



VERO-S NSE3

Quick-change Pallet System

Superior Clamping and Gripping



Product Overview



Gripping Systems

Clamping Technology



Chuck Jaws



Lathe Chucks



Stationary Workholding



Toolholders



Hydraulic Expansion Technology



VERO-S



KONTEC



TANDEM



ROTA

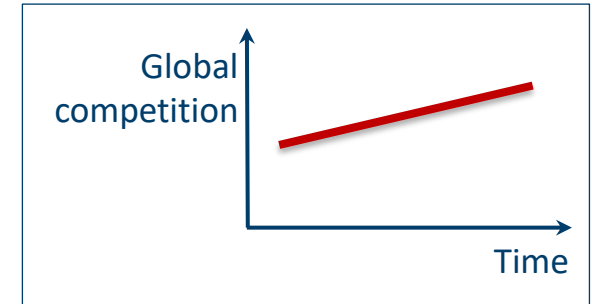
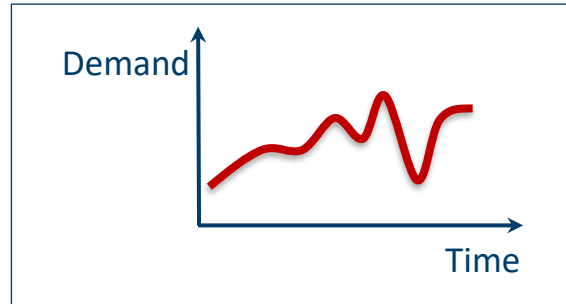
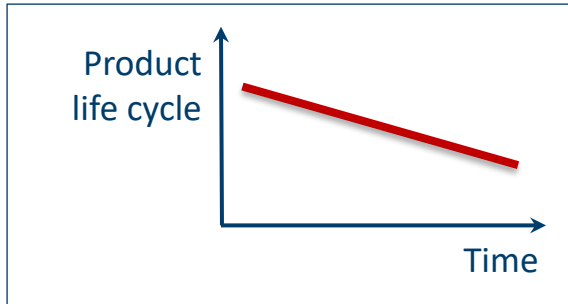
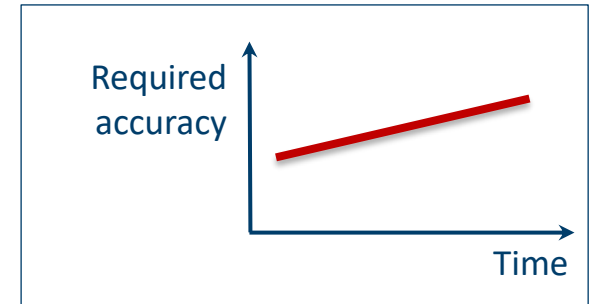
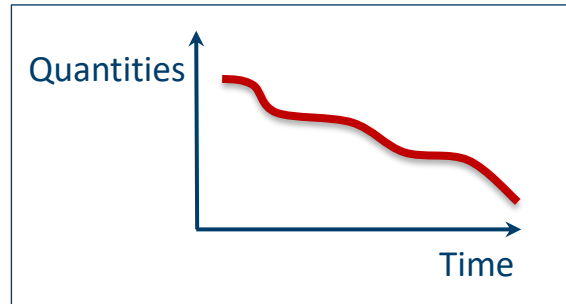
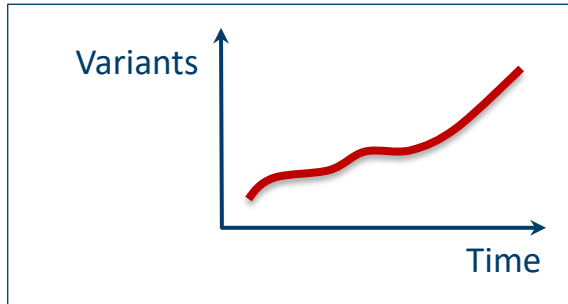


