

# K85

K85 121 563.738 DN1/4" - DN4"  
Ball valve butt welding BW

Certificate 3.1



Lloyd's  
Register

PED 97/23/CE



BUREAU  
VERITAS  
TA LUFT



**Size :** DN 8 to 100 mm  
**Ends :** Threaded BSP , Socket or Butt Welding  
**Min Temperature :** - 20°C  
**Max Temperature :** + 220°C  
**Max Pressure :** 63 Bars up to DN50 , 40 Bars over  
**Specifications :** ISO 5211 mounting pad  
PTFE filled with S.S. seat  
Anti blow-out stem  
Atex

**Materials :** Carbon steel ASTM A216 WCB

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### SPECIFICATIONS :

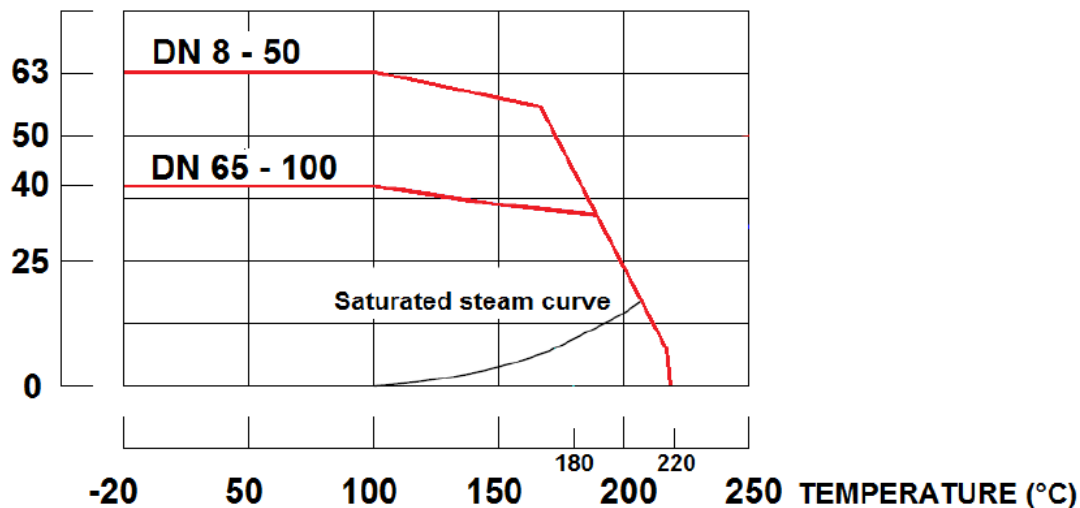
- Full bore
- Anti blow-out stem
- Special gland pack with elastic washer
- Antistatic device from DN8 to 32, double antistatic device (ball between body-stem and ball-stem) from DN40 to 100
- PTFE filled with stainless steel seat
- Locking device
- Blue handle cover possible
- ISO 5211 mounting pad

### USE :

- Chemical and pharmaceutical industries, petrochemical industries, hydraulic installation, compressed air
- Steam : 18 bars maximum
- Vacuum :  $10^{-2}$  torr
- Min and max Temperature Ts : -20°C to + 220°C
- Max Pressure Ps : 63 bars up to DN50 and 40 bars over ( see graph )

### PRESSURE / TEMPERATURE GRAPH :

Pressure (Bar)



### RANGE :

- 3 pieces carbon steel body valve Performance range Ref. 737/738/739 from DN 8 to DN 100
- Blue handle cover Ref. 9830432-9830436 from DN 8 to DN 100

