GEMÜ 717

Manually operated ball valve

EN **Operating instructions**

further information
webcode: GW-717

Contents

1 General information

1.1 Information

- The descriptions and instructions apply to the standard versions. For special versions not described in this document the basic information contained herein applies in combination with any additional special documentation.
- Correct installation, operation, maintenance and repair work ensure faultless operation of the product.
- Should there be any doubts or misunderstandings, the German version is the authoritative document.
- Contact us at the address on the last page for staff training information.

1.2 Symbols used

The following symbols are used in this document:

Symbol	Meaning
●	Tasks to be performed
▶	Response(s) to tasks
–	Lists

1.3 Definition of terms

Working medium

The medium that flows through the GEMÜ product.

1.4 Warning notes

Wherever possible, warning notes are organised according to the following scheme:

SIGNAL WORD	
Possible symbol for the specific danger	Type and source of the danger ▶ Possible consequences of non-observance. ● Measures for avoiding danger.

Warning notes are always marked with a signal word and sometimes also with a symbol for the specific danger.

The following signal words and danger levels are used:

⚠ DANGER

Imminent danger!

▶ Non-observance can cause death or severe injury.

⚠ WARNING

Potentially dangerous situation!

▶ Non-observance can cause death or severe injury.

⚠ CAUTION

Potentially dangerous situation!

▶ Non-observance can cause moderate to light injury.

NOTICE

Potentially dangerous situation!

▶ Non-observance can cause damage to property.

The following symbols for the specific dangers can be used within a warning note:

Symbol	Meaning
	Danger of explosion
	Corrosive chemicals!
	Hot plant components!

2 Safety information

The safety information in this document refers only to an individual product. Potentially dangerous conditions can arise in combination with other plant components, which need to be considered on the basis of a risk analysis. The operator is responsible for the production of the risk analysis and for compliance with the resulting precautionary measures and regional safety regulations.

The document contains fundamental safety information that must be observed during commissioning, operation and maintenance. Non-compliance with these instructions may cause:

- Personal hazard due to electrical, mechanical and chemical effects.
- Hazard to nearby equipment.
- Failure of important functions.
- Hazard to the environment due to the leakage of dangerous materials.

The safety information does not take into account:

- Unexpected incidents and events, which may occur during installation, operation and maintenance.
- Local safety regulations which must be adhered to by the operator and by any additional installation personnel.

Prior to commissioning:

1. Transport and store the product correctly.
2. Do not paint the bolts and plastic parts of the product.
3. Carry out installation and commissioning using trained personnel.
4. Provide adequate training for installation and operating personnel.
5. Ensure that the contents of the document have been fully understood by the responsible personnel.
6. Define the areas of responsibility.
7. Observe the safety data sheets.
8. Observe the safety regulations for the media used.

During operation:

9. Keep this document available at the place of use.
10. Observe the safety information.
11. Operate the product in accordance with this document.
12. Operate the product in accordance with the specifications.
13. Maintain the product correctly.
14. Do not carry out any maintenance work and repairs not described in this document without consulting the manufacturer first.

In cases of uncertainty:

15. Consult the nearest GEMÜ sales office.

3 Product description

3.1 Construction

Item	Name	Materials
1	Ball valve body	PVC-U, PVC-C, ABS, PP-H or PVDF
2	Pipe connections	PVC-U, PVC-C, ABS, PP-H or PVDF
3	Anti-twist protection	POM
4	Hand lever	HIPVC
	Ball valve seals	FPM, EPDM, FFKM
	Ball valve seat seals	PTFE

3.2 Description

The GEMÜ 717 2/2 or 3/2-way plastic ball valve has an ergonomically designed hand lever and is manually operated. The seat seal is made from PTFE and the O-ring seals can be made from either EPDM or FKM.

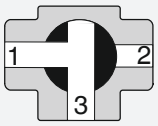
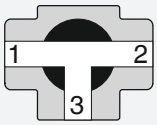
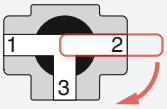
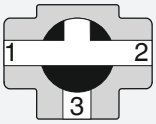
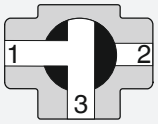
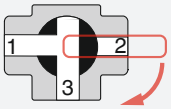
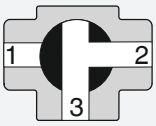
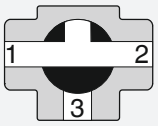
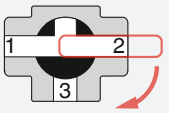
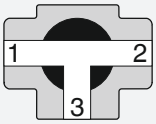
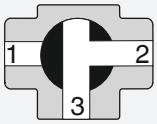
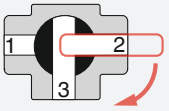
3.3 Function

The product is a 2/2 or 3/2-way plastic ball valve equipped with a plastic manual operator. The threaded connection locking device enables the unions to be locked in place.

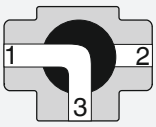
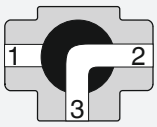
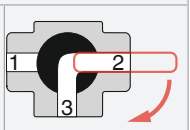
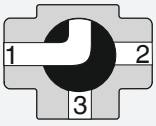
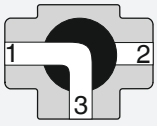
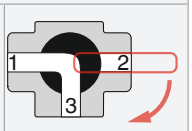
The valve body and the seal material are available in various designs as shown in the datasheet. Optional accessories are available on request (see chapter "Accessories").

3.4 Port positions

3.4.1 T-port

	CLOSED end position	OPEN end position	Condition as supplied to customer OPEN
Delivery condition			
Code T			
Optional port positions, can be user adjusted			
Code 2			
Code 3			
Code 4			

3.4.2 L-port

	CLOSED end position	OPEN end position	Condition as supplied to customer OPEN
Delivery condition			
Code L			
Optional port positions, can be user adjusted			
Code 6			

3.4.3 Control ball

	View with a scale	Control ball
Code R		

	View with a scale	Control ball
For 0°- 90° control range, linear control characteristic between port position and percentage flow rate. For ball configuration (R), an indicator plate is fitted on the ball valve body. NOTE: Ball configuration (R) cannot be retrofitted to standard 2/2-way bodies at a later date.		

4 Correct use

⚠ DANGER

Danger of explosion

- ► Risk of death or severe injury.
- ● Do **not** use the product in potentially explosive zones.

⚠ WARNING

Improper use of the product

- ► Risk of severe injury or death.
- ► Manufacturer liability and guarantee will be void.
- ● Only use the product in accordance with the operating conditions specified in the contract documentation and in this document.

The product is designed for installation in piping systems and for controlling a working medium.

The product is not intended for use in potentially explosive areas.

The product is controlled via a manual operator.

- ● Use the product in accordance with the technical data.

5 Order data

The order data provide an overview of standard configurations.

Please check the availability before ordering. Other configurations available on request.

Order codes

1 Type	Code
Ball valve, plastic, manually operated	717

2 DN	Code
DN 10	10
DN 15	15
DN 20	20
DN 25	25
DN 32	32
DN 40	40
DN 50	50
DN 65	65
DN 80	80
DN 100	100

3 Body configuration	Code
2/2-way body	D
Multi-port version	M

4 Connection type	Code
Union end with insert (solvent cement or weld socket) - DIN	2
Union end with flange EN 1092, PN 10, form B, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1	4
Union end with inch insert - BS (socket)	33
Union end with flange ANSI Class 125/150 RF	39
Union end with inch insert – ASTM (socket)	3M
Union end with JIS insert (socket)	3T
Union end with insert (for IR butt welding) - DIN	78
Union end with insert (Rp threaded socket) - DIN	7R

5 Ball valve material	Code
PVC-U, grey	1
PVC-C	2
PVDF	20
ABS	4
PP-H, grey	5

6 Seal material	Code
FKM	4
EPDM	14
FFKM	F5

7 Control function	Code
Manually operated	0

8 Ball config./port position	Code
2/2-way body	
R ball (control ball) for 0°- 90° control range linear control characteristic between port position and percentage flow rate	R
Multi-port version	
L-port, standard end position "Open", connection 2 and 3 open, L-port, standard end position "Closed", connection 1 and 3 open	L
T-port, standard end position "Open", connection 1, 2 and 3 open, T-port, standard end position "Closed", connection 1 and 3 open	T
T-port, end position "Open", connection 1 and 3 open, T-port, end position "Closed", connection 1 and 2 open	2
T-port, end position "Open", connection 1 and 2 open, T-port, end position "Closed", connection 2 and 3 open	3
T-port, end position "Open", connection 2 and 3 open, T-port, end position "Closed", connection 1, 2 and 3 open	4
L-port, end position "Open", connection 1 and 3 open, L-port, end position "Closed", connection 1 open	6

9 Type of design	Code
Without	
Insert in PE	1187

Order example

Order option	Code	Description
1 Type	717	Ball valve, plastic, manually operated
2 DN	15	DN 15
3 Body configuration	M	Multi-port version
4 Connection type	33	Union end with inch insert - BS (socket)
5 Ball valve material	1	PVC-U, grey
6 Seal material	14	EPDM
7 Control function	0	Manually operated
8 Ball config./port position	L	L-port, standard end position "Open", connection 2 and 3 open, L-port, standard end position "Closed", connection 1 and 3 open
9 Type of design		Without

6 Technical data

6.1 Medium

Betriebsmedium: Corrosive, inert, gaseous and liquid media and steam which have no negative impact on the physical and chemical properties of the body and seal material.

6.2 Temperature

Medientemperatur: see Pressure / temperature diagram

Seal material: FPM: -15 – 210 °C
EPDM: -20 – 95 °C

Umgebungstemperatur: Valve body ABS: -20 to 60 °C

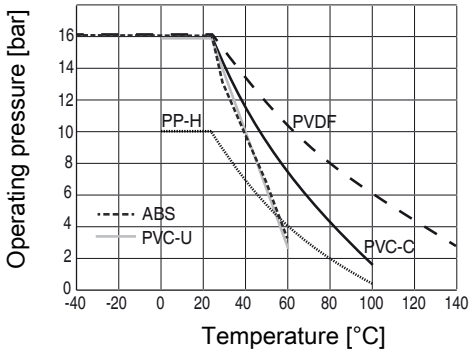
Valve body PP-H: 5 to 60 °C

Valve body PVC-U, PVC-C: 10 to 50 °C

Valve body PVDF: -5 to 50 °C

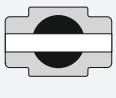
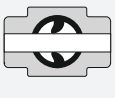
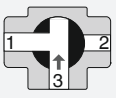
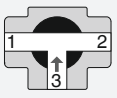
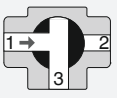
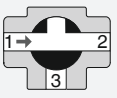
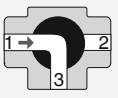
6.3 Pressure

Operating pressure: Pressure / temperature diagram



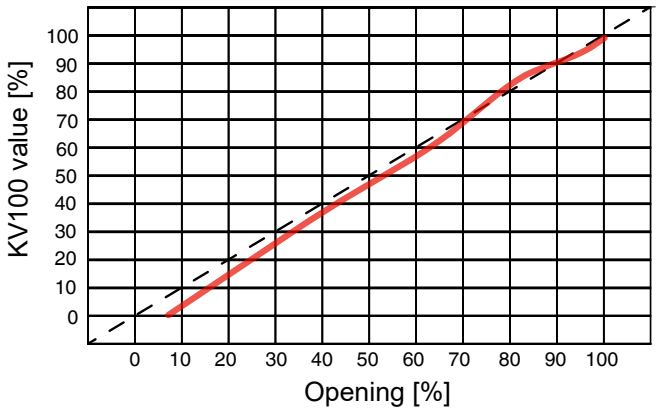
Data for extended temperature ranges on request. Please note that the ambient temperature and media temperature generate a combined temperature at the valve body which must not exceed the above values.

