

Lampiran 1. Data Availability ratio mesin CNC periode bulan November 2020

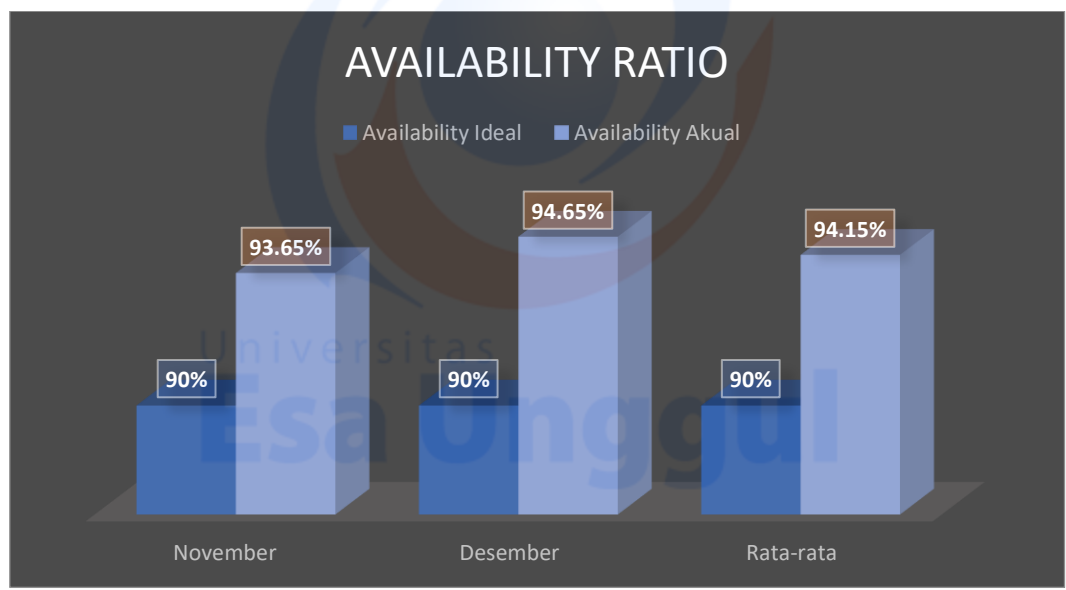
Tanggal	Working time machine (menit)	Planned downtime	adjustment shift	trouble (menit)	setup (menit)	waiting	loading time	availability losses	operating time	availability ratio
2	960	0	3	4	55	0	957	59	898	93.83%
3	960	0	3	4	30	0	957	34	923	96.45%
4	960	0	3	2	60	0	957	62	895	93.52%
5	960	0	3	4	45	0	957	49	908	94.88%
6	960	20	3	2	60	0	937	62	875	93.38%
7	600	20	3	4	60	0	577	64	513	88.91%
9	960	0	7	4	45	0	953	49	904	94.86%
10	960	0	3	4	60	0	957	64	893	93.31%
11	960	0	3	2	40	0	957	42	915	95.61%
12	960	0	3	2	35	0	957	37	920	96.13%
13	960	20	3	4	45	0	937	49	888	94.77%
14	600	20	3	4	60	0	577	64	513	88.91%
16	960	0	7	2	45	0	953	47	906	95.07%
17	960	0	3	4	60	0	957	64	893	93.31%
18	960	0	3	2	35	0	957	37	920	96.13%
19	960	0	3	4	60	0	957	64	893	93.31%
20	960	20	3	4	45	0	937	49	888	94.77%
21	600	20	3	2	60	0	577	62	515	89.25%
23	960	0	7	4	45	0	953	49	904	94.86%
24	960	0	3	4	60	0	957	64	893	93.31%

Tabel Lanjutan										
25	960	0	3	2	55	0	957	57	900	94.04%
26	960	0	3	4	60	0	957	64	893	93.31%
27	960	20	3	4	60	0	937	64	873	93.17%
28	600	20	3	2	60	0	577	62	515	89.25%
30	960	0	3	4	25	0	957	29	928	96.97%
Total	22560	160	87	82	1265	0	22313	1347	20966	2341.34%
Rata-rata										93.65%

