DIASTAR type Six, Ten, TenPlus and Sixteen

			
Six	Ten	TenPlus	Sixteen

Product description

DIASTAR Six

The DIASTAR Six is an affordable solution with a long service life for elastomer diaphragms with up to 6 bar media pressure. The actuator is compact and combines high quality with the basic functions of a pneumatic actuator. It is available with the control function fail safe to close (FC), but does not include any additional accessories.

DIASTAR Ten

Optimally suited for standard applications of up to 10 bar media pressure. Uncomplicated integration into the plant automation possible through the appropriate interface. Available with the control functions fail safe to close (FC), fail safe to open (FO) and double-acting (DA). Option of using PTFE diaphragms for aggressive chemicals.

DIASTAR TenPlus

This actuator is for high performance applications that require high closing forces. Regulation of up to 10 bar media pressure on both sides, such as occurs in ring pipe systems, is possible with this actuator. Available with the control function fail safe to close (FC), as well as in all diaphragm and pipe materials. An accessory interface for simple system integration is integrated.

DIASTAR Sixteen

This is the strongest actuator in the portfolio of GF Piping Systems. The high closing power in combination with the special housing nut guarantees safe regulation of media pressures of up to 16 bar in water applications. The actuator is equipped with an integrated accessory interface for system integration and is also available with the control functions fail safe to close (FC), fail safe to open (FO) and double-acting (DA).

Function

Diaphragm valves from GF Piping Systems are used for regulating, as well as closing, controlling and monitoring volume flows. Especially when transporting contaminated, aggressive or abrasive media, this type of valve has decisive advantages thanks to its simple function and optimized construction. Only the valve body and diaphragm come into contact with the medium.

The valve is suited for use with gases and liquids and can be installed in any location and completely drained. By applying pressure to the actuator, and through the force of the integrated spring assemblies (FC, FO), the position of the diaphragms is controlled and regulated.

Benefits/features

- Full plastic pipe valves without metal screws

- No corrosion caused by aggressive media
- Constant leak-tightness in the event of changes in temperature without tightening screws
- Plastic-appropriate, highly stable connection of upper part and valve body by means of a buttress thread
- Simple regulation via maximum flow and linear characteristic curve
- Optimized diaphragm geometry for a longer lifetime
- 90° rotatable air connection for flexible installation

Possible flow media

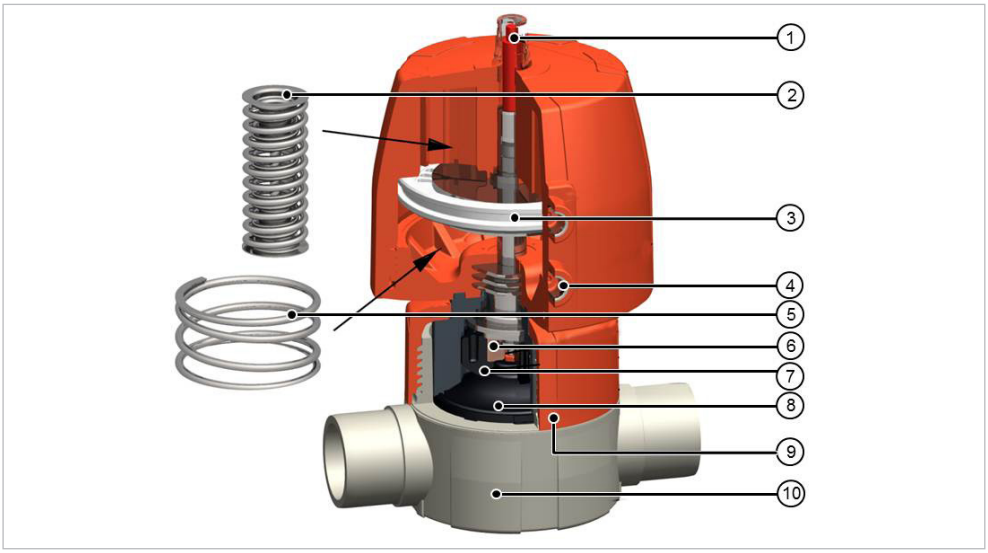
Contaminated, containing solids or ultrapure media.

Liquid and gaseous medium which do not negatively affect the physical and chemical properties of the respective housing and diaphragm material during normal mode. Information on chemical resistance is available from the GF Piping Systems Sales Company or at www.gfps.com.

Applications

- Chemical process industry
- Microelectronics
- Water treatment
- Cooling
- Control applications

Technical data



1 Optical position indicator with cap
2 Pre-loaded spring assemblies for FC mode
3 Lifting piston
4 Air connections
5 Spring for FO mode
6 Diaphragm holder
7 Pressure piece
8 Diaphragms
9 All-plastic housing
10 Valve body

DA mode does not use any springs.

Specification

Approved media		Liquid and gaseous media which, in normal operation, do not adversely affect the physical and chemical properties of the respective housing and diaphragm material. Information on chemical resistance is available from the Georg Fischer Sales Company or at www.gfps.com.				
Dimensions		Type Six	d20/DN15 – d63/DN50, ½" – 2"			
		Type Ten	d20/DN15 – d63/DN50, ½" – 2"			
		Type TenPlus	d20/DN15 – d63/DN50. ½" – 2"			
		Type Sixteen	d20/DN15 – d63/DN50, ½" – 2"			
Materials	**Valve body**	Type Six	PVC-U, PVC-C, ABS, PP-H			
		Type Ten	PVC-U, PVC-C, ABS, PP-H, PP-N, PVDF, PVDF-HP			
		Type TenPlus	PVC-U, PVC-C, ABS, PP-H, PP-N, PVDF, PVDF-HP			
		Type Sixteen	PVC-U, PVC-C, ABS, PVDF, PVDF-HP			
	Housing nut	PPGF 30 for PN10				
		PPSGF40 for PN16 (only for water applications)				
	Gasket/ diaphragm[1]	Membrane	NBR	FKM	EPDM	PTFE
		O-Ring	EPDM	FKM	EPDM	FKM
Operating temperature[2] **(valve body material)**		PVC-U	0 to 60 °C			
		PVC-C	0 to 80 °C			
		ABS	-30 to 60 °C			
		PP	0 to 80 °C			
		PVDF	-20 to 140 °C			
Functions		Type Six	FC			
		Type Ten	FC, FO, DA			
		Type TenPlus	FC			
		Type Sixteen	FC, FO, DA			
Actuation		Pneumatic				
Pressure ratings		Type Six	PN6			
		Type Ten	PN10			
		Type TenPlus	PN10 on both sides			
		Type Sixteen	PN16			
Approvals		ACS, FDA, DIBt, TA Luft, NAMSA				
Product standard		EN ISO 16138				
Test standard		ISO 9393-2, EN 12266-1 (leackage rate A)				
Approvals		ACS, FDA, DIBt				

[1] Other combinations on request.

[2] According to pressure-temperature diagram. Temperature ranges may vary depending on the seal material combination.

Actuator sizes DIASTAR

DN	Six FC	Ten DA/FO/FC	TenPlus FC	Sixteen FC	Sixteen DA/FO
15	 1	 1	 2	 2	 1
20	 2	 2	 2	 2	 2
25	 2	 2	 3	 3	 2
32	 3	 3	 4	 4	 3
40	 3	 4	 5	 5	 4
50	 3	 4	 5	 5	 4

Kv 100 values

Type 514 – 517

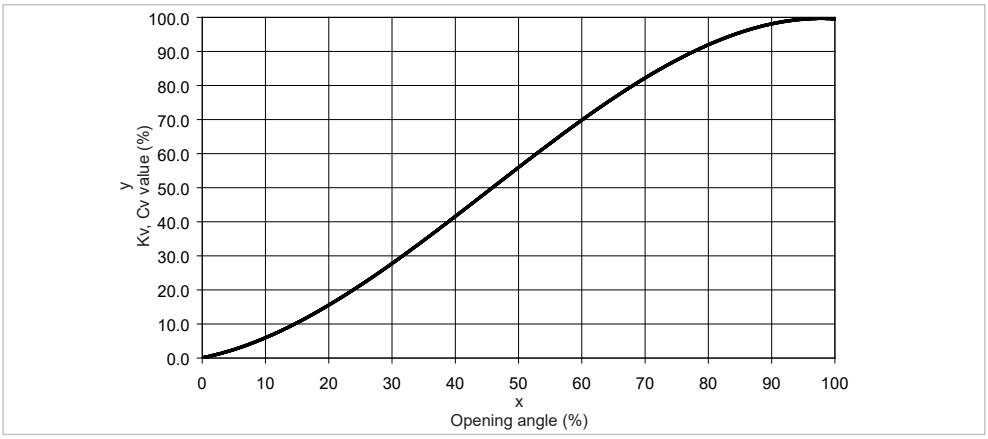
d (mm)	DN (mm)	inch (inch)	kv 100 (l/min)	Cv 100 (gal/min)	kv 100 (m^3/h)
20	15	½	125	9	8
25	20	¾	271	19	16
32	25	1	481	33	29
40	32	1 ¼	759	52	45
50	40	1 ½	1'263 (960[1)])	87	76
63	50	2	1'728 (1'181[1)])	119	104

