

BAB 6

KESIMPULAN DAN SARAN

6.1. Kesimpulan

Berdasarkan perhitungan yang telah dilakukan dalam merancang usulan tata letak akibat perluasan area bengkel dari yang sebelumnya 558,9 m² menjadi 1024,02 m², maka dapat diambil kesimpulan sebagai berikut:

- a. Dari hasil analisis *BLOCPLAN* didapatkan denah keseluruhan Bengkel JAT kecuali denah peletakan fasilitas produksi seperti departemen-departemen produksi, mesin produksi dan lain-lain.
- b. Hasil dari analisis *PLANET* dan *from to chart* digunakan sebagai *input software CRAFT* untuk merancang usulan tata letak. Setelah dilakukan penyesuaian dan perbaikan maka dipilih alternatif 2 yang peletakkan departemen bubut dan departemen *mill* dikelompokkan masing-masing secara horizontal dan berhadapan antara mesin yang sama, nilai total bobot dari hasil perkalian antara jarak alternatif dengan massa setiap komponen per bulan yang paling kecil yaitu 958260,6502 kg.m/bulan.

6.2. Saran

Adapun saran yang dapat diberikan penulis untuk penelitian selanjutnya yaitu, dalam penelitian selanjutnya sebaiknya dilakukan analisis perhitungan biaya yang dibutuhkan untuk *relayout*.

DAFTAR PUSTAKA

- Apple, J.M, 1990, *Tata Letak Pabrik dan Pemindahan Bahan*, Institut Teknologi Bandung, Bandung.
- Asriningtyas, Kezia, 2010, *Usulan Tata Letak Baru PT. Adi Putro Malang Akibat Perluasan Pabrik*, Skripsi, Program Studi Teknik Industri, Fakultas Teknologi Industri, Universitas Atma Jaya Yogyakarta, Yogyakarta.
- Assauri, S., 1977, *Manajemen Produksi*, Lembaga Penerbit Fakultas Ekonomi, Universitas Indonesia, Jakarta.
- Dewi, Kamayanti, 2003, *Usulan Perancangan Ulang Tata Letak Fasilitas Produksi Di CV. Prima Furniture Klaten*, Skripsi, Program Studi Teknik Industri, Fakultas Teknologi Industri, Universitas Atma Jaya Yogyakarta, Yogyakarta.
- Ismartaya, Kristian, 2011, *Usulan Perbaikan Tata Letak Pabrik di PT. Kripton Gama Jaya, Bantul*, Skripsi, Program Studi Teknik Industri, Fakultas Teknologi Industri, Universitas Atma Jaya Yogyakarta, Yogyakarta.
- Meyers, Fred E dan Stephens, Matthew P., 2005, *Manufacturing Facilities Design and Material Handling, 3rd Ed*, Prentice Hall, Inc., New Jersey.
- Muther, Richard., 1970, *Plant Layout and Design, Handbook of Modern Manufacturing Management*, Mc Graw Hill.
- Prabowo, Yulius Deny, 2007, *Usulan Perancangan Tata Letak Rumah Sakit*, Skripsi, Program Studi Teknik Industri, Fakultas Teknologi Industri, Universitas Atma Jaya Yogyakarta, Yogyakarta.
- Tompkins, James A., White, John A., Bozer, Yavus A., dan Tanchocho, J.M.A., 2003, *Facilities Planning, 3th Ed*, John Wiley & Sons, Inc., United State of America.

Yuniarti, Asih Tri, 2009, *Usulan Perancangan Tata Letak Baru Akibat Perluasan Pabrik (Studi Kasus di PT. Mega Andalan Kalasan, Yogyakarta)*, Skripsi, Program Studi Teknik Industri, Fakultas Teknologi Industri, Universitas Atma Jaya Yogyakarta, Yogyakarta.



LAMPIRAN 1

Komponen-Komponen Penyusun FJAT 650 S Yang Diproduksi
Sendiri Oleh Bengkel JAT



LAMPIRAN 2

Tata Letak Awal Bengkel JAT



LAMPIRAN 3

Massa Komponen-Komponen Penyusun FJAT 650 S Yang
Diproduksi Sendiri Oleh Bengkel JAT



LAMPIRAN 4

Perhitungan Frekuensi Perpindahan Material



LAMPIRAN 5

Gambar *CRAFT* Alternatif 1 dan Alternatif 2

Gambar Usulan Tata letak Alternatif 1 dan Alternatif 2



LAMPIRAN 6

Perhitungan Massa Setiap Komponen Per Bulan X Jarak
Perpindahan





LAMPIRAN 1

Komponen-Komponen Penyusun FJAT 650 S Yang Diproduksi
Sendiri Oleh Bengkel JAT



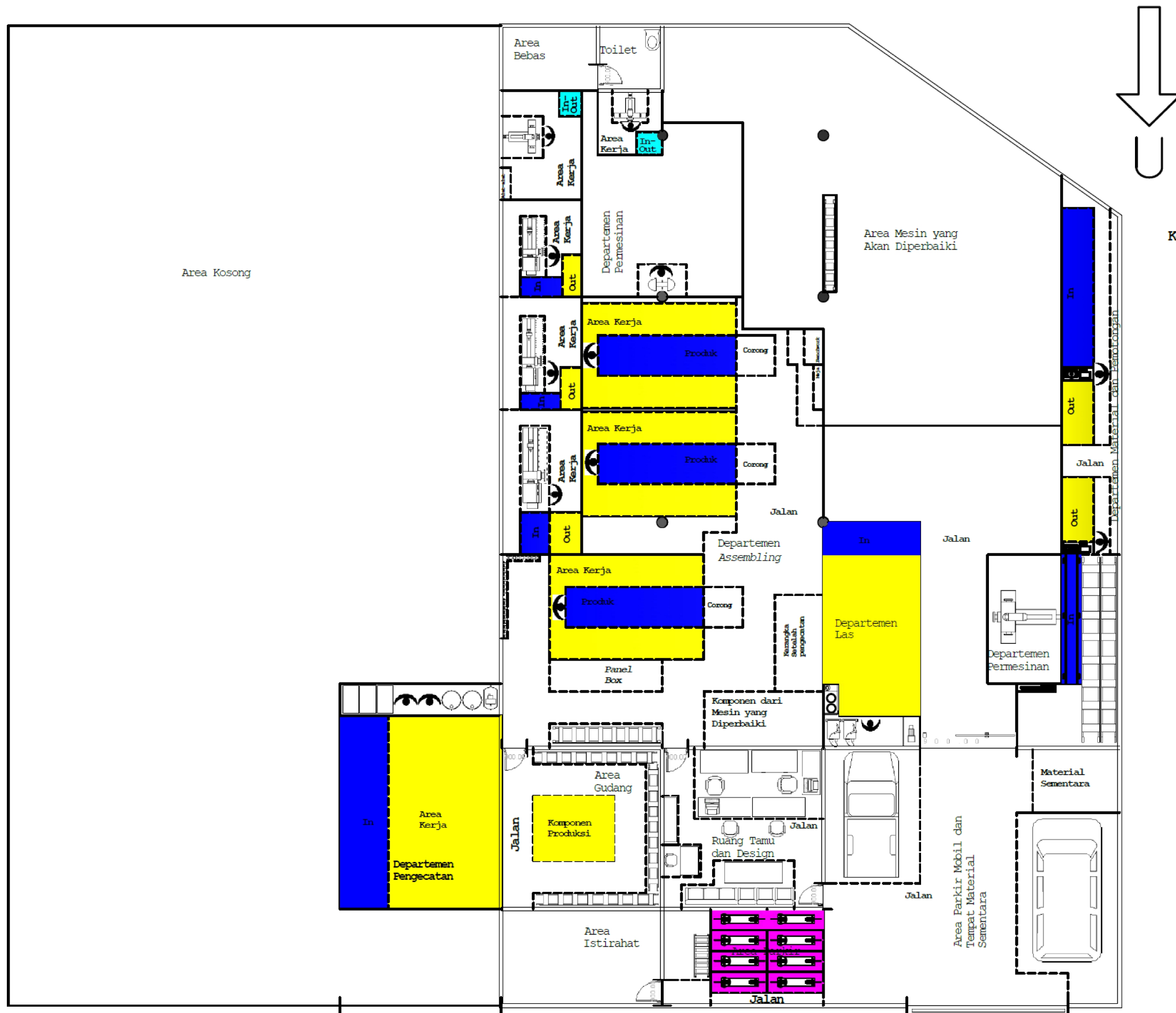
No. Part	Nama Part	Jml/Mesin	Jml/Bln (x 8)	Material	Proses					
					1	2	3	4	5	6
0100 FRAME BLOCK										
0101	Frame Front	1	8	Material Cor	Perakitan	Pengecatan	Perakitan			
0102	Frame Right	1	8	Material Cor	Perakitan	Pengecatan	Perakitan			
0106	Frame Left	1	8	Material Cor	Perakitan	Pengecatan	Perakitan			
0108	Switch Hanger	1	8	Material Besi	Gerinda Potong	Mill 1	Pengecatan	Perakitan		
0110	Plastic Feeder Rod	1	8	Material Besi	Gergaji Potong	Bubut 1	Perakitan			
0116	Plastic Feeder Spindle	1	8	Material Besi	Gergaji Potong	Bubut 3	Perakitan			
0118	Stainless Steel Rod	1	8	Material Besi	Gergaji Potong	Bubut 1	Mill 2	Perakitan		
0119	Bearing Housing	2	16	Material Besi	Mill 2	Pengecatan	Perakitan			
0122	Plastic Feeder Brackie Right	1	8	Material Cor	Pengecatan	Perakitan				
0122A	Plastic Feeder Brackie Left	1	8	Material Cor	Pengecatan	Perakitan				
0124	Frame Rear	1	8	Material Cor	Perakitan	Pengecatan	Perakitan			
0200 SPINDLE EXCENTRE										
0201	Shaft Steel	1	8	Material Besi	Gergaji Potong	Bubut 3	Pengecatan	Perakitan		
0209	Bearing Housing Sealer	1	8	Material Cor	Mill 1	Pengecatan	Perakitan			
0211	Bearing Housing Sealer Excentre	1	8	Material Cor	Bubut 2	Mill 1	Pengecatan	Perakitan		
0213	Bushing Shaft	1	8	Material Besi	Gergaji Potong	Bubut 1	Mill 1	Pengecatan	Perakitan	
0216	Shaft Housing	1	8	Material Besi	Mill 2	Bubut 2	Pengecatan	Perakitan		
0220	Plate Move	1	8	Material Besi	Mill 2	Pengecatan	Perakitan			
0221	Sealer Move	1	8	Material Besi	Gerinda Potong	Bubut 3	Mill 1	Perakitan		
0223	Grill Move	1	8	Material Besi	Gergaji Potong	Bubut 1	Pengecatan	Perakitan		
0228	Bushing Hex. Clamp	1	8	Material Besi	Gergaji Potong	Bubut 1	Perakitan			
0229	Bearing Housing To Move	1	8	Material Cor	Mill 1	Pengecatan	Perakitan			
0231	Bushing Move	1	8	Material Besi	Gergaji Potong	Bubut 1	Perakitan			
0300 SPINDLE LEVER										
0301	Shaft Lever	1	8	Material Besi	Gergaji Potong	Bubut 3	Pengecatan	Perakitan		
0302	Adjustable Lever	1	8	Material Cor	Mill 1	Pengecatan	Perakitan			
0306	Lever Knife	1	8	Material Cor	Mill 1	Pengecatan	Perakitan			
0307	Weight Knife	1	8	Material Besi	Gergaji Potong	Bubut 1	Mill 1	Pengecatan	Perakitan	
0308	Shaft Weight Knife	1	8	Material Besi	Gergaji Potong	Bubut 3	Pengecatan	Perakitan		
0309	Full Rod U-Lever To Excentre	1	8	Material Besi	Gergaji Potong	Bubut 3	Pengecatan	Perakitan		
0311	U-Lever	2	16	Material Cor	Mill 1	Pengecatan	Perakitan			
0316	Adjustable Lever	1	8	Material Cor	Mill 1	Pengecatan	Perakitan			
0317	Lever Knife	1	8	Material Cor	Mill 1	Pengecatan	Perakitan			
0318	Bearing Bushing Housing	2	16	Material Besi	Gergaji Potong	Bubut 1	Perakitan			
0320	Bearing Bushing To Knife	2	16	Material Cor	Mill 1	Pengecatan	Perakitan			
0321	Housing Bearing Bushing Shim	2	16	Material Besi	Gergaji Potong	Bubut 1	Perakitan			
0400 SPINDLE PULLY										
0401	Pully Shaft	1	8	Material Besi	Gergaji Potong	Bubut 3	Pengecatan	Perakitan		
0402	Big Pully V-Belt	1	8	Material Cor	Bubut 2	Mill 1	Pengecatan	Perakitan		
0406	Hand Pully	1	8	Material Cor	Bubut 2	Mill 1	Pengecatan	Perakitan		
0410	Small Lower Chainwheel	1	8	Material Cor	Bubut 2	Mill 1	Pengecatan	Perakitan		
0414	Small Pully V-Belt	1	8	Material Cor	Bubut 2	Mill 1	Pengecatan	Perakitan		
0500 SPINDLE WELDER										
0501	Shaft Lever Welder	1	8	Material Besi	Gergaji Potong	Bubut 3	Pengecatan	Perakitan		
0507	Sealer Lever	1	8	Material Cor	Mill 1	Pengecatan	Perakitan			
0508	Sealer Weight	1	8	Material Besi	Gergaji Potong	Bubut 1	Mill 1	Pengecatan	Perakitan	
0508A	Shaft Weight Sealer	1	8	Material Besi	Gergaji Potong	Bubut 3	Pengecatan	Perakitan		
0511	U-Lever	1	8	Material Cor	Mill 1	Pengecatan	Perakitan			
0515	Adjustable Arm U-Lever To U-Lever	1	8	Material Besi	Gergaji Potong	Bubut 3	Pengecatan	Perakitan		
0526	Bushing Shim	2	16	Material Besi	Gergaji Potong	Bubut 1	Perakitan			
0527	Bearing Housing Sealer	2	16	Material Cor	Mill 1	Pengecatan	Perakitan			
0529	Bushing (Ring/Connector)	2	16	Material Besi	Gergaji Potong	Bubut 1	Perakitan			
0531	Sealer Scackle Plate	4	32	Material Besi	Gerinda Potong	Mill 2	Pengecatan	Perakitan		
0538	Pillow Block Plate	4	32	Material Besi	Gerinda Potong	Mill 2	Pengecatan	Perakitan		
0600 BASE PLATE										
0601	Bottom Plate Cover	1	8	Material Besi	Pemotong Plat	Las	Pengecatan	Perakitan		
0602	Top Plate Cover	1	8	Material Besi	Pemotong Plat	Las	Pengecatan	Perakitan		
0609	Plate Bushing	4	32	Material Besi	Gergaji Potong	Bubut 1	Perakitan			
0614	Shaft Supports	2	16	Material Besi	Mill 2	Pengecatan	Perakitan			
0616	Base Plate Shaft	1	8	Material Besi	Gergaji Potong	Bubut 3	Perakitan			
0700 CUTTER BLOCK										
0701	Base Plate	1	8	Material Cor	Pengecatan	Perakitan				
0703	Front Bottom Shaft	1	8	Material Besi	Gergaji Potong	Bubut 2	Perakitan			
0708	Bushing Lever Knife	2	16	Material Besi	Gergaji Potong	Bubut 1	Perakitan			
0709	Knife Lever	2	16	Material Cor	Bubut 2	Pengecatan	Perakitan			
0712	Bushing Knife Lever	2	16	Material Besi	Gergaji Potong	Bubut 1	Perakitan			
0714	Slider Plate Shaft	1	8	Material Besi	Gergaji Potong	Bubut 3	Perakitan			
0715	Adjustment Bolt	2	16	Material Besi	Gergaji Potong	Bubut 1	Perakitan			
0718	Front Top Shaft	1	8	Material Besi	Gergaji Potong	Bubut 3	Perakitan			
0722	U-Plate	1	8	Material Besi	Gerinda Potong	Mill 2	Pengecatan	Perakitan		
0728	Bearing Housing Jumper	2	16	Material Besi	Gerinda Potong	Las	Mill 2	Pengecatan	Perakitan	
0730	Brass Plate	2	16	Material Kuningan	Mill 2	Perakitan				
0734	Brass Plate	2	16	Material Kuningan	Mill 2	Perakitan				
0735	Brass Plate	2	16	Material Kuningan	Mill 2	Perakitan				
0736	Edge Guide	2	16	Material Besi	Gerinda Potong	Las	Mill 2	Pengecatan	Perakitan	
0760	Bearing Housing Cover	2	16	Material Besi	Gergaji Potong	Bubut 1	Pengecatan	Perakitan		
0761	Bearing Housing Crank Roll	2	16	Material Cor	Mill 1	Pengecatan	Perakitan			
0761A	Bushing	2	16	Material Besi	Gergaji Potong	Bubut 1	Perakitan			
0767	Cup Shoe	4	32	Material Besi	Gergaji Potong	Bubut 1	Perakitan			
0768	Crank Shaft Rubber Roll	1	8	Material Besi	Gergaji Potong	Bubut 1	Perakitan			
0773	Right Sliding Base Plate	1	8	Material Cor	Pengecatan	Perakitan				
0774	Left Sliding Base Plate	1	8	Material Cor	Pengecatan	Perakitan				
0776	Right Slider Plate	1	8	Material Besi	Gergaji Potong	Mill 2	Pengecatan	Perakitan		
0777	Left Slider Plate	1	8	Material Besi	Gergaji Potong	Mill 2	Pengecatan	Perakitan		
0800 WELDER / SEALER										
0804	Heater / Isolator Cover Plate	1	8	Material Besi	Gerinda Potong	Mill 1	Perakitan			
0805	Teflon Plate	1	8	Material Besi	Gerinda Potong	Mill 1	Perakitan			
0808	Teflon Plate Clamp	2	16	Material Besi	Gerinda Potong	Mill 1	Perakitan			
0812	Heater / Isolator Cover Plate	1	8	Material Besi	Gerinda Potong	Mill 1	Perakitan			
0813	Left Bolt Pin	1	8	Material Besi	Gergaji Potong	Bubut 1	Perakitan			
0820	Sealer Adjustment Bolt	2	16	Material Besi	Gergaji Potong	Bubut 1	Pengecatan	Perakitan		
0821	Sealer Top Plate	1	8	Material Besi	Gerinda Potong	Mill 1	Perakitan			
0822	Sealer Spindel	2	16	Material Besi	Gerinda Potong	Bubut 1	Perakitan			
0823	Sealer Slinding Bar	2	16	Material Besi	Gergaji Potong	Bubut 1	Perakitan			
0827	Right Bolt Pin	1	8	Material Besi	Gergaji Potong	Bubut 1	Perakitan			
0900 TALL ROLLER										
0901	Tail Frame	2	16	Material Cor	Pengecatan	Perakitan				
0905	Crank Roller	2	16	Material Cor	Mill 2	Pengecatan	Perakitan			
0909	Front Tail Roll	1	8	Material Besi	Gergaji Potong	Bubut 3	Mill 2	Perakitan		
0918	Crank	2	16	Material Cor	Mill 2	Pengecatan	Perakitan			
0919	Roll To Plate	1	8	Material Besi	Gergaji Potong	Bubut 3	Mill 2	Perakitan		
0920	Motor Support Plate	2	16	Material Besi	Gerinda Potong	Mill 2	Pengecatan	Perakitan		
0921	Motor Base Plate	2	16	Material Besi	Gerinda Potong	Mill 2	Pengecatan	Perakitan		
0923	Coil Spring Edge	2	16	Material Besi	Gerinda Potong	Mill 1	Pengecatan	Perakitan		
0930	Tail Shaft	1	8	Material Besi	Gergaji Potong	Bubut 3	Perakitan			
0937	Top Tail Roll	1	8	Material Besi	Gergaji Potong	Bubut 3	Perakitan			
0942	Bottom Tail Roll	1	8	Material Besi	Gergaji Potong	Bubut 3	Perakitan			
0944	Tail Base Plate	2	16	Material Cor	Mill 1	Pengecatan	Perakitan			
0946	Shaft To Tail Rubber Roll	1	8	Material Besi	Gergaji Potong	Bubut 3	Perakitan			
0949	Big Timing Gear	1	8	Material Cor	Bubut 2	Mill 1	Pengecatan	Perakitan		
0955	Little Timing Gear	1	8	Material Cor	Bubut 2	Pengecatan	Perakitan			
0962	Timing Chain	1	8	Material Besi	Pemotong Plat	Las	Pengecatan	Perakitan		
0967	Tail Shaft	2	16	Material Besi	Gergaji Potong	Bubut 3	Perakitan			
0970	Tail Crank	2	16	Material Cor	Mill 1	Pengecatan	Perakitan			