MAGNOS



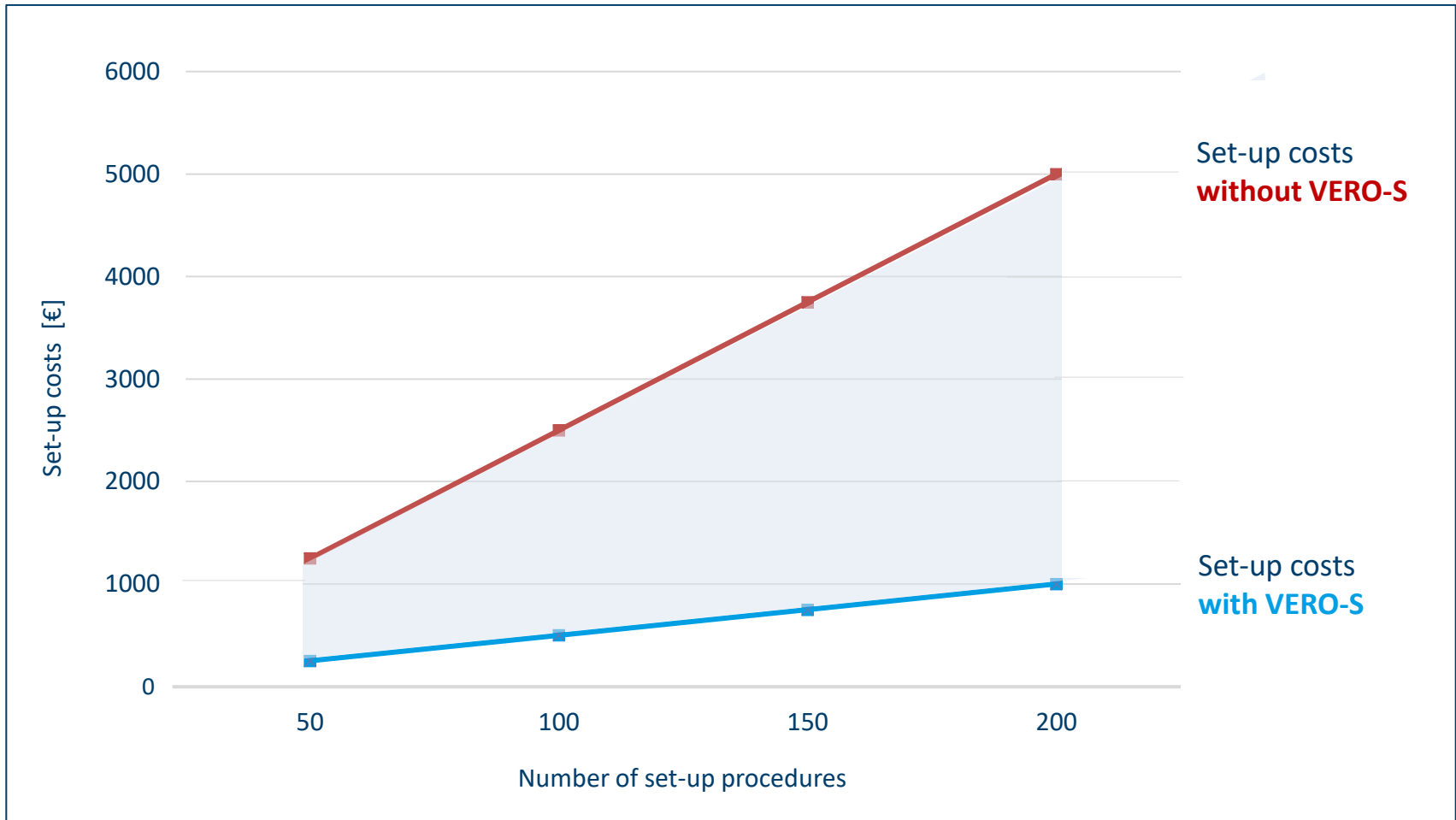
PLANOS

Challenges



Increasing relevance of the set-up process

Potential for savings



Amortisation

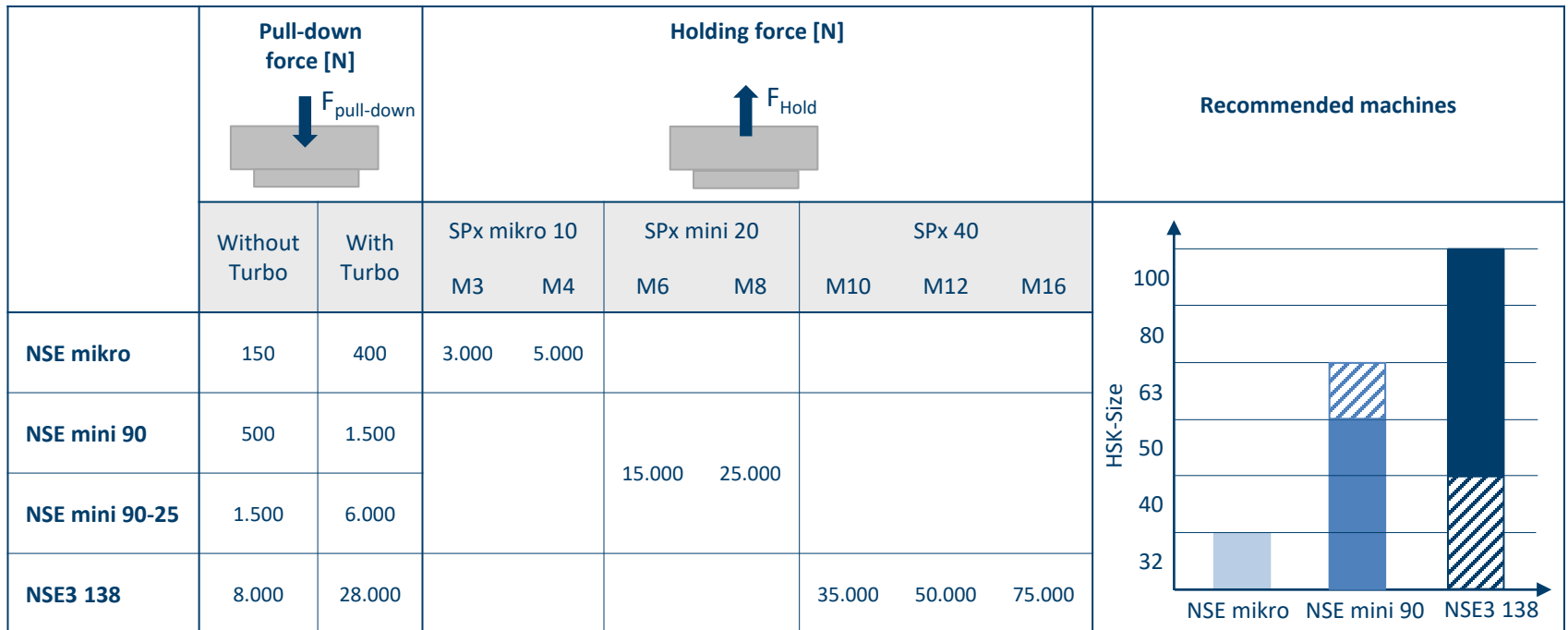


Even for older machines, the investment in SCHUNK VERO-S quick change pallet system amortizes within a minimum of time.

Thanks to the consistent interface of the clamping pin, the existing clamping devices can easily be integrated in the new system.

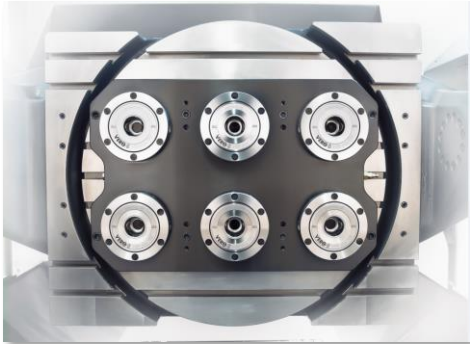
Calculation for set-up costs	Case 1	Case 2
Investment in SCHUNK VERO-S [€]	5.000	10.000
Time per set-up procedure without VERO-S [min]	25	
Time per set-up procedure with VERO-S [min]	5	
Machine costs [€/h]	60	
