

FIRE SAFE 3 PIECES BALL VALVE PN 100 EXCELLENCE RANGE

PRODUCT EVOLUTION



Be careful, our valves Ref.702 are changing

**We currently have 2 different types available (according to DN)
with different dimension and non-commutable gaskets**

Old marking :



New marking :



At the end, only the new type will be available (from page 2 to 13)

FIRE SAFE 3 PIECES BALL VALVE PN 100 EXCELLENCE RANGE

Certificate 3.1



NEW



Lloyd's
Register

ISO 9001 : 2015



Lloyd's
Register

PED/2014/68/EU



Size : DN 8 to 50 mm
Ends : Threaded BSP or NPT , S.W. or B.W.
Min Temperature : - 20°C
Max Temperature : + 220°C
Max Pressure : 100 to 140 Bars
Specifications : Antistatic device
ISO 5211 mounting pad
Anti blow-out stem
Fully encapsulated bolts
Fire safe ISO 10497 : 2010 and API 607 V.6
Atex

Materials : Carbon steel ASTM A216 WCB

FIRE SAFE 3 PIECES BALL VALVE PN 100 EXCELLENCE RANGE

SPECIFICATIONS :

- Full bore
- Anti blow-out stem
- Special gland pack with elastic washer
- Antistatic device from DN8 to 10, double antistatic device (ball between body-stem and ball-stem) from DN15 to 50
- Fire safe according to ISO 10497:2010 and API 607 V.6
- Locking device
- Handwheel and stem extension (optional)
- ISO 5211 mounting pad
- Fully encapsulated bolts
- Pressure class 600 lbs
- On request PEEK seat(optional) for high temperature

USE :

- Chemical and pharmaceutical industries, petrochemical industries, hydraulic installation, compressed air
- Steam : 18 bars maximum with PTFE filled with 25% carbon seat
- Steam : 30 bars maximum with PEEK seat
- Vacuum : 10⁻² torr
- Min and max Temperatures Ts : -20°C to + 220°C with PTFE filled with 25% carbon seat type **Ref. 702**
- Min and max Temperatures Ts : -10°C to + 260°C for valve with PEEK seat (optional)
- Max Pressure Ps : 100 to 140 bars (see graph)

FLOW COEFFICIENT Kvs (M3 / h) :

DN	1/4"	3/8"	1/2"	3/4"	1"	1"1/4	1"1/2	2"
Kvs (m3/h)	13	13.4	31.3	57.86	94.25	157.9	227.9	414.8

TORQUE VALUES WITH PTFE FILLED WITH CARBON SEAT (in Nm without safety coefficient) :

DN	1/4"	3/8"	1/2"	3/4"	1"	1"1/4	1"1/2	2"
Pressure (bar)								
Breaking torque	5	5.5	10	12	19.2	25	28.7	50
17	5	5.5	9.5	10	16	17	18	36
34	5	5.5	10	10	17	18	18	36
69	6	5.5	10	10.5	17.5	21	22	41
103	6	6	10	10.5	18	26	27.5	42
138	6	6.5	10	11.5	19			

TORQUE VALUES WITH PEK SEAT (in Nm without safety coefficient) :

DN	1/4"	3/8"	1/2"	3/4"	1"	1"1/4	1"1/2	2"
Breaking torque	9	9	17	20	33	43	49	85

BOLT TIGHTENING TABLE (in Nm) :

DN	1/4"	3/8"	1/2"	3/4"	1"	1"1/4	1"1/2	2"
Torque (Nm)	9.8	9.8	9.8	22.07	22.07	39.2	39.2	58.8



FIRE SAFE 3 PIECES BALL VALVE PN 100 EXCELLENCE RANGE

RANGE :

- 3 pieces fire safe carbon steel ball valve Ref. **702** DN 8 to DN 50

ENDS :

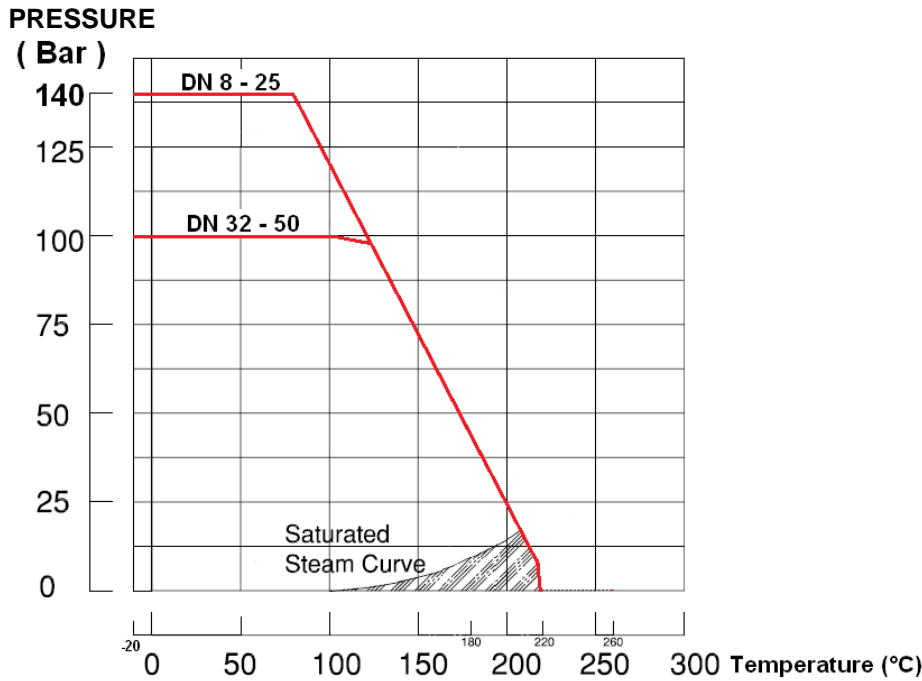
- Female / female threaded BSP
- Female / female threaded NPT
- Welding S.W.
- Welding B.W.

OPTIONS :

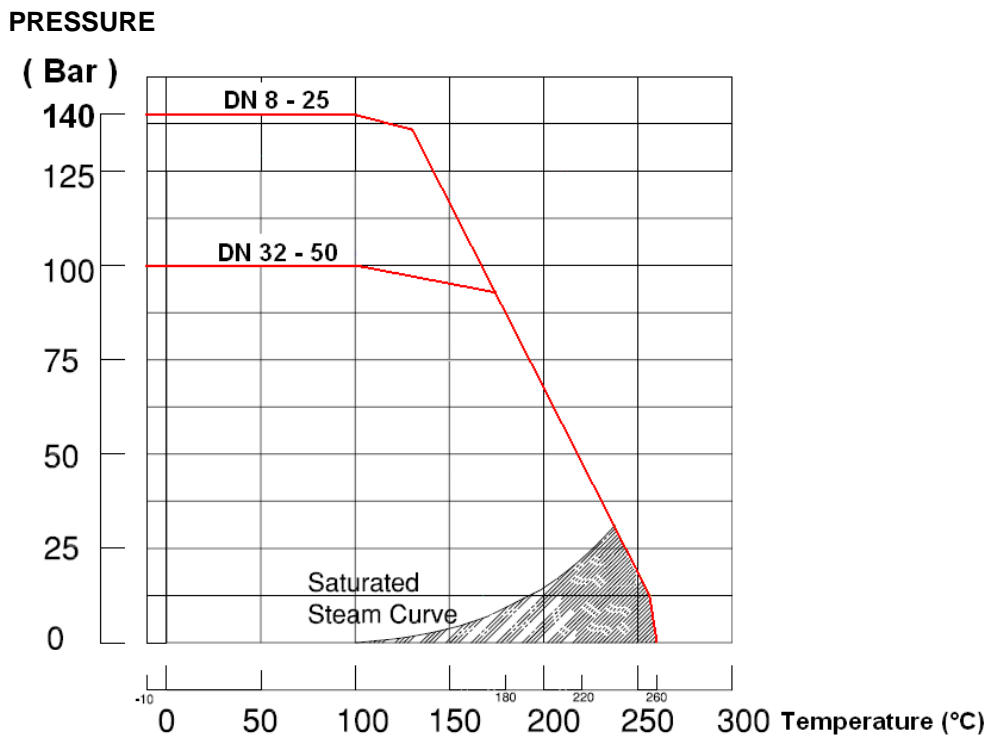
- SS 304 handwheel Ref. **9830440-9830475**
- SS 304 stem extension Ref. **9830471-9830474**
- PEEK gasket kits (including Grafoil body gasket and packing, PTFE filled 15% glass fiber stem gasket + Grafoil and PEEK seat)
Ref. **9804380-9804386**

