UPPER RING	PTFE		2
9	STEM O-RING	VITON		1
10	UPPER SEALING COUPLE	PTFE		2
11	PACKING GLAND	AISI 304	1.4301	2
12	OPERATION STOP	AISI 304		1
13	BELLEVILLE WASHERS	50CrV4		2
14	STEM RETAINING NUT	AISI 304		1
15	FIXING NUT PLATE	AISI 304	1.4301	1
17	LOCKING NUT	AISI 304		1
18	LEVER HANDLE	AISI 304		1
19	OPERATION STOP SCREW	AISI 304		1
27	FLANGE LOCKING SCREW	AISI 304		1
30	SIDE SEALING RING	GRAPHITE		1
31	V SHAPED CHEVRON TYPE	PTFE+GRAPHITE		1
32	UPPER RING	PTFE		1

DYSTRYBUTOR W POLSCE:
ECOZAM Sp. z o.o.
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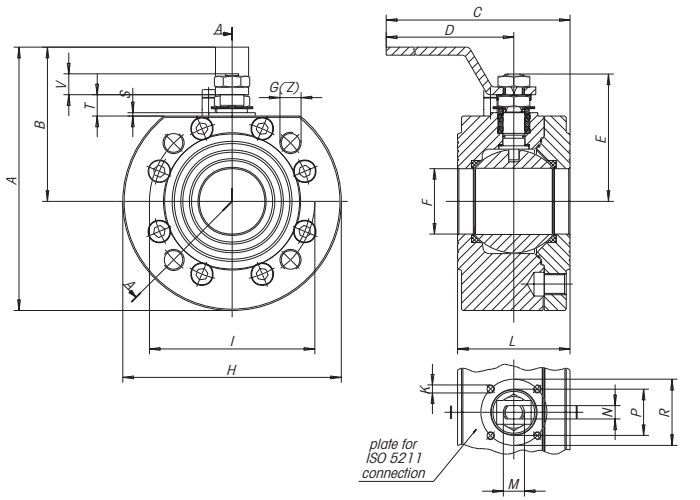
UNI EN ISO 9001: 2000
Progettazione, Sviluppo, Fabbricazione
Certificato n° 0024/3

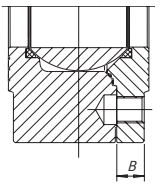
SELENE A 105

WAFER SPLIT BODY BALL VALVE – FULL BORE



FLANGE DRILLINGS UNI2223-67

SIZE	A	B
DN65	M16	20
DN80	M16	24
DN100	M16	20
DN100	M20	24
DN125	M16	22
DN150	M20	22
DN200	M20	24



SIZE	A	B	C	D	E	F	G	H	K	I	L	M	N	P	R	S	T	V	N. Holes	PN	ISO	Weight in gr.
DN40	183	108	273	230	87	40	M16	150	M6	110	76	M16	10	-	50	-	10	14	4	40	F05	8750
DN50	199	117	273	230	94.5	49.5	M16	165	M6	125	85	M16	10	35	50	2.5	16	14	4	40	F05	11000
DN65	232	139	372	320	119.5	65	M16	185	M8	145	103	M22	14	55	70	3	19	20.5	4	16	F07	17500
DN65	232	139	372	320	119.5	65	M16	185	M8	145	103	M22	14	55	70	3	19	20.5	8	40	F07	17300
DN80	249	149	381	320	129.5	78	M16	200	M8	160	122	M22	14	55	70	3	19	20.5	8	40	F07	22800
DN100	277	167	448	370	148.5	96	M16	220	M10	180	155	M27	16	70	102	3	22.2	25.3	8	16	F10	34500
DN100	284	167	448	370	148.5	96	M20	235	M10	190	155	M27	16	70	102	3	22.2	25.3	8	40	F10	39000
DN125	309	181	455	370	166.5	118	M16	255	M10	210	170*	M27	16	70	102	3	22.2	25.3	8	16	F10	51000
DN150	388	241	500	395	197.5	144	M20	259	M12	240	210*	M42	26	-	125	-	4	29	8	16	F12	81000
DN200	458	276	829	674	232.5	192	M20	365	M12	295	310*	M42	26	-	125	-	4	29	12	16	F12	177000

*** from 2005 DN125 : L 185 DN150 : L 235 DN200 : L 315**

BREAKAWAY TORQUES in Nm

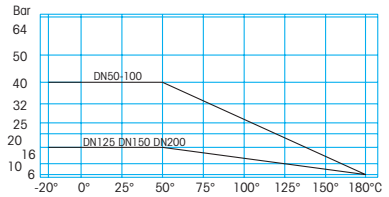
PN - bar	DN size	50	65	80	100	125	150	200
	0	35	55	75	150	240	310	600
	16	39	59	84.5	168	300	400	800
	25	41.5	62.5	92	180			
	40	44	67	99	195			

Nm

The values in Nm may vary as a function of the seals material, temperature and type of medium. For a firm operation of the various types of actuators, in the different working conditions it is necessary to consider a safety factor of 1.5. During operation, with frequent open and close cycles, the operating torque can decrease considerably in comparison with the initial breakaway torque.

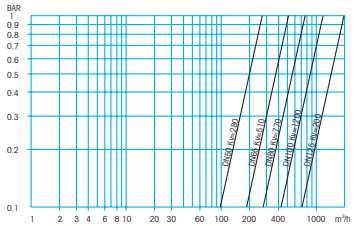
PRESSURE/TEMPERATURE DIAGRAM

At each pressure level corresponds the admissible temperature level.



LOSS OF HEAD DIAGRAM/FLOW RATE

The Kv value is the flow rate causing a pressure drop of 1 bar



UNI EN ISO 9001: 2000
Progettazione, Sviluppo, Fabbricazione
Certificato n° 0024/3

SELENE A 105

WAFER SPLIT BODY BALL VALVE - FULL BORE WITH **DOUBLE ACTING** PNEUMATIC ACTUATOR

ACTUATOR FEATURES

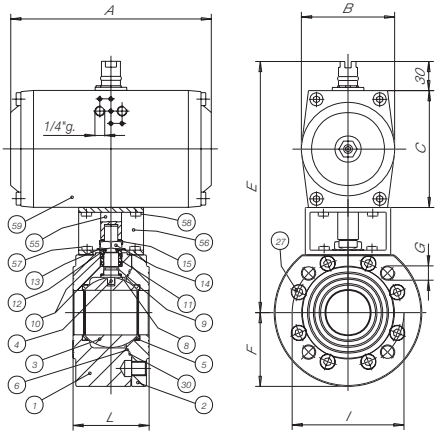
- Rotation angle: 90°
- Standard version for temperature between –20°C and + 90°C
- Supply maximum pressure: 10 bar (8bar for DNA045)
- Nominal pressure: 5,62 bar
- Supply medium: dry filtered compressed air, not necessarily lubricated
- Lubrication: in such a case use a non-detergent or NBR compatible oil

STANDARD VALVE FEATURES

- General prescriptions: BS 5351, Fire safe to: BS 6755-API 6 FA- API 607
- Working temperature: from –20°C to +180°C
- Maximum working pressure with actuator: **PN 16** (PN 25 and 40 on request)
- CONNECTIONS with flanges: UNI 2223-2229 AND DIN 2501 BL.1
- FLANGE DRILLING: METRIC
- BLOW-OUT PROOF stem with antistatic device
- For general applications and special versions see technical table of manual valve
- In the below table the part number and the valve code refer to the standard valve **PN 16** and PN 40 where applicable

SIZE	PART NUMBER	weight in gr.	A	B	C	E	F	G	I	L	PN	ACTUATOR code	VALVE code	MOUNTING KIT code
DN50	D95AA60900	13700	182	91	108	260.5	82.5	M16	125	85	40	DGA083AX00	V903X609	K1GA0008
DN65	D95AA61000	21215	203	100	117	294	92.5	M16	145	103	16	DGA092AX00	V903X610	K1GA0010
DN65	D96AA61000	21015	203	100	117	294	92.5	M16	145	103	40	DGA092AX00	V904X610	K1GA0010
DN80	D95AA61100	28085	222	120	140	327	100	M16	160	122	40	DNA110AX00	V903X611	K1GA0011
DN100	D95AA61200	43800	300	137	160	382	110	M16	180	155	16	DNA127AX00	V903X612	K1GA0012
DN100	D96AA61200	48300	300	137	160	382	117.5	M20	190	155	40	DNA127AX00	V904X612	K1GA0012
DN125	D95AA61300	77000	380	172	198	430	128	M16	210	170*	16	DNA160AX00	V903X613	K1GA0013
DN150	D95AA61400	114000	450	224	255	542	148	M20	240	210*	16	DNA160AX00	V903X614	K1GA0014
DN200	D95AA61500	224000	450	224	255	564	183	M20	295	310*	16	DNA210AX00	V903X615	K1GA0015

*** from 2005** **DN125 : L 185** **DN150 : L 235** **DN200 : L 315**



LIST OF VALVE COMPONENTS AND MATERIALS

REF.	PART	QTY	MATERIAL
1	BODY	1	ASTM A105
2	FLANGE	1	ASTM A105
3	BALL	1	AISI 304
4	STEM	1	AISI 304
5	SEAT	2	PTFE
6	SIDE SEALING RING	1	PTFE
8	UPPER RING	3	PTFE
9	STEM O-RING	1	VITON
10	UPPER SEALING COUPLE	1	PTFE
11	PACKING GLAND	1	AISI 304
12	WASHER	1	AISI 304
13	BELLEVILLE WASHERS	2	50CrV4
14	STEM RETAINING NUT	1	AISI 304
15	FIXING NUT PLATE	1	AISI 304
27	FLANGE LOCKING SCREW	8	AISI 304
30	SIDE SEALING RING	1	GRAPHITE
55	ACTUATOR SHAFT	1	C.S.
56	BRACKET	1	C.S.
57	BRACKET/VALVE SCREW	4	8.8
58	BRACKET/ACTUATOR SCREW	4	8.8
59	ACTUATOR	1	

For accessories see relevant catalogue sheet

SELENE A 105

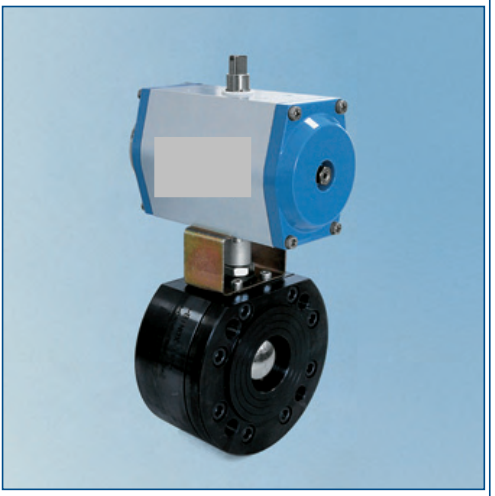
WAFER SPLIT BODY BALL VALVE - FULL BORE WITH **SPRING RETURN** PNEUMATIC ACTUATOR

ACTUATOR FEATURES

- Rotation angle: 90°
- Standard version for temperature between –20°C and + 90°C
- Supply maximum pressure: 10 bar
- Nominal pressure: 5,62 bar
- Supply medium: dry filtered compressed air, not necessarily lubricated
- Lubrication: in such a case use a non-detergent or NBR compatible oil
- STANDARD: **SPRING CLOSES/AIR OPENS**, clockwise automatic closing

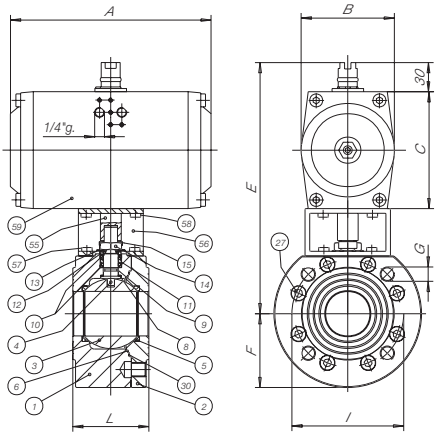
STANDARD VALVE FEATURES

- General prescriptions: BS 5351, Fire safe to: BS 6755-API 6 FA- API 607
- Working temperature: from –20°C to +180°C
- Maximum working pressure with actuator: **PN 16** (PN 25 and 40 on request)
- CONNECTIONS with flanges: UNI 2223-2229 AND DIN 2501 BL.1
- FLANGE DRILLING: METRIC
- BLOW-OUT PROOF stem with antistatic device
- For general applications and special versions see technical table of manual valve
- In the below table the part number and the valve code refer to the standard valve **PN 16** and PN 40 where applicable



SIZE	PART NUMBER	weight in gr.	A	B	C	E	F	G	I	L	PN	ACTUATOR code	VALVE code	MOUNTING KIT code
DN50	S95AA60900	16720	222	120	140	292,5	82.5	M16	125	85	40	SNA1104X00	V903X609	K1GA0108
DN65	S95AA61000	27620	300	137	160	337	92.5	M16	145	103	16	SNA1274X00	V903X610	K1GA0110
DN65	S96AA61000	27420	300	137	160	337	92.5	M16	145	103	40	SNA1274X00	V904X610	K1GA0110
DN80	S95AA61100	41690	380	172	198	395	100	M16	160	122	40	SNA1604X00	V903X611	K1GA0111
DN100	S95AA61200	54270	380	172	198	430	110	M16	180	155	16	SNA1605X00	V903X612	K1GA0112
DN100	S96AA61200	58770	380	172	198	430	117.5	M20	190	155	40	SNA1605X00	V904X612	K1GA0112
DN125	S95AA61300	93000	450	224	255	492	128	M16	210	170*	16	SNA2104X00	V903X613	K1GA0113
DN150	S95AA61400	171000	683	272	302	594	148	M20	240	210*	16	SNA2544X00	V903X614	K1GA0114
DN200	S95AA61500	261000	603	272	302	634	183	M20	295	310*	16	SNA2554X00	V903X615	K1GA0115

*** from 2005** **DN125 : L 185** **DN150 : L 235** **DN200 : L 315**



LIST OF VALVE COMPONENTS AND MATERIALS

REF.	PART	QTY	MATERIAL
1	BODY	1	ASTM A105
2	FLANGE	1	ASTM A105
3	BALL	1	AISI 304
4	STEM	1	AISI 304
5	SEAT	2	PTFE
6	SIDE SEALING RING	1	PTFE
8	UPPER RING	3	PTFE
9	STEM O-RING	1	VITON
10	UPPER SEALING COUPLE	1	PTFE
11	PACKING GLAND	1	AISI 304
12	WASHER	1	AISI 304
13	BELLEVILLE WASHERS	2	50CrV4
14	STEM RETAINING NUT	1	AISI 304
15	FIXING NUT PLATE	1	AISI 304
27	FLANGE LOCKING SCREW	8	AISI 304
30	SIDE SEALING RING	1	GRAPHITE
55	ACTUATOR SHAFT	1	C.S.
56	BRACKET	1	C.S.
57	BRACKET/VALVE SCREW	4	8.8
58	BRACKET/ACTUATOR SCREW	4	8.8
59	ACTUATOR	1	

For accessories see relevant catalogue sheet

ANTARES AISI 316

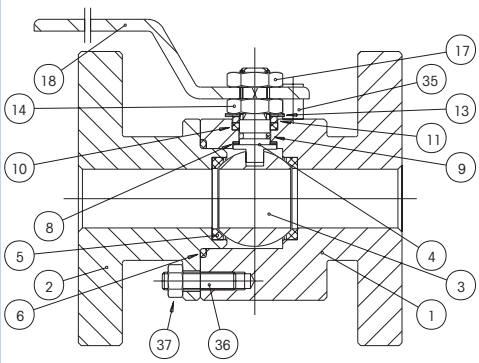
SPLIT BODY BALL VALVE – FULL BORE

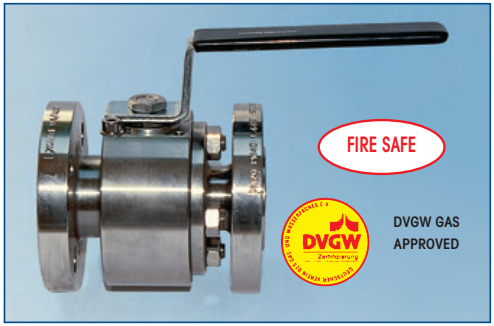
MAIN STANDARD FEATURES

- CONSTRUCTION: AISI 316
- General prescriptions: BS 5351
- Certifications: FIRE SAFE to: BS 6755 - API 6 FA - API 607
  TÜV for TA Luft
- DIAMETER: from DN 15-1/2" to DN 150-6"
- PRESSURES: PN 16/40 from DN 15 to DN 50
  PN 16 from DN 65 to DN 150
  ANSI 150 from 1/2" to 6"
- TEMPERATURE LIMITS: from –20°C to +180°C
- CONNECTIONS: flanges to UNI 2223-2229 and DIN 2501 BL.1
  DIN 3202 face to face F4
  flanges to ANSI 150 RF - ANSI B16.5 -
  ANSI B16.10 face to face
- BLOW-OUT PROOF stem with antistatic device (from DN40)
- WRAPPING SEATS
- TRIPLE stem-packing with labyrinth effect and automatic adjustment by Belleville washers
- ISO 5211 mounting plate for actuators
- OPERATION device: lever handle

SPECIAL EXECUTIONS

- 15% GLASS-FILLED PTFE with temperaure limits –20°C + 195°C
- PTFE + CARBOGRAPHITE with temperature limits -20°C + 210°C
- From DN 65 to DN 150 PN 25/40
- From DN15 to DN 100, PN16/40, DIN3202 face to face F1
- From 1/2" to 6" ANSI 300
- DN 200 PN 16, and 8" ANSI 150
  (with application of reduction gear)
- Yellow lever handle for gas
- Degreased version
- Antistatic device from DN15 to DN32
- On request the valve is available with ATEX certificate
- For further special requests please consult our technical/commercial service





STANDARD PART NUMBERS

Art. 2921	Art. 2922	Art. 2924
ANSI 150 RF	DIN face to face F4	DIN face to face F1

GENERAL APPLICATIONS

Use as an ON-OFF valve for: chemical products, food, installations for gas, water, air distribution. Suitable for vacuum up to $1x10^{-3}$ STD CC/SEC, steam up to +195°C with PTFE+CARBOGRAPHITE. Thanks to its firm standardizations it is among the most used valves in all industrial plants.
For special utilizations ascertain the compatibility with process features and the corrosion resistance also by the relevant table.

LIST OF COMPONENTS AND MATERIALS

REF.	PART	MATERIAL	DIN MAT.	QTY
1	BODY	AISI 316	1.4401	1
2	BODY FLANGE	AISI 316	1.4401	1
3	BALL	AISI 316	1.4401	1
4	STEM	AISI 316	1.4401	1
5	SEAT	PTFE		2
6	FLANGE SEAL	PTFE		1
8	STEM SEAL	PTFE		1
9	STEM O-RING	VITON		1
10	UPPER SEAL	PTFE		1
11	PACKING GLAND	AISI 316	1.4401	1
13	BELLEVILLE WASHERS	S.S.		2
14	STEM RETAINING NUT	AISI 304	1.4301	1
17	LOCKING NUT	AISI 304	1.4301	1
18	LEVER HANDLE	C.S. GALV.		1
35	OPERATION STOP PIN	AISI 304	1.4301	1
36	STUD BOLT	A 193 B8		4
37	NUT	A 194 8A		4

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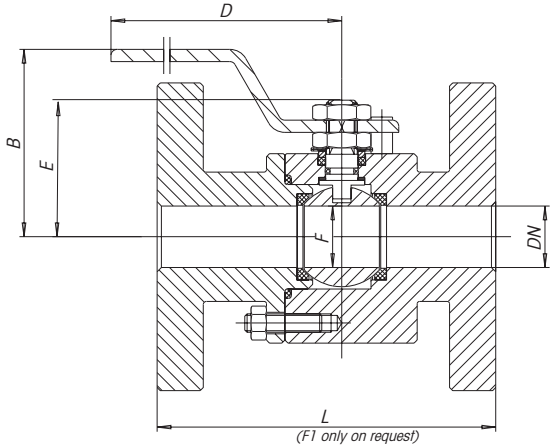
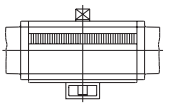
UNI EN ISO 9001: 2000
Progettazione, Sviluppo, Fabbricazione
Certificato n° 0024/3

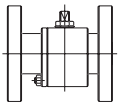
ANTARES AISI 316

SPLIT BODY BALL VALVE – FULL BORE





By removing the lever handle, the ANTARES valve can be assembled directly with an actuator by means of a bracket with screws, the stem adapter and by replacing the operation stop (part 35) of the valve (kit supplied upon request).



DIN SERIES									
SIZE	B	D	E	F	L F4	L F1	PN	ISO	Weight in gr.
DN15	66	140	48	15	115	130	16/40	F03	3600
DN20	69	140	51	20	120	150	16/40	F03	4635
DN25	82	180	62,5	25	125	160	16/40	F04	5750
DN32	87	180	67	32	130	180	16/40	F04	8320
DN40	108	230	87,5	40	140	200	16/40	F05	11160
DN50	115	230	94,5	49,5	150	230	16/40	F05	14900
DN65	139	320	119,5	65	170	290	16	F07	23750
DN80	150	320	130	78	180	310	16/40	F07	28530
DN100	163	370	148,5	96	190	350	16	F10	35560
DN150	249	584	200	144	350	480	16	F12	108900

serie ANSI 150							
SIZE	B	D	E	F	L	ISO	Weight in gr.
1/2"	66	140	48	15	108	F03	3600
3/4"	69	140	51	20	117	F03	3750
1"	82	180	62,5	25	127	F04	5525
1" 1/4	87	180	67	32	140	F04	8320
1" 1/2	108	230	87,5	40	165	F05	10260
2"	115	230	94,5	49,5	178	F05	13755
2" 1/2	139	320	119,5	65	190	F07	23130
3"	150	320	130	78	203	F07	29235
4"	163	370	148,5	96	229	F10	39385
6"	249	584	200	144	394	F12	114100

BREAKAWAY TORQUES in Nm

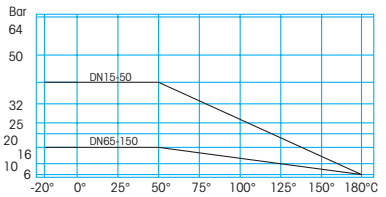
PN - bar	DN size	15	20	25	32	40	50	65	80	100
	0	4	7	15	21	26	36	51	81	130
	16	5	8	17	23	28	39	54	86	150
	40	6	10	22	28	32	45	62	120	200

Nm

The values in Nm may vary as a function of the seals material, temperature and type of medium. For a firm operation of the various types of actuators, in the different working conditions it is necessary to consider a safety factor of 1.5. During operation, with frequent open and close cycles, the operating torque can decrease considerably in comparison with the initial breakaway torque.

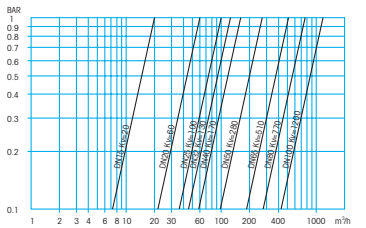
PRESSURE/TEMPERATURE DIAGRAM

At each pressure level corresponds the admissible temperature level.



LOSS OF HEAD DIAGRAM/FLOW RATE

The Kv value is the flow rate causing a pressure drop of 1 bar



ANTARES AISI 316

SPLIT BODY BALL VALVE - FULL BORE WITH **DOUBLE ACTIVE** PNEUMATIC ACTUATOR

ACTUATOR FEATURES

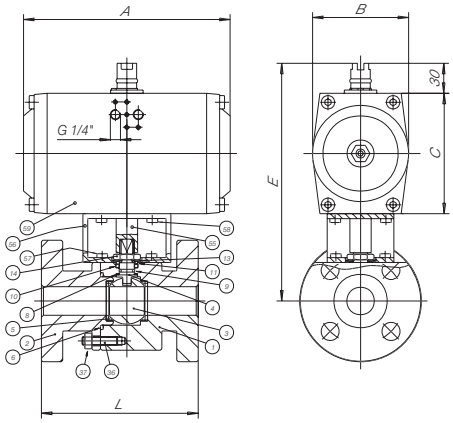
- Rotation angle: 90°
- Standard version for temperature between –20°C and + 90°C
- Supply maximum pressure: 10 bar (8bar for DNA045)
- Nominal pressure: 5,62 bar
- Supply medium: dry filtered compressed air, not necessarily lubricated
- Lubrication: in such a case use a non-detergent or NBR compatible oil

STANDARD VALVE FEATURES

- General prescriptions: BS 5351, Fire safe to: BS 6755-API 6 FA- API 607
- Working temperature: from –20°C to +180°C
- Maximum working pressure with actuator: PN 16 (PN 25 and 40 on request)
- CONNECTIONS with flanges: UNI 2223-2229 AND DIN 2501 BL.1
  DIN 3202 face to face
  ANSI 150 RF - ANSI B16.5
  ANSI B16.10 face to face
- BLOW-OUT PROOF stem with antistatic device
- For general applications and special versions see technical table of manual valve
- In the below table the part number and the valve code refer to the standard valve UNI/DIN PN 16 and PN 40 where applicable

SIZE	PART NUMBER	weight in gr.	A	B	C	E DIN	L F4	L F1	E ANSI150	L ANSI150	PN	ACTUATOR code	VALVE code	MOUNTING KIT code
DN15	D22AA60400		110	53	68	172	115	130	172	108	16/40	DNA045AZ00	3922X604	K1GA0504
DN20	D22AA60500		110	53	68	172	120	150	172	117	16/40	DNA045AZ00	3922X605	K1GA0004
DN25	D22AA60600		127	59	74	193	125	160	193	127	16/40	DGA052AX00	3922X606	K1GA0006
DN32	D22AA60700		133	70	88	214	130	180	214	140	16/40	DGA063AX00	3922X607	K1GA0007
DN40	D22AA60800		132	83	100	237	140	200	237	165	16/40	DGA075AX00	3922X608	K1GA0008
DN50	D22AA60900		182	91	108	253	150	230	253	178	16/40	DGA083AX00	3922X609	K1GA0008
DN65	D22AA61000		203	100	117	287	170		287	190	16	DGA092AX00	3922X610	K1GA0010
DN80	D22AA61100		222	120	140	321	180		321	203	16/40	DNA110AX00	3922X611	K1GA0011
DN100	D22AA61200		300	137	160	391	190		391	229	16	DNA127AX00	3922X612	K1GA0212

For ANSI 150 series the codes become: PART NUMBER = D21AA60400 ÷ 61200, VALVE code = 3921X604 ÷ 612



LIST OF VALVE COMPONENTS AND MATERIALS

REF.	PART	QTY	MATERIAL
1	BODY	1	AISI 316
2	BODY FLANGE	1	AISI 316
3	BALL	1	AISI 316
4	STEM	1	AISI 316
5	SEAT	2	PTFE
6	FLANGE SEAL	1	PTFE
8	STEM SEAL	1	PTFE
9	STEM O-RING	1	VITON
10	UPPER SEAL	1	PTFE
11	PACKING GLAND	1	AISI 316
13	BELLEVILLE WASHERS	2	S.S.
14	STEM RETAINING NUT	1	S.S.
36	STUD BOLT	1	A 193 B8
37	NUT	1	A 194 8A
55	ACTUATOR SHAFT	1	S.S.
56	BRACKET	1	S.S.
57	BRACKET/VALVE SCREW	4	8.8
58	BRACKET/ACTUATOR SCREW	4	8.8
59	ACTUATOR	1	

For accessories see relevant catalogue sheet

ANTARES AISI 316

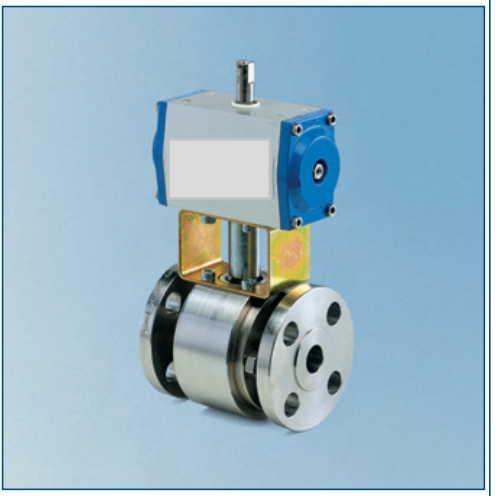
SPLIT BODY BALL VALVE - FULL BORE WITH **SPRING RETURN** PNEUMATIC ACTUATOR

ACTUATOR FEATURES

- Rotation angle: 90°
- Standard version for temperature between –20°C and + 90°C
- Supply maximum pressure: 10 bar
- Nominal pressure: 5,62 bar
- Supply medium: dry filtered compressed air, not necessarily lubricated
- Lubrication: in such a case use a non-detergent or NBR compatible oil
- STANDARD: SPRING CLOSES/AIR OPENS, clockwise automatic closing