Number of set-up procedures per day	5	
Working days per month	20	
Working days per year	240	
Payback Time		
Set-up procedures	250	500
Working days	50	100
Months	2,5	5
Years	0,21	0,42

Consistency of pull-down and holding forces



VERO-S Overview

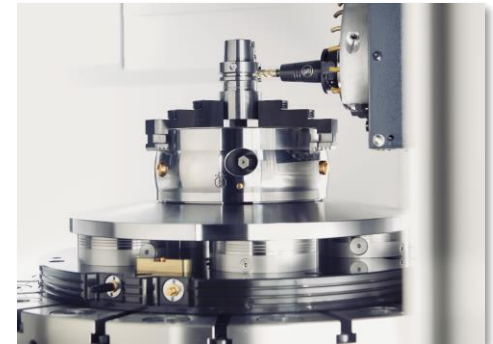
General milling applications



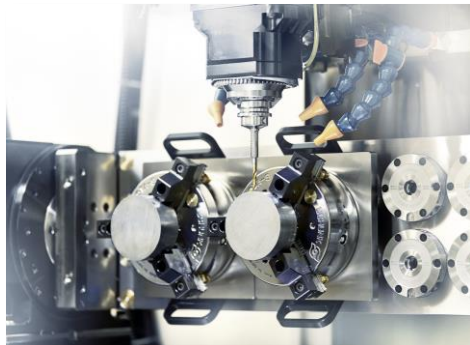
Direct workpiece clamping



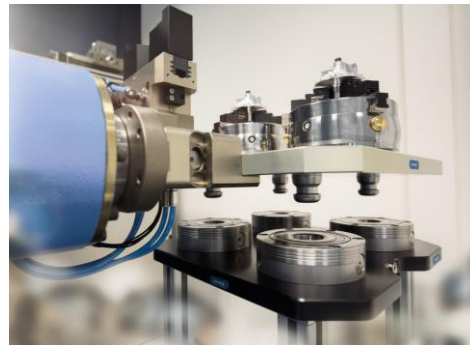
Milling and turning applications



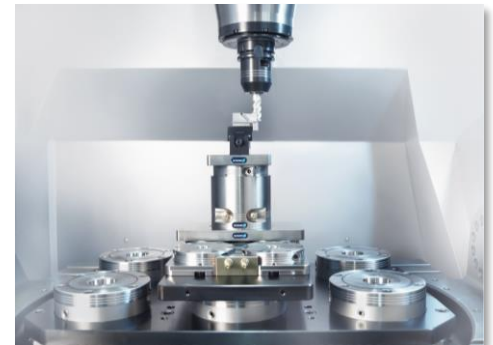
Easy milling applications



Automated machine loading



Further applications



VERO-S NSE3

Example of application



VERO-S:

Standard 6-way clamping station with NSE plus 138 modules.

