



VERO-S WDP-5X

**Collision-free working due to
clamping pillars**

Pneumatically actuated modular system for workpiece direct clamping

The modular system VERO-S WDB-5X brings the efficiency effects of the SCHUNK VERO-S quick-change pallet system specifically to machining applications for workpiece direct clamping. The modules are clamped via spring force and can be opened simultaneously with compressed air. Depending on the customer request, the pneumatic modules can be replaced by manual modules in order to enable manual actuation. Workpieces of all kinds can be lifted off the machine table and directly clamped in seconds without interfering contours due to clamping pillars with a modular structure. Due to specially designed clamping modules and a large range of clamping pins, the clamping pillars can be adapted to suit all customer requirements.



Advantages – Your benefits

- + Modular clamping pillars**
Flexible clamping of large workpieces and free forged parts
- + Scope-free pin centering between components**
High repeat accuracy of < 0.005 mm
- + Integrated air feed-through to the clamping module**
Easy control of modules and monitoring of workpiece presence
- + Intelligent clamping connection between the stacking modules**
For simple and quick operation
- + High pull-down forces**
Up to 15 kN for high cutting parameters and greater production efficiency
- + Turbo integrated by default**
Pull-down force increased up to 300% for optimal utilization of the machine's performance, hence high efficiency.
- + Form-fit, self-retained locking**
Full pull-down force is maintained even in the event of a pressure drop
- + Corrosion-free stainless steel design**
Long life time and maximum process reliability

Function WDP-5X clamping pillar

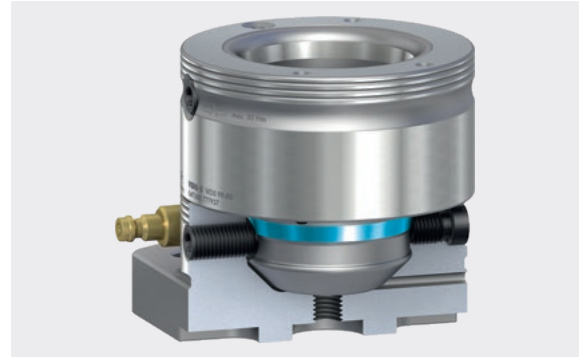
The basic structure of the clamping pillars consists of a basic module, stacking modules, and clamping and compensation modules. The clamping and compensation modules are supplied with compressed air for opening via the basic modules. The clamping procedure itself takes place via an integrated spring assembly and is self-locking. In addition, the pull-down and holding force can be increased by means of an integrated turbo function.



- ❶ **Basic module WDP-5X-BM**
Ensures a rigid connection to the machine table
- ❷ **Pneumatic connections on the basic module**
Eliminates the need for any bothersome cables on the workpiece
- ❸ **Locking drive**
For extremely high pull-down forces
- ❹ **Media transfer via stacking modules**
For controlling the direct clamping module
- ❺ **Stacking module WDP-5X-SM 99-50**
For flexible configuration of the clamping pillars
- ❻ **Stacking module WDP-5X-SM 99-30**
For flexible configuration of the clamping pillars
- ❼ **Clamping module WDP-5X-DSM 99-70**
For a direct connection to the workpiece

Centering via short taper

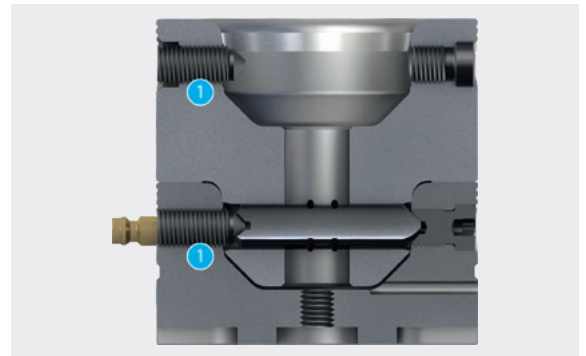
The SCHUNK modular system features a high-precision short-taper centering mechanism in combination with an intelligent, form-fit clamp connection. In this way, clamping pillars can be adjusted to new clamping applications very quickly.



Intelligent drive concept

The drive concept allows for form-fit connection of the modular system components. When the actuating screw is actuated, the connection pin of the upper module is pushed into the mount opposite and clamped in a form-fit fashion.

1 Actuation screw



Integrated media transfer unit as standard

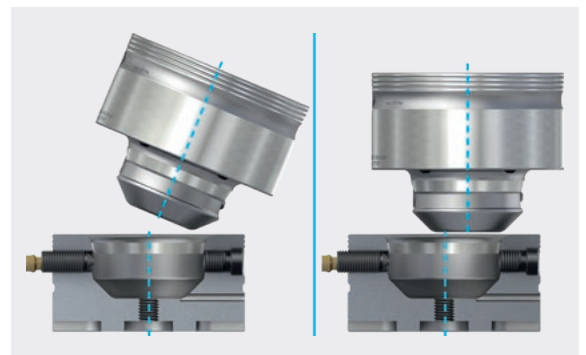
All modules for direct workpiece clamping have an integrated media transfer unit for supplying media to the clamping module. The media supply is thus always provided via the basic module directly on the machine table, irrespective of the height of the clamping pillar. This has the major advantage that the hose lines always lie in a defined manner on the machine table and do not hang freely in the machine's working area.

1 Air feed-through across modules



Simple joining – incredibly user-friendly

Feed chamfers on the clamping pin enable quick and safe joining even with a tilt angle and eccentricity. Advantage: Clamping pillars can be adjusted to new clamping tasks in an extremely user-friendly manner.



Made of stainless steel – long service life

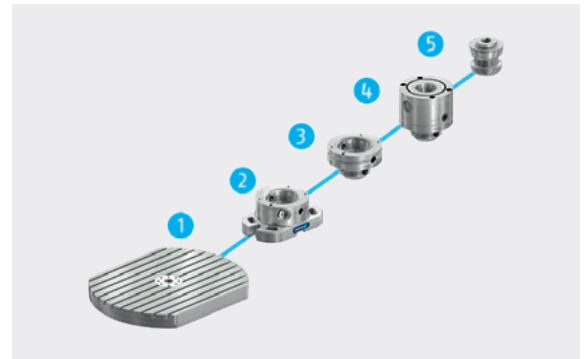
The base bodies are made of hardened stainless steel. This greatly increases life span and process reliability.



Functional Principle of the Modular System

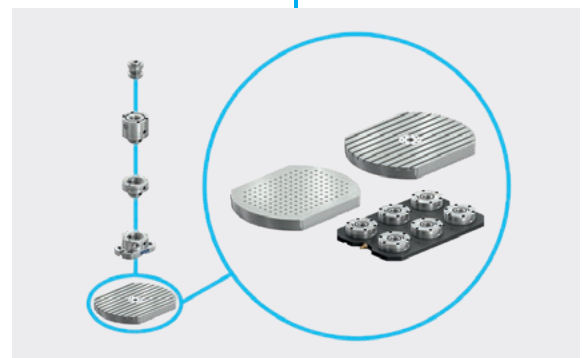
Depending on the machine table, the basic structure of the clamping pillars consists of a basic module, stacking modules (optional), and various clamping modules. A large range of SCHUNK clamping pins forms the interface to the workpiece.

- ❶ Machine table
- ❷ Basic modules
- ❸ Stacking Modules
- ❹ Clamping modules
- ❺ Clamping pins



1. Base plate

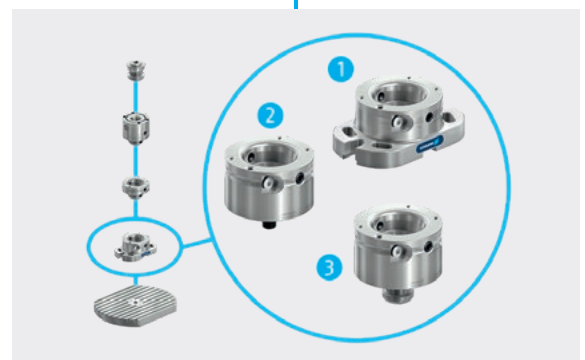
The modular system is compatible with different machine tables. Depending on the requirements, the modules can be mounted on T-slot tables, grid plates, and on existing NSL3 clamping stations.