[1)] DIASTAR SIX

Type 519

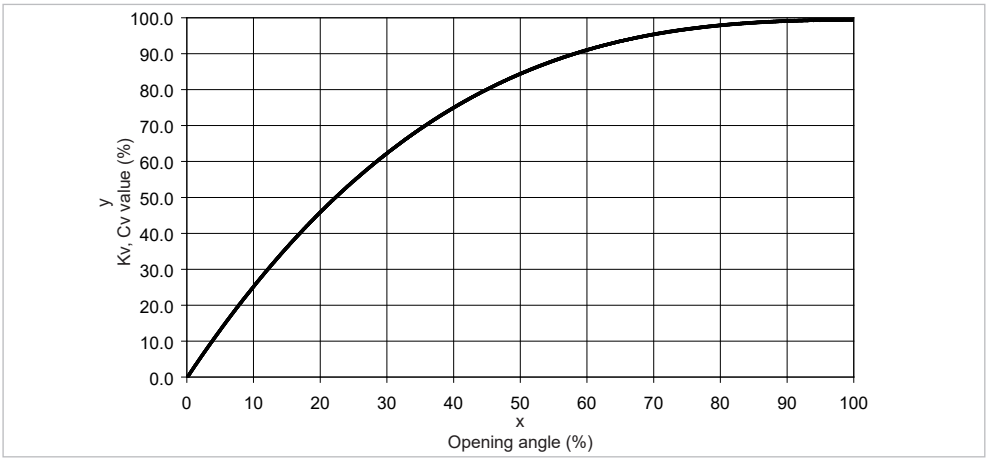
d (mm)	DN (mm)	Inch (inch)	d1 (mm)	DN1 (mm)	Inch (inch)	kv 100 (l/min)	Cv 100 (gal/min)	kv 100 (m^3/h)
20	15	½	20	15	½	57	4	3
25	20	¾	20	15	½	89	6	5
25	20	¾	25	20	¾	118	8	7
32	25	1	20	15	½	80	6	5
32	25	1	25	20	¾	105	7	6
32	25	1	32	25	1	231	16	14
40	32	1 ¼	20	15	½	85	6	5
40	32	1 ¼	25	20	¾	119	8	7
40	32	1 ¼	32	25	1	153	11	9
40	32	1 ¼	40	32	1 ¼	187	13	11
50	40	1 ½	20	15	½	86	6	5
50	40	1 ½	25	20	¾	160	11	10
50	40	1 ½	32	25	1	206	14	12
50	40	1 ½	40	32	1 ¼	524	36	31
50	40	1 ½	50	40	1 ½	667	46	40
63	50	2	20	15	½	84	6	5
63	50	2	25	20	¾	150	11	9
63	50	2	32	25	1	184	13	11
63	50	2	40	32	1 ¼	471	32	28
63	50	2	50	40	1 ½	610	42	37
63	50	2	36	50	2	747	52	45
90	80	3	20	15	½	82	6	5
90	80	3	25	20	¾	103	7	6
90	80	3	32	25	1	129	9	8
90	80	3	50	40	1 ½	623	43	37
90	80	3	36	50	2	696	48	42
110	100	4	20	15	½	78	5	4
110	100	4	25	20	¾	103	7	6
110	100	4	32	25	1	131	9	8
110	100	4	50	40	1 ½	604	42	36
110	100	4	36	50	2	661	46	40

Flow characteristics type 514 – 517



x Open angle (%)
y kv, Cv value (%)

Flow characteristics type 519



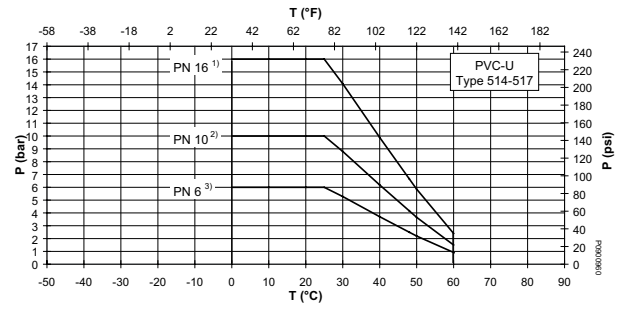
x Open angle (%)
y kv, Cv value (%)

Pressure-temperature diagrams

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

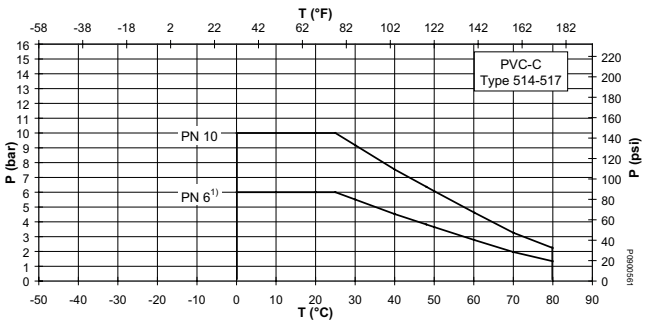
T Temperature (°C, °F)
P Permissible pressure (bar, psi)

PVC-U



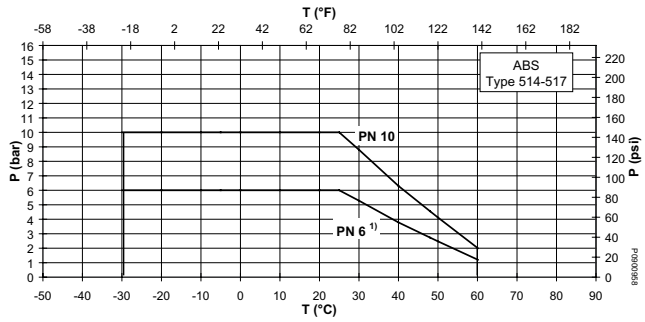
1) Only with black housing nut
2) Depending on the connection type and actuator, the nominal pressure is reduced to PN10
3) Depending on the connection type and actuator, the nominal pressure is reduced to PN6

PVC-C



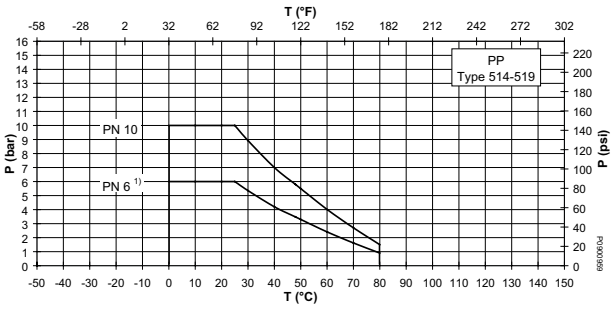
1) Depending on the connection type and actuator, the nominal pressure is reduced to PN6

ABS



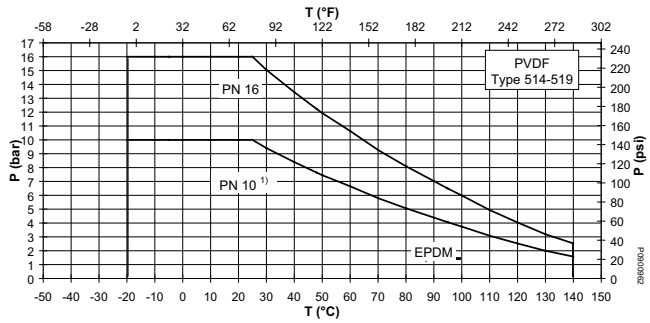
1) Depending on the connection type and actuator, the nominal pressure is reduced to PN6

PP



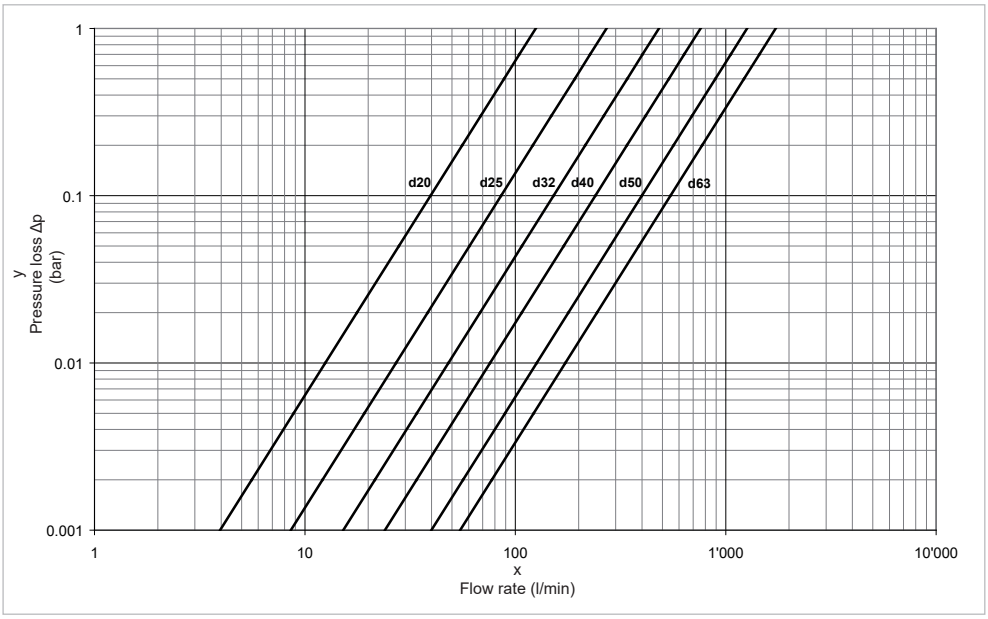
1) Depending on the connection type and actuator, the nominal pressure is reduced to PN6

