

NEW

PATENT

EP 3620247B1



TGC MULTI-RANGE CHUCK
FOR AUTOMATED PRODUCTION



FOR AUTOMATED PRODUCTION WITH MULTI-RANGE CLAMPING

Improve your productivity and reduce costs!

In modern manufacturing, batch sizes continue to decrease and machining processes become increasingly complex. At the same time, however, there is a growing demand for fully automated production, which makes it possible to reduce staff costs and increase productivity. To realise the full potential of modern production machinery, it is essential to have a variable diameter clamping device on hand! In high-volume production, different production batches – which may also involve different chucking diameters – should be able to be machined without the need for manual tooling changes. Due to the complex geometries of the workpieces, a slim contour to prevent collisions is essential to ensure collision-free tool retraction. To ensure that workpieces can be produced at the highest possible cutting rate but with the best possible quality, stable and absolutely precise clamping is essential.

With the TGC multi-range chuck, we have succeeded in reliably meeting all these requirements. Whether manufacturing or re-sharpening mono-block tools (milling cutters, drills, taps or reamers), our premium TGC chuck allows us to guarantee the highest concentricity across the entire clamping range. Moreover, we are able to adapt the clamping device flexibly to the machine-specific interfaces and customise the variable clamping range to the customer's specifications.

In short – we create the ideal solution for you, so that you can actually enhance your productivity and cut down on costs!

Advantages



- Reduction in set-up times
- Highest precision ≤ 0.005 mm
- Optional sealing air supply for maximum service life
- Minimal wear at the clamping point thanks to axially fixed carbide clamping jaws
- Suitable for use on tool grinders, grinding machines and lathes

Function



- Variable clamping range
- Interface to the axial stops
- Patented clamping technology
- Various operating options

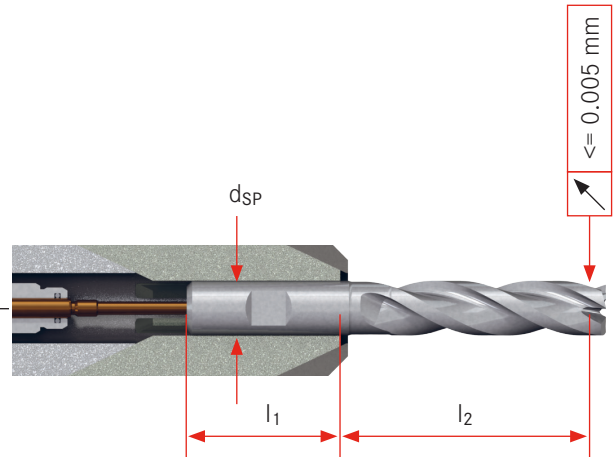
YOUR BENEFITS AT ONE GLANCE



Maximum concentricity

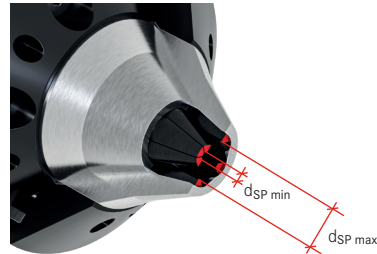
A concentricity of ≤ 0.005 mm can be attained within the following conditions:

- Clamping length l_1 : min. 3 times the clamping diameter d_{SP} or min. 25 mm and 14 mm for the TGC Micro
- Measuring point l_2 no more than 4 times the clamping diameter d_{SP} away from the clamping jaws



Variable clamping range as a set-up time killer

- No need for manual collet changes
- Customised clamping ranges available on request
- Axially fixed clamping jaws across the entire clamping range
- Continuously variable clamping across the entire clamping range, without any need for re-alignment



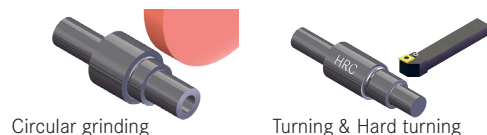
High machine compatibility

- Add-on assemblies exist for Rollomatic, Studer, Junker, Schütte and Benzinger
- Can be adapted to all standard machine spindles on the customers request



Wide range of potential applications

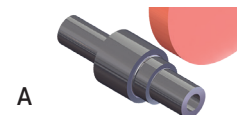
- For tool grinding machines
- For grinding machines
- For lathes



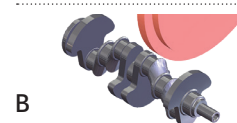
TGC^{Compact}



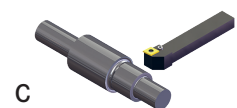
Suitability according to machining process:



A
Cylindrical grinding



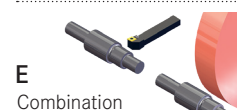
B
Non-circular grinding



C
Turning



D
Hard turning



E
Combination Grinding/hard turning



Explanation of symbols:
SwissChuck.com

Typ TGC^{Compact} | cylinder-operated

Chuck	SX1047103	SX1040857	SX1042284
Clamping range	ø1.5 – 14.5 mm	ø3 – 16 mm	ø13 – 26 mm
Outside diameter	ø112 mm	ø112 mm	ø128 mm
Overall height at spindle flange	100 mm	100 mm	121.5 mm
Max. actuating force	8'000 N	8'000 N	8'000 N
Max. clamping force	12'000 N	12'000 N	12'000 N
Max. speed	4'000 rpm	4'000 rpm	2'500 rpm
Piston stroke (clamping cylinder)	17.5 mm	17.5 mm	17.5 mm
Opening	15 mm	16.5 mm	17 mm



Machine compatibility

Machine	Add-on assembly	Spindle flange	Threaded adapter	Draw tube	Remarks
Adelbert Haas Radical SK50	SZ1041754	-	SX1041798	SM1028749	WP receiving depth to ø15 x L310
Adelbert Haas Radical HSK80	SZ1039549	-	-	SX1045159	WP receiving depth to ø16 x L264
Walter Mini-Power	SZ1046711 (SZ1042000)	SX1045214	SM1046710 (SM1045230)	SX1045316	WP receiving depth to ø16 x L280
Walter Power					
Walter Power 400					
Walter Vision 400L					
Walter Vision 700L					
Schaublin 125 CCN	SZ1042401	SX1042402	SX1042440	-	WP passage to ø16mm

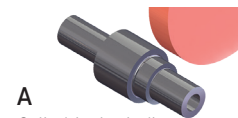
Compatibility data for additional machine types is available on request.

TGC^{Micro}

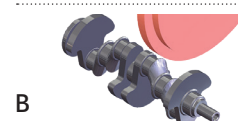


Explanation of symbols:
SwissChuck.com

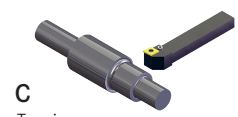
Suitability according
to machining process:



A
Cylindrical grinding



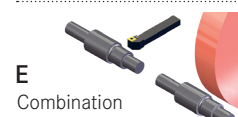
B
Non-circular
grinding



C
Turning



D
Hard turning



E
Combination
Grinding/hard turning

Typ TGC^{Micro} | cylinder-operated

Chuck	SX1045475	SX1047446	SX1046989
Clamping range	ø0.6 - 10 mm	ø2 - 11 mm	ø3 - 12 mm
Outside diameter	ø74 mm	ø74 mm	ø74 mm
Overall height at spindle flange	75 mm	70 mm	70 mm
Max. actuating force	2'500 N	2'500 N	2'500 N
Max. clamping force	2'500 N	2'500 N	2'500 N
Max. speed	4'000 rpm	4'000 rpm	4'000 rpm
Piston stroke (clamping cylinder)	10.5 mm	10 mm	10 mm
Opening	11 mm	12 mm	12 mm



Machine compatibility

Machine	Add-on assembly	Spindle flange	Threaded adapter	Draw tube	Remarks
Rollomatic GrindSmart@529XS	SZ1048242	-	SX1039357	SX1039361	WP passage to ø5mm
Rollomatic GrindSmart@529XW					
Rollomatic GrindSmart@629XS					WP receiving depth to ø12 x L150
Rollomatic GrindSmart@629XW					
Rollomatic GrindSmart@630XS					
Rollomatic GrindSmart@630XW	SZ1025386	-	SX1031685	-	WP passage to ø5mm
Rollomatic GrindSmart@630XW3					
Rollomatic GrindSmart@630RS					WP receiving depth to ø12 x L38
Rollomatic GrindSmart@630RW					
Rollomatic GrindSmart@630RW3					
Strausak Strausak One	SZ1040308	SX1040653	SX1047046	SX1047045	WP receiving depth to ø12 x L319
Adelbert Haas Radical SK50	SZ1039388	SX1039497	-	SX1039391	WP receiving depth to ø12 x L247
Adelbert Haas Radical HSK80	-	SX1039497	-	SX1039391	WP receiving depth to ø12 x L247
Benzinger DOLittle B2	SZ1038955	SX1038960	SX1038967	-	WP receiving depth to ø12 x L18

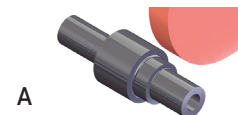
Compatibility data for additional machine types is available on request.

TGC^{Macro}

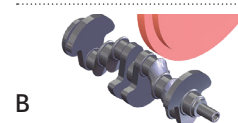


Explanation of symbols:
SwissChuck.com

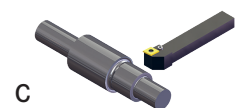
Suitability according
to machining process:



A
Cylindrical grinding



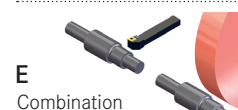
B
Non-circular
grinding



C
Turning



D
Hard turning



E
Combination
Grinding/hard turning

Typ TGC^{Macro} | cylinder-operated

Chuck	SX1045155	SX1043888 / SX1033695	SX1033025
Clamping range	ø2 - 17 mm	ø5 - 20.4 mm	ø10 - 25.4 mm
Outside diameter	ø135 mm	ø135 mm	ø135 mm
Overall height at spindle flange	109 mm	106 mm	106 mm
Max. actuating force	10'000 N	10'000 N	10'000 N
Max. clamping force	10'000 N	10'000 N	10'000 N
Max. speed	2'500 rpm	2'500 rpm	2'500 rpm
Piston stroke (clamping cylinder)	13.5 mm	13.5 mm	13.5 mm
Opening	-	17 mm / 20.5 mm	17 mm



Machine compatibility

Machine	Add-on assembly	Spindle flange	Threaded adapter	Draw tube	Remarks
Rollomatic GrindSmart®830XW	SZ1033037	–	SX1033033	–	WP passage to ø6mm
	SZ1043898				WP receiving depth to ø25.4 x L97
Studer S131R	SZ1044883	SX1044887	SX1044888	–	WP receiving depth to ø17 x L72
Vollmer Vgrind 360E	SZ1035528	SM1035530	SX1035539	–	WP receiving depth to ø20.4 x L111
			SX1035564		
Compatibility data for additional machine types is available on request.					

CUSTOMISED SOLUTIONS

Crossover workpiece clamping

- Versatile application thanks to wide clamping range



With integrated, spring-mounted axial stop

- Variable axial stops realisable



Clamping range: $\varnothing 2$ to $\varnothing 52$ | Zero-point interface

Hydraulically operated special chucks for grinding tap cutters from solid carbide bars

- Multiple chuck changes per day possible through special precision zero-point interface
- Chuck changes in under 5 minutes
- No need to align the chuck
- The entire clamping range from $\varnothing 2$ to $\varnothing 52$ mm can be covered with no more than 3 chucks

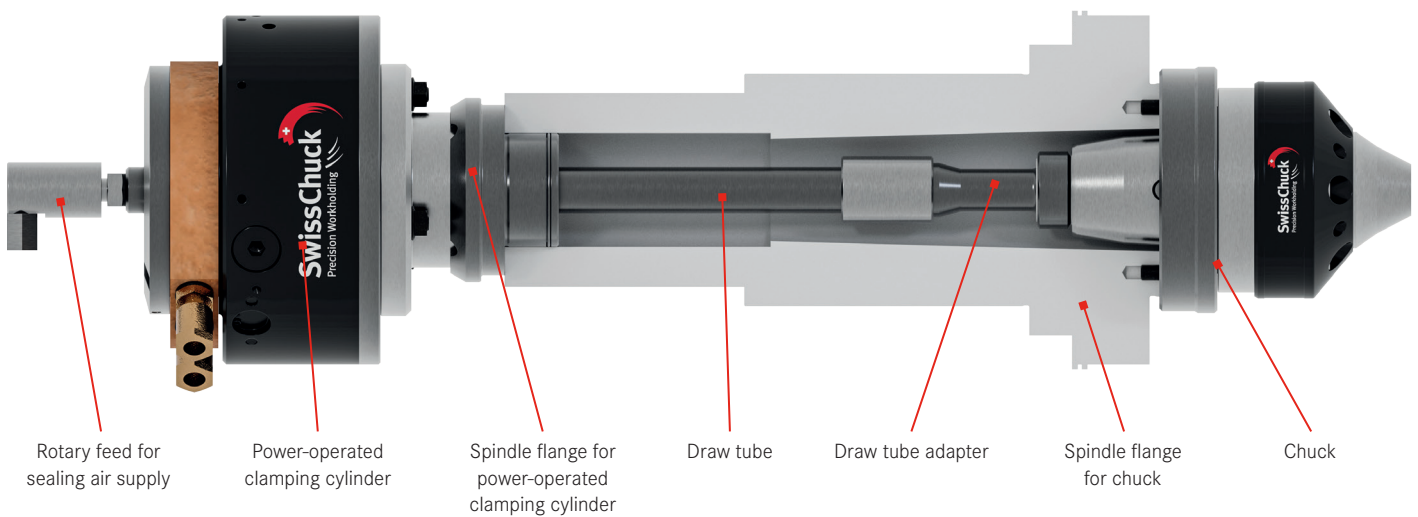


MOUNTING EXAMPLES

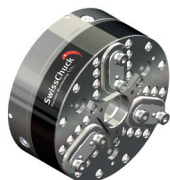


Power-operated

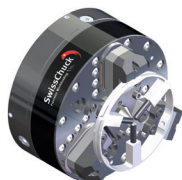
with pneumatic clamping cylinder



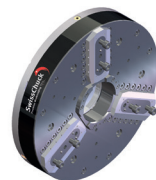
The chuck attachment is tailored to each specific machine it is intended for. SwissChuck designs and manufactures all required components. Customers thus receive a complete, ready-to-install add-on assembly.



KCHP/VKHP
High-precision force chuck



SAP to KCHP
Automated drive carrier



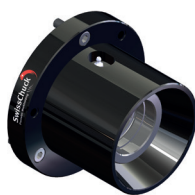
KFHP
Precision power chuck



AdaptZero®
Precision quick-change interface



VMCHP
Diaphragm chuck



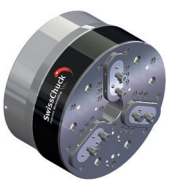
LZK/LSK-S
Collet chuck with clamping lamellas



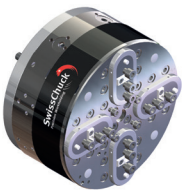
DL
Collet expanding mandrel



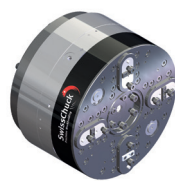
TGC/FTGC
Tool chuck



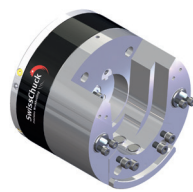
OVEK
High-precision force chuck



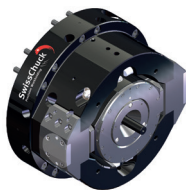
OVEKA
Compensating chuck



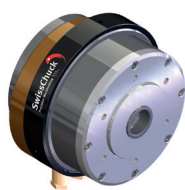
OVEKAV
Moving compensating chucks



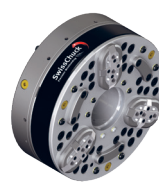
FLD/AFLD
Twist finger type console chuck



SPECIAL SOLUTIONS
Tailor made solutions



PZLHM
Pneumatic force clamping cylinder



TRITON
Precision lathe chuck



LZK-S
Collet system

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