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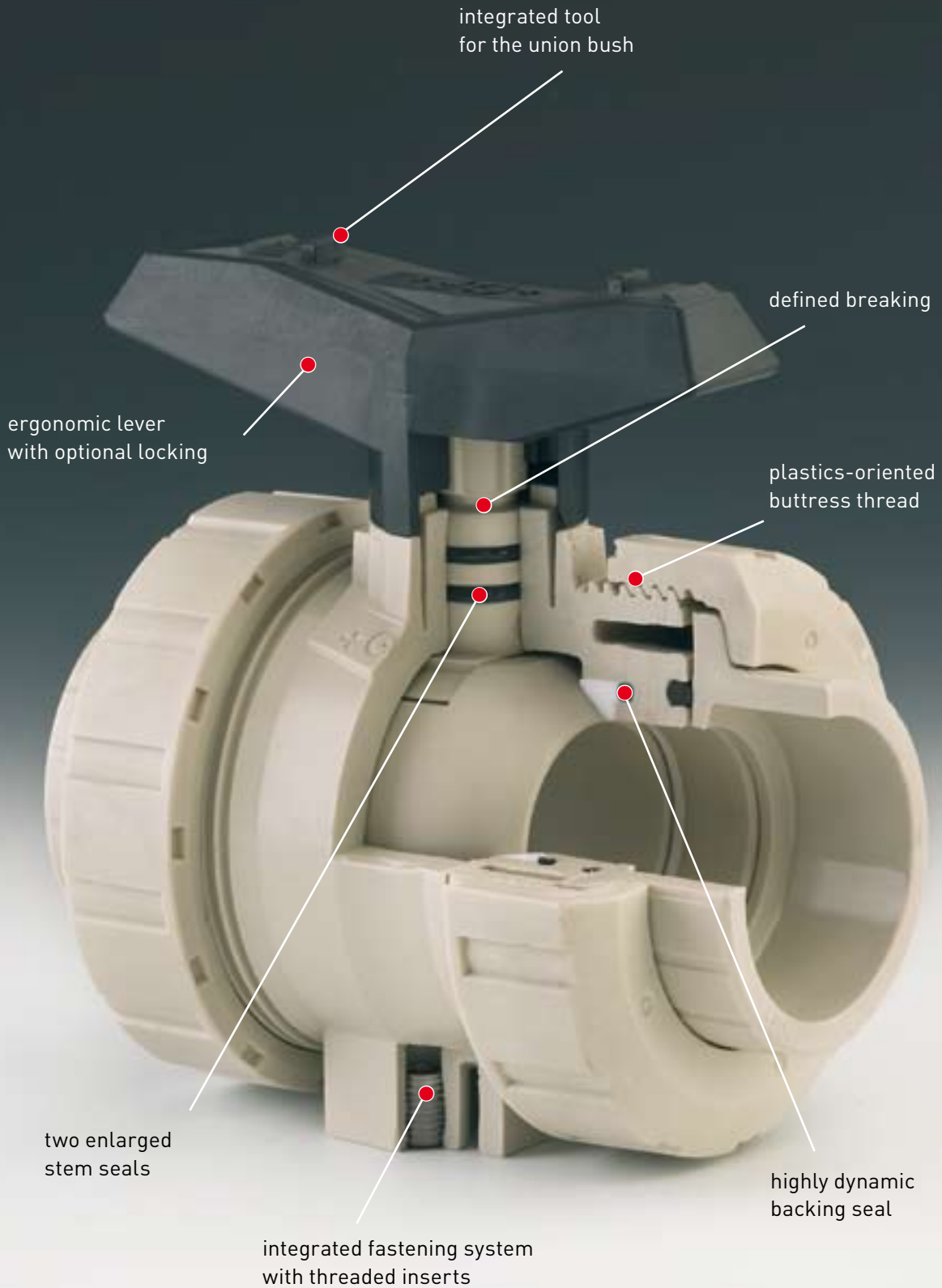
## Type 546 Manual and Actuated Ball Valves DN10 to DN100



**+GF+**

**GEORG FISCHER**  
PIPING SYSTEMS

# ● Safety in every detail



Designed for ISO, ANSI, BS, JIS

# The system at a glance

## The complete program for a sophisticated system

The ball valve type 546 is yet another innovative product developed by GF Piping Systems; it comprises extensive experience and the latest technology. A broad spectrum of product features provides you with quality, flexibility, reliability, in addition to modularity. We have expanded our program to include DN65 to DN100 – available in the materials PVC-U, PVC-C, ABS and PP-H. We have the right ball valve for all of your industrial applications.

