EXPERTISE FOR CUTTING AND NON-CUTTING THREAD PRODUCTION
Since 1880, WAGNER TOOLING SYSTEMS has specialized in precision tools for the efficient production of external threads and specialized production techniques such as beading, knurling, flanging or rolling tubes.

The proven thread cutting heads, whose tradition goes back to the era of Gustav-Wagner-Maschinenfabrik, have been manufactured in Pliezhausen, Germany with exacting quality standards since 1994.

We are transporting the tradition of the Gustav-Wagner-Maschinenfabrik with innovative technology into the future through the further development of rolling heads, multi-cutter turning heads and tangential tools.

Our aim is to develop sophisticated solutions that offer the user maximum economy and durability. Our products, particularly the castors of the thread rolling heads specially developed by WAGNER TOOLING SYSTEMS, as well as our consulting and development services enjoy an excellent reputation among international experts – because commitment to innovation is our constant objective!

The continuous development efforts by our engineers ensure that our technology is always among the world’s most advanced. Each of our products is developed and manufactured for you with Swabian precision to meet the growing demands of the market.

The modular system developed by WAGNER for axial rolling heads with exchangeable roller holding sets covers the entire operating range of a tool. Changing the rollers for all common threads is both quick and uncomplicated.
TANGENTIAL ROLLING TOOLS

Threads of the highest surface quality can be produced with minimum machining times using the WAGNER tangential roller tool.

The tangential rolling tool is mounted with the adapter on the tool carrier, e.g. turret disc. It moves with a constant feed onto the rotating workpiece. The thread rolls are set in rotation by touching the workpiece and form the thread as the tool carrier continues to feed. As soon as the thread rolls are centred on the workpiece, the rapid return is triggered and the workpiece is released.

Optimum productivity is achieved using precise thread rolling. The diameter, pitch and shape of these rolls are adapted to the thread to be rolled.

WAGNER tangential rolling tools are available in various sizes and are suitable for machining workpieces from Ø 2 - 72 mm.

Premium rolling results in fine-pitch threads can be achieved by using our tool variant “F”. For threads with very small pitches, it is important to keep the axial play of the thread rollers as low as possible. By means of the patented WAGNER® axial play fine adjustment, the axial roll play can be minimized in 0.02 mm steps. The fine adjustment is available as an option.

Threads of the highest surface quality can be produced using the WAGNER tangential roller tool. Optimum productivity is achieved using precise thread rolling. The diameter, pitch and shape of these rolls are adapted to the thread to be rolled.

**AREAS OF APPLICATION**
- cylindrical and conical threads, right- and left-hand threads as well as regular and fine threads
- threads behind a collar
- threads close up to a collar
- very short threads
- threads where the end of the workpiece is not free
- threads with very short run-outs

**ADVANTAGES**
- large working range
- long service life due to large rollers and high rigidity of the tool body
- particularly low-maintenance
- the rolled threads are suitable for high loads due to their uninterrupted fibre direction.
- durable, wear-resistant and corrosion-resistant threads
- high flexibility due to numerous adapter variants for use on different machines, e.g. single and multi-spindle lathes as well as special machines
- short processing time

