

LAMPIRAN 1
(BIODATA PENULIS)

BIODATA PENULIS



Nama : Sri Bintang Perdana Putra
Tempat/Tanggal Lahir : Cilacap, 13 Januari 2003
Alamat : Cigintung Rt 04/11 Kel. Kutawaru. Kec. Cilacap
Tengah
E-mail : bintangperdana063@gmail.com
Nomor Handphone : +62 83872990259
Hobi : Running
Motto : Mengejar kesuksesan tidak harus berlari, berjalan dengan tenang sudah cukup untuk mencapainya.

Riwayat Pendidikan :

Formal

- SD Negeri Kutawaru 02 : Tahun 2008-2014
- SMP Negeri 09 Cilacap : Tahun 2014-2017
- SMK Dr. Soetomo Cilacap : Tahun 2017-2020
- Politeknik Negeri Cilacap : Tahun 2020-2023

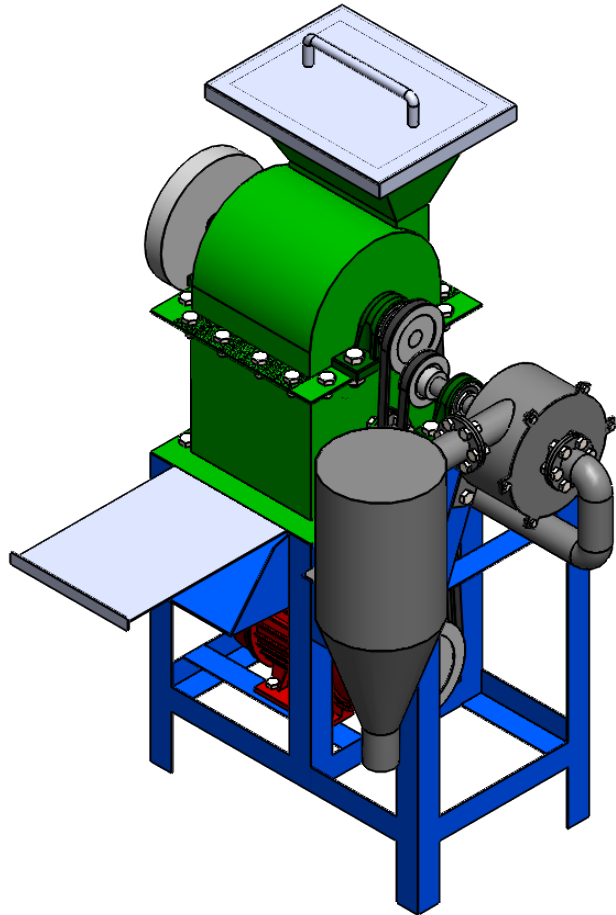
Non Formal

- License C3 PSSI Referee Course : 2022 Batalyon Zeni Tempur 04/TK kab. Semarang
- License C2 PSSI Referee Course : 2023 Kolat koarmada 1 Jakarta Utara

LAMPIRAN 2
(HASIL PERANCANGAN)

GAMBAR INI TANPA IZIN TERTULIS DARI POLITEKNIK NEGERI CILACAP DILARANG MEMFOTOKOPI, MEMPERBANYAK, MENYALIN, MEMINDAHTANGANKAN

| | | | | | | | |
|----|-----------|---------|------|----|-----------|---------|------|
| | 5 | 4 | 3 | 2 | 1 | | |
| NO | PERUBAHAN | TANGGAL | NAMA | NO | PERUBAHAN | TANGGAL | NAMA |
| △ | | | | △ | | | |



