

# VALVE REPAIR AND TESTING EQUIPMENT AND MORE



## Serving the World

Since EFCO was established in 1978, we have been a world leading manufacturer of portable and stationary valve repair and testing equipment. The company has been a family-run business with the philosophy of making our customers our partners. We can jointly solve problems concerning machining and testing of sealing surfaces in valves and flanges of all types.

Experience has shown that preventative maintenance is the cheapest way of increasing the safety of your installations. Once the first faults occur, costs frequently balloon, because actions have to be taken under enormous time pressure in such cases. In addition to environmental damages and high clean-up costs, unquantifiable damage to your image may arise.

With targeted use of EFCO technology, you achieve not just a high level of safety, but also save significant amounts of time and money in the long term and make an additional contribution to environmental protection – without additional costs.

EFCO machines are used worldwide and are characterised by:

- Excellent quality
- Durability
- Operator-friendly handling
- First-class repair results

As a world-leading manufacturer of portable and stationary valve repair and testing technology, we are certified to DIN EN ISO 9001.

We are able to maintain our market leadership due to flexibility, continuous process improvements, short information paths as well as dealing actively and positively with problems.

Our product range includes:

- Portable and stationary machining and repair machinery for valves, flanges and pipelines
- Surface grinding and lapping machines
- Valve test benches
- Workshops, mobile and stationary
- Planning of workshops
- Consumables
- And much more

Please contact our team in Düren, our sales offices or our sales partners for further information or if you have any questions. You can also visit us on the internet at [www.efco-dueren.com](http://www.efco-dueren.com)

We will gladly demonstrate our machines, also at your facility.





Apparatus construction  
 Boiler manufacturers  
 Chemical industry  
 Combined heat and power stations  
 District heating suppliers  
 Fertilizer plants  
 Food industry  
 Fossil power plants  
 Gas manufacturers  
 Hydroelectric power plants  
 Manufacturers of valves  
 Mining  
 Nuclear power stations  
 Paper industry / cellulose  
 Petrochemical plants / refineries  
 Pharmaceutical industry  
 Pipelines  
 Plant construction  
 Refuse incinerators  
 Rubber manufacturers  
 Shipping companies  
 Shipyards  
 Steel industry  
 Steel works  
 Sugar refineries  
 Valves service companies  
 Valves trade  
 Water treatment plants





GRINDING AND LAPPING EQUIPMENT



TURNING EQUIPMENT



TESTING EQUIPMENT



OTHER PRODUCTS

**Flat Seats / Safety Valves:**

Mobile Machining		Stationary Machining	
VALVA	Grinding and lapping equipment	SM-D	Grinding and lapping equipment
VSA	Grinding equipment	TSV	Grinding and lapping equipment
TSV	Grinding and lapping equipment	MK/ENT	Grinding equipment
TD	Turning equipment	KS	Grinding equipment*
TD-NC	Turning equipment	FLM	Lapping equipment*
CW-1000	Welding equipment	PDM	Turning equipment
		SPM	Turning equipment
		CW-1000	Welding equipment

\* not for safety valve

**Conical Seats:**

Mobile Machining		Stationary Machining	
VSK	Grinding equipment	SPM	Turning equipment
LS	Grinding equipment	PDM	Turning equipment
VSA	High-speed grinding equipment	CW-1000	Welding equipment
TD	Turning equipment		
TD-NC	Turning equipment		
CW-1000	Welding equipment		

**Flanges / Bores / Pressure Seals:**

Mobile Machining		Stationary Machining	
TDF	Turning equipment	SPM	Turning equipment
TDFI	Turning equipment	PDM	Turning equipment
TDF-NC	Turning equipment		
TD	Turning equipment		
TD-NC	Turning equipment		
SL	Grinding and lapping equipment		

**Gate Valves And Check Valves:**

Mobile Machining		Stationary Machining	
SL	Grinding and lapping equipment	SM-N	Grinding equipment
HSL	High-speed grinding equipment	KS	Grinding equipment
		FLM	Lapping equipment
		MK and ENT	Grinding equipment
		SPM	Turning equipment
		PDM	Turning equipment
		CW-1000	Welding equipment

**Ball valve:**

Mobile Machining		Stationary Machining	
		ROTAGO	Lapping equipment

**Testing Technology:**

Mobile Testing Technology		Stationary Testing Technology	
PS-T/SV5 (SV/A)		PS-15M-75M (SV/A)	
PS-T10.03 (SV/A)		PS-SV 15M-75M (SV)	
EFCO-VALVE-DOC (SV/A)		PS-100/150 (A)	
		PS-H 200M-550M (A)	
		EFCO-Booster	

SV = safety valve A = shut-off and control valves

**Cleaning And Inspection:**

Mobile Machining		Stationary Machining	
ARS	Cleaning set		
TSM	Mirror set		
	Protractor for gate valve sealing surfaces		



## VALVA SERIES

Portable machine for grinding and lapping of flat sealing surfaces on valves, valve disks and flanges from DN 8-1600 mm (¼"-64").