Kv values:

DN	Body configuration						
	2/2-way		Multi-port (code M)				
	(code D)	(code R)	T-port	T-port	T-port	T-port	L-port
							
10	4.8	4.98	2.2	1.5	2.4	4.7	2.9
15	12.0	5.28	3.3	2.1	3.9	11.7	4.4
20	23.1	8.10	8.1	5.7	8.7	22.8	9.0
25	46.2	15.36	12.3	8.4	14.7	45.6	15.9
32	66.0	28.68	23.4	16.2	27.6	63.0	28.5
40	105.0	35.52	28.5	19.8	36.0	102.0	37.2
50	204.0	64.08	54.0	37.2	72.0	192.0	73.2
65	315.0	-	-	-	-	-	-
80	426.0	-	-	-	-	-	-
100	570.0	-	-	-	-	-	-

Kv values in m³/h

Control diagram: with control ball (code R)



For 0°- 90° control range, linear control characteristic between port position and percentage flow rate.

NOTE: Ball configuration (R) cannot be retrofitted to standard 2/2-way bodies at a later date.

6.4 Mechanical data

Torques:

DN	2/2-way code D				Multi-port code M		
	PN 6	PN 10	PN 16		PN 10		PN 16
	Material code [1)]						
	1, 2, 4, 5, 20	5	1, 2, 20	4	1, 2	5	1, 2
10	-	2.4	3.6	3.0	-	-	-
15	-	2.4	3.6	3.0	2.4	2.4	3.6
20	-	3.6	4.0	4.0	3.6	3.6	4.8
25	-	4.8	6.0	6.0	5.0	5.0	5.4
32	-	7.2	7.2	7.2	7.2	7.2	11.5
40	-	8.6	10.0	10.0	9.6	10.0	14.8
50	-	12.4	16.0	16.0	14.8	14.8	23.3
65	20.0	25.0	30.0	30.0	-	-	-
80	25.0	35.0	45.0	45.0	-	-	-
100	40.0	55.0	65.0	65.0	-	-	-

Torques in Nm

1) **Ball valve material**
Code 1: PVC-U, grey
Code 2: PVC-C
Code 4: ABS
Code 5: PP-H, grey
Code 20: PVDF

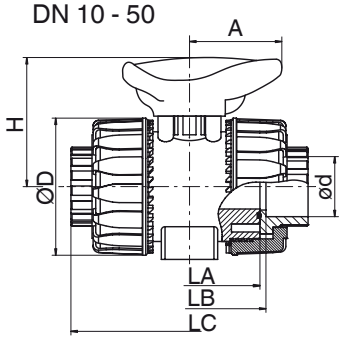
7 Dimensions

7.1 2/2-way body

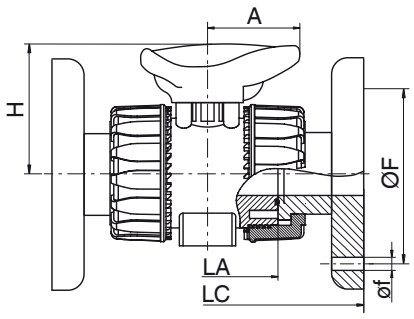
7.1.1 Valve body material PVC-U (code 1), body configuration D

Socket
connection type code 2, 33, 3M, 3T, 7R

DN 10 - 50

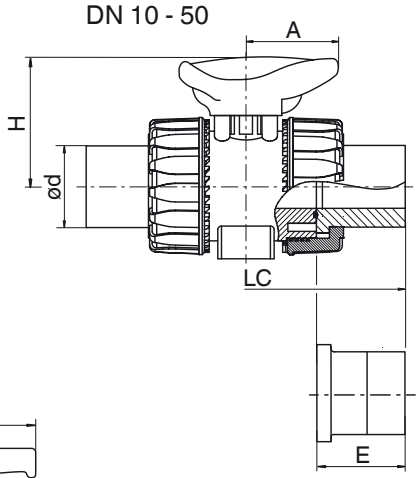


Flange
connection type code 4, 39

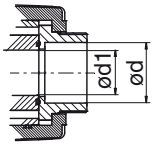


Butt weld spigot
connection type code 2 (PVDF), 78, 78*

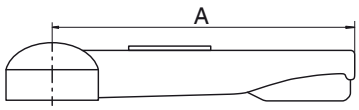
DN 10 - 50



Connection type
code 3M



Hand lever DN 65 - 100



DN	Connection type code [1]						4	39	78*	4	39	4	39	78*
	d	ød	ØD	A	H	LA	LC			øf		ØF		E
15	1/2“	20.0	54.0	40.0	54.0	65.0	130.0	143.0	175.0	14.0	15.9	65.0	60.3	55.0
20	3/4“	25.0	65.0	49.0	65.0	70.0	150.0	172.0	210.0	14.0	15.9	75.0	69.9	70.0
25	1“	32.0	73.0	49.0	69.5	78.0	160.0	187.0	226.0	14.0	15.9	85.0	79.4	74.0
32	1 ¼“	40.0	86.0	64.0	82.5	88.0	180.0	190.0	243.0	18.0	15.9	100.0	88.9	78.0
40	1 ½“	50.0	98.0	64.0	89.0	93.0	200.0	212.0	261.0	18.0	15.9	110.0	98.4	84.0
50	2“	63.0	122.0	76.0	108.0	111.0	230.0	234.0	293.0	18.0	19.1	125.0	120.7	91.0
65	2 ½“	75.0	164.0	175.0	164.0	133.0	290.0	290.0	356.0	17.0	18.0	145.0	139.7	111.0
80	3“	90.0	203.0	272.0	177.0	149.0	310.0	310.0	390.0	17.0	18.0	160.0	152.4	118.0
100	4“	110.0	238.0	330.0	195.0	167.0	350.0	350.0	431.0	17.0	18.0	180.0	190.5	132.0

Dimensions in inch

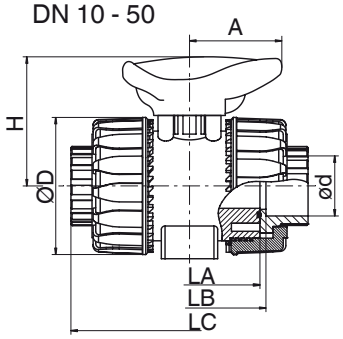
* Inserts according to valve body material,
special version: PE insert, design code 1187

1) **Connection type**
Code 4: Union end with flange EN 1092, PN 10, form B, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1
Code 39: Union end with flange ANSI Class 125/150 RF
Code 78: Union end with insert (for IR butt welding) - DIN

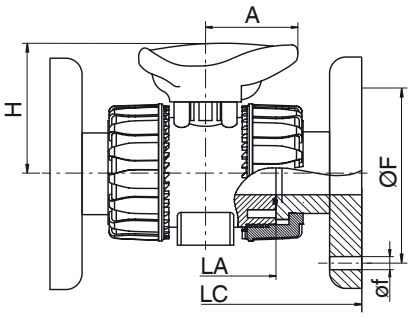
7.1.2 Valve body material PVC-U (code 1), body configuration D

Socket
connection type code 2, 33, 3M, 3T, 7R

DN 10 - 50

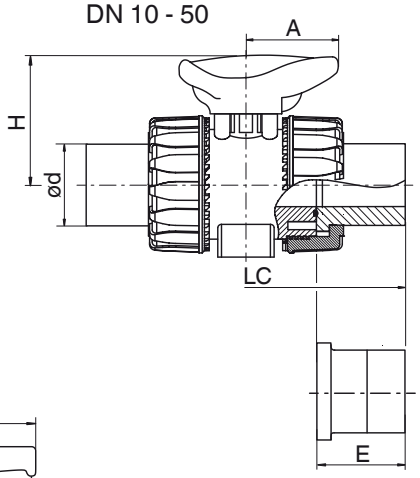


Flange
connection type code 4, 39

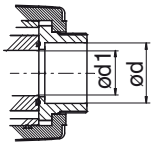


Butt weld spigot
connection type code 2 (PVDF), 78, 78*

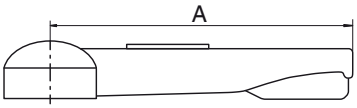
DN 10 - 50



Connection type
code 3M



Hand lever DN 65 - 100



DN	Connection type code [1]						33	2	33	3M	3T	7R	2	33	3M	3T	7R
	d	ød	ØD	A	LA	H	ød1	LB					LC				
10	3/8“	16.0	54.0	40.0	65.0	54.0	21.5	75.0	74.0	-	-	-	103.0	103.0	-	-	-
15	1/2“	20.0	54.0	40.0	65.0	54.0	26.9	71.0	70.0	72.0	71.0	80.0	103.0	103.0	117.0	131.0	110.0
20	3/4“	25.0	65.0	49.0	70.0	65.0	33.7	77.0	77.0	78.0	77.0	83.5	115.0	115.0	129.0	147.0	116.0
25	1“	32.0	73.0	49.0	78.0	69.5	42.4	84.0	83.0	84.6	84.0	96.0	128.0	128.0	142.0	164.0	134.0
32	1 ¼“	40.0	86.0	64.0	88.0	82.5	48.4	94.0	94.0	98.0	94.0	110.0	146.0	146.0	162.0	182.0	153.0
40	1 ½“	50.0	98.0	64.0	93.0	89.0	60.5	102.0	104.0	102.0	102.0	113.0	164.0	164.0	172.0	212.0	156.0
50	2“	63.0	122.0	76.0	111.0	108.0	-	123.0	127.0	122.6	122.0	134.5	199.0	199.0	199.0	248.0	186.0
65	2 ½“	75.0	164.0	175.0	133.0	164.0	-	147.0	147.0	146.0	145.0	174.5	235.0	235.0	235.0	267.0	235.0
80	3“	90.0	203.0	272.0	149.0	177.0	-	168.0	168.0	174.0	165.0	203.5	270.0	270.0	270.0	294.0	270.0
100	4“	110.0	238.0	330.0	167.0	195.0	-	186.0	182.0	193.0	202.0	229.5	308.0	308.0	308.0	370.0	308.0

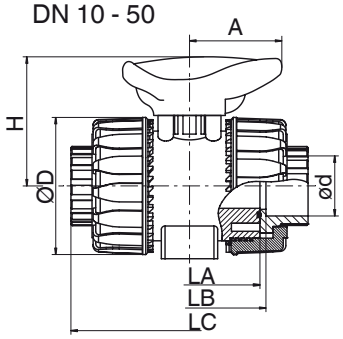
Dimensions in inch

1) **Connection type**
Code 2: Union end with insert (solvent cement or weld socket) - DIN
Code 33: Union end with inch insert - BS (socket)
Code 3M: Union end with inch insert – ASTM (socket)
Code 3T: Union end with JIS insert (socket)
Code 7R: Union end with insert (Rp threaded socket) - DIN

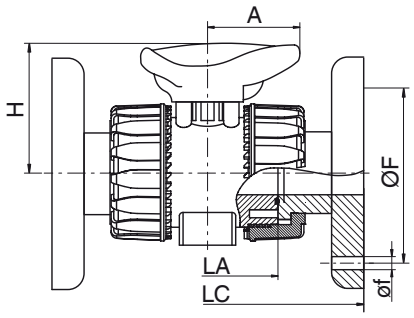
7.1.3 Valve body material PVC-C (code 2), body configuration D

