

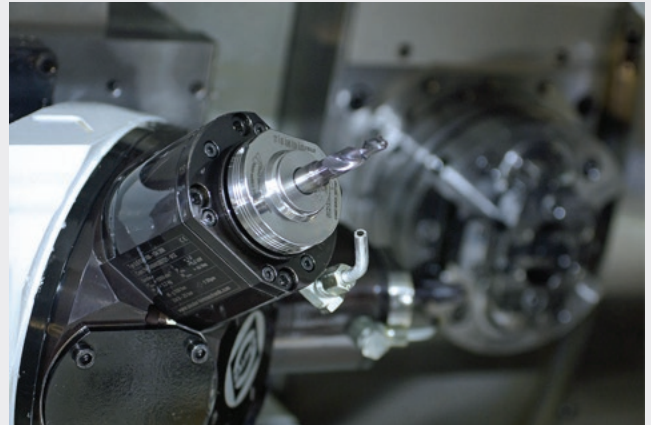


T|E|N|D|O® Turn

**Quick. Low maintenance.
Flexible.**

In addition to the highlights such as the versatile clamping range due to the use of intermediate sleeves, the run-out and repeat accuracy of < 0.003 mm (DSE double clamping insert), and the easy handling, TENDO Turn particularly convinces by its unique vibration damping. This helps you to realize excellent workpiece surfaces.

TENDO Turn is available in three versions: TENDO Turn VDI, designed for direct mounting in the lathe turret, offers accessibility as well as internal coolant supply and is available in the interface sizes VDI 25, VDI 30 and VDI 40 with additional adjustment screws. TENDO Turn DKE increases productivity thanks to its vibration-damping properties and fits into all standard VDI boring bar holders without the need for a specific interface. The modular TENDO Turn DSE for driven tools optimizes performance through outstanding run-out quality and vibration damping. Its uniform I.D./O.D. clamping ensures maximum holding forces.

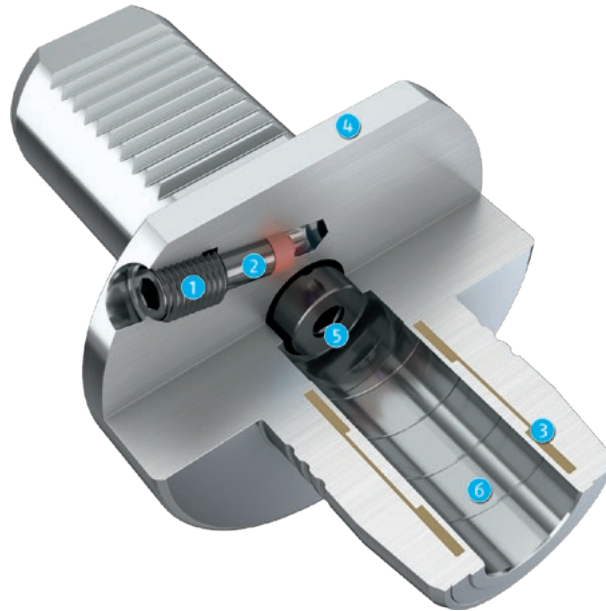


Advantages – Your benefits

- + Micron-precise tool change within seconds without peripheral equipment**
Time saving through reduction of set-up time and no investment and energy costs due to additional clamping devices
- + Low maintenance**
The completely closed system ensures a long service life
- + High level of flexibility**
Clamping of different diameters due to the use of slotted or coolant-proof intermediate sleeves
- + Exact axial length pre-setting**
Length adjustment in the range of 0.01 mm accuracy, with adjustment travel of 10 mm
- + Permanent run-out and repeat accuracy < 0.003 mm**
Optimal surface results, high precision machining and safe processes due to a uniform cutting action and highest repeatability
- + Excellent vibration damping**
Micro-blowouts are prevented, optimal workpiece surfaces, machine spindle protection, increased tool service life resulting in a reduction of costs
- + Fine-balanced by default**
With a balancing grade of G2.5 at 25,000 RPM, suitable for high speeds (double clamping insert DSE)
- + Comprehensive compatibility**
Can be ideally combined with TENDO SVL and TRIBOS SVL extensions
- + All commercially available tool shank types can be clamped**
Form A: with smooth cylindrical shank, shank form A in accordance with DIN 1835 and DIN 6535 HA Form AB: with flat face and cylindrical shank with pulling face, shank form B in accordance with DIN 1835 and DIN 6535 HB Form B: with lateral pulling faces, shank form B in accordance with DIN 1835 Form E: with inclined clamping face, shank form E in accordance with DIN 1835 and DIN 6535 HE
- + Dirt grooves for reliable torque transmission**
Dry clamping surfaces, by displacement of oil, grease or lubricant residues into the dirt groove

TENDOturn with VDI interface

For direct mounting in the turret of a lathe. Available with VDI 25, VDI 30 or VDI 40 interface. The complete solution by the market leader. Ideal accessibility in the turret due to the second actuation screw, useable for internal coolant supply and additionally equipped with axial length adjustment screw for comfortable pre-setting outside the machine.



