

LAMPIRAN

Lampiran 1. *Cutting Speed* dan *Feed* Proses Bubut

Work Material	Hardness BHN	High Speed Steel Tool		Carbide Tool	
		Speed	Feed	Speed	Feed
		m/min	mm/rev	m/min	mm/rev
Grey cast Iron	150-180	30	0.25	140	0.30
Grey cast Iron	220-260	20	0.25	90	0.30
Malleable Iron	160-220	33	0.25	50	0.25
Malleable Iron	240-270	-	-	45	0.30
Cast steel	140-180	40	0.25	150	0.30
Cast steel	190-240	26	0.25	125	0.30
C20 steel	110-160	40	0.30	150	0.38
C40 Steel	120-185	30	0.30	145	0.38
C80 Steel	170-200	26	0.30	130	0.30
Alloy Steel	150-240	30	0.25	110	0.38
Alloy Steel	240-310	20	0.25	100	0.30
Alloy Steel	315-370	15	0.25	85	0.25
Alloy Steel	380-440	10	0.20	75	0.25
Alloy Steel	450-500	8	0.20	55	0.25
Tool Steel	150-200	18	0.25	70	0.25
Hot work die steel	160-220	25	0.25	120	0.25
Hot work die steel	340-375	15	0.25	75	0.25
Hot work die steel	515-560	5	0.20	23	0.20
Stainless Steel	160-220	30	0.20	120	0.25
Aluminium Alloys	70-105	210	0.30	400	0.38
Copper Alloys	120-160	200	0.25	300	0.25
Copper Alloys	165-180	85	0.25	230	0.25

(<http://www.expertsmind.com>)

Lampiran 2. Cutting Speed dan Feed Proses Milling

		Peripheral Milling		Slot Milling				
		For Solid HSS and Cobalt End Mills only.		Slot Milling				
Material	Cutting Speed Ft. Per Min.	Feed Rate Range Inches Per Tooth	Peripheral Milling		Slot Milling		Cutting Fluid	Tool Material
			Dia. In.	Dia. In.	Cutting Speed Ft. Per Min.	Feed Rate Range Inches Per Tooth		
Aluminum	425	.002	340	.002	340	.002	A, B, J	HSS
Alum. Pipe	47	.0005	30	.0005	30	.0005	C, D, F, H	Cobalt
Brass	68	.001	60	.001	60	.001	E, G, L	HSS
Cast Iron	72	.001	38	.001	38	.001	E, G	HSS
Cast Iron, Hard	34	.0005	.0025	17	.0005	.002	E, G	Cobalt
Invar	15	.001	.0025	10	.0007	.0025	D	Cobalt
Inconel	8	.0007	.002	6	.0005	.002	D	Cobalt
Invar	21	.001	.004	17	.0005	.002	B, F, H	Cobalt
Iron, Malleable	60	.0007	.004	38	.0005	.002	E, G	HSS
Kovar	21	.001	.004	17	.0005	.002	B, F, H	Cobalt
Magnesium Alloys	425	.002	.009	319	.002	.008	B, M	HSS
Monel K	15	.0007	.003	8	.0005	.0025	D, F, H	Cobalt
Nylon & Plastics	340	.003	.013	340	.001	.004	A, E, G	HSS
Reno 41	6	.0007	.002	6	.0003	.002	D	Cobalt
Steel, Cast	94	.001	.005	76	.0008	.0025	C, D, F, H	HSS
Steel, Chromium	51	.001	.005	34	.0005	.0025	C, D, F, H	HSS
Steel, Free Machining (MAG 1100 Series)	110	.001	.005	81	.005	.004	G, D, F, H	HSS
Steel, High Carbon (Austenitic)	60	.0007	.004	42	.0005	.003	C, D, F, H	HSS
Steel, High Speed (Austenitic)	42	.0005	.0025	26	.0005	.0025	C, D, F, H	Cobalt
Steel, Up to .25 Carbon	85	.0007	.004	64	.0005	.003	C, D, F, H	HSS
Steel, .30 to .40 Carbon								
Annihilated	81	.0007	.004	60	.0005	.003	G, D, F, H	HSS
Heat Treated, Rc 20-35	47	.0005	.004	34	.0005	.0025	C, D, F, H	Cobalt
Heat Treated, Rc 35-45	34	.0005	.0015	26	.0005	.002	C, D, F, H	Cobalt
Steel, Machinery	85	.0007	.004	64	.0005	.003	C, D, F, H	HSS
Steel, Manganese	81	.0007	.004	60	.0005	.003	C, D, F, H	HSS
Steel, Molybdenum	81	.0007	.004	60	.0005	.003	C, D, F, H	HSS
Steel, Nickel	42	.0005	.002	30	.0005	.002	C, D, F, H	Cobalt
Steel, Stainless	85	.001	.004	64	.0005	.0025	C, D, F, H	HSS
Free Machining (Precipitation Hardening)	52	.0005	.002	30	.0005	.002	C, D, F, H	Cobalt
Steel, Stainless (Precipitation Hardening)	81	.0007	.004	60	.0005	.003	C, D, F, H	HSS
Steel, Tungsten	81	.0007	.004	60	.0005	.003	C, D, F, H	HSS
Steel, Vanadium	8	.0007	.002	6	.0005	.002	D	Cobalt
Stellite								
Titanium Alloys	64	.001	.004	42	.0005	.0025	K	Cobalt
Under Rc 30								
Rc 30-40	34	.001	.0025	34	.0005	.0025	K	Cobalt

Drilling

Uddeholm Corrax

Lampiran 3. Cutting Speed dan Feed Proses Drilling

Drilling		Drill diameter (mm)				
		1-5	5-10	10-20	20-30	30-40
Uncoated HSS ¹⁻²⁾	Cutting speed, v_c (m/min)	13-15				
	Feed, f (mm/rev)	0,05-0,10	0,10-0,20	0,20-0,30	0,30-0,35	0,35-0,40
Coated HSS ¹⁻²⁾	Cutting speed, v_c (m/min)	13-15				
	Feed, f (mm/rev)	0,05-0,10	0,10-0,20	0,20-0,30	0,30-0,35	0,35-0,40
Indexable insert ³⁻⁴⁾ (cem. carbide inserts)	Cutting speed, v_c (m/min)				180-200	
	Feed, f (mm/rev)				0,03-0,08	0,08-0,12
Solid cemented carbide ⁵⁻⁷⁾	Cutting speed, v_c (m/min)	100-130				
	Feed, f (mm/rev)	0,08-0,10	0,10-0,20	0,20-0,30	0,30-0,35	
Brazed cemented carbide ⁵⁻⁷⁾	Cutting speed, v_c (m/min)	50-70				
	Feed, f (mm/rev)			0,15-0,25	0,25-0,35	0,35-0,40

www.uddeholm.com/files/Cutting_Data_Corrax_eng.pdf

Lampiran 4. Ukuran Diameter Lubang Bor Untuk Pengetapan

Metric threads		Piping threads		
Name	Under hole dia. (mm)	Name	Outer dia. (mm)	Under hole dia. (mm)
M2	1.6	PF 1/8	9.7	8.8
M3	2.5	PF 1/4	13.2	11.5
M4	3.3	PF 3/8	16.7	15.0
M5	4.2	BF 1/2	21.0	19.0
M6	6.1	PT 1/8	(9.7)	8.2
M8	6.8	PT 1/4	(13.2)	11.0
M10	8.6	PT 3/8	(16.7)	14.5
M12	10.3	PT 1/2	(21.0)	18.0

(<http://an-tika.blogspot.co.id/2011/08/pengetahuan-dasar-tentang-ulirdrat.html>)

Lampiran 5. Ukuran Standar Dan Panjang Elektroda

UKURAN STANDAR DAN PANJANG ELEKTRODA

Ukuran standar kawat inti		klasifikasi panjang standar			
		E6010, E6011, E6012 E6013, E6022, E7014 E7015, E7016, E7018		E6020, E6027, E7024 E7027, E7028, E7048	
inci	mm	inci	mm	inci	mm
1/16	1,6		230	—	—
5/64	2,0	9 atau 12	230 atau 300	—	—
3/32	2,4	12 atau 14	300 atau 350	12 atau 14	300 atau 350
1/8	3,2	14	350	14	350
5/32	4,0	14	350	14	350
3/16	4,8	14	350	14 atau 18	350 atau 450
7/32	5,6	14 atau 18	350 atau 450	18 atau 28	450 atau 700
1/4	6,4	18	450	18 atau 28	450 atau 700
5/16	8,0	18	450	18 atau 28	450 atau 700

Catatan:

- DB = Datar bawah (*flat*).
- TL = Tegak lurus (*vertical*).
- AK = Atas kepala (*overhead*).
- DT = Datar tegak (*horizontal*).
- AS = Arus searah (*Direct Current*).
- AB = Arus bolak-balik (*Alternating current*).
- PT = Polaritas terbalik (*reverse polarity*). → DCRP (EP)
- PL = Polaritas lurus (*straight polarity*). → DCSP (EN)
- PM = Polaritas mana saja (*either polarity*).
- F = fillet.

(<https://ntrux.wordpress.com/2011/04/12/elektroda-las/>)

Lampiran 6. Simbol-Simbol Tanda Pengerjaan

Simbol dinar/pokok yang tidak mempunyai arti untuk pengerjaan.	✓
Harus dikerjakan dengan suatu mesin, simbol pokok ditentang garis mendatar.	✓
Tidak boleh dikerjakan sedikitpun, simbol pokok ditentang lingkaran.	✓

Simbol-simbol dengan harga ketahanan yang diperbahagi :

Harga ketahanan yang harus dicapai dikerjakan dengan mesin, misal H6	H6 ✓
Harga ketahanan yang harus dicapai dikerjakan dengan cara-cara apapun boleh, kecuali dengan mesin.	H6 ✓
Harga ketahanan yang harus dicapai tanpa dikerjakan sedikitpun.	H6 ✓

Simbol-simbol dengan tambahan perintah pengerjaan :

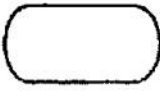


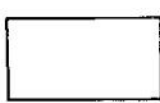


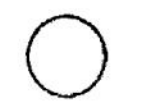

Perintah harus dikerjakan dengan mesin yang diperbahagi mesin gerinda.	✓ diperindah
Harus diberi warna belah ketupat, untuk pengerjaan berikutnya.	03 ✓
Acak alur/sarat pemutaran, kelas pengerjaan seperti misal : 1 / 2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10	✓ 1

(H. Sirod dan Pardjono, 1983:152)

