



## PS SERIES

Valve test benches can be used for various applications.

These are, for example, the incoming goods test when new valves are delivered, the intermediate and final inspection during/after valve manufacture, checking the valve repair result or routine testing of, for example, safety valves.

The tests comprise mainly pressure tests of valve housings, leakage tests of the valve seats and testing of the set pressure of safety valves in particular.

In addition to valves, other components, too, can obviously be subjected to a pressure test. These are, for example, tanks, motor housings, pump housings, pipe fittings, insulators, etc. Special clampings are frequently required to clamp these test pieces.

An EFCO valve test bench consists of a clamping unit and a control panel for operation, measurement, and control. The test piece is held securely by the clamping device and sealed on inlet and outlet for the test. Clamping forces up to about 1500 t can be implemented (on request even higher).

The operating/measuring/control unit (console) is used for the actual test (filling of the valve, building up of test pressure, controlling the clamping unit, measuring of test pressure).

We also offer small, portable test units for mobile applications. These test units do not have a clamping unit and can be used to build up test pressure and measure it (e.g. for tank tests).

### Construction of valve test benches

- Stationary / portable (available up to about 10 t clamping force)
- Manual / automatic
- Horizontal/vertical/tilting

### For the testing of

- Gate valves
- Control valves
- Check valves
- Ball valves
- Safety valves
- Hollow bodies (motor housings, pipe fittings, tanks, etc.)

### Design of test piece ends (inlet/outlet)

- Flange
- Thread
- Welding socket pieces
- Flangeless ("sandwich" / "wafer")

### Test medium

- Water
- Air
- Nitrogen
- Special test media (e.g. oil, kerosene)

### Test types

- Shell/body tests
- Leakage test of spindle gland
- Leakage test of shut-off device
- Set pressure of safety valves

### Test pressure

- Water up to 1380 bar (20000 psi) (higher on request)
- Air / nitrogen up to 300 bar (4350 psi) (higher on request)
- Vacuum testing

### PS-200





## EFCO standard testing technology

Well-tries technology, standardised and with modular design. Cost-effective and with short delivery times. Basic product range in various versions and many options.

The standard testing technology is characterised by:

- Easy to operate
- Manual operation
- Infinitely variable clamping force
- Suitable for pressure testing of shut-off/control valves and safety valves
- Water tank made from stainless steel (VA)
- All parts of clamping device with anticorrosive coating

### Vertical chucking

Type	DN	Clamping force (t)
PS-T/SV5	10-80 (3/8"-3")	5
PS-T10.03	10-200 (3/8"-8")	10
PS-15M	15-250 (1/2"-10")	15
PS-SV15M	15-250 (1/2"-10")	15
PS-30/50/75M	25-400 (1"-16")	30/50/75
PS-SV30/50/75M	25-400 (1"-16")	30/50/75
PS-100	50-500 (2"-20")	100
PS-150	50-500 (2"-20")	150

### Horizontal clamping

Type	DN	Clamping force (t)
PS-H200M	50-600 / 100-1000 (2"-24"/4"-40")	200
PS-H250M	50-600 / 100-1000 (2"-24"/4"-40")	250
PS-H300M	50-600 / 100-1000 (2"-24"/4"-40")	300
PS-H350M	50-600 / 100-1000 (2"-24"/4"-40")	350
PS-H400M	50-600 / 100-1000 (2"-24"/4"-40")	400
PS-H450M	50-600 / 100-1000 (2"-24"/4"-40")	450
PS-H500M	50-600 / 100-1000 (2"-24"/4"-40")	500
PS-H550M	50-600 / 100-1000 (2"-24"/4"-40")	550

Other variants on request

Dimensions in mm (inch)