1 Clamping screw

The clamping screw is used to actuate the clamping piston. Clamp the clamping screw to dead stop using an Allen key. A torque wrench is not needed.

2 Clamping piston

The clamping piston compresses the hydraulic fluid into the oil chamber system.

3 Expansion sleeve and oil chamber

The expansion sleeve evenly expands against the tool shank. The tool shank is centered first and then clamped powerfully and uniformly over the entire surface during this clamping process. When the chamber system is filled with hydraulic fluid, it has a damping effect on the clamped tool. Wear on the cutting edge is minimized and service life increases by up to 40%.

4 Base body

The machine-side interface is located on the base body.

5 Length-setting screw

For fast and easy tool presetting.

6 Dirt groove

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

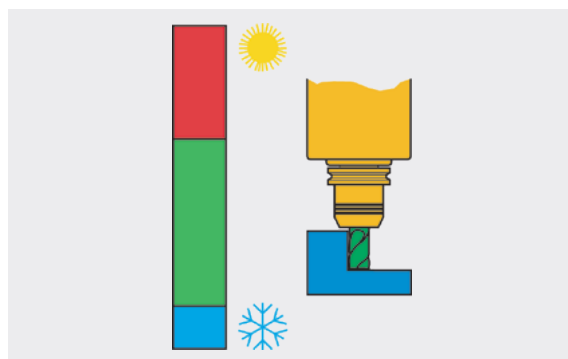
Clamping force test

The clamping force in the clamping system can be tested at any time in a matter of seconds by using a test shaft.



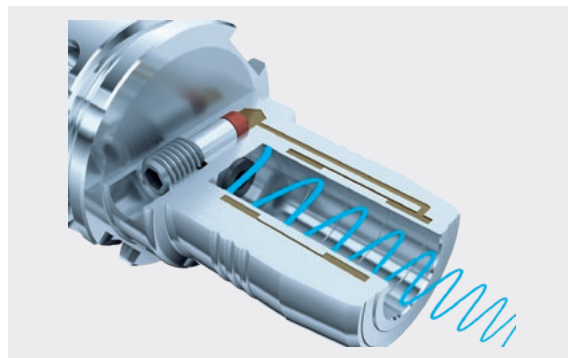
Optimum temperature range

All technical data in the catalog applies to a normal temperature range between 20 – 25°C. The optimum operating temperature range is between 20 and 50 °C. Higher temperature ranges are possible upon request.



Excellent vibration damping

Micro-blowouts on the cutting edge of the tool are prevented, thus achieving optimum workpiece surfaces. The spindle performance will be enhanced, the tool service life is considerably increased and costs reduced.



High flexibility due to the use of intermediate sleeves

The application of slotted or coolant-proof intermediate sleeves enables clamping of different tool diameters using the same toolholder. This is why a toolholder can be used flexibly within the clamping range.

The run-out accuracy of the intermediate sleeve is ≤ 0.003 mm.



Dirt grooves for reliable torque transmission

The enormous clamping pressure of the TENDO hydraulic expansion toolholder creates a displacement of oil, grease, or lubricant residues into the dirt groove. This results in the clamping face remaining dry and reliable torque transmission is guaranteed.