2. Selection of the basic module

Depending on the machine table interface, different basic modules are available. WDP-5X-BM 99-60 (T-slot tables, grid plates), WDP-5X-BMR 99-60 (grid plates) and WDP-5X-BMR 99-60 (VERO-S clamping stations) are available.

- ❶ WDP-5X-BM 99-60
- ❷ WDP-5X-BMR 99-60
- ❸ WDP-5X-BMG 99-60



3. Stacking modules (optional)

For being able to compensate differences in the clamping heights that change from workpiece to workpiece, so-called stacking modules are available in five standardized heights. These can be expanded as often as desired.



4. Selection of the clamping module

For clamping the workpiece, there are different clamping and compensation modules. With the compensation modules, height differences of up to 11 mm can be continuously compensated. Both versions are available in either pneumatic or manual version.

- ❶ Clamping module
- ❷ Compensation Module



5. Interface to the workpiece

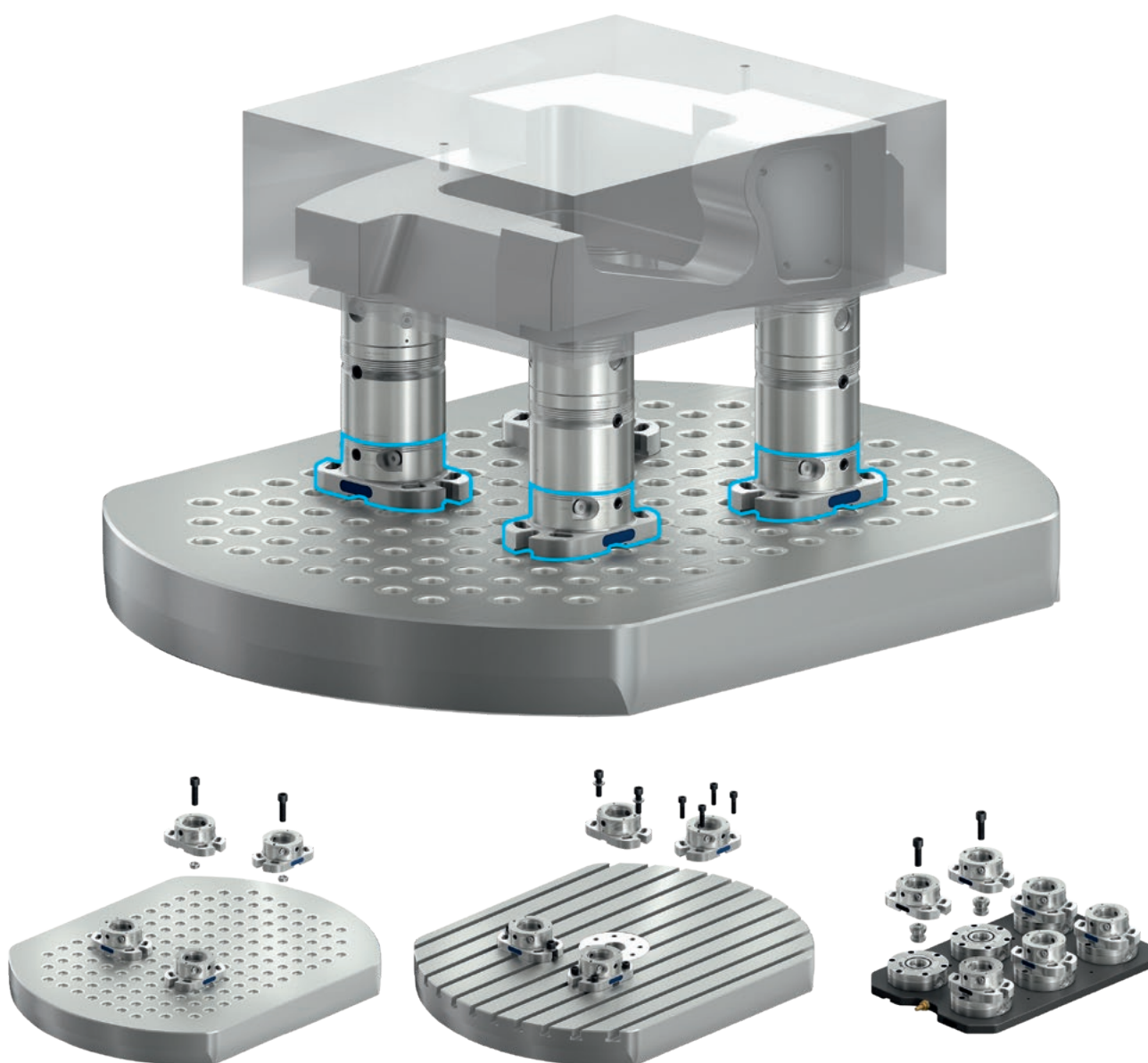
A large range of different SCHUNK VERO-S clamping pins form the interface to the workpiece. The portfolio ranges from standard clamping pins through compensation pins – for height and length compensation – up to clamping pin extensions to reduce the interfering contour to the workpiece.

- ❶ Compensation pins
- ❷ Clamping pin extension
- ❸ Clamping pins



Basic Module WDP-5X-BM 99-60

The basic module WDP-5X-BM 99-60 forms the base for clamping pillars on T-slot tables and grid plates.
The module can be fixed on T-slot tables over lateral grooves and on grid plates over a sleeve in combination with a screw on the machine table.
The interface upwards forms the proven SCHUNK short taper centering.