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

The VALVA series: an impressive concept = simple, easy, one-man operation, wear-resistant tools, good price/performance ratio, high profitability and efficiency.

Type	DN	Grinding	Lapping
VALVA-S1	8-150 (¼"-6")	•	
VALVA-1	8-150 (¼"-6")	•	•
VALVA-S15	80-300 (3"-12")	•	
VALVA-15	80-300 (3"-12")	•	•
VALVA-2	200-700 (8"-28")	•	•
VALVA-3	500-1600 (20"-64")	•	•

Dimensions in mm (inch)

## VSK SERIES

Portable machine for the grinding of conical sealing surfaces in:

- High-pressure, shut-off, control and globe valves of DN 8-300 mm (¼"-12")
- Standard seat angles of 30° (2x15°), 40° (2x20°), 60° (2x30°), 75° (2x37,5°), 90° (2x45°) (other angles and dimensions on request)

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

VSK*	1	2	3	4	5
DN	8-50 (¼"-2")	8-65 (¼"-2½")	8-100 (¼"-4")	80-150 (3"-6")	80-300 (3"-12")
VSK*	6	7			
DN	8-150 (¼"-6")	8-300 (¼"-12")			

Dimensions in mm (inch)

\*Please state seat angle in enquiries.

VSK





LS

## LS SERIES

Portable machine for grinding flanged pipe ends with metallic lenticular gaskets 140° as per BASF- and DIN 2696 standard from DN 6-200 mm (¼"-8").

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

LS	1	2
DN	6-90 (¼"-3½")	6-200 (¼"-8")

Dimensions in mm (inch)



SL-2

## SL SERIES

Portable grinding and lapping machine for the repair of sealing surfaces in gate valves and non-return valves and on wedges and flanges of DN 20-2000 mm (¾"-80").

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

	SL-05	SL-1	SL-15	SL-2	SL-3
DN					
Standard	20-65 (¾"-2½")	32-150 (1¼"-6")	40-300 (1½"-12")	200-700 (8"-28")	500-1200 (20"-48")
Special up to	80 (3")	200 (8")	450 (18")	900 (36")	2000 (80")
Immersion depth					
Standard	250 (9.8")	400 (15.7")	600 (23.6")	1000 (39.4")	1200 (47.2")
Special up to	400 (15.7")	600 (23.6")	1200 (47.2")	1600 (62.9")	2200 (86.6")
Min. spacing					
	15 (0.59")	28 (1.1")	41 (1.6")	69 (2.7")	102 (4")

Dimensions in mm (inch)

Other immersion depths can be supplied on request.

Option:

- Digital rocker (for the exact reproduction of the set contact pressure)
- Swing-check-adaptor (for machining the sealing surfaces in non-return valve housings with large inclination)
- VB device:  
additional arm for grinding and lapping flat sealing surfaces in valve housings.





## SLA SERIES

Planetary gears with driven high-speed spindles for the machining of hard sealing surfaces ( $\geq 35\text{HRC}$ ) for SL-15 and SL-2 machines (patented).

Time saving up to 90%.

Available as option for new machines and for retrofitting to existing SL machines.

### Driven planetary gears

Type	SLA-15*	SLA-2**
AS-1	DN 125-175 (5"-7") (Option)	
AS-2	DN 175-225 (7"-9")	DN 200-225 (8"-9") (Option)
AS-3	DN 225-400 (9"-16")	DN 225-400 (9"-16")
AS-4		DN 400-600 (16"-24")

Dimensions in mm (inch)

\* for SL-15 machines \*\* for SL-2 machines

AS-3



HSL-15



## HSL SERIES

Portable machine for high-speed grinding of hard sealing surfaces ( $\geq 35\text{HRC}$ ) in high-pressure gate valves and wedges of various design.

Fitted with SLA series planetary gears for use with driven GSS grinding spindles.

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

Type	HSL-15	HSL-2
Working range	DN 175-400 (7"-16")	DN 225-600 (9"-24")

Dimensions in mm (inch)

- Grinding speed up to 21 m/s (826.8"/s)
- Very high material removal of up to 2 mm/h / 0.08"/h (for Stellite 6/21 dia. 350/300 (13.8"/11.8"))
- Time saving up to 90%!
- Patente



TSV-150

## TSV SERIES

**Portable grinding and lapping machine with eccentricity for the machining of sealing surfaces/nozzles of in safety valves of DN 15-300 mm ( $\frac{1}{2}$ "-12").**

In these machines the grinding movement is overlaid by an additional eccentric movement. This results in a cross-hatch finish and absolutely flat sealing surface.