No. Part	Nama Part	Jml/Mesin	Jml/Bln (x 8)	Material	Proses					
					1	2	3	4	5	6
1000	GEAR RACK BLOCK									
1001	Pinion Gear Shaft	1	8	Material Besi	Gergaji Potong	Bubut 1	Mill 2	Perakitan		
1015	Left Bearing Housing Flange	1	8	Material Cor	Pengecatan	Perakitan				
1017	Bushing	1	8	Material Besi	Gergaji Potong	Bubut 1		Perakitan		
1020	Right Bearing Housing Flange	1	8	Material Cor	Pengecatan	Perakitan				
1024	Gear Rack Brass Bushing	1	8	Material Kuningan	Gergaji Potong	Bubut 1		Perakitan		
1027	Excentre Pin	1	8	Material Besi	Gergaji Potong	Bubut 1		Perakitan		
1042	Elephant Nose (Bearing Housing)	1	8	Material Cor	Pengecatan	Perakitan				
1049	Bar Gear Shaft	1	8	Material Besi	Gergaji Potong	Bubut 3		Perakitan		
1100	VARIABLE BLOCK									
1104	Lamp Base	1	8	Material Besi	Gerinda Potong	Mill 2	Pengecatan	Perakitan		
1106	Variable Roller	1	8	Material Besi	Gergaji Potong	Bubut 3		Perakitan		
1107	Variable Spindle	2	16	Material Besi	Gerinda Potong	Bubut 1		Perakitan		
1108	Variable Shaft	4	32	Material Besi	Gergaji Potong	Bubut 1		Perakitan		
1113	Variable Plate	1	8	Material Besi	Mill 2	Pengecatan		Perakitan		
1114	Variable Plate	1	8	Material Besi	Mill 2	Pengecatan		Perakitan		
1115	Variable Shaft Base	2	16	Material Besi	Mill 2	Pengecatan		Perakitan		
1122	Hand Wheel Shaft	1	8	Material Besi	Gergaji Potong	Bubut 1	Pengecatan	Perakitan		
1126	Base Lamp Cover	1	8	Material Besi	Pemotong Plat	Las	Pengecatan	Perakitan		
1128	Variable Bushing Srew	2	16	Material Besi	Gergaji Potong	Bubut 1	Pengecatan	Perakitan		
1133	Travo Base	1	8	Material Besi	Pemotong Plat	Las	Pengecatan	Perakitan		
1134	Variable Screw 2	1	8	Material Besi	Gerinda Potong	Bubut 1		Perakitan		
1138	L-Plate, U-Plate, Shaft Table	5	40	Material Besi	Gerinda Potong	Las	Mill 1	Bubut 1	Pengecatan	Perakitan
1139	Plate Table Edge	3	24	Material Besi	Gerinda Potong	Las	Mill 2	Pengecatan	Perakitan	
1140	Plate Table	1	8	Material Besi	Pemotong Plat	Las	Pengecatan	Perakitan		
1141	Pipe Table	2	16	Material Besi	Gerinda Potong	Bubut 1	Mill 1	Pengecatan		Perakitan
1142	Base Table	1	8	Material Besi	Gergaji Potong	Bubut 1	Pengecatan	Perakitan		
1200	BOX PANEL						Pengecatan	Perakitan		
1201	Left Box Panel	1	8							
1202	Left Box Panel Up	1	8	Material Besi	Pemotong Plat	Perakitan Las				
1203	Left Box Panel Side	2	16	Material Besi	Pemotong Plat	Perakitan Las				
1204	Left Box Panel Back	1	8	Material Besi	Pemotong Plat	Perakitan Las				
1205	Left Box Panel Bottom	1	8	Material Besi	Pemotong Plat	Perakitan Las				
1206	Left Door Twin 1	1	8	Material Besi	Pemotong Plat	Perakitan Las				
1207	Left Door Twin 2	1	8	Material Besi	Pemotong Plat	Perakitan Las				
1208	Left Door	1	8	Material Besi	Pemotong Plat	Perakitan Las				
1209	Frame Left 1	4	32	Material Besi	Gerinda Potong	Perakitan Las				
1210	Frame Left 2	8	64	Material Besi	Gerinda Potong	Perakitan Las				
1211	Frame Left 3	8	64	Material Besi	Gerinda Potong	Perakitan Las				
1212	Right Box Panel	1	8							
1213	Right Box Panel Up	1	8	Material Besi	Pemotong Plat	Perakitan Las				
1214	Right Box Panel Side	2	16	Material Besi	Pemotong Plat	Perakitan Las				
1215	Right Box Panel Back	1	8	Material Besi	Pemotong Plat	Perakitan Las				
1216	Right Box Panel Bottom	1	8	Material Besi	Pemotong Plat	Perakitan Las				
1217	Right Box Panel Front	1	8	Material Besi	Pemotong Plat	Perakitan Las				
1218	Right Door Twin 1	1	8	Material Besi	Pemotong Plat	Perakitan Las				
1219	Right Door Twin 2	1	8	Material Besi	Pemotong Plat	Perakitan Las				
1220	Frame Right 1	4	32	Material Besi	Gerinda Potong	Perakitan Las				
1221	Frame Right 2	8	64	Material Besi	Gerinda Potong	Perakitan Las				
1222	Frame Right 3	8	64	Material Besi	Gerinda Potong	Perakitan Las				
1300	TAIL PLASTIC							Pengecatan	Perakitan	
1301	Up Tail	1	8	Material Besi	Gerinda Potong	Mill 1	Perakitan Las			
1302	Down Tail	1	8	Material Besi	Gerinda Potong	Mill 1	Perakitan Las			
1303	Right Tail	1	8	Material Besi	Gerinda Potong	Perakitan Las				
1304	Left Tail	1	8	Material Besi	Gerinda Potong	Perakitan Las				
1309	Center Tail	3	24	Material Besi	Gerinda Potong	Mill 1	Perakitan Las			

LAMPIRAN 2

Tata Letak Awal Bengkel JAT





Keterangan:

- Dinding Semen
- Batas Departemen
- Batas Area Kerja

LAMPIRAN 3

Massa Komponen-Komponen Penyusun FJAT 650 S Yang
Diproduksi Sendiri Oleh Bengkel JAT



Tabel Massa Jenis, Modulus Young, dan Koefisien Thermal Expansion dari Berbagai Material

Massa jenis, modulus young, dan koefisien thermal expansion itu sangat erat kaitannya dengan ilmu material. Adapun pengertiannya, massa jenis adalah satuan massa per satuan volume dari suatu benda, modulus young (atau juga disebut modulus elastisitas) adalah batas elastis suatu benda sebelum benda tersebut mengalami proses deformasi ketika dikenakan beban kepadanya, sedangkan koefisien thermal expansion adalah besarnya angka pemuaian volume dari suatu benda per kenaikan suhu yang terjadi disekitarnya. Berikut TutorialCAD.Net berikan tabel massa jenis, modulus young, dan koefisien thermal expansion dari berbagai material yang didapat dari katalog press dies Misumi edisi tahun 2007.

Material	Density [g/cm ³]	Young's modulus E [Kgf/mm ²]	Thermal expansion coefficient [×10 ⁻⁶ /°C]
Mild steel	7.85	21000	11.7
SKD11	7.85	21000	11.7
Powdered high-speed steel (HAP40) •	8.07	23300	10.1
Cemented carbide V30	14.1	56000	6.0
Cast iron	7.3	7500~10500	9.2~11.8
SUS304	8.0	19700	17.3
Oxygen free copper C1020	8.9	11700	17.6
6/4 Brass C2801	8.4	10300	20.8
Aluminum A1100	2.7	6900	23.6
Duralumin A7075	2.8	7200	23.6
Titanium	4.5	10600	8.4

TutorialCAD.Net

1 Kgf/mm² = 9.80665 × 10⁶ Pa

Tabel massa jenis, modulus young, dan koefisien thermal expansion dari berbagai material

