



ROTA TB2-LH

**Pneumatic power lathe
chucks with dual stroke
system for bar and pipe
machining**

Pneumatic power lathe chucks with dual stroke system for clamping over large interfering contours

The principle of the ROTA TB2-LH power lathe chuck is based on achieving a long, fast jaw stroke in combination with maximum clamping force at low air consumption. The long jaw stroke allows the chuck for clamping around interfering contours of the workpiece. The special thing about it: Despite a long jaw stroke, the ROTA TB2-LH generates a high clamping force over the clamping stroke, allowing pipes to be clamped in a reliable process in the petroleum industry, for example.



Advantages – Your benefits

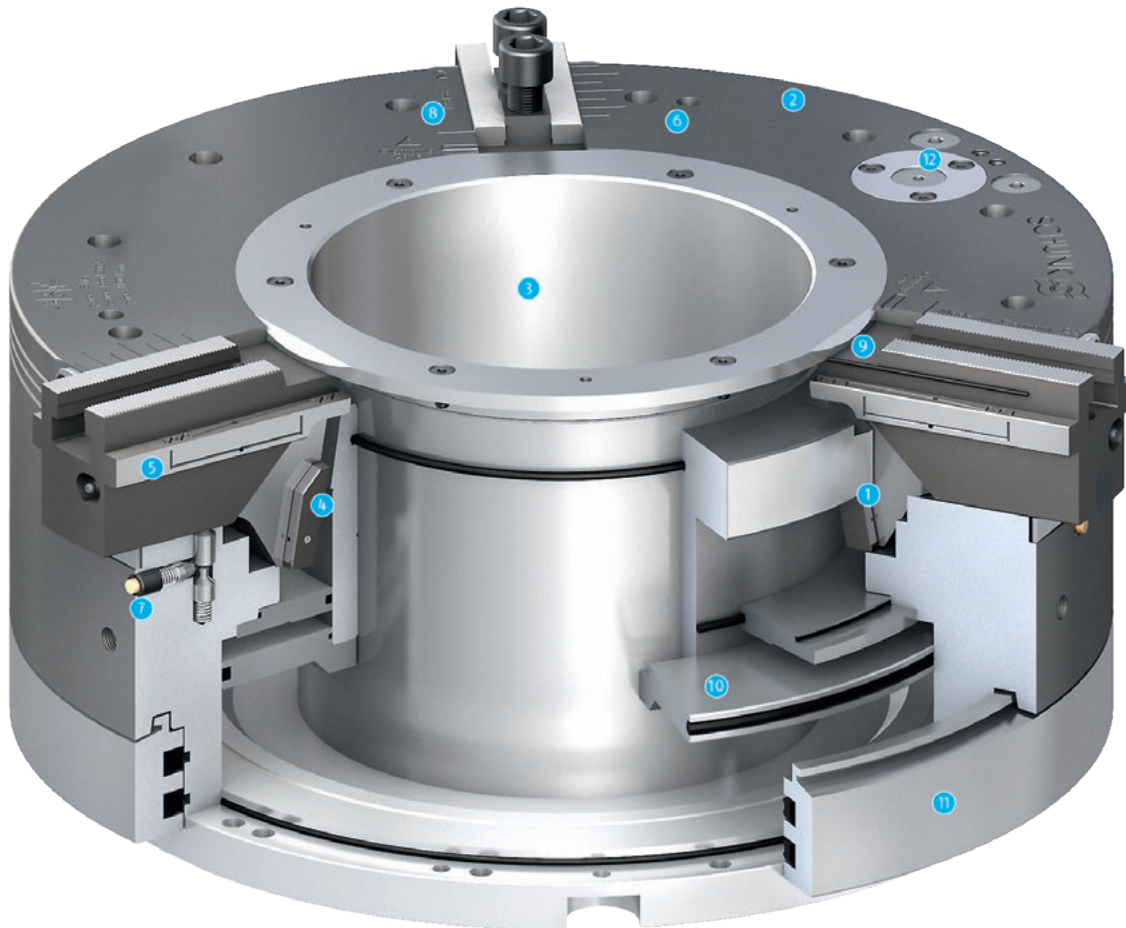
- + Precision wedge hook pneumatic chuck for top quality demands**
Allows excellent machining results
- + Very large through-hole**
Machining all standard pipe diameters
- + High efficiency of the wedge hook system**
Process-reliable clamping due to high clamping forces
- + Visual safety devices**
Maximum operating safety
- + Optimized lubrication system**
Consistently high clamping forces ensured
- + Monitoring of the opening and closing process**
Process reliable operation of the lathe chuck
- + Fast ventilation of the pressure chambers**
Shorter process times
- + Pneumatic cylinder integrated in the chuck**
Especially suited to lathes without a hydraulic cylinder
- + Sealed guideways**
Optimum protection against coolant and chips
- + 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 TB2 470-185 LH	1300	115	20	185
ROTA TB2 520-191 LH	1300	115	38.5	191
ROTA TB2 570-230 LH	1300	220	25.4	230
ROTA TB2 600-275 LH	1100	200	25.4	275
ROTA TB2 630-275 LH	1000	200	38.1	275
ROTA TB2 685-325 LH	900	280	25.4	325
ROTA TB2 850-375 LH	750	240	25.4	375
ROTA TB2 1000-560 LH	500	240	25.4	560