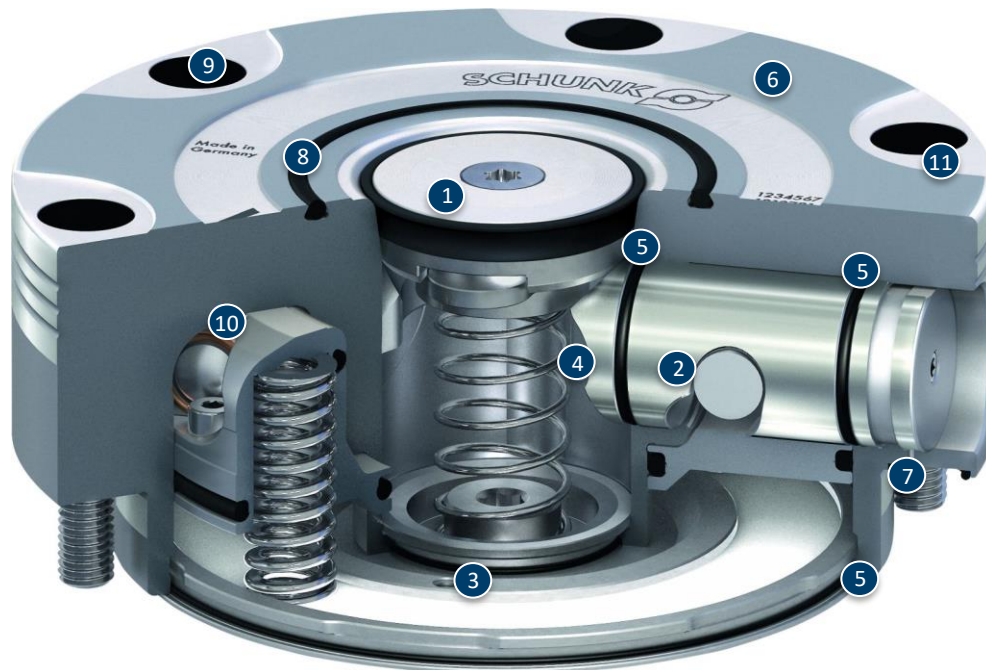
Clamping device:

Manual chuck ROTA-S plus 2.0, KONTEC single-acting vise KSG.

Features/Application:

High variety of processing thanks to large variances of clamping devices.

VERO-S NSE3



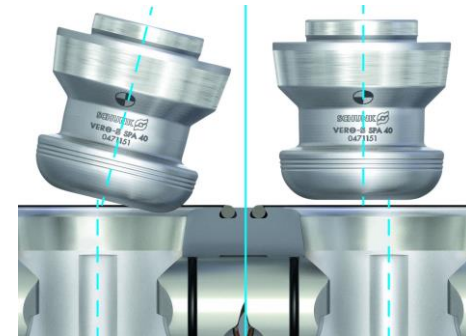
- ① Optional cone seal
- ② Patented dual stroke system
- ③ Turbo function
- ④ Large surfaces
- ⑤ Completely sealed system
- ⑥ Large flat surfaces
- ⑦ Monitoring of the clamping slide position „open condition“ and „locked position“
- ⑧ Flat seal to protect the interface during machining
- ⑨ Cover caps for fastening screws
- ⑩ Sliding bearings in force flow
- ⑪ Lower-lying countersunk screws

VERO-S NSE3

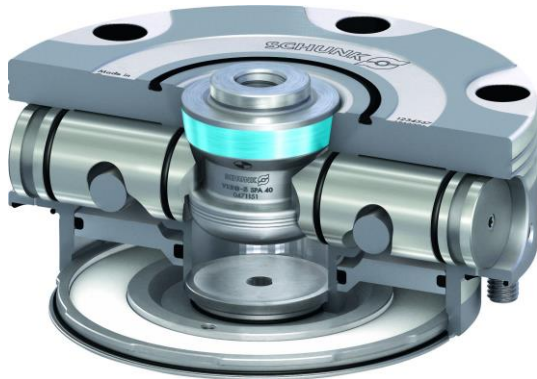
Exchangeability of the plug against a cone seal



