

# MX445

切削参数参考表 Recommended Milling Conditions

| 加工材料<br>Work Material                      | 碳素钢<br>Carbon Steels<br>S50C                                                                                                                                                                                                                                                                                                                  |              | 合金钢<br>Alloy Steels<br>SCM・SKD・SUS |              | 调质钢<br>Prehardened Steels<br>HPM・NAK |              | 铜合金<br>Copper                                                        |              |
|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|------------------------------------|--------------|--------------------------------------|--------------|----------------------------------------------------------------------|--------------|
| 切削速度<br>Cutting Speed                      | 15~25m/min                                                                                                                                                                                                                                                                                                                                    |              | 10~20m/min                         |              | 10~15m/min                           |              | 15~35m/min                                                           |              |
| 刃 径<br>Dia.                                | 侧面<br>Side Milling                                                                                                                                                                                                                                                                                                                            |              | 侧面<br>Side Milling                 |              | 侧面<br>Side Milling                   |              | 侧面<br>Side Milling                                                   |              |
|                                            | 主轴转速<br>Spindle Speed                                                                                                                                                                                                                                                                                                                         | 进给速度<br>Feed | 主轴转速<br>Spindle Speed              | 进给速度<br>Feed | 主轴转速<br>Spindle Speed                | 进给速度<br>Feed | 主轴转速<br>Spindle Speed                                                | 进给速度<br>Feed |
|                                            | min <sup>-1</sup>                                                                                                                                                                                                                                                                                                                             | mm/min       | min <sup>-1</sup>                  | mm/min       | min <sup>-1</sup>                    | mm/min       | min <sup>-1</sup>                                                    | mm/min       |
| 1                                          | 6,400                                                                                                                                                                                                                                                                                                                                         | 100          | 4,800                              | 60           | 4,000                                | 55           | 8,000                                                                | 150          |
| 1.5                                        | 4,200                                                                                                                                                                                                                                                                                                                                         | 100          | 3,200                              | 60           | 2,700                                | 55           | 5,300                                                                | 170          |
| 2                                          | 3,200                                                                                                                                                                                                                                                                                                                                         | 100          | 2,400                              | 70           | 2,000                                | 60           | 4,000                                                                | 190          |
| 2.5                                        | 2,500                                                                                                                                                                                                                                                                                                                                         | 120          | 1,900                              | 70           | 1,600                                | 60           | 3,200                                                                | 200          |
| 3                                          | 2,100                                                                                                                                                                                                                                                                                                                                         | 130          | 1,600                              | 75           | 1,300                                | 70           | 2,700                                                                | 210          |
| 3.5                                        | 1,800                                                                                                                                                                                                                                                                                                                                         | 140          | 1,400                              | 75           | 1,100                                | 70           | 2,300                                                                | 210          |
| 4                                          | 1,600                                                                                                                                                                                                                                                                                                                                         | 160          | 1,200                              | 90           | 1,000                                | 80           | 2,000                                                                | 240          |
| 4.5                                        | 1,400                                                                                                                                                                                                                                                                                                                                         | 170          | 1,100                              | 90           | 900                                  | 85           | 1,800                                                                | 240          |
| 5                                          | 1,300                                                                                                                                                                                                                                                                                                                                         | 170          | 1,000                              | 100          | 800                                  | 90           | 1,600                                                                | 240          |
| 5.5                                        | 1,200                                                                                                                                                                                                                                                                                                                                         | 170          | 900                                | 100          | 700                                  | 95           | 1,400                                                                | 240          |
| 6                                          | 1,100                                                                                                                                                                                                                                                                                                                                         | 190          | 800                                | 110          | 700                                  | 100          | 1,300                                                                | 240          |
| 8                                          | 800                                                                                                                                                                                                                                                                                                                                           | 160          | 600                                | 100          | 500                                  | 90           | 1,000                                                                | 220          |
| 10                                         | 600                                                                                                                                                                                                                                                                                                                                           | 150          | 500                                | 100          | 400                                  | 85           | 800                                                                  | 200          |
| 12                                         | 500                                                                                                                                                                                                                                                                                                                                           | 140          | 400                                | 90           | 300                                  | 80           | 700                                                                  | 200          |
| 切深量<br>Depth of Cut<br><br>( D : 刃径 Dia. ) | <div>侧面 Side Milling</div> <div></div> <div><math>a_e</math><br/><math>\phi 1\sim 2.5=0.03D</math><br/><math>\phi 3\sim 6=0.06D</math><br/><math>\phi 8\sim 12=0.08D</math></div>                                                                                                                                                             |              |                                    |              |                                      |              | <div>侧面 Side Milling</div> <div></div> <div><math>0.06D</math></div> |              |
| 备 注<br>Notes                               | ※ 请使用发烟性低的切削油。<br>※ 仅限于侧面切削。<br>※ 请以相同的比率调整主轴转速和进给速度。<br>※ 加工参数会因切深量和机床刚性的状况而有所不同。请每次调整后再使用。<br>※ Use cutting fluid with smoke retardant.<br>※ Available only for side cutting.<br>※ Adjust both spindle speed and feed at the same rate.<br>※ Adjust milling conditions according to the volume of Depth of Cut and rigidity of the machine. |              |                                    |              |                                      |              |                                                                      |              |

CBN 铣刀  
Cubic Boron Nitride

钻石铣刀  
Diamond

平底铣刀  
Square

长颈平底  
铣刀

球头铣刀  
Ball

长颈球头  
铣刀

圆鼻铣刀  
Radius

长颈圆皇  
铣刀

锥形铣刀  
Taper

## 锥形球头铣刀

铣刀

Drilling

Thread milling 螺纹铣刀

倒角刀  
Chamfering