Socket
connection type code 2, 33, 3M, 3T, 7R

DN 10 - 50

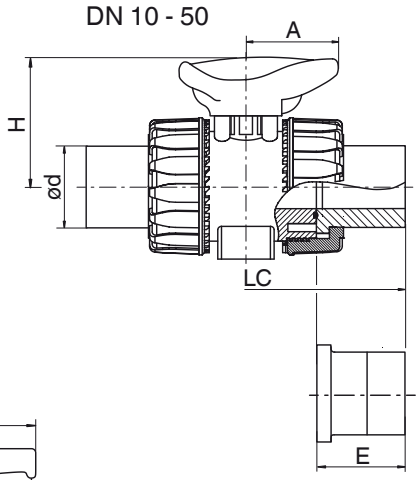


Flange
connection type code 4, 39

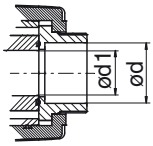


Butt weld spigot
connection type code 2 (PVDF), 78, 78*

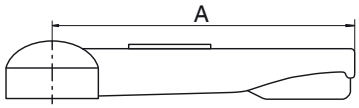
DN 10 - 50



Connection type
code 3M



Hand lever DN 65 - 100



DN	Connection type code [1]						2	3M	2	4	39	3M	4	39	4	39
	d	ød	øD	A	H	LA	LB		LC				øf		ØF	
10	3/8“	16.0	54.0	40.0	54.0	65.0	75.0	-	103.0	-	-	-	-	-	-	-
15	1/2“	20.0	54.0	40.0	54.0	65.0	71.0	72.0	103.0	130.0	143.0	117.0	14.0	15.9	65.0	60.3
20	3/4“	25.0	65.0	49.0	65.0	70.0	77.0	78.0	115.0	150.0	172.0	129.0	14.0	15.9	75.0	69.9
25	1“	32.0	73.0	49.0	69.5	78.0	84.0	84.6	128.0	160.0	187.0	142.0	14.0	15.9	85.0	79.4
32	1 ¼“	40.0	86.0	64.0	82.5	88.0	94.0	98.0	146.0	180.0	190.0	162.0	18.0	15.9	100.0	88.9
40	1 ½“	50.0	98.0	64.0	89.0	93.0	102.0	102.0	164.0	200.0	212.0	172.0	18.0	15.9	110.0	98.4
50	2“	63.0	122.0	76.0	108.0	111.0	123.0	122.6	199.0	230.0	234.0	199.0	18.0	19.1	125.0	120.7
65	2 ½“	75.0	164.0	175.0	164.0	133.0	147.0	146.0	235.0	290.0	290.0	235.0	17.0	18.0	145.0	139.7
80	3“	90.0	203.0	272.0	177.0	149.0	168.0	174.0	270.0	310.0	310.0	270.0	17.0	18.0	160.0	152.4
100	4“	110.0	238.0	330.0	195.0	167.0	186.0	193.0	308.0	350.0	350.0	308.0	17.0	18.0	180.0	190.5

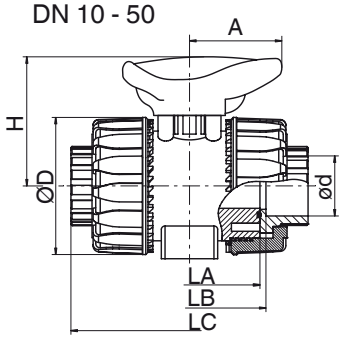
Dimensions in inch

1) **Connection type**
Code 2: Union end with insert (solvent cement or weld socket) - DIN
Code 4: Union end with flange EN 1092, PN 10, form B, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1
Code 39: Union end with flange ANSI Class 125/150 RF
Code 3M: Union end with inch insert – ASTM (socket)

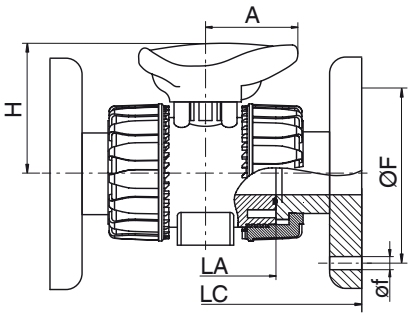
7.1.4 Valve body material ABS (code 4), body configuration D

Socket
connection type code 2, 33, 3M, 3T, 7R

DN 10 - 50

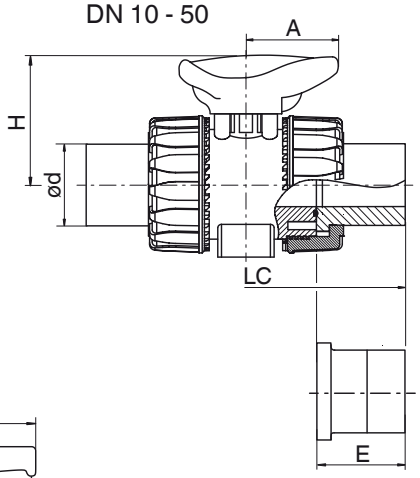


Flange
connection type code 4, 39

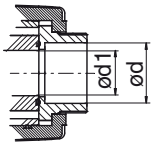


Butt weld spigot
connection type code 2 (PVDF), 78, 78*

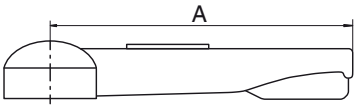
DN 10 - 50



Connection type
code 3M



Hand lever DN 65 - 100



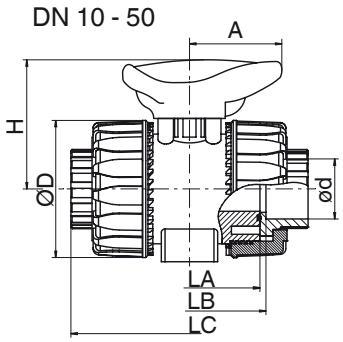
DN	Connection type code [1]						2	7R	33	2, 33	7R
	d	ød	øD	A	LA	H	LB			LC	
10	3/8"	15.0	55.0	40.0	65.0	49.0	75.0	-	75.0	103.0	-
15	1/2“	20.0	55.0	40.0	65.0	49.0	71.0	80.0	71.0	103.0	110.0
20	3/4“	25.0	66.0	49.0	70.0	59.0	77.0	83.4	77.0	115.0	116.0
25	1“	32.0	75.0	49.0	78.0	66.0	84.0	95.8	84.0	128.0	134.0
32	1 ¼“	40.0	87.0	64.0	88.0	75.0	94.0	110.2	94.0	146.0	153.0
40	1 ½“	50.0	100.0	64.0	93.0	87.0	102.0	113.2	102.0	164.0	156.0
50	2“	63.0	122.0	76.0	111.0	101.0	123.0	134.6	123.0	199.0	186.0
65	2 ½“	75.0	164.0	175.0	133.0	164.0	147.0	-	147.0	235.0	-
80	3“	90.0	203.0	272.0	149.0	177.0	168.0	-	168.0	270.0	-
100	4“	110.0	238.0	330.0	167.0	195.0	186.0	-	186.0	308.0	-

Dimensions in inch

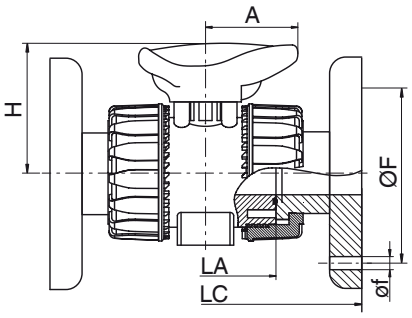
1) **Connection type**
Code 2: Union end with insert (solvent cement or weld socket) - DIN
Code 33: Union end with inch insert - BS (socket)
Code 7R: Union end with insert (Rp threaded socket) - DIN

7.1.5 Valve body material PP-H (code 5), body configuration D

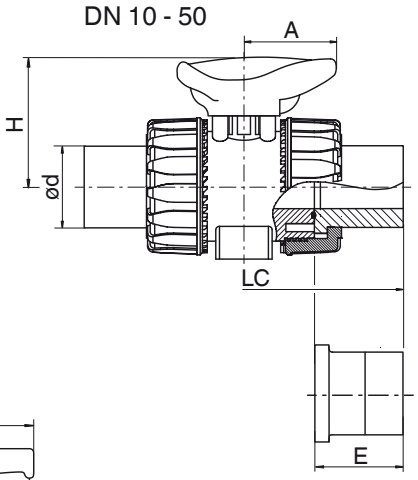
Socket
connection type code 2, 33, 3M, 3T, 7R



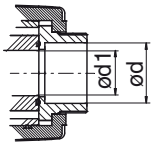
Flange
connection type code 4, 39



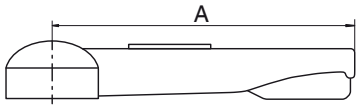
Butt weld spigot
connection type code 2 (PVDF), 78, 78*



Connection type
code 3M



Hand lever DN 65 - 100



DN	Connection type code [1]						2	7R	2	4	39	78/78 *	7R	78/78 *	4	39	4	39
	d	ød	øD	A	H	LA	LB		LC					E	øf		ØF	
10	3/8“	16.0	54.0	40.0	-	65.0	75.0	-	102.0	-	-	-	-	-	-	-	-	-
15	1/2“	20.0	54.0	40.0	54.0	65.0	73.0	80.0	102.0	130.0	143.0	175.0	110.0	55.0	14.0	15.9	65.0	60.3
20	3/4“	25.0	65.0	49.0	65.0	70.0	82.0	83.0	114.0	150.0	172.0	210.0	116.0	70.0	14.0	15.9	75.0	69.9
25	1“	32.0	73.0	49.0	69.5	78.0	90.0	96.0	126.0	160.0	187.0	226.0	134.0	77.0	14.0	15.9	85.0	79.4
32	1 ¼“	40.0	86.0	64.0	82.5	88.0	100.0	110.0	141.0	180.0	190.0	243.0	153.0	78.0	18.0	15.9	100.0	88.9
40	1 ½“	50.0	98.0	64.0	89.0	93.0	117.0	113.0	164.0	200.0	212.0	261.0	156.0	84.0	18.0	15.9	110.0	98.4
50	2“	63.0	122.0	76.0	108.0	111.0	144.0	134.0	199.0	230.0	234.0	293.0	186.0	91.0	18.0	15.9	125.0	120.7
65	2 ½“	75.0	164.0	175.0	164.0	133.0	153.0	-	213.0	290.0	290.0	356.0	-	111.0	17.0	18.0	145.0	139.7
80	3“	90.0	203.0	272.0	177.0	149.0	173.0	-	239.0	310.0	310.0	390.0	-	118.0	17.0	18.0	160.0	152.4
100	4“	110.0	238.0	330.0	195.0	167.0	199.0	-	268.0	350.0	350.0	431.0	-	132.0	17.0	18.0	180.0	190.5

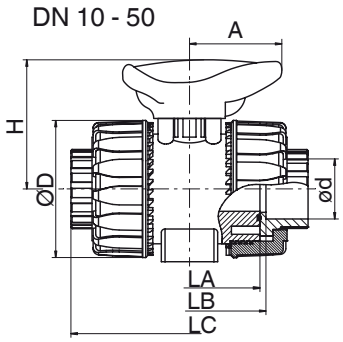
Dimensions in inch

* Inserts according to valve body material,
special version: PE insert, design code 1187

