



ROTA TP

Versatile, pneumatically
actuated power lathe chucks

Compact power lathe chucks with integrated pneumatic cylinder and large through-hole

ROTA TP power lathe chucks from SCHUNK are equipped with an integrated pneumatic cylinder. During downtime these chucks can be opened and closed via a distributor ring using a special air supply system. ROTA TP power lathe chucks are especially suitable for small lathes that do not have a hydraulic clamping cylinder, but are to be operated via a fluid medium. But the chucks are also very useful in automation technology.



Advantages – Your benefits

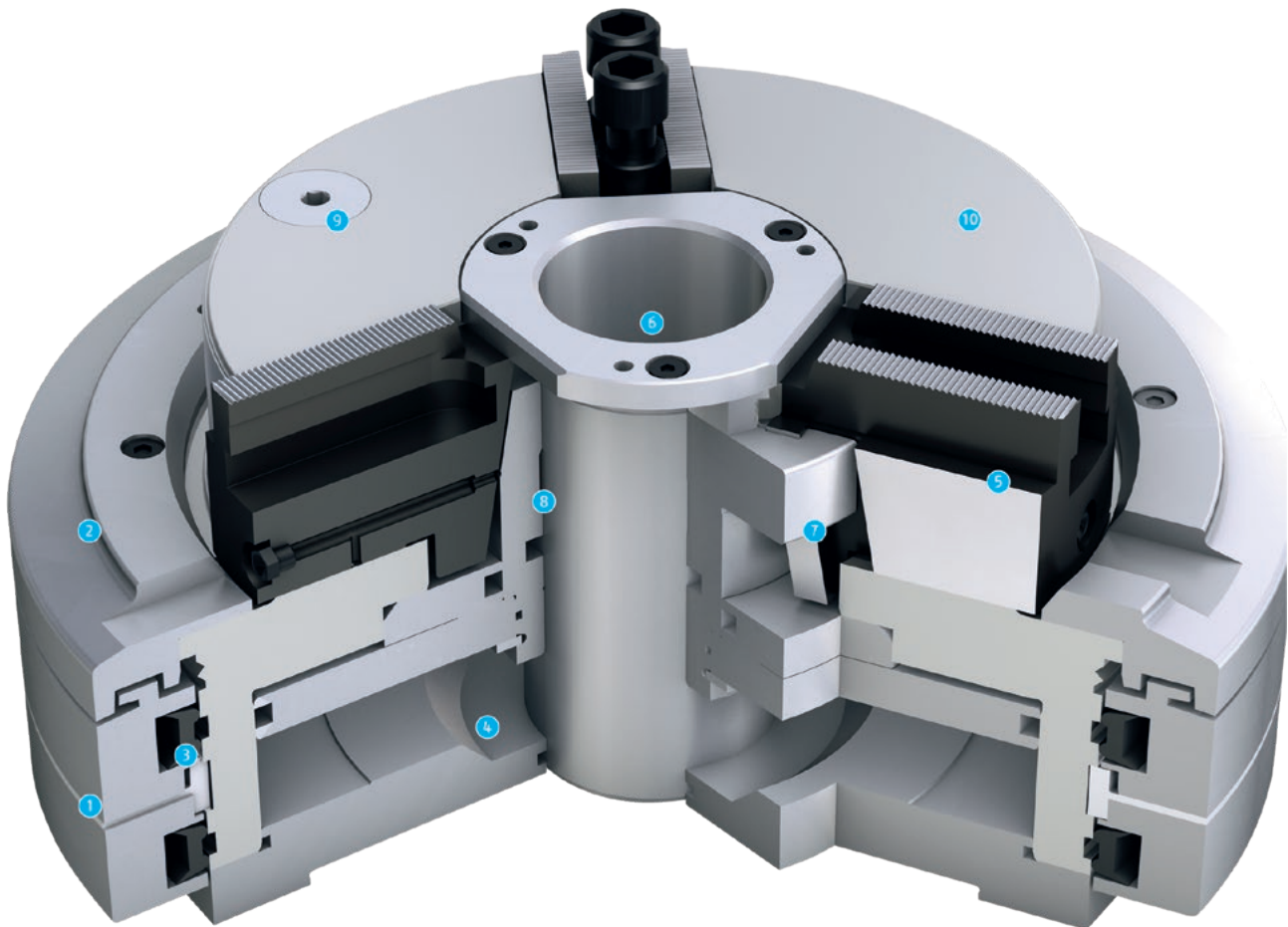
- + Precision wedge hook pneumatic chuck for top quality demands**
Allows excellent machining results
- + Large through-hole**
Machining all standard pipe diameters
- + High efficiency of the wedge hook system**
Process-reliable clamping due to high clamping forces
- + Optimized lubrication system**
Consistently high clamping forces ensured
- + Pneumatic cylinder integrated in the chuck**
Especially suited to lathes without a hydraulic cylinder
- + Air supply via a distributor ring**
Very simple control of the chuck
- + High clamping forces at system pressure**
Ensure process reliability during machining
- + All sides of the functional parts are hardened and ground**
Ensures a long service life