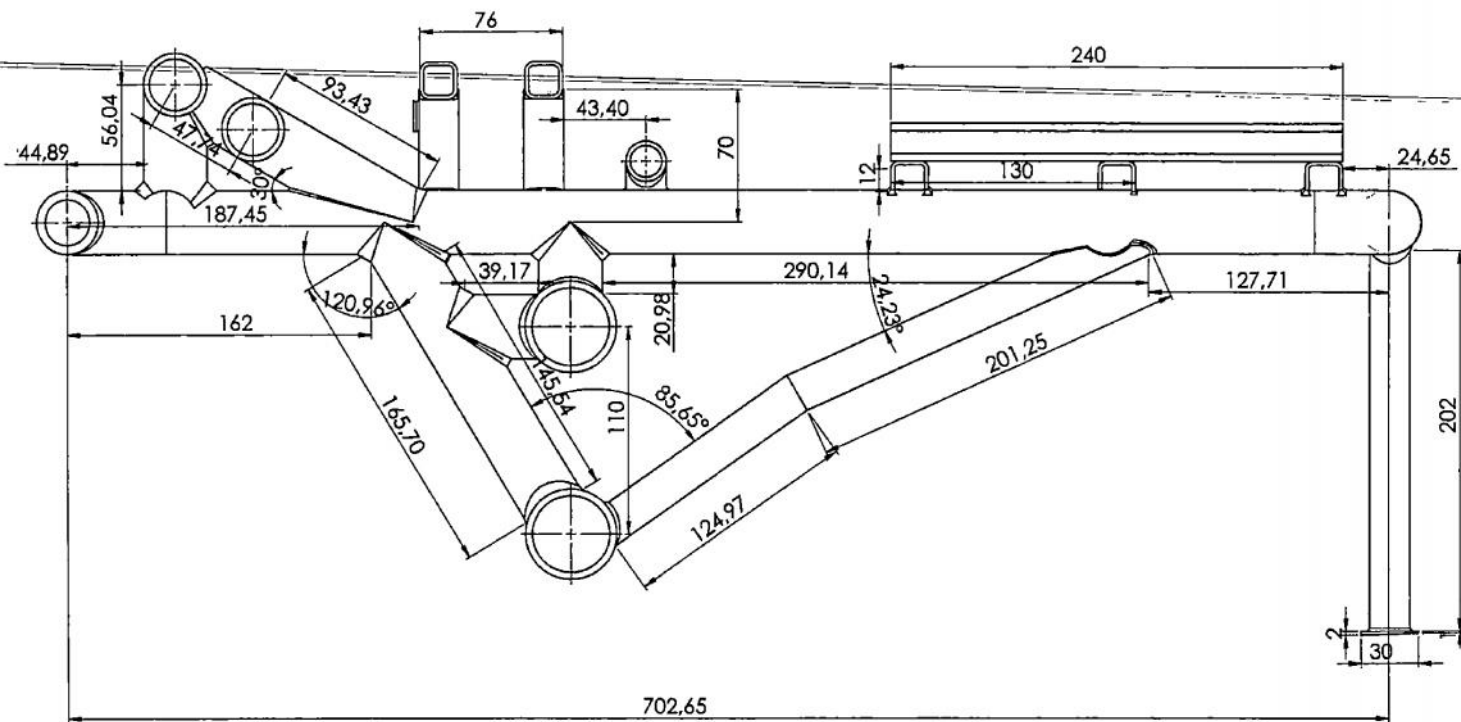
BAHAN	MODULUS ELASTISITAS (E)		Modulus Elastisitas Geser (G)		Poisson's Rasio
	ksi	GPa	ksi	GPa	
Paduan Aluminium	10.000-11.400	70-79	3.800-4.300	26-30	0.33
2014-T6	10.600	73	4.000	28	0.33
6061-T6	10.000	70	3.800	26	0.3
7075-T6	10.400	72	3.900	27	0.33
Kuningan	14.000-16.000	96-110	5.200-6.000	36-41	0.34
Perunggu	14.000-17.000	96-120	5.200-6.300	36-44	0.34
Besi Tuang	12.000-25.000	83-170	4.600-10.000	32-69	0.2-0.3
Beton (tekan)	2.500-4.500	17-31			0.1-0.2
Tembaga dan paduannya	16.000-18.000	110-120	5.800-6.800	40-47	0.33-0.36
Gelas	7.000-12.000	48-83	2.700-5.100	19-35	0.17-0.27
Paduan Magnesium	6.000-6.500	41-45	2.200-2.400	15-17	0.35
Monel (67% Ni, 30% Cu)	25.000	170	9.500	66	0.32
Nikel	30.000	210	11.400	80	0.31
Plastik:					
Nilon	300-500	2.1-3.4			0.4
Polietilin	100-200	0.7-1.4			0.4
Batu (tekan)					
Granit, Marmer	6.000-14.000	40-100			0.2-0.3
Kuarsa, Sandstone	3.000-10.000	20-70			0.2-0.3
Karet	0.1-0.6	0.0007-0.004	0.03-0.2	0.0002-0.001	0.45-0.50
Baja	28.000-30.000	190-210	10.800-11.800	75-80	0.27-0.30
Paduan Titanium	15.000-17.000	100-120	5.600-6.400	39-44	0.33
Tungsten	50.000-55.000	340-380	21.000-23.000	140-160	0.2
Kayu (bengkok)					
Douglas fir	1.600-1.900	11-13			
Oak	1.600-1.800	11-12			
Southern pine	1.600-2.000	11-14			

(Gere dan Timoshenko, 2000:462)

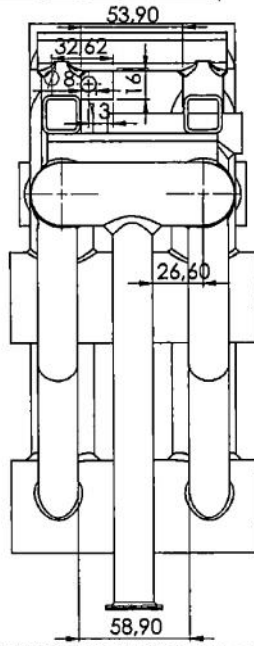
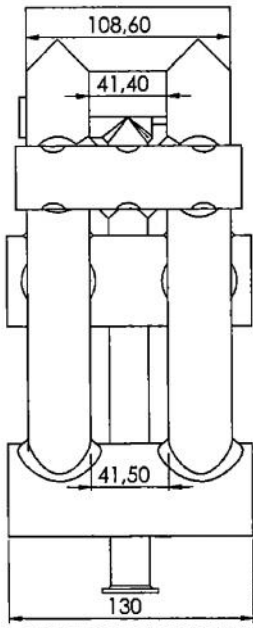
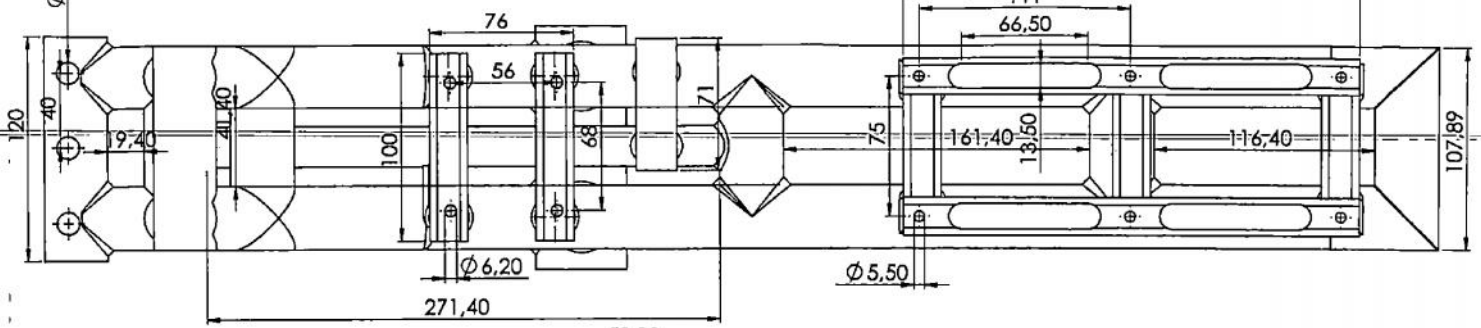
Lampiran 8. Lambang-Lambang Dari Diagram Alir

Lambang	Nama	Keterangan
	Terminal	Untuk menyatakan mulai (start), berakhir (end) atau berhenti (stop).
	Input	Data dan persyaratan yang diberikan disusun disini.
	Pekerjaan orang	Di sini diperlukan pertimbangan-pertimbangan seperti pemilihan persyaratan kerja, persyaratan pengerjaan, bahan dan perlakuan panas, penggunaan faktor keamanan dan factor-faktor lain, harga-harga empiris, dll.
	Pengolahan	Pengolahan dilakukan secara mekanis dengan menggunakan persamaan, tabel dan gambar.
	Keputusan	Harga yang dihitung dibandingkan dengan harga Patokan, dll. Untuk mengambil keputusan.
	Dokumen	Hasil perhitungan yang utama dikeluarkan pada alat ini.
	Penghubung	Untuk menyatakan pengeluaran dari tempat keputusan ke tempat sebelumnya atau berikutnya, atau suatu pemasukan ke dalam aliran yang berlanjut.
	Garis aliran	Untuk menghubungkan langkah-langkah yang berurutan.

