

A class of their own

Diaphragm valves



System overview

A solution for every situation

GF Piping Systems offers a wide range of diaphragm valves to cover the individual demands of our customers. No matter which pressure level, media temperature, dimension or actuator – we provide every kind of diaphragm valves to meet your expectations perfectly.

+ Manual diaphragm valves



Type 514, 515, 517
Manual 2-way diaphragm valve

- Full plastic valve with optimized body design for improved flow profile
- Lockable handwheel
- Optical position indicator

Dimension range:
d20/DN15 to d65/DN50

Pressure range:
0 to 16 bar



Type 519
3-way zero-static

- Full plastic valve with optimized body design for improved flow profile
- No dead space
- Different outlet sizes available

Dimension range:
d16/DN15 to d110/DN50

Pressure range:
0 to 16 bar



Type 317
Big dimensions

- Proven screw design for big dimension
- Optical position indicator

Dimension range:
d75/DN65 to d160/DN150

Pressure range:
0 to 10 bar



+ Pneumatic diaphragm valves



Type 604/605

- Full plastic valve with optimized body design for improved flow profile
- Control mode: FC, FO, DA
- Optical position indicator

Dimension:
d20/DN15

Pressure range:
0 to 6 bar



DIASTAR range

- Full plastic valve with optimized body design for improved flow profile
- Control mode: FC, FO, DA
- Wide selection of accessories

Dimension range:
d20/DN15 to d65/DN50

Pressure range:
0 to 16 bar

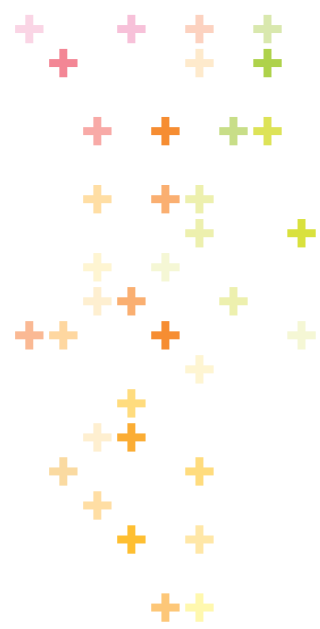


**Type 025
big dimensions**

- Proven screw design for big dimensions
- Optical position indicator

Dimension range:
d75/DN65 to d160/DN150

Pressure range:
0 to 10 bar



Configurator

A valve with hundreds of options

Due to the modularity of the GF diaphragm valves, there are many different options to choose from. You can easily adjust your valve to your process conditions to get the most out of it.

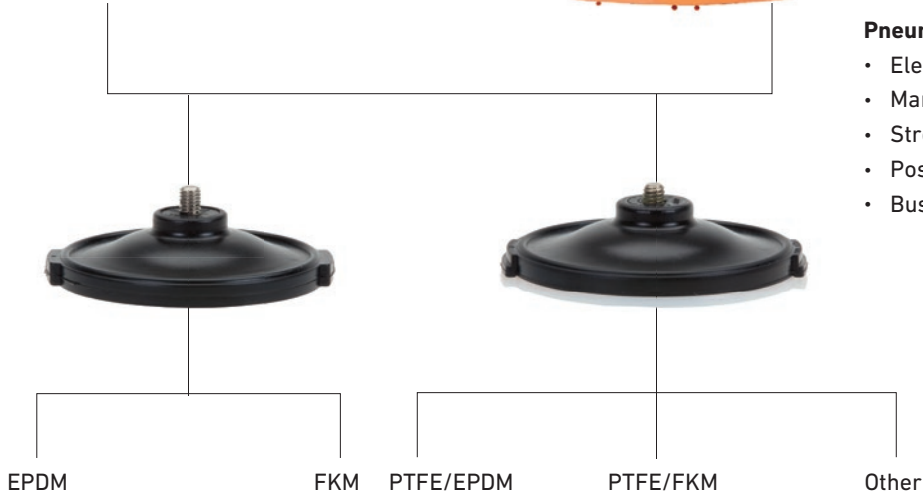


Manual option:

- Electric feedback

Pneumatic Option:

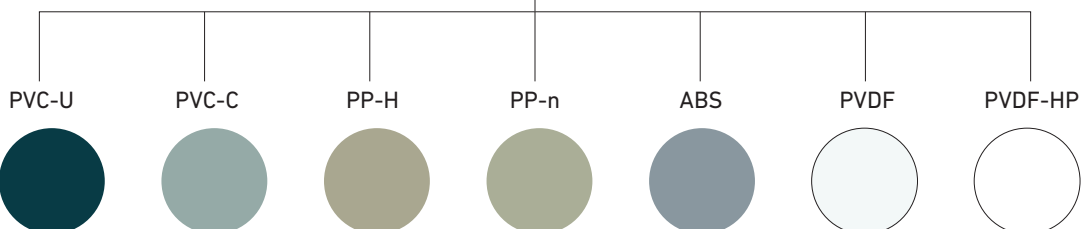
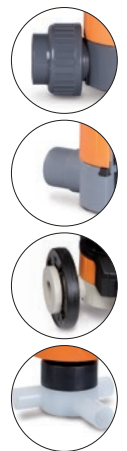
- Electric feedback
- Manual override
- Stroke limiter
- Positioner
- Bus connection