Function of ROTA TB2-LH

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.

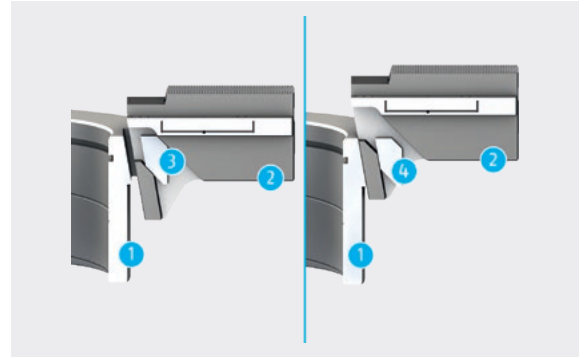


- | | |
|---|--|
| <ul style="list-style-type: none"> 1 Wedge hook drive
Offers constantly high clamping forces in operation 2 Hardened and extremely rigid base body
Therefore a longer service life at highest precision. Even with maximum clamping force 3 Very large through-hole
For machining of all standard raw material diameters 4 Dual stroke system
Ensures a large jaw stroke in combination with high clamping forces 5 Optimized lubrication system
For a high level of efficiency 6 Mounting thread
For workpiece stops | <ul style="list-style-type: none"> 7 Indicator pin
For visual stroke monitoring of the fast stroke and clamping stroke 8 Jaw stroke display
To verify the jaw stroke 9 Seal of the base jaw guidance
For sealing against coolants and chips 10 Pneumatic cylinder integrated in the chuck
For direct control of the lathe chuck without an additional cylinder 11 Static distributor ring
For air supply of the lathe chuck 12 Pressure maintenance valve
Provides for enduring clamping force during rotation |
|---|--|

Dual stroke system

The ROTA TB2 power lathe chuck is available with the dual stroke system (LH) for safe loading and clamping of workpieces with an interfering contour. The fast jaw stroke achieves a long jaw stroke. Clamping is not allowed on the fast stroke, since the high transmission ratio means that only minimal clamping force is available. The maximum chuck clamping force is available on the clamping stroke and the workpiece can be reliably clamped.

