

# IC3MBS IC5MBS



## (ザ・) カットミル 高硬度用超硬3枚刃・5枚刃ボールエンドミル

Coated Solid Carbide Ball Endmills for Hardende steels (5・3Flutes)



### 特長 Feature

- 耐摩耗性と耐熱性に優れ、滑りが良く、着着しにくい特殊コーティングを採用
- 生材から難削材まで幅広い加工領域を実現
- 革新の刃形状・最強の超硬+特殊コーティングで高速高送りが可能
- Wear and heat resistance are excellent, also slipping is good. Special coating which is not easily adhered to is used.
- Ability to process a range of materials from alloyed steel to difficult-to-machine.
- High speed feed is possible due to innovative edge shape and the strongest carbide coating.

単位：mm

| 商品コード<br>Item Code | R±0.015 | D  | ℓ  | L   | d  |
|--------------------|---------|----|----|-----|----|
| IC3MBS-R3          | 3       | 6  | 10 | 80  | 6  |
| IC3MBS-R4          | 4       | 8  | 12 | 80  | 8  |
| IC3MBS-R5          | 5       | 10 | 15 | 100 | 10 |
| IC3MBS-R6          | 6       | 12 | 18 | 110 | 12 |
| IC3MBS-R8          | 8       | 16 | 24 | 150 | 16 |

| 商品コード<br>Item Code | R±0.015 | D  | ℓ  | L   | d  |
|--------------------|---------|----|----|-----|----|
| IC5MBS-R3          | 3       | 6  | 10 | 80  | 6  |
| IC5MBS-R4          | 4       | 8  | 12 | 80  | 8  |
| IC5MBS-R5          | 5       | 10 | 15 | 100 | 10 |
| IC5MBS-R6          | 6       | 12 | 18 | 110 | 12 |
| IC5MBS-R8          | 8       | 16 | 24 | 150 | 16 |

### ■ 荒加工 Roughing

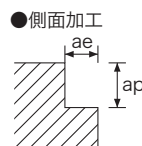
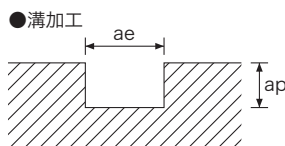
| 被削材<br>Work          | 炭素鋼・合金鋼<br>(180~250HB) |                              |       | 工具鋼<br>(25~35HRC)            |       |                              | プリハードン鋼<br>(35~45HRC) |                              |       | 焼き入れ鋼<br>(45~55HRC)          |       |                              | 焼き入れ鋼<br>(55~65HRC) |       |       |
|----------------------|------------------------|------------------------------|-------|------------------------------|-------|------------------------------|-----------------------|------------------------------|-------|------------------------------|-------|------------------------------|---------------------|-------|-------|
|                      | R                      | 回転数<br>n(min <sup>-1</sup> ) | 送り速度  | 回転数<br>n(min <sup>-1</sup> ) | 送り速度  | 回転数<br>n(min <sup>-1</sup> ) | 送り速度                  | 回転数<br>n(min <sup>-1</sup> ) | 送り速度  | 回転数<br>n(min <sup>-1</sup> ) | 送り速度  | 回転数<br>n(min <sup>-1</sup> ) | 送り速度                |       |       |
| R3                   | 14,040                 | 5,270                        | 6,850 | 12,720                       | 4,780 | 6,210                        | 11,400                | 4,060                        | 5,280 | 10,200                       | 3,060 | 3,980                        | 8,880               | 2,000 | 2,600 |
| R4                   | 10,560                 | 5,540                        | 7,200 | 9,600                        | 5,040 | 6,550                        | 8,640                 | 4,310                        | 5,600 | 7,680                        | 3,230 | 4,200                        | 6,720               | 2,110 | 2,740 |
| R5                   | 8,400                  | 5,540                        | 7,200 | 7,680                        | 5,060 | 6,580                        | 6,840                 | 4,280                        | 5,560 | 6,120                        | 3,230 | 4,200                        | 5,400               | 2,140 | 2,780 |
| R6                   | 6,960                  | 5,420                        | 7,200 | 6,360                        | 4,960 | 6,450                        | 5,760                 | 4,270                        | 5,550 | 5,040                        | 3,140 | 4,080                        | 4,440               | 2,080 | 2,700 |
| R8                   | 5,280                  | 5,060                        | 6,580 | 4,800                        | 4,610 | 5,990                        | 4,320                 | 3,940                        | 5,120 | 3,840                        | 2,950 | 3,840                        | 3,360               | 1,930 | 2,510 |
| 切込み量<br>Depth of cut | ap=0.1D, ae=0.3D       |                              |       | ap=0.1D, ae=0.3D             |       |                              | ap=0.1D, ae=0.3D      |                              |       | ap=0.07D, ae=0.21D           |       |                              | ap=0.05D, ae=0.15D  |       |       |