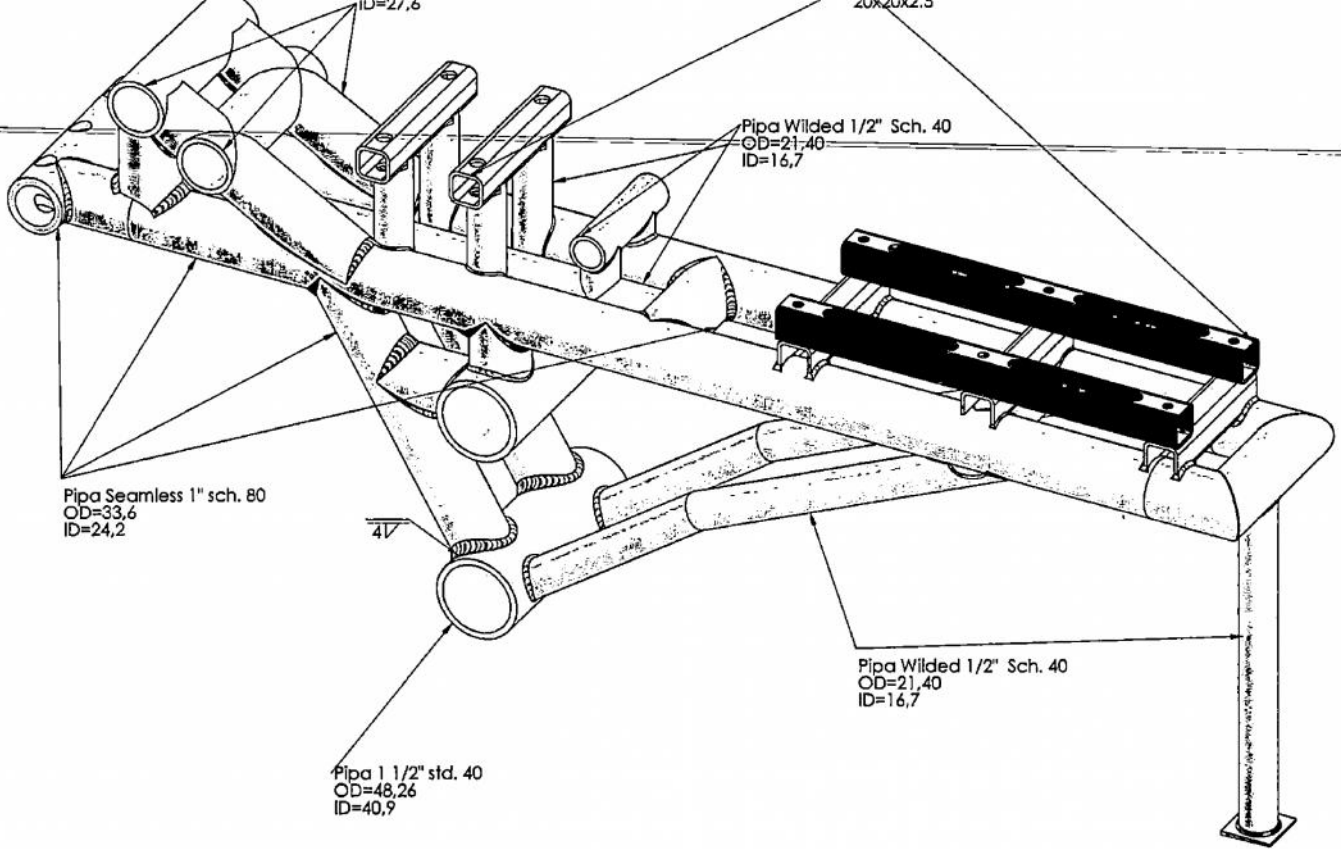
Catatan Y=ya, T=tidak



SKALA : 1:2 DRN : SARJITO APPD
 UNIT : mm NO. STUDENT : 20110130139
 DATE : 07-04-2015 CHD : TOTOK SUWANDA, S.I., M.T.
 TEKNIK MESIN UMY "FRAME HAND TRACTOR" DWG NO. FHT 1 A3



SKALA : 1 : 2 DRN : SARJITO APPD
 UNIT : mm NB. STUDENT : 2011013013P
 DATE : 07-04-2015 CHD : TOTOK SUWANDA, S.T., M.T.
 TEKNIK MESIN UMY "FRAME HAND TRACTOR" DWG NO. FHT 2 A3

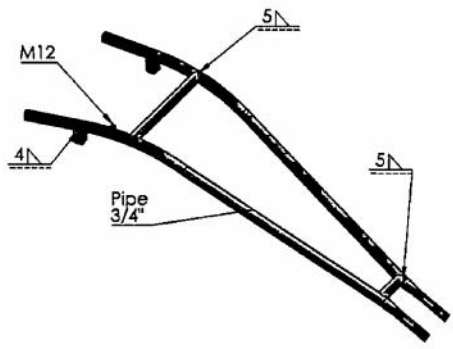
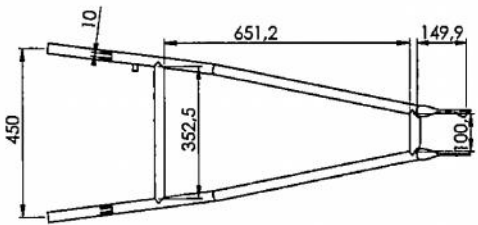
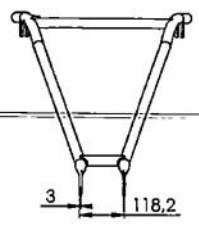
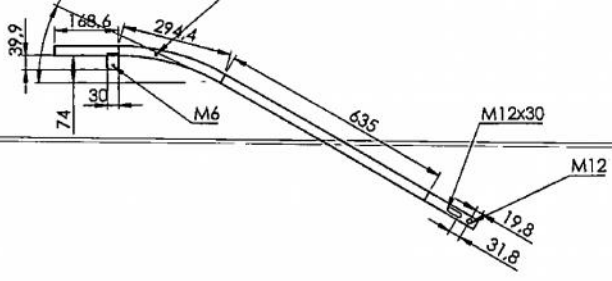



SKALA : 1 : 2 DRN : SARJITO APPD

UNIT : mm NB. STUDENT : 20110130139

DATE : 07-04-2016 CHD : TOTOK SUWANDA, S.T., M.T.

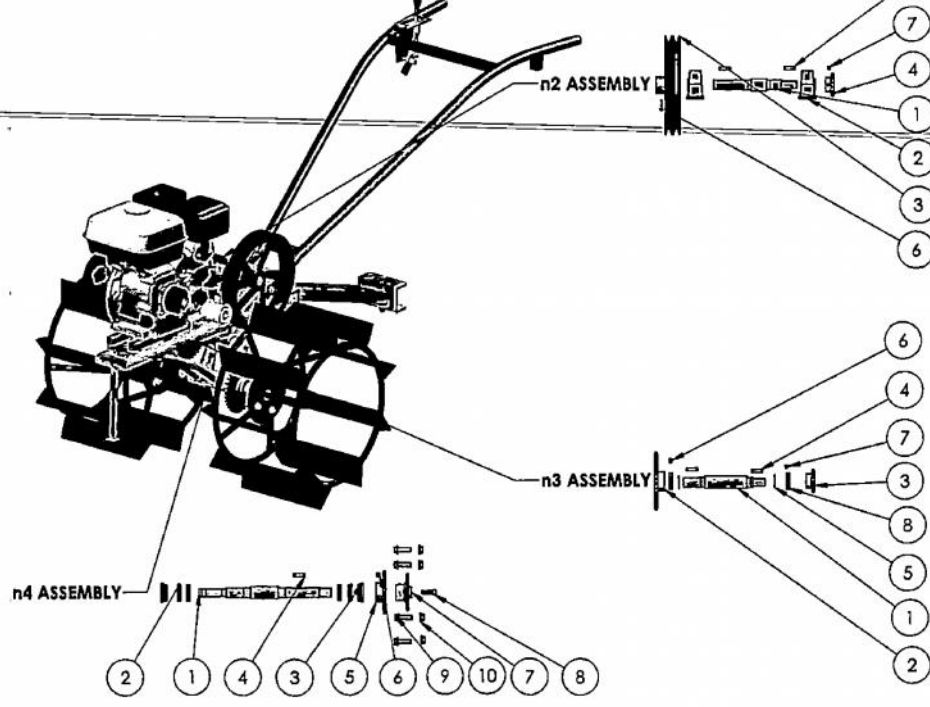
TEKNIK MESIN UMY "FRAME HAND TRACTOR" DWG NO. RHT 3 A3



SKALA: 1 : 10	DRN	: SARJITO	APPD
UNIT : mm	NB. STUDENT :	20110130139	
DATE : 06-08-2015	CHD	: TOTOK SUWANDA, S.T., M.T.	DWG NO.
 TEKNIK MESIN UMY		"FRAME HANDLE HT"	
			A3

2	UCPA	UCPA 205	2	SS dan baja
3	Puli	Puli 10 in	1	Besi cor
4	Sproket	Tipe 40B Z13	1	Baja biasa
5	Spel	7 x 7 x 30	2	S30C
6	Baut puli	M8 x 25	1	Baja 7
7	Baut sproket	M6 x 8	1	Baja 7

ITEM NO.	PART NAME	DESCRIPTION	QTY.	MATERIAL
1	As n3	As bertingkat	1	SS
2	Sproket	Tipe 40B Z 36	1	Baja biasa
3	Sproket	Tipe 40B Z 13	1	Baja biasa
4	Spel	7 x 7 x 30	2	S30C
5	Snap ring	D 25	2	Baja
6	Baut sproket	M8 x 8	1	Baja 7
7	Baut sproket	M6 x 8	1	Baja 7
8	Bantalan	d25 D42 B9	2	SS



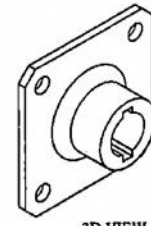
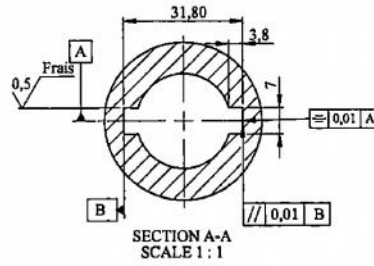
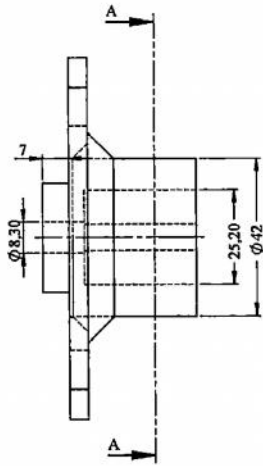
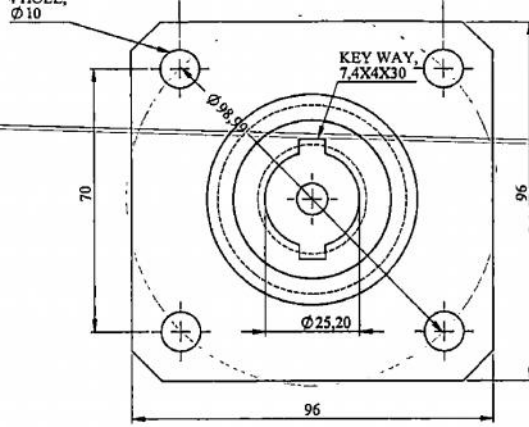
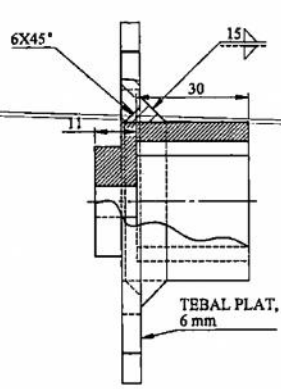
ITEM NO.	PART NAME	DESCRIPTION	QTY.	MATERIAL
1	As n4	As bertingkat	1	SS
2	Bantalan	d25 D42 B9	4	SS
3	Baut pipa rangka	M42	2	Baja biasa
4	Spel	7 x 7 x 30	1	S30C
5	Sproket	Tipe 40B Z 26	1	Baja biasa
6	Baut sproket	M8 x 8	1	Baja 7
7	Pengunci as roda kiri	OD 24	1	Baja biasa
8	Baut pr-1	M8x 30	1	Baja 9
9	Baut pr-2	M10 x 25	4	Baja 9
10	Mur	M10	4	Baja 9

