

Tabel 1. Komponen Bill Of Material

No.	Nama Komponen	Manufaktur	Beli
1.	Mesin Honda Beat		✓
2.	Ban		✓
3.	Aluminium 6061		✓
4.	Polikarbonat		✓
5.	Bearing		✓
6.	Velg		✓
7.	Rantai		✓
8.	<i>Universal joint</i> /sambungan join		✓
9.	<i>Engine Control Unit</i> (ECU)		✓
10.	<i>Ball joint</i>		✓
11.	Rangka mobil	✓	
12.	Mur baut		✓
13.	Piston		✓
14.	<i>Fuse</i> /kring		✓
15.	Apar		✓
16.	Knalpot		✓
17.	<i>Fibber glass</i>		✓
18.	<i>Injector</i>		✓
19.	<i>Body</i> mobil	✓	
20.	Rantai		✓
21.	<i>Capacitor Discharge Ignitio</i> (CDI)		✓
22.	<i>Disc brake</i> / Cakram rem		✓
23.	Selang rem		✓
24.	Aki		✓
25.	Gear		✓
26.	<i>Pressure gauge</i>		✓
27.	<i>Poxy</i>		✓
28.	Tali sabuk		✓
29.	<i>Cam shaft</i> /noken as		✓
30.	<i>Valve</i> / katup		✓
31.	Katalis		✓
32.	<i>Cairan Polivinil Alkohol</i> (PVA)		✓
33.	Neppel penematik		✓
34.	tromol		✓
35.	Ruji		✓
36.	Kemudi mobil	✓	
37.	<i>Tei rod</i>		✓
38.	<i>Engine mount</i>	✓	
39.	<i>Brake disc mount</i>	✓	
40.	<i>Air reservior</i>	✓	
41.	As Roda	✓	
42.	Shock as roda	✓	
43.	<i>Steering cone set</i>	✓	
44.	Dudukan gear depan	✓	

Tabel 2 Proses Manufaktur

No.	Komponen	Manufaktur
1.	Rangka mobil	Gerinda, Las GTAW, Bor
2.	<i>Engine mount</i>	Bor, Gerinda,Las GTAW
3.	Dudukan gear	Gerinda
4.	Air Reservior	Bor/ <i>drilling</i>
5.	<i>Body</i> mobil	Pemotongan plywood,pembuatan moldingan,pembuatan bodi
6.	<i>Break disc mount + Tie rod breaket</i>	Bor/ <i>drilling</i> ,Frais ,Gerinda
7.	As roda	Gerinda,bubut
8.	Shock as roda	Gerinda,bubut
9.	<i>Steering cone set</i>	Gerinda,bubut
10.	Pengemudi mobil	Gerinda,Las SMAW

Tabel 3. Menghitung Waktu Proses Manufaktur

No.	Komponen	Proses manufaktur	waktu proses (menit)	waktu persiapan (menit)	waktu jeda (menit)	waktu total (menit)	Keterangan
1.	Rangka mobil	Gerinda	180	30			
		Las GTAW	2.880	30	90	3.285	Pers 1
		Bor/ <i>drilling</i>	60	15			
2.	<i>Engine mount</i>	Gerinda	60	10			
		Bor/ <i>drilling</i>	20	20	60	915	Pers 1
		Las GTAW	720	30			
3.	Dudukan gear	Bubut	15	5	15	35	Pers 1
4.	<i>Air Reservior</i>	Bor/ <i>drilling</i>	15	2	20	37	pers 1
5.	<i>Body</i> mobil	pemotongan plywood	2.880	60			
		pembuatan moldingan	57.600	90	120	82.425	pers 1
		pembuatan body	20.160	60			
6.	<i>Break disc mount + Tie rod breaket</i>	Bor/ <i>drilling</i>	15	5			
		Frais	5.760	60	30	5.870	Pers 1
		Gerinda	1.440	15			
7.	As roda	Gerinda	30	5	60	200	pers 1
8.	<i>Shock</i> as roda	Bubut	90	15			
		Gerinda	15	10	20	95	pers 1
		Bubut	35	15			
9.	<i>Steerig cone set</i>	Gerinda	15	15	30	115	pers 1
		Bubut	30	25			
		Gerinda	60	20	20	245	Pers 1
10.	Pengemudi mobil	Las SMAW	120	15			
		Waktu total				93.222	

