Industry Solutions

# Dental Solution

Volume 3

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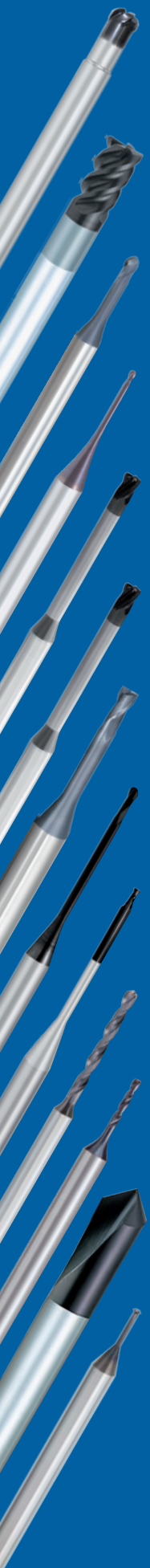


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# Tool selection Guide

## Bridge and Crown

| Material | Cobalt Chrome | Titanium | Zirconium | PMMA/WAX | PEEK |
|---|---|---|---|---|---|
| Ball Nose | WXL-LN-EBD | WXL-LN-EBD | DG-LN-EBD (WXS-LN-EBD) | WXL-LN-EBD | WXS-LN-EBD (WXL-LN-EBD) |
| Radius | WXS-CRE (Roughing) WXL-CPR | FXS-PKE (Roughing) WXL-CPR | WXS-CPR | WXL-CPR | WXS-CPR |
| Square | WXL-EDS | WXL-EDS | WXL-EDS | WXL-EDS | WXL-EDS |

## Abutment

| Material | Titanium | Zirconium |
|---|---|---|
| Ball Nose | WXL-LN-EBD | DG-LN-EBD |
| Radius | FXS-PKE (Roughing) WXL-CPR | WXS-CPR |
| Square | WXL-EDS | WXL-EDS |
| Drill | MRS-GDL WX-MS-GDS | MRS-GDL WX-MS-GDS |
| Threading | WH-VM-PNC | WH-VM-PNC |

## Implant Bar

| Material | Titanium |
|---|---|
| Ball Nose | WXL-LN-EBD |
| Radius | FXS-PKE (Roughing) WXL-CPR |
| Square | WXL-EDS |
| Drill | MRS-GDL WX-MS-GDS |
| Threading | WH-VM-PNC |

# The OSG Advantage

Total solution from start to finish

## Innovation, Service & Global Network

OSG is the world's largest manufacturer of round cutting tools. Established in 1938, OSG has a longstanding reputation as a total solution cutting tool provider throughout the manufacturing industry. Gaining the support and trust of our customers has always been OSG's commitment. Through our innovative technological know-how, exceptional services, and out-of-the-box thinking, we can offer tailored support for your dental application needs.

**KNOW-HOW** **01**

Over 75 years of history and proven successes in the cutting tool sector, serving an array of industries including automotive, mold & die, aerospace, energy, medical, etc.

**ABSOLUTE QUALITY CONTROL** **02**

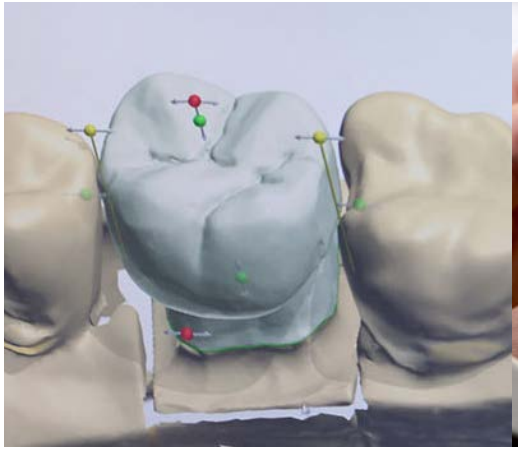
OSG produces its own carbide, designs its own tools, develops its own coating and manufactures its own CNC machines to ensure quality control.

**TAILORED SOLUTIONS** **03**

OSG offers custom support for each of our client's individual needs - from application evaluation, tool drawing creation, to creating tailored proposals.

**AFTER SALES SUPPORT** **04**

OSG is committed to providing the best possible service and offers on-site technical support to guarantee performance.



# Technical Data

OSG's patented diamond coating performance overview

## OSG Diamond Coating

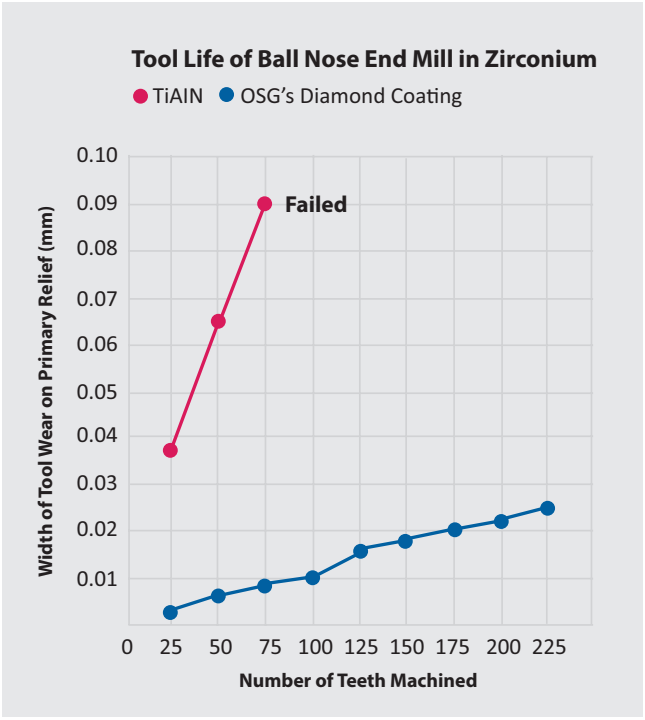
OSG's proprietary diamond coating is composed of ultra-fine diamond crystals and is ideal for common dental materials such as PMMA, zirconium and hybrid resin.

### Features & Benefits

- **Smooth Surface**
Results in better work surface.

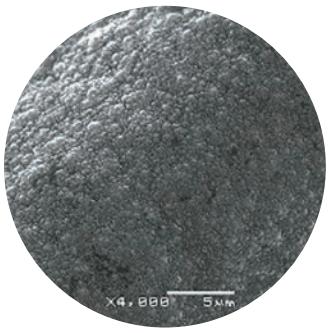
- **Sharp Cutting Edge**
Prevents delamination.

- **Multi-Layer Structure & Special Treatment**
Increase toughness and adhesion to prolong tool life.

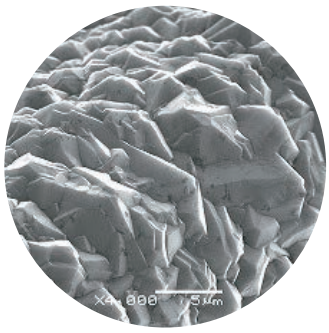



In this test, OSG's patented diamond coating was able to achieve three times the tool life versus the TiAlN coating in zirconium, which is a popular dental prosthetics manufacturing material.