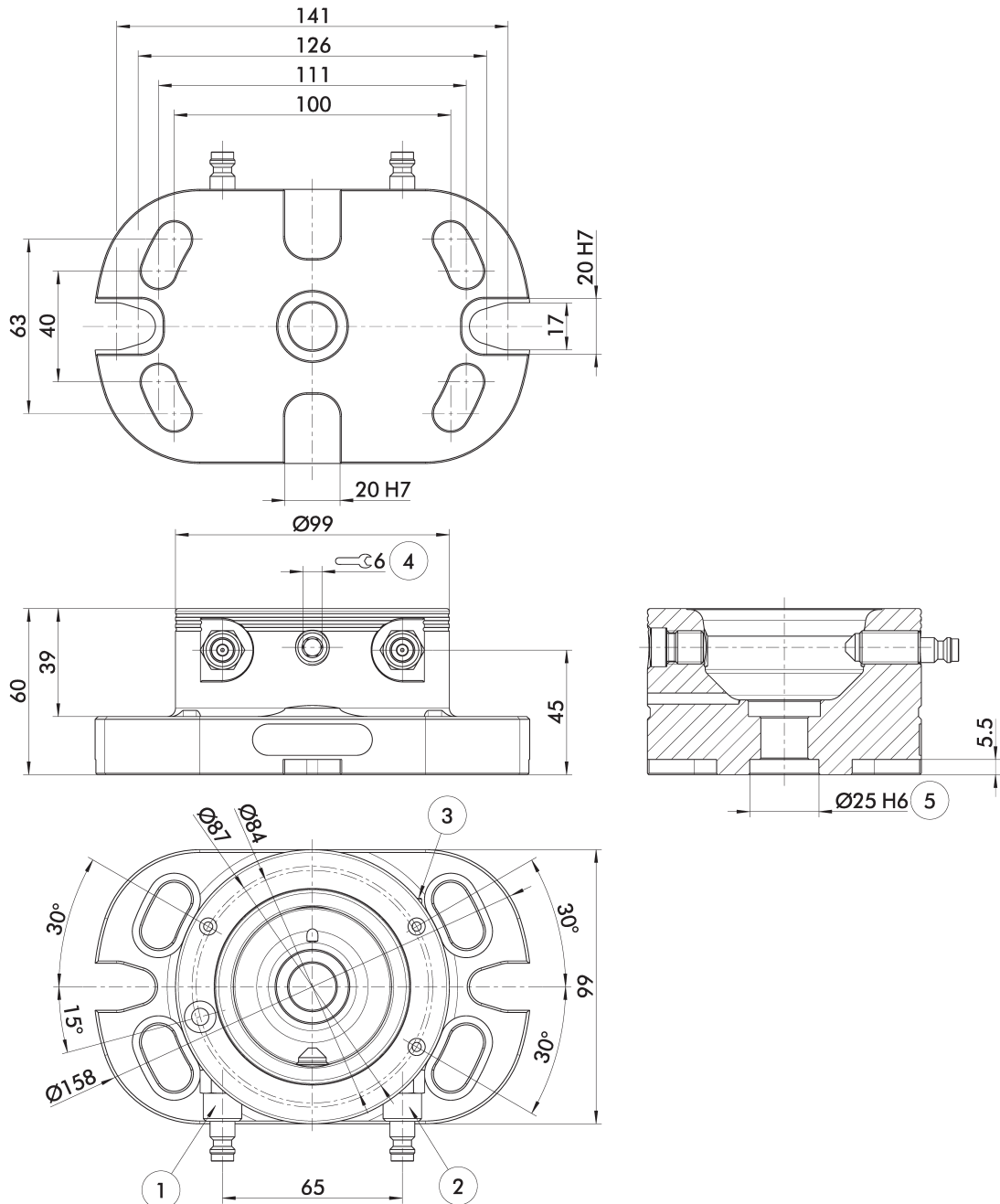


Scope of delivery

Basic module, fastening screws, locking couplings, hexagonal socket screwdriver, operating manual

Technical data

Description	ID	Pull-down force module interface [kN]	Holding force module interface [kN]	Max. actuation moment [Nm]	Repeat accuracy [mm]	Weight [kg]
WDP-5X-BM 99-60	0471617	10 - 25	50	50	< 0.005	3.2

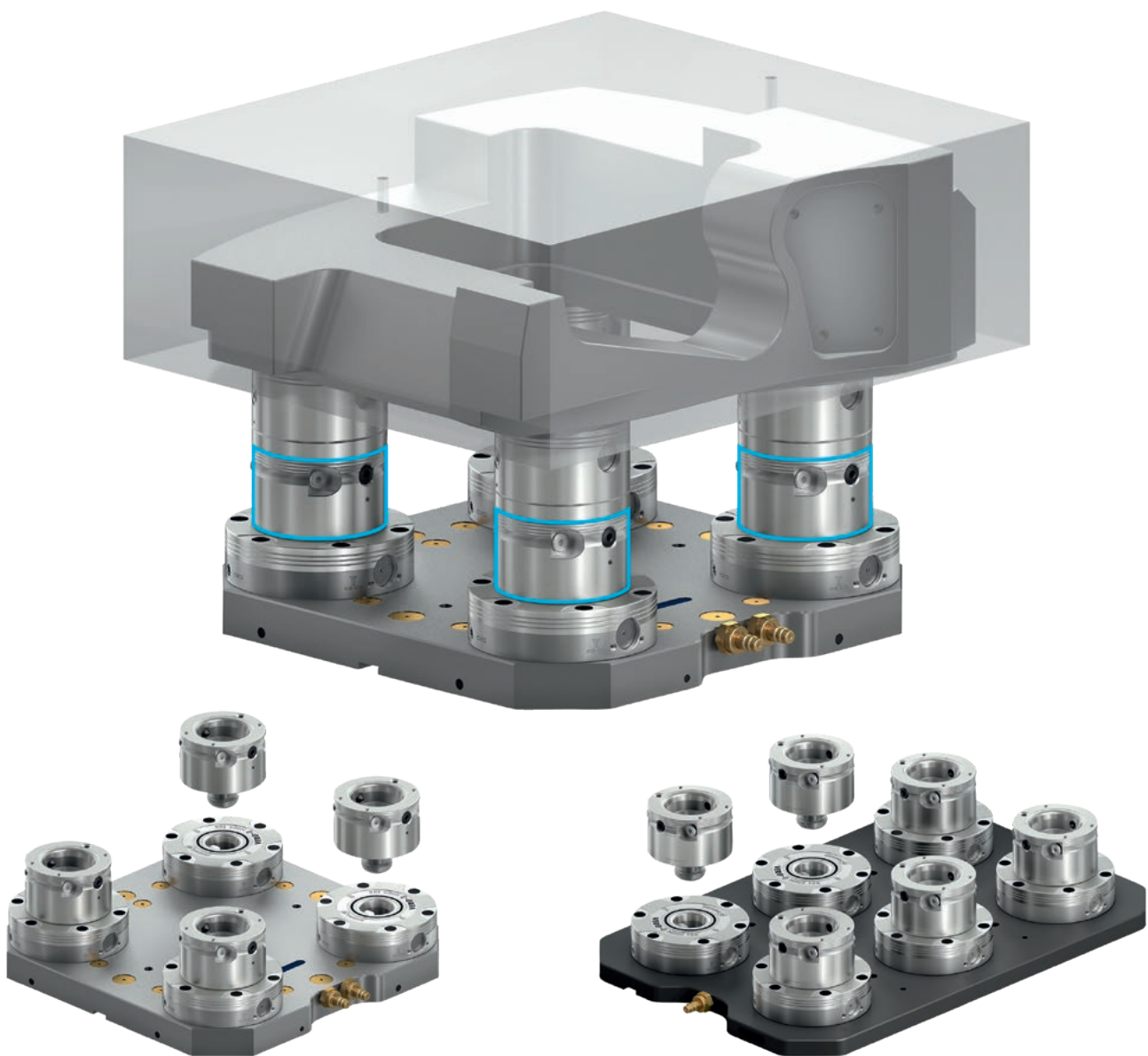


Subject to technical changes.

- ① Quick coupling module, open
- ② Quick coupling for turbo function
- ③ Air purge connection
- ④ Locking mechanism AF 6
- ⑤ Integration on grid plates with sleeves HUE D24-D25 (ID 0471632)

Basic Module WDP-5X-BMG 99-60

Basic module WDP-5X-BMG 99-60 is used if, on the machine table, VERO-S quick-change pallet modules or stations are already fitted to the machine table. By means of a clamping pin in the module, the module can be directly fastened. The interface upwards forms the proven SCHUNK short taper centering.

