

3刃 铜·铝合金用短刀型

3 Flutes-Short-for Copper & Aluminum Alloys

CA-ETS

切削条件 Cutting Conditions | P599



由于其锋利的切削刃及排屑性优良的容屑槽，能实现槽和侧面的高效率加工。

High efficiency operation for slotting and side milling can be realized thanks to a sharp cutting edge and wide chip pocket room.



(单位:mm) (Unit:mm)

| 商品号<br>EDP No. | 外径<br>DC | 全长<br>LF | 刃长<br>APMX | 柄径<br>DCON | 库存<br>Stock | 重量<br>(g) |    |    |
|----------------|----------|----------|------------|------------|-------------|-----------|----|----|
| 8502806        | 3        | 50       | 8          | 6          | ●           | 19        |    |    |
|                | 3.1      |          | 10         |            | 8           | □         | —  |    |
|                | 3.2      |          |            |            |             | □         | —  |    |
|                | 3.3      |          |            |            |             | □         | —  |    |
|                | 3.4      |          |            |            |             | □         | —  |    |
| 8502807        | 3.5      |          | 8          |            | 8           | ●         | 19 |    |
|                | 3.6      |          | 10         |            | 8           | □         | —  |    |
|                | 3.7      |          |            |            |             | □         | —  |    |
|                | 3.8      |          |            |            |             | □         | —  |    |
|                | 3.9      |          |            |            |             | □         | —  |    |
|                | 4        | □        |            | —          |             |           |    |    |
| 8502808        | 4.1      | 50       | 11         | 6          | ●           | 19        |    |    |
|                | 4.2      |          |            |            | □           | —         |    |    |
|                | 4.3      |          |            |            | □           | —         |    |    |
|                | 4.4      |          |            |            | □           | —         |    |    |
| 8502809        | 4.5      |          |            |            | 5           | 6         | ●  | 19 |
|                | 4.6      |          |            |            | 10          | 8         | □  | —  |
|                | 4.7      |          |            |            |             |           | □  | —  |
|                | 4.8      |          |            |            |             |           | □  | —  |
|                | 4.9      |          |            |            |             |           | □  | —  |
|                | 5        |          |            |            |             |           | □  | —  |
| 8502810        | 5.1      | 60       | 13         | 8          | ●           | 19        |    |    |
|                | 5.2      |          |            |            | □           | —         |    |    |
|                | 5.3      |          |            |            | □           | —         |    |    |
|                | 5.4      |          |            |            | □           | —         |    |    |
| 8502811        | 5.5      |          |            |            | 5           | 6         | ●  | 19 |
|                | 5.6      |          |            |            | 10          | 8         | □  | —  |
|                | 5.7      |          |            |            |             |           | □  | —  |
|                | 5.8      |          |            |            |             |           | □  | —  |
|                | 5.9      |          |            |            |             |           | □  | —  |
|                | 6        |          |            |            |             |           | □  | —  |
| 8502812        | 6.1      | 60       | 16         | 8          | ●           | 19        |    |    |
|                | 6.2      |          |            |            | □           | —         |    |    |
|                | 6.3      |          |            |            | □           | —         |    |    |
|                | 6.4      |          |            |            | □           | —         |    |    |
| 8502813        | 6.5      |          |            |            | 5           | 6         | ●  | 38 |
|                | 6.6      |          |            |            | 10          | 8         | □  | —  |
|                | 6.7      |          |            |            |             |           | □  | —  |
|                | 6.8      |          |            |            |             |           | □  | —  |
|                | 6.9      |          |            |            |             |           | □  | —  |
|                | 7        |          |            |            |             |           | □  | —  |
| 8502814        | 7.1      | 5        | 6          | ●          | 39          |           |    |    |

(单位:mm) (Unit:mm)