Suitable for use on-site and in the workshop.

	TSV-150	TSV-300
DN range	15-150 ( $\frac{1}{2}$ "-6")	25-300 (1"-12")
Max. immersion depth	350 (14")	350 (14")
Clamping range of chuck	85-450 (3.4"-17.7")	85-450 (3.4"-17.7")
Max. spindle speed	560 rpm	460 (690*) rpm
Max. eccentric speed	255 rpm	300 (450*) rpm
Eccentricity	3 (0.12")	3 (0.12")
Drive	pneumatic 6-7 bar	230/120V, 50/60 Hz or pneumatic 6-7 bar*

Dimensions in mm (inch)



VSA-2

## VSA SERIES

**High-speed precision grinding machine for the machining of build-up welding, sealing surfaces, conical surfaces and bores in valves, cylinders, pump housings and flanges of DN 20-1500 mm ( $\frac{3}{4}$ "-59").**

Drive: pneumatic 6-7 bar

Type	Working range	Immersion depth
VSA-05	DN 20-150 ( $\frac{3}{4}$ "-6")	250 (9.8")
VSA-1	DN 50-400 (2"-16")	650 (25.6")
VSA-2	DN 250-800 (10"-32")	1000 (39.4")
VSA-3	DN 500-1500 (20"-59")	1500 (59")

Dimensions in mm (inch). Other dimensions on request.

A bore grinding unit and a manhole grinding unit can be supplied as accessories.





## ROTAGO

Stationary ball lapping machine, especially suitable for finishing the ball and metallic sealing seats of a ball valve so they fit together perfectly. The machine produces an exact surface shape between the lapped workpieces. Lapping with freely selectable or predefined parameters is possible. Standard programs for automatic sequencing of the lapping process preinstalled. Enormous time saving compared to manual lapping.  
drive: electric 230/120 V, 50/60 Hz and pneumatic 6-7 bar

	ROTAGO
DN-range	DN 32–200 (1 1/4"–8")
Ball-Ø	Ø50–Ø300 (2"–11.8")
max. weight of the ball:	100 kg

All figures in mm (inches)

## KS SERIES

Grinding table for face grinding wedges, valve disks and other machine components.

	KS-6	KS-10
Grinding disk Ø	600 (23.6")	1000 (39.4")
max. workpiece weight	50 kg	200 kg
Drive	electric 230/120 V, 50/60 Hz	electric 380-480 V, 50/60 Hz

The grinding disk is fitted with self-adhesive grinding plates.  
A version with quick-change grinding disks is available for use with frequently changing grits (KS-6 only).  
Safe operation due to stop bracket and footswitch.

ROTAGO



KS-6



FLM-600



## FLM SERIES

Stationary surface lapping machines, particularly suitable for the lapping of valve disks, axial face seals and wedges etc.

Drive: electric 380-480 V, 50/60 Hz (FLM-400: 230/120 V, 50/60 Hz)

Type	Lapping wheel dia.	Max. workpiece dia.	Max. workpiece weight
FLM-400	405 (15.9")	120 (5")	10 kg
FLM-600	615 (24.2")	220 (9")	50 kg
FLM-900	915 (36")	350 (14")	100 kg
FLM-1200	1215 (47.8")	470 (19")	150 kg
FLM-1500	1515 (59.6")	600 (24")	150 kg

Dimensions in mm (inch)

Accessories such as interference lamp, optical flats, polishing tables and roughness testers as well as consumables can also be supplied.



## SM-550 SERIES

**Stationary grinding and lapping machine for the machining of sealing surfaces in shut-off valves, wedges, safety valves, etc.**

The machine can be supplied optionally with one or two tables in various configurations.

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

	Inclined table	Rotary table
Size	550 x 550 (21.7"x21.7")	Ø 550 (21.7")
Adjusting distance*	—	0-20 (0-0.78")
Inclination	± 12°	—
Max. valve diameter	Ø 900 (36")	Ø 900 (36")
Max. valve height	800 (32")	830 (33")
Max. valve weight	450 kg	450 kg

Dimensions in mm (inch)

\* the movement of the turntable and the superposition of the rotating movements (work spindle to turntable) produce an optimum sealing surface on safety valves.