FIRE SAFE 3 PIECES BALL VALVE PN 100 EXCELLENCE RANGE

PRESSURE / TEMPERATURE GRAPH FOR VALVES REF.702 (WITH PTFE FILLED WITH CARBON SEAT) :

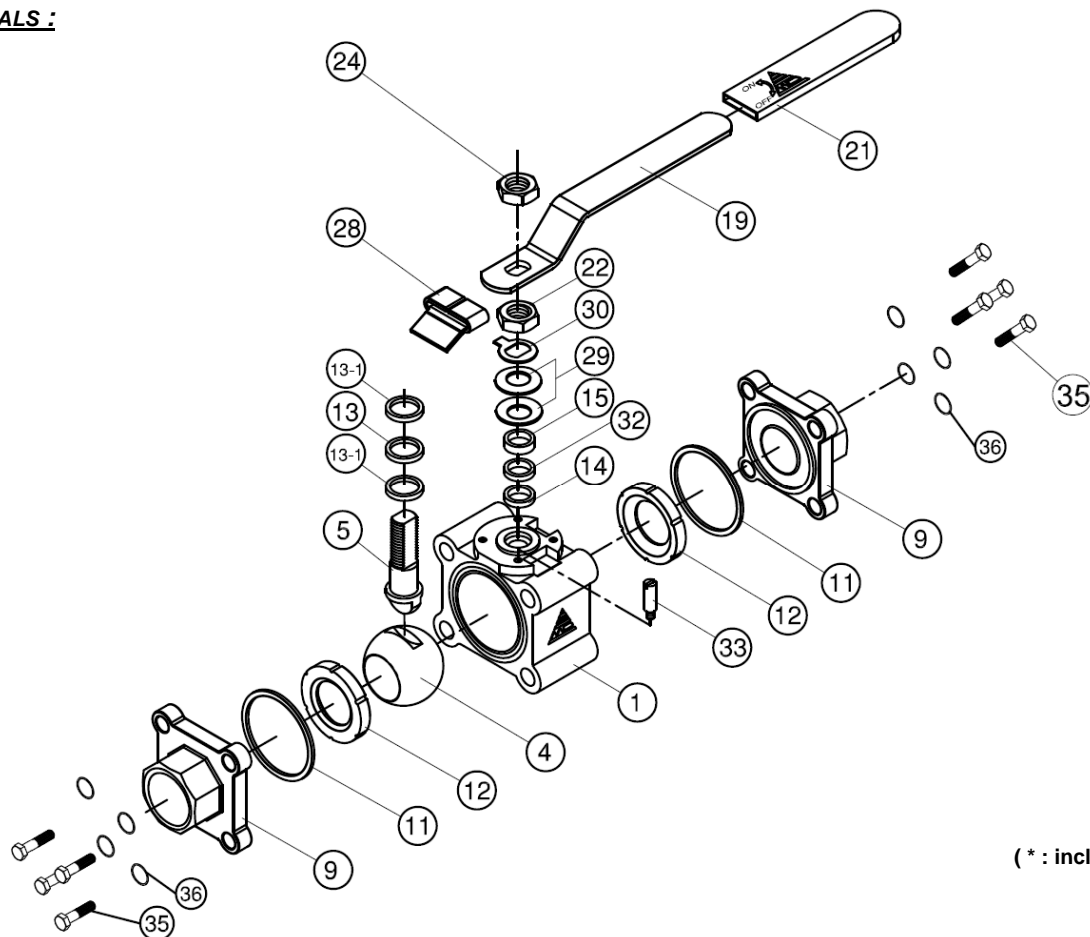


PRESSURE / TEMPERATURE GRAPH FOR VALVES REF.702 WITH OPTIONAL PEEK SEAT :



FIRE SAFE 3 PIECES BALL VALVE PN 100 EXCELLENCE RANGE

MATERIALS :

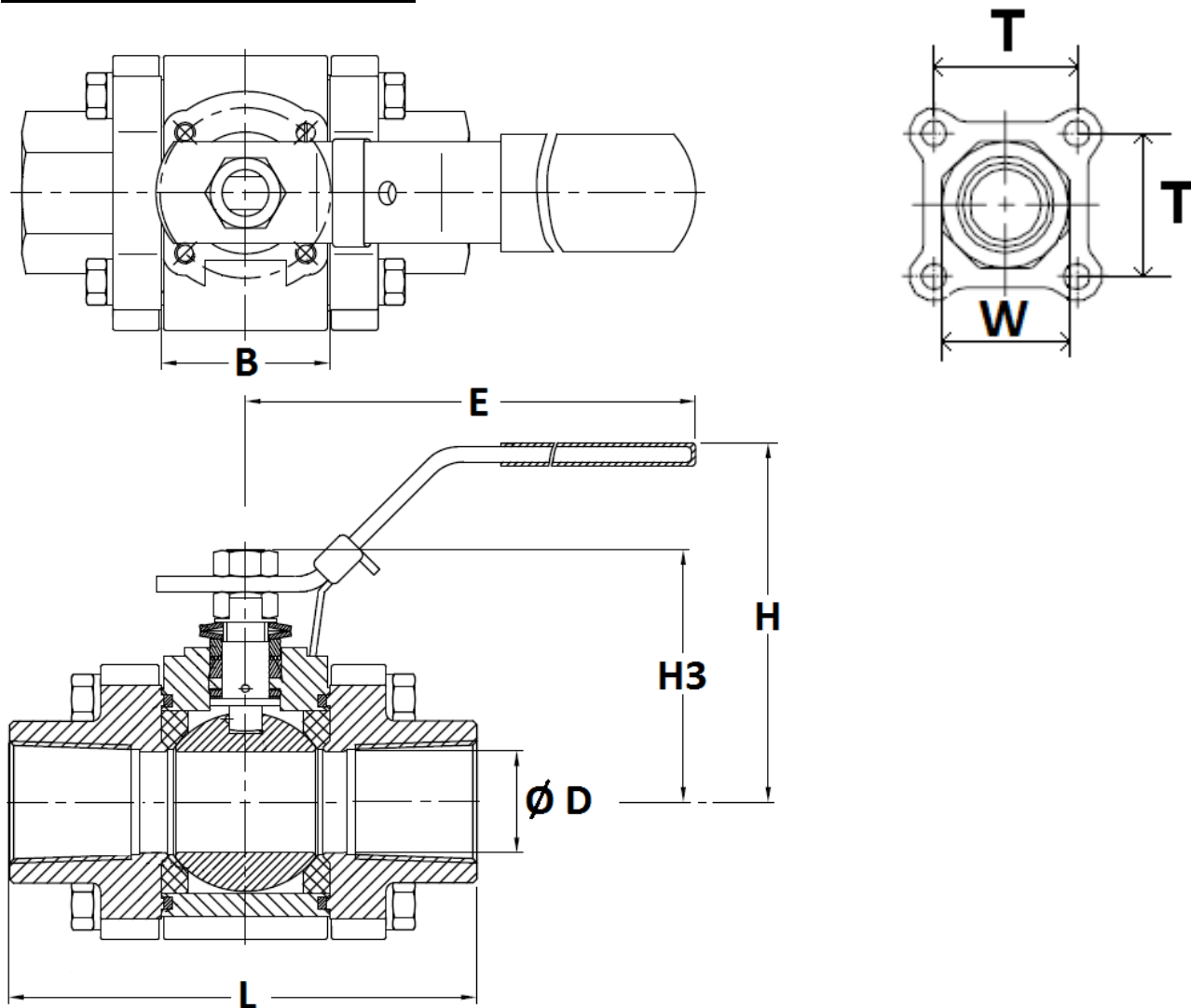


(* : included in gaskets kit)