Lampiran 2. Data Availability ratio mesin CNC periode bulan Desember 2020

Tanggal	Working time machine (menit)	Planed downtime	adjustment shift	trouble (menit)	setup (menit)	waiting	loading time	availability losses	operating time	availability ratio
1	960	0	3	4	60	0	957	64	893	93.31%
2	960	0	3	4	35	0	957	39	918	95.92%
3	960	0	3	2	25	0	957	27	930	97.18%
4	960	20	3	2	60	0	937	62	875	93.38%
5	600	20	3	4	30	0	577	34	543	94.11%
7	960	0	3	2	25	0	957	27	930	97.18%
8	960	0	7	4	55	0	953	59	894	93.81%
9	960	0	3	2	60	0	957	62	895	93.52%
10	960	0	3	4	40	0	957	44	913	95.40%
11	960	20	3	4	45	0	937	49	888	94.77%
12	600	20	3	2	35	0	577	37	540	93.59%
14	960	0	3	4	60	0	957	64	893	93.31%
15	960	0	7	2	25	0	953	27	926	97.17%
16	960	0	3	2	45	0	957	47	910	95.09%
17	960	0	3	2	60	0	957	62	895	93.52%
18	960	20	3	4	25	0	937	29	908	96.91%
19	600	20	3	4	30	0	577	34	543	94.11%
21	960	0	3	2	60	0	957	62	895	93.52%
22	960	0	7	4	45	0	953	49	904	94.86%
23	960	0	3	4	40	0	957	44	913	95.40%
24	960	0	3	2	60	0	957	62	895	93.52%

Tabel Lanjutan										
25	960	20	3	4	30	0	937	34	903	96.37%
26	600	20	3	2	45	0	577	47	530	91.85%
28	960	0	3	2	60	0	957	62	895	93.52%
29	960	0	3	4	45	0	957	49	908	94.88%
Total	22560	160	87	76	1100	0	22313	1176	21137	2366.21%
Rata-rata										94.65%



Lampiran 3. Data Performance ratio mesin CNC periode bulan November 2020

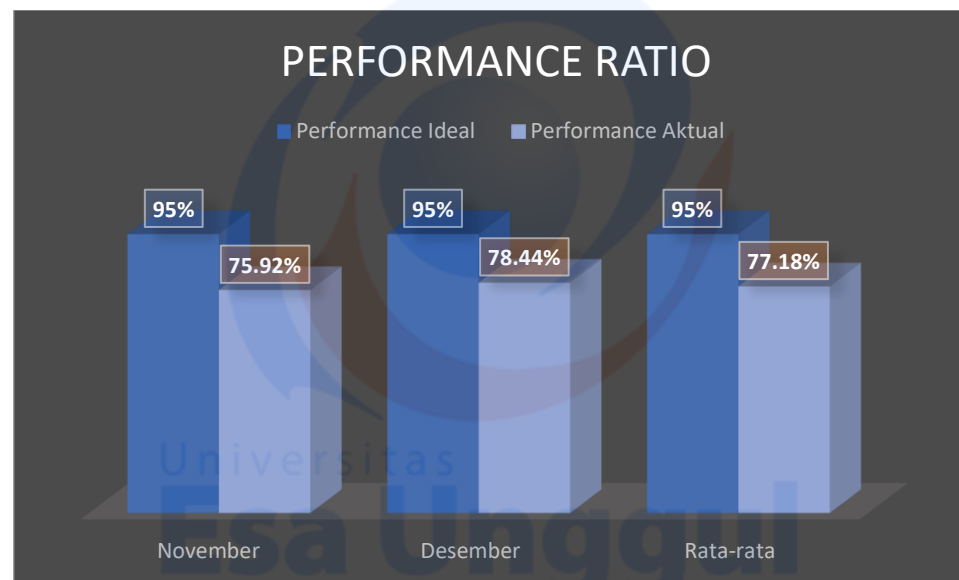
Tanggal	Operating time (menit)	Total production (Pcs)	stoppage	waiting	Cycle time	net operating time	performance (%)
2	960	210	3	0	4	957	87.77%
3	960	200	3	0	4	957	83.59%
4	960	200	3	0	4	957	83.59%
5	960	185	3	0	4	957	77.32%
6	960	160	3	0	4	957	66.88%
7	600	140	3	0	4	597	93.80%
9	960	100	3	0	4	957	41.80%
10	960	160	3	0	4	957	66.88%
11	960	200	3	0	4	957	83.59%
12	960	154	3	0	4	957	64.37%
13	960	180	3	0	4	957	75.24%
14	600	140	3	0	4	597	93.80%
16	960	188	3	0	4	957	78.58%
17	960	180	3	0	4	957	75.24%
18	960	188	3	0	4	957	78.58%
19	960	140	3	0	4	957	58.52%
20	960	200	3	0	4	957	83.59%
21	600	140	3	0	4	597	93.80%
23	960	170	3	0	4	957	71.06%
24	960	188	3	0	4	957	78.58%
25	960	200	3	0	4	957	83.59%