SM-550



## SM-750 SERIES

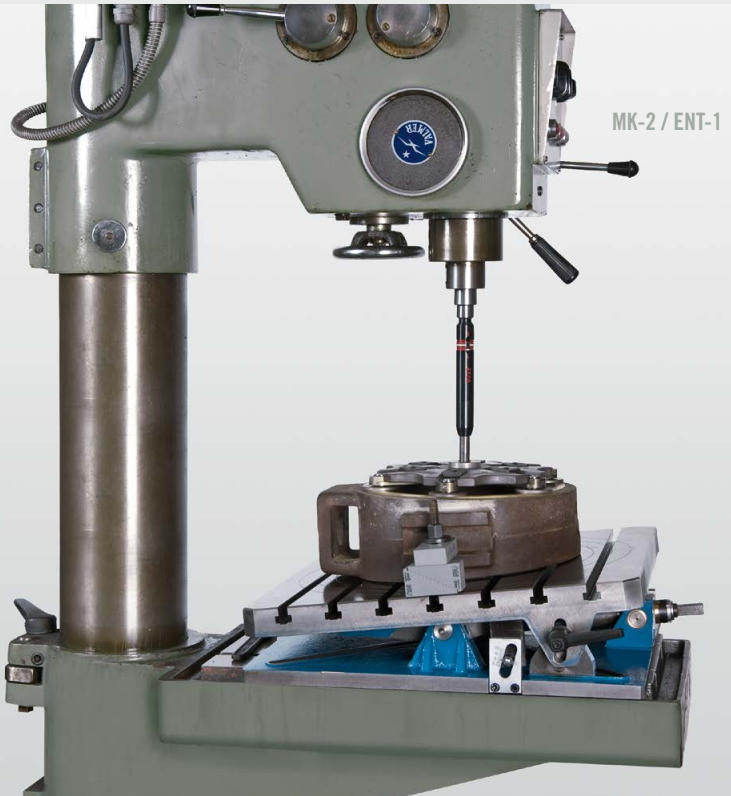
**Stationary grinding and lapping machine for the machining of sealing surfaces in shut-off valves, wedges, safety valves, etc.**

The machine can be supplied with centre or eccentric spindle and one or two inclined tables.

Drive: electric 380-480 V, 50/60 Hz

	SM-750 centred	SM-750 eccentric
Spindle	centred	eccentric 0-20 (0-0.78")
Inclined table size	750 x 750 (29.5" x 29.5")	750 x 750 (29.5" x 29.5")
Inclination	± 12°	± 12°
Max. valve diameter	Ø 950 (38")	Ø 950 (38")
Max. valve height	1000 (40")	1000 (40")
Max. valve weight	2500 kg	2500 kg

Dimensions in mm (inch)



## MK and ENT SERIES

The pillar or radial drilling machine with MK-ADAPTER makes it possible to use the EFCO tools of the Valva and SL series for stationary machining of sealing surfaces in and on valves and wedges.

We recommend the appropriate inclined tables (0°-12°) for fast alignment of valve housings and wedges.

Adapter	Inclined table	EFCO machines	up to DN
MK2	ENT-1 300 x 300 (11.8" x 11.8")	Valva-1, Valva-S1	150 (6")
	ENT-2 500 x 500 (19.7" x 19.7")	Valva-15	300 (12")
		SL-15	400 (16")
MK 3	ENT-3 1000 x 1000 (39.4" x 39.4")	SL-2, Valva-2	600 (24")
MK 5	ENT-4 1500 x 1500 (59" x 59")	SL-3, Valva-3	1200-1600 (48"-64")

Dimensions in mm (inch)

## PORTABLE LATHES



## TD SERIES

Portable lathe for on-site machining on valves, flanges, pumps, turbine housings.

Particularly suitable for turning cylindrical and conical sealing surfaces in high-pressure valves (internal seals) and for the removal of welded-in valve seats.

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

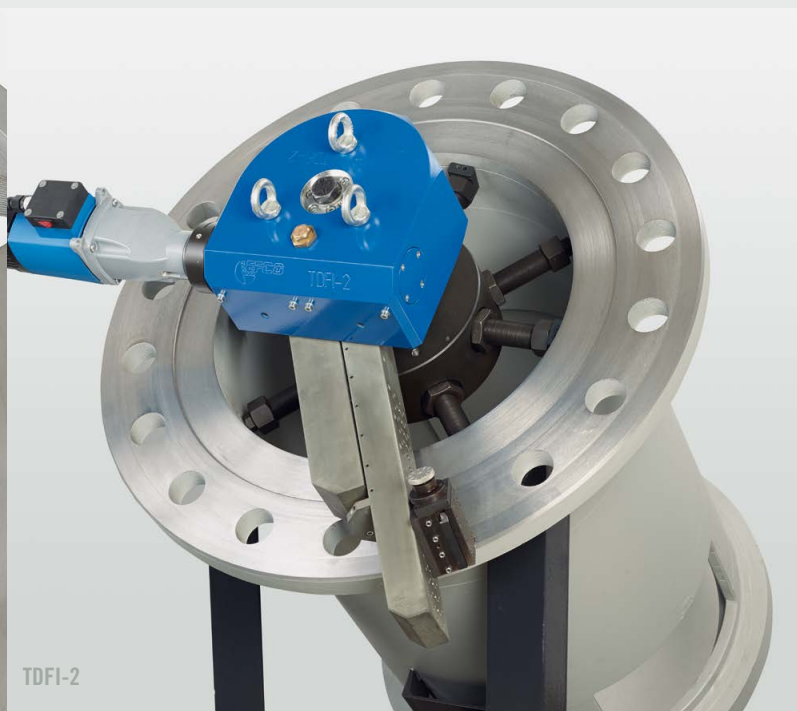
Type	TD-03*	TD-1.02	TD-2.02*
Machining Ø	0-150 (0-5.9")	0-400 (0-15.7")	0-800 (0-31.5")
Working depth	250 (9.8")	450 (17.7")	600 (23.6")
Radial stroke	20 (0.79")	40 (1.57")	60 (2.36")
Axial stroke	100 (3.94")	200 (7.87")	250 (9.8")