Item	Designation	Materials
1	Body	ASTM A216 WCB
4	Ball	ASTM A351 CF8M
5	Stem	AISI 316
9	Ends	ASTM A216 WCB
11*	Body gasket	Graphite
12*	Seat	PTFE filled with 25% carbon
13*	Thrust washer	Graphite
13-1*	Thrust washer	PTFE filled with 15% Glass fiber
14	Packing	Graphite
15	Gland bush	AISI 304
19	Handle	AISI 304
21	Handle cover	Plastic
22	Packing nut	AISI 304
24	Handle nut	AISI 304
28	Locking device	AISI 304
29	Elastic washer	AISI 301
30	Tab washer	AISI 304
32*	Packing follower	PTFE filled with 15% Glass fiber
33	Stop pin	AISI 304
35	Screw	AISI 304
36	Washer	AISI 304

FIRE SAFE 3 PIECES BALL VALVE PN 100 EXCELLENCE RANGE

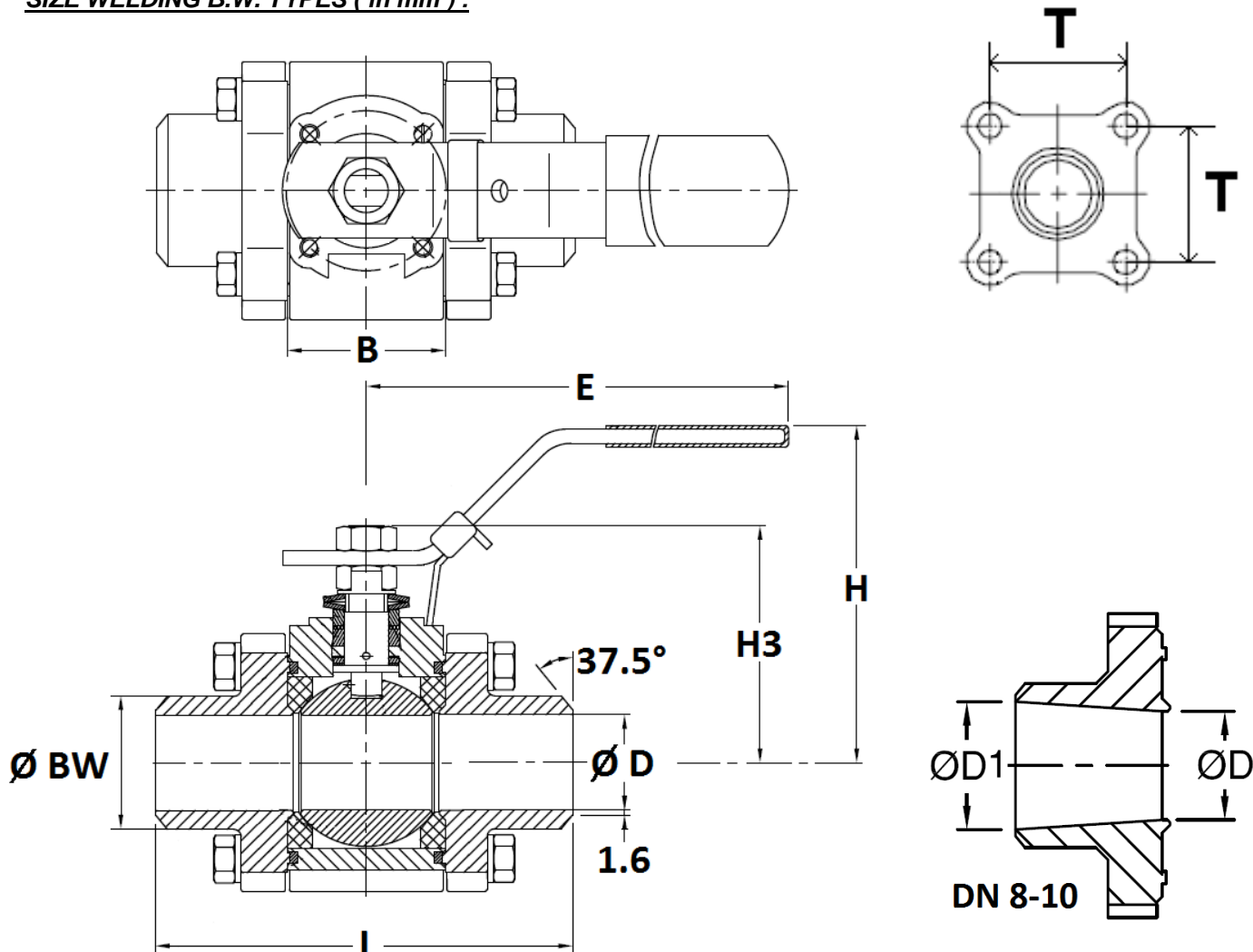
SIZE THREADED TYPES (in mm) :



Ref.	DN	1/4"	3/8"	1/2"	3/4"	1"	1"1/4"	1"1/2"	2"
7020-7023 Threaded	Ø D	10	10	15	20	25	32	38	50
	L	64,8	64,8	72,5	84.2	105,3	111	127,3	153.4
	B	20.5	20.5	24.5	31.4	41.3	48.4	56.3	72
	E	132.8	132.8	132.8	132.8	171.8	171.8	204.2	211
	H	63.7	63.7	65.1	73.2	83.1	87.6	98.4	130
	H3	37.1	37.1	46.1	50.9	61.4	66.8	80	99,4
	T	32	32	35	41.3	48	56.2	63.6	79.2
	W (on flat)	29.4	29.4	30.3	36.5	44.5	54.1	60	76
	Weight (Kg)	0.6	0.7	0.8	1.3	2	2.9	4.1	7.7

