

Ball Valve type 542



Product description

The manual Ball Valve type 542 offers uncompromising quality and is available in various materials and connection variants.

Function

The ball valve uses a rotating ball with a hole through it that allows straight-through flow in the open position and shuts off flow when the ball is rotated 90° to block the flow passage. This valve is primarily used for open/close functions and for throttling services.

Applications

From simple water to manual applications in demanding processes.

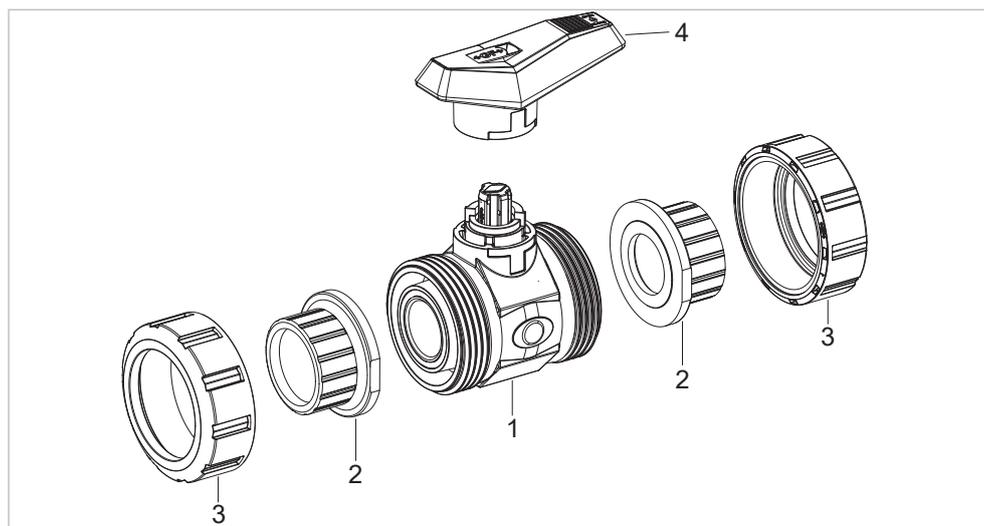
Benefits/features

- Ball seats: PE (blue lever) / PTFE (red lever)
- Very high flow rate
- Same installation length as Ball Valve type 546 Pro
- Possibility of attaching a valve marking

Flow media

Neutral and aggressive media with a small amount of particles/solids. The chemical resistance is independent of the selected valve material ([see online tool ChemRes PLUS](#)).

Technical data



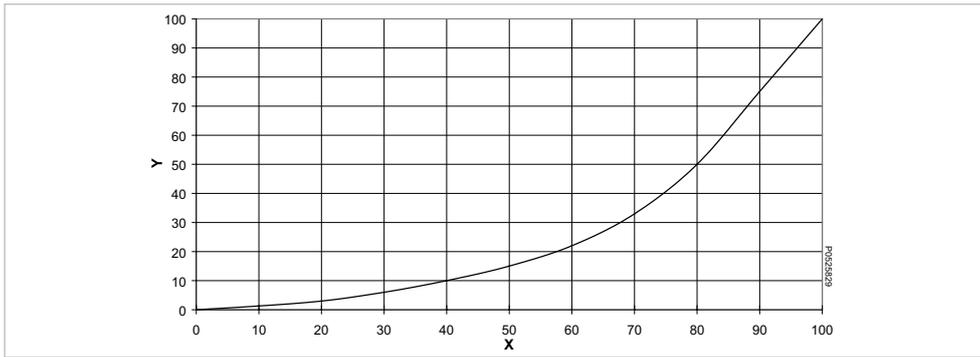
- 1 Housing
- 2 End connection
- 3 Union nut
- 4 Hand lever

Specification		
Dimensions	d16/DN10 – d63DN50, 3/8" – 2"	
Materials	Central part	PVC-U, PVC-C, PP-H
	Lever	PP-GF30
Gasket materials	O-rings	EPDM, FKM
	Ball seat	PTFE, PE
Pressure levels	PP	PN10
	PVC-U, PVC-C	PN16
Connections	Fusion / solvent cement sockets	ISO, ASTM, JIS, BS
	Fusion / solvent cement spigot	ISO
	Threaded socket	Rp, NPT, Rc
	Backing flange	ISO, ANSI, BS, JIS
	Butt fusion spigots	SDR11 and SDR17.6
	PE100 electrofusion spigot or butt fusion spigot	SDR11 and SDR17.6
Product standard	EN ISO 16135	
Test standard	ISO 9393-2, EN 12266-1 (leakage rate A)	
Approvals	ACS, FDA, QAP/ITP, ABS, BV; RINA, LR	