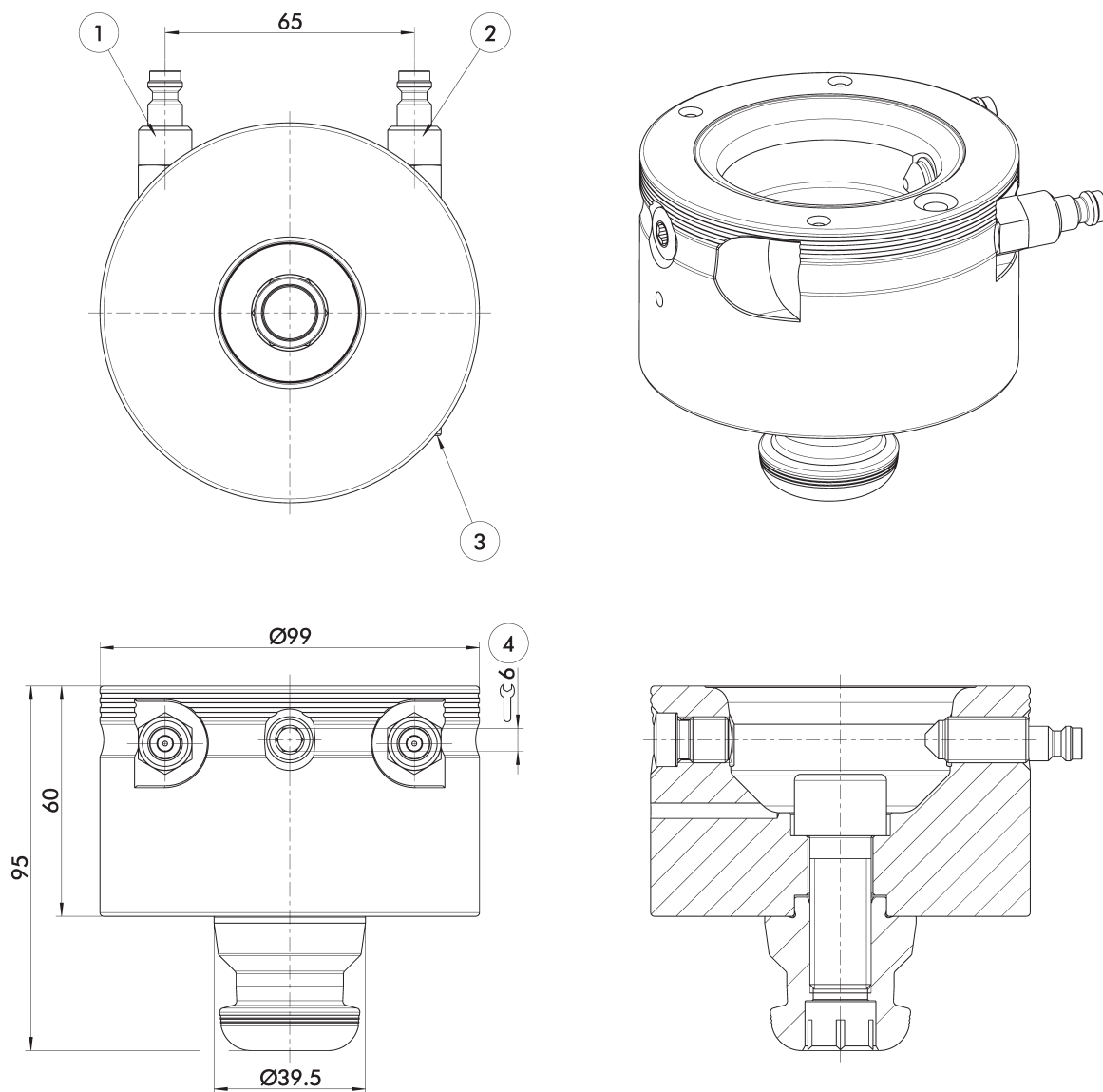


Scope of delivery

Basic module, operating manual

Technical data

Description	ID	Pull-down force module interface [kN]	Holding force module interface [kN]	Max. actuation moment [Nm]	Repeat accuracy [mm]	Weight [kg]
WDP-5X-BMG 99-60	0471618	10 - 25	50	50	< 0.005	2.6



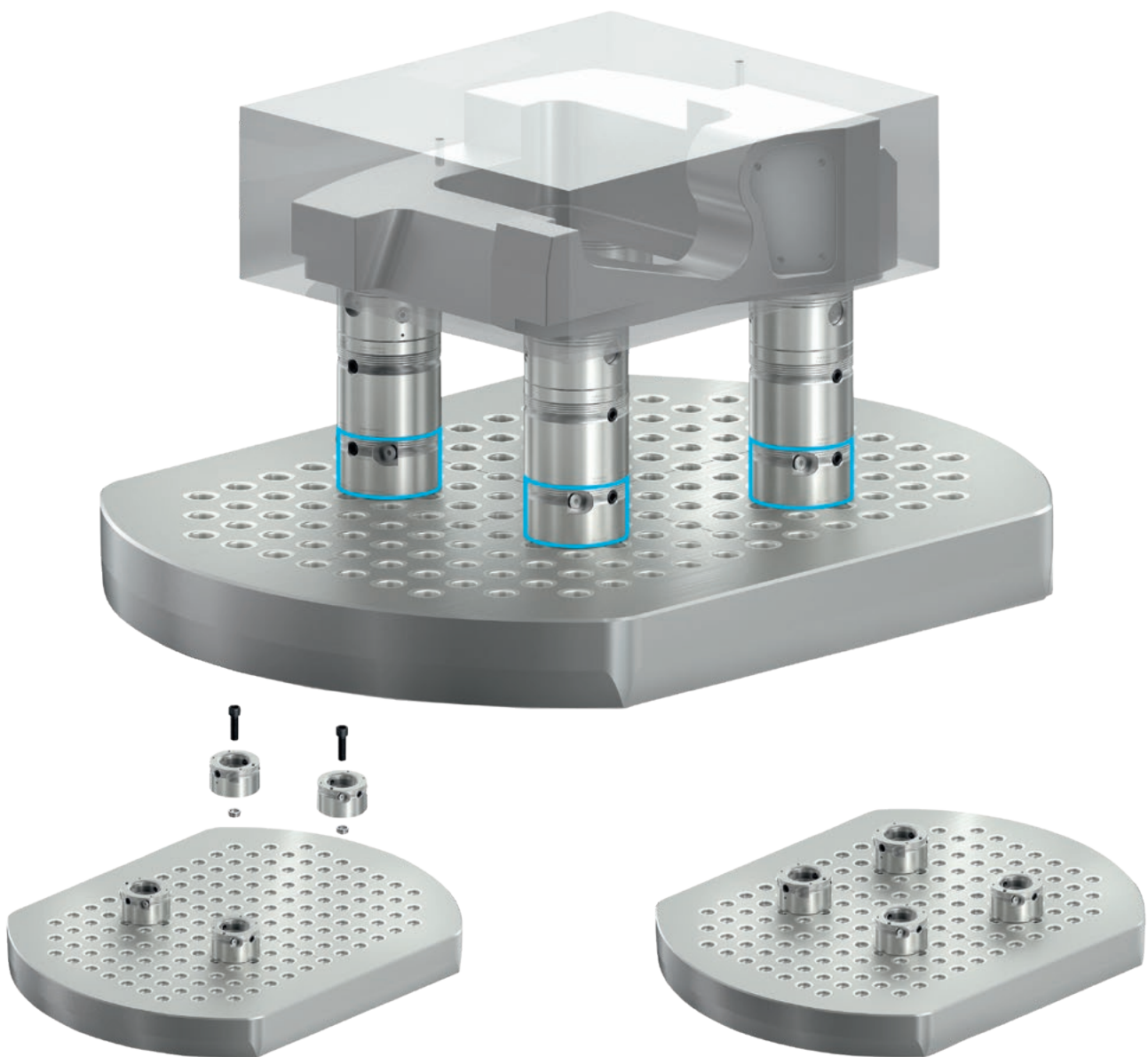
Subject to technical changes.

- ① Quick coupling module, open
- ② Quick coupling for turbo function

- ③ Air purge connection
- ④ Locking mechanism AF 6

Basic Module WDP-5X-BMR 99-60

Basic module WDP-5X-BMR 99-60 forms the base for clamping pillars on grid plates.
By means of a sleeve in combination with a screw, the module can be fastened onto the grid plate.
The interface upwards forms the proven SCHUNK short taper centering.