FIRE SAFE 3 PIECES BALL VALVE PN 100 EXCELLENCE RANGE

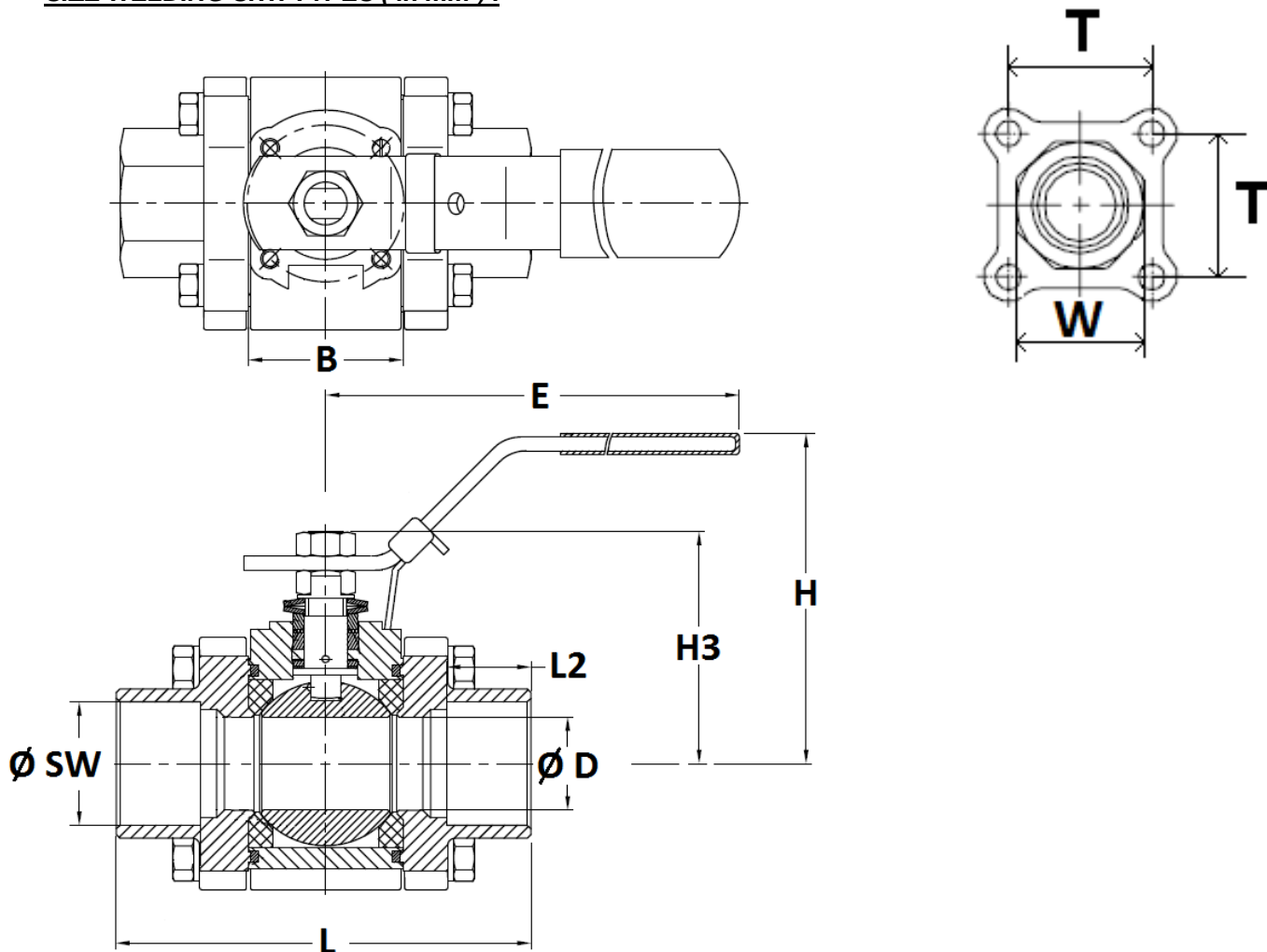
SIZE WELDING B.W. TYPES (in mm) :



Ref.	DN	8	10	15	20	25	32	40	50
7021 BW	Ø D	10	10	15	20	25	32	38	50
	Ø D1	10	12.7	-	-	-	-	-	-
	L	64,8	64,8	72.5	84.2	105.3	111	127.3	153.4
	B	20.5	20.5	24.5	31.4	41.3	48.4	56.3	72
	E	132.8	132.8	132.8	132.8	171.8	171.8	204.2	211
	H	63.7	63.7	65.1	73.2	83.1	87.6	98.4	130
	H3	37.1	37.1	46.1	50.9	61.4	66.8	80	99.4
	T	32	32	35	41.3	48	56.2	63.6	79.2
	Ø BW	17.7	17.7	21.9	27.3	34.7	42.8	49.1	60.9
	Weight (Kg)	0.6	0.58	0.74	1.21	1.85	2.67	3.9	7.33

FIRE SAFE 3 PIECES BALL VALVE PN 100 EXCELLENCE RANGE

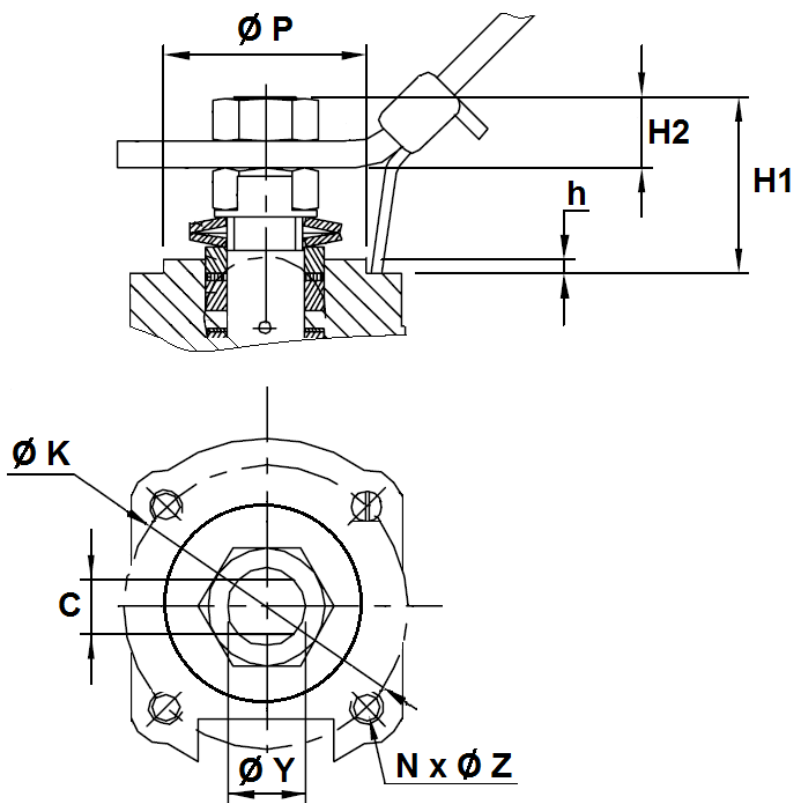
SIZE WELDING S.W. TYPES (in mm) :



Ref.	DN	8	10	15	20	25	32	40	50
7022 SW	Ø D	10	10	15	20	25	32	38	50
	L	64,8	64,8	72,5	84,2	105,3	111	127,3	153,4
	B	20,5	20,5	24,5	31,4	41,3	48,4	56,3	72
	L2	10	10	10	13	13	13	13	16
	E	132,8	132,8	132,8	132,8	171,8	171,8	204,2	211
	H	63,7	63,7	65,1	73,2	83,1	87,6	98,4	130
	H3	37,1	37,1	46,1	50,9	61,4	66,8	80	99,4
	T	32	32	35	41,3	48	56,2	63,6	79,2
	W (on flat)	29,4	29,4	30,3	36,5	44,5	54,1	60	76
	Ø SW	14,1	17,6	21,7	27,3	33,9	42,8	48,7	61,3
	Weight (Kg)	0,6	0,7	0,8	1,3	2	2,85	4,1	7,68