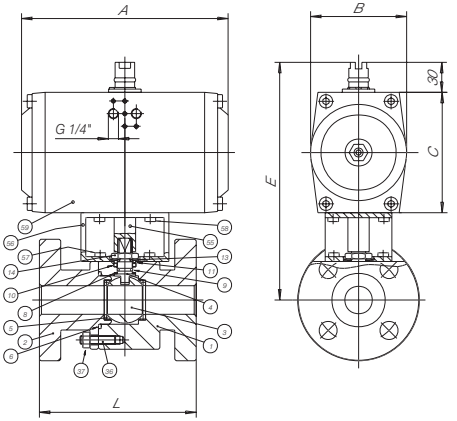
STANDARD VALVE FEATURES

- General prescriptions: BS 5351, Fire safe to BS 6755 – API 6 FA – API 607
- Working temperature: from –20°C to +180 °C
- Maximum working pressure with actuator: PN 16 (PN 25 and 40 on request)
- CONNECTIONS with flanges: UNI 2223-2229 and DIN 2501 BL.1
  DIN 3202 face to face
  ANSI 150 RF – ANSI B16.5
  ANSI B16.10 face to face
- BLOW-OUT PROOF stem with antistatic device
- For general applications and special versions see technical table of manual valve
- In the below table the part number and the valve code refer to the standard valve UNI/DIN PN 16 and PN 40 where applicable



SIZE	PART NUMBER	weight in gr.	A	B	C	E DIN	L F4	L F1	E ANSI150	L ANSI150	PN	ACTUATOR code	VALVE code	MOUNTING KIT code
DN15	S22AA60400		127	59	74	178	115	130	178	108	16/40	SGA0524X00	3922X604	K1GA0604
DN20	S22AA60500		133	70	88	192	120	150	192	117	16/40	SGA0634X00	3922X605	K1GA0005
DN25	S22AA60600		132	83	100	219	125	160	219	127	16/40	SGA0754X00	3922X606	K1GA0106
DN32	S22AA60700		182	91	108	234	130	180	234	140	16/40	SGA0834X00	3922X607	K1GA0107
DN40	S22AA60800		203	100	117	254	140	200	254	165	16/40	SGA0924X00	3922X608	K1GA0108
DN50	S22AA60900		222	120	140	285	150	230	285	178	16/40	SNA1104X00	3922X609	K1GA0108
DN65	S22AA61000		300	137	160	330	170		330	190	16	SNA1274X00	3922X610	K1GA0110
DN80	S22AA61100		380	172	198	379	180		379	203	16/40	SNA1604X00	3922X611	K1GA0111
DN100	S22AA61200		380	172	198	429	190		429	229	16	SNA1605X00	3922X612	K1GA0312

For ANSI 150 series the codes become: PART NUMBER = S21AA60400 ÷ 61200, VALVE code = 3921X604 ÷ 612



LIST OF VALVE COMPONENTS AND MATERIALS

REF.	PART	QTY	MATERIAL
1	BODY	1	AISI 316
2	BODY FLANGE	1	AISI 316
3	BALL	1	AISI 316
4	STEM	1	AISI 316
5	SEAT	2	PTFE
6	FLANGE SEAL	1	PTFE
8	STEM SEAL	1	PTFE
9	STEM O-RING	1	VITON
10	UPPER SEAL	1	PTFE
11	PACKING GLAND	1	AISI 316
13	BELLEVILLE WASHERS	2	S.S.
14	STEM RETAINING NUT	1	AISI 304
36	STUD BOLT	1	A 193 B8
37	NUT	1	A 194 8A
55	ACTUATOR SHAFT	1	C.S.
56	BRACKET	1	C.S.
57	BRACKET/VALVE SCREW	4	8.8
58	BRACKET/ACTUATOR SCREW	4	8.8
59	ACTUATOR	1	

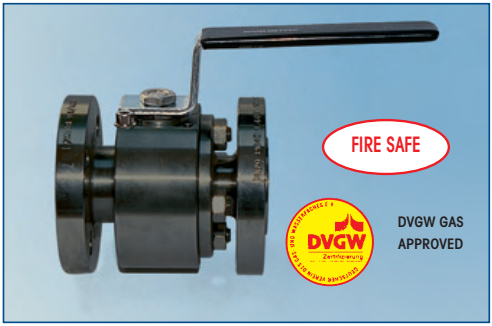
For accessories see relevant catalogue sheet

ANTARES A 105

SPLIT BODY BALL VALVE – FULL BORE

MAIN STANDARD FEATURES

- CONSTRUCTION: ASTM A 105
- General prescriptions: BS 5351
- Certifications: FIRE SAFE to: BS 6755 - API 6 FA - API 607
  TÜV for TA Luft
- DIAMETER: from DN 15-1/2" to DN 150-6"
- PRESSURES: PN 16/40 from DN 15 to DN 50
  PN 16 from DN 65 to DN 150
  ANSI 150 from 1/2" to 6"
- TEMPERATURE LIMITS: from –10°C to +180°C
- CONNECTIONS: flanges to UNI 2223-2229 and DIN 2501 BL.1
  DIN 3202 face to face F4
  flanges to ANSI 150 RF - ANSI B16.5 - ANSI B16.10 face to face
- BLOW-OUT PROOF stem with antistatic device (from DN40)
- WRAPPING SEATS
- TRIPLE stem-packing with labyrinth effect and automatic adjustment by Belleville washers
- ISO 5211 mounting plate for actuators
- OPERATION device: lever handle



STANDARD PART NUMBERS

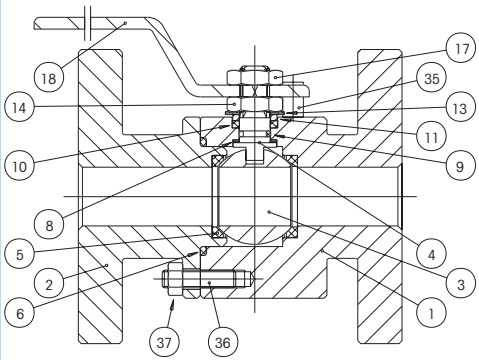
Art. 2931	Art. 2932	Art. 2934
ANSI 150 RF	DIN face to face F4	DIN face to face F1

SPECIAL EXECUTIONS

- 15% GLASS-FILLED PTFE with temperature limits –10°C + 195°C
- PTFE + CARBOGRAPHITE with temperature limits -20°C +210°C
- From DN 65 to DN 150 PN 25/40
- From DN15 to DN100, PN16/40, DIN 3202 face to face F1
- From 1/2" to 6" ANSI 300
- DN 200 PN 16, and 8" ANSI 150
  (with application of reduction gear)
- Yellow lever handle for gas
- Antistatic device from DN15 to DN32
- Body in LF2 up to -20°C
- On request the valve is available with ATEX certificate
- For further special requests please consult our technical/commercial service

GENERAL APPLICATIONS

Use as an ON-OFF valve for: installations for gas, water, air distribution. Suitable for vacuum up to $1x10^{-3}$ STD CC/SEC, steam up to +195°C with PTFE+CARBOGRAPHITE.
Thanks to its firm standardizations it is among the most used valves in all industrial plants.
For special utilizations ascertain the compatibility with process features and the corrosion resistance also by the relevant table.



LIST OF COMPONENTS AND MATERIALS

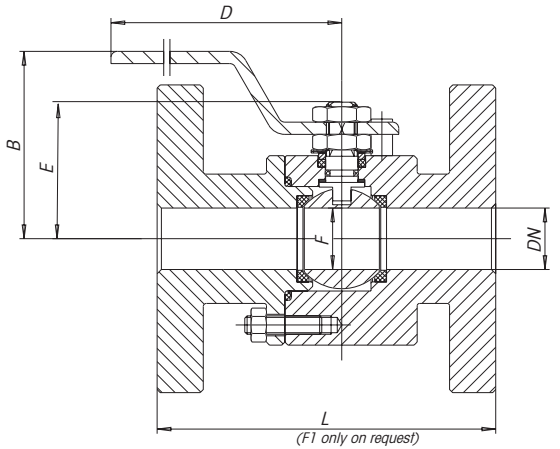
REF.	PART	MATERIAL	DIN MAT.	QTY
1	BODY	ASTM A105		1
2	BODY FLANGE	ASTM A105		1
3	BALL	AISI 304	1.4301	1
4	STEM	AISI 304	1.4301	1
5	SEAT	PTFE		2
6	FLANGE SEAL	PTFE		1
8	STEM SEAL	PTFE		1
9	STEM O-RING	VITON		1
10	UPPER SEAL	PTFE		1
11	PACKING GLAND	AISI 304	1.4310	1
13	BELLEVILLE WASHERS	50CrV4		2
14	STEM RETAINING NUT	C.S. GALV.		1
17	LOCKING NUT	C.S. GALV.		1
18	LEVER HANDLE	C.S. GALV.		1
35	OPERATION STOP PIN	C.S. 8.8		1
36	STUD BOLT	A 193 B7		4
37	NUT	A 194 2H		4

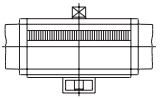
DYSTRYBUTOR W POLSCE:
ECOZAM Sp. z o.o.
ul.Załogowa 17 80-557 Gdańsk
tel.:(+48 58) 522 03 80 fax.(+48 58) 342 20 10

UNI EN ISO 9001: 2000
Progettazione, Sviluppo, Fabbricazione
Certificato n° 0024/3

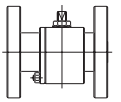
ANTARES A 105

SPLIT BODY BALL VALVE – FULL BORE





By removing the lever handle, the ANTARES valve can be assembled directly with an actuator by means of a bracket with screws, the stem adapter and by replacing the operation stop (part 35) of the valve (kit supplied upon request).



DIN SERIES									
SIZE	B	D	E	F	L F4	L F1	PN	ISO	WEIGHT in gr.
DN15	66	140	48	15	115	130	16/40	F03	3600
DN20	69	140	51	20	120	150	16/40	F03	4635
DN25	82	180	62,5	25	125	160	16/40	F04	5750
DN32	87	180	67	32	130	180	16/40	F04	8320
DN40	108	230	87,5	40	140	200	16/40	F05	11160
DN50	115	230	94,5	49,5	150	230	16/40	F05	14900
DN65	139	320	119,5	65	170	290	16	F07	23750
DN80	150	320	130	78	180	310	16/40	F07	28530
DN100	163	370	148,5	96	190	350	16	F10	35560
DN150	249	584	200	144	350	480	16	F12	108900

ANSI 150 SERIES							
SIZE	B	D	E	F	L	ISO	WEIGHT in gr.
1/2"	66	140	48	15	108	F03	3600
3/4"	69	140	51	20	117	F03	3750
1"	82	180	62,5	25	127	F04	5525
1 1/4"	87	180	67	32	140	F04	8320
1 1/2"	108	230	87,5	40	165	F05	10260
2"	115	230	94,5	49,5	178	F05	13755
2 1/2"	139	320	119,5	65	190	F07	23130
3"	150	320	130	78	203	F07	29235
4"	163	370	148,5	96	229	F10	39385
6"	249	584	200	144	394	F12	114100

BREAKAWAY TORQUES in Nm

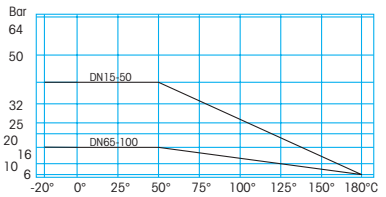
PN - bar	DN size	15	20	25	32	40	50	65	80	100
	0	4	7	15	21	26	36	51	81	130
	16	5	8	17	23	28	39	54	86	150
	40	6	10	22	28	32	45	62	120	200

Nm

The values in Nm may vary as a function of the seals material, temperature and type of medium. For a firm operation of the various types of actuators, in the different working conditions it is necessary to consider a safety factor of 1.5. During operation, with frequent open and close cycles, the operating torque can decrease considerably in comparison with the initial breakaway torque.

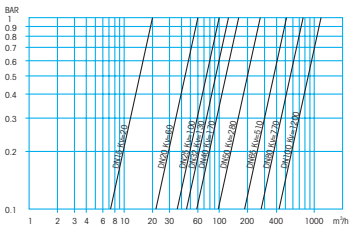
PRESSURE/TEMPERATURE DIAGRAM

At each pressure level corresponds the admissible temperature level.



LOSS OF HEAD DIAGRAM/FLOW RATE

The Kv value is the flow rate causing a pressure drop of 1 bar



ANTARES A 105

SPLIT BODY BALL VALVE - FULL BORE WITH **DOUBLE ACTING** PNEUMATIC ACTUATOR

ACTUATOR FEATURES

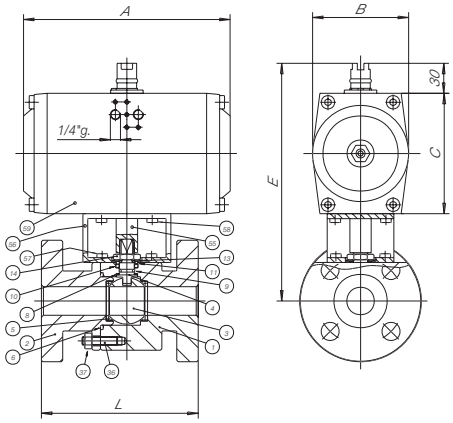
- Rotation angle: 90°
- Standard version for temperature between –20°C and + 90°C
- Supply maximum pressure: 10 bar (8bar for DNA045)
- Nominal pressure: 5,62 bar
- Supply medium: dry filtered compressed air, not necessarily lubricated
- Lubrication: in such a case use a non-detergent or NBR compatible oil

STANDARD VALVE FEATURES

- General prescriptions: BS 5351, Fire safe to: BS 6755-API 6 FA- API 607
- Working temperature: from –20°C to +180°C
- Maximum working pressure with actuator: PN 16 (PN 25 and 40 on request)
- CONNECTIONS with flanges: UNI 2223-2229 AND DIN 2501 BL.1
  DIN 3202 face to face
  ANSI 150 RF - ANSI B16.5
  ANSI B16.10 face to face
- BLOW-OUT PROOF stem with antistatic device
- For general applications and special versions see technical table of manual valve
- In the below table the part number and the valve code refer to the standard valve UNI/DIN PN 16 and PN 40 where applicable

SIZE	PART NUMBER	weight in gr.	A	B	C	E DIN	L F4	L F1	E ANSI150	L ANSI150	PN	ACTUATOR code	VALVE code	MOUNTING KIT code
DN15	D26AA60400		110	53	68	172	115	130	172	108	16/40	DNA045AZ00	3932X604	K1GA0504
DN20	D26AA60500		110	53	68	172	120	150	172	117	16/40	DNA045AZ00	3932X605	K1GA0004
DN25	D26AA60600		127	59	74	193	125	160	193	127	16/40	DGA052AX00	3932X606	K1GA0006
DN32	D26AA60700		133	70	88	214	130	180	214	140	16/40	DGA063AX00	3932X607	K1GA0007
DN40	D26AA60800		132	83	100	237	140	200	237	165	16/40	DGA075AX00	3932X608	K1GA0008
DN50	D26AA60900		182	91	108	253	150	230	253	178	16/40	DGA083AX00	3932X609	K1GA0009
DN65	D26AA61000		203	100	117	287	170		287	190	16	DGA092AX00	3932X610	K1GA0010
DN80	D26AA61100		222	120	140	321	180		321	203	16/40	DNA118AX00	3932X611	K1GA0011
DN100	D26AA61200		300	137	160	391	190		391	229	16	DNA127AX00	3932X612	K1GA0212

For ANSI 150 series the codes become: PART NUMBER = D25AA60400 ÷ 61200, VALVE code = 3931X604-612



LIST OF VALVE COMPONENTS AND MATERIALS

REF.	PART	QTY	MATERIAL
1	BODY	1	ASTM A105
2	BODY FLANGE	1	ASTM A105
3	BALL	1	AISI 304
4	STEM	1	AISI 304
5	SEAT	2	PTFE
6	FLANGE SEAL	1	PTFE
8	STEM SEAL	1	PTFE
9	STEM O-RING	1	VITON
10	UPPER SEAL	1	PTFE
11	PACKING GLAND	1	AISI 304
13	BELLEVILLE WASHERS	2	50CrV4
14	STEM RETAINING NUT	1	C.S.
36	STUD BOLT	1	A 193 B7
37	NUT	1	A 194 2H
55	ACTUATOR SHAFT	1	C.S.
56	BRACKET	1	C.S.
57	BRACKET/VALVE SCREW	4	8.8
58	BRACKET/ACTUATOR SCREW	4	8.8
59	ACTUATOR	1	

For accessories see relevant catalogue sheet

ANTARES A 105

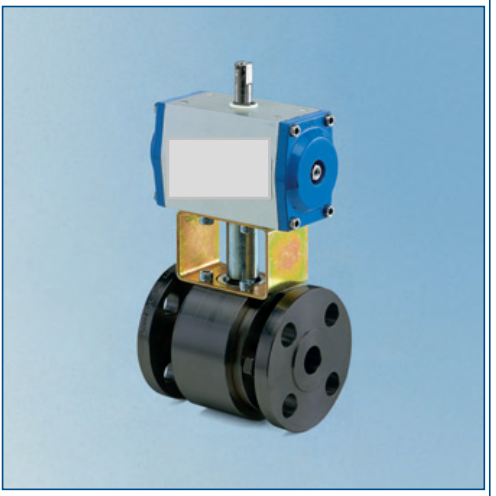
SPLIT BODY BALL VALVE - FULL BORE WITH **SPRING RETURN** PNEUMATIC ACTUATOR

ACTUATOR FEATURES

- Rotation angle: 90°
- Standard version for temperature between –20°C and + 90°C
- Supply maximum pressure: 10 bar
- Nominal pressure: 5,62 bar
- Supply medium: dry filtered compressed air, not necessarily lubricated
- Lubrication: in such a case use a non-detergent or NBR compatible oil
- STANDARD: SPRING CLOSES/AIR OPENS, clockwise automatic closing

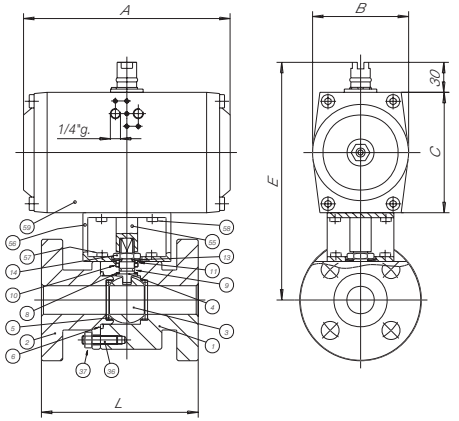
STANDARD VALVE FEATURES

- General prescriptions: BS 5351, Fire safe to BS 6755 – API 6 FA – API 607
- Working temperature: from –20°C to +180 °C
- Maximum working pressure with actuator: PN 16 (PN 25 and 40 on request)
- CONNECTIONS with flanges: UNI 2223-2229 and DIN 2501 BL.1
  DIN 3202 face to face
  ANSI 150 RF – ANSI B16.5
  ANSI B16.10 face to face
- BLOW-OUT PROOF stem with antistatic device
- For general applications and special versions see technical table of manual valve
- In the below table the part number and the valve code refer to the standard valve UNI/DIN PN 16 and PN 40 where applicable



SIZE	PART NUMBER	weight in gr.	A	B	C	E DIN	L F4	L F1	E ANSI150	L ANSI150	PN	ACTUATOR code	VALVE code	MOUNTING KIT code
DN15	S26AA60400		127	59	74	178	115	130	178	108	16/40	SGA0524X00	3932X604	K1GA0604
DN20	S26AA60500		133	70	88	192	120	150	192	117	16/40	SGA0634X00	3932X605	K1GA0005
DN25	S26AA60600		132	83	100	219	125	160	219	127	16/40	SGA0754X00	3932X606	K1GA0106
DN32	S26AA60700		182	91	108	234	130	180	234	140	16/40	SGA0834X00	3932X607	K1GA0107
DN40	S26AA60800		203	100	117	254	140	200	254	165	16/40	SGA0924X00	3932X608	K1GA0108
DN50	S26AA60900		222	120	140	285	150	230	285	178	16/40	SNA1104X00	3932X609	K1GA0108
DN65	S26AA61000		300	137	160	330	170		330	190	16	SNA1274X00	3932X610	K1GA0110
DN80	S26AA61100		380	172	198	379	180		379	203	16/40	SNA1604X00	3932X611	K1GA0111
DN100	S26AA61200		380	172	198	429	190		429	229	16	SNA1605X00	3932X612	K1GA0312

For ANSI 150 series the codes become: PART NUMBER = D25AA60400, VALVE code = 3931X604 ÷ 12



LIST OF VALVE COMPONENTS AND MATERIALS

REF.	PART	QTY	MATERIAL
1	BODY	1	ASTM A105
2	BODY FLANGE	1	ASTM A105
3	BALL	1	AISI 304
4	STEM	1	AISI 304
5	SEAT	2	PTFE
6	FLANGE SEAL	1	PTFE
8	STEM SEAL	1	PTFE
9	STEM O-RING	1	VITON
10	UPPER SEAL	1	PTFE
11	PACKING GLAND	1	AISI 304
13	BELLEVILLE WASHERS	2	50CrV4
14	STEM RETAINING NUT	1	C.S.
36	STUD BOLT	1	A 193 B7
37	NUT	1	A 194 2H
55	ACTUATOR SHAFT	1	C.S.
56	BRACKET	1	C.S.
57	BRACKET/VALVE SCREW	4	8.8
58	BRACKET/ACTUATOR SCREW	4	8.8
59	ACTUATOR	1	

For accessories see relevant catalogue sheet

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Certificato n° 0024/3

OLYMPIC

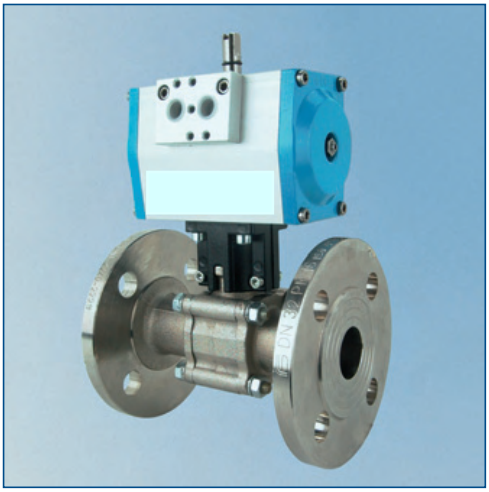
FLANGED BALL VALVE - FULL BORE, WITH **DOUBLE ACTING** PNEUMATIC ACTUATOR

ACTUATOR FEATURES

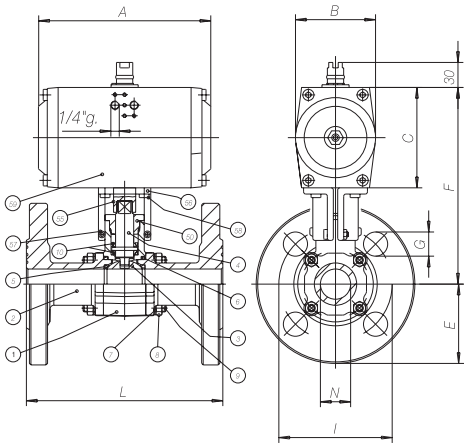
- Rotation angle: 90°
- Standard version for temperature between –20°C and + 90°C
- Supply maximum pressure: 10 bar (8bar for DNA045)
- Nominal pressure: 5,62 bar
- Supply medium: dry filtered compressed air, not necessarily lubricated
- Lubrication: in such a case use a non-detergent or NBR compatible oil

STANDARD VALVE FEATURES

- Temperature limits: for fluids from -15°C to +120°C
- Working pressure: for fluids 16 bar for all sizes
- CONNECTIONS flanges to UNI2249 and 2229 (raised face PN16) overall length to ISO5752 (table 6 medium series PN16)
- Stem with double conical sealing by 4 seals
- For general applications and special versions see technical table of manual valve
- In the below table the part number and the valve code refer to the standard valve female/female



SIZE	Part Number	Weight in gr.	A	B	C	E	F	G	I	L	N	ACTUATOR code	VALVE code	MOUNTING KIT code
DN 20	D16AA60500	2745	110	53	68	52.5	153	14	75	130	20	DNA045AW00	V116N605	KABB0005
DN 25	D16AA60600	3787	127	59	74	57,5	175	14	85	140	25	DGA052AX00	V116N606	KABB0006
DN 32	D16AA60700	5920	133	70	88	70	201	18	100	165	32	DGA063AX00	V116N607	KABB0007
DN 40	D16AA60800	7238	133	70	88	75	208.5	18	110	165	40	DGA063AX00	V116N608	KABB0008
DN 50	D16AA60900	10335	132	83	100	82.5	228.5	18	125	203	50	DGA075AX00	V116N609	KABB0009
DN 65	D16AA61000	15570	203	100	117	92.5	270	18	145	222	65	DGA092AX00	V116N610	KABB0010
DN 80	D16AA61100	22545	222	120	140	100	303.5	18	160	241	80	DNA110AX00	V116N611	KABB0011
DN 100	D16AA61200	34650	300	137	160	100	336.5	18	180	305	100	DNA127AX00	V116N612	KABB0011



LIST OF VALVE COMPONENTS AND MATERIALS

REF.	PART	Qty	MATERIAL
1	BODY	1	CW617N (OT58)
2	FLANGE	2	CW617N (OT58)
3	BALL	1	CW614N (OT58)
4	STEM	1	CW614N (OT58)
5	SEAT	2	PTFE
6	FLANGE SEALING O-RING	2	VITON
7	WASHER	8	C72
8	NUT	8	4A
9	TIE ROD	4	8.8
10	UPPER SEALING COUPLE	2	PTFE
50	GLAND	1	CW614N (OT58)
55	ACTUATOR SHAFT	1	ALUMINIUM
56	BRACKET	1	ALUMINIUM
57	BRACKET/VALVE SCREW	2	8.8
58	BRACKET/ACTUATOR SCREW	4	8.8
59	ACTUATOR	1	

For accessories see relevant catalogue sheet

OLYMPIC

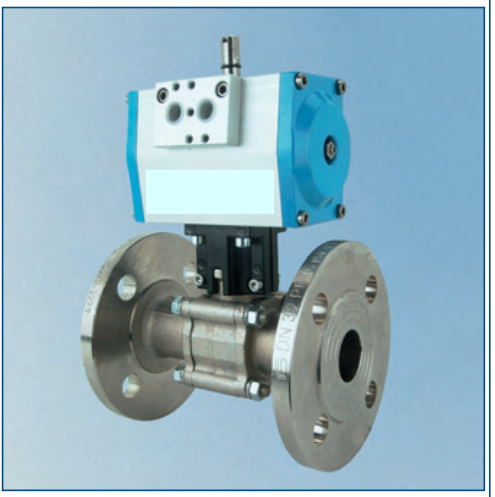
FLANGED BALL VALVE - FULL BORE, WITH **SPRING RETURN** PNEUMATIC ACTUATOR

ACTUATOR FEATURES

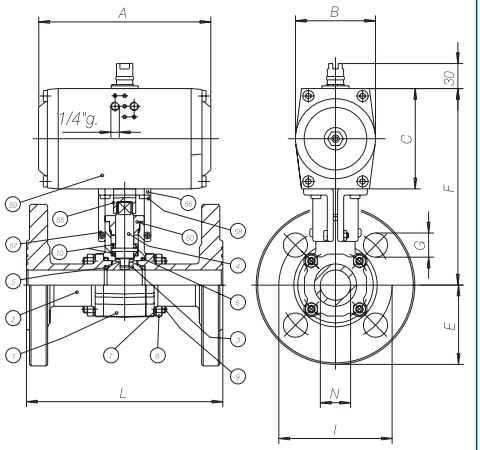
- Rotation angle: 90°
- Standard version for temperature between –20°C and + 90°C
- Supply maximum pressure: 10 bar
- Nominal pressure: 5,62 bar
- Supply medium: dry filtered compressed air, not necessarily lubricated
- Lubrication: in such a case use a non-detergent or NBR compatible oil
- STANDARD: SPRING CLOSES/AIR OPENS, clockwise automatic closing

