

**Presenting a new generation of valves:**

**+GF+ Type 546 Ball Valve**



«Hello,  
who are you?»

«Type 546  
and you?»

**Setting a new standard in piping systems.**

**GEORGE FISCHER +GF+**  
Piping Systems

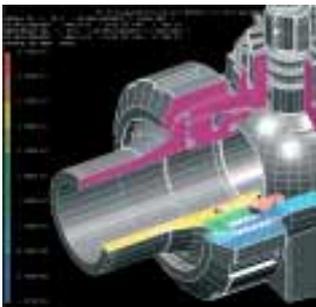
# The new +GF+ Type 546 Ball Valve.

## Innovation for your needs

Do ball valves play an important role in your work?

Do you judge the quality of a product on the functional reliability and operational safety of the entire system? The type 546 ball valve, successor to the proven type 346 ball valve, is an established product behind which stand George Fischer's 40 years of experience and know-how in plastic piping systems. The type 546 ball valve is the core of a modular system. From manual valve to actuated valve with numerous options – from electric feedback unit to lockable handle and pipe clamp, we have everything you require.

A ball valve, as part of a system, which meets your operational safety requirements just as easily as your ecological and economical needs. The George Fischer name stands for reliability and longevity; this also applies to the availability of spare parts and single components – now and in the future.



### Designed for safety

Developed on state-of-the-art CAD systems and with FEM (Finite Element Method) calculations.



### Tested through and through

Extensive prototype and pre-series testing in the EN ISO IEC 17025 accredited George Fischer test lab. 100% leakproof testing is integrated in the production process.

## We promise

### Highest quality

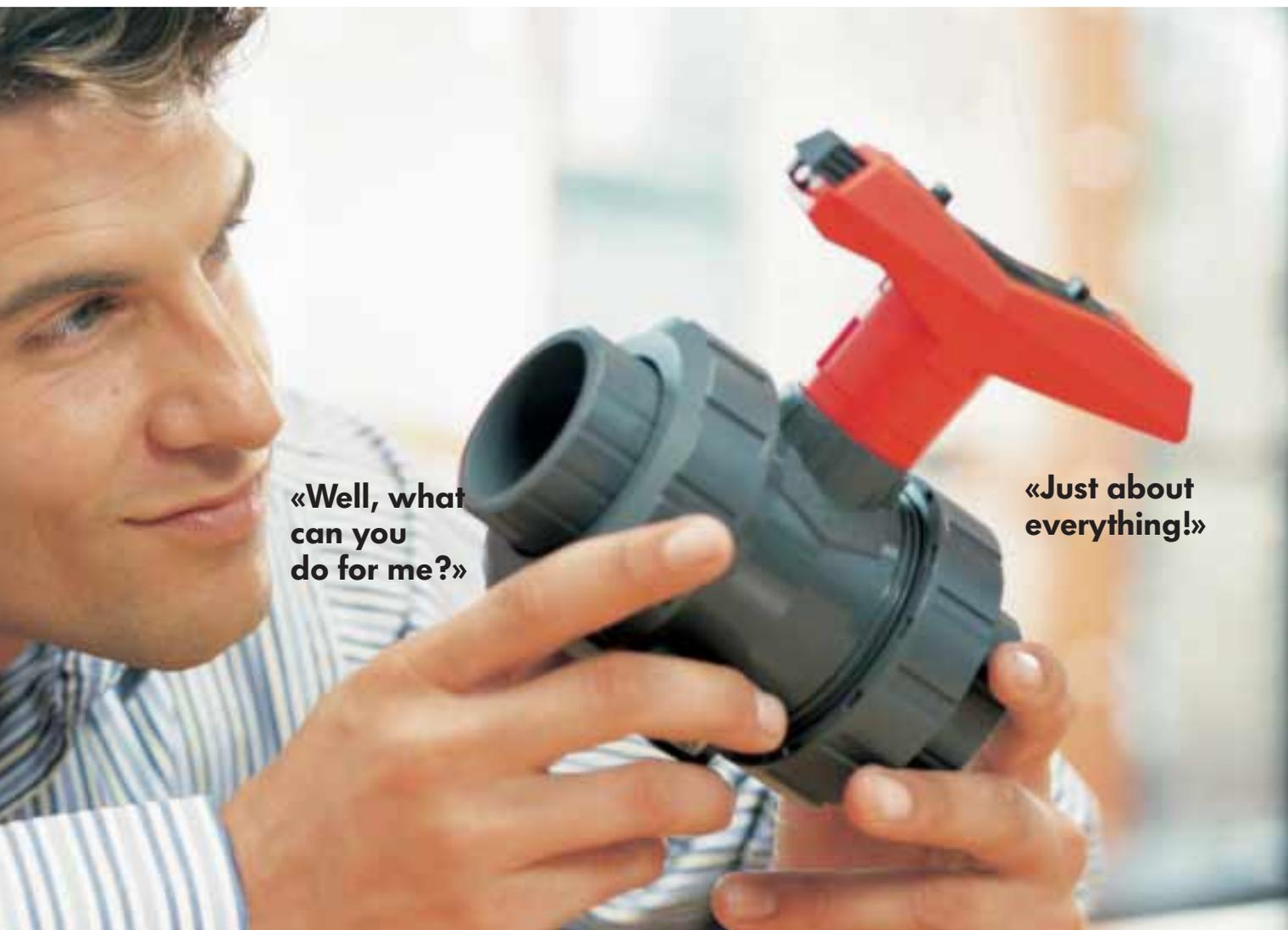
In the raw materials we use as well as in the entire production process. From incoming goods inspection all the way to delivery.