- ISO
- ANSI
- BS
- JIS



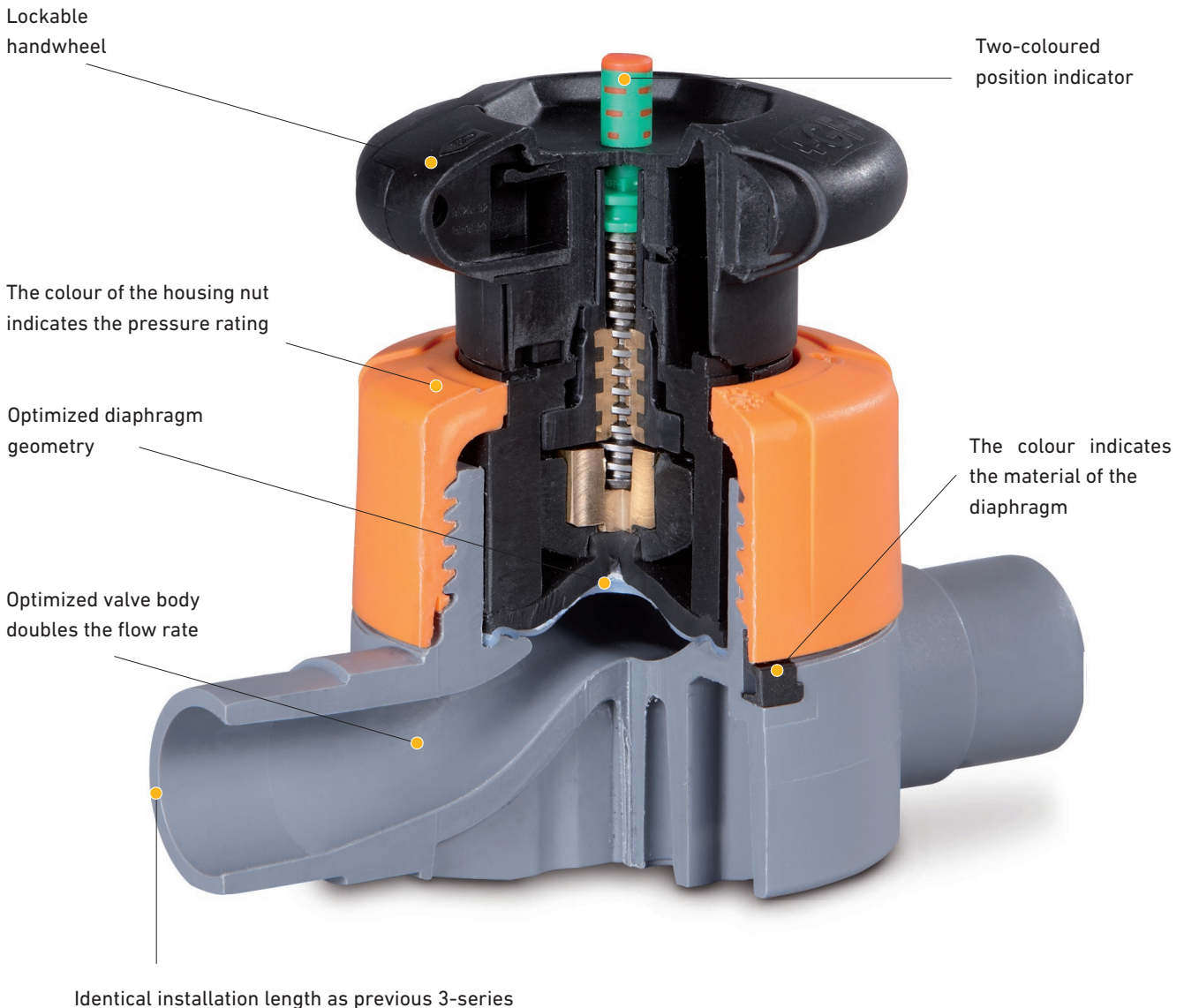
- Socket 514
- Spigot 515
- Flange 517
- 3-way 519



Features of the manual diaphragm valve

Manual mode in every detail

Optimized valve body, higher flow rate, straightforward installation and a central