STANDARD VALVE FEATURES

- Temperature limits: for fluids from -15°C to +120°C
- Working pressure: for fluids 16 bar for all sizes
- CONNECTIONS flanges to UNI2249 and 2229 (raised face PN16) overall length to ISO5752 (table 6 medium series PN16)
- Stem with double conical sealing by 4 seals
- For general applications and special versions see technical table of manual valve
- In the below table the part number and the valve code refer to the standard valve female/female



SIZE	Part Number	Weight in gr.	A	B	C	E	F	G	I	L	N	ACTUATOR code	VALVE code	MOUNTING KIT code
DN 20	S16AA60500	3825	133	70	88	52,5	173	14	75	130	20	SGA0634X00	V116N605	KABB0105
DN 25	S16AA60600	5307	132	83	100	57,5	201	14	85	140	25	SGA0754X00	V116N606	KABB0106
DN 32	S16AA60700	7480	182	91	108	70	221	18	100	165	32	SGA0834X00	V116N607	KABB0107
DN 40	S16AA60800	9768	203	100	117	75	236	18	110	165	40	SGA0924X00	V116N608	KABB0108
DN 50	S16AA60900	13335	222	120	140	82,5	272	18	125	203	50	SNA1104X00	V116N609	KABB0109
DN 65	S16AA61000	22480	300	137	160	92,5	312,5	18	145	222	65	SNA1274X00	V116N610	KABB0110
DN 80	S16AA61100	27860	300	137	160	100	323,5	18	160	241	80	SNA1274X00	V116N611	KABB0011
DN 100	S16AA61200	44783	380	172	198	110	374,5	18	180	305	100	SNA1604X00	V116N612	KABB0012



LIST OF VALVE COMPONENTS AND MATERIALS

REF.	PART	Qty	MATERIAL
1	BODY	1	CW617N (OT58)
2	FLANGE	2	CW617N (OT58)
3	BALL	1	CW614N (OT58)
4	STEM	1	CW614N (OT58)
5	SEAT	2	PTFE
6	FLANGE SEALING O-RING	2	VITON
7	WASHER	8	C72
8	NUT	8	4A
9	TIE ROD	4	8.8
10	UPPER SEALING COUPLE	2	PTFE
50	GLAND	1	CW614N (OT58)
55	ACTUATOR SHAFT	1	ALUMINIUM
56	BRACKET	1	ALUMINIUM
57	BRACKET/VALVE SCREW	2	8.8
58	BRACKET/ACTUATOR SCREW	4	8.8
59	ACTUATOR	1	

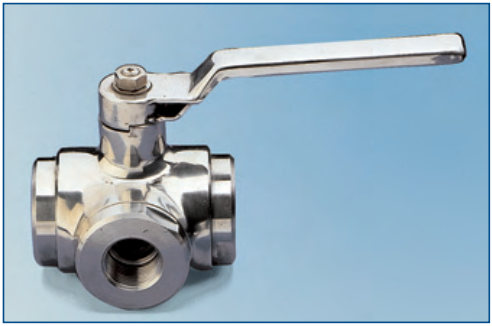
For accessories see relevant catalogue sheet

TRISTAR

3-WAY BALL VALVE—FULL BORE

MAIN STANDARD FEATURES

- CONSTRUCTION: AISI 316
- DIAMETER: from DN10 - 3/8" to DN 50 - 2"
- PRESSURES: from PN 40 to PN 25
- TEMPERATURE LIMITS: from –20°C to +160°C
- CONNECTIONS: F/F UNI-ISO 7/1 Rp – DIN 2999 parallel
- WRAPPING seats
- NON - WETTED parts in stainless steel
- OPERATION devices: lever handle
- TRIPLE stem-packing with labyrinth effect
- BALL: "L" bored
  "T" bored
- 90° lever rotation clockwise



STANDARD PART NUMBERS

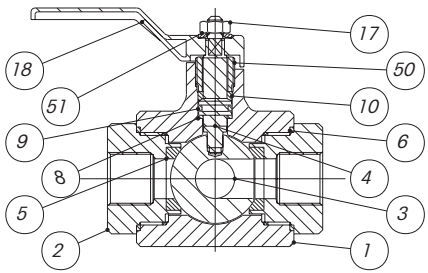
Art. 2831 female/female with "L" bored ball
Art. 2851 female/female with "T" bored ball

SPECIAL EXECUTIONS

- Female connections: NPT ANSI B1.20.1
- 15% GLASS-FILLED PTFE. Temperaure limits –20°C + 175°C
- PTFE+CARBOGRAPHITE: temperature limits –20°C + 195°C
- Degreased version
- ISO 5211 mounting plate for actuator
- Valve for pneumatic actuator
- Different flow combinations obtainable by removing the lever and rotating the stem in order to position the ball as requested during installation (the valve is supplied in the standard version)
- For further special requests please consult our technical/commercial service

GENERAL APPLICATIONS

Use as an ON-OFF valve for: diversion or mixing of fluids and gases in chemical plants, food, HEVAC and water plants. All parts have to be adequately degreased if the valves have to be used for oxygen. For special utilizations ascertain the compatibility with process features and the corrosion resistance also by the relevant table.



LIST OF COMPONENTS AND MATERIALS

REF.	PART	MATERIAL	DIN MAT.	QTY
1	BODY	AISI 316	1.4401	1
2	FEMALE END	AISI 316	1.4401	1
3	BALL	AISI 316	1.4401	1
4	STEM	AISI 316	1.4401	1
5	SEAT	PTFE	-	4
6	SIDE SEALING RING	PTFE	-	3
8	UPPER SEALING RING	PTFE	-	1
9	STEM O-RING	VITON	-	1
10	UPPER SEALING COUPLE	PTFE	-	1
17	LOCKING NUT	AISI 304	1.4301	1
18	LEVER HANDLE	AISI 304	1.4301	1
50	THREADED GLAND	AISI 303	1.4305	1
51	WASHER	AISI 304	1.4301	1

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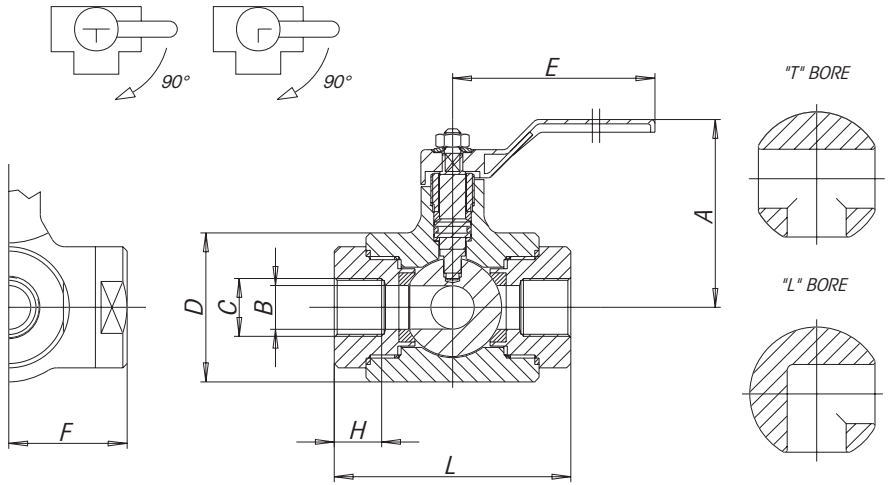
TRISTAR

3-WAY BALL VALVE—FULL BORE



C (Inch)	A	B	D	E	F	H	L	weight in gr. FF
3/8"	77	12	45	126	36	-	72	1000
1/2"	82	15	52	126	41	15	82	1200
3/4"	85	20	60	148	46	16.3	92	1900
1"	95	25	70	148	51	19.1	102	2500
1 1/4"	115	32	85	180	59	21.4	118	4300
1 1/2"	130	40	100	180	67	21.4	134	6600
2"	140	50	110	185	72	25.7	144	8000

BREAKAWAY TORQUES in Nm

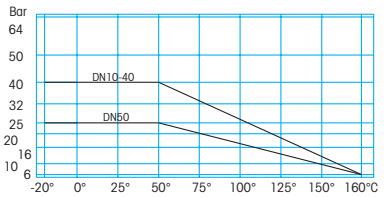
PN - bar	DN / size	10 3/8"	15 1/2"	20 3/4"	25 1"	32 1 1/4"	40 1 1/2"	50 2"
	0	10	12	23	25	33	40	50
	25	12.2	15.5	29.5	29	40.5	46	60
	40	14	18	32.5	31	43	48	

Nm

The values in Nm may vary as a function of the seals material, temperature and type of medium. For a firm operation of the various types of actuators, in the different working conditions it is necessary to consider a safety factor of 1.5. During operation, with frequent open and close cycles, the operating torque can decrease considerably in comparison with the initial breakaway torque.

PRESSURE/TEMPERATURE DIAGRAM

At each pressure level corresponds the admissible temperature level.

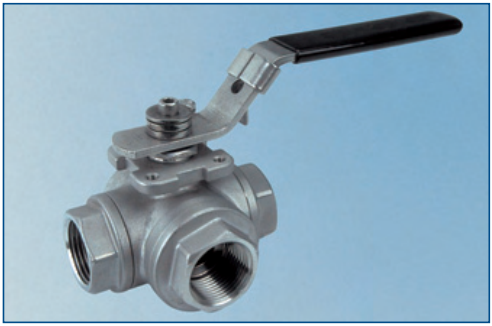


GEMINI

3-WAY BALL VALVE - "T" OR "L" BORE - REDUCED BORE

MAIN STANDARD FEATURES

- CONSTRUCTION: AISI 316
- DIAMETER: from DN8 - 1/4" to DN50 - 2"
- PRESSURES: PN 64 for all sizes
- TEMPERATURE LIMITS: from –20°C to +160°C
- CONNECTIONS: F/F UNI-ISO 7/1 Rp - DIN 2999 parallel
- NON-WETTED parts in stainless steel
- OPERATION device: lever handle
- ISO 5211 mounting plate for actuators
- BLOW-OUT PROOF stem from 1/4" to 2"
- BALL: "L" bored
  "T" bored
- 90° lever rotation clockwise



STANDARD PART NUMBERS

Art. 2841
female/female with "T" bored ball

Art. 2846
female/female with "L" bored ball

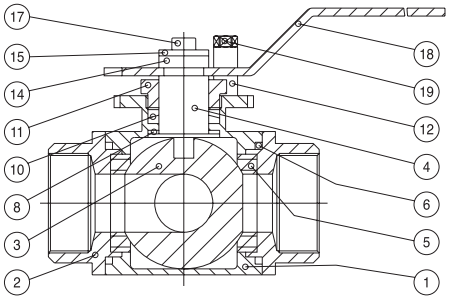
SPECIAL EXECUTIONS

- Degreased version
- For further special requests please consult our technical/commercial service

GENERAL APPLICATIONS

Use as an ON-OFF valve for: diversion or mixing of fluids and gases in general installation.

For special utilizations ascertain the compatibility with process features and the corrosion resistance also by the relevant table.



LIST OF COMPONENTS AND MATERIALS

REF.	PART	AISI 316 vers.	ASTM A105 vers.	Q.ty
1	BODY	AISI 316-CF8M	1.4401	1
2	FEMALE END	AISI 316-CF8M	1.4401	3
3	BALL	AISI 316	1.4401	1
4	STEM	AISI 316	1.4401	1
5	SEAT	PTFE		4
6	SIDE SEALING RING	PTFE		3
8	UPPER SEALING RING	PTFE		1
10	UPPER SEALING COUPLE	PTFE		1
11	GLAND	AISI 304	1.4301	1
12	OPERATION STOP	AISI 304	1.4301	1
14	STOP WASHER	AISI 304	1.4301	1
15	SCREW WASHER	AISI 304	1.4301	1
17	LOCKING NUT	AISI 304	1.4301	1
18	LEVER HANDLE	AISI 304	1.4301	1
19	OPERATION STOP SCREW	AISI 304	1.4301	1

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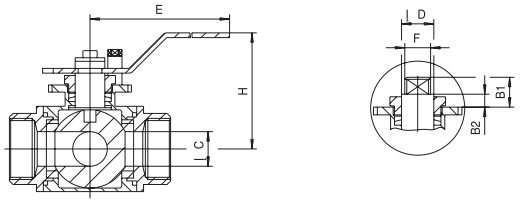
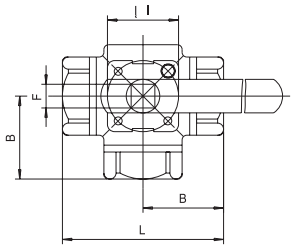
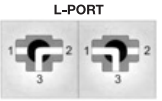
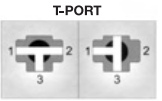
GEMINI

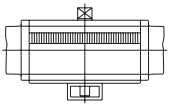
3-WAY BALL VALVE - "T" OR "L" BORE - REDUCED BORE



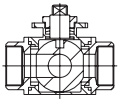








By removing the lever handle, the GEMINI valve can be assembled directly with an actuator by means of a bracket, the stem adapter (kit supplied on request) and by eliminating the operation stop (part. 12).



SIZE	B	B1	B2	Ø C	Ø D	E	F	H	Ø I	L	M	ISO 5211	Weight gr.
1/4"	34	11	6	11	12	106	9	58	42	68	M5	F04	600
3/8"	34	11	6	11	12	106	9	58	42	68	M5	F04	600
1/2"	37.5	11	6	12.7	12	138	9	61	42	75	M5	F04	700
3/4"	43	13	6	16	15	138	11	74	50	86	M6	F05	110
1"	51.5	19	7.5	20	15	162	11	81	50	103	M6	F05	1750
1 1/4"	57.5	19	7.5	25	15	162	11	88	50	115	M6	F05	2420
1 1/2"	62.5	23.5	8.5	32	15	220	11	104	70	125	M8	F07	3400
2"	73	24.5	8.5	38.1	18.5	220	14	110	70	146	M8	F07	5450

BREAKAWAY TORQUES in Nm

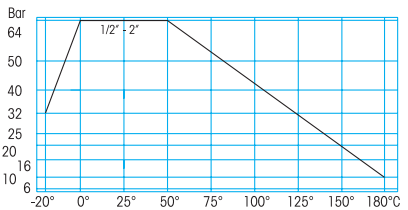
PN - bar

DIN size	8	10	15	20	25	32	40	50
0	3.5	3.5	6	8	18	29	41	50
64	7	7	9	11	23	38	54	64

Nm

The values in Nm may vary as a function of the seals material, temperature and type of medium. For a firm operation of the various types of actuators, in the different working conditions it is necessary to consider a safety factor of 1.5. During operation, with frequent open and close cycles, the operating torque can decrease considerably in comparison with the initial breakaway torque.

PRESSURE/TEMPERATURE DIAGRAM At each pressure level corresponds the admissible temperature level.



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Progettazione, Sviluppo, Fabbricazione
Certificato n° 0024/3

GEMINI

3-PIECE BALL VALVE - "T" OR "L" PORT-REDUCED BORE WITH **DOUBLE ACTING** PNEUMATIC ACTUATOR

ACTUATOR FEATURES

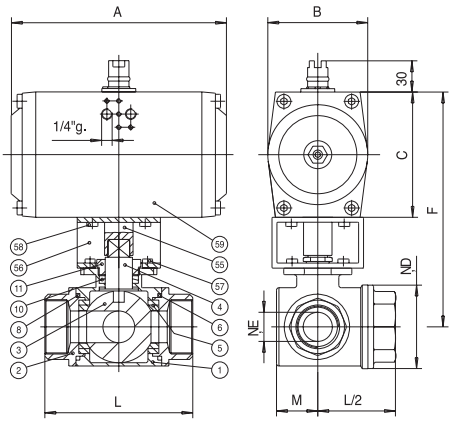
- Rotation angle: 90°
- Standard version for temperature between –20°C and + 90°C
- Supply maximum pressure: 10 bar (8bar for DNA045)
- Nominal pressure: 5,62 bar
- Supply medium: dry filtered compressed air, not necessarily lubricated
- Lubrication: in such a case use a non-detergent or NBR compatible oil

STANDARD VALVE FEATURES

- Working temperature: for fluids from -20°C to +160°C
- Maximum working pressure with actuator: 64 bar for all sizes
- CONNECTION: F/F UNI-ISO 7/1 Rp - DIN2999 parallel GAS
- BLOW-OUT PROOF stem from 1/4" to 2"
- ISO 5211 mounting plate for actuators
- For general applications and special versions see technical table of manual valve
- In the below table the part number and the valve code refer to the standard valve version, with T-bored ball

SIZE	Part Number	Weight in gr.	A	B	C	D	E	F	L	M	ACTUATOR code	VALVE code	MOUNTING KIT code
1/4"	D07AA20200	1155	110	53	68	33	11	171,5	68	26	DNA045AZ00		K1GB0002
3/8"	D07AA20300	1155	110	53	68	33	11	171,5	68	26	DNA045AZ00		K1GB0002
1/2"	D07AA20400	1260	110	53	68	38,5	12,7	175	75	23,5	DNA045AZ00		K1GB0002
3/4"	D07AA20500	1955	127	59	74	47,5	16	191,5	86	30	DGA052AX00		K1GB0005
1"	D07AA20600	3255	133	70	88	59	20	210,5	103	35,5	DGA063AX00		K1GB0005
1"1/4	D07AA20700	4589	132	83	100	68	25	227	115	39	DGA075AX00		K1GB0007
1"1/2	D07AA20800	6195	182	91	108	78	32	252	125	42,5	DGA083AX00		K1GB0008
2"	D07AA20900	8348	182	91	108	95	38,1	260,5	146	53	DGA083AX00		K1GB0009

For the series with L-port the codes become: PART NUMBER=D08AA20200-900, VALVE code=3846X202-09



LIST OF VALVE COMPONENTS AND MATERIALS

REF.	PART	Qty	MATERIAL
1	BODY	1	AISI 316-CF8M
2	FEMALE END	3	AISI 316-CF8M
3	BALL	1	AISI 316
4	STEM	1	AISI 316
5	SEAT	4	PTFE
6	SIDE SEALING RING	3	PTFE
8	UPPER RING	1	PTFE
10	UPPER SEAL COUPLE	1	PTFE
11	PACKING GLAND	1	AISI 304
55	ACTUATOR SHAFT	1	C.S.
56	BRACKET	1	C.S.
57	BRACKET/VALVE SCREW	4	8.8
58	BRACKET/ACTUATOR SCREW	4	8.8
59	ACTUATOR	1	

For accessories see relevant catalogue sheet

GEMINI

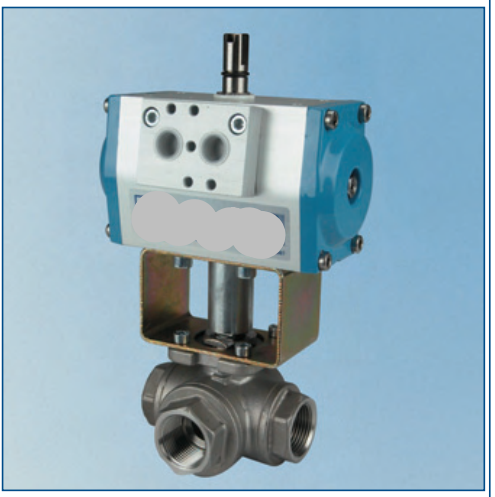
3-PIECE BALL VALVE - "T" OR "L" PORT-REDUCED BORE WITH **SPRING RETURN** PNEUMATIC ACTUATOR

ACTUATOR FEATURES

- Rotation angle: 90°
- Standard version for temperature between –20°C and + 90°C
- Supply maximum pressure: 10 bar (8bar for DNA045)
- Nominal pressure: 5,62 bar
- Supply medium: dry filtered compressed air, not necessarily lubricated
- Lubrication: in such a case use a non-detergent or NBR compatible oil
- STANDARD: SPRING CLOSES/AIR OPENS, clockwise automatic closing

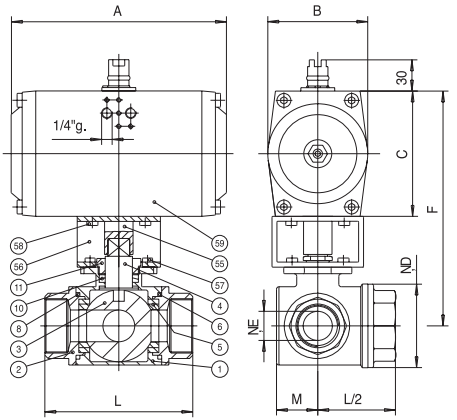
STANDARD VALVE FEATURES

- Working temperature: for fluids from -20°C to +160°C
- Maximum working pressure with actuator: 64 bar for all sizes
- CONNECTION: F/F UNI-ISO 7/1 Rp - DIN2999 parallel GAS
- BLOW-OUT PROOF stem from 1/4" to 2"
- ISO 5211 mounting plate for actuators
- For general applications and special versions see technical table of manual valve
- In the below table the part number and the valve code refer to the standard valve version, with T-bored ball



SIZE	Part Number	Weight in gr.	A	B	C	D	E	F	L	M	ACTUATOR code	VALVE code	MOUNTING KIT code
1/4"	S07AA20200	1628	127	59	74	33	11	177,5	68	26	SGA0524X00		K1GB0102
3/8"	S07AA20300	1628	127	59	74	33	11	177,5	68	26	SGA0524X00		K1GB0102
1/2"	S07AA20400	2310	133	70	88	38,5	12,7	195	75	23,5	SGA0634X00		K1GB0102
3/4"	S07AA20500	2730	133	70	88	47,5	16	205,5	86	30	SGA0634X00		K1GB0105
1"	S07AA20600	4148	132	83	100	59	20	222,5	103	35,5	SGA0754X00		K1GB0106
1"1/4	S07AA20700	6374	203	100	117	68	25	214	115	39	SGA0924X00		K1GB0107
1"1/2	S07AA20800	9345	222	120	140	78	32	284	125	42,5	SNA1104X00		K1GB0108
2"	S07AA20900	13808	294	120	140	95	38,1	292,5	146	53	SNA1184X00		K1GB0109

For the series with L-port the codes become: PART NUMBER=S08AA20200-900, VALVE code=3846X202-09



LIST OF VALVE COMPONENTS AND MATERIALS

REF.	PART	Qty	MATERIAL
1	BODY	1	AISI 316-CF8M
2	FEMALE END	3	AISI 316-CF8M
3	BALL	1	AISI 316
4	STEM	1	AISI 316
5	SEAT	4	PTFE
6	SIDE SEALING RING	3	PTFE
8	UPPER RING	1	PTFE
10	UPPER SEAL COUPLE	1	PTFE
11	PACKING GLAND	1	AISI 304
55	ACTUATOR SHAFT	1	C.S.
56	BRACKET	1	C.S.
57	BRACKET/VALVE SCREW	4	8.8
58	BRACKET/ACTUATOR SCREW	4	8.8
59	ACTUATOR	1	

For accessories see relevant catalogue sheet

TRIFLUX

3-WAY BALL VALVE - "T" OR "L" PORT, REGULAR BORE,
WITH **DOUBLE ACTING** PNEUMATIC ACTUATOR

ACTUATOR FEATURES

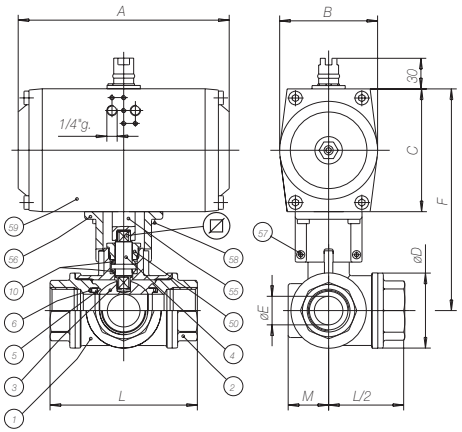
- Rotation angle: 90°
- Standard version for temperature between –20°C and + 90°C
- Supply maximum pressure: 10 bar (8bar for DNA045)
- Nominal pressure: 5,62 bar
- Supply medium: dry filtered compressed air, not necessarily lubricated
- Lubrication: in such a case use a non-detergent or NBR compatible oil

STANDARD VALVE FEATURES

- Temperature limits: for fluids from -15°C to +100°C
- Working pressure: for fluids from 40 bar to 16 bar
- CONNECTION: F/F ISO 7/1 Rp - DIN2999 parallel
- Stem with double conical sealing by 4 seals
- For general applications and special versions see technical table of manual valve
- In the below table the part number and the valve code refer to the standard valve female/female, with T bored ball

SIZE	⍁	Part Number	Weight in gr.	A	B	C	D	E	F	L	M	ACTUATOR code	VALVE code	MOUNTING KIT code
1/2"	7	D36AA20400	1170	110	53	68	38	13	147.5	80	21	DNA045AW00	V160N204	KABB0003
3/4"	10	D36AA20500	1974	127	59	74	48	18	161	96	26	DGA052AX00	V160N205	KABB0005
1"	10	D36AA20600	3192	133	70	88	58	23	189.5	113	31	DGA063AX00	V160N206	KABB0006
1"1/4	14	D36AA20700	4540	132	83	100	67	29	213	130	34	DGA075AX00	V160N207	KABB0007
1"1/2	14	D36AA20800	6510	182	91	108	78	35	227.5	147	40	DGA083AX00	V160N208	KABB0008
2"	17	D36AA20900	9566	203	100	117	95	44	249.5	169	47	DGA092AX00	V160N209	KABB0009

For the series with L -port the codes become: PART NUMBERS=D38AA20400 ./. 20900, VALVE cod.=V161N204./.209



LIST OF VALVE COMPONENTS AND MATERIALS

REF.	PART	Qty	MATERIALE
1	BODY	1	CW617N (OT58)
2	FEMALE END	2	CW617N (OT58)
3	BALL	1	CW614N (OT58)
4	STEM	1	CW614N (OT58)
5	SEAT	2	PTFE
6	SIDE SEALING O-RING	2	VITON
10	UPPER SEALING COUPLE	2	PTFE
50	GLAND	1	CW614N (OT58)
55	ACTUATOR SHAFT	1	ALUMINIUM
56	BRACKET	1	ALUMINIUM
57	BRACKET/VALVE SCREW	2	8.8
58	BRACKET/ACTUATOR SCREW	4	8.8
59	ACTUATOR	1	

For accessories see relevant catalogue sheet

TRIFLUX

3-WAY BALL VALVE - "T" OR "L" PORT, REGULAR BORE,
WITH **DOUBLE ACTING** PNEUMATIC ACTUATOR

ACTUATOR FEATURES

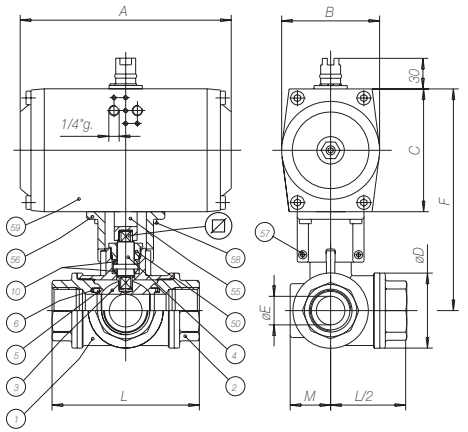
- Rotation angle: 90°
- Standard version for temperature between –20°C and + 90°C
- Supply maximum pressure: 10 bar (8bar for DNA045)
- Nominal pressure: 5,62 bar
- Supply medium: dry filtered compressed air, not necessarily lubricated
- Lubrication: in such a case use a non-detergent or NBR compatible oil

STANDARD VALVE FEATURES

- Temperature limits: for fluids from -15°C to +100°C
- Working pressure: for fluids from 40 bar to 16 bar
- CONNECTION: F/F ISO 7/1 Rp - DIN2999 parallel
- Stem with double conical sealing by 4 seals
- For general applications and special versions see technical table of manual valve
- In the below table the part number and the valve code refer to the standard valve female/female, with T bored ball