FIRE SAFE 3 PIECES BALL VALVE PN 100 EXCELLENCE RANGE

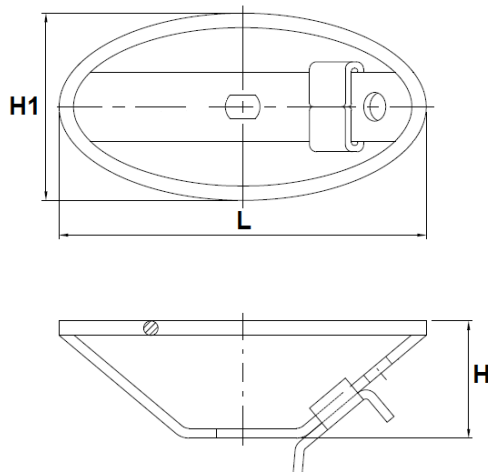
ISO 5211 MOUNTING PAD AND STEM SIZE (in mm) :



DN	1/4"	3/8"	1/2"	3/4"	1"	1"1/4"	1"1/2"	2"
H1	7.5	7.5	17.1	18.1	25.4	26.2	32.4	28.5
H2	6.6	6.6	11.1	9.1	13.1	12.6	14.9	15.5
h	0,5	0,5	2	2	2	2	2,2	1,5
C	6,5				8		9,7	12
Ø Y	9,5 (3/8"-24UNF)				11,1 (7/16"-20UNF)		14.2 (9/16"-18UNF)	19 (3/4"-16UNF)
Ø P	25	25	25	25	30	30	35	55
Ø K	36	36	36	36	42	42	50	70
ISO	F03	F03	F03	F03	F04	F04	F05	F07
N x Ø Z	4x M5	4x M5	4x M5	4x M5	4x M5	4x M5	4 x M6	4 x M8

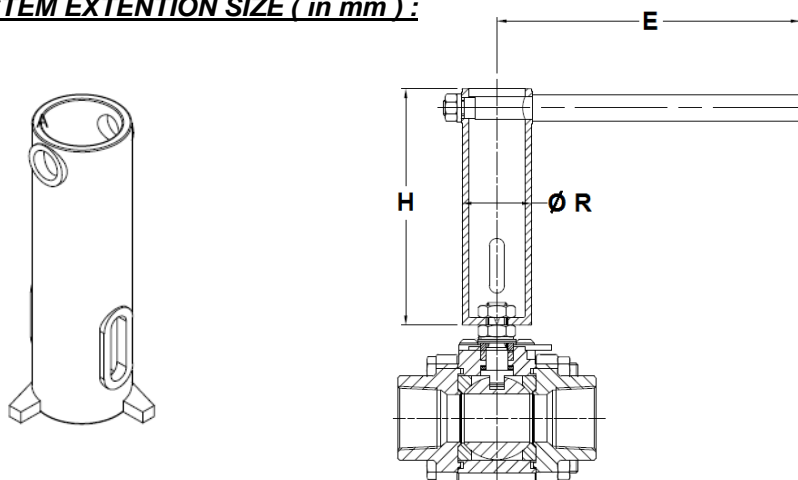
FIRE SAFE 3 PIECES BALL VALVE PN 100 EXCELLENCE RANGE

AISI 304 HANDWHEEL SIZE (in mm) :



DN	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
L	102	102	116	116	130	130	147	194
H	32.5	32.5	35	35	40	40	43	51
H1	52	52	62	62	82	82	87	98
Weight (Kg)	0.106	0.106	0.119	0.119	0.176	0.176	0.22	0.34
Ref.	9830440	9830440	9830441	9830441	9830442	9830442	9830443	9830475

AISI 304 STEM EXTENTION SIZE (in mm) :



DN	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
H	125.5	125.5	125.5	125.5	127.5	127.5
E	126.5	126.5	161	161	194	198.5
Ø R	31	31	37	37	43	52
Ref.	9830471	9830471	9830472	9830472	9830473	9830474

FIRE SAFE 3 PIECES BALL VALVE PN 100 EXCELLENCE RANGE

STANDARDS :

- Fabrication according to ISO 9001 : 2015
- DIRECTIVE 2014/68/EU : CE N° 0038
Risk category III module H
- Certificate 3.1 on request
- Construction according to EN 12516-1 Class 600
- Designing according to ASME B16.34
- Pressure tests according to EN12266-1, rate A
- Fire safe according to ISO 10497:2010 and API 607 6th (only with PTFE filled with 25% carbon seats)
- ABS type Approval Marine certificate
- Threaded cylindrical BSPP ends according to ISO 228-1
- Threaded NPT ends according to ANSI B1.20.1
- S.W. ends according to ASME B16.11 Schedule 40
- B.W. ends according to ASME B36.10 Schedule 40
- ISO 5211 mounting pad
- ATEX Group II Category 2 G/2D Zone 1 & 21 Zone 2 & 22 (optional marking) according directive 2014/34/EU

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The customer must check the right choice of the products with the real service conditions.

FIRE SAFE 3 PIECES BALL VALVE PN 100 EXCELLENCE RANGE

INSTALLATION AND MAINTENANCE

BEFORE INSTALLATION :

Pipe-line must be cleaned and free from residual of weldings, rubbish, shaving and every kind of extraneous materials.
 Pipe-line must be perfectly aligned and their support properly dimensioned so that there's no external constraint.

Check to use a produce compatible to the services conditions for the sealing of the threaded types.
 To tighten the ends, use the appropriate tool.
 Use the right bolt tightening so that the ends won't be damaged.

The welding of the ends for the SW and the BW types, must be done with the central part removed.
 A gauge can be used to have the good length and alignment between the ends.

INSTALLATION OF THE CENTRAL PART

During the installation of the central part, tighten bolts according to the table below. Tighten bolts in cross.

BOLT TIGHTENING TABLE (in Nm) :

DN	1/4"	3/8"	1/2"	3/4"	1"	1" 1/4	1" 1/2	2"
Torque (Nm)	9.8	9.8	9.8	22.07	22.07	39.2	39.2	58.8

CLEANING AND TESTS

Keep opened the valves during the cleaning operation so that there are no impurities between the ball and the body.

Tests under pressure must be done with a cleaned pipe-line.

Open partially the valve for tests. Pressure test do not exceed the valve specifications according to EN 12266-1.

MAINTENANCE

It's recommended to operate the valve twice (open and close) 1 to 2 times per year.

When intervention on the valve, be sure there's no pressure in the pipe-line, there's no fluid in it, and that it is isolated.
 The temperature must be low enough to operate without risks.
 If there's a corrosive fluid, inert installation before intervention.

When the valve is under pressure :
 If there's a leakage between the body and the ends, tighten bolts according to the above table

If there's a leakage at the packing, tighten it slightly so that the leakage disappears.

MAINTENANCE OPERATION IN WORKSHOP

REPLACEMENT OF SEAT GASKETS AND PACKING.
 The central part must be removed.
 Turn the ball at 45° and removed the seat gaskets.
 Operate the valve in closed position to removed the ball. Verify the surface of the ball has no impacts and no scores.
 If there are important scores or impacts, replace the ball.
 Clean inside the body valve and remove the impurities.
 To replace the packing, remove the handle, unscrew the gland nut, extract the stem by the inside of the valve.
 Clean the packing seat.
 Reassemble thrust washer on stem, introduce stem by the inside of the valve, reassemble packing with packing nut, reassemble hand washer, hand nut and the handle.
 Turn stem in closed position and insert the ball.
 Then turn the ball in opened position and reassemble the seat.
 Place the valve on the installation, tighten bolts according to the above table.
 Then proceed to the tests in the same way that the first installation.