housing, the strength of this full plastic diaphragm valve is located in every detail. Have a closer look and find out many other features.



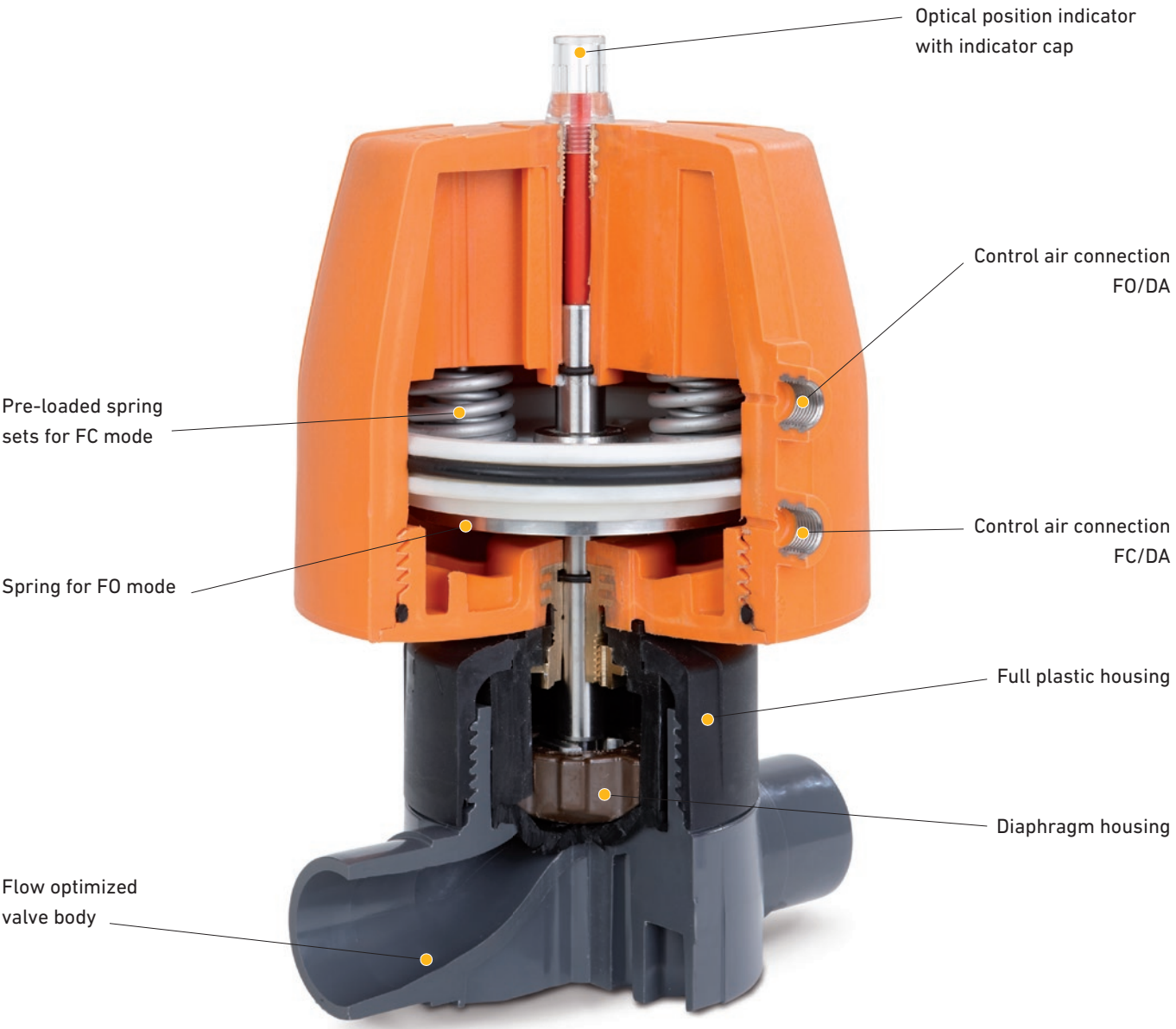
Functions and configurations can differ from the illustration, depending on the type.