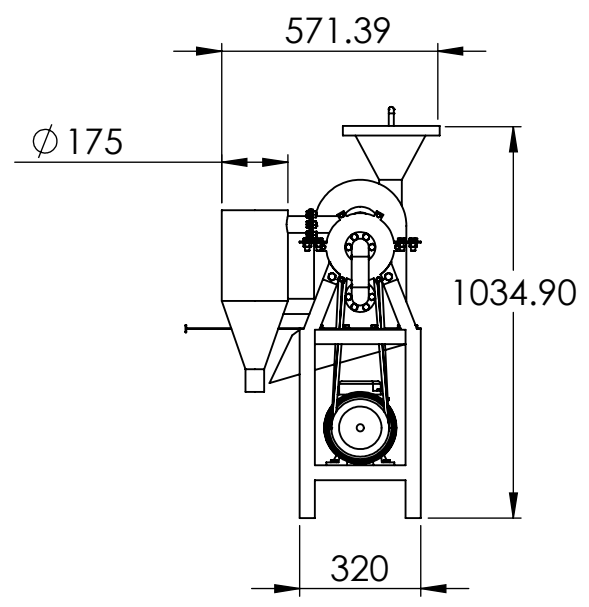
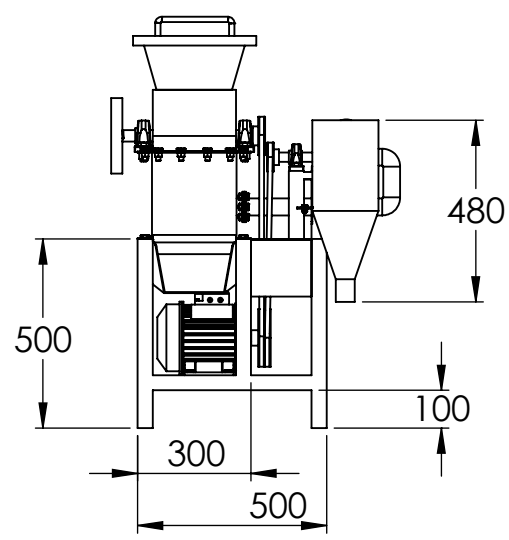
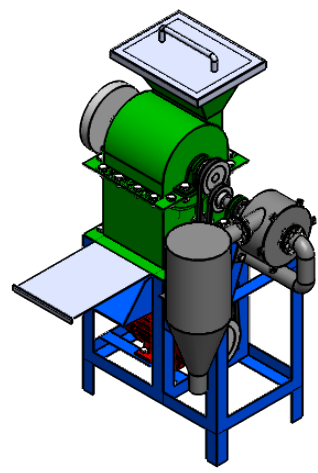
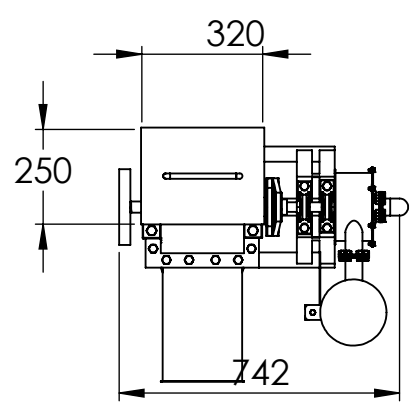
| JML | NAMA BAGIAN | | | | | BAHAN | UKURAN JADI | UKURAN KASAR | NO. ID | KETERANGAN |
|-----|-------------|------|------|------|------|-------|-------------------|--------------|----------|------------|
| > | 0 | 6 | 30 | 120 | 400 | 1000 | Pengerjaan Lanjut | NO ORDER | PROYEKSI | |
| < | 6 | 30 | 120 | 400 | 1000 | 2000 | | | | |
| TOL | ±0.1 | ±0.2 | ±0.3 | ±0.5 | ±0.8 | ±1.2 | | | | |

| | | | |
|--|--|-----------------------------------|------------------------------------|
| NAMA <h2 style="text-align: center;">MESIN PEMBUAT TEPUNG MOCAF</h2> <h3 style="text-align: center;">KAPASITAS 15 KG/JAM</h3> NO . ASSY : | SKALA <h1 style="text-align: center;">1 : 10</h1> | DIGAMBAR DIPERIKSA DISAHKAN | SRI BINTANG Agus. S Ipung. K |
|--|--|-----------------------------------|------------------------------------|

| | | |
|--|---|---|
| POLITEKNIK NEGERI CILACAP TELP. (0282) 537992 EMAIL : tmpnc@politeknikcilacap.ac.id JL. Dr. SOETOMO, SIDAKAYA, CILACAP, 53212 | FORMAT <h2 style="text-align: center;">A4</h2> | NO GAMBAR : <h1 style="text-align: center;">MPTM / 01</h1> |
|--|---|---|