International compatibility is also given with connections for all standards, such as ISO, ANSI, BS and JIS.

## From manual valve to control valve:

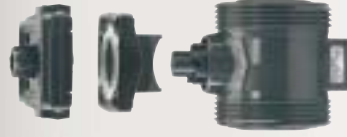
The ball valve type 546 is extremely versatile. From the standard manual version to the actuated version, we have a model to fit your needs and a wide range of accessories to choose from. Even the manual version has additional options sure to interest you, such as an integrated fastening system and a lockable lever with indexing.

The multifunctional module provides feedback on the «open/closed» valve positions in a variety of signals. It also serves as an interface for electric or pneumatic actuators. So you see: Multifunctionality is on the agenda.



Ball Valve with pneumatic actuator and manual override

Ball Valve with multifunctional module



Ball Valve with electric actuator



Ball Valve with pneumatic actuator and manual override



Ball Valve with electric actuator

# The ball valve type 546 in the dimension

The ball valve type 546 is a perfected product, embodying GF Piping Systems' extensive experience in the field of plastics. Until recently, the ball valve type 546 was only available in the dimensions DN10 to DN50 – now, however, also in the dimensions DN65 to DN100. The design, which expresses form and function ideally, is consistent for the whole type series.

## All around perfection

The ball, the heart of a ball valve, has a glassy surface, guaranteeing 100% leak tightness in the passage while also maintaining a low actuation torque. Even the finer details of every single component have been engineered to perfection.

## Sold on safety

The ball seal features a positive fit. The backing seal makes sure the passage is sealed tight, even in case of pulsation or water hammer. The backing O-ring, which being a dynamic seal presses the PTFE ball seal on the ball, always remains in position and is adapted to the respective dimension. The union bush is another sophisticated detail with our patented left-hand thread. For the floating ball seal to remain permanently tight, the union bush can be adjusted with the integrated tool. Your benefit: maximum leak tightness and precise adjustability.

## A perfect solution for plastics

The buttress thread provides a greater contact surface over the same length in comparison to a trapezoidal thread. Thus, the vertical flanks with their high cover, e.g. in case of water hammer, protect the coupling nut from jumping out or over. The buttress thread withstands maximum forces in the utilized direction.

## Precisely defined: breaking point

It's good if you don't need it; it's better if you have it. What are we talking about? The defined breaking point in the stem. It breaks precisely in the safe area. Leakage to the outside is prevented. The valve remains tight; O-rings make sure of this. Thanks to the increased cord thickness, they have greater dynamic reliability.

## Integrated solutions

The ball valve type 546 has an integrated fastening system. With the built-in threaded inserts, it is easy to install the ball valve. Your benefit: fast, easy mounting. Also integrated is the tool for adjustment of the union bush. And because it is an inherent component of the lever, you will always have the right tool at hand. If you require information on the actual status of your system, the optional electric feedback unit is for you. You always know which valve is open and which is closed. We have a selection of five different limit switches to choose from.



# ns DN10 to DN100



## Lever and module are multi-talented

The ball valve type 546 has been engineered to perfection from top to bottom, including the lever:

- An index plate fixes the lever in the open and closed positions.
- The lever is lockable, so its position cannot be changed afterwards.
- The lever is made of rugged PPGF material (polypropylene, fiberglass-reinforced).
- For insulated piping systems, we offer a lever extension for DN10 to DN50.