**WEIGHTS IN KG**

<table>
<thead>
<tr>
<th>Typ</th>
<th>Standard thread Ø</th>
<th>Fine thread Ø</th>
<th>Thread length max.</th>
<th>Max. Feed force (N)</th>
<th>Tool with rollers</th>
<th>Adapters</th>
</tr>
</thead>
<tbody>
<tr>
<td>B 8 W</td>
<td>1.6 - 12</td>
<td>0.06 - 0.5</td>
<td>2 - 12</td>
<td>14</td>
<td>0.9</td>
<td>ca. 1.5</td>
</tr>
<tr>
<td>B 10 W</td>
<td>2 - 15</td>
<td>0.08 - 0.625</td>
<td>2 - 17</td>
<td>19</td>
<td>1.9</td>
<td>ca. 1.7</td>
</tr>
<tr>
<td>B 14 W</td>
<td>4 - 22</td>
<td>0.157 - 0.875</td>
<td>4 - 24</td>
<td>25.5</td>
<td>5.000</td>
<td>ca. 3.0</td>
</tr>
<tr>
<td>B 16 W</td>
<td>6 - 22</td>
<td>0.25 - 0.875</td>
<td>6 - 45</td>
<td>25.5</td>
<td>5.700</td>
<td>ca. 3.0</td>
</tr>
<tr>
<td>B 19 W</td>
<td>8 - 27</td>
<td>0.3125 - 1</td>
<td>8 - 52</td>
<td>31</td>
<td>9.800</td>
<td>ca. 3.0</td>
</tr>
</tbody>
</table>

*These tool types are also available with fine adjustment (F) for the roller clearance.

---

**WAGNER tangential rolling tools are available in various sizes and are suitable for machining workpieces from Ø 2 - 72 mm.**
The TSW tangential tool is the „knurling professional“ among the WAGNER tools and is an economical version of the versatile and proven tangential rolling tool.

The TSW knurling tool can be used to roll profiles, parallel grooves, knurls and beads in a time-saving manner. During machining — preferably on single and multispeed machines — the workpiece must rotate, the tool itself is stationary.

**ADVANTAGES**
- Cost-effective alternative to the tangential rolling head
- Simple operation
- Simple and quick roll change
- Simple diameter adjustment
- Sturdy tool body
- With a roller width of up to 43 mm, a working range of diameter 3 to 40 mm can be covered.

### TANGENTIAL ROLLING HEAD WITH PREMOUNTED ROLLERS

These tools are designed for use on all common lathes with a controlled feed rate movement.

<table>
<thead>
<tr>
<th>type</th>
<th>Standard thread Ø</th>
<th>Fine thread Ø</th>
<th>Thread length max. 2 x thread pitch mm</th>
<th>Max. Feed force (N)</th>
<th>Tool with rollers</th>
<th>Adapter</th>
</tr>
</thead>
<tbody>
<tr>
<td>B 13-VB</td>
<td>3–10</td>
<td>0.12–0.375</td>
<td>3–24</td>
<td>0.12–0.9375</td>
<td>15</td>
<td>4.000</td>
</tr>
<tr>
<td>B 16-VB</td>
<td>12–16</td>
<td>0.5–0.625</td>
<td>12–42</td>
<td>0.5–1.625</td>
<td>18</td>
<td>4.000</td>
</tr>
</tbody>
</table>

Only WAGNER offers tangential rolling tools with front mounted rollers. This makes it possible to roll threads directly up to the collar or the chuck, enabling the shortest machining times.

### PREMOUNTED ROLLERS — EXCLUSIVELY AT WAGNER

The TSW – THE KNURLING PROFESSIONAL

**Knurling types**

**TANGENTIAL ROLLING HEAD WITH PREMOUNTED ROLLERS**
Threads of the highest surface quality are produced in an unparalleled wide operating range with the use of the axially operated WAGNER® thread rolling head.

The large machining capacities of the individual rolling head types are made possible by the quick and easy replacement of the roller holders. These differ in the working range and the holder angle. Other forming operations such as knurling, beading, rolling and smoothing can also be carried out. The heads are suitable for stationary or rotational use.

The axial head is closed by radial rotation of the closing handle or respectively by an automatic closing device. The opening mechanism of the head is triggered by the feed stop and the rollers release the workpiece.