Dimensions in mm (inch)

Optional unit for high-speed grinding can be supplied (TD-1.02, TD-2.02).







Portable flange facers with internal or external clamping for on-site machining on flanges, valves, pumps, turbine housings and heat exchangers.

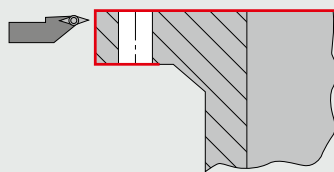
Drive: electric 230/120 V, 50/60 Hz or pneumatic 6-7 bar

(TDFI-1, TDFI-2, TDFI-2.5)

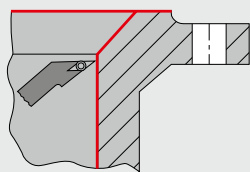
pneumatic 6-7 bar or hydraulic (TDFI-3, TDFI-4)

Numerous machining options:

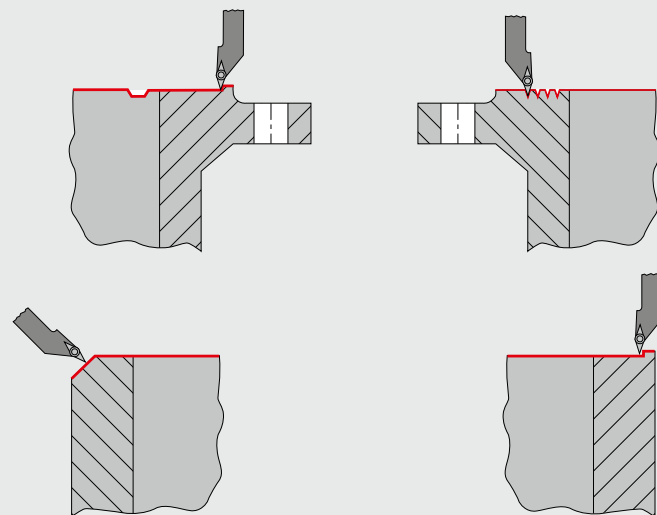
Only TDFI Series:



Only TDF Series:



TDFI Series & TDF Series:

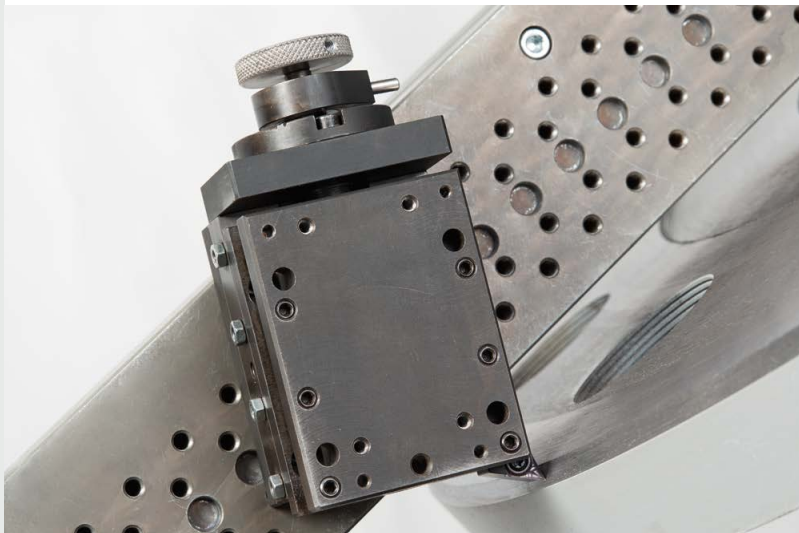


## TDFI SERIES

- with internal clamping
- machining  $\varnothing$  150-4400 mm (5.9"-173.2")
- easier handling due to separate installation of clamping device and machine unit
- precision alignment of clamping device within a short time by means of simply designed adjusting system

