## LING / Solid Carbide End Mills

#### Cutting parameters for HMX series end mills

#### HMX-4R★HMX-4RBL/M/X★HMX-4RP★HMX-4RF

Workpiece material		ardened steel, Hardened steel  40~50HRC  Hardened steel  50~60HRC		Hardened steel 60~68HRC		
Cutting speed	300m/min		150m/min		100m/min	
Diameter (mm)	Rotating speed (min <sup>-1</sup> )	Feed speed (mm/min)	Rotating speed (min <sup>-1</sup> )	Feed speed (mm/min)	Rotating speed (min <sup>-1</sup> )	Feed speed (mm/min)
3	32000	1225	16000	610	11000	420
4	24000	1500	12000	745	8000	500
5	19000	1630	9500	815	6400	550
6	16000	1850	8000	925	5300	610
8	12000	1850	6000	925	4000	610
10	9600	1850	4800	925	3200	610
12	8000	1920	4000	960	2700	648
16	6000	1440	3000	720	2000	480
Maximum cutting depth	a <sub>e</sub> =0.05D $a_p=1.5D$ Maximum a <sub>e</sub> =1.0mm		a <sub>e</sub> =0.03D $a_p=1D$ Maximum a <sub>e</sub> =0.5mm		a <sub>e</sub> =0.02D  a <sub>p</sub> =1D  Maximum a <sub>e</sub> =0.3mm	

- 1.Please select high-precision and rigidity machine and tool holder.
- 2.When the machine rigidity and workpiece fixture stability is low, vibration and abnormal noise may be generated. Please reduce the rotating speed and feed speed stated above correspondingly.
- 3. Please use air blow or MQL( minimum oil mist cooling).
- 4. Down milling is recommended in the case of side milling.
- 5. Make overhang of tool as short as possible in conditions of non-interference.

# Solid Carbide End Mills

### **Cutting parameters for HMX series end mills**

#### HMX-6R-MAX

Workpiece material	Pre-hardened ster 40~50		Hardened steel 50~60HRC		
Cutting speed	100n	n/min	80m/min		
Diameter (mm)	Rotating speed (min <sup>-1</sup> )	Feed speed (mm/min)	Rotating speed (min <sup>-1</sup> )	Feed speed (mm/min)	
6	5300	3200	4200	2600	
8	4000	3200	3200	2600	
10	3200	3200	2600	2600	
12	2600	3200	2200	2600	
16	2000	3600	1600	2800	
20	1600	3600	1300	2800	
Maximum cutting depth	ae≤0.	05D a <sub>p≤</sub> 0.035D	a <sub>e</sub> ≤0.5D a <sub>p</sub> ≤0.035D		

- 1.Please select high-precision and rigidity machine and tool holder.
- 2. When the machine rigidity and workpiece fixture stability is low, vibration and abnormal noise may be generated. Please reduce the rotating speed and feed speed stated above correspondingly.
- 3.Please use air blow or MQL( minimum oil mist cooling).
- 4. Make overhang of tool as short as possible in conditions of non-interference.