ROTA TP / TB / EP

Pneumatic Power Chucks

Superior Clamping and Gripping

SCHUNK

ROTA TP/TB/EP


TOOLHOLDING AND
WORKHOLDING


Chuck Jaws


Lathe Chucks


Toolholding Systems


Special Hydraulic Expansion Technology


Stationary Workholding


Manual Chucks


Power Chucks


Pneumatic Power Chucks


Precision Chucks


Hybridspannfutter


Special Solutions


Steady Rests


Lathe Chuck Accessories

ROTA TP

ROTA TP/TB/EP

The ROTA TP self-contained power chuck from SCHUNK is equipped with an integrated pneumatic cylinder. The force transmission is effected by the proven wedge hook system. The chuck contains an air supply system on the distributor ring. Therefore no rotary feed throughs are necessary.

Especially on machines without hydraulic clamping cylinders, the ROTA TP and the manual chucks can be easily exchanged.

ROTA TP/TB/EP

Your advantages	Your benefits
Very large through-hole	Machining all standard bar diameters
Safe lathe chuck process operation	Control of closing and opening via electropneumatic safety control unit (SCHUNK ELKE 24/ESIS 24)
Wedge hook power chuck with integrated pneumatic cylinder	Suitable for conventional or cycle controlled lathes (without hydraulic clamping cylinder)
Very high clamping forces already at a standard air pressure of 6 bar	Useable pressure range between 2 and 8 bar
With distributor ring cover (only ROTA TP)	Better protection against contamination compared to our competitors
Perfectly suitable for lathes without hydraulic cylinder	Quick and easy changeover to manual lathe chucks
All sides of the functioning parts are ground and hardened	High run-out and repeat accuracy
Very large jaw stroke (only ROTA EP-LH/TB-LH)	Safe and variable clamping of workpieces over interfering contours

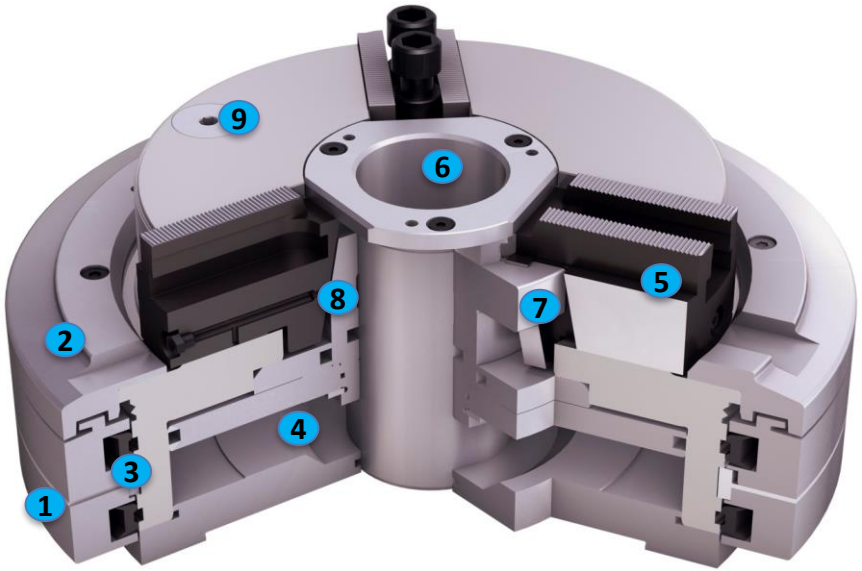
ROTA TP/TB/EP

		Futterbohrung Through-hole	Max. Spannkraft (bei 6 bar) Max. clamping force (at 6 bar)	Max. Drehzahl Max. RPM	Hub/Backe Stroke/Jaw	Verzahnung Backen Jaw serration	Futter-Ø Chuck Ø	Schwebering Ø Distributor ring Ø
	Seite/Page	[mm]	[kN]	[min^{-1}]	[mm]		[mm]	[mm]
ROTA TP 125	396	26	22	4200	3.0	1/16" x 90°	130	204
ROTA TP 160	398	38	39	4200	4.2	1/16" x 90°	165	255
ROTA TP 200	400	52	68	3800	4.2	1/16" x 90°	205	300
ROTA TP 250	402	68	105	3500	5.0	1/16" x 90°	255	372
ROTA TP 315	404	90	140	2500	5.0	1/16" x 90°	320	413
ROTA TP 315	406	105	100	3000	5.0	1/16" x 90°	335	372
ROTA TP 350	408	115	90	2200	5.0	1/16" x 90°	350	372
ROTA TP-LH 350	410	115	90	2200	5.0	1/16" x 90°	350	372
ROTA TB 400	416	115/140	200/180	1700	7.0	3/32" x 90°	400/422	467
ROTA TB 470	420	185	115	1700	7.0	3/32" x 90°	470	470
ROTA TB 500	422	160/205/230	300/240/230	1300	8.5	3/32" x 90°	500/540/570	570
ROTA TB 600	428	275	200	1300	12.0	3/32" x 90°	610	570
ROTA TB 630	430	265/310	330/280	1000	10.0	3/32" x 90°	630/662	685
ROTA TB 630	434	330	280	700	10.0	3/32" x 90°	685	685
ROTA TB 800	436	365/410	420/400	750	12.0	3/32" x 90°	800	850
ROTA TB 1000	440	534	280	450	12.0	3/32" x 90°	1000	850
ROTA TB-LH 400	444	140	180	1300	19.0	3/32" x 90°	467	467
ROTA TB-LH 470	446	185	115	1300	20.0	3/32" x 90°	470	470
ROTA TB-LH 500	448	205/230	240/220	1100	25.4	3/32" x 90°	570	570
ROTA TB-LH 600	452	275	180	1100	25.4	3/32" x 90°	610	570
ROTA TB-LH 630	454	265/325	330/280	900	38.0/25.4	3/32" x 90°	685/720	685
ROTA TB-LH 850	458	375	330	750	25.4	3/32" x 90°	850	850
ROTA TB-LH 1000	460	560	170	450	25.4	3/32" x 90°	1000	850
ROTA TB-LH 1200	462	640	170	180	38.0	3/32" x 90°	1200	925
ROTA EP 380	466	127	160	2300	7.0	3/32" x 90°	380	380
ROTA EP 460	468	165/185	230	1600	7.0	3/32" x 90°	460	460
ROTA EP 500	475	260	80	1000	15	1/16" x 90°	500	467
ROTA EP-LH 460	476	165/185	230/220	1600	19.0	3/32" x 90°	460	460

ROTA TP/TB/EP

Technology

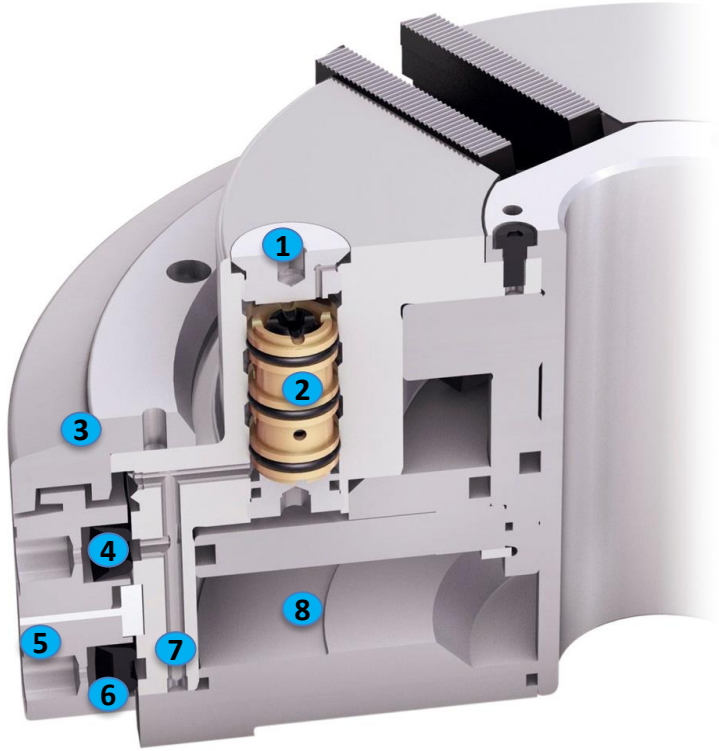
1. Distributor ring
2. Distributor ring cover (only ROTA TP)
3. Profile sealing rings
4. Integrated pneumatic cylinder
5. very stable base jaws
6. very large through-hole
7. very stable wedge hook
8. long piston guidance
9. integrated double check valve