SKALA : 1 : 10 DRN : SARJITO APPD

UNIT : mm NB. STUDENT : 20110130139

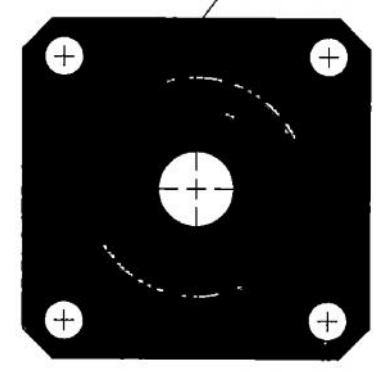
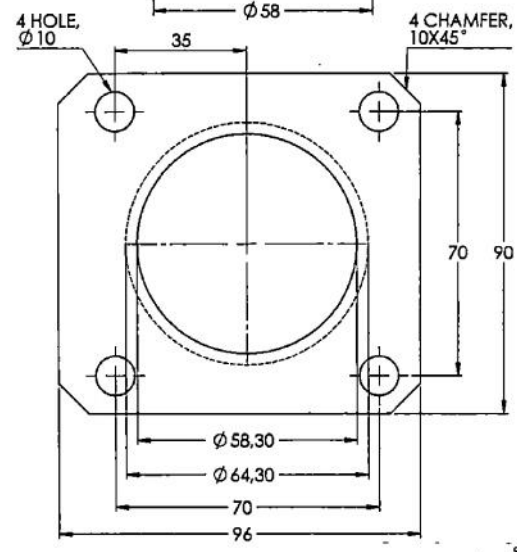
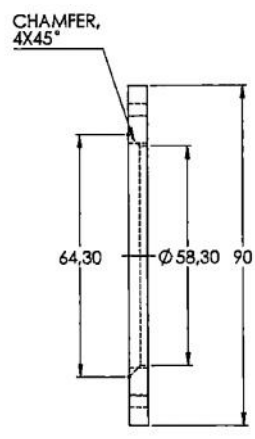
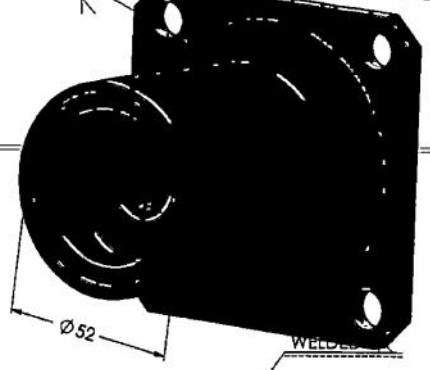
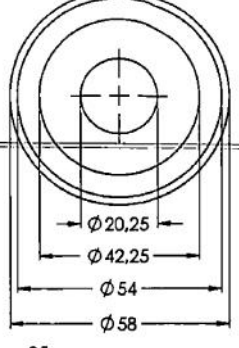
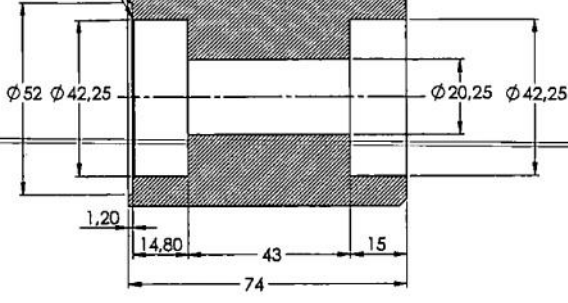
DATE : 13-09-2015 CHD : TOTOK SUWANDA, S.T., M.T.

TEKNIK MESIN UMY "KOMPONEN TRANSMISI TRAKTOR TANGAN" DWG NO. HT-2 A3

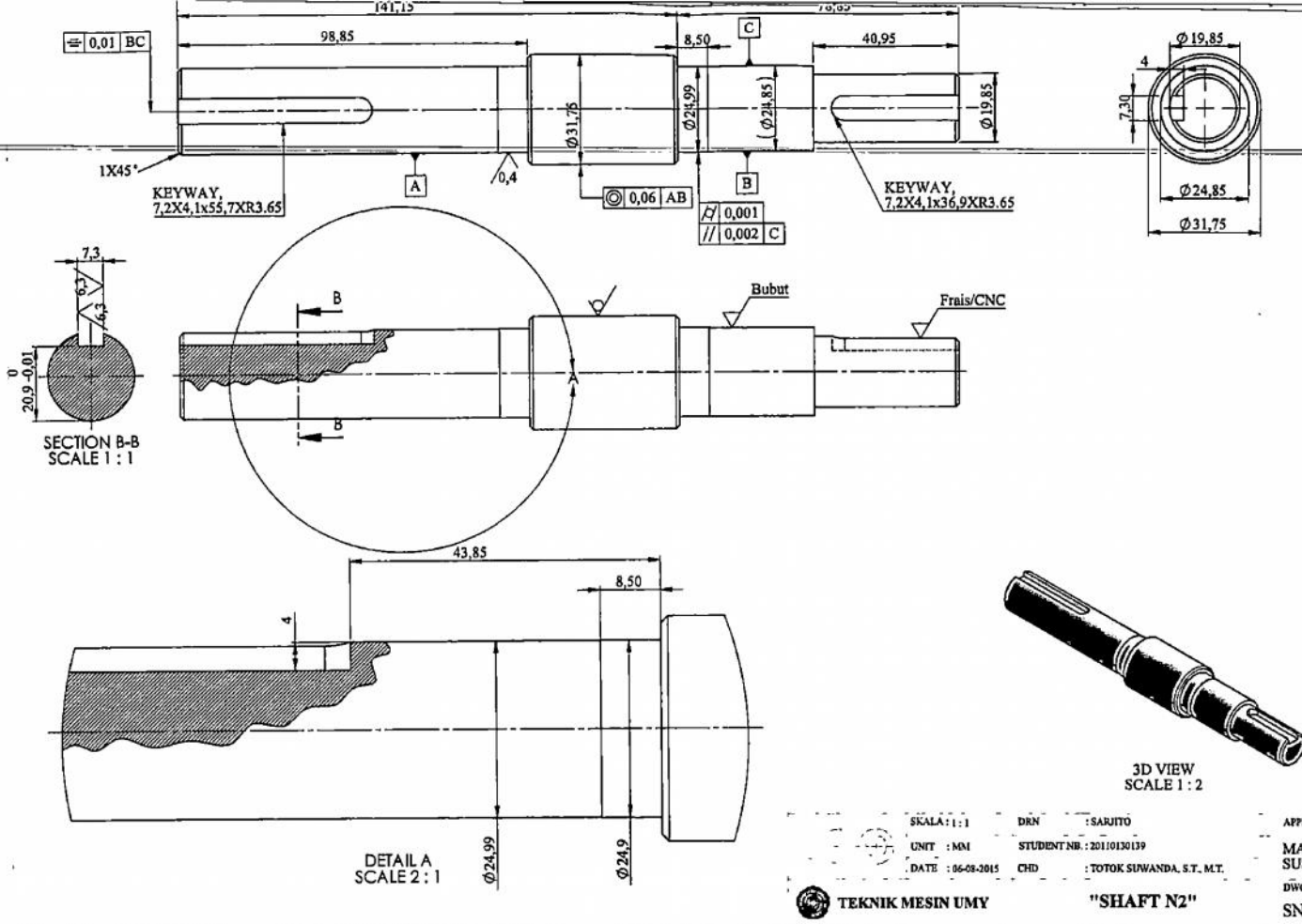


3D VIEW
1:2

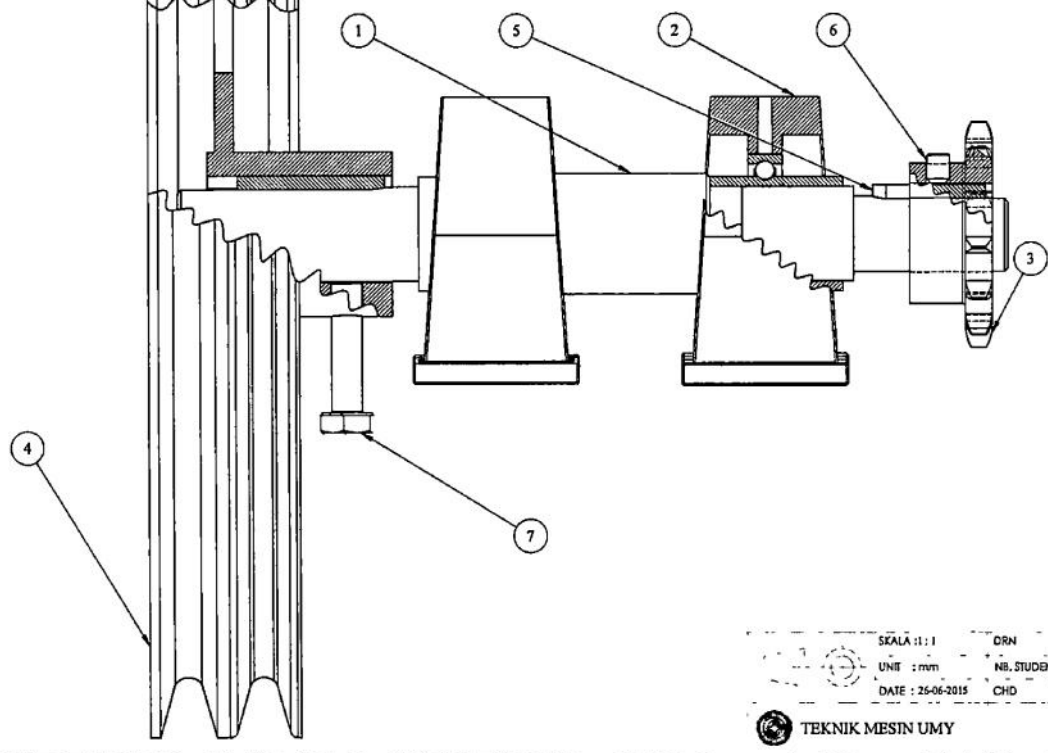
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UNIT : MM	STUDENT NB.:	20110130139	MAT. SS 400
DATE : 01-08-2015	CHD	: TOTOK SUWANDA, S.T., M.T.	DWG NO. P-1
TEKNIK MESIN UMY		"PENGUNCI RODA"	