GAMBAR INI TANPA IZIN TERTULIS DARI POLITEKNIK NEGERI CILACAP
DILARANG MEMFOTOKOPI, MEMPERBANYAK, MENYALIN, MEMINDAHTANGANKAN

| | | | | | | | |
|----|-----------|---------|------|----|-----------|---------|------|
| | 5 | 4 | 3 | 2 | 1 | | |
| NO | PERUBAHAN | TANGGAL | NAMA | NO | PERUBAHAN | TANGGAL | NAMA |
| / | | | | / | | | |



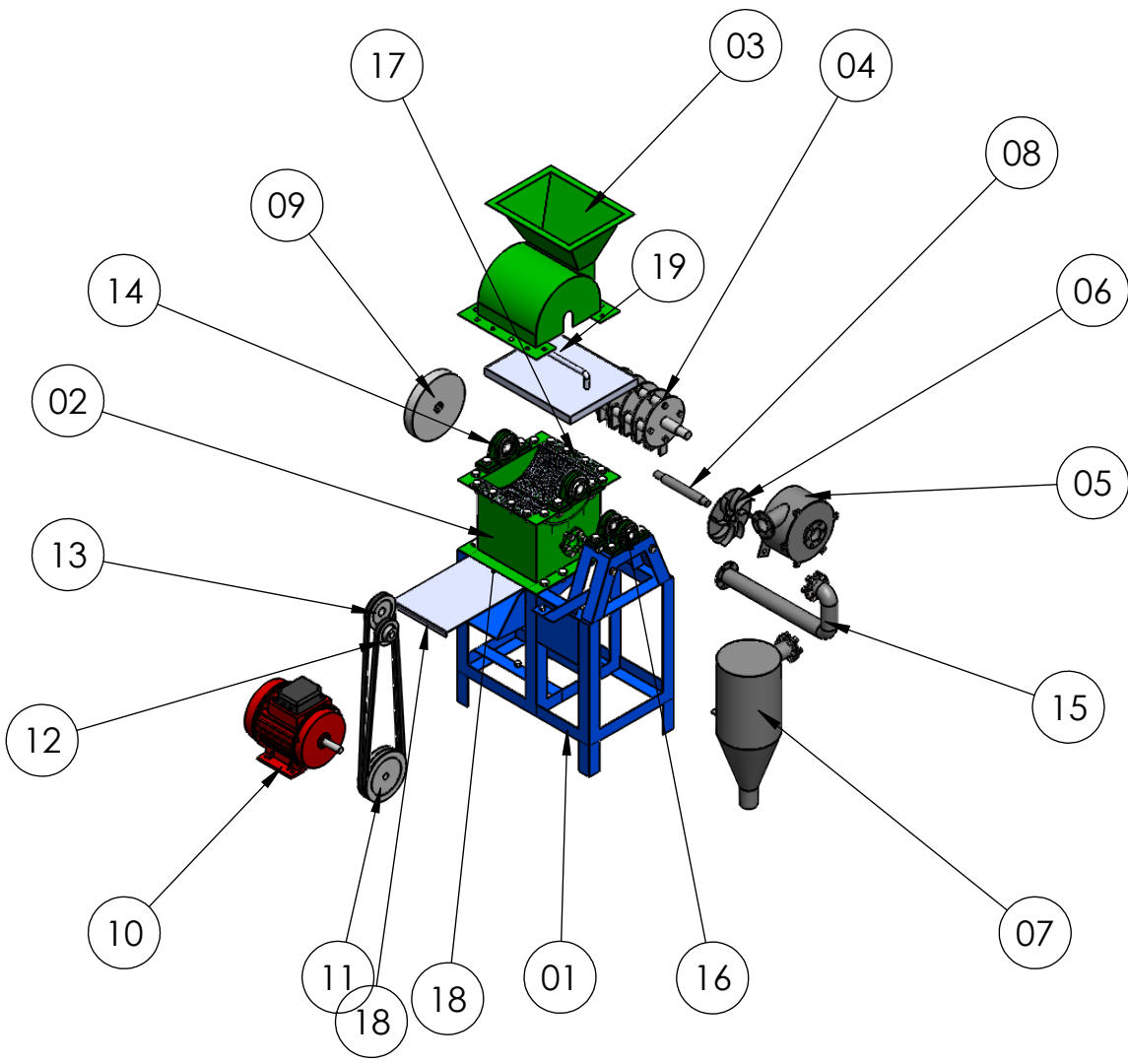
| JML | NAMA BAGIAN | | | | | BAHAN | UKURAN JADI | UKURAN KASAR | NO. ID | KETERANGAN |
|-----|-------------|------|------|------|------|-------|-------------------|--------------|----------|------------|
| > | 0 | 6 | 30 | 120 | 400 | 1000 | Pengerjaan Lanjut | NO ORDER | PROYEKSI | |
| < | 6 | 30 | 120 | 400 | 1000 | 2000 | | | | |
| TOL | ±0.1 | ±0.2 | ±0.3 | ±0.5 | ±0.8 | ±1.2 | | | | |

