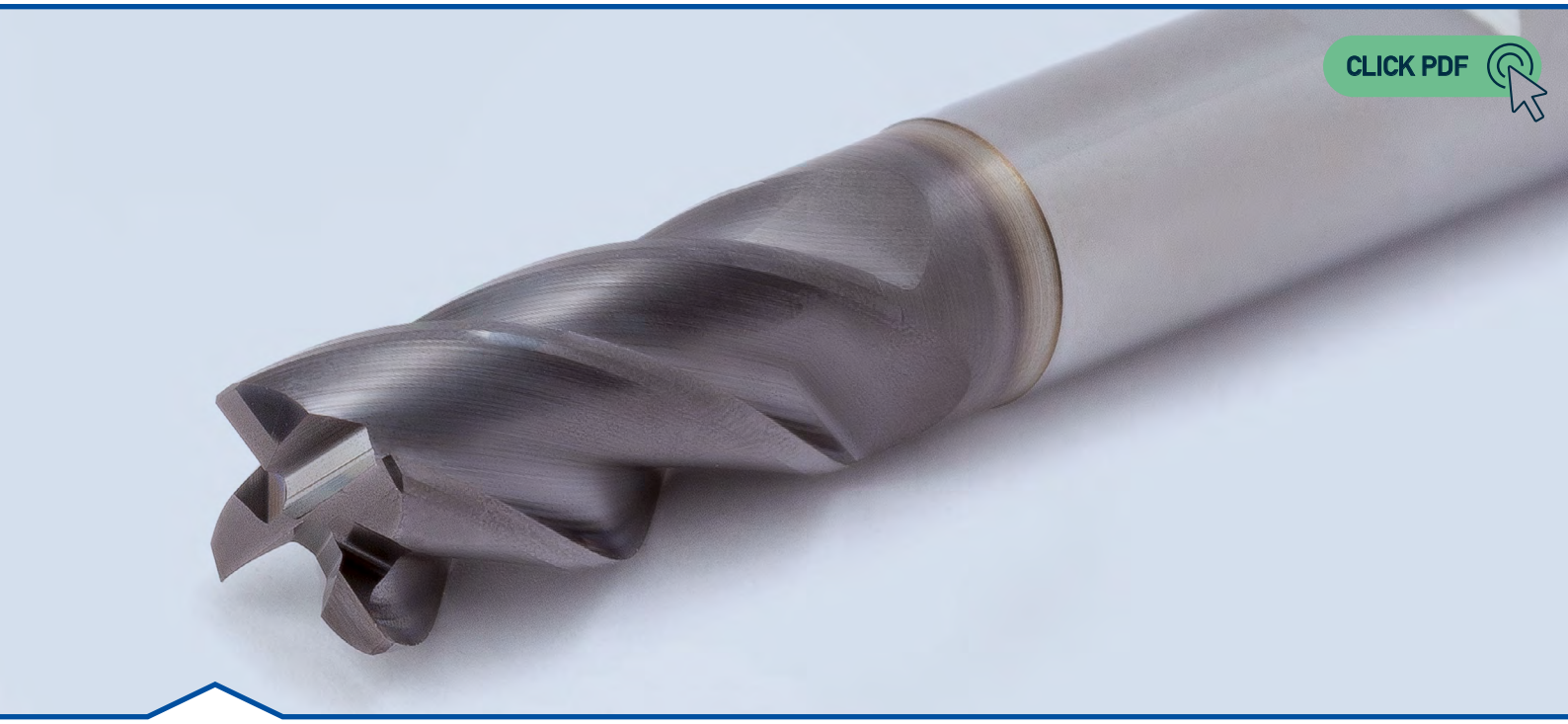



Your technology partner for cost-effective machining

# OptiMill®-Inox-HPC

# OptiMill®-Inox-HPC

## Versatile corner milling cutter for precise stainless steel machining

The four-edged OptiMill-Inox-HPC corner milling cutter is a versatile tool. The solid carbide end mill can be used for both roughing and finishing. The special cutting edge preparation produces optimum surfaces with particularly low-vibration running. Thanks to its AlTiN-based multilayer coating, it is ideal for machining stainless steel.



**1 Optimised groove profile**
- For fast and reliable chip removal in ductile materials

**2 Unequal helix & pitch**
- Less vibration
- Smooth running

**3 Innovative cutting material**
- Specially designed for machining ISO 'M' materials

**4 Face geometry and cutting edge**
- For various milling applications (ramps, helical milling)
- Corner chamfer for maximum stability

