



KARAN INDUSTRIES

COBALT HSS AND HSS END MILLS

Speed and Feed Data - Applications in Various Materials

TECHNICAL DATA

MATERIAL	HEAT-RESISTANT COBALT BASE ALLOYS (64-68 C)			HEAT-RESISTANT ALUMINUM, PLASTICS, WOOD		
	SPEED S-FM	FEED CHIP LEAD	PER TOOTH	SPEED 204-408 S-FM	FEED CHIP LEAD	PER TOOTH
DIA. OF END MILLS	HEAT-RESISTANT AUSTENITIC ALLOYS, HIGH TENSILE STEELS (46-56 C)			BRASS, BRONZE, ALLOYED ALUMINUM, ABRASIVE PLASTICS		
	SPEED 15-35 S-FM	FEED CHIP LEAD	PER TOOTH	SPEED 100-200 S-FM	FEED CHIP LEAD	PER TOOTH
	HEAT-RESISTANT NICKEL BASE ALLOYS, HIGH STRENGTH STAINLESS STEELS, HIGH TENSILE STEELS (43-48 C)			CAST IRON, MILD STEEL, HALF-HARD BRASS AND BRONZE		
	SPEED 35-45 S-FM	FEED CHIP LEAD	PER TOOTH	SPEED 85-100 S-FM	FEED CHIP LEAD	PER TOOTH
	HEAT-RESISTANT INCOEL BASE ALLOYS, HIGH STRENGTH STAINLESS STEELS (43-48 C)			MACHINE STEEL, HARD BRASS AND BRONZE, ELECTROLYTIC COPPER		
	SPEED 48-60 S-FM	FEED CHIP LEAD	PER TOOTH	SPEED 60-80 S-FM	FEED CHIP LEAD	PER TOOTH
	HIGH STRENGTH STAINLESS STEELS, HIGH TENSILE STEELS (43-48 C)			MILD STEEL, FORGINGS (29-30 C)		
	SPEED 60-80 S-FM	FEED CHIP LEAD	PER TOOTH	SPEED 85-100 S-FM	FEED CHIP LEAD	PER TOOTH
	HEAT RESISTANT FERRITIC BASE ALLOYS MEDIUM STRENGTH STAINLESS STEELS UNALLOYED TITANIUM TOOL STEELS (58-60 C)			CAST IRON, MILD STEEL, HALF-HARD BRASS AND BRONZE		
	SPEED 85-100 S-FM	FEED CHIP LEAD	PER TOOTH	SPEED 100-200 S-FM	FEED CHIP LEAD	PER TOOTH
	HEAT RESISTANT FERRITIC BASE ALLOYS MEDIUM STRENGTH STAINLESS STEELS UNALLOYED TITANIUM TOOL STEELS (58-60 C)			MACHINE STEEL, HARD BRASS AND BRONZE, ELECTROLYTIC COPPER		
	SPEED 100-200 S-FM	FEED CHIP LEAD	PER TOOTH	SPEED 120-240 S-FM	FEED CHIP LEAD	PER TOOTH
1/16	-	-	-	4888-6111	0.002 - 0.005	0.002 - 0.005
3/32	-	-	-	3259-4073	0.002 - 0.005	0.002 - 0.005
1/8	-	-	-	2448-3096	0.002 - 0.01	0.002 - 0.01
5/16	-	-	-	1628-2037	0.002 - 0.01	0.002 - 0.01
3/4	-	-	-	1223-1528	0.005 - 0.02	0.005 - 0.02
1 1/4	-	-	-	879-1222	0.005 - 0.02	0.005 - 0.02
1 3/4	-	-	-	611-919	0.01 - 0.02	0.01 - 0.02
2 1/4	-	-	-	488-611	0.01 - 0.02	0.01 - 0.02
2 3/4	-	-	-	301-407	0.01 - 0.02	0.01 - 0.02
3 1/4	-	-	-	244-306	0.01 - 0.02	0.01 - 0.02
4 1/4	-	-	-	188-209	0.01 - 0.02	0.01 - 0.02
5 1/4	-	-	-	144-179	0.01 - 0.02	0.01 - 0.02
6 1/4	-	-	-	109-144	0.01 - 0.02	0.01 - 0.02
7 1/4	-	-	-	81-111	0.01 - 0.02	0.01 - 0.02
8 1/4	-	-	-	61-92	0.01 - 0.02	0.01 - 0.02
9 1/4	-	-	-	48-68	0.01 - 0.02	0.01 - 0.02
10 1/4	-	-	-	38-58	0.01 - 0.02	0.01 - 0.02
11 1/4	-	-	-	30-48	0.01 - 0.02	0.01 - 0.02
12 1/4	-	-	-	24-38	0.01 - 0.02	0.01 - 0.02
13 1/4	-	-	-	19-28	0.01 - 0.02	0.01 - 0.02
14 1/4	-	-	-	15-23	0.01 - 0.02	0.01 - 0.02
15 1/4	-	-	-	12-18	0.01 - 0.02	0.01 - 0.02
16 1/4	-	-	-	9-14	0.01 - 0.02	0.01 - 0.02
17 1/4	-	-	-	7-11	0.01 - 0.02	0.01 - 0.02
18 1/4	-	-	-	5-8	0.01 - 0.02	0.01 - 0.02
19 1/4	-	-	-	4-6	0.01 - 0.02	0.01 - 0.02
20 1/4	-	-	-	3-5	0.01 - 0.02	0.01 - 0.02
21 1/4	-	-	-	2-4	0.01 - 0.02	0.01 - 0.02
22 1/4	-	-	-	1-3	0.01 - 0.02	0.01 - 0.02
23 1/4	-	-	-	1-2	0.01 - 0.02	0.01 - 0.02
24 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
25 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
26 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
27 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
28 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
29 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
30 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
31 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
32 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
33 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
34 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
35 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
36 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
37 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
38 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
39 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
40 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
41 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
42 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
43 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
44 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
45 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
46 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
47 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
48 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
49 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
50 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
51 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
52 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
53 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
54 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
55 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
56 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
57 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
58 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
59 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
60 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
61 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
62 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
63 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
64 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
65 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
66 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
67 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
68 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
69 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
70 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
71 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
72 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
73 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
74 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
75 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
76 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
77 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
78 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
79 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
80 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
81 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
82 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
83 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
84 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
85 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
86 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
87 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
88 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
89 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
90 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
91 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
92 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
93 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
94 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
95 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
96 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
97 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
98 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
99 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02
100 1/4	-	-	-	1-1	0.01 - 0.02	0.01 - 0.02

Note: All speed and feed data are suggested starting points. They may be increased or decreased depending on machine condition, depth of cut, finish required, coolant, etc.