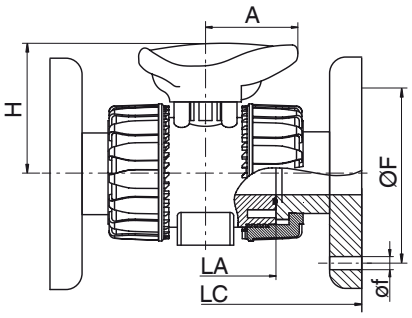
1) **Connection type**
Code 2: Union end with insert (solvent cement or weld socket) - DIN
Code 4: Union end with flange EN 1092, PN 10, form B, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1
Code 39: Union end with flange ANSI Class 125/150 RF
Code 78: Union end with insert (for IR butt welding) - DIN
Code 7R: Union end with insert (Rp threaded socket) - DIN

7.1.6 Valve body material PVDF (code 20), body configuration D

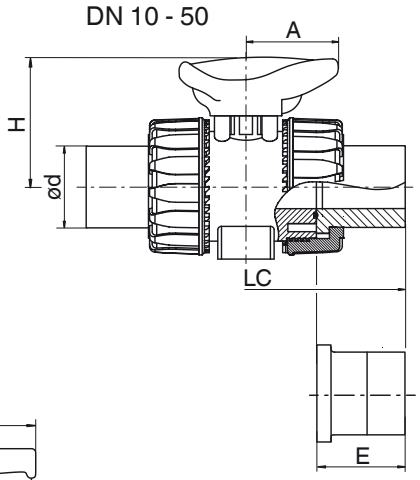
Socket
connection type code 2, 33, 3M, 3T, 7R



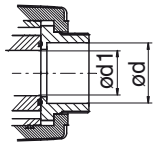
Flange
connection type code 4, 39



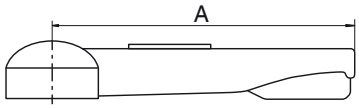
Butt weld spigot
connection type code 2 (PVDF), 78, 78*



Connection type
code 3M



Hand lever DN 65 - 100



DN	Connection type code [1]						2	2	4	78	4	39	4	39	78*
	d	ød	øD	A	H	LA	LB	LC			øf		ØF		E
10	-	16.0	54.0	40.0	54.0	65.0	74.5	102.0	-	-	-	-	-	-	-
15	1/2"	20.0	54.0	40.0	54.0	65.0	73.0	102.0	130.0	124.0	14.0	15.9	65.0	60.5	30.0
20	3/4"	25.0	65.0	49.0	65.0	70.0	82.0	114.0	150.0	144.0	14.0	15.9	75.0	70.0	37.0
25	1"	32.0	73.0	49.0	69.5	78.0	90.0	126.0	160.0	154.0	14.0	15.9	85.0	79.5	39.5
32	1 ¼"	40.0	86.0	64.0	82.5	88.0	100.0	141.0	180.0	174.0	18.0	15.9	100.0	89.0	44.5
40	1 ½"	50.0	98.0	64.0	89.0	93.0	117.0	164.0	200.0	194.0	18.0	15.9	110.0	98.5	51.5
50	2"	63.0	122.0	76.0	108.0	111.0	144.0	199.0	230.0	224.0	18.0	19.1	134.0	121.0	58.0
65	2 ½"	75.0	164.0	175.0	164.0	133.0	147.0	235.0	290.0	355.0	18.0	18.0	145.0	140.0	110.5
80	3"	90.0	203.0	272.0	177.0	149.0	173.0	239.0	310.0	389.0	18.0	18.0	160.0	152.5	118.5
100	4"	110.0	238.0	330.0	195.0	167.0	186.0	308.0	350.0	427.0	18.0	18.0	180.0	190.5	130.5

Dimensions in inch

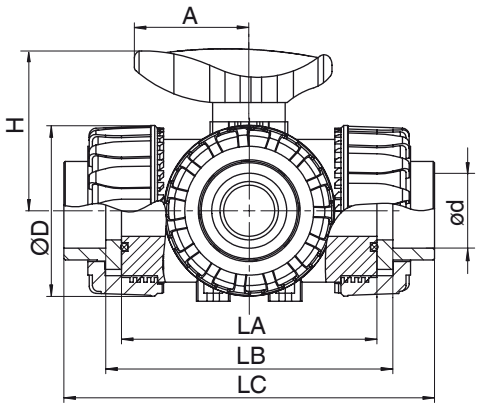
* Inserts according to valve body material,
special version: PE insert, design code 1187

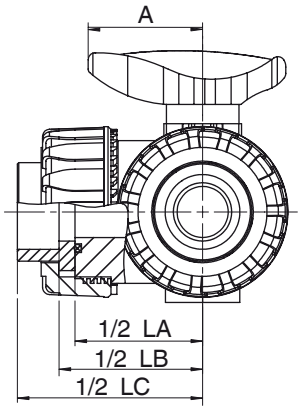
1) **Connection type**
Code 2: Union end with insert (solvent cement or weld socket) - DIN
Code 4: Union end with flange EN 1092, PN 10, form B, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1
Code 39: Union end with flange ANSI Class 125/150 RF
Code 78: Union end with insert (for IR butt welding) - DIN

7.2 Multi-port design

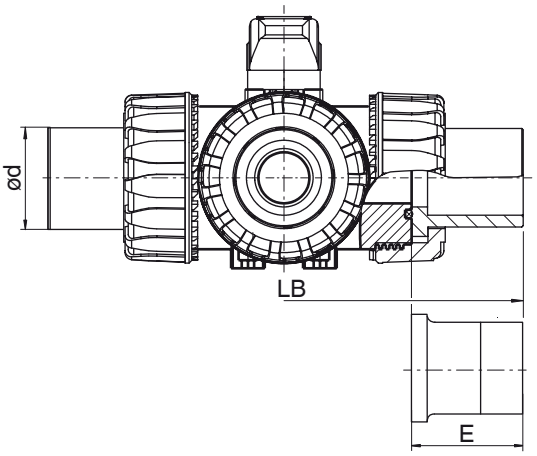
7.2.1 Valve body material PVC-U (code 1), body configuration M

Connection type code 2, 33, 3M, 3T, 7R





Connection type code 78, 78*



DN	Connection type code [1]						2	33	3M	3T	7R	2, 33	3M	3T	7R	78*	78*
	d	ød	ØD	A	H	LA	LB					LC					E
10	3/8“	16.0	54.0	40.0	54.0	80.0	90.0	-	-	-	-	118.0	-	-	-	-	-
15	1/2“	20.0	54.0	40.0	54.0	80.0	86.0	85.0	87.2	86.0	95.0	118.0	132.2	146.0	125.0	190.0	55.0
20	3/4“	25.0	65.0	49.0	65.0	100.0	107.0	106.8	108.2	107.0	114.0	145.0	159.2	177.0	146.0	240.0	70.0
25	1“	32.0	73.0	49.0	69.5	110.0	116.0	115.0	116.6	116.0	129.0	160.0	174.0	196.0	166.0	258.0	74.0
32	1 ¼“	40.0	86.0	64.0	82.5	131.0	136.5	136.6	141.0	137.0	151.0	188.5	205.0	225.0	195.5	287.0	78.0
40	1 ½“	50.0	98.0	64.0	89.0	148.0	157.0	159.0	157.6	157.2	166.0	219.0	227.6	267.2	211.0	316.0	84.0
50	2“	63.0	122.0	76.0	108.0	179.0	190.5	194.2	190.6	190.0	199.0	266.5	267.0	316.0	253.5	361.0	91.0

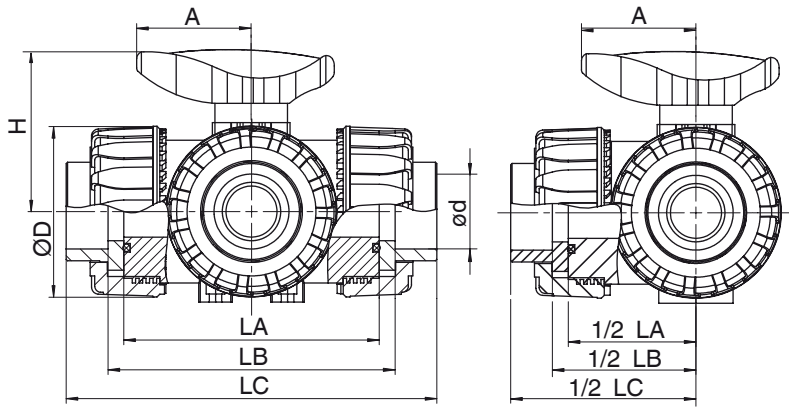
Dimensions in inch

* Inserts according to valve body material,
special version: PE insert, design code 1187

1) **Connection type**
Code 2: Union end with insert (solvent cement or weld socket) - DIN
Code 33: Union end with inch insert - BS (socket)
Code 3M: Union end with inch insert – ASTM (socket)
Code 3T: Union end with JIS insert (socket)
Code 78: Union end with insert (for IR butt welding) - DIN
Code 7R: Union end with insert (Rp threaded socket) - DIN

7.2.2 Valve body material PVC-C (code 2), body configuration M

Connection type code 2, 33, 3M, 3T, 7R



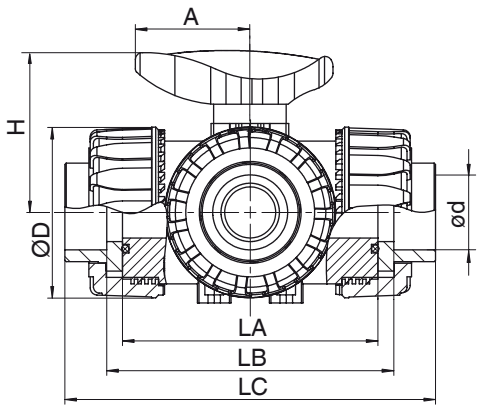
DN	Connection type code [1]						2	3M	2	3M
	d	ød	ØD	A	H	LA	LB		LC	
10	3/8"	16.0	54.0	40.0	54.0	80.0	90.0	-	118.0	-
15	1/2"	20.0	54.0	40.0	54.0	80.0	86.0	87.2	118.0	132.2
20	3/4"	25.0	65.0	49.0	65.0	100.0	107.0	108.2	145.0	159.2
25	1"	32.0	73.0	49.0	69.5	110.0	116.0	116.6	160.0	174.0
32	1 ¼"	40.0	86.0	64.0	82.5	131.0	136.5	141.0	188.5	205.0
40	1 ½"	50.0	98.0	64.0	89.0	148.0	157.0	157.6	219.0	227.6
50	2"	63.0	122.0	76.0	108.0	179.0	190.5	190.6	266.5	267.0

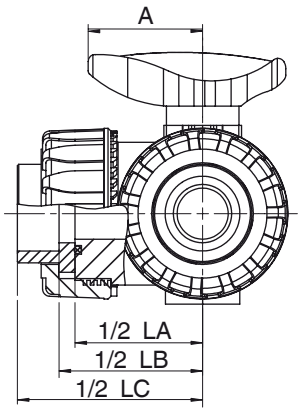
Dimensions in inch

1) **Connection type**
Code 2: Union end with insert (solvent cement or weld socket) - DIN
Code 3M: Union end with inch insert – ASTM (socket)

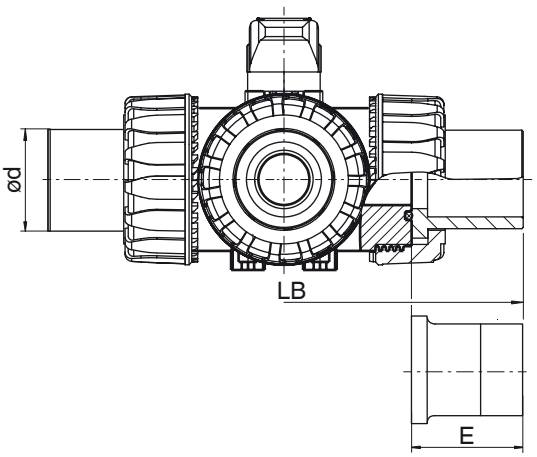
7.2.3 Valve body material ABS (code 4), body configuration M