PVDF



1) PN16 only with black PPS housing nut. Depending on the connection type and actuator, the nominal pressure is reduced to PN10

Pressure losses



x Flow rate (l/min, US gal/min)

y Pressure loss Δp (bar, psi)

Air connection

	DIASTAR Six (FC)	DIASTAR Ten (FC/FO/DA)	DIASTAR TenPlus (FC)	DIASTAR Sixteen (FC)	(FO/DA)
20DN15	G 1/8"	G 1/8"	G 1/8"	G 1/8"	
25DN20	G 1/8"	G 1/8"	G 1/8"	G 1/8"	
32DN25	G 1/8"	G 1/8"	G 1/8"	G 1/8"	
40DN32	G 1/8"	G 1/8"	G 1/4"	G 1/4"	G 1/8"
50DN40	G 1/8"	G 1/4"	G 1/4"	G 1/4"	
63DN50	G 1/8"	G 1/4"	G 1/4"	G 1/4"	

Control volume

	DIASTAR Six (FC) [dm^3]	DIASTAR Ten (FC) [dm^3]	DIASTAR Ten (FO) [dm^3]	DIASTAR Ten (DA) [dm^3] close	open	DIASTAR TenPlus (FC) [dm^3]	DIASTAR Six-teen (FC) [dm^3]
20DN15	0.04	0.04	0.07	0.07	0.04	0.10	0.10
25DN20	0.12	0.12	0.20	0.20	0.12	0.12	0.12
32DN25	0.12	0.12	0.23	0.23	0.12	0.22	0.22
40DN32	0.24	0.24	0.44	0.44	0.24	0.40	0.40
50DN40	0.24	0.42	0.86	0.86	0.42	0.70	0.70
63DN50	0.24	0.44	0.86	0.86	0.44	0.80	0.80

Pressure ratings

DIASTAR Six FC

Valve body material	PVC-U, PVC-C, ABS, PP-H, PP-N	
	Pressure rating [bar]	Max. control pressure[2] [bar]
DN	EPDM[1]	
20DN15	6	2.6
25DN20	6	3.8
32DN25	6	3.8
40DN32	6	3.8
50DN40	6	3.8
63DN50	6	5.5
Medium pressure	→ One sided applied	

[1] Also applies to other elastomer diaphragms such as FKM, NBR, etc.

[2] At 0 bar medium pressure.

DIASTAR Ten FC

Valve body material	PVC-U, PVC-C, ABS, PP-H, PVDF, PVDF-HP, PP-N		
	Pressure rating [bar]		Max. control pressure[2] [bar]
DN	EPDM[1]	PTFE	
20DN15	10	10/6*	5.4
25DN20	10	10/6*	5.4
32DN25	10	10/6*	5.4
40DN32	10	10/6*	5.4
50DN40	10	10/6*	5.4
63DN50	10	6/5	5.4
Medium pressure	→ One sided applied	→ One sided applied	

*With medium pressure applied on both sides.

[1] Also applies to other elastomer diaphragms such as FKM, NBR, etc.

[2] At 0 bar medium pressure.

DIASTAR Ten FO/DA

Valve body material	PVC-U, PVC-C, ABS, PP-H, PVDF, PVDF-HP, PP-N			
	Pressure rating [bar]		Max. control pressure[2] [bar]	
DN	EPDM[1]	PTFE	EPDM[1]	PTFE
20DN15	10	10/6*	4.5	3.5
25DN20	10	10/6*	4.5	3
32DN25	10	10/6*	4.5	3.5
40DN32	10	10/6*	4.5	3.5
50DN40	10	10/6*	3.5	3.5
63DN50	10	10/6*	3.5	4.5
Medium pressure	→ One sided applied	→ One sided applied		

*With medium pressure applied on both sides.

[1] Also applies to other elastomer diaphragms such as FKM, NBR, etc.

[2] At 10 bar medium pressure.

DIASTAR TenPlus FC

Valve body material	PVC-U, PVC-C, ABS, P-H, PVDF, PVDF-HP		
	Pressure rating [bar]		Max. control pressure[2] [bar]
DN	EPDM[1]	PTFE	
20DN15	10	10	5.4
25DN20	10	10	5.4
32DN25	10	10	5.4
40DN32	10	10	5.4
50DN40	10	10	5.4
63DN50	10	10	5.4
Medium pressure	→← Both sides applied	→← Both sides applied	

[1] Also applies to other elastomer diaphragms such as FKM, NBR, etc.

[2] At 0 bar medium pressure.

DIASTAR Sixteen FC

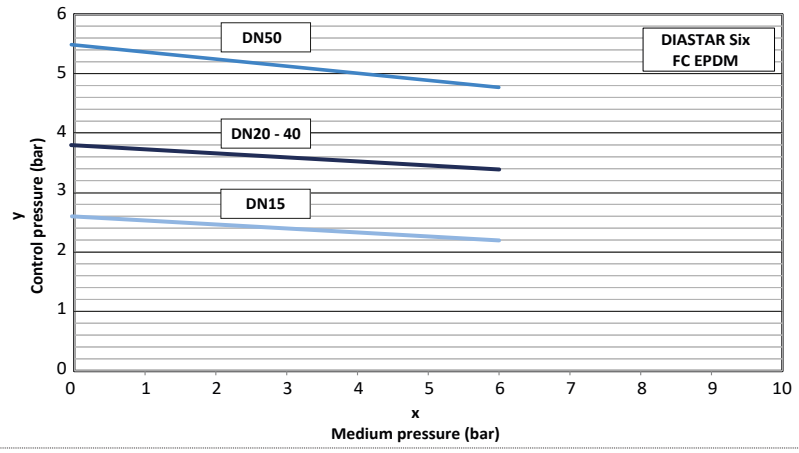
Valve body material	PVC-U, PVDF, PVDF-HP		
	Pressure rating [bar]		Max. control pressure[2] [bar]
DN	EPDM[1]	PTFE	
20DN15	16	16	5.5
25DN20	16	16	5.5
32DN25	16	16	5.5
40DN32	16	16	5.5
50DN40	16	16	5.5
63DN50	16	10	5.5
Medium pressure	→ One sided applied	→ One sided applied	

[1] Also applies to other elastomer diaphragms such as FKM, NBR, etc.

[2] At 0 bar medium pressure.