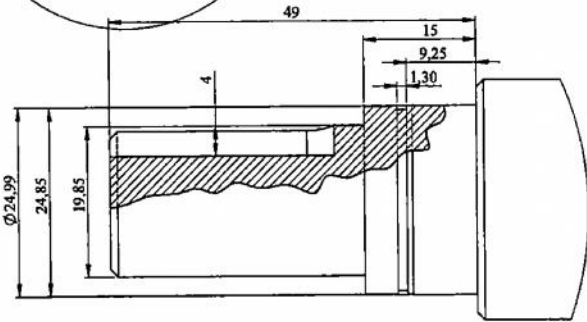
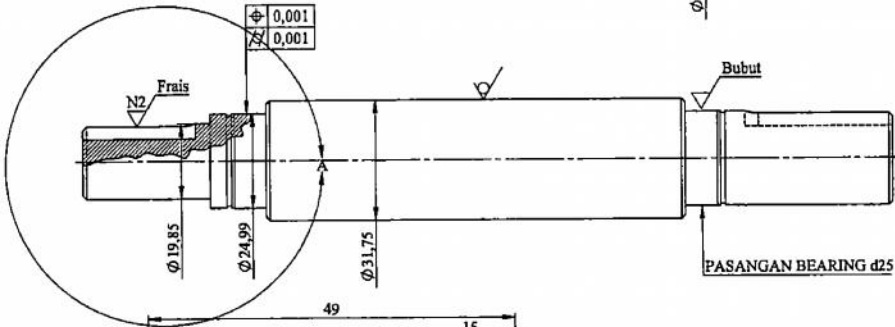
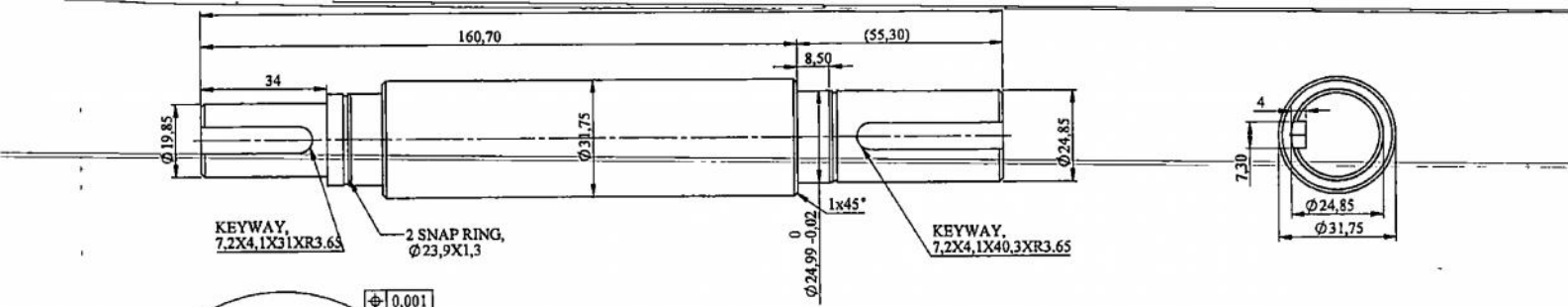
SKALA: 1:1 DRN : SARJITO APPD
 UNIT : MM STUDENT NO.: 20110130139
 DATE : 21-06-2015 CHD : TOTOK SUWANDA, S.T., M.T.
TEKNIK MESIN UMY **"TROMOL WHEEL R"** DWG NO. A3



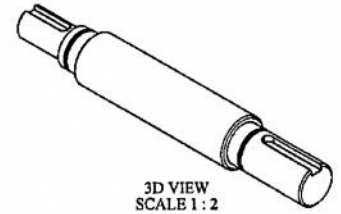
2.	UCPA	Bore 25	2	SUI2
3.	Gear sprocket	40-B Z13	1	C45
4.	Pulley n2	20 Inchi	1	SC410
5.	Key way	7x7x30	2	DIN 6885
6.	Baut sproket	M6 x 8	1	SUS 304
7.	Baut puli	M8 x 25	1	SNB7



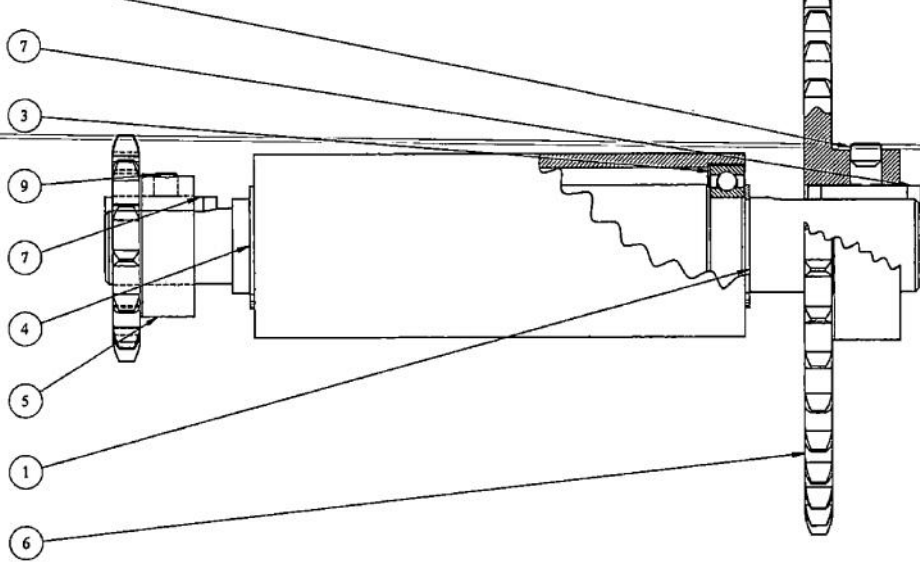
SKALA : 1 : 1 DRN : SARJITO APPD
 UNIT : mm NB, STUDENT : 20110130139
 DATE : 25-06-2015 CHD : TOTOK SUWANDA, S.T., M.T.
TEKNIK MESIN UMY **"N2 ASSEMBLY COMPONENT"** DWG NO. SN2-2 A3



DETAIL A
SCALE 2 : 1

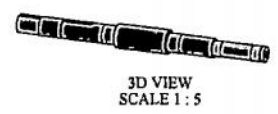
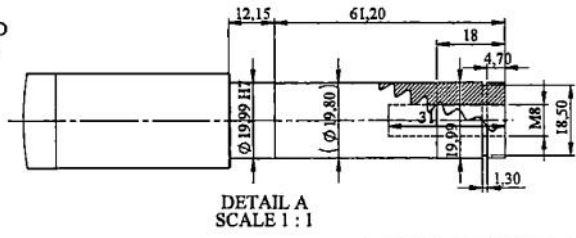
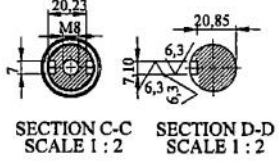
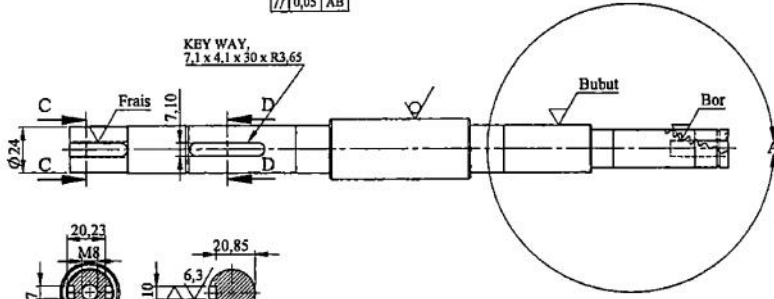
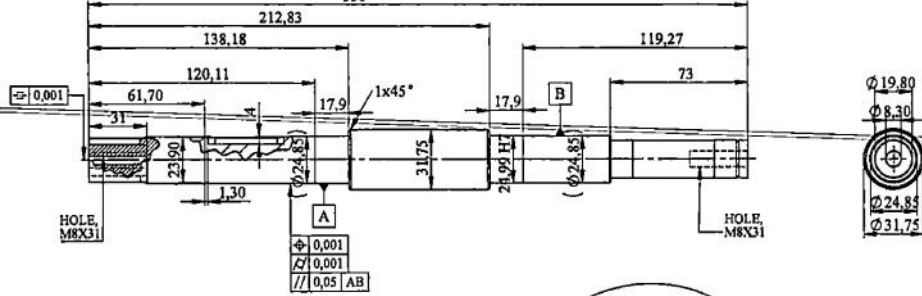


SKALA : 1 : 1	DRN : SARJITO	APPD
UNIT : MM	STUDENT NR. : 20110130139	MAT. SUS440C
DATE : 27-08-2015	CHD : TOTOK SUWANDA, S.T., MT.	DWG NO. SN3-1
TEKNIK MESIN UMY		"SHAFT N3"

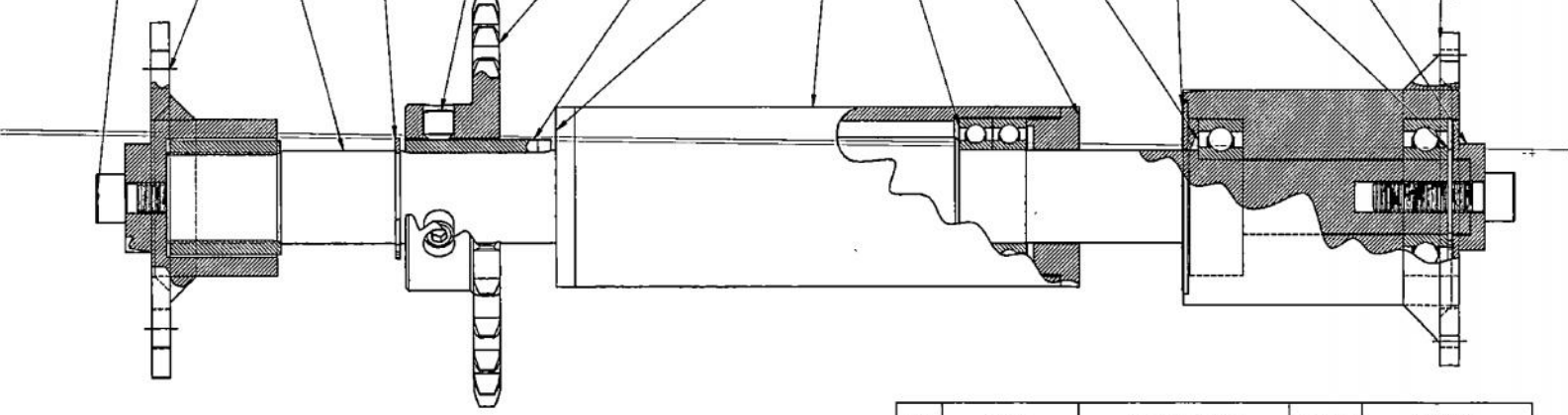


NO.	PART NUMBER	DESCRIPTION	QTY.	MATERIAL
1	Shaft n3	Shaft bertingkat OD 32, 25	1	SUS440C
2	Pipa	Welded Sch. 40 1,5"	1	A35 Type E
3	Bearing	Ball bearing d 25 D 42 B 9	2	SUJ2
4	Snap ring	Snap ring 25	2	C60
5	Sproket	Sproket 40-B Z13	1	C45
6	Sproket	Sproket 40-B Z 36	1	C45
7	Spei	Spei/ kuyway 7x7x30	2	DIN 6885
8	Baut tanam	M8x6	1	SNB7