Connection type code 2, 33, 3M, 3T, 7R





Connection type code 78, 78*



DN	Connection type code [1]						2	33	3M	3T	7R	2, 33	3M	3T	7R	78*	78*
	d	ød	ØD	A	H	LA	LB					LC					E
10	3/8"	16.0	54.0	40.0	54.0	80.0	90.0	-	-	-	-	118.0	-	-	-	-	-
15	1/2"	20.0	54.0	40.0	54.0	80.0	86.0	85.0	87.2	86.0	95.0	118.0	132.2	146.0	125.0	190.0	55.0
20	3/4"	25.0	65.0	49.0	65.0	100.0	107.0	106.8	108.2	107.0	114.0	145.0	159.2	177.0	146.0	240.0	70.0
25	1"	32.0	73.0	49.0	69.5	110.0	116.0	115.0	116.6	116.0	129.0	160.0	174.0	196.0	166.0	258.0	74.0
32	1 ¼"	40.0	86.0	64.0	82.5	131.0	136.5	136.6	141.0	137.0	151.0	188.5	205.0	225.0	195.5	287.0	78.0
40	1 ½"	50.0	98.0	64.0	89.0	148.0	157.0	159.0	157.6	157.2	166.0	219.0	227.6	267.2	211.0	316.0	84.0
50	2"	63.0	122.0	76.0	108.0	179.0	190.5	194.2	190.6	190.0	199.0	266.5	267.0	316.0	253.5	361.0	91.0

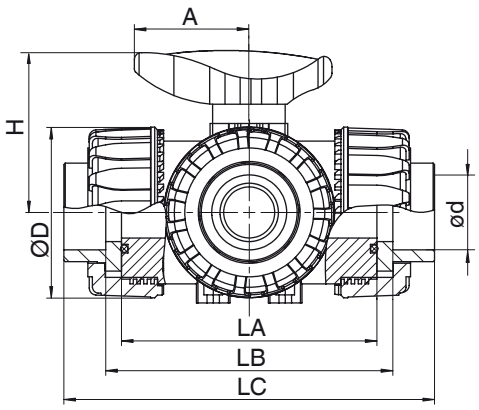
Dimensions in inch

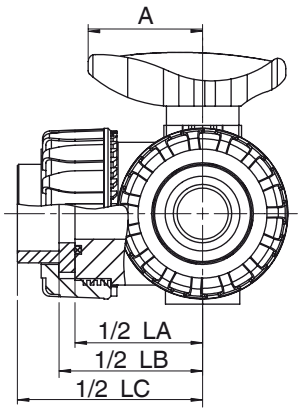
* Inserts according to valve body material,
special version: PE insert, design code 1187

1) **Connection type**
Code 2: Union end with insert (solvent cement or weld socket) - DIN
Code 33: Union end with inch insert - BS (socket)
Code 3M: Union end with inch insert – ASTM (socket)
Code 3T: Union end with JIS insert (socket)
Code 78: Union end with insert (for IR butt welding) - DIN
Code 7R: Union end with insert (Rp threaded socket) - DIN

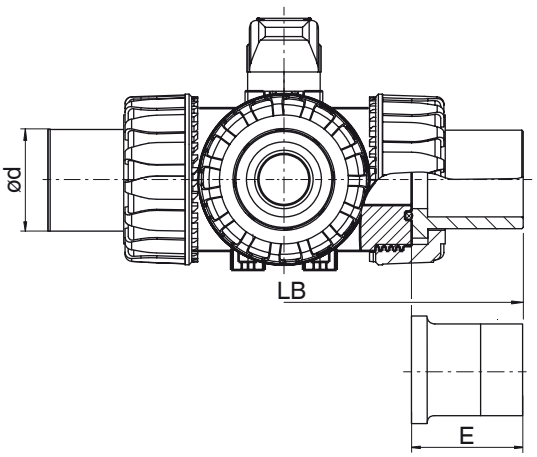
7.2.4 Valve body material PP-H (code 5), body configuration M

Connection type code 2, 33, 3M, 3T, 7R





Connection type code 78, 78*



DN	Connection type code [1]						2	7R	2	7R	78, 78*	78, 78*
	d	ød	ØD	A	H	LA	LB 1		LC			E
15	1/2"	20.0	54.0	40.0	54.0	80.0	88.0	87.0	117.0	117.0	190.0	55.0
20	3/4"	25.0	65.0	49.0	65.0	100.0	112.0	114.0	144.0	143.0	240.0	70.0
25	1"	32.0	69.5	49.0	69.5	110.0	122.0	120.0	158.0	157.0	258.0	74.0
32	1 ¼"	40.0	82.5	64.0	82.5	131.0	142.5	140.0	183.5	184.5	287.0	78.0
40	1 ½"	50.0	89.0	64.0	89.0	148.0	172.0	172.0	216.0	217.0	316.0	84.0
50	2"	63.0	108.0	76.0	108.0	179.0	211.5	211.0	266.5	265.5	361.0	91.0

Dimensions in inch

* Inserts according to valve body material,
special version: PE insert, design code 1187

1) **Connection type**
Code 2: Union end with insert (solvent cement or weld socket) - DIN
Code 78: Union end with insert (for IR butt welding) - DIN
Code 7R: Union end with insert (Rp threaded socket) - DIN

8 Manufacturer's information

8.1 Delivery

- Check that all parts are present and check for any damage immediately upon receipt.

The product's performance is tested at the factory. The scope of delivery is apparent from the dispatch documents and the design from the order number.

8.2 Packaging

The product is packaged in a cardboard box which can be recycled as paper.

8.3 Transport

1. Only transport the product by suitable means. Do not drop. Handle carefully.
2. After the installation dispose of transport packaging material according to relevant local or national disposal regulations / environmental protection laws.

8.4 Storage

1. Store the product free from dust and moisture in its original packaging.
2. Avoid UV rays and direct sunlight.
3. Do not exceed the maximum storage temperature (see chapter "Technical data").
4. Do not store solvents, chemicals, acids, fuels or similar fluids in the same room as GEMÜ products and their spare parts.

9 Installation in piping

9.1 Preparing for installation

⚠ WARNING

The equipment is subject to pressure!

► Risk of severe injury or death.
- Depressurize the plant.
- Completely drain the plant.

⚠ WARNING

Corrosive chemicals!

► Risk of caustic burns.
- Wear suitable protective gear.
- Completely drain the plant.

⚠ CAUTION

Hot plant components!

► Risk of burns.
- Only work on plant that has cooled down.

⚠ CAUTION

Exceeding the maximum permissible pressure.

► Damage to the product.
- Provide precautionary measures against exceeding the maximum permitted pressures caused by pressure surges (water hammer).

⚠ CAUTION

Use as step.

► Damage to the product.
► Risk of slipping-off.
- Choose the installation location so that the product cannot be used as a foothold.
- Do not use the product as a step or a foothold.

NOTICE

Suitability of the product!

► The product must be appropriate for the piping system operating conditions (medium, medium concentration, temperature and pressure) and the prevailing ambient conditions.

NOTICE

Tools

► The tools required for installation and assembly are not included in the scope of delivery.

● Use appropriate, functional and safe tools.

1. Ensure the product is suitable for the relevant application.
2. Check the technical data of the product and the materials.
3. Keep appropriate tools ready.
4. Wear appropriate protective gear, as specified in the plant operator's guidelines.
5. Observe appropriate regulations for connections.
6. Have installation work carried out by trained personnel.
7. Shut off plant or plant component.
8. Secure plant or plant component against recommissioning.
9. Depressurize the plant or plant component.
10. Completely drain the plant (or plant component) and let it cool down until the temperature is below the media vaporization temperature and cannot cause scalding.
11. Correctly decontaminate, rinse and ventilate the plant or plant component.
12. Lay piping so that the product is protected against transverse and bending forces, and also from vibrations and tension.
13. Only install the product between matching aligned pipes (see chapters below).
14. Please note the flow direction (see chapter "Flow direction").
15. Please note the installation position (see chapter "Installation position").

9.2 Installation with inserts for solvent cementing

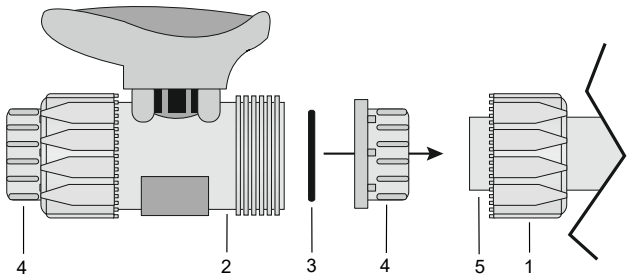
NOTICE

Solvent cement

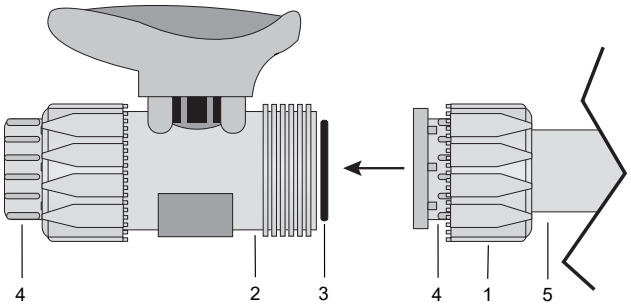
► The solvent cement is not included in the scope of delivery.

● Only use suitable solvent cement!

1. Carry out preparations for installation (see chapter "Preparations for installation").



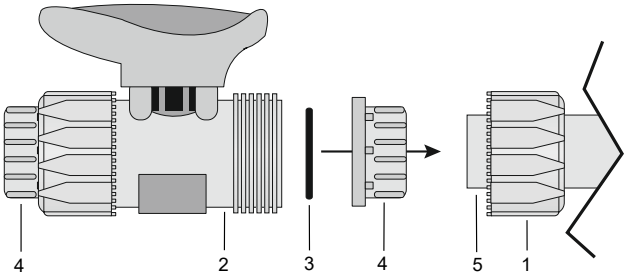
2. Unscrew the union nut **1** from the ball valve body **2**.
3. Reinsert the gasket **3** if necessary.



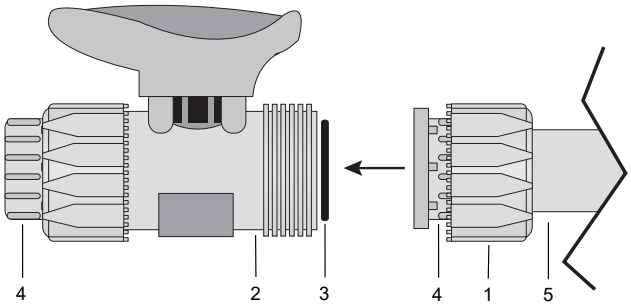
4. Push the union nut **1** over the piping **5**.
5. Prepare solvent cementing surfaces as specified by the solvent cement manufacturer.
6. Apply solvent cement on the inside of the insert **4** and on the outside of the piping **5** as specified by the solvent cement manufacturer.
7. Push the piping **5** into the insert **4**.
8. Screw the union nut **1** to the ball valve body **2** again.
9. Connect the other connections of the ball valve body **2** with the piping **5** in the same manner.

9.3 Installation with inserts for welding

1. Carry out preparations for installation (see chapter "Preparing for installation").
2. Adhere to good welding practices!