Tabel Lanjutan							
26	960	140	3	0	4	957	58.52%
27	960	100	3	0	4	957	41.80%
28	600	140	3	0	4	597	93.80%
30	960	200	3	0	4	957	83.59%
<b>Total</b>	<b>22560</b>	<b>4203</b>	<b>75</b>	<b>0</b>	<b>100</b>	<b>22485</b>	<b>1897.88%</b>
Rata-rata							75.92%

Lampiran 4. Data Performance ratio mesin CNC periode bulan Desember 2020

Tanggal	Operating time (menit)	Total production (meter)	stoppage	waiting	Actual cycle time (meter/menit)	net operating time	performance (%)
1	960	220	3	0	4	957	91.95%
2	960	200	3	0	4	957	83.59%
3	960	160	3	0	4	957	66.88%
4	960	190	3	0	4	957	79.41%
5	960	160	3	0	4	957	66.88%
7	600	140	3	0	4	597	93.80%
8	960	200	3	0	4	957	83.59%
9	960	188	3	0	4	957	78.58%
10	960	210	3	0	4	957	87.77%
11	960	200	3	0	4	957	83.59%
12	960	188	3	0	4	957	78.58%
14	600	140	3	0	4	597	93.80%
15	960	160	3	0	4	957	66.88%
16	960	150	3	0	4	957	62.70%
17	960	140	3	0	4	957	58.52%
18	960	184	3	0	4	957	76.91%
19	960	174	3	0	4	957	72.73%
21	600	140	3	0	4	597	93.80%
22	960	210	3	0	4	957	87.77%
23	960	200	3	0	4	957	83.59%
24	960	150	3	0	4	957	62.70%
25	960	160	3	0	4	957	66.88%

Tabel Lanjutan							
26	960	140	3	0	4	957	58.52%
28	600	140	3	0	4	597	93.80%
29	960	210	3	0	4	957	87.77%
<b>Total</b>	<b>22560</b>	<b>4354</b>	<b>75</b>	<b>0</b>	<b>100</b>	<b>22485</b>	<b>1961.00%</b>
<b>Rata-rata</b>							<b>78.44%</b>





Lampiran 5. Data Quality ratio mesin CNC periode bulan November 2020

Tanggal	total production (Pcs)	defect (Pcs)	Quality ratio
2	210	2	99.05%
3	200	0	100.00%
4	200	4	98.00%
5	185	0	100.00%
6	160	2	98.75%
7	140	0	100.00%
9	100	2	98.00%
10	160	0	100.00%
11	200	4	98.00%
12	154	1	99.35%
13	180	2	98.89%
14	140	0	100.00%
16	188	0	100.00%
17	180	3	98.33%
18	188	0	100.00%
19	140	0	100.00%
20	200	0	100.00%
21	140	0	100.00%
23	170	2	98.82%
24	188	0	100.00%
25	200	0	100.00%
26	140	0	100.00%
27	100	2	98.00%
28	140	0	100.00%
30	200	0	100.00%
total	4203	24	2485.19%
Rata-rata			99.41%

