

DAFTAR LAMPIRAN

Lampiran 1 Spesifikasi baja SGD 400 D

**PT. CITRA TANAMAS**  
 Jl. Raya Serang Km. 3 Tangenung 15310  
 Telp. (021) 59301888, 59302365 Fax. (021) 59302556

ISO CERTIFIED  
 9001 : 2005

---

No. CT/QA/QC-15-V-021/221

DATE : 4-May-18

**MILL CERTIFICATE**


DESCRIPTION OF GOODS  
 GRADE


: Cold Finished Carbon Steel Round Bar, ref to JIS G-3123  
 : SGD 400 D

DELIVERY DATE : Apr-18

TRANSPORT BY : Truck

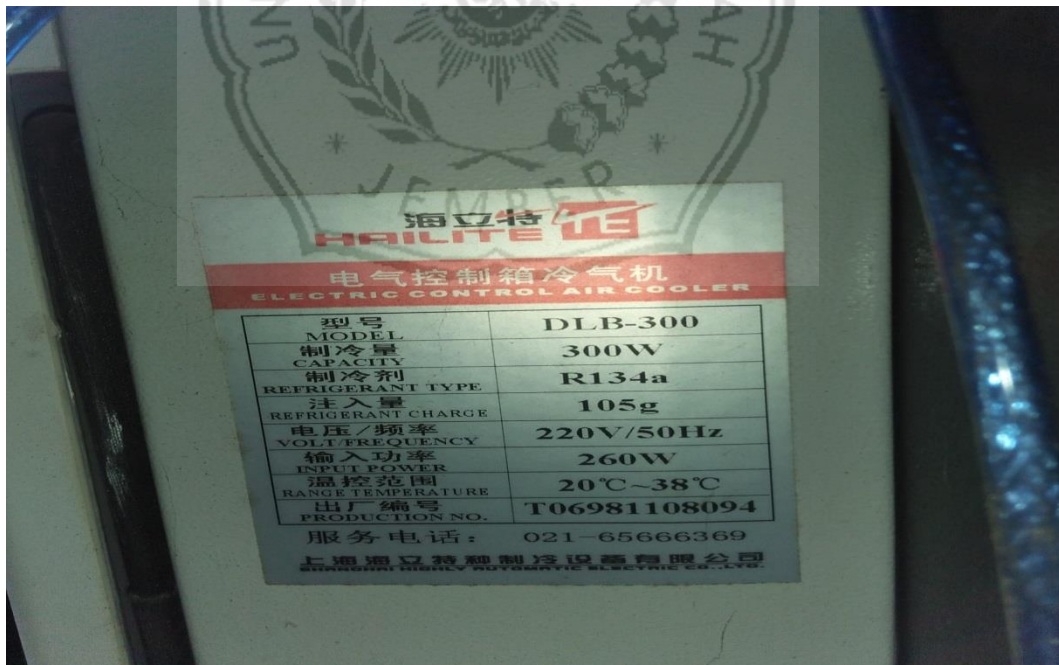
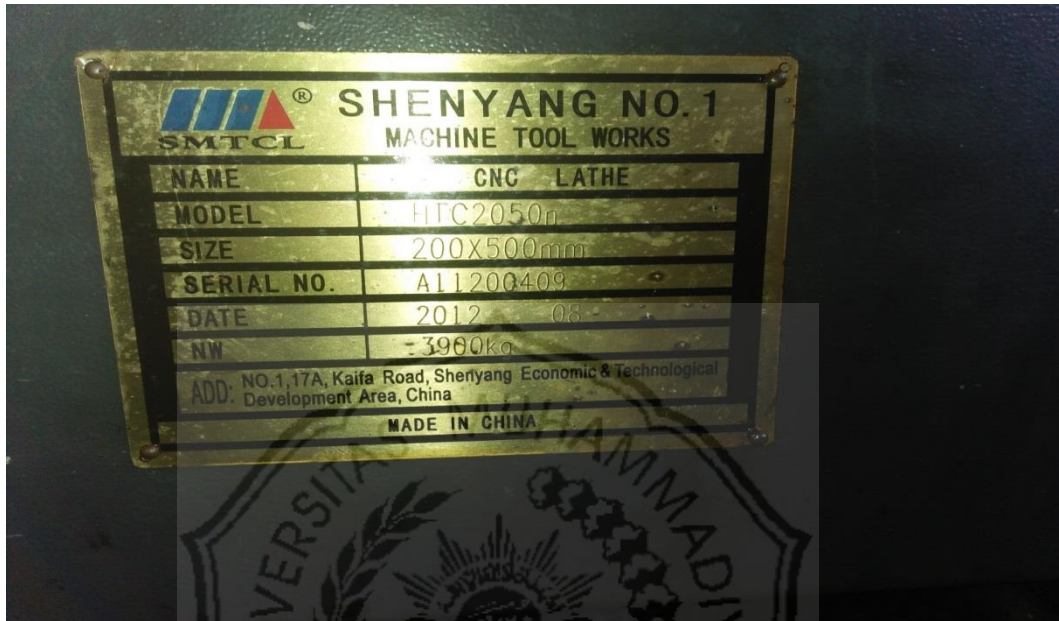
NO.	NO. HEAT	GRADE	QTY Pcs.	SIZE Dia. x Length	CHEMICAL COMPOSITION / ANALYSIS					MECHANICAL PROPERTIES			
					C	Mn	Si	P	S	UTS	YIELD	ELONGATION	HARDNESS
					(%)	(%)	(%)	(%)	(%)	N/mm <sup>2</sup>	N/mm <sup>2</sup>	%	HB
					0.10 Max	0.60 Max	NA	0.040 Max	0.040 Max	450 - 760	NA	NA	NA
1	15309529	SGD400D	1500	7/8" x 6000 mm	0.10	0.39	0.167	0.018	0.023	451.3	420.7	18	
2	5K01244	SGD400D	850	1" x 6000 mm	0.08	0.35	0.18	0.019	0.016	451.6	420.9	17	
3	421405676	SGD400D	188	1 1/8" x 6000 mm	0.07	0.41	0.22	0.015	0.019	452.3	399.8	16	
4	5413461	SGD400D	500	1 3/8" x 6000 mm	0.09	0.38	0.21	0.013	0.007	451.5	423.6	18	
5	4394007	SGD400D	40	1 1/2" x 6000 mm	0.09	0.38	0.21	0.013	0.007	451.7	421.7	18	