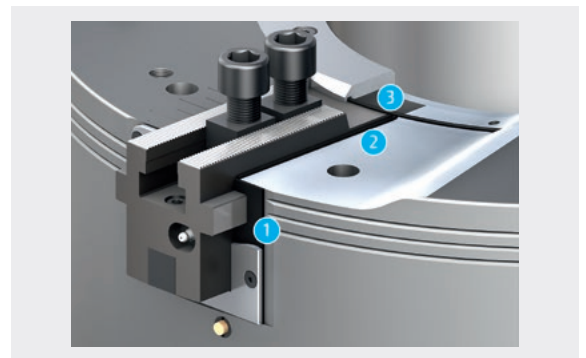
- ❶ Chuck piston
- ❷ Base jaw
- ❸ Fast stroke
- ❹ Clamping stroke



Seal of the base jaw guidance

To protect the ROTA TB2-LH against dirt and coolant, the base jaw was equipped with an additional 3-way sealing.

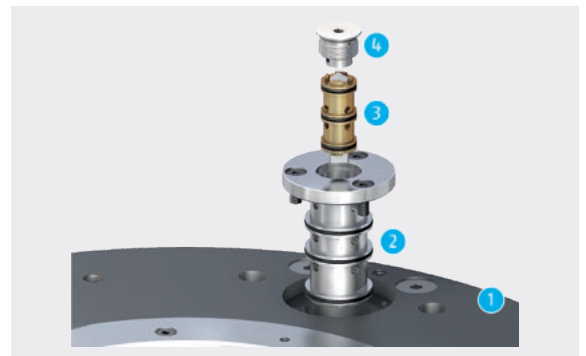
- ❶ Front-end profile sealing element
Between the chuck body and base jaw with additional cover plate for the mounting
- ❷ Sealing element
For protection of the base jaw guidance
- ❸ O-ring
Between base jaw and center sleeve



Exchangeable valve

In the new ROTA TB2-LH chuck generation starting from size 570, the pressure maintenance valve is located in an exchangeable valve insert. This allows fast and inexpensive replacement not only of the pressure maintenance valve when needed, but also the valve insert. This ensures prolonged and reliable functioning even of older chucks.

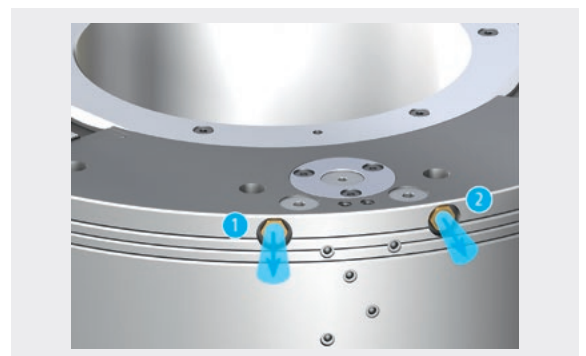
- ❶ Chuck body
- ❷ Valve insert
- ❸ Pressure maintenance valve
- ❹ Sealing cap



Fast ventilation

To remove the air from the cylinder via the shortest path, the ROTA TB2-LH features one integrated air duct for opening and one for closing. The escaping air then no longer has to exit via the air seal ring, but instead is released via the shortest path.

- ❶ Escaping air
During opening of the chuck
- ❷ Escaping air
During closing of the chuck



Optimized lubrication system

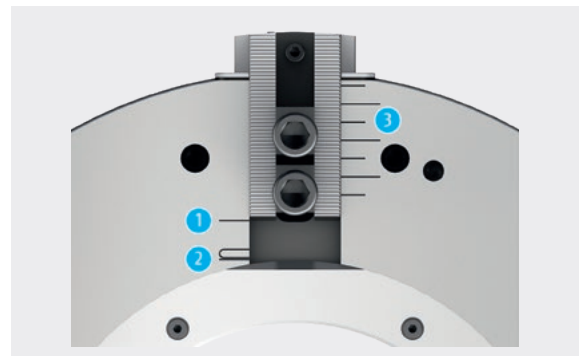
Each base jaw is optimally supplied with grease via a lubrication nipple on the front. An intelligent distribution system ensures even distribution of the grease on all sliding planes of the base jaw for consistently high clamping forces.