### Comparison of Diamond Coating Surface



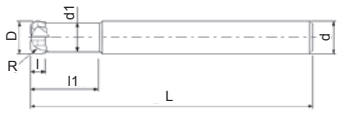
OSG's Diamond Coating



Competitor's Diamond Coating

# WXS-CRE

## Carbide End Mills for Roughing



### Shank diamter 6mm

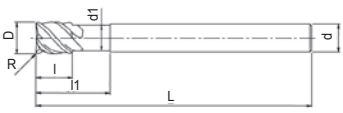
| EDP | d | D | R | l1 | L | l | d1 | ZΔ | Price |
|---|---|---|---|---|---|---|---|---|---|
| 48106421 | 6 | 2,0 | 0,5 | 8,0 | 50 | 0,8 | 2,00 | 4 | |
| 48254212 | 6 | 2,0 | 0,5 | 12,0 | 50 | 0,8 | 1,80 | 4 | |
| 48254316 | 6 | 3,0 | 0,75 | 16,0 | 50 | 1,3 | 2,70 | 5 | |
| 48106433 | 6 | 3,0 | 0,75 | 12,0 | 55 | 1,2 | 2,70 | 5 | |
| 48106445 | 6 | 4,0 | 1 | 12,0 | 55 | 1,6 | 3,60 | 5 | |

ZΔ= Number of flutes - Anzahl Schneiden - Numero di denti - Nombre de lèvres - Liczba ostrzy - Antal skær - Antal skär - Numero de ranuras - Число режущих кромок - Kanal sayısı

| | | | | | |
|---|---|---|---|---|---|
| Cobalt Chrome | Titanium | Zirconium | Wax/PMMA | PEEK | Glass Ceramics |
| ◎ | ○ | | | | |

# FXS-PKE

## Carbide End Mills for Roughing



### Shank diamter 6mm

| EDP | d | D | R | l1 | L | l | d1 | ZΔ | Price |
|---|---|---|---|---|---|---|---|---|---|
| 8548003 | 6 | 3,0 | 0,5 | 9,0 | 60 | 5,0 | 2,85 | 4 | |

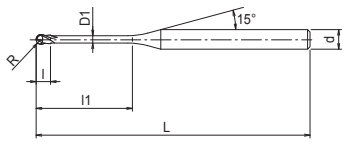
| | | | | | |
|---|---|---|---|---|---|
| Cobalt Chrome | Titanium | Zirconium | Wax/PMMA | PEEK | Glass Ceramics |
| ○ | ◎ | | | | |

◎ Best ○ Good

# WXL-LN-EBD

CARBIDE 30° SHRINK FIT ± 0.005 min-1 page 16

## Carbide End Mills



### Shank diamter 4mm

| EDP | d | D | R | l1 | L | l | d1 | ZΔ | Price |
|---|---|---|---|---|---|---|---|---|---|
| 3110525 | 4 | 0,5 | 0,25 | 2,5 | 45 | 0,4 | 0,45 | 2 | |
| 3110660 | 4 | 0,6 | 0,3 | 6,0 | 45 | 0,5 | 0,55 | 2 | |
| 3110700 | 4 | 0,6 | 0,3 | 10,0 | 45 | 0,5 | 0,55 | 2 | |
| 3111070 | 4 | 1,0 | 0,5 | 7,0 | 45 | 0,8 | 0,95 | 2 | |
| 3111112 | 4 | 1,0 | 0,5 | 12,0 | 45 | 0,8 | 0,95 | 2 | |
| 3111114 | 4 | 1,0 | 0,5 | 14,0 | 50 | 0,8 | 0,95 | 2 | |
| 3111116 | 4 | 1,0 | 0,5 | 16,0 | 50 | 0,8 | 0,95 | 2 | |
| 3111118 | 4 | 1,0 | 0,5 | 18,0 | 55 | 0,8 | 0,95 | 2 | |
| 3111120 | 4 | 1,0 | 0,5 | 20,0 | 55 | 0,8 | 0,95 | 2 | |
| 3112112 | 4 | 2,0 | 1 | 12,0 | 45 | 1,6 | 1,95 | 2 | |
| 3112114 | 4 | 2,0 | 1 | 14,0 | 50 | 1,6 | 1,95 | 2 | |
| 3112116 | 4 | 2,0 | 1 | 16,0 | 50 | 1,6 | 1,95 | 2 | |
| 48251220 | 4 | 2,0 | 1 | 20,0 | 50 | 1,6 | 1,95 | 2 | |
| 3112615 | 4 | 2,5 | 1,25 | 15,0 | 55 | 2,0 | 2,35 | 2 | |

### Shank diamter 6mm

| EDP | d | D | R | l1 | L | l | d1 | ZΔ | Price |
|---|---|---|---|---|---|---|---|---|---|
| 3120625 | 6 | 0,6 | 0,3 | 2,5 | 50 | 0,5 | 0,55 | 2 | |
| 48251008 | 6 | 0,6 | 0,3 | 8,0 | 50 | 0,5 | 0,55 | 2 | |
| 3121080 | 6 | 1,0 | 0,5 | 8,0 | 50 | 0,8 | 0,95 | 2 | |
| 3121100 | 6 | 1,0 | 0,5 | 10,0 | 50 | 0,8 | 0,95 | 2 | |
| 48251116 | 6 | 1,0 | 0,5 | 16,0 | 50 | 0,8 | 0,95 | 2 | |
| 3121580 | 6 | 1,5 | 0,75 | 8,0 | 50 | 1,2 | 1,45 | 2 | |
| 3121600 | 6 | 1,5 | 0,75 | 10,0 | 50 | 1,2 | 1,45 | 2 | |
| 3121612 | 6 | 1,5 | 0,75 | 12,0 | 50 | 1,2 | 1,45 | 2 | |
| 3122100 | 6 | 2,0 | 1 | 10,0 | 50 | 1,6 | 1,95 | 2 | |
| 3122112 | 6 | 2,0 | 1 | 12,0 | 50 | 1,6 | 1,95 | 2 | |
| 48251221 | 6 | 2,0 | 1 | 20,0 | 50 | 1,6 | 1,95 | 2 | |
| 3123112 | 6 | 3,0 | 1,5 | 12,0 | 55 | 2,4 | 2,85 | 2 | |
| 3123116 | 6 | 3,0 | 1,5 | 16,0 | 55 | 2,4 | 2,85 | 2 | |

ZΔ= Number of flutes - Anzahl Schneiden - Numero di denti - Nombre de lèvres - Liczba ostrzy - Antal skær - Antal skär - Numero de ranuras - Число режущих кромок - Kanal sayısı

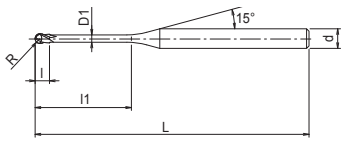
| | | | | | |
|---|---|---|---|---|---|
| **Cobalt Chrome** | **Titanium** | **Zirconium** | **Wax/PMMA** | **PEEK** | **Glass Ceramics** |
| ◎ | ◎ | ○ | ◎ | ○ | |

◎ Best ○ Good

# WXS-LN-EBD

CARBIDE | 30° | SHRINK FIT | ± 0.005 | min⁻¹ | page 17

## Carbide End Mills



### Shank diamter 4mm

| EDP | d | D | R | l1 | L | l | d1 | ZΔ | Price |
|---|---|---|---|---|---|---|---|---|---|
| 3051008 | 4 | 1,0 | 0,5 | 8,0 | 45 | 0,8 | 0,95 | 2 | |
| 3051010 | 4 | 1,0 | 0,5 | 10,0 | 45 | 0,8 | 0,95 | 2 | |
| 3051012 | 4 | 1,0 | 0,5 | 12,0 | 45 | 0,8 | 0,95 | 2 | |
| 3051016 | 4 | 1,0 | 0,5 | 16,0 | 50 | 0,8 | 0,95 | 2 | |
| 3051510 | 4 | 1,5 | 0,75 | 10,0 | 45 | 1,2 | 1,45 | 2 | |
| 3051512 | 4 | 1,5 | 0,75 | 12,0 | 45 | 1,2 | 1,45 | 2 | |
| 3051516 | 4 | 1,5 | 0,75 | 16,0 | 45 | 1,2 | 1,95 | 2 | |
| 3052012 | 4 | 2,0 | 1 | 12,0 | 45 | 1,6 | 1,95 | 2 | |
| 3052016 | 4 | 2,0 | 1 | 16,0 | 50 | 1,6 | 2,35 | 2 | |
| 2052020 | 4 | 2,0 | 1 | 20,0 | 55 | 1,6 | 2,85 | 2 | |