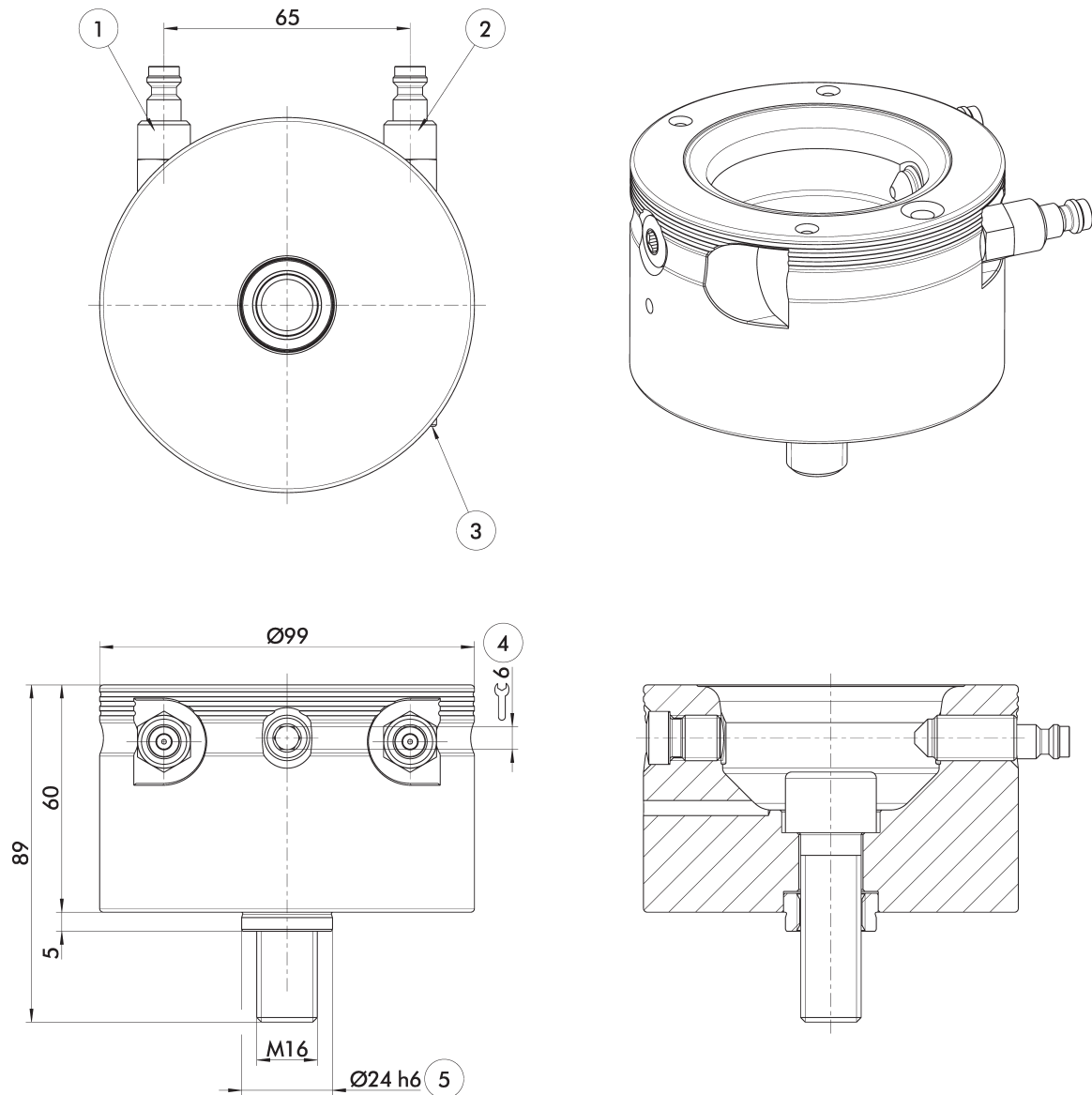


Scope of delivery

Basic module, fastening screws, locking couplings, hexagonal socket screwdriver, operating manual

Technical data

Description	ID	Pull-down force module interface [kN]	Holding force module interface [kN]	Max. actuation moment [Nm]	Repeat accuracy [mm]	Weight [kg]
WDP-5X-BMR 99-60	0471619	10 - 25	50	50	< 0.005	2.9



Subject to technical changes.

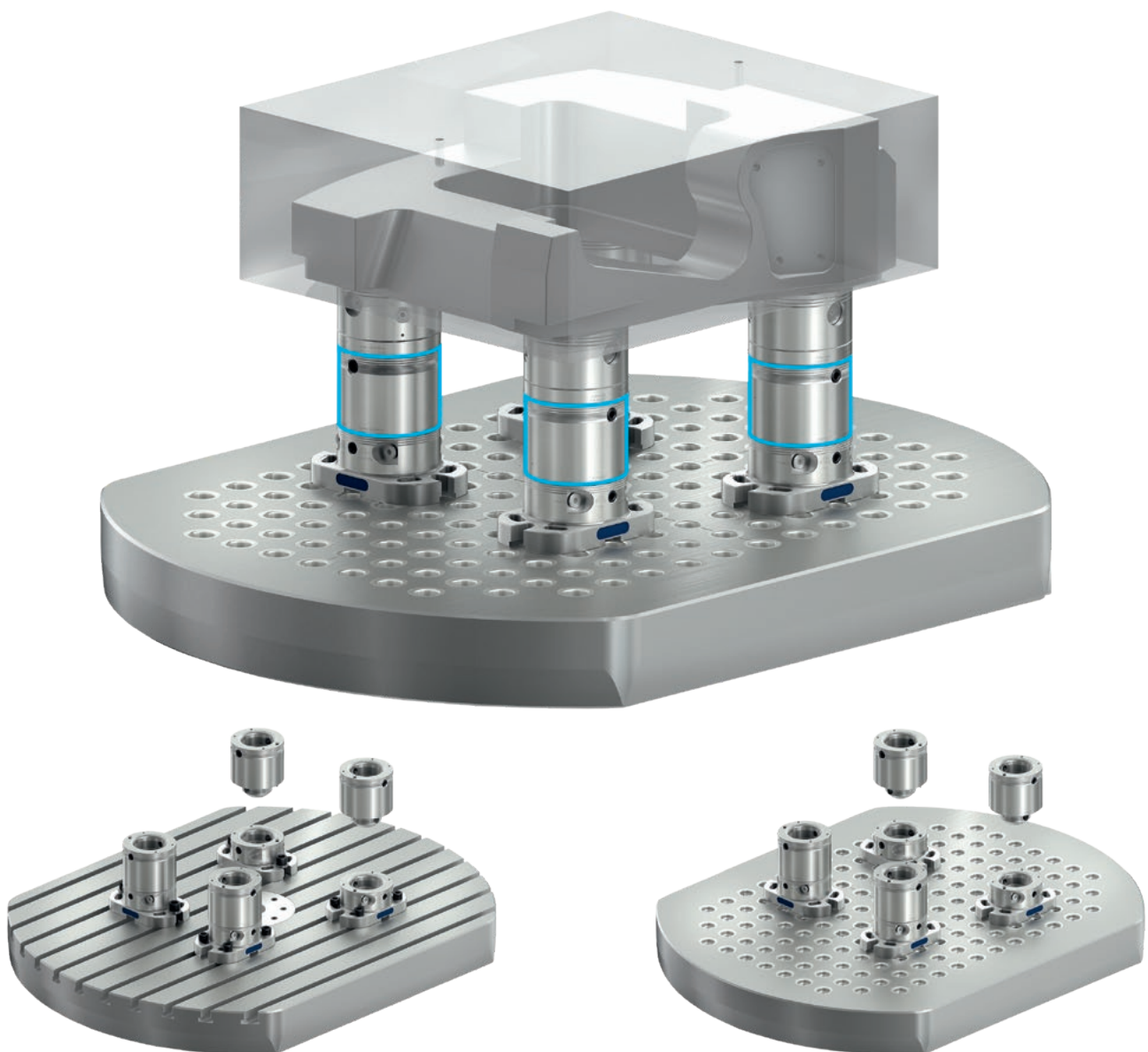
- ① Quick coupling module, open
- ② Quick coupling for turbo function
- ③ Air purge connection
- ④ Locking mechanism AF 6
- ⑤ Integration on grid plates with sleeves HUE D24-D25 (ID 0471632)

Stacking Modules WDP-5X-SM 99

The stacking modules are used for presetting the height of the clamping pillars.

The modules are available in five standardized heights.

The stacking modules can be quickly integrated into the clamping pillars via a high-precision short taper centering upwards as well as downwards.