SIZE	⍁	Part Number	Weight in gr.	A	B	C	D	E	F	L	M	ACTUATOR code	VALVE code	MOUNTING KIT code
1/2"	7	S36AA20400	1565	127	59	74	38	13	153.5	80	21	SGA0524X00	V160N204	KABB0103
3/4"	10	S36AA20500	2580	133	70	80	48	18	185	96	26	SGA0634X00	V160N205	KABB0105
1"	10	S36AA20600	4490	182	91	108	58	23	211.5	113	31	SGA0834X00	V160N206	KABB0106
1"1/4	14	S36AA20700	6240	203	100	117	67	29	235	130	34	SGA0924X00	V160N207	KABB0107
1"1/2	14	S36AA20800	9200	203	100	117	78	35	262.5	147	40	SGA0924X00	V160N208	KABB0108
2"	17	S36AA20900	13460	294	120	140	95	44	272.5	169	47	SNA1184X00	V160N209	KABB0109

For the series with L -port the codes become: PART NUMBERS=S38AA20400 ./. 20900, VALVE cod.=V161N204./.209



LIST OF VALVE COMPONENTS AND MATERIALS

REF.	PART	Qty	MATERIALE
1	BODY	1	CW617N (OT58)
2	FEMALE END	2	CW617N (OT58)
3	BALL	1	CW614N (OT58)
4	STEM	1	CW614N (OT58)
5	SEAT	2	PTFE
6	SIDE SEALING O-RING	2	VITON
10	UPPER SEALING COUPLE	2	PTFE
50	GLAND	1	CW614N (OT58)
55	ACTUATOR SHAFT	1	ALUMINIUM
56	BRACKET	1	ALUMINIUM
57	BRACKET/VALVE SCREW	2	8.8
58	BRACKET/ACTUATOR SCREW	4	8.8
59	ACTUATOR	1	

For accessories see relevant catalogue sheet

DELTA

3-WAY BALL VALVE - "L" PORT, FULL BORE,
WITH **DOUBLE ACTING** PNEUMATIC ACTUATOR

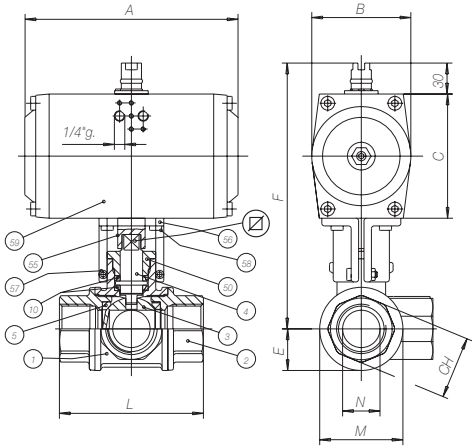
ACTUATOR FEATURES

- Rotation angle: 90°
- Standard version for temperature between –20°C and + 90°C
- Supply maximum pressure: 10 bar (8bar for DNA045)
- Nominal pressure: 5,62 bar
- Supply medium: dry filtered compressed air, not necessarily lubricated
- Lubrication: in such a case use a non-detergent or NBR compatible oil

STANDARD VALVE FEATURES

- Temperature limits: for fluids from -15°C to +120°C
- Working pressure: for fluids up to 10 bar maximum
- CONNECTION: F/F ISO 7/1 Rp - DIN2999 parallel
- Stem with double conical sealing by 4 seals
- For general applications and special versions see technical table of manual valve
- In the below table the part number and the valve code refer to the standard valve

SIZE	⊠	Part Number	Weight in gr.	A	B	C	E	F	CH Octagonal key	L	M	N	ACTUATOR code	VALVE code	MOUNTING KIT code
3/8"	7	D06AA20300	733	110	53	68	14.5	143.5	22	54	29	10	DNA045AW00	V151N203	KABB0003
1/2"	7	D06AA20400	894	110	53	68	18	146.5	27	69	36	14	DNA045AW00	V151N204	KABB0003
3/4"	10	D06AA20500	1035	110	53	66	22.5	153.5	23.5	77	45	19	DNA045AW00	V151N205	KABB0005
1"	10	D06AA20600	1737	127	59	74	27	175.5	40.5	89	54	24	DGA052AX00	V151N206	KABB0006
1 1/4"	14	D06AA20700	2860	133	70	88	32.5	202	50	103	65	30.5	DGA063AX00	V151N207	KABB0007
1 1/2"	14	D06AA20800	3588	133	70	88	39.5	210	55	114	79	38.5	DGA063AX00	V151N208	KABB0008
2"	17	D06AA20900	5635	132	83	100	48	230	70	134	96	48.5	DGA075AX00	V151N209	KABB0009



LIST OF VALVE COMPONENTS AND MATERIALS

REF.	PART	Qty	MATERIAL
1	BODY	1	CW617N (OT58)
2	FEMALE END	2	CW617N (OT58)
3	BALL	1	CW614N (OT58)
4	STEM	1	CW614N (OT58)
5	SEAT	2	PTFE
10	UPPER SEALING COUPLE	2	PTFE
50	GLAND	1	CW614N (OT58)
55	ACTUATOR SHAFT	1	ALUMINIUM
56	BRACKET	1	ALUMINIUM
57	BRACKET/VALVE SCREW	2	8.8
58	BRACKET/ACTUATOR SCREW	4	8.8
59	ACTUATOR	1	

For accessories see relevant catalogue sheet

DELTA

3-WAY BALL VALVE - "L" PORT, FULL BORE,
WITH **SPRING RETURN** PNEUMATIC ACTUATOR

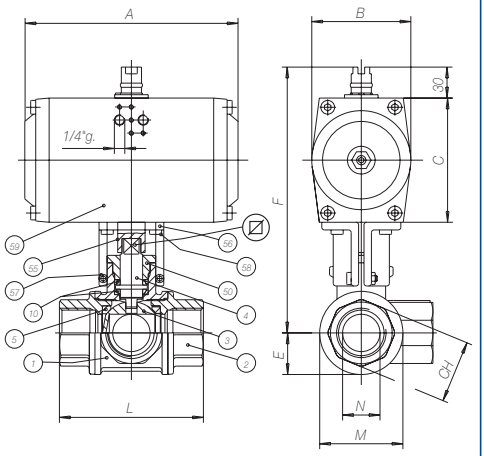
ACTUATOR FEATURES

- Rotation angle: 90°
- Standard version for temperature between –20°C and + 90°C
- Supply maximum pressure: 10 bar
- Nominal pressure: 5,62 bar
- Supply medium: dry filtered compressed air, not necessarily lubricated
- Lubrication: in such a case use a non-detergent or NBR compatible oil
- STANDARD: SPRING CLOSES/AIR OPENS, clockwise automatic closing

STANDARD VALVE FEATURES

- Temperature limits: for fluids from -15°C to +120°C
- Working pressure: for fluids up to 10 bar maximum
- CONNECTION: F/F ISO 7/1 Rp - DIN2999 parallel
- Stem with double conical sealing by 4 seals
- For general applications and special versions see technical table of manual valve
- In the below table the part number and the valve code refer to the standard valve

SIZE	⍁	Part Number	Weight in gr.	A	B	C	D	E	F	CH Octagonal key	L	M	N	ACTUATOR code	VALVE code	MOUNTING KIT code
3/8"	7	S06AA20300	1173	127	59	74	30	14.5	150	22	54	29	10	SGA0523X00	V151N203	KABB0103
1/2"	7	S06AA20400	1329	127	59	74	30	18	152.5	27	69	36	14	SGA0523X00	V151N204	KABB0103
3/4"	10	S06AA20500	2115	133	70	88	30	22.5	173.5	23.5	77	45	19	SGA0634X00	V151N205	KABB0105
1"	10	S06AA20600	3257	132	83	100	30	27	201.5	40.5	89	54	24	SGA0754X00	V151N206	KABB0106
1 1/4"	14	S06AA20700	4420	182	91	108	30	32.5	222	50	103	65	30.5	SGA0834X00	V151N207	KABB0107
1 1/2"	14	S06AA20800	6118	203	100	117	30	39.5	237.5	55	114	79	38.5	SGA0924X00	V151N208	KABB0108
2"	17	S06AA20900	8635	222	120	140	30	48	273.5	70	134	96	48.5	SNA1104X00	V151N209	KABB0109



LIST OF VALVE COMPONENTS AND MATERIALS

REF.	PART	Qty	MATERIAL
1	BODY	1	CW617N (OT58)
2	FEMALE END	2	CW617N (OT58)
3	BALL	1	CW614N (OT58)
4	STEM	1	CW614N (OT58)
5	SEAT	2	PTFE
10	UPPER SEALING COUPLE	2	PTFE
50	GLAND	1	CW614N (OT58)
55	ACTUATOR SHAFT	1	ALUMINIUM
56	BRACKET	1	ALUMINIUM
57	BRACKET/VALVE SCREW	2	8.8
58	BRACKET/ACTUATOR SCREW	4	8.8
59	ACTUATOR	1	

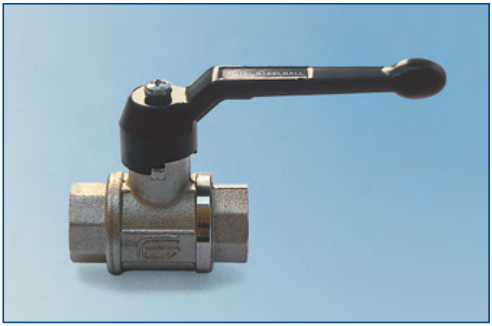
For accessories see relevant catalogue sheet

TOTAL STEELBALL

2-PIECE BALL VALVE—FULL BORE

MAIN STANDARD FEATURES

- CONSTRUCTION: BODY CW617N (OT58), BALL AISI 316
- DIAMETER: from DN10 - 3/8" to DN 50 - 2"
- PRESSURES: from 64 bar to 32 bar for fluids and PN 4 for gas
- TEMPERATURE LIMITS: from –20°C to +150°C for fluids
  from -20°C to +60°C for gas
- CONNECTIONS: F/F UNI-ISO 7/1 Rp – DIN 2999 parallel
- WRAPPING seats
- DOUBLE stem-packing with 4 conical seals
- OPERATION devices: lever or T-handle



STANDARD PART NUMBERS

Art. 2990
female/female w/lever

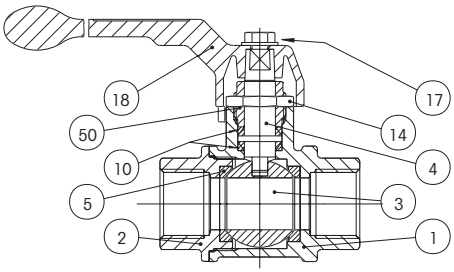
Art. 2995
female/female w/T-handle up to 1"

SPECIAL EXECUTIONS

- Yellow lever handle for gas
- Stem extension
- Square cap
- Sealing cap
- Underground adaptor
- On request the valve is available with ATEX certificate
- For further special requests please consult our technical/commercial service

GENERAL APPLICATIONS

Use as an ON-OFF valve for: general industrial applications, for water, vacuum, gas distribution, industrial heating, for partially corrosive media and for steam.
For special utilizations ascertain the compatibility with process features and the corrosion resistance also by the relevant table.



LIST OF COMPONENTS AND MATERIALS

REF.	PART	MATERIAL	UNI/DIN MAT.	QTY
1	BODY	CW617N (OT58)	UNI5705-65	1
2	FEMALE END	CW617N (OT58)	UNI5705-65	1
3	BALL	AISI 316	1.4401	1
4	STEM	CW614N (OT58)	UNI5705-65	1
5	SEAT	PTFE		2
10	UPPER SEALING COUPLE	PTFE		2
14	GLAND NUT	CW614N (OT58)	UNI5705-65	1
17	FIXING SCREW	zinc plated steel		1
18	LEVER HANDLE	see below	UNI5706	1
50	GLAND	CW614N (OT58)	UNI5705-65	1
	SURFACE TREATMENT	brillant nickel-plating		
	SEALANT	loctite AVX 586		

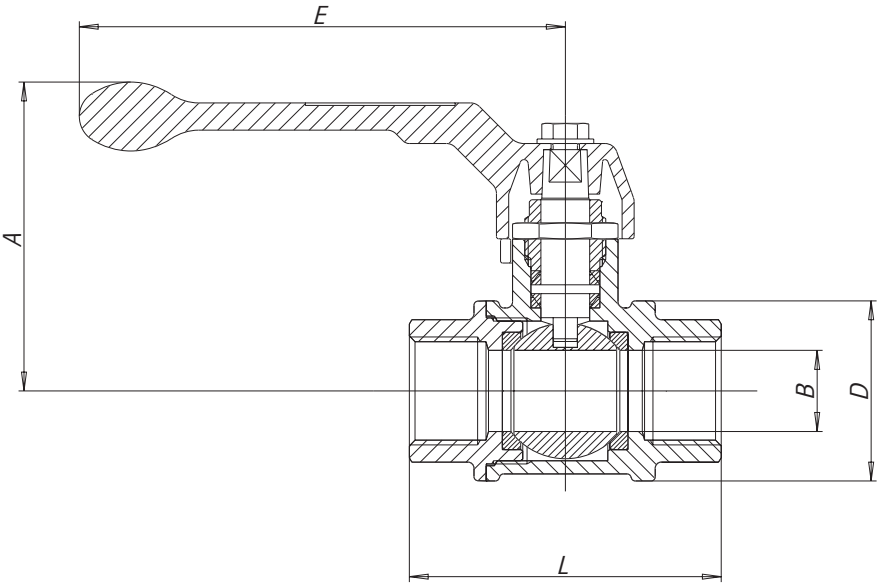
LEVER: ALUM. ALLOY POLYUR. COATED

DYSTRYBUTOR W POLSCE:
ECOZAM Sp. z o.o.
ul.Załogowa 17 80-557 Gdańsk
tel.:(+48 58) 522 03 80 fax.(+48 58) 342 20 10

UNI EN ISO 9001: 2000
Progettazione, Sviluppo, Fabbricazione
Certificato n° 0024/3

TOTAL STEELBALL

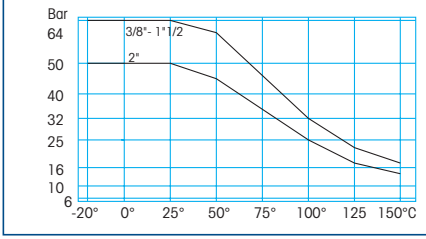
2-PIECE BALL VALVE—FULL BORE



SIZE	A	B	D	E	L	Weight in gr
3/8"	61	10	29	100	54	240
1/2"	64	15	36	100	69	370
3/4"	76	20	45	120	77	630
1"	80	25	54	120	89	900
1 1/4"	97	32	65	150	103	1570
1 1/2"	104	40	79	150	114	2380
2"	118	50	96	175	134	3770

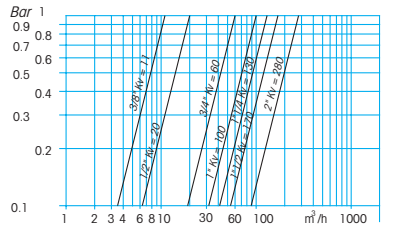
PRESSURE/TEMPERATURE DIAGRAM

At each pressure level corresponds the admissible temperature level.



LOSS OF HEAD DIAGRAM/FLOW RATE

The Kv value is the flow rate causing a pressure drop of 1 bar



TOTAL

2-PIECE BALL VALVE - FULL BORE WITH **DOUBLE ACTING** PNEUMATIC ACTUATOR

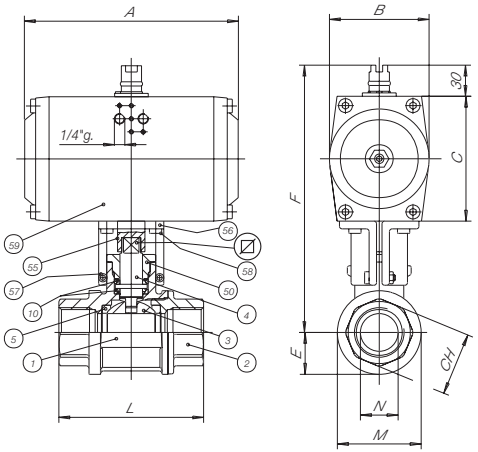
ACTUATOR FEATURES

- Rotation angle: 90°
- Standard version for temperature between –20°C and + 90°C
- Supply maximum pressure: 10 bar (8bar for DNA045)
- Nominal pressure: 5,62 bar
- Supply medium: dry filtered compressed air, not necessarily lubricated
- Lubrication: in such a case use a non-detergent or NBR compatible oil

STANDARD VALVE FEATURES

- Working temperature: from –20°C to +150°C for fluids
  from –20°C to + 60°C for gas
- Working pressure: from 64 bar to 20 bar for fluids.
  PN 4 for gas.
- CONNECTIONS: F/F UNI-ISO 7/1 Rp – DIN 2999 parallel
- DOUBLE stem-packing with 4 conical seals
- For general applications and special versions see technical table of manual valve
- In the below table the part number and the valve code refer to the standard valve female/female

SIZE	⊠	PART NUMBER	weight in gr.	A	B	C	E	F	GH octag.	L	M	N	ACTUATOR code	ACTUATOR code	MOUNTING KIT code
3/8"	7	D11AA20300	730	110	53	68	14.5	143.5	22	54	29	10	DNA045AW00	V111N203	KABB0003
1/2"	7	D11AA20400	865	110	53	68	18	146.5	27	69	36	15	DNA045AW00	V111N204	KABB0003
3/4"	10	D11AA20500	1030	110	53	68	22.5	153.5	23.5	77	45	20	DNA045AW00	V111N205	KABB0005
1"	10	D11AA20600	1690	127	59	74	27	175.5	40.5	89	54	25	DGA052AX00	V111N206	KABB0006
1 1/4"	14	D11AA20700	2805	133	70	88	32.5	202	50	103	65	32	DGA063AX00	V111N207	KABB0007
1 1/2"	14	D11AA20800	3630	133	70	88	39.5	210	55	114	79	40	DGA063AX00	V111N208	KABB0008
2"	17	D11AA20900	5665	132	83	100	48	230	70	134	96	50	DGA075AX00	V111N209	KABB0009
2 1/2"	22	D11AA21000	8470	203	100	117	59.5	269	86	161	119	65	DGA092AX00	V111N210	KABB0010
3"	22	D11AA21100	14465	222	120	140	72	303	100	185	144	80	DNA110AX00	V111N211	KABB0011



LIST OF VALVE COMPONENTS AND MATERIALS

REF.	PART	QTY	MATERIAL
1	BODY	1	CW617N (OT58)
2	FEMALE END	1	CW617N (OT58)
3	BALL	1	CW614N (OT58)
4	STEM	1	CW614N (OT58)
5	SEAT	2	PTFE
10	UPPER SEALING COUPLE	2	PTFE
50	GLAND	1	CW614N (OT58)
55	ACTUATOR SHAFT	1	ALUMINIUM
56	BRACKET	1	ALUMINIUM
57	BRACKET/VALVE SCREW	2	8.8
58	BRACKET/ACTUATOR SCREW	4	8.8
59	ACTUATOR	1	

For accessories see relevant catalogue sheet

TOTAL

2-PIECE BALL VALVE - FULL BORE WITH **SPRING RETURN** PNEUMATIC ACTUATOR

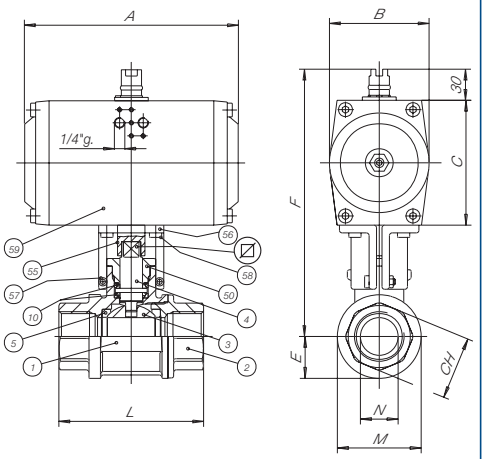
ACTUATOR FEATURES

- Rotation angle: 90°
- Standard version for temperature between –20°C and + 90°C
- Supply maximum pressure: 10 bar
- Nominal pressure: 5,62 bar
- Supply medium: dry filtered compressed air, not necessarily lubricated
- Lubrication: in such a case use a non-detergent or NBR compatible oil
- STANDARD: **SPRING CLOSES/AIR OPENS**, clockwise automatic closing

STANDARD VALVE FEATURES

- Working temperature: from –20°C to +150°C for fluids
  from –20°C to + 60°C for gas
- Working pressure: from 64 bar to 20 bar for fluids. PN 4 for gas.
- CONNECTIONS: F/F UNI-ISO 7/1 Rp – DIN 2999 parallel
- DOUBLE stem-packing with 4 conical seals
- For general applications and special versions see technical table of manual valve
- In the below table the part number and the valve code refer to the standard valve female/female

SIZE	⊠	PART NUMBER	weight in gr.	A	B	C	E	F	GH octag.	L	M	N	ACTUATOR code	ACTUATOR code	MOUNTING KIT code
3/8"	7	S11AA20300	1170	127	59	74	14.5	150	22	54	29	10	SGA0523X00	V111N203	KABB0103
1/2"	7	S11AA20400	1300	127	59	74	18	152.5	27	69	36	15	SGA0523X00	V111N204	KABB0103
3/4"	10	S11AA20500	2110	133	70	88	22.5	173.5	23.5	77	45	20	SGA0634X00	V111N205	KABB0105
1"	10	S11AA20600	3210	132	83	100	27	201.5	40.5	89	54	25	SGA0754X00	V111N206	KABB0106
1 1/4"	14	S11AA20700	4365	182	91	108	32.5	222	50	103	65	32	SGA0834X00	V111N207	KABB0107
1 1/2"	14	S11AA20800	6160	203	100	117	39.5	237.5	55	114	79	40	SGA0924X00	V111N208	KABB0108
2"	17	S11AA20900	8665	222	120	140	48	273.5	70	134	96	50	SGA1104X00	V111N209	KABB0109
2 1/2"	22	S11AA21000	15380	300	137	160	59.5	311.5	86	161	119	65	SGA1274X00	V111N210	KABB0110
3"	22	S11AA21100	19780	300	137	160	72	323	100	185	144	80	SGA1274X00	V111N211	KABB0011



LIST OF VALVE COMPONENTS AND MATERIALS

REF.	PART	QTY	MATERIAL
1	BODY	1	CW617N (OT58)
2	FEMALE END	1	CW617N (OT58)
3	BALL	1	CW614N (OT58)
4	STEM	1	CW614N (OT58)
5	SEAT	2	PTFE
10	UPPER SEALING COUPLE	2	PTFE
50	GLAND	1	CW614N (OT58)
55	ACTUATOR SHAFT	1	ALUMINIUM
56	BRACKET	1	ALUMINIUM
57	BRACKET/VALVE SCREW	2	8.8
58	BRACKET/ACTUATOR SCREW	4	8.8
59	ACTUATOR	1	

For accessories see relevant catalogue sheet

HIPRESS

2-PIECE BALL VALVE FOR HIGH PRESSURES, WITH **DOUBLE ACTING** PNEUMATIC ACTUATOR

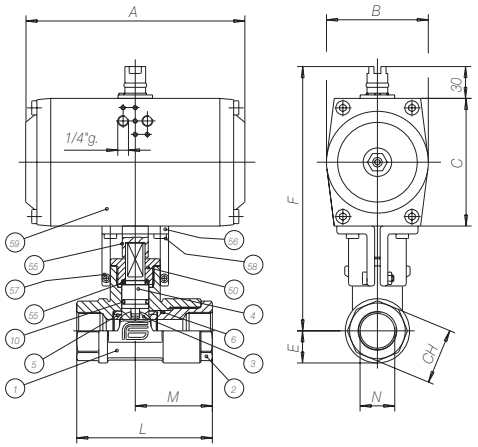
ACTUATOR FEATURES

- Rotation angle: 90°
- Standard version for temperature between –20°C and + 90°C
- Supply maximum pressure: 10 bar (8bar for DNA045)
- Nominal pressure: 5,62 bar
- Supply medium: dry filtered compressed air, not necessarily lubricated
- Lubrication: in such a case use a non-detergent or NBR compatible oil

STANDARD VALVE FEATURES

- Temperature limits: from –20°C to +80°C
- Working pressure: for fluids up to 210 bar
- CONNECTIONS: F/F ISO 7/1 Rp – DIN 2999 parallel
- DOUBLE stem-packing with 4 conical seals
- For general applications and special versions see technical table of manual valve
- In the below table the part number and the valve code refer to the standard valve female/female

SIZE	PART NUMBER	weight in gr.	A	B	C	E	F	CH octag. key	L	M	N	ACTUATOR code	VALVE code	MOUNTING KIT code
3/8"	DH1AA20300	1030	110	53	68	15	153	26	75	44	8	DNA045AW00	V113N203	K1BA0003
1/2"	DH1AA20400	1190	110	53	68	18	154.5	32	85	47	12	DNA045AW00	V113N204	K1BA0003
3/4"	DH1AA20500	2075	127	59	74	22.5	175	39	95	54	16	DGA052AX00	V113N205	K1BA0005
1"	DH1AA20600	3030	133	70	88	26.5	191.5	48	105	56	20	DGA063AX00	V113N206	K1BA0005



LIST OF VALVE COMPONENTS AND MATERIALS

REF.	PART	QTY	MATERIAL
1	BODY	1	CW617N (OT58)
2	FEMALE END	1	CW617N (OT58)
3	BALL	1	CW614N (OT58)
4	STEM	1	CW614N (OT58)
5	SEAT	2	DELRIN
6	SIDE SEALING RING	1	VITON
10	UPPER SEALING O-RING	1	PTFE
15	STEM SEALING O-RING	1	VITON
50	GLAND	1	CW614N (OT58)
55	ACTUATOR SHAFT	1	ALUMINIUM
56	BRACKET	1	ALUMINIUM
57	BRACKET/VALVE SCREW	2	8.8
58	BRACKET/ACTUATOR SCREW	4	8.8
59	ACTUATOR	1	

For accessories see relevant catalogue sheet

HIPRESS

2-PIECE BALL VALVE FOR HIGH PRESSURES, WITH **SPRING RETURN** PNEUMATIC ACTUATOR

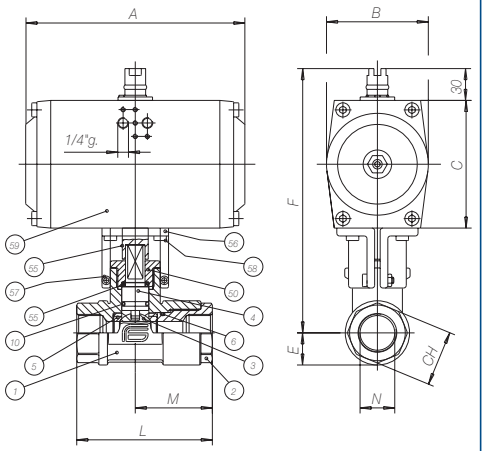
ACTUATOR FEATURES

- Rotation angle: 90°
- Standard version for temperature between –20°C and + 90°C
- Supply maximum pressure: 10 bar
- Nominal pressure: 5,62 bar
- Supply medium: dry filtered compressed air, not necessarily lubricated
- Lubrication: in such a case use a non-detergent or NBR compatible oil
- STANDARD: SPRING CLISES/AIR OPENS, clockwise automatic closing

STANDARD VALVE FEATURES

- Temperature limits: from –20°C to +80°C
- Working pressure: for fluids up to 210 bar
- CONNECTIONS: F/F ISO 7/1 Rp – DIN 2999 parallel
- DOUBLE stem-packing with 4 conical seals
- For general applications and special versions see technical table of manual valve
- In the below table the part number and the valve code refer to the standard valve female/female

SIZE	PART NUMBER	weight in gr.	A	B	C	E	F	CH octag. key	L	M	N	ACTUATOR code	VALVE code	MOUNTING KIT code
3/8"	SH1AA20300	1500	127	59	74	15	160.5	26	75	44	8	SGA0524X00	V113N203	K1BA0103
1/2"	SH1AA20400	2240	133	70	88	18	176	32	85	47	12	SGA0634X00	V113N204	K1BA0103
3/4"	SH1AA20500	3545	132	83	100	22.5	201	39	95	54	16	SGA0754X00	V113N205	K1BA0105
1"	SH1AA20600	4550	182	91	108	26.5	211.5	48	105	56	20	SGA0834X00	V113N206	K1BA0105