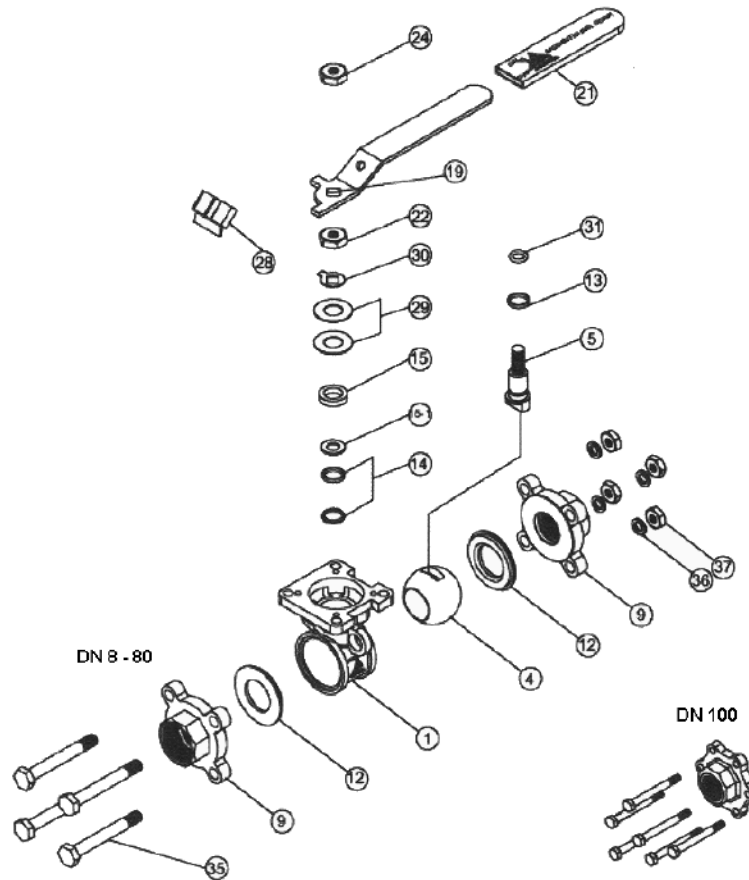
### ENDS :

- Female / female threaded BSP Ref. 737
- Socket Welding Ref. 739
- Butt Welding Ref. 738

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### MATERIALS :



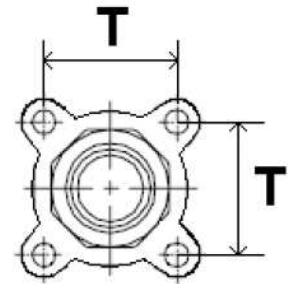
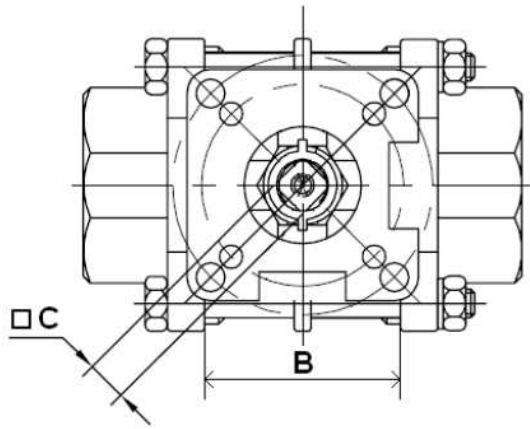
Item	Designation	Materials
1	Body	ASTM A216 WCB
4	Ball	ASTM A351 CF8M
5	Stem	AISI 316
9	Ends	ASTM A216 WCB
12*	Seat	PTFE with 50% AISI 316
13*	Thrust washer	PTFE with 25% grafoil
14*	Stem packing	PTFE with 25% grafoil
15-1*	Packing Follower	PTFE with 15% grafoil
15	Gland bush	AISI 304
19	Handle	
21	Handle cover	Plastic
22	Stem nut	AISI 304
24	Handle nut	
28	Locking device	
29	Elastic washer	AISI 301
30	Tab washer	AISI 304
31*	O-ring	FKM
35	Body bolt	AISI 304
36	Bolt washer	
37	Bolt nut	

(\* : included in gaskets kit )

