

RECOMMENDED CUTTING CONDITIONS

■ CUTTING SPEED

Work Material	Hardness	Insert				Cutting Width a_e (mm)			
		Grade		Breaker		$\leq 0.15DC$	0.15–0.3DC	DC (Slot)	
		1st Recommendation	2nd Recommendation						
Cutting Speed V_c (m/min)									
P Mild Steel	$\leq 180HB$	MP6120	VP15TF	M	H	200(160–250)	160(120–200)	140(120–160)	
		MP6130	VP20RT	M	H	170(130–220)	130(90–170)	110(90–130)	
Carbon Steel Alloy Steel	180–350HB	MP6120	VP15TF	M	H	160(120–200)	120(100–140)	100(80–120)	
		MP6130	VP20RT	M	H	130(90–170)	90(70–110)	70(50–90)	
M Stainless Steel	$\leq 270HB$	MP7130	VP15TF	M	H	160(120–200)	120(100–140)	100(80–120)	
K Gray Cast Iron	$\leq 350MPa$	MC5020	VP15TF	H	–	230(180–280)	190(140–240)	190(140–240)	
	$\leq 800MPa$	MC5020	VP15TF	H	–	190(140–220)	170(120–220)	170(120–220)	
S Titanium Alloy	$\leq 350HB$	MP9120	VP15TF	H	M	50(40–70)	–	50(40–70)	
		MP9130	VP20RT	H	M	40(30–60)	–	40(30–60)	
	Heat-resistant Alloy	–	MP9120	VP15TF	H	M	40(30–60)	–	40(30–60)
			MP9130	VP20RT	H	M	30(20–40)	–	30(20–40)

■ DEPTH OF CUT AND FEED PER TOOTH

Work Material	Characteristics	Cutting Width a_e (mm)	Depth of Cut a_p (mm)	Feed per Tooth f_z (mm/t.)				
				Cutter Diameter DC (mm)				
				$\phi 40$ Length of cut 56mm $\phi 50$ Length of cut 42mm	$\phi 50$ Length of cut 56mm $\phi 63$ Length of cut 56mm	$\phi 50$ Length of cut 84mm		
P Mild Steel	$\leq 180HB$	$\leq 0.3DC$	≤ 20	0.25	0.25	0.20		
			20–50	0.20	0.20	0.15		
			50–80	–	–	0.10		
		DC (Slot)	≤ 20	0.20	0.20	0.15		
			20–50	0.15	0.15	–		
			50–80	–	–	–		
Carbon Steel Alloy Steel	180–350HB	$\leq 0.3DC$	≤ 20	0.25	0.25	0.20		
			20–50	0.20	0.20	0.15		
			50–80	–	–	0.10		
		DC (Slot)	≤ 20	0.15	0.15	0.10		
			20–50	0.10	0.10	–		
			50–80	–	–	–		
M Stainless Steel	$\leq 270HB$	$\leq 0.3DC$	≤ 20	0.25	0.25	0.20		
			20–50	0.20	0.20	0.15		
			50–80	–	–	0.10		
		DC (Slot)	≤ 10	0.10	0.10	0.07		
K Gray Cast Iron	Tensile Strength $\leq 350MPa$	$\leq 0.15DC$	≤ 10	0.30	0.30	0.25		
			10–50	0.25	0.25	0.20		
			50–80	–	–	0.15		
		0.15–0.3DC	≤ 10	0.25	0.25	0.20		
			10–50	0.20	0.20	0.15		
			50–80	–	–	0.10		
		DC (Slot)	≤ 10	0.25	0.25	0.20		
			10–50	0.20	0.20	0.15		
			50–80	–	–	–		
		Ductile Cast Iron	Tensile Strength $\leq 800MPa$	$\leq 0.15DC$	≤ 20	0.25	0.25	0.20
					20–50	0.20	0.20	0.15
					50–80	–	–	0.10
0.15–0.3DC	≤ 20			0.20	0.20	0.15		
	20–50			0.15	0.15	0.10		
	50–80			–	–	0.07		
DC (Slot)	≤ 10			0.15	0.15	0.10		
	10–50			0.10	0.10	–		
	50–80			–	–	–		
S Titanium Alloy	$\leq 350HB$			$\leq 0.15DC$	≤ 20	0.10	0.10	–
					20–50	0.10	0.10	–
				DC (Slot)	≤ 50	0.08	0.08	–
		50–80	–		–	–		
Heat-resistant Alloy	–	$\leq 0.15DC$	≤ 10	0.07	0.07	–		
		DC (Slot)	≤ 20	0.05	0.05	–		

Note 1) The above cutting conditions are determined based on high rigidity machine and work materials, where no vibration occurred. Please adjust processing conditions if vibration is generated.