ROTA TP/TB/EP

Technology

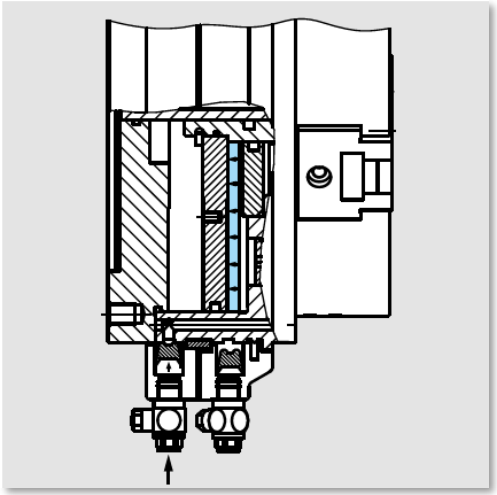
1. Screw cap
2. double check valve
3. distributor ring cover
4. profile sealing ring A
5. distributor ring
6. profile sealing ring B
7. air supply channel holes
8. cylinder space



ROTA TP/TB/EP

Opening and closing only possible at stopped machine spindle.

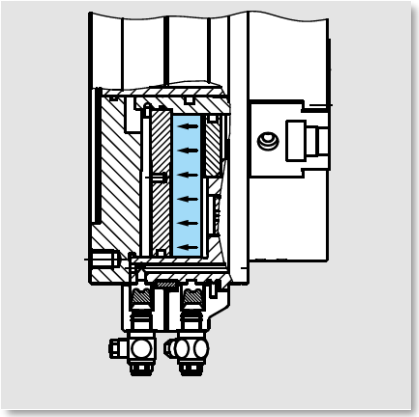
The profile seals deform radially under pneumatic pressure and seal on the chuck body to fill the cylinder chamber. The reached air pressure is maintained permanently through a non-return valve in the chuck.



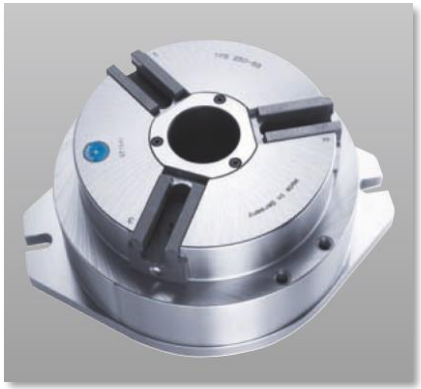
ROTA TP/TB/EP

The SCHUNK profile seals lift up to the expanded position.

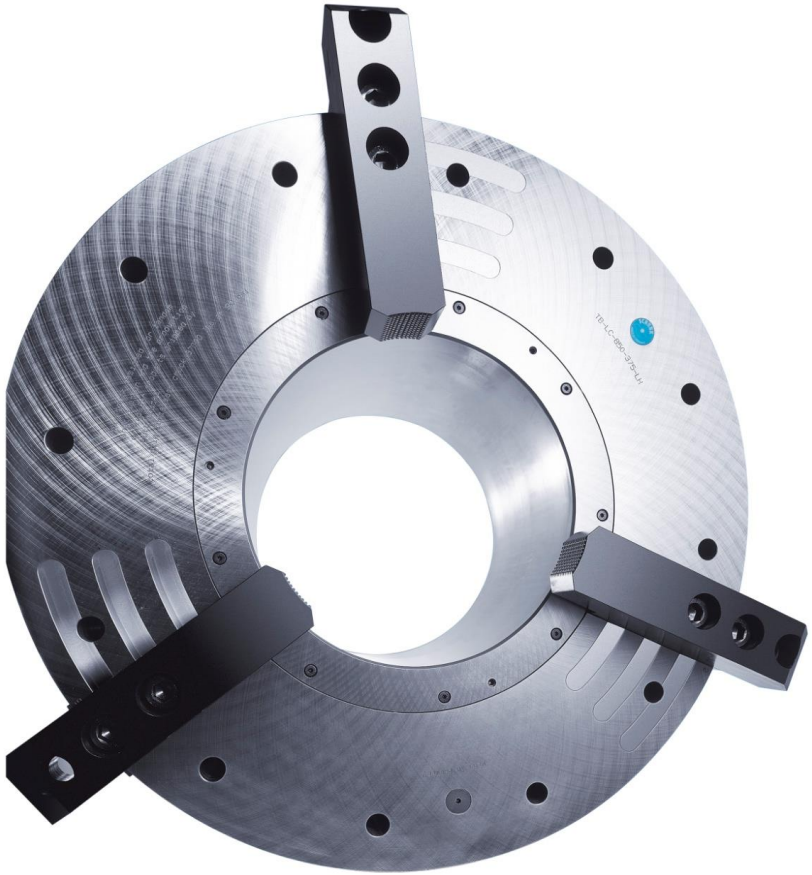
The air pressure is maintained by a non-return valve. The chuck can start to rotate.



Also available for stationary applications



ROTA TB-LH/EP-LH



ROTA TB-LH/EP-LH

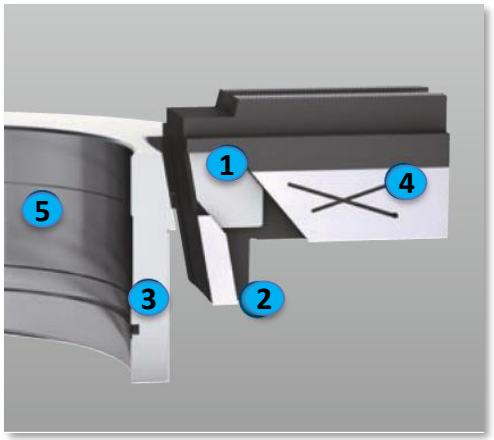
The technology of a self-contained power chuck with fast and extended stroke (LH) is based on a chuck piston with two different gear transmission ratios.

- → this technology can be used for O.D.-Clamping only!
- → a low air consumption
- → a large and fast jaw stroke combined with a maximum clamping force
- → due to the very large through-hole → chucks are suitable for the machining of large pipes
- → machining of adapter plate components is also possible
- → the chuck contains an air supply system on the distributor ring. Therefore no rotary feed throughs are necessary

ROTA TB-LH/EP-LH

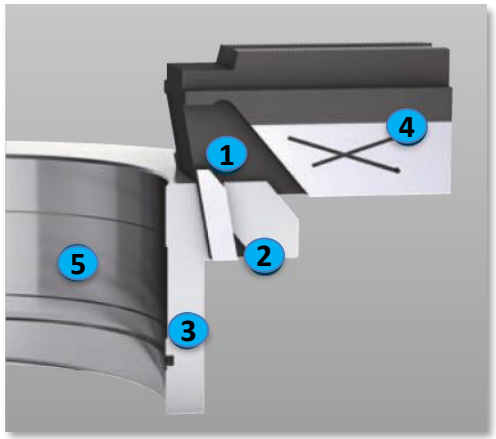
Fast stroke

1. extended jaw stroke
2. clamping stroke
3. piston
4. base jaw
5. extremely large through-hole