FIRE SAFE 3 PIECES BALL VALVE PN 100 EXCELLENCE RANGE

ISO 9001:2008
BUREAU VERITAS
Certification



Size : DN 8 to 15 mm
Ends: Socket Welding or Butt Welding
Min Temperature : - 20°C
Max Temperature : + 220°C
Max Pressure : 100 to 140 Bars
Specifications : Antistatic device
ISO 5211 mounting pad
Anti blow out stem
Fully encapsulated bolts
Fire-safe according to API607 6th
Atex

Materials : Carbon steel ASTM A216 WCB

FIRE SAFE 3 PIECES BALL VALVE PN 100 EXCELLENCE RANGE

SPECIFICATIONS :

- Full bore
- Anti blow-out stem
- Special gland pack with elastic washer
- Antistatic device from DN8 to 10, double antistatic device (ball between body-stem and ball-stem) from DN15 to 50
- Fire safe according to API 607 V.6
- Locking device
- ISO 5211 mounting pad
- Fully encapsulated bolts
- Pressure class 600 lbs

USE :

- Chemical and pharmaceutical industries, petrochemical industries, hydraulic installation, compressed air
- Steam : 18 bars maximum
- Min and max temperature Ts : -20°C à + 220°C
- Max pressure Ps : 100 to 140 bars according to DN (see graph under)

FLOW COEFFICIENT Kvs (M3 / h) :

DN	1/4"	3/8"	1/2"	3/4"	1"	1"1/4	1"1/2	2"
Kvs (m3/h)	14	14	31	58	94	158	230	416

RANGE :

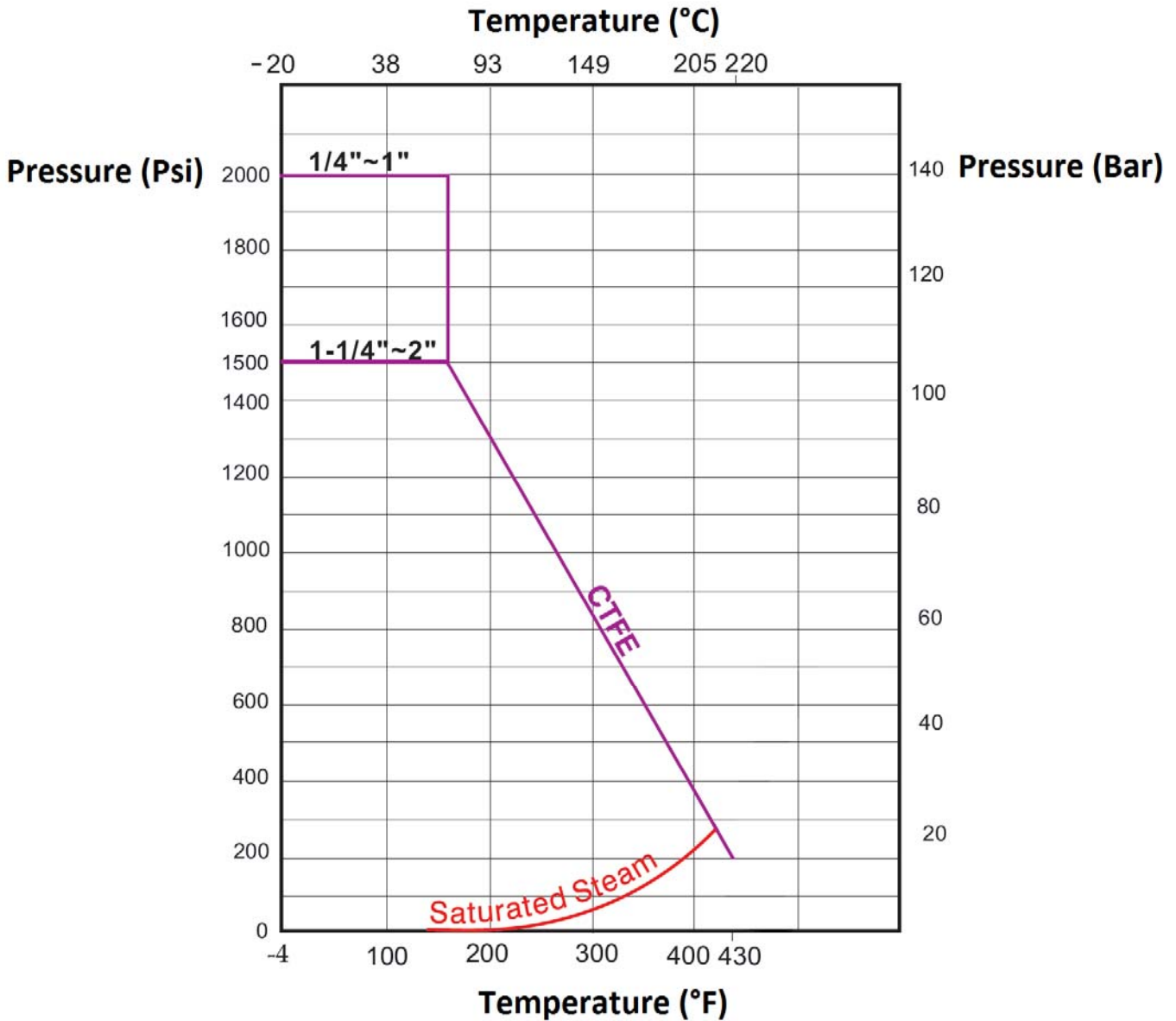
- 3 pieces carbon steel ball valve PN100 Ref. 702 from DN 8 to DN 15

ENDS :

- Socket Welding
- Butt Welding

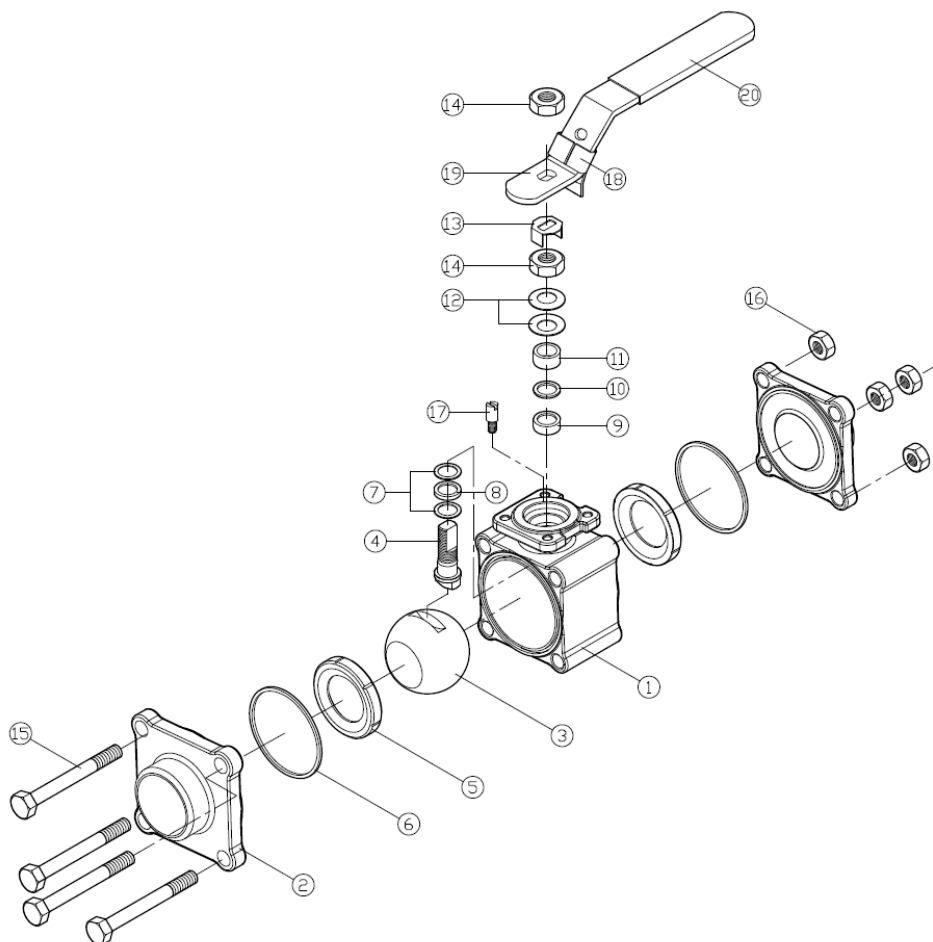
FIRE SAFE 3 PIECES BALL VALVE PN 100 EXCELLENCE RANGE

PRESSURE / TEMPERATURE GRAPH :