| | | | |
|---|------------------------|-----------------------------------|------------------------------------|
| NAMA MESIN PEMBUAT TEPUNG MOCAF KAPASITAS 15 KG/JAM | SKALA 1 : 20 | DIGAMBAR DIPERIKSA DISAHKAN | SRI BINTANG Agus. S Ipung. K |
| NO . ASSY : | | | |

| | | |
|--|---------------------|---------------------------------|
| POLITEKNIK NEGERI CILACAP TELP. (0282) 537992 EMAIL : tmpnc@politeknikcilacap.ac.id JL. Dr. SOETOMO, SIDAKAYA, CILACAP, 53212 | FORMAT A4 | NO GAMBAR : MPTM / 02 |
|--|---------------------|---------------------------------|

GAMBAR INI TANPA IZIN TERTULIS DARI POLITEKNIK NEGERI CILACAP DILARANG MEMFOTOKOPI, MEMPERBANYAK, MENYALIN, MEMINDAHTANGANKAN

| | | | | | | | |
|----|-----------|---------|------|----|-----------|---------|------|
| | 5 | 4 | 3 | 2 | 1 | | |
| NO | PERUBAHAN | TANGGAL | NAMA | NO | PERUBAHAN | TANGGAL | NAMA |
| ^ | | | | ^ | | | |



| JML | NAMA BAGIAN | | | | | BAHAN | UKURAN JADI | UKURAN KASAR | NO. ID | KETERANGAN |
|-----|-------------|------|------|------|------|-------|-------------------|--------------|----------|------------|
| > | 0 | 6 | 30 | 120 | 400 | 1000 | Pengerjaan Lanjut | NO ORDER | PROYEKSI | |
| < | 6 | 30 | 120 | 400 | 1000 | 2000 | | | | |
| TOL | ±0.1 | ±0.2 | ±0.3 | ±0.5 | ±0.8 | ±1.2 | | | | |

| | | | |
|--|--|-----------------------------------|------------------------------------|
| NAMA <h2 style="text-align: center;">ASSY MESIN PEMBUAT TEPUNG MOCAF KAPASITAS 15 KG/JAM</h2> NO . ASSY : | SKALA <h3 style="text-align: center;">1 : 20</h3> | DIGAMBAR DIPERIKSA DISAHKAN | SRI BINTANG Agus. S Ipung. K |
|--|--|-----------------------------------|------------------------------------|

| | | |
|--|---|---|
| POLITEKNIK NEGERI CILACAP TELP. (0282) 537992 EMAIL : tmpnc@politeknikcilacap.ac.id JL. Dr. SOETOMO, SIDAKAYA, CILACAP, 53212 | FORMAT <h3 style="text-align: center;">A4</h3> | NO GAMBAR : <h2 style="text-align: center;">MPTM / 03</h2> |
|--|---|---|