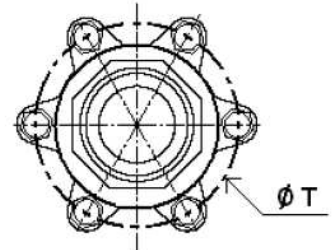
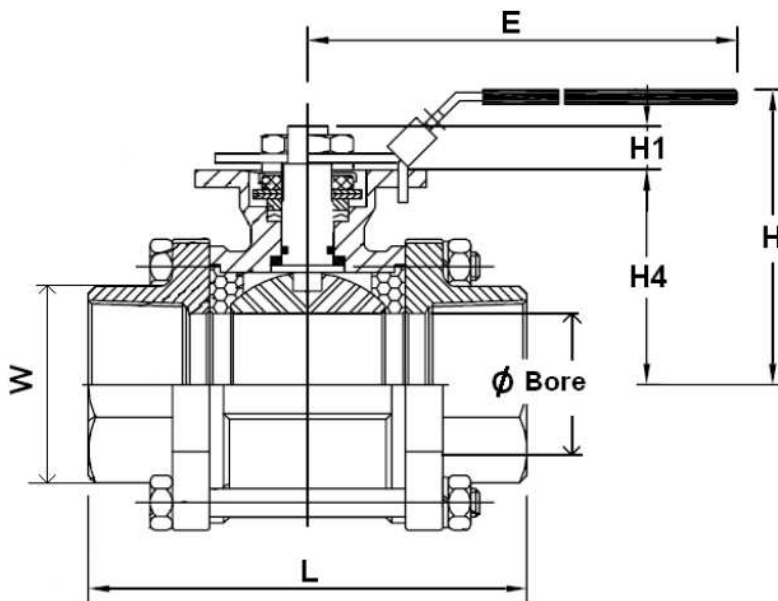
# K85

## K85 121 563.738 DN1/4" - DN4" Ball valve butt welding BW

SIZE THREADED TYPES REF.737 ( in mm ) :

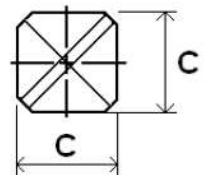


DN 1/4" - 3"



DN 4"

Stem size :

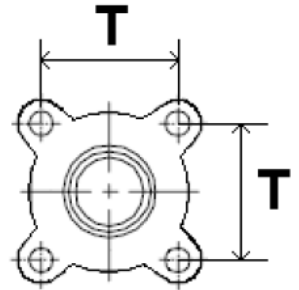
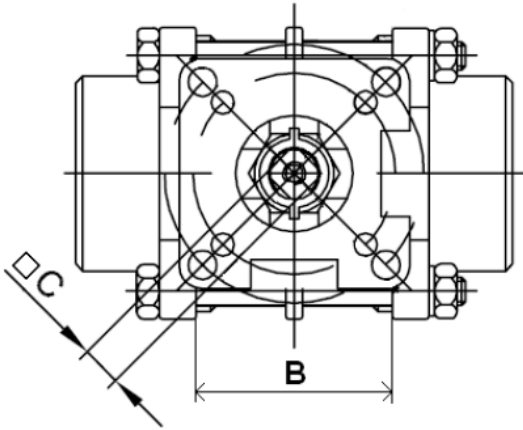


Ref.	DN	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"
737 Threaded	Ø Bore	11.5	12.5	15	20	25	32	38	50	65	80	100
	L	63.5	63.5	63.5	72.5	81	94.5	108	121.5	157.5	190	225
	B	22.5	22.5	22.5	27.5	34	42.5	52	63.5	85.5	102	128.5
	E	112	112	112	112	136	185	197.9	197.9	267	267	322
	H	73	73	73	80.8	90.5	98.7	115.3	124	155	164.5	216.7
	H1	8.5	8.5	8.5	8.5	9.5	9.5	14	13.7	18	18	18
	H4	37	37	37	45	53.5	59	74.8	83.5	108.8	118.3	153.8
	C	9	9	9	9	9	9	14	14	17	17	17
	T	31	31	31	35	41	49	59	71	91	107	195
	W ( on flat )	28	28	28	34	42	50	58	70	88	103	128
	Weight ( Kg )	0.64	0.62	0.58	0.75	1.03	1.62	2.5	3.7	7.8	11.3	22

