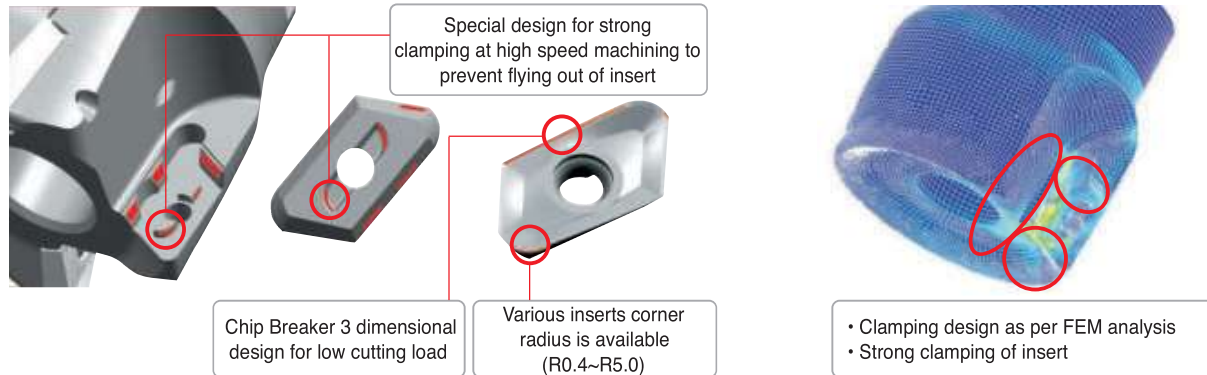


Features a strong clamping provided by the concave grooves on the back surface of the inserts

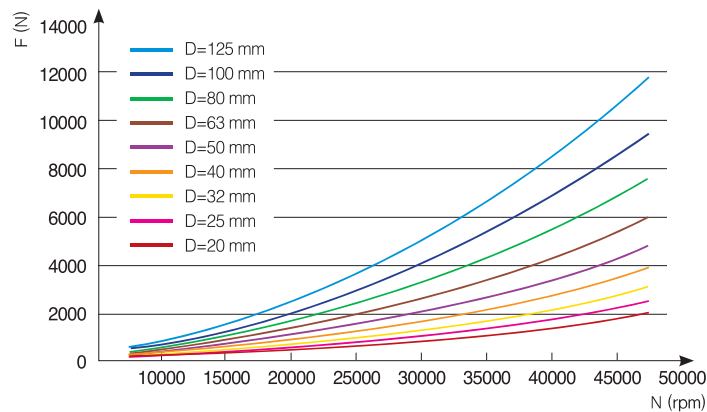
## Pro-X Mill

- Inserts feature a buffed top surface ensuring a smoother chip evacuation and reducing built-up edge
- High rake angle of insert provides good surface finish and low cutting load
- Specially designed for high speed machining of aluminum
- Suitable for square shouldering and curved surface machining

### Clamping system for high speed



### Centrifugal force as per RPM



Marking [ • Designation • Max. RPM ]



### Max. RPM as per cutting diameter

| Cutting diameter<br>ØD (mm) | 5000 type              |            | 6000 type              |            |
|-----------------------------|------------------------|------------|------------------------|------------|
|                             | n (min <sup>-1</sup> ) | vc (m/min) | n (min <sup>-1</sup> ) | vc (m/min) |
| 20                          | 14,000                 | 879        | -                      | -          |
| 25                          | 28,000                 | 2,199      | 15,000                 | 1,178      |
| 32                          | 25,000                 | 2,513      | 23,000                 | 2,312      |
| 40                          | 22,000                 | 2,764      | 20,000                 | 2,513      |
| 50                          | 20,000                 | 3,141      | 18,000                 | 2,827      |
| 63                          | 18,000                 | 3,562      | 16,000                 | 3,166      |
| 80                          | 16,000                 | 4,021      | 14,000                 | 3,518      |
| 100                         | 14,000                 | 4,398      | 13,000                 | 4,084      |
| 125                         | 13,000                 | 5,105      | 11,000                 | 4,319      |

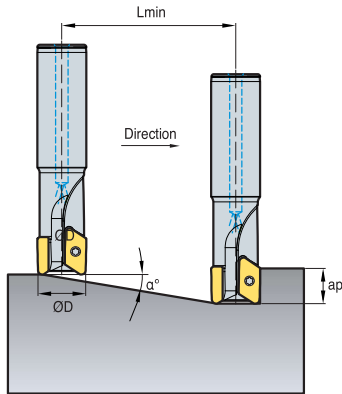
※ In case of actual machining accidental breakage of insert or tool could happen even under the written RPM special cover or door is necessary to prevent damage from broken insert or broken tool