Features of the pneumatic diaphragm valve

Perfect teamwork

Same advantages and features, different technology. The perfect interaction of the pneumatic actuator and the high-tech body makes GF diaphragm valves a leading technology in this field.



Features

The DIASTAR system

Different pressure levels require different handling. Therefore, GF Piping Systems offers the optimal actuator configuration for your individual needs.



+ Differentiation DIASTAR



DIASTAR Six

For low pressure applications

- DN15 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

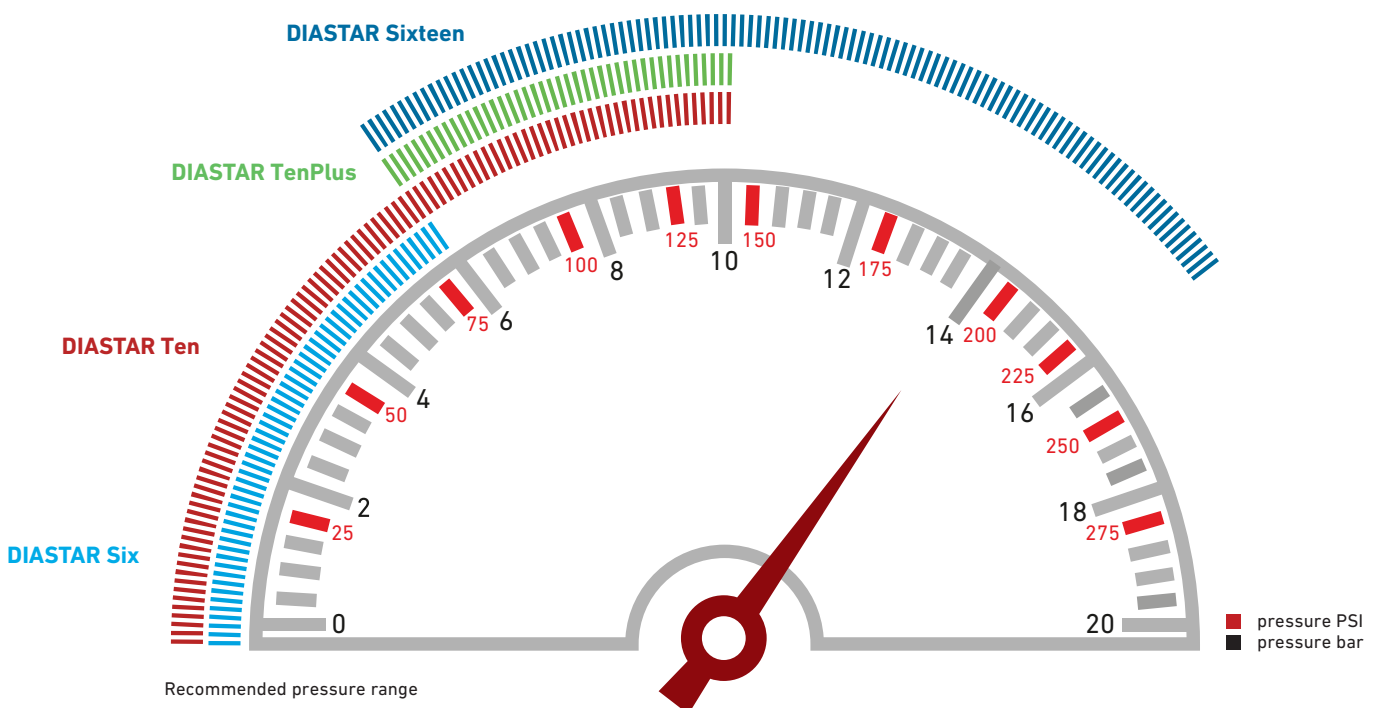
- DN15 to DN50
- FC-function



DIASTAR Sixteen

For water applications with high pressure

- DN15 to DN50
- FC-, FO-, DA-function

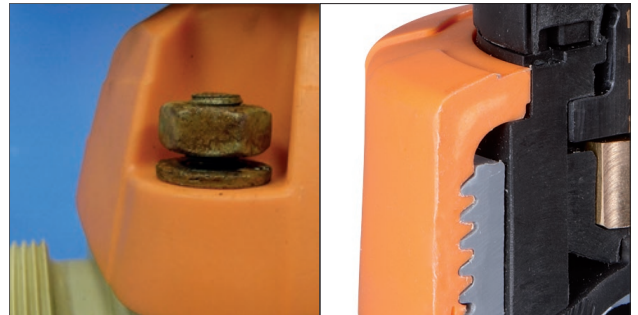


Full plastic solution brings safety

The full plastic design of GF diaphragm valves is a revolution and has a lot of advantages against the metal versions. The benefits of the design simplify your daily business and optimize your plant to make the best of your applications.

+ No corrosion & maintenance

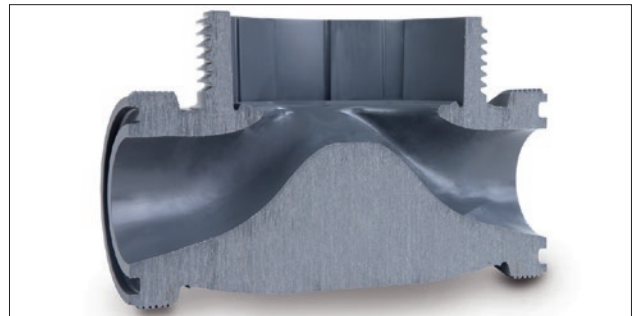
Instead of four metal screws the full plastic diaphragm valve has only one central housing nut. The result is a homogeneous expansion during temperature changes. This results in zero maintenance and no leakages during temperature cycles.



+ 100% more flow

The development aimed to increase the flow and provide a valve for a stable process. Through the optimization of the patented valve body you benefit from:

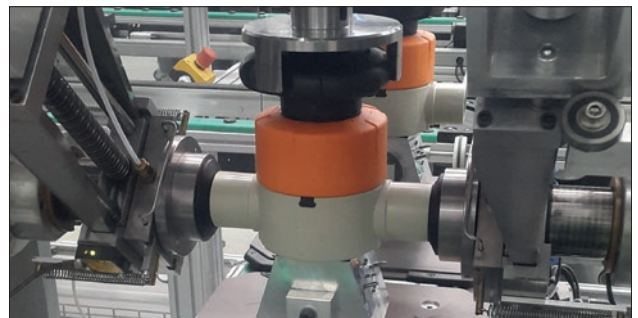
- Double flow rate
- Linear flow characteristics
- Minimized dead space for maximal hygiene



+ Absolute reliability

All diaphragm valves are 100% leak-tested. Even by exceeding ISO 9393-2, after passing this test the QR code and quality check sticker is put on the valve. By scanning the QR code you will find the service site online (www.gfps.com/dv) with information regarding the latest developments.

- Product catalog
- Technical specification
- Service manuals
- Service videos
- Tips and Tricks



Diaphragm valve type 604/605

Packs a punch for dosing applications

The full-plastic diaphragm valve 604 / 605 with integrated pneumatic actuator from GF Piping Systems ensures best flow performance in compact design. With this corrosion free valve we offer an additional product with the most economic price-performance ratio which is suitable for many applications.