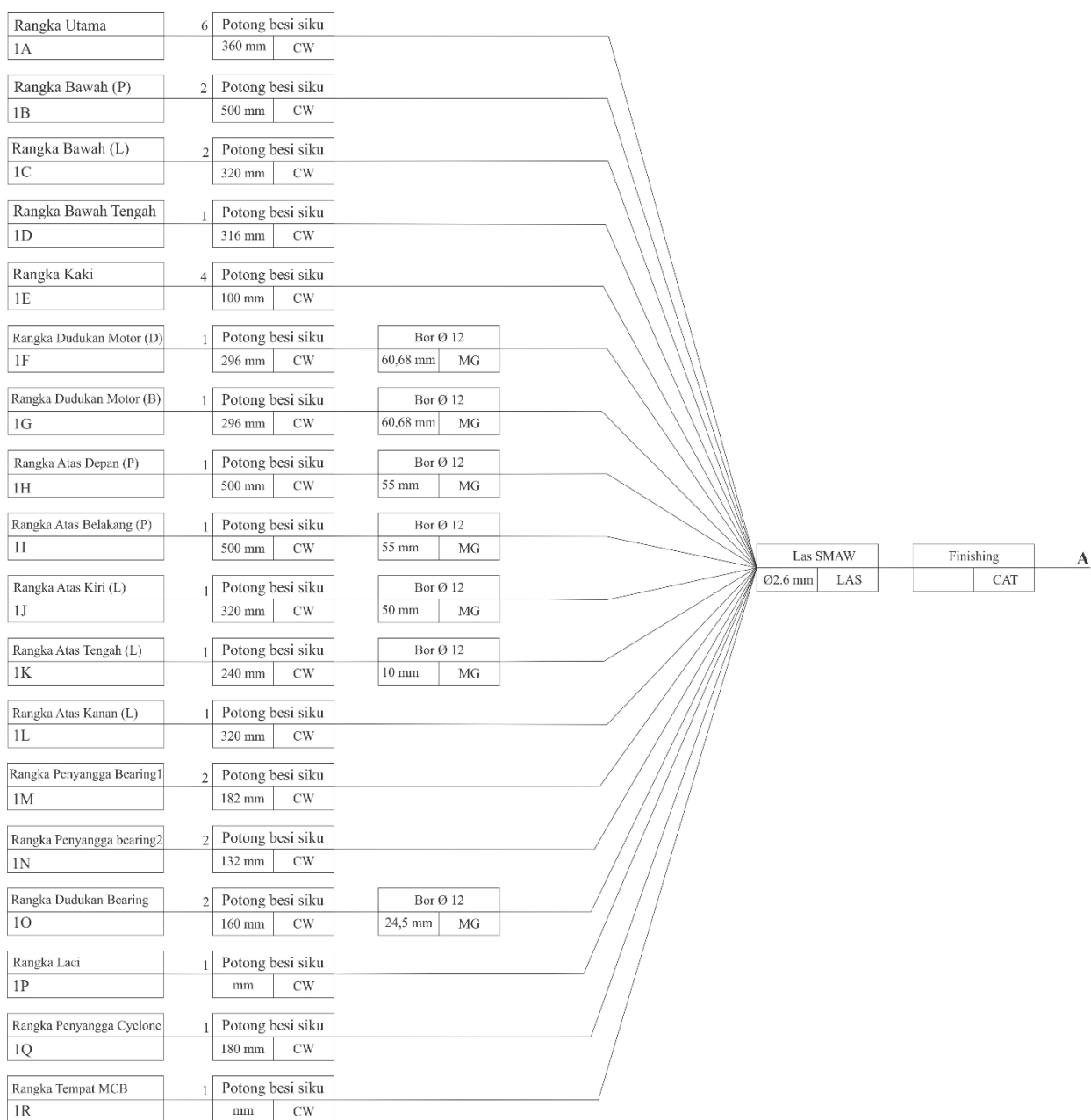
GAMBAR INI TANPA IZIN TERTULIS DARI POLITEKNIK NEGERI CILACAP DILARANG MEMFOTOKOPI, MEMPERBANYAK, MENYALIN, MEMINDAHTANGANKAN