### APPLICATION AREAS
- right-hand and left-hand threads as well as standard and fine pitch threads, pipe threads, trapezoidal threads and special threads
- profile rollers available for special applications such as rollers for lubrication grooves, knurling or smoothing
- rotating and stationary designs for use on lathes, machining centres, rotary transfer machines and special machines
- machining of long threads — suitable for both small series and large batch sizes

### ADVANTAGES
- reduction of acquisition costs due to modular design
- precision thread rolls of the highest quality
- self-opening for non-contact return flow
- machining of threads with various profile shapes right- and left-handed with only one head possible
- highest efficiency
- high flexibility on the majority of machines due to commercially available holders
- short processing times
- short set-up times

### AXIAL ROLLER HEADS MODULAR

<table>
<thead>
<tr>
<th>Type</th>
<th>Fine thread Nominal Ø mm</th>
<th>Standard thread Nominal Ø mm</th>
<th>Main Structural Dimensions</th>
<th>Weight kg</th>
<th>Thread Length up to Ø mm</th>
<th>max. length mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>RS 10</td>
<td>2.5–10</td>
<td>0.1–0.394</td>
<td>2.5–10</td>
<td>0.1–0.394</td>
<td>66</td>
<td>55</td>
</tr>
<tr>
<td>RS 16</td>
<td>3–24</td>
<td>0.188–0.945</td>
<td>3–18</td>
<td>0.188–0.63</td>
<td>88</td>
<td>72</td>
</tr>
<tr>
<td>RS 16/VB</td>
<td>6–23</td>
<td>0.236–0.945</td>
<td>6–12</td>
<td>0.286–0.472</td>
<td>88</td>
<td>73</td>
</tr>
<tr>
<td>RS 22-2</td>
<td>5–36</td>
<td>0.197–1.299</td>
<td>5–24</td>
<td>0.236–0.482</td>
<td>125</td>
<td>120</td>
</tr>
<tr>
<td>RS 22/VB</td>
<td>5–56</td>
<td>0.197–2.087</td>
<td>5–27</td>
<td>0.197–1.063</td>
<td>150</td>
<td>109</td>
</tr>
<tr>
<td>RS 42</td>
<td>8–45</td>
<td>0.315–1.654</td>
<td>8–42</td>
<td>0.315–1.535</td>
<td>190–200</td>
<td>154.5–162.5</td>
</tr>
<tr>
<td>RS 42/VB</td>
<td>45–75</td>
<td>1.634–2.953</td>
<td>–</td>
<td>–</td>
<td>150–200</td>
<td>154.5–162.5</td>
</tr>
<tr>
<td>RS 45</td>
<td>12–54</td>
<td>0.472–2.008</td>
<td>12–45</td>
<td>0.472–1.772</td>
<td>210</td>
<td>185</td>
</tr>
<tr>
<td>RS 50</td>
<td>32–60</td>
<td>1.26–2.244</td>
<td>–</td>
<td>–</td>
<td>182</td>
<td>131</td>
</tr>
</tbody>
</table>

**VB** = prefabricated castors

### Type rotary

<table>
<thead>
<tr>
<th>Type</th>
<th>Fine thread Nominal Ø mm</th>
<th>Standard thread Nominal Ø mm</th>
<th>Main Structural Dimensions</th>
<th>Weight kg</th>
<th>Thread Length up to Ø mm</th>
<th>max. length mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>RAR 10-2</td>
<td>2.5–10</td>
<td>0.1–0.394</td>
<td>2.5–10</td>
<td>0.1–0.394</td>
<td>66–108</td>
<td>109.5</td>
</tr>
<tr>
<td>RAR 16-2</td>
<td>3–24</td>
<td>0.188–0.945</td>
<td>3–18</td>
<td>0.188–0.63</td>
<td>88–130</td>
<td>126.3</td>
</tr>
<tr>
<td>RAR 16/VB</td>
<td>6–23</td>
<td>0.236–0.945</td>
<td>6–12</td>
<td>0.286–0.472</td>
<td>88–130</td>
<td>127</td>
</tr>
<tr>
<td>RR 22-2</td>
<td>5–36</td>
<td>0.197–1.299</td>
<td>5–24</td>
<td>0.236–0.482</td>
<td>125–180</td>
<td>180</td>
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<td>5–56</td>
<td>0.197–2.087</td>
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<td>8–45</td>
<td>0.315–1.654</td>
<td>8–42</td>
<td>0.315–1.535</td>
<td>190–238</td>
<td>217.5</td>
</tr>
<tr>
<td>RR 42/VB</td>
<td>45–75</td>
<td>1.634–2.953</td>
<td>–</td>
<td>–</td>
<td>190–238</td>
<td>217.5</td>
</tr>
<tr>
<td>RR 45</td>
<td>12–54</td>
<td>0.472–2.008</td>
<td>12–45</td>
<td>0.742–1.772</td>
<td>210</td>
<td>228</td>
</tr>
</tbody>
</table>