### ■ 仕上げ加工 Finishing

| 被削材<br>Work          | 炭素鋼・合金鋼<br>(180~250HB) |                              |       | 工具鋼<br>(25~35HRC)            |       |                              | プリハードン鋼<br>(35~45HRC)  |                              |       | 焼き入れ鋼<br>(45~55HRC)          |       |                              | 焼き入れ鋼<br>(55~65HRC)    |       |       |
|----------------------|------------------------|------------------------------|-------|------------------------------|-------|------------------------------|------------------------|------------------------------|-------|------------------------------|-------|------------------------------|------------------------|-------|-------|
|                      | R                      | 回転数<br>n(min <sup>-1</sup> ) | 送り速度  | 回転数<br>n(min <sup>-1</sup> ) | 送り速度  | 回転数<br>n(min <sup>-1</sup> ) | 送り速度                   | 回転数<br>n(min <sup>-1</sup> ) | 送り速度  | 回転数<br>n(min <sup>-1</sup> ) | 送り速度  | 回転数<br>n(min <sup>-1</sup> ) | 送り速度                   |       |       |
| R3                   | 19,080                 | 5,000                        | 6,500 | 17,880                       | 4,690 | 6,100                        | 16,560                 | 4,130                        | 5,370 | 13,320                       | 2,800 | 3,640                        | 11,400                 | 1,800 | 2,340 |
| R4                   | 14,280                 | 5,140                        | 6,680 | 13,320                       | 4,800 | 6,240                        | 12,360                 | 4,220                        | 5,490 | 10,080                       | 2,900 | 3,770                        | 8,640                  | 1,870 | 2,430 |
| R5                   | 11,400                 | 5,140                        | 6,680 | 10,680                       | 4,810 | 6,250                        | 9,960                  | 4,260                        | 5,540 | 8,040                        | 2,890 | 3,760                        | 6,840                  | 1,890 | 2,460 |
| R6                   | 9,600                  | 5,180                        | 6,730 | 8,880                        | 4,800 | 6,240                        | 8,280                  | 4,250                        | 5,530 | 6,720                        | 2,900 | 3,770                        | 5,760                  | 1,870 | 2,430 |
| R8                   | 7,200                  | 4,750                        | 6,180 | 6,720                        | 4,440 | 5,770                        | 6,240                  | 3,910                        | 5,080 | 5,040                        | 2,660 | 3,460                        | 4,320                  | 1,720 | 2,240 |
| 切込み量<br>Depth of cut | ap=0.05~0.1D, ae=0.02D |                              |       | ap=0.05~0.1D, ae=0.02D       |       |                              | ap=0.05~0.1D, ae=0.02D |                              |       | ap=0.05~0.1D, ae=0.02D       |       |                              | ap=0.05~0.1D, ae=0.02D |       |       |

※ 切削条件はあくまでも目安です。使用される機械、チャックの剛性や切削油等の状況によって変動致します。

These conditions are for general guidance. Therefore they are subject to change to the situation of the machine used, the tool hold rigidity, cutting oil, etc.



| 構造用鋼/炭素鋼<br>(SS41、S45C) | 工具鋼/プリハードン鋼<br>(SKD、NAK101) | 合金鋼/ステンレス鋼<br>(SCM、SUS304) | 熱処理鋼等    | 硬質材      |
|-------------------------|-----------------------------|----------------------------|----------|----------|
| HRC30以下                 | HRC30~35                    | HRC35~40                   | HRC40~45 | HRC45~65 |
| ○                       | ○                           | ○                          | ○        | ○        |