Tabel 4. Menghitung Biaya Bahan Baku

No.	Nama Komponen	Jumlah (Q)	Satuan	Harga per satuan (H)	Total (Rp)	Keterangan
1.	Triplek tebal 0,5 SNI	6	lembar	Rp160.000	Rp960.000	
2.	<i>Polycarbonat</i>	7	lembar	Rp310.000	Rp2.170.000	
3.	Aluminium foil	1	roll	Rp300.000	Rp300.000	
4.	Resin A/G	19	liter	Rp50.000	Rp950.000	
5.	<i>Fiberglass 25 x 30 cm</i>	10	meter	Rp30.000	Rp300.000	
6.	Amplas AA 80 (kasar)	5	meter	Rp250.000	Rp1.250.000	
7.	Amplas 120 halus	5	lembar	Rp40.000	Rp200.000	
8.	Kabel ties (20 cm)	2	Pcs	Rp50.000	Rp100.000	
9.	Paku rivet (429)	2	Pcs	Rp36.000	Rp72.000	
10.	Aluminium 6061 (pipa)	4	biji	Rp270.000	Rp1.080.000	
11.	Aluminium alloy silinder 20mm x 40mm, 2mm, 6 meter	4	biji	Rp780.000	Rp3.120.000	
12.	Aluminium alloy silinder Ø21,3mm, 2mm, 6 meter	4	biji	Rp875.000	Rp3.500.000	
13.	As roda	3	biji	Rp40.000	Rp120.000	
14.	<i>Pillow bearing block</i>	1	biji	Rp 90.000	Rp90.000	
15.	Kabel	4	meter	Rp12.000	Rp48.000	
16.	Remover	1	biji	Rp70.000	Rp70.000	
17.	Hanger bearing	2	biji	Rp90.000	Rp180.000	
18.	Plat besi	6	lembar	Rp50.000	Rp300.000	
19.	Cat	2	kg	Rp70.000	Rp140.000	
20.	Kawat las ER 5356	1	pack	Rp300.000	Rp300.000	
21.	Dudukan kemudi	2	set	Rp35.000	Rp70.000	
22.	<i>Sefty belt</i>	1	set	Rp720.000	Rp720.000	
23.	<i>Arm steering</i>	1	set	Rp150.000	Rp150.000	
24.	<i>Ball joint</i>	4	biji	Rp120.000	Rp480.000	
25.	<i>Universal joint</i>	1	biji	Rp30.000	Rp30.000	
26.	Rantai	3	biji	Rp70.000	Rp210.000	
27.	Master rem	3	biji	Rp170.000	Rp510.000	
28.	Pedal rem	3	biji	Rp20.000	Rp60.000	
29.	<i>Connecting road</i>	2	set	Rp40.000	Rp80.000	
30.	<i>Switc rem</i>	2	biji	Rp35.000	Rp70.000	
31.	Gigi stater VEGA ZE JUPI robot lepasan	1	set	Rp230.000	Rp230.000	
32.	<i>Crankshaft crypton</i>	1	set	Rp300.000	Rp300.000	
33.	Laher kruk AS FAG 63/22 - 15 original fag	2	biji	Rp390.000	Rp780.000	
34.	Gear set	1	set	Rp280.000	Rp280.000	
35.	Krengkes Jupiter z	1	biji	Rp500.000	Rp500.000	
36.	<i>Bearing SKF</i>	3	biji	Rp100.000	Rp300.000	
37.	ECU Uma M9 MX King	1	biji	Rp4.500.000	Rp4.500.000	
	Total				Rp 24.520.000	

pers 2

Tabel 5. Menghitung Biaya Tenaga Kerja

No.	Jenis pekerjaan	Lama pengerjaan (J)	Upah/jam (U)	Total biaya (Rp)	Keterangan
1.	Pemotongan	76,98 jam		Rp 2.497.770	pers 3
2.	Pengelasan	62,05 jam		Rp 2.013.336	
3.	Pembubutan	1,83 jam	Rp 32.447	Rp 59.378	
4.	Frais/ <i>milling</i>	96,2 jam		Rp 3.121.401	
5.	pembubutan	2,8 jam		Rp 91.825	
Total				Rp 7.783.710	

Tabel 6. Menghitung Biaya Operasional

Tabel 6. Menghitung Biaya Operasional						
No.	Nama alat	Daya alat (wat)	Daya alat (kwh)	Lama pengerjaan (jam)	Tarif listrik (Rp/kwh)	Biaya listrik (Rp)
1.	Gerinda	710	0,71	76,98	Rp1.699	Rp 92.860
2.	Las GTAW	5000	5	63,08		Rp 527.369
3.	Mesin Bubut	6000	6	2,83		Rp 11.503
4.	Mesin Frais/ <i>Milling</i>	3700	3,7	96,2		Rp 604.742
5.	Bor/ <i>drilling</i>	3700	3,7	1,83		Rp 28.849
Total						Rp 1.265.323

Tabel 7 Hasil Uji Penggereman

Kecepatan Awal (m/s)	Jarak Rem (meter)	Waktu Rem (s)	Deselerasi (m/s ²)	Rata Rata
50	13,0	18,41	2,71	50,37333
	12,0	17,33	2,85	46,72667
	9,0	14,56	3,43	35,99667
40	7,0	13,56	2,94	28,83333
	6,7	10,79	3,7	27,16333
	6,4	10,29	3,88	26,05667
30	5,3	9,87	3,03	21,96667
	4,8	9,14	3,28	20,14
	5,1	8,79	3,41	21,06667

Tabel 8 Hasil Uji Defleksi

No	Beban (kg)	Uji 1	Uji 2	Uji 3	Rata rata
1.	50kg	4,75	5,31	4,7	4,92
		1,8	2,84	2,52	2,52
2.	60kg	5,49	5,95	5,03	5,49
		2,7	2,91	2,82	2,81
3.	70kg	6,27	6,89	5,72	6,29
		3,81	3,26	3,25	3,44

Tabel 9. Biaya sewa mesin

No	Biaya sewa mesin	Jumlah biaya
1.	Las GTAW	Rp 525.000
2.	Gerinda	Rp 30.000
3.	Bubut	Rp 150.000
4.	Bor/drilling	Rp 50.000
5.	Frais	Rp 600.00
	total	Rp 1.335.000