3. Unscrew the union nut **1** from the ball valve body **2**.
4. Reinsert the gasket **3** if necessary.



5. Push the union nut **1** over the piping **5**.
6. Push the piping **5** into the insert **4**.
7. Weld the piping **5** to the insert **4** with a suitable welding method and appropriate welding parameters and allow to cool down.
8. Screw the union nut **1** to the ball valve body **2** again.
9. Connect the other connections of the ball valve body **2** with the piping **5** in the same manner.

9.4 Installation with screw-type inserts

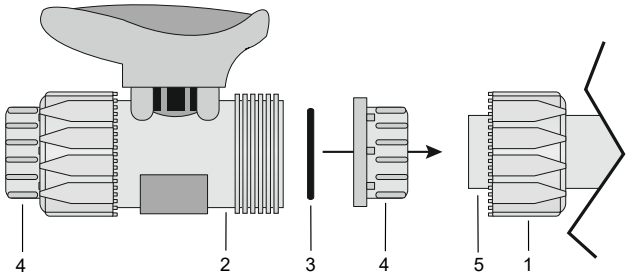
NOTICE

Thread sealant

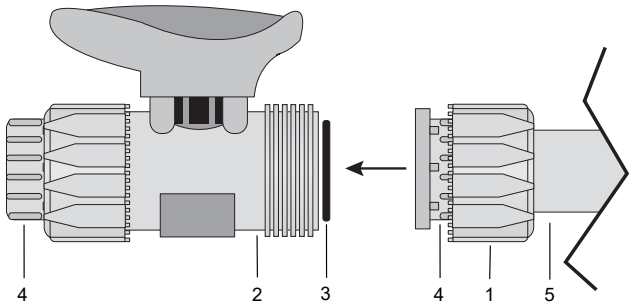
► The thread sealant is not included in the scope of delivery.

● Only use appropriate thread sealant.

1. Keep thread sealant ready.
2. Carry out preparations for installation (see chapter "Preparing for installation").



3. Unscrew the union nut **1** from the ball valve body **2**.
4. Reinsert the gasket **3** if necessary.



5. Push the union nut **1** over the piping **5**.
6. Apply thread sealant on connection thread.
7. Screw the insert **4** into the piping **5**.
8. Screw the union nut **1** to the ball valve body **2** again.
9. Connect the other connections of the ball valve body **2** with the piping **5** in the same manner.

9.5 Installation with flanged connection

NOTICE

Sealing material

► The sealing material is not included in the scope of delivery.
● Only use appropriate sealing material.

NOTICE

Connector elements

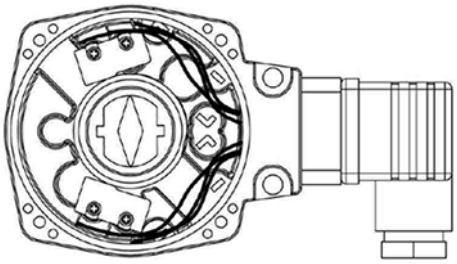
► The connector elements are not included in the scope of delivery.
● Only use connector elements made of approved materials.
● Observe permissible tightening torque of the bolts.

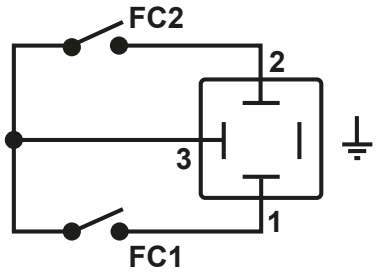
1. Keep sealing material ready.
2. Carry out preparations for installation (see chapter "Preparing for installation").
3. Ensure clean, undamaged sealing surfaces on the connection flanges.
4. Align flanges carefully before installing them.
5. Clamp the product centrally between the piping with flanges.
6. Centre the gaskets.
7. Connect the valve flange and the piping flange using appropriate sealing materials and matching bolting.
8. Use all flange holes.
9. Tighten the bolts diagonally.
10. Re-attach or reactivate all safety and protective devices.

10 Electrical connection of electrical position indicators (optional accessories)

10.1 Connection diagrams

Microswitch EP1





1 = Signal 1 - OPEN

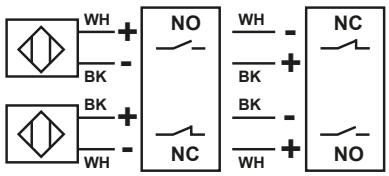
2 = Signal 2 - CLOSED

3 = Common GND

FC1 = Microswitch 1

FC2 = Microswitch 2

Proximity switch EP2 PNP/NPN, 2-wire



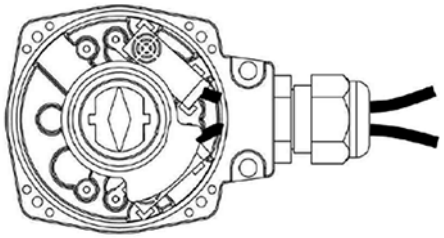
NO = Normally open

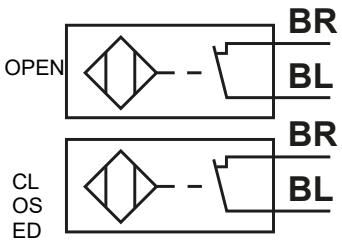
NC = Normally closed

WH = white

BK = black

Proximity switch EP3, Namur





BL = blue

BR = brown

11 Commissioning

1. Check the tightness and the function of the product (close and reopen the product). Due to the setting behavior of elastomers, the bolts may need to be retightened following the installation and commissioning of the valve.
2. Flush the piping system of new plant and following repair work (the product must be fully open).
   ⇨ Harmful foreign matter has been removed.
   ⇨ The product is ready for use.
3. Commission the product.

12 Operation

12.1 Handle

NOTICE

► The opening of the ball valves with a handle is variable but cannot be engaged and locked.

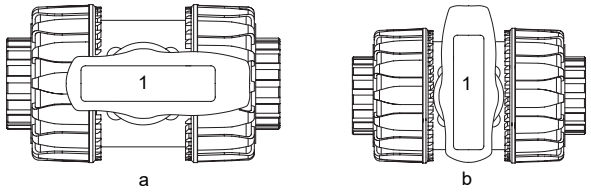


Fig. 1: Handle operation (DN 10 - 50)

Item	Name
1	Handle
a	Ball valve open
b	Ball valve closed

1. Move the handle **1** to the desired position.

NOTICE

► **Fully open ball valve:**
► Handle **1** is in piping direction.
► **Fully closed ball valve:**
► Handle **1** is across the piping.

Securing the handle (optional):

2. Remove the handle **1** from the ball valve.
3. Fit the locking device **2** of the handle.
4. Mount the handle **1** to the ball valve again.
5. Optional: Fit a padlock.

12.2 Hand lever

NOTICE

► The hand lever can be locked in 12 positions.

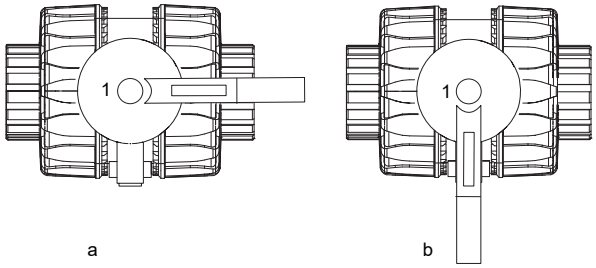


Fig. 2: Hand lever operation (DN 65 - 100)

Item	Name
1	Hand lever
a	Ball valve open
b	Ball valve closed

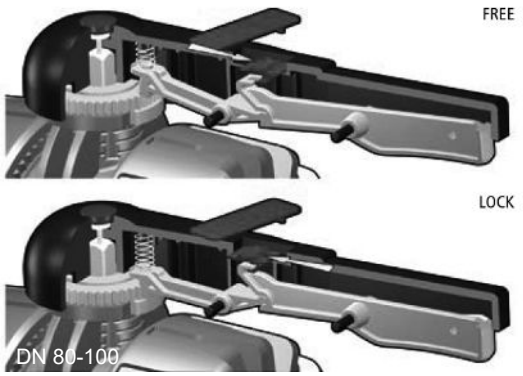
1. Move the hand lever 1 to the desired position.

NOTICE

► **Fully open ball valve:**
► Hand lever **1** is in piping direction.
► **Fully closed ball valve:**
► Hand lever **1** is across the piping.

Securing the hand lever:

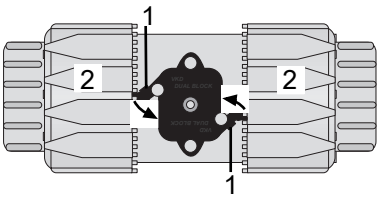
2. Open the cover of the hand lever **1** (for DN 80 - 100).
3. Move the red lever to the "LOCK" position.



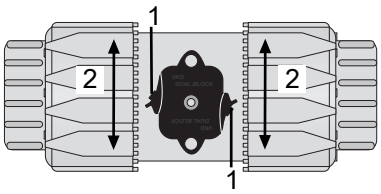
4. Optional: Fit a padlock.

12.3 Threaded connection locking devices

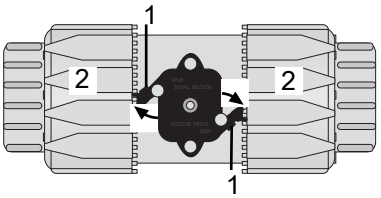
2/2-way ball valve DN 10–50



1. Press the latches **1** together and hold in position.
   ⇨ The teeth of the threaded connection locking device are retracted.

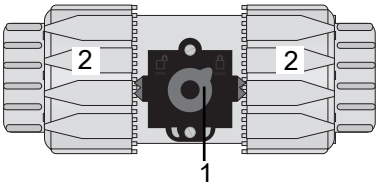


2. Turn the union nuts **2** to the desired position.

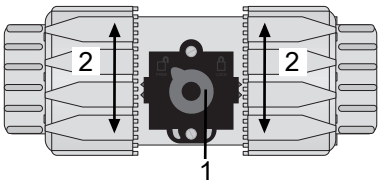


3. Release the latches **1** of the threaded connection locking device.
   ⇨ The teeth of the threaded connection locking device engage with the teeth of the union nuts 2 and fix them in place.

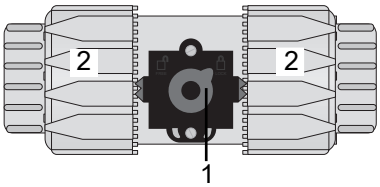
2/2-way ball valve DN 65–100



4. Turn the red blocking knob anticlockwise to the **FREE** position.
   ⇨ The teeth of the threaded connection locking device are retracted.

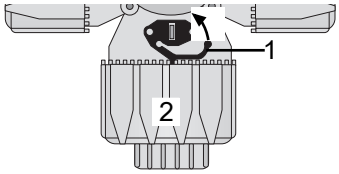


5. Turn the union nuts **2** to the desired position.

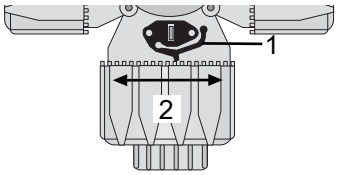


6. Turn the red blocking knob clockwise to the **LOCK** position.
   ⇨ The teeth of the threaded connection locking device engage with the teeth of the union nuts **2** and fix them in place.

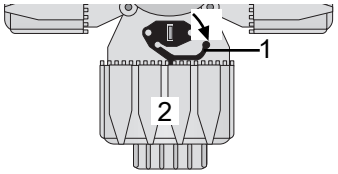
3/2-way ball valve



7. Press the latch **1** together and hold in position.
   ⇨ The tooth of the threaded connection locking device is retracted.