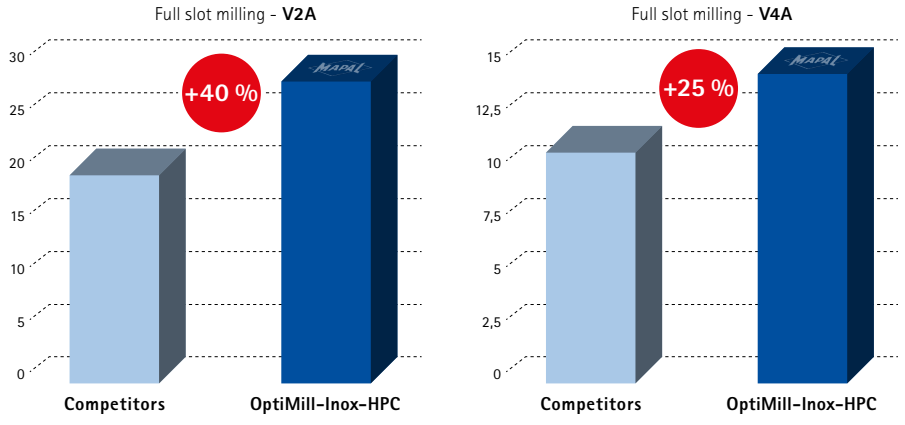

## Features

**Preferred series in stock:**
- Design z=4: long design with neck
- ø range: 3.00 - 20.00 mm
- Shank form: HB

**Configurable features:**
- ø range: 3.00 - 20.00 mm
- Shank form: HA

## Tool life [m]

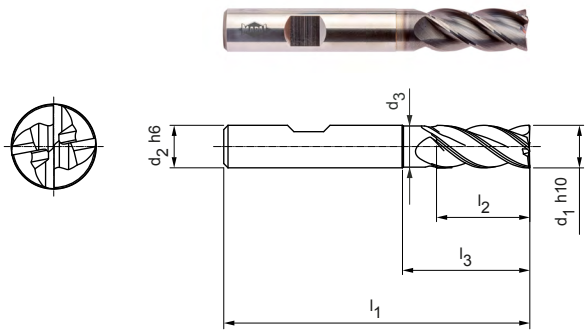
**Cutting parameters:** $v_c$: 90 m/min $a_p$: 12.00 mm
Tool ø: 12.00 mm $f_z$: 0.05 mm $a_e$: 12.00 mm



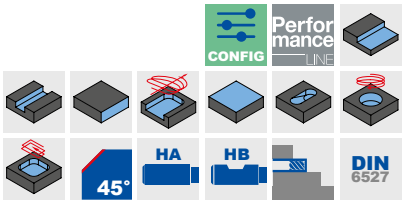
# OptiMill®-Inox-HPC

Shoulder milling cutter, long design with neck
SCM108

**Design:**
Diameter of milling cutter: 3.00 – 20.00 mm
Cutting material: HP921
Number of cutting edges: 4
Helix angle: 38°
Special features: Unequal spacing








## Preferred series in stock

| Dimensions | | | | | | | z | Specification | Order no. |
|---|---|---|---|---|---|---|---|---|---|
| $d_1$ h10 | $d_2$ h6 | $d_3$ | $l_1$ | $l_2$ | $l_3$ | Cx45° | | | |
| 3,00 | 6 | - | 57 | 8 | - | 0,06 | 4 | SCM108-0300Z04R-F0006HB-HP921 | 31181468 |
| 4,00 | 6 | - | 57 | 11 | - | 0,08 | 4 | SCM108-0400Z04R-F0008HB-HP921 | 31181469 |
| 5,00 | 6 | - | 57 | 13 | - | 0,10 | 4 | SCM108-0500Z04R-F0010HB-HP921 | 31181480 |
| 6,00 | 6 | 5,8 | 57 | 13 | 19 | 0,12 | 4 | SCM108-0600Z04R-F0012HB-HP921 | 31181481 |
| 8,00 | 8 | 7,8 | 63 | 19 | 25 | 0,16 | 4 | SCM108-0800Z04R-F0016HB-HP921 | 31181482 |
| 10,00 | 10 | 9,8 | 72 | 22 | 30 | 0,20 | 4 | SCM108-1000Z04R-F0020HB-HP921 | 31181483 |
| 12,00 | 12 | 11,8 | 83 | 26 | 36 | 0,24 | 4 | SCM108-1200Z04R-F0024HB-HP921 | 31181484 |
| 16,00 | 16 | 15,8 | 92 | 32 | 42 | 0,32 | 4 | SCM108-1600Z04R-F0032HB-HP921 | 31181486 |
| 20,00 | 20 | 19,8 | 104 | 38 | 52 | 0,40 | 4 | SCM108-2000Z04R-F0040HB-HP921 | 31181488 |

## Available on request

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 14,00 | 14 | 13,8 | 83 | 26 | 36 | 0,28 | 4 | SCM108-1400Z04R-F0028HB-HP921 | 31181485 |
| 18,00 | 18 | 17,8 | 92 | 32 | 42 | 0,36 | 4 | SCM108-1800Z04R-F0036HB-HP921 | 31181487 |

## Configurable features

**Shank form:**
Shank form: HA

**Specification:**
SCM108-0300Z04R-F0006**[shank form]**-HP921

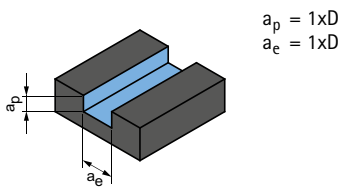
**Example:**
SCM108-0300Z04R-F0006**HA**-HP921
Shank form HA

Dimensions in mm.
For cutting data recommendations, see side 4/5.
Special designs and other coatings available upon request.