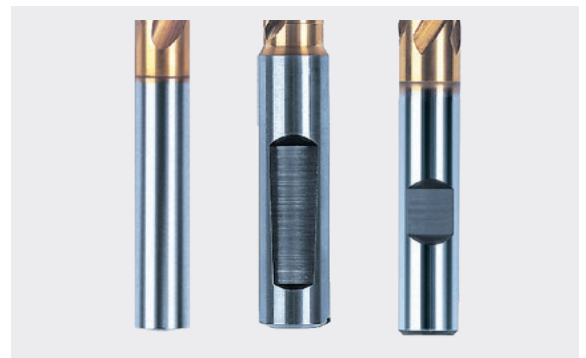
All commercially available tool shank types can be clamped

Form A: with smooth cylindrical shank, shank form A in accordance with DIN 1835 and DIN 6535 HA

Form AB: with flat face and cylindrical shank with pulling face, shank form B in accordance with DIN 1835 and DIN 6535 HB

Form B: with lateral pulling faces, shank form B in accordance with DIN 1835

Form E: with inclined clamping face, shank form E in accordance with DIN 1835 and DIN 6535 HE



Dirt resistance for a long-lasting functional reliability

The completely enclosed TENDO system prevents the penetration of dirt, chips, coolants, and grease. The clamping range is not damaged, functionality and perfect tool clamping system remain fully preserved. TENDO hydraulic expansion toolholders are low-maintenance and enjoy a long service life.



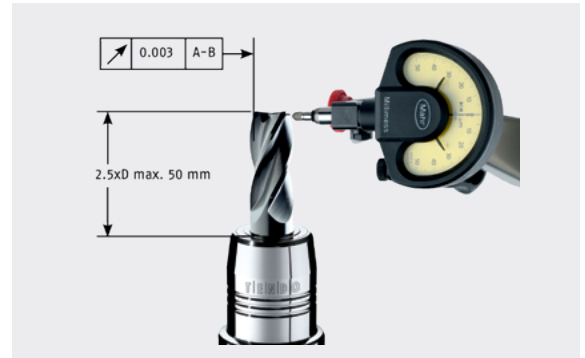
Micron-precise tool change within seconds without peripheral equipment

With a few simple actions, the tool can be changed quickly and process reliably. Time savings due to reduced set-up times and no investment costs for additional clamping devices.

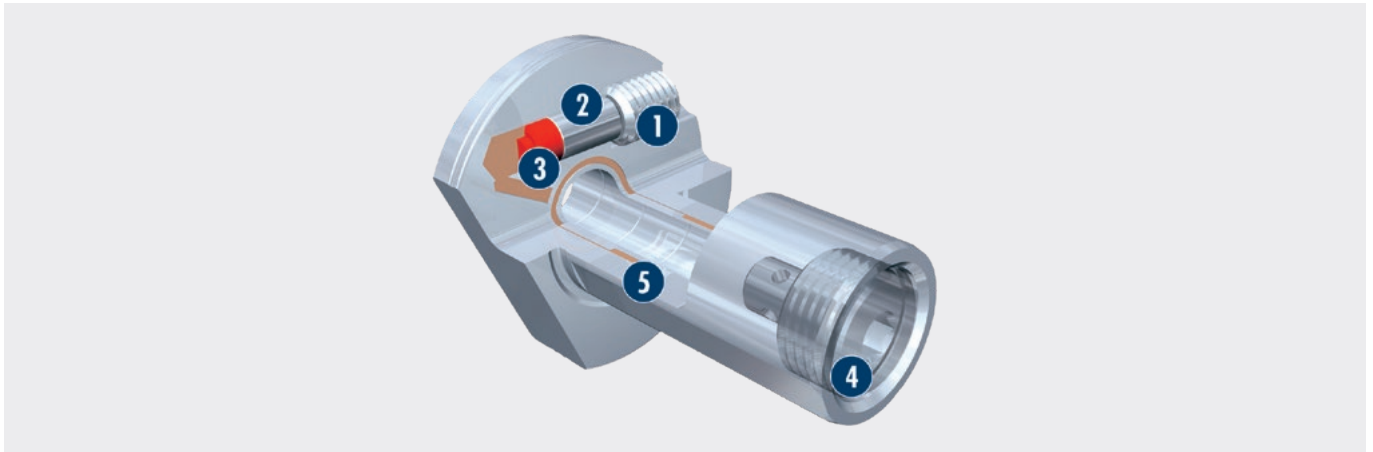


Run-out and repeat accuracy

Highest permanent run-out and a repeat accuracy of < 0.003 mm ensure an even cutting action (DSE double clamping insert). This minimizes wear to the cutting edges of the tool, increases tool service life considerably, and reduces the costs incurred for regrinding or buying new tools.