| 5 | | 4 | | | 3 | | 2 | | 1 | | |
|--|---------------------|------|------|------|--------------|--------------|-------------------|------------------------|---------------------------------|---------|--------------|
| NO | PERUBAHAN | | | | TANGGAL | NAMA | NO | PERUBAHAN | | TANGGAL | NAMA |
| △ | | | | | | | △ | | | | |
| | | | | | | | | | | | |
| 1 | Tutup Hopper | | | | Carbon steel | Lihat detail | - | 19 | - | | E |
| 1 | Tutup Sorokan | | | | Carbon steel | Lihat detail | - | 18 | - | | D |
| 1 | Wire Mesh | | | | SS 304 | Dibeli | - | 17 | - | | D |
| 2 | Bearing UCP 205 | | | | - | Dibeli | - | 16 | - | | D |
| 1 | Pipa Saluran Blower | | | | Carbon steel | Lihat detail | - | 15 | - | | D |
| 2 | Bearing UCP 206 | | | | - | Dibeli | - | 14 | - | | D |
| 1 | Pulley A1 4IN | | | | Aluminium | Dibeli | - | 13 | - | | D |
| 1 | Pulley A1 3IN | | | | Aluminium | Dibeli | - | 12 | - | | D |
| 1 | Pulley A2 6IN | | | | Aluminium | Dibeli | - | 11 | - | | D |
| 1 | Motor Listrik 1HP | | | | - | Dibeli | - | 10 | - | | D |
| 1 | Pemberat | | | | Carbon steel | Lihat detail | - | 09 | - | | C |
| 1 | Poros Blower | | | | Baja S45C | Lihat detail | - | 08 | - | | C |
| 1 | Tangki Cyclone | | | | Carbon steel | Lihat detail | - | 07 | - | | C |
| 1 | Kipas Blower | | | | Carbon steel | Lihat detail | - | 06 | - | | C |
| 1 | Housing Blower | | | | Carbon steel | Lihat detail | - | 05 | - | | B |
| 1 | Hammer Mill | | | | Carbon steel | Lihat detail | - | 04 | - | | B |
| 1 | Penutup Housing | | | | Carbon steel | Lihat detail | - | 03 | - | | B |
| 1 | Housing Hammer | | | | Carbon steel | Lihat detail | - | 02 | - | | B |
| 1 | Rangka | | | | Mild steel | Lihat detail | - | 01 | - | | B |
| JML | NAMA BAGIAN | | | | BAHAN | UKURAN JADI | UKURAN KASAR | NO. ID | KETERANGAN | | B |
| > | 0 | 6 | 30 | 120 | 400 | 1000 | Pengerjaan Lanjut | | NO ORDER | | PROYEKSI |
| < | 6 | 30 | 120 | 400 | 1000 | 2000 | | | | | |
| TOL | ±0.1 | ±0.2 | ±0.3 | ±0.5 | ±0.8 | ±1.2 | | | | | |
| NAMA ASSY MESIN PEMBUAT TEPUNG MOCAP KAPASITAS 15 KG/JAM | | | | | | | | SKALA 1 : 20 | DIGAMBAR | | SRI BINTANG |
| NO. ASSY : | | | | | | | | | DIPERIKSA | | Agus. S |
| | | | | | | | | | DISAHKAN | | Ipung. K |
| POLITEKNIK NEGERI CILACAP TELP. (0282) 537992 EMAIL : tmpnc@politeknikcilacap.ac.id JL. Dr. SOETOMO, SIDAKAYA, CILACAP, 53212 | | | | | | | | FORMAT A4 | NO GAMBAR : MPTM / 03 | | A |

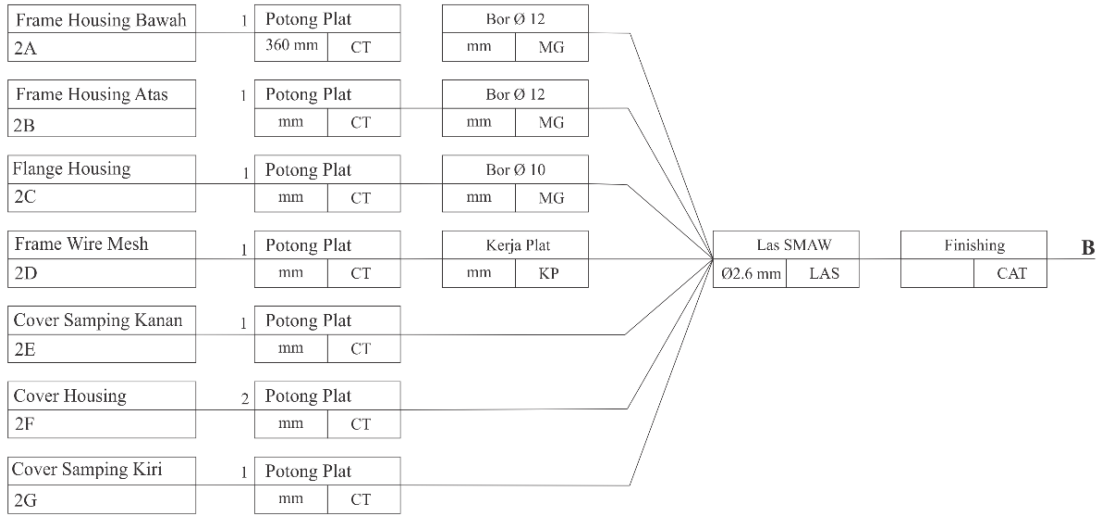
LAMPIRAN 3
(FLOW OF PROCESS)