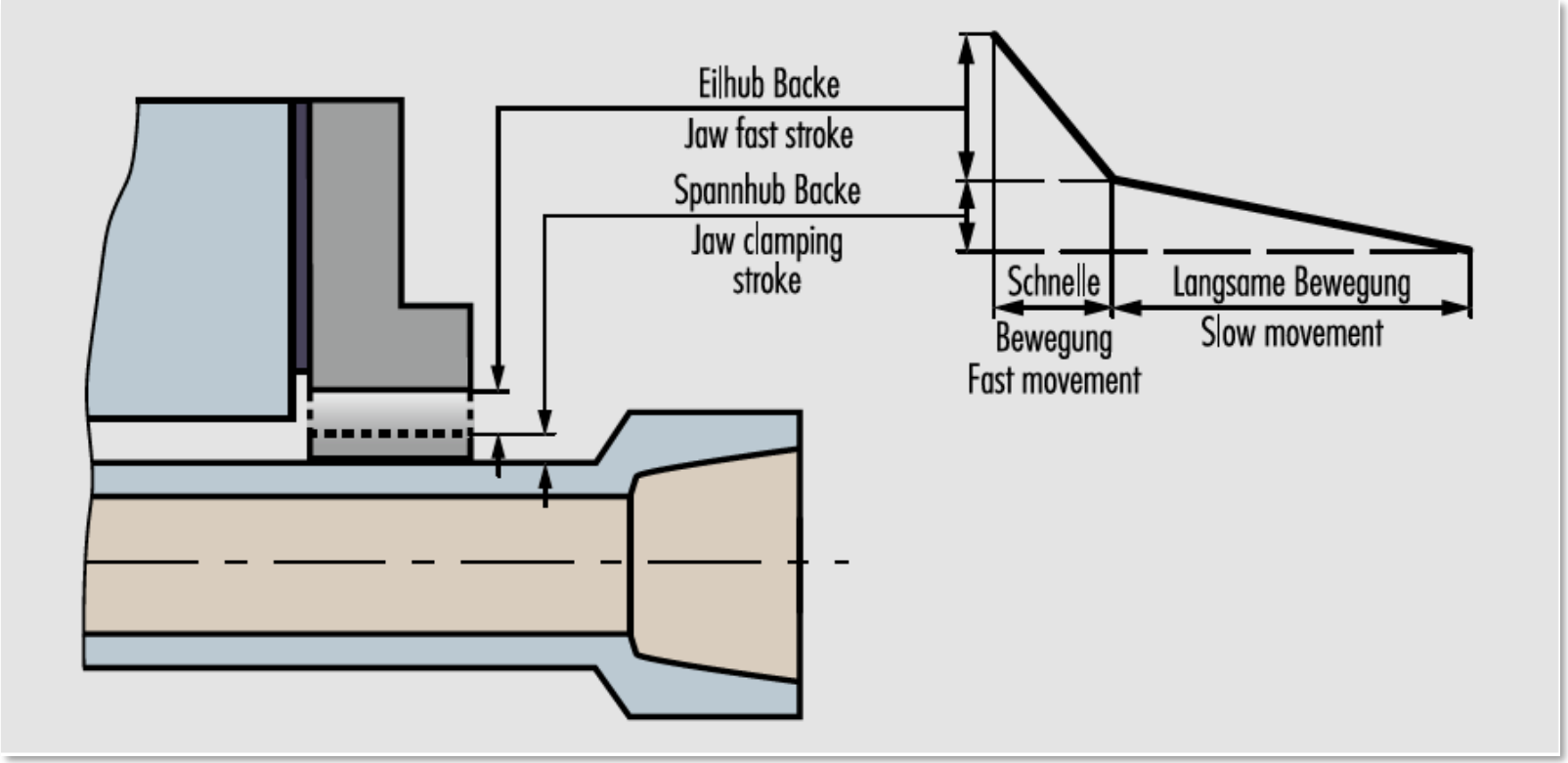
Clamping stroke

1. extended jaw stroke
2. clamping stroke
3. piston
4. base jaw
5. extreme large through-hole



ROTA TB-LH/EP-LH

Principle of function



Fast- and clamping stroke

ROTA TP/TB/EP

Wireless pressure control

Optional for all pneumatic power chucks

1. receiver-antenna
2. protection cover
3. transmitter unit
4. receiver
5. pressure sensor connected with the cylinder

ROTA TP/TB/EP

Pressure monitoring for ROTA TB/EP

1. protection cover
2. transmitter unit
3. channel bores
4. receiver antenna
5. receiver
6. chuck body TB/EP made out of steel
7. pressure sensor connected with the cylinder

ROTA TP/TB/EP

RSS-W1: Wireless Path Control checks secure clamping

Product features

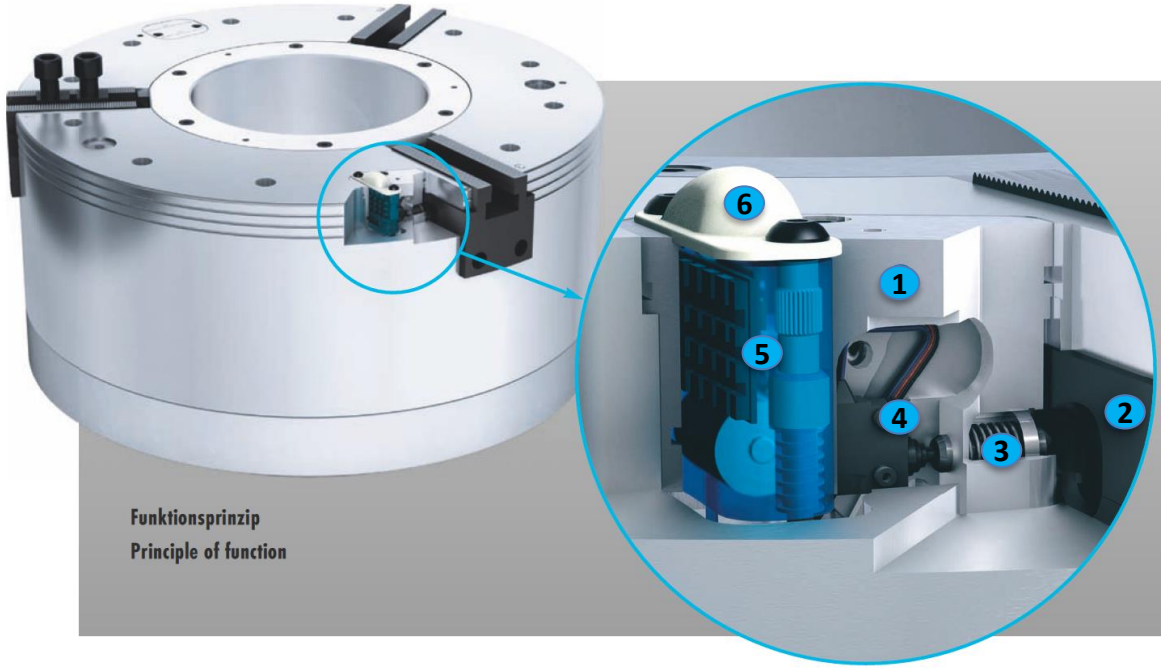
- permanent control of the clamping path
- high degree of safety for machining
- interference-free radio signal transmission
- available for all pneumatic lathe chuck models ROTA TB-LH/EP-LH from SCHUNK

Technical data

- power supply is a lithium battery, lifetime with 1 signal/10 seconds approx. 6 years
- frequency: 868-3 MHz
- short-circuit-proof and overload-proof
- permitted ambient temperature: 0°C up to +55 °C

ROTA TP/TB/EP

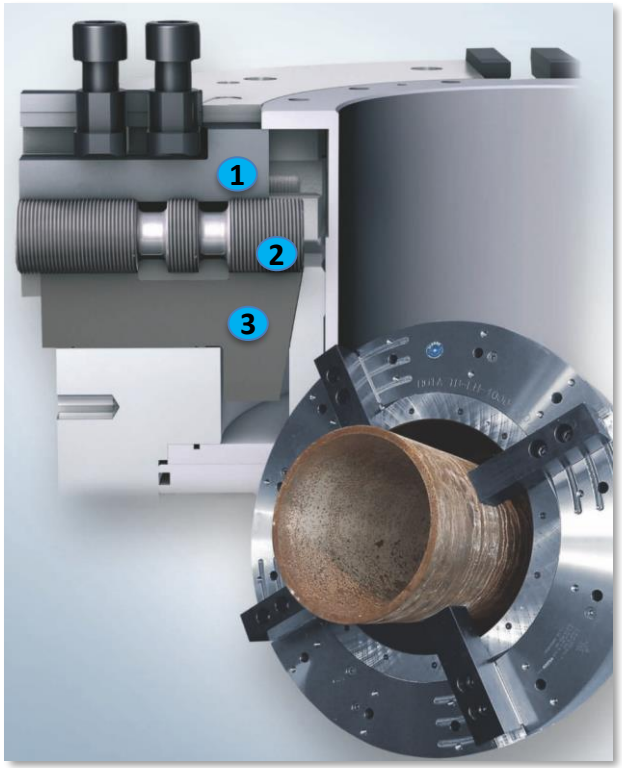
RSS-W1 in detail



1. base body
2. base jaw TB-LH / EP-LH
3. tappet with spring support
4. mechanical feeler
5. transmission unit completely sealed with permanent battery
6. protective cap for the transmission unit