  
**PT BINTANG HARVA STEEL**

  
**PT. CITRA TANAMAS**  
 QA/QC

Manufacturing of : Hot Rolled Carbon Steel Round Bar, Square Bar, Flat Bar, Deformed Bar & Cold Drawn Steel Round Bar, Hexagonal Bar

## Lampiran 2 Spesifikasi mesin CNC











Lampiran 3 dromus

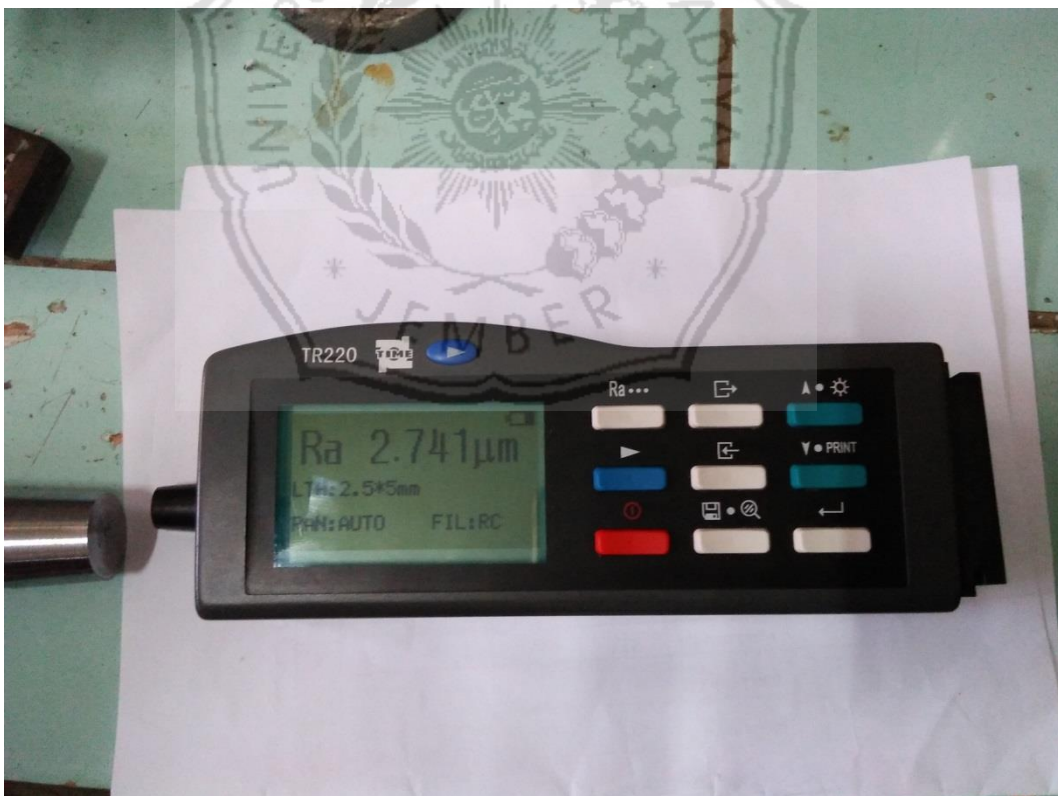




Lampiran 4 pengukuran panjang benda kerja



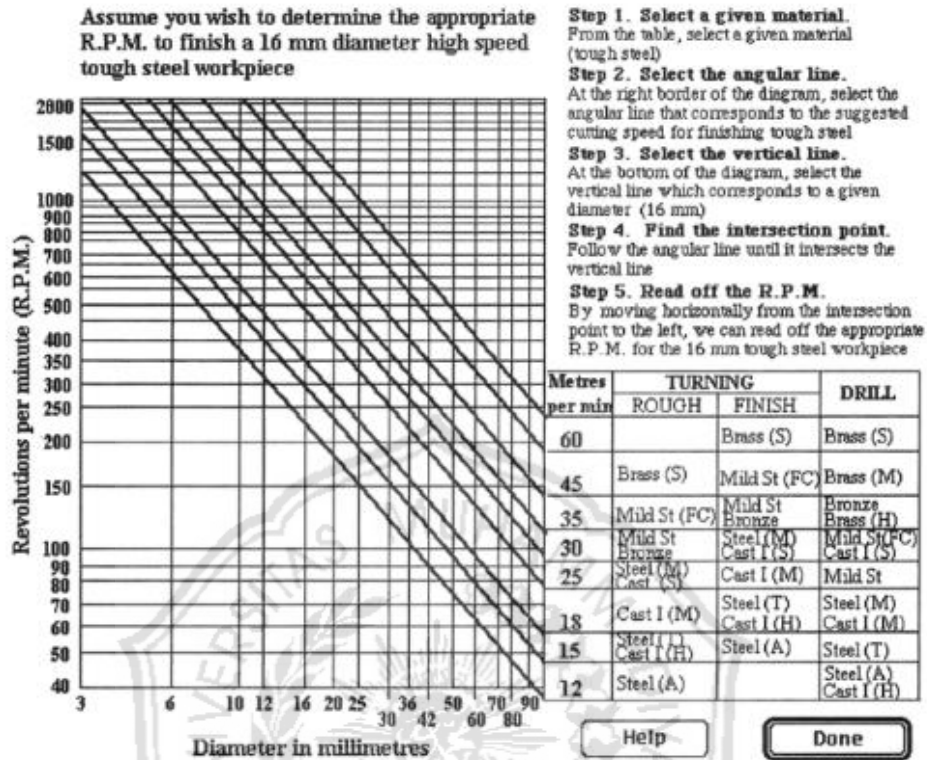
Lampiran 5 pengujian kekasaran








Lampiran 6 parameter cutting speed



Lampiran 7 surat keterangan pengujian

 KEMENTERIAN RISET, TEKNOLOGI DAN PENDIDIKAN TINGGI  
UNIVERSITAS JEMBER  
FAKULTAS TEKNIK  
Jl. Kalimantan No.37 Kampus Tegalboto, Jember 68121  
Telp. (0331) 484977 Fax-email (0331) 484977  
Laman www.teknik.unej.ac.id

---

**SURAT KETERANGAN TELAH MELAKUKAN PENGUJIAN**

Yang bertanda tangan dibawah ini menerangkan dengan sebenarnya bahwa:

Nama : Imam Syafi'i  
Nim : 1410641020  
Fakultas : Teknik Mesin Universitas Muhammadiyah Jember

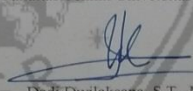
Telah melakukan pengujian di Laboratorium Material Jurusan Teknik Mesin Fakultas Teknik Universitas Jember dengan perincian sebagai berikut:

Tanggal uji : 27 Juli 2018  
Jenis uji : Uji Kekasaran Permukaan  
Spesifikasi bahan uji : Panjang Spesimen 100 mm  
Jumlah Spesimen : 8 keping  
Spesifikasi alat uji :  
Nama : Alat Uji Surface Roughness Tester

Demikian surat keterangan ini dibuat untuk digunakan sebagaimana mestinya.