ZΔ= Number of flutes - Anzahl Schneiden - Numero di denti - Nombre de lèvres - Liczba ostrzy - Antal skær - Antal skär - Numero de ranuras - Число режущих кромок - Kanal sayısı

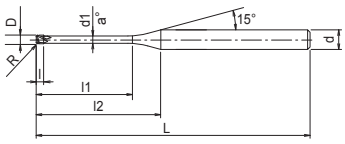
| Cobalt Chrome | Titanium | Zirconium | Wax/PMMA | PEEK | Glass Ceramics |
|---|---|---|---|---|---|
| ○ | ○ | ○ | ○ | ◎ | |

◎ Best ○ Good

# WXL-CPR

CARBIDE | 30° | SHRINK FIT | ± 0.005 | 0~-0.0015 | min⁻¹ | page 17

## Carbide End Mills



### Shank diamter 6mm

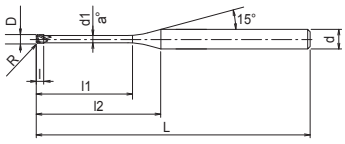
| EDP | d | D | R | l1 | l2 | L | l | d1 | ZΔ | Price |
|---|---|---|---|---|---|---|---|---|---|---|
| 48250112 | 6 | 1,5 | 0,2 | 12,0 | 21 | 50 | 1,2 | 1,43 | 2 | |
| 48250115 | 6 | 1,5 | 0,2 | 15,0 | 24 | 50 | 1,2 | 1,43 | 2 | |

| Cobalt Chrome | Titanium | Zirconium | Wax/PMMA | PEEK | Glass Ceramics |
|---|---|---|---|---|---|
| ◎ | ◎ | ○ | ◎ | ○ | |

# WXS-CPR

CARBIDE | 30° | SHRINK FIT | ± 0.005 | 0~-0.0015 | min⁻¹ | page 17

## Carbide End Mills



### Shank diamter 4mm

| EDP | d | D | R | l1 | l2 | L | l | d1 | ZΔ | Price |
|---|---|---|---|---|---|---|---|---|---|---|
| 3100405 | 4 | 0,4 | 0,05 | 4,0 | 10,77 | 50 | 0,3 | 0,37 | 2 | |
| 3101015 | 4 | 1,0 | 0,2 | 12,0 | 17,69 | 50 | 0,8 | 0,95 | 2 | |
| 3101022 | 4 | 1,0 | 0,3 | 12,0 | 17,69 | 50 | 0,8 | 0,95 | 2 | |
| 3101505 | 4 | 1,5 | 0,2 | 16,0 | 20,75 | 50 | 1,2 | 1,45 | 2 | |
| 3101510 | 4 | 1,5 | 0,3 | 16,0 | 20,75 | 50 | 1,2 | 1,45 | 2 | |
| 3102010 | 4 | 2,0 | 0,2 | 16,0 | 19,82 | 60 | 1,6 | 1,95 | 2 | |
| 3102022 | 4 | 2,0 | 0,5 | 16,0 | 19,82 | 60 | 1,6 | 1,95 | 2 | |
| 3102023 | 4 | 2,0 | 0,5 | 20,0 | 23,82 | 60 | 1,6 | 1,95 | 2 | |

### Shank diamter 6mm

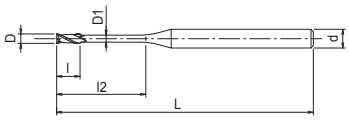
| EDP | d | D | R | l1 | l2 | L | l | d1 | ZΔ | Price |
|---|---|---|---|---|---|---|---|---|---|---|
| 48253108 | 6 | 1,0 | 0,2 | 8,0 | 17,90 | 50 | 0,8 | 0,94 | 2 | |
| 3103015 | 6 | 3,0 | 0,5 | 16,0 | 21,87 | 60 | 2,5 | 2,85 | 2 | |
| 3103027 | 6 | 3,0 | 0,5 | 20,0 | 24,45 | 60 | 2,5 | 2,85 | 2 | |

| Cobalt Chrome | Titanium | Zirconium | Wax/PMMA | PEEK | Glass Ceramics |
|---|---|---|---|---|---|
| ○ | ○ | ○ | ○ | ◎ | |

◎ Best ○ Good

# WXL-LN-EDS

## Carbide End Mills



### Shank diamter 4mm

| EDP | d | D | l2 | L | l | D1 | ZΔ | Price |
|---|---|---|---|---|---|---|---|---|
| 3131308 | 4 | 0,3 | 4 | 45 | 0,5 | 0,28 | 2 | |
| 3131408 | 4 | 0,4 | 4 | 45 | 0,6 | 0,37 | 2 | |
| 3131504 | 4 | 0,5 | 4 | 45 | 0,7 | 0,45 | 2 | |
| 3131606 | 4 | 0,6 | 6 | 45 | 0,9 | 0,55 | 2 | |
| 3131610 | 4 | 0,6 | 10 | 45 | 0,9 | 0,55 | 2 | |
| 3132010 | 4 | 1,0 | 10 | 45 | 1,5 | 0,95 | 2 | |
| 3132016 | 4 | 1,0 | 16 | 50 | 1,5 | 0,95 | 2 | |
| 3132018 | 4 | 1,0 | 18 | 55 | 1,5 | 0,95 | 2 | |
| 3132020 | 4 | 1,0 | 20 | 55 | 1,5 | 0,95 | 2 | |
| 3132518 | 4 | 1,5 | 18 | 55 | 2,3 | 1,45 | 2 | |
| 3133010 | 4 | 2,0 | 10 | 45 | 3,0 | 1,95 | 2 | |
| 3133016 | 4 | 2,0 | 16 | 50 | 3,0 | 1,95 | 2 | |
| 3133020 | 4 | 2,0 | 20 | 55 | 3,0 | 1,95 | 2 | |

### Shank diamter 6mm

| EDP | d | D | l2 | L | l | D1 | ZΔ | Price |
|---|---|---|---|---|---|---|---|---|
| 48252112 | 6 | 1,5 | 12 | 50 | 2,3 | 1,45 | 2 | |

ZΔ= Number of flutes - Anzahl Schneiden - Numero di denti - Nombre de lèvres - Liczba ostrzy - Antal skær - Antal skär - Numero de ranuras - Число режущих кромок - Kanal sayısı

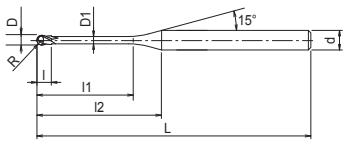
| Cobalt Chrome | Titanium | Zirconium | Wax/PMMA | PEEK | Glass Ceramics |
|---|---|---|---|---|---|
| ○ | ○ | ○ | ○ | ○ | |