SKALA : 1 : 1 DRN : SARJITO APPD
 UNIT : MM STUDENT NB. : 20110130139
 DATE : 27-08-2015 CHD : TOTOK SUWANDA, S.T., MT.
TEKNIK MESIN UMY **"N3 ASSEMBLY COMPONENT"** DWG NO. SN3-2 A3



SKALA: 1:2	DRN	: SARJITO	APPD
UNIT : MM	STUDENT N ^o .	: 20110130139	MAT.
DATE : 21-06-2015	CHD	: TOTOK SUWANDA, S.T., M.T.	SUS440C
TEKNIK MESIN UMY			"SHAFT N4"
			DWG NO.
			SN4-1
			A3



NO.	NAMA	KETERANGAN	JUMLAH	BAHAN
1.	Shaft n4	Bertingkat OD 32, 25, 20	1	SUS440C
2.	Pipa	Welded Sch. 40 1,5"	1	A35 Type E
3.	Tromol roda kanan	100x100	1	SS 400
4.	Ball bearing	d=20; D=42; B=12	2	SUJ2
5.	Lock wheel left	100x100	1	SS 400
6.	Pengunci tromol	ID 8	1	SS 400
7.	Ball bearing	d=25; D=42; B=9	4	SUJ2
8.	Baut shaft pipa L	M42x10	1	SS 400
9.	Baut shaft pipa R	M42x10	1	SS 400
10.	Penutup tromol	SS400	1	SS 400
11.	Baut L	M8x30	2	SUS 304
12.	Spei	7x7x30	3	DIN 6885
13.	Baut tanam	M8x6	1	SNB7
14.	Snap ring	D 25	1	C60
15.	Sproket	40-B Z26	1	C45
16.	Snap ring	D 20	1	C60

SKALA : 1 : 1 DRN : SARJITO APPD

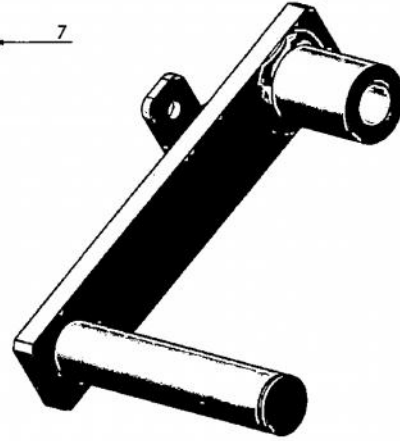
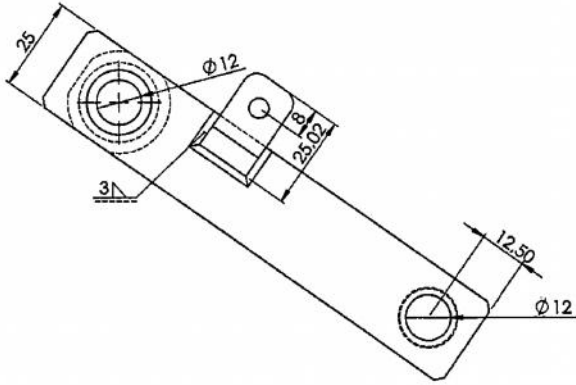
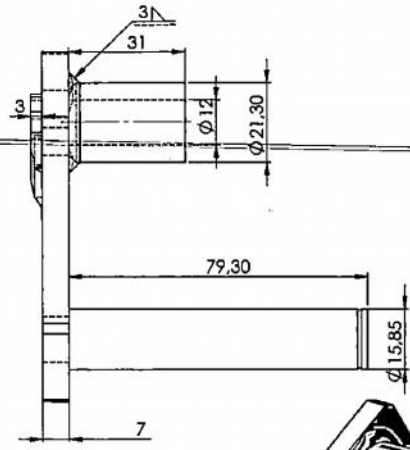
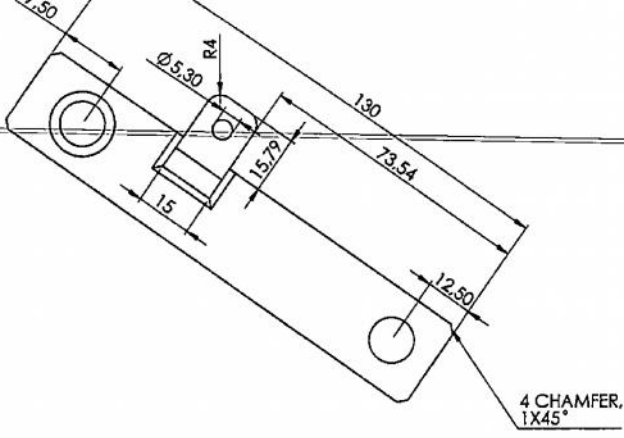
UNIT : MM STUDENT NR. : 20110130139

DATE : 02-06-2015 CHD : TOTOK SUWANDA, S.T., M.T.

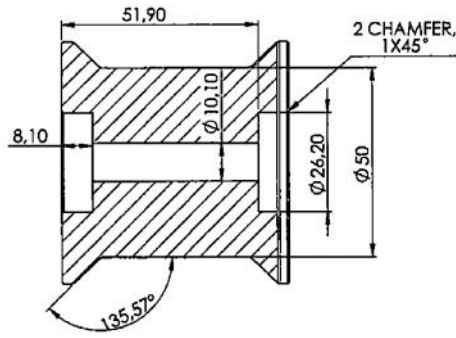
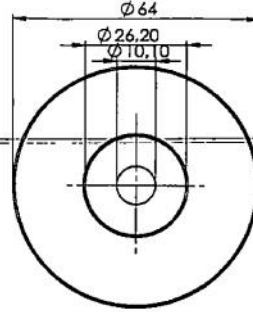
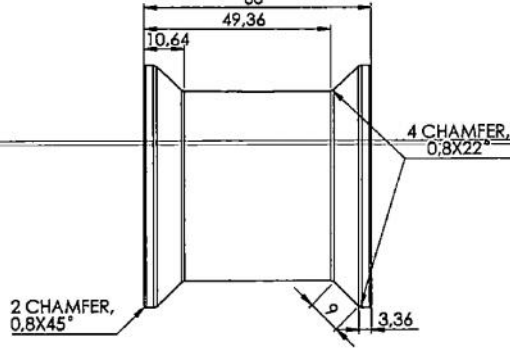
 **TEKNIK MESIN UMY**

**"N4 ASSEMBLY
COMPONENT"**

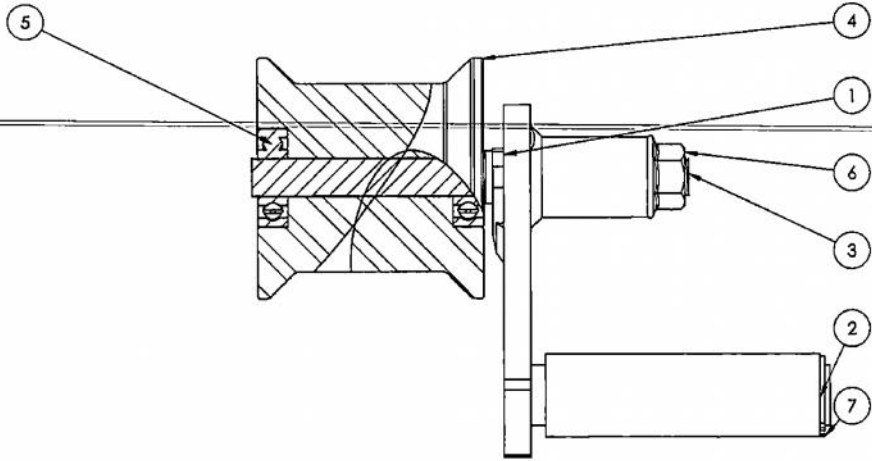
DWG NO.
SN4-2 A3



SKALA : 1 : 1	DRN : SARJITO	APPD
UNIT : mm	NB. STUDENT : 20110130139	
DATE : 04-08-2015	CHD : TOTOK SUWANDA, S.T., M.T.	DWG NO.
TEKNIK MESIN UMY		"PLAT IDLER"



SKALA: 1:1	DRN : SARJITO	APPD
UNIT : mm	NB. STUDENT : 20110130139	
DATE : 04-08-2015	CHD : FOTOK SUWANDA, S.T., M.T.	
TEKNIK MESIN UMY	"PULLEY IDLER"	DWG NO.

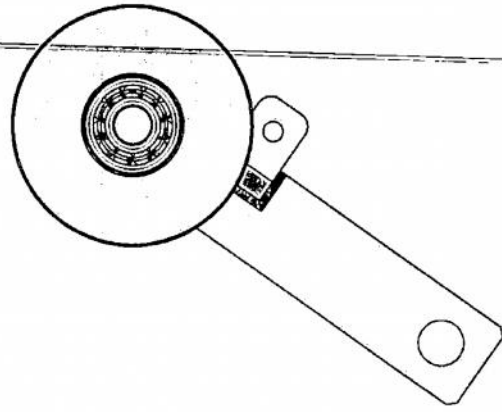
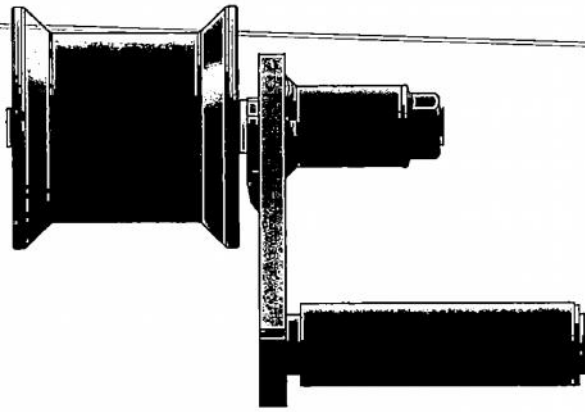


ITEM NO.	PART NUMBER	DESCRIPTION	QTY.	MATERIAL
1	Plat Idler	Plat pulley Idler	1	Baja biasa
2	Pipe Coupling	Pipe Kopling	1	Baja biasa
3	Speed Set Pulley Part 4 - T2	As pull idler	1	Baja biasa
4	Speed Set Pulley T2	Pulley Idler	1	Baja biasa
5	ISO 15 RBB - 1010 - Full, DE, AC, Full, 68 - Imported	Bantalan	2	SS
6	Hexagon Flange Nut ISO - 4161 - M10 - N-xt	Mur M10	1	Baja 7
7	B27.8M - 3DM1-16-xt	Spin ring 16	1	Steel

SKALA : 1:1 DRN : SARJITO APPD
 UNIT : mm NB. STUDENT : 20110130139
 DATE : 04-08-2015 CHD : TOTOK SUWANDA, S.T., M.T.
 DWG NO.