| 商品号<br>EDP No. | 外径<br>DC | 全长<br>LF | 刃长<br>APMX | 柄径<br>DCON | 库存<br>Stock | 重量<br>(g) |
|----------------|----------|----------|------------|------------|-------------|-----------|
|                | 7.2      | 60       | 16         | 8          | □           | —         |
|                | 7.3      |          |            |            | □           | —         |
|                | 7.4      |          |            |            | □           | —         |
| 8502815        | 7.5      |          |            |            | ●           | 40        |
|                | 7.6      |          |            |            | □           | —         |
|                | 7.7      |          |            |            | □           | —         |
|                | 7.8      |          |            |            | □           | —         |
|                | 7.9      |          |            |            | □           | —         |
| 8502816        | 8        |          |            |            | ●           | 40        |
|                | 8.1      |          |            |            | □           | —         |
|                | 8.2      | 70       | 19         | 10         | □           | —         |
|                | 8.3      |          |            |            | □           | —         |
|                | 8.4      |          |            |            | □           | —         |
| 8502817        | 8.5      |          |            |            | ●           | 69        |
|                | 8.6      |          |            |            | □           | —         |
|                | 8.7      |          |            |            | □           | —         |
|                | 8.8      |          |            |            | □           | —         |
|                | 8.9      |          |            |            | □           | —         |
| 8502818        | 9        |          |            |            | ●           | 70        |
|                | 9.1      |          |            |            | □           | —         |
|                | 9.2      | 85       | 22         | 12         | □           | —         |
|                | 9.3      |          |            |            | □           | —         |
|                | 9.4      |          |            |            | □           | —         |
| 8502819        | 9.5      |          |            |            | ●           | 71        |
|                | 9.6      |          |            |            | □           | —         |
|                | 9.7      |          |            |            | □           | —         |
|                | 9.8      |          |            |            | □           | —         |
|                | 9.9      |          |            |            | □           | —         |
| 8502820        | 10       |          |            |            | ●           | 71        |
| 8502850        | 10.5     |          |            |            | ●           | 106       |
| 8502821        | 11       | ●        | 106        |            |             |           |
| 8502851        | 11.5     | ●        | 108        |            |             |           |
| 8502822        | 12       | ●        | 108        |            |             |           |
| 8502823        | 13       | ●        | 138        |            |             |           |
| 8502824        | 14       | ●        | 139        |            |             |           |
| 8502825        | 15       | ●        | 231        |            |             |           |
| 8502826        | 16       | ●        | 257        |            |             |           |
| 8502827        | 17       | ●        | 261        |            |             |           |
| 8502828        | 18       | ●        | 265        |            |             |           |
| 8502829        | 19       | ●        | 387        |            |             |           |
| 8502830        | 20       | ●        | 404        |            |             |           |

| 加工材料<br>Work Material | 碳素钢<br>Carbon Steel      | 合金钢<br>Alloy Steel | 预硬钢<br>Prehardened Steel    | 不锈钢<br>Stainless Steel | 铸铁<br>Cast Iron           | 铜合金<br>Copper Alloy | 铝合金<br>Aluminum Alloy | 石墨<br>Graphite | 钛合金<br>Titanium Alloy | 耐热合金<br>Heat Resistant Alloy | 塑料<br>Plastic |
|-----------------------|--------------------------|--------------------|-----------------------------|------------------------|---------------------------|---------------------|-----------------------|----------------|-----------------------|------------------------------|---------------|
|                       | 预硬钢<br>Prehardened Steel | 工具钢<br>Tool Steel  | 淬火钢<br>Hardened Steel       |                        | 球墨铸铁<br>Ductile Cast Iron |                     |                       |                |                       |                              |               |
| 商品记号<br>Abbreviation  | ~40HRC                   |                    | ~45HRC ~55HRC ~60HRC ~65HRC | ~35HRC                 | ~350HB                    |                     |                       |                |                       |                              |               |
| CA-ETS                |                          |                    |                             |                        |                           | ◎                   | ◎                     |                |                       |                              | ○             |

库存标识 Inventory symbols

- = 标准库存品  
standard stock item
- = 特定代理店库存品  
Stocked by specific distributors. Contact us for price & availability.

- ▲ = 由新产品及后续产品取代 (请确认库存)  
Scheduled to be replaced by new product or successor item

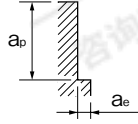
# 硬质合金铣刀切削条件基准表

CUTTING CONDITIONS FOR CARBIDE END MILLS

铜·铝合金用3刃短刃型 CA-ETS  
铜·铝合金用3刃圆弧角短刃型 CA-CR-ETS  
侧铣

3 FLUTES SHORT FOR COPPER & ALUMINUM ALLOY  
3 FLUTES SHORT WITH CORNER RADIUS FOR COPPER & ALUMINUM ALLOYS  
SIDE MILLING