Kv 100 values

DN (mm)	Inch (inch)	d (mm)	Kv 100 (l/min)	Cv 100 (US gal/min)	Kv 100 (m ³ /h)
10	3/8	16	70	4.9	4
15	1/2	20	185	12.9	11
20	3/4	25	350	24.5	21
25	1	32	700	49.0	42
32	1 1/4	40	1'000	70.0	60
40	1 1/2	50	1'600	112.0	96
50	2	63	3'100	217.1	186
65	2 1/2	75	5'000	350.0	300
80	3	90	7'000	490.0	420
100	4	110	11'000	770.0	660

Flow characteristics



X Opening angle (%)
Y Kv, Cv value (%)

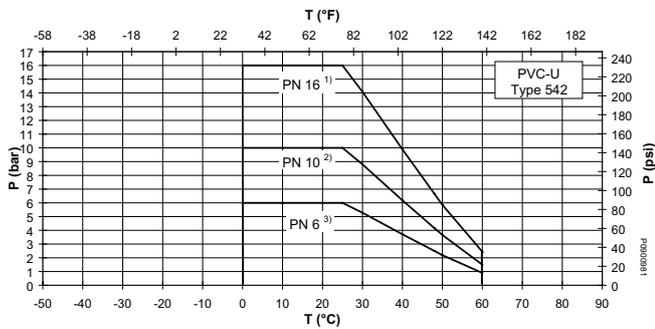
Pressure-temperature diagrams

The following pressure-temperature diagrams are based on a service life of 25 years and water or similar media.

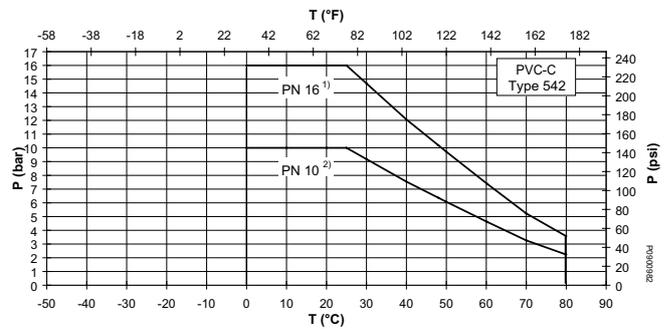
T Temperature (°C, °F)

P Permissible pressure (bar, psi)

PVC-U



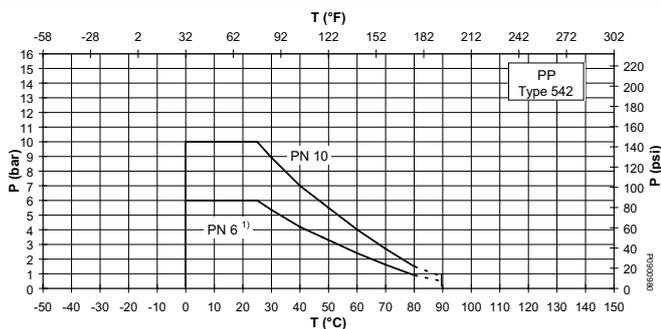
PVC-C



- 1) The central part of the ball valve is designed for the nominal pressure PN16
- 2) Depending on the connection, the nominal pressure is reduced to PN10
- 3) Depending on the connection, the nominal pressure is reduced to PN6

- 1) The central part of the ball valve is designed for the nominal pressure PN16
- 2) Depending on the connection, the nominal pressure is reduced to PN10