Technical data

Description	Max. rotational speed [min ⁻¹]	Max. clamping force (at 6 bar) [kN]	Stroke/jaw [mm]	Through-hole [mm]
ROTA TP 125-26	4000	22	3	26
ROTA TP 160-38	3500	39	4.2	38
ROTA TP 200-52	2800	68	4.2	52
ROTA TP 250-68	2200	105	5	68
ROTA TP 315-90	1800	140	5	90
ROTA TP 315-105	2200	100	5	105
ROTA TP 350-115	2200	90	5	115
ROTA TP-LH 350-115	2200	90	15	115

Function of ROTA TP

The piston integrated in the chuck is supplied during down-time with compressed air from the distributor ring and thus axially shifted. The wedge hook system converts this axial movement of the chuck piston into a radial movement of the base jaws, synchronous to the rotating axis. The double check valve prevents that after removal of the system pressure the compressed air can again escape.



- | | |
|--|---|
| <ul style="list-style-type: none"> 1 Distributor ring
For air transmission during down-time 2 Distributor ring cover
Prevents the penetration of dirt and chips 3 Profile sealing rings
For air transmission 4 Pneumatic cylinder integrated in the chuck
Especially suited to lathes without a hydraulic cylinder 5 Very stable base jaw
With fine serration for universal clamping | <ul style="list-style-type: none"> 6 Very large through-hole
Ideal for pipe processing 7 Very stable wedge hook
For force transmission 8 Long piston guidance
Optimizes the force flow and provides optimal rigidity 9 Pressure maintenance valve
Provides for enduring clamping force during rotation 10 One-piece, rigid chuck body
For a long service life |
|--|---|

Control of the self-contained power lathe chucks

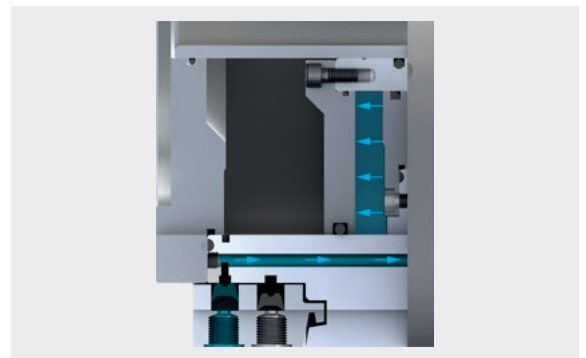
All pneumatic self-contained power lathe chucks have an integrated double check valve. The valve is responsible for pressure maintenance and thus ensures constant clamping force.

- ❶ **Double check valve**
Ensures pressure maintenance
- ❷ **Profile sealing ring**
For chuck actuation during I.D. clamping
- ❸ **Profile sealing ring**
For chuck actuation during O.D. clamping
- ❹ **Distributor ring**
For air supply of the lathe chuck
- ❺ **Distributor ring cover**
For a better sealing against contamination at the distributor ring



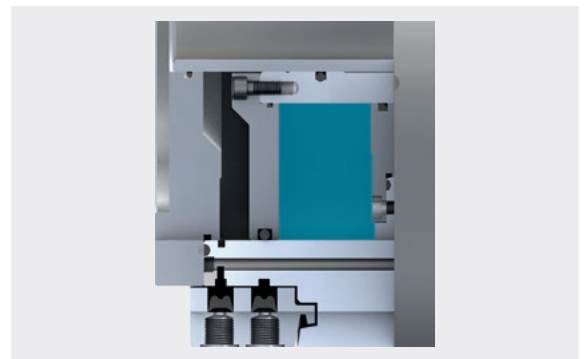
Clamping and opening is only possible during down-time

The profile seals deform radially under pneumatic pressure and seal on the chuck body to fill the cylinder chamber. The generated air pressure is permanently maintained through a double-check valve in the chuck.