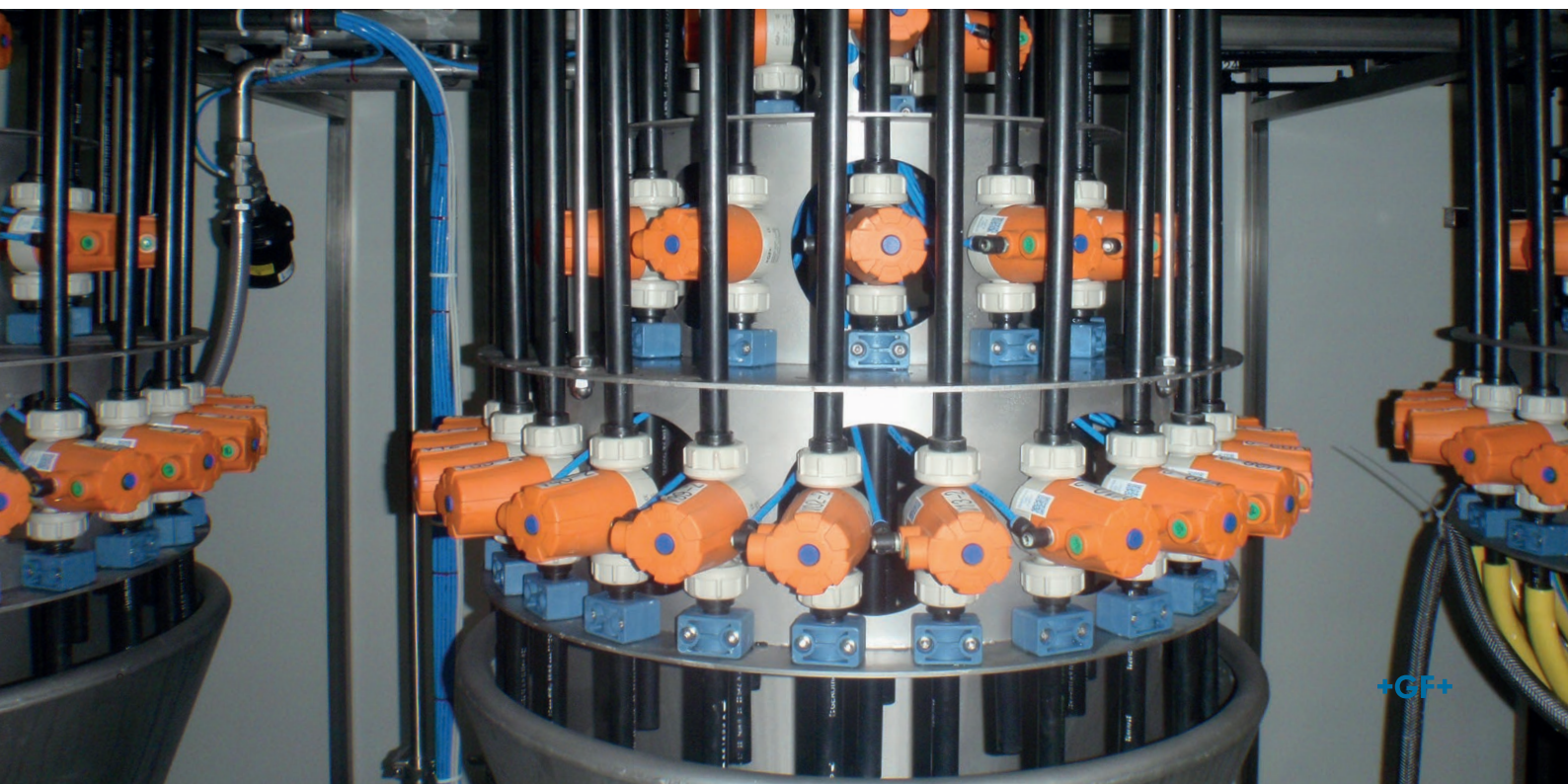
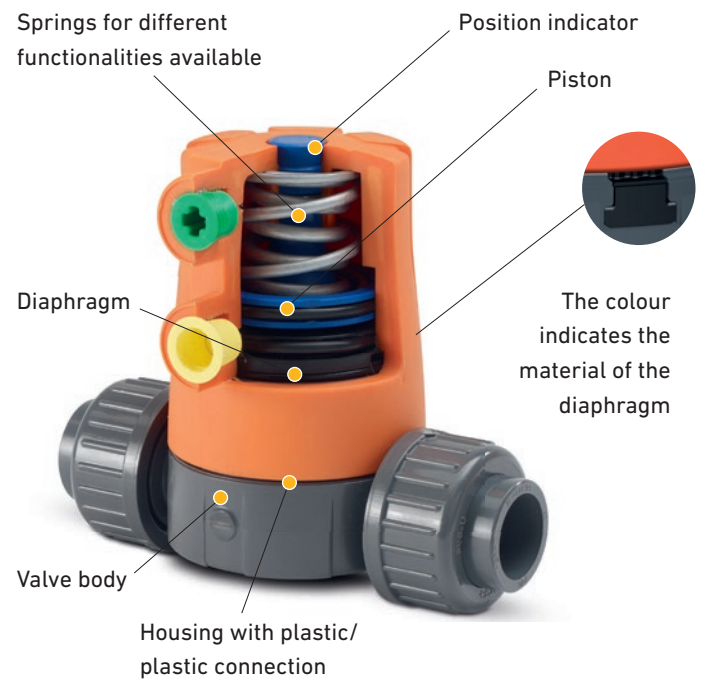
Easy installation and operation

- The compact design enables installation in limited spaces
- No re-torquing needed due to full plastic design without metal parts and screws
- Radially dismantlable due to true unions
- Maintenance free
- Same installation length as all GF diaphragm valves and market standard valves
- Integrated optical position feedback
- QR code on valve leads to online available product documents

High safety

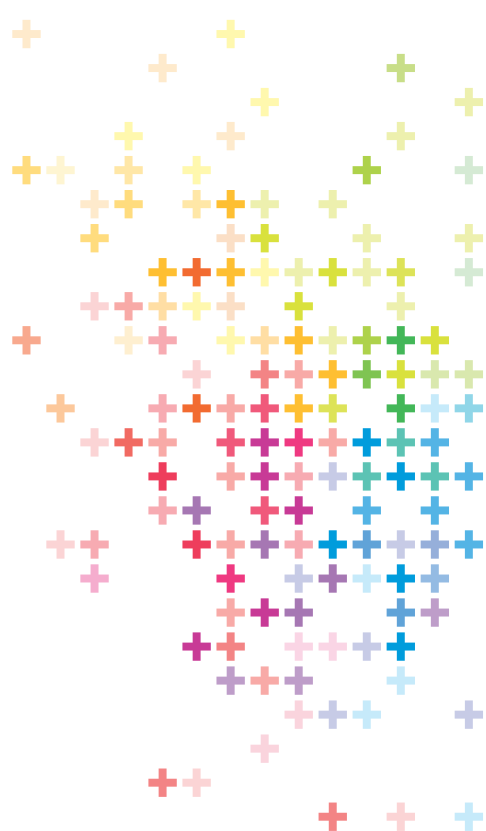
- Uniform temperature expansion of plastic/plastic connection prevents leakages
- High chemical resistance due to large material range
- Best quality and reliability for high number of cycles

+ Features




System overview – it's your choice

GF Piping Systems offers you a wide variety of valves to meet your needs in every situation. The following valve overview should simplify your decision by offering every detail of the valves. Have a closer look to find the perfect valve.