8. Turn the union nut **2** to the desired position.



9. Release the latch **1** of the threaded connection locking device.
   ⇨ The tooth of the threaded connection locking device engages with the teeth of the union nut **2** and fixes it in place.

13 Troubleshooting

Error	Possible cause	Troubleshooting
The product doesn't open or doesn't open fully	Foreign matter in the product	Remove and clean the product
The product doesn't close or doesn't close fully	Foreign matter in the product	Remove and clean the product
Joint between ball valve body and piping is leaking	Ball valve body installed incorrectly in piping	Check installation of ball valve body in piping
	Flange bolting loose/thread leaking	Retighten flange bolting / reseal threads
	Sealing material faulty	Replace sealing material
Ball valve body leaking	Ball valve body faulty	Check ball valve body for potential damage and replace if necessary
No flow	Ball incorrectly adjusted	Turn ball to the correct position

14 Inspection and maintenance

The operator must carry out regular visual examination of the GEMÜ products depending on the operating conditions and the potential danger in order to prevent leakage and damage.

The product also must be disassembled and checked for wear in the corresponding intervals.

1. Have servicing and maintenance work performed by trained personnel.
2. Wear appropriate protective gear as specified in plant operator's guidelines.
3. Shut off plant or plant component.
4. Secure plant or plant component against recommissioning.
5. Depressurize the plant or plant component.
6. Actuate GEMÜ products which are always in the same position four times a year.

NOTICE

Exceptional maintenance work!

► Damage to the GEMÜ product.
● Any maintenance work and repairs not described in these operating instructions must not be performed without consulting the manufacturer first.

⚠ CAUTION

Use of incorrect spare parts!

► Damage to the GEMÜ product.
► Manufacturer liability and guarantee will be void.
● Use only genuine parts from GEMÜ.

⚠ CAUTION

Hot plant components!

► Risk of burns.
● Only work on plant that has cooled down.

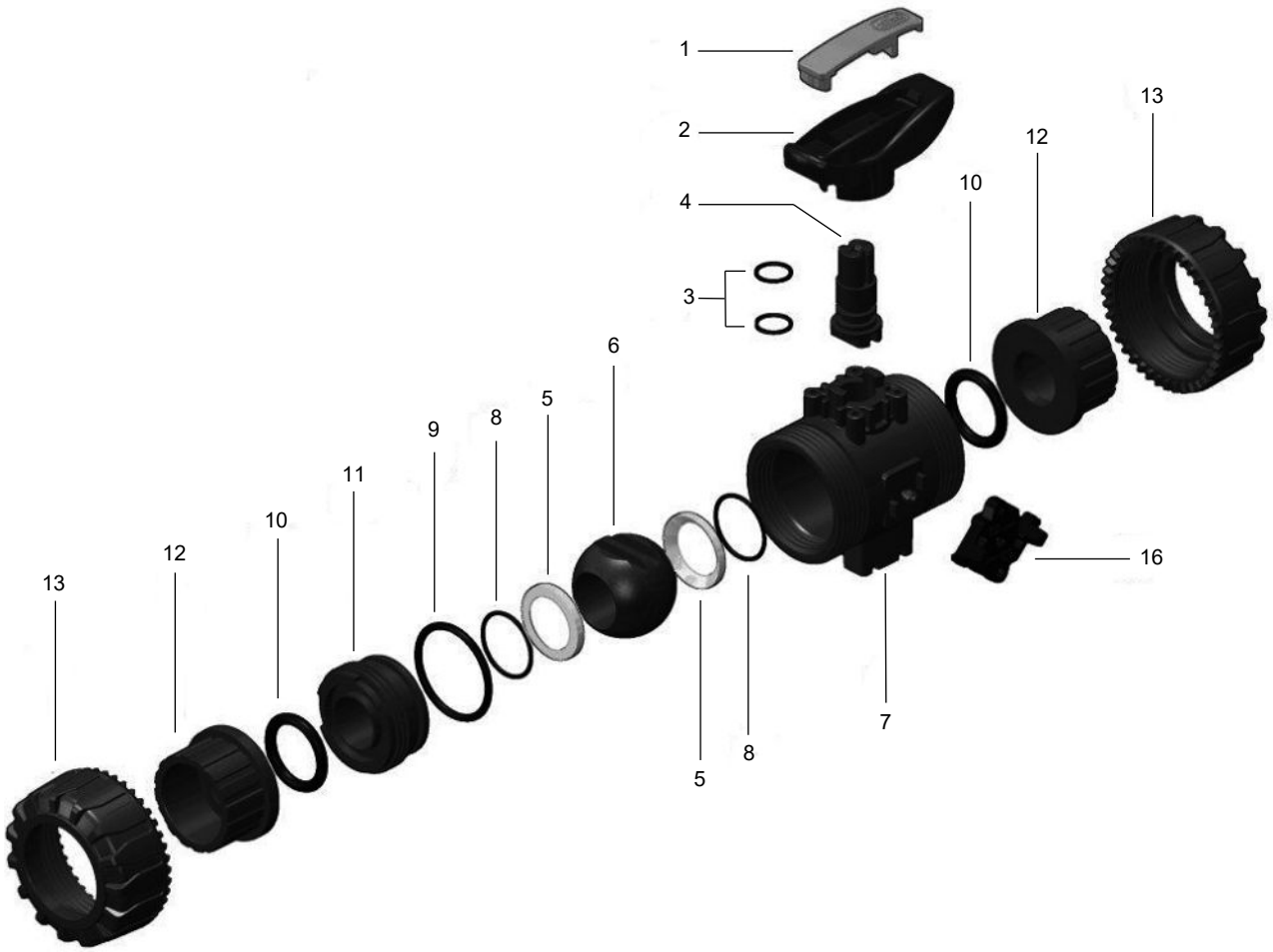
⚠ WARNING

The equipment is subject to pressure!

► Risk of severe injury or death.
● Depressurize the plant.
● Completely drain the plant.

14.1 Spare parts

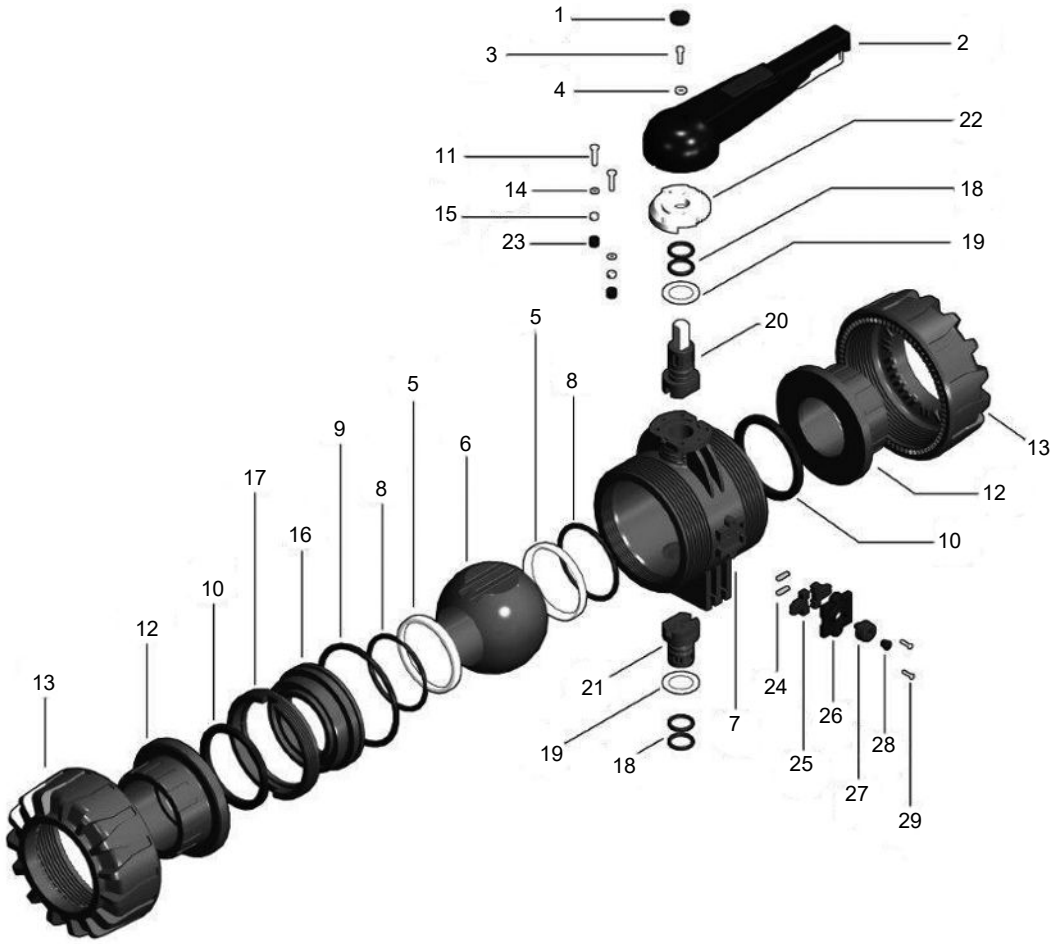
2/2-way ball valve DN 10 - 50



Item	Name	Design	Order description
3 5 8 9 10	Seal kit	DNXX, FPM DNXX, EPDM	717 XXSDS D4 717 XXSDS D14
4	Spindle	DNXX	717 XXPSP M
6	Ball, T-port	DNXX	717 XXPKUMT
	Ball, L-port	DNXX	717 XXPKUML
12	Insert	DNXX	717 XXPEL
13	Union nut	DNXX	717 XXPUM

XX - corresponds to nominal sizes DN 10 – 50.

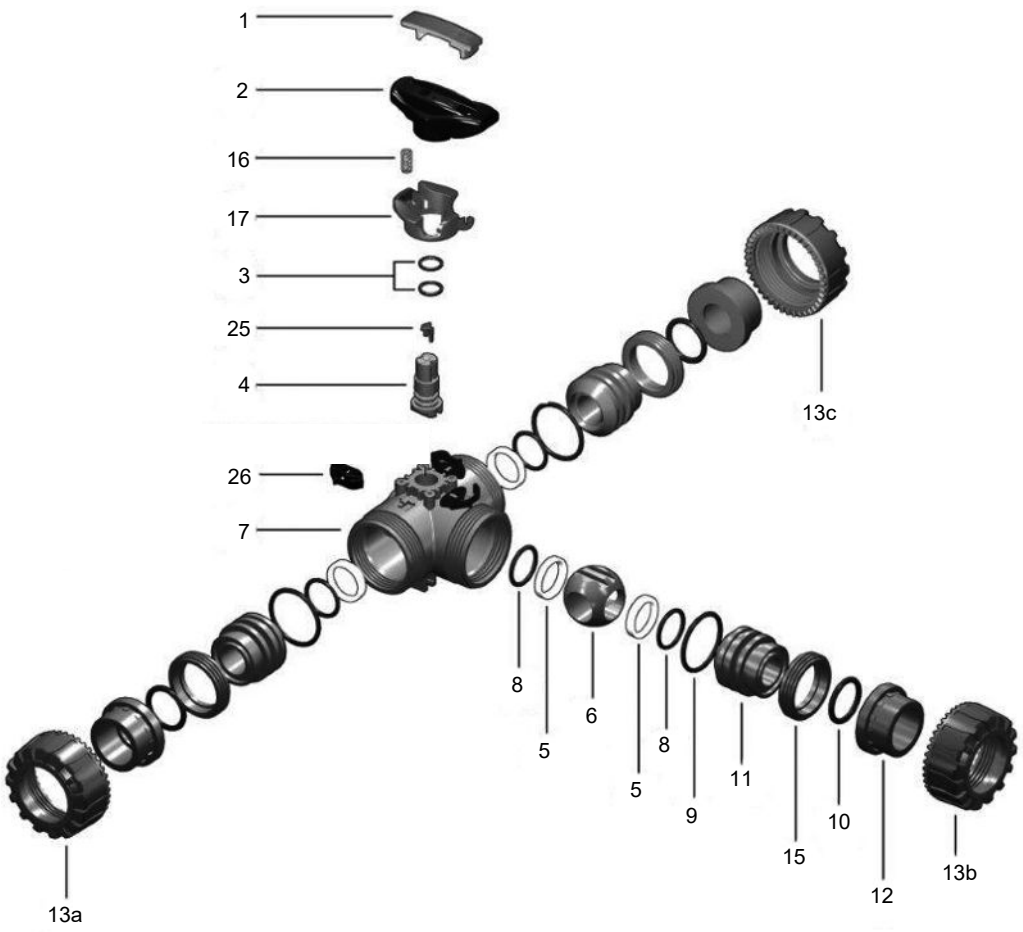
2/2-way ball valve DN 65 - 100



Item	Name	Design	Order description
3 5 8 9 10	Seal kit	DNXX, FPM DNXX, EPDM	717 XXSDS D4 717 XXSDS D14
4	Spindle	DNXX	717 XXPSP M
6	Ball, T-port	DNXX	717 XXPKUMT
	Ball, L-port	DNXX	717 XXPKUML
12	Insert	DNXX	717 XXPEL
13	Union nut	DNXX	717 XXPUM