LIST OF VALVE COMPONENTS AND MATERIALS

REF.	PART	QTY	MATERIAL
1	BODY	1	CW617N (OT58)
2	FEMALE END	1	CW617N (OT58)
3	BALL	1	CW614N (OT58)
4	STEM	1	CW614N (OT58)
5	SEAT	2	DELRIN
6	SIDE SEALING RING	1	VITON
10	UPPER SEALING O-RING	1	PTFE
15	STEM SEALING O-RING	1	VITON
50	GLAND	1	CW614N (OT58)
55	ACTUATOR SHAFT	1	ALUMINIUM
56	BRACKET	1	ALUMINIUM
57	BRACKET/VALVE SCREW	2	8.8
58	BRACKET/ACTUATOR SCREW	4	8.8
59	ACTUATOR	1	

For accessories see relevant catalogue sheet

LYBRA

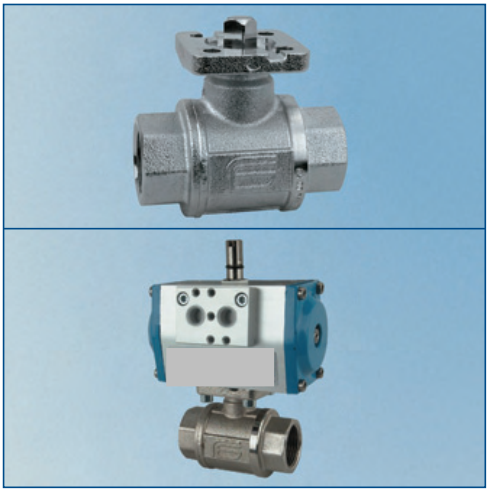
2-PIECE BALL VALVE FULL BORE WITH ISO TOP, WITH **DOUBLE ACTING** PNEUMATIC ACTUATOR

ACTUATOR FEATURES

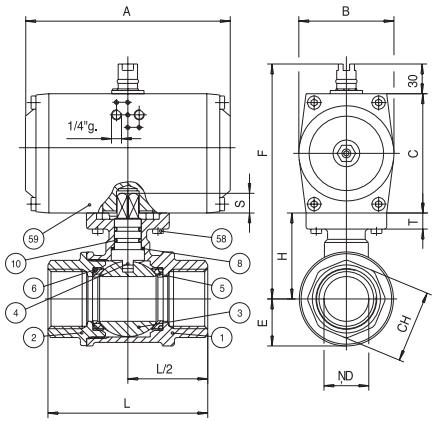
- Rotation angle: 90°
- Standard version for temperature between –20°C and + 90°C
- Supply maximum pressure: 10 bar (8bar for DNA045)
- Nominal pressure: 5,62 bar
- Supply medium: dry filtered compressed air, not necessarily lubricated
- Lubrication: in such a case use a non-detergent or NBR compatible oil

STANDARD VALVE FEATURES

- Temperature limits: from –20°C to +130°C
- Maximum working pressure: PN40 for all sizes
- CONNECTIONS: F/F ISO 7/1 Rp – DIN 2999 parallel
- BLOW-OUT PROOF stem from 1/2" to 2"
- ISO 5211 mounting plate
- In the below table the part number and the valve code refer to the standard valve female/female



SIZE	PART NUMBER	weight in gr.	A	B	C	D	E	F	H	L	CH	S	T	Stem Square	Iso top drilling	Torque	ACTUATOR code	VALVE code	MOUNTING KIT code
1/2"	D66AA20400	836	110	53	68	15	17,5	135	36,5	64	26	9	6	9	F03	3Nm	DNA045AX00	1801N204	KANX0004
3/4"	D66AA20500	1056	110	53	68	20	22	141	42,5	74	32	9	7	9	F03	5Nm	DNA045AX00	1801N205	KANX0004
1"	D66AA20600	1396	110	53	68	25	26,5	146	48	89,5	40,5	8	8	9	F03-F05	6Nm	DNA045AX00	1801N206	KANX0006
1"1/4	D66AA20700	1790	110	53	68	32	32,5	152	54	104	49,5	8	8	9	F03-F05	7Nm	DNA045AX00	1801N207	KANX0006
1"1/2	D66AA20800	2711	127	59	74	40	39	165	60,5	114	55	14	8	14	F05	9Nm	DGA052AX00	1801N208	KANX0108
2"	D66AA20900	4418	133	70	88	50	47	188	70	135	68,5	14	8	14	F05	10Nm	DGA063AX00	1801N209	KANX0108



LIST OF VALVE COMPONENTS AND MATERIALS

REF.	PART	Qty	MATERIAL
1	BODY	1	CW617N (OT58)
2	FEMALE END	1	CW617N (OT58)
3	BALL	1	CW614N (OT58)
4	STEM	1	CW614N (OT58)
5	SEAT	2	PTFE
6	SIDE SEALING RING	2	VITON
8	UPPER SEALING O-RING	2	PTFE
10	UPPER SEALING O-RING	2	EPDM
58	BRACKET/ACTUATOR SCREW	4	8.8
59	ACTUATOR	1	

For accessories see relevant catalogue sheet

LYBRA

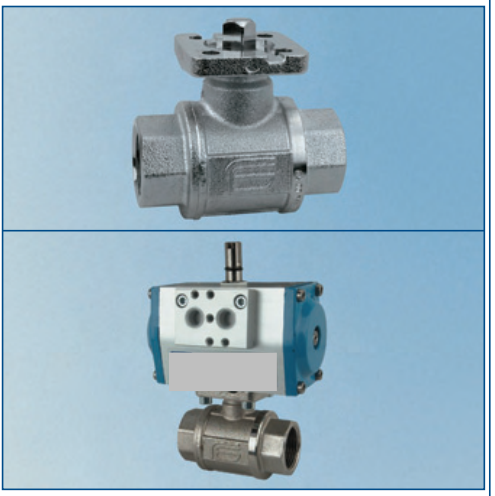
2-PIECE BALL VALVE FULL BORE WITH ISO TOP, WITH **SPRING RETURN** PNEUMATIC ACTUATOR

ACTUATOR FEATURES

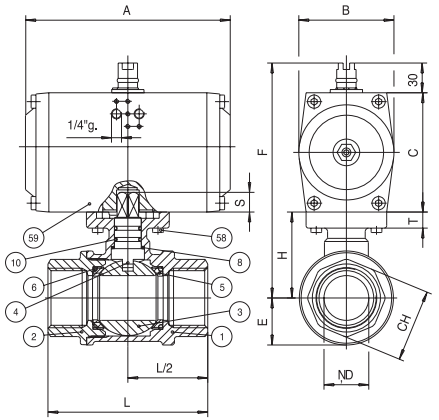
- Rotation angle: 90°
- Standard version for temperature between –20°C and + 90°C
- Supply maximum pressure: 10 bar
- Nominal pressure: 5,62 bar
- Supply medium: dry filtered compressed air, not necessarily lubricated
- Lubrication: in such a case use a non-detergent or NBR compatible oil
- STANDARD: SORING CLOSES/AIR OPENS, clockwise automatic closing

STANDARD VALVE FEATURES

- Temperature limits: from –20°C to +130°C
- Maximum working pressure: PN40 for all sizes
- CONNECTIONS: F/F ISO 7/1 Rp – DIN 2999 parallel
- BLOW-OUT PROOF stem from 1/2" to 2"
- ISO 5211 mounting plate
- In the below table the part number and the valve code refer to the standard valve female/female



SIZE	PART NUMBER	weight in gr.	A	B	C	D	E	F	H	L	CH	S	T	Stem Square	Iso top drilling	Torque	ACTUATOR code	VALVE code	MOUNTING KIT code
1/2"	S66AA20400	936	110	53	68	15	17,5	135	36,5	64	26	9	6	9	F03	3Nm	SNA0452X00	1801N204	KANX0004
3/4"	S66AA20500	1510	127	59	74	20	22	147	42,5	74	32	9	7	9	F03	5Nm	SGA0524X00	1801N205	KANX0005
1"	S66AA20600	2410	133	70	88	25	26,5	166	48	89,5	40,5	8	8	9	F03-F05	6Nm	SGA0634X00	1801N206	KANX0106
1"1/4	S66AA20700	2807	133	70	88	32	32,5	172	54	104	49,5	8	8	9	F03-F05	7Nm	SGA0634X00	1801N207	KANX0106
1"1/2	S66AA20800	4125	132	83	100	40	39	191	60,5	114	55	14	8	14	F05	9Nm	SGA0754X00	1801N208	KANX0208
2"	S66AA20900	5277	132	83	100	50	47	200	70	135	68,5	14	8	14	F05	10Nm	SGA0754X00	1801N209	KANX0208



LIST OF VALVE COMPONENTS AND MATERIALS

REF.	PART	Qty	MATERIAL
1	BODY	1	CW617N (OT58)
2	FEMALE END	1	CW617N (OT58)
3	BALL	1	CW614N (OT58)
4	STEM	1	CW614N (OT58)
5	SEAT	2	PTFE
6	SIDE SEALING RING	2	VITON
8	UPPER SEALING O-RING	2	PTFE
10	UPPER SEALING O-RING	2	EPDM
58	BRACKET/ACTUATOR SCREW	4	8.8
59	ACTUATOR	1	

For accessories see relevant catalogue sheet

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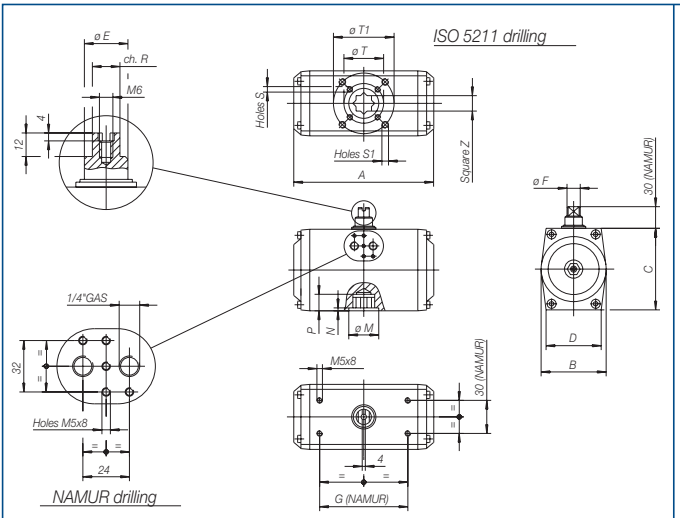
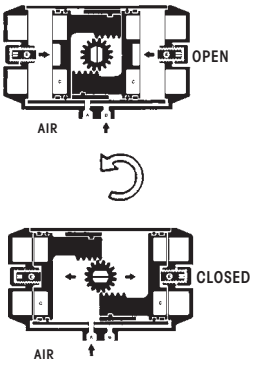
UNI EN ISO 9001: 2000
Progettazione, Sviluppo, Fabbricazione
Certificato n° 0024/3

PNEUMATIC ACTUATOR

DEVICE FOR AUTOMATIC VALVE OPERATION BY COMPRESSED AIR, DOUBLE ACTING OR SPRING RETURN



STANDARD INSTALLATION



IT IS AVAILABLE A SPECIAL EXECUTION D.E. OPERATED BY WATER

SIZE	A	B	C	D	øE	øF	G	øM	N	P	ch. R	Holes S	øT	Holes S1	øT1	Square Z	Weight gr. DE	Weight gr. SE *	N/	Sec
045	110	65	68	53	12	12	80	25/30	2	14	9	M5x11	36 (ISO F03)	M5x11	42 (ISO F05)	9/11	500	600		
052	127	59	74	50	12	12	80	23.8	2	18	10	M5x8	36 (ISO F03)	M6x10	50 (ISO F05)	14	800	950	0,25	0.158
063	133	70	88	60	12	12	80	23.8	2	18	10	M6x10	50 (ISO F05)	M8x13	70 (ISO F07)	14	1.350	1.500	0,40	0.214
075	132	83	100	65	18	14	80	29.3	2	19	10	M6x10	50 (ISO F05)	M8x13	70 (ISO F07)	17	1.950	2.200	0,60	0.334
083	182	91	108	65	18	14	80	32.3	2	19	10	M6x10	50 (ISO F05)	M8x13	70 (ISO F07)	17	2.500	2.800	0,82	0.430
092	203	100	117	70	25	19.5	80	37.3	2	19	14	M6x10	50 (ISO F05)	M8x13	70 (ISO F07)	17	3.350	3.650	1,20	0.444
110	222	120	140	90	25	19.5	80	37.3	2.5	24.5	14	M8x13	70 (ISO F07)	M10x16	102 (ISO F10)	22	4.800	5.500	1,90	0.462
118	294	120	140	90	40	28	80	53.3	2.5	24.5	20	M8x13	70 (ISO F07)	M10x16	102 (ISO F10)	22	6.800	7.700	2,30	0.600
127	300	137	160	103	40	28	80	53.3	3	25	20	M8x13	70 (ISO F07)	M10x16	102 (ISO F10)	22	8.500	9.650	3,65	0.858
160	380	172	198	110	40	36	130	66.3	3	29	28	M10x16	102 (ISO F10)	M12x20	125 (ISO F12)	27	15.600	18.150	4,00	1.620
210	450	224	255	135	60	47	130	79.3	4	40	32	-	-	M16x25	140 (ISO F14)	36	31.200	36.600	15,22	3.330
254	603	272	302	159	60	47	130	105.3	4	50	32	-	-	M20x28	165 (ISO F16)	46	60.000	74.700	22,00	6.000
255	683	272	302	159	60	47	130	134	3.1	50	32	-	-	M20x28	165 (ISO F16)	46	73.000	87.700	32,00	7.500

DOUBLE ACTING ACTUATOR:

In the case of double acting actuator it is sufficent to look at the below table for a needed torque value, increased by 10% for an acceptable safety factor. The coordinates of relevant case show the type of DE actuator and the necessary working pressure in kPa.

EXAMPLE: if you have to operate a valve requiring a torque of 200 Nm, you apply 10% safety factor and obtain 220 Nm. You then choose DNA 127x90 giving a torque of 275 Nm at 500 kPa., or DNA 118x90, giving a torque of 252 Nm at 600 kP.

TIPO	100 kPa	200 kPa	300 kPa	400 kPa	500 kPa	562 kPa	600 kPa	700 kPa	800 kPa	900 kPa	1000 kPa
DNA045	2.3	4.6	6.9	9.2	11.5	12.9	13.8	16.1	18.4	-	-
DGA052	3.9	7.8	11.7	15.6	19.5	21.9	23.4	27.3	31.2	35.1	39.0
DGA063	5.8	11.6	17.4	23.2	29.0	32.6	34.8	40.6	46.4	52.2	58.0
DGA075	10.0	20.0	30.0	40.0	50.0	56.2	60.0	70.0	80.0	90.0	100.0
DGA083	14.0	28.0	42.0	56.0	70.0	78.7	84.0	98.0	112.0	126.0	140.0
DGA092	19.4	38.8	58.2	77.6	97.0	109.0	116.4	135.8	155.2	174.6	194.0
DNA110	28.2	56.4	84.6	112.8	141.0	158.5	169.2	197.4	225.6	253.8	282.0
DNA118	42.0	84.0	126.0	168.0	210.0	236.0	252.0	294.0	336.0	378.0	420.0
DNA127	55.0	110.0	165.0	220.0	275.0	309.1	320.0	385.0	440.0	495.0	550.0
DNA160	110.0	220.0	330.0	440.0	550.0	618.0	660.0	770.0	880.0	990.0	1100
DNA210	237.0	474.0	711.0	948.0	1185	1332	1422	1659	1896	2133	2370
DNA254	435.0	870.0	1305	1740	2175	2445	2610	3045	3480	3915	4350
DNA255	543.0	1086	1629	2172	2715	3051	3258	3801	4344	4887	5430

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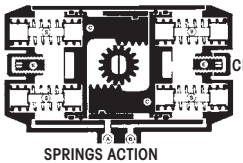
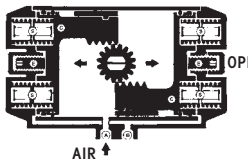
UNI EN ISO 9001: 2000
Progettazione, Sviluppo, Fabbricazione
Certificato n° 0024/3

PNEUMATIC ACTUATOR

BREAKAWAY TORQUES GIVEN BY THE ACTUATOR A DIFFERENT PRESSIONS
DEVICE FOR AUTOMATIC VALVE OPERATION BY COMPRESSED AIR, ACTING OR SPRING RETURN





• VALUES EXPRESSED IN Nm • 0° STRETCHED SPRING • 90° COMPRESSED SPRING

TIPO/TYPE	STRESS RELIEVED SPRING	COMPRES-SED SPRING	TOTAL NR ACTUATOR SPRING	2 BAR		3 BAR		4 BAR		5 BAR		5,6 BAR		6 BAR		7 BAR		8 BAR		9 BAR		10 BAR	
	0°	90°	N°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°
045	2,9 4,4 5,9	5,0 7,5 10,0	4 6 8			4,0	1,9	6,3 4,8	4,2 1,6	8,7 7,1 5,6	6,6 4,0 1,4	10,1 8,5 7,0	8,0 5,4 2,8	11,0 9,5 7,9	8,9 6,3 3,8	13,3 11,8 10,3	11,2 8,7 6,1	15,7 14,1 12,6	13,6 11,0 8,4	18,0 16,5 16,0	15,9 13,3 10,8	20,3 18,8 17,3	18,2 15,7 13,1
052	3,7 5,5 7,4 9,3 11,1	6,3 9,4 12,6 15,7 18,9	4 6 8 10 12	4,0	1,4	7,9 6,0	5,3 2,1	11,8 9,9 8,0	9,2 6,0 2,7	15,7 13,8 11,9 10,0 8,1	13,1 9,9 6,6 3,4 0,2	18,0 16,1 14,2 12,3 10,4	15,4 12,2 9,0 5,8 2,5	19,6 17,7 15,8 13,9 12,0	17,0 13,7 10,5 7,3 4,1	23,5 21,6 19,7 17,8 15,9	20,9 17,6 14,4 11,2 8,0	27,4 25,5 23,6 21,7 19,8	24,8 21,5 18,3 15,1 11,9	31,3 29,4 27,5 25,6 23,7	28,7 25,4 22,2 19,0 15,8	35,2 33,3 31,4 29,5 27,6	32,5 29,3 26,1 22,9 19,7
063	5,8 8,8 11,7 14,7 17,6	8,8 13,3 17,7 22,2 26,6	4 6 8 10 12	5,6	2,5	11,4 8,4	8,3 3,8	17,2 14,2 11,2	14,1 9,6 5,1	23,0 20,0 17,0 14,0	19,9 15,4 10,9 6,3	26,5 23,5 20,5 17,5 14,5	23,4 18,9 14,4 9,8 5,3	28,8 25,8 22,8 19,8 16,8	25,7 21,2 16,7 12,1 7,6	34,6 31,6 28,6 25,6 22,6	31,5 27,0 22,5 17,9 13,4	40,4 37,4 34,4 31,4 28,4	37,3 32,8 28,3 23,7 19,2	46,2 43,2 40,2 37,2 34,2	43,1 38,6 34,1 29,5 25,0	52,0 49,0 46,0 43,0 40,0	48,9 44,4 39,9 35,3 30,8
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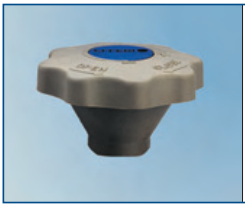
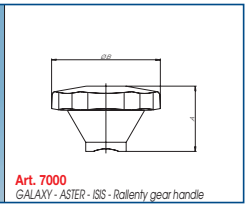
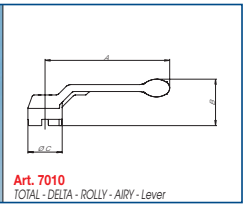
SPARE PARTS





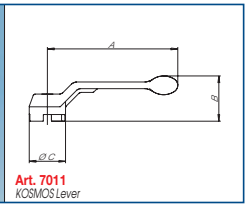
Art. 7000
GALAXY - ASTER - ISIS - Rallenty gear handle

GALAXY	1/4"-1"	1"1/4-2"					
ASTER	3/8"-1"	1"1/4-2"					
ISIS	1/4"-1"	1"1/4-2"					
Amm	50	78					
ØBmm	83	130					



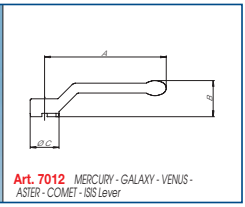
Art. 7010
TOTAL - DELTA - ROLLY - AIRY - Lever

TOTAL	1/8"-1/4"	3/8"-1/2"	3/4"-1"	1"1/4-1"1/2	2"	2"1/2-3"
DELTA		1/4"-1/2"	3/4"-1"	1"1/4-1"1/2	2"	
ROLLY		DN15	DN20-25	DN32-40	DN50	DN65-80
AIRY		1/8"-1/2"	3/4"-1"	1"1/4-1"1/2	2"	
Amm	75	100	120	150	175	280
Bmm	34	39	45	51	56	74
ØCmm	24	29	33	43	48	66



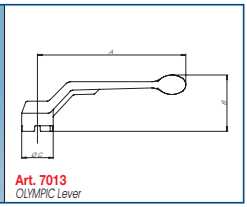
Art. 7011
KOSMOS Lever

KOSMOS	1/8"-1/4"	3/8"	1/2"-3/4"	1"	1"1/4-1"1/2	2"	2"1/2-3"
Amm	**TOTAL** 1/8"-1/4"	**TOTAL** 3/8"-1/2"	**TOTAL** 3/8"-1/2"	**TOTAL** 3/4"-1"	**TOTAL** 1" 1/4 1" 1/2"	**TOTAL** 2"	**TOTAL** 2"1/2-3"
Bmm							
ØCmm							



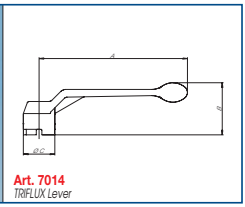
Art. 7012 *MERCURY - GALAXY - VENUS - ASTER - COMET - ISIS Lever*

MERCURY	1/4"-1/2"	3/4"-1"	1"1/4-1"1/2	2"	2"1/2-4"		
GALAXY	1/4"-1/2"	3/4"-1"	1"1/4-1"1/2	2"	2"1/2-4"		
VENUS	1/4"-1/2"	3/4"-1"	1"1/4-1"1/2	2"	2"1/2-4"		
ASTER	1/4"-1/2"	3/4"-1"	1"1/4-1"1/2	2"	2"1/2-4"		
COMET	1/4"-1/2"	3/4"-1"	1"1/4-1"1/2	2"	2"1/2-4"		
ISIS	1/4"-1/2"	3/4"-1"	1"1/4-1"1/2	2"			
Amm	85	105	130	165	260		
Bmm	27	32	39	47	57		
ØCmm	22	25	32	37	47		



Art. 7013
OLYMPIC Lever

OLYMPIC	DN20-25	DN32-40	DN50	DN65-100			
Amm	160	195	235	**TOTAL** 2"1/2-3"			
Bmm	61	67	72				
ØCmm	34	44	50				



Art. 7014
TRIFLUX Lever

TRIFLUX	1/2"	3/4"-1"	1"1/4-1"1/2	2"			
Amm	130	160	195	235			
Bmm	51	56	63	69			
ØCmm	30	34	44	49			

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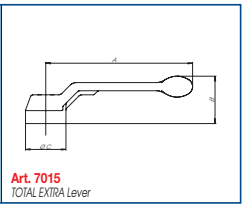
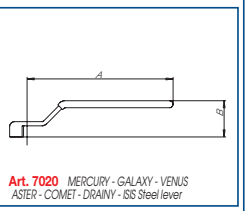
SPARE PARTS



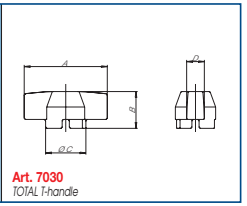
Art. 7015
TOTAL EXTRA Lever

TOTAL EXTRA	1/2"-1"						
Amm	120						
Bmm	39						
ØCmm	33						



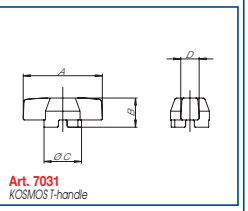
Art. 7020 *MERCURY - GALAXY - VENUS ASTER - COMET - DRAINY - ISIS Steel lever*

MERCURY	1/4"-1/2	3/4"-1"	1"1/4-1"1/2	2"	2"1/2-4"		
GALAXY	"	3/4"-1"	1"1/4-1"1/2	2"	2"1/2-4"		
VENUS	1/4"-1/2	3/4"-1"	1"1/4-1"1/2	2"	2"1/2-4"		
ASTER	"	3/4"-1"	1"1/4-1"1/2	2"	2"1/2-4"		
COMET	1/4"-1/2	3/4"-1"	1"1/4-1"1/2	2"	2"1/2-4"		
DRAINY	"	3/4"-1"					
ISIS	1/4"-1/2	3/4"-1"	1"1/4-1"1/2	2"			
Amm	"	105	130	165	250		
Bmm	1/4"-1/2	27	32	38	40		



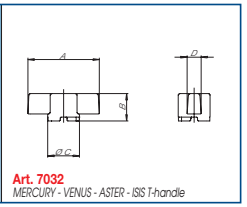
Art. 7030
TOTAL T-handle

TOTAL	1/8"-1/4"	3/8"-1/2"	3/4"-1"				
Amm	45	55	70				
Bmm	22	27	31				
ØCmm	25	30	34				
Dmm	12	13	15				



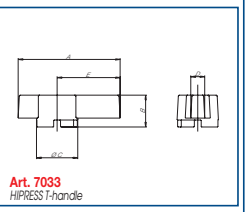
Art. 7031
KOSMOS T-handle

KOSMOS	1/8"-1/4"	3/8"	1/2"-3/4"	1"			
Amm	TOTAL 1/8"-1/4"	TOTAL 1/8"-1/4"	TOTAL 3/8"-1/2"	TOTAL 3/4"-1"			
Bmm							
ØCmm							
Dmm							



Art. 7032
MERCURY - VENUS - ASTER - ISIS T-handle

MERCURY	1/4"-1/2"	3/4"-1"					
VENUS	1/4"-1/2"	3/4"-1"					
ASTER	1/4"-1/2"	3/4"-1"					
ISIS	1/4"-1/2"	3/4"-1"					
Amm	47	56					
Bmm	16	20					
ØCmm	22	25					
Dmm	11	12					



Art. 7033
HIPRESS T-handle

HIPRESS	3/8"-1/2"	3/4"-1"					
Amm	73	110					
Bmm	28	34					
ØCmm	36	44					
Dmm	10	15					
Emm	43	68					

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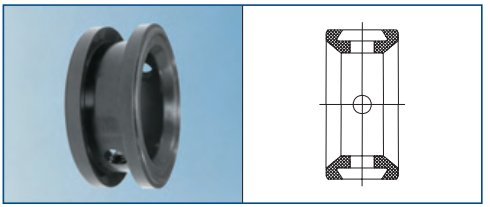
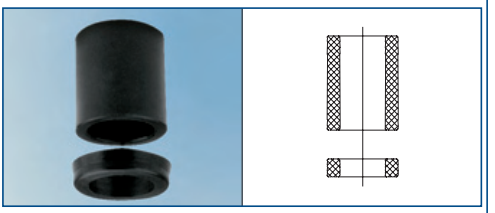
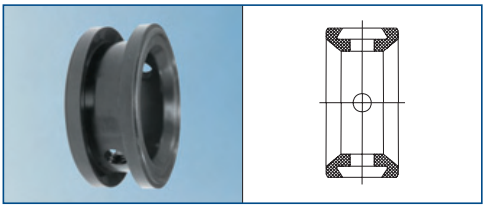


