

Instruction manual

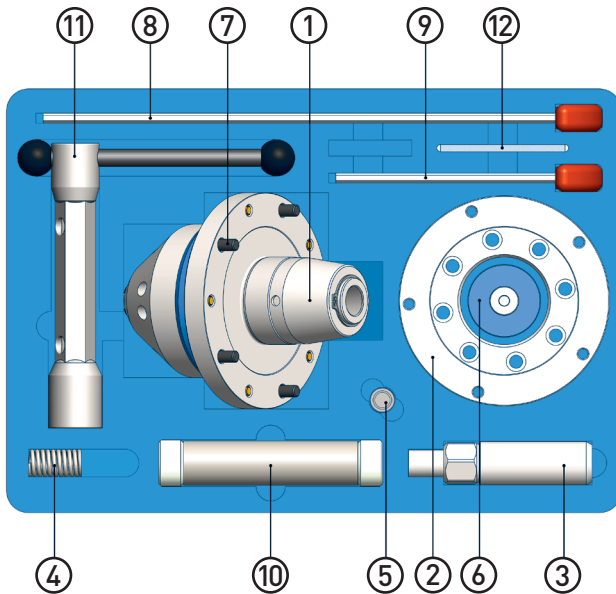
SHARK 5-Jaw Chuck



grinding deserves SOLUTIONS

GDS[®]
Made in Germany

Case includes:



- ① SHARK 5-Jaw Chuck
- ② SHARK adapter flange
- ③ Tension rod (drawbar)
- ④ Compression spring
- ⑤ Adjustment bolt
- ⑥ Adjustment mandrel, $\varnothing 20$ mm & $\varnothing 12$ mm
- ⑦ Mounting bolts
- ⑧ Tension wrench SW6 mm x 350 mm/3 m x 150 mm
- ⑨ Mounting wrench SW6 mm x 150 mm
- ⑩ Alignment hammer ($\varnothing 30$ mm x 155 mm)
- ⑪ Double socket wrench SW24 x 27 with handle
- ⑫ Test certificate

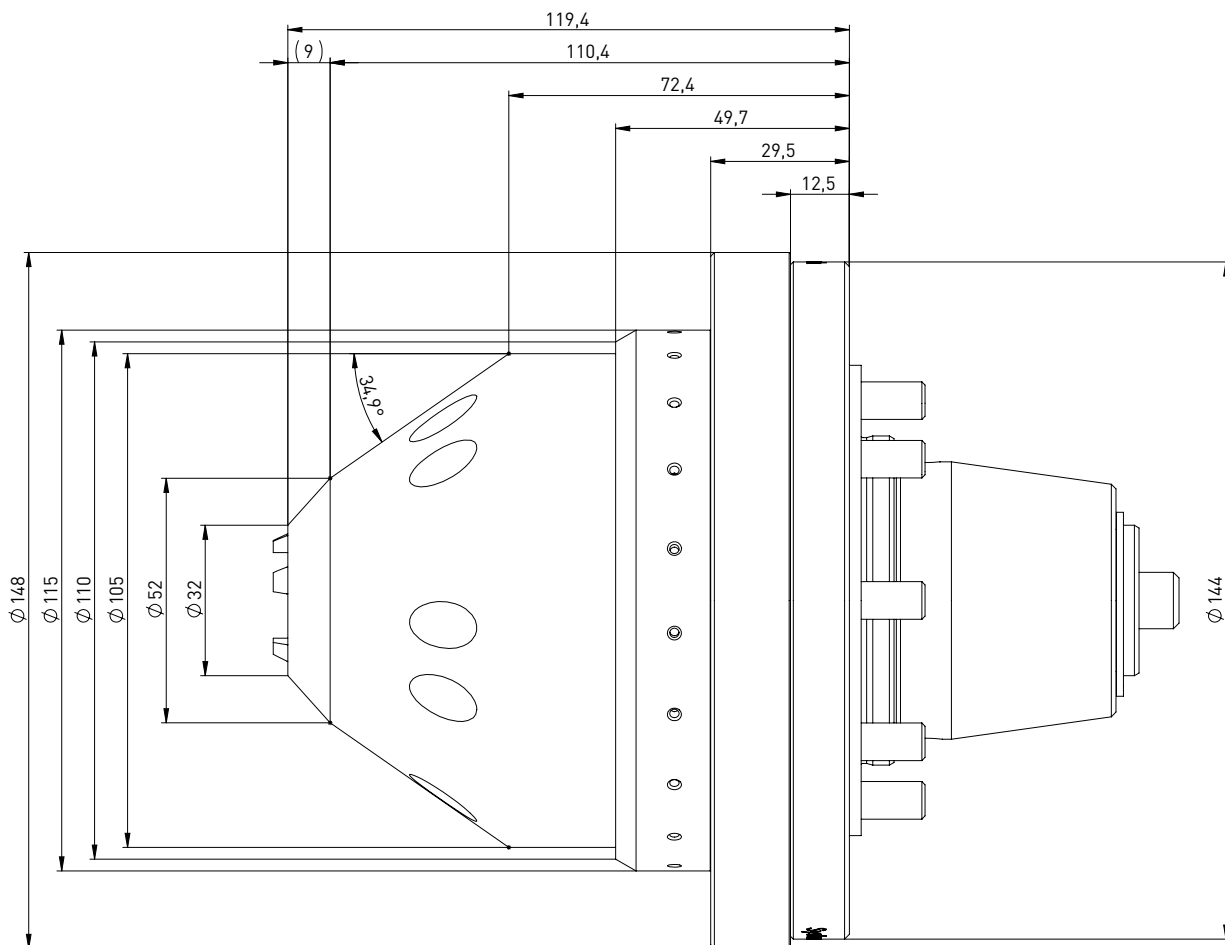


Available for the following machines:

ANCA
Haas
JOERG S-techplus
Reinecker
Saacke
Schneeberger
Star
Vollmer
Walter

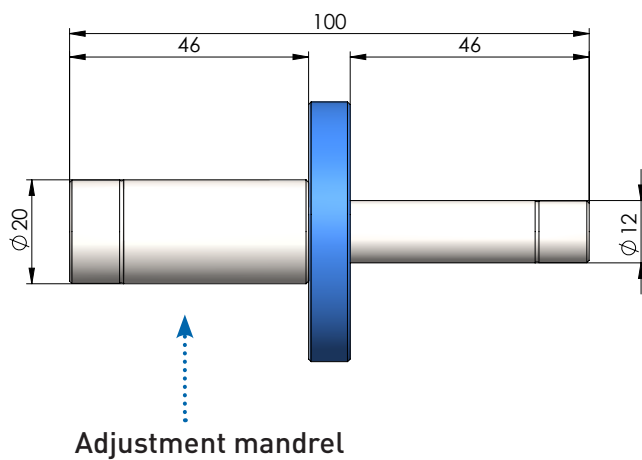
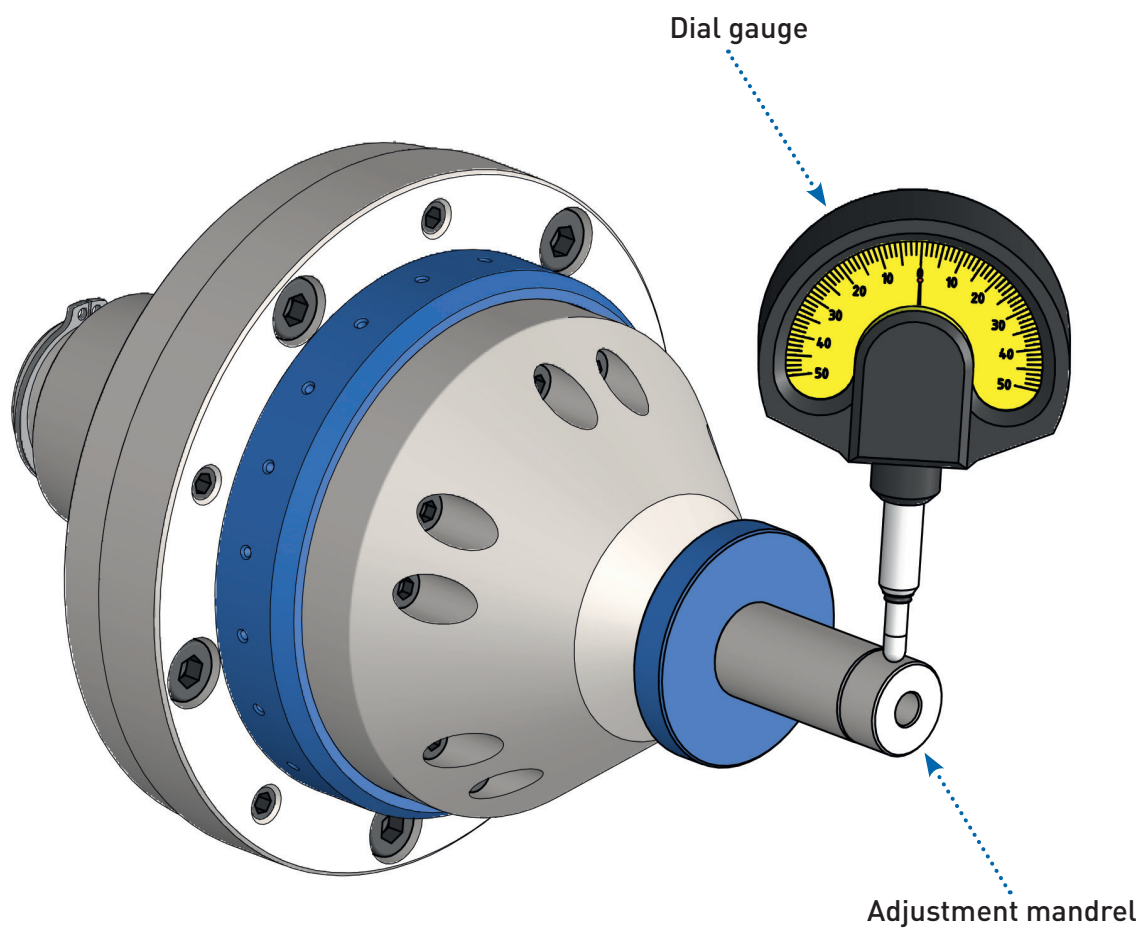
Available for these machines **on request**:

ISOG
Schütte
TGT
Utsunomiya-Seisakusho



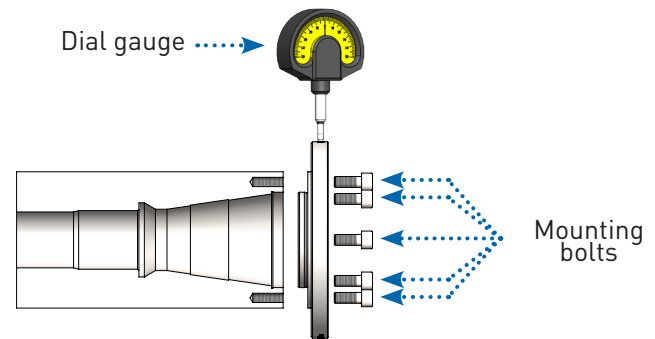
**ATTENTION:**

The SHARK 5-Jaw Chuck is only suitable for automatic operation.



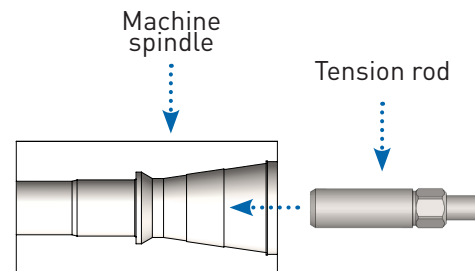
Step 1: Preparation of the adapter flange

1. Make sure that the face of the machine interface is level and clean.
2. Clean all contact surfaces of the adapter flange.
3. Mount the adapter flange on the machine interface using the supplied mounting bolts.
4. Center the adapter flange to within 0.001 mm by tapping lightly on the alignment surface with the alignment hammer provided.
5. After achieving the optimum runout, tighten the mounting screws clockwise to 15 Nm.



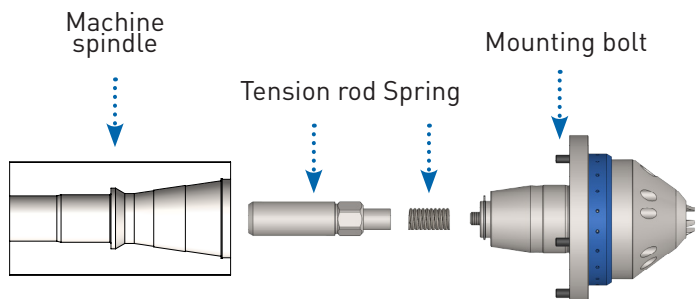
Step 2: Screw in tension rod

1. Screw the tension rod into the machine spindle and tighten it firmly with the counter screw supplied.
2. Use the machine control to move the tension rod to the rear (clamped) position.
3. Clean all contact surfaces of the adapter flange and the chuck.



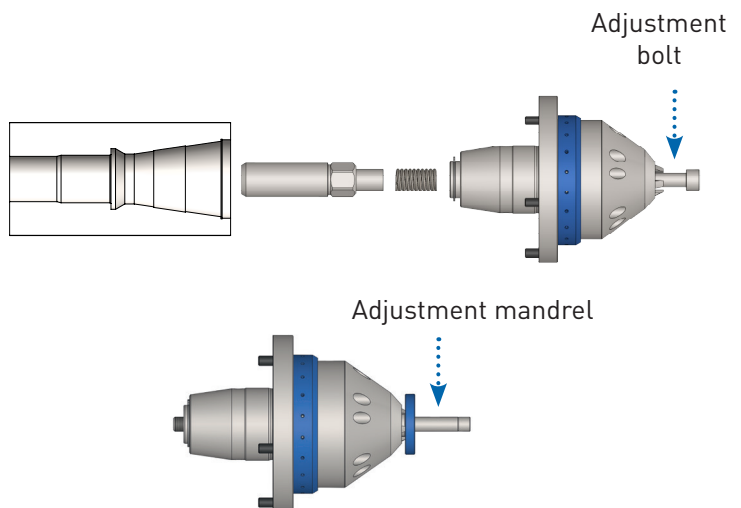
Step 3: Mount chuck

1. Insert the supplied spring into the rear of the chuck.
2. Bolt the chuck onto the face of the adapter flange using the supplied mounting bolts. When doing so, set the mounting bolts only "finger tight." (We will tighten the bolts after adjusting the concentricity.)



Step 4: Preparation for setting

1. Use the machine control to move the tension rod forward (to the unclamp position) and rotate the chuck till the SHARK logo etched in the nose is at top.
2. Using the long 6 mm T-handle wrench (or the 3 x 150 mm wrench, as applicable), screw the supplied adjusting bolt into the chuck from the front until the jaws are just wide enough for either the Ø12 mm or Ø20 mm end of the adjustment mandrel.
3. Insert the matching end of adjustment mandrel into the chuck and use the machine control to clamp (i.e. move the drawbar to the rear).



CAUTION: Risk of injury!

Setting concentricity and repeatability

Please take the time to adjust the runout. The more accurately the chuck is set during setup, the more accurately it will perform



When adjusting, use precision dial gauges as well as the supplied adjustment mandrel.



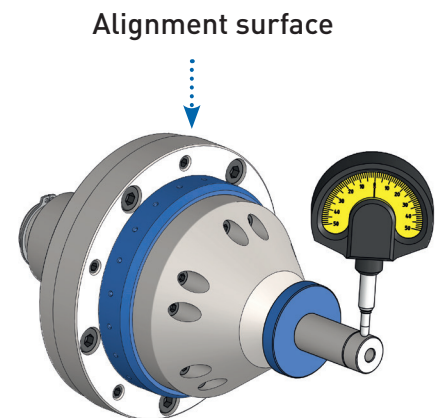
ATTENTION:

To ensure proper functioning, disassemble and clean the chuck at least once a month.

Step 5: Adjust concentricity

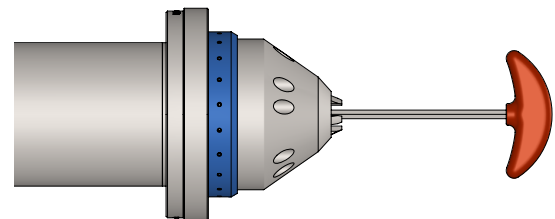
Center the chuck by tapping on the alignment surface with the supplied alignment hammer (9).

1. Turn the A-axis evenly clockwise to the highest deflection value shown on the gauge. (This will almost certainly be where the SHARK logo is on top.) Now reduce this by half the value by tapping the alignment surface.
2. Repeat this process until you have achieved a runout of 0.001 mm. Then tighten the mounting screws clockwise with 15 Nm.
3. Unclamp and clamp the adjustment mandrel three to five times so that the chuck settles and the assembly tensions are released. Do this with the SHARK on top.
4. Check the concentricity again. Readjust if necessary.



Step 6: Set clamping range

1. You can set the desired clamping range by adjusting the depth of the adjustment bolt.
 - ▶ To set a clamping range from Ø 3mm to Ø 12mm, use the adjusting mandrel with the Ø 12mm.
 - ▶ To set a clamping range from Ø 7mm to Ø 20mm, use the adjusting mandrel with the Ø 20mm.



GDS SHARK safety instructions

Please note:

- The SHARK multi-range clamping system was designed for loading and changing rotationally symmetrical blanks and tools in automatic mode.
- For shank tools, all shanks according to DIN 1835 Form A, B, E or DIN 6535 form HA, HB, HE can be clamped.
- The SHARK multi-range clamping system may only be used within the scope of its technical specifications.
- This product is intended for industrial use.
- Intended use includes compliance with all the information in these instructions.
- Faultless function and warranty claims can only be guaranteed with original GDS accessories.
- Inserting the blank by hand is prohibited.

GDS SHARK error causes and solutions

Check the following points:

- Check the machine's clamping pressure
- Check the blank for out of roundness or other anomalies
- Check for contamination
- Ensure all mounting screws tightened correctly
- Ensure the chuck is at room/machine temperature
- Open everything again, clean and start from the beginning step by step

Basic safety instructions

Danger to persons and property may arise from this product due to incorrect handling, assembly and maintenance if these operating instructions are not observed. Damage and defects must be reported to the manufacturer immediately and repaired without delay in order to keep the extent of damage to a minimum and to ensure that the safety of the product is not impaired.

Only original GDS spare parts may be used.

Intended use

The SHARK 5-Jaw Chuck is used for clamping tools with cylindrical shanks for tool grinding on grinding machines.

- The product may only be used within the scope of its technical specifications.
- The product is intended for installation in a machine. The applicable directives must be observed and complied with.
- The product is intended for industrial use.
- Intended use also includes compliance with all the information in these instructions.

Use not in accordance with the intended purpose

The multi-range chuck must not be used for turning or milling. The precision grinding chuck is not being used for the intended purpose, for example:

- If tools are not properly clamped.
- If, in disregard of the safety regulations, persons are working on the 5-jaw chuck without additional protective devices, e.g. in order to machine clamped tools.
- If the technical specifications are exceeded when using the 5-jaw chuck.
- If the 5-jaw chuck is used on machines not intended for this purpose.

Notes on special hazards

Danger to persons (risk of injury) and damage to property can arise from the SHARK 5-Jaw Chuck system if:

- It is not used as intended;
- It is improperly installed or maintained;
- The safety and assembly instructions, the safety and accident prevention regulations applicable at the place of use, and the EC Machinery Directive are not observed.

**CAUTION:**

Risk of injury to the operating personnel in case of jaw breakage or loss of workpiece due to flying parts!

- When using the 5-jaw chuck, protective equipment must be used in accordance with the EC Machinery Directive so that in the event of failure of the 5-jaw chuck or a component of the chuck, parts flying away are caught by the protective equipment.
- The machine manufacturer must ensure sufficient wall thicknesses for his enclosure/ protective equipment (in compliance with the currently applicable regulations and standards).

**CAUTION:**

Risk of injury to the operating personnel in case of improper use and exceeding the technical specifications due to failure of the 5-jaw chuck! Improper use and exceeding the technical specifications may cause failure of the 5-jaw chuck, resulting in danger to the life and limb of the operator and considerable damage to the equipment.

- Observe the values of the technical specifications
- Only use the 5-jaw chuck for its intended purpose.
- Comply with the applicable safety standards and safety regulations.

**CAUTION:**

Risk of injury due to falling down of the chuck during transport, mounting and dismounting. Protect the 5-jaw chuck from falling during transport and installation or dismantling.

**CAUTION:**

During manual loading and unloading, there is a risk of crushing fingers due to the opening and closing of the clamping jaws. Do not reach between the clamping jaws. For hand-loading, the tool feed must be carried out with a setting aid.

**CAUTION:**

Risk of injury during manual loading and unloading of the tools due to sharp cutting edges. Remove the tools only when the machine is at a standstill. Prefer automatic loading and unloading of the tools.

Notes for safe operation

- The smallest diameter tool that can be clamped is 3 mm. Smaller tools cannot be clamped safely.
- With manual loading, there is a risk that fingers can be trapped and crushed. Therefore, an insertion aid must be used for manual loading.
- Out-of-round tools damage the 5-jaw chuck or have an unfavorable effect on the grinding accuracy. The concentricity of the tools must not exceed 0.006 mm.
- The chuck must not be used in EDM machines. Corrosion can cause the 5-jaw chuck to lose its specification.
- Observe the maintenance and care instructions.

Clamping depth

The clamping depth depends on the clamping diameter.

The minimum clamping depth for optimum concentricity is 2.5 x the tool's diameter.

Adjusting the clamping range

You can set the desired clamping range by adjusting the adjustment bolt (see page 6 step 6).



Structure of the 5-jaw chuck

The 5-jaw chuck and the associated actuating device must be matched to each other. The stroke of the chuck must be sufficient to safely accommodate the largest and smallest diameter to be clamped.

When mounting the chuck and the clamping cylinder on the grinding machines, the following safety requirements must be observed:

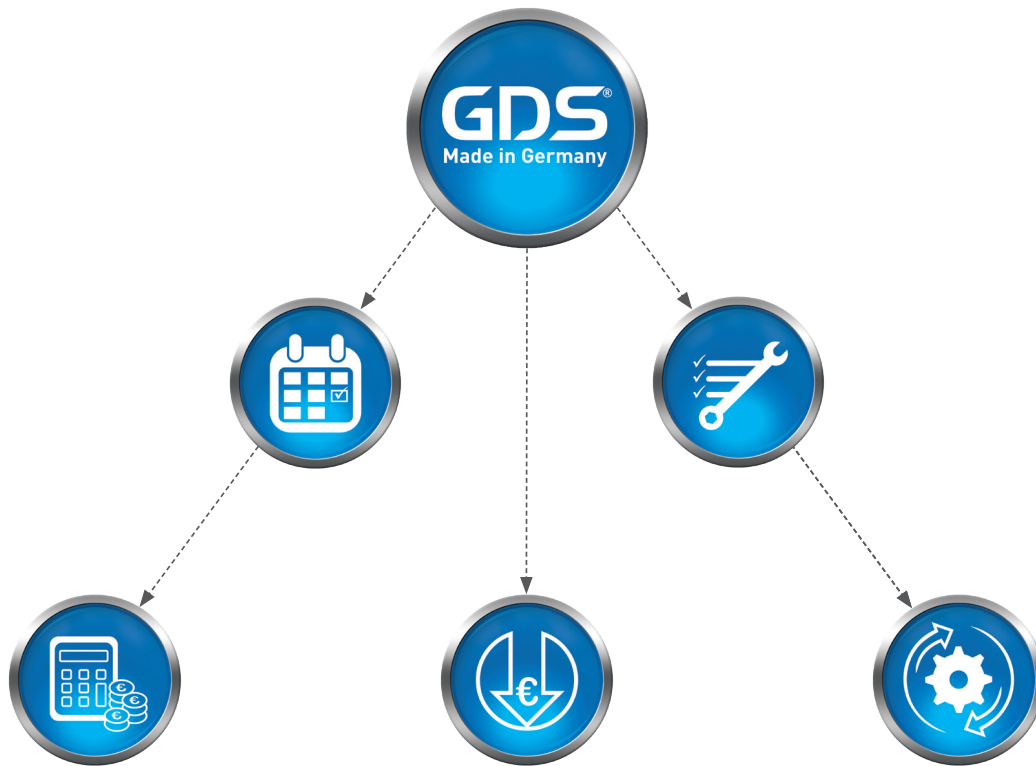
- The machine spindle must not start until the clamping pressure is built up in the clamping cylinder and the clamping takes place in the permissible working range and the machine door is closed.
- It must not be possible to release the tension until the machine spindle has come to a standstill.
- If the clamping energy fails, the tool must remain firmly clamped until the spindle comes to a standstill.
- In the event of power failure and return, there must be no change in the current switching position.
- The axial movement of the drive cylinder must not exceed a speed of 10 mm/sec when loaded manually.

Function test

After the 5-jaw chuck has been set up, its function must be checked by commissioning. If the machine's clamping system is changed, it is necessary to adjust the 5-jaw chuck to the new situation with a new stroke check.



Revolution in tool grinding



In North America contact:

Toolroom Solutions Inc.

8824 Old Block House Ln
Spotsylvania, VA 22551 USA

Tel: +1 (540) 940-5977

Email: info@toolroom.solutions

Web: www.toolroom.solutions



GDS Präzisionszerspanungs GmbH
Endelbergstrasse 8
D - 72131 Ofterdingen

