

MDR-R

无限涂层 小径钻头

MUGEN-COATING Miniature Drill

Cubic Boron Nitride
CBN 铣刀

Diamond
钻石 铣刀

Square
平底 铣刀

Long Neck-Square
长颈平底 铣刀

Ball
球头 铣刀

Long Neck-Ball
长颈球头 铣刀

Radius
圆鼻 铣刀

Long Neck-Radius
长颈圆鼻 铣刀

Taper
锥形 铣刀

Taper Ball
锥形球头 铣刀

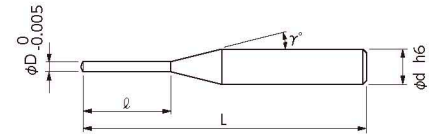
Taper Radius
锥形圆鼻 铣刀

Drilling
钻头

Thread milling
螺纹 铣刀

Chamfering
倒角 刀

前端角 120°
Point Angle 120°



- 采用无限涂层, 实现了长寿命与稳定的孔加工!
- 适用于精密零件加工的高精度规格。直径公差精度 0~-0.005mm。
- Stable and long-life drill realized by MUGEN-COATING.
- High accuracy suitable for precision machining. Tolerance of diameter: 0/-0.005mm.



加工材料 Work Material

| 碳素钢 Carbon Steels | 合金钢·工具钢 Alloy Steels· Tool Steels | 预硬钢·调质钢 Prehardened Steels | 淬火钢 Hardened Steels | | 不锈钢 Stainless Steels | 钛合金 Titanium Alloy | 铝合金 Aluminum | 铜合金 Copper | 树脂 Plastic |
|----------------------|---|----------------------------------|------------------------|--------|-------------------------|-----------------------|-----------------|---------------|---------------|
| | | | ~55HRC | 55HRC~ | | | | | |
| ○ | ○ | ○ | | | ○ | ○ | ○ | ○ | ○ |

单位 [规格: mm / 价格: 日元]
Unit [size: mm / Retail Price: JPY]

| 产品代码 Code No. | (D)直径 Dia. | (ℓ)槽长 Flute Length | (γ)刃角 Nex Taper Angle | (d)柄径 Shank Dia. | (L)全长 Overall Length | 定价(日元) Retail Price |
|------------------|---------------|-----------------------|--------------------------|---------------------|-------------------------|------------------------|
| 04-00200-00100 | 0.1 | 1.2 | 15° | 3 | 38 | 6,000 |
| 04-00200-00110 | 0.11 | 1.2 | 15° | 3 | 38 | 6,000 |
| 04-00200-00120 | 0.12 | 1.4 | 15° | 3 | 38 | 6,000 |
| 04-00200-00130 | 0.13 | 1.4 | 15° | 3 | 38 | 6,000 |
| 04-00200-00140 | 0.14 | 1.4 | 15° | 3 | 38 | 6,000 |
| 04-00200-00150 | 0.15 | 1.8 | 15° | 3 | 38 | 5,100 |
| 04-00200-00160 | 0.16 | 1.8 | 15° | 3 | 38 | 5,400 |
| 04-00200-00170 | 0.17 | 1.8 | 15° | 3 | 38 | 5,400 |
| 04-00200-00180 | 0.18 | 2.1 | 15° | 3 | 38 | 5,400 |
| 04-00200-00190 | 0.19 | 2.1 | 15° | 3 | 38 | 5,400 |
| 04-00200-00200 | 0.2 | 2.4 | 15° | 3 | 38 | 4,400 |
| 04-00200-00210 | 0.21 | 2.4 | 15° | 3 | 38 | 5,000 |
| 04-00200-00220 | 0.22 | 2.6 | 15° | 3 | 38 | 5,000 |
| 04-00200-00230 | 0.23 | 2.6 | 15° | 3 | 38 | 5,000 |
| 04-00200-00240 | 0.24 | 2.6 | 15° | 3 | 38 | 5,000 |
| 04-00200-00250 | 0.25 | 3 | 15° | 3 | 38 | 5,000 |
| 04-00200-00260 | 0.26 | 3 | 15° | 3 | 38 | 4,700 |
| 04-00200-00270 | 0.27 | 3 | 15° | 3 | 38 | 4,700 |
| 04-00200-00280 | 0.28 | 3.3 | 15° | 3 | 38 | 4,700 |
| 04-00200-00290 | 0.29 | 3.3 | 15° | 3 | 38 | 4,700 |
| 04-00200-00300 | 0.3 | 5 | 15° | 3 | 38 | 3,900 |
| 04-00200-00310 | 0.31 | 5 | 15° | 3 | 38 | 4,700 |
| 04-00200-00320 | 0.32 | 5 | 15° | 3 | 38 | 4,700 |
| 04-00200-00330 | 0.33 | 5 | 15° | 3 | 38 | 4,700 |
| 04-00200-00340 | 0.34 | 5 | 15° | 3 | 38 | 4,700 |
| 04-00200-00350 | 0.35 | 5 | 15° | 3 | 38 | 4,200 |
| 04-00200-00360 | 0.36 | 5 | 15° | 3 | 38 | 4,700 |
| 04-00200-00370 | 0.37 | 5 | 15° | 3 | 38 | 4,700 |
| 04-00200-00380 | 0.38 | 5 | 15° | 3 | 38 | 4,700 |
| 04-00200-00390 | 0.39 | 5 | 15° | 3 | 38 | 4,700 |