ROTA TP/TB/EP

Functional principle of the individual jaw adjustment for pneumatic air chucks in the size 500 mm - 1000 mm



1. base jaw upper part
2. base jaw lower part
3. Adjustable spindle

Advantages at a glance

- large through hole
- large jaw adjusting range
- high clamping forces transferable
- fast and acurate adjustment possible
- optional with RSS-P1 clamping pressure monitoring

ROTA TP/TB/EP

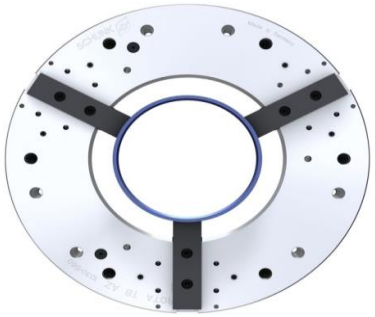
Pneumatic 4-jaw power chucks with individual jaw adjustment

	Max. Drehzahl Max. RPM	Gesamter Backenhub Total jaw stroke	Eilhub Extended stroke	Spannhub Clamping stroke	Verstellbereich pro Backe Adjustment per jaw	Gewicht Weight	Gesamtspannkraft bei 6 bar Clamping force at 6 bar
	[min^{-1}]	[mm]	[mm]	[mm]	[mm]	[kg]	[KN]
TB 500-190 LH	450	25.4	16.9	8.5	25.4	509	220
TB 630-310	450	12	-	-	25.4	690	220
TB 850-375	450	14	-	-	25.4	1211	220
TB 1000-560 LH	450	25.4	15.4	10	25.4	1350	220

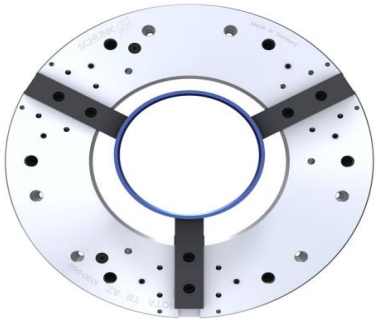
ROTA TB-AZ

Pneumatic Power Chuck:

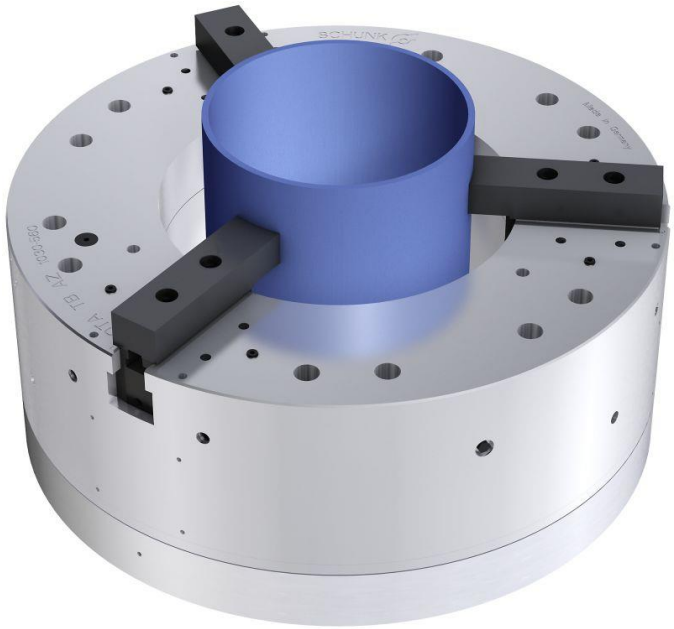
Centric and compensating clamping, automatic change-over



centric clamping



compensational clamping



ROTA TB-AZ

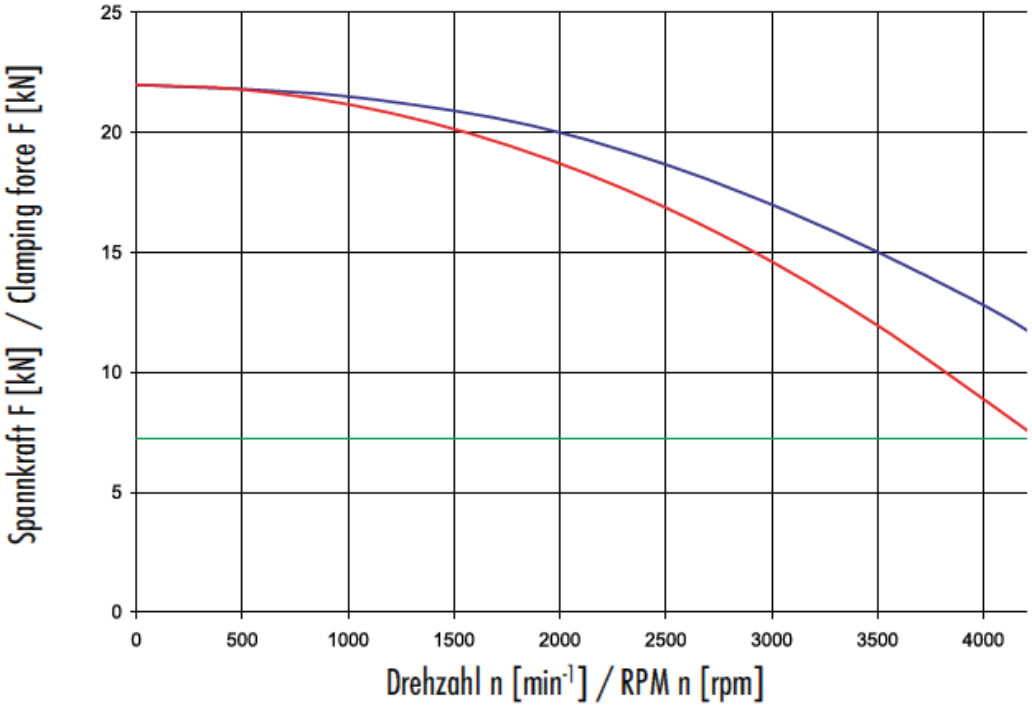
Advantages at a glance

- self-centering and compensational clamping combined in one air chuck
- workpiece position will not be changed through the compensational clamping operation
- automatic change-over through air feed via distributor ring
- large through-hole
- large jaw stroke
- standard jaw interface

	Zentrische Spannung Centric clamping	Ausgleichende Spannung Compensational clamping						
	max. Spannkraft max. Clamping force	max. Spannkraft max. Clamping force	Backenhub Jaw stroke	Eilhub Fast stroke	Spannhub Clamping stroke	max. Drehzahl max. RPM	Gewicht Weight	Massenträgheitsmoment Moment of inertia
	[kN]	[kN]	[mm]	[mm]	[mm]	[min^{-1}]	[kg]	[kgm^2]
TB-AZ 1030-560	280	100	20		20	400	1690	293
TB-AZ 750-375 LH	235	100	25.4	16.2	9.2	750	820	92
TB-AZ 630.275 LH	180	100	25.4	16.2	9.2	1000	720	72
TB-AZ 500-220 LH	155	76	25.4	16.2	9.2	1100	550	27

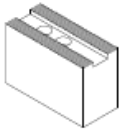
ROTA TP

Clamping force-RPM-diagram ROTA TP 125-26



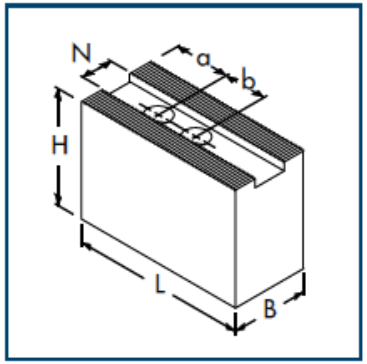
Restspannkraft/Residual clamp. force 33 %

