



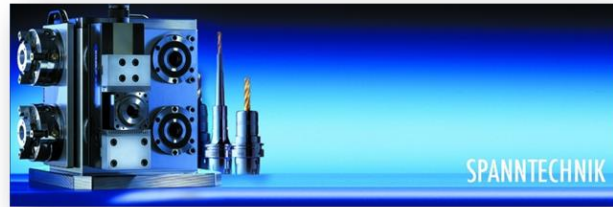
Toolholding Systems

T | E | N | D | O[®] E compact

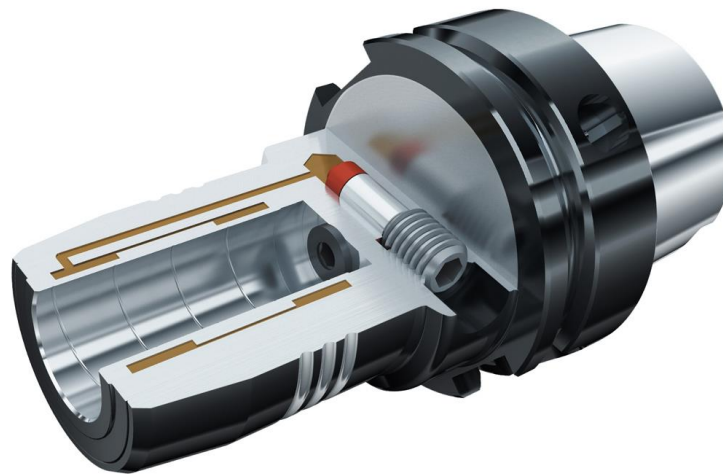
Superior Clamping and Gripping



Product overview



TENDO E compact

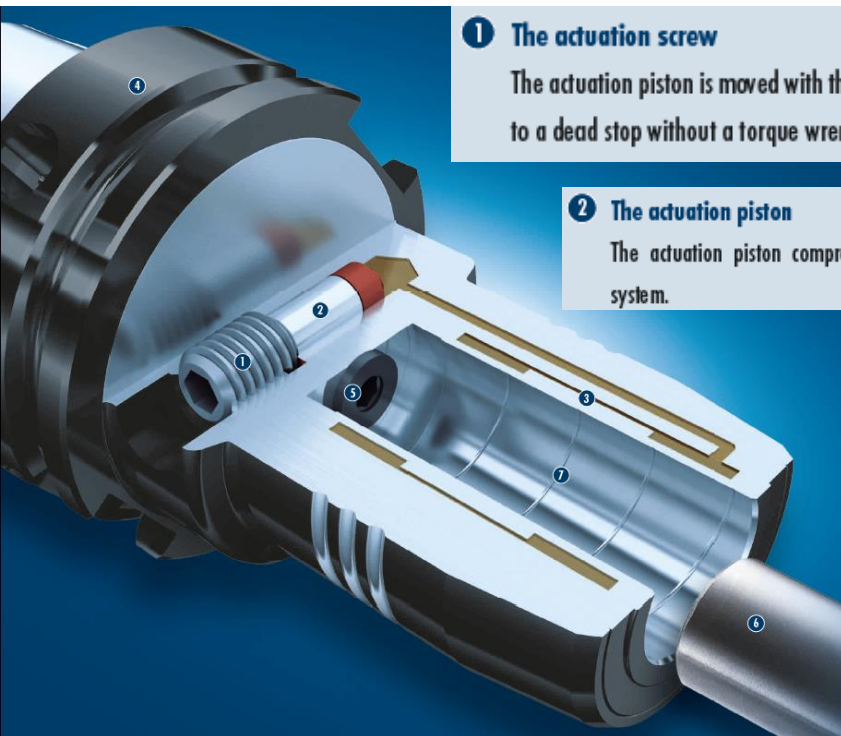


TENDO E compact

The toolholder for almost every requirement

- Sets completely new standards
- A strong performance during:
 - Torque transmission
 - Damping characteristics
 - Rigidity
 - Run-out accuracy
- Perfect for precise and fast metal cutting – even for roughing applications

TENDO E compact in detail



1 The actuation screw

The actuation piston is moved with the actuation screw and can be tightened to a dead stop without a torque wrench.

2 The actuation piston

The actuation piston compresses the hydraulic fluid into the chamber system.

3 The expansion sleeve and chamber system

The expansion sleeve expands against the tool shank. This clamping process first centers the tool shank before fully clamping it over the whole surface. The chamber system fills with hydraulic fluid, exerting a damping effect on the clamped tool. Wear on the cutting edge of the tool is minimized, service life is increased by up to 40%.

4 The toolholder body

The toolholder body includes the machine interface, e.g. HSK, SK, JIS-BT, etc.

5 The length adjustment screw

For fast and easy presetting.

6 The tool

The tool is clamped centrally to the center axis - highest run-out and repeat accuracy of less than 0.003 mm

7 The groove

The enormous clamping pressure of the TENDO hydraulic expansion toolholder creates a displacement of oil, grease, or lubricant residues into the groove causing surfaces to remain dry.

