

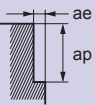
## INDEXABLE HEAD END MILLS

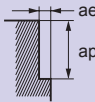
**IMX-C6HV/C10HV/C12HV**

Corner radius head, Multi-flute, Irregular helix

## RECOMMENDED CUTTING CONDITIONS

## Side milling

| Dia.<br>(mm) | Pre-hardened steel, Carbon steel, Alloy steel,<br>Alloy tool steel                |                                    |                    |                       |                         |                         | Austenitic stainless steel,<br>Ferritic, Precipitation hardening stainless steel,<br>Titanium alloy |                                    |                    |                       |                         |                         | Precipitation hardening stainless steel,<br>Cobalt chromium alloy |                                    |                    |                       |                         |                         |
|--------------|-----------------------------------------------------------------------------------|------------------------------------|--------------------|-----------------------|-------------------------|-------------------------|-----------------------------------------------------------------------------------------------------|------------------------------------|--------------------|-----------------------|-------------------------|-------------------------|-------------------------------------------------------------------|------------------------------------|--------------------|-----------------------|-------------------------|-------------------------|
|              | Cutting speed<br>(m/min)                                                          | Revolution<br>(min <sup>-1</sup> ) | Feed<br>(mm/tooth) | Feed rate<br>(mm/min) | Depth of cut<br>ap (mm) | Depth of cut<br>ae (mm) | Cutting speed<br>(m/min)                                                                            | Revolution<br>(min <sup>-1</sup> ) | Feed<br>(mm/tooth) | Feed rate<br>(mm/min) | Depth of cut<br>ap (mm) | Depth of cut<br>ae (mm) | Cutting speed<br>(m/min)                                          | Revolution<br>(min <sup>-1</sup> ) | Feed<br>(mm/tooth) | Feed rate<br>(mm/min) | Depth of cut<br>ap (mm) | Depth of cut<br>ae (mm) |
| 10           | 200                                                                               | 6400                               | 0.07               | 2700                  | 10                      | 1                       | 150                                                                                                 | 4800                               | 0.07               | 2000                  | 10                      | 1                       | 100                                                               | 3200                               | 0.07               | 1300                  | 10                      | 1                       |
| 12           | 200                                                                               | 5300                               | 0.085              | 2700                  | 12                      | 1.2                     | 150                                                                                                 | 4000                               | 0.085              | 2000                  | 12                      | 1.2                     | 100                                                               | 2700                               | 0.085              | 1400                  | 12                      | 1.2                     |
| 16           | 200                                                                               | 4000                               | 0.07               | 2800                  | 16                      | 0.64                    | 150                                                                                                 | 3000                               | 0.088              | 2600                  | 16                      | 0.64                    | 100                                                               | 2000                               | 0.07               | 1400                  | 16                      | 0.64                    |
| 20           | 200                                                                               | 3200                               | 0.08               | 3100                  | 20                      | 0.8                     | 150                                                                                                 | 2400                               | 0.1                | 2900                  | 20                      | 0.8                     | 100                                                               | 1600                               | 0.08               | 1500                  | 20                      | 0.8                     |
| 25           | 200                                                                               | 2500                               | 0.08               | 2400                  | 25                      | 1                       | 150                                                                                                 | 1900                               | 0.1                | 2300                  | 25                      | 1                       | 100                                                               | 1300                               | 0.08               | 1200                  | 25                      | 1                       |
| Depth of cut |  |                                    |                    |                       |                         |                         |                                                                                                     |                                    |                    |                       |                         |                         |                                                                   |                                    |                    |                       |                         |                         |

| Dia.<br>(mm) | Heat resistant alloys<br>Inconel718                                                 |                                    |                    |                       |                         |                         |
|--------------|-------------------------------------------------------------------------------------|------------------------------------|--------------------|-----------------------|-------------------------|-------------------------|
|              | Cutting speed<br>(m/min)                                                            | Revolution<br>(min <sup>-1</sup> ) | Feed<br>(mm/tooth) | Feed rate<br>(mm/min) | Depth of cut<br>ap (mm) | Depth of cut<br>ae (mm) |
| 10           | 40                                                                                  | 1300                               | 0.033              | 260                   | 10                      | 0.5                     |
| 12           | 40                                                                                  | 1100                               | 0.035              | 230                   | 12                      | 0.6                     |
| 16           | 40                                                                                  | 800                                | 0.038              | 300                   | 16                      | 0.64                    |
| 20           | 40                                                                                  | 640                                | 0.04               | 310                   | 20                      | 0.8                     |
| 25           | 40                                                                                  | 510                                | 0.04               | 240                   | 25                      | 1                       |
| Depth of cut |  |                                    |                    |                       |                         |                         |

- 1) For stainless steel, titanium alloy and heat resistant alloy, the use of water-soluble coolant is effective.
- 2) If the depth of cut is shallow, the revolution and feed rate can be increased.
- 3) The irregular helix flute end mill has a large effect on controlling vibration when compared to standard end mills. However, if the rigidity of the machine or the workpiece installation is poor, vibration or abnormal sound can occur. In this case, please reduce the revolution and feed rate proportionately, or set a lower depth of cut.
- 4) If the machining radius at the corner is the same as the tool radius when using a head with more than 10 flutes, please set the depth of cut and feed rate to half of the above.