◎ Best ○ Good

# DG-LN-EBD

CARBIDE | 30° | SHRINK FIT | ± 0.01 0,5 ≤ R | ± 0.008 0,5 > R | min⁻¹ page 17

## Diamond Coated Carbide End Mills



### Shank diamter 4mm

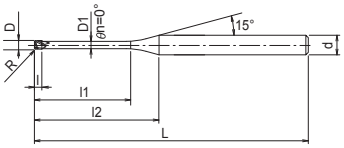
| EDP | d | D | R | l1 | l2 | L | l | D1 | ZΔ | Price |
|---|---|---|---|---|---|---|---|---|---|---|
| 8553711 | 4 | 0,6 | 0,3 | 6 | 12,8 | 50 | 0,9 | 0,56 | 2 | |
| 8553712 | 4 | 0,6 | 0,3 | 10 | 16,8 | 50 | 0,9 | 0,56 | 2 | |
| 8553723 | 4 | 1 | 0,5 | 10 | 16,05 | 50 | 1,5 | 0,96 | 2 | |
| 8553724 | 4 | 1 | 0,5 | 16 | 22,05 | 60 | 1,5 | 0,96 | 2 | |
| 48249116 | 4 | 1 | 0,5 | 16 | 21,8 | 50 | 1,5 | 0,93 | 2 | |
| 8553733 | 4 | 1,5 | 0,75 | 16 | 21,07 | 60 | 2,3 | 1,44 | 2 | |
| 8553743 | 4 | 2 | 1 | 16 | 20,35 | 60 | 3 | 1,9 | 2 | |
| 8553744 | 4 | 2 | 1 | 20 | 24,35 | 60 | 3 | 1,9 | 2 | |
| 48249220 | 4 | 2 | 1 | 20 | 24,2 | 50 | 3 | 1,87 | 2 | |

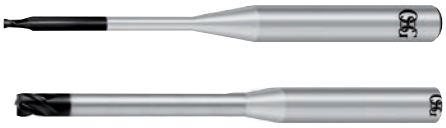
| Cobalt Chrome | Titanium | Zirconium | Wax/PMMA | PEEK | Glass Ceramics |
|---|---|---|---|---|---|
| | | ◎ | | ◎ | ○ |

# DG-CPR

CARBIDE | 30° | SHRINK FIT | ± 0.01 | D < 1 0~-0.02 | D ≥ 1 0~-0.027 | min⁻¹ page 16

## Diamond Coated Carbide End Mills





### Shank diamter 4mm

| EDP | d | D | R | l1 | l2 | L | l | D1 | θn | ZΔ | Price |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 8554511 | 4 | 0,5 | 0,1 | 4 | 10,98 | 50 | 0,9 | 0,46 | 0° | 2 | |
| 8554512 | 4 | 0,5 | 0,1 | 6 | 12,98 | 50 | 0,9 | 0,46 | 0° | 2 | |
| 48103001 | 4 | 1 | 0,1 | 10 | 16,05 | 50 | 1,5 | 0,96 | 0° | 2 | |
| 8554542 | 4 | 2 | 0,2 | 10 | 14,35 | 60 | 3 | 1,9 | 0° | 2 | |
| 8554544 | 4 | 2 | 0,2 | 20 | 24,35 | 70 | 3 | 1,9 | 0° | 2 | |

### Shank diamter 6mm

| EDP | d | D | R | l1 | l2 | L | l | D1 | θn | ZΔ | Price |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 48103004 | 6 | 4 | 0,5 | 25 | - | 70 | 6 | 3,9 | 0° | 4 | |

ZΔ= Number of flutes - Anzahl Schneiden - Numero di denti - Nombre de lèvres - Liczba ostrzy - Antal skær - Antal skär - Numero de ranuras - Число режущих кромок - Kanal sayısı

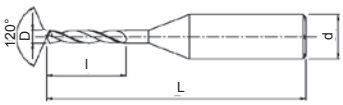
| Cobalt Chrome | Titanium | Zirconium | Wax/PMMA | PEEK | Glass Ceramics |
|---|---|---|---|---|---|
| | | ◎ | | ◎ | ○ |

◎ Best ○ Good

# MRS-GDL

CARBIDE | 30° | SHRINK FIT | | 0~-0.008 | F D ≤ 1,15 | X D ≥ 1,2 | min⁻¹ page 18

## Drills



### Shank diamter 3mm

| EDP | d | D | L | l | Price |
|---|---|---|---|---|---|
| 8577100 | 3 | 1 | 46 | 12 | |
| 8577110 | 3 | 1,1 | 50 | 13,2 | |
| 8577111 | 3 | 1,11 | 50 | 13,8 | |
| 8577112 | 3 | 1,12 | 50 | 13,8 | |
| 8577115 | 3 | 1,15 | 50 | 13,8 | |
| 8577120 | 3 | 1,2 | 50 | 14,4 | |
| 8577127 | 3 | 1,27 | 50 | 15,6 | |
| 8577128 | 3 | 1,28 | 50 | 15,6 | |
| 8577129 | 3 | 1,29 | 50 | 15,6 | |
| 8577130 | 3 | 1,3 | 50 | 15,6 | |
| 8577140 | 3 | 1,4 | 54 | 16,8 | |
| 8577145 | 3 | 1,45 | 54 | 17,4 | |
| 8577146 | 3 | 1,46 | 54 | 18 | |
| 8577147 | 3 | 1,47 | 54 | 18 | |
| 8577150 | 3 | 1,5 | 54 | 18 | |
| 8577151 | 3 | 1,51 | 54 | 18,6 | |
| 8577152 | 3 | 1,52 | 54 | 18,6 | |
| 8577153 | 3 | 1,53 | 54 | 18,6 | |
| 8577155 | 3 | 1,55 | 54 | 18,6 | |
| 8577156 | 3 | 1,56 | 54 | 19,2 | |
| 8577157 | 3 | 1,57 | 54 | 19,2 | |
| 8577160 | 3 | 1,6 | 54 | 19,2 | |
| 8577170 | 3 | 1,7 | 58 | 20,4 | |
| 8577180 | 3 | 1,8 | 58 | 21,6 | |
| 8577181 | 3 | 1,81 | 58 | 22,2 | |
| 8577182 | 3 | 1,82 | 58 | 22,2 | |
| 8577183 | 3 | 1,83 | 58 | 22,2 | |
| 8577190 | 3 | 1,9 | 58 | 22,8 | |
| 8577198 | 3 | 1,98 | 58 | 24 | |
| 8577199 | 3 | 1,99 | 58 | 24 | |
| 8577200 | 3 | 2 | 58 | 24 | |
| 8577210 | 3 | 2,1 | 62 | 25,2 | |
| 8577212 | 3 | 2,12 | 62 | 25,8 | |
| 8577213 | 3 | 2,13 | 62 | 25,8 | |
| 8577214 | 3 | 2,14 | 62 | 25,8 | |
| 8577220 | 3 | 2,2 | 62 | 26,4 | |
| 8577229 | 3 | 2,29 | 62 | 27,6 | |
| 8577230 | 3 | 2,3 | 62 | 27,6 | |
| 8577231 | 3 | 2,31 | 62 | 28,2 | |
| 8577239 | 3 | 2,39 | 62 | 28,8 | |
| 8577240 | 3 | 2,4 | 62 | 28,8 | |
| 8577241 | 3 | 2,41 | 66 | 29,4 | |
| 8577242 | 3 | 2,42 | 66 | 29,4 | |
| 8577250 | 3 | 2,5 | 66 | 30 | |
| 8577255 | 3 | 2,55 | 66 | 30,6 | |
| 8577256 | 3 | 2,56 | 66 | 31,2 | |
| 8577257 | 3 | 2,57 | 66 | 31,2 | |
| 8577260 | 3 | 2,6 | 66 | 31,2 | |
| 8577270 | 3 | 2,7 | 66 | 32,4 | |
| 8577277 | 3 | 2,77 | 66 | 33,6 | |
| 8577278 | 3 | 2,78 | 66 | 33,6 | |
| 8577279 | 3 | 2,79 | 66 | 33,6 | |
| 8577280 | 3 | 2,8 | 66 | 33,6 | |
| 8577290 | 3 | 2,9 | 66 | 34,8 | |
| 8577300 | 3 | 3 | 66 | 36 | |