Manual operated

General

Type	514	515	517	519	317
					
Description	True union	Spigot ends	Flange version	3-way	Big dimension
Dimension			DN15-DN50		DN65-DN150
Pressure level			PN10/PN16 *		PN10 (PN6*)
Materials					
PVC-U	✓	✓	✓		✓
PVC-C	✓	✓	✓		✓
ABS	✓	✓			✓
PP-H	✓	✓	✓	✓	✓
PP-n		✓			
PVDF	✓	✓	✓	✓	✓
PVDF-HP	✓	✓	✓	✓	✓
Diaphragm materials					
EPDM	✓	✓	✓	✓	✓
PTFE/EPDM	✓	✓	✓	✓	✓
PTFE/FKM	✓	✓	✓	✓	
FKM	✓	✓	✓		✓
NBR	✓	✓	✓		✓
Accessories					
Feedback electric	✓	✓	✓	✓	

*See pressure-temperature diagram in the respective data sheet

Pneumatically operated

General

Type	604	605	DIASTAR Six	DIASTAR Ten	DIASTAR TenPlus	DIASTAR Sixteen	025
							
Dimension	DN15		DN15-DN50				DN65-DN150
Pressure level	PN6		PN6	PN10	PN10 on both sides	PN16	PN10 (PN6*)

Functions

FC	✓	✓	✓	✓	✓	✓	✓
FO	✓	✓		✓		✓	✓
DA	✓	✓		✓		✓	✓

Pneumatic connections

Size	G $\frac{1}{4}$ "	G $\frac{1}{4}$ "	G $\frac{1}{8}$ "	to DN40: G $\frac{1}{8}$ " from DN40: G $\frac{1}{4}$ "	to DN32: G $\frac{1}{8}$ " from DN32: G $\frac{1}{4}$ "	to DN32: G $\frac{1}{8}$ " from DN32: G $\frac{1}{4}$ "	G $\frac{1}{4}$ "
PVC-U	✓	✓	✓	✓	✓		✓
PVC-C	✓	✓	✓	✓	✓		✓
ABS	✓	✓	✓	✓	✓		✓
PP-H	✓	✓	✓	✓	✓		✓
PP-n				✓			
PVDF	✓	✓		✓	✓	✓	✓
PVDF-HP				✓	✓	✓	✓

Connection

Sockets	✓		✓	✓	✓	✓	
Spigot		✓	✓	✓	✓	✓	
Flange			✓	✓	✓	✓	✓
Threaded socket			✓	✓	✓	✓	

Diaphragm

EPDM	✓	✓	✓	✓	✓	✓	✓
PTFE/EPDM	✓	✓		✓	✓	✓	✓
PTFE/FKM	✓	✓		✓	✓	✓	
FKM	✓	✓	✓	✓	✓	✓	✓
NBR			✓	✓	✓	✓	✓

Accessories

Feedback electric				✓	✓	✓	✓
Emergency manual override				✓	✓	✓	✓
Stroke limiter	✓	✓		✓	✓	✓	✓
Positioner				✓	✓	✓	✓
Bus connection				✓	✓	✓	✓



Technical data

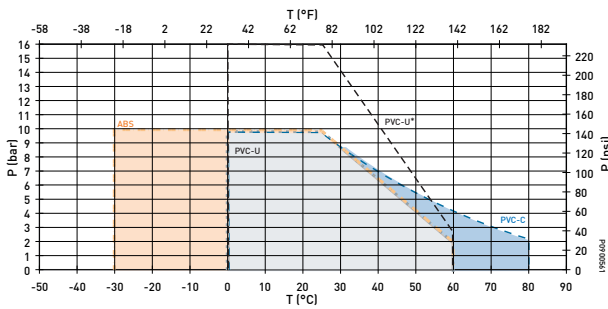
Specifications

The most important data at a glance.

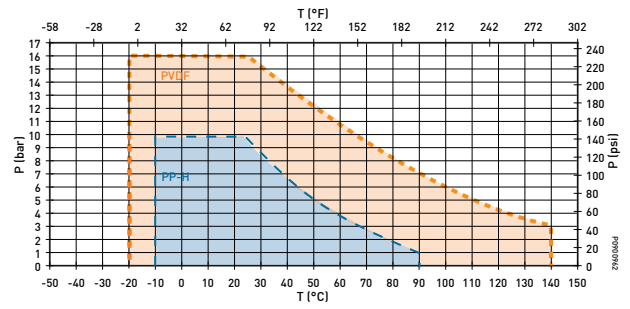


+ Pressure-temperature diagram

Pressure temperature diagram ABS, PVC-U, PVC-C (water, 25 years)

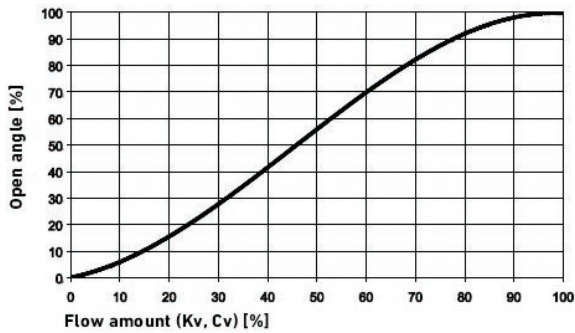


Pressure-temperature diagram PVDF, PP-H (water, 25 years)

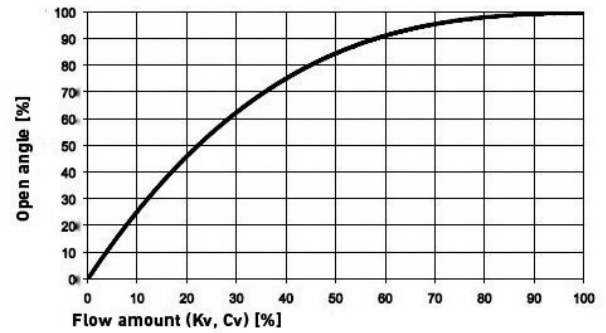


+ Flow characteristics

2-Way diaphragm valve type 514–517/DIASTAR



3-way diaphragm valve type 519/DIASTAR



KV 100 values

d [mm]	DN	Inch	Kv 100 (l/min)	Cv 100 (gal/min)	Increased flow to comparable valve ¹
20	15	½	125	9	74%
25	20	¾	271	19	98%
32	25	1	481	33	132%
40	32	1 ¼	759	52	114%
50	40	1 ½	1263	87	144%
63	50	2	1728	119	142%

¹ Compared with the precursor type 317 in the correlation dimension.