Jaw stroke display

To make jaw change as easy as possible for the machine operator, the ROTA TB2-LH is equipped with a visual display for the clamping range and the top jaw position. This allows fast and easy fastening of all three top jaws in the identical position. At the same time the operator can check whether the clamping stroke is fully achieved (when the jaws are in contact with the workpiece).

- 1 **Chuck opened**
Here machining shouldn't be started
- 2 **Clamping stroke range**
Here the workpiece can be clamped
- 3 **Visual display**
For the orientation of the jaw serration



Visual monitoring of the dual stroke system

In addition to the visual indicator on the chuck face, the base jaws of the LH version are also monitored by a radial indicator pin. If the pin is extended out of the chuck, the workpiece must not be clamped, since the base jaw is still in the fast jaw stroke. If the indicator pin is retracted, the workpiece can be reliably clamped with full force on the clamping stroke.

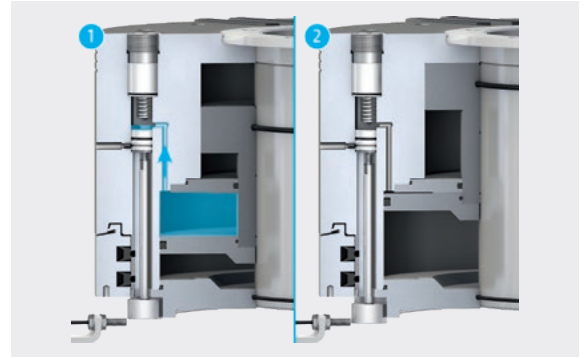
- 1 **Visual indicator pin LH version**



Pressure monitoring via sensor (optional)

During machining the pneumatic pressure in the lathe chuck is monitored by a spring-loaded switch element. If the pressure drops, the spring pushes the control cam backwards. The inductive proximity switch detects the position and reports it to the machine control system. The corresponding mounting kit and sensors must be ordered separately for this purpose (see Accessories).

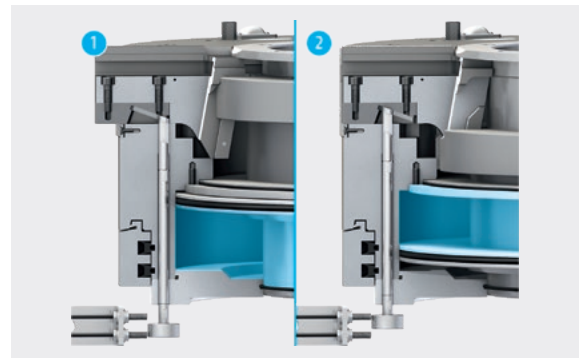
- ❶ **Operating pressure**
Sufficiently available
- ❷ **Pressure loss**
Is detected by proximity switch