| 加工材料<br>Work<br>Material | 铝合金展伸材<br>Aluminum Alloy Expanding Material<br>A7075 |                                     | 铝合金铸件<br>Aluminum Alloy Casting<br>< Si13% |                                     | 铜合金<br>Copper Alloy<br>C1100 |                          |
|--------------------------|--|-------------------------------------|--|-------------------------------------|------------------------------|--------------------------|
|                          | 外径<br>Mill Dia.<br>(mm)                              | 转速<br>Speed<br>(min <sup>-1</sup> ) | 进给速度<br>Feed<br>(mm/min)                   | 转速<br>Speed<br>(min <sup>-1</sup> ) | 进给速度<br>Feed<br>(mm/min)     | 进给速度<br>Feed<br>(mm/min) |
|                          | 3  | 21,000                              | 950  | 21,000                              | 950                          | 7,950                    |
|                          | 4  | 15,500                              | 1,100                                      | 15,500                              | 1,100                        | 5,950                    |
|                          | 5  | 12,500                              | 1,100                                      | 12,500                              | 1,100                        | 4,750                    |
|                          | 6  | 10,500                              | 1,200                                      | 10,500                              | 1,200                        | 3,950                    |
|                          | 8  | 7,950                               | 1,300                                      | 7,950                               | 1,300                        | 2,950                    |
|                          | 10   | 6,350                               | 1,500                                      | 6,350                               | 1,500                        | 2,350                    |
|                          | 12   | 5,300                               | 1,550                                      | 5,300                               | 1,550                        | 1,950                    |
|                          | 16   | 3,950                               | 1,550                                      | 3,950                               | 1,550                        | 1,450                    |
|                          | 20   | 3,150                               | 1,550                                      | 3,150                               | 1,550                        | 1,150                    |
| 切深量<br>Depth<br>of Cut   | $\frac{a_p}{1.5D}$                                   |                                     | $\frac{a_e}{0.1D}$                         |                                     |                              |                          |



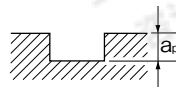
1. 请使用高精度和高刚性的设备及夹具。
2. 请使用水溶性切削油。
3. 根据切深量、机械刚性等使用状况可调整转速和进给速度。

1. Use a rigid and precise machine and holder.
2. Use a water soluble cutting fluid.
3. Please adjust the speed and feed when the cutting depth is large or when machines with low rigidity are used.

铜·铝合金用3刃短刃型 CA-ETS  
铜·铝合金用3刃圆弧角短刃型 CA-CR-ETS  
槽铣

3 FLUTES SHORT FOR COPPER & ALUMINUM ALLOY  
3 FLUTES SHORT WITH CORNER RADIUS FOR COPPER & ALUMINUM ALLOYS  
SLOTING

| 加工材料<br>Work<br>Material | 铝合金展伸材<br>Aluminum Alloy Expanding Material<br>A7075 |                                     | 铝合金铸件<br>Aluminum Alloy Casting<br>< Si13% |                                     | 铜合金<br>Copper Alloy<br>C1100 |                          |
|--------------------------|--|-------------------------------------|--|-------------------------------------|------------------------------|--------------------------|
|                          | 外径<br>Mill Dia.<br>(mm)                              | 转速<br>Speed<br>(min <sup>-1</sup> ) | 进给速度<br>Feed<br>(mm/min)                   | 转速<br>Speed<br>(min <sup>-1</sup> ) | 进给速度<br>Feed<br>(mm/min)     | 进给速度<br>Feed<br>(mm/min) |
|                          | 3  | 21,000                              | 670  | 21,000                              | 670                          | 7,950                    |
|                          | 4  | 15,500                              | 700  | 15,500                              | 700                          | 5,950                    |
|                          | 5  | 12,500                              | 745  | 12,500                              | 745                          | 4,750                    |
|                          | 6  | 10,500                              | 820  | 10,500                              | 820                          | 3,950                    |
|                          | 8  | 7,950                               | 865  | 7,950                               | 865                          | 2,950                    |
|                          | 10   | 6,350                               | 970  | 6,350                               | 970                          | 2,350                    |
|                          | 12   | 5,300                               | 1,050                                      | 5,300                               | 1,050                        | 1,950                    |
|                          | 16   | 3,950                               | 1,050                                      | 3,950                               | 1,050                        | 1,450                    |
|                          | 20   | 3,150                               | 1,050                                      | 3,150                               | 1,050                        | 500                      |
| 切深量<br>Depth<br>of Cut   | $\frac{a_p}{0.5D}$                                   |                                     |  |                                     |                              |                          |



1. 请使用高精度和高刚性的设备及夹具。
2. 请使用水溶性切削油。
3. 根据切深量、机械刚性等使用状况可调整转速和进给速度。

1. Use a rigid and precise machine and holder.
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