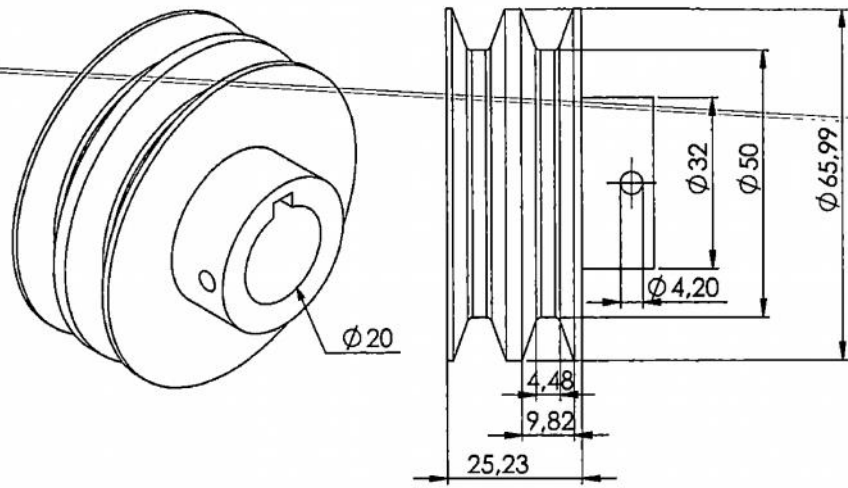
TEKNIK MESIN UMY "TENSION PULI IDLER"

A3

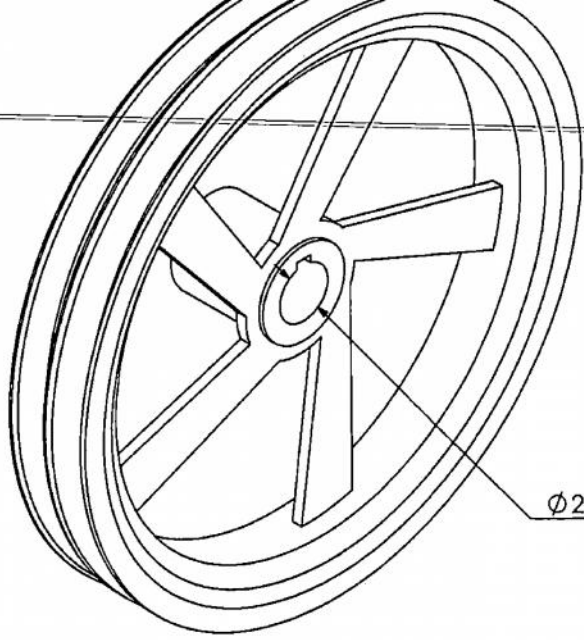


SKALA : 1:1	DIRN : SARJITO	APPD
UNIT : mm	NB. STUDENT : 20110130139	
DATE : 04-08-2015	CHD : TOTOK SUWANDA, S.T., M.T.	DWG NO.

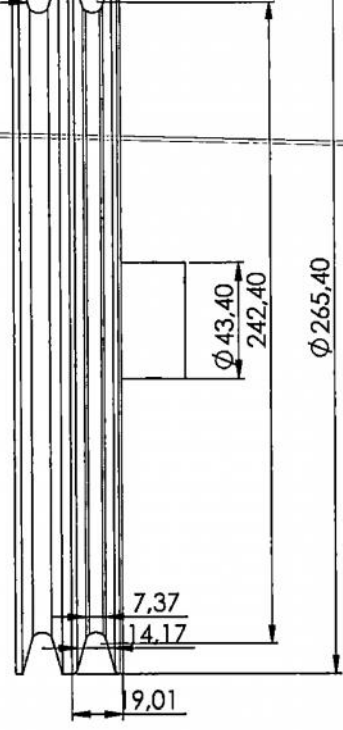
TEKNIK MESIN UMY "TENSION PULI IDLER" A3



	PROJECTION	SCALE : 1 : 1	DRN : SARJITO	APPD
		UNIT : mm	NB. STUDENT : 20110130139	
		DATE : 16-05-2015	CHD : TOTOK SUWANDA, S.T., M.T.	
TEKNIK MESIN UMY		"PULLEY ENGINE"		DWG NO. P.1.2
				A4



Ø 25,40



Ø 43,40
242,40

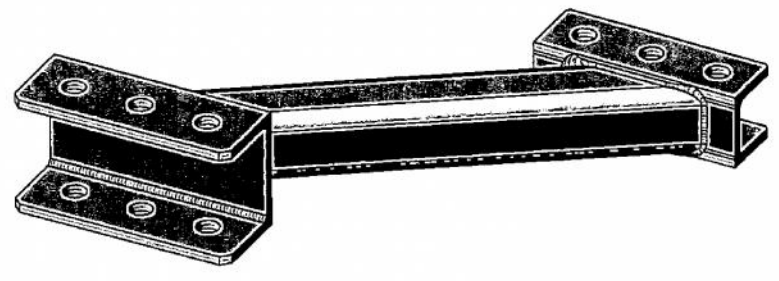
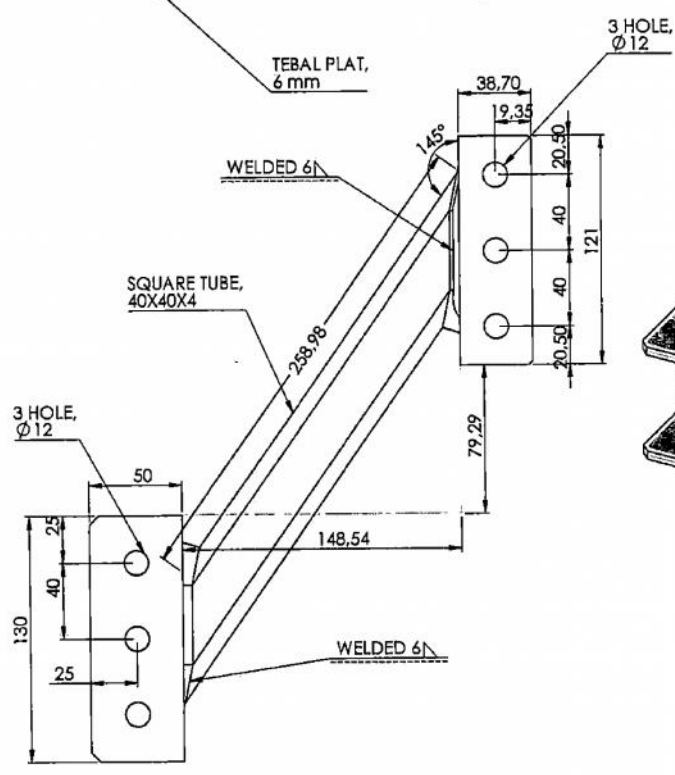
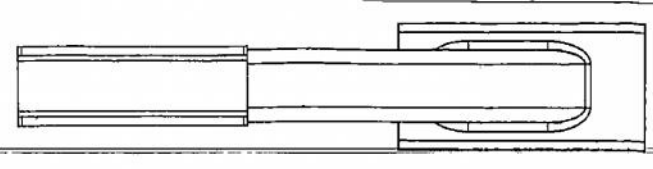
Ø 265,40

7,37

14,17

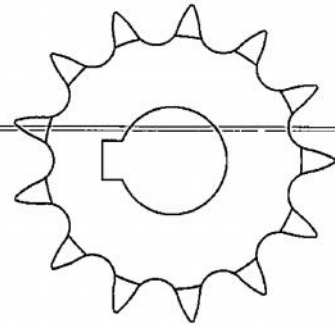
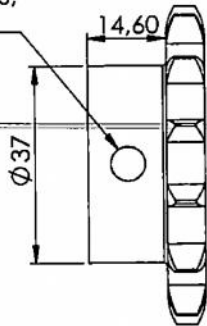
19,01

	PROJECTION	SCALE : 1 : 1	DRN : SARJITO	APPD
		UNIT : mm	NB. STUDENT : 20110130139	
	DATE : 16-05-2015	CHD : TOTOK SUWANDA. S.T., M.T.		
TEKNIK MESIN UMY		"PULLEY N2"		DWG NO. P.2.2 A4

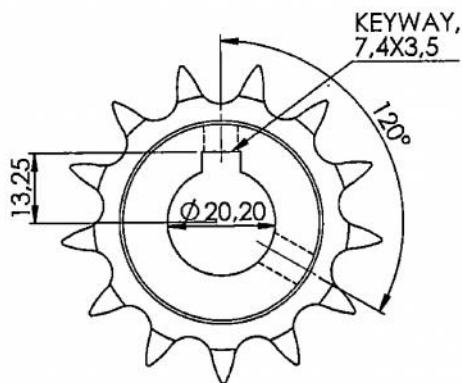


SKALA : 1 : 2	DRN : SARJITO	APPD
UNIT : mm	NB. STUDENT : 20110130139	
DATE : 17-05-2015	CHD : TOTOK SUWANDA S.T., M.T.	
TEKNIK MESIN UMY	"SAMBUNGAN BAJAK T2"	DWG NO.