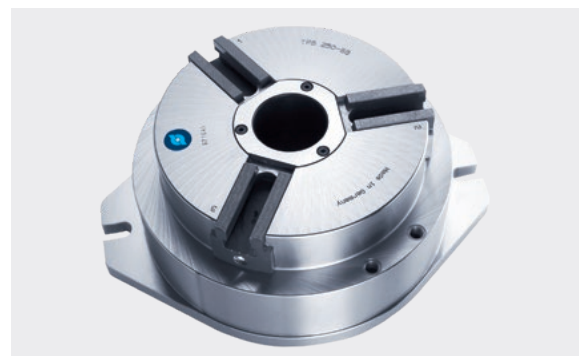
The SCHUNK profile seal lifts itself through its own elasticity

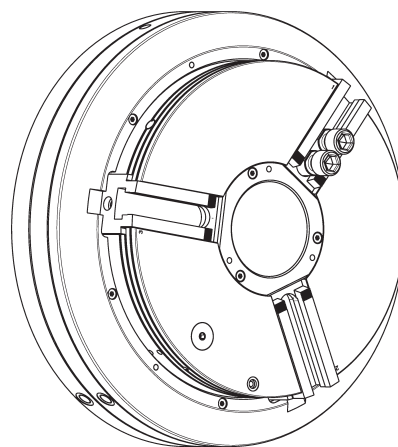
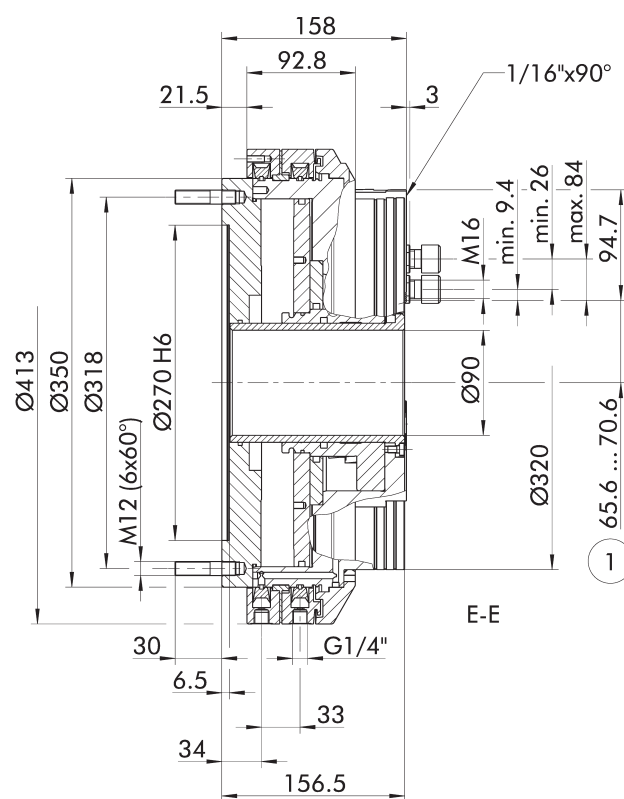
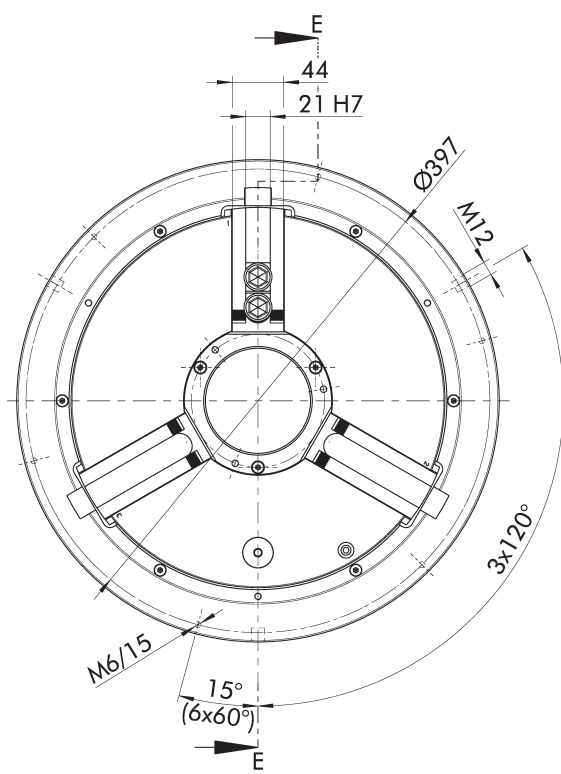
The air pressure is maintained in the cylinder, and the chuck can start to rotate.