**VB** = prefabricated castors

The maximum thread length can be limited by the mounting shaft.
ADVANTAGES

- large operational range (nominal ø 10 mm to 22 mm)
- large bore diameter
- large roll diameter
- front panel with large bore for large collar diameters
- user-friendly due to easy handling and replaceable wearing parts
- sturdy attachment of the exchangeable receptacle shafts (for all common interfaces)
- small measurements

OUR EXPERT FOR THREAD ROLLING

HELIX RG 22-S
stationary for standard threads up to M 22

HELIX FG 22-R
rotating for standard threads up to M 22

HELIX RG 22-S
stationary for standard threads up to M 22 x 2

HELIX FG 22-R
rotating for standard threads up to M 22 x 2
The WAGNER thread cutting head is an axial operating precision tool, which produces threads of highest quality in a short time. It is available in stationary and rotating design.

The stationary tapping head is connected to the tool carrier, e.g. turret, via a tool holder. The tool moves axially on the workpiece at a feed rate that is accurate to the pitch, which cuts the thread in a single operation. The opening mechanism of the head is triggered by the feed stop and the chasers release the workpiece and the head is closed by moving the closing lever axially or by means of an automatic closing device.

### THREAD CUTTING HEADS

The WAGNER thread cutting head is an axial operating precision tool, which produces threads of highest quality in a short time. It is available in stationary and rotating design.

The stationary tapping head is connected to the tool carrier, e.g. turret, via a tool holder. The tool moves axially on the workpiece at a feed rate that is accurate to the pitch, which cuts the thread in a single operation. The opening mechanism of the head is triggered by the feed stop and the chasers release the workpiece and the head is closed by moving the closing lever axially or by means of an automatic closing device.

The rotating thread cutting head is flanged to the machine spindles or picked up in a chuck. The opening and closing of the head is controlled by an external control rod or an internal drawer.

**AREAS OF APPLICATION**
- Cylindrical control, fine pitch threads or tapered threads, right- or left-hand threads, pipe, trapezoidal, round and special threads
- Thread according to English and American standards
- Parallel profiles possible in grooving process
- The heaviest cutting tasks and large diameters are effortless with the cutting head types WDK-WKK

**WAGNER CHASERS/THREAD CUTTING PLATES**
- Standard: HSS or HSSE
- Nitrated
- Coated: TiN, TiCN, TiALN, CrN
- Hard metal
- Adapted to customer requirements

### ADVANTAGES
- By exchanging the chasers, it is possible for different thread types to be machined with only one cutting head
- High efficiency due to chasers which can be ground
- Short set-up times due to preset chasers
- Time-saving working method due to single cut
- Precise thread chasers, the pitch and shape of which are adapted to the thread to be cut
- High flexibility on almost all machines due to commercially available holders suitable for thin walled workpieces suitable for materials that can not be thread rolled

**WEK**
- Standard: HSS or HSSE
- Nitrated
- Coated: TiN, TiCN, TiALN, CrN
- Hard metal
- Adapted to customer requirements