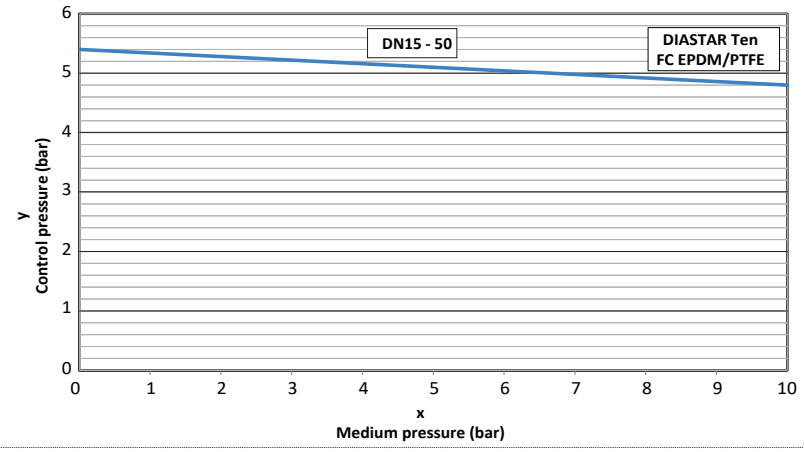
Control pressure diagrams

DIASTAR Six FC with EPDM* diaphragm



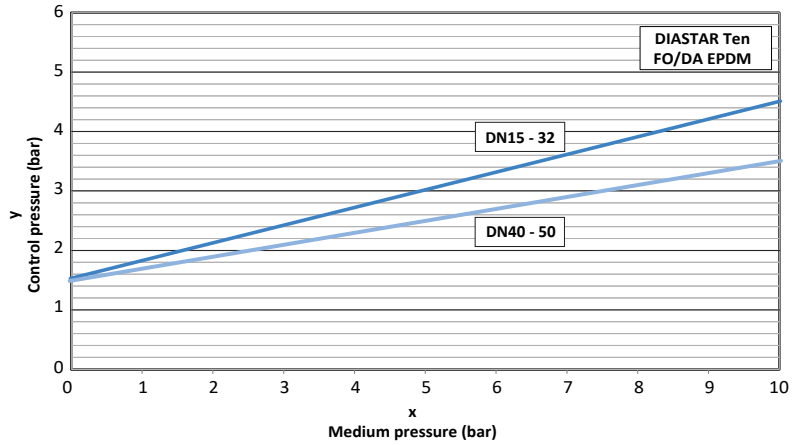
x Media pressure
y Control pressure

DIASTAR Ten FC with EPDM* or PTFE diaphragm



x Media pressure
y Control pressure

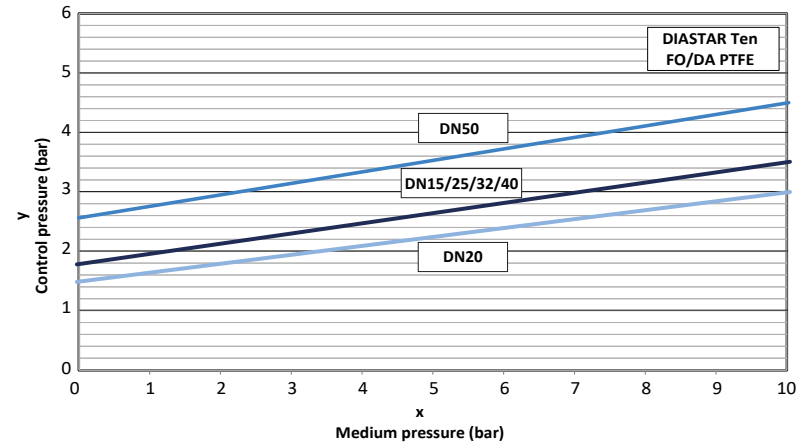
DIASTAR Ten FO and DA with EPDM* diaphragm



x Media pressure
y Control pressure

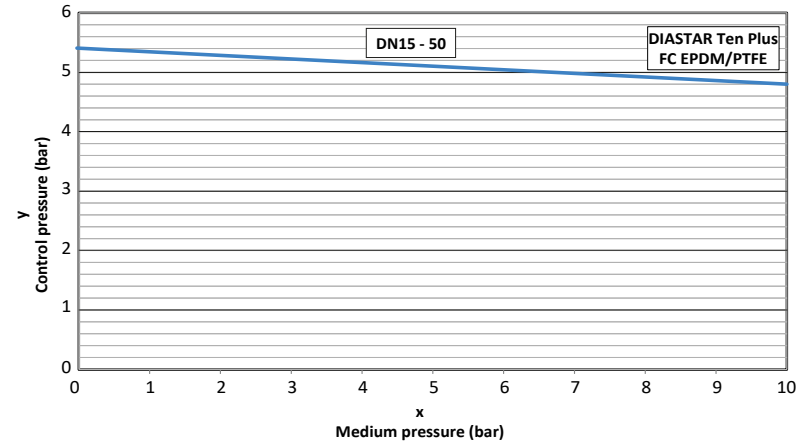
* also applies to other elastomer diaphragms such as FKM, NBR, etc.

DIASTAR Ten FO and DA with PTFE diaphragm



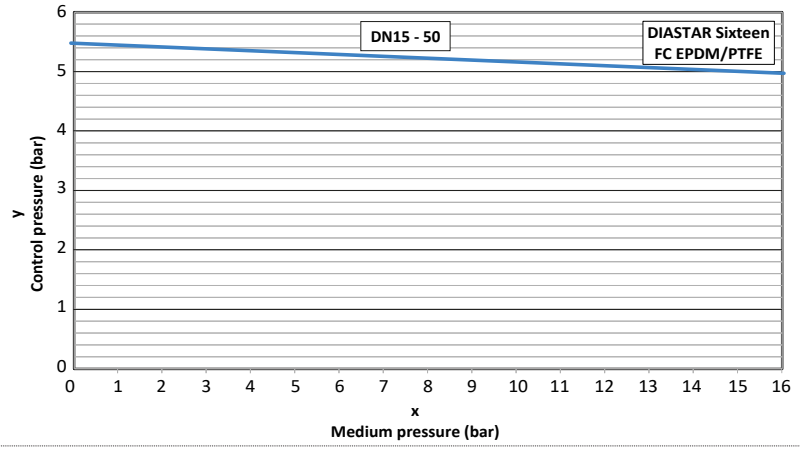
x Media pressure
y Control pressure

DIASTAR TenPlus FC with EPDM* or PTFE diaphragm



x Media pressure
y Control pressure

DIASTAR Sixteen FC with EPDM* or PTFE diaphragm

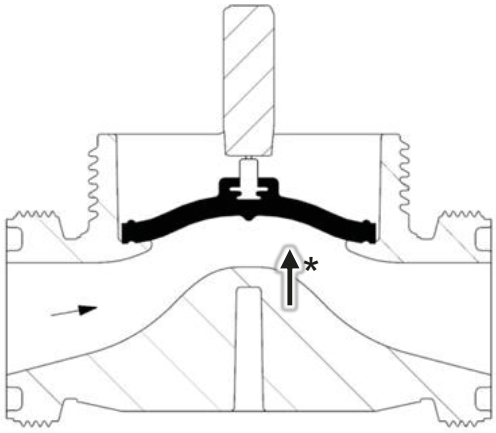


x Media pressure
y Control pressure

* also applies to other elastomer diaphragms such as FKM, NBR, etc.

Valve stroke

Valve stroke



* Max. Valve stroke

DN (mm)	Actuator Size	Version	Valve stroke Reference (mm)
15	1	Six, 604/605	6.0
	1	Ten	6.0
			6.0
	2	Sixteen	6.0
20	2	Six	9.0
	2	Ten	9.0
	2	Sixteen	9.0
25	2	Six	12.0
	2	Ten	12.0
	3	Sixteen	12.0
32	3	Six	14.0
	3	Ten	14.0
	4	Sixteen	14.0
40	3	Six	14.0
	4	Ten	14.0
			14.0
	5	Sixteen	14.0
50	3	Six	14.0
			14.0
			14.0
	4	Ten	22.0
	5	Sixteen	22.0

Technical basics

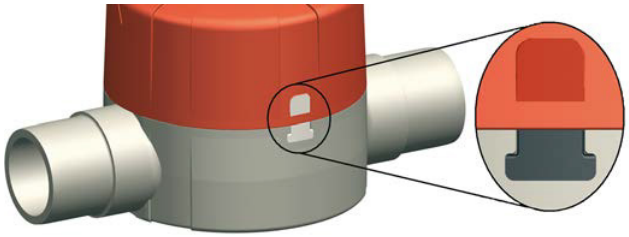
The actuators are available with the functions fail safe to close (FC), fail safe to open (FO) and double-acting (DA). The valves have an integrated optical position indicator. The actuator housings are made of PPGF (fiberglass-reinforced polypropylene). Actuators of the FC design have pre-tensioned spring assemblies made of galvanized steel, for safe operation and safe maintenance of the actuator.

i All diaphragm valves are manufactured in accordance with EN ISO 16138. The upper housing made of PPGF (fiberglass-reinforced polypropylene) is screwed together with the lower housing using a central plastic nut, which avoids exposed metal screws.

Indicator for diaphragm material

The color of the index plate on the valve body shows the type of diaphragm material:

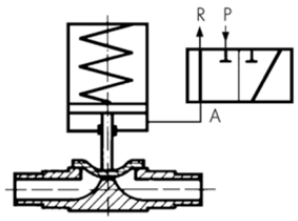
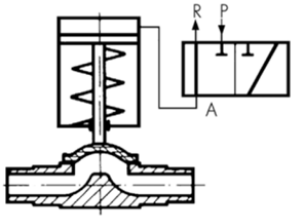
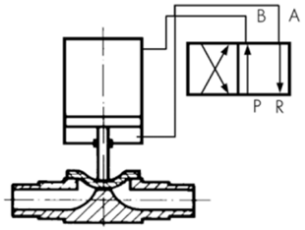
Color	Diaphragm material
Black	EPDM
White	PTFE/EPDM
Green	PTFE/FKM
Red	FKM
Blue	NBR



Differentiation in functionalities – FC, FO, DA

Function	Name
FC	Fail safe to close
FO	Fail safe to open
DA	Fail safe double-acting

FC mode	FO mode	DA mode
In the non-operative state, the valve is closed by means of spring resistance. When the actuator is pressurized with the control pressure (bottom connection), the valve opens. When the control pressure escapes, the valve is closed via spring resistance.	In the non-operative state, the valve is opened by means of spring resistance. When the actuator is pressurized with the control pressure (top connection), the valve closes. When the control pressure escapes, the valve is opened via spring resistance.	The valve has no defined basic position. The valve is opened and closed by applying control pressure to the corresponding connection (top connection for closing, bottom connection for opening).