Sumber : Katalog press dies Misumi edisi tahun 2007



No. Part	Nama Part	Jml/ Mesin	Jml/ Bln (x 8)	Material	Dimensi per Komponen				Vol (cm³)	Massa (kg)	Massa (kg) /Produk
					Ø	p	l	t			
0100	FRAME BLOCK										
0101	Frame Front	1	8	Cor		73	5	45		48	48
0102	Frame Right	1	8	Cor		130	10	70		120	120
0106	Frame Left	1	8	Cor		130	10	70		120	120
0108	Switch Hanger	1	8	Besi		8	10	0,6	48,00	0,38	0,38
0110	Plastic Feeder Rod	1	8	stainless	2	70			219,91	1,74	1,74
0116	Plastic Feeder Spindle	1	8	stainless	2	82			257,61	2,04	2,04
0118	Stainless Steel Rod	1	8	stainless	2	50			157,08	1,24	1,24
0119	Bearing Housing	2	16	Besi		8	3	5	120,00	0,94	1,88
0122	Plastic Feeder Brackle Right	1	8	Cor		25	5	4	500,00	3,65	3,65
0122A	Plastic Feeder Brackle Left	1	8	Cor		25	5	4	500,00	3,65	3,65
0124	Frame Rear	1	8	Cor		73	5	45		48	48
0200	SPINDLE EXCENTRE										
0201	Shaft Steel	1	8	Besi	3,5	100			962,11	7,55	7,55
0209	Bearing Housing Sealer	1	8	Cor	14	3			461,81	3,37	3,37
0211	Bearing Housing Sealer Excentre	1	8	Cor	9	2			127,23	0,93	0,93
0213	Bushing Shaft	1	8	Besi	14	1			153,94	1,21	1,21
0216	Shaft Housing	1	8	Besi		8	7,5	6	360,00	2,83	2,83
0220	Plate Move	1	8	Besi		30	8	3	720,00	5,65	5,65
0221	Sealer Move	1	8	Besi	1,2	30			33,93	0,27	0,27
0223	Grill Move	1	8	Besi	3,5	4			38,48	0,30	0,30
0228	Bushing Hex. Clamp	1	8	Besi	4	3			37,70	0,30	0,30
0229	Bearing Housing To Move	1	8	Cor	5,5	3			71,27	0,52	0,52
0231	Bushing Move	1	8	Besi	3	2			14,14	0,11	0,11
0300	SPINDLE LEVER										
0301	Shaft Lever	1	8	Besi	3,2	74			595,14	4,67	4,67
0302	Adjustable Lever	1	8	Cor		24	6	7	1008,00	7,36	7,36
0306	Lever Knife	1	8	Cor		24	6	7	1008,00	7,36	7,36
0307	Weight Knife	1	8	Besi	10	15			1178,10	9,25	9,25
0308	Shaft Weight Knife	1	8	Besi	2	40			125,66	0,99	0,99
0309	Pull Rod U-Lever To Excentre	1	8	Besi	1,5	57			100,73	0,79	0,79
0311	U-Lever	2	16	Cor		15,5	10	7,5	1162,50	8,49	16,97
0316	Adjustable Lever	1	8	Cor		24	6	7	1008,00	7,36	7,36
0317	Lever Knife	1	8	Cor		24	6	7	1008,00	7,36	7,36
0318	Bearing Bushing Housing	2	16	Besi	3	2,5			17,67	0,14	0,28
0320	Bearing Bushing To Knife	2	16	Cor	5,5	3			71,27	0,52	1,04
0321	Housing Bearing Bushing Shim	2	16	Besi	3	2			14,14	0,11	0,22
0400	SPINDLE PULLEY										
0401	Pully Shaft	1	8	Besi	3,5	100			962,11	7,55	7,55
0402	Big Pully V-Belt	1	8	Cor	35	6			5772,68	42,14	42,14
0406	Hand Pully	1	8	Cor	15	3			530,14	3,87	3,87
0410	Small Lower Chainwheel	1	8	Cor	9	2,5			159,04	1,16	1,16
0414	Small Pully V-Belt	1	8	Cor	12	10			1130,97	8,26	8,26
0500	SPINDLE WELDER										
0501	Shaft Lever Welder	1	8	Besi	3,5	95			914,01	7,17	7,17
0507	Sealer Lever	1	8	Cor		24	6	7	1008,00	7,36	7,36
0508	Sealer Weight	1	8	Besi	10	15			1178,10	9,25	9,25
0508A	Shaft Weight Sealer	1	8	Besi	2	40			125,66	0,99	0,99
0511	U-Lever	1	8	Cor		15,5	10	7,5	1162,50	8,49	8,49
0515	Adjustable Arm U-Lever To U-Lever	1	8	Besi	1,5	57			100,73	0,79	0,79
0526	Bushing Shim	2	16	Besi	3	2			14,14	0,11	0,22
0527	Bearing Housing Sealer	2	16	Cor	5,5	3			71,27	0,52	1,04
0529	Bushing (Ring/Connector)	2	16	Besi	3	2,5			17,67	0,14	0,28
0531	Sealer Scackle Plate	4	32	Besi		17	2	1	34,00	0,27	1,07
0538	Pillow Block Plate	4	32	Besi		3	1,5	1	4,50	0,04	0,14
0600	BASE PLATE										
0601	Bottom Plate Cover	1	8	Besi		83	65	0,2	1079,00	8,47	8,47
0602	Top Plate Cover	1	8	Besi		83	35	0,2	581,00	4,56	4,56
0609	Plate Bushing	4	32	Besi	3	23			162,58	1,28	5,10
0614	Shaft Supports	2	16	Besi		12	5	5	300,00	2,36	4,71
0616	Base Plate Shaft	1	8	stainless	2	75			235,62	1,86	1,86
0700	CUTTER BLOCK										
0701	Base Plate	1	8	Cor		73	30	5	10950,00	66	66
0703	Front Bottom Shaft	1	8	stainless	3,5	70			673,48	5,32	5,32
0708	Bushing Lever Knife	2	16	Besi	3	2,5			17,67	0,14	0,28
0709	Knife Lever	2	16	Cor	5,5	3			71,27	0,52	1,04
0712	Bushing Knife Lever	2	16	Besi	3	2			14,14	0,11	0,22
0714	Slider Plate Shaft	1	8	stainless	1,5	72			127,23	1,01	1,01
0715	Adjustment Bolt	2	16	Besi	4	15			188,50	1,48	2,96
0718	Front Top Shaft	1	8	stainless	3,5	72			692,72	5,47	5,47
0722	U-Plate	1	8	Besi		63	10	0,5	315,00	2,47	2,47
0728	Bearing Housing Jumper	2	16	Besi		20	5	5	500,00	3,93	7,85
0730	Brass Plate	2	16	Kuningan		25	3	0,2	15,00	0,13	0,25
0734	Brass Plate	2	16	Kuningan		25	3	0,2	15,00	0,13	0,25
0735	Brass Plate	2	16	Kuningan		25	3	0,2	15,00	0,13	0,25
0736	Edge Guide	2	16	Besi		18	11,5	0,5	103,50	0,81	1,62
0760	Bearing Housing Cover	2	16	Besi	4	3			37,70	0,30	0,59

0761	Bearing Housing Crank Roll	2	16	Cor		30	9	10	2700,00	19,71	39,42
0761A	Bushing	2	16	Besi	2	3			9,42	0,07	0,15
0767	Cup Shoe	4	32	Besi	2	2			6,28	0,05	0,20
0768	Crank Shaft Rubber Roll	1	8	stainless	1	73			57,33	0,45	0,45
0773	Right Sliding Base Plate	1	8	Cor		25	3	25	1875,00	13,69	13,69
0774	Left Sliding Base Plate	1	8	Cor		25	3	25	1875,00	13,69	13,69
0776	Right Slider Plate	1	8	Besi		35	6	5	1050,00	8,24	8,24
0777	Left Slider Plate	1	8	Besi		35	6	5	1050,00	8,24	8,24
0800	WELDER / SEALER										
0804	Heater / Isolator Cover Plate	1	8	Besi		60	8	0,15	72,00	0,57	0,57
0805	Teflon Plate	1	8	Besi		60	8	0,15	72,00	0,57	0,57
0808	Teflon Plate Clamp	2	16	Besi		60	5	0,4	120,00	0,94	1,88
0812	Heater / Isolator Cover Plate	1	8	Besi		60	8	0,15	72,00	0,57	0,57
0813	Left Bolt Pin	1	8	Besi	2	6			18,85	0,15	0,15
0820	Sealer Adjustment Bolt	2	16	Besi	8	8			402,12	3,16	6,31
0821	Sealer Top Plate	1	8	Besi		70	3	1	210,00	1,65	1,65
0822	Sealer Spindel	2	16	Besi	1,2	35			39,58	0,31	0,62
0823	Sealer Slinding Bar	2	16	Besi	2	35			109,96	0,86	1,73
0827	Right Bolt Pin	1	8	Besi	2	6			18,85	0,15	0,15
0900	TALL ROLLER										
0901	Tail Frame	2	16	Cor		100	10	5	5000,00	24	48
0905	Crank Roller	2	16	Cor		17	3	2,5	127,50	0,93	1,86
0909	Front Tail Roll	1	8	stainless	2	80			251,33	1,99	1,99
0918	Crank	2	16	Cor		33	3	2,5	247,50	1,81	3,61
0919	Roll To Plate	1	8	stainless	2	80			251,33	1,99	1,99
0920	Motor Support Plate	2	16	Besi		23	2	1	46,00	0,36	0,72
0921	Motor Base Plate	2	16	Besi		80	2	1	160,00	1,26	2,51
0923	Coil Spring Edge	2	16	Besi		5	10	0,6	30,00	0,24	0,47
0930	Tail Shaft	1	8	stainless	1	80			62,83	0,50	0,50
0937	Top Tail Roll	1	8	stainless	2	82			257,61	2,04	2,04
0942	Bottom Tail Roll	1	8	stainless	2	82			257,61	2,04	2,04
0944	Tail Base Plate	2	16	Cor		25	21	4	2100,00	15,33	30,66
0946	Shaft To Tail Rubber Roll	1	8	stainless	1,5	82			144,91	1,14	1,14
0949	Big Timing Gear	1	8	Cor	8	7			351,86	2,57	2,57
0955	Little Timing Gear	1	8	Cor	12	7			791,68	5,78	5,78
0962	Timing Chain	1	8	Besi		30	30	0,15	135,00	1,06	1,06
0967	Tail Shaft	2	16	stainless	2	82			257,61	2,04	4,07
0970	Tail Crank	2	16	Cor		18	3	2,5	135,00	0,99	1,97
1000	GEAR RACK BLOCK										
1001	Pinion Gear Shaft	1	8	Besi	2,2	100			380,13	2,98	2,98
1015	Left Bearing Housing Flange	1	8	Cor		20	18	3	1080,00	7,88	7,88
1017	Bushing	1	8	Besi	2	5			15,71	0,12	0,12
1020	Right Bearing Housing Flange	1	8	Cor		20	18	3	1080,00	7,88	7,88
1024	Gear Rack Brass Bushing	1	8	Kuningan	2	8			25,13	0,21	0,21
1027	Excentre Pin	1	8	Besi	1	25			19,63	0,15	0,15
1042	Elephant Nose (Bearing Housing)	1	8	Cor		30	15	35	7	7	7
1049	Bar Gear Shaft	1	8	Besi	1,5	45			79,52	0,62	0,62
1100	VARIABLE BLOCK										
1104	Lamp Base	1	8	Besi		100	8	0,5	400,00	3,14	3,14
1106	Variable Roller	1	8	stainless	2	80			251,33	1,99	1,99
1107	Variable Spindle	2	16	Besi	1,2	130			147,03	1,15	2,31
1108	Variable Shaft	4	32	stainless	1,5	120			212,06	1,68	6,70
1113	Variable Plate	1	8	Besi		8	5	3	120,00	0,94	0,94
1114	Variable Plate	1	8	Besi		8	5	3	120,00	0,94	0,94
1115	Variable Shaft Base	2	16	Besi		8	5	3	120,00	0,94	1,88
1122	Hand Wheel Shaft	1	8	Besi	1	10			7,85	0,06	0,06
1126	Base Lamp Cover	1	8	Besi		125	28	0,15	525,00	4,12	4,12
1128	Variable Bushing Srew	2	16	Besi	2	3			9,42	0,07	0,15
1133	Travo Base	1	8	Besi		26	4	0,2	20,80	0,16	0,16
1134	Variable Screw 2	1	8	Besi	1,2	130			147,03	1,15	1,15
1138	L-Plate, U-Plate, Shaft Table	5	40	Besi	1 (83)	100	6	0,4	665,19	5,22	26,11
1139	Plate Table Edge	3	24	Besi		83	3	1	249,00	1,95	5,86
1140	Plate Table	1	8	Besi		121	89	0,15	1615,35	12,68	12,68
1141	Pipe Table	2	16	Besi	2	100			314,16	2,47	4,93
1142	Base Table	1	8	Besi	2	80			251,33	1,97	1,97
1200	BOX PANEL										
1201	Left Box Panel	1	8								
1202	Left Box Panel Up	1	8	Besi		142	21	0,15	447,30	3,51	3,51
1203	Left Box Panel Side	2	16	Besi		62	21	0,15	195,30	1,53	3,07
1204	Left Box Panel Back	1	8	Besi		62	50	0,15	465,00	3,65	3,65
1205	Left Box Panel Bottom	1	8	Besi		142	21	0,15	447,30	3,51	3,51
1206	Left Door Twin 1	1	8	Besi		52	40	0,15	312,00	2,45	2,45
1207	Left Door Twin 2	1	8	Besi		52	40	0,15	312,00	2,45	2,45
1208	Left Door	1	8	Besi		52	40	0,15	312,00	2,45	2,45
1209	Frame Left 1	4	32	Besi		142	10	0,6	852,00	6,69	26,75
1210	Frame Left 2	8	64	Besi		62	20	0,4	496,00	3,89	31,15
1211	Frame Left 3	8	64	Besi		21	10	0,6	126,00	0,99	7,91

1212	Right Box Panel	1	8								
1213	Right Box Panel Up	1	8	Besi		142	21	0,15	447,30	3,51	3,51
1214	Right Box Panel Side	2	16	Besi		62	21	0,15	195,30	1,53	3,07
1215	Right Box Panel Back	1	8	Besi		62	50	0,15	465,00	3,65	3,65
1216	Right Box Panel Bottom	1	8	Besi		142	21	0,15	447,30	3,51	3,51
1217	Right Box Panel Front	1	8	Besi		62	56	0,15	520,80	4,09	4,09
1218	Right Door Twin 1	1	8	Besi		52	40	0,15	312,00	2,45	2,45
1219	Right Door Twin 2	1	8	Besi		52	40	0,15	312,00	2,45	2,45
1220	Frame Right 1	4	32	Besi		142	10	0,6	852,00	6,69	26,75
1221	Frame Right 2	8	64	Besi		62	20	0,4	496,00	3,89	31,15
1222	Frame Right 3	8	64	Besi		21	10	0,6	126,00	0,99	7,91
1300	TAIL PLASTIC										
1301	Up Tail	1	8	Besi		89	12	0,25	267,00	2,10	2,10
1302	Down Tail	1	8	Besi		89	12	0,25	267,00	2,10	2,10
1303	Right Tail	1	8	Besi		285	12	0,25	855,00	6,71	6,71
1304	Left Tail	1	8	Besi		285	12	0,25	855,00	6,71	6,71
1309	Center Tail	3	24	Besi		83	12	0,25	249,00	1,95	5,86

LAMPIRAN 4

Perhitungan Frekuensi Perpindahan Material



Dept. Material dan pemotongan ke Dept. Las

No	No. Part	Nama Part	Jml/ Mesin	Jml/ Bln (x 8)	Lot Pemindahan	Frekuensi /Produk	Frekuensi /Bulan	Massa/ Produk	Frekuensi x Massa/Bln		
1	0601	Bottom Plate Cover	1	8	1	1	8	8,47	104,25		
2	0602	Top Plate Cover	1	8				4,56			
3	0728	Bearing Housing Jumper	2	16				7,85			
4	0736	Edge Guide	2	16	2	1	8	1,62	75,80		
5	0962	Timing Chain	1	8	1	1	8	1,06	8,48		
6	1126	Base Lamp Cover	1	8	1	1	8	4,12	391,50		
7	1140	Plate Table	1	8				12,68			
8	1138	L-Plate, U-Plate, Shaft Table	5	40				5		26,11	
9	1139	Plate Table Edge	3	24	3			5,86			
10	1133	Travo Base	1	8	1			0,16			
11	1202	Left Box Panel Up	1	8	1	1	8	3,51	350,50		
12	1203	Left Box Panel Side	2	16	2			3,07			
13	1204	Left Box Panel Back	1	8	1			3,65			
14	1205	Left Box Panel Bottom	1	8				3,51			
15	1206	Left Door Twin 1	1	8				2,45			
16	1207	Left Door Twin 2	1	8				2,45			
17	1208	Left Door	1	8				2,45			
18	1213	Right Box Panel Up	1	8				3,51			
19	1214	Right Box Panel Side	2	16	2			3,07			
20	1215	Right Box Panel Back	1	8	1			3,65			
21	1216	Right Box Panel Bottom	1	8				3,51			
22	1217	Right Box Panel Front	1	8				4,09			
23	1218	Right Door Twin 1	1	8				2,45			
24	1219	Right Door Twin 2	1	8				2,45			
25	1209	Frame Left 1	4	32	4	1	8	26,75	616,51		
26	1210	Frame Left 2	8	64	8			31,15			
27	1211	Frame Left 3	8	64	7,91						
28	1215	Frame Right 1	4	32	4			3,65			
29	1216	Frame Right 2	8	64	3,51						
30	1217	Frame Right 3	8	64	8			4,09			
31	1303	Right Tail	1	8	1	1	8	6,71	107,39		
32	1304	Left Tail	1	8				6,71			
		Total							1654,43		