Lampiran 6. Data Quality ratio mesin CNC periode bulan Desember 2020

Tanggal	total production	defect	Quality ratio
1	220	1	99.55%
2	200	0	100.00%
3	160	0	100.00%
4	190	0	100.00%
5	160	0	100.00%
7	140	0	100.00%
8	200	0	100.00%
9	188	0	100.00%
10	210	1	99.52%
11	200	0	100.00%
12	188	0	100.00%
14	140	0	100.00%
15	160	0	100.00%
16	150	2	98.67%
17	140	0	100.00%
18	184	0	100.00%
19	174	0	100.00%
21	140	0	100.00%
22	210	0	100.00%
23	200	0	100.00%
24	150	0	100.00%
25	160	0	100.00%
26	140	0	100.00%
28	140	0	100.00%
29	210	0	100.00%
Total	4354	4	2497.74%
Rata- rata			99.91%

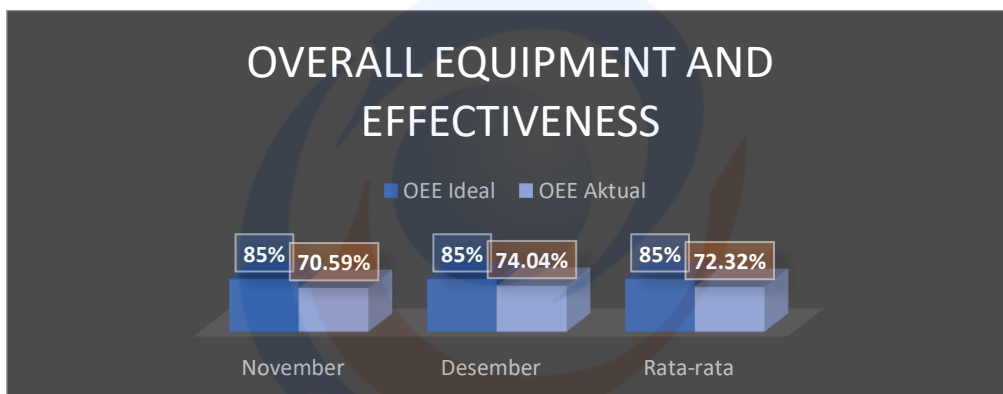


Lampiran 7. Data OEE mesin CNC periode bulan November 2020

Tanggal	Availability ratio (%)	Performance Ratio (%)	Quality Ratio (%)	OEE (%)
2	93.83%	87.77%	99.05%	81.57%
3	96.45%	83.59%	100.00%	80.62%
4	93.52%	83.59%	98.00%	76.61%
5	94.88%	77.32%	100.00%	73.36%
6	93.38%	66.88%	98.75%	61.67%
7	88.91%	93.80%	100.00%	83.40%
8	94.86%	41.80%	98.00%	38.86%
9	93.31%	66.88%	100.00%	62.41%
10	95.61%	83.59%	98.00%	78.32%
11	96.13%	64.37%	99.35%	61.48%
12	94.77%	75.24%	98.89%	70.51%
13	88.91%	93.80%	100.00%	83.40%
14	95.07%	78.58%	100.00%	74.71%
16	93.31%	75.24%	98.33%	69.03%
17	96.13%	78.58%	100.00%	75.54%
18	93.31%	58.52%	100.00%	54.61%
19	94.77%	83.59%	100.00%	79.22%
20	89.25%	93.80%	100.00%	83.72%
21	94.86%	71.06%	98.82%	66.61%
23	93.31%	78.58%	100.00%	73.32%
24	94.04%	83.59%	100.00%	78.61%
25	93.31%	58.52%	100.00%	54.61%
26	93.17%	41.40%	98.00%	37.80%
27	89.25%	93.80%	100.00%	83.72%
28	96.97%	83.59%	100.00%	81.06%
Total	2341.31%	1897.48%	2485.19%	
Rata-rata				70.59%