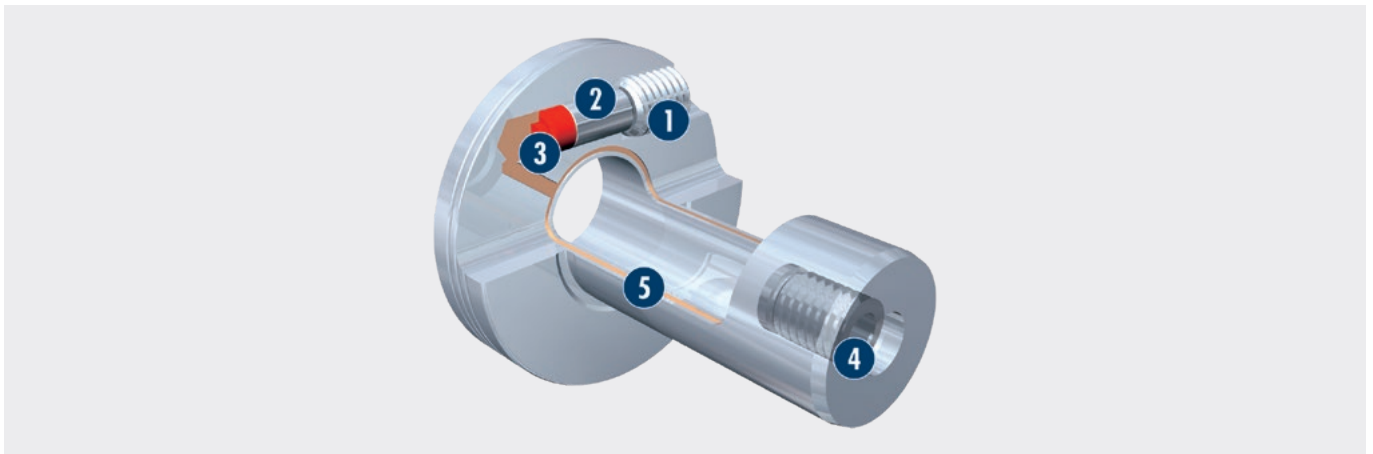
TENDO Turn Lathes Clamping Insert DKE



Increase the productivity of your existing equipment by using the lathe clamping insert DKE. TENDO Turn DKE does not require any specific interface and can be held in any customary VDI bore rod holders in order to absorb vibrations.

- ① Clamping screw
- ② Clamping piston
- ③ Sealing element
- ④ Length-setting screw
- ⑤ Chamber system