Dept. Material dan pemotongan ke Dept. Bubut

No	No. Part	Nama Part	Jml/ Mesin	Jml/ Bln (x 8)	Lot Pemindahan	Frekuensi /Produk	Frekuensi /Bulan	Massa/ Produk	Frekuensi x Massa/Bln				
1	0110	Plastic Feeder Rod	1	8	1	1	8	1,74	40,11				
2	0116	Plastic Feeder Spindle	1	8				2,04					
3	0118	Stainless Steel Rod	1	8				1,24					
4	0201	Shaft Steel	1	8				7,55					
5	0213	Bushing Shaft	1	8		1,21	1	8	0,27	77,89			
6	0221	Sealer Move	1	8		0,30							
7	0223	Grill Move	1	8		0,30							
8	0228	Bushing Hex. Clamp	1	8		0,11							
9	0231	Bushing Move	1	8		4,67			1		8	9,25	129,57
10	0301	Shaft Lever	1	8		0,99							
11	0307	Weight Knife	1	8	0,79								
12	0308	Shaft Weight Knife	1	8	0,28								
13	0309	Pull Rod U-Lever To Excentre	1	8	2	1	8	0,22	60,42				
14	0318	Bearing Bushing Housing	2	16	2			7,55					
15	0321	Housing Bearing Bushing Shim	2	16	2			7,17					
16	0401	Pully Shaft	1	8	2			9,25					
17	0501	Shaft Lever Welder	1	8	1	1	8	0,99	149,60				
18	0508	Sealer Weight	1	8				0,79					
19	0508A	Shaft Weight Sealer	1	8				0,22					
20	0515	Adjustable Arm U-Lever To U-Lever	1	8				0,28					
21	0526	Bushing Shim	2	16	2	1	8	5,10	55,73				
22	0529	Bushing (Ring/Connector)	2	16	4			1,86					
23	0609	Plate Bushing	4	32	1			8		5,32	133,18		
24	0616	Base Plate Shaft	1	8						0,28			
25	0703	Front Bottom Shaft	1	8	2	1	8	0,22					
26	0708	Bushing Lever Knife	2	16				1,01					
27	0712	Bushing Knife Lever	2	16	1	1	8	2,96					
28	0714	Slider Plate Shaft	1	8				5,47					
29	0715	Adjustment Bolt	2	16	2	2	8	0,59					
30	0718	Front Top Shaft	1	8				0,15					
31	0760	Bearing Housing Cover	2	16	4	4	8	0,20					
32	0761A	Bushing	2	16				0,45					
33	0767	Cup Shoe	4	32	1	1	8						
34	0768	Crank Shaft Rubber Roll	1	8									

35	0813	Left Bolt Pin	1	8	1	1	8	0,15	71,66
36	0820	Sealer Adjustment Bolt	2	16	2			6,31	
37	0822	Sealer Spindel	2	16				0,62	
38	0823	Sealer Slinding Bar	2	16				1,73	
39	0827	Right Bolt Pin	1	8	1	1	8	0,15	110,02
40	0909	Front Tail Roll	1	8				1,99	
41	0919	Roll To Plate	1	8				1,99	
42	0930	Tail Shaft	1	8				0,50	
43	0937	Top Tail Roll	1	8				2,04	
44	0942	Bottom Tail Roll	1	8				2,04	
45	0946	Shaft To Tail Rubber Roll	1	8				1,14	
46	0967	Tail Shaft	2	16	2	1	8	4,07	32,77
47	1001	Pinion Gear Shaft	1	8	1			2,98	
48	1017	Bushing	1	8				0,12	
49	1024	Gear Rack Brass Bushing	1	8				0,21	
50	1027	Excentre Pin	1	8				0,15	
51	1049	Bar Gear Shaft	1	8				0,62	
52	1106	Variable Roller	1	8				1,99	
53	1107	Variable Spindle	2	16	2	1	8	2,31	154,11
54	1108	Variable Shaft	4	32	4			6,70	
55	1122	Hand Wheel Shaft	1	8	1			0,06	
56	1128	Variable Bushing Srew	2	16	2			0,15	
57	1134	Variable Screw 2	1	8	1			1,15	
58	1141	Pipe Table	2	16	2			4,93	
59	1142	Base Table	1	8	1			1,97	
		Total							1015,06

Dept. Material dan pemotongan ke Dept. Mill

No	No. Part	Nama Part	Jml/ Mesin	Jml/ Bln (x 8)	Lot Pemindahan	Frekuensi /Produk	Frekuensi /Bulan	Massa/ Produk	Frekuensi x Massa/Bln		
1	0108	Switch Hanger	1	8	1	1	8	0,38	18,09		
2	0119	Bearing Housing	2	16	2			1,88			
3	0216	Shaft Housing	1	8	1	1	8	2,83	67,82		
4	0220	Plate Move	1	8				5,65			
5	0531	Sealer Scackle Plate	4	32	4	1	8	1,07	9,67		
6	0538	Pillow Block Plate	4	32				0,14			
7	0614	Shaft Supports	2	16	2	1	8	4,71	37,68		
8	0722	U-Plate	1	8	1	1	8	2,47	157,71		
9	0730	Brass Plate	2	16	2			0,25			
10	0734	Brass Plate	2	16				0,25			
11	0735	Brass Plate	2	16				0,25			
12	0776	Right Slider Plate	1	8	1	1	8	8,24	41,82		
13	0777	Left Slider Plate	1	8				8,24			
14	0804	Heater / Isolator Cover Plate	1	8				0,57			
15	0805	Teflon Plate Clamp	1	8	2	1	8	0,57	29,64		
16	0808	Teflon Plate Clamp	2	16				1,88			
17	0812	Heater / Isolator Cover Plate	1	8	1	1	8	0,57	55,26		
18	0821	Sealer Top Plate	1	8	2			1,65			
19	0920	Motor Support Plate	2	16				0,72			
20	0921	Motor Base Plate	2	16	2	1	8	2,51	80,45		
21	0923	Coil Spring Edge	2	16				0,47			
22	1104	Lamp Base	1	8	1	1	8	3,14	80,45		
23	1113	Variable Plate	1	8				0,94			
24	1114	Variable Plate	1	8				0,94			
25	1115	Variable Shaft Base	2	16	2	1	8	1,88	80,45		
26	1301	Up Tail	1	8	1			2,10			
27	1302	Down Tail	1	8				2,10			
28	1309	Center Tail	3	24	3			5,86			
		Total							498,15		

Gudang Material Cor ke Dept. Bubut

No	No. Part	Nama Part	Jml/ Mesin	Jml/ Bln (x 8)	Lot Pemindahan	Frekuensi /Produk	Frekuensi /Bulan	Massa/ Produk	Frekuensi x Massa/Bln
1	0211	Bearing Housing Sealer Excentre	1	8	1	1	8	0,93	7,43
2	0402	Big Pully V-Belt	1	8	1	1	8	42,14	443,42
3	0406	Hand Pully	1	8				3,87	
4	0410	Small Lower Chainwheel	1	8				1,16	
5	0414	Small Pully V-Belt	1	8	2	1	8	8,26	8,32
6	0709	Knife Lever	2	16				1,04	
7	0949	Big Timing Gear	1	8				2,57	
8	0955	Little Timing Gear	1	8	1	1	8	5,78	66,78
		Total							525,96

Gudang Material Cor ke Dept. Mill

No	No. Part	Nama Part	Jml/ Mesin	Jml/ Bln (x 8)	Lot Pemindahan	Frekuensi /Produk	Frekuensi /Bulan	Massa/ Produk	Frekuensi x Massa/Bln
1	0209	Bearing Housing Sealer	1	8	1	1	8	3,37	31,13
2	0229	Bearing Housing To Move	1	8				0,52	
3	0302	Adjustable Lever	1	8				7,36	
4	0306	Lever Knife	1	8				7,36	
5	0311	U-Lever	2	16	2	1	8	16,97	379,57
6	0316	Adjustable Lever	1	8	7,36				
7	0317	Lever Knife	1	8	7,36				
8	0320	Bearing Bushing To Knife	2	16	1,04				
9	0507	Sealer Lever	1	8	1	1	8	7,36	135,08
10	0511	U-Lever	1	8				8,49	
11	0527	Bearing Housing Sealer	2	16				1,04	
12	0761	Bearing Housing Crank Roll	2	16	2	1	8	39,42	315,36
13	0905	Crank Roller	2	16		1	8	1,86	304,85
14	0918	Crank	2	16				3,61	
15	0944	Tail Base Plate	2	16				30,66	
16	0970	Tail Crank	2	16				1,97	
		Total							1166,00

Gudang Material Cor ke Dept. Pengecatan

No	No. Part	Nama Part	Jml/ Mesin	Jml/ Bln (x 8)	Lot Pemindahan	Frekuensi /Produk	Frekuensi /Bulan	Massa/ Produk	Frekuensi x Massa/Bln
1	0122	Plastic Feeder Brackle Right	1	8	1	1	8	3,65	58,40
2	0122A	Plastic Feeder Brackle Left	1	8				3,65	
3	0701	Base Plate	1	8		1	8	66,00	
4	0773	Right Sliding Base Plate	1	8				13,69	
5	0774	Left Sliding Base Plate	1	8	2	1	8	13,69	384,00
6	0901	Tail Frame	2	16				48,00	
7	1015	Left Bearing Housing Flange	1	8		1	8	7,88	
8	1020	Right Bearing Housing Flange	1	8				7,88	
9	1042	Elephant Nose (Bearing Housing)	1	8				7,00	
		Total							1371,54

Gudang Material Cor ke Dept. Perakitan

No	No. Part	Nama Part	Jml/ Mesin	Jml/ Bln (x 8)	Lot Pemindahan	Frekuensi /Produk	Frekuensi /Bulan	Massa/ Produk	Frekuensi x Massa/Bln
1	0101	Frame Front	1	8	1	1	8	48,00	2688,00
2	0102	Frame Right	1	8				120,00	
3	0106	Frame Left	1	8				120,00	
4	0124	Frame Rear	1	8				48,00	
		Total							2688,00

Dept. Las ke Dept. Mill

No	No. Part	Nama Part	Jml/ Mesin	Jml/ Bln (x 8)	Lot Pemindahan	Frekuensi /Produk	Frekuensi /Bulan	Massa/ Produk	Frekuensi x Massa/Bln
1	0728	Bearing Housing Jumper	2	16	2	1	8	7,85	75,80
2	0736	Edge Guide	2	16				1,62	
3	1138	L-Plate, U-Plate, Shaft Table	5	40	5	1	8	26,11	255,78
4	1139	Plate Table Edge	3	24	3			5,86	
		Total							331,58

Dept. Las ke Dept. Pengecatan

No	No. Part	Nama Part	Jml/ Mesin	Jml/ Bln (x 8)	Lot Pemindahan	Frekuensi /Produk	Frekuensi /Bulan	Massa/ Produk	Frekuensi x Massa/Bln
1	0601	Bottom Plate Cover	1	8	1	1	8	8,47	104,25
2	0602	Top Plate Cover	1	8				4,56	
3	0962	Timing Chain	1	8		1	8	1,06	8,48
4	1126	Base Lamp Cover	1	8				4,12	
5	1133	Travo Base	1	8		1	8	0,16	135,72
6	1140	Plate Table	1	8				12,68	
7	1200	BOX PANEL	1	8		1	8	7,00	56,00
8	1300	TAIL PLASTIC	1	8		1	8	7,00	56,00
		Total							360,45

Dept. Bubut ke Dept. Mill

No	No. Part	Nama Part	Jml/ Mesin	Jml/ Bln (x 8)	Lot Pemindahan	Frekuensi /Produk	Frekuensi /Bulan	Massa/ Produk	Frekuensi x Massa/Bln
1	0118	Stainless Steel Rod	1	8	1	1	8	1,24	9,93
2	0211	Bearing Housing Sealer Excentre	1	8		1	8	0,93	19,23
3	0213	Bushing Shaft	1	8				1,21	
4	0221	Sealer Move	1	8				0,27	
5	0307	Weight Knife	1	8		1	8	9,25	73,98
6	0402	Big Pulley V-Belt	1	8		1	8	42,14	443,42
7	0406	Hand Pulley	1	8				3,87	
8	0410	Small Lower Chainwheel	1	8				1,16	
9	0414	Small Pulley V-Belt	1	8				8,26	
10	0508	Sealer Weight	1	8		1	8	9,25	73,98
11	0909	Front Tail Roll	1	8		1	8	1,99	52,32
12	0919	Roll To Plate	1	8				1,99	
13	0949	Big Timing Gear	1	8				2,57	
14	1001	Pinion Gear Shaft	1	8		1	8	2,98	23,87
15	1141	Pipe Table	2	16	2	1	8	4,93	39,46
		Total							736,19

Dept. Bubut ke Dept. Pengecatan

No	No. Part	Nama Part	Jml/ Mesin	Jml/ Bln (x 8)	Lot Pemindahan	Frekuensi /Produk	Frekuensi /Bulan	Massa/ Produk	Frekuensi x Massa/Bln
1	0201	Shaft Steel	1	8	1	1	8	7,55	85,45
2	0216	Shaft Housing	1	8				2,83	
3	0223	Grill Move	1	8				0,30	
4	0301	Shaft Lever	1	8				4,67	
5	0308	Shaft Weight Knife	1	8		1	8	0,99	51,59
6	0309	Pull Rod U-Lever To Excentre	1	8				0,79	
7	0401	Pulley Shaft	1	8		1	8	7,55	60,42
8	0501	Shaft Lever Welder	1	8		1	8	7,17	71,62
9	0508A	Shaft Weight Sealer	1	8				0,99	
10	0515	Adjustable Arm U-Lever To U-Lever	1	8				0,79	
11	0709	Knife Lever	2	16	2	1	8	1,04	13,06
12	0760	Bearing Housing Cover	2	16				0,59	
13	0820	Sealer Adjustment Bolt	2	16		1	8	6,31	50,51
14	0955	Little Timing Gear	1	8	1	1	8	5,78	272,56
15	1122	Hand Wheel Shaft	1	8				0,06	
16	1128	Variable Bushing Srew	2	16				0,15	
17	1138	L-Plate, U-Plate, Shaft Table	5	40				26,11	
18	1142	Base Table	1	8	1			1,97	
		Total							605,21

