CNC Dressing Discs

CNC dressing discs can be used as an alternative to full form diamond dressing rolls by allowing the user to generate profiles using the capability of the CNC machine, enabling complex grinding wheel profiles and cylindrical grinding wheels of differing widths to be dressed effectively.

The discs use both natural and synthetic diamond incorporating the latest developments in diamond processing technologies. Both individual and/or ‘bulk’ stones can be used, with the diamond layer being fixed in a sintered free standing metal body to give maximum product performance. The discs specification will be dictated by the application.

Advantages of CNC dressing:
- A versatile dressing tool, particularly for small to medium batch sizes and prototyping
- Design is not specific to individual work pieces
- Constant effective dressing width
- Automation of the dressing process
- Reproducible high precision with low work piece rejects
- Discs can be re-lapped/re-profiled

Diamond Types
- Individual Reinforcing Pieces
- Bulk Stones

Markets
- Automotive Industry
- Turbine Industry
- Wind Farms
- Gear Industry

Applications
- Peel grinding
- Form grinding
- Centreless grinding
- Drill flute grinding
## Types of rotary CNC dressing discs

<table>
<thead>
<tr>
<th>Type</th>
<th>Manufacture</th>
<th>Grit density</th>
<th>Description</th>
<th>Advantages</th>
</tr>
</thead>
</table>
| SG         | Positive process | Maximum     | Positive electroplated SG dressing discs are characterized by a single layer of diamonds arranged radially, offering a constant effective dressing width.                                                                 | • Statistical diamond distribution gives maximum diamond concentration  
• Exceptional running truth accuracy is achieved through the finish of the diamond coating  
• Constant diamond layer widths due to single layer of diamond particles |
| TS         | Reverse process | Controlled or Maximum | Infiltrated dressing discs are characterized by high wear resistance and consist of a single layer diamond coating.                                                                                       | • Both random and controlled diamond concentration  
• Extremely high accuracy as the diamond coating is ground  
• Individually selected diamonds reinforce small radii  
• Edge reinforcements can be used to increase the wear resistance |
| PCD/CVD/MCD| Reverse process | Controlled   | Infiltrated versions of CNC dressing discs, with CVD PCD or MCD segments are particularly suitable for dressing very small radii.                                                                          | • Controlled concentration  
• Extremely high accuracy as the diamond coating is ground  
• Can be re-profiled many times |
| SD         | Positive process | Controlled   | The metal bonded sintered SD dressing discs consist of a multi-layer coating that can be reground and sharpened many times. SD discs are highly suitable for centerless cylindrical applications with very fine surface requirements. | • Statistical diamond distribution  
• Controlled diamond concentration  
• Extremely high accuracy as the diamond layer is ground  
• Constant effective dressing width, dependant on the design |
Which one to choose?

This diagram is intended to assist technical users in the selection of the correct dressing tool. The selection does not depend just on the machine settings and grinding wheel specification, but also on the geometry to be dressed and the surface finish to be achieved on the workpiece. This diagram is no more than a rough guideline and recommendation.

What grinding wheel specification will be dressed?

- Vitrified bonded CBN grinding wheel
- Conventional grinding wheels

What type of profile will be dressed?

- Concave/Convex/Cylindrical
- Cylindrical
- Concave/Convex
- Concave/Convex/Cylindrical

- SG
- SD
- TS Radii
  - < 0.4 mm: PCD/CVD
- TS
## Range of SG dressing discs in stock

<table>
<thead>
<tr>
<th>Design code</th>
<th>D</th>
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<th>W</th>
<th>T</th>
<th>H</th>
<th>Body</th>
<th>Order number</th>
<th>Comment</th>
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<td>25</td>
<td>H6</td>
<td>D602 Bronze</td>
<td>00310337536 Semi-manufactured part</td>
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</table>

### Machine:
Universal application — after suitable adaptation of the body it can be used on all machines (e.g. bores 40, 52, 56 mm etc.)

### Application:
Dressing of conventional and vitrified bonded cBN grinding wheels

### Delivery:
Ex stock, 2 weeks for adapting the bore, body width and fastening holes if necessary

### SG 40

<table>
<thead>
<tr>
<th>Design code</th>
<th>D</th>
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<th>T</th>
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### Machine:
e.g. Junker

### Application:
Dressing of conventional and vitrified bonded cBN grinding wheels

### Delivery:
Ex stock

### SG 40

<table>
<thead>
<tr>
<th>Design code</th>
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### Machine:
e.g. Junker

### Application:
Dressing of conventional and vitrified bonded cBN grinding wheels

### Delivery:
Ex stock

### SG 40

<table>
<thead>
<tr>
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### Machine:
e.g. Junker