+ Accessories and special valves



Solenoid pilot valve 3/2-ways type PV94

- 230 V, 50-60 Hz
- 115 V, 50-60 Hz
- 24 V, 50-60 Hz
- 24 V DC
- G $\frac{1}{8}$, G $\frac{1}{4}$, G6mm
- DN1.2



Solenoid pilot valve 3/2-ways type PV95

- 230 V, 50-60 Hz
- 115 V, 50-60 Hz
- 24 V, 50-60 Hz
- 24 V DC
- G $\frac{1}{8}$, G $\frac{1}{4}$
- DN1.5 - DN2



Height compensation and mounting plate

- 5 different sizes to reach the required height
- Mounting plate for easy fixation
- Suitable for all 5-series diaphragm valves



Solenoid pilot valve type MNL 532

- Version for 3/2-way and 5/2-way
- Namur connection
- Material of body: Aluminum
- 24 V AC, 24 V DC, 48 V AC, 110 V AC, 230 V AC



Electric position feedback type ER 52-1/ER53-1

- For pneumatic stroke actuators
- For DIASTAR Ten, TenPLUS, Sixteen, 025
- Mechanical switches (AgNi or Au)
- NPN/PNP, Namur connection
- With visual position indication



Diaphragm Valve type 517 (317)

- PVC-U, PVC-C, PP-H, PVDF, PVDF-HP
- EPDM, PTFE/EPDM, FPM, PTFE/FPM
- DN15-DN50 (type 317: DN65-DN150)
- Up to PN16
- Lockable handwheel
- Electrical feedback module



Stroke limiter/ manual override

- For DIASTAR types



Digital electro-pneumatic positioner type DSR 500

- Mounted on pneumatic control valves
- Linear and rotary actuators
- Nominal stroke 3 - 28 mm
- Self-learning
- Control signal 4 - 20 mA
- 24 V DC

High purity

Clean room production



Our quality aspirations are binding throughout the entire process chain and have been verified with numerous certificates and awards.

Our clean room, one of the largest clean-room production facilities in Europe, is equipped with everything that is required for the perfect manufacturing of high-purity products consisting of synthetic materials.

Verified and monitored incoming and outgoing process, clean-room quality up to ISO Class 5 and a thoroughgoing double-door system ensure maximum purity.



Full-plastic diaphragm valves in ion-exchange systems

Water treatment and environmental protection are becoming increasingly important in today's society. It is also a big cost-driver for companies. In many applications of metal processing companies, deionised water (DI-Water) with very low conductivity values is required. With an ion-exchange system, the water can be treated economically for the processes. The company Gross Wassertechnik GmbH, based in Pforzheim, Germany, is a specialist in the plant construction industry. The company specializes in industrial water treatment plants and wastewater treatment.

Ion-exchange systems

In an ion-exchange system, water is passed through various resins. The resins absorb ions and organic substances from the water. The result is "DI-water", which can be used for various processes. As soon as the resins' capacity is reached, they are regenerated with hydrogen chloride (HCL) or sodium hydroxide (NaOH). Due to the use of chemicals, it is expedient to use plastics for this process for their excellent chemical and corrosion resistance. The application conditions and chemical resistance require the use of two different plastics in this ion-exchange system. 80% of the plant are built of PVC-U and the remaining 20% of PP-h. In addition, high quality standards are required, so that the process remains constant at a high level. In order to meet these customer requirements, GF Piping Systems develops and supplies the entire system of the pipes, valves and connection technology over the entire dimension range of the materials.

Valves used in this ion-exchange system

- Manual diaphragm valve type 514 (d20 mm – d32 mm)
- Pneumatic diaphragm valve DIASTAR Six (d25 mm – d32 mm)
- Pneumatic diaphragm DIASTAR Ten (d32 mm – d63 mm)
- Manual butterfly valve type 567 (d63 mm – d90 mm)
- Manual ball valve type 546 (d20 mm – d63 mm)

Reasons for GF Piping Systems

- Flow characteristics of the diaphragm valves
- Increase flow rate and improved flow control characteristics, lead to reduced dimensions and costs
- Corrosion free full plastic solution
- Excellent controllability and simple signal input of the diaphragm valves



Worldwide at home

Our sales companies and representatives ensure local customer support in over 100 countries

www.gfps.com

Argentina / Southern South America

Georg Fischer Central Plastics Sudamérica S.R.L.
Buenos Aires, Argentina
Phone +54 11 4512 02 90
gfcentral.ps.ar@georgfischer.com
www.gfps.com/ar

Australia

George Fischer Pty Ltd
Riverwood NSW 2210 Australia
Phone +61 (0) 2 9502 8000
australia.ps@georgfischer.com
www.gfps.com/au

Austria

Georg Fischer Rohrleitungssysteme GmbH
3130 Herzogenburg
Phone +43 (0) 2782 856 43-0
austria.ps@georgfischer.com
www.gfps.com/at

Belgium / Luxembourg

Georg Fischer NV/SA
1600 Sint-Pieters-Leeuw / Belgium
Phone +32 (0) 2 556 40 20
Fax +32 (0) 2 524 34 26
be.ps@georgfischer.com
www.gfps.com/be

Brazil

Georg Fischer Sist. de Tub. Ltda.
04571-020 São Paulo/SP
Phone +55 (0) 11 5525 1311
br.ps@georgfischer.com
www.gfps.com/br

