GEAR AND THREAD GRINDING

Continuous generating grinding
Continuous generating profile grinding
Single flank generating and profile grinding
Spiral bevel gear grinding
Deburring
Thread grinding
GEAR AND THREAD GRINDING

STELLA has experience in producing precision grinding wheels for more than 80 years. By means of special combinations of high-quality abrasive grain types, improved vitrified bonds and innovative manufacturing processes a new generation of conventional grinding tools has been designed: STELLA select (STs).

In order to achieve optimal cutting features for gear grinding we use abrasive grain compositions of sintered aluminium oxide and special corundums (e.g. monocrystalline or ruby fused aluminium oxide). Highest porosity that is matched to the grinding task by its size and distribution abets the chip removal.

Special vitrified bonding systems which are adjusted to the particular grinding application by their elasticities, consistencies and their flowability ensure that the selected abrasive grains are integrated in an optimal way into the abrasive wheel’s matrix.

What are the distinctive features of STs-grinding wheels?
They do not have only a high and constant cutting efficiency but also a very good form retention in connection with an optimal and economic utilization of the abrasive grains. Due to expanded dressing cycles the grinding process times are shortened and the wheel’s lifetime is extended. The cool cutting effect is an additional important advantage.

Continuous generating grinding

current shapes

<table>
<thead>
<tr>
<th>Shape 1Sp</th>
<th>Shape 7Sp</th>
</tr>
</thead>
</table>

Machines of (e.g.):
Reishauer
Pfauter Gleason
Samputensili
Liebherr
Kapp
Czepel

The worm grinding wheels can be produced with one start or with multi-starts (up to 7 starts).

Speeds: 40 m/s, 50 m/s, 63 m/s

<table>
<thead>
<tr>
<th>Module</th>
<th>Specification of grinding wheels</th>
</tr>
</thead>
</table>
| 0,5 – 1,25 | 20A 150 i8 VX  
92/283A 150 Jot8P1 V10 |
| 1,0 – 3,5 | 20A 120 i8 VX  
283A 120/2 i-Jot10 VX  
92/283A 100/2 i8P1 V10  
92/313A 100/2 Jot10P1 V10  
94A 100/2 i8P1 V10 |
| 2,0 – 7,0 | 20A 100 i8 VX  
283A 80/5 i-Jot10 VX  
92/283A 90/2 Jot12P02 V10  
92/313A 80/5 Jot10P1 V10  
92/313A 80/2 i12P02 V8KK125  
94A 80/5 i8P1 V10 |
| larger than 6,0 | 20A 80 i8 VX  
92/313A 80/10 H11P0 V10 |
Continuous generating profile grinding

current shapes

Machines of (e.g.):
Reishauer RZP
Reishauer RZF

Specifications
20A 100/2 G17P1 V10
92A 120 H17P1 V10

Single flank generating and profile grinding

current shapes

Machines of (e.g.):
Höfler
Kapp
Kownatzki
Klingelnberg/Oerlikon

Specifications
20A 100/2 G17P1 V10
92A 120 H17P1 V10

Speeds: 40 m/s, 50 m/s, 63 m/s

Module | Specification of grinding wheels
---|---
| Single flank generating grinding | Profile grinding |
| 1,0 – 3,0 | 20A 80/2 J14P1 V6 |
| | 94A 80/2 J14P1 V10 |
| 3,0 – 6,0 | 20A 60/2 J14P2 V6 |
| | 94A 60/2 J14P2 V10 |
| larger than 6,0 | 20A 46/2 i8P2 V55 |
| and rough grinding | 92A 46/2 i10P2 V10 |

Machines of (e.g.):
Maag

Speeds: up to 32 m/s

Spiral bevel gear grinding

Machines of (e.g.):
Gleason
Klingelnberg

Specification of grinding wheels

Universal use
223A 60 i5 V23
92A 70 i8P2 V8
BP 80 i8P02 V8

Automotive transmission
94/223A 54/2 i14P02 V8
94A 70/6 i16P02 V8

Speeds: up to 32 m/s

The mentioned qualities are mainly used for case-hardened steels.
Deburring

Machines of (e.g.):
Rausch

Speed: 80 m/s

Thread grinding

current shapes / single-rib grinding

Machines of (e.g.):
Klingelnberg
Lindner
Reishauer
Samputensili
WMW

Shape 1, 1E, 1ESp, 1F
Shape 39, 39E

Shape 1

current shapes / multi-rib grinding

Shape 1

Speeds: 40 m/s, 50 m/s, 63 m/s

For special applications we customize shape, dimension and specification to your individual operating conditions and requirements.

<table>
<thead>
<tr>
<th>Thread pitch/mm</th>
<th>Specification of grinding wheels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unhardened and case-hardened steel</td>
<td>Traverse grinding with single-rib grinding wheels</td>
</tr>
<tr>
<td>0.6 – 0.8</td>
<td>20A 320 M7 V16cbt</td>
</tr>
<tr>
<td>0.9 – 1.5</td>
<td>20A 240 M7 V49</td>
</tr>
<tr>
<td>1.75 – 2.5</td>
<td>20A 180 M7 V49</td>
</tr>
<tr>
<td>2.75 – 6.0</td>
<td>20A 120 L7 V1</td>
</tr>
</tbody>
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<th>Thread pitch/mm</th>
<th>Specification of grinding wheels</th>
</tr>
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<tr>
<td>Tool steel and high-speed steel (HSS)</td>
<td>Traverse grinding with single-rib grinding wheels</td>
</tr>
<tr>
<td>0.6 – 0.8</td>
<td>70C 320 Jot8 V40cbt</td>
</tr>
<tr>
<td>0.9 – 1.5</td>
<td>60C 280 Jot7 V30</td>
</tr>
<tr>
<td>1.75 – 2.5</td>
<td>60C 220 K7 V30</td>
</tr>
<tr>
<td>2.75 – 6.0</td>
<td>60C 150 K7 V30</td>
</tr>
</tbody>
</table>

Please observe the FEPA safety recommendations for the correct use of grinding tools.
www.fepa-abrasives.org