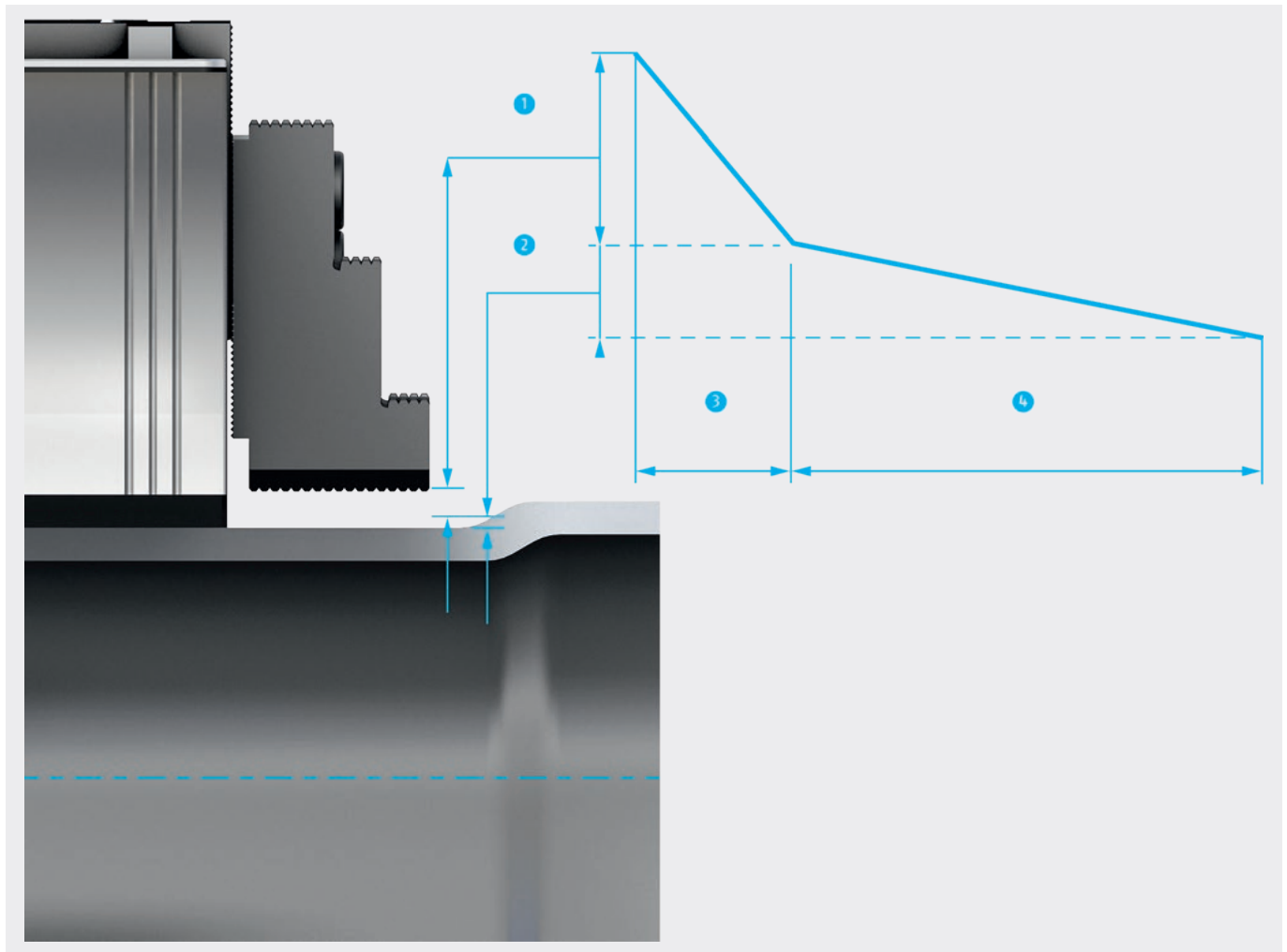
Path control of the chuck jaws (optional)

To ensure reliable clamping of the workpiece on the dual stroke system, the chuck can optionally be equipped with an inductive proximity switch for stroke monitoring. If clamping already takes place on the fast jaw stroke, this is detected and signaled to the machine control system.

- ❶ **Chuck completely opened**
- ❷ **Chuck in clamping position on the clamping stroke**



Functional principle of the dual stroke system (fast and clamping stroke)



In order to achieve a possibly long jaw stroke, a so-called fast jaw stroke is upstreamed to the actual clamping stroke, and an overall stroke of up to 38 mm per jaw can be achieved. Due to the long jaw stroke, workpieces with interfering contours can be loaded collision-free.

Important: no workpiece should be clamped on the fast jaw stroke, since its clamping force is not sufficiently high. The LH lathe chucks can only be used for O.D. clamping.

- ❶ Fast stroke
- ❷ Clamping stroke
- ❸ Fast movement
- ❹ Slow movement



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Technical data

Spindle size	ID	Max. rotational speed	Max. clamping force (at 6 bar)	Actuation pressure	Moment of inertia	Weight
		[min ⁻¹]	[kN]	[bar]	[kgm ²]	[kg]
Z510	0818326	900	280	3 – 8	37.3	500

Scope of delivery

Chuck, T-nuts with screws, chuck mounting bolts, elbow-unions G 3/8 on the distributor ring, couplings for connection to the electric compressed air control unit, eye bolt, operating manual; without distributor ring mounting bracket, without top jaws

Notes

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.

Important note for lathe chucks with dual stroke system

Lathe chucks with dual stroke system (LH series) are not allowed to be used for I.D. clamping.

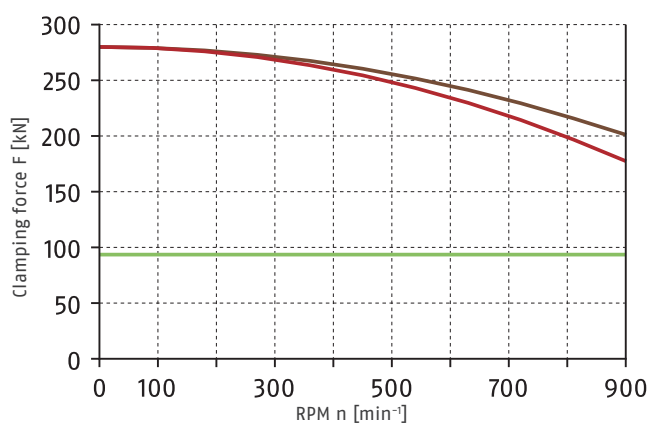
Moreover, no workpieces are allowed to be clamped on the fast jaw stroke, since due to the long jaw strokes the resulting clamping forces are lower.

Please make sure that the whole fast stroke plus at least 1/3 of the clamping stroke (corresponds to the basic covering) of the TB2-LH lathe chuck is executed during tool clamping.

Further technical data

Chuck type	Through-hole	Stroke/jaw	Fast stroke/jaw	Clamping stroke/jaw	Air consumption/jaw stroke at 6 bar	Center jaw height
	[mm]	[mm]	[mm]	[mm]	[l]	[mm]
ROTA TB2 685-325 LH	325	25.4	16.9	8.5	54.1	124.5

Clamping force-RPM-diagram



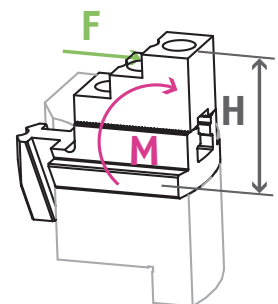
Required minimum clamping force F_{spmin} 33%

SP-HB 630
15.46 kg

SP-WB 630
32.35 kg



Load of base jaw guidance



$M_{max} = 11620$ Nm

Adapter plates

Z-mount on short taper ISO 702-1



Technical data

Description	ID	Suitable for	D1	D2 [mm]	D3	D4 [mm]	D5 [mm]	D6 [mm]	G	H [mm]	T1 [mm]	T2 [mm]
FFV 510-A11	0836070	ROTA TB2 685-325 LH	Nr. 11	193	Z510	21 (6x60°)	32	610	M16 (12 x 30°)	42.5	235	580
FFV 510-A15	0836071	ROTA TB2 685-325 LH	Nr. 15	265	Z510	26 (6x60°)	38	610	M16 (12 x 30°)	50	330.2	580
FFV 510-A20	0836072	ROTA TB2 685-325 LH	Nr. 20	325	Z510	26 (6x60°)	38	610	M16 (12 x 30°)	50	463.6	580

Reduction adapter plates

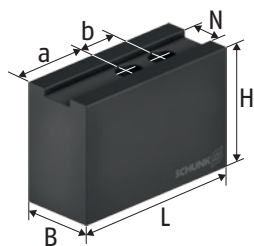
All flanges on the pneumatic power chuck are designed as reducing flanges.

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.

Soft top jaws

with fine serration 90°



SP-WB
Soft top jaws

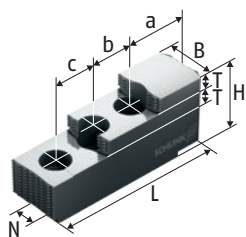
Technical data

Chuck type	Description	ID	N [mm]	B [mm]	H [mm]	L [mm]	a [mm]	b [mm]	Screws	m/SET
ROTA TB2 685-325 LH	SP-WB 630	0124107	30	75	90	240	133	65	M24	32.4
ROTA TB2 685-325 LH	SP-WB 800	0124108	30	75	90	300	167	65	M24	41.0

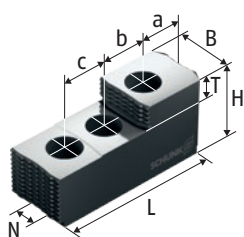
Our complete range of chuck jaws can be found online in our Chuck Jaw Quickfinder and on [schunk.com](https://www.schunk.com)

Hard stepped top jaws

with fine serration 90°



SP-HB
Hard stepped top jaws



SP-HB
Hard stepped top jaws

Technical data

Chuck type	Description	ID	N [mm]	B [mm]	H [mm]	L [mm]	T [mm]	a [mm]	b [mm]	c [mm]	Screws	m/SET [kg]
ROTA TB2 685-325 LH	SP-HB 630	0125106	30	75	88	174.5	30	44.5	50	50	M24	15.5
ROTA TB2 685-325 LH	SP-HB 800	0125108	30	75	105	250	22	91.8	60	60	M24	29.1

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

T-nut

with fine serration 90°



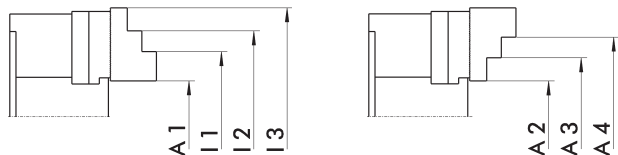
NS
T-nut

Chuck type	Description	ID	N	B	H	H1	L	Cyl.-screw	Max. adm. tightening torque
			[mm]	[mm]	[mm]	[mm]	[mm]		[Nm]
ROTA TB2 685-325 LH	NS 240-1	0140114	30	42	41	15	34	M24 x 70	450

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

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]
ROTA TB2 685-325 LH	SP-HB 630	0125106	260 - 534	282 - 494	485 - 685

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 TB2 685-325 LH	IFT Set	1404235

Extension set for large chucks

For use as an extension of the IFT measuring head for measuring the jaw clamping force of large chucks of Ø 400 mm and more.



Suitable for	Description	ID
ROTA TB2 685-325 LH	IFT adapter set	1498512

Maintenance unit

For processing the required compressed air.



Suitable for	Description	ID
ROTA TB2 685-325 LH	WEH 1/4"	0890021

Pressure measuring unit

For checking pressure tightness.



Suitable for	Description	ID
ROTA TB2 685-325 LH	DMG Ø24-NPT1/4"	8702680

Pressure monitoring retrofit kit

Retrofit kit for monitoring pneumatic pressure during machining, consisting of control cam, compression spring and other accessories.

An inductive proximity switch is also required.



Suitable for	Description	ID
ROTA TB2 685-325 LH	NRS-PM	0818205

Inductive proximity switches

For pneumatic power lathe chucks for permanent pressure and/or path monitoring during processing in two versions. Opener (ID 9987327) and closer (ID 9986713).



Suitable for	Description	ID
ROTA TB2 685-325 LH	BES M12MI-POC40B-S04G	9987327
ROTA TB2 685-325 LH	BES M12MI-PSC40B-S04G	9986713

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

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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