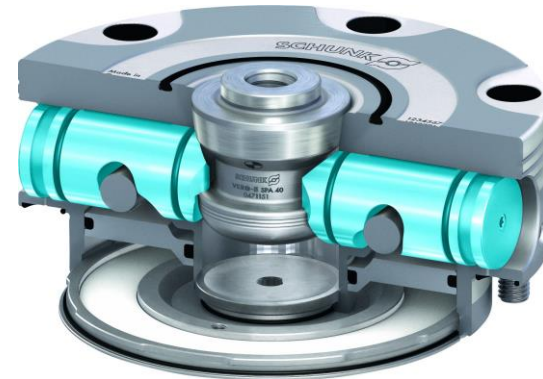
Easy positioning – more user-friendly



Centering via short taper



Locking via clamping slides

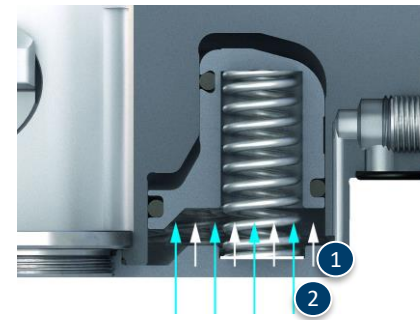


VERO-S NSE3

Rolling friction between piston and clamping slide

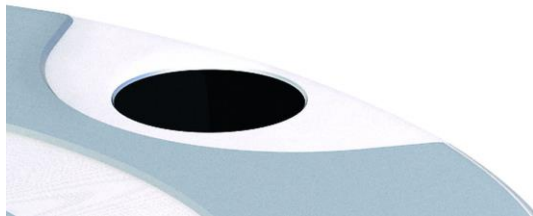


Integrated turbo function



- 1 Spring force
- 2 Additional force, resulting from the turbo function

Lower-lying countersunk screws



Control of the quick-change pallet system

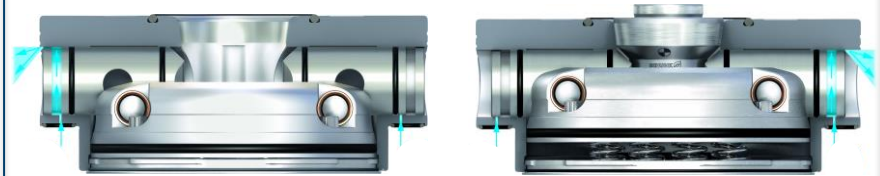


VERO-S NSE3

Hermetically sealed – maintenance-free



Monitoring of the clamping slide position via the dynamic pressure



Opened condition

Locked condition

NSE3 138-V1 – the quick-change pallet module with integrated anti-rotation protection

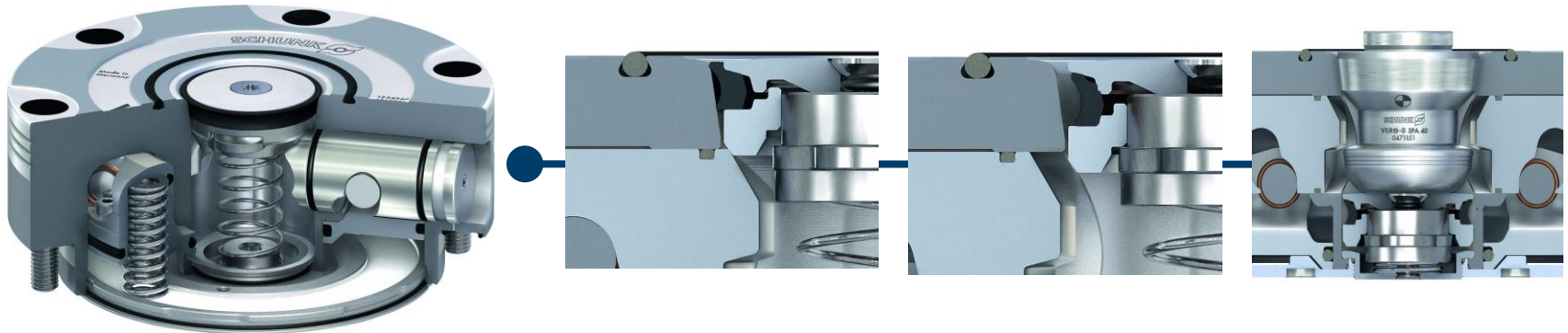


NSE-T3 – the tombstone module of the third generation



VERO-S NSE3

Optional cone seal



Optional sensor variants



AFS3 138 PMI:

- Open condition
- Locked condition with clamping pin
- Error message at locked condition without clamping pin