Dept. Bubut ke Dept. Perakitan

No	No. Part	Nama Part	Jml/ Mesin	Jml/ Bln (x 8)	Lot Pemindahan	Frekuensi /Produk	Frekuensi /Bulan	Massa/ Produk	Frekuensi x Massa/Bln
1	0228	Bushing Hex. Clamp	1	8	1	1	8	0,30	3,26
2	0231	Bushing Move	1	8				0,11	
3	0318	Bearing Bushing Housing	2	16	2	1	8	0,28	4,00
4	0321	Housing Bearing Bushing Shim	2	16				0,22	
5	0526	Bushing Shim	2	16		1	8	0,22	4,00
6	0529	Bushing (Ring/Connector)	2	16				0,28	
7	0609	Plate Bushing	4	32	4	1	8	5,10	6,97
8	0616	Base Plate Shaft	1	8	1			1,86	
9	0703	Front Bottom Shaft	1	8	2	1	8	5,32	128,44
10	0708	Bushing Lever Knife	2	16				0,28	
11	0712	Bushing Knife Lever	2	16				0,22	
12	0714	Slider Plate Shaft	1	8				1	
13	0715	Adjustment Bolt	2	16	2			2,96	
14	0718	Front Top Shaft	1	8	1			5,47	
15	0761A	Bushing	2	16	2			0,15	
16	0767	Cup Shoe	4	32	4			0,20	
17	0768	Crank Shaft Rubber Roll	1	8	1			0,45	

18	0813	Left Bolt Pin	1	8	1	1	8	0,15	21,15
19	0822	Sealer Spindel	2	16	2			0,62	
20	0823	Sealer Slinding Bar	2	16				1,73	
21	0827	Right Bolt Pin	1	8	1	1	8	0,15	78,25
22	0930	Tail Shaft	1	8				0,50	
23	0937	Top Tail Roll	1	8				2,04	
24	0942	Bottom Tail Roll	1	8				2,04	
25	0946	Shaft To Tail Rubber Roll	1	8	2	1	8	1,14	8,90
26	0967	Tail Shaft	2	16				4,07	
27	1017	Bushing	1	8				0,12	
28	1024	Gear Rack Brass Bushing	1	8				0,21	
29	1027	Excentre Pin	1	8	1	1	8	0,15	97,19
30	1049	Bar Gear Shaft	1	8				0,62	
31	1106	Variable Roller	1	8				1,99	
32	1107	Variable Spindle	2	16				2,31	
33	1108	Variable Shaft	4	32	4	1	8	6,70	352,15
34	1134	Variable Screw 2	1	8	1			1,15	
		Total							

Dept. Mill ke Dept. Las

No	No. Part	Nama Part	Jml/ Mesin	Jml/ Bln (x 8)	Lot Pemindahan	Frekuensi /Produk	Frekuensi /Bulan	Massa/ Produk	Frekuensi x Massa/Bln
1	1301	Up Tail	1	8	1	1	8	2,10	80,45
2	1302	Down Tail	1	8				2,10	
3	1309	Center Tail	3	24				5,86	
		Total							80,45

Dept. Mill ke Dept. Bubut

No	No. Part	Nama Part	Jml/ Mesin	Jml/ Bln (x 8)	Lot Pemindahan	Frekuensi /Produk	Frekuensi /Bulan	Massa/ Produk	Frekuensi x Massa/Bln
1	0216	Shaft Housing	1	8	1	1	8	2,83	22,61
2	1138	L-Plate, U-Plate, Shaft Table	5	40	5	1	8	26,11	208,87
		Total							231,48

Dept. Mill ke Dept. Pengecatan

No	No. Part	Nama Part	Jml/ Mesin	Jml/ Bln (x 8)	Lot Pemindahan	Frekuensi /Produk	Frekuensi /Bulan	Massa/ Produk	Frekuensi x Massa/Bln				
1	0108	Switch Hanger	1	8	1	1	8	0,38	18,09				
2	0119	Bearing Housing	2	16	2			1,88					
3	0209	Bearing Housing Sealer	1	8	1			1		8	3,37	93,45	
4	0211	Bearing Housing Sealer Excentre	1	8		0,93							
5	0213	Bushing Shaft	1	8		1,21							
6	0220	Plate Move	1	8		5,65							
7	0229	Bearing Housing To Move	1	8		0,52							
8	0302	Adjustable Lever	1	8		1	8		7,36		453,56		
9	0306	Lever Knife	1	8					7,36				
10	0307	Weight Knife	1	8					9,25				
11	0311	U-Lever	2	16					2				16,97
12	0316	Adjustable Lever	1	8					1				7,36
13	0317	Lever Knife	1	8	7,36								
14	0320	Bearing Bushing To Knife	2	16	2	1	8	1,04	443,42				
15	0402	Big Pully V-Belt	1	8	1			8		42,14			
16	0406	Hand Pully	1	8						3,87			
17	0410	Small Lower Chainwheel	1	8						1,16			
18	0414	Small Pully V-Belt	1	8	1			8		8,26	218,74		
19	0507	Sealer Lever	1	8						7,36			
20	0508	Sealer Weight	1	8						9,25			
21	0511	U-Lever	1	8		8,49							
22	0527	Bearing Housing Sealer	2	16	2	1	8	1,04	37,68				
23	0531	Sealer Scackle Plate	4	32	4			1,07					
24	0538	Pillow Block Plate	4	32				0,14					
25	0614	Shaft Supports	2	16	2	1	8	4,71	542,82				
26	0722	U-Plate	1	8	1	1	8	2,47					
27	0728	Bearing Housing Jumper	2	16	2			7,85					
28	0736	Edge Guide	2	16				1,62					
29	0761	Bearing Housing Crank Roll	2	16	1			39,42					
30	0776	Right Slider Plate	1	8				8,24					
31	0777	Left Slider Plate	1	8				8,24					

32	0905	Crank Roller	2	16	2	1	8	1,86	355,04
33	0918	Crank	2	16				3,61	
34	0920	Motor Support Plate	2	16				0,72	
35	0921	Motor Base Plate	2	16				2,51	
36	0923	Coil Spring Edge	2	16				0,47	
37	0944	Tail Base Plate	2	16				30,66	
38	0949	Big Timing Gear	1	8	1	1	8	2,57	141,63
39	0970	Tail Crank	2	16	2			1,97	
40	1104	Lamp Base	1	8	1			3,14	
41	1113	Variable Plate	1	8				0,94	
42	1114	Variable Plate	1	8				0,94	
43	1115	Variable Shaft Base	2	16	2			1,88	
44	1139	Plate Table Edge	3	24	3			5,86	
45	1141	Pipe Table	2	16	2			4,93	
		Total							2304,42

Dept. Mill ke Dept. Perakitan

No	No. Part	Nama Part	Jml/ Mesin	Jml/ Bln (x 8)	Lot Pemindahan	Frekuensi /Produk	Frekuensi /Bulan	Massa/ Produk	Frekuensi x Massa/Bln		
1	0118	Stainless Steel Rod	1	8	1	1	8	1,24	9,93		
2	0221	Sealer Move	1	8		1	8	0,27	2,13		
3	0730	Brass Plate	2	16		2	1	8	0,25	6,05	
4	0734	Brass Plate	2	16	0,25						
5	0735	Brass Plate	2	16	0,25						
6	0804	Heater / Isolator Cover Plate	1	8	1	1	8	0,57	41,82		
7	0805	Teflon Plate Clamp	1	8				0,57			
8	0808	Teflon Plate Clamp	2	16	2			1,88			
9	0812	Heater / Isolator Cover Plate	1	8	1			0,57			
10	0821	Sealer Top Plate	1	8				1,65			
11	0909	Front Tail Roll	1	8	1		8	1,99	31,77		
12	0919	Roll To Plate	1	8				1,99			
13	1001	Pinion Gear Shaft	1	8	1	8	2,98	23,87			
		Total							115,57		

Dept. Pengecatan ke Dept. Perakitan

No	No. Part	Nama Part	Jml/ Mesin	Jml/ Bln (x 8)	Lot Pemindahan	Frekuensi /Produk	Frekuensi /Bulan	Massa/ Produk	Frekuensi x Massa/Massa
1	0101	Frame Front	1	8	1	1	8	48,00	2778,38
2	0102	Frame Right	1	8				120,00	
3	0106	Frame Left	1	8				120,00	
4	0108	Switch Hanger	1	8				0,38	
5	0110	Plastic Feeder Rod	1	8				1,74	
6	0119	Bearing Housing	2	16	2	1	8	1,88	178,89
7	0122	Plastic Feeder Brackle Right	1	8				3,65	
8	0122A	Plastic Feeder Brackle Left	1	8				3,65	
9	0124	Frame Rear	1	8				48,00	
10	0201	Shaft Steel	1	8				7,55	
11	0209	Bearing Housing Sealer	1	8	1	1	8	3,37	505,15
12	0211	Bearing Housing Sealer Excentre	1	8				0,93	
13	0213	Bushing Shaft	1	8				1,21	
14	0216	Shaft Housing	1	8				2,83	
15	0220	Plate Move	1	8				5,65	
16	0223	Grill Move	1	8				0,30	
17	0229	Bearing Housing To Move	1	8				0,52	
18	0301	Shaft Lever	1	8				4,67	
19	0302	Adjustable Lever	1	8				7,36	
20	0306	Lever Knife	1	8				7,36	
21	0307	Weight Knife	1	8	2	1	8	9,25	503,84
22	0308	Shaft Weight Knife	1	8				0,99	
23	0309	Pull Rod U-Lever To Excentre	1	8				0,79	
24	0311	U-Lever	2	16				16,97	
25	0316	Adjustable Lever	1	8				7,36	
26	0317	Lever Knife	1	8	1	1	8	7,36	
27	0320	Bearing Bushing To Knife	2	16				1,04	
28	0401	Pully Shaft	1	8				7,55	
29	0402	Big Pully V-Belt	1	8				42,14	
30	0406	Hand Pully	1	8	1	1	8	3,87	503,84
31	0410	Small Lower Chainwheel	1	8				1,16	
32	0414	Small Pully V-Belt	1	8				8,26	

33	0501	Shaft Lever Welder	1	8	1	1	8	7,17	290,35
34	0507	Sealer Lever	1	8				7,36	
35	0508	Sealer Weight	1	8				9,25	
36	0508A	Shaft Weight Sealer	1	8				0,99	
37	0511	U-Lever	1	8				8,49	
38	0515	Adjustable Arm U-Lever To U-Lever	1	8	2	1	8	0,79	141,93
39	0527	Bearing Housing Sealer	2	16				1,04	
40	0531	Sealer Scackle Plate	4	32				1,07	
41	0538	Pillow Block Plate	4	32				0,14	
42	0601	Bottom Plate Cover	1	8				8,47	
43	0602	Top Plate Cover	1	8	2	1	8	4,56	1302,88
44	0614	Shaft Supports	2	16				4,71	
45	0701	Base Plate	1	8				66,00	
46	0709	Knife Lever	2	16				1,04	
47	0722	U-Plate	1	8				2,47	
48	0728	Bearing Housing Jumper	2	16	1	1	8	7,85	50,51
49	0736	Edge Guide	2	16				1,62	
50	0760	Bearing Housing Cover	2	16				0,59	
51	0761	Bearing Housing Crank Roll	2	16				39,42	
52	0773	Right Sliding Base Plate	1	8				13,69	
53	0774	Left Sliding Base Plate	1	8	1	1	8	13,69	793,75
54	0776	Right Slider Plate	1	8				8,24	
55	0777	Left Slider Plate	1	8				8,24	
56	0820	Sealer Adjustment Bolt	2	16				6,31	
57	0901	Tail Frame	2	16	2	1	8	48,00	182,14
58	0905	Crank Roller	2	16				1,86	
59	0918	Crank	2	16				3,61	
60	0920	Motor Support Plate	2	16				0,72	
61	0921	Motor Base Plate	2	16				2,51	
62	0923	Coil Spring Edge	2	16	1	1	8	0,47	512,92
63	0944	Tail Base Plate	2	16				30,66	
64	0949	Big Timing Gear	1	8				2,57	
65	0955	Little Timing Gear	1	8				5,78	
66	0962	Timing Chain	1	8				1,06	
67	0970	Tail Crank	2	16	1	1	8	1,97	56,00
68	1015	Left Bearing Housing Flange	1	8				7,88	
69	1020	Right Bearing Housing Flange	1	8				7,88	
70	1042	Elephant Nose (Bearing Housing)	1	8				7,00	
71	1104	Lamp Base	1	8				3,14	
72	1113	Variable Plate	1	8	1	1	8	0,94	56,00
73	1114	Variable Plate	1	8				0,94	
74	1115	Variable Shaft Base	2	16				1,88	
75	1122	Hand Wheel Shaft	1	8				0,06	
76	1126	Base Lamp Cover	1	8				4,12	
77	1128	Variable Bushing Srew	2	16	1	1	8	0,15	56,00
78	1133	Travo Base	1	8				0,16	
79	1134	Variable Screw 2	1	8				1,15	
80	1138	L-Plate, U-Plate, Shaft Table	5	40				26,11	
81	1139	Plate Table Edge	3	24				5,86	
82	1140	Plate Table	1	8	1	1	8	12,68	56,00
83	1141	Pipe Table	2	16				4,93	
84	1142	Base Table	1	8				1,97	
85	1200	BOX PANEL	1	8				7,00	
86	1300	TAIL PLASTIC	1	8				7,00	
Total									7352,75

Dept. Perakitan Ke Dept. Pengecatan

No	No. Part	Nama Part	Jml/ Mesin	Jml/ Bln (x 8)	Lot Pemindahan	Frekuensi /Produk	Frekuensi /Bulan	Massa/ Produk	Frekuensi x Massa/Bln
1	0101	Frame Front	1	8	1	1	8	48,00	2688,00
2	0102	Frame Right	1	8				120,00	
3	0106	Frame Left	1	8				120,00	
4	0124	Frame Rear	1	8				48,00	
Total									2688,00