Also available for stationary applications

The ROTA TP chuck can be also used for stationary applications. However, the so-called ROTA TPS chuck has to be permanently actuated with air and is not equipped with a distributor ring and no double check valve is integrated.





Subject to technical changes.

① Distance to center of first tooth

Technical data

Spindle type	Spindle size	ID	Max. RPM 1	Max. RPM 2	Max. clamping force (at 6 bar)	Actuation pressure	Moment of inertia	Weight
			[min ⁻¹]	[min ⁻¹]	[kN]	[bar]	[kgm ²]	[kg]
-	Z270	0816165	1800	2500	140	3 - 8	1.35	85

Scope of delivery

Chuck, distributor ring cover, T-nuts with screws, chuck mounting bolts, 2 elbow-unions R 1/4" on the distributor ring, 1 set-screw to position the distributor ring, 6 double-threaded mounting bolts, 2 couplings for connection to the electro pneumatic control block, spacer ring, operating manual; without distributor ring mounting bracket, without top jaws

Notes

Max. RPM 1

"Max. RPM 1" is the maximum RPM when using a distributor ring with centering ring.

Max. RPM 2

"Max. RPM 2" is the maximum RPM with a stationary fastening of distributor ring.

Min. actuation pressure

The minimum actuation pressure is $P_{\min} = 3$ bar.

For lower clamping forces, a clamping force reduction can be offered as an option.

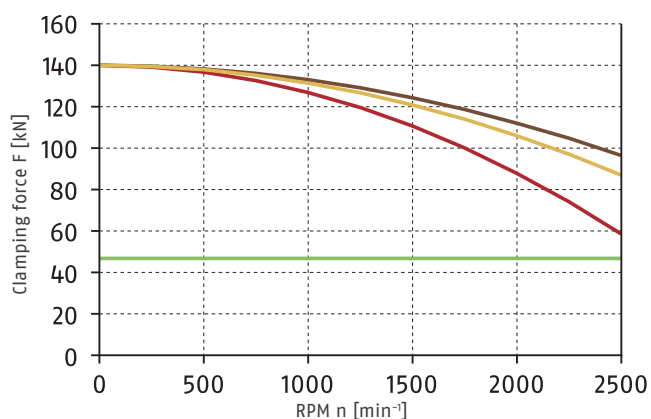
2-jaw chuck

The 2-jaw chuck version is available on request.

Further technical data

Chuck type	Through-hole	Stroke/jaw	Opening/closing time	Air consumption/jaw stroke at 6 bar	Center jaw height
	[mm]	[mm]	[s]	[l]	[mm]
ROTA TP 315-90	90	5	7	11.2	88