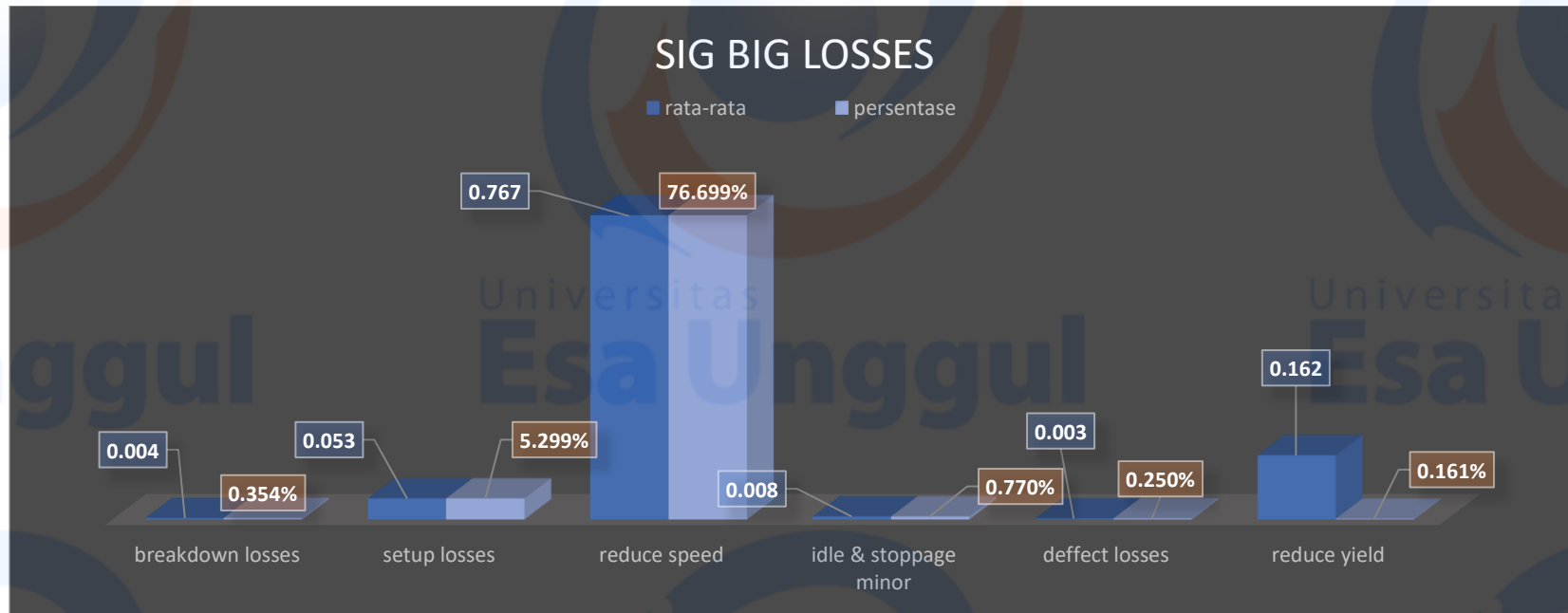
Lampiran 8. Data OEE mesin CNC periode bulan Desember 2020