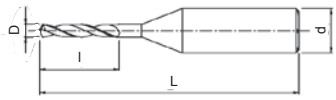
| Cobalt Chrome | Titanium | Zirconium | Wax/PMMA | PEEK | Glass Ceramics |
|---|---|---|---|---|---|
| ◎ | ◎ | ○ | | | |

◎ Best ○ Good

# WX-MS-GDS

CARBIDE | 26°~32° | SHRINK FIT | 130° ≥2,4 | 140° ≤2,35 | 0~-0.01 | min⁻¹ page 18

## Drills (short length)



### Shank diamter 3mm

| EDP | d | D | L | l | Price |
|---|---|---|---|---|---|
| 3300050 | 3 | 0,5 | 38 | 3 | |
| 3300060 | 3 | 0,6 | 38 | 3,5 | |
| 3300070 | 3 | 0,7 | 38 | 4,5 | |
| 3300080 | 3 | 0,8 | 38 | 5 | |
| 3300090 | 3 | 0,9 | 38 | 5,5 | |
| 3300095 | 3 | 0,95 | 38 | 5,5 | |
| 3300100 | 3 | 1 | 38 | 6 | |
| 3300110 | 3 | 1,1 | 42 | 7 | |
| 3300111 | 3 | 1,11 | 42 | 7 | |
| 3300112 | 3 | 1,12 | 42 | 7 | |
| 3300120 | 3 | 1,2 | 42 | 8 | |
| 3300125 | 3 | 1,25 | 42 | 8 | |
| 3300127 | 3 | 1,27 | 42 | 8 | |
| 3300128 | 3 | 1,28 | 42 | 8 | |
| 3300129 | 3 | 1,29 | 42 | 8 | |
| 3300130 | 3 | 1,3 | 42 | 8 | |
| 3300140 | 3 | 1,4 | 42 | 9 | |
| 3300144 | 3 | 1,44 | 42 | 9 | |
| 3300145 | 3 | 1,45 | 42 | 9 | |
| 3300146 | 3 | 1,46 | 42 | 9 | |
| 3300147 | 3 | 1,47 | 42 | 9 | |
| 3300148 | 3 | 1,48 | 42 | 9 | |
| 3300150 | 3 | 1,5 | 42 | 9 | |
| 3300154 | 3 | 1,54 | 42 | 10 | |
| 3300155 | 3 | 1,55 | 42 | 10 | |
| 3300156 | 3 | 1,56 | 42 | 10 | |
| 3300157 | 3 | 1,57 | 42 | 10 | |
| 3300158 | 3 | 1,58 | 42 | 10 | |
| 3300160 | 3 | 1,6 | 42 | 10 | |
| 3300170 | 3 | 1,7 | 42 | 10 | |
| 3300180 | 3 | 1,8 | 42 | 11 | |
| 3300181 | 3 | 1,81 | 42 | 11 | |
| 3300182 | 3 | 1,82 | 42 | 11 | |
| 3300183 | 3 | 1,83 | 42 | 11 | |
| 3300184 | 3 | 1,84 | 42 | 11 | |
| 3300185 | 3 | 1,85 | 42 | 11 | |
| 3300190 | 3 | 1,9 | 42 | 11 | |
| 3300200 | 3 | 2 | 50 | 12 | |
| 3300210 | 3 | 2,1 | 50 | 12 | |
| 3300220 | 3 | 2,2 | 50 | 13 | |
| 3300230 | 3 | 2,3 | 50 | 13 | |
| 3300240 | 3 | 2,4 | 50 | 14 | |
| 3300250 | 3 | 2,5 | 50 | 14 | |
| 3300260 | 3 | 2,6 | 50 | 14 | |
| 3300270 | 3 | 2,7 | 50 | 16 | |
| 3300280 | 3 | 2,8 | 50 | 16 | |
| 3300290 | 3 | 2,9 | 50 | 16 | |
| 3300300 | 3 | 3 | 50 | 16 | |

| Cobalt Chrome | Titanium | Zirconium | Wax/PMMA | PEEK | Glass Ceramics |
|---|---|---|---|---|---|
| ◎ | ◎ | ○ | | | |

◎ Best ○ Good

# FX-LDS

## Drills

- High performance
- For centering and chamfering

- High performance
- Zum Zentrieren und Fräsen

- Alta prestazione
- Per centratura e svasatura su centri di lavoro

- Haute performance
- A centrer et à chanfreiner

- Yüksek performans
- Merkezleme ve pah kırma takımı

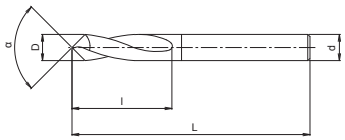
- High performance
- Til centrering og rejfning

- High performance
- Til centrering och fasning

- Altas prestaciones
- Para puntear y chaflanar

- Высокая производительность
- Для центрования и снятия фасок

- Wysoka wydajność
- Do centrowania i fazowania



### Shank diamter 3mm

| EDP | d | L | l | D | Price |
|---|---|---|---|---|---|
| 8561503 | 3 | 48 | 9 | 3 | |

### Shank diamter 4mm

| EDP | d | L | l | D | Price |
|---|---|---|---|---|---|
| 8561504 | 4 | 54 | 12 | 4 | |

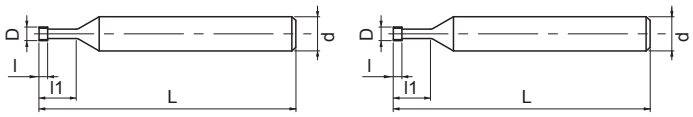
| Cobalt Chrome | Titanium | Zirconium | Wax/PMMA | PEEK | Glass Ceramics |
|---|---|---|---|---|---|
| ◎ | ◎ | | | | |

◎ Best ◯ Good

# WH-VM-PNC

M CARBIDE 11° h6

## Thread Mill



### Shank diamter 3mm

| EDP | Thread | Min. Cutting bore dia. | d | D | l1 | L | l | P | ZΔ | Price |
|---|---|---|---|---|---|---|---|---|---|---|
| 3900495 | M | M1 | 3 | 0,72 | 2,75 | 40 | 0,25 | 0,25 | 3 | |
| 3900496 | M | M1,2 | 3 | 0,92 | 3,25 | 40 | 0,25 | 0,25 | 3 | |
| 3900497 | M | M1,4 | 3 | 1,05 | 3,8 | 40 | 0,3 | 0,3 | 3 | |
| 3900498 | M | M1,6 | 3 | 1,2 | 4,35 | 40 | 0,35 | 0,35 | 3 | |
| 3900499 | M | M1,7 ~ M1,8 | 3 | 1,3 | 4,85 | 40 | 0,35 | 0,35 | 3 | |

### Shank diamter 6mm

| EDP | Thread | Min. Cutting bore dia. | d | D | l1 | L | l | P | ZΔ | Price |
|---|---|---|---|---|---|---|---|---|---|---|
| 3900500 | M | M2 | 6 | 1,5 | 4,4 | 40 | 1,2 | 0,4 | 3 | |