Clamping force-RPM-diagram



Required minimum clamping force F_{spmin} 33%

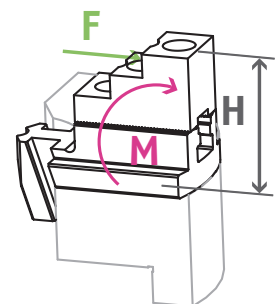
SHB 315
4.6 kg

SWB 250
9.2 kg

SWB-AL 250
3.29 kg



Load of base jaw guidance



$$M_{\max} = 4107 \text{ Nm}$$

Adapter plates

Z-mount on short taper ISO 702-1



Technical data

Description	ID	Suitable for	D1	D2	D3	D4	D5	D6	D7	H	T1	T2
				[mm]		[mm]	[mm]	[mm]		[mm]	[mm]	[mm]
FFV Z270-A6	0836040	ROTA TP 315-90	Nr. 6	103.2	Z270	13 (6 x 60°)	20	350	13 (6 x 60°)	38	133.4	318
FFV Z270-A8	0836041	ROTA TP 315-90	Nr. 8	136.2	Z270	17 (6x60°)	25	350	13 (6 x 60°)	44	171.4	318
FFV Z270-A11	0836042	ROTA TP 315-90	Nr. 11	192.9	Z270	21 (6x60°)	32	350	13 (6 x 60°)	42	235	318

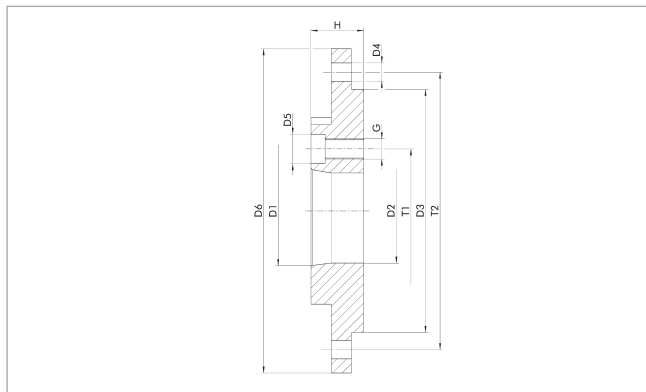
Reduction adapter plates

All flanges on the pneumatic power chuck are designed as reducing flanges.

These are used if the mounting bolt circle of the spindle is smaller than the one of the lathe chuck mounting bolt circle.

The adapter plate is first mounted on the spindle and then the lathe chuck is mounted on the adapter plate.

Z-mount on camlock ISO 702-2



Technical data

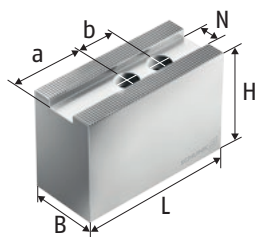
Description	ID	Suitable for	D1	D2	D3	D4	D5	D6	G	H	T1	T2
				[mm]		[mm]	[mm]	[mm]		[mm]	[mm]	[mm]
FFV Z270-D6	0836240	ROTA TP 315-90	Nr. 6	103.2	Z270	13 (6 x 60°)	22.6	350	M16x1.5 (6 x 60°)	35	133.4	318
FFV Z270-D8	0836241	ROTA TP 315-90	Nr. 8	136.2	Z270	13 (6 x 60°)	25.8	350	M20x1.5 (6 x 60°)	40	171.4	318
FFV Z270-D11	0836242	ROTA TP 315-90	Nr. 11	192.9	Z270	13 (6 x 60°)	30.6	350	M22x1.5 (6 x 60°)	45	235	318

Soft top jaws

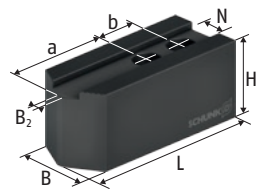
with fine serration 90°



CWB
Soft top jaws



SWB-AL
Soft top jaws



SWBL
Soft top jaws

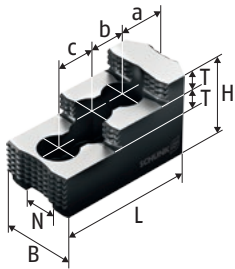
Technical data

Chuck type	Description	ID	N [mm]	B [mm]	H [mm]	L [mm]	a [mm]	b [mm]	Screws	m/SET [kg]
ROTA TP 315-90	SWBL 250-21	0120155	21	50	50	120	72	28	M16	5.4
ROTA TP 315-90	CWB 251	0100012	21	50	60	95	52	28	M16	5.2
ROTA TP 315-90	SWB 250	0120105	21	50	80	120	62	28	M16	9.2
ROTA TP 315-90	SWB-AL 250	0168102	21	50	80	120	62	28	M16	3.3