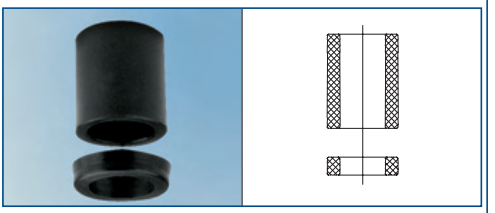
Art. K550E
SEAT EPDM



Art. K550E
UPPER SEAL EPDM



Art. K550N
SEAT NBR



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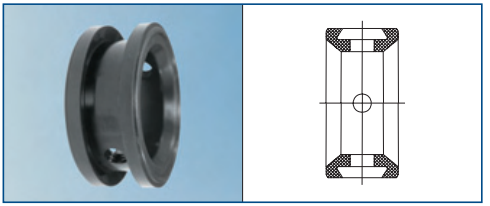
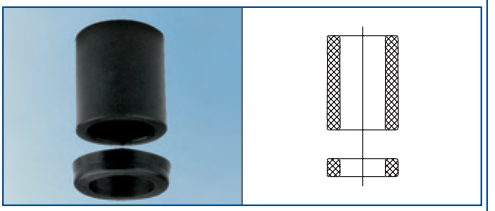
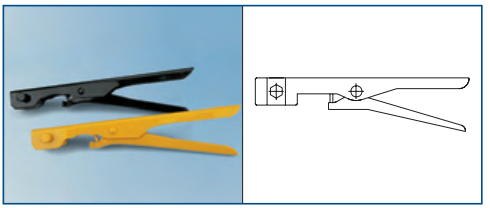


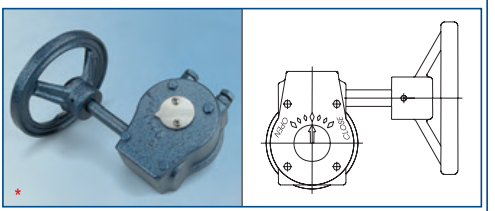
Art. K550V
SEAT VITON



Art. K550V
UPPER SEAL VITON



Art. LVA1
Hand lever



*

Art. RDA1
Reduction gear

*
available also for gas with yellow handwheel

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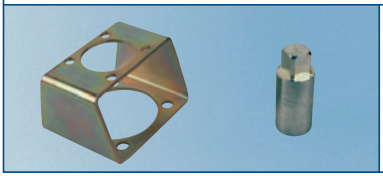
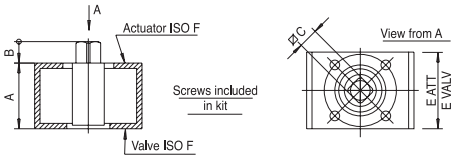
VALVES ACCESSORIES

VALVES-ACTUATORS CONNECTING KIT

Connecting kit actuator-valve, series SUN WP, MOON, SELENE, TITAN-ARGOS, GEMINI

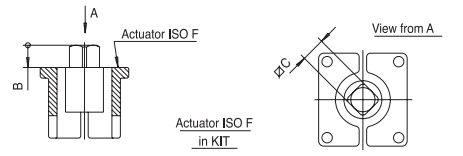




KIT CODE	SERIES	E AT.	E VA.	A	B	⍁C	Square red. stand.	ISO F valve	ISO F actuator
K1GA0003	SUN WP	34	34	40	11	11	-	F03	F03
K1GA0204	SUN WP	34	34	40	11	11	11-14	F03	F03
K1GA0105	SUN WP	34	34	40	11	11	-	F03	F03
K1GA0205	SUN WP	34	34	40	11	11	11-14	F03	F03
K1GA0206	SUN WP	34	34	40	15	14	-	F03	F03
K1GA0306	SUN WP	46	34	40	15	14	-	F03	F05
K1GA0207	SUN WP	46	40	50	15	14	-	F04	F05
K1GA0307	SUN WP	46	40	50	15	14	14-17	F04	F05
K1GA0208	SUN WP	46	40	50	16	17	-	F04	F05
K1GA0009	SUN WP	46	46	50	16	17	-	F05	F05
K1GA0109	SUN WP	65	46	50	16	17	17-22	F05	F07
K1GA0004	MOON	34	34	40	11	11	-	F03	F03
K1GA0104	MOON	34	34	40	11	11	11-14	F03	F03
K1GA0005	MOON	46	34	40	11	11	11-14	F03	F05
K1GA0006	MOON	46	40	50	15	14	-	F04	F03
K1GA0106	MOON	46	40	50	15	14	14-17	F04	F05
K1GA0007	MOON	46	40	50	15	14	-	F04	F05
K1GA0107	MOON	46	40	50	15	14	14-17	F04	F05
K1GA0008	MOON	46	46	50	16	17	-	F05	F05
K1GA0108	MOON	65	46	50	16	17	-	F05	F07
K1GA0010	MOON	70	70	60	16	17	-	F07	F07
K1GA0110	MOON	70	70	60	16	17	17-22	F07	F07
K1GA0011	MOON	70	70	60	21.5	22	-	F07	F07
K1GA0111	MOON	90	90	60	21.5	22	22-27	F07	F10
K1GA0012	MOON	120	120	80	21.5	22	-	F10	F10
K1GA0112	MOON	120	120	80	21.5	22	22-27	F10	F10
K1GA0013	SELENE	120	120	80	26	27	-	F10	F12
K1GA0113	SELENE	140	140	80	26	27	27-36	F10	F14

KIT CODE	SERIES	E AT.	E VA.	A	B	⍁C	Square red. stand.	ISO F valve	ISO F actuator
K1GA0014	SELENE	120	120	80	26	27	-	F12	F12
K1GA0114	SELENE	200	200	100	46	46	-	F12	F16
K1GA0015	SELENE	140	140	80	36	36	-	F12	F14
K1GA0115	SELENE	200	200	100	46	46	-	F12	F16
K1GA0002	TITAN-ARG.	34	34	40	11	11	-	F03	F03
K1GA0102	TITAN-ARG.	46	34	40	11	11	11-14	F03	F05
K1GA0304	TITAN-ARG.	34	34	40	15	14	-	F03	F03
K1GA0404	TITAN-ARG.	46	34	40	15	14	14-17	F03	F05
K1GA0305	TITAN-ARG.	34	34	40	15	14	-	F03	F03
K1GA0405	TITAN-ARG.	46	34	40	15	14	14-17	F03	F05
K1GA0406	TITAN-ARG.	46	40	50	15	14	-	F04	F05
K1GA0506	TITAN-ARG.	46	40	50	15	14	14-17	F04	F05
K1GA0407	TITAN-ARG.	46	40	50	15	14	-	F04	F05
K1GA0507	TITAN-ARG.	46	40	50	15	14	14-17	F04	F05
K1GA0308	TITAN-ARG.	46	46	50	16	17	-	F05	F05
K1GA0408	TITAN-ARG.	65	46	50	16	17	17-22	F05	F07
K1GB0002	GEMINI	46	40	50	11	11	-	F04	F03
K1GB0102	GEMINI	46	40	50	11	11	11-14	F04	F03
K1GB0104	GEMINI	46	40	50	11	11	11-14	F04	F05
K1GB0005	GEMINI	46	46	50	11	14	-	F05	F05
K1GB0105	GEMINI	46	46	50	11	14	-	F05	F05
K1GB0106	GEMINI	46	46	50	11	14	14-17	F05	F05
K1GB0007	GEMINI	46	46	50	11	17	-	F05	F05
K1GB0107	GEMINI	46	46	50	11	17	-	F05	F05
K1GB0008	GEMINI	70	70	60	11	17	-	F07	F07
K1GB0108	GEMINI	70	70	60	11	17	17/22	F07	F07
K1GB0009	GEMINI	70	70	60	11	17	-	F07	F07
K1GB0109	GEMINI	70	70	60	11	17	17/22	F07	F07

Connecting kit actuator-valve, series TOTAL (TRIFLUX, DELTA, OLYMPIC), OLYMPIC HIPRESS



KIT CODE	SERIES	B	⍁C	Square red. stand.	ISO F actuator
KABB0003	TOTAL	11	11	-	F03
KABB0103	TOTAL	15	14	-	F05
KABB0005	TOTAL	11	11	-	F03
KABB0105	TOTAL	15	14	-	F05
KABB0006	TOTAL	15	14	-	F05
KABB0106	TOTAL	16	17	-	F05
KABB0007	TOTAL	15	14	-	F05
KABB0107	TOTAL	15	14	14-17	F05
KABB0008	TOTAL	15	14	-	F05
KABB0108	TOTAL	15	14	14-17	F05

KIT CODE	SERIES	B	⍁C	Square red. stand.	ISO F actuator
KABB0009	TOTAL	16	17	17-22	F07
KABB0109	TOTAL	16	17	17-22	F07
KABB0010	TOTAL	16	17	-	F07
KABB0110	TOTAL	16	17	17-22	F07
KABB0011	TOTAL	21.5	22	-	F07
KABB0012	OLYMPIC	21.5	22	22-27	F10
K1BA0003	HIPRESS	11	11	-	F03
K1BA0103	HIPRESS	15	14	-	F05
K1BA0005	HIPRESS	15	14	-	F05
K1BA0105	HIPRESS	16	17	-	F05

ATTENTION: IN MOST CASES THE VALVE FOR ACTUATOR DIFFERS FROM THE MANUAL ONE

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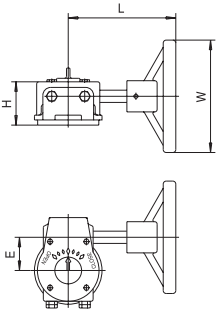
Progettazione, Sviluppo, Fabbricazione
Certificato n° 0024/3

VALVES ACCESSORIES

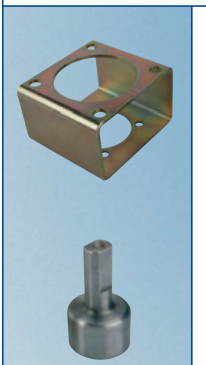
REDUCTION GEARS AND CONNECTING KITS, EXTENSIONS FOR MANUAL VALVES

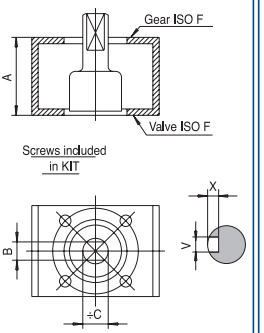
Gears for manual operation for MOON - SELENE series



Gear code	Rate	F ISO	E	H	L	W	Tm in Nm	Tm out Nm	weight Gr.
RDA1Y608	24:1	F7	45	63	160	150	17	125	4,5
RDA1Y611	24:1	F7	45	63	160	150	17	125	
RDA1Y613	24:1	F7	45	63	160	150	17	125	
RDA1Y616	30:1	F10	45	63	190	235	20	175	6,5
RDA1Y617	30:1	F10	65	75	260	235	20	175	10
RDA1Y618	30:1	F10	65	75	260	235	20	175	10
RDA1Y619	35:1	F14	65	75	260	310	25	260	10
RDA1Y621	45:1	F16	100	100	305	400	45	600	18
RDA1Y622	45:1	F16	100	100	360	400	45	600	48,5

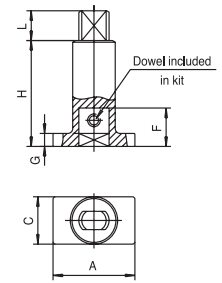
Gear kit for MOON - SELENE series





VALVE SIZE	Gear code	Gear code	A	B	øC	X	V	ISO F valve	ISO F gear
DN 15	RDA1Y608	K2GA0004	40	9.5	14			F03	F07
DN 20	RDA1Y608	K2GA0004	40	9.5	14			F03	F07
DN 25	RDA1Y608	K2GA0006	50	9.5	14			F04	F07
DN 32	RDA1Y608	K2GA0006	50	9.5	14			F04	F07
DN 40	RDA1Y608	K2GA0008	50	9,5	14			F05	F07
DN 50	RDA1Y611	K2GA0009	50	12	16			F05	F07
DN 65	RDA1Y613	K2GA0010	60	15	19			F07	F07
DN 80	RDA1Y613	K2GA0011	60	15	19			F07	F07
DN 100	RDA1Y613	K2GA0012	60	15	19			F10	F07
DN 125	RDA1Y616	K2GA0013	80		22	4	8	F10	F10
DN 150	RDA1Y616	K2GA0014	80		22	4	8	F12	F10
DN 200	RDA1Y621	K2GA0015	100		45	5,5	14	F12	F16

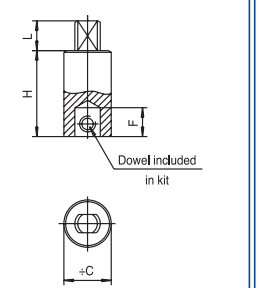
Stem extensions kit for SUN WP, ALBA, SUNNY valves with lever



Material AISI304 or A105

VALVE SIZE	Kit Code AISI 304	A	C	F	G	H stand.	L	Weight gr.
DN15 - DN20	2004060000	-	-	13	-	50	12	75
DN25 - DN32	2004080000	-	-	14	-	50	13	100
DN40 - DN50	2004090000	-	-	19	-	50	16	177
DN65 - DN80	2004110000	60	30	24	10	50	22	285
DN 100	2004120000	70	35	27	10	50	25	348

Stem extensions kit for SUN WP, ALBA, SUNNY series with lever



Material AISI304

VALVE SIZE	KIT CODE	L	F	H stand.	øC	Weight gr.
1/4"-1/2"	2004040000	10	11	50	16	75
3/4"-1"	2004060000	12	13	50	16	75
1"1/4-1"1/2	2004080000	13	14	50	20	100
2"	2004090000	16	19	50	25	177

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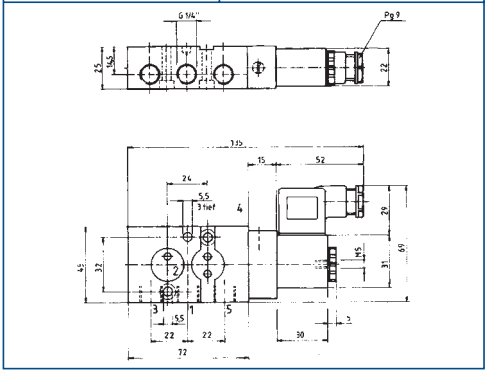
ACTUATOR ACCESORIES

SOLENOID VALVES - LIMIT SWITCHES

5/2 and 3/2 way NAMUR monostable solenoid valve multifunctional

Valve with air spring
Emergency screw
Reduced outside dimensions
Airflow 750 l/min for standard version
IP65 to DIN 40050
Body in anodised aluminium
Inside parts in polycarbonate and brass
Seals in NBR
Working pressure from 2 to 10 bar
Working temperature from -10°C to +70°C
Voltage: DC: 12V, 24V; AC:24V, 48V, 110V, 230V
On request: explosion-proof coil EExm II T4-T5
Intrinsic safety coil EEwia IIC T6

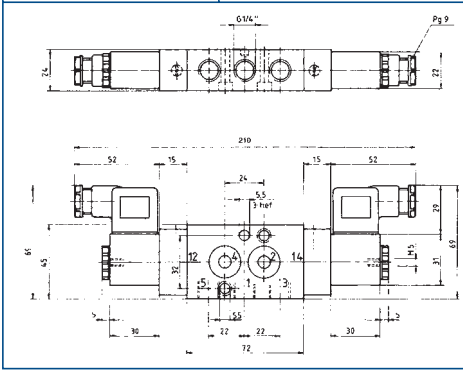
Art. EVNM



5/2 way NAMUR bistable solenoid valve

Emergency screw
Reduced outside dimensions
Airflow 750 l/min for standard version
IP65 to DIN 40050
Body in anodised aluminium
Inside parts in polycarbonate and brass
Seals in NBR
Working pressure from 2 to 10 bar
Working temperature from -10°C to +70°C
Voltage: DC: 12V, 24V; AC:24V, 48V, 110V, 230V
On request: explosion-proof coil EExm II T4-T5
Intrinsic safety coil EExia IIC T6

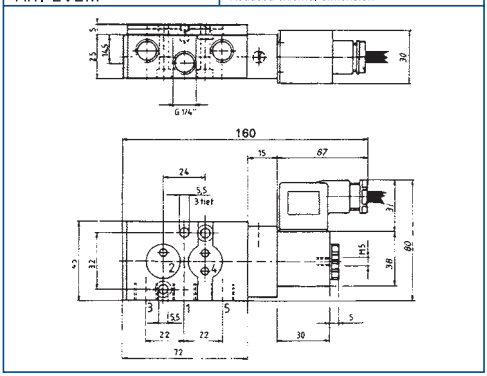
Art. EVNB



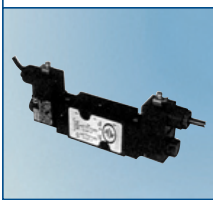
Selenoid valve NAMUR with combined 5/2- and 3/2-ways function + explosionproof coil EEx m II T4-T5

Manual override as standard
Air entry G 1/4"
Dimension 5 mm
Air pressure 2 - 10 bar
Temperature -10°C a +70°C
Enclosure IP65 / DIN 40050
Voltage: DC=12V,24V AC=24V,48V,110V,220V
Power consumotion 3W 3W 5VA 5VA 5VA 5VA
Air flow 750 l/min
Serial number stampod
Easy change over from 5/2- to 3/2-ways operation by innovativo soaling-plato to be turned around
Single stable or dual stable version
Reduced external dimension

Art. EVEM

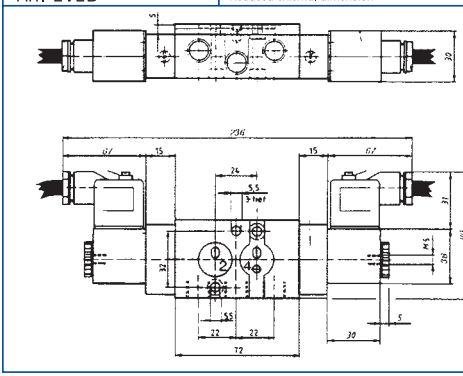


Selenoid valve NAMUR with combined 5/2- and 3/2-ways function + explosionproof coil EEx m II T4-T5



Manual override as standard
Air entry G 1/4"
Dimension 5 mm
Air pressure 2 - 10 bar
Temperature -10°C a +70°C
Enclosure IP65 / DIN 40050
Voltage: DC=12V,24V AC=24V,48V,110V,220V
Power consumotion 3W 3W 5VA 5VA 5VA 5VA
Air flow 750 l/min
Serial number stampod
Easy change over from 5/2- to 3/2-ways operation by innovativo soaling-plato to be turned around
Single stable or dual stable version
Reduced external dimension

Art. EVEB



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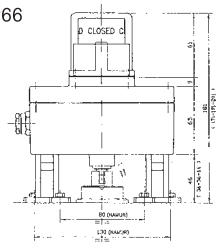
ACTUATOR ACCESORIES

MICROSWITCHES BOX

Box in aluminium with mechanical microswitches, with 3D

IP66



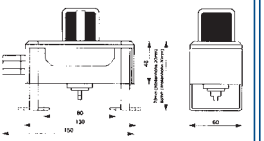
Art. GZ01BA01

Box: IP66, GD AlSi12 - DIN232 ASTM SC114A
Shaft in stainless steel AISI 303,
screws in SS AISI 304
Cams in plastic material
Cable clamping in nickel-plated brass PG11
3D position indicator in plastic material
Interchangeable protected microswitches in polyamide

Seals in nitrilic rubber BUNA N.
Adjustable bracket 80/130mm in width
Microswitches: Crouzet IP66 250V AC-10(2) A..
Working temperature from -20°C to +80°C
Stock temperature from -30°C to +80°C

Box in Polycarbonate with mechanical microswitches, with 3D

IP65



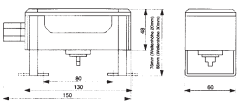
Art. GZ01BCH2

Box: IP65, DIN 40050, Polycarbonate
Shaft in stainless steel AISI 303,
screws in SS AISI 304
Cams in Polyamide
Black cable clamping PG 13.5
Mounting bracket in AISI 304
3D position indicator in plastic material

Seals in EPDM, NBR
Maximum overall dimensions: 180x119x60mm
Adjustable bracket 80/130mm in width
Microswitches: Crouzet IP65 250V AC-10(2) A..
Working temperature from -20°C to +80°C

Box in Polycarbonate with mechanical microswitches

IP65



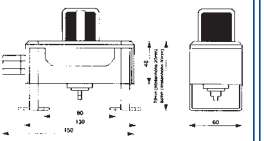
Art. GZ01BCA2

Box: IP65, DIN 40050, Polycarbonate
Shaft in Polyamide, screws in SS AISI 304
Cams in Polyamide
Black cable clamping PG 13.5
Mounting bracket in AISI 304
Seals in EPDM, NBR

Maximum overall dimensions: 180x88x60mm
Adjustable bracket 80/130mm in width
Microswitches: Crouzet IP65 250V AC-10(2) AC 10(2) A - "V4" Din 41635 B
Working temperature from -20°C to +80°C

Box in Polycarbonate with proximity switches, with 3D

IP67



Art. GZ01ABH2

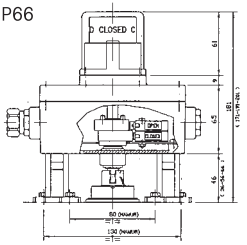
Box: IP65, DIN 40050, Polycarbonate
Shaft in AISI 303, screws in AISI 304
Cams in Polyamide
Mounting bracket in AISI 304
3D position indicator in plastic material, yellow LED

Seals in EPDM, NBR
Maximum overall dimensions: 180x119x60mm
Adjustable bracket 80/130mm in width
Microswitches: P+F IP67 Type NB B2 - V3 - E2, 0-30 V CC 0-100 m A 1000 H2; min. current 15 mA
Working temperature from -20°C to +80°C

Box in aluminium with explosion-proof microswitches EExd, with 3D

ATEX: 94/9/CE

IP66



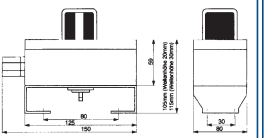
Art. GZ01CA04

Box: IP66, GD AlSi12 - DIN232 ASTM SC114A
Shaft AISI 303, screw AISI 304
Cams in plastic material
2 fittings with Ø1/2" nickel plated brass plug
3D position indicator in plastic material
Microswitches: explosion-proof in polyamide
+4 cables 2m, sect. 0,75 sq. mm

Seals in nitrilic rubber BUNA N.
Adjustable bracket in height and width
Microswitches: Crouzet type 83 139,I EEX DILC TE 250V AC-6 (11) A - EN 50014+50018
Working temperature from -20°C to +80°C
Stock temperature from -30°C to +80°C

Box in aluminium with intrinsic safety proximity switches EExia, with 3D

IP65



Art. GZ01DB01

Box: IP65, DIN 40050, Aluminium
Shaft in AISI 303, screws in AISI 304
Cams in Polyamide, seals in EPDM, NBR
Black cable clamping PG 13.5
Mounting bracket in AISI 304
3D position indicator in plastic material

Maximum overall dimensions: 180x151x80mm
Standard version brakel: 80mm axle base
Microswitches: P+F IP67 Type NB
8V CC 1 m A in on - 3 m A in off, 1000 H2
EMC EN 60947-5-2, min current 15 mA
Working temperature from -20°C to +100°C

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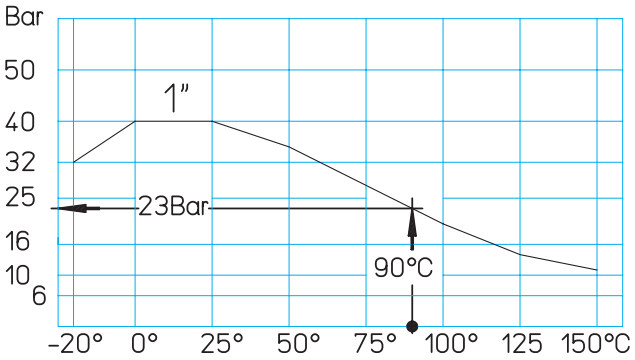
DIAGRAMS

Pressure/temperature diagram

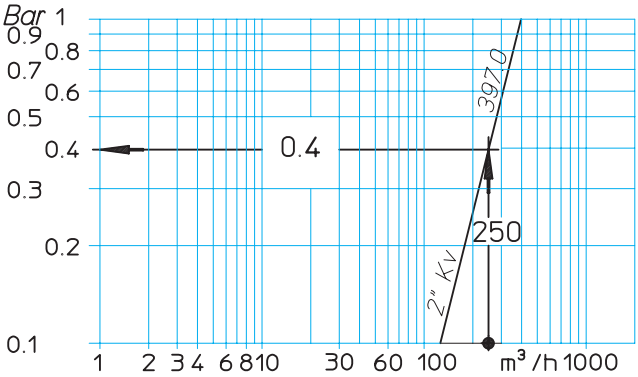
The pressure curves have been drawn on the basis of laboratory tests by using predetermined temperature values. Since the curves are a mediation of said values, these are only indicative of the potential real performance of ball valves.