Type	TDFI-1	TDFI-2	TDFI-2.5
Machining $\varnothing$	150-630 (5.9"-24.8")	400-1200 (15.8"-47.2")	760-2440 (29.9"-96.1")
Installation $\varnothing$	150-460 (5.9"-18.1")	400-1000 (15.8"-39.4")	760-2200 (29.9"-86.6")
Machine height	315 (12.4")	350 (14")	500 (20")
Type	TDFI-3	TDFI-4	
Machining $\varnothing$	1200-3300 (47.2"-129.9")	1700-4400 (66.9"-173.2")	
Installation $\varnothing$	1200-3000 (47.2"-118.1")	1650-3800 (65"-149.6")	
Machine height	500 (20")	500 (20")	

All information in mm (inches)





TDF-05A

## TDF SERIES

- with external clamping
- machining  $\varnothing$  0-3500 mm (0"-137.8")

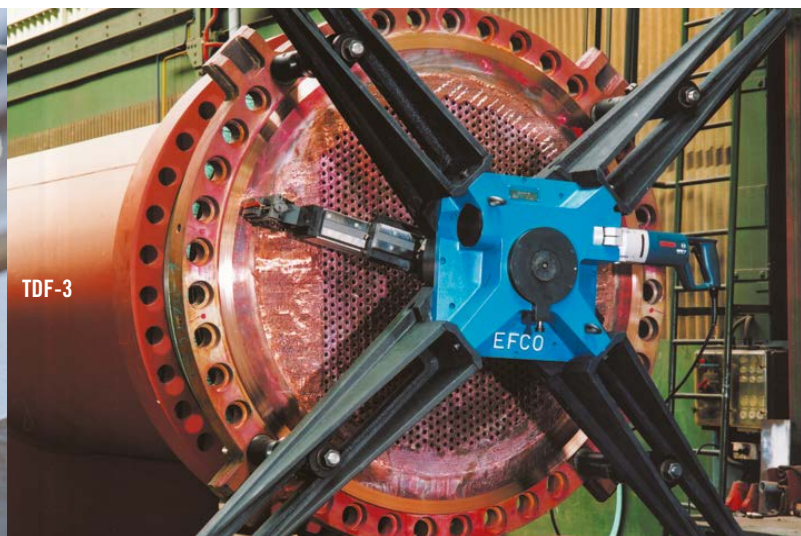
Type	TDF-05	TDF-05A	TDF-1	TDF-1A
Machining dia.	0-250 (0-9.8")	0-250 (0-9.8")	0-500 (0-19.7")	0-400 (0-15.7")
Mounting dia.	250-400 (9.8"-15.7")	250-400 (9.8"-15.7")	260-600 (10.2"-23.6")	260-600 (10.2"-23.6")
Machine height	265 (10.4")	310 (12.2")	265 (10.4")	310 (12.2")
Axial stroke	—	23 (0.9")	—	23 (0.9")
Axial stroke with angular head (optional)	60 (2.36")	60 (2.36")	60 (2.36")	60 (2.36")
Radial stroke	80 (3.15")	80 (3.15")	80 (3.15")	80 (3.15")

Dimensions in mm (inch)

Type	TDF-2	TDF-3	TDF-4
Machining dia.	300-1200 (11.8"-47.2")	500-2200 (19.7"-86.6")	1500-3500 (59"-137.8")
Mounting dia.	485-1345 (19.1"-53")	660-2710 (26"-106.7")	1500-3700 (59"-145.7")
Machine height	350 (13.8")	480 (18.9")	760 (29.9")
Axial stroke	—	—	—
Axial stroke with angular head (optional)	80 (3.15")	80 (3.15")	80 (3.15")
Radial stroke	100 (3.9")	150 (5.9")	200 (7.9")

Dimensions in mm (inch)

Special versions on request



TDF-3



**Portable CNC-controlled lathes and flange facers with two controlled axes (X+Z) for on-site use on flanges, valves, pumps, turbine housings and heat exchangers.**

End faces and holes, tapers, radii and grooves can be machined in one clamping operation using these machine variants.