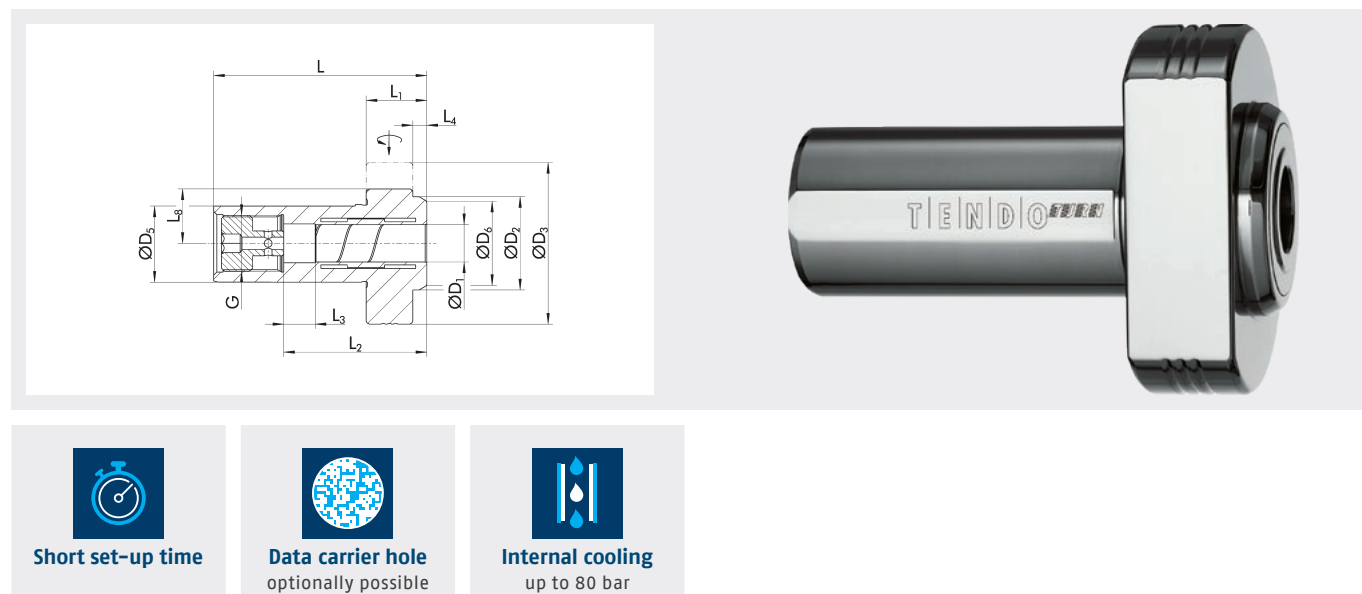
TENDO Turn Double Clamping Insert DSE



Modular insert for driven tools, for perfect performance on existing equipment. Maximum run-out quality and great vibration damping ensure optimal results. The uniform I.D. and O.D. clamping centers the insert providing maximum holding forces and correct and precise clamping of your tool.

- ① Clamping screw
- ② Clamping piston
- ③ Sealing element
- ④ Length-setting screw
- ⑤ Chamber system

TENDO Turn DKE



Short set-up time



Data carrier hole
optionally possible



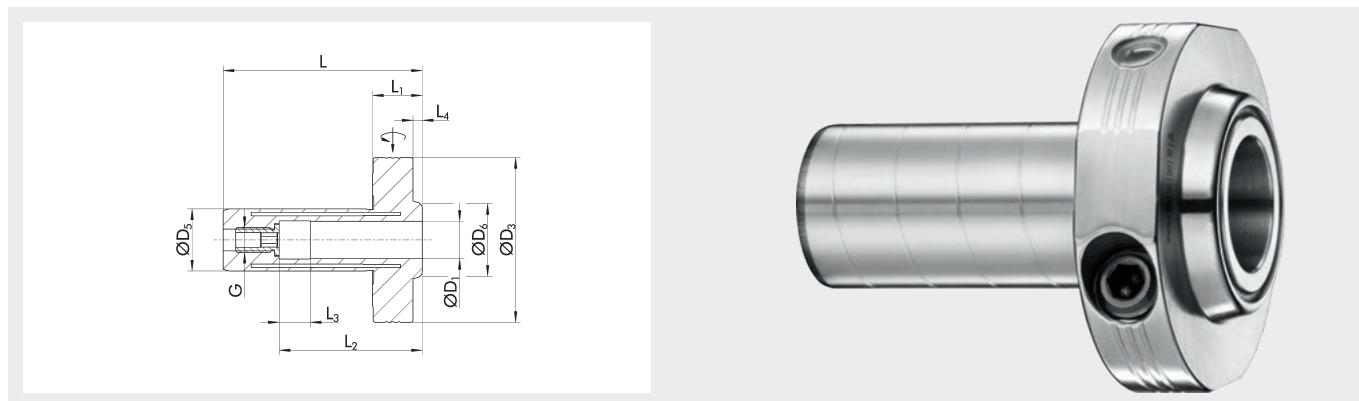
Internal cooling
up to 80 bar

Technical data

ID	D1 [mm/ Inch]	D2 [mm]	D3 [mm]	D5 [mm]	D6 [mm]	L [mm]	L1 [mm]	L2 [mm]	L3 [mm]	L4 [mm]	L8 [mm]	G	Mmin [Nm]	Weight [kg]	
0216353	12	30	52	25	27.1	68.5	19.5	46	10	4.5	17.5	M18x1	75	0.38	9205650
0216355	16	34	56	25	31.7	75.5	19.5	50.5	10	4.5	17.5	M8x1	185	0.38	9205650
0216406	20	42	60	32	39.1	78.5	19.5	51	10	4.5	21.5	M18x1	280	0.7	9205650
28003530	1/2"	30	52	25.4	27.1	68.5	19.5	46	10	4.5	17.5	M22x1	75	0.35	9205650
28003531	3/4"	42	60	31.75	39.1	78.5	19.5	51	10	4.5	21.5	M22x1	280	0.55	9205650
28003532	3/4"	42	60	38.1	39.1	78.5	19.5	51	10	4.5	21.5	M22x1	280	0.7	9205650

Additional sizes and customized designs are available upon request
Additional shank diameters can be clamped using intermediate sleeves