FIRE SAFE 3 PIECES BALL VALVE PN 100 EXCELLENCE RANGE

MATERIALS :

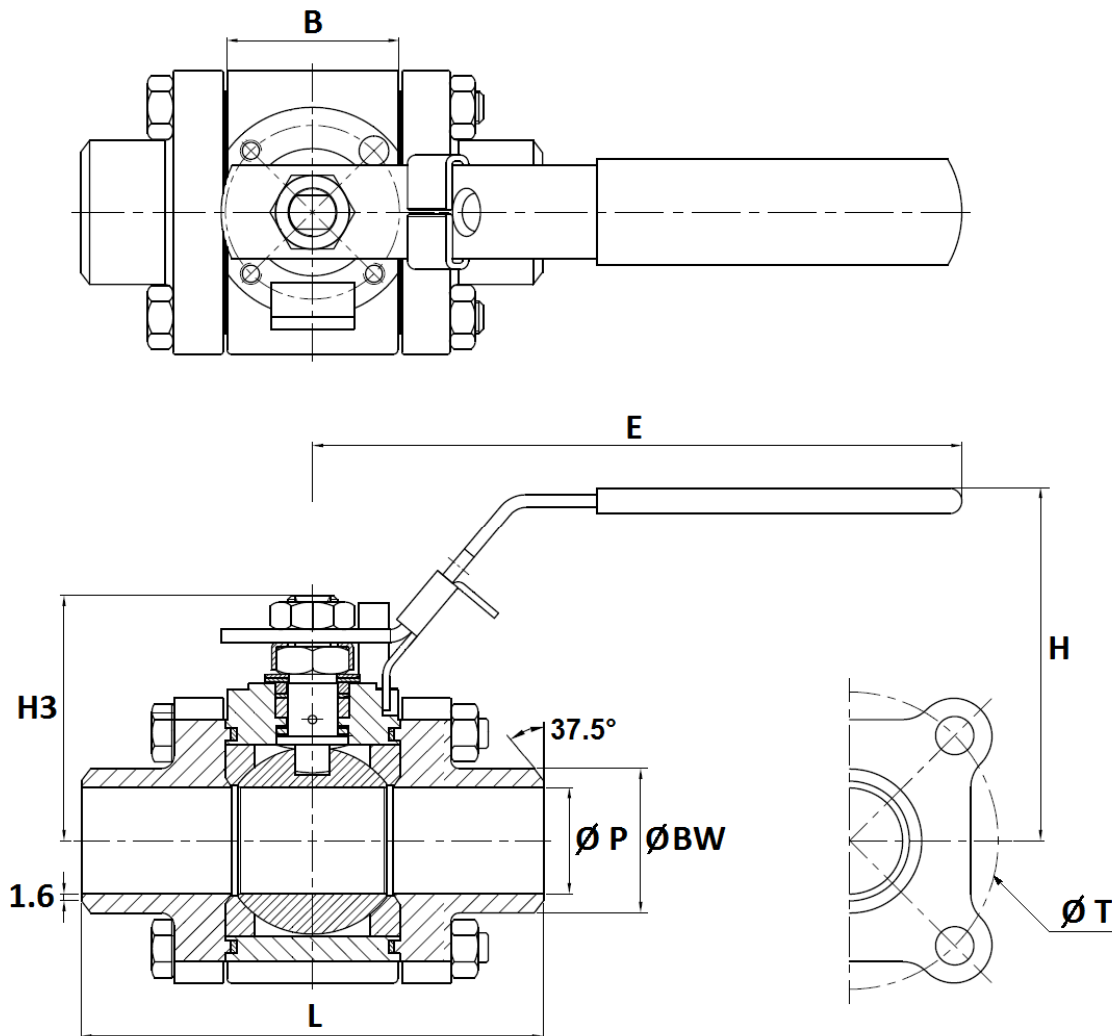


Item	Designation	Materials
1	Body	ASTM A216 WCB
2	Ends	
3	Ball	ASTM A351 CF8M
4	Stem	ASTM A276-316
5*	Seat	PTFE filled with carbon (CTFE)
6*	Body gasket	Graphite
7*	Thrust washer	PTFE filled with carbon (CTFE)
8*	Gasket	Graphite
9*	Packing	PTFE filled with carbon (CTFE)
10*	Packing	Graphite
11	Gland bush	AISI 304
12	Elastic ring	AISI 301
13	Stop washer	AISI 304
14	Nut	
15	Stud	
16	Nut	
17	Stop pin	AISI 201
18	Locking device	
19	Handle	AISI 201
20	Handle cover	PVC

(* : included in gasket kit)

FIRE SAFE 3 PIECES BALL VALVE PN 100 EXCELLENCE RANGE

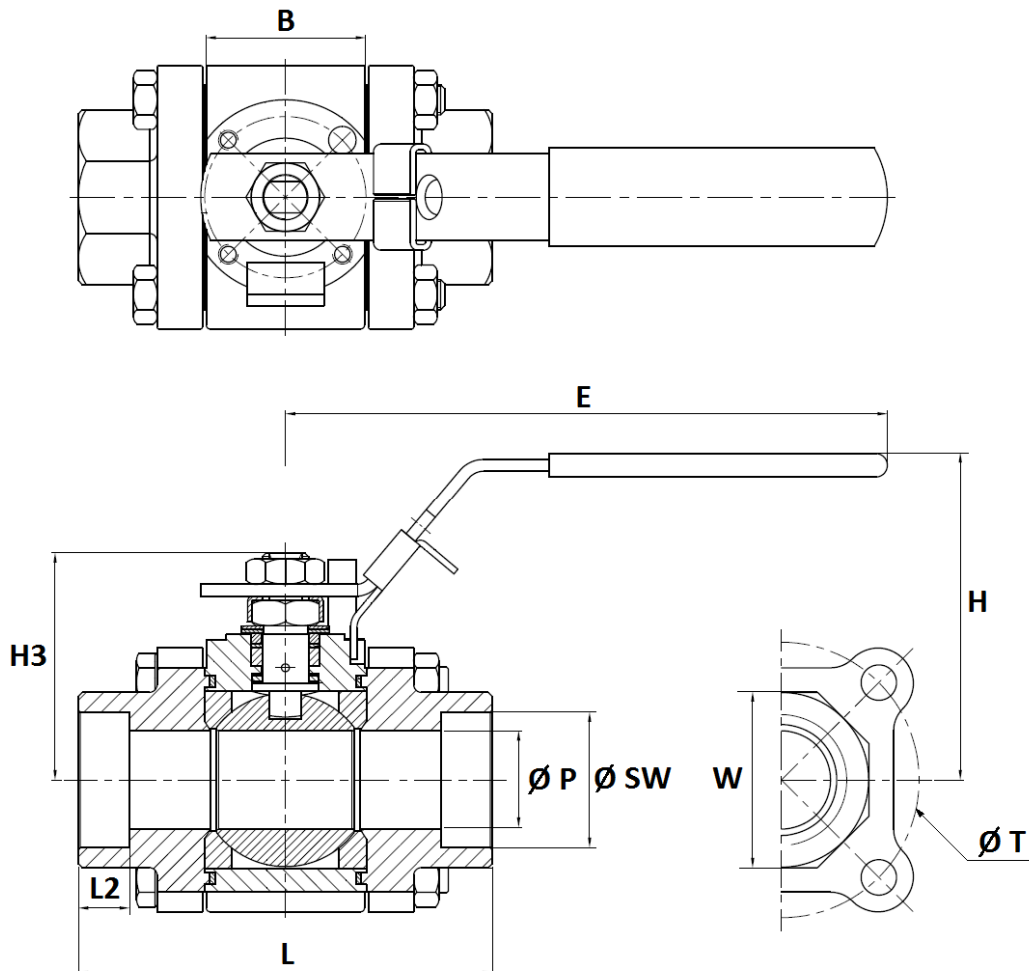
SIZE WELDING B.W. TYPES (in mm) :



