

Ventilating and Bleed Valve type 591 and Ventilating Valve type 595



Type 591 (without spring)

Type 595 (with spring)

Product description

Ventilating and bleed valves can emit gases from containers and piping systems and vacuums can be avoided by supplying air - automatically and without using external energy. Types 591 and 595 fit all common plastic piping systems thanks to an extensive assortment.

Function

Type 591 function

Bleeding when filling, venting when draining. Depending on the filling rate, the float is raised by the rising fluid level. Simultaneously, the gases are removed from the system through the valve. When the pipe is completely filled, the float is pressed into the profile gasket and closes the valve.



Note: Not suitable for continuous operation! A closed valve under operating pressure cannot vent!

Type 595 function

Ventilating when draining. The ventilating Valve type 595 was developed especially for the ventilation process and is used when a safe and controlled supply of air must be guaranteed. This prevents gases/liquids from being emitted into the surroundings. The cone is continuously pressed into the profile seal and does not open until a vacuum is created in the pipe or container.

Applications

- Microelectronics
- Chemical process industry
- Food and beverages
- Water treatment
- Cooling processes

Advantages

- Self-acting bleeding and venting
- No auxiliary energy required for operation
- Wide range of materials for optimum chemical resistance
- Complete and reliable bleeding of the piping system
- Controlled supply of air
- High efficiency and precision

Characteristics

Safety

The new valve of types 591 and 595 control the venting and bleeding of piping systems and tanks with high precision and completely reliably. They contribute significantly to the safety and protection of your system, for example by avoiding the unwanted buildup of a vacuum when emptying piping systems and tanks.

Simplicity

The valves are impressive by virtue of their simple installation and are practically maintenance-free. This is a result of their compact construction and innovative details of their construction, which are designed for safety, ergonomics and efficiency.

Flexibility

The many different dimensions and optimal sizes allow the valves to be used under almost all space conditions and in any system design. The valves are positioned at the absolute or temporary high points in the system, after pumps and at turning points.

Flow media

Media that are free of foreign particles, viscous, thick and gaseous media.

Technical data



- 1 Protection cap
- 2 Coupling nut
- 3 Spigot
- 4 O-ring
- 5 Screw-in ring
- 6 Sealing ring
- 7 Back-up ring
- 8 Float
- 9 Spring (Type 595)
- 10 Housing
- 11 Connecting part

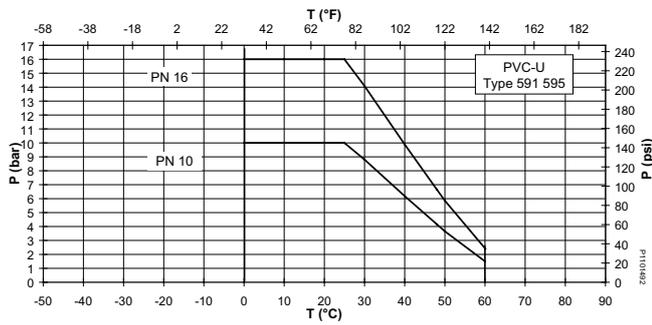
Specification

Dimensions	d16/DN10 – d110/DN100, 3/8" – 4"	
Materials	Valve body	PVC-U, PVC-C, ABS, PP-H, PVDF
	Spring for type 595	Standard: Nimonic 90 Optional: Nimonic 90 Halar (ECTFE) coated
Gasket materials	EPDM, FKM	
Pressure levels	PVC-U, PVC-C, PVDF	PN16
	PP-H, ABS	PN10
Product standard	EN ISO 16137	
Test standard	ISO 9393-2, EN 12266-1	
Approvals	ACS, FDA, DIBt, TA Luft, NAMSA	