TENDO Turn DSE



Run-out accuracy
< 0.003 mm*



Balancing grade
G2.5 at 25,000 RPM*



Short set-up time



Data carrier hole
optionally possible



Internal cooling
up to 80 bar

Technical data

ID	D1 [mm]	D3 [mm]	D5 [mm]	D6 [mm]	L [mm]	L1 [mm]	L2 [mm]	L3 [mm]	L4 [mm]	G	Mmin [Nm]	Weight [kg]	
0216504	12	53	20	23.4	64	16	46	10	3.5	M8x1	65	0.4	9205650
0216503	12	53	20	23.4	64	16	46	10	3.5	M8x1	65	0.4	9205650
0216560	20	56	25	32.3	68	18	51	10	3.5	M10x1	220	0.6	9205650
0216557	20	56	25	32.3	68	18	51	10	3.5	M10x1	220	0.6	9205650

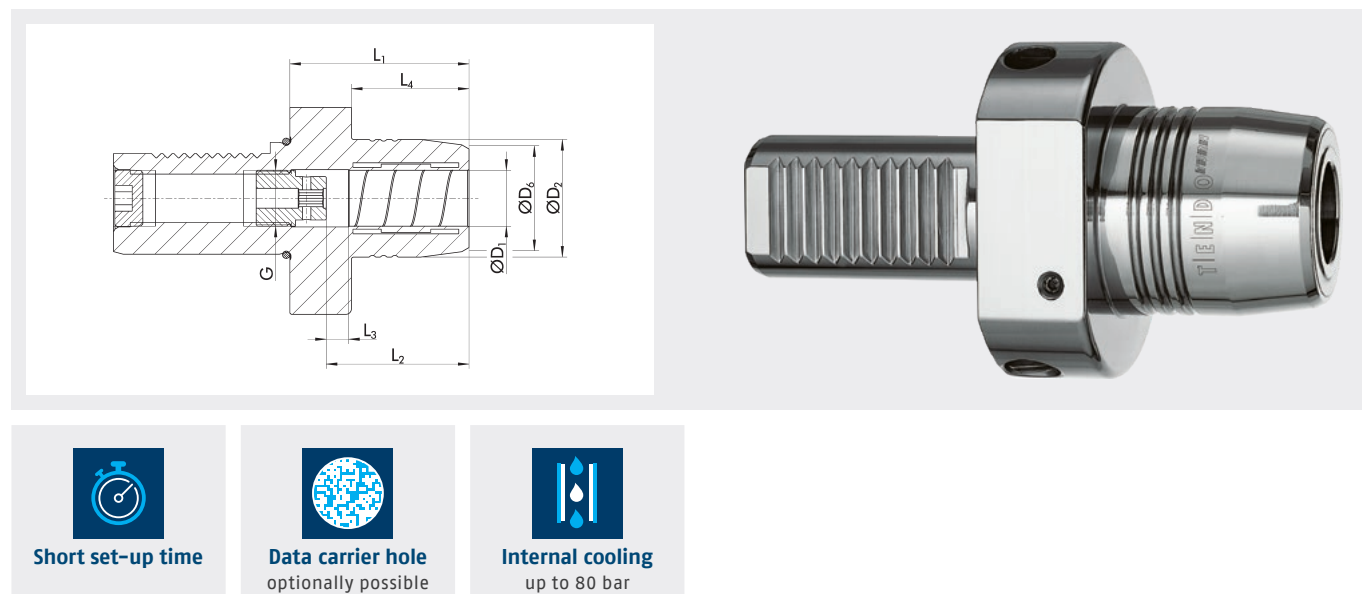
*Run-out accuracy: at 2.5 x D

*Balancing grade: or Umax < 1 gmm

Additional sizes and customized designs are available upon request

Additional shank diameters can be clamped using intermediate sleeves

TENDO Turn VDI



Technical data

ID	Interface	D1 [mm]	D2 [mm]	D6 [mm]	L1 [mm]	L2 [mm]	L3 [mm]	L4 [mm]	G	Mmin [Nm]	Weight [kg]	
0216103	VDI 25	12	32	27.5	55	46	10	37	M10x1	90	0.65	9205640
0216156	VDI 30	20	42	37.5	64	51	10	42	M16x1	330	1.1	9205650
0216206	VDI 40	20	42	37.5	64	51	10	42	M20x1.5	330	1.9	9205650
0216207	VDI 40	20	42	37.5	64	112		42		330	1.9	9205650
0216209	VDI 30	32	64	59.6	86	70		64		650	2.1	9205660
0216208	VDI 40	32	64	59.6	86	71.5		64		650	2.8	9205660

Additional sizes and customized designs are available upon request
Additional shank diameters can be clamped using intermediate sleeves



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