### Application:
Dressing of conventional and vitrified bonded cBN grinding wheels

### Delivery:
Ex stock

Please feel free to contact our expert advisors at any time. Contact details can be found on the last page.
<table>
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<td>D426</td>
<td>Steel 66260347760 Case-hardened bore</td>
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<td></td>
<td></td>
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<td></td>
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</tbody>
</table>
| Machine: e.g. Landis
| Application: Dressing of conventional and vitrified bonded cBN grinding wheels
| Delivery: Ex stock |
|------------|----|-----|----|----|-----|------|--------------|------------------------------|
| 1SG71P     | 130| 0.6 | 10 | 12 | 50  | H3   | D602        | Steel 66260116525           |
|            |    |     |    |    |     |      |             |                              |
| Machine: e.g. Schaudt
| Application: Dressing of conventional and vitrified bonded cBN grinding wheels
| Delivery: Ex stock |
|------------|----|-----|----|----|-----|------|--------------|------------------------------|
| 1SG71P     | 140| 0.6 | 5  | 12 | 50  | H3   | D602        | Bronze 66260334649          |
|            |    |     |    |    |     |      |             |                              |
| Machine: e.g. Schaudt
| Application: Dressing of conventional and vitrified bonded cBN grinding wheels
| Delivery: Ex stock |
|------------|----|-----|----|----|-----|------|--------------|------------------------------|
| 302SG71P   | 140| 0.6 | 5  | 12 | 50  | H3   | D602        | Steel 69014159716 Hardened body |
|            |    |     |    |    |     |      |             |                              |
| Machine: e.g. Schaudt
| Application: Dressing of conventional and vitrified bonded cBN grinding wheels
| Delivery: Ex stock |
|------------|----|-----|----|----|-----|------|--------------|------------------------------|
| 303SG71P   | 150| 0.4 | 5  | 19 | 52  | H3   | D426        | Steel 66260355740 Case-hardened bore |
|            |    |     |    |    |     |      |             |                              |
| Machine: e.g. Landis
| Application: Dressing of conventional and vitrified bonded cBN grinding wheels
| Delivery: Ex stock |

WINTER diamond tools for dressing grinding wheels
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<th>H</th>
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**Machine:** e.g. Naxos  
**Application:** Dressing of conventional and vitrified bonded cBN grinding wheels  
**Delivery:** Ex stock

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**Machine:** e.g. Junker  
**Application:** Dressing of conventional and vitrified bonded cBN grinding wheels  
**Delivery:** Ex stock

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**Machine:** e.g. Schaudt  
**Application:** Dressing conventional grinding wheels  
**Delivery:** Ex stock

* This refers to the conicity of the outer diameter
TS dressing discs held in stock

### TS 20

<table>
<thead>
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<th>Design code</th>
<th>D</th>
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<th>X</th>
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<th>Comment</th>
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**Machine:** e.g. Buderus
**Applications:** Dressing conventional grinding wheels
**Delivery:** Ex stock

### TS 30

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<th>Design code</th>
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**Machine:** e.g. Giustina
**Applications:** Dressing conventional grinding wheels
**Delivery:** Ex stock

### TS 60 N

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<th>Design code</th>
<th>D</th>
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<th>X</th>
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<th>Grit size</th>
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<th>Comments</th>
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**Machine:** e.g. Klingelnberg
**Applications:** Dressing conventional grinding wheels
**Delivery:** Ex stock

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**8**

WINTER diamond tools for dressing grinding wheels
Designs with CVD held in stock

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<thead>
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Machine:                   
Applications: Dressing conventional grinding wheels  
Delivery: Ex stock

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<thead>
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<th>TS 20 N</th>
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</tr>
</tbody>
</table>

Machine:                   
Applications: Dressing conventional grinding wheels  
Delivery: Ex stock
# Checklist

for CNC dressing discs

## Customer
- Customer:
- Customer no.:

## Machine
- Machine type:
- Maximum acceptable dressing disc diameter (mm):
- Current dressing tool:

## Dressing unit
- Arbor diameter (mm):
- Arbor length (mm):

## Workpiece
- Workpiece drawing:
- Surface finish desired:
- Grinding allowance (mm / Ø):

## Grinding wheel
- Specification:
- Dimensions:

## Parameters
- Profile or straight dressing:
- Grinding wheel circumferential speed (m/s) or speed (rpm):
- Circumferential speed of dressing disc (m/s) or speed (rpm):
- Counter-directional (GGL) / uni-directional dressing (GL):
- Radial infeed per dressing pass ($a_v$):
- Axial dressing feed ($f_a$):
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