Drive: electric 380-480 V, 50/60 Hz

## TDF-NC SERIES

**Portable CNC-controlled flange facer with external clamping.**

Type	TDF-1 NC	TDF-2 NC
Machining Ø	0-600 (0"-23.6")	500-1500 (19.7"-59")
Installation Ø	400-1100 (15.8"-43.3")	1200-2600 (47.2"-102.4")
Axial stroke	100 (3.9")	80 (3.2")
Radial stroke	120 (4.7")	400 (15.8")

All information in mm (inches)

Other dimensions on request

## TD-NC SERIES

**Portable CNC-controlled lathe with external clamping.**

**Particularly suitable for machining with large immersion depths.**

Type	TD-1.02 NC	TD-2.02 NC
Machining Ø	0-400 (0-15.7")	0-800 (0-31.5")
Installation Ø	350-750 (13.8"-29.5")	400-1100 (15.8"-43.3")
Working depth*	450 (17.7") (Standard)	600 (23.6") (Standard)
Axial stroke	200 (7.9")	250 (9.8")
Radial stroke	40 (1.6")	60 (2.4")

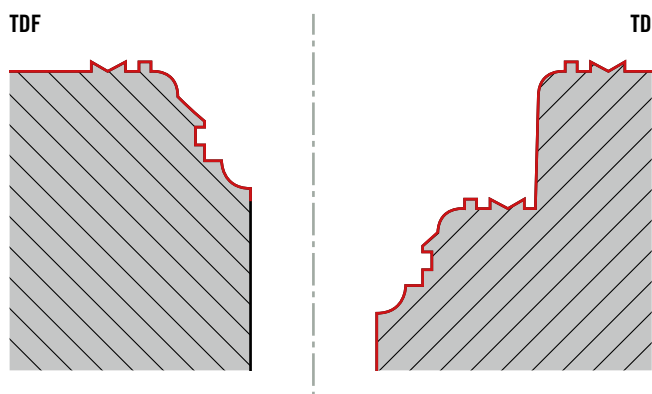
Type	TD-3.02 NC
Machining Ø	400-1250 (15.8"-49.2")
Installation Ø	780-1780 (30.7"-70.1")
Working depth*	1000 (39.4") (Standard)
Axial stroke	600 (23.6")
Radial stroke	130 (5.1")

All information in mm (inches)

Other dimensions on request

\*Working depths of more than 1500 mm (59") possible

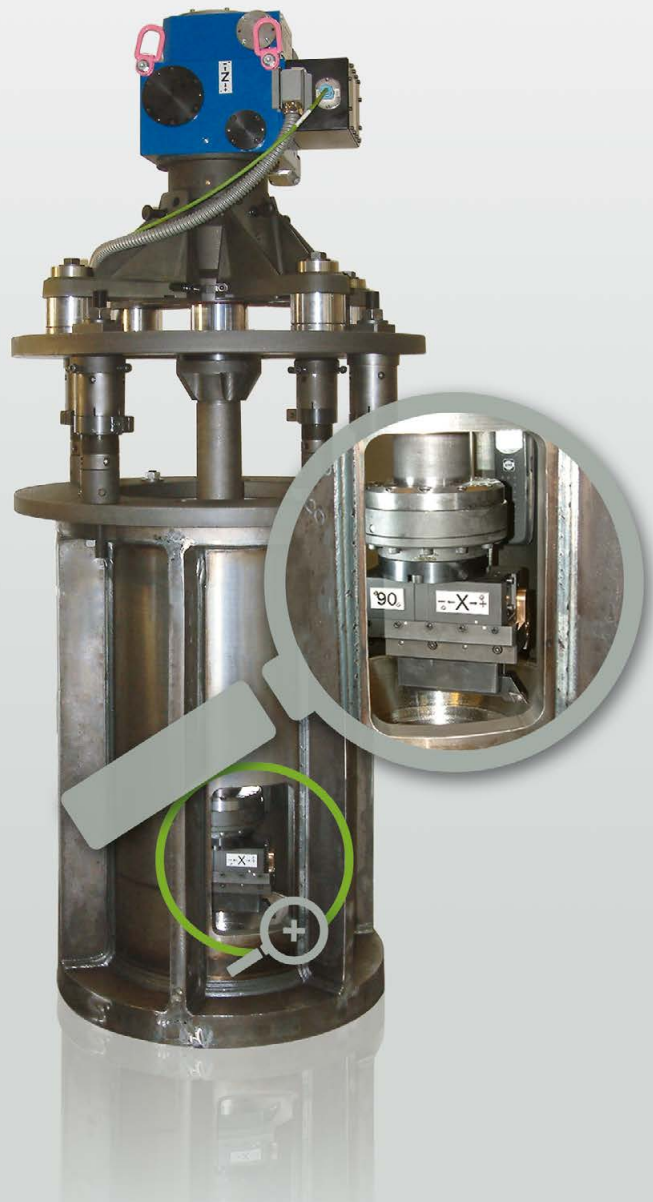
**Machining options:**



TDF-2 NC



TD-2.02 NC





CNC-controlled vertical lathes for manufacturing or machining end faces, cylindrical surfaces, tapers, radii and grooves.