Ref.	DN	15
7021 BW	Ø P	15
	L	75
	B	22.9
	E	140
	H	68
	H3	45.1
	Ø T	53
	Ø BW	21.7
	Weight (in Kg)	0.8

FIRE SAFE 3 PIECES BALL VALVE PN 100 EXCELLENCE RANGE

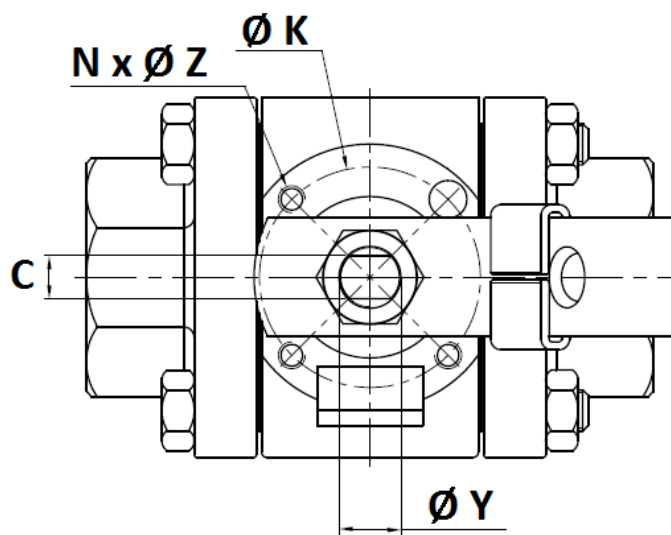
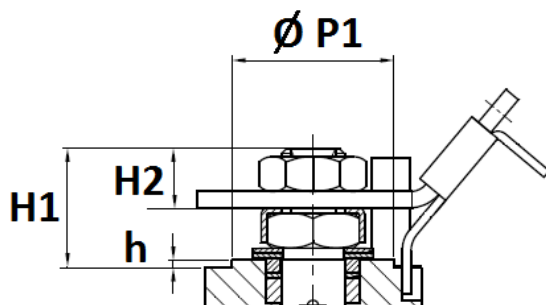
SIZE WELDING S.W. TYPES (in mm) :



Ref.	DN	8
7022 SW	Ø P	10
	L	64.8
	B	18.8
	L2	10
	E	133
	H	62
	H3	37.2
	Ø T	45
	W (on flat)	30
	Ø SW	14
	Weight (in Kg)	0.7

FIRE SAFE 3 PIECES BALL VALVE PN 100 EXCELLENCE RANGE

ISO 5211 MOUNTING PAD AND STEM SIZE (in mm) :



DN	8	15
H1	7.1	15.8
H2	5.5	9
h	0.5	2
C	5.7	5.7
Ø Y	3/8-24UNF	3/8-24UNF
Ø P1	25	25
Ø K	36	36
ISO	F03	F03
N x Ø Z	4x M5	4x M5

FIRE SAFE 3 PIECES BALL VALVE PN 100 EXCELLENCE RANGE

TORQUE VALUES (in Nm without safety coefficient) :

DN	8	10	15	20	25	32	40	50
Torque (Nm)	7	7	7	11	15	18	25	35

BOLT TIGHTENING TABLE (in Nm) :

DN	8	10	15	20	25	32	40	50
Size	M5	M5	M5	M5	M5	M5	M6	M8
Torque (Nm)	10	10	10	10	10	10	10	25

STANDARDS :

- Fabrication according to ISO 9001 : 2008
- DIRECTIVE 97/23/CE : CE N° 0035
Risk category III module H
- Construction according to EN 12516-1 Class 600
- Designing according to ASME B16.34
- Pressure tests according to EN12266-1, rate A
- Fire safe according to API 607 6th
- Threaded cylindrical BSPP ends according to ISO 7-1 Rp
- Threaded NPT ends according to ANSI B1.20.1
- S.W. ends according to ASME B16.11 Schedule 40
- B.W. ends according to ASME B16.25 Schedule 40
- ISO 5211 mounting pad
- ATEX Group II Category 2 G/2D Zone 1 & 21 Zone 2 & 22 (optional marking)

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FIRE SAFE 3 PIECES BALL VALVE PN 100 EXCELLENCE RANGE

INSTALLATION AND MAINTENANCE

BEFORE INSTALLATION :

Pipe-line must be cleaned and free from residual of weldings, rubbish, shaving and every kind of extraneous materials.
 Pipe-line must be perfectly aligned and their support properly dimensioned so that there's no external constraint.

Check to use a produce compatible to the services conditions for the sealing of the threaded types.
 To tighten the ends, use the appropriate tool.
 Use the right bolt tightening so that the ends won't be damaged.

The welding of the ends for the SW and the BW types, must be done with the central part removed.
 A gauge can be used to have the good length and alignment between the ends.

INSTALLATION OF THE CENTRAL PART

During the installation of the central part, tighten bolts according to the table below. Tighten bolts in cross.

BOLT TIGHTENING TABLE (in Nm) :

DN	8	10	15	20	25	32	40	50
Torque (Nm)	10	10	10	10	10	10	10	25

CLEANING AND TESTS

Keep opened the valves during the cleaning operation so that there are no impurities between the ball and the body.

Tests under pressure must be done with a cleaned pipe-line.

Open partially the valve for tests. Pressure test do not exceed the valve specifications according to EN 12266-1.

MAINTENANCE

It's recommended to operate the valve twice (open and close) 1 to 2 times per year.

When intervention on the valve, be sure there's no pressure in the pipe-line, there's no fluid in it, and that it is isolated.
 The temperature must be low enough to operate without risks.
 If there's a corrosive fluid, inert installation before intervention.

When the valve is under pressure :
 If there's a leakage between the body and the ends, tighten bolts according to the above table

If there's a leakage at the packing, tighten it slightly so that the leakage disappears.

MAINTENANCE OPERATION IN WORKSHOP

REPLACEMENT OF SEAT GASKETS AND PACKING.

The central part must be removed.
 Turn the ball at 45° and removed the seat gaskets.
 Operate the valve in closed position to removed the ball. Verify the surface of the ball has no impacts and no scores.
 If there are important scores or impacts, replace the ball.
 Clean inside the body valve and remove the impurities.
 To replace the packing, remove the handle, unscrew the gland nut, extract the stem by the inside of the valve.
 Clean the packing seat.
 Reassemble thrust washer on stem, introduce stem by the inside of the valve, reassemble packing with packing nut, reassemble hand washer, hand nut and the handle.
 Turn stem in closed position and insert the ball.
 Then turn the ball in opened position and reassemble the seat.
 Place the valve on the installation, tighten bolts according to the above table.
 Then proceed to the tests in the same way that the first installation.