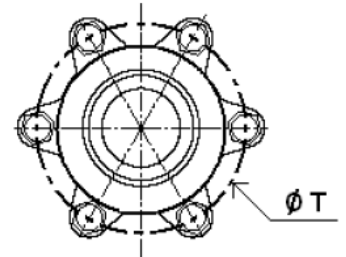
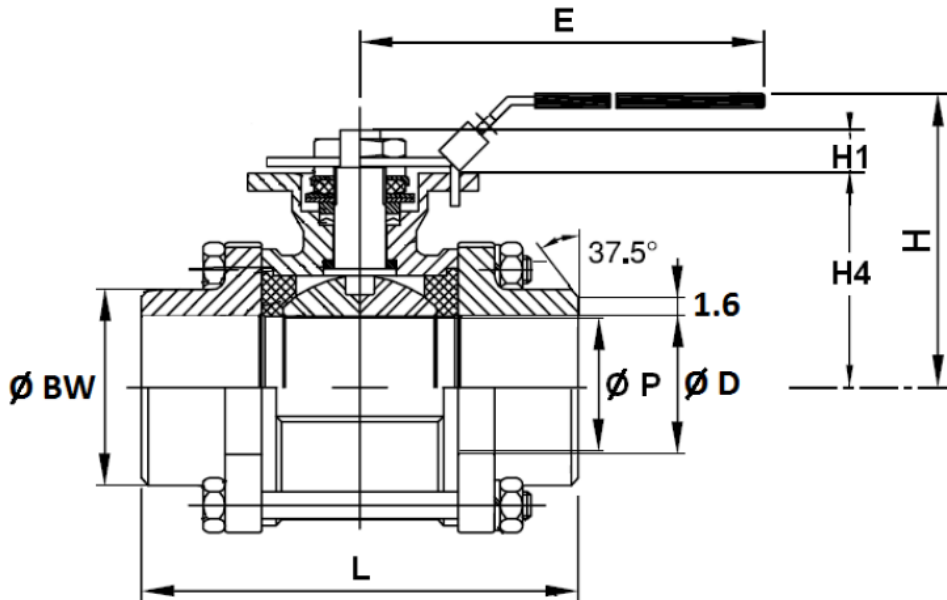
# K85

## K85 121 563.738 DN1/4"- DN4" Ball valve butt welding BW

SIZE WELDING B.W.TYPES REF. 738 ( in mm ) :



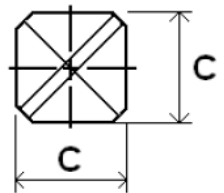
DN 8 - 80



DN 100

Stem size :

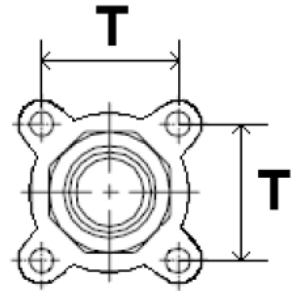
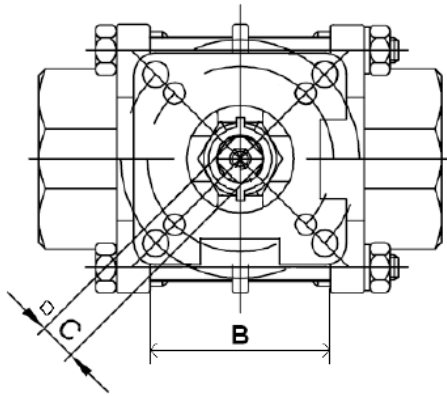
Ref.	DN	8	10	15	20	25	32	40	50	65	80	100	
738 BW	Ø D	11	12.5	15.8	20.9	26.6	35.1	40.9	52.5	62.7	77.9	102.3	
	Ø P	11	12.5	15	20	25	32	38.1	50	62.7	77.9	100	
	L	63.5	63.5	63.5	72.5	81	94.5	108	121.5	157.5	190	225	
	B	22.5	22.5	22.5	27.5	34	42.5	52	63.5	85.5	102	128.5	
	E	112	112	112	112	136	185	197.9	197.9	267	267	322	
	H	73	73	73	80.8	90.5	98.7	115.3	124	155	164.5	216.7	
	H1	8.5	8.5	8.5	8.5	9.5	9.5	14	13.7	18	18	18	
	H4	37	37	37	45	53.5	59	74.8	83.5	108.8	118.3	153.8	
	C	9	9	9	9	9	9	14	14	17	17	17	
	T	31	31	31	35	41	49	59	71	91	107	195	
	Ø BW	13.7	17.1	21.3	26.7	33.4	42.2	48.3	60.3	73	88.9	114.3	
	Weight (Kg)		0.55	0.58	0.57	0.71	1	1.56	2.5	3.6	7.6	10.98	21