S CARBIDE 11° h6

### Shank diamter 3mm

| EDP | Thread | Min. Cutting bore dia. | d | D | l1 | L | l | P | ZΔ | Price |
|---|---|---|---|---|---|---|---|---|---|---|
| 3900495 | S | S1 | 3 | 0,72 | 2,75 | 40 | 0,25 | 0,25 | 3 | |
| 3900496 | S | S1,2 | 3 | 0,92 | 3,25 | 40 | 0,25 | 0,25 | 3 | |
| 3900497 | S | S1,4 | 3 | 1,05 | 3,8 | 40 | 0,3 | 0,3 | 3 | |

| WORK MATERIAL | | TAPPING SPEED (m/min) | FEED (mm/tooth) |
|---|---|---|---|
| TITANIUM ALLOYS | Ti-6AL-4V | 20~60 | 0,01~0,03 |

ZΔ= Number of flutes - Anzahl Schneiden - Numero di denti - Nombre de lèvres - Liczba ostrzy - Antal skær - Antal skär - Numero de ranuras - Число режущих кромок - Kanal sayısı

| | | | | | |
|---|---|---|---|---|---|
| Cobalt Chrome | Titanium | Zirconium | Wax/PMMA | PEEK | Glass Ceramics |
| ◎ | ◎ | | | | |

◎ Best ○ Good

# Conditions

## WXS-CRE

| Ø | EDP | l1 | Titanium | | | | CoCr | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | S (min⁻¹) | F (mm/min.) | ap | ae | S (min⁻¹) | F (mm/min.) | ap | ae |
| 2 | 48106421 | 8 | 9.600 | 1.340 | 0,07 | 0,6 | 8.600 | 1200 | 0,1 | 0,6 |
| 2 | 48254212 | 12 | 9.600 | 1.340 | 0,07 | 0,6 | 8.600 | 1200 | 0,1 | 0,6 |
| 3 | 48106433 | 12 | 6.900 | 1.730 | 0,1 | 0,9 | 6.300 | 1580 | 0,2 | 0,9 |
| 3 | 48254316 | 16 | 6.900 | 1.730 | 0,1 | 0,9 | 6.300 | 1580 | 0,2 | 0,9 |
| 4 | 48106445 | 12 | 5.200 | 2.080 | 0,13 | 1,2 | 4.700 | 1880 | 0,25 | 1,2 |

## FXS-PKE

| Ø | EDP | l1 | Titanium | | | | CoCr | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | S (min⁻¹) | F (mm/min.) | ap | ae | S (min⁻¹) | F (mm/min.) | ap | ae |
| 3 | 8548003 | 9 | 8.000 | 1.120 | 0,2 | 0,9 | 7.200 | 1010 | 0,2 | 0,9 |

## WXL-LN-EBD

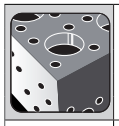
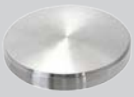
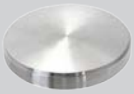
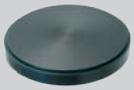
| Ø | EDP | l1 | Titanium | | | | CoCr | | | | PMMA/WAX | | | | PEEK | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | S (min⁻¹) | F (mm/min.) | ap | ae | S (min⁻¹) | F (mm/min.) | ap | ae | S (min⁻¹) | F (mm/min.) | ap | ae | S (min⁻¹) | F (mm/min.) | ap | ae |
| **Shank diamter 4mm** | | | | | | | | | | | | | | | | | | |
| 0,5 | 3110525 | 2,5 | 25.500 | 410 | 0,015 | 0,15 | 22.900 | 370 | 0,015 | 0,15 | 35.000 | 490 | 0,030 | 0,15 | 35.000 | 300 | 0,02 | 0,15 |
| 0,6 | 3110660 | 6 | 25.500 | 410 | 0,02 | 0,18 | 22.900 | 370 | 0,02 | 0,18 | 35.600 | 500 | 0,040 | 0,18 | 33.000 | 300 | 0,03 | 0,18 |
| 0,6 | 3110700 | 10 | 25.500 | 410 | 0,02 | 0,18 | 22.900 | 370 | 0,02 | 0,18 | 35.600 | 500 | 0,040 | 0,18 | 33.000 | 300 | 0,03 | 0,18 |
| 1,0 | 3111070 | 7 | 22.300 | 620 | 0,05 | 0,30 | 20.100 | 560 | 0,05 | 0,30 | 32.000 | 770 | 0,100 | 0,3 | 28.000 | 470 | 0,07 | 0,3 |
| 1,0 | 3111112 | 12 | 22.300 | 580 | 0,05 | 0,30 | 20.100 | 520 | 0,05 | 0,30 | 32.000 | 710 | 0,100 | 0,3 | 28.000 | 430 | 0,07 | 0,3 |
| 1,0 | 3111114 | 14 | 21.700 | 560 | 0,05 | 0,30 | 19.500 | 510 | 0,05 | 0,30 | 32.000 | 710 | 0,100 | 0,3 | 28.000 | 430 | 0,07 | 0,3 |
| 1,0 | 3111116 | 16 | 21.700 | 520 | 0,05 | 0,30 | 19.500 | 470 | 0,05 | 0,30 | 32.000 | 710 | 0,100 | 0,3 | 28.000 | 430 | 0,07 | 0,3 |
| 1,0 | 3111118 | 18 | 21.000 | 500 | 0,05 | 0,30 | 18.900 | 450 | 0,05 | 0,30 | 32.000 | 710 | 0,100 | 0,3 | 28.000 | 430 | 0,07 | 0,3 |
| 1,0 | 3111120 | 20 | 21.000 | 500 | 0,05 | 0,30 | 18.900 | 450 | 0,05 | 0,30 | 32.000 | 710 | 0,100 | 0,3 | 28.000 | 430 | 0,07 | 0,3 |
| 2,0 | 3112112 | 12 | 14.300 | 860 | 0,08 | 0,60 | 12.900 | 770 | 0,08 | 0,60 | 24.400 | 1.270 | 0,350 | 0,6 | 20.000 | 770 | 0,25 | 0,6 |
| 2,0 | 3112114 | 14 | 14.300 | 860 | 0,08 | 0,60 | 12.900 | 770 | 0,08 | 0,60 | 24.400 | 1.270 | 0,350 | 0,6 | 20.000 | 770 | 0,25 | 0,6 |
| 2,0 | 3112116 | 16 | 14.000 | 810 | 0,07 | 0,60 | 12.600 | 730 | 0,08 | 0,60 | 23.900 | 1.250 | 0,350 | 0,6 | 20.000 | 750 | 0,25 | 0,6 |
| 2,0 | 48251220 | 20 | 13.700 | 770 | 0,07 | 0,60 | 12.300 | 690 | 0,08 | 0,60 | 23.200 | 1.160 | 0,350 | 0,6 | 20.000 | 700 | 0,25 | 0,6 |
| 2,5 | 3112615 | 15 | 11.200 | 900 | 0,10 | 0,75 | 10.100 | 810 | 0,10 | 0,75 | 19.100 | 1.340 | 0,350 | 0,75 | 18.000 | 810 | 0,25 | 0,75 |
| **Shank diamter 6mm** | | | | | | | | | | | | | | | | | | |
| 0,6 | 3120625 | 2,5 | 25.500 | 610 | 0,02 | 0,18 | 22.900 | 550 | 0,02 | 0,18 | 34.500 | 760 | 0,030 | 0,18 | 28.100 | 460 | 0,02 | 0,18 |
| 0,6 | 48251008 | 8 | 25.500 | 610 | 0,02 | 0,18 | 22.900 | 550 | 0,02 | 0,18 | 36.100 | 800 | 0,030 | 0,18 | 29.700 | 480 | 0,02 | 0,18 |
| 1,0 | 3121080 | 8 | 23.900 | 720 | 0,05 | 0,30 | 21.500 | 520 | 0,05 | 0,30 | 35.000 | 910 | 0,100 | 0,3 | 28.700 | 550 | 0,07 | 0,3 |
| 1,0 | 3121100 | 10 | 23.900 | 720 | 0,05 | 0,30 | 21.500 | 520 | 0,05 | 0,30 | 35.000 | 910 | 0,100 | 0,3 | 28.700 | 550 | 0,07 | 0,3 |
| 1,0 | 48251116 | 16 | 23.200 | 700 | 0,05 | 0,30 | 20.900 | 500 | 0,05 | 0,30 | 34.400 | 900 | 0,100 | 0,3 | 28.300 | 540 | 0,060 | 0,3 |
| 1,5 | 3121580 | 8 | 15.900 | 950 | 0,07 | 0,45 | 14.300 | 660 | 0,07 | 0,45 | 25.500 | 1.330 | 0,140 | 0,45 | 20.800 | 800 | 0,1 | 0,45 |
| 1,5 | 3121600 | 10 | 15.900 | 950 | 0,07 | 0,45 | 14.300 | 630 | 0,07 | 0,45 | 25.500 | 1.330 | 0,140 | 0,45 | 20.800 | 800 | 0,1 | 0,45 |
| 1,5 | 3121612 | 12 | 15.900 | 950 | 0,07 | 0,45 | 14.300 | 630 | 0,07 | 0,45 | 25.500 | 1.330 | 0,140 | 0,45 | 20.800 | 800 | 0,1 | 0,45 |
| 2,0 | 3122100 | 10 | 14.300 | 1.000 | 0,10 | 0,60 | 12.900 | 830 | 0,10 | 0,60 | 23.900 | 1.490 | 0,200 | 0,6 | 20.700 | 900 | 0,14 | 0,6 |
| 2,0 | 3122112 | 12 | 14.300 | 1.000 | 0,10 | 0,60 | 12.900 | 830 | 0,10 | 0,60 | 23.900 | 1.490 | 0,200 | 0,6 | 20.700 | 900 | 0,14 | 0,6 |
| 2,0 | 48251221 | 20 | 13.700 | 960 | 0,10 | 0,60 | 12.100 | 680 | 0,10 | 0,60 | 22.300 | 1.250 | 0,200 | 0,6 | 20.700 | 750 | 0,14 | 0,6 |
| 3,0 | 3123112 | 12 | 9.600 | 1.150 | 0,15 | 0,90 | 8.600 | 860 | 0,15 | 0,90 | 19.100 | 2.030 | 0,400 | 0,9 | 15.700 | 1.220 | 0,28 | 0,9 |
| 3,0 | 3123116 | 16 | 9.300 | 1.120 | 0,15 | 0,90 | 8.400 | 840 | 0,15 | 0,90 | 18.700 | 1.800 | 0,400 | 0,9 | 15.300 | 1.080 | 0,250 | 0,9 |