EXAMPLE: *To determine at which maximum pressure a ball valve of 1" can resist at 90°C, one has to act in this way: raise from the temperature line the X-axis till it meets the oblique line. Pull from that point a horizontal line till it meets the ordinate. The value obtained will be 23 bar.*

Loss of head/flow rate diagram

The curves of flow rate diagram have been drawn on the basis of laboratory tests. The Kv value indicates a volumetric normalised flow rate of a ball valve completely open, at a temperature of 5°/40°C causing a loss of head of 1 bar (10^5 Pa)



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CORROSION STRENGTH VALUES

1 = EXCELLENT • 2 = GOOD
3 = NOT TOO GOOD • 4 = RISKY
— = NO INFORMATION AVAILABLE

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Ta = ROOM TEMPERATURE

COMPOUND	CONCENTRATION	TEMPERATURE °C	AISI 304 18/8/2 CF8M 1.4401 –1.4408	AISI 316 18/8/2 CF8M 1.4401 –1.4408	CARBON STEEL A 105/A216WCB	CAST IRON	BRASS
A							
Acetaldehyde		Ta	1	1	3	3	—
Acetilene		+20	1	1	1	1	4
Acetic Acid	10%	+20	1	1	4	4	2
Acetic Acid	10%	B	2	4	4	4	4
Acetic Acid	20-80%	+20	1	2	4	4	4
Acetic Acid	80%	B	2	2	4	4	4
Acetic Acid (vapours)	30%	C	3	3	4	4	4
Acetic Anhydride		B	2	2	3	3	3
Acetic Ester	Concentrated	+20	1	1	2	2	—
Acetic Solvents		Ta	1	1	1	2	—
Acetone		B	1	1	2	2	1
Acido Cresilico		+20	1	1	2	2	2
Acido Idrofluorosilicico		Ta	3	3	4	4	2
Acrylonitrile		Ta	1	1	1	1	—
Alcool Diacetone		Ta	1	1	1	1	—
Alum	10%	B	2	2	4	4	2
Alum	saturated	B	3	2	4	4	—
Aluminium Chloride	25%	+20	4	3	4	4	4
Aluminium (Chloride)	25%	+20	4	3	4	4	—
Aluminium (Chloride)	25%	B	4	4	4	4	—
Aluminium (Fluoride)	5%	+20	4	3	4	4	—
Aluminium Sulfate		+20	2	2	4	4	—
Aluminium Sulfate		B	3	2	4	4	—
Aluminum Sulphate		Ta	2	1	3	3	3
Ammines		+20	1	1	1	1	—
Ammonia	concentrated	+20	1	1	2	2	1
Ammonia	acquarosa	Ta	1	1	1	1	4
Ammonia	gaseous	C	4	4	3	3	—
Ammonium Bicarbonate		Ta	2	2	3	3	—
Ammonium Carbonate		+20	2	2	2	2	—
Ammonium Carbonate		Ta	2	2	2	2	—
Ammonium Chloride	10%	+20	2	2	3	3	4
Ammonium Chloride	10%	+20	2	2	3	3	—
Ammonium Chloride	10%	B	3	2	4	4	—
Ammonium Disulphate		+20	1	1	3	3	—
Ammonium Hydroxide	Concentrated	C	1	1	2	2	—
Ammonium Hydroxide		Ta	1	1	2	2	—
Ammonium Hydroxide		C	1	1	2	2	4
Ammonium Monophosphate		+20	1	1	4	4	—
Ammonium Monophosphate		+20	1	1	4	4	—
Ammonium Nitrate		+20	2	2	2	2	—
Ammonium Nitrate	Saturated	B	2	2	3	3	—
Ammonium Nitrate		+20	2	2	2	2	4
Ammonium Persulphate	5%	+20	2	2	4	4	—
Ammonium Phosphate		Ta	2	2	4	4	—
Ammonium Sulphate	5%	+20	3	2	3	3	—
Ammonium Sulphate	10%	B	4	3	4	4	—
Ammonium Sulphate	Saturated	B	4	3	4	4	—
Ammonium Sulphate		+20	3	2	3	3	4
Ammonium Trisulphate		+20	2	1	2	2	—
Amyl Acetate	concentrated	+20	2	2	2	2	—
Amyl Acetate		Ta	2	2	3	3	2
Amyl Alcohol	concentrated	+20	1	1	4	4	1
Aniline	3%	+20	1	1	2	2	3
Aniline	Concentrated	+20	2	2	2	2	3
Aniline (dyes)		Ta	1	1	3	3	3
Animal Oil		Ta	1	1	1	1	—
Antimony Trichloride		+20	4	4	4	4	—
Antimony Trichloride		Ta	4	4	4	4	—
Apple Juice		Ta	2	2	4	4	4
Asphalt		Ta	1	1	2	2	1
B							
Barium Chloride	Saturated	+20	3	2	3	3	3
Barium Chloride	Water sol.	C	4	3	4	4	3
Barium Carbonate		Ta	2	2	2	2	1
Barium Chloride	5%	+20	2	2	3	3	4
Barium Hydroxide		Ta	2	2	3	3	2
Barium Sulphate	Saturated	+20	3	2	2	2	1
Barium Sulphate		+20	2	2	2	2	2
Barium Sulphite		Ta	2	2	3	3	1
Benzaldehyde		Ta	1	1	1	1	—
Benzoic Acid		+20	2	2	2	2	2
Benzol		C	2	2	2	2	1
Borax		+20	1	1	2	2	1
Boric Acid	5%	C	2	2	4	4	2
Brine		Ta	2	2	3	3	2
Bromine		+20	4	4	4	4	4
Butadiene		Ta	1	1	1	1	1
Butane		Ta	1	1	1	1	1
Butyric Acid	5%	+70	2	2	3	3	4
Butyl Alcohol		Ta	1	1	2	2	1
Butylene		ta	1	1	1	1	—
Butyl Acetate		+20	2	2	1	1	—
C							
Calcium Bisulphite		+20	3	2	4	4	2
Calcium Bisulphite		+20	3	2	4	4	2
Calcium Carbonate		+20	2	2	2	2	1
Calcium Carbonate		+20	2	2	2	2	1
Calcium Chloride		+20	3	2	3	3	4
Calcium Chloride	Diluted	+20	3	2	3	3	4
Calcium Chloride	Concentrated	+20	4	3	3	3	4
Calcium Chloride	Concentrated	B	4	4	4	4	4
Calcium Hydroxide	5%	+20	2	2	2	2	2
Calcium Hydroxide	10%	B	2	2	4	4	2
Calcium Hydroxide	50%	B	4	2	4	4	2
Calcium Hypochlorite	2%	+20	3	3	4	4	4
Calcium Hydroxide		Ta	1	1	1	1	—
Calcium Hydroxide		+20	2	2	2	2	2
Calcium Hypochlorite		+20	3	3	4	4	4
Calcium Sulphate		Ta	2	2	3	3	1
Calcium Sulphate	Saturated	+20	2	2	2	2	—
Carbolic Acid		B	2	2	3	3	—
Carbonic Acid	saturated	+20	2	2	4	4	—
Carbon Dioxide		Ta	1	1	1	1	1
Carbon Disulphide		+20	2	2	2	2	2
Carbon Disulphite		Ta	2	2	2	4	1
Carbon Monoxide		B	1	1	1	1	—
Carbon Tetrachloride		+20	2	2	2	2	3
Carbon Tetrachloride		B	3	3	4	4	3
Carbon Tetrachloride	Dry	Ta	1	1	2	2	3
Carbon Tetrachloride	Wet	Ta	2	2	4	4	4
Caustic Soda	5%	+20	2	2	2	2	—
Caustic Soda	20%	B	1	1	2	2	—
Caustic Soda	50%	B	2	2	3	3	—
Caustic Soda	75%	B	3	3	4	4	—
Chlorinated Solvents	Dry	Ta	2	2	3	3	—
Chloroacetic Acid		+20	4	4	4	4	4
Chlorobenzene	Concentrated	+20	1	1	1	1	—
Chloroform		+20	1	1	1	1	1
Chlorous Acid		+20	4	4	4	4	4
Chlorosulfonic Acid	10%	+20	3	2	4	4	3
Chlorosulfonic Acid	concentrated	+20	2	2	4	4	3
Chromic Acid	5%	+20	2	2	2	2	4
Chromic Acid	50% com.	B	4	4	4	4	4
Citric Acid	5%	+20	1	1	4	4	3
Citric Acid	15%	B	2	2	4	4	3
Citric Acid	concentrated	B	4	2	4	4	3
Colophony		Ta	1	1	4	4	—
Coke-oven Gas		Ta	1	1	2	2	—
Copper Acetate		Ta	1	1	4	4	—
Copper Acetate	Saturated	+20	2	2	4	4	—
Copper Chloride	19%	+20	3	2	3	2	4
Copper Chloride	1%	+20	3	2	4	4	—
Copper Chloride	5%	B	4	4	4	4	—
Copper Nitrate	5%	+20	1	1	4	4	3
Copper Nitrate	5%	220	1	1	4	4	—
Copper Nitrate	50%	C	2	2	4	4	—

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COMPOUND	CONCENTRATION	TEMPERATURE °C	AISI 304 18/8/2 CF8M 1.4401 –1.4408	AISI 316 16/8/2 CF8M 1.4401 –1.4408	CARBON STEEL A105/A216WCB	CAST IRON	BRASS
Copper Sulphate		+20	2	2	4	4	—
Copper Sulphate	Saturated	B	2	2	4	4	4
Copper Sulphate		+20	2	2	4	4	4
Creosote		C	2	2	2	2	—
Creosote Oil		Ta	2	2	2	2	1
Cyclohexane		Ta	1	1	1	1	—
D							
Dichloroethane		B	2	2	4	4	—
Diethylamine		Ta	1	1	1	1	—
Diethyl Ether		+20	1	1	1	2	—
Distilled water		Ta	1	1	3	3	1
E							
Epsom Salt		Ta	2	2	3	3	—
Ethane		Ta	2	2	2	2	1
Ethyl Acrylate		Ta	1	1	3	3	—
Ethyl Alcohol		B	2	2	2	2	1
Ethyl Acetate		Ta	2	2	2	2	1
Ethyl Chloride	Dry	+20	1	1	1	1	—
Ethyl Chloride		+20	1	1	1	1	2
Ethylene Glycol		+20	1	1	1	1	2
Ethylene Oxide		Ta	2	2	2	2	1
F							
Fatty Acids		B	2	2	3	3	4
Ferric Chloride	1%	+20	4	3	4	4	4
Ferric Chloride	5%	+20	4	4	4	4	4
Ferric Nitrate		Ta	3	3	4	4	4
Ferric Nitrate	5%	+20	2	2	4	4	4
Ferric Sulphate		+20	2	1	4	4	4
Ferric Sulphate	5%	B	2	2	4	4	4
Ferrous Chloride		Ta	4	4	4	4	4
Ferrous Sulphate	Saturated	+20	2	2	4	4	4
Ferrous Sulphate	10%	+20	2	2	4	4	4
Fertilizers		Ta	2	2	2	2	—
Fish Oil		Ta	1	1	2	2	—
Fluorine	Dry	+20	2	2	4	4	—
Formaldehyde		Cold	1	1	1	2	3
Formaldehyde		Hot	3	3	4	4	3
Formic Acid	5-50%	+20	2	2	4	4	4
Formic Acid	10-50%	B	4	4	4	4	4
Formic Acid	100%	+20	3	3	4	4	4
Formic Acid	100%	B	4	4	4	4	4
Freon	Dry	Ta	1	1	1	1	1
Freon	Wet	Ta	3	3	3	3	1
Fuel Oil		Ta	1	1	2	2	1
Furfuraldehyde		+20	2	2	2	2	1
G							
Gallic Acid	5%	+70	2	2	4	4	—
Gas Chlorate	Dry	+20	4	3	2	2	—
Gas Chlorate	Wet	+100	4	4	4	4	—
Gaseous Methyl Chloride		+20	2	2	4	4	—
Gelatine		Ta	1	1	4	4	2
Glue		Ta	2	2	1	1	—
Glucose		Ta	2	2	2	2	1
Glycerol		+20	1	1	1	1	1
Glycols		Ta	2	2	2	2	—
H							
Heptane		Ta	1	1	2	2	—
Hexane		Ta	2	2	2	2	—
Hexanol		Ta	1	1	1	1	—
Hydraulic Oil		Ta	1	1	1	1	—
Hydriodic Acid (iodidrico)	diluted	+20	4	4	4	4	—
Hydrocarbons		+20	1	1	1	1	1
Hydrobromic Acid		+20	4	4	4	4	4
Hydrocyanic Acid		+20	2	2	3	3	—
Hydrochloric Acid	1%	+20	4	3	4	4	4
Hydrochloric Acid	5%	B	4	4	4	4	4
Hydrochloric Acid		+20	4	4	4	4	4
Hydrofluoric Acid	concentrated	+20	4	4	4	4	4
Hydrofluoric Acid	dry	+20	3	3	3	3	4
Hydrofluoric Acid	wet	+20	4	4	4	4	4
Hydrofluoric Acid		+20	4	4	4	4	4
Hydrogen Gas	Cold	Ta	1	1	2	2	—
Hydrogen dioxide		+20	1	1	4	4	4
Hydrogen dioxide		B	2	2	4	4	4
I							
Illuminating Gas		Ta	1	1	1	1	—
Ink		Ta	1	1	4	4	—
Iodine	Dry	+20	4	3	4	4	—
Iodine	Wet	+20	4	4	4	4	—
Iodoform		+20	1	1	4	4	—
Isooctane		Ta	1	1	1	1	—
Isopropyl Ether		Ta	1	1	1	2	—
Isopropyl Alcohol		Ta	2	2	2	2	—
J							
Juices		B	2	1	4	4	4
K							
Ketone		Ta	1	1	1	1	—
Kerosene		Ta	1	1	2	2	—
L							
Lactic Acid	1%	B	2	2	4	4	3
Lactic Acid	5%	+70	2	2	4	4	3
Lactic Acid	5%	B	4	2	4	4	3
Lactic Acid	5-10%	+20	2	1	4	4	3
Lactic Acid	10%	+70	3	2	4	4	3
Lactic Acid	10%	B	4	3	4	4	3
Lactic Acid	concentrated	B	4	4	4	4	3
Latex		+20	1	1	4	4	—
Latex Emulsions		Ta	1	1	2	2	—
Lead Acetate		+20	2	2	4	4	—
Lead Acetate		Ta	2	2	4	4	—
Lemon Juice		Ta	2	2	4	4	4
Linoleic Acid		Ta	1	1	2	2	—
Linseed Oil		Ta	2	2	1	1	2
Liquefied Gas (LPG)		Ta	2	2	2	2	—
Lithium		+150	1	1	2	2	—
Lubricating Oil		Ta	1	1	1	1	—
Lye		B	2	2	4	4	4
Lysol		+20	3	3	4	4	—
M							
Magnesium Chloride	5%	+20	2	2	4	4	4
Magnesium Chloride	5%	C	4	4	4	4	4
Magnesium Chloride	10-30%	+20	3	2	4	4	4
Magnesium Chloride	Saturated	+20	3	2	4	4	4
Magnesium Chloride	5%	+20	2	2	4	4	4
Magnesium Disulphate		Ta	1	1	2	2	—
Magnesium Hydroxide		C	1	1	2	2	2
Magnesium Oxide		+20	2	2	2	2	—
Magnesium Sulphate		+20	2	2	2	2	3
Magnesium Sulphate		+20	2	2	2	2	3
Maleic Acid		Ta	2	2	2	2	—
Malic Acid		C	2	2	4	4	—
Mercury		+150	3	3	2	2	4
Mercury		+500	4	4	4	4	4
Mercury Bichloride	2%	+20	4	4	4	4	4
Mercury Cyanide		+20	2	2	4	4	4
Mercury Cyanide		+20	2	2	4	4	—
Mercuric Chloride		Ta	4	3	4	4	—
Methane		Ta	2	2	2	2	1
Methyl Acetate		Ta	1	1	2	2	—

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Methyl Alcohol		B	3	2	2	2	1
Methylacetone		Ta	1	1	2	2	—
Methylamine		Ta	1	1	2	2	—
Methyl Chloride		+20	2	2	4	4	2
Methylene Chloride		Ta	1	1	2	2	2
Methyl Formate		Ta	2	2	3	3	—
Milk		+20	1	1	4	4	2
Mineral Naphtha		+20	2	2	2	2	2
Mineral Oil		Ta	1	1	2	2	1
Mineral water		Ta	2	2	3	3	2
Mixed Acid-turpentine		+20	4	4	4	4	4
Muriatic Acid		+20	4	3	4	4	4
N							
Naphthalene		Ta	2	2	1	1	—
Natural Gas		Ta	1	1	2	2	1
Neon		+20	2	2	2	2	—
Nickel Chloride		+20	3	2	4	4	3
Nickel Chloride		+20	3	2	4	4	3
Nickel Sulphate		C	3	2	4	4	3
Nickel Sulphate		C	3	2	4	4	3
Nickel Nitrate		Ta	2	2	4	4	—
Nicotinic Acid		Ta	1	1	2	2	—
Nitric Acid	5-50%	+20	1	1	4	4	4
Nitric Acid	10-50%	B	2	3	4	4	4
Nitric Acid	85%	+20	2	2	2	2	4
Nitric Acid	85%	C	2	3	4	4	4
Nitric Acid	concentrated	+20	2	2	2	2	4
Nitric Acid	concentrated	B	3	3	4	4	4
Nitric Acid	anhydrous	Ta	1	1	1	1	4
Nitrobenzene		Ta	2	2	2	2	—
Nitrogen		Ta	1	1	1	1	1
Nitrous Acid	5%	+20	2	2	4	4	—
Nitrous Gases		Ta	1	1	2	2	—
Nitrous Oxide		Ta	2	2	2	2	—
O							
Oil		Ta	1	1	2	2	2
Oleic Acid	crude	+20	2	2	3	3	—
Oleum		Ta	2	2	2	2	—
Olive Oil		Ta	1	1	2	2	3
Oxalic Acid	5%	C	3	3	4	4	—
Oxalic Acid	10%	+20	2	2	3	3	—
Oxalic Acid		B	4	4	4	4	—
Oxalic Acid	saturated	+20	2	2	3	3	—
Oxalic Acid	saturated	B	4	4	4	4	—
Oxygen	Cold		1	1	2	2	1
Oxygen		+250	2	2	2	2	—
Ozone	Dry	Ta	1	1	3	3	—
Ozone	Wet	Ta	1	1	1	1	—
P							
Paint Varnish		Ta	1	1	3	3	—
Palm Oil		Ta	2	2	3	3	—
Palmitic Acid		+20	2	2	3	3	3
Paraformaldehyde		Ta	2	2	2	2	—
Paraffin wax		Ta	1	1	1	1	1
Pentane		Ta	1	1	2	2	—
Perchloroethylene		Ta	1	1	2	2	3
Peroxide		Ta	2	2	4	4	4
Petrol		Ta	1	1	1	1	1
Petrol (Crude)		+20	1	1	3	3	1
Phenol		B	2	2	3	3	—
Phosphoric Acid	C.P.1%	+20	2	2	4	4	4
Phosphoric Acid	5%	+20	2	2	4	4	4
Phosphoric Acid	10%	+20	3	2	4	4	4
Phosphoric Acid	20-45%	B	4	3	4	4	4
Phosphoric Acid	45-85%	+20	4	2	4	4	4
Phosphoric Acid	85%	B	4	4	4	4	4
Phthalic Acid		Ta	2	2	3	3	—

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COMPOUND	CONCENTRATION	TEMPERATURE °C	AISI 304 18/8/2 CF8M 1.4401 –1.4408	AISI 316 18/8/2 CF8M 1.4401 –1.4408	CARBON STEEL A105/A216WCB	CAST IRON	BRASS
Phtalic Anhydride			2	2	3	3	—
Picric Acid	water sol.	+20	2	2	3	3	4
Potassium Bichromate		+20	2	2	3	3	—
Potassium Bisulphite		Ta	2	2	4	4	—
Potassium Bromide		+20	3	2	4	4	—
Potassium Bromide		+20	3	2	4	4	—
Potassium Carbonate	1%	+20	2	2	2	2	3
Potassium Carbonate	1%	+20	2	2	2	2	—
Potassium Chlorate		+20	2	2	2	2	—
Potassium Chloride	1-5%	+20	3	2	4	4	3
Potassium Chlorate		+20	2	2	2	2	4
Potassium Chloride	1-5%	+20	3	2	4	4	4
Potassium Chloride	1-5%	B	4	4	4	4	4
Potassium Cyanide		+20	2	2	2	2	4
Potassium Cyanide		+20	2	2	2	2	4
Potassium Dichromate		+20	2	2	3	3	4
Potassium Diphosphate		Ta	1	1	1	1	—
Potassium Disulphite	Saturated	+20	2	2	3	3	2
Potassium Ferricyanide		Ta	2	2	3	3	4
Potassium Ferricyanide	5%	+20	2	2	3	3	4
Potassium Hydroxide	5%	+20	2	2	2	2	4
Potassium Hypochlorite		+20	4	3	4	4	—
Potassium Iodide	2%	Ta	2	2	3	3	—
Potassium Nitrate	1-5%	+20	2	2	2	2	2
Potassium Nitrate	1-5%	C	2	2	2	2	—
Potassium Permanganate		+20	1	1	1	1	—
Potassium Permanganate		+20	1	1	1	1	—
Potassium Sulphate	1-5%	+20	2	2	2	2	2
Potassium Sulphate	Saturated	+20	2	2	3	3	—
Potassium Sulphate		+20	2	2	2	2	2
Potassium Sulphite		Ta	1	1	2	1	2
Propane		Ta	2	2	2	2	1
Propanol		Ta	1	1	2	2	—
Propylene Glycol		Ta	2	2	2	2	—
Propionic Acid		+20	2	2	4	4	—
Prussic Acid		+20	2	2	3	3	—
Pyrogailic Acid		+20	2	2	2	2	—
Pyroligneous Acid		+20	1	1	4	4	—
Q							
Quinine Bisulphate	Dry	+20	2	2	4	4	—
R							
Resins		Ta	1	1	3	3	—
S							
Sal Ammoniac		+20	2	2	3	3	—
Salicylic Acid		+20	2	2	4	4	—
Sea water		+20	2	2	4	4	3
Shellac		Ta	1	1	1	1	—
Silver Bromide		+20	3	2	4	4	—
Silver Chloride		+20	4	4	4	4	—
Silver Nitrate		+20	2	2	4	4	—
Silver Nitrate		+20	2	2	4	4	4
Sludge		Ta	1	1	2	2	—
Soap		+20	2	2	2	2	2
Sodium Acetate	Wet	+20	2	2	3	3	—
Sodium Acetate		Ta	2	2	3	3	—
Sodium Bicarbonate		+20	2	2	3	3	3
Sodium Bicarbonate		+20	2	2	3	3	3
Sodium Bisulphite		Ta	1	1	4	4	2
Sodium Borate		Ta	2	2	3	3	—
Sodium Bromide		Ta	2	2	3	4	—
Sodium Carbonate	5%	+70	2	2	2	2	—
Sodium Carbonate		+20	2	2	2	2	4
Sodium Chlorate	10%	+20	2	2	3	3	—
Sodium Chloride	20%	+20	2	2	3	3	—
Sodium Chloride	Saturated	B	3	2	4	4	—
Sodium Chlorate		+20	2	2	3	3	4
Sodium Chloride	5%	+20	2	2	3	3	3

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CORROSION STRENGTH VALUES

1 = EXCELLENT • 2 = GOOD
3 = NOT TOO GOOD • 4 = RISKY
— = NO INFORMATION AVAILABLE

B = BOILING • C = HOT
Ta = ROOM TEMPERATURE

COMPOUND	CONCENTRATION	TEMPERATURE °C	AISI 304 18/8/2 CF8M 1.4401 –1.4408	AISI 316 18/8/2 CF8M 1.4401 –1.4408	CARBON STEEL A 105/A2 16WCB	CAST IRON	BRASS
Sodium Cyanide		+20	2	2	2	2	4
Sodium Cyanide		+20	2	2	2	2	—
Sodium Disulphate		+20	2	2	4	4	2
Sodium Disulphate		+20	2	2	4	4	—
Sodium Disulphite		+20	2	2	2	2	2
Sodium Disulphite		C	2	2	3	3	2
Sodium Fluoride		Ta	2	2	4	4	—
Sodium Fluoride	5%	+20	2	2	4	4	—
Sodium Hydroxide		+20	1	1	1	1	—
Sodium Hypochlorite		Ta	3	3	4	4	4
Sodium Hypochlorite		+20	2	2	4	4	4
Sodium Hypochlorate	5%	+20	4	3	4	4	4
Sodium Hyposulphite		+20	2	2	4	4	4
Sodium Metaphosphate		Ta	1	1	2	2	4
Sodium Metasilicate	Cold		1	1	3	3	—
Sodium Metasilicate		C	1	1	4	4	—
Sodium Nitrate		+20	1	1	2	2	—
Sodium Nitrate		Ta	2	2	2	2	3
Sodium Perborate		Ta	2	2	2	2	—
Sodium Peroxide		Ta	2	2	3	3	4
Sodium Phosphate		Ta	2	2	3	3	—
Sodium Silicate		Ta	2	2	2	2	2
Sodium Silicate		C	2	2	3	3	2
Sodium Silicate		Ta	2	2	2	2	—
Sodium Sulphate	Saturated	+20	3	2	2	2	2
Sodium Sulphate		+20	3	2	2	2	2
Sodium Sulphite	10%	+65	3	2	2	2	2
Sodium Sulphite	10%	B	3	2	4	4	2
Sodium Sulphide	Saturated	+20	2	2	2	2	2
Sodium Trisulphate	20%	+20	2	2	4	4	—
Sodium Thiosulphate		Ta	1	1	2	2	
Soft water		Ta	1	1	3	3	4
Solvent		Ta	1	1	2	2	1
Spirit Vinegar		+20	1	1	4	4	—
Starci		Ta	2	2	3	3	—
Stannic Chloride	5%	+20	4	3	4	4	—
Stannic Chloride	5%	B	4	4	4	4	—
Stannic Chloride	5%	+20	4	3	4	4	—
Stannous Chloride	Saturated	+20	4	3	4	4	—
Stearic Acid		+20	2	1	3	3	3
Strontium Nitrate		+20	1	1	4	4	—
Styrene		Ta	1	1	1	1	—
Suds (Stearate)		Ta	1	1	1	2	—
Sugary Juices in general		+70	2	2	4	4	4
S Sulphur	Dry and liquefied	+230	2	2	2	2	4
S Sulphur	Wet and liquefied	+230	3	2	4	4	4
Sulphuric Anhydride	Dry	Ta	1	1	2	2	2
Sulphidric Acid	dry	+20	1	1	1	1	—
Sulphidric Acid	wet	+20	3	2	3	3	—
Sulphuric Acid	5%	+20	3	2	4	4	4
Sulphuric Acid	5%	B	4	3	4	4	4
Sulphuric Acid	10%	+20	4	3	4	4	4
Sulphuric Acid	10%	B	4	4	4	4	4
Sulphuric Acid	50%	+20	4	4	4	4	4
Sulphuric Acid	50%	B	4	4	4	4	4
Sulphuric Acid	concentrated	+20	2	2	2	2	4
Sulphuric Acid	concentrated	B	4	4	4	4	4
Sulphuric Acid	fuming	+20	3	2	3	3	4
Sulphur Chloride		Ta	3	2	4	4	—
Sulphur Dioxide	Dry	+250	2	2	2	2	1
Sulphur Dioxide	Dry	+230	2	2	2	2	4
Sulphur Dioxide	Wet	+20	3	2	4	4	4
Sulphurous Acid	saturated	+20	4	2	4	4	3
Syngas		Ta	2	2	2	2	—
T							
Tannic Acid		+20	2	2	4	4	2
Tar		Ta	1	1	1	1	2
Tartaric Acid	10%	+20	1	1	4	4	3
Tartaric Acid	10%	C	3	2	4	4	3
Tetraethyl Lead		Ta	2	2	3	3	—
Titanium Tetrachloride	Wet	+20	4	4	4	4	—
Tomato Juice		Ta	1	1	3	3	4
Toluene		Ta	1	1	1	1	1
Tributyl Phosphate		Ta	1	1	1	1	—
Trichloroethylene	Dry	Ta	2	2	2	3	1
Trichloroacetic Acid		+20	4	4	4	4	3
Tung Oil		Ta	2	2	3	3	—
Turpentine		+20	1	1	1	1	2
U							
Urea		Ta	2	2	3	3	—
Uric Acid	concentrated	+20	2	2	4	4	—
V							
Varnish		+20	1	1	3	3	1
Varnish		C	2	2	4	4	1
Vaseline		Ta	2	2	3	3	—
Vinegar (vapors)		Ta	2	2	4	4	—
Viscose		Ta	2	2	2	2	—
W							
Waste water		+20	2	2	3	3	—
Wax		Ta	1	1	1	1	—
Wax Emulsions		Ta	1	1	1	1	—
X							
Xylene	Dry	Ta	1	1	2	2	—
Z							
Zinc Chloride	5%	+20	3	2	4	4	—
Zinc Chloride	5%	B	4	3	4	4	—
Zinc Chloride	5%	+20	3	2	4	3	4
Zinc Hydrosulphite		Ta	1	1	1	1	—
Zinc Sulphate	5%	+20	2	1	2	2	2
Zinc Sulphate	25%	B	3	2	4	4	2
Zinc Sulphate		Ta	2	2	4	4	4

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CORROSION STRENGTH VALUES

1 = EXCELLENT 2 = GOOD 3 = INSUFFICIENT 4 = RISKY — = NO INFORMATION AVAILABLE	DELRIN	EPDM	NBR	VITON	PTFE
A					
Acetaldehyde	2	—	4	4	1
Acetal	—	—	—	—	1
Acetammide	—	1	2	2	1
Acetate Solvent	—	—	4	4	1
Acetilene	1	1	2	2	1
Acetic Acid 10-20%	4	1	1	1	1
Acetic Acid 50%	4	—	1	1	1
Acetic Acid 80%	4	1	2	2	1
Acetic Anhydride	4	—	4	4	1
Acetylene Chloride	—	—	4	1	1
Acetoacetato di Etile	—	—	4	4	1
Acetofenone	—	—	4	4	1
Acetone	1	1	4	4	1
Acetone 50% water	—	—	4	—	1
Acetonitrile	—	—	—	—	1
Acid Chloric 20%	—	—	4	4	1
Acid Laisileico	—	—	2	2	1
Acido Cresilico	4	—	4	1	1
Acrylonitrile	—	—	4	4	1
Adipic Acid	—	—	4	—	1
Air	—	1	1	1	1
Alumed Chrome	—	1	2	2	1
Alumed Potassium	—	1	2	2	1
Alumed Potassium Sulphate	—	1	—	—	1
Alumina	—	1	1	2	1
Aluminium Chloride	1	1	2	2	1
Aluminium Fluoride	—	1	2	2	1
Aluminium Hydroxide	1	1	2	2	1
Aluminium Nitrate	—	1	2	2	1
Aluminium Sulphate	1	1	2	2	1
Alum (All. Potassium Sulphate)	1	—	1	1	1
Amyl Alcohol	1	1	—	—	1
Amyl Acetate	1	4	4	4	1
Ammonium Acetate	—	1	4	—	1
Ammonia (Anhydrous)	—	1	2	4	1
Ammonia (Gas)	—	—	2	4	1
Ammonium Chloride	3	1	2	2	1
Ammonium Sulphate	1	1	2	4	1
Ammonium Sulphite 50°C	—	—	1	—	1
Ammonium Sulphide	—	1	2	4	1
Ammonium Hydroxide	—	1	2	2	1
Ammonium Fluoride 25%	—	1	—	—	1
Ammonium Phosphate	—	1	2	2	1
Ammonium Metaphosphate	—	—	2	2	1
Ammonium Nitrate	1	1	2	4	1
Ammonium Oxalate	—	1	—	—	1
Ammonium Bicarbonate	3	1	—	—	1
Ammonium Bifluoride	—	1	—	—	1
Ammonium Carbonate	3	1	2	2	1
Amyl Chloride 77°C	—	—	4	1	—
Anhydrous Formic Acid	4	—	4	2	1
Aniline	1	4	4	1	1
Aqua Regia	—	—	4	1	1
Arsenic Acid	—	1	2	2	1
Artficial Gas	—	—	2	—	1
Asphalt	1	—	4	1	1