XX - corresponds to nominal sizes DN 65 – 100.

3/2-way ball valve DN 10 - 50



Item	Name	Design	Order description
3 5 8 9 10	Seal kit	DNXX, FPM DNXX, EPDM	717 XXSDS M4 717 XXSDS M14
4	Spindle	DNXX	717 XXPSP M
6	Ball, T-port	DNXX	717 XXPKUMT
	Ball, L-port	DNXX	717 XXPKUML
12	Insert	DNXX	717 XXPEL
13	Union nut	DNXX	717 XXPUM

XX - corresponds to nominal sizes DN 10 – 50.

14.2 Replacement of spare parts

NOTICE

► For an overview of spare parts see chapter "Spare parts".

14.2.1 Disassembly of 2/2-way ball valve DN 10-50

1. Depressurize the plant or plant component.
2. Release the threaded connection locking device (see chapter "Threaded connection locking devices").

NOTICE

► The threaded connection locking device can also be pulled off from the ball valve body when assembling or disassembling the ball valve.

3. Unscrew the union nuts **13** from the ball valve body **7**.
4. Remove the insert **12**.
5. Remove the gasket **10**.
6. Remove the ball valve from the piping.
7. Hold the ball valve vertically and open by 45°.

⇨ The remaining residual liquid runs out.

8. Move the ball valve to the CLOSED position.
9. Using the key insert **1** for the handle **2**, turn out the seal carrier **11**.
10. Remove the handle **2**.
11. Remove O-ring **9**, O-ring **8** and gasket **5**.
12. Carefully press out the ball **6** (taking care not to scratch the ball).
13. Press the spindle(s) **4** (21) into the ball valve body and remove.
14. Refit all parts in the reverse order.

14.2.2 Disassembly of 2/2-way ball valve DN 65-100

1. Depressurize the plant or plant component.
2. Release the threaded connection locking device (see chapter "Threaded connection locking devices").

NOTICE

► The threaded connection locking device can also be pulled off from the ball valve body when assembling or disassembling the ball valve.

3. Unscrew the union nuts **13** from the ball valve body **7**.
4. Remove the insert **12**.
5. Remove the gasket **10**.
6. Remove the ball valve from the piping.
7. Move the ball valve to the open position.
8. Remove the hand lever protection cap **1**.
9. Release the hand lever screw **3** and washer **4** and remove them.
10. Remove the hand lever.
11. Undo and remove the screws.
12. Remove the ratchet plate.
13. Using the key insert for the hand lever, turn out the threaded ring **17** and the seal carrier **16**.
14. Remove O-ring **9**, O-ring **8** and gasket **5**.
15. Carefully press out the ball **6** (taking care not to scratch the ball).
16. Press the upper spindle **20** and lower spindle **21** into the ball valve body and remove.
17. Refit all parts in the reverse order.

14.2.3 Disassembly of 3/2-way ball valve DN 10-50

1. Depressurize the plant or plant component.
2. Release the threaded connection locking device (see chapter "Threaded connection locking devices").

NOTICE

► The threaded connection locking device can also be pulled off from the ball valve body when assembling or disassembling the ball valve.

3. Unscrew the union nuts **13** from the ball valve body **7**.
4. Remove the insert **12**.
5. Remove the gasket **10**.
6. Remove the ball valve from the piping.
7. Hold the ball valve vertically and open by 45°.

⇨ The remaining residual liquid runs out.

8. Move the ball valve to the CLOSED position.
9. Using the key insert **1** for the handle **2**, turn out the seal carrier **11**.
10. Remove the handle **2**.
11. Remove O-ring **9**, O-ring **8** and gasket **5**.
12. Carefully press out the ball **6** (taking care not to scratch the ball).
13. Press the spindle(s) **4** (21) into the ball valve body and remove.
14. Refit all parts in the reverse order.

14.3 Cleaning the product

⚠ CAUTION

Cleaning agent

► Damage to the GEMÜ product.

● The plant operator is responsible for selecting the cleaning material and performing the procedure.

– Clean the product with a damp cloth.

– Do **not** clean the product with a high pressure cleaning device.

15 Removal from piping

1. Remove the clamp or screw connections in reverse order to installation.
2. Remove welded or solvent cemented connections using a suitable cutting tool.
3. Observe the safety information and accident prevention regulations.

16 Returns

Legal regulations for the protection of the environment and personnel require that the completed and signed return delivery note is included with the dispatch documents. Returned goods can be processed only when this note is completed. If no return delivery note is included with the product, GEMÜ cannot process credits or repair work but will dispose of the goods at the operator's expense.

1. Clean the product.
2. Request a return delivery note from GEMÜ.
3. Complete the return delivery note.
4. Send the product with a completed return delivery note to GEMÜ.

17 EU Declaration of conformity 2-way ball valve

Aliaxis
UTILITIES & INDUSTRY

FIP

DICHIARAZIONE / *DECLARATION*

FIP dichiara che l'attrezzatura a pressione / *FIP declares that the pressure equipment*:

TIPO VALVOLA / *VALVE TYPE*: sfera, membrana, farfalla, non-ritorno / *ball, diaphragm, butterfly, check*
MODELLO / *MODEL*: VKD / VXE / VEE / TKD / VKR / VM / MK / DK / DM / FK / FE / VR / SXE / SSE / VA / VZ / SR / VV / RV
GAMMA DN / *DN RANGE*: 32 ÷ 100
MATERIALE / *MATERIAL*: PVC-U, PVC-C, PPH, PVDF

secondo la Procedura di Valutazione della Conformità
according to the Assessment of Conformity Procedure:
Modulo / *Module* A2

sorvegliato dall'Organismo Notificato / *inspected by the Notified Body*:
PASCAL (n° 1115)
Via Scarsellini, 13
I-20161 (MI)
ITALY

in accordo alla norma / *according to the standard*:
EN ISO 16135, EN ISO 16136, EN ISO 16137, EN ISO 16138 e / *and* ISO 9393

è conforme ai requisiti della Direttiva 2014/68/EU per le Attrezzature a Pressione.
is in conformity with the requirements of the Pressure Equipment Directive 2014/68/EU.

Per quanto concerne la valvole con DN < 32 mm, sono conformi alla direttiva PED 2014/68/EU Art.4 Par.3, esse non possono essere marcate CE, ma sono progettate e collaudate secondo la stessa procedura delle dimensioni maggiori quindi in accordo a / *For what concern the valve sizes lower than DN 32 mm, they meet the PED 2014/68/EU Art.4 Par.3, so they can't be CE marked but, they are designed and tested in the same way of biggers so, they completely fulfil the criteria of*

EN ISO 16135, EN ISO 16136, EN ISO 16137, EN ISO 16138 e / and ISO 9393

In fede / Faithfully

Casella, 8/7/2016

Ing.Oleg Clericuzio
QUALITY ASSURANCE MANAGER

The underlined type (VKD) corresponds to GEMÜ 717 (2-way ball valve)

FIP - Formatura Iniezione Polimeri S.p.A.
Società Unipersonale - Soggetta a direzione e coordinamento da parte di Aliaxis Holding Italia S.p.A.
Loc. Pian di Parata - 16015 Casella - Genova - Italia
Tel +39 (010) 96211 – Fax +39 (010) 9621209
www.fipnet.it

C.F. - P.IVA - Iscrizione al Registro delle Imprese di Genova Nr.: 00276860103
REA C.C.I.A.A. Genova Nr.: 196879
Capitale Sociale: €6.200.000

Dati bancari
IBAN: IT 53L 01 005 01400 000000024674
Swift/BIC: BNLIITRRGEX
Banca Nazionale del Lavoro

18 EU Declaration of conformity 3-way ball valve

Aliaxis
UTILITIES & INDUSTRY

FIP

DICHIARAZIONE / *DECLARATION*

FIP dichiara che l'attrezzatura a pressione / *FIP declares that the pressure equipment*:

TIPO VALVOLA / *VALVE TYPE*: sfera, membrana, farfalla, non-ritorno / *ball, diaphragm, butterfly, check*
MODELLO / *MODEL*: VKD / VXE / VEE / TKD / VKR / VM / MK / DK / DM / FK / FE / VR / SXE / SSE / VA / VZ / SR / VV / RV
GAMMA DN / *DN RANGE*: 32 ÷ 100
MATERIALE / *MATERIAL*: PVC-U, PVC-C, PPH, PVDF

secondo la Procedura di Valutazione della Conformità
according to the Assessment of Conformity Procedure:
Modulo / *Module* A2

sorvegliato dall'Organismo Notificato / *inspected by the Notified Body*:
PASCAL (n° 1115)
Via Scarsellini, 13
I-20161 (MI)
ITALY

in accordo alla norma / *according to the standard*:
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EN ISO 16135, EN ISO 16136, EN ISO 16137, EN ISO 16138 e / and ISO 9393

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Casella, 8/7/2016

Ing.Oleg Clericuzio
QUALITY ASSURANCE MANAGER

The underlined type (TKD) corresponds to GEMÜ 717 (3-way ball valve)

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Società Unipersonale - Soggetta a direzione e coordinamento da parte di Aliaxis Holding Italia S.p.A.
Loc. Pian di Parata - 16015 Casella - Genova - Italia
Tel +39 (010) 96211 – Fax +39 (010) 9621209
www.fipnet.it

C.F. - P.IVA - Iscrizione al Registro delle Imprese di Genova Nr.: 00276860103
REA C.C.I.A.A. Genova Nr.: 196879
Capitale Sociale: €6.200.000

Dati bancari
IBAN: IT 53L 01 005 01400 000000024674
Swift/BIC: BNLIITRRGEX
Banca Nazionale del Lavoro

GEMÜ Gebr. Müller Apparatebau GmbH & Co. KG
Fritz-Müller-Straße 6–8, 74653 Ingelfingen-Criesbach, Germany
Phone +49 (0) 7940 1230 · info@gemue.de
www.gemu-group.com

Subject to alteration

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