SHB 125 0.7 kg

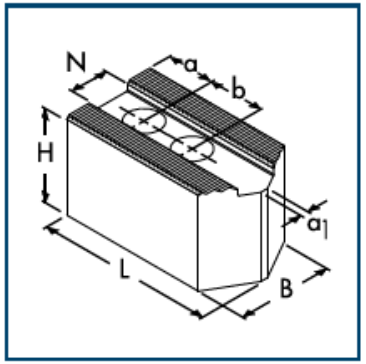


SP-WB 125 1.3 kg

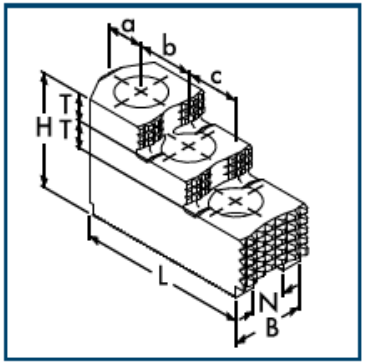
ROTA TP



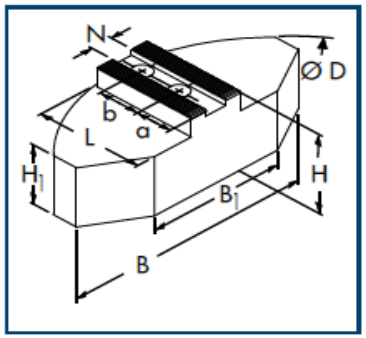
Soft top jaws SP-WB, CWB, SWB and SWB-AL



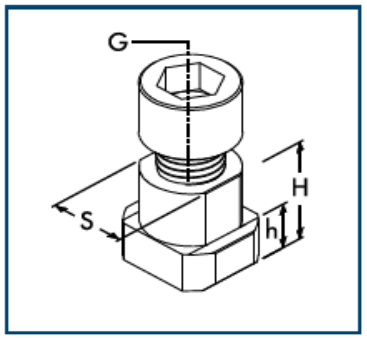
Soft top jaws, SWBL



Hard top jaws, SHB and SP-HB



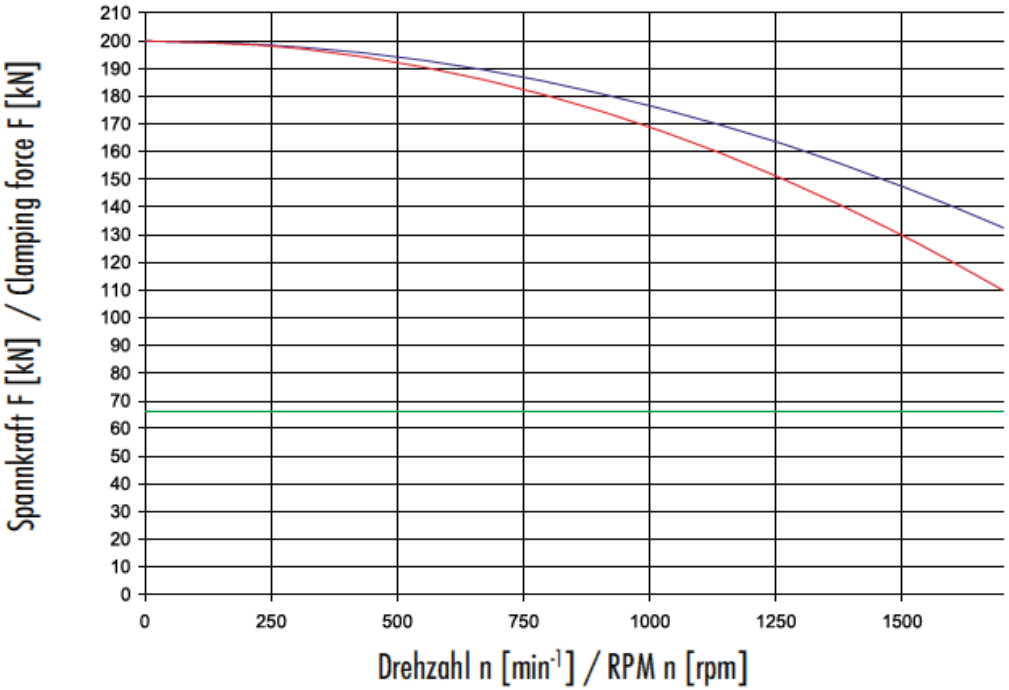
Soft full grip jaws, SWB-SM and SWB-SA



T-nuts-NS

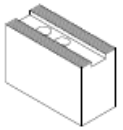
ROTA TB

Clamping force-RPM-diagram ROTA TB 400-115



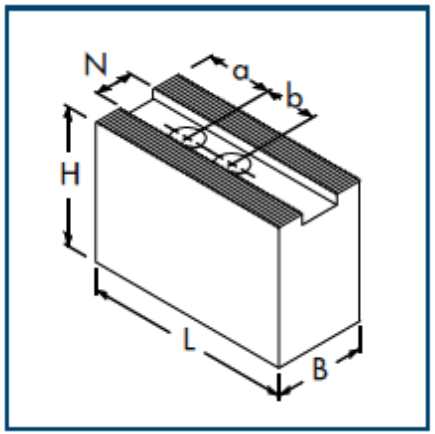
Restspannkraft/Residual clamp. force 33 %

SHB 400 8.0 kg

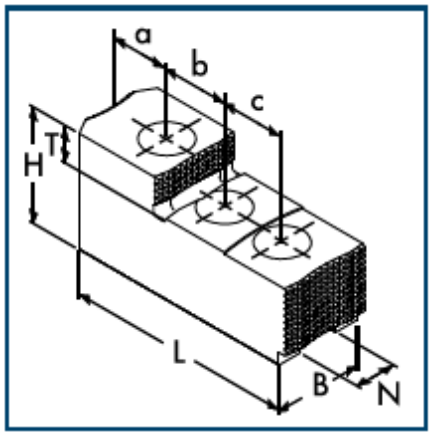


SWB 400 16.0 kg

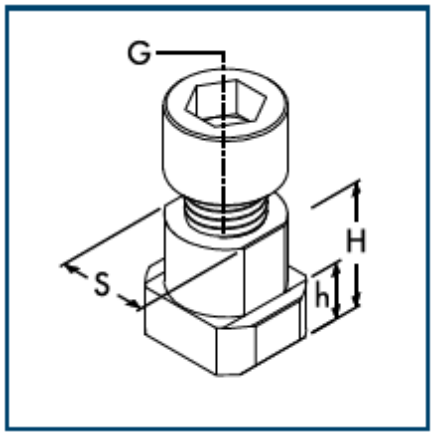
ROTA TB



Soft to jaws, SP-WB, SWB



Hard to jaws, SP-HB, SHB

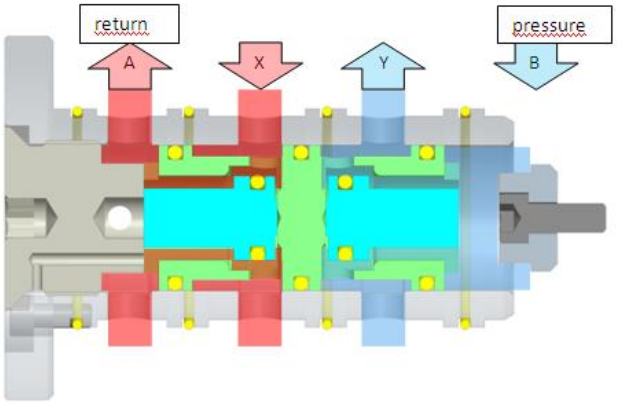


T-nuts, NS

Function check valve

Switchpoint of check valve (unlockable check valve) during clamping and opening.