Tanggal	Availability ratio (%)	Performance Ratio (%)	Quality Ratio (%)	OEE (%)
1	93.31%	91.95%	95.55%	81.98%
2	95.92%	83.59%	100.00%	80.18%
3	97.18%	66.88%	100.00%	64.99%
4	93.38%	79.41%	100.00%	74.15%
5	94.11%	66.88%	100.00%	62.94%
6	97.18%	93.80%	100.00%	91.15%
8	93.81%	83.59%	100.00%	78.42%
9	93.52%	78.58%	100.00%	73.49%
10	95.40%	87.77%	99.52%	83.33%
11	94.77%	83.59%	100.00%	79.22%
12	93.59%	78.58%	100.00%	73.54%
13	93.31%	93.80%	100.00%	87.52%
15	97.17%	66.88%	100.00%	64.99%
16	95.09%	62.70%	98.67%	58.83%
17	93.52%	58.52%	100.00%	54.73%
18	96.91%	76.91%	100.00%	74.53%
19	94.11%	72.73%	100.00%	68.45%
20	93.52%	93.80%	100.00%	87.72%
22	94.86%	87.77%	100.00%	83.26%
23	95.40%	83.59%	100.00%	79.74%
24	93.52%	62.70%	100.00%	58.64%
25	96.37%	66.88%	100.00%	64.45%
26	91.85%	58.52%	100.00%	53.75%
27	93.52%	93.80%	100.00%	87.72%
29	94.88%	87.77%	100.00%	83.28%
	2366.20%	1960.99%	2493.74%	
<b>Rata-rata</b>				<b>74.04%</b>



Lampiran 9. Data Six Big Losses mesin CNC periode bulan November - Desember2020

Bulan	Availability		Performance		Quality		total
	Breakdown losses	Setup losses	Reduce speed	Idle & stoppage minor	Deffect losses	Reduce yield	
Mei	0.37%	5.67%	75.35%	0.77%	0.43%	0.28%	82.86%
Juni	0.34%	4.93%	78.05%	0.77%	0.07%	0.05%	84.21%
Total	0.71%	10.60%	153.40%	1.54%	0.50%	0.32%	166.25%
Rata-rata	0.35%	5.30%	76.70%	0.77%	0.25%	0.16%	83.12%



Lampiran 10. Jenis defect periode bulan November - Desember 2020

Klasifikasi Cacat Swing Arm Jupiter mesin Cnc	November	Desember
Lebar lubang variasi kurang	4	1
lubang As roda miring	3	1
panjang holow kurang	4	
Chamfer lubang tidak sama	3	2
Hollow gepeng	1	
jarak lubang variasi tidak sama	4	
Titik lubang variasi tidak sesuai	5	
Total cacat	24	4
Total produksi	4244	4694

## Lampiran 11 Penerapan kaizen 5S

### SOP PEMASANGAN BAHAN BAKU PRODUKSI PADA JIG

<b>PT.GEMA AIR MASINDO</b>	Nomer Dokumen	:	
	Mulai Berlaku	:	
	Revisi	:	
<b>STANDAR OPERASIONAL PROSEDUR PEMASANGAN BAHAN BAKU PRODUKSI PADA JIG</b>	Tanggal Revisi	:	
	Pemberi Saran	:	
<p>1: Tujuan</p> <p>Untuk memberi panduan dalam melakukan aktivitas pemasangan bahan baku produksi pada jig</p> <p>2: Unit Kerja Terkait</p> <p>Bagian Produksi</p> <p>3: Prosedur Pelaksanaan</p> <p>Ø Posisi bahan baku pada bagian datar berada di bawah, kemudian bahan baku pada bagian radius berada di atas</p> <p>Ø Pastikan bahan baku pada bagian datar nempel pada jig, jangan sampai ada kotoran yang mengganjal</p> <p>Ø Setelah itu kunci jig yang sudah terpasang.</p>			
<b>Di Posisi</b>	<b>Nama</b>	<b>Jabatan</b>	<b>Paraf</b>
<b>Dibuat Oleh</b>			
<b>Diperiksa Oleh</b>			
<b>Disetujui Oleh</b>			