### Safety in operation

Thanks to a safe connection with the buttress thread specially developed for plastics, new added features such as a handle that locks, and our worldwide customer support service.

### Space saving design

Shorter installation length enabling more compact systems.



«Well, what can you do for me?»

«Just about everything!»

#### **Quicker mounting**

Integrated fastening system for direct mounting or with a mounting plate for through wall installations, designed to fit with the +GF+ pipe clamps for complete piping systems.

#### **More ergonomic**

Latest valve design and an operator-friendly handle.

#### **Tailoring to your particular application**

Would you like to have a multi-functional valve that gives you position feedback even with a manual valve?  
Would you like to use the ball valve as a transition valve?  
Just configure it exactly as you wish!

#### **Smart automation**

Fast and easy to add pneumatic and electric actuators according to a modular principle.

#### **The most comprehensive line of ball valves**

The new generation of George Fischer ball valves will be available long-term in the materials: PVC-U, PVC-C, ABS, PP-H and PVDF in the dimensions DN 10–DN 100 as 2- and 3-way valve with the consistent compatibility of all connections, actuators and additional services.

# +GF+ Type 546 Ball Valve.

## Innovative down to the last detail.

### Plastics-oriented design

The new type 546 industrial ball valve has a state-of-the-art design. The distinct design is internationally registered and protected. But the changes are not only cosmetic. It was our goal to develop a ball valve that combines the latest standards in technology, material, form and function. This is why we paid special attention to your needs. The new type 546 ball valve offers you added value with its multiple features and safety aspects down to the last detail.



**Shorter length**  
For more compact systems



**Safer locking**  
Multi-functional handle



**Safer connection**  
New buttress thread developed specially for plastics



**Built-in tool**  
For easy adjustment of ball torque



**Choice of colors for short handle**  
Red or black



**New stem for even more safety**  
Stronger seals



**Integrated fastening system**  
Threaded inserts for fixed point direct mounting



**Lockable handle**  
Protects against unauthorized operation



**Redesigned central part**  
Flush-proof backing seals

**«So what's  
different?»**

**«It's all  
in the details!»**



# +GF+ Type 546 Ball Valve. With multi-functional module.

## The multi-functional module is the answer

What is the current status of the valves in the system? Which ones are open, which are closed?

To be able to answer these questions at all times means safety for you and your operators.

With this multi-functional module, we have a tested and proven unit for you which has not been available before.

The feedback concept includes a selection of 5 different limit switches, designed to fit your needs.

With AS-Interface on request.

## The multi-functional module has more to offer

Thanks to its robust construction and the secure fastening on the ball valve (4 Torx screws), the multi-functional module can be used as a mounting bracket. Through-wall/panel mounting was never so easy.

Replace the lid and the module is equipped with a DIN EN ISO 5211 mounting interface. The new George Fischer actuators can be connected directly.



## One module with many uses

The new multi-functional module significantly expands the number of uses for the type 546 ball valve:



### Mechanical interface

The multi-functional module is fastened on the ball valve with 4 strong Torx screws and can be used for through-wall/panel mounting.



### Connection for actuation

The new electric and pneumatic actuators are built onto the standardized mechanical interface of the multi-functional module.

«What's the  
black box for?»

«Connections!»