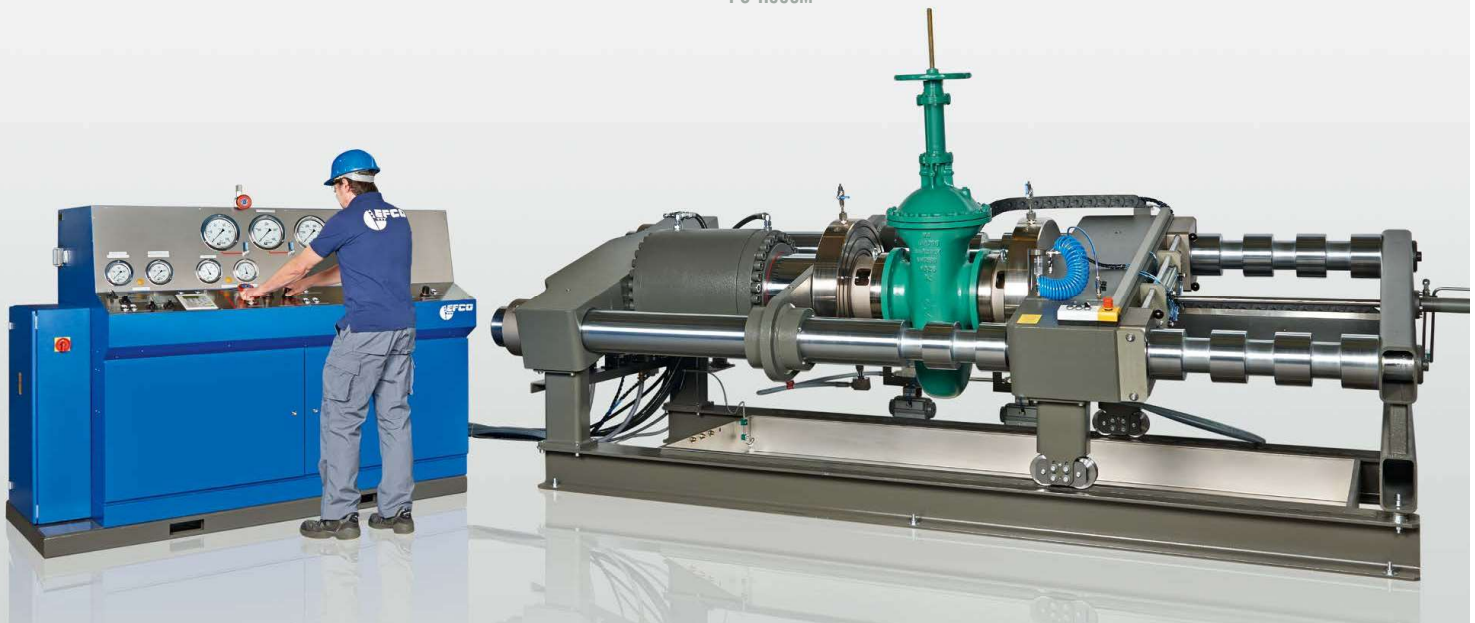
PS-15M



PS-T10.03



PS-H550M





Individually adapted testing equipment, coordinated to your particular specifications and needs.

Our particular strength lies in creating a product for you that meets your requirements exactly. You benefit from our many years of experience in implementing customer-specific projects.

Here is a small selection of a wide range of options:

- Nominal test specimen widths (DN10/ 3/8") up to (DN1000/ 40") and larger
- Manual, semi-automatic or automatic operation
- Repeated test cycles (endurance testing)
- Underwater testing
- Vacuum testing
- Testing of 2-way / 3-way / multi-way test specimens
- Individual or multiple clamping
- Recording of test specimen ID using handheld scanner
- Output of test result data via defined interface

## PS-50UW

- Automatic air and water shut-off valve testing
- Air testing under water
- Clamping unit that swings out to allow for easy installation

## PS-30A

- Automatic air and water testing of 2 and 3-way control valves
- Actuator for closing and opening the test specimen
- Proportional clamping to protect housing



PS-50UW



PS-30A



PS-H90A





## PS-H7.5UW

- Fully automatic testing of ball valves
- Air testing under water
- Torque measurement when closing
- Horizontal clamping

## PS-H1500

- For testing valves up to DN 1000 (40")
- Water testing up to 1380 bar (20.000 psi)
- Housing-protecting horizontal clamping with self-sealing test tables

PS-H7,5 UW



PS-H1500



## PS Bellows testing device

- For air testing of bellows
- Automatic testing procedure
- Multiple clamping (photo: 3-way vertical)

## PS-H90A

- Fully automatic air and water testing of gate valves and butterfly valves DN40-600 (1½"-24")
- Torque measurement when closing
- Horizontal clamping
- Test specimen ID recorded using hand scanner
- Transfer of test result data to network interface
- Proportional, housing-protecting clamping





## EFCO-VALVE-DOC

The EFCO-Valve-Doc is a documentation and administration system for valve test:

- Mobile or stationary device for the acquisition, analysis and documentation of valve tests
- Suitable for all test benches on the market
- User friendly
- Designed with the latest technology
- Available in several languages

The EFCO-Valve-Doc is ready to be used; all software is installed and configured. It only needs to be plugged in, and the pressure transducers need to be connected to the valve test bench.

It is to log, record and analyse:

- Set-pressure and seat leakage tests of safety valves and / or
- Body leakage and seat leakage tests of shut-off valves

## EFCO-BOOSTER

Water pressure generation with appropriate high-pressure pumps is integrated in every EFCO valve test bench intended for a water test.

The air/nitrogen test pressure required for testing is provided either via a high-pressure bottle pre-filled by the customer or via an EFCO Booster.

The EFCO Booster compresses air or nitrogen to 300 bar (4350 psi) (higher pressures are possible on request).

