

NEW

PATENT

EP 3620247B1



TGC MULTI-RANGE CHUCK
FOR AUTOMATED PRODUCTION



FOR AUTOMATED PRODUCTION WITH MULTIRANGE CLAMPING

Increase your productivity and reduce costs!

In modern manufacturing, batch sizes are becoming smaller and smaller and machining processes more complex. At the same time, however, the demand for fully automated production is increasing, which makes it possible to reduce personnel costs and increase productivity. In order to exploit the full potential of modern production machines, a flexible clamping device with variable clamping diameter is a prerequisite! In high production, different production batches, which also include different clamping diameters, should be able to be machined without manual retooling of collets. Due to the demanding workpiece geometries, a slim interference contour is a must for collision-free tool run-out. In order for the workpieces to be produced with the highest possible removal rate, but with the best possible quality, stable and absolutely precise clamping is a matter of course.

With the TGC multi-range chuck, we have succeeded in meeting all these requirements. Whether it is for manufacturing or resharpening monobloc tools (milling cutters, drills, taps or reamers), we guarantee the highest concentricity over the entire clamping range with the premium TGC chuck. In addition, we are able to flexibly adapt the clamping device to the machine-specific interfaces and adjust the variable clamping range to the customer's specifications.

In short - we create the optimal standard for you so that you actually increase your productivity and reduce costs!

Advantages



- Reduction of set-up times
- Highest precision $\leq 0.005\text{mm}$
- Active sealing air protects against contamination
- Minimal wear at clamping point due to axially stationary carbide clamping jaws
- Can be used on tool-grinding, grinding and turning machines

Function



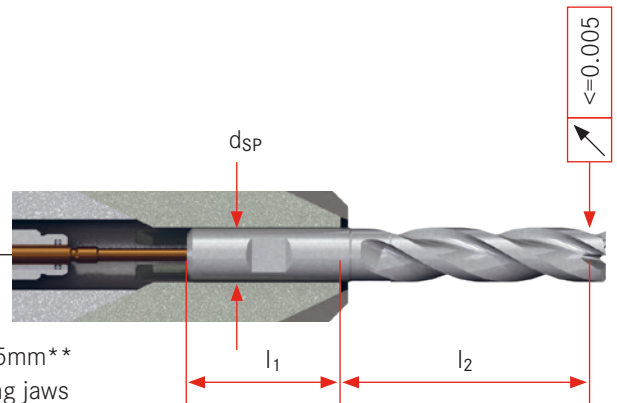
- Variable clamping range
- Interface to axial stops
- Patented clamping technology
- Various actuation options

YOUR ADVANTAGES AT A GLANCE

++ Highest concentricity

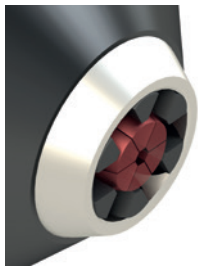
The concentricity of ≤ 0.005 mm is achieved under the following conditions:

- Clamping length l_1 : min. 3 x clamping diameter d_{SP} or min. 14mm* bzw. 25mm**
- Measuring point l_2 maximum 4 x clamping diameter d_{SP} away from clamping jaws
- Perfect condition of the chuck
- No disturbing transverse forces when loading the workpiece



*TGC Micro **TGC Macro

++ Variable clamping range as a set-up time killer



- TGC Micro 3 - 12mm
- TGC Macro 5 - 20mm
- No manual retooling of collets required
- Customised clamping ranges available on request
- Axially stationary jaws over the entire clamping range

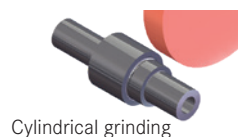
++ High machine compatibility

- Existing attachments for Rollomatic, Studer, Junker, Schütte and Benzinger.
- Adaptable to all common machine spindles on customer request



++ Versatile application possibilities

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



VARIABLE CLAMPING RANGE FROM 3 TO 12MM



Suitability according to machining process:

- A**
Cylindrical grinding
- B**
Eccentric cylindrical or orbital pin grinding
- C**
Turning
- D**
Hard turning
- E**
Combination Grinding/hard turning



Explanation of symbols:
SwissChuck.com

Typ TGC^{Micro} | cylinder operated

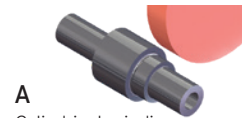
Technical characteristics

Outer diameter	74 mm
Clamping range	3 - 12 mm
Jaw stroke (per jaw)	4.5 mm
Actuating force max.	3.65 kN
Clamping force max.	3.65 kN
Max. speed	4000 1/min
Piston stroke (clamping cylinder)	10 mm

VARIABLE CLAMPING RANGE FROM 5 TO 20MM



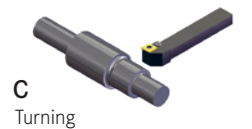
Suitability according
to machining process:



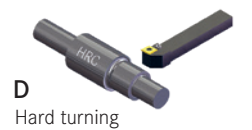
A
Cylindrical grinding



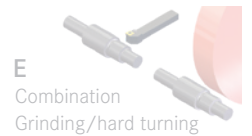
B
Eccentric cylindrical
or orbital pin grinding



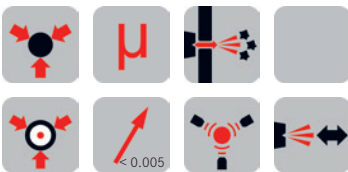
C
Turning



D
Hard turning



E
Combination
Grinding/hard turning



Explanation of symbols:
SwissChuck.com

Typ TGC^{Macro} | cylinder operated

Technical characteristics

Outer diameter	135 mm
Clamping range	5 - 20mm
Jaw stroke (per jaw)	7.5 mm
Actuating force max.	10 kN
Clamping force max.	10 kN
Max. speed	2500 1/min
Piston stroke (clamping cylinder)	13.5 mm

CUSTOMISED SOLUTIONS

Special clamping range for Medical tools

- Clamping range from $\varnothing 0.8$ to $\varnothing 10$ mm



Special version for turning ceramic parts

- Maximum speeds up to 4000 1/min possible
- Variable axial stops



Clamping range $\varnothing 2$ bis $\varnothing 52$ | zero point interface

Hydraulically operated special chuck for grinding taps from solid carbide rods

- Multiple chuck changes per day, therefore special precision zero-point interface
- Chuck change in less than 5 minutes
- No need to align the chuck
- Total clamping range from $\varnothing 2$ to $\varnothing 52$ mm covered with 3 chucks

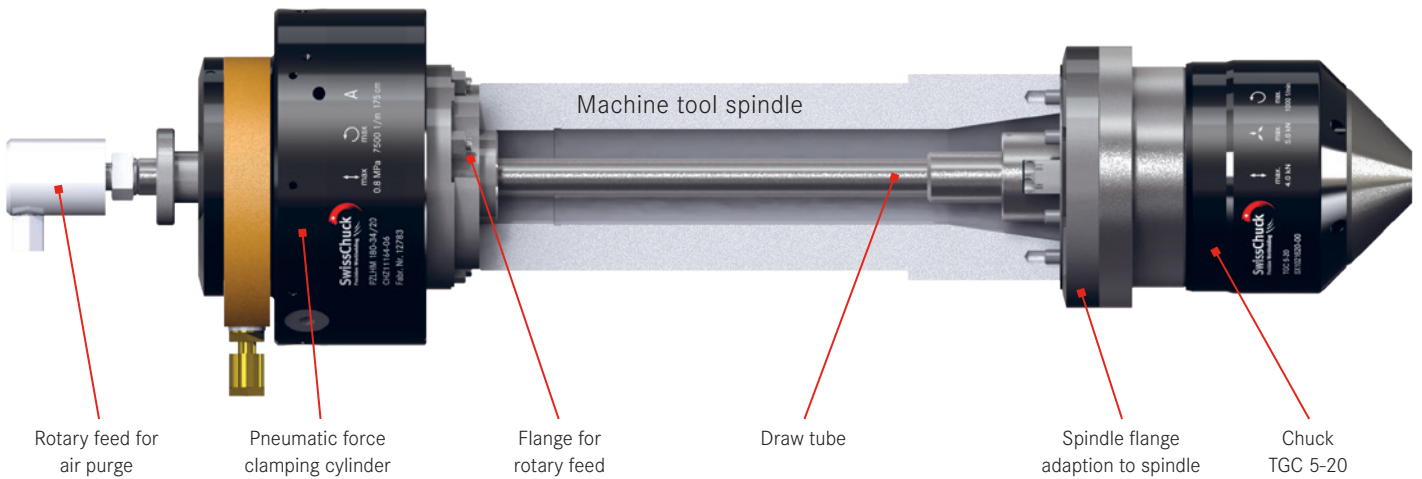


MOUNTING EXAMPLES



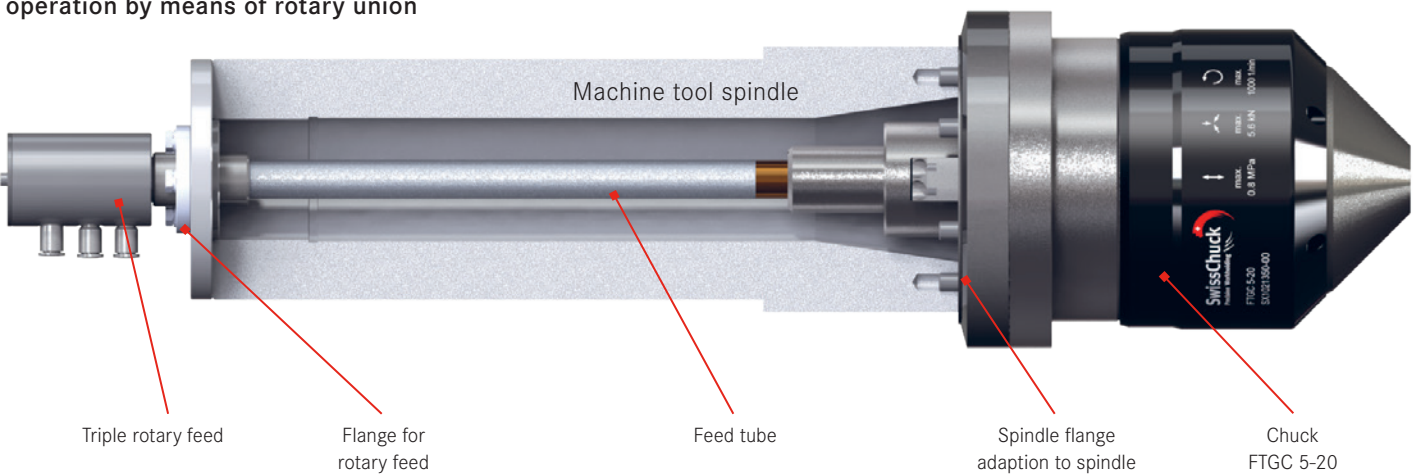
Power operated

With pneumatic clamping cylinder

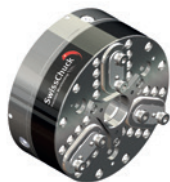


Front end solution

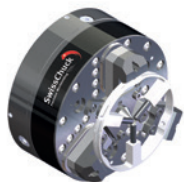
operation by means of rotary union



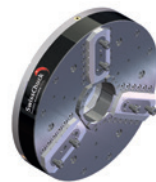
The chuck is specifically mounted according to the machine type, SwissChuck designs and provides all the required components. Hence, our customers will receive the entire workholding unit ready for installation.



KCHP/VKHP
High-precision force chuck



SAP to KCHP
Automated drive carrier



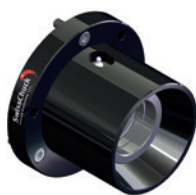
KFHP
Precision power chuck



KHSF
Centrifugal force chuck



VMCHP
Diaphragm chuck



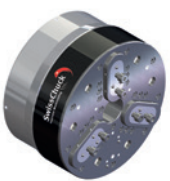
LZK/LSK-S
Collet chuck with clamping lamellas



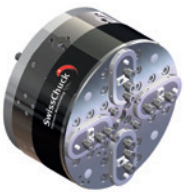
DL
Collet expanding mandrel



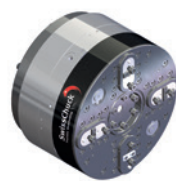
TGC/FTGC
Tool chuck



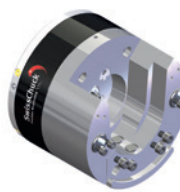
OVEK
High-precision force chuck



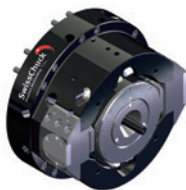
OVEKA
Compensating chuck



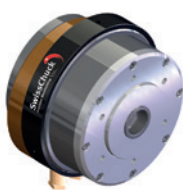
OVEKAV
Moving compensating chucks



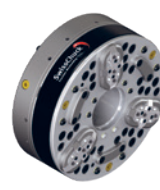
FLD/AFLD
Twist finger type console chuck



SPECIAL SOLUTIONS
Tailor made solutions



PZLHM
Pneumatic force clamping cylinder



TRITON
Precision lathe chuck



LZK-S
Collet system

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