Our complete range of chuck jaws can be found online in our Chuck Jaw Quickfinder and on schunk.com

Hard stepped top jaws, Full grip jaws

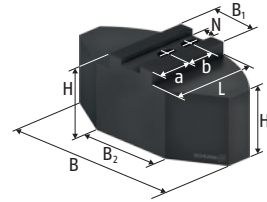
with fine serration 90°



SHB
Hard stepped top jaws



SWB-SA
Full grip jaws



SWB-SM
Full grip jaws

Technical data

Chuck type	Description	ID	N [mm]	B [mm]	B1 [mm]	H [mm]	H2 [mm]	L [mm]	T [mm]	a [mm]	b [mm]	c [mm]	Screws	m/SET [kg]
ROTA TP 315-90	SWB-SA 315	0170104	21	240	50	78	63	117		70	28		M16	11.0
ROTA TP 315-90	SWB-SM 315	0169104	21	240	50	70	55	110		60	28		M16	26.6
ROTA TP 315-90	SHB 315	0121111	21	50		58		128	14	46	30	30	M16	4.6

Our complete range of chuck jaws can be found online in our Chuck Jaw Quickfinder and on [schunk.com](https://www.schunk.com)

Claw jaws

with fine serration 90°



SZA
Claw jaws

Technical data

Chuck type	Clamping range ØD	Swing diameter SDmax	Description	ID	N	B	H	L	T	G	b	Screws	m/SET
	[mm]	[mm]			[mm]	[mm]	[mm]	[mm]	[mm]		[mm]		[kg]
ROTA TP 315-90	51 - 147	348	SZA 31-10	0138184	21	50	58	115.4	25	M8	28	M16	3.4
ROTA TP 315-90	109 - 205	349	SZA 31-11	0138185	21	50	58	92.1	25	M8	28	M16	3.4
ROTA TP 315-90	174 - 271	347	SZA 31-12	0138186	21	50	58	87.3	25	M8	28	M16	3.2
ROTA TP 315-90	238 - 320	392	SZA 31-13	0138187	21	50	58	111.1	25	M8	28	M16	4.7

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T-nut

with fine serration 90°



NS
T-nut

Chuck type	Description	ID	N	B	H	H1	L	Cyl.-screw	Max. adm. tightening torque
			[mm]	[mm]	[mm]	[mm]	[mm]		[Nm]
ROTA TP 315-90	NS 164	0143108	21	28.4	30	11	24.3	M16 x 35	150

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Hard stepped top jaws

with fine serration 90°



Jaw position I

Jaw position II

O.D. clamping

Chuck type	Description	ID	A1 [mm]	A2 [mm]	A3 [mm]	A4 [mm]
ROTA TP 315-90	SHB 315	0121111	16 - 160	45 - 141	137 - 233	229 - 320

I.D. clamping

Chuck type	Description	ID	I1 [mm]	I2 [mm]	I3 [mm]
ROTA TP 315-90	SHB 315	0121111	88 - 184	180 - 275	271 - 380

Accessories

Clamping force tester

For measuring the jaw clamping force of 2, 3 and 6-jaw chucks up to 6,000 RPM.



Suitable for	Description	ID
ROTA TP 315-90	IFT Set	1404235

Maintenance unit

For processing the required compressed air.



Suitable for	Description	ID
ROTA TP 315-90	WEH 1/4"	0890021

Grease

LINOMAX plus

High-performance grease as standard for regularly lubricating SCHUNK manual and power lathe chucks and steady rests.



Bundle	Description	ID
Cartridge	LINOMAX plus cartridge	1342585
Can	LINOMAX plus can	1342586
Bucket	LINOMAX plus bucket	1342587

Pressure measuring unit

For checking pressure tightness.



Suitable for	Description	ID
ROTA TP 315-90	DMG Ø20-NPT1/4"	8702679

Grease gun

Auxiliary tools for lubrication of all kinds of SCHUNK products. The grease gun can be used for cartridges of all types of SCHUNK grease.



Bundle	Description	ID
Cartridge	Grease gun	9900543



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