

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、溶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 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 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

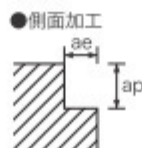
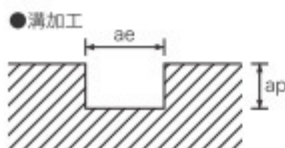
| 被削材 Work | 炭素鋼・合金鋼 (180~250HB) | | | 工具鋼 (25~35HRC) | | | プリハードン鋼 (35~45HRC) | | | 焼き入れ鋼 (45~55HRC) | | | 焼き入れ鋼 (55~65HRC) | | |
|----------------------|------------------------|-------|-------|------------------------------|-------|-------|------------------------------|-------|-------|------------------------------|-------|-------|------------------------------|-------|-------|
| | R | 送り速度 | | 回転数 n(min ⁻¹) | 送り速度 | | 回転数 n(min ⁻¹) | 送り速度 | | 回転数 n(min ⁻¹) | 送り速度 | | 回転数 n(min ⁻¹) | 送り速度 | |
| | | 3MB | 5MB | | 3MB | 5MB | | 3MB | 5MB | | 3MB | 5MB | | 3MB | 5MB |
| 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 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 Work | 炭素鋼・合金鋼 (180~250HB) | | | 工具鋼 (25~35HRC) | | | プリハードン鋼 (35~45HRC) | | | 焼き入れ鋼 (45~55HRC) | | | 焼き入れ鋼 (55~65HRC) | | |
|----------------------|------------------------|-------|-------|------------------------------|-------|-------|------------------------------|-------|-------|------------------------------|-------|-------|------------------------------|-------|-------|
| | R | 送り速度 | | 回転数 n(min ⁻¹) | 送り速度 | | 回転数 n(min ⁻¹) | 送り速度 | | 回転数 n(min ⁻¹) | 送り速度 | | 回転数 n(min ⁻¹) | 送り速度 | |
| | | 3MB | 5MB | | 3MB | 5MB | | 3MB | 5MB | | 3MB | 5MB | | 3MB | 5MB |
| 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 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 (SS41, S45C) | 工具鋼/プリハードン鋼 (SKD, NAK101) | 合金鋼/ステンレス鋼 (SCM, SUS304) | 熱処理鋼等 | 硬質材 |
|--------------------------|------------------------------|-----------------------------|----------|----------|
| HRC30以下 | HRC30~35 | HRC35~40 | HRC40~45 | HRC45~65 |
| ○ | ○ | ○ | ○ | ○ |