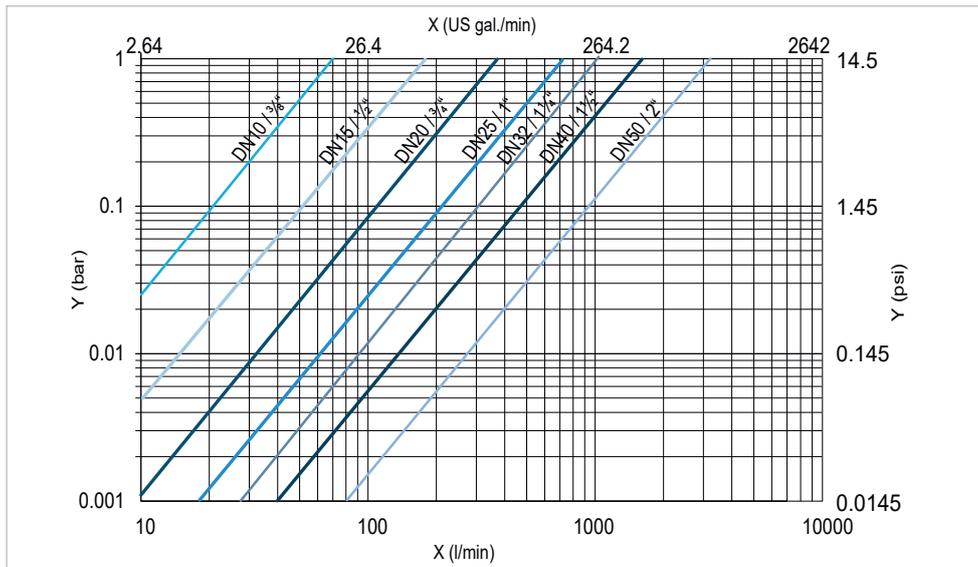
PP



- 1) For example, ball valve with butt fusion spigot PP or PE100, SDR 17

Pressure losses

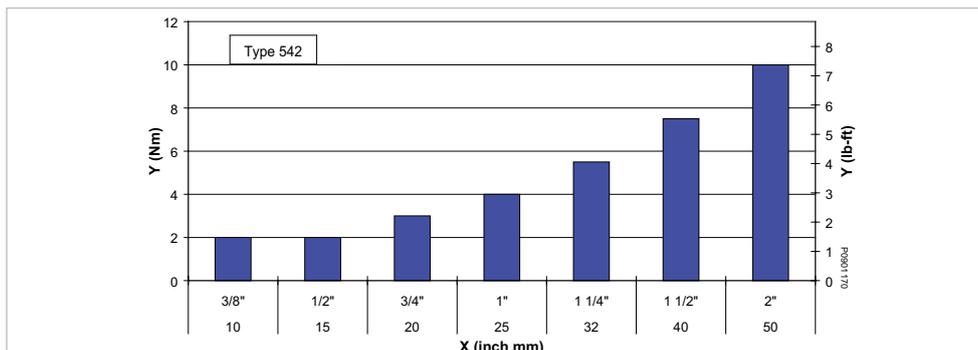
d16/DN10 – d63/DN50



- X Flow rate (l/min, US gal/min)
- Y Pressure loss Δp (bar, psi)

Operating torque

DN10 – DN50



- X Nominal diameter DN (mm, inch)
- Y Tightening torque (Nm, lb-ft)

Reference values for tightening torque of screws

Flange connections with profile flange seal or flat gaskets

d (mm)	DN (mm)	Inch (inch)	Total number of screws (for 2 flange connections) standard nut ¹⁾	Torque (Reference values) Profile flange gasket ²⁾		Torque (Reference values) Flat gasket	
				(Nm)	(lb-ft)	(Nm)	(lb-ft)
20	15	1/2	8 x M12 x 50	10	7.4	10	7.4
25	20	3/4	8 x M12 x 55	10	7.4	10	7.4
32	25	1	8 x M12 x 60	10	7.4	15	11
40	32	1 1/4	8 x M16 x 70	15	11	20	15
50	40	1 1/2	8 x M16 x 70	15	11	25	18
63	50	2	8 x M16 x 80	20	15	35	26

- ¹⁾ For valve ends type 542 made of PP in combination with backing flanges, use half of the standard nut height
- ²⁾ Preferred gasket type (suited for plastics)

Technical basics



- 1 Ergonomic lever
- 2 Reinforced security break point in the stem interface
- 3 Double stem seals
- 4 Dynamic backing seal
- 5 Smooth spherical surface
- 6 Saw tooth thread suitable for plastics

With the backing seals, the ball has a floating position. This results in preloading and hence a constant seal. Stem, backing, housing and connection seals are made of EPDM or FKM.

Valve handling

Installation notes

When installing the ball valve, ensure that it is always installed into the system in an opened ball position.

Selection of lubricant

All seals should be lubricated with a silicone-based grease. Using the wrong lubricants can damage the material of the ball valve or seals.

- Mineral oil-based and Vaseline (petrolatum) are not appropriate.

Maintenance notes

Ball valves require no maintenance under normal operating conditions (clear water). However, the following measures must be considered:

- Regularly check that no medium escapes to the outside.
- We recommend a function test for ball type valves that are kept permanently in the same position 1 – 2 times per year to check functionality.

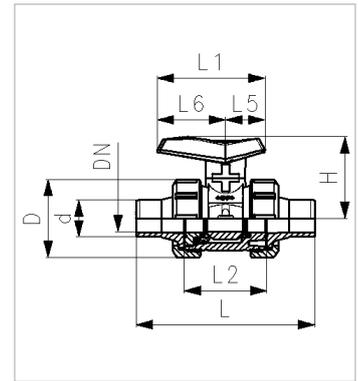


Installation and maintenance must be performed according to the corresponding installation instructions. The installation manual is included with the product, see also the online product catalogue at www.gfps.com