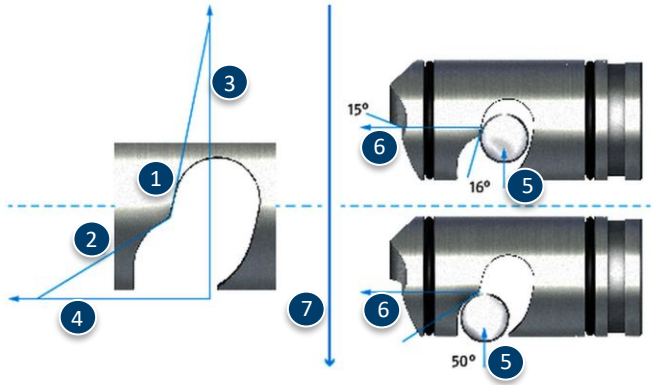


AFS3 138 MMS:

- Open condition
- Locked condition with clamping pin

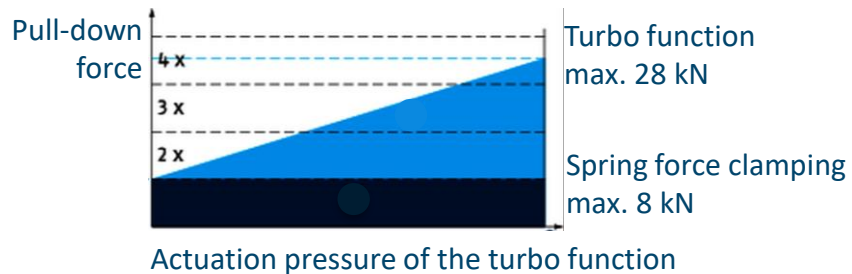
VERO-S NSE3

The patented fast and clamping stroke



- 1 Clamping stroke
- 2 Fast stroke
- 3 Force
- 4 Travel
- 5 Actuation force
- 6 Force on the clamping slide:
- 7 Pull-down force: 5x higher than the actuation force

Comparison: Pull-down force spring clamping and turbo function












VERO-S NSE3

Configuration of clamping pins type A, B and C



- 1 Typ A fixed
- 2 Typ B positioned
- 3 Typ C with a centering play

Standard clamping pins			Compensation pins	Accuracy pin	Dove tail pins	Clamping pins without centering collar	Heavy duty pins	Indexing pin IXB V1
SPA	SPB	SPC	SPA-X / SPA-XY	SPG	SPx-S	SPx-OB	SPA-F / SPC-F	IXB V1
Clamping pin	Positioning pin	Holding pin	Compensation of pitch fluctuations +/- 1 mm	Repeat accuracy < 0.002 mm	Fastening depth 3.5 mm	Mounting via fitting screw	Holding force of 75 kN	Position orientation of clamping pallets or devices
								

Variants of VERO-S NSE3

Technical Data	NSE3	NSE3 138-V1	NSE3-T3 138	NSE3-T3 138-V
Diameter [mm]	138	138	138	138
Pull-down force [kN]	8	8	7	7
Pull-down force with turbo [kN]	28	28	24	24
Unlocking pressure [bar]	6	6	6	6
Repeat accuracy [mm]	< 0.005	< 0.005	< 0.005	< 0.005
Weight [kg]	4.4	4.4	3.5	3.5

* All Variants are available with cone seal

Superior Clamping and Gripping



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VERO-S Application



VERO-S:

Special 4-Way clamping station with NSE plus 138 clamping modules.

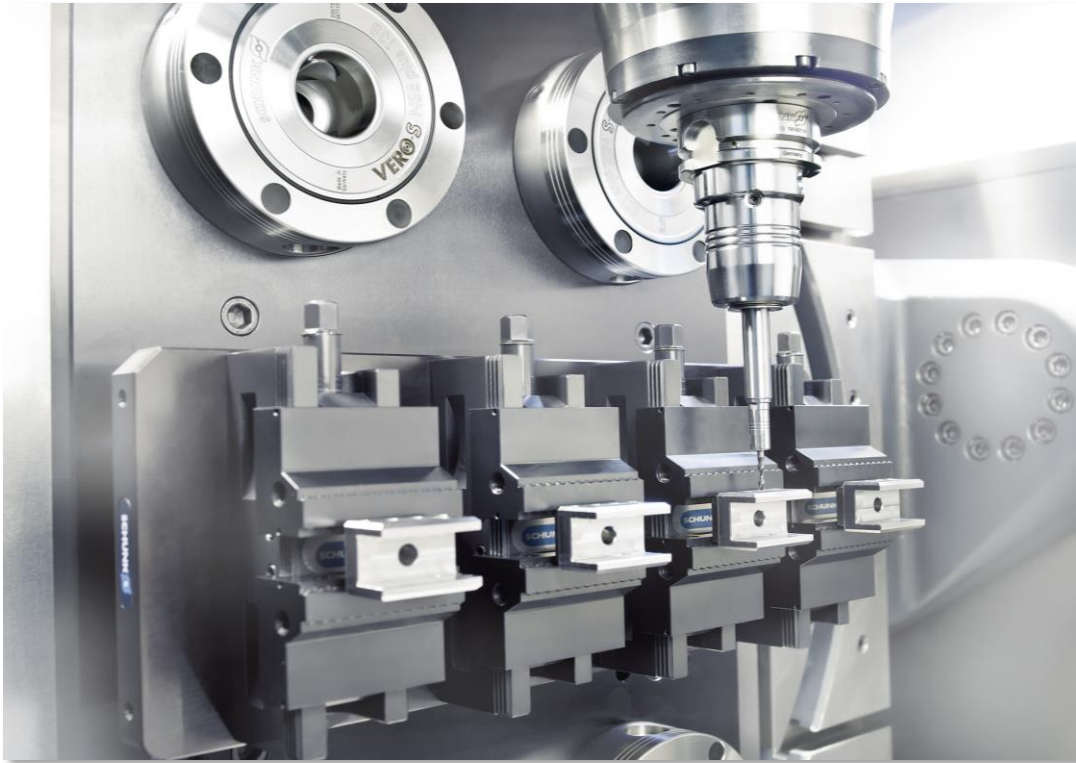
Clamping device:

TANDEM clamping force blocks.

Features/Application:

The actuation of the modules via the machine table allows a high level of automation.

VERO-S Application



VERO-S:

Standard 6-Way clamping station with NSE plus 138 clamping modules.

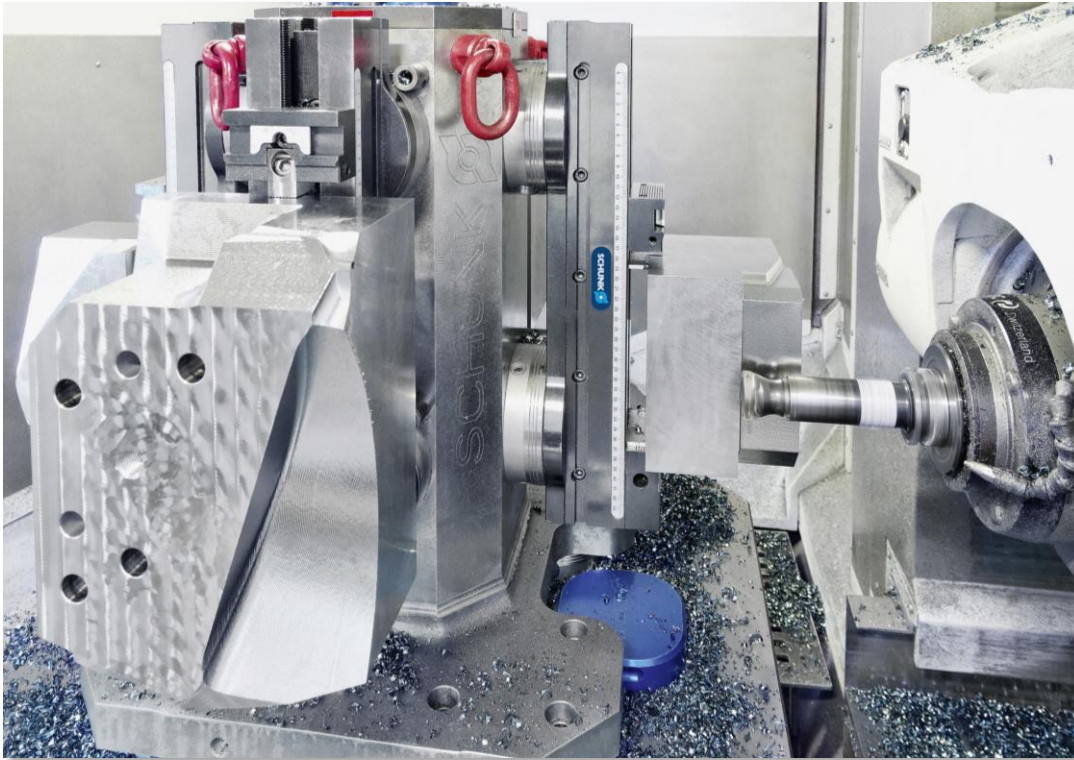
Clamping device:

Clamping pallet with 4 KSC2 centric clamping vises.

Features/Application:

The application of clamping pallets allows a high arrangement of clamping devices and workpieces.

VERO-S Application



VERO-S:

Special 10-Way tombstone with NSE plus 138 clamping modules.