Jember, 07 Agustus 2018

Mengetahi,  
Kepala Laboraturium Material  
Fakultas Teknik Universitas Jember

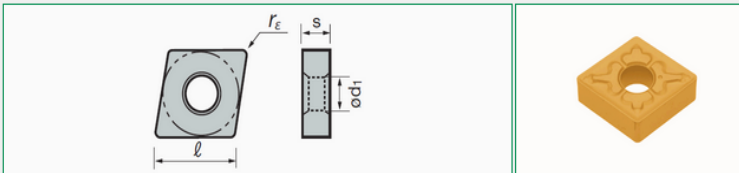
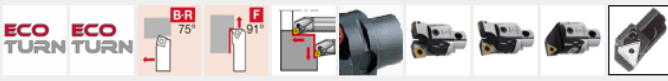
  
Dedi Dwilaksana, S.T., M.T.  
NIP. 1969120111996021001





## Lampiran 8 katalog pahat

**TUNETURN**  
**CNMG-TM** : Negative relief ang., M class, 80deg rhombic insert, for medium cutting

Designation	Stock	l	d	s	re	d1	ap (min)	ap (max)	ft (min)	ft (max)	Tough ← → Hard Grade & Vc
CNMG090304-TM	Available	9.70	9.525	3.18	0.40	3.81	1.00	5.00	0.20	0.50	T9125 T9215 T9115
CNMG090308-TM	Available	9.70	9.525	3.18	0.80	3.81	1.00	5.00	0.20	0.50	T9135 T9125 T9215 T9115
CNMG120404-TM	Available	12.90	12.700	4.76	0.40	5.16	1.00	5.00	0.20	0.50	AH645 AH120 AH630 AH8015 AH110 T6130 T9135 T9125 T9215 T6120 T9115 T9105 T515
CNMG120408-TM	Available	12.90	12.700	4.76	0.80	5.16	1.00	5.00	0.20	0.50	AH645 AH120 AH630 AH725 AH8015 AH110 T6130 T9135 T9125 T9215 T6120 T9115 T9105 T515
CNMG120412-TM	Available	12.90	12.700	4.76	1.20	5.16	1.00	5.00	0.20	0.50	AH645 AH120 AH630 AH8015 AH110 T6130 T9135 T9125 T9215 T6120 T9115 T9105 T515
CNMG120416-TM	Available	12.90	12.700	4.76	1.60	5.16	1.00	5.00	0.20	0.50	AH645 AH120 AH630 AH8015 T6130 T9135 T9125 T9215 T6120 T9115 T515
CNMG160612-TM	Available	16.10	15.875	6.35	1.20	6.35	1.00	5.00	0.20	0.50	AH120 T9135 T9125 T9215 T9115 T9105
CNMG190608-TM	Available	19.30	19.050	6.35	0.80	7.93	1.00	5.00	0.20	0.50	AH120 T9135 T9125 T9215 T9115 T9105
CNMG190612-TM	Available	19.30	19.050	6.35	1.20	7.93	1.00	5.00	0.20	0.50	AH120 T9135 T9125 T9215 T9115 T9105

### Cutting Speed for: CNMG120408-TM AH725 - 6862344

ISO	Material	Material Description	Material Condition	Cutting Speed Recommendations
P 1	1	Non-alloy steel and cast steel, free cutting steel <0.25%C.	Annealed :125	120-240 m/min
P 2	2	Non-alloy steel and cast steel, free cutting steel >=0.25%C.	Annealed :190	120-240 m/min
P 3	3	Non-alloy steel and cast steel, free cutting steel <0.55%C.	Quench and tempered. :250	70-200 m/min
P 4	4	Non-alloy steel and cast steel, free cutting steel >=0.55%C.	Annealed :220	70-200 m/min
P 5	5	Non-alloy steel and cast steel, free cutting steel >=0.55%C.	Quenched & tempered. :300	70-200 m/min
P 6	6	Low alloy & cast steel (less than 5% of alloying elements).	Annealed :200	120-240 m/min
P 7	7	Low alloy & cast steel (less than 5% of alloying elements).	Quenched & tempered :275	120-240 m/min
P 8	8	Low alloy & cast steel (less than 5% of alloying elements).	Quenched & tempered :300	70-200 m/min
P 9	9	Low alloy & cast steel (less than 5% of alloying elements).	Quenched & tempered :350	70-200 m/min
P 10	10	High alloyed steel, cast steel and tool steel.	Annealed :200	70-200 m/min
P 11	11	High alloyed steel, cast steel and tool steel.	Quenched & tempered :325	70-200 m/min

## Lampiran 9: Riwayat Hidup Penulis

### BIODATA PENULIS



#### Data Pribadi

Nama : Imam Syafi'i  
NIM : 14 1064 1020  
Tempat/Tanggal Lahir \* : Jember, 12 OKTOBER 1995  
Jurusan : Teknik Mesin  
Alamat Asal : DSN Krajan Kulon RT2/13 Paleran-Umbulsari  
Jember  
E-mail : simam9039@gmail.com

#### Pendidikan

2002 – 2007 : MI Miftahul ulum 1 Umbulsari  
2007 – 2010 : SMPN 2 Umbulsari  
2010 – 2013 : SMK PGRI 3 Tanggul  
2014 – 2019 : Universitas Muhammadiyah Jember