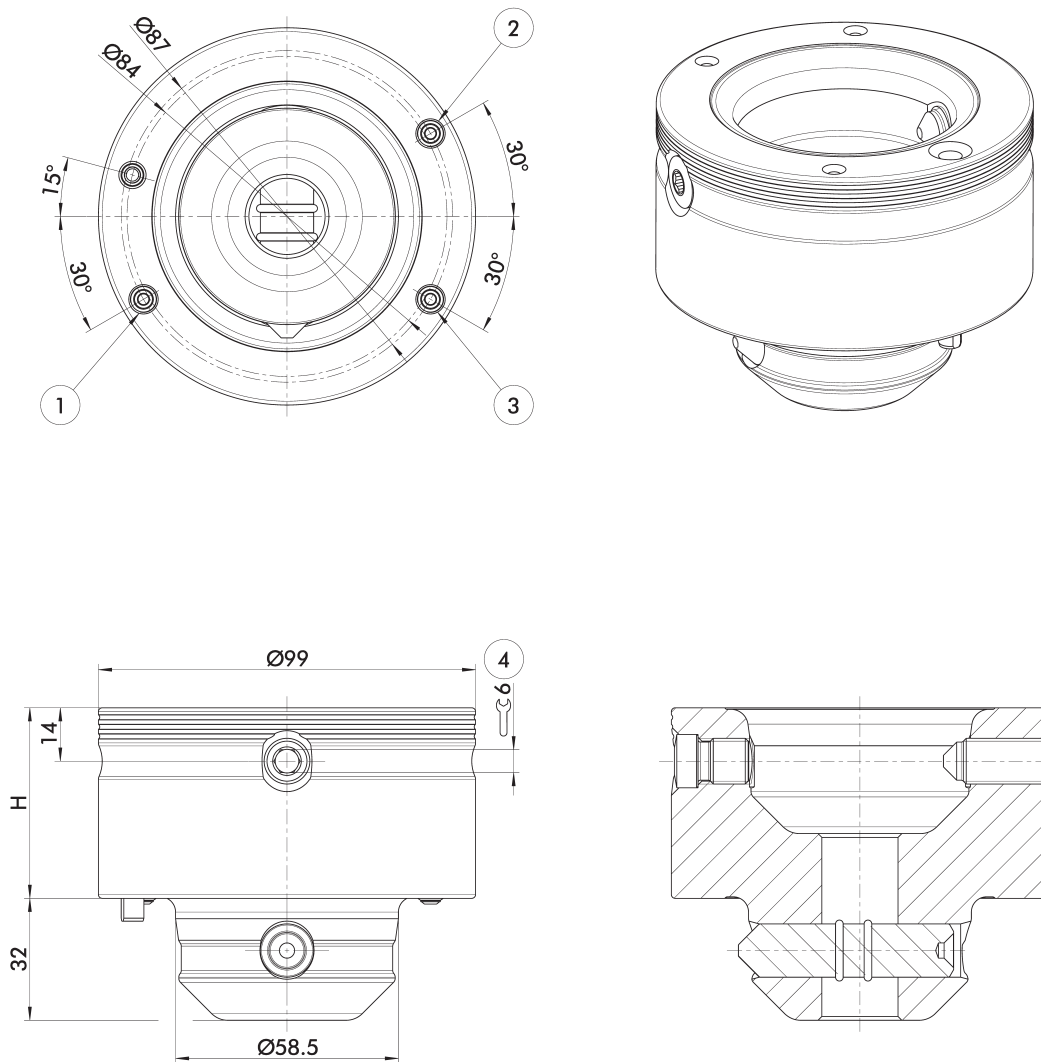


Scope of delivery

Stacking Module

Technical data

Description	ID	Pull-down force module interface [kN]	Holding force module interface [kN]	Max. actuation moment [Nm]	Repeat accuracy [mm]	Height H [mm]	Weight [kg]
WDP-5X-SM 99-30	0471601	10 - 25	50	50	< 0.005	30	1.7
WDP-5X-SM 99-50	0471602	10 - 25	50	50	< 0.005	50	3.3
WDP-5X-SM 99-80	0471607	10 - 25	50	50	< 0.005	80	3.9
WDP-5X-SM 99-120	0471608	10 - 25	50	50	< 0.005	120	5.5
WDP-5X-SM 99-160	0471609	10 - 25	50	50	< 0.005	160	7



Subject to technical changes.

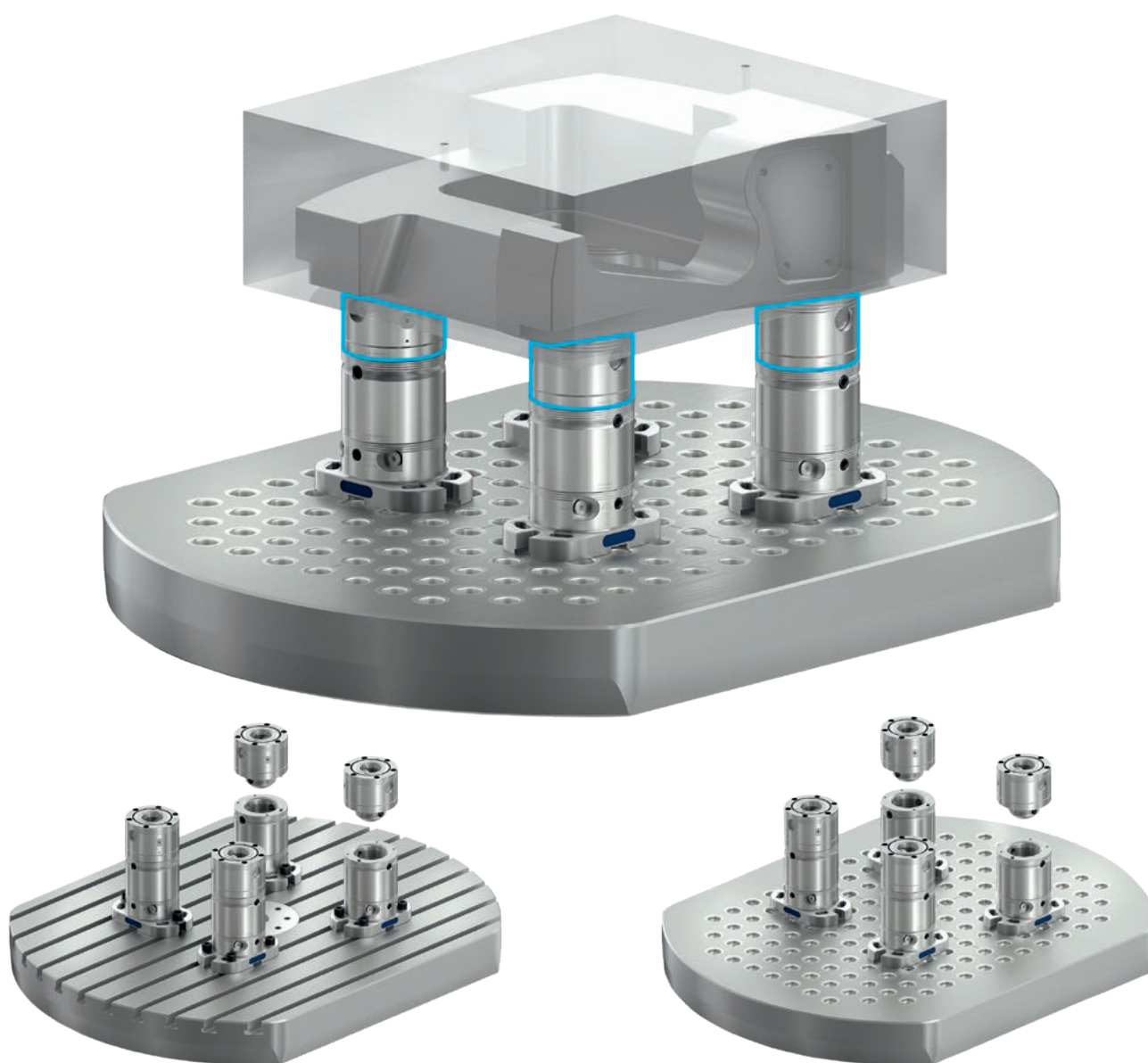
- ① Media transfer for module open
- ③ Media transfer for air purge
- ② Media transfer for turbo function
- ④ Locking mechanism AF 6

Clamping modules WDP-5X-DSM 99

The direct clamping modules are available in pneumatic or manual versions.

In combination with VERO-S clamping pins, these modules serve as an interface to the workpiece.

The pneumatic modules are supplied with compressed air via an integrated media transfer unit through the respective basic module.