Selection of the solenoid valve and associated connecting thread		
3/2-way solenoid valves are used to control single acting actuators (FC). They are mounted either directly to the actuator using a hollow screw or via a multiple connection plate or valve clusters, as required.	3/2-way solenoid valves are used to control single acting actuators (FO). They are mounted either directly to the actuator using a hollow screw or via a multiple connection plate or valve clusters, as required.	4/2-way or 5/2-way solenoid valves are used to control double-acting actuators (DA). They can be mounted either directly to the actuator using a NAMUR connector plate or via valve clusters.
		
FC mode with a 3/2-way solenoid valve for bottom connection	FO mode with a 3/2-way solenoid valve for top connection	The DA mode with a 4/2- or 5/2-way solenoid valve. Both connections are used.

Control pressure

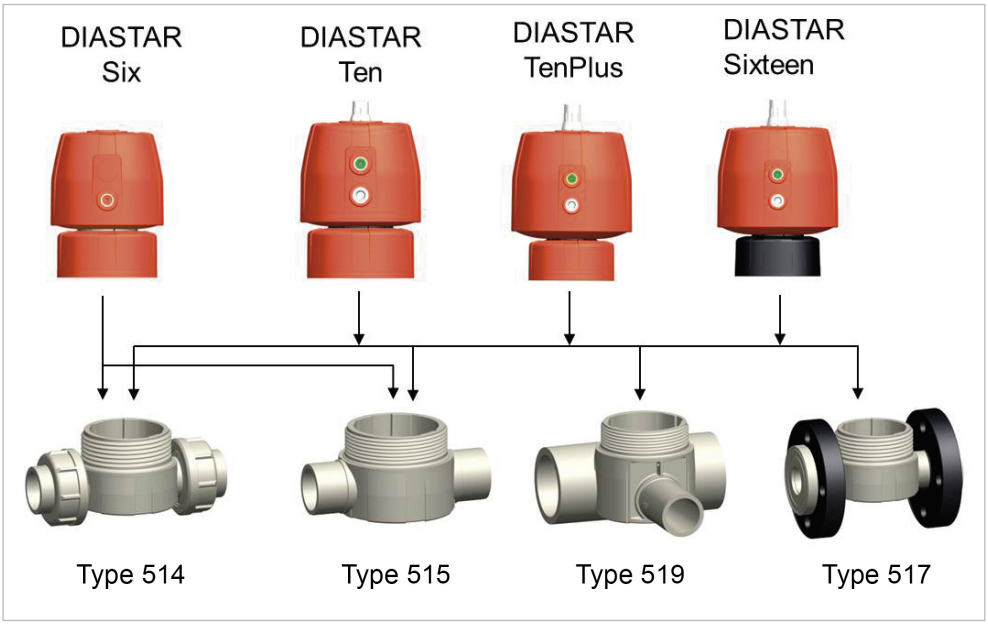
Function FC	Function FO	Function DA
6 bar maximum for function FC; low control pressures possible by reducing the spring assemblies. Depending on dimension, see table of pressure stages and control pressure diagrams.	5 bar maximum for the FO function. For dimension DN50 and from a medium pressure of 10 bar, the max. control pressure is 6 bar. Depending on the dimension, see table of pressure stages and control pressure diagrams.	5 bar maximum for the DA function. For dimension DN50 and from a medium pressure of 10 bar, the max. control pressure is 6 bar. Depending on the dimension, see table of pressure stages and control pressure diagrams.
Compressed air classes (ISO 8573-1) 2 or 3 at -10°C and 3 or 4 at T>0°C	Compressed air classes (ISO 8573-1) 2 or 3 at -10°C and 3 or 4 at T>0°C	Compressed air classes (ISO 8573-1) 2 or 3 at -10°C and 3 or 4 at T>0°C
From a medium pressure of 10 bar, the control pressure must be throttled (set actuator operating time to approx. 3s).	From a medium pressure of 10 bar, the exhaust air of the control pressure must be throttled (set actuator operating time to approx. 3s).	From a medium pressure of 10 bar, the exhaust air of the control pressure must be throttled (set actuator operating time to approx. 3s).
Temperature of the control medium max. 40°C	Temperature of the control medium max. 40°C	Temperature of the control medium max. 40°C
	Depending on the medium pressure, low control pressures can be selected.	Depending on the medium pressure, low control pressures can be selected.

Note: For optimum valve life, it is recommended to set the control pressure based on the medium pressure - see control pressure diagrams.

Diaphragms

Diaphragms in this Valve type are heavily stressed components. In addition to the mechanical stress caused by wear and tear over several actuating cycles, the diaphragms are also subject to wear and tear due to the flow medium. We strongly recommend that you inspect and, if necessary, replace the diaphragms after 50,000 cycles.

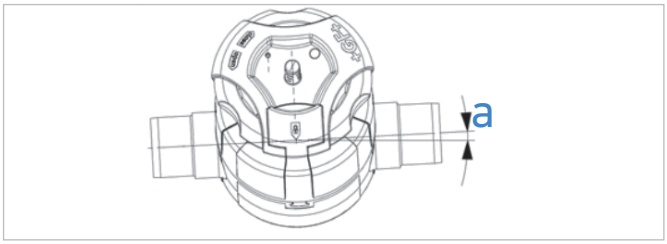
Connections



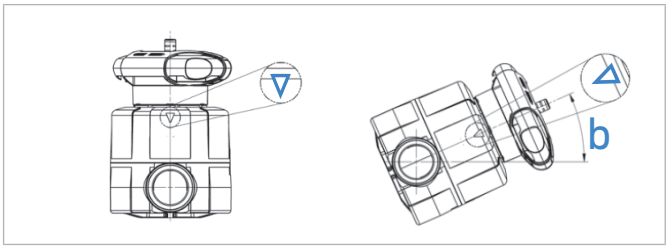
Installation angle for optimal draining of the valve

In order to achieve optimal drainage of these diaphragm valves, GF Piping Systems recommends installing them at the angles (a and b), which correspond to the respective dimension ranges. An installation inclination of about 1° to 2° is not taken into consideration with the stated angles.

Dimension	Angle a for types 514, 515, 517
d20/DN15	2
d25/DN20	2
d32/DN25	3
d40/DN32	4
d50/DN40	5
d63/DN50	7

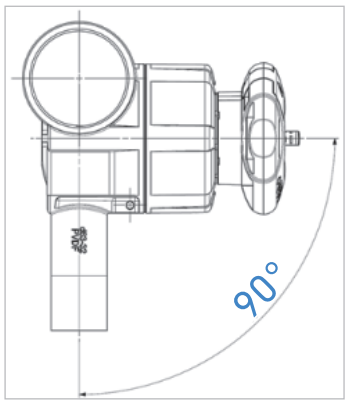


Dimension	Angle a for types 514, 515, 517
d20/DN15	27
d25/DN20	24
d32/DN25	25
d40/DN32	23
d50/DN40	24
d63/DN50	22



Optimum angle with one of the triangle legs horizontal.

Emptying angle for type 519 is 90°, regardless of the dimension



Integrated fastening and PP mounting blocks

Integrated mounting

The diaphragm valve includes an integrated mounting. With this, the forces that can occur when operating the valve (e.g. breakaway torque) are absorbed. Thanks to the integrated mounting, operation forces are not transmitted to the piping system.

PP mounting block for diaphragm valves

The mounting blocks are designed to allow differently sized GF diaphragm valves to be aligned on the same pipe axis by equalizing the different heights from the mounting surface to the pipe axis. The blocks can also be used for the PVC diaphragm Valve type 514 for equalizing the coupling nut with the mounting surface.

- Material: PP-GF15, black
- 5 sizes, numbered from 1 to 5
- Can be plugged together to achieve the desired height

