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Technology letter

May 2008

Perfect surfaces through:

DF-Tools machines with angled workpiece holders

With certain machine types such as the DF-3 Tools, the workpiece holders are optionally available in an angled version (see photo). The angled position considerably increases the contact pressure of the grinding / polishing medium. This can give a significantly better processing of the cross sectional areas of the workpiece. It also considerably improves the quality of the finish in the chip flute of straight-fluted tools.

The angled position has also proven effective for the processing of hardened precision shafts and spindles (see attached user information).



The requirements here are as follows:

- Smoothing the contact surface of shaft sealing rings in order to improve the seal – a higher percentage contact area gives a better seal (e.g. can increase the contact area from 70% to 80%).
- Smoothing the surface to make shaft seals easier to fit.
- Deburring male threads; removes flashing which could subsequently ruin the seals or similar.
- Reduction of the Ra values from e.g. Ra 0.2 μm to 0.02 μm .
- Better protection against corrosion - polished surfaces are more resistant to corrosion – oily residues from the polishing process also contribute to this.
- Workpieces have a higher quality appearance.

Benefits of angled holders:

- Very good processing of the cross sectional areas of the workpiece and of straight-fluted workpieces.
- Short processing times
- Fundamentally better smoothing of the whole workpiece surface, since the grinding or polishing medium has a greater axial effect.

Applications:

- precision shafts, spindles
- measuring discs
- milling heads
- elbow joints
- engine valves
- pistons
- etc.

If you have any queries on this subject, please contact Helmut Gegenheimer Tel. + 49 (0) 7082 491120



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User information:

Processing of cross sectional areas in 15° angled holder

Job definition: smoothing and polishing of the cross sectional area after grinding

Process:

Machine:	DF-3 Tools with 15° angled holder
Media:	H1/100 + H1/400 (30%)
Paste:	P 17
Processing time:	15 min.
Speed:	45 rpm

Fixed with special 15° angled holder. Direction of rotation:
100% clockwise.

Workpieces processed with 15° angled holders

Ra before processing: 0.2 µm

Ra after processing: 0.01 µm



For your diary:

Visit us at the PROFORM fair in Dortmund from 10 -13 June 2008, Hall H4 Stand 4064.