Canada

Georg Fischer Piping Systems Ltd
Mississauga, ON L5T 2B2
Phone +1 (905) 670 8005
Fax +1 (905) 670 8513
ca.ps@georgfischer.com
www.gfps.com/ca

China

Georg Fischer Piping Systems Ltd
Shanghai 201319
Phone +86 21 3899 3899
china.ps@georgfischer.com
www.gfps.com/cn

Denmark / Iceland

Georg Fischer A/S
2630 Taastrup
Phone +45 (0) 70 22 19 75
info.dk.ps@georgfischer.com
www.gfps.com/dk

Finland

Georg Fischer AB
01510 VANTAA
Phone +358 (0) 9 586 58 25
Fax +358 (0) 9 586 58 29
info.fi.ps@georgfischer.com
www.gfps.com/fi

France

Georg Fischer SAS
95932 Roissy Charles de Gaulle Cedex
Phone +33 (0) 1 41 84 68 84
fr.ps@georgfischer.com
www.gfps.com/fr

Germany

Georg Fischer GmbH
73095 Albershausen
Phone +49 (0) 7161 302 0
info.de.ps@georgfischer.com
www.gfps.com/de

India

Georg Fischer Piping Systems Pvt. Ltd
400 083 Mumbai
Phone +91 22 4007 2000
Fax +91 22 4007 2020
branchoffice@georgfischer.com
www.gfps.com/in

Indonesia

PT Georg Fischer Indonesia
Karawang 41371, Jawa Barat
Phone +62 267 432 044
Fax +62 267 431 857
indonesia.ps@georgfischer.com
www.gfps.com/id

Italy

Georg Fischer S.p.A.
20063 Cernusco S/N (MI)
Phone +39 02 921 861
it.ps@georgfischer.com
www.gfps.com/it

Japan

Georg Fischer Ltd
530-0003 Osaka
Phone +81 (0) 6 6341 2451
jp.ps@georgfischer.com
www.gfps.com/jp

Korea

Georg Fischer Korea Co. Ltd
Unit 2501, U-Tower
120 HeungdeokJungang-ro
(Yeongdeok-dong)
Giheung-gu, Yongin-si, Gyeonggi-do
Phone +82 31 8017 1450
Fax +82 31 217 1454
kor.ps@georgfischer.com
www.gfps.com/kr

Malaysia

George Fischer (M) Sdn. Bhd.
40460 Shah Alam, Selangor Darul Ehsan
Phone +60 (0) 3 5122 5585
Fax +60 (0) 3 5122 5575
my.ps@georgfischer.com
www.gfps.com/my

Mexico / Northern Latin America

Georg Fischer S.A. de C.V.
Apodaca, Nuevo Leon
CP66636 Mexico
Phone +52 (81) 1340 8586
Fax +52 (81) 1522 8906
mx.ps@georgfischer.com
www.gfps.com/mx

Middle East

Georg Fischer Piping Systems (Switzerland) Ltd
Dubai, United Arab Emirates
Phone +971 4 289 49 60
gcc.ps@georgfischer.com
www.gfps.com/int

Netherlands

Georg Fischer N.V.
8161 PA Epe
Phone +31 (0) 578 678 222
nl.ps@georgfischer.com
www.gfps.com/nl

Norway

Georg Fischer AS
1351 Rud
Phone +47 67 18 29 00
no.ps@georgfischer.com
www.gfps.com/no

Philippines

George Fischer Pte Ltd
Representative Office
Phone +632 571 2365
Fax +632 571 2368
sgp.ps@georgfischer.com
www.gfps.com/sg

Poland

Georg Fischer Sp. z o.o.
05-090 Sekocin Nowy
Phone +48 (0) 22 31 31 0 50
poland.ps@georgfischer.com
www.gfps.com/pl

Romania

Georg Fischer Piping Systems (Switzerland) Ltd
020257 Bucharest - Sector 2
Phone +40 (0) 21 230 53 80
ro.ps@georgfischer.com
www.gfps.com/int

Russia

Georg Fischer Piping Systems (Switzerland) Ltd
Moscow 125040
Phone +7 495 748 11 44
ru.ps@georgfischer.com
www.gfps.com/ru

Singapore

Georg Fischer Pte Ltd
11 Tampines Street 92, #04-01/07
528 872 Singapore
Phone +65 6747 0611
Fax +65 6747 0577
sgp.ps@georgfischer.com
www.gfps.com/sg

Spain / Portugal

Georg Fischer S.A.
28046 Madrid
Phone +34 (0) 91 781 98 90
es.ps@georgfischer.com
www.gfps.com/es

Sweden

Georg Fischer AB
117 43 Stockholm
Phone +46 (0) 8 506 775 00
info.se.ps@georgfischer.com
www.gfps.com/se

Switzerland

Georg Fischer Rohrleitungssysteme (Schweiz) AG
8201 Schaffhausen
Phone +41 (0) 52 631 3026
ch.ps@georgfischer.com
www.gfps.com/ch

Taiwan

Georg Fischer Co. Ltd
San Chung Dist., New Taipei City
Phone +886 2 8512 2822
Fax +886 2 8512 2823
www.gfps.com/tw

United Kingdom / Ireland

George Fischer Sales Limited
Coventry, CV2 2ST
Phone +44 (0) 2476 535 535
uk.ps@georgfischer.com
www.gfps.com/uk

USA / Caribbean

Georg Fischer LLC
9271 Jeronimo Road
92618 Irvine, CA
Phone +1 714 731 8800
Fax +1 714 731 6201
us.ps@georgfischer.com
www.gfps.com/us

International

Georg Fischer Piping Systems (Switzerland) Ltd
8201 Schaffhausen/Switzerland
Phone +41 (0) 52 631 3003
Fax +41 (0) 52 631 2893
info.export@georgfischer.com
www.gfps.com/int

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