### Safe connection:

Plastics-oriented butress thread that withstands maximum forces in the respective direction

### Enlarged stem seals:

Increased cord thickness of the O-rings for more safety



### Integrated fastening system:

Comes with threaded inserts for direct mounting

### Lockable lever:

Protects against unauthorized use



### Newly designed central part:

Highly dynamic backing seals

### Electrical feedback:

Complete process monitoring and process documentation, also for manual valves

With the multifunctional module, you expand the ball valve's range of possibilities with a variety of functions:

- Due to the all-plastic housing, the robust construction and the secure fastening on the ball valve, the module can be used as a standardized mechanical interface, providing a direct connection to electric and pneumatic actuators.
- The module offers diverse options in the way of microswitches in Ag-Ni, Au as well as inductive switches with NPN, PNP and Namur signals for electric feedback on the manual valves.
- For the dimensions DN10 to DN50 you can also use the module as an intermediate part, enabling back wall installation of the ball valve.



# Versatile: PA 11/21



Our PA 11/21 pneumatic actuators offer a solution for every need. They are available with or without stroke limiter in the following versions:

- Fail safe open (FO)
- Fail safe close (FC)
- Double acting (DA)

**PA 11** from DN10 to DN25

**PA 21** from DN32 to DN50

## Namur interface

Thanks to the Namur interface integrated in the position indicator, mounting accessories on our PA 11/21 pneumatic actuators is child's play. Available are position feedback, digital positioners and the option of bus system connections, such as AS-i. The flange is of course adapted for the Namur interface. So you can easily install other valves as well.

## Extra safety

In order to run your system safely during commissioning or if the air supply is interrupted, a manual override can be installed between the ball valve and the actuator. It is self-catching which means that when compressed air is again introduced, the manual valve engages automatically, allowing you to continue with normal operation. What's more, our PA 11/21 pneumatic actuators are easily installed on the ball valve in combination with the multifunctional module.

## Many options

The multifunctional module, equipped with electrical feedback for the manual valve or the automated version, provides you with micro-switches in Ag-Ni, Au as well as inductive switches with NPN, PNP or Namur signals.



# A solid base: EA 11



Our EA 11 electric actuator is the basic version for open/close operation with low torques. Its rated torque is 10 Nm, its peak torque 20 Nm.

## Diversity

The flange connection on the EA 11 has a standard ISO 5211 interface.

Your benefit: Installing valves from other manufacturers is not a problem.

With the appropriate adaptors, the EA 11 corresponds 100% to the F05 flange pattern.

## Functionality

The EA 11 has a large selection of interesting standard accessories that are easy to install on the mother board. For position feedback to the control room, two additional limit switches can be installed. The actuator can be additionally expanded with a fail safe return unit and a heating element. The emergency manual override is standard on all our actuators.

## Staying power

Actuators from GF Piping Systems provide you with a long service life and high number of cycles. The EA 11 is tested to 150,000 cycles at nominal torque.

## Robust

The fiberglass-reinforced housing of the EA 11 is flame retardant and complies with IP 65. This housing is extremely robust and resilient.

## Implementable worldwide

The EA 11 also has a power supply for a wide range of input voltages and is therefore, like all our actuators, a true global player. This includes automatic adaptation to the supply voltage 100-230V, 50-60Hz.

Also available: a 24V AC/DC actuator version.

## Certified globally

CE, UL, CSA

# Modularity for individual applications: E

The electric actuators EA 21/31 meet all the specifications of the EA 11 and thanks to the wide-range power supply and all the global approvals can be implemented worldwide. Compared to the basic model, the EA 11, they have an integrated ready-for-operation signal and more extensive and diverse accessories. The EA 21 is tested to 250,000 cycles at nominal torque (10Nm) and is therefore extremely durable. The EA 31 has a nominal torque of 60Nm at which it is tested to 100,000 cycles. And like the EA 11, the EA 21 with an adaptor

complies with the F05 flange pattern according to ISO 5211. The flange pattern for the EA 31 is F07.

## For more safety: heating element and fail safe return

GF Piping Systems offers an interesting package for the EA 21/31: heating element and fail safe return unit including battery pack. Both components can also be purchased individually.

The fail safe return ensures that the actuator goes into a safe position in case of power failure.



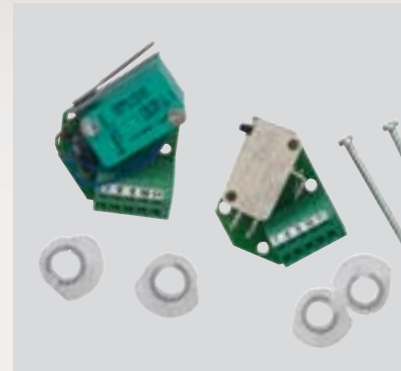
Standard interface per ISO 5211



Space for accessories



Heating element and fail safe return unit



Additional limit switch kits in Ag-Ni, Au, NPN and PNP



EA 21  
with ball valve type 546  
DN10 to DN50

## For more control: additional limit switches

We can provide additional limit switches that tell you exactly what position your actuator is currently in.

We have kits with two additional limit switches each – in the standard materials, silver-nickel.

For smaller currents, gold is used.

For four additional limit switches, an installation set with backing plate is available; this ensures the necessary stability. Our kits for two additional limit switches are also available in NPN and PNP.

For PNP, the signal is positive, for NPN negative.



# EA 21, EA 31

## For more accuracy:

### position feedback and positioner

For position feedback, the precise mechanical position of a valve is determined. The feedback is given via a 4-20mA signal.

Ideal solution: Our products allow you to combine position feedback with the PE 25 positioner and the monitoring PCB.

The positioner PE 25 enables you continuous control of the valve position. The set value can be either 0-10V or 4-20mA.

## For more comfortable analysis:

### test adaptor kit with RS232 interface

Before calling the repair service, you already know where the problem lies. Our new test adaptor kit automatically recognizes which accessories have been installed and where the source of trouble is. Fast and reliable – without expensive service personnel. All you need is a laptop/PC.



and PNP

Monitoring PCB with BCD switch

Position feedback

Positioner

## For more sophistication:

### monitoring PCB

- with cycle time extension
- with cycle time monitoring
- with cycle counter
- with motor current monitoring

The monitoring PCB can be equipped as an option with up to four BCD switches. By adding a cycle time extension, you can prevent water hammer effectively by having the valve close more slowly. Control time monitoring helps to identify problems with the valve or in the process at an early stage. The cycle counter informs you when the set number of cycles has been reached. Via a DIP switch you can choose freely, whether the actuator stops or keeps on running.



**EA 31**  
with ball valve type 546  
DN65 to DN100

# Configure your valve

Material				
PVC-U	PVC-C	ABS	PP-H	PVDF

Dimension									
DN10 3/8"	DN15 1/2"	DN20 3/4"	DN25 1"	DN32 1 1/4"	DN40 1 1/2"	DN50 2"	DN65 2 1/2"	DN80 3"	DN100 4"

Version		
standard	oil-free	silicone-free
PTFE ball seal	PTFE ball seal	PVDF ball seal

Seal	
EPDM	FPM

Threaded inserts	
with	without

Connections				
<b>(selectable)</b>				
cemented socket	cemented spigot	threaded socket	fusion socket	socket fusion spigot
metric PVC-U	metric PVC-U	Rp PVC-U	metric PP-H	metric PP-H
JIS PVC-U	metric PVC-C	Rp reinforced PVC-U		
inch ASTM PVC-U		Rc PVC-U		
inch BS PVC-U		NPT PVC-U		
metric PVC-C		Rp PVC-C		
JIS PVC-C		Rp reinforced PVC-C		
inch ASTM PVC-C		NPT PVC-C		
metric ABS		Rp ABS		
inch BS ABS		Rp reinforced ABS		

Multifunctional module		
no module	empty module	module with
		microswitch Ag-Ni
		microswitch Au
		inductive switch Namur
		inductive switch PNP
		inductive switch NPN

Lever		
standard lever red	standard lever black	multifunction lever red

Fastening plate	
without fastening plate	with fastening plate

Electric actuator	
24 V AC/DC	100 - 230 V AC

Pneumatic actuator	
FC, FO, DA	with or without manual override

# Support and service included



Innovative products and first-class service – inseparable for GF Piping Systems. For us, it goes without saying that we stand by you at every stage of your project. Our competent employees discuss the matter with you on location and put together a package for your specific application. This means you always have a system solution exactly right for you.

#### **Planning made easy: CAD product library**

GF Piping Systems supplies a CAD product library free of charge – an excellent tool for planning and visualization. Here you will find our product ranges in many 2D/3D data formats.

#### **Data formats**

e.g.: IGES, STEP, DXF, DWG, JPG

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