The optimum solution for complete machining and general overhauling of valves.

The CNC-controlled machines have precision tilt tables ( $\pm 12^\circ$ , accuracy  $\pm 10''$ ) and have been designed for machining valves in a more efficient way. The flexible design means that the machine can also be used for other machining tasks.

Drive: electric 380-480 V, 50/60 Hz

## PDM SERIES

- Manual tilt adjustment
- The table axis is clamped manually

Type	PDM-601
Machining $\varnothing$	80-600 (3.2"-23.6")
Machining height	650 (26")
Precision tilting table	600 x 600 (23.6" x 23.6")

All information in mm (inches)

## SPM SERIES

- Motorised tilt adjustment
- The table axis is clamped hydraulically

Type	SPM-802-N
Machining $\varnothing$	80-1000 (3.2"-39.4")
Machining height	1300 (52")
Precision tilting table	1000 x 1000 (39.4" x 39.4")

All information in mm (inches)

PDM-601



SPM-802-N





## 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)

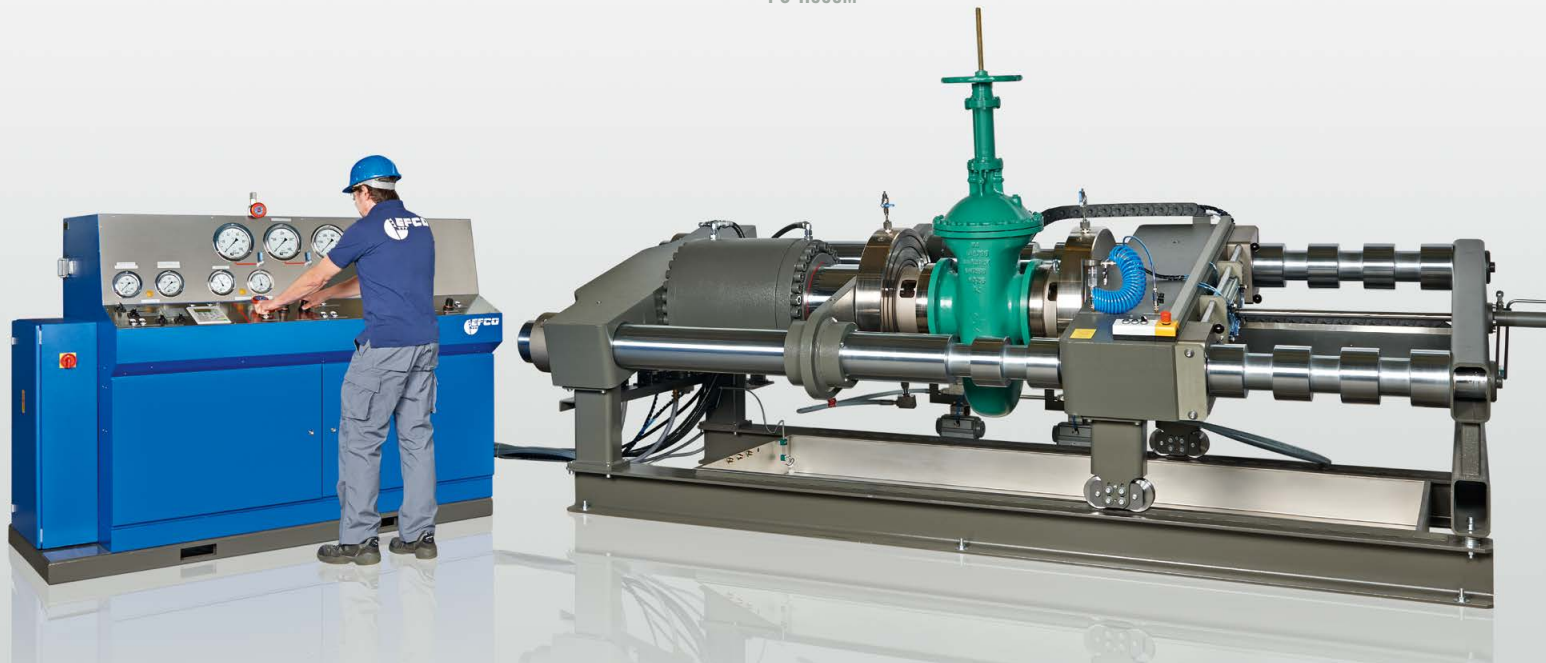
PS-15M



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



ARS

## 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

## 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:

- Paper
- Cloth
- Film

Grain types:

- Aluminium oxide ( $Al_2O_3$ )
- Silicon carbide (SiC)
- Zirconium corundum ( $ZrO_2 + Al_2O_3$ )

Grain size:

- Standard grit sizes: P80-P1800  
(other grit sizes on request)



## 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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