Clamping:



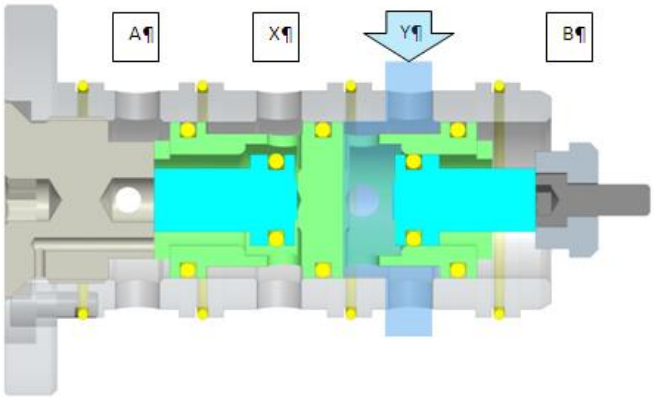
A = to distributor ring

X = cylinder chamber II

Y = cylinder chamber I

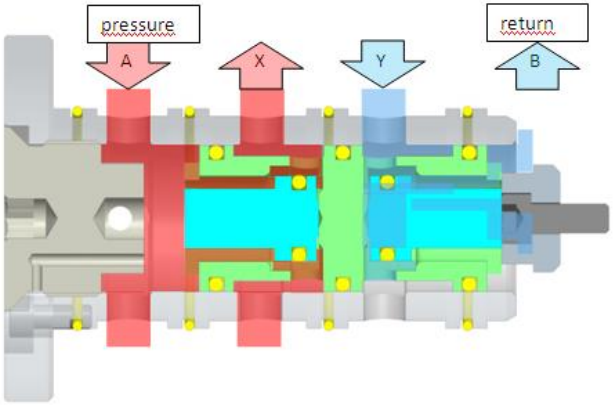
B = from distributor ring

Clamped:



Y = pressure maintenance cylinder chamber II

Function check valve

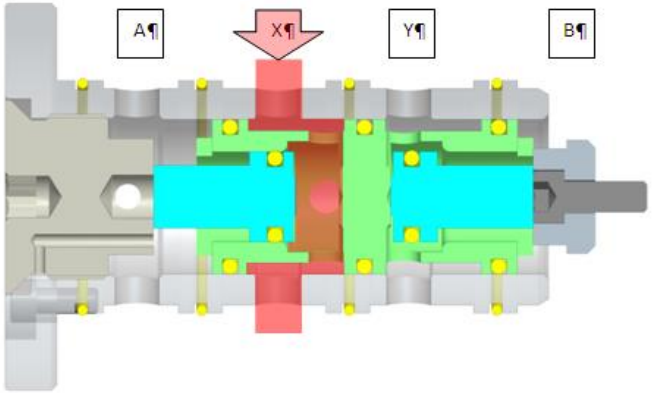


A = from distributor ring

Y = cylinder chamber II

X = cylinder chamber I

B = to distributor ring



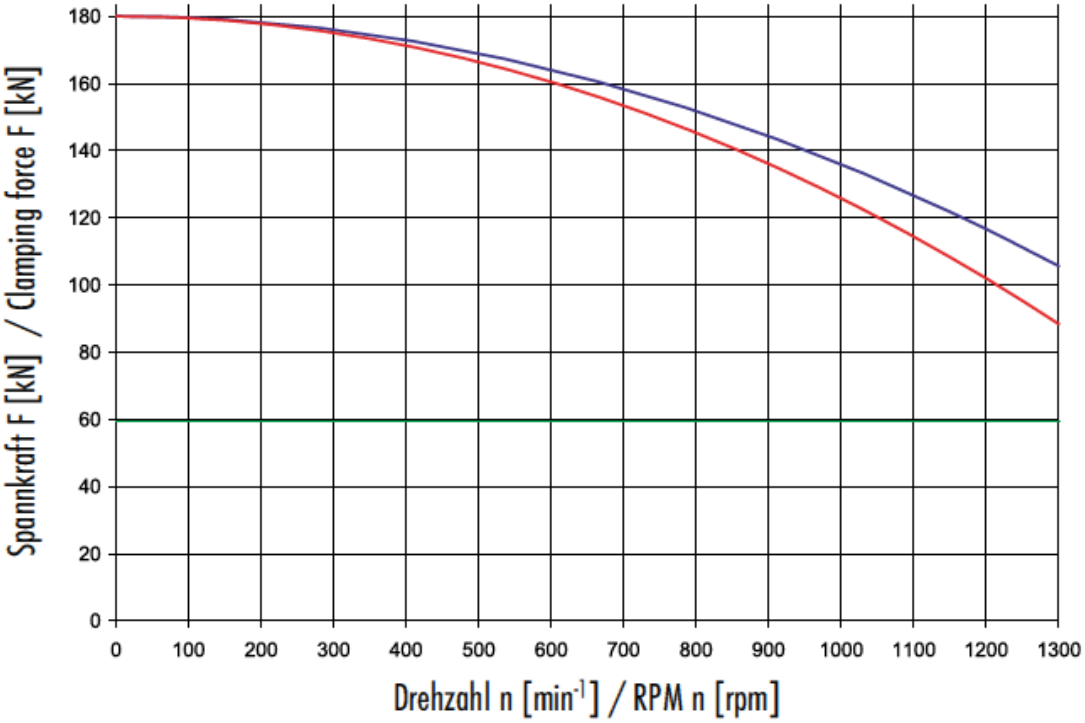
X = pressure maintenance

cylinder chamber I

When the air feed is depressurized the piston in the check valve seals the bore of the distributor ring. By switching the air pressure of the distributor ring is led in the other chamber, which moves the entire check valve in the opposite position.

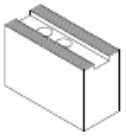
ROTA TB-LH

Clamping force-RPM-diagram ROTA TB-LH 400-140



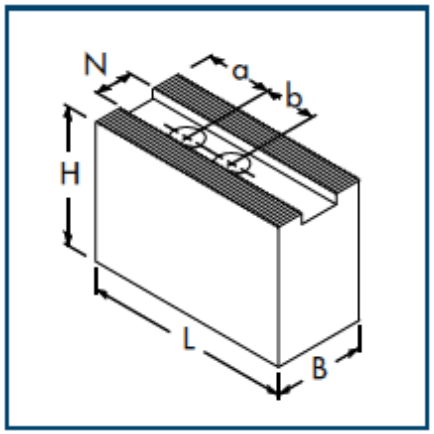
Restspannkraft/Residual clamp. force 33 %