Flow Of Process

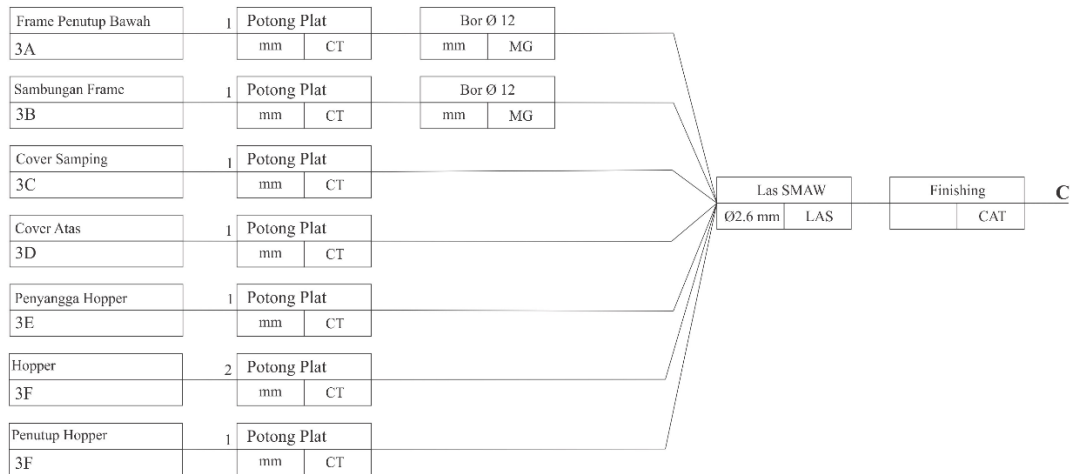
Rangka



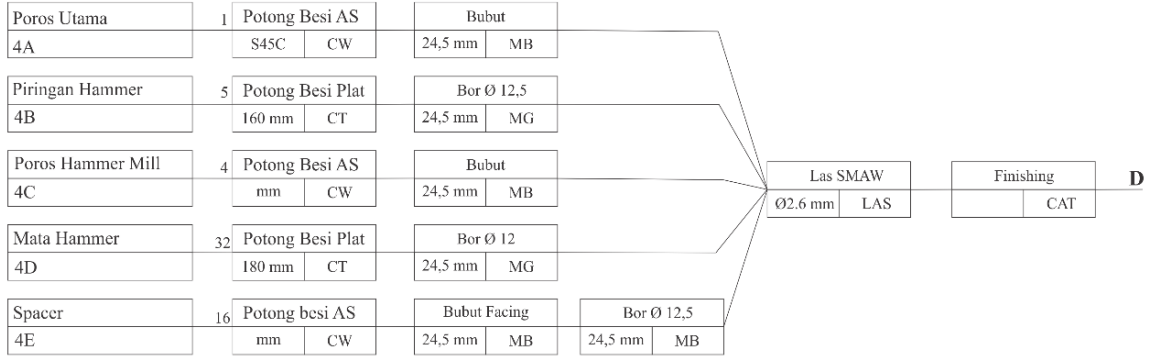
Housing Hammer



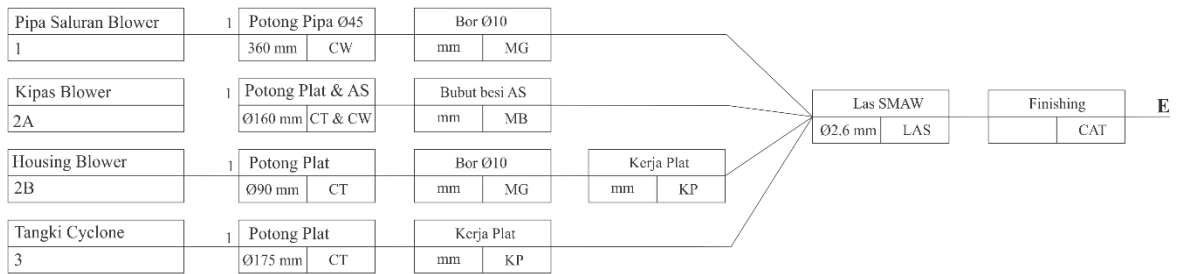
Hopper