**WAGNER CHASERS/THREAD CUTTING PLATES**
- Standard: HSS or HSSE
- Nitrated
- Coated: TiN, TiCN, TiALN, CrN
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**Stationary Heads Compact**

<table>
<thead>
<tr>
<th>Type</th>
<th>Regular Threads Nominal Ø</th>
<th>Fine Threads Nominal Ø</th>
<th>Pipe Threads Nominal Ø</th>
<th>Size</th>
<th>Weight kg</th>
<th>Length of Thread up to Ø mm max. length ≤ Ø mm</th>
</tr>
</thead>
</table>
| Z 12 | 1.6–12 0.063–0.472 | 2–16 0.0787–0.551 | 4–14 0.157–1.496 | 58 | 58 | 0.8
| Z 16 | 2.5–16 0.098–0.63 | 3–24 0.118–0.787 | 6–22 0.177–3.906 | 72 | 70 | 1.8
| Z 22 | 4–22 0.157–0.86 | 4–38 0.157–1.496 | 8–32 0.238–5.910 | 88 | 83 | 2.8
| Z 27 | 5–24 0.197–0.787 | 5–50 0.197–2.362 | 10–40 0.276–6.708 | 110 | 109 | 6.8

**Stationary Heads Standard**

<table>
<thead>
<tr>
<th>Type</th>
<th>Regular Threads Nominal Ø</th>
<th>Fine Threads Nominal Ø</th>
<th>Pipe Threads Nominal Ø</th>
<th>Size</th>
<th>Weight kg</th>
<th>Length of Thread up to Ø mm max. length ≤ Ø mm</th>
</tr>
</thead>
</table>
| Z 39 | 8–39 0.355–1.535 | 8–80 0.355–2.25 | 5–50 0.197–2.362 | 180 | 170 | 6.2

**Rotary Heads Compact**

<table>
<thead>
<tr>
<th>Type</th>
<th>Regular Threads Nominal Ø</th>
<th>Fine Threads Nominal Ø</th>
<th>Pipe Threads Nominal Ø</th>
<th>Size</th>
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<th>Weight kg</th>
<th>Length of Thread up to Ø mm max. length ≤ Ø mm</th>
</tr>
</thead>
</table>
| Z 27 | 5–24 0.197–0.787 | 5–50 0.197–2.362 | 10–40 0.276–6.708 | 110 | 109 | 6.8

**Rotary Heads Heavy Duty**

<table>
<thead>
<tr>
<th>Type</th>
<th>Regular Threads Nominal Ø</th>
<th>Fine Threads Nominal Ø</th>
<th>Pipe Threads Nominal Ø</th>
<th>Size</th>
<th>Weight kg</th>
<th>Length of Thread up to Ø mm max. length ≤ Ø mm</th>
</tr>
</thead>
</table>
| WDK | 8–52 0.315–2.047 | 8–85 0.355–2.56 | 10–60 0.394–4.33 | 310 | 320 | 54
| WEX | 8–52 0.315–2.047 | 8–85 0.355–2.56 | 10–60 0.394–4.33 | 310 | 320 | 54
| WKG | 10–75 0.394–3 | 12–110 0.472–4.33 | 14–90 0.551–6.99 | 370 | 380 | 94
| WEX | 8–52 0.315–2.047 | 8–85 0.355–2.56 | 10–60 0.394–4.33 | 310 | 320 | 54
| WKG | 10–75 0.394–3 | 12–110 0.472–4.33 | 14–90 0.551–6.99 | 370 | 380 | 94
| WEX | 8–52 0.315–2.047 | 8–85 0.355–2.56 | 10–60 0.394–4.33 | 310 | 320 | 54
| WKG | 10–75 0.394–3 | 12–110 0.472–4.33 | 14–90 0.551–6.99 | 370 | 380 | 94

**The maximum thread length can be limited by the shank.**
WHAT IS A THREAD?

TERMS RELATED TO THREADS (ACCORDING TO DIN 2244):

