

**LAMPIRAN A**  
**BIODATA PENULIS**



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Riwayat Pendidikan:

<b>Sekolah</b>	<b>Jurusan</b>	<b>Periode</b>
SD N 1 Mujur Lor	-	2007 – 2013
SMP N 4 Kroya	-	2013 – 2016
SMA N 2 Kroya	IPA	2016 – 2019
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Penulis telah mengikuti seminar hasil Tugas Akhir pada tanggal 22 Agustus 2023, sebagai salah satu persyaratan untuk memperoleh gelar Ahli Madya.

## LAMPIRAN B

### TABEL KECEPATAN POTONG DAN GERAK MAKAN PROSES PEMESINAN

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

MATERIAL	CUTTING SPEEDS $v_c$		POINT ANGLE	LIP CLEARANCE	COOLANTS
	(METERS/MINUTE)	(FEET/MINUTE)			
	SFM	FPM			
Aluminum And Alloys	61.00 - 91.50	200 - 300	90 - 120 deg	12 - 15 deg	Kerosene/Kerosene & Lard Oil/Soluble Oil
Armor Plate	12.20 - 18.25	40 - 50	135 - 140 deg	6 - 9 deg	Light Machine Oil
Brass	61.00 - 91.50	200 - 300	118 - 118 deg	12 - 15 deg	Dry/Soluble Oil/Kerosene/Lard Oil
Brass	61.00 - 91.50	200 - 300	110 - 118 deg	12 - 15 deg	Dry/Soluble Oil/Mineral Oil/Lard Oil
Brass, High Tensile	21.25 - 45.75	70 - 150	100 - 110 deg	12 - 15 deg	Dry/Soluble Oil/Mineral Oil/Lard Oil
Cast Iron, Soft	30.50 - 45.75	100 - 150	90 - 100 deg	12 - 15 deg	Air Jet Dry/Soluble Oil
Cast Iron, Medium	21.25 - 30.50	70 - 100	100 - 110 deg	12 - 15 deg	Air Jet Dry/Soluble Oil
Cast Iron, Hard	21.25 - 30.50	70 - 100	100 - 118 deg	8 - 12 deg	Air Jet Dry/Soluble Oil
Cast Iron, Chilled	9.15 - 12.20	30 - 40	118 - 125 deg	5 - 9 deg	Air Jet Dry/Soluble Oil
Copper	61.00 - 91.50	200 - 300	100 - 118 deg	12 - 15 deg	Air Jet Dry/Soluble Oil
Copper Graphite Alloy (Carbon Drills)	18.20 - 21.25	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	12 - 15 deg	Light Machine Oil
Magnesium And Alloys	76.25 - 122.0	250 - 400	70 - 118 deg	12 - 15 deg	Soluble Oil
Monel Nickel	4.15 - 15.20	30 - 50	118 - 125 deg	10 - 12 deg	Compressed Air/Mineral Oil
Nickel Alloys	12.20 - 18.20	40 - 60	135 - 140 deg	5 - 7 deg	Lard Oil/Soluble Oil
Plastic, Hot Set	30.50 - 91.50	100 - 300	60 - 90 deg	10 - 12 deg	Lard Oil/Soluble Oil
Plastic, Cold Set	30.50 - 91.50	100 - 300	110 - 125 deg	12 - 20 deg	Soap Solution
Steel, Low Carbon, 0.2-0.3%	24.40 - 33.55	80 - 110	110 - 118 deg	7 - 9 deg	Soap Solution
Steel, Medium Carbon 0.4-0.5%	21.25 - 24.40	70 - 90	118 - 125 deg	7 - 9 deg	Soluble Oil/Mineral Oil/Sulfur Oil/Lard Oil
Steel (High Carbon 1.2%)	15.25 - 18.20	50 - 60	118 - 145 deg	7 - 9 deg	Soluble Oil/Mineral Oil/Sulfur Oil/Lard Oil
Steel, Forged	15.25 - 18.20	50 - 60	118 - 145 deg	7 - 12 deg	Soluble Oil/Mineral Oil/Sulfur Oil/Lard Oil
Steel, Alloy	15.25 - 21.25	50 - 70	118 - 125 deg	10 - 12 deg	Mineral Lard Oil
Steel, Alloy 200 To 400 Briaual	6.10 - 9.15	20 - 30	120 - 140 deg	7 - 10 deg	Soluble Oil
Steel, Stainless, Free Machining	9.15 - 24.40	30 - 80	110 - 118 deg	8 - 12 deg	Soluble Oil
Steel, Stainless, Hard	4.57 - 15.25	15 - 30	118 - 135 deg	6 - 8 deg	Soluble Oil
Steel, Manganese	3.66 - 4.57	12 - 15	140 - 150 deg	7 - 10 deg	Soluble Oil
Stone (Carbide Drills)	7.63 - 9.15	25 - 30	**_**	**_**	Water Solution
Wood	91.50 - 122.2	300 - 400	60 - 70 deg	10 - 15 deg	Dry

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

<ul style="list-style-type: none"> <li>• Untuk baja</li> </ul> $f = 0,084\sqrt[3]{d}; mm / put \dots\dots\dots(8.2)$ <ul style="list-style-type: none"> <li>• Untuk besi tuang</li> </ul> $f = 0,1\sqrt[3]{d}; mm / put \dots\dots\dots(8.3)$
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**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

**Tabel 3.** Gerak Makan Pada Mesin Bubut

LONGITUDINAL FEED		M					TRANSVERSE FEED	
G	D	E	F	G	D	G	D	
15	1	0.044	0.088	0.176	0.352	1	0.02	
14	2	0.050	0.099	0.198	0.396	2	0.02	
13 1/2	3	0.052	0.105	0.210	0.420	3	0.02	
13	4	0.055	0.110	0.220	0.440	4	0.02	
12	5	0.060	0.121	0.242	0.484	5	0.02	
11 1/2	6	0.063	0.127	0.254	0.508	6	0.02	
11	7	0.066	0.132	0.264	0.528	7	0.02	
10	8	0.072	0.144	0.287	0.574	8	0.03	
9 1/2	9	0.075	0.149	0.298	0.596	9	0.03	
9	10	0.077	0.154	0.308	0.616	10	0.03	
8	11	0.083	0.166	0.331	0.662	11	0.03	

**Tabel 4.** Putaran Mesin Bor

R.P.M	50Hz		60Hz	
	4P	6P	4P	6P
1-7	240	170	290	200
2-7	400	280	490	340
1-6	810	285	500	350
1-5	960	440	800	560
2-7	860	480	800	560
2-6	710	500	800	600
2-4	1780	1230	2150	1500
2-3	1800	1250	2190	1520
2-4	2840	1990	3440	2490

**Tabel 5.** Putaran Mesin Bubut

	1	2	3
A	60	220	860
B	92	360	1400
C	140	530	2000