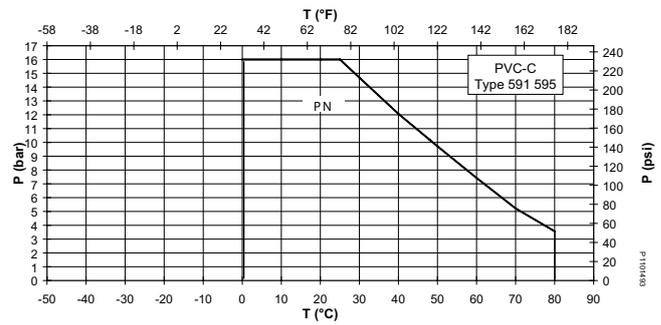
Pressure-temperature diagrams

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

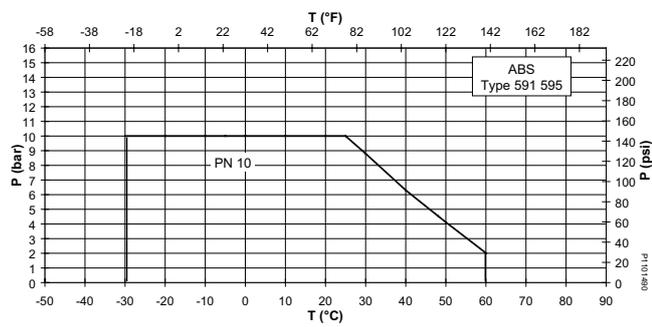
PVC-U



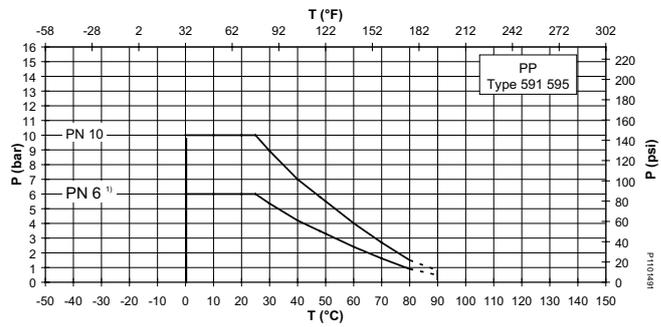
PVC-C



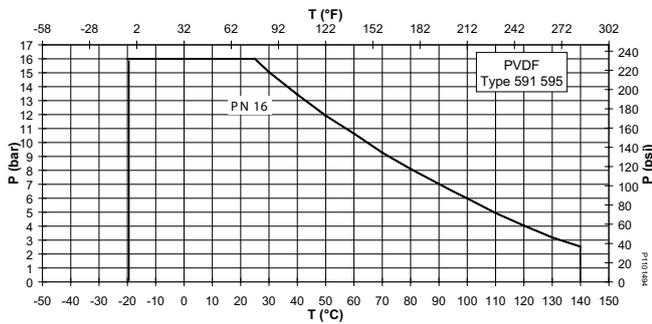
ABS



PP



PVDF



T Temperature (°C, °F)

P Permissible pressure (bar, psi)

¹⁾ E.g. check valves with PP or PE100 SDR17 butt fusion spigots. For applications in the dotted temperature range, please contact the responsible GF representative.

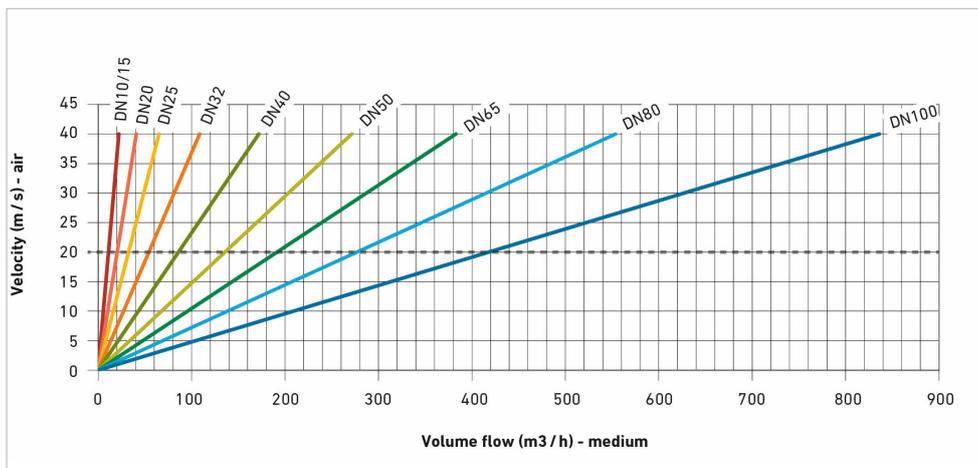
Calculations for valve configuration

To select the correct valve size, the max. flow (Q in m³/h) is first calculated. To do this, the flow velocity of the medium (Vr in m/s) is required, as is the inner diameter of the medium-conveying pipe (di in mm).

$$Q = V_r \cdot \pi \cdot \frac{d_i^2}{4} \cdot 0.001 \cdot 3.6$$

The volume flow of the medium can be equated with the gas volume to be discharged or filled. If several aerating or deaerating valves are used, each valve must be configured for the maximum flow velocity. With the calculated volume flow, the correct valve dimension can be determined from the air volume diagram. The velocity in this diagram corresponds to the discharge velocity of the gases at the valve. It is recommended that, if possible, 20m/s is not exceeded to prevent excessive wear on the valve.