- $d$: outer diameter of the external thread
- $d_1$: pitch diameter of the external thread
- $d_2$: core diameter of the external thread
- $h_3$: profile height of the external thread
- $H$: height of the output triangle
- $n$: number of threads, number of thread starts
- $P$: pitch/slope (with single-start thread)
- $P_h$: slope (with multi-start thread)
- $R$: radius at the thread tip or in the thread base (root)
- $\alpha$: thread profile angle (called "flank angle" in earlier standards)
- $\phi$: helix angle
- $RH$: international abbreviation for right-hand thread
- $LH$: international mark for left-hand thread

ADVANTAGES:

- High economic efficiency results from the very high cutting performance due to 3 to 4 times higher feed rates.
- Large operational range.
- Easy handling due to central diameter adjustment.
- High turning accuracy (0.01 - 0.02 mm in diameter) achievable.
- Large and unstable workpiece lengths can be turned with good results.
- High surface quality due to original WAGNER® opening function. When the turning length is reached, the four carbide inserts are lifted off the workpiece when the head is opened. This contact-free return ensures a score-free workpiece.
- Use of DIN-ISO reversing plates or WAGNER® precision reversing plates.

MULTI-CUTTING TURNING HEADS

With the WAGNER® multi-cutting turning heads, workpieces can be reduced in diameter by up to 6 mm in one pass. The starting material can be round, square or hexagonal, drawn or rolled. In addition, all cuttable materials can be machined.
**CUTTING AND NON-CUTTING EXTERNAL THREAD PRODUCTION**

In the manufacture of threads, a distinction is made between non-cutting thread rolling and the machining shaping process of thread cutting.

**CUTTING**
- thread cutting
- thread turning
- thread milling
- thread whirling
- thread grinding

**NON-CUTTING**
- thread rolling

Cut threads acquire their shape by cutting the material, whereby the original grain pattern of the workpiece is not changed, but the fibres are interrupted by the cutting process. In thread rolling, the workpiece is rolled or formed with a forming tool in a cold extrusion process. In this process, the fibre flow of the work-hardened material is not interrupted. The prerequisite for thread rolling is a material that is suitable for cold forming.

**THREAD ROLLING**

**THE PROCEDURE**

In thread rolling the thread form is produced by cold forming the material. Very high pressure causes plastic deformation of the material. The thread rolls displace the material from the thread core and allow flow in the direction of the thread tips. The grain flow is not interrupted but only changed. The result is a thread with high strength.

The pre-machining diameter required for thread rolling corresponds to the effective diameter of the thread. The tolerance is selected so that the desired outer diameter of the thread is achieved, but the thread tips are not fully formed. A change in the pre-machining diameter can have an effect on the outside diameter of up to 3-5 times. Therefore, a rough turning diameter that is 0.02 mm larger can result in an outer diameter that is up to 0.1 mm larger. Fully formed thread tips have a negative effect on the roller service life and can lead to roller breakage (see picture below left).

**ADVANTAGES:**
- high fatigue strength of the workpiece
- increased wear protection and corrosion resistance
- reduced notch sensitivity due to continuous fibre flow
- press-polished thread flanks and thus low coefficient of friction
- precise thread profile
- no chips
- efficient and economical production
- short rolling times
- long tool life and thus low machine downtimes
- flexibility due to very large working areas

**PRECONDITIONS:**
- exact pre-turning dimension
- breaking elongation of the material should reach > 5%.
- material strength up to approx. 1700 N/mm²

**Cutting of External Threads**

Thread cutting is a machining process in which material is cut out of the workpiece by means of chasers in order to produce a thread.

The cutting head moves in axial direction on the workpiece and cuts the thread. At least four chasers are provided with a pitch-free profile. Pitch and profile correspond to the thread profile. The thread is produced by the inclination of the chasers in the chaser holders.