Dimensions

Ball Valve type 542 with cemented spigots, metric

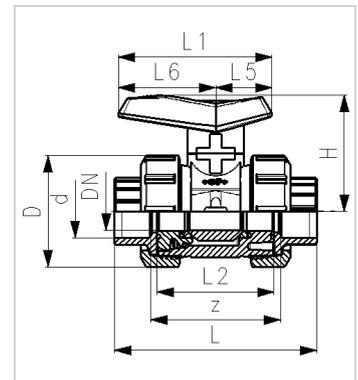
d (mm)	DN (mm)	D (mm)	H (mm)	L (mm)	L1 (mm)	L2 (mm)	L5 (mm)	L6 (mm)
16	10	50	54	114	72	56	26	46
20	15	50	54	124	72	56	26	46
25	20	58	66	144	93	65	34	59
32	25	68	71	155	93	71	34	59
40	32	84	85	175	110	85	41	69
50	40	97	92	193	110	89	41	69
63	50	124	108	224	128	101	49	79



Ball Valve type 542 with cemented sockets, fusion sockets or threaded sockets*

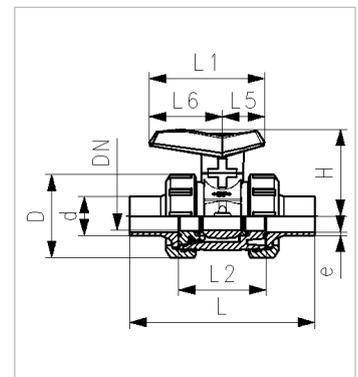
d (mm)	DN (mm)	D (mm)	H (mm)	L (mm)	L1 (mm)	L2 (mm)	L5 (mm)	L6 (mm)	z (mm)
16	10	50	54	92	72	56	26	46	64
20	15	50	54	95	72	56	26	46	53
25	20	58	66	110	93	65	34	59	73
32	25	68	71	124	93	71	34	59	79
40	32	84	85	147	110	85	41	69	94
50	40	97	92	157	110	89	41	69	95
63	50	124	108	184	128	101	49	79	108

*example PVC-U with cemented sockets



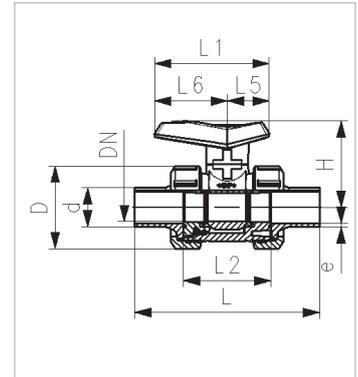
Ball Valve type 542 with butt fusion spigots, metric

d (mm)	DN (mm)	D (mm)	H (mm)	L (mm)	L1 (mm)	L2 (mm)	L5 (mm)	L6 (mm)	e (mm)
20	15	50	54	130	72	56	26	46	1.9
25	20	58	66	144	93	65	34	59	2.3
32	25	68	71	151	93	71	34	59	2.9
40	32	84	85	171	110	85	41	69	3.7
50	40	97	92	189	110	89	41	69	4.6
63	50	124	108	220	128	101	49	79	5.8



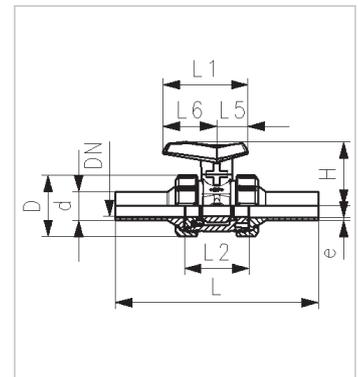
Ball Valve type 542 with PE butt fusion spigots short, metric

d (mm)	DN (mm)	D (mm)	H (mm)	L (mm)	L1 (mm)	L2 (mm)	L5 (mm)	L6 (mm)	e (mm)
20	15	50	54	130	72	56	26	46	1.9
25	20	58	66	144	93	65	34	59	2.3
32	25	68	71	151	93	71	34	59	2.9
40	32	84	85	171	110	85	41	69	3.7
50	40	97	92	189	110	89	41	69	4.6
63	50	124	108	220	128	101	49	79	5.8



Ball Valve type 542 with PE butt fusion spigots long, metric

d (mm)	DN (mm)	D (mm)	H (mm)	L (mm)	L1 (mm)	L2 (mm)	L5 (mm)	L6 (mm)	e (mm)
20	15	50	54	193	72	56	26	46	1.9
25	20	58	66	218	93	65	34	59	2.3
32	25	68	71	224	93	71	34	59	2.9
40	32	84	85	250	110	85	41	69	3.7
50	40	97	92	271	110	89	41	69	4.6
63	50	124	108	321	128	101	49	79	5.8



Further accessories

i For further information on accessories, refer to the online product catalogue at www.gfps.com

■ Mobile apps and online tools to support configuration and calculation at www.gfps.com/tools



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