# Cutting data recommendations for shoulder milling cutters

Feed and cutting speed

**Groove milling**

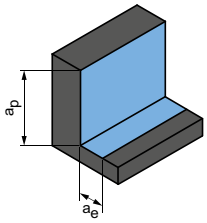



**OptiMill-Inox-HPC | SCM108**

| MMG* | | | Workpiece material | Strength/ hardness [N/mm²] [HRC] | Cooling | | | $v_c$ [m/min] | $f_z$ [mm] Diameter of milling cutter [mm] | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | MQL/Air | Dry | Coolant | | 3.00 | 4.00 | 6.00 | 8.00 | 10.00 | 12.00 | 16.00 | 20.00 |
| M | M1 | M1.1 | Stainless steels, austenitic | < 700 | ✓ | | ✓ | **70** | 0.011 | 0.013 | 0.019 | 0.025 | 0.030 | 0.035 | 0.044 | 0.051 |
| | | M1.2 | Stainless steels, ferritic/austenitic (duplex) | < 1,000 | | | ✓ | **65** | 0.009 | 0.011 | 0.016 | 0.020 | 0.025 | 0.029 | 0.036 | 0.042 |
| | M2 | M2.1 | Stainless/heat-resistant cast steel, austenitic | < 700 | ✓ | | ✓ | **75** | 0.011 | 0.015 | 0.021 | 0.027 | 0.032 | 0.038 | 0.047 | 0.055 |
| | M3 | M3.1 | Stainless cast steel, ferritic/austenitic (duplex) | < 1,000 | | | ✓ | **70** | 0.009 | 0.012 | 0.016 | 0.021 | 0.026 | 0.030 | 0.037 | 0.043 |

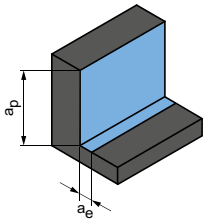
* MAPAL machining groups
The specified machining values are guide values.
The optimum data for the respective machining task should be determined during the test or machining.

**Roughing**




$a_p$ = 1.5xD
$a_e$ = 0.25xD

**Finishing**




$a_p$ = 1.5xD
$a_e$ = 0.1xD

| $v_c$ [m/min] | $f_z$ [mm] Diameter of milling cutter [mm] | | | | | | | | $v_c$ [m/min] | $f_z$ [mm] Diameter of milling cutter [mm] | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 3.00 | 4.00 | 6.00 | 8.00 | 10.00 | 12.00 | 16.00 | 20.00 | | 3.00 | 4.00 | 6.00 | 8.00 | 10.00 | 12.00 | 16.00 | 20.00 |
| **110** | 0.018 | 0.023 | 0.033 | 0.042 | 0.051 | 0.059 | 0.074 | 0.086 | **160** | 0.028 | 0.036 | 0.051 | 0.066 | 0.080 | 0.093 | 0.117 | 0.135 |
| **105** | 0.015 | 0.019 | 0.027 | 0.035 | 0.042 | 0.049 | 0.061 | 0.071 | **150** | 0.023 | 0.030 | 0.043 | 0.055 | 0.066 | 0.077 | 0.097 | 0.112 |
| **120** | 0.019 | 0.025 | 0.035 | 0.045 | 0.055 | 0.064 | 0.080 | 0.093 | **180** | 0.031 | 0.039 | 0.056 | 0.072 | 0.087 | 0.101 | 0.127 | 0.147 |
| **110** | 0.015 | 0.020 | 0.028 | 0.036 | 0.043 | 0.051 | 0.063 | 0.073 | **160** | 0.024 | 0.031 | 0.044 | 0.057 | 0.069 | 0.080 | 0.100 | 0.116 |

# Explanation

## Pictograms

CONFIG — Product with configurable features

Performance LINE — **Performance Line:** High-performance tools, broad field of application, high productivity in series production

Shoulder milling

Groove milling

Trimming

Trochoidal milling

Face milling

Ramps

Helix milling

Pocket milling

45° — 45° chamfer

HA — Shank form HA

HB — Shank form HB

Long

DIN 6527 — Design DIN 6527

## Material suitability

■ Highly suitable

◒ Suitable in some situations

E.g. Standard material suitability table

| P | 1 | 2 | 3 | 4 | 5 | 6 | M | 1 | 2 | 3 | K | 1 | 2 | 3 | N | 1 | 2 | 3 | 4 | S | 1 | 2 | 3 | 4 | 5 | H | 1 | 2 | 3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ◒ | ◒ | ◒ | ◒ | ◒ | ◒ | ◒ | ■ | ■ | ■ | ■ | ◒ | ◒ | ◒ | ◒ | | | | | | | | | | | | | | | |

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