## DG-CPR

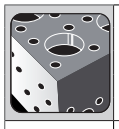
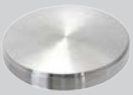
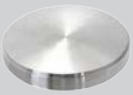
| Ø | EDP | l1 | Zirconium | | | |
|---|---|---|---|---|---|---|
| | | | S (min⁻¹) | F (mm/min.) | ap | ae |
| 0,5 | 8554511 | 4 | 28700 | 460 | 0,04 | 0,15 |
| 0,5 | 8554512 | 6 | 28700 | 460 | 0,04 | 0,15 |
| 1 | 48103001 | 10 | 27100 | 760 | 0,1 | 0,30 |
| 2 | 8554542 | 10 | 25500 | 870 | 0,3 | 0,60 |
| 2 | 8554544 | 20 | 23900 | 760 | 0,3 | 0,60 |

# Conditions

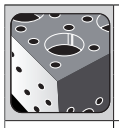
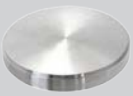
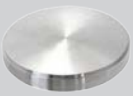
## WXS-LN-EBD

|  | | |  Titanium | | | |  CoCr | | | |  PMMA/WAX | | | | PEEK | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ø | EDP | l1 | S (min⁻¹) | F (mm/min.) | ap | ae | S (min⁻¹) | F (mm/min.) | ap | ae | S (min⁻¹) | F (mm/min.) | ap | ae | S (min⁻¹) | F (mm/min.) | ap | ae |
| 1,0 | 3051008 | 8,0 | 23.900 | 570 | 0,05 | 0,30 | 21.500 | 520 | 0,05 | 0,30 | 32.000 | 710 | 0,100 | 0,3 | 28.000 | 430 | 0,07 | 0,3 |
| 1,0 | 3051010 | 10,0 | 23.900 | 570 | 0,05 | 0,30 | 21.500 | 520 | 0,05 | 0,30 | 32.000 | 710 | 0,100 | 0,3 | 28.000 | 430 | 0,07 | 0,3 |
| 1,0 | 3051012 | 12,0 | 23.900 | 570 | 0,05 | 0,30 | 21.500 | 520 | 0,05 | 0,30 | 32.000 | 710 | 0,100 | 0,3 | 28.000 | 430 | 0,07 | 0,3 |
| 1,0 | 3051016 | 16,0 | 23.900 | 480 | 0,05 | 0,30 | 21.500 | 520 | 0,05 | 0,30 | 32.000 | 580 | 0,100 | 0,3 | 28.000 | 350 | 0,07 | 0,3 |
| 1,5 | 3051510 | 10,0 | 17.000 | 680 | 0,06 | 0,45 | 15.300 | 610 | 0,06 | 0,45 | 32.000 | 1.160 | 0,150 | 0,3 | 23.000 | 650 | 0,11 | 0,3 |
| 1,5 | 3051512 | 12,0 | 17.000 | 680 | 0,06 | 0,45 | 15.300 | 610 | 0,06 | 0,45 | 32.000 | 1.160 | 0,150 | 0,3 | 23.000 | 650 | 0,11 | 0,3 |
| 1,5 | 3051516 | 16,0 | 16.100 | 640 | 0,05 | 0,45 | 14.500 | 580 | 0,05 | 0,45 | 32.000 | 1.090 | 0,150 | 0,3 | 22.500 | 650 | 0,09 | 0,3 |
| 2,0 | 3052012 | 12,0 | 14.300 | 860 | 0,08 | 0,60 | 12.900 | 770 | 0,08 | 0,60 | 24.400 | 1.270 | 0,350 | 0,6 | 20.000 | 770 | 0,25 | 0,6 |
| 2,0 | 3052016 | 16,0 | 14.000 | 810 | 0,08 | 0,60 | 12.600 | 760 | 0,08 | 0,60 | 23.900 | 1.150 | 0,350 | 0,6 | 20.000 | 690 | 0,25 | 0,6 |
| 2,0 | 2052020 | 20,0 | 13.700 | 740 | 0,07 | 0,60 | 12.300 | 740 | 0,07 | 0,60 | 23.200 | 1.030 | 0,350 | 0,6 | 20.000 | 620 | 0,22 | 0,6 |

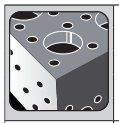
## WXL-CPR

|  | | |  Titanium | | | |  CoCr | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Ø | EDP | l1 | S (min⁻¹) | F (mm/min.) | ap | ae | S (min⁻¹) | F (mm/min.) | ap | ae |
| 1,5 | 48250112 | 12,0 | 13800 | 550 | 0,05 | 0,45 | 12400 | 500 | 0,045 | 0,45 |
| 1,5 | 48250115 | 15,0 | 13800 | 550 | 0,05 | 0,45 | 12400 | 500 | 0,045 | 0,45 |