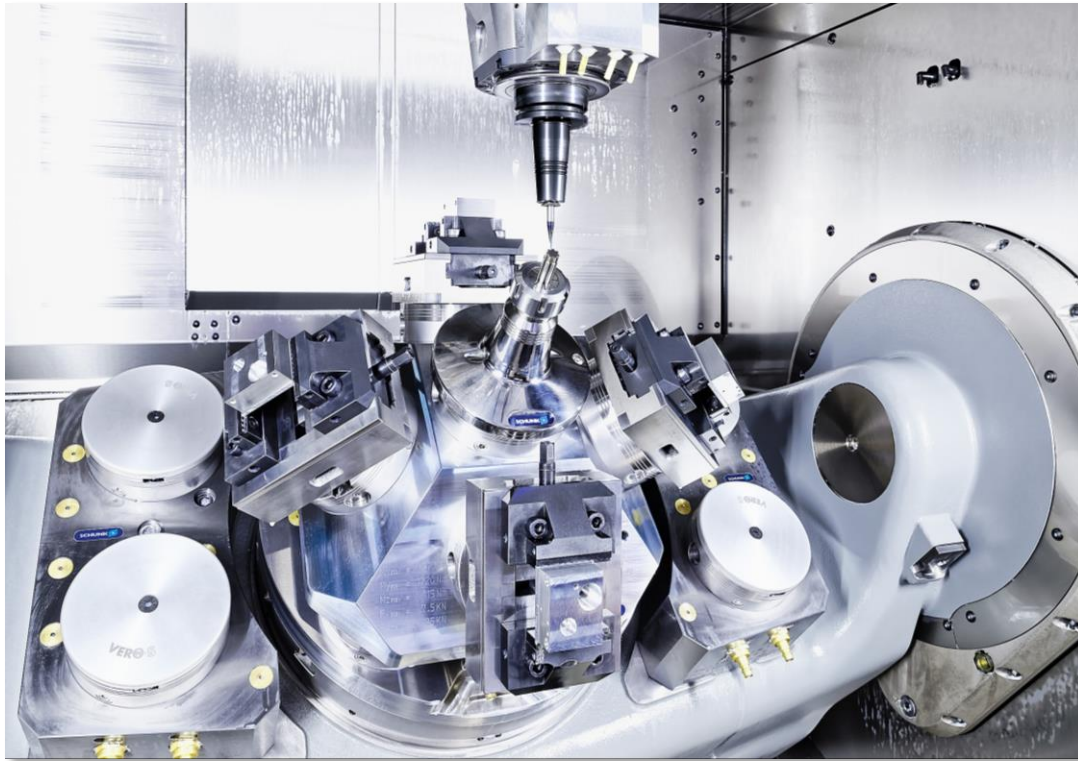
Clamping device:

KSM clamping rail.

Features/Applications:

The vibration-damping construction of the tombstones enables the machining of highly complex setups.

VERO-S Application



VERO-S:

Special 8-Way clamping station with NSE plus 138 clamping modules.

Clamping device:

Clamping pyramid with NSE plus 138 clamping modules, KSC centric clamping vise and colle chuck mounting.

Features/Application:

Maximum utilization of the processing space of the machine.

VERO-S Application



VERO-S:

Special 8-Way clamping station with NSE plus 138 clamping modules.

Clamping device:

KSG clamping vise.

Features/Application:

Integration of the modules in the machine table by the machine manufacturer.

VERO-S Application



VERO-S:

Special 8-Way clamping station with NSE plus 138 clamping modules.

Clamping device:

PLANOS vacuum matrix plates.

Features/Application:

Clamping of non-ferromagnetic materials by PLANOS modular system.

VERO-S Application



VERO-S:

Special 8-Way clamping station with NSE plus 138 clamping modules.

Clamping device:

KSX 5-Axis clamping vise.

Features/Application:

Height alignment of the multi-parted clamping station.

VERO-S Application



VERO-S:

Special 6-Way clamping station with NSE plus 138 clamping modules.

Clamping device:

Direct workpiece clamping combined with clamping pin extension.

Features/Application:

Increased accessibility to the workpiece.

VERO-S Application



VERO-S:

Special 24-Way clamping station with NSE plus 138 clamping modules

Clamping device:

Clamping jaw boxes
Direct workpiece clamping

Features/Application:

OP10 Clamping jaw boxes
OP20 Direct workpiece clamping

VERO-S Application



VERO-S:

Direct workpiece clamping 2-Way
NSE plus 138 clamping modules.

Clamping device:

Direct workpiece clamping
MAGNOS magnetic chuck

Features/Application:

Flexibility and position accuracy
thanks to the combination of VERO-S
and MAGNOS.

VERO-S Application



VERO-S:

Direct workpiece clamping 2-Way NSE plus 138 clamping modules.

Clamping device:

Direct workpiece clamping.

Features/Application:

Flexible adjustment of the height and position of the modules. Very good accessibility of all sides.

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