SHB 400 8.0 kg

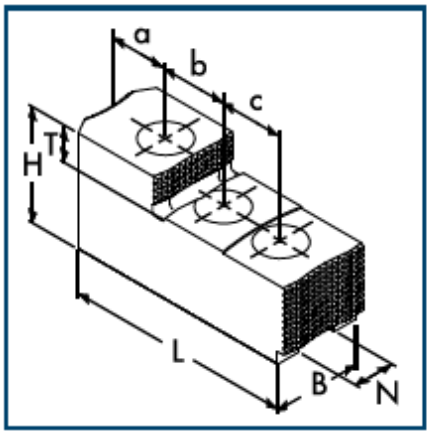


SWB 400 16.0 kg

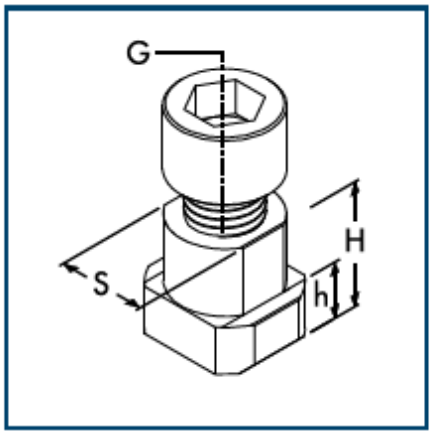
ROTA TB-LH



Soft to jaws, SP-WB, SWB



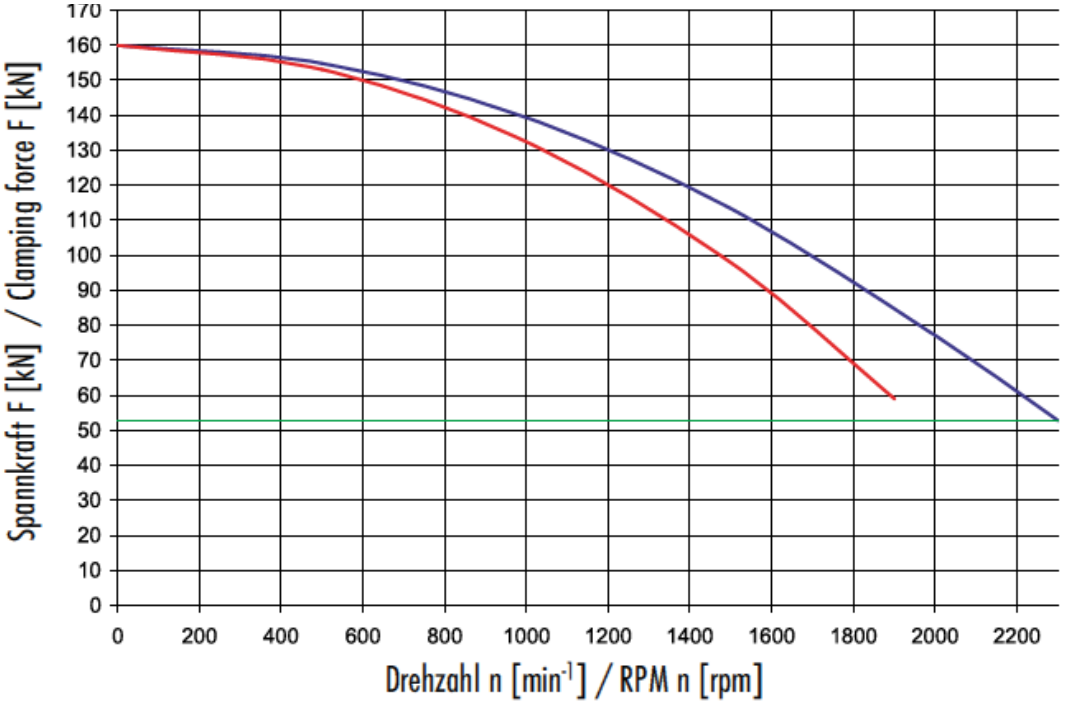
Hard top jaws, SP-HB, SHB



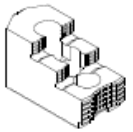
T-nuts, NS

ROTA EP

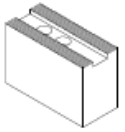
Clamping force-RPM-diagram ROTA EP 380-127



Restspannkraft/Residual clamp. force 33 %

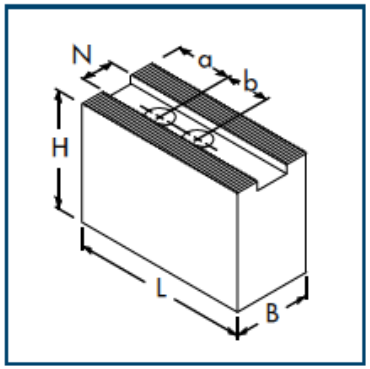


SHB 400 8.0 kg

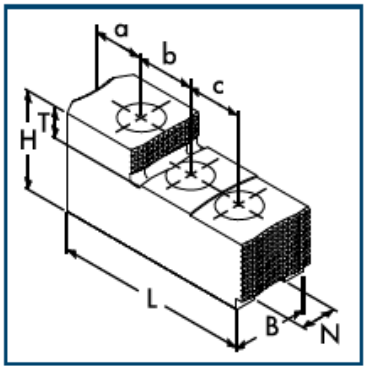


SWB 400 16.0 kg

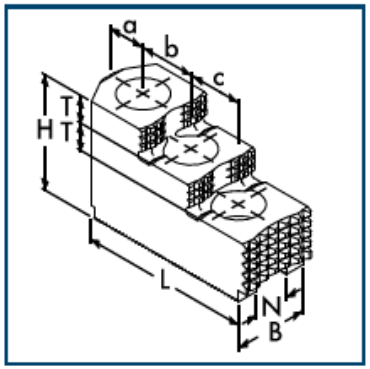
ROTA EP



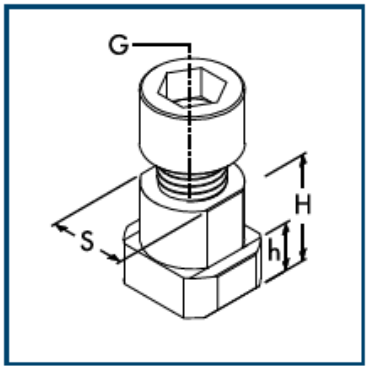
Soft top jaws, SP-WB, CWB, SWB and SWB-AL



Hard top jaws, SP-HB



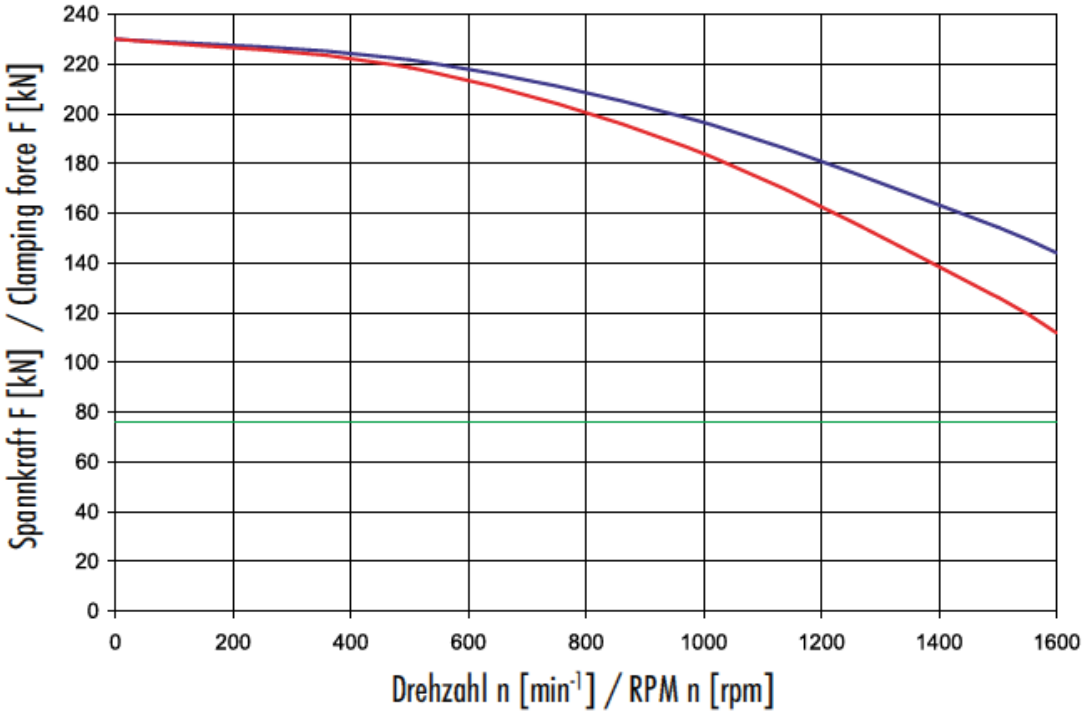
Hard top jaws, SHBc



T-nuts, NS

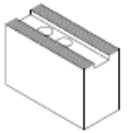
ROTA EP-LH

Clamping force-RPM-diagram ROTA EP-LH 400-165



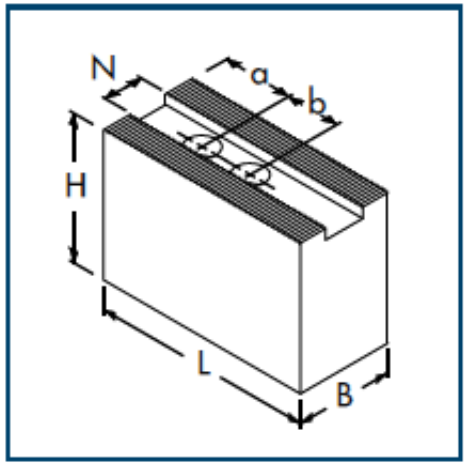
Restspannkraft/Residual clamp. force 33 %