LAMPIRAN 5

Gambar *CRAFT* Alternatif 1 dan Alternatif 2

Gambar Usulan Tata letak Alternatif 1 dan Alternatif 2



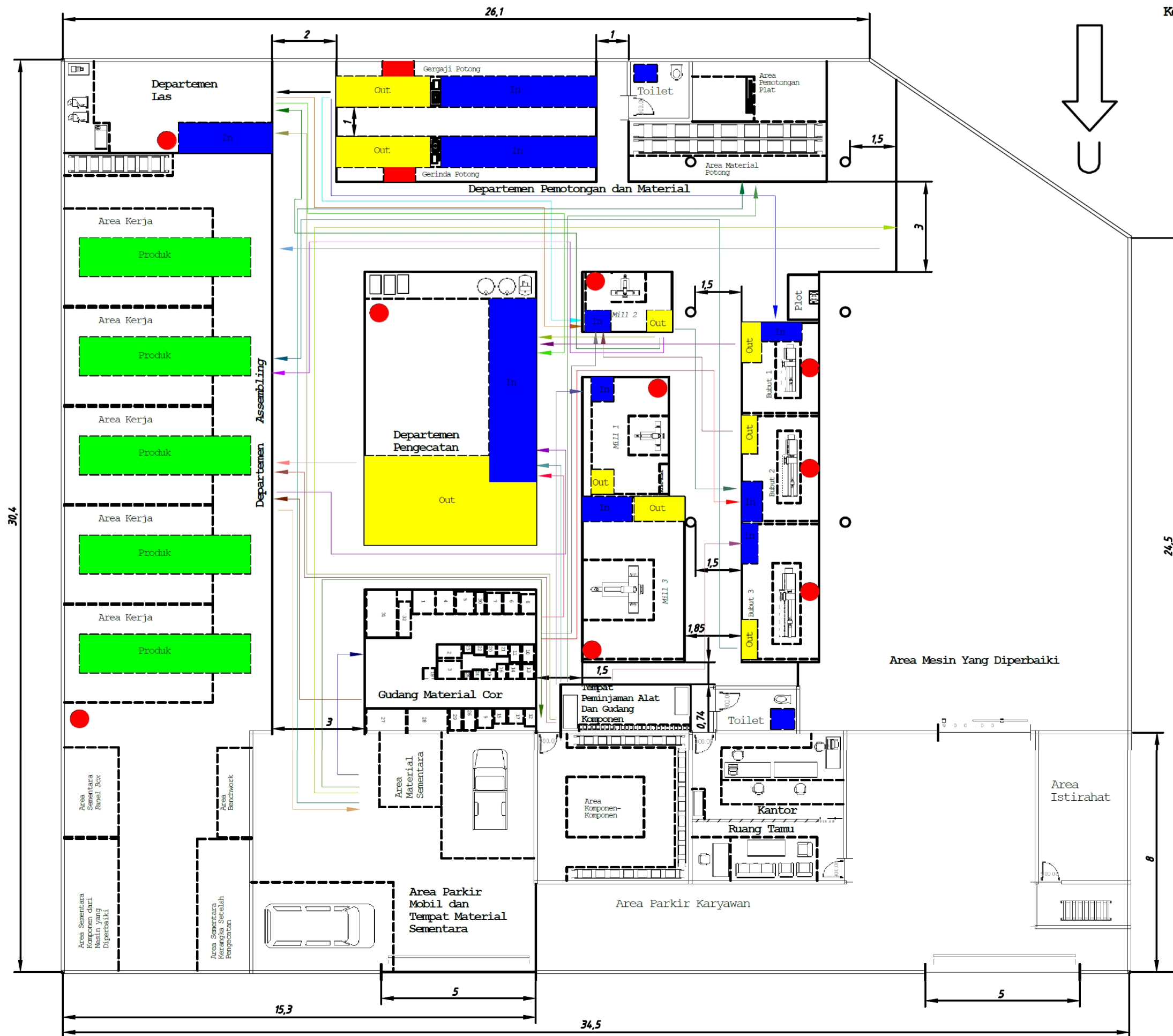
Gambar Usulan Tata letak Alternatif 1



Hasil CRAFT WIN QSB

Total Cost = 246417.60 (by Rectilinear Distance)

	Column																																			
Row	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	
1	C	C	C	C	C	A	A	A	A	A	A	A	A	A	A	A	A	A	J	J	A	A	A	I	I	I	I	I	J	J	J	J	J	J	J	
2	C				C	A												A	J	J	A		A	I					I	J					J	
3	C				C	A													A	A			A	I						I	J				J	
4	C	C	C	C	C	C	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	I							I	J	J		J	
5	G	G	G	G	G	G	G	F	F	F	F	E	E	E	E	H	H	I	I	I	I	I	I	I								I	I	J	J	
6	G						G	F		F	E				E	D	I																	I	J	
7	G						G	F			F	E			E	D	D	I																	I	
8							G	F			F	E			E	D	D	I																	I	
9							G	F			F	E			E	D	D	I																	I	
10							G	F			F	E			E	D	D	I																	I	
11							G	F			F	E	E	D		D	I																		I	
12							G	F			F	E	E	D		D	I																		I	
13							G	F			F	E	E	D		D	I																		I	
14							G	F			F	E	E	D		D	I																		I	
15							G	F			F	E	E	D		D	I																		I	
16							G	F			F	E	E	D	D	D	I																		I	
17							G	F	F	F	F	E	E	I	I	I																			I	
18							G	B	B	B	B	B	B	I																					I	
19							G	B					B	I																						I
20							G	B				B	I						I	I	I		I	I											I	
21							G	B				B	I					I	J	J	J	I	J	J	I										I	
22							G	B	B	B	B	B	B	I	I	I	I	J			J	I	J	J	I	I	I	I	I	I	I	I	I	I	I	
23							G	J	J	J	J	J	J	J	J	J	J					J			J	J	J	J	J	J	J	J	J	J	J	
24							G	J																												J
25							G	J																												J
26							G	J																												J
27							G	J																												J
28						G	J																													J
29						G	J																													J
30	G	G	G	G	G	G	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J



Keterangan:

- Sekat Korden
- Dinding Semen
- Sekat Ruang
- Batas Departemen
- Batas Area Kerja
- D. Mat. Pot ke D. Las
- D. Mat. Pot ke D. But
- D. Mat. Pot ke D. Mill
- G. Cor ke D. But
- G. Cor ke D. Mill
- G. Cor ke D. Cat
- G. Cor ke D. Ass
- D. Las ke D. Mill
- D. Las ke D. Cat
- D. But ke D. Mill
- D. But ke D. Cat
- D. But ke D. Ass
- D. Mill ke D. Las
- D. Mill ke D. Cat
- D. Mill ke D. Ass
- D. Mill ke D. But
- D. Cat ke D. Ass
- D. Ass ke D. Cat
- Tempat Sampah
- Parkir Mobil ke Gudang Komponen
- Parkir Mobil ke Gudang Cor
- Parkir Mobil ke D. Mat. Pot
- Parkir Mobil ke Area Mesin Yang Diperbaiki
- D. Ass ke Parkir Mobil
- Gudang Komponen ke D. Ass
- Gudang Komponen ke D. Las
- Gudang Komponen ke D. Mat. Pot
- Gudang Komponen ke D. Cat
- Gudang Komponen ke D. Mill
- Gudang Komponen ke D. But
- Area Mesin Yang Akan Diperbaiki ke D. Ass

Gambar Usulan Tata letak Alternatif 2



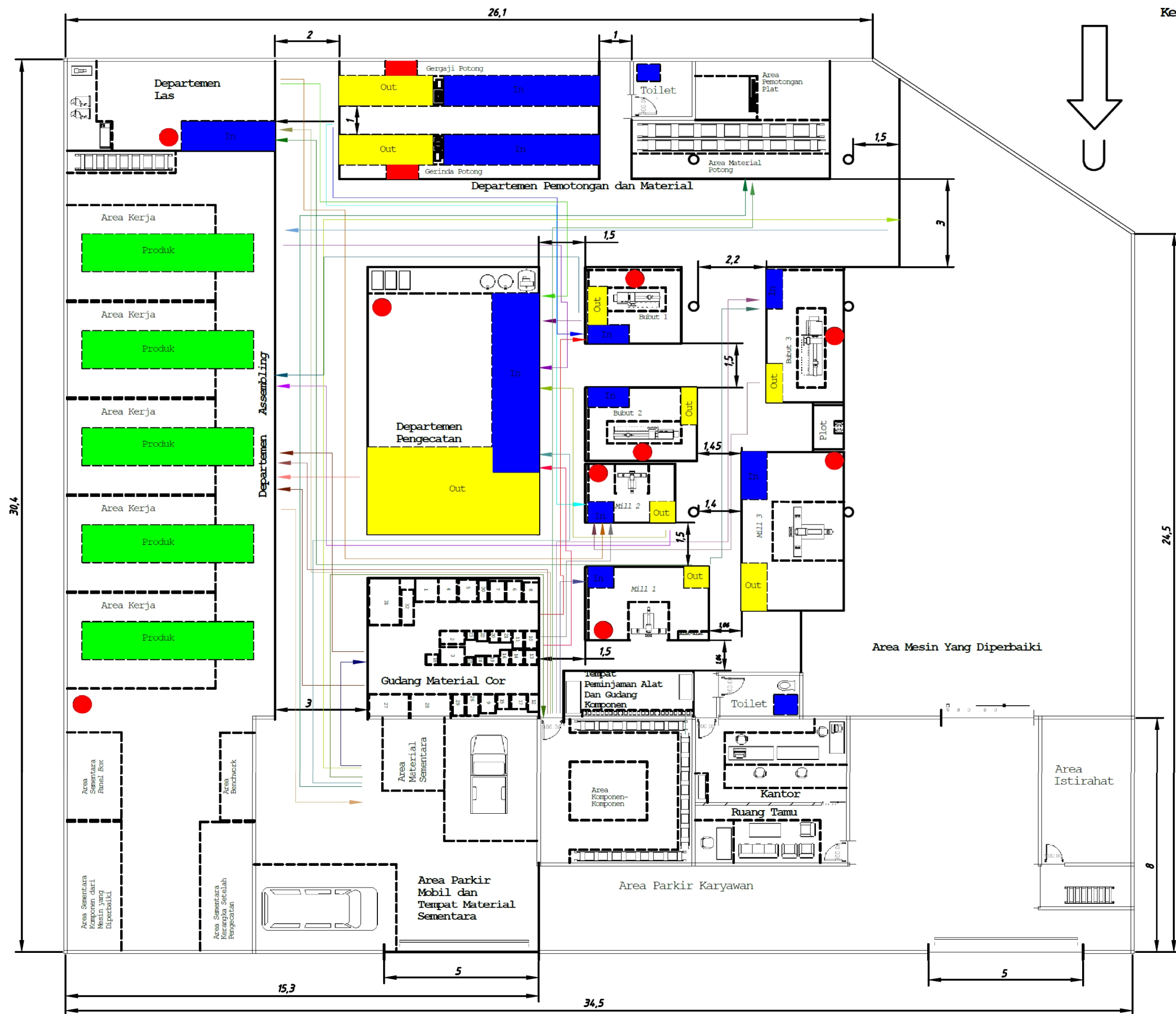
Hasil CRAFT WIN QSB

Total Cost = 257579.70 (by Rectilinear Distance)

Column

Row 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35

1	C	C	C	C	C	A	A	A	A	A	A	A	A	A	A	A	J	J	A	A	A	I	I	I	I	J	J	J	J	J	J	
2	C				C	A											A	J	J	A		A	I				I	J			J	
3	C				C	A											A	A			A	I				I	J				J	
4	C	C	C	C	C	C	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	I					I	J	J		J
5	G	G	G	G	G	G	F	F	F	F	D	D	D	D	I	I	I	I	I	I	I	I						I	I	J	J	
6	G						G	F			F	D			D	I														I	J	
7	G						G	F			F	D			D	I															I	
8	G						G	F			F	D			D	I															I	
9	G						G	F			F	D			D	I															I	
10	G						G	F			F	D			D	I															I	
11	G						G	F			F	D	D	D	D	I															I	
12	G						G	F			F	E	E	E	H	I															I	
13	G						G	F			F	E			E	H	I														I	
14	G						G	F			F	E			E	E	I														I	
15	G						G	F			F	E				E	I														I	
16	G						G	F			F	E				E	I														I	
17	G						G	F			F	E				E	I														I	
18	G						G	F			F	E	E			E	I														I	
19	G						G	F	F		F	B	B	E	E	E	I														I	
20	G						G	B	B	B				B	B	B	I			I	I	I			I	I					I	
21	G						G	B							B	I			I	J	J	J	I	J	J	I					I	
22	G						G	B	B	B	B	B	B	B	B	I	I	J			J	I	J	J	I	I	I	I	I	I	I	I
23	G						G	J	J	J	J	J	J	J	J	J	J				J			J	J	J	J	J	J	J	J	J
24	G						G	J																								J
25	G						G	J																								J
26	G						G	J																								J
27	G						G	J																								J
28	G					G	J																									J
29	G					G	J																									J
30	G	G	G	G	G	G	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J



Keterangan:

- Sekat Korden
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- Sekat Ruang
- Batas Departemen
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- D. Mat. Pot ke D. Las
- D. Mat. Pot ke D. But
- D. Mat. Pot ke D. Mill
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- G. Cor ke D. Mill
- G. Cor ke D. Cat
- G. Cor ke D. Ass
- D. Las ke D. Mill
- D. Las ke D. Cat
- D. But ke D. Mill
- D. But ke D. Cat
- D. But ke D. Ass
- D. Mill ke D. Las
- D. Mill ke D. Cat
- D. Mill ke D. Ass
- D. Cat ke D. Ass
- D. Ass ke D. Cat
- Tempat Sampah
- Parkir Mobil ke Gudang Komponen
- Parkir Mobil ke Gudang Cor
- Parkir Mobil ke D. Mat. Pot
- Parkir Mobil ke Area Mesin Yang Diperbaiki
- D. Ass ke Parkir Mobil
- Gudang Komponen ke D. Ass
- Gudang Komponen ke D. Las
- Gudang Komponen ke D. Mat. Pot
- Gudang Komponen ke D. Cat
- Gudang Komponen ke D. Mill
- Gudang Komponen ke D. But
- Area Mesin Yang Akan Diperbaiki ke D. Ass

LAMPIRAN 6

Perhitungan Massa Setiap Komponen Per Bulan X Jarak
Perpindahannya



Tabel Beban Pemindahan

No. Part	Nama Part	Jml/ Mesin	Jml/ Bln (x 8)	Massa (kg) /Produk	Massa (kg) /Bulan
0100	FRAME BLOCK				
0101	Frame Front	1	8	48	384
0102	Frame Right	1	8	120	960
0106	Frame Left	1	8	120	960
0108	Switch Hanger	1	8	0,38	3,01
0110	Plastic Feeder Rod	1	8	1,74	13,90
0116	Plastic Feeder Spindle	1	8	2,04	16,28
0118	Stainless Steel Rod	1	8	1,24	9,93
0119	Bearing Housing	2	16	1,88	30,14
0122	Plastic Feeder Brackle Right	1	8	3,65	29,20
0122A	Plastic Feeder Brackle Left	1	8	3,65	29,20
0124	Frame Rear	1	8	48	384
0200	SPINDLE EXCENTRE				
0201	Shaft Steel	1	8	7,55	60,42
0209	Bearing Housing Sealer	1	8	3,37	26,97
0211	Bearing Housing Sealer Excentre	1	8	0,93	7,43
0213	Bushing Shaft	1	8	1,21	9,67
0216	Shaft Housing	1	8	2,83	22,61
0220	Plate Move	1	8	5,65	45,22
0221	Sealer Move	1	8	0,27	2,13
0223	Grill Move	1	8	0,30	2,42
0228	Bushing Hex. Clamp	1	8	0,30	2,37
0229	Bearing Housing To Move	1	8	0,52	4,16
0231	Bushing Move	1	8	0,11	0,89
0300	SPINDLE LEVER				
0301	Shaft Lever	1	8	4,67	37,38
0302	Adjustable Lever	1	8	7,36	58,87
0306	Lever Knife	1	8	7,36	58,87
0307	Weight Knife	1	8	9,25	73,98
0308	Shaft Weight Knife	1	8	0,99	7,89
0309	Pull Rod U-Lever To Excentre	1	8	0,79	6,33
0311	U-Lever	2	16	16,97	271,56
0316	Adjustable Lever	1	8	7,36	58,87
0317	Lever Knife	1	8	7,36	58,87
0318	Bearing Bushing Housing	2	16	0,28	4,44
0320	Bearing Bushing To Knife	2	16	1,04	16,65
0321	Housing Bearing Bushing Shim	2	16	0,22	3,55
0400	SPINDLE PULLY				
0401	Pully Shaft	1	8	7,55	60,42
0402	Big Pully V-Belt	1	8	42,14	337,12
0406	Hand Pully	1	8	3,87	30,96
0410	Small Lower Chainwheel	1	8	1,16	9,29
0414	Small Pully V-Belt	1	8	8,26	66,05
0500	SPINDLE WELDER				
0501	Shaft Lever Welder	1	8	7,17	57,40
0507	Sealer Lever	1	8	7,36	58,87
0508	Sealer Weight	1	8	9,25	73,98
0508A	Shaft Weight Sealer	1	8	0,99	7,89
0511	U-Lever	1	8	8,49	67,89
0515	Adjustable Arm U-Lever To U-Lever	1	8	0,79	6,33
0526	Bushing Shim	2	16	0,22	3,55
0527	Bearing Housing Sealer	2	16	1,04	16,65
0529	Bushing (Ring/Connector)	2	16	0,28	4,44
0531	Sealer Scackle Plate	4	32	1,07	34,16
0538	Pillow Block Plate	4	32	0,14	4,52
0600	BASE PLATE				
0601	Bottom Plate Cover	1	8	8,47	67,76
0602	Top Plate Cover	1	8	4,56	36,49
0609	Plate Bushing	4	32	5,10	163,36
0614	Shaft Supports	2	16	4,71	75,36
0616	Base Plate Shaft	1	8	1,86	14,89