2 HOLES,
M6

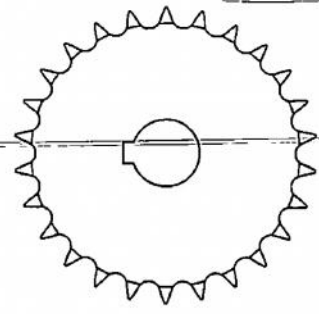
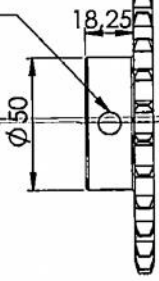


VIEW
SCALE 1 : 1

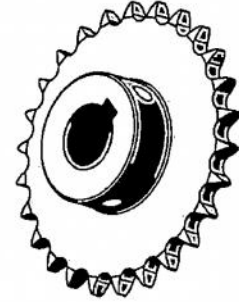
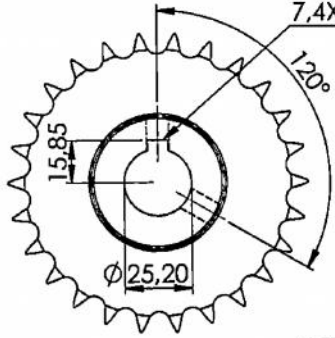




	PROJECTION	SCALE : 1 : 1	DRN : SARJITO	APPD
		UNIT : mm	NB. STUDENT : 20110130139	
		DATE : 30-05-2015	CHD : TOTOK SUWANDA, S.T., M.T.	
TEKNIK MESIN UMY		"GEAR SPROCKET 40B T13"		DWG NO.
				A4

2 HOLES,
M 8



KEYWAY,
7,4X3,5



PROJECTION 	SCALE : 1 : 2	DRN : SARJITO	APPD
	UNIT : mm	NB. STUDENT : 20110130139	
	DATE : 30-05-2015	CHD : TOTOK SUWANDA, S.T., M.T.	
 TEKNIK MESIN UMY	"GEAR SPROCKET 40B T26"		DWG NO. A4

HOLE,
M8

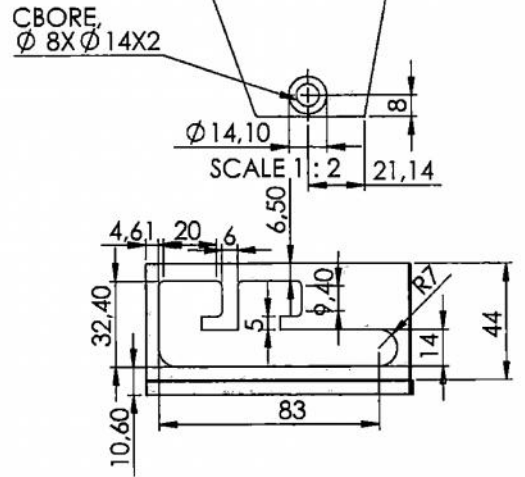
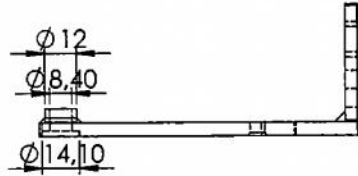
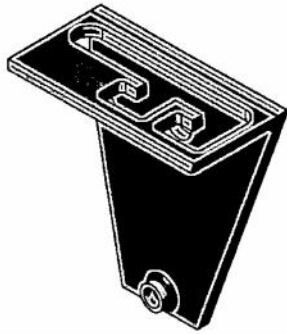
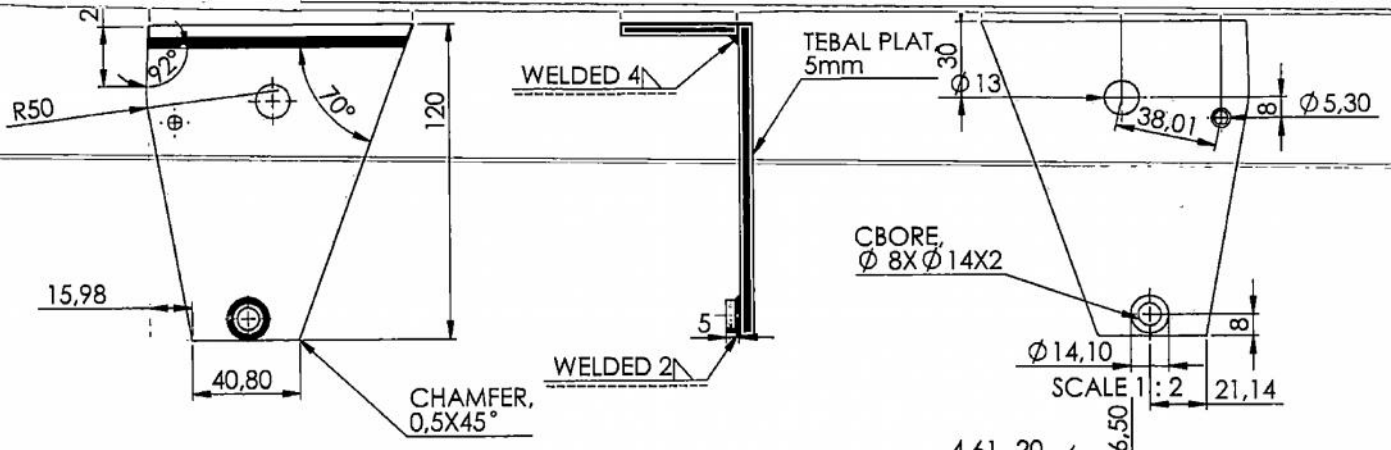
9

KEY WAY,
7,4X3,5

$\phi 50$
 $\phi 25,40$

$\phi 25,40$

	PROJECTION	SCALE : 1 : 2	DRN : SARJITO	APPD
		UNIT : mm	NB. STUDENT : 20110130139	
		DATE :	CHD : TOTOK SUWANDA, S.T., M.T.	DWG NO.
	TEKNIK MESIN UMY	"GEAR SPROCKET 40B T36"		A4



PROJECTION : FIRST ANGLE SCALE : 1 : 2 DRN : SARJITO APPD :
 UNIT : mm NB. STUDENT : 20110130139 MAT: SS400
 DATE : 17-05-2015 CHD : TOTOK SUWANDA, S.T., M.T. DWG NO. TR 1 A4



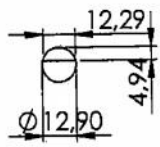
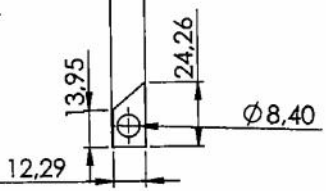
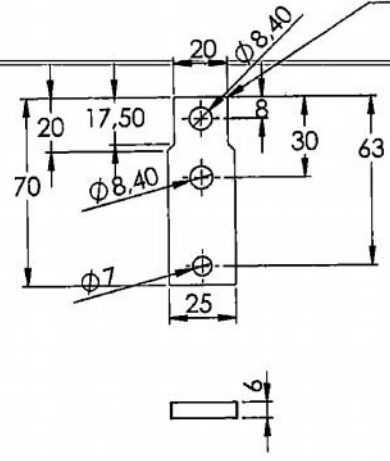
"PENGUNCI TUAS"

DWG NO. TR 1 A4

Ø12,90

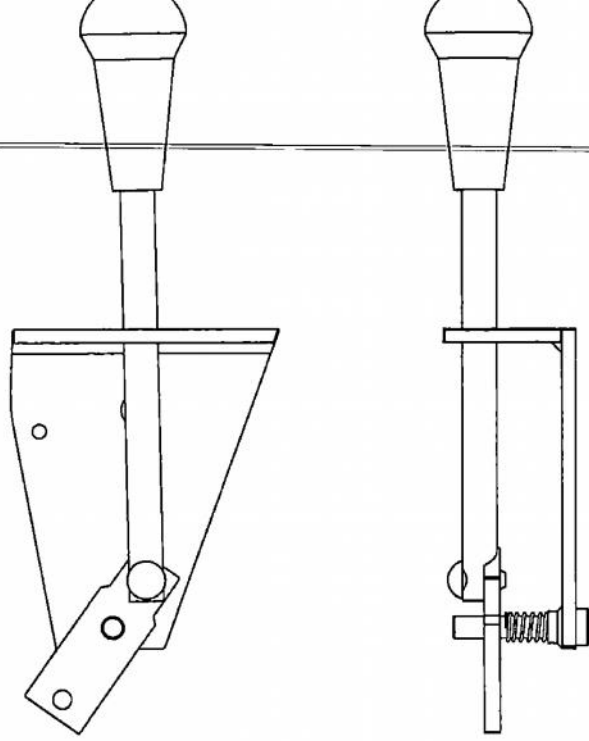
4 CHAMFER,
0,5X45°

230

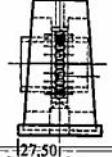
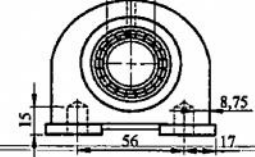
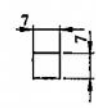
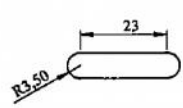
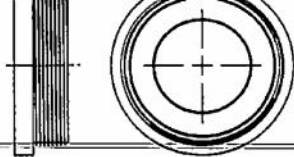
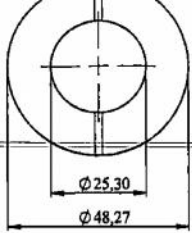


	PROJECTION	SCALE : 1 : 2	DRN : SARJITO	APPD	
		UNIT : mm	NB. STUDENT : 20110130139		
		DATE : 17-05-2015	CHD : TOTOK SUWANDA, S.T., M.T.		
TEKNIK MESIN UMY		"TENSION ROD SET "		DWG NO. TR 2	A4

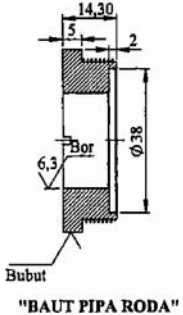
1 2 3 4 5 6



	PROJECTION	SCALE : 1 : 2	DRN : SARJITO	APPD
		UNIT : mm	NB. STUDENT : 20110130139	
		DATE : 20-05-2015	CHD : TOTOK SUWANDA, S.T., M.T.	
TEKNIK MESIN UMY		"TENSION ROD ASM"		DWG NO.
				A4



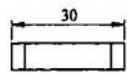
"SPEI/ KEY"



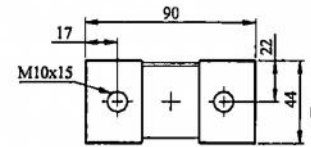
"BAUT PIPA RODA"



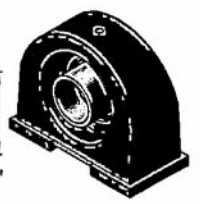
3D VIEW 1:2



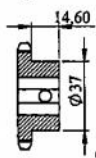
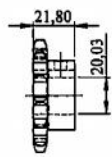
3D VIEW 1:1



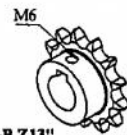
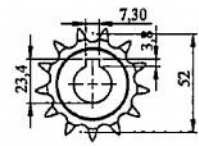
"UCPA B EARING"



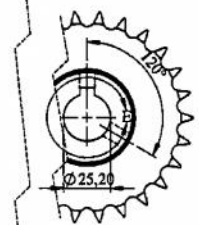
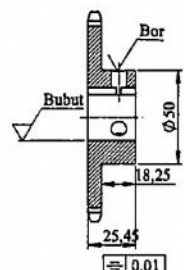
3D VIEW 1:2



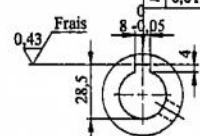
"SPROKET 40-B Z13"



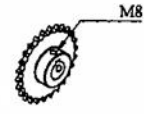
M6



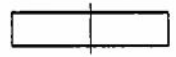
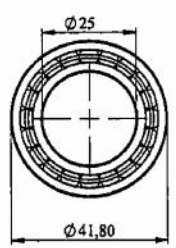
"SPROKET 40-B Z26"



DETAIL E



M8



"BANTALAN 6095"



3D VIEW 1:2

DRN : SARITTO
 STUDENT NB. : 20110130139
 DATE : 02-08-2015
 CHD : TOTOK SUWANDA, S.T., M.T.

APPD
 DWG NO. PC-1
 A3