Valve handling

Installation notes

Relation between the pipe pressure and spring assemblies

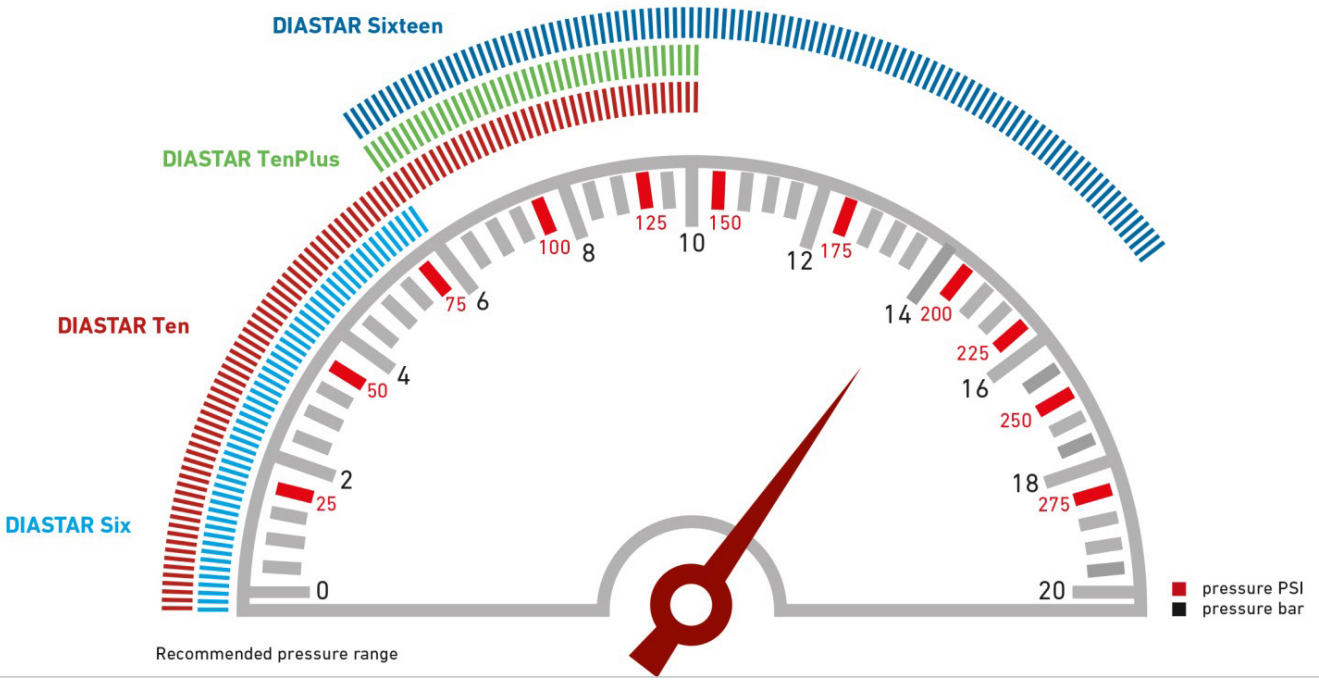
The closing forces of the actuators were designed for the specified PN pressure level. Operation with low pipe pressure can cause increased diaphragm wear. In order to extend the diaphragm life span, the number of spring assemblies can be reduced. For the specific dimensioning, please contact your representative at GF Piping Systems.

DIASTAR Six
For low pressure applications
- DN20 to DN50
- FC-function
- Cost effective

DIASTAR Ten
All-rounder for standard applications
- DN15 to DN50
- FC-, FO and DA-function

DIASTAR TenPlus
Use only when pressure is applied from both sides
- DN15 to DN50
- FC-function

DIASTAR Sixteen
For water applications with high pressure
- DN15 to DN50
- FC-, FO-, DA-function



- The pneumatic diaphragm valve DIASTAR Six can be used from 0 to 6 bar. If the pipe pressure is below 2 bar, a reduction in the spring assemblies should be considered.
- The pneumatic diaphragm valve DIASTAR Ten is suitable for use with a pipe pressure from 0 to 10 bar. For optimal valve lifespan, note that the spring assemblies should be reduced in the event of pipe pressures < 2 bar.
- For pipe pressures from 4-6 to 10 bar, DIASTAR TenPlus should be used on both sides.
- The DIASTAR Sixteen should be used for pipe pressures between 6 and 16 bar. When using with a pipe pressure below 8 bar, the adjustment of the spring assemblies is recommend.

Ensure that the diaphragm valve and the spring assemblies are each designed in accordance with the medium pressure. Reducing the spring assemblies leads to a reduced closing force. When the medium pressure rises, the valve cannot close or cannot close completely if spring assemblies are missing. This can have a negative impact on the process.

Maintenance notes

We recommend regular inspection of the diaphragm and the valve body, at the latest after:

- 100,000 operations at less than 10 bar nominal pressure at 20 °C with water
- 50,000 operations at more than 10 bar nominal pressure at 20 °C with water

Should the flow medium show increased temperatures, chemicals, or particles that cause abrasion, we recommend more frequent monitoring. The diaphragm can be controlled by professionally dismounting the housing nut.

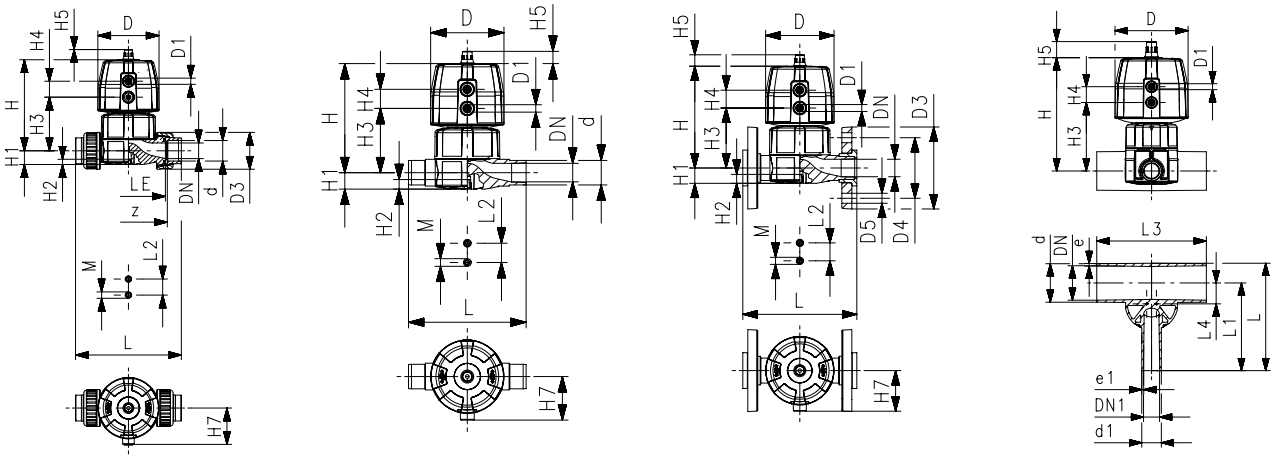
⚠ Installation and maintenance must be performed in accordance with the corresponding installation manual. The installation manual can be downloaded via the QR code on the enclosed quick start guide, see also the online product catalog at www.gfps.com

Tips for installation

- The direction of flow and mounting position may be chosen freely.

Dimensions

Type 514 **Type 515** **Type 517** **Type 519**



DIASTAR Six FC (Type 514 – 517)

Dim. (mm)	DN (mm)	Inch (inch)	D (mm)	D1 (inch)	D4 (mm)	D5 (mm)	L(1) (mm)	L(2) (mm)	L(3) (mm)	L(4) (mm)	L(5) (mm)	L(6) (mm)	L(7) (mm)
20	15	½	68	⅛	65	14	128	128	128	224	196	124	124
25	20	¾	96	⅛	75	14	152	152	150	250	221	144	144
32	25	1	96	⅛	85	14	166	166	162	262	234	154	154
40	32	1 ¼	120	⅛	100	18	192	192	184	296	260	174	174
50	40	1 ½	120	⅛	110	18	222	222	210	328	284	194	194
63	50	2	120	⅛	125	18	266	266	248	370	321	224	224

Dim. (mm)	DN (mm)	Inch (inch)	L(8) (mm)	L(9) (mm)	L2 (mm)	H (mm)	H1 (mm)	H2 (mm)	H3 (mm)	H7 (mm)	M	Z (mm)	LE	z for L(3)	Hx (mm)
20	15	½	124	130	25	101	14	12	60	43	M6	96	90	100	7
25	20	¾	144	150	25	132	18	12	73	57	M6	114	108	118	10
32	25	1	154	160	25	143	22	12	84	57	M6	122	116	126	13
40	32	1 ¼	174	180	45	173	26	15	99	69	M8	140	134	144	14
50	40	1 ½	194	200	45	193	32	15	119	69	M8	160	154	164	16
63	50	2	224	230	45	205	39	15	132	69	M8	190	184	194	16

DIASTAR Ten FC (Type 514 – 517)

Dim. (mm)	DN (mm)	Inch (inch)	D (mm)	D1 (inch)	D4 (mm)	D5 (mm)	L(1) (mm)	L(2) (mm)	L(3) (mm)	L(4) (mm)	L(5) (mm)	L(6) (mm)	L(7) (mm)	L(8) (mm)
20	15	½	68	⅛	65	14	128	128	128	224	196	124	124	124
25	20	¾	96	⅛	75	14	152	152	150	250	221	144	144	144
32	25	1	96	⅛	85	14	166	166	162	262	234	154	154	154
40	32	1 ¼	120	⅛	100	18	192	192	184	296	260	174	174	174
50	40	1 ½	150	¼	110	18	222	222	210	328	284	194	194	194
63	50	2	150	¼	125	18	266	266	248	370	321	224	224	224

Dim. (mm)	DN (mm)	inch (inch)	L(9) (mm)	L2 (mm)	H (mm)	H1 (mm)	H2 (mm)	H3 (mm)	H4 (mm)	H5 (mm)	H7 (mm)	M	z (mm)	LE	z for L(3)	Hx (mm)
20	15	½	130	25	101	14	12	60	24	16	43	M6	96	90	100	7
25	20	¾	150	25	132	18	12	73	25	16	57	M6	114	108	118	10
32	25	1	160	25	143	22	12	84	25	16	57	M6	122	116	126	13
40	32	1 ¼	180	45	173	26	15	99	26	26	69	M8	140	134	144	15
50	40	1 ½	200	45	214	32	15	119	36	26	88	M8	160	154	164	19
63	50	2	230	45	226	39	15	132	36	26	88	M8	190	184	194	23