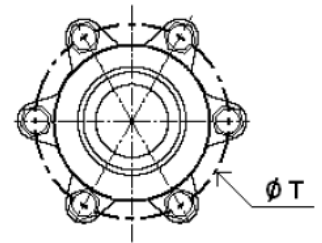
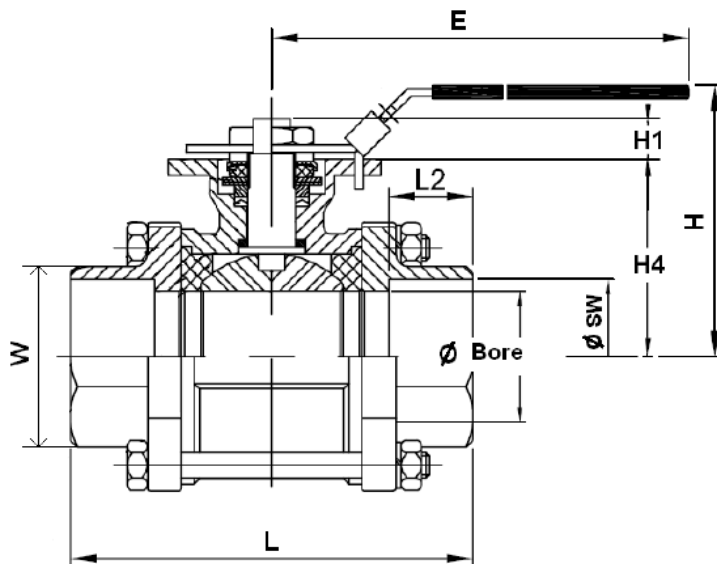
# K85

## K85 121 563.738 DN1/4" - DN4" Ball valve butt welding BW

SIZE WELDING S.W. TYPES REF. 739 ( in mm ) :

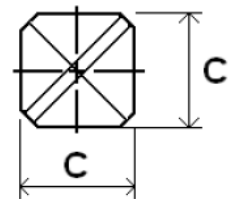


DN 8 – 80



DN 100

Stem size :