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|------------------|---------------|-----------------------|--------------------------|---------------------|-------------------------|------------------------|
| 04-00200-00400 | 0.4 | 6 | 15° | 3 | 38 | 3,900 |
| 04-00200-00410 | 0.41 | 6 | 15° | 3 | 38 | 4,700 |
| 04-00200-00420 | 0.42 | 6 | 15° | 3 | 38 | 4,700 |
| 04-00200-00430 | 0.43 | 6 | 15° | 3 | 38 | 4,700 |
| 04-00200-00440 | 0.44 | 6 | 15° | 3 | 38 | 4,700 |
| 04-00200-00450 | 0.45 | 6 | 15° | 3 | 38 | 4,200 |
| 04-00200-00460 | 0.46 | 6 | 15° | 3 | 38 | 4,700 |
| 04-00200-00470 | 0.47 | 6 | 15° | 3 | 38 | 4,700 |
| 04-00200-00480 | 0.48 | 6 | 15° | 3 | 38 | 4,700 |
| 04-00200-00490 | 0.49 | 6 | 15° | 3 | 38 | 4,700 |
| 04-00200-00500 | 0.5 | 6 | 15° | 3 | 38 | 4,200 |
| 04-00200-00510 | 0.51 | 6 | 15° | 3 | 38 | 4,200 |
| 04-00200-00520 | 0.52 | 6 | 15° | 3 | 38 | 4,200 |
| 04-00200-00530 | 0.53 | 6 | 15° | 3 | 38 | 4,200 |
| 04-00200-00540 | 0.54 | 6 | 15° | 3 | 38 | 4,200 |
| 04-00200-00550 | 0.55 | 6 | 15° | 3 | 38 | 3,400 |
| 04-00200-00560 | 0.56 | 6 | 15° | 3 | 38 | 4,200 |
| 04-00200-00570 | 0.57 | 6 | 15° | 3 | 38 | 4,200 |
| 04-00200-00580 | 0.58 | 6 | 15° | 3 | 38 | 4,200 |
| 04-00200-00590 | 0.59 | 6 | 15° | 3 | 38 | 4,200 |
| 04-00200-00600 | 0.6 | 7 | 15° | 3 | 38 | 2,900 |
| 04-00200-00610 | 0.61 | 7 | 15° | 3 | 38 | 4,200 |
| 04-00200-00620 | 0.62 | 7 | 15° | 3 | 38 | 4,200 |
| 04-00200-00630 | 0.63 | 7 | 15° | 3 | 38 | 4,200 |
| 04-00200-00640 | 0.64 | 7 | 15° | 3 | 38 | 4,200 |
| 04-00200-00650 | 0.65 | 7 | 15° | 3 | 38 | 3,400 |
| 04-00200-00660 | 0.66 | 7 | 15° | 3 | 38 | 4,200 |
| 04-00200-00670 | 0.67 | 7 | 15° | 3 | 38 | 4,200 |
| 04-00200-00680 | 0.68 | 7 | 15° | 3 | 38 | 4,200 |
| 04-00200-00690 | 0.69 | 7 | 15° | 3 | 38 | 4,200 |

订购方法

请指定MDR-R 直径(D)。
When you order, indicate MDR-R (D).

※(γ)为参考值。
※(γ) is reference value

- 切削参数表记载于第H-014页
- Recommended Drilling Conditions are shown on page H-014.