**SOP PROSEDUR PEMILIHAN JENIS MATERIAL**

<b>PT.GEMA AIR MASINDO</b>	Nomer Dokumen	:	
	Mulai Berlaku	:	
	Revisi	:	
<b>STANDAR OPERASIONAL PROSEDUR PEMILAHAN JENIS MATERIAL</b>	Tanggal Revisi	:	
	Pemberi Saran	:	
<p>1: Tujuan</p> <p>Untuk memberi panduan dalam memilih dan memahami jenis material yang digunakan</p> <p>2: Unit Kerja Terkait</p> <p>Bagian Produksi dan Bagian QC Material</p> <p>3: Prosedur Pelaksanaan</p> <p>∅ Bagian produksi mendapat rekomendasi dari bagian QC Material, jenis material mana yang sesuai spek dalam kebutuhan produksi</p> <p>∅ Bagian Produksi memastikan bahan baku yang di pilih oleh bagian QC materil itu jenis material alumunium T6 bukan T7, dengan cara visual saja ,tekstur material T6 halus, sedangkan tekstur material T7 lebih kasar.</p> <p>∅ Setelah itu kunci jig yang sudah terpasang.</p>			
<b>Di Posisi</b>	<b>Nama</b>	<b>Jabatan</b>	<b>Paraf</b>
<b>Dibuat Oleh</b>			
<b>Diperiksa Oleh</b>			
<b>Disetujui Oleh</b>			



Jadwal Maintenance

GAM	CHECK LIST MAINTENANCE MESIN						Dibuat				Disetujui							
							( )				( )							
PT.GEMA AIR MASINDO	Jenis Mesin	:CNC Axis 5	Line	: H	Tahun	: 2021	Pekan 1											
					Bulan	Maret	Senin	Selasa	Rabu	Kamis	Jum'at	Sabtu						
Item pengecekan	Standard				Metode		B	TB	B	TB	B	TB	B	TB	B	TB		
1. Sliding Bed	* Tidak ada sisa produksi/Gram di atas sliding bed				*Dibersihkan dengan kompresor													
2.Drat Sliding Bed	*Tidak ada sisa produksi/gram pada sela - sela				*Dibersihkan dengan kompresor													
	*Kondisi Dras sliding bed dalam ke adaan basah oil ,tidak boleh kering				*Diberikan oil dengan kuas													
						Pekan 2												

			Senin		Selasa		Rabu		Kamis		Jum'at		Sabtu	
			B	TB	B	TB	B	TB	B	TB	B	TB	B	TB
1. Sliding Bed	* Tidak ada sisa produksi/Gram di atas sliding bed	*Dibersihkan dengan kompresor												
2.Drat Sliding Bed	*Tidak ada sisa produksi/gram pada sela - sela	*Dibersihkan dengan kompresor												
	*Kondisi Dras sliding bed dalam ke adaan basah oil ,tidak boleh kering	*Diberikan oil dengan kuas												

Jadwal Maintenance (lanjutan)

<b>GAM</b>	<b>CHECK LIST MAINTENANCE MESIN</b>						<b>Dibuat</b>				<b>Disetujui</b>			
							( )				( )			
PT.GEMA AIR MASINDO	Jenis Mesin	:CNC Axis 5	Line	: H	Tahun	: 2021	Pekan 3							
					Bulan	Maret	Senin	Selasa	Rabu	Kamis	Jum'at	Sabtu		



Jadwal Pelatihan

GAM		SCHEDULE PELATIHAN										Tahun	
		PT.GEMA AIR MASINDO										Bulan	
NO	Target Materi	Peserta			Minggu Ke								Tempat
		Operator	Staf	Materi	1/(Hari & Jam)	Materi	2/(Hari&am)`	Materi	3/(Hari&Jam)`	Materi	4/(Hari&Jam)`		
1	Basic dasar 5R	√		√	Senin .10.00`								
2	Penerapan 5R di bagian produksi	√				√	Senin .10.00`						
3	Sosialisasi Pedoman Standar Operasional Prosedur (SOP)	√						√	Senin .10.00`				
4	Simulasi Penerapan Standar Operasional Prosedur (SOP)	√								√	Senin .10.00`		

Label Jenis Material

**GAM**

**PT.GEMA AIR MASINDO**

**Jenis Material**

Alumunium T6

Alumunium T7