BOOSTER



## PS ACCESSORIES

All EFCO valve test benches are equipped with standard accessories and their function can be extended with optional accessories.

The following are some of the accessories available:

- O-ring sealing plates
- Polyurethane sealing plates (Vulkollan)
- Safety plugs (specially for safety valves)
- Threaded adapters (for the testing of test pieces with threaded end)
- Accumulators
- Digital displays



## EFCO WELDING EQUIPMENT CW-1000 SERIES

DN 30-1000 mm (1¼"-40").

Complete solution for MIG/MAG welding in and on valves.

Automatic welding of sealing faces/circular welding of:

- bores, circular and conical surfaces

The machine is equipped with automatic feed and has integrated water cooling.

Drive: electric 230/120 V, 50/60 Hz

Type	CW 1000
Axial stroke	175 (6.89")
Radial stroke	90 (3.54")
Axial feed /rev.	3 (0.12")
Radial feed /rev.	3 / 3,8 / 4,6 (adjustable) (0.12"/0.15"/0.18")
Speed range	0,1 - 5,0 rpm
Adjustment angle	of head 0 - 90° (manually)

Dimensions in mm (inch)

CW-1000



## EFCO-ARS-SERIES

Professional cleaning set for valves to remove rust, seal residues, scale, slag, paint residue and other contamination.

Developed for cleaning of dirty valves or housings using high-speed rotating twisted brushes.

Drive: electric 230/120 V, 50/60Hz or pneumatic 6-7 bar

ARS



## MOBILE WORKSHOPS

As fixed lorry superstructure or in an ISO container

Fast reaction times and flexibility are required for on-site valve service. EFCO can provide you with a mobile workshop equipped to your requirements. It is equipped with EFCO turning, grinding and lapping technology and can also be fitted with a lathe, drilling machine, valve test bench and everything else you require.







## GSS SERIES

EFCO GSS grinding tools are coated with electroplated cubic crystalline boron nitride (CBN).

CBN is highly suitable for grinding hard sealing surfaces with a minimum hardness of 35 HRC such as, for example, steel on cobalt and nickel basis, highly alloyed steels, chromium steel, etc.

The good heat resistance of CBN in combination with its great hardness makes economic grinding at the higher machining temperatures of these steels possible (long life).

## EFCO ABRASIVES

The EFCO abrasives are perfectly formulated and matched to EFCO machines through extensive testing. We supply coated abrasives in various grit sizes and formulations optimised for the application.

- |                   |   |
|-------------------|---|
| Abrasive backing: | <ul style="list-style-type: none"> <li>• Paper</li> <li>• Cloth</li> <li>• Film</li> </ul>  |
| Grain types:      | <ul style="list-style-type: none"> <li>• Aluminium oxide (<math>\text{Al}_2\text{O}_3</math>)</li> <li>• Silicon carbide (SiC)</li> <li>• Zirconium corundum (<math>\text{ZrO}_2 + \text{Al}_2\text{O}_3</math>)</li> </ul> |
| Grain size:       | <ul style="list-style-type: none"> <li>• Standard grit sizes: P80-P1800</li> <li>(other grit sizes on request)</li> </ul>   |



## EFCOBOR LAPPING COMPOUNDS

In accordance with DIN 8589, lapping is a microfinishing process using a grain distributed loosely in a liquid or paste (lapping compound) which is held on a, usually shaped, counterpart (lapping tool).

EFCOBOR lapping compounds are oil soluble lapping pastes of boron carbide.

Independent of the material hardness, with EFCOBOR it is possible to achieve:

- High surface quality
- Highest dimensional accuracy
- Close dimensional tolerances

EFCOBOR Lapping Paste comes in various grit sizes from F80-F1500 (FEPA) and pack sizes.



EFCO also supplies other equipment, machinery and materials for valve repair on-site or in the workshop and for the repair of pipelines.

- **SEAL AND PACKING CUTTING MACHINES AND EQUIPMENT**
- **INCLINOMETER FOR GATE VALVE SEALING SURFACES**
- **TSM TELESCOPIC INSPECTION MIRROR**
- **HYDRAULIC NUT OPENER**

## Advice, Project Planning and Training

We offer training with our machines and equipment in our company or at your site. Valve repair training, too, is carried out competently.

Our core competence is valve repair/valve testing. We are happy to advise you and work together with you on drawing up concepts for valve repair.

Our partners are companies of different sizes from many industries.

We can design and build special machines for you which match the requirements of your company.

Within Europe, we would be pleased to visit you by arrangement with one of our demonstration vehicles to introduce you personally and competently to a large section of our product range.

We will gladly advise you at your site and also to provide any special information specific to your requirements.

You can also find us on the Internet with further product details and up-to-date information.

[www.efco-dueren.com](http://www.efco-dueren.com)





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