Air volume diagram



 The escape velocity of the air must not exceed 20 m/s.

Pressure for raising cone type 595

DN (mm)	10	15	20	25	32	40	50	65	80	100
Differential pressure for raising cone (bar)	0.028	0.028	0.030	0.030	0.035	0.040	0.050	0.060	0.060	0.060

Technical basics

Causes of air in the piping system

- During operation, air can be released into the system through pumps, valves, molded parts and other pipe components.
- When filling tanks and pipelines, air inclusions may occur.
- Pressure drops or temperature increases can release air.

Positioning of the valves

- At absolute and temporary high points
- After pumps
- At turning points

Valve handling

Installation notes

Only identical materials may be joined together via fusion or adhesive joints.

- Sections of pipework with adhesive joints must be rinsed with non-pressurized water as soon as possible after completion of the joints.
- Hand-tighten the coupling nuts on the check valve.

Mounting orientation

- The arrow on the housing of the valve indicates the direction of installation and must point upwards.
- The valve must be installed in a vertical position.
- Reliable ventilation and safe pressure equalization are only guaranteed if the valve is properly installed. Any other installation may impair the function of the valve.



Maintenance notes

The automatic operation of the valve requires maintenance to ensure that it functions without problems.

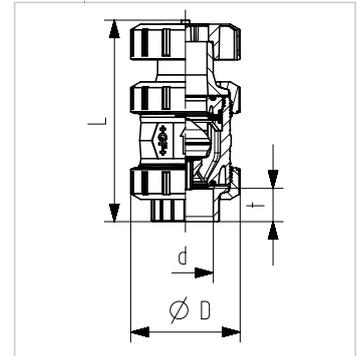


Installation and maintenance must be performed in accordance with the corresponding installation manual. The installation manual is provided with the product, see also the online product catalogue at www.gfps.com

Dimensions

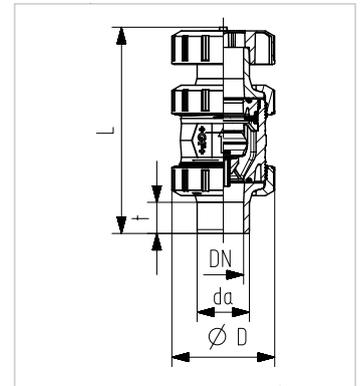
Type 591, Type 595 with solvent cement sockets, metric

d (mm)	DN (mm)	D (mm)	L (mm)	t (mm)	closest (inch)
16	10	50	118	14	3/8
20	15	50	124	16	1/2
25	20	58	142	19	3/4
32	25	68	157	22	1
40	32	84	179	26	1 1/4
50	40	97	197	31	1 1/2
63	50	124	229	38	2
75	65	166	258	45	2 1/2
90	80	200	277	52	3
110	100	238	320	64	4



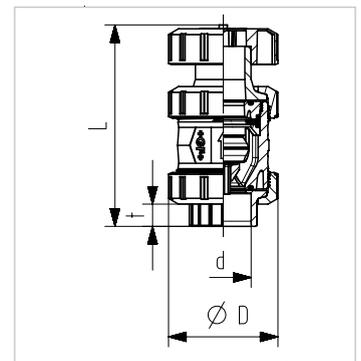
Type 591, Type 595 with solvent cement spigot, metric

d (mm)	DN (mm)	D (mm)	L (mm)	t (mm)	closest (inch)
16	10	50	129	14	3/8
20	15	50	139	16	1/2
25	20	58	160	19	3/4
32	25	68	172	22	1
40	32	84	193	26	1 1/4
50	40	97	215	31	1 1/2
63	50	124	249	38	2
75	65	166	284	44	2 1/2
90	80	200	300	52	3
110	100	238	340	61	4



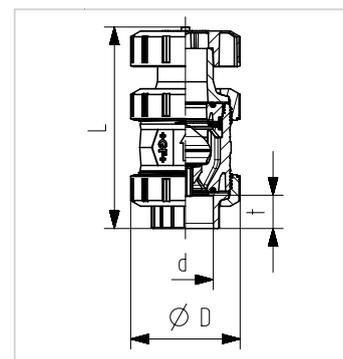
Type 591, Type 595 with solvent cement sockets, inch BS

