

## LAMPIRAN A

### TABEL KECEPATAN POTONG, GERAK MAKAN PROSES PEMESINAN, DAN PUTARAN MESIN

**Tabel 1.** Data Material, Kecepatan Potong, Sudut Mata Bor HSS, dan Cairan Pendingin Proses Gurdi (Widarto, 2008)

MATERIAL	CUTTING SPEEDS 1.		POINT ANGLE	LIP CLEARANCE	COOLANTS
	(METERS/MINUTE) / (FEET/MINUTE)	MPM			
Aluminum And Alloys	61.00 - 91.50		200 - 300	90 - 130 deg	Kerosene/Kerosene & Lard Oil/ Soluble Oil
Armor Plate	12.20 - 18.25		40 - 50	135 - 140 deg	Light Machine Oil
Brass	61.00 - 91.50		200 - 300	118 - 118 deg	Dry/ Soluble Oil/Kerosene/Lard Oil
Bronze	61.00 - 91.50		200 - 300	110 - 118 deg	Dry/ Soluble Oil/Mineral Oil/Lard Oil
Bronze, High Tensile	21.35 - 45.75		70 - 150	100 - 110 deg	Dry/ Soluble Oil/Mineral Oil/Lard Oil
Cast Iron, Soft	30.50 - 45.75		100 - 150	90 - 100 deg	Air Jet Dry/ Soluble Oil
Cast Iron, Medium	21.35 - 30.50		70 - 100	100 - 110 deg	Air Jet Dry/ Soluble Oil
Cast Iron, Hard	21.35 - 30.50		70 - 100	100 - 118 deg	Air Jet Dry/ Soluble Oil
Cast Iron, Chilled	9.15 - 12.20		30 - 40	118 - 135 deg	Air Jet Dry/ Soluble Oil
Copper	61.00 - 91.50		200 - 300	100 - 118 deg	Air Jet Dry/ Soluble Oil
Copper Graphite Alloy (Carbon Drills)	18.30 - 21.35		60 - 70	**...*	Soluble Oil/Dry/Mineral Oil/Kerosene
Glass (Carbon Drills)	6.10 - 9.15		20 - 30	**...*	Soluble Oil/Dry/Mineral Oil/Kerosene
Iron, Malleable	15.25 - 27.45		50 - 90	90 - 100 deg	Light Machine Oil
Magnesium And Alloys	76.25 - 122.0		250 - 400	70 - 118 deg	Soluble Oil
Monel Nickel	4.15 - 15.28		30 - 50	118 - 125 deg	Compressed Air/Mineral Oil
Nickel Alloys	12.20 - 18.30		40 - 60	135 - 140 deg	Lard Oil/Soluble Oil
Plastic, Hot Set	30.50 - 91.50		100 - 300	60 - 90 deg	Lard Oil/Soluble Oil
Plastic, Cold Set	30.50 - 91.50		100 - 300	118 - 135 deg	Soap Solution
Steel, Low Carbon, 0.2-0.3ct	24.40 - 33.55		80 - 110	110 - 118 deg	Soap Solution
Steel, Medium Carbon 0.4-0.5c	21.35 - 24.40		70 - 80	118 - 125 deg	Soluble Oil/Mineral Oil/Sulfur Oil/Lard Oil
Steel (High Carbon 1.2c)	15.25 - 18.30		50 - 60	118 - 145 deg	Soluble Oil/Mineral Oil/Sulfur Oil/Lard Oil
Steel, Forged	15.25 - 18.30		50 - 60	118 - 145 deg	Soluble Oil/Mineral Oil/Sulfur Oil/Lard Oil
Steel, Alloy	15.25 - 21.35		50 - 70	118 - 125 deg	Mineral Lard Oil
Steel, Alloy 300 To 400 Brinell	6.10 - 9.15		20 - 30	130 - 140 deg	Soluble Oil
Steel, Stainless, Free Machining	9.15 - 24.40		30 - 80	110 - 118 deg	Soluble Oil
Steel, Stainless, Hard	4.57 - 15.25		15 - 50	118 - 135 deg	Soluble Oil
Steel, Manganese	3.66 - 4.57		12 - 15	140 - 150 deg	Soluble Oil
Stone (Carbide Drills)	7.63 - 9.15		25 - 30	**...*	Water Solution
Wood	91.50 - 122.2		300 - 400	60 - 70 deg	Dry

- Untuk baja

$$f = 0,084\sqrt[3]{d}; mm / put \dots\dots\dots (8.2)$$

- Untuk besi tuang

$$f = 0,1\sqrt[3]{d}; mm / put \dots\dots\dots (8.3)$$

Rumus Empiris Gerak Makan Per Mata Potong Gurdi (Widarto, 2008)

**Tabel 2.** Kecepatan Potong Proses Bubut Rata dan Proses Bubut Ulir Untuk Pahat HSS (Widarto, 2008)

MATERIAL	STRAIGHT TURNING SPEED		THREADING SPEED	
	FEET PER MINUTE	METERS PER MINUTE	FEET PER MINUTE	METERS PER MINUTE
LOW-CARBON STEEL	80-100	24.4-30.5	35-40	10.7-12.2
MEDIUM-CARBON STEEL	60-80	18.3-24.4	25-30	7.6-9.1
HIGH-CARBON STEEL	35-40	10.7-12.2	15-20	4.6-6.1
STAINLESS STEEL	40-50	12.2-15.2	15-20	4.6-6.1
ALUMINUM AND ITS ALLOYS	200-300	61.0-91.4	50-60	15.2-18.3
ORDINARY BRASS AND BRONZE	100-200	30.5-61.0	40-50	12.2-15.2
HIGH-TENSILE BRONZE	40-60	12.2-18.3	20-25	6.1-7.6
CAST IRON	50-80	15.2-24.4	20-25	6.1-7.6
COPPER	60-80	18.3-24.4	20-25	6.1-7.6

NOTE: Speeds for carbide-tipped bits can be 2 to 3 times the speed recommended for high-speed steel