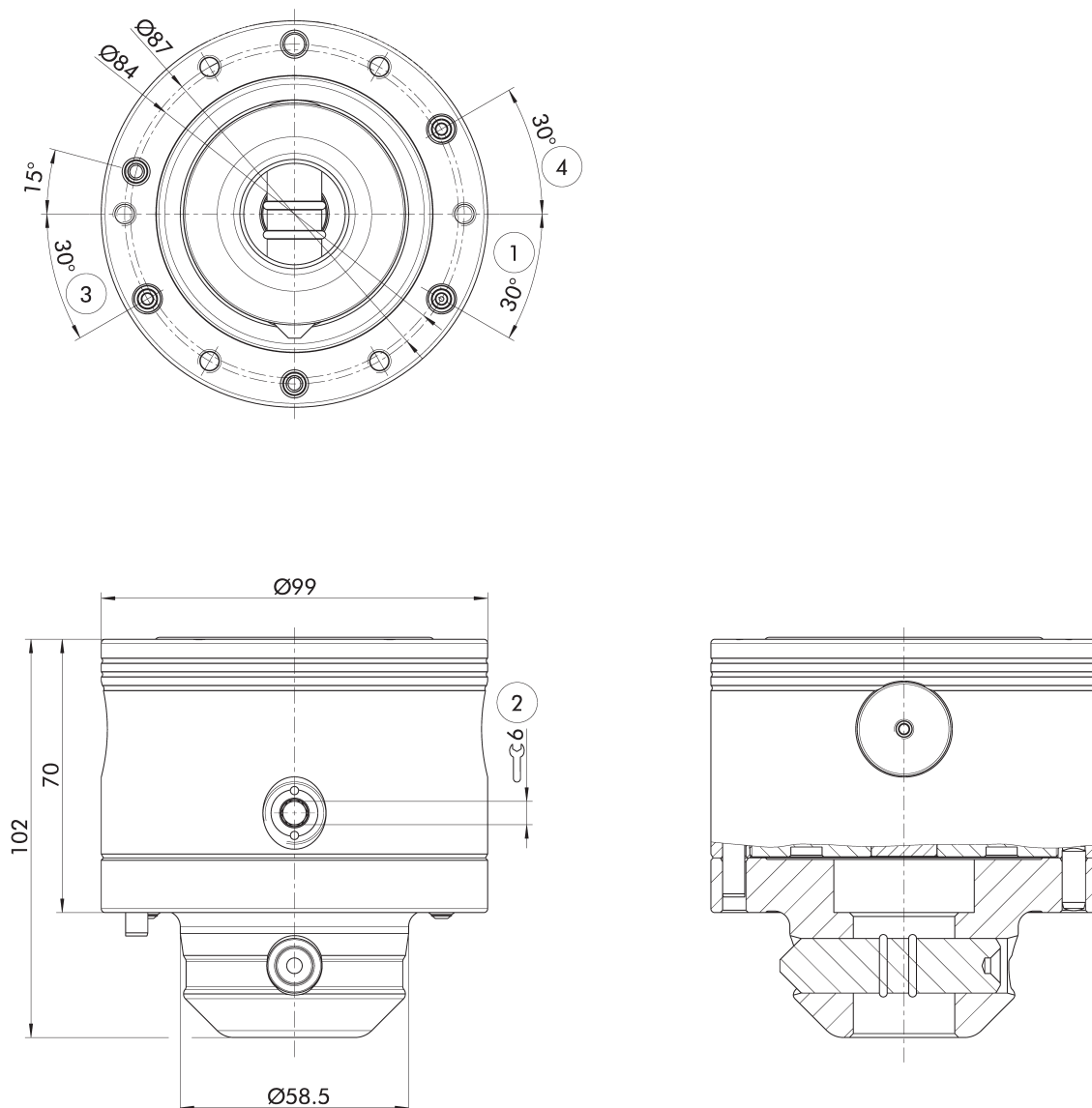


Scope of delivery

Direct clamping module, operating manual

Technical data

Description	ID	Pull-down force [kN]	Pull-down force with turbo [kN]	Unlocking pressure [bar]	Max. actuation moment [Nm]	Repeat accuracy [mm]	Weight [kg]
WDP-5X-DSM 99-70	0471603	5	18	6		< 0.005	3.9
WDP-5X-DSM 99-70-M	0471611	15			20	< 0.005	3.9



Subject to technical changes.

- ① Media transfer for air purge
- ② Actuation connection SW 6 (WDP-5X-DSM 99-70-M)
- ③ Media transfer unit for opening the module (WDP-5X-DSM 99-70)
- ④ Media transfer unit for turbo function (WDP-5X-DSM 99-70)

Compensation modules WDP-5X-ASM 99

The compensation modules are available in pneumatic or manual versions.

With the aid of the compensation pin, height differences of up to 11 mm can be continuously compensated.

The pneumatic modules are supplied with compressed air via an integrated media transfer unit through the respective basic module.

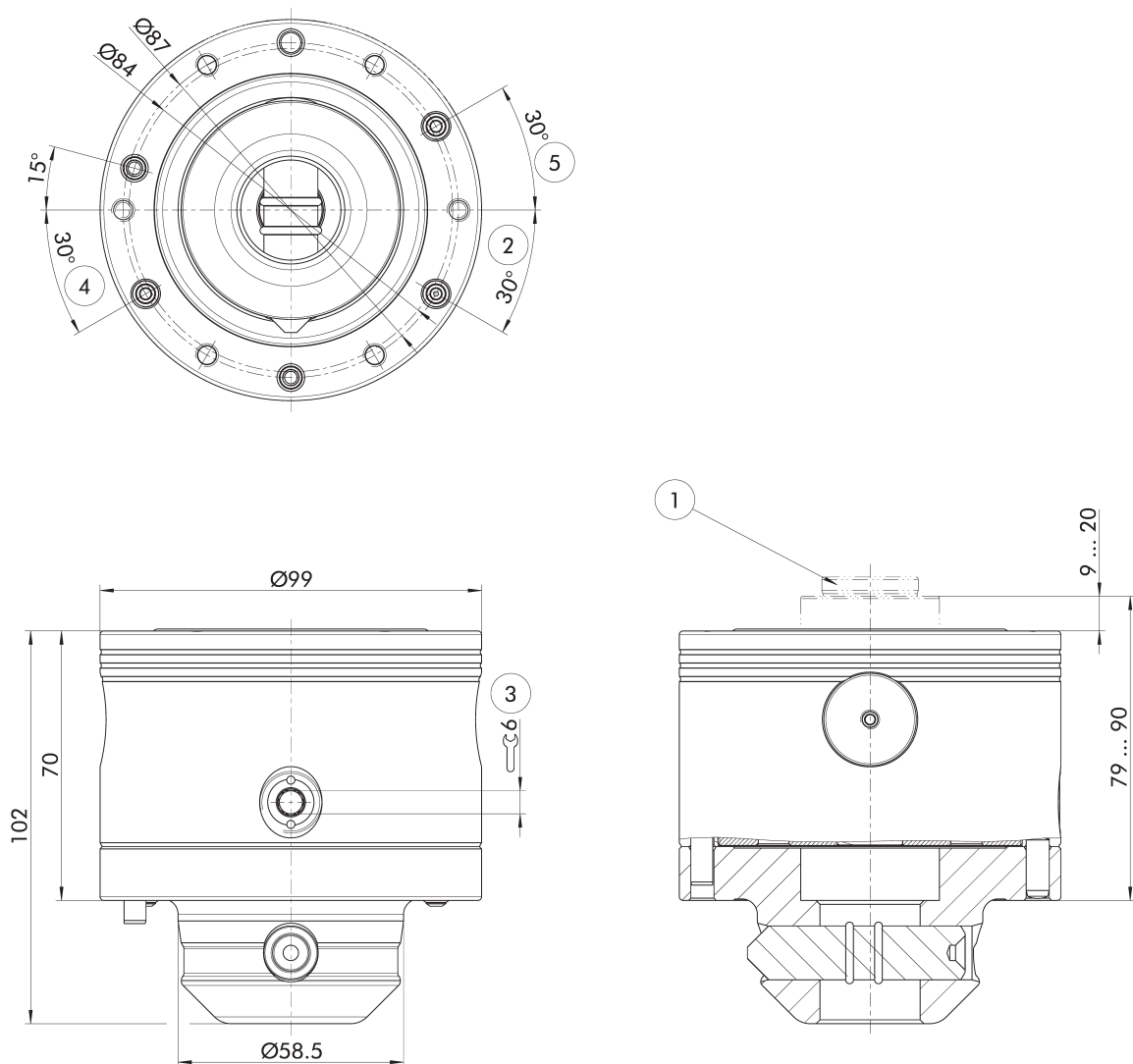


Scope of delivery

Compensation module, operating manual

Technical data

Description	ID	Holding force [kN]	Holding force with turbo [kN]	Unlocking pressure [bar]	Max. actuation moment [Nm]	Repeat accuracy [mm]	Vertical height compensation [mm]	Weight [kg]
WDP-5X-ASM 99-70-Ø36	0471615	0.8	4	6		< 0.005	11	3
WDP-5X-ASM 99-70-Ø36-M	1358030	4			20	< 0.005	11	4



Subject to technical changes.