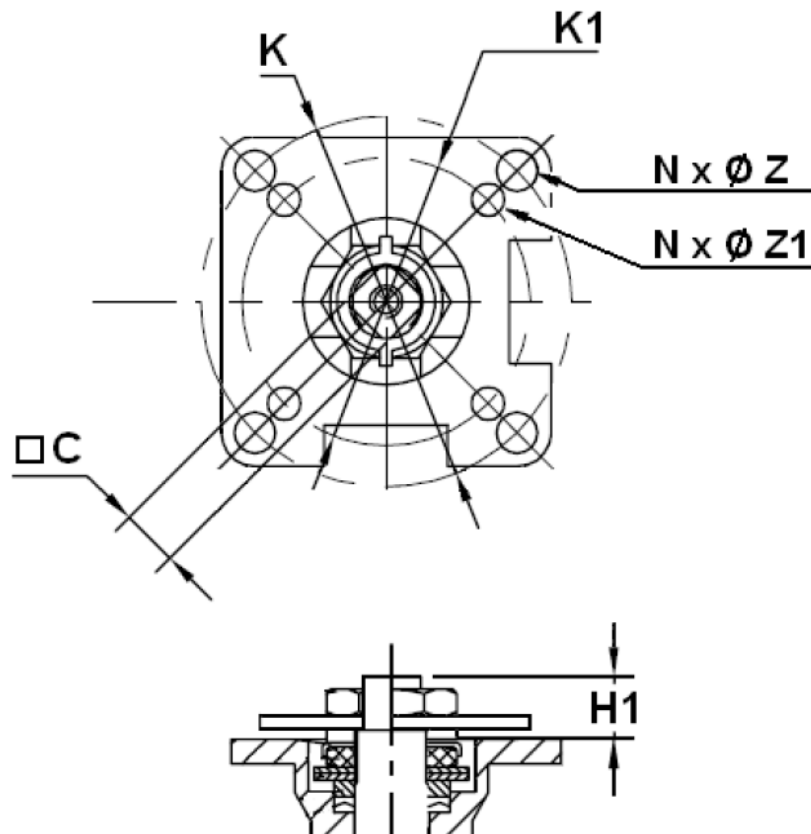


Ref.	DN	8	10	15	20	25	32	40	50	65	80	100
739	Ø Bore	11.5	12.5	15	20	25	32	38	50	65	80	100
	L	63.5	63.5	63.5	72.5	81	94.5	108	121.5	157.5	190	225
	B	22.5	22.5	22.5	27.5	34	42.5	52	63.5	85.5	102	128.5
	L2	10	10	10	13	13	13	13	16	16	16	22
	E	112	112	112	112	136	185	197.9	197.9	267	267	322
	H	73	73	73	80.8	90.5	98.7	115.3	124	155	164.5	216.7
	H1	8.5	8.5	8.5	8.5	9.5	9.5	14	13.7	18	18	18
	H4	37	37	37	45	53.5	59	74.8	83.5	108.8	118.3	153.8
SW	C	9	9	9	9	9	9	14	14	17	17	17
	T	31	31	31	35	41	49	59	71	91	107	195
	W ( on flat )	28	28	28	34	42	50	58	70	88	103	128
	Ø SW	14.2	17.5	21.8	27.4	34.1	42.7	49	61	77	90.2	115.3
	Weight ( Kg )	0.64	0.62	0.58	0.74	1.03	1.62	2.5	3.67	7.7	10.98	21

# K85

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Ball valve butt welding BW

ISO MOUNTING PAD AND STEM SIZE ( in mm ) :



DN	1/4"	3/8"	1/2"	3/4"	1"	1"1/4	1"1/2	2"	2"1/2	3"	4"
C	9	9	9	9	9	9	14	14	17	17	17
H1	8.5	8.5	8.5	8.5	9.5	9.5	14	13.7	18	18	18
$\varnothing K$	50	50	50	50	50	50	70	70	102	102	102
ISO	F05	F05	F05	F05	F05	F05	F07	F07	F10	F10	F10
$N \times \varnothing Z$	4 x 7	4 x 7	4 x 7	4 x 7	4 x 7	4 x 7	4 x 9	4 x 9	4 x 11	4 x 11	4 x 11
$\varnothing K1$	36	36	36	36	36	36	50	50	70	70	70
ISO 1	F03	F03	F03	F03	F03	F03	F05	F05	F07	F07	F07
$N \times \varnothing Z1$	4 x 6	4 x 6	4 x 6	4 x 6	4 x 6	4 x 6	4 x 7	4 x 7	4 x 9	4 x 9	4 x 9

# K85

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### TORQUE VALUES ( in Nm without safety coefficient ) :

DN	1/4"	3/8"	1/2"	3/4"	1"	1"1/4"	1"1/2"	2"	2"1/2"	3"	4"
Torque	7.6	7.6	7.6	14.5	21	25	35	60	80	88	190

### BOLT TIGHTENING TABLE ( in Nm):

DN	1/4"	3/8"	1/2"	3/4"	1"	1"1/4"	1"1/2"	2"	2"1/2"	3"	4"
Torque ( Nm )	6.9	6.9	6.9	9.8	9.8	11.8	15.7	20.6	54.9	73.5	94.1

### FLOW COEFFICIENT Kvs ( M3 / h ) :

DN	1/4"	3/8"	1/2"	3/4"	1"	1"1/4"	1"1/2"	2"	2"1/2"	3"	4"
Kvs ( m3/h )	17.2	21	31.3	57.9	94.3	157.9	227.9	414.8	720.2	1091	1754

### STANDARDS :

- Fabrication according to ISO 9001 : 2008
- DIRECTIVE 97/23/CE : CE N° 0038  
Risk category III Module H
- Certificate 3.1 on request
- Construction according EN 12516
- Designing according to ASME B16.34
- Pressure tests according to EN 12266-1, rate A
- Threaded cylindrical BSP ends according to ISO 228-1
- 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
- Tightness on stem according to TA LUFT VDI 2440/3.3.1.3



# K85

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### 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 lenght 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"	2"1/2	3"	4"
Torque ( Nm )	6.9	6.9	6.9	9.8	9.8	11.8	15.7	20.6	54.9	73.5	94.1

#### CLEANING AND TESTS

Keep closed the valves during the cleaning operation so that there's 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.

#### MAITENANCE

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 impatcs,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 paking 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.