SHB 400 8.0 kg

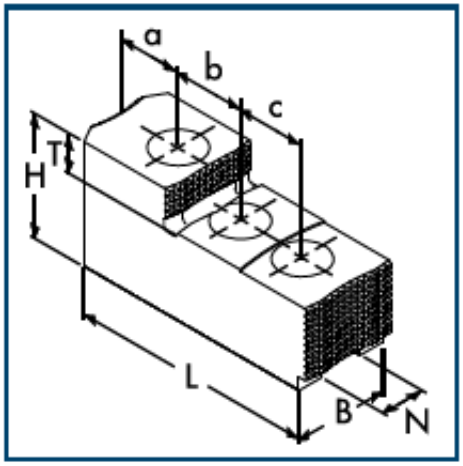


SWB 400 16.0 kg

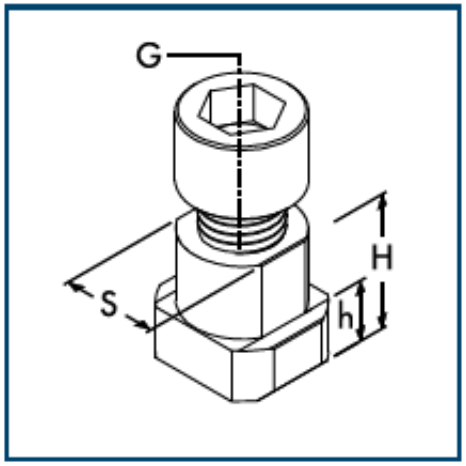
ROTA EP-LH



Soft top jaws, SWB



Hard top jaws, SHB



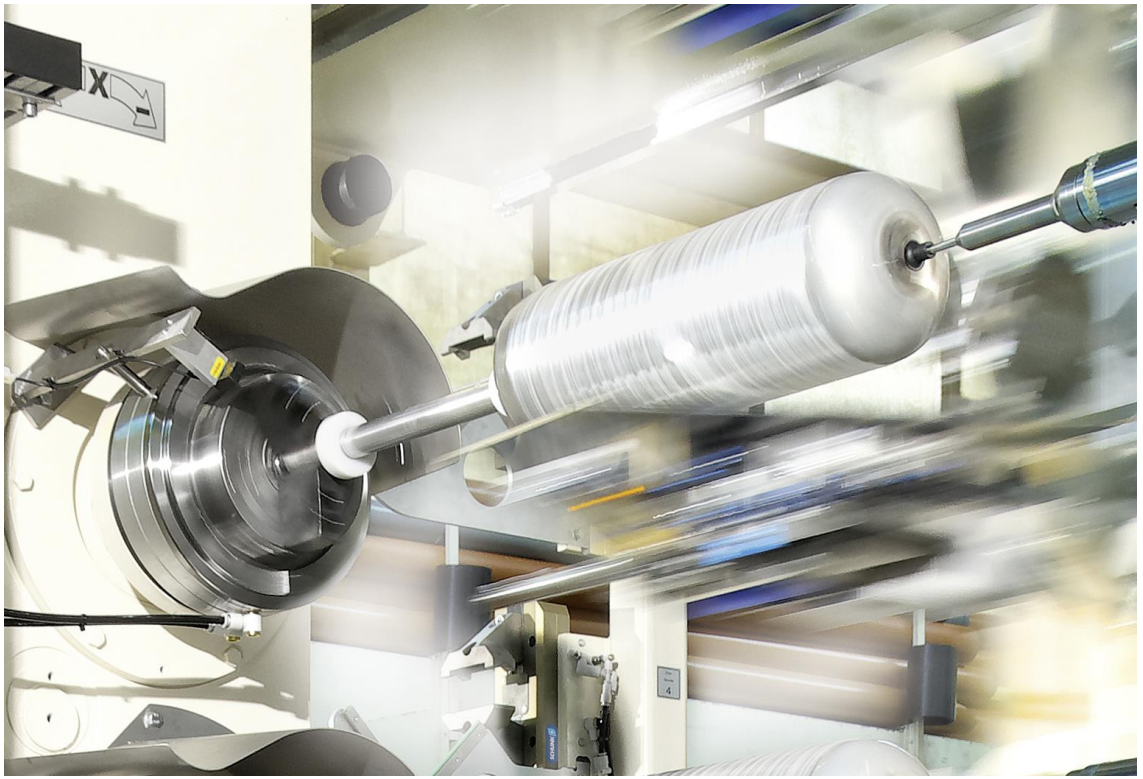
T-nuts, NS

ROTA TP

Application examples

ROTA TP

Application examples



ROTA TP/TB/EP

ROTA TB 1000-560-LH 4

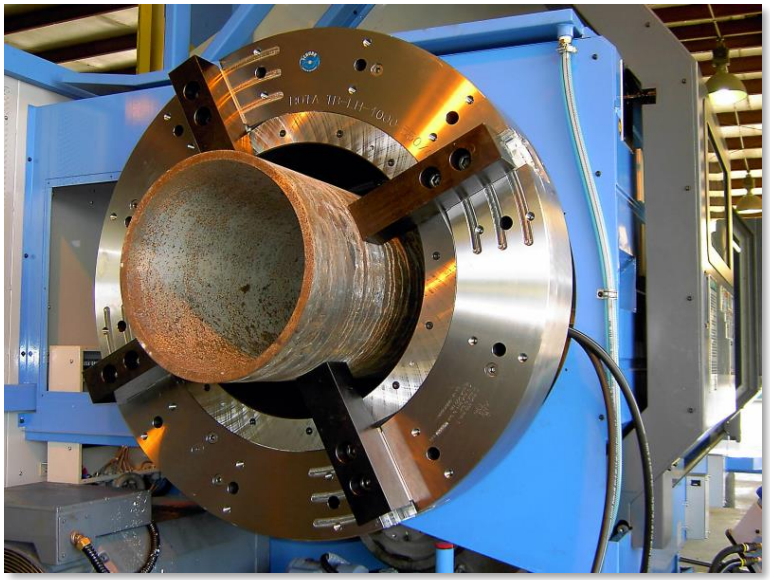
Special version with four jaws and independent top jaws

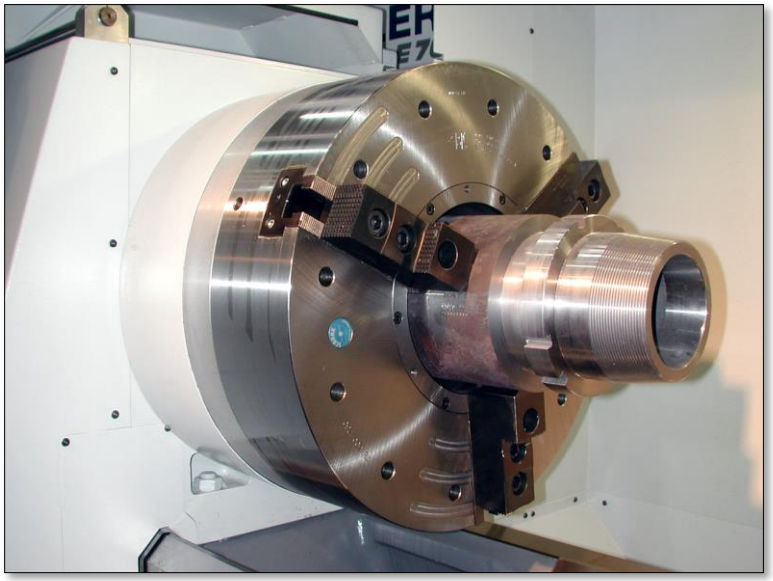
Main advantages

- out-of-round and bent pipes can be aligned by the single adjustable jaws
- very large through-hole (chuck size 1000 mm – through-hole 560 mm)
- chuck in self-contained version with integrated pneumatic clamping cylinder

ROTA TB

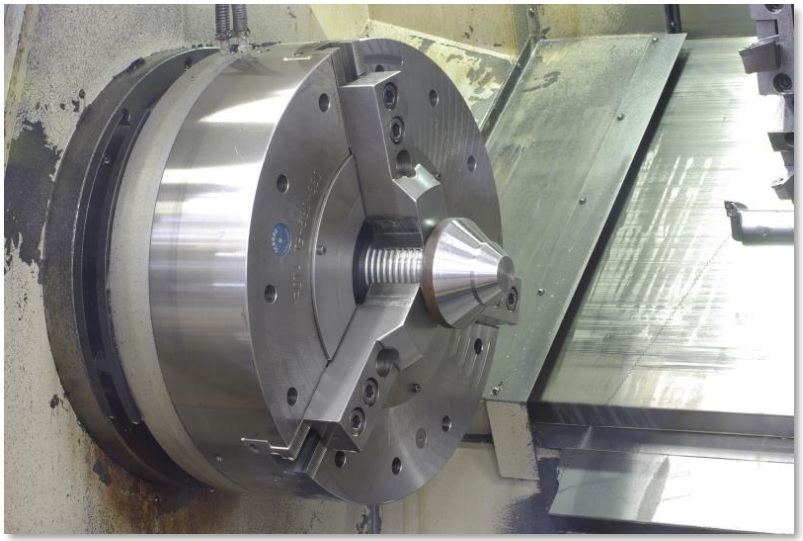
Application examples





ROTA TB

Application examples



Superior Clamping and Gripping

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