No. Part	Nama Part	Jml/ Mesin	Jml/ Bln (x 8)	Massa (kg) /Produk	Massa (kg) /Bulan
0700	CUTTER BLOCK				
0701	Base Plate	1	8	66	528
0703	Front Bottom Shaft	1	8	5,32	42,56
0708	Bushing Lever Knife	2	16	0,28	4,44
0709	Knife Lever	2	16	1,04	16,65
0712	Bushing Knife Lever	2	16	0,22	3,55
0714	Slider Plate Shaft	1	8	1,01	8,04
0715	Adjustment Bolt	2	16	2,96	47,35
0718	Front Top Shaft	1	8	5,47	43,78
0722	U-Plate	1	8	2,47	19,78
0728	Bearing Housing Jumper	2	16	7,85	125,60
0730	Brass Plate	2	16	0,25	4,03
0734	Brass Plate	2	16	0,25	4,03
0735	Brass Plate	2	16	0,25	4,03
0736	Edge Guide	2	16	1,62	26,00
0760	Bearing Housing Cover	2	16	0,59	9,47
0761	Bearing Housing Crank Roll	2	16	39,42	630,72
0761A	Bushing	2	16	0,15	2,37
0767	Cup Shoe	4	32	0,20	6,31
0768	Crank Shaft Rubber Roll	1	8	0,45	3,62
0773	Right Sliding Base Plate	1	8	13,69	109,50
0774	Left Sliding Base Plate	1	8	13,69	109,50
0776	Right Slider Plate	1	8	8,24	65,94
0777	Left Slider Plate	1	8	8,24	65,94
0800	WELDER / SEALER				
0804	Heater / Isolator Cover Plate	1	8	0,57	4,52
0805	Teflon Plate	1	8	0,57	4,52
0808	Teflon Plate Clamp	2	16	1,88	30,14
0812	Heater / Isolator Cover Plate	1	8	0,57	4,52
0813	Left Bolt Pin	1	8	0,15	1,18
0820	Sealer Adjustment Bolt	2	16	6,31	101,01
0821	Sealer Top Plate	1	8	1,65	13,19
0822	Sealer Spindel	2	16	0,62	9,94
0823	Sealer Slinding Bar	2	16	1,73	27,62
0827	Right Bolt Pin	1	8	0,15	1,18
0900	TALL ROLLER				
0901	Tail Frame	2	16	48	768
0905	Crank Roller	2	16	1,86	29,78
0909	Front Tail Roll	1	8	1,99	15,88
0918	Crank	2	16	3,61	57,82
0919	Roll To Plate	1	8	1,99	15,88
0920	Motor Support Plate	2	16	0,72	11,56
0921	Motor Base Plate	2	16	2,51	40,19
0923	Coil Spring Edge	2	16	0,47	7,54
0930	Tail Shaft	1	8	0,50	3,97
0937	Top Tail Roll	1	8	2,04	16,28
0942	Bottom Tail Roll	1	8	2,04	16,28
0944	Tail Base Plate	2	16	30,66	490,56
0946	Shaft To Tail Rubber Roll	1	8	1,14	9,16
0949	Big Timing Gear	1	8	2,57	20,55
0955	Little Timing Gear	1	8	5,78	46,23
0962	Timing Chain	1	8	1,06	8,48
0967	Tail Shaft	2	16	4,07	65,12
0970	Tail Crank	2	16	1,97	31,54
1000	GEAR RACK BLOCK				
1001	Pinion Gear Shaft	1	8	2,98	23,87
1015	Left Bearing Housing Flange	1	8	7,88	63,07
1017	Bushing	1	8	0,12	0,99
1020	Right Bearing Housing Flange	1	8	7,88	63,07
1024	Gear Rack Brass Bushing	1	8	0,21	1,69
1027	Excentre Pin	1	8	0,15	1,23

No. Part	Nama Part	Jml/ Mesin	Jml/ Bln (x 8)	Massa (kg) /Produk	Massa (kg) /Bulan
1042	Elephant Nose (Bearing Housing)	1	8	7	56
1049	Bar Gear Shaft	1	8	0,62	4,99
1100	VARIABLE BLOCK				
1104	Lamp Base	1	8	3,14	25,12
1106	Variable Roller	1	8	1,99	15,88
1107	Variable Spindle	2	16	2,31	36,93
1108	Variable Shaft	4	32	6,70	214,43
1113	Variable Plate	1	8	0,94	7,54
1114	Variable Plate	1	8	0,94	7,54
1115	Variable Shaft Base	2	16	1,88	30,14
1122	Hand Wheel Shaft	1	8	0,06	0,49
1126	Base Lamp Cover	1	8	4,12	32,97
1128	Variable Bushing Srew	2	16	0,15	2,37
1133	Travo Base	1	8	0,16	1,31
1134	Variable Screw 2	1	8	1,15	9,23
1138	L-Plate, U-Plate, Shaft Table	5	40	26,11	1044,35
1139	Plate Table Edge	3	24	5,86	140,73
1140	Plate Table	1	8	12,68	101,44
1141	Pipe Table	2	16	4,93	78,92
1142	Base Table	1	8	1,97	15,78
1200	BOX PANEL				
1201	Left Box Panel	1	8		
1202	Left Box Panel Up	1	8	3,51	28,09
1203	Left Box Panel Side	2	16	3,07	49,06
1204	Left Box Panel Back	1	8	3,65	29,20
1205	Left Box Panel Bottom	1	8	3,51	28,09
1206	Left Door Twin 1	1	8	2,45	19,59
1207	Left Door Twin 2	1	8	2,45	19,59
1208	Left Door	1	8	2,45	19,59
1209	Frame Left 1	4	32	26,75	856,09
1210	Frame Left 2	8	64	31,15	1993,52
1211	Frame Left 3	8	64	7,91	506,42
1212	Right Box Panel	1	8		
1213	Right Box Panel Up	1	8	3,51	28,09
1214	Right Box Panel Side	2	16	3,07	49,06
1215	Right Box Panel Back	1	8	3,65	29,20
1216	Right Box Panel Bottom	1	8	3,51	28,09
1217	Right Box Panel Front	1	8	4,09	32,71
1218	Right Door Twin 1	1	8	2,45	19,59
1219	Right Door Twin 2	1	8	2,45	19,59
1220	Frame Right 1	4	32	26,75	856,09
1221	Frame Right 2	8	64	31,15	1993,52
1222	Frame Right 3	8	64	7,91	506,42
1300	TAIL PLASTIC				
1301	Up Tail	1	8	2,10	16,77
1302	Down Tail	1	8	2,10	16,77
1303	Right Tail	1	8	6,71	53,69
1304	Left Tail	1	8	6,71	53,69
1309	Center Tail	3	24	5,86	140,73

Tabel Jarak Antara Alternatif 1 Dan Alternatif 2

No. Part	Nama Part	Mat.	Proses																Jumlah	Jumlah			
			Jarak		1	Jarak		2	Jarak		3	Jarak		4	Jarak		5	Jarak			6		
			Alt.1	Alt.2		Alt.1	Alt.2		Alt.1	Alt.2		Alt.1	Alt.2		Alt.1	Alt.2		Alt.1				Alt.2	
0100	FRAME BLOCK																						
0101	Frame Front	Cor	16,94	16,94	Perakitan	24,71	24,71	Pengecatan	24,93	24,93	Perakitan											66,58	66,58
0102	Frame Right	Cor	16,94	16,94	Perakitan	24,71	24,71	Pengecatan	24,93	24,93	Perakitan											66,58	66,58
0106	Frame Left	Cor	16,94	16,94	Perakitan	24,71	24,71	Pengecatan	24,93	24,93	Perakitan											66,58	66,58
0108	Switch Hanger	Besi			Gerinda Potong	20,07	26,58	Mill 1	5,94	12,45	Pengecatan	21,27	21,27	Perakitan								47,28	60,30
0110	Plastic Feeder Rod	Besi			Gergaji Potong	25,96	20,57	Bubut 1	26,4	20,31	Perakitan											52,36	40,88
0116	Plastic Feeder Spindle	Besi			Gergaji Potong	31,98	24,39	Bubut 3	36,22	28,63	Perakitan											68,20	53,02
0118	Stainless Steel Rod	Besi			Gergaji Potong	25,96	20,57	Bubut 1	6,46	9,41	Mill 2	24,94	31,62	Perakitan								57,36	61,60
0119	Bearing Housing	Besi	13,56	20,28	Mill 2	7,05	11,35	Pengecatan	21,27	21,27	Perakitan											41,88	52,90
0122	Plastic Feeder Brackle Right	Cor	14,03	14,03	Pengecatan	21,27	21,27	Perakitan														35,30	35,30
0122A	Plastic Feeder Brackle Left	Cor	14,03	14,03	Pengecatan	21,27	21,27	Perakitan														35,30	35,30
0124	Frame Rear	Cor	16,94	16,94	Perakitan	24,71	24,71	Pengecatan	24,93	24,93	Perakitan											66,58	66,58
0200	SPINDLE EXCENTRE																						
0201	Shaft Steel	Besi			Gergaji Potong	31,98	24,39	Bubut 3	18,35	9,55	Pengecatan	21,27	21,27	Perakitan								71,60	55,21
0209	Bearing Housing Sealer	Cor	13,98	7,18	Mill 1	5,94	12,45	Pengecatan	21,27	21,27	Perakitan											41,19	40,90
0211	Bearing Housing Sealer Excentre	Cor	24,81	13,55	Bubut 2	8,58	10,62	Mill 1	5,94	12,45	Pengecatan	21,27	21,27	Perakitan								60,60	57,89
0213	Bushing Shaft	Besi			Gergaji Potong	25,96	20,57	Bubut 1	6,36	11,61	Mill 1	5,94	12,45	Pengecatan	21,27	21,27	Perakitan					59,53	65,90
0216	Shaft Housing	Besi	13,56	20,28	Mill 2	8,92	10,87	Bubut 2	11,53	7,57	Pengecatan	21,27	21,27	Perakitan								55,28	59,99
0220	Plate Move	Besi	13,56	20,28	Mill 2	7,05	11,35	Pengecatan	21,27	21,27	Perakitan											41,88	52,90
0221	Sealer Move	Besi			Gerinda Potong	29,98	22,39	Bubut 3	15,4	12,2	Mill 1	26,24	32,72	Perakitan								71,62	67,31
0223	Grill Move	Besi			Gergaji Potong	25,96	20,57	Bubut 1	9,31	5,27	Pengecatan	21,27	21,27	Perakitan								56,54	47,11
0228	Bushing Hex. Clamp	Besi			Gergaji Potong	25,96	20,57	Bubut 1	26,4	20,31	Perakitan											52,36	40,88
0229	Bearing Housing To Move	Cor	13,98	7,18	Mill 1	5,94	12,45	Pengecatan	21,27	21,27	Perakitan											41,19	40,90
0231	Bushing Move	Besi			Gergaji Potong	25,96	20,57	Bubut 1	26,4	20,31	Perakitan											52,36	40,88
0300	SPINDLE LEVER																						
0301	Shaft Lever	Besi			Gergaji Potong	31,98	24,39	Bubut 3	18,35	9,55	Pengecatan	21,27	21,27	Perakitan								71,60	55,21
0302	Adjustable Lever	Cor	13,98	7,18	Mill 1	5,94	12,45	Pengecatan	21,27	21,27	Perakitan											41,19	40,90
0306	Lever Knife	Cor	13,98	7,18	Mill 1	5,94	12,45	Pengecatan	21,27	21,27	Perakitan											41,19	40,90
0307	Weight Knife	Besi			Gergaji Potong	25,96	20,57	Bubut 1	6,36	11,61	Mill 1	5,94	12,45	Pengecatan	21,27	21,27	Perakitan					59,53	65,90
0308	Shaft Weight Knife	Besi			Gergaji Potong	31,98	24,39	Bubut 3	18,35	9,55	Pengecatan	21,27	21,27	Perakitan								71,60	55,21
0309	Pull Rod U-Lever To Excentre	Besi			Gergaji Potong	31,98	24,39	Bubut 3	18,35	9,55	Pengecatan	21,27	21,27	Perakitan								71,60	55,21
0311	U-Lever	Cor	13,98	7,18	Mill 1	5,94	12,45	Pengecatan	21,27	21,27	Perakitan											41,19	40,90
0316	Adjustable Lever	Cor	13,98	7,18	Mill 1	5,94	12,45	Pengecatan	21,27	21,27	Perakitan											41,19	40,90
0317	Lever Knife	Cor	13,98	7,18	Mill 1	5,94	12,45	Pengecatan	21,27	21,27	Perakitan											41,19	40,90
0318	Bearing Bushing Housing	Besi			Gergaji Potong	25,96	20,57	Bubut 1	26,4	20,31	Perakitan											52,36	40,88
0320	Bearing Bushing To Knife	Cor	13,98	7,18	Mill 1	5,94	12,45	Pengecatan	21,27	21,27	Perakitan											41,19	40,90
0321	Housing Bearing Bushing Shim	Besi			Gergaji Potong	25,96	20,57	Bubut 1	26,4	20,31	Perakitan											52,36	40,88
0400	SPINDLE PULLY																						
0401	Pully Shaft	Besi			Gergaji Potong	31,98	24,39	Bubut 3	18,35	9,55	Pengecatan	21,27	21,27	Perakitan								71,60	55,21
0402	Big Pully V-Belt	Cor	24,81	13,55	Bubut 2	8,58	10,62	Mill 1	5,94	12,45	Pengecatan	21,27	21,27	Perakitan								60,60	57,89
0406	Hand Pully	Cor	24,81	13,55	Bubut 2	8,58	10,62	Mill 1	5,94	12,45	Pengecatan	21,27	21,27	Perakitan								60,60	57,89
0410	Small Lower Chainwheel	Cor	24,81	13,55	Bubut 2	8,58	10,62	Mill 1	5,94	12,45	Pengecatan	21,27	21,27	Perakitan								60,60	57,89
0414	Small Pully V-Belt	Cor	24,81	13,55	Bubut 2	8,58	10,62	Mill 1	5,94	12,45	Pengecatan	21,27	21,27	Perakitan								60,60	57,89
0500	SPINDLE WELDER																						
0501	Shaft Lever Welder	Besi			Gergaji Potong	31,98	24,39	Bubut 3	18,35	9,55	Pengecatan	21,27	21,27	Perakitan								71,60	55,21
0507	Sealer Lever	Cor	13,98	7,18	Mill 1	5,94	12,45	Pengecatan	21,27	21,27	Perakitan											41,19	40,90
0508	Sealer Weight	Besi			Gergaji Potong	25,96	20,57	Bubut 1	6,36	11,61	Mill 1	5,94	12,45	Pengecatan	21,27	21,27	Perakitan					59,53	65,90
0508A	Shaft Weight Sealer	Besi			Gergaji Potong	31,98	24,39	Bubut 3	18,35	9,55	Pengecatan	21,27	21,27	Perakitan								71,60	55,21
0511	U-Lever	Cor	13,98	7,18	Mill 1	5,94	12,45	Pengecatan	21,27	21,27	Perakitan											41,19	40,90
0515	Adjustable Arm U-Lever To U-Lever	Besi			Gergaji Potong	31,98	24,39	Bubut 3	18,35	9,55	Pengecatan	21,27	21,27	Perakitan								71,60	55,21
0526	Bushing Shim	Besi			Gergaji Potong	25,96	20,57	Bubut 1	26,4	20,31	Perakitan											52,36	40,88
0527	Bearing Housing Sealer	Cor	13,98	7,18	Mill 1	5,94	12,45	Pengecatan	21,27	21,27	Perakitan											41,19	40,90