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The toolholder for almost every requirement

Volume machining

- Suitable for volume machining up to $400 \text{ cm}^3/\text{min}$ at 42CRMo4*

* depending on the machine tool and the tool

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Reaming

- Excellent vibration damping assures best workpiece surfaces
- Permanent run-out accuracy for an excellent dimensional accuracy

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The toolholder for almost every requirement

Drilling

- Vibration damping and a run-out accuracy of less than 0.003 mm

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The toolholder for almost every requirement

Countersinking/Chamfering

- Countersinking and chamfering are defined by precision and excellent run-out accuracy

TENDO E compact



The toolholder for almost every requirement

Tapping

- High torques (of up to 900 Nm at 20 mm Ø)
- Excellent vibration damping
- Made for tapping

Advantages

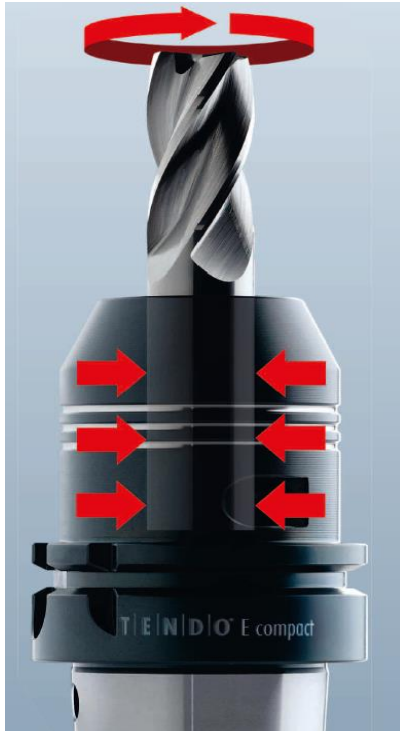


High radial rigidity for a better part geometry accuracy

- Optimum radial rigidity
- Robust toolholder body avoids lateral deflection during metal cutting
- Advantage: high part accuracy geometry at the workpiece and the highest material removal rates (e.g. 400 cm³/min at 42CrMo4*)

* depending on the machine tool and the tool

Advantages



High torque of up to 900 Nm (\varnothing 20) for highest volume machining

- Due to the compact design, holding forces and a high torque transmission are guaranteed
- Advantage: highest material removal rate

Advantages



Permanent run-out accuracy of less than 0.003 mm – without any fluctuations

- Best surface results due to a uniform cutting action and highest reproducibility
- Advantage: safe and precise machining

Advantages



Excellent vibration damping

- The hydraulic system absorbs vibrations
- That assures smooth running
- Best workpiece surfaces are assured

- Advantage:
 - High surface quality
 - Machine spindle is protected from damage
 - Service life is increased

Advantages



All shaft types can be clamped

- All customary tools (\varnothing 3 to 32 mm) with a smooth cylinder shank as well as recesses according to:
Din 1835 Form B, E and
Din 6535 Form HB, HE
can be clamped directly with or without intermediate sleeves
- Advantage: no additional costs for new tools

Advantages



Tool change within seconds, micron-precise without peripheral equipment. Just screw to the dead stop

- Easy handling
- Turn in the actuation screw with an Allen key to the dead stop
- The clamping results in a run-out accuracy of less than 0.003 mm without the need for additional peripheral equipment
- Advantages:
 - Time savings due to reduced set-up times
 - No investment costs for additional clamping devices

Advantages



Suitable for HSC/HPC machining – precision-balanced as standard

- Balancing grade G 2.5 at 25.000 rpm
- HSK-A63 version for high speeds
- Perfectly suitable for HPC/HSC machining centers

- Advantage: perfect for HSK high speed spindles

Advantages



Flexible clamping areas through intermediate sleeves

- With intermediate sleeves, various shaft diameters from 3 to 32 mm can be clamped with only one toolholder
- Advantage:
 - Reduction of the purchase cost
 - Higher clamping force at shaft diameter

Advantages



Maintenance-free

- Sealed system
- Blocks the penetration of dirt, coolant, lubricants or chips
- Clamping area will not be damaged
- Proper function is guaranteed

- Advantage: maintenance-free and a long service life

TENDO E compact

Practical hardness tests surprised experts

“I never dared to believe that such holding forces could be achieved by a hydraulic expansion toolholder. Nothing slips during machining, the new hydraulic expansion toolholder holds firmly.”

(Jörg Kleemann, CEO of WKL NC-Technik GmbH, Bad Salzuflen, Germany)

“The TENDO E compact absorbs the vibrations during rough machining. We wish we could have had rough machining like this in the past.”

(Anton Schönfelder, CEO of SLZ Maschinenbau GmbH, Hanau, Germany)

“Compared with a Weldon, service life of the tools increases by 30 to 35% with the TENDO E compact.” “The high clamping force is amazing to watch.”

(Raimund Dinyer, Project Manager, and Andreas Scheuermann, cutting machine operator, Invenio GmbH Engineering Services, Nauheim, Germany)

Superior Clamping and Gripping



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