Inch	DN (mm)	D (mm)	L (mm)	t (mm)
3/8	10	50	118	16
1/2	15	50	124	18
3/4	20	58	142	21
1	25	68	157	24
1 1/4	32	84	179	29
1 1/2	40	97	197	30
2	50	124	229	36
2 1/2	65	166	258	45
3	80	200	277	51
4	100	238	320	64



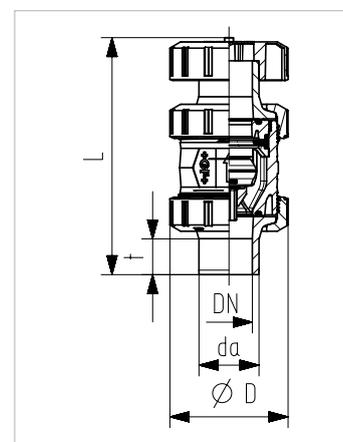
Type 591, Type 595 with solvent cement sockets, inch ASTM incl. 2 threaded sockets, NPT

inch	DN (mm)	D (mm)	L (mm)	t (mm)
3/8	10	50	111	19
1/2	15	50	119	23
3/4	20	58	137	25
1	25	68	152	28
1 1/4	32	84	176	31
1 1/2	40	97	193	35
2	50	124	229	38
2 1/2	65	166	258	45
3	80	200	277	48
4	100	238	320	58



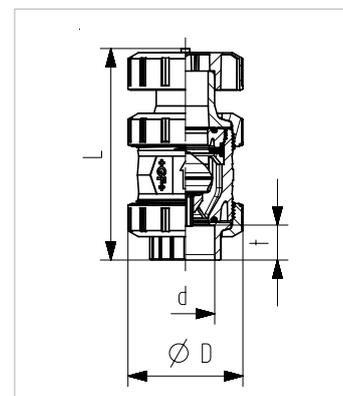
Type 591, Type 595 with fusion spigot

d (mm)	closest (inch)	DN (mm)	PN (bar)	D (mm)	L (mm)	t (mm)
16	3/8	10	10	50	135	13
20	1/2	15	10	50	140	14
25	3/4	20	10	58	157	16
32	1	25	10	68	168	18
40	1 1/4	32	10	84	183	20
50	1 1/2	40	10	97	211	23
63	2	50	10	124	245	27
75	2 1/2	65	10	166	280	48
90	3	80	10	200	296	49
110	4	100	10	238	336	54



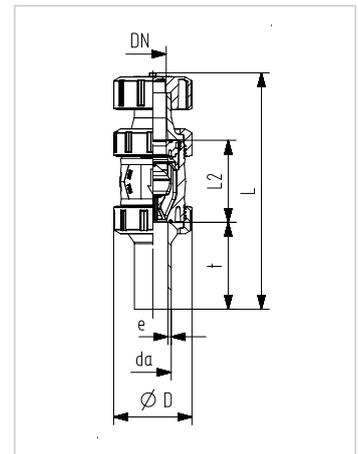
Type 591, Type 595 with fusion socket

d (mm)	closest (inch)	DN (mm)	PN (bar)	D (mm)	L (mm)	t (mm)
16	3/8	10	10	50	126	14
20	1/2	15	10	50	127	15
25	3/4	20	10	58	142	16
32	1	25	10	68	153	18
40	1 1/4	32	10	84	171	19
50	1 1/2	40	10	97	190	21
63	2	50	10	124	219	28
75	2 1/2	65	10	166	256	29
90	3	80	10	200	275	33
110	4	100	10	238	318	39



Type 591, Type 595 with butt fusion spigot, SDR11 PE100

d (mm)	closest (inch)	DN (mm)	PN (bar)	D (mm)	L (mm)	l2 (mm)	t (mm)	e (mm)
20	1/2	15	16	50	175	56	69	2.25
25	3/4	20	16	58	195	65	76	2.30
32	1	25	16	68	207	71	76	2.90
40	1 1/4	32	16	84	230	85	82	3.70
50	1 1/2	40	16	97	254	89	91	4.60
63	2	50	16	124	298	101	110	5.80
75	2 1/2	65	16	166	334	136	125	6.80
90	3	80	16	200	360	141	140	8.20
110	4	100	16	238	411	164	160	10.000



The information and technical data (altogether "Data") herein are not binding, unless explicitly confirmed in writing. The Data neither constitutes any expressed, implied or warranted characteristics, nor guaranteed properties or a guaranteed durability. All Data is subject to modification. The General Terms and Conditions of Sale of Georg Fischer Piping Systems apply.

02/2025-A