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Tabel Bobot Akhir Alternatif 1 dan Alternatif 2

No. Part	Nama Part	Massa (kg) /Bulan	Jarak Alternati 1 (m)	Jarak Alternati 2 (m)	Bobot Akhir Alternatif 1 (kg.m/Bulan)	Bobot Akhir Alternatif 2 (kg.m/Bulan)
0100	FRAME BLOCK					
0101	Frame Front	384	66,58	66,58	25566,72	25566,72
0102	Frame Right	960	66,58	66,58	63916,80	63916,80
0106	Frame Left	960	66,58	66,58	63916,80	63916,80
0108	Switch Hanger	3,01	47,28	60,3	142,52	181,77
0110	Plastic Feeder Rod	13,90	52,36	40,88	727,72	568,17
0116	Plastic Feeder Spindle	16,28	68,2	53,02	1110,36	863,22
0118	Stainless Steel Rod	9,93	57,36	61,6	569,44	611,53
0119	Bearing Housing	30,14	41,88	52,9	1262,43	1594,62
0122	Plastic Feeder Brackle Right	29,20	35,3	35,3	1030,76	1030,76
0122A	Plastic Feeder Brackle Left	29,20	35,3	35,3	1030,76	1030,76
0124	Frame Rear	384	66,58	66,58	25566,72	25566,72
0200	SPINDLE EXCENTRE					
0201	Shaft Steel	60,42	71,6	55,21	4326,12	3335,83
0209	Bearing Housing Sealer	26,97	41,19	40,9	1110,89	1103,07
0211	Bearing Housing Sealer Excentre	7,43	60,6	57,89	450,29	430,15
0213	Bushing Shaft	9,67	59,53	65,9	575,49	637,08
0216	Shaft Housing	22,61	55,28	59,99	1249,77	1356,25
0220	Plate Move	45,22	41,88	52,9	1893,65	2391,93
0221	Sealer Move	2,13	71,62	67,31	152,60	143,42
0223	Grill Move	2,42	56,54	47,11	136,65	113,86
0228	Bushing Hex. Clamp	2,37	52,36	40,88	123,96	96,78
0229	Bearing Housing To Move	4,16	41,19	40,9	171,45	170,24
0231	Bushing Move	0,89	52,36	40,88	46,49	36,29
0300	SPINDLE LEVER					
0301	Shaft Lever	37,38	71,6	55,21	2676,05	2063,47
0302	Adjustable Lever	58,87	41,19	40,9	2424,74	2407,67
0306	Lever Knife	58,87	41,19	40,9	2424,74	2407,67
0307	Weight Knife	73,98	59,53	65,9	4404,30	4875,58
0308	Shaft Weight Knife	7,89	71,6	55,21	565,04	435,70
0309	Pull Rod U-Lever To Excentre	6,33	71,6	55,21	452,92	349,24
0311	U-Lever	271,56	41,19	40,9	11185,56	11106,80
0316	Adjustable Lever	58,87	41,19	40,9	2424,74	2407,67
0317	Lever Knife	58,87	41,19	40,9	2424,74	2407,67
0318	Bearing Bushing Housing	4,44	52,36	40,88	232,43	181,47
0320	Bearing Bushing To Knife	16,65	41,19	40,9	685,81	680,98
0321	Housing Bearing Bushing Shim	3,55	52,36	40,88	185,94	145,18
0400	SPINDLE PULLY					
0401	Pully Shaft	60,42	71,6	55,21	4326,12	3335,83
0402	Big Pully V-Belt	337,12	60,6	57,89	20429,73	19516,13
0406	Hand Pully	30,96	60,6	57,89	1876,20	1792,30
0410	Small Lower Chainwheel	9,29	60,6	57,89	562,86	537,69
0414	Small Pully V-Belt	66,05	60,6	57,89	4002,56	3823,57
0500	SPINDLE WELDER					
0501	Shaft Lever Welder	57,40	71,6	55,21	4109,81	3169,03
0507	Sealer Lever	58,87	41,19	40,9	2424,74	2407,67
0508	Sealer Weight	73,98	59,53	65,9	4404,30	4875,58
0508A	Shaft Weight Sealer	7,89	71,6	55,21	565,04	435,70
0511	U-Lever	67,89	41,19	40,9	2796,39	2776,70
0515	Adjustable Arm U-Lever To U-Lever	6,33	71,6	55,21	452,92	349,24
0526	Bushing Shim	3,55	52,36	40,88	185,94	145,18
0527	Bearing Housing Sealer	16,65	41,19	40,9	685,81	680,98
0529	Bushing (Ring/Connector)	4,44	52,36	40,88	232,43	181,47
0531	Sealer Scackle Plate	34,16	46	57	1571,51	1947,30
0538	Pillow Block Plate	4,52	46	57	207,99	257,73
0600	BASE PLATE				0,00	0,00
0601	Bottom Plate Cover	67,76	76,92	76,92	5212,19	5212,19
0602	Top Plate Cover	36,49	76,92	76,92	2806,56	2806,56
0609	Plate Bushing	163,36	52,36	40,88	8553,41	6678,07
0614	Shaft Supports	75,36	41,88	52,9	3156,08	3986,54
0616	Base Plate Shaft	14,89	68,2	53,02	1015,58	789,53
0700	CUTTER BLOCK					
0701	Base Plate	528	35,3	35,3	18638,40	18638,40
0703	Front Bottom Shaft	42,56	60,11	49,38	2558,51	2101,80
0708	Bushing Lever Knife	4,44	52,36	40,88	232,43	181,47
0709	Knife Lever	16,65	57,6	42,39	959,03	705,79
0712	Bushing Knife Lever	3,55	52,36	40,88	185,94	145,18
0714	Slider Plate Shaft	8,04	68,2	53,02	548,41	426,35
0715	Adjustment Bolt	47,35	52,36	40,88	2479,25	1935,67
0718	Front Top Shaft	43,78	68,2	53,02	2985,79	2321,21
0722	U-Plate	19,78	46	57	909,97	1127,57
0728	Bearing Housing Jumper	125,60	53,97	64,97	6778,63	8160,23
0730	Brass Plate	4,03	38,5	51,91	155,23	209,30
0734	Brass Plate	4,03	38,5	51,91	155,23	209,30
0735	Brass Plate	4,03	38,5	51,91	155,23	209,30
0736	Edge Guide	26,00	53,97	64,97	1403,18	1689,17
0760	Bearing Housing Cover	9,47	56,54	47,11	535,43	446,13
0761	Bearing Housing Crank Roll	630,72	41,19	40,9	25979,36	25796,45
0761A	Bushing	2,37	52,36	40,88	123,96	96,78
0767	Cup Shoe	6,31	52,36	40,88	330,57	258,09
0768	Crank Shaft Rubber Roll	3,62	52,36	40,88	189,73	148,13
0773	Right Sliding Base Plate	109,50	35,3	35,3	3865,35	3865,35
0774	Left Sliding Base Plate	109,50	35,3	35,3	3865,35	3865,35
0776	Right Slider Plate	65,94	48	59	3165,12	3890,46
0777	Left Slider Plate	65,94	48	59	3165,12	3890,46

No. Part	Nama Part	Massa (kg) /Bulan	Jarak Alternati 1 (m)	Jarak Alternati 2 (m)	Bobot Akhir Alternatif 1 (kg.m/Bulan)	Bobot Akhir Alternatif 2 (kg.m/Bulan)
0800	WELDER / SEALER					
0804	Heater / Isolator Cover Plate	4,52	46,31	58,85	209,40	266,10
0805	Teflon Plate	4,52	46,31	58,85	209,40	266,10
0808	Teflon Plate Clamp	30,14	46,31	58,85	1395,97	1773,97
0812	Heater / Isolator Cover Plate	4,52	46,31	58,85	209,40	266,10
0813	Left Bolt Pin	1,18	52,36	40,88	61,98	48,39
0820	Sealer Adjustment Bolt	101,01	56,54	47,11	5711,30	4758,75
0821	Sealer Top Plate	13,19	46,31	58,85	610,74	776,11
0822	Sealer Spindel	9,94	50,36	38,88	500,76	386,60
0823	Sealer Slinding Bar	27,62	52,36	40,88	1446,23	1129,14
0827	Right Bolt Pin	1,18	52,36	40,88	61,98	48,39
0900	TALL ROLLER					
0901	Tail Frame	768	35,3	35,3	27110,40	27110,40
0905	Crank Roller	29,78	44,4	42	1322,41	1250,93
0909	Front Tail Roll	15,88	72,42	68,22	1150,31	1083,60
0918	Crank	57,82	44,4	42	2567,03	2428,27
0919	Roll To Plate	15,88	72,42	68,22	1150,31	1083,60
0920	Motor Support Plate	11,56	46	57	531,54	658,65
0921	Motor Base Plate	40,19	46	57	1848,83	2290,94
0923	Coil Spring Edge	7,54	47,28	60,3	356,30	454,42
0930	Tail Shaft	3,97	68,2	53,02	270,82	210,54
0937	Top Tail Roll	16,28	68,2	53,02	1110,36	863,22
0942	Bottom Tail Roll	16,28	68,2	53,02	1110,36	863,22
0944	Tail Base Plate	490,56	41,19	40,9	20206,17	20063,90
0946	Shaft To Tail Rubber Roll	9,16	68,2	53,02	624,58	485,56
0949	Big Timing Gear	20,55	60,59	57,89	1245,04	1189,55
0955	Little Timing Gear	46,23	57,6	42,39	2663,09	1959,87
0962	Timing Chain	8,48	76,92	76,92	652,13	652,13
0967	Tail Shaft	65,12	68,2	53,02	4441,45	3452,87
0970	Tail Crank	31,54	41,19	40,9	1298,97	1289,82
1000	GEAR RACK BLOCK					
1001	Pinion Gear Shaft	23,87	57,36	61,61	1369,32	1470,77
1015	Left Bearing Housing Flange	63,07	35,3	35,3	2226,44	2226,44
1017	Bushing	0,99	52,36	40,88	51,65	40,33
1020	Right Bearing Housing Flange	63,07	35,3	35,3	2226,44	2226,44
1024	Gear Rack Brass Bushing	1,69	52,36	40,88	88,43	69,04
1027	Excentre Pin	1,23	52,36	40,88	64,56	50,41
1042	Elephant Nose (Bearing Housing)	56	35,3	35,3	1976,80	1976,80
1049	Bar Gear Shaft	4,99	68,2	53,02	340,59	264,78
1100	VARIABLE BLOCK					
1104	Lamp Base	25,12	46	57	1155,52	1431,84
1106	Variable Roller	15,88	68,2	53,02	1083,28	842,16
1107	Variable Spindle	36,93	50,36	38,88	1859,95	1435,96
1108	Variable Shaft	214,43	52,36	40,88	11227,69	8766,00
1113	Variable Plate	7,54	41,88	52,9	315,61	398,65
1114	Variable Plate	7,54	41,88	52,9	315,61	398,65
1115	Variable Shaft Base	30,14	41,88	52,9	1262,43	1594,62
1122	Hand Wheel Shaft	0,49	56,54	47,11	27,89	23,24
1126	Base Lamp Cover	32,97	76,92	76,92	2536,05	2536,05
1128	Variable Bushing Srew	2,37	56,54	47,11	133,86	111,53
1133	Travo Base	1,31	76,92	76,92	100,48	100,48
1134	Variable Screw 2	9,23	50,36	38,88	464,99	358,99
1138	L-Plate, U-Plate, Shaft Table	1044,35	74,3	73,66	77595,08	76926,70
1139	Plate Table Edge	140,73	53,97	64,97	7595,46	9143,54
1140	Plate Table	101,44	76,92	76,92	7803,07	7803,07
1141	Pipe Table	78,92	64,04	57,39	5053,83	4529,04
1142	Base Table	15,78	56,54	47,11	892,39	743,55
1200	BOX PANEL	7111,62	43,77	43,77	311275,73	311275,73
1201	Left Box Panel					
1202	Left Box Panel Up	28,09	32,99	32,99	926,70	926,70
1203	Left Box Panel Side	49,06	32,99	32,99	1618,47	1618,47
1204	Left Box Panel Back	29,20	32,99	32,99	963,37	963,37
1205	Left Box Panel Bottom	28,09	32,99	32,99	926,70	926,70
1206	Left Door Twin 1	19,59	32,99	32,99	646,39	646,39
1207	Left Door Twin 2	19,59	32,99	32,99	646,39	646,39
1208	Left Door	19,59	32,99	32,99	646,39	646,39
1209	Frame Left 1	856,09	5,54	5,54	4742,74	4742,74
1210	Frame Left 2	1993,52	5,54	5,54	11044,12	11044,12
1211	Frame Left 3	506,42	5,54	5,54	2805,56	2805,56
1212	Right Box Panel					
1213	Right Box Panel Up	28,09	32,99	32,99	926,70	926,70
1214	Right Box Panel Side	49,06	32,99	32,99	1618,47	1618,47
1215	Right Box Panel Back	29,20	32,99	32,99	963,37	963,37
1216	Right Box Panel Bottom	28,09	32,99	32,99	926,70	926,70
1217	Right Box Panel Front	32,71	32,99	32,99	1078,98	1078,98
1218	Right Door Twin 1	19,59	32,99	32,99	646,39	646,39
1219	Right Door Twin 2	19,59	32,99	32,99	646,39	646,39
1220	Frame Right 1	856,09	5,54	5,54	4742,74	4742,74
1221	Frame Right 2	1993,52	5,54	5,54	11044,12	11044,12
1222	Frame Right 3	506,42	5,54	5,54	2805,56	2805,56
1300	TAIL PLASTIC	281,66	47,59	47,59	13404,10	13404,10
1301	Up Tail	16,77	43,7	56,72	732,74	951,06
1302	Down Tail	16,77	43,7	56,72	732,74	951,06
1303	Right Tail	53,69	5,54	5,54	297,46	297,46
1304	Left Tail	53,69	5,54	5,54	297,46	297,46
1309	Center Tail	140,73	43,7	56,72	6150,11	7982,48
Total					965210,1159	958260,6502