### Recommended cutting condition

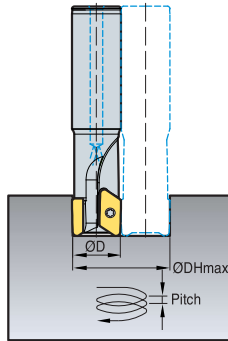
| Workpiece                      |                | Cutting Speed<br>vc (m/min) | Feed<br>fz (mm/t) |
|--------------------------------|----------------|-----------------------------|-------------------|
| Aluminum alloy                 | Rm280 < MPa    | 1200                        | 0.30              |
|                                | Rm280 > MPa    | 1000                        | 0.25              |
| Copper alloy<br>Thermo plastic | Long chipping  | 400                         | 0.20              |
|                                | -              | 350                         | 0.15              |
| Aluminum alloy                 | Si < 12%       | 1000                        | 0.25              |
|                                | Si ≥ 12%       | 300                         | 0.23              |
| Copper alloy                   | Short chipping | 500                         | 0.20              |
| Magnesium alloy                | -              | 450                         | 0.20              |
| Duroplastics                   | -              | 200                         | 0.15              |

## Pro-X Mill ramping & helical cutting technical data

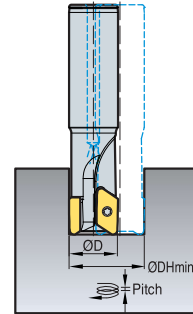
### 1. Ramping



### 2. Blind hole helical cutting



### 3. Thru hole helical cutting



(mm)

| Designation   | ØD  | Ramping |      | Blind hole Helical cutting |      |        |      | Thru hole Helical cutting |      |
|---------------|-----|---------|------|----------------------------|------|--------|------|---------------------------|------|
|               |     | α°      | Lmin | ØDHmin                     | dmax | ØDHmax | dmax | ØDHmin                    | dmax |
| PAXS5020HR    | 20  | 8.4     | 68   | 32                         | 4.7  | 34     | 5.0  | 27                        | 4.0  |
| PAXS5025HR    | 25  | 13.2    | 43   | 42                         | 9.9  | 44     | 10.4 | 34                        | 8.0  |
| PAXS5032HR    | 32  | 9.5     | 60   | 56                         | 9.3  | 58     | 9.7  | 48                        | 8.0  |
| PAXS5040HR    | 40  | 7.1     | 80   | 72                         | 9.0  | 74     | 9.3  | 64                        | 8.0  |
| PAXCM5050HR   | 50  | 5.4     | 105  | 92                         | 8.8  | 94     | 9.0  | 84                        | 8.0  |
| PAXCM5063HR   | 63  | 4.2     | 138  | 118                        | 8.6  | 120    | 8.7  | 110                       | 8.0  |
| PAXC(M)5080HR | 80  | 3.2     | 180  | 152                        | 8.4  | 154    | 8.6  | 144                       | 8.0  |
| PAXC(M)5100HR | 100 | 2.5     | 230  | 192                        | 8.3  | 194    | 8.4  | 184                       | 8.0  |
| PAXC(M)5125HR | 125 | 2.0     | 293  | 242                        | 8.3  | 244    | 8.3  | 234                       | 8.0  |
| PAXS6025HR    | 25  | 9.0     | 63   | 42                         | 6.6  | 44     | 6.9  | 38                        | 6.0  |
| PAXS6032HR    | 32  | 6.6     | 87   | 56                         | 6.5  | 58     | 6.7  | 52                        | 6.0  |
| PAXS6040HR    | 40  | 12.1    | 47   | 72                         | 15.4 | 74     | 15.9 | 56                        | 12.0 |
| PAXCM6050HR   | 50  | 9.0     | 63   | 92                         | 14.5 | 94     | 14.8 | 76                        | 12.0 |
| PAXCM6063HR   | 63  | 6.7     | 85   | 118                        | 13.9 | 120    | 14.1 | 102                       | 12.0 |
| PAXC(M)6080HR | 80  | 5.0     | 113  | 152                        | 13.4 | 154    | 13.6 | 136                       | 12.0 |
| PAXC(M)6100HR | 100 | 3.9     | 147  | 192                        | 13.1 | 194    | 13.2 | 176                       | 12.0 |
| PAXC(M)6125HR | 125 | 3.0     | 188  | 242                        | 12.8 | 244    | 13.0 | 226                       | 12.0 |

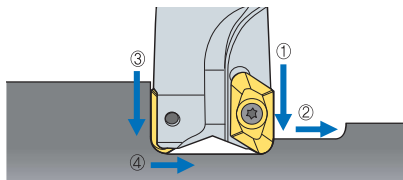
• Lmin: When ap = 10mm

• Lmin: Minimum inclination cutting length  $Lmin = \frac{ap}{\tan \alpha^\circ}$  (mm)

α°: Max. ramping angle

ap: Depth of cut

## Plunging, slotting, drilling technical data



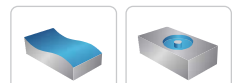
1. When drilling, grooving machining sequence is ① → ② → ③ → ④

2. When drilling, grooving, decrease the feed and cutting speed 30%~50% from the recommended data

### • Cutting condition for drilling

| Holder  | ap (mm)   |           |
|---------|-----------|-----------|
|         | 5000 type | 6000 type |
| Ø20     | 8         | -         |
| Ø25     | 4         | 11        |
| Ø32     | 4         | 6         |
| Ø40~125 | 4         | 6         |
| Insert  | ap (mm)   |           |
| XETK19  | 4         |           |
| XETK25  | 6         |           |

## Uses



Copying

Helical cutting



Slotting & Shouldering

Ramping