DIASTAR Ten FO/DA (Type 514 – 517)

Dim. (mm)	DN (mm)	Inch (inch)	D (mm)	D1 (inch)	D4 (mm)	D5 (mm)	L(1) (mm)	L(2) (mm)	L(3) (mm)	L(4) (mm)	L(5) (mm)	L(6) (mm)	L(7) (mm)	L(8) (mm)
20	15	½	68	⅛	65	14	128	128	128	224	196	124	124	124
25	20	¾	96	⅛	75	14	152	152	150	250	221	144	144	144
32	25	1	96	⅛	85	14	166	166	168	262	234	154	154	154
40	32	1 ¼	120	⅛	100	18	192	192	184	296	260	174	174	174
50	40	1 ½	150	¼	110	18	222	222	210	328	284	194	194	194
63	50	2	150	¼	125	18	266	266	248	370	321	224	224	224

Dim. (mm)	DN (mm)	Inch (inch)	L(9) (mm)	l2 (mm)	H (mm)	H1 (mm)	H2 (mm)	H3 (mm)	H4 (mm)	H5 (mm)	H7 (mm)	M	z (mm)	LE	z for L(3)	Hx (mm)
20	15	½	130	25	101	14	12	60	24	16	43	M6	96	90	100	7
25	20	¾	150	25	132	18	12	73	25	16	57	M6	114	108	118	10
32	25	1	160	25	147	22	12	84	25	16	57	M6	122	116	126	13
40	32	1 ¼	180	45	173	26	15	99	26	26	69	M8	140	134	144	15
50	40	1 ½	200	45	214	32	15	119	36	26	88	M8	160	154	164	19
63	50	2	230	45	226	39	15	132	36	26	88	M8	190	184	194	23

DIASTAR Ten FO/DA (Type 519)

Dim. (mm)	d1 (mm)	DN (mm)	inch (inch)	DN1 (mm)	Inch1 (")	DN2 (mm)	Inch2 (inch)	D (mm)	D1 (inch)	L(6) (mm)	L1 (mm)	L3 (mm)	L4 (mm)	H (mm)	H3 (mm)	H4 (mm)	H5 (mm)	Hx (mm)
20	20	15	½	15	½	15	½	68	⅛	117	96	162	12	104	63	24	16	7
25	20	20	¾	15	½	20	¾	96	⅛	133	108	162	16	131	73	25	16	10
25	25	20	¾	20	¾	20	¾	96	⅛	133	108	162	16	131	73	25	16	10
32	20	25	1	15	½	20	¾	96	⅛	142	120	162	19	135	76	25	16	10
32	25	25	1	20	¾	20	¾	96	⅛	142	120	162	19	135	76	25	16	10
32	32	25	1	25	1	25	1	96	⅛	145	120	160	19	143	84	25	16	13
40	20	32	1¼	15	½	25	1	96	⅛	149	128	180	23	151	92	25	16	13
40	25	32	1 ¼	20	¾	25	1	96	⅛	149	128	180	23	151	92	25	16	13
40	32	32	1 ¼	25	1	25	1	96	⅛	149	128	180	23	151	92	25	16	13
40	40	32	1 ¼	32	1 ¼	25	1	96	⅛	174	153	180	23	151	92	25	16	13
50	20	40	1 ½	15	½	20	¾	96	⅛	160	134	180	27	148	90	25	16	10
50	25	40	1 ½	20	¾	25	1	96	⅛	160	134	180	28	156	97	25	16	13
50	32	40	1 ½	25	1	25	1	96	⅛	160	134	180	28	156	97	25	16	13
50	40	40	1 ½	32	1 ¼	50	2	150	¼	209	169	209	33	224	129	36	26	23
50	50	40	1 ½	40	1 ½	50	2	150	¼	209	169	209	33	224	129	36	26	23
63	20	50	2	15	½	20	2	96	⅛	177	144	180	33	155	96	25	16	10
63	25	50	2	20	¾	25	1	96	⅛	177	144	180	35	163	104	25	16	13
63	32	50	2	25	1	25	1	96	⅛	177	144	180	35	163	104	25	16	13
63	40	50	2	32	1 ¼	50	2	150	¼	225	192	220	39	230	136	36	26	23
63	50	50	2	40	1 ½	50	2	150	¼	225	192	220	39	230	136	36	26	23
63	63	50	2	50	2	50	2	150	¼	225	192	220	39	230	136	36	26	23
90	20	80	3	15	½	25	1	96	⅛	205	159	190	47	176	117	25	16	13
90	25	80	3	20	¾	25	1	96	⅛	205	159	190	47	176	117	25	16	13
90	32	80	3	25	1	25	1	96	⅛	205	159	190	47	176	117	25	16	13
90	50	80	3	40	1 ½	50	2	150	¼	254	207	250	51	244	150	36	26	23
90	63	80	3	50	2	50	2	150	¼	254	207	250	51	244	150	36	26	23
110	20	100	4	15	½	25	1	96	⅛	227	171	190	56	185	126	25	16	13
110	25	100	4	20	¾	25	1	96	⅛	227	171	190	56	185	126	25	16	13
110	32	100	4	25	1	25	1	96	⅛	277	171	190	56	185	126	25	16	13
110	50	100	4	40	1 ½	50	2	150	¼	276	219	250	60	254	160	36	26	23
110	63	100	4	50	2	50	2	150	¼	276	219	250	60	254	160	36	26	23

DIASTAR TenPlus FC (Type 514 – 517)

Dim. (mm)	DN (mm)	Inch (inch)	D (mm)	D1 (inch)	D4 (mm)	D5 (mm)	L(1) (mm)	L(2) (mm)	L(3) (mm)	L(4) (mm)	L(5) (mm)	L(6) (mm)	L(7) (mm)	L(8) (mm)
20	15	½	96	⅛	65	14	128	128	128	224	196	124	124	124
25	20	¾	96	⅛	75	14	152	152	152	250	221	144	144	144
32	25	1	120	⅛	85	14	166	166	166	262	234	154	154	154
40	32	1 ¼	150	¼	100	18	192	192	192	296	260	174	174	174
50	40	1 ½	180	¼	110	18	222	222	222	328	284	194	194	194
63	50	2	180	¼	125	18	266	266	266	370	321	224	224	224

Dim. (mm)	DN (mm)	Inch (inch)	L(9) (mm)	l2 (mm)	H (mm)	H1 (mm)	H2 (mm)	H3 (mm)	H4 (mm)	H5 (mm)	H7 (mm)	M	z (mm)	z for L(3)	Hx (mm)
20	15	½	130	25	127	14	12	68	25	16	57	M6	96	100	7
25	20	¾	150	25	132	18	12	73	25	16	57	M6	114	118	10
32	25	1	160	25	167	22	12	93	26	26	69	M6	122	126	13
40	32	1 ¼	180	45	196	26	15	101	36	26	88	M8	140	144	15
50	40	1 ½	200	45	239	32	15	124	37	26	103	M8	160	164	19
63	50	2	230	45	251	39	15	137	37	26	103	M8	190	194	23

DIASTAR TenPlus FC (Type 519)