## WXS-CPR

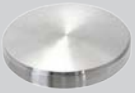
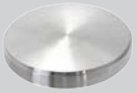
|  | | |  Titanium | | | |  CoCr | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Ø | EDP | l1 | S (min⁻¹) | F (mm/min.) | ap | ae | S (min⁻¹) | F (mm/min.) | ap | ae |
| **Shank diamter 4mm** | | | | | | | | | | |
| 0,4 | 3100405 | 4,0 | 21000 | 260 | 0,015 | 0,12 | 21000 | 260 | 0,015 | 0,12 |
| 1,0 | 3101015 | 12,0 | 17500 | 420 | 0,03 | 0,30 | 15800 | 380 | 0,03 | 0,30 |
| 1,0 | 3101022 | 12,0 | 17500 | 420 | 0,03 | 0,30 | 15800 | 380 | 0,03 | 0,30 |
| 1,5 | 3101505 | 16,0 | 12300 | 620 | 0,045 | 0,45 | 11100 | 440 | 0,045 | 0,45 |
| 1,5 | 3101510 | 16,0 | 12300 | 620 | 0,045 | 0,45 | 11100 | 440 | 0,045 | 0,45 |
| 2,0 | 3102010 | 16,0 | 9200 | 740 | 0,06 | 0,60 | 8300 | 500 | 0,06 | 0,60 |
| 2,0 | 3102022 | 16,0 | 9200 | 740 | 0,06 | 0,60 | 8300 | 500 | 0,06 | 0,60 |
| 2,0 | 3102023 | 20,0 | 8900 | 640 | 0,06 | 0,60 | 8000 | 480 | 0,06 | 0,60 |
| **Shank diamter 6mm** | | | | | | | | | | |
| 1,0 | 48253108 | 8,0 | 19100 | 460 | 0,03 | 0,30 | 17200 | 410 | 0,03 | 0,30 |
| 3,0 | 3103015 | 16,0 | 6400 | 640 | 0,08 | 0,90 | 5700 | 410 | 0,08 | 0,90 |
| 3,0 | 3103027 | 20,0 | 6200 | 620 | 0,07 | 0,90 | 5500 | 390 | 0,07 | 0,90 |

## DG-LN-EBD

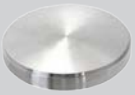
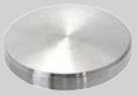
|  | | | Zirconium | | | |
|---|---|---|---|---|---|---|
| Ø | EDP | l1 | S (min⁻¹) | F (mm/min.) | ap | ae |
| 0,6 | 8553711 | 6 | 31800 | 510 | 0,04 | 0,18 |
| 0,6 | 8553712 | 10 | 31800 | 510 | 0,04 | 0,18 |
| 1 | 8553723 | 10 | 35000 | 980 | 0,1 | 0,30 |
| 1 | 8553724 | 16 | 31800 | 890 | 0,1 | 0,30 |
| 1 | 48249116 | 16 | 31800 | 890 | 0,1 | 0,30 |
| 1,5 | 8553733 | 16 | 31800 | 950 | 0,2 | 0,45 |
| 2 | 8553743 | 16 | 31800 | 1080 | 0,3 | 0,60 |
| 2 | 8553744 | 20 | 30300 | 970 | 0,3 | 0,60 |
| 2 | 48249220 | 20 | 30300 | 970 | 0,3 | 0,60 |

# Conditions

## MRS-GDL

| |  CoCr | |  Titanium | |
|---|---|---|---|---|
| ø | S (min⁻¹) | F (mm/min.) | S (min⁻¹) | F (mm/min.) |
| **1** | 4800 | 0,025 | 5700 | 0,027 |
| **1,1** | 4300 | 0,028 | 5200 | 0,03 |
| **1,2** | 4000 | 0,030 | 4800 | 0,032 |
| **1,3** | 3700 | 0,033 | 4400 | 0,035 |
| **1,4** | 3400 | 0,035 | 4100 | 0,038 |
| **1,5** | 3200 | 0,038 | 3800 | 0,041 |
| **1,6** | 3000 | 0,040 | 3600 | 0,043 |
| **1,7** | 2800 | 0,043 | 3400 | 0,046 |
| **1,8** | 2700 | 0,045 | 3200 | 0,049 |
| **1,9** | 2500 | 0,048 | 3000 | 0,051 |
| **2** | 2400 | 0,050 | 2900 | 0,054 |
| **2,1** | 2300 | 0,053 | 2700 | 0,057 |
| **2,2** | 2200 | 0,055 | 2600 | 0,059 |
| **2,3** | 2100 | 0,058 | 2500 | 0,062 |
| **2,4** | 2000 | 0,060 | 2400 | 0,065 |
| **2,5** | 1900 | 0,063 | 2300 | 0,068 |
| **2,6** | 1800 | 0,065 | 2200 | 0,07 |
| **2,7** | 1800 | 0,068 | 2100 | 0,073 |
| **2,8** | 1700 | 0,070 | 2000 | 0,076 |
| **2,9** | 1600 | 0,073 | 2000 | 0,078 |
| **3** | 1600 | 0,075 | 1900 | 0,081 |

## WX-MS-GDS

| |  CoCr | |  Titanium | |
|---|---|---|---|---|
| ø | S (min⁻¹) | F (mm/min.) | S (min⁻¹) | F (mm/min.) |
| **1** | 4800 | 0,022 | 5700 | 0,024 |
| **1,1** | 4300 | 0,024 | 5200 | 0,026 |
| **1,2** | 4000 | 0,027 | 4800 | 0,029 |
| **1,3** | 3700 | 0,029 | 4400 | 0,031 |
| **1,4** | 3400 | 0,031 | 4100 | 0,033 |
| **1,5** | 3200 | 0,033 | 3800 | 0,036 |
| **1,6** | 3000 | 0,036 | 3600 | 0,038 |
| **1,7** | 2800 | 0,038 | 3400 | 0,040 |
| **1,8** | 2700 | 0,040 | 3200 | 0,043 |
| **1,9** | 2500 | 0,042 | 3000 | 0,045 |
| **2** | 2400 | 0,044 | 2900 | 0,048 |
| **2,1** | 2300 | 0,047 | 2700 | 0,050 |
| **2,2** | 2200 | 0,049 | 2600 | 0,052 |
| **2,3** | 2100 | 0,051 | 2500 | 0,055 |
| **2,4** | 2000 | 0,053 | 2400 | 0,057 |
| **2,5** | 1900 | 0,056 | 2300 | 0,060 |
| **2,6** | 1800 | 0,058 | 2200 | 0,062 |
| **2,7** | 1800 | 0,060 | 2100 | 0,064 |
| **2,8** | 1700 | 0,062 | 2000 | 0,067 |
| **2,9** | 1600 | 0,064 | 2000 | 0,069 |
| **3** | 1600 | 0,067 | 1900 | 0,071 |

# Icon Guide

## Material

Carbide

Corner Radius

Ball Nose

Square

## Helix Angle

Helix Angle

## Shank

Developped for Shrink Fit System

Straight Shank



Extra long Neck

Point Angle

## Milling Operation

Roughing and Finishing

Deep Slotting

High Speed Milling

## Center Cutting

Center Cutting

## Radius Tolerance

Radius Tolerance

## Tolerance

Milling Diameter Tolerance

Tool Tolerance

*shaping your dreams*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