1 = EXCELLENT 2 = GOOD 3 = INSUFFICIENT 4 = RISKY — = NO INFORMATION AVAILABLE	DELRIN	EPDM	NBR	VITON	PTFE
B					
Barium Carbonate	—	1	—	—	1
Barium Chloride	1	1	2	2	1
Barium Hydroxide	—	1	2	2	1
Barium Nitrate	—	1	2	2	1
Barium Sulphate	—	1	2	2	1
Barium Sulphide	—	—	2	2	1
Beer	—	—	2	2	1
Benzaldehyde	—	—	4	4	1
Benzene, Benzol	—	—	4	4	1
Benzoic Acid	—	1	4	2	1
Benzyl Alcohol	—	—	4	1	1
Benzyl Chloride	—	—	4	—	1
Black Liquor	—	—	1	2	1
Borax	1	1	2	2	1
Boric Acid	1	1	2	2	1
Brine	—	2	1	—	1
Bromine Water	—	—	4	1	1
Butyl Acetate	—	—	—	—	1
Butyl Alcohol	1	1	4	1	1
Butyric Acid	1	4	4	—	1
Butyl Chloride	—	—	—	—	1
Butyl Phenol	—	—	—	—	1
Butyl Phthalate	—	—	4	—	1
Butter	—	—	1	—	1
Butadiene	1	—	1	1	1
Butane	1	1	4	1	1
Butylene	1	—	4	2	1
C					
Calcium Bisulphite	1	1	2	2	1
Calcium Bicarbonate	—	—	—	—	1
Calcium Carbonate	1	1	2	2	1
Calcium Chlorate	—	—	2	2	1
Calcium Chloride	1	1	2	2	1
Calcium Disulphate	—	—	—	—	1
Calcium Fluoride	—	—	—	—	1
Calcium Hydroxide	1	1	2	2	1
Calcium Hypochlorite	1	1	4	2	1
Calcium Nitrate	—	1	2	2	1
Calcium Oxide 20°C	—	—	—	—	1
Calcium Sulphate	1	1	—	—	1
Cane Sugar Liquor	—	1	2	2	1
Carbolic Acid (Phenol)	—	—	4	4	1
Carbonic Acid	4	1	2	2	1
Carbon Bisulphide	—	—	4	2	1
Carbon Dioxide	—	—	1	—	1
Carbon Monoxide	—	1	2	2	1
Castor Oil	1	1	2	2	1
Caustic Soda	—	1	3	—	1
Cellulose Acetate	—	1	4	4	1
Cellosolve	—	1	4	4	1
Cement	—	1	2	—	1
Cereal Syrup (Glucose)	—	—	2	2	1
Chloroacetic Acid	—	—	4	4	1
Chloroform	1	4	4	2	1
Chlorosulfonic Acid	—	—	—	—	1
Chlorine Dioxide	—	—	4	—	—
Chlorine Water	—	—	4	1	1

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CORROSION STRENGTH VALUES

1 = EXCELLENT 2 = GOOD 3 = INSUFFICIENT 4 = RISKY — = NO INFORMATION AVAILABLE	DELRIN	EPDM	NBR	VITON	PTFE
Chlorine Water	—	—	4	—	1
Chlorobenzene	1	4	4	2	1
Chromic Acid	4	—	2	1	1
Chromic Anhydride	—	—	2	1	1
Chrome Potassium Sulphate	—	—	2	—	1
Citric Acid	—	1	2	2	1
Coconut Oil	1	—	2	1	1
Coffee	—	1	4	1	1
Coke-oven Gas	—	1	4	2	1
Copper Acetate	—	—	—	4	1
Copper Chloride	1	1	2	2	1
Copper Nitrate	1	—	2	2	1
Copper Sulphate	1	1	2	2	1
Corn Oil	1	—	4	—	1
Cotton seeds Oil	—	—	2	1	1
Creosote	—	4	3	1	1
Cresol	—	—	4	4	1
Cromil Chloride	—	—	—	—	1
Crotonaldehyde	—	—	—	—	1
Crude Oil	—	—	2	1	1
Cyanoacetic Acid	—	—	—	—	1
Cyanogen Gas	—	1	—	—	1
Cyclohexane	—	4	2	2	1
D					
Demineralized Water	—	1	2	2	1
Detergents	—	1	2	2	1
Dextrine	—	—	4	4	1
Dextrose	—	—	2	2	1
Diacetone	—	1	4	4	1
Diacetone Alcohol	—	—	4	—	1
Dibutylphthalate	—	—	—	2	1
Dichloroethane	—	—	4	1	1
Dichlorobenzene max 40°C	—	—	—	2	1
Dichloroethane	—	—	4	2	1
Dichloroethylene	—	—	4	2	1
Diethyl Ether	—	—	4	4	1
Diethyl Ether 40°C	—	—	2	4	1
Diethylcellosolve	—	—	—	—	1
Diethylamine max 40°C	—	—	4	—	1
Dimethyl	—	—	—	4	1
Dimethylphthalate	—	—	4	1	1
Dimethyl Ether	—	—	—	—	1
Dioxan	—	4	4	4	1
Diphenyl (Dowtherms)	—	—	4	1	1
Disodium Phosphate 20°C	—	—	4	2	1
Distilled Water	1	1	2	2	1
Dry Sulphur Dioxide	4	—	4	4	1
Drilling Sludge	—	4	1	—	1
Drilling Sludge	—	4	1	—	1
Dry Sulphurized Hydrogen	—	1	—	4	1
Dry Sulphurized Hydrogen	—	1	—	4	1
Dyes	—	4	4	—	1
Dyes	—	4	4	—	1
E					
Ethyl Acetate	1	4	4	4	1
Ethyl Acrylate	—	1	2	2	1
Ethyl Alcohol	1	1	3	1	1
Ethyl Chloride	1	—	2	2	1

1 = EXCELLENT 2 = GOOD 3 = INSUFFICIENT 4 = RISKY — = NO INFORMATION AVAILABLE	DELRIN	EPDM	NBR	VITON	PTFE
Ethyl Glycol	—	1	1	1	1
Ethylene Bromide	—	—	4	—	1
Ethylene Chloride	—	—	4	1	1
Ethylene Diamine	—	—	1	1	1
Ethylene Glycol	—	1	2	1	1
Ethylene Oxide	—	—	4	4	1
Epichlorohydrin	—	—	4	4	1
F					
Fats	—	4	1	—	1
Fatty Acids	—	—	2	2	1
Ferric Chloride	1	1	2	2	1
Ferric Nitrate 10-50%	—	1	2	2	1
Ferric Sulphate	1	1	2	2	1
Ferrous Chloride	1	1	2	—	1
Ferrous Sulphate	1	1	2	2	1
Fluorinated Hydrogen	—	—	2	2	1
Fluorine Gas	—	—	4	4	1
Fluorosilicic Acid	—	1	3	—	—
Formaldehyde 35-50%	1	1	4	4	1
Formic Acid 10-85%	4	1	4	2	1
Freon F 11-12	—	—	2	2	—
Freon F 22	—	—	4	4	—
Fuel Oil	1	4	2	1	1
Fuel for aircrafts (JP4 or JP5)	—	4	2	1	1
Furfural	—	—	4	4	1
Furfuraldehyde	1	—	4	4	1
G					
Gallic Acid	1	1	—	2	1
Galvanizing Solution	—	1	2	2	1
Gaseous Bromine	2	4	4	—	1
Gaseous Oxygen	1	—	4	2	1
Gas Oil	—	—	2	2	1
Gelatine	1	—	2	2	1
Glucose	1	—	2	2	1
Glue	—	1	3	—	1
Glycerol	3	—	2	1	1
Glycols 60°C	—	—	1	1	1
Glycolic Acid	—	1	—	—	1
Green Liquor	—	1	2	—	1
H					
Helium	—	2	2	—	1
Heptane	—	1	2	1	1
Hexane	—	4	2	1	1
Hexanol	—	—	2	1	1
Hydraulic Fluid	—	—	2	1	1
Hydrobromic Acid	—	—	4	2	1
Hydrocyanic Acid	—	1	2	2	1
Hydrochloric Acid max 50%	—	1	—	2	1
Hydrofluoric Acid max 70%	—	—	4	1	—
Hydrofluoric Acid 100%	—	—	4	—	—
Hydrogen Dioxide	1	1	4	1	1
Hydrogen Chloride	—	—	—	—	1
Hydrogen	—	1	2	2	1
Hydrogen Sulphide	—	—	4	4	1
Hydroquinone	—	1	4	2	1
I					
Ink	—	1	—	—	
Industrial oils	—	—	—	—	1

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CORROSION STRENGTH VALUES

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Iodoform	1	—	4	1	1
Isobutyl-Methyl-Ketone	—	—	4	4	1
Isooctane	1	4	1	1	1
Isopropyl Alcohol	1	1	3	2	1
Isopropyl Ether	—	—	4	4	1
J					
Juices	1	2	2	—	1
K					
Kerose	—	—	2	1	1
L					
Lactic Acid	4	—	4	2	1
Lard Oil	—	—	1	1	1
Lead Acetate	1	—	4	4	1
Lead Chloride max 20°C	—	—	—	2	1
Lead Sulphate	—	—	3	—	1
Leaded Petrol	1	—	2	2	1
Lemon Oil	—	2	3	—	1
Lime	—	1	4	—	1
Lime Sulphur	—	1	4	2	1
Linseed Oil	1	—	2	1	1
Liquid Chlorine	—	—	4	2	1
Liquid Soap	—	1	2	—	1
Lithium Bromine	—	1	2	2	1
Lubricating Oil	—	—	2	2	1
M					
Maleic Acid	1	1	4	2	1
Malic Acid	1	—	2	2	1
Manganese Chloride max 20°C	—	—	2	2	1
Magnesium Carbonate	—	—	2	—	1
Magnesium Chloride	1	1	2	2	1
Magnesium Hydroxide	1	1	2	2	1
Magnesium Nitrate	—	1	2	—	1
Magnesium Oxide	—	2	2	—	1
Machine Oil	—	—	—	—	1
Magnesium Sulphate	1	1	2	—	1
Methane	1	1	2	1	1
Methanol	—	1	2	4	1
Methyl Acetate	—	3	4	4	1
Methyl Alcohol	1	1	2	4	1
Methyl Bromine	—	—	—	2	1
Methyl Chloride	—	—	4	2	1
Methyl Methacrylate	—	—	2	2	1
Methylene Chloride	—	4	4	4	1
Methylacetone	—	2	4	4	1
Methylcellosolve	—	—	3	4	1
Methyl-Ethyl-Ketone	—	—	4	4	1
Mercury	1	—	2	2	1
Mercuric Chloride	—	1	2	2	1
Mercuric Nitrate	—	1	—	—	1
Milk	1	—	2	2	1
Mineral Oil	1	—	2	2	1
Mineral Water	1	1	2	—	1
Mineral Naphtha (Combustible Oil)	1	4	2	1	1
Mixed Acids (°T max 32°C)	—	1	1	1	1
Molasses	—	1	2	2	1
Monoclorobenzene 20°C	—	—	4	1	1
Motor Oil	—	—	2	2	1
n Butyl Mercaptan	—	—	—	—	1

1 = EXCELLENT 2 = GOOD 3 = INSUFFICIENT 4 = RISKY — = NO INFORMATION AVAILABLE	DELRIN	EPDM	NBR	VITON	PTFE
N					
Naphthalene	1	—	4	2	1
Natural Gas	1	1	2	2	1
Nickel Ammonium Sulphate	—	—	—	—	1
Nickel Chloride	1	1	2	—	1
Nickel Nitrate	1	—	2	2	1
Nickel Salt	—	—	2	—	1
Nickel Sulphate	1	1	2	2	1
Nicotine	—	—	—	—	1
Nicotinic Acid	—	1	—	—	1
Nitric Acid	4	4	4	2	1
Nitrobenzene 25°C	—	2	4	4	1
Nitrobenzene over 25°C	—	—	4	4	1
Nitrogen	1	1	2	—	1
Nitromethane	—	—	4	—	1
Nitrous Oxide 40°C	—	—	4	3	1
O					
Oleum	4	—	4	1	1
Oleic Acid	1	—	1	4	1
Oli Vegetali	—	1	2	2	1
Olive Oil	—	2	1	1	1
Oxalic Acid	3	1	1	2	1
Oxygen	1	1	3	2	1
Ozone	—	—	4	2	1
P					
Paint Solvents	—	4	4	4	1
Palmitic Acid	1	—	2	2	1
Paraffin wax	1	—	2	—	1
Perchloric Acid	—	—	4	2	1
Perchloroethylene	—	4	4	1	1
Persolfato di Ammonio	—	1	2	—	1
Petrol Oils (acid or refined oils)	—	—	2	2	1
Petrolatum (Vaseline)	—	—	—	—	1
Phenyl Chloride (Chlorobenzene)	—	—	4	1	1
Phenylhydrazine	—	—	4	2	1
Phenol (Carbolic Acid)	4	—	4	1	—
Phosphate 50°C	—	—	—	—	1
Phosphoric Acid 10%	4	—	4	2	1
Phosphoric Acid 25/50%	4	—	4	2	1
Phosphoric Acid 50/80%	4	1	4	2	1
Phosphorus Oxychloride	—	—	—	—	1
Phosphorous Pentoxide 20°C	—	—	—	—	1
Phosphorous Pentoxide	—	—	4	4	1
Phthalic Acid	1	—	4	—	1
Phtalic Anhydride	—	—	4	2	1
Picric Acid	—	1	3	2	1
Pickling solution	—	4	—	—	1
Polyvinyl Acetate	—	1	—	—	1
Potassium Bicarbonate	—	—	2	2	1
Potassium Bichromate (30%)	—	—	4	4	1
Potassium Bromide	1	1	2	2	1
Potassium Carbonate 50%	1	—	2	2	1
Potassium Chlorate	—	1	2	2	1
Potassium Chloride	1	1	2	2	1
Potassium Chromate 30%	—	1	—	—	1
Potassium Cyanide 30%	1	1	2	2	1
Potassium Ferricyanide 30%	—	—	2	2	1
Potassium Fluoride	—	—	2	2	1

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CORROSION STRENGTH VALUES

1 = EXCELLENT 2 = GOOD 3 = INSUFFICIENT 4 = RISKY — = NO INFORMATION AVAILABLE	DELRIN	EPDM	NBR	VITON	PTFE
Potassium Hydroxide	—	—	2	2	1
Potassium Hydroxide 5-30%	—	1	4	—	1
Potassium Hydroxide 50-90%	—	1	2	4	1
Potassium Hypochlorite 30°C	—	—	4	2	1
Potassium Hypochlorite 90°C	—	—	4	—	1
Potassium Iodide 70%	1	1	—	—	1
Potassium Nitrate 80%	—	1	2	2	1
Potassium Nitrate 1-5%	—	1	2	2	1
Potassium Oxalate 20%	—	—	—	—	1
Potassium Permanganate	—	1	4	3	1
Potassium Phosphate	—	—	1	1	1
Potassium Sulphate 10%	1	1	2	2	1
Potassium Sulphite	—	2	3	—	1
Potassium Sulphite	—	—	—	4	1
Propane	1	1	2	1	1
Propanol	—	—	2	2	1
Propylene Oxide	—	—	4	—	1
Propylene Glycol	—	—	2	2	1
Pyridine	—	—	4	4	1
Pyrogallic Acid	1	—	3	3	1
R					
Resins	—	—	—	2	1
S					
Salicylic Acid	1	—	4	2	1
Salt Water	—	1	2	2	1
Sea Water	1	1	2	2	1
Sewage	—	2	2	2	1
Sewage	—	—	2	2	1
Silver Nitrate	1	1	2	2	1
Silicone Oil	—	—	2	2	1
Sodium Acetate	1	1	—	4	1
Sodium Bicarbonate	1	1	2	2	1
Sodium Bichromate	—	—	—	2	1
Sodium Bisulphite	1	1	2	2	1
Sodium Borate	1	—	2	2	1
Sodium Bromide	—	—	1	1	1
Sodium Carbonate	1	—	2	2	1
Sodium Chlorate	—	1	2	2	1
Sodium Chlorite	—	—	—	—	1
Sodium Chloride	1	1	2	2	1
Sodium Disulphate	—	—	2	2	1
Sodium Fluoride	—	1	—	—	—
Sodium Hydroxide (Caustic Soda)	—	1	3	—	1
Sodium Hypochlorite	1	1	4	2	1
Sodium Hypochlorite	—	1	2	2	1
Sodium Metaphosphate	—	—	2	2	1
Sodium Nitrate	1	1	3	4	1
Sodium Nitrite	—	—	—	—	1
Sodium Perborate 10%	1	—	2	2	1
Sodium Peroxide 10%	—	1	2	2	1
Sodium Phosphate	—	—	2	2	1
Sodium Silicate	1	1	2	2	1
Sodium Sulphate	1	1	2	2	1
Sodium Sulphite 10%	—	1	2	2	1
Sodium Sulphide 50%	1	1	2	2	1
Sodium Thiosulphate	1	1	2	2	1
Soft Water	1	1	1	—	1
Spirit Vinegar	4	—	4	2	1

1 = EXCELLENT 2 = GOOD 3 = INSUFFICIENT 4 = RISKY — = NO INFORMATION AVAILABLE	DELRIN	EPDM	NBR	VITON	PTFE
Stannic Chloride	—	1	2	2	1
Stannous Chloride	—	1	2	2	1
Starci	—	2	2	—	1
Steam 130°C	4	1	4	4	1
Stearic Acid	1	—	2	—	1
Suds	—	1	2	—	1
Sugarbeet Liquor	—	—	—	2	1
Sulphuric Acid 10-50%	3	1	3	1	1
Sulphuric Acid 60-70%	3	1	4	1	1
Sulphuric Acid 80-100%	4	—	4	1	1
Sulphurous Acid	3	—	4	2	1
Sulphamic Acid	—	1	—	—	1
Sulphur 20°C	—	—	4	4	1
Sulphur Chloride	—	—	4	2	1
Swimming pool Water	—	1	2	—	1
T					
Tannic Acid	1	—	4	3	1
Tar	1	4	4	2	1
Tartaric Acid	1	—	2	2	1
Tetraphosphoric Acid	—	—	—	—	1
Tetrachydrofuran	—	—	4	4	1
Tetraethyl Lead	—	—	4	2	1
Thionyl Chloride	—	—	4	4	1
Toluene	1	4	4	2	1
Tomato Juice	—	—	2	2	1
Trichloroacetic Acid	—	—	4	2	1
Trisodium Phosphate	—	—	2	2	1
Tributyl Phosphate 30°C	—	—	4	4	1
Trichloroethylene	—	—	4	1	1
Transformer Oil	—	—	2	2	1
Turpentine	1	4	2	2	1
U					
Unleaded Petrol	1	—	2	2	1
Urea	—	—	4	1	1
V					
Various Esters	—	—	—	—	1
Various Ethers 40°C	—	—	2	4	1
Various Soaps	—	—	2	2	1
Various Ketones	—	—	4	4	1
Vaseline	—	—	3	3	1
Vegetable Oil	—	—	2	1	1
Vinyl Acetate	—	—	4	2	1
W					
Wet Chlorine Gas	—	1	4	2	1
Wet Sulphurized Hydrogen	—	1	4	1	1
Wet Sulphur Dioxide	1	1	2	4	1
White Liquor	—	1	4	2	1
Wine	—	—	2	2	1
X					
Xylene, Xylol	—	—	4	2	1
Z					
Zinc Chloride	1	1	2	2	1
Zinc Nitrate	—	—	—	2	1
Zinc Sulphate 30%	—	1	2	2	1

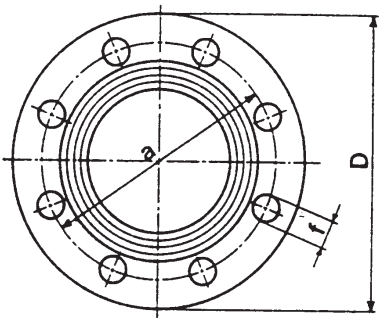
Coupling dimensions (in mm) of the flanges for nominal pressures

FLANGES UNI-DIN

	PN6				PN10				PN16				PN25				PN40				PN64				PN100				PN160			
		HOLES				HOLES				HOLES				HOLES				HOLES				HOLES				HOLES				HOLES		
DN	D	N.	f	a	D	N.	f	a	D	N.	f	a	D	N.	f	a	D	N.	f	a	D	N.	f	a	D	N.	f	a	D	N.	f	a
10	75	4	11	50	90	4	14	60	90	4	14	60	90	4	14	60	90	4	14	60	100	4	14	70	100	4	14	70	100	4	14	70
15	80	4	11	55	95	4	14	65	95	4	14	65	95	4	14	65	95	4	14	65	105	4	14	75	105	4	14	75	105	4	14	75
20	90	4	11	65	105	4	14	75	105	4	14	75	105	4	14	75	105	4	14	75	130	4	18	90	130	4	18	90	130	4	18	90
25	100	4	11	75	115	4	14	85	115	4	14	85	115	4	14	85	115	4	14	85	140	4	18	100	140	4	18	100	140	4	18	100
32	120	4	14	90	140	4	18	100	140	4	18	100	140	4	18	100	140	4	18	100	155	4	22	110	155	4	22	110	155	4	22	110
40	130	4	14	100	150	4	18	110	150	4	18	110	150	4	18	110	150	4	18	110	170	4	22	125	170	4	22	125	170	4	22	125
50	140	4	14	110	165	4	18	125	165	4	18	125	165	4	18	125	165	4	18	125	180	4	22	135	195	4	25	145	195	4	25	145
65	160	4	14	130	185	4	18	145	185	4	18	145	185	8	18	145	185	8	18	145	205	8	22	160	220	8	25	170	220	8	25	170
80	190	4	18	150	200	4	18	160	200	8	18	160	200	8	18	160	200	8	18	160	215	8	22	170	230	8	25	180	230	8	25	180
100	210	4	18	170	220	8	18	180	220	8	18	180	235	8	22	190	235	8	22	190	250	8	25	200	265	8	30	210	265	8	30	210
125	240	8	18	200	250	8	18	210	250	8	18	210	270	8	25	220	270	8	25	220	295	8	30	240	315	8	33	250	315	8	33	250
150	265	8	18	225	285	8	22	240	285	8	22	240	300	8	25	250	300	8	25	250	345	8	33	280	355	12	33	290	355	12	33	290
200	320	8	18	280	340	8	22	295	340	12	22	295	360	12	25	310	375	12	30	320	415	12	36	345	430	12	36	360	430	12	36	360
250	375	12	18	335	395	12	22	350	405	12	25	355	425	12	30	370	450	12	33	385	470	12	36	400	505	12	39	430	515	12	42	430
300	440	12	22	395	445	12	22	400	460	12	25	410	485	16	30	430	515	16	33	450	530	16	36	460	585	16	42	500	585	16	42	500
350	490	12	22	445	505	16	22	460	520	16	25	470	555	16	33	490	580	16	36	510	600	16	39	525	655	16	48	560				
400	540	16	22	495	565	16	25	515	580	16	30	525	620	16	36	550	660	16	39	585	670	16	42	585	715	16	48	620				
(450)	595	16	22	550	615	20	25	565	640	20	30	585	670	20	36	600	685	20	39	610	715	20	42	630	770	20	48	675				
500	645	20	22	600	670	20	25	620	715	20	33	650	730	20	36	660	755	20	42	670	800	20	48	705	870	20	56	760				
600	755	20	25	705	780	20	30	725	840	20	36	770	845	20	39	770	890	20	48	795	930	20	56	820	990	20	62	875				

FLANGES ANSI

	ANSI 150				ANSI 300				ANSI 600			
		HOLES				HOLES				HOLES		
Inch	D	N.	f	a	D	N.	f	a	D	N.	f	a
1/2	89	4	16	61	95	4	16	67	95	4	16	67
3/4	98	4	16	70	118	4	19	83	118	4	19	83
1	108	4	16	80	124	4	19	89	124	4	19	89
11/4	118	4	16	89	133	4	19	99	133	4	19	99
11/2	127	4	16	99	156	4	23	115	156	4	23	115
2	152	4	19	121	165	8	19	127	165	8	19	127
21/2	178	4	19	140	191	8	23	150	191	8	23	150
3	191	4	19	153	210	8	23	169	210	8	23	169
4	229	8	19	191	254	8	23	200	273	8	26	216
5	254	8	23	216	279	8	23	235	330	8	29	267
6	279	8	23	242	318	12	23	270	356	12	29	293
8	343	8	23	299	381	12	26	331	419	12	32	350
10	406	12	26	362	445	16	29	388	508	16	35	432
12	483	12	26	432	521	16	32	451	559	20	35	489
14	533	12	29	477	584	20	32	515	603	20	38	527
16	597	16	29	540	648	20	35	572	686	20	42	604
18	635	16	32	587	711	24	35	629	743	20	45	654
20	699	20	32	635	775	24	35	686	813	24	45	724
24	813	20	35	750	914	24	42	813	940	24	51	839



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STEAM TABLE

PTFE + CARBOGRAPHITE

PRESSION (BAR) p	TEMPERATURE (°C) t
0,010	7,0
0,020	17,5
0,030	24,1
0,040	29,0
0,050	32,9
0,060	36,2
0,070	39,0
0,080	41,5
0,090	43,8
0,10	45,8
0,20	60,1
0,30	69,1
0,40	75,9
0,50	81,3
0,60	86,0
0,70	90,0
0,80	93,5
0,90	96,7

PRESSION (BAR) p	TEMPERATURE (°C) t
1,00	99,6
1,5	111,4
2,0	120,2
2,5	127,4
3,0	133,5
3,5	138,9
4,0	143,6
4,5	147,9
5,0	151,8
6,0	158,8
7,0	164,9
8,0	170,4
9,0	175,4
10	179,9
11	184,1
12	188
13	191,6

VACUUM GRADE

The pressure is expressed in TORR (1 TORR = mmttg)

GRADE	PRESSURE
Low vaccum	760 to 1
Medium vaccum	1 to 10^{-3}
High vaccum	10^{-3} to 10^{-7}
Very high vaccum	10^{-7} to 10^{-9}
Ultra high vaccum	less than 10^{-9}

MEASUREMENT UNITS

CONVERSION

PRESSURE			
Si	Pascal	Pa	1 Pa = 1 N/m² 1 kPa = 0,01 bar = 1 N/cm²
(1)	-	bar	1 bar = 100.000 Pa = 1,019 kg/cm² = 14,48 psi = 10,19 mH₂O
Engl.	Pounds per square inch	psi	1 psi = 6,906 kPa = 0,068 bar = 0,0703 kg/cm²
Tec.	Metric atmosphere	at	1 at = 1kg/cm² = 736 mm di Hg = 10 mH₂O = 98.066,50 Pa
Tec.	Metric atmosphere	kg/cm²	1 kg/cm² = 98,067 kPa = 0,980 bar = 0,967 atm
Tec.	Standard atmosphere	atm	1 atm = 101.325 Pa = 760 mm di Hg = 1,033 at = 1 torr

TEMPERATURE			
Si	Kelvin	K	1 K = °C + 273,15
Si	Celsius	°C	1°C = (°F -32) x 5/9 = K -273,15
Engl.	Fahrenheit	°F	1 °F = 9/5 x °C +32

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PROTECTION RATE OF BOXES FOR ELECTRIC MATERIAL

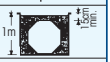
(according to NF EN 60529 and CEI 529)

P symbol, followed by two figures: for example IP65
The first figure shows the protection rate against live parts, internal moving parts, introduction of foreign matters
The second figure shows the protection rate from penetration of fluids.

1st figure

	DESCRIZIONE	TEST
0	not protected	
1	protected from solid bodies above ø 50mm	
2	protected from solid bodies above ø 12mm	
3	protected from solid bodies above ø 2,5mm	
4	protected from solid bodies above ø 1mm	
5	protected from dust (no dangerous deposit)	
6	full protection from dust	

2nd figure

	DESCRIZIONE	TEST
0	not protected	
1	splashproof from vertical water drops of water (condensed water)	
2	splashproof from vertical water drops up to 15°	
3	splashproof from rain up to 60°	
4	splashproof from all directions	
5	splashproof from water spouts (from all directions)	
6	splashproof from sea waves and similar splashes	
7	splashproof from the effects of immersion	
8	splashproof from the effects of submersion	