**Stationary Type:**

The stationary WAGNER thread cutting head is designed for use with rotating workpieces. This design is used, for example, on the turret of a lathe.

**Rotary Type:**

The WAGNER thread cutting head in rotary design is designed for use with stationary workpieces. It is used, for example, on the mandrel of a machining unit or on the spindle of a slide unit.
KNURLING

WHAT IS KNURLING?

Knurling is a manufacturing process for producing non-slip surfaces on cylindrical components, in which patterns are embossed into workpieces.

PROCEDURE

Basically, a distinction is made in the production of knurls between non-chipping “knurl pressing” or “knurl forming” and cutting “knurl milling”. When knurling with axial and tangential rolling heads, “knurl spinning” is used. Cold forming is used to roll the profile of the knurling roller onto the workpiece. As with thread rolling, the profile tips of the rollers are pressed into the workpiece and the displaced material flows into the gaps of the rollers, i.e. the diameter of the workpiece becomes larger.

According to DIN82, all knurl types can be rolled, provided that the material is cold-formable.

WAGNER knurling tools are suitable for demanding applications and large quantities due to their outstanding quality. We produce the various knurl forms with the pitches from 0.5 - 2 mm.

POSSIBLE KNURL TYPES

- RGE: Left-right diamond, raised tips (fish skin)
- RGV: left-right diamond, recessed tips
- RKE: cross knurl, raised tips
- RKV: cross knurl, recessed tips
- RAA: straight pattern parallel to the axis
- RBL: left-hand spiral
- RBR: right-hand spiral

ADVANTAGES:

- High strength of the work piece, as the grain of the material is not affected.
- High wear resistance due to hardening of the surface.
- High efficiency.

THREAD ROLLING SYSTEMS

AXIAL THREAD ROLLING IN A CONTINUOUS PROCESS:

The rolling head moves in an axial direction on the workpiece and forms the thread. The thread rolls are provided with a pitch-free profile. Pitch and profile correspond to the thread profile. The thread pitch is produced by the inclination of the thread rollers in the rolling head. The feed corresponds to the thread pitch. The length of the rolled workpiece is not limited by the tool. At the end of the thread, a feed stop automatically initiates the opening mechanism of the tool. The rollers release the workpiece and the tool returns in a rapid motion. In order to process the next workpiece, the rolling head is closed manually or by an automatic closing device.

Stationary Type:
The stationary WAGNER Thread Rolling Head is designed for use with rotating workpieces. This design is used, for example, on the turret of a lathe.

Rotating Type:
The WAGNER rotary thread rolling head is designed for use with stationary workpieces. It is used, for example, on the sleeve of a machining unit or on the spindle of a slide unit.

GROOVING PROCEDURE WITH TANGENTIAL TOOLS:

The tangential tool carries two rollers synchronized by a gear. Profile and pitch of the thread are defined by the roll geometry. The roller diameter is a multiple of the thread diameter.

The tangential tool moves at a constant feed rate against the rotating workpiece. The feed motion is perpendicular to the workpiece axis.

The thread rollers are set in rotation by contact with the workpiece and form the thread as the tool continues to advance. As soon as the thread rollers are above the center of the workpiece, the rapid return is initiated and the workpiece is released.

It is not necessary to open or close the tool. The length of the thread is limited by the width of the roller.

THREAD ROLLING SYSTEMS

RGE: Left-right diamond, raised tips (fish skin)
- RGV: left-right diamond, recessed tips
- RKE: cross knurl, raised tips
- RKV: cross knurl, recessed tips
- RAA: straight pattern parallel to the axis
- RBL: left-hand spiral
- RBR: right-hand spiral

ADVANTAGES:

- High strength of the work piece, as the grain of the material is not affected.
- High wear resistance due to hardening of the surface.
- High efficiency.

WAGNER knurling tools are suitable for demanding applications and large quantities due to their outstanding quality. We produce the various knurl forms with the pitches from 0.5 - 2 mm.