Dim. (mm)	d1 (mm)	DN (mm)	Inch (inch)	DN1 (mm)	Inch1 (inch)	DN2 (mm)	Inch2 (inch)	D (mm)	D1 (inch)	L(6) (mm)	L1 (mm)	L3 (mm)	L4 (mm)	H (mm)	H3 (mm)	H4 (mm)	H5 (mm)	Hx (mm)
20	20	15	½	15	½	15	½	96	⅛	117	96	162	12	103	71	25	16	7
25	20	20	¾	15	½	20	¾	96	⅛	133	108	162	16	131	72	25	16	10
25	25	20	¾	20	¾	20	¾	96	⅛	133	108	162	16	131	72	25	16	10
32	20	25	1	15	½	20	¾	96	⅛	142	120	162	19	135	76	25	16	10
32	25	25	1	20	¾	20	¾	96	⅛	142	120	162	19	135	76	25	16	10
32	32	25	1	25	1	25	1	120	⅛	145	120	160	19	167	93	26	26	13
40	20	32	1 ¼	15	½	25	1	120	⅛	149	128	180	23	175	101	26	26	13
40	25	32	1 ¼	20	¾	25	1	120	⅛	149	128	180	23	175	101	26	26	13
40	32	32	1 ¼	25	1	25	1	120	⅛	149	128	180	23	175	101	26	26	13
40	40	32	1 ¼	32	1 ¼	25	1	120	⅛	174	153	180	23	175	101	26	26	13
50	20	40	1 ½	15	½	20	¾	96	⅛	160	134	180	27	148	90	25	16	10
50	25	40	1 ½	20	¾	25	1	120	⅛	160	134	180	28	180	106	26	26	13
50	32	40	1 ½	25	1	25	1	120	⅛	160	134	180	28	180	106	26	26	13
50	40	40	1 ½	32	1 ¼	50	2	180	¼	209	169	209	33	249	135	37	26	23
50	50	40	1 ½	40	1 ½	50	2	180	¼	209	169	209	33	249	135	37	26	23
63	20	50	2	15	½	20	2	96	⅛	177	144	180	33	155	96	25	16	10
63	25	50	2	20	¾	25	1	120	⅛	177	144	180	35	187	113	26	26	13
63	32	50	2	25	1	25	1	120	⅛	177	144	180	35	187	113	26	26	13
63	40	50	2	32	1 ¼	50	2	180	¼	225	192	220	39	255	141	37	26	23
63	50	50	2	40	1 ½	50	2	180	¼	225	192	220	39	255	141	37	26	23
63	63	50	2	50	2	50	2	180	¼	225	192	220	39	255	141	37	26	23
90	20	80	3	15	½	25	1	120	⅛	205	159	190	47	200	126	26	26	13
90	25	80	3	20	¾	25	1	120	⅛	205	159	190	47	200	126	26	26	13
90	32	80	3	25	1	25	1	120	⅛	205	159	190	47	200	126	26	26	13
90	50	80	3	40	1 ½	50	2	180	¼	254	207	250	51	269	155	37	26	23
90	63	80	3	50	2	50	2	180	¼	254	207	250	51	269	155	37	26	23
110	20	100	4	15	½	25	1	120	⅛	227	171	190	56	209	135	26	26	13
110	25	100	4	20	¾	25	1	120	⅛	227	171	190	56	209	135	26	26	13
110	32	100	4	25	1	25	1	120	⅛	277	171	190	56	209	135	26	26	13
110	50	100	4	40	1 ½	50	2	180	¼	276	219	250	60	279	165	37	26	23
110	63	100	4	50	2	50	2	180	¼	276	219	250	60	279	165	37	26	23

DIASTAR Sixteen FC (Type 514 – 517)

Dim. (mm)	DN (mm)	Inch (inch)	D (mm)	D1 (inch)	D4 (mm)	D5 (mm)	L(1) (mm)	L(2) (mm)	L(3) (mm)	L(4) (mm)	L(5) (mm)	L(6) (mm)	L(7) (mm)	L(8) (mm)
20	15	½	96	⅛	65	14	128	128	128	224	196	124	124	124
25	20	¾	96	⅛	75	14	152	152	152	250	221	144	144	144
32	25	1	120	⅛	85	14	166	166	162	262	234	154	154	154
40	32	1 ¼	150	¼	100	18	192	192	184	296	260	174	174	174
50	40	1 ½	180	¼	110	18	222	222	210	328	284	194	194	194
63	50	2	180	¼	125	18	266	266	248	370	321	224	224	224

Dim. (mm)	DN (mm)	Inch (inch)	L(9) (mm)	L2 (mm)	H (mm)	H1 (mm)	H2 (mm)	H3 (mm)	H4 (mm)	H5 (mm)	H7 (mm)	M	z (mm)	z for L(3)	Hx (mm)
20	15	½	130	25	127	14	12	68	25	16	57	M6	96	100	7
25	20	¾	150	25	132	18	12	73	25	16	57	M6	114	118	10
32	25	1	160	25	167	22	12	93	26	26	69	M6	122	126	13
40	32	1 ¼	180	45	196	26	15	101	36	26	88	M8	140	144	15
50	40	1 ½	200	45	239	32	15	124	37	26	103	M8	160	164	19
63	50	2	230	45	251	39	15	137	37	26	103	M8	190	194	23

DIASTAR Sixteen FC (Type 519)

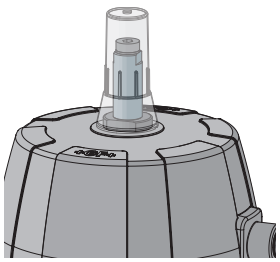
Dim. (mm)	d1 (mm)	DN (mm)	Inch (inch)	DN1 (mm)	Inch1 (inch)	DN2 (mm)	Inch2 (inch)	D (mm)	D1 (inch)	L(6) (mm)	L1 (mm)	L3 (mm)	L4 (mm)	H (mm)	H3 (mm)	H4 (mm)	H5 (mm)	Hx (mm)
20	20	15	½	15	½	15	½	96	⅛	117	96	162	12	130	71	25	16	7
25	20	20	¾	15	½	20	¾	96	⅛	133	108	162	16	131	72	25	16	10
25	25	20	¾	20	¾	20	¾	96	⅛	133	108	162	16	131	72	25	16	10
32	20	25	1	15	½	20	¾	96	⅛	142	120	162	19	135	76	25	16	10
32	25	25	1	20	¾	20	¾	96	⅛	142	120	162	19	135	76	25	16	10
32	32	25	1	25	1	25	1	120	⅛	145	120	160	19	167	93	26	26	13
40	20	32	1 ¼	15	½	25	1	120	⅛	149	128	180	23	175	101	26	26	13
40	25	32	1 ¼	20	¾	25	1	120	⅛	149	128	180	23	175	101	26	26	13
40	32	32	1 ¼	25	1	25	1	120	⅛	149	128	180	23	175	101	26	26	13
40	40	32	1 ¼	32	1 ¼	25	1	120	⅛	174	153	180	23	175	101	26	26	13
50	20	40	1 ½	15	½	20	¾	96	⅛	160	134	180	27	148	90	25	16	10
50	25	40	1 ½	20	¾	25	1	120	⅛	160	134	180	28	180	106	26	26	13
50	32	40	1 ½	25	1	25	1	120	⅛	160	134	180	28	180	106	26	26	13
50	40	40	1 ½	32	1 ¼	50	2	180	¼	209	169	209	33	249	135	37	26	23
50	50	40	1 ½	40	1 ½	50	2	180	¼	209	169	209	33	249	135	37	26	23
63	20	50	2	15	½	20	2	96	⅛	177	144	180	33	155	96	25	16	10
63	25	50	2	20	¾	25	1	120	⅛	177	144	180	35	187	113	26	26	13
63	32	50	2	25	1	25	1	120	⅛	177	144	180	35	187	113	26	26	13
63	40	50	2	32	1 ¼	50	2	180	¼	225	192	220	39	255	141	37	26	23
63	50	50	2	40	1 ½	50	2	180	¼	225	192	220	39	255	141	37	26	23
63	63	50	2	50	2	50	2	180	¼	225	192	220	39	255	141	37	26	23
90	20	80	3	15	½	25	1	120	⅛	205	159	190	47	200	126	26	26	13
90	25	80	3	20	¾	25	1	120	⅛	205	159	190	47	200	126	26	26	13
90	32	80	3	25	1	25	1	120	⅛	205	159	190	47	200	126	26	26	13
90	50	80	3	40	1 ½	50	2	180	¼	254	207	250	51	269	155	37	26	23
90	63	80	3	50	2	50	2	180	¼	254	207	250	51	269	155	37	26	23
110	20	100	4	15	½	25	1	120	⅛	227	171	190	56	209	135	26	26	13
110	25	100	4	20	¾	25	1	120	⅛	227	171	190	56	209	135	26	26	13
110	32	100	4	25	1	25	1	120	⅛	277	171	190	56	209	135	26	26	13
110	50	100	4	40	1 ½	50	2	180	¼	276	219	250	60	279	165	37	26	23
110	63	100	4	50	2	50	2	180	¼	276	219	250	60	279	165	37	26	23

Accessories

- Stroke limiter / emergency manual override
- Solenoid pilot Valve type PV94, PV95, MNL532, PV2000
- Feedback – ER55, ER52 and ER53
- Positioner – type SPC
- Bus communication – AS interface

Stroke limiter/Emergency manual override

The stroke limiter for DIASTAR is used to limit the stroke of the DIASTAR pneumatic diaphragm valve after it has been installed, and as a manual override.

DN (mm)		Six	Ten	TenPlus	Sixteen	Product picture
DN10	FC		199 190 381			
	FO		199 190 381			
	DA		199 190 381			
DN15	FC		199 190 381	199 190 382	199 190 382	
	FO		199 190 381			
	DA		199 190 381			
DN20	FC		199 190 382	199 190 382	199 190 382	
	FO		199 190 382		199 190 382	
	DA		199 190 382			
DN25	FC		199 190 382	199 190 383	199 190 383	
	FO		199 190 382		199 190 382	
	DA		199 190 382			
DN32	FC		199 190 383	199 190 384	199 190 384	
	FO		199 190 383		199 190 383	
	DA		199 190 383			
DN40	FC		199 190 384	199 190 385	199 190 385	
	FO		199 190 384		199 190 384	
	DA		199 190 384			
DN50	FC		199 190 384	199 190 385	199 190 385	
	FO		199 190 384		199 190 384	
	DA		199 190 384			

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

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

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