CBN铣刀
Cubic Boron Nitride

钻石铣刀
Diamond

平底铣刀
Square
长颈平底
铣刀
Long Neck Square

球头铣刀
Ball
长颈球头
铣刀
Long Neck Ball

圆鼻铣刀
Radius
长颈圆鼻
铣刀
Long Neck Radius

锥形铣刀
Taper
铣刀
Taper Ball
锥形圆鼻
铣刀
Taper Radius

钻头
Drilling

螺纹铣刀
Thread milling

倒角刀
Chamfering

P·C·D : 涂层
PCD-Monocrystal
涂层
Coating

涂层
Coating
无涂层
Non-Coating

涂层
Coating
无涂层
Non-Coating

涂层
Coating
无涂层
Non-Coating

涂层
Coating
无涂层
Non-Coating

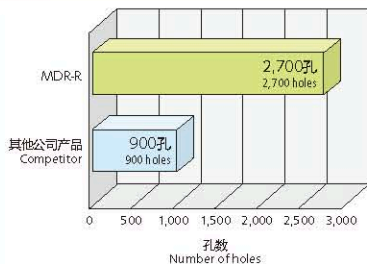
| 产品代码 Code No. | (D)直径 Dia. | (L)槽长 Flute Length | (γ)颈角 Neck Taper Angle | (d)柄径 Shank Dia. | (L)全长 Overall Length | 定价(日元) Retail Price |
|------------------|---------------|-----------------------|---------------------------|---------------------|-------------------------|------------------------|
| 04-00200-00700 | 0.7 | 8 | 15° | 3 | 38 | 2,900 |
| 04-00200-00710 | 0.71 | 8 | 15° | 3 | 38 | 4,200 |
| 04-00200-00720 | 0.72 | 8 | 15° | 3 | 38 | 4,200 |
| 04-00200-00730 | 0.73 | 8 | 15° | 3 | 38 | 4,200 |
| 04-00200-00740 | 0.74 | 8 | 15° | 3 | 38 | 4,200 |
| 04-00200-00750 | 0.75 | 8 | 15° | 3 | 38 | 3,400 |
| 04-00200-00760 | 0.76 | 8 | 15° | 3 | 38 | 4,200 |
| 04-00200-00770 | 0.77 | 8 | 15° | 3 | 38 | 4,200 |
| 04-00200-00780 | 0.78 | 8 | 15° | 3 | 38 | 4,200 |
| 04-00200-00790 | 0.79 | 8 | 15° | 3 | 38 | 4,200 |
| 04-00200-00800 | 0.8 | 8 | 15° | 3 | 38 | 2,900 |
| 04-00200-00810 | 0.81 | 8 | 15° | 3 | 38 | 4,200 |
| 04-00200-00820 | 0.82 | 8 | 15° | 3 | 38 | 4,200 |
| 04-00200-00830 | 0.83 | 8 | 15° | 3 | 38 | 4,200 |
| 04-00200-00840 | 0.84 | 8 | 15° | 3 | 38 | 4,200 |
| 04-00200-00850 | 0.85 | 8 | 15° | 3 | 38 | 3,400 |

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|------------------|---------------|-----------------------|---------------------------|---------------------|-------------------------|------------------------|
| 04-00200-00860 | 0.86 | 8 | 15° | 3 | 38 | 4,200 |
| 04-00200-00870 | 0.87 | 8 | 15° | 3 | 38 | 4,200 |
| 04-00200-00880 | 0.88 | 8 | 15° | 3 | 38 | 4,200 |
| 04-00200-00890 | 0.89 | 8 | 15° | 3 | 38 | 4,200 |
| 04-00200-00900 | 0.9 | 8 | 15° | 3 | 38 | 2,900 |
| 04-00200-00910 | 0.91 | 8 | 15° | 3 | 38 | 4,200 |
| 04-00200-00920 | 0.92 | 8 | 15° | 3 | 38 | 4,200 |
| 04-00200-00930 | 0.93 | 8 | 15° | 3 | 38 | 4,200 |
| 04-00200-00940 | 0.94 | 8 | 15° | 3 | 38 | 4,200 |
| 04-00200-00950 | 0.95 | 8 | 15° | 3 | 38 | 3,400 |
| 04-00200-00960 | 0.96 | 8 | 15° | 3 | 38 | 4,200 |
| 04-00200-00970 | 0.97 | 8 | 15° | 3 | 38 | 4,200 |
| 04-00200-00980 | 0.98 | 8 | 15° | 3 | 38 | 4,200 |
| 04-00200-00990 | 0.99 | 8 | 15° | 3 | 38 | 4,200 |
| 04-00200-01000 | 1 | 10 | 15° | 3 | 38 | 2,900 |

加工案例1 Technical Data 1

S50c 通孔加工 Through hole drilling

| | |
|-----------------------|-------------------------------|
| 使用刀具 Tool | MDR-R φ1 |
| 主轴转速 Spindle Speed | 10,000 min ⁻¹ |
| 进给速度 Feed | 500 mm/min |
| 分切量 Step Feed | 0.5 mm |
| 孔深 Depth of Hole | 9 mm (通孔) Through |
| 冷却方式 Coolant | 水溶性切削油 Water Soluble Fluid |



加工案例2 Technical Data 2

SUS304 通孔加工 Through hole drilling

| | |
|-----------------------|-------------------------------|
| 使用刀具 Tool | MDR-R φ0.5 |
| 主轴转速 Spindle Speed | 7,000 min ⁻¹ |
| 进给速度 Feed | 105 mm/min |
| 分切量 Step Feed | 0.1 mm |
| 孔深 Depth of Hole | 4 mm (通孔) Through |
| 冷却方式 Coolant | 水溶性切削油 Water Soluble Fluid |