- ① Direct clamping pin (ID 0471616) for axial length compensation
- ② Media transfer for air purge
- ③ Actuation connection SW 6 (WDP-5X-ASM 99-70-Ø36-M)
- ④ Media transfer unit for opening the module (WDP-5X-ASM 99-70-Ø36)
- ⑤ Media transfer unit for turbo function (WDP-5X-ASM 99-70-Ø36)

Accessories

Clamping pins SPx

Clamping pin for positive connection with NSE3 clamping modules.



Suitable for	Description	ID
WDP-5X-DSM 99	SPA 40	0471151
WDP-5X-DSM 99	SPB 40	0471152
WDP-5X-DSM 99	SPC 40	0471153

Clamping pins SPx

Standard clamping pins with M16 thread for form-fit connection of workpieces or devices with NSE3 clamping modules.



Suitable for	Description	ID
WDP-5X-DSM 99	SPA 40-16	0471064
WDP-5X-DSM 99	SPB 40-16	0471065
WDP-5X-DSM 99	SPC 40-16	0471066

Compensation pins

Clamping pin for compensating fluctuations of the bore hole gauges.
SPA-X 40 = compensation in one direction of ± 1 mm.
SPA-XY 40 = compensation in all directions of ± 1 mm.



Suitable for	Description	ID
WDP-5X-DSM 99	SPA-X 40	0471155
WDP-5X-DSM 99	SPA-XY 40	0471156

Accuracy pin

Clamping pins with patented flex taper with a repeat accuracy of less than 0.002 mm.



Suitable for	Description	ID
WDP-5X-DSM 99	SPG 40	0471154

Dove tail pins

Clamping pins with a mounting depth of 3.5 mm



Suitable for	Description	ID
WDP-5X-DSM 99	SPA-S 40	1310630
WDP-5X-DSM 99	SPB-S 40	1323856
WDP-5X-DSM 99	SPC-S 40	1323857

Clamping pins without centering collar

The clamping pin is screwed into the workpiece using a fitting screw.
Fitting screw with fitting diameter $\varnothing 8$ mm = ID 0471634.
Fitting screw with fitting diameter $\varnothing 10$ mm = ID 0471635.



Suitable for	Description	ID
WDP-5X-DSM 99	SPA-OB 40	0471631
WDP-5X-DSM 99	SPB-OB 40	1316935
WDP-5X-DSM 99	SPC-OB 40	1316936

Heavy duty pins

Clamping pins with integrated mounting threads for high holding forces.



Suitable for	Description	ID
WDP-5X-DSM 99	SPA-F 40	0471171
WDP-5X-DSM 99	SPC-F 40	0471172

Direct clamping pin

Clamping pins for stepless compensation of height differences up to 11 mm.



Suitable for	Description	ID
WDP-5X-ASM 99	SPC-ASM 36	0471616

Clamping pin extension

Serves to reduce the interfering contour and improves the accessibility of the machine spindle to the workpiece.



Suitable for	Description	ID
WDP-5X-DSM 99	SPA-VLK 50	1318565
WDP-5X-DSM 99	SPB-VLK 50	1317936
WDP-5X-DSM 99	SPC-VLK 50	1317937

Positioning mandrel

For manual pre-adjustment and subsequent accurate positioning – without opening – the modules using the machine spindle.



Suitable for	Description	ID
WDP-5X-DSM 99	SPA-PDK 40	40108422

Connecting strip

4-way or 8-way connecting strips for fast and easy actuation of pneumatic clamping pillars on the machine table.



Suitable for	Description	ID
WDP-5X-BM 99-60		
WDP-5X-BMG 99-60		
WDP-5X-BMR 99-60	ASL 4	1368298
WDP-5X-BM 99-60		
WDP-5X-BMG 99-60		
WDP-5X-BMR 99-60	ASL 8	1368299

Cover caps

Used to cover the mounting screws and to avoid the accumulation of chips.



Suitable for	Description	ID
WDP-5X-DSM 99		
WDP-5X-ASM 99	ADK M6-SW5	9985503

Protection covers

Used to close the changing interface and to cover the contact surface.



Suitable for	Description	ID
WDP-5X-DSM 99	SDE 40	0471017
WDP-5X-DSM 99	SDE 99	0471038

Accessory 5-axis Stabilizers

Telescopic clamping unit

Clamping unit can be pulled out and extended through the use of extension elements.



Suitable for	Description	ID
WDP-5X-DSM 99	TKE 255-305	1398469
WDP-5X-DSM 99	TKE 355-505	1398470

Clamping ball with conical seat

Central connecting element with turning and swiveling function for telescopic clamping units.



Suitable for	Description	ID
WDP-5X-DSM 99	SKG Ø25.4	1535214

Bracket for protection covers

For mounting SDE type protection covers.
HAT 5 = Storage of up to five covers.
HAT 10 = Storage of up to ten covers.



Suitable for	Description	ID
WDP-5X-DSM 99	HAT 5	40102043
WDP-5X-DSM 99	HAT 10	40102000

Sleeve

Serves as insert for basic modules WDP-5X-BM 99 or WDP-5X-BMR 99 for positioning on grid plates.



Suitable for	Description	ID
WDP-5X-BM 99-60		
WDP-5X-BMR 99-60	HUE Ø24/Ø25	0471632

Alignment element

Alignment element for basic module with the fitting widths 14 h7, 18 h7, and 22 h7.



Suitable for	Description	ID
WDP-5X-BM 99-60	ARE 25	1319098

Extensions

With Ø 25 mm for the extension of telescopic clamping units.



Suitable for	Description	ID
WDP-5X-DSM 99	TKE-VL 75	1398480
WDP-5X-DSM 99	TKE-VL 100	1398481
WDP-5X-DSM 99	TKE-VL 150	1398482
WDP-5X-DSM 99	TKE-VL 250	1398483
WDP-5X-DSM 99	TKE-VL 500	1398484

Fine adjustment

Used for final and accurate alignment of the workpiece.



Suitable for	Description	ID
WDP-5X-DSM 99	TKE-FE	1398490

Magnet including clamping balls

Used for the quick and simple mounting of telescopic clamping units on the machine table or ferromagnetic workpieces.



Suitable for	Description	ID
WDP-5X-DSM 99	MHM-ITS 125-2	1398491

Metal sheet clamp

Used for mounting the clamping ball on metal sheets and thin workpieces.



Suitable for	Description	ID
WDP-5X-DSM 99	BKW	1398492

Mounting kit

Used for mounting the clamping ball on the clamping modules.



Suitable for	Description	ID
WDP-5X-DSM 99	BFS-SPA 40	1398493

Clamping ball without screw thread

Used for mounting the clamping ball by means of threads.



Suitable for	Description	ID
WDP-5X-DSM 99	BFS-SC M12-40	1471460
WDP-5X-DSM 99	BFS-SC M16-40	1471462
WDP-5X-DSM 99	BFS-SC M18-40	1471463
WDP-5X-DSM 99	BFS-SC M20-50	1471464
WDP-5X-DSM 99	BFS-SC M24-50	1471466

Stabilizer set

Set consisting of telescopic clamping unit TKE 355-505, extension TKE-LV 100/150, mounting kit and case.



Suitable for	Description	ID
WDP-5X-DSM 99	TKE Set	1398521



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