**Electric feedback unit**  
The multi-functional module is also an electric feedback unit with AS-Interface.



**Electric feedback unit and position indicator**  
Complete process monitoring and documentation, also for manual valves.



**Many options**  
Multi-functional module as electric feedback unit for manual valves with many options:  
Microswitch: Ag, Ni; Au  
Inductive switch: NPN; PNP;  
Namur

# +GF+ Type 546 Ball Valve.

## The new standard for automation.



### The new pneumatic actuators PA 11 and PA 21

#### Two optimized sizes

- Adapted torques and very compact construction:

#### PA 11

from d 16/DN 10 to d 32/DN 25

#### PA 21

from d 40/DN 32 to d 63/DN 50

#### New attractive design

- All-plastic housing and with no metal parts on the outside
- Pre-loaded spring sets make maintenance safe and easy
- For long service life with guaranteed 250,000 cycles for the actuator

#### Comprehensive line of accessories

- Optional emergency manual override
- Multi-functional housing with integrated limit switches as accessory
- Stroke limiter as special version
- ISO-Namur interfaces for limit switch, pilot valve or valve mounting

#### Outstanding price-performance ratio for all versions

- FC fail safe to close function
- FO fail safe to open function
- DA double acting

#### Position feedback

- Multi-functional module with different limit switch versions (see pages 6/7)



**Easy mounting**  
on the multi-functional module



**Manual override**  
as an option, for limit switch  
operation as well



**Standard ISO-Namur connection**  
according to DIN ISO 5211

## The new electric actuators EA 11 and EA 21

### Two optimized sizes

#### EA 11

for standard applications

#### EA 21

for special requirements

### Accessories for most functions

- Operation status monitoring
- Different input signals for set and actual values in control applications possible
- Expandable to PID controller
- Emergency manual override as a standard feature
- Communication interfaces
- ISO-Namur interfaces

### Connection versatility

- Automatic adjustment of voltage and frequency
- Adjustment to supply voltage 100–230 V, 50–60 Hz
- 24 V AC/DC

### Application versatility

- Implementable from simple applications up to process applications
- Modular design

### All new, inside and outside

- New compact design
- Plastics-oriented construction
- Weight and space optimized
- Actuator designed for long service life with 250,000 cycles; this adds up to an optimal cost-benefit ratio

### Certified worldwide

CE, UL, CSA



**Integrated manual override**  
The handle is built into the housing.



**Information and operation directly on location**  
Display for indication and configuration can be installed directly on the EA 21 actuator for control operations.

# +GF+ Type 546 Ball Valve. The system at a glance.

## A complete model range with many combinations

From the manual valve to the electric actuated ball valve with LCD display. Modular design and expandable. From DN 10 to DN 50. Up to 16 bar pressure.

In cementable materials: PVC-U, ABS, PVC-C and in fusible materials: PP-H, PVDF

Connections in all the major standards:

- metric: DIN, EN, ISO
- inch: BS, ANSI
- JIS

This broad range of products enables you to find the right solution for your application.

## The new +GF+ type 546 ball valve conforms to the following international standards

### prEN ISO 16135 (pending)

Industrial valves – ball valves of thermoplastic materials (ISO/DIS 16135:2001)

### ISO 9393

Thermoplastic valves – pressure test methods and requirements

### EN 558

Flanged valve dimensions are in accordance with EN 558

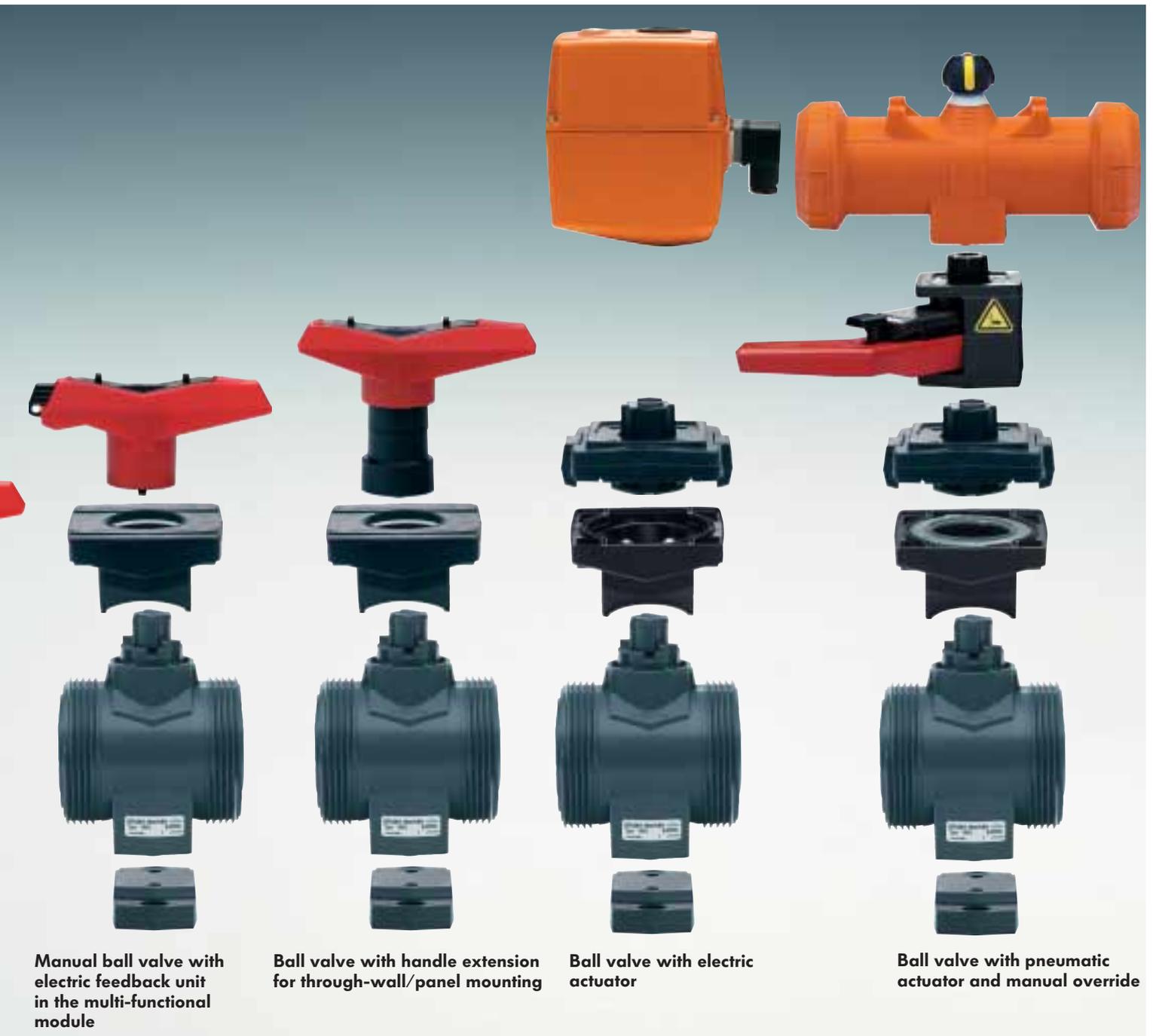
### Approvals

DIBt approval pending



Solvent cement socket

Threaded socket



Manual ball valve with electric feedback unit in the multi-functional module

Ball valve with handle extension for through-wall/panel mounting

Ball valve with electric actuator

Ball valve with pneumatic actuator and manual override



Solvent cement spigot

Fusion spigot and socket

Backing flange

Fixed flange

# +GF+ Type 546 Ball Valve.

## Always the right solution.

We already offer a wide range of products in our catalogues. And that is not going to change in the future. The new system components offer many new solutions. We have put together a selection menu to make it easier for you to order exactly the ball valve you need for your specific application. You choose. We deliver.

<b>Material</b>	<b>Dimension</b>	<b>Version</b>
PVC-U PVC-C ABS PP-H PVDF	DN 10 3/8" DN 15 1/2" DN 20 3/4" DN 25 1" DN 32 1 1/4" DN 40 1 1/2" DN 50 2"	Standard, PTFE ball seal Oil-free, PTFE ball seal Silicon-free, PTFE ball seal Silicon-free, PVDF ball seal



«Just what I need  
for my application!»



**Seal**  
EPDM seals  
FPM seals

**Threaded inserts**  
with threaded inserts  
without threaded inserts

**Connections** (individually selectable)

- Cement socket metric PVC-U
- Cement socket JIS PVC-U
- Cement socket inch ANSI PVC-U
- Cement socket inch BS PVC-U
- Cement spigot metric PVC-U
- Threaded socket Rp PVC-U
- Threaded socket Rp reinforced PVC-U
- Threaded socket Rc PVC-U
- Threaded socket NPT PVC-U
- Cement socket metric PVC-C
- Cement socket JIS PVC-C
- Cement socket inch ANSI PVC-C
- Cement socket inch BS PVC-C
- Cement spigot metric PVC-C
- Threaded socket Rp PVC-C
- Threaded socket Rp reinforced PVC-C
- Threaded socket NPT PVC-C
- Cement socket metric ABS
- Cement socket inch BS ABS
- Threaded socket Rp ABS
- Threaded socket Rp reinforced ABS
- Fusion socket metric PP-H
- Socket fusion spigot metric PP-H

- Threaded socket Rp reinforced PP-H
- Threaded socket NPT reinforced PP-H
- Butt fusion spigot SDR11 metric IR-PLUS PP-H
- Butt fusion spigot SDR17.6 metric PP-H
- Butt fusion spigot long SDR11 metric PP-H
- Fusion socket metric PE-100
- Butt fusion spigot SDR11 metric PE-100
- Butt fusion spigot SDR17.6 metric PE-100
- Butt fusion spigot long SDR11 metric PE-100
- Fusion socket metric PVDF
- Socket fusion spigot metric PVDF
- Butt fusion spigot SDR21 metric IR-PLUS PVDF
- Threaded socket NPT PVDF
- Fixed flange serrated metric PVC-U
- Fixed flange flat metric PVC-U
- Fixed flange JIS PVC-U
- Fixed flange serrated metric PP-H
- Fixed flange inch BS PVDF
- Backing flange PVC-U metric
- Backing flange PVC-U inch ANSI
- Backing flange PP-steel metric
- Backing flange PP-steel inch ANSI

**Multi-functional module**

- No multi-functional module
- Empty module
- Module with microswitches Ag, Ni
- Module with microswitches Au
- Module with inductive switches Namur
- Module with inductive switches PNP
- Module with inductive switches NPN

**Pneumatic actuator**

- PA 11/21 fail safe to close
- PA 11/21 fail safe to open
- PA 11/21 double acting

**Electric actuator**

- EA 11
- EA 21

**Accessories EA 11**

- No accessories
- Standard limit switch
- Heating element
- Fail safe unit

**Accessories EA 21**

- No accessories
- Heating element
- Cycle time module
- Cycle time monitoring
- Cycles monitoring
- Motor current monitoring
- 2 limit switches Ag, Ni
- 2 limit switches Au
- 2 limit switches NPN
- 2 limit switches PNP
- Positioner
- Electric position indicator
- Fieldbus module
- Fail safe return unit

**Manual handle**  
Standard handle red  
Standard handle black  
Multi-function handle red

**Mounting plate**  
without mounting plate  
with mounting plate

**Manual override**  
without manual override  
with manual override

**Mounting plate**  
without mounting plate  
with mounting plate



# The new generation. A smart system.



**Integrated threaded inserts**  
For direct mounting (optional).



**Handle extension**  
With a standard metric pipe as an intermediate part, you can cater for even the thickest insulation.



**Ball valve with mounting plate**  
Matching the height of the KLIP-IT spacer system. For the correct level of valve and pipeline.



**Flange**  
The flange connection is designed for mounting with the KLIP-IT system.



**The new fixed point installation**  
The ball valve unit easily becomes a fixed point. Direct mounting with the integrated threaded insert or the mounting plate. Designed to fit with the KLIP-IT system for pipe fastening. The planning, installation and maintenance of piping systems is now easier and faster.



### **The new integration in system and data technology**

The type 546 manual ball valve with multi-functional module and feedback unit is also integrated in process monitoring.

Pneumatic and electric actuators offer fully automatic operation. Take advantage of the synergies with George Fischer products. The most compact version is achieved in combination with our PRO-FIT product series.



### **The new CAD system planning**

If you need the ball valve data for your 2-D or 3-D engineering – you are just a click away from downloading the new CAD product library for the type 546 from the Internet or ordering it on CD-ROM directly from us. The library is compatible with most CAD programmes.

**[www.piping.georgfischer.com](http://www.piping.georgfischer.com)**

*The technical data are not binding. They are not warranted characteristics and are subject to change. Please consult our General Conditions of Supply.*

# George Fischer Type 546 Ball Valve. One name. One system. Worldwide for you.



Quality and environmental management systems according to ISO 9001 and 14001 are the basis for the continuous improvement of our performance.

Excellent customer service is guaranteed by our global network of sales organisations in 25 countries and representatives in over 80 countries, with

the additional support of engineers and plant operators. These comprehensive George Fischer services mean more safety for you worldwide.



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