Superfinishing Machine
Supfina M-660

Machining of gear shafts
Superfinish
Machining of gear shafts

Process Type
Plunge-cut machining of gear shafts by use of finishing tape.

Versatility
Suitable for workpiece machining between centers, such as spindles and gear shafts of every kind.

Loading and Unloading Options
• manual
• walking beam or chain conveyor
• shuttle

supfina M-660
Part length: 490–550 mm
Spindle speed: 150–650 rpm
Designed on the modular principle, the Supfina M-660 is suitable for almost all superfinishing tasks on workpieces capable of being positioned between centers. As a rule, the workpiece is secured by a power-operated chuck or front-end driver.

The headstock (with infinitely adjustable drive system) is stationary, while the pneumatically operated tailstock traverses dovetail guideways.

This machine offers two options for the oscillating unit. A pneumatic oscillator can perform approximately 2,500 double strokes per minute, while a mechanical oscillator can make approximately 1,500 double strokes per minute. Both options have variable amplitudes. The superfinishing-tool oscillation occurs while the workpiece is rotated between centers.

The tools are applied to the workpiece surface with the desired force and are lifted off when the superfinishing process completes. The worn superfinishing tape advances so that fresh tape is available to finish the next workpiece.

Up to five tape modules may be used. Tools are easily replaced by means of rapid-change mounts.

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**Gear shaft**

Tape superfinishing of four bearing journals and one sealing seat.

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**Results**

<table>
<thead>
<tr>
<th></th>
<th>Journal: $R_z &lt; 1.0 \ \mu m$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roughness:</td>
<td>Sealing seat: $R_z &lt; 2.0 \ \mu m$</td>
</tr>
<tr>
<td></td>
<td>Lead-free, with all-round machining marks</td>
</tr>
<tr>
<td>Cylindricity:</td>
<td>Bearings: $&lt; 4 \ \mu m$</td>
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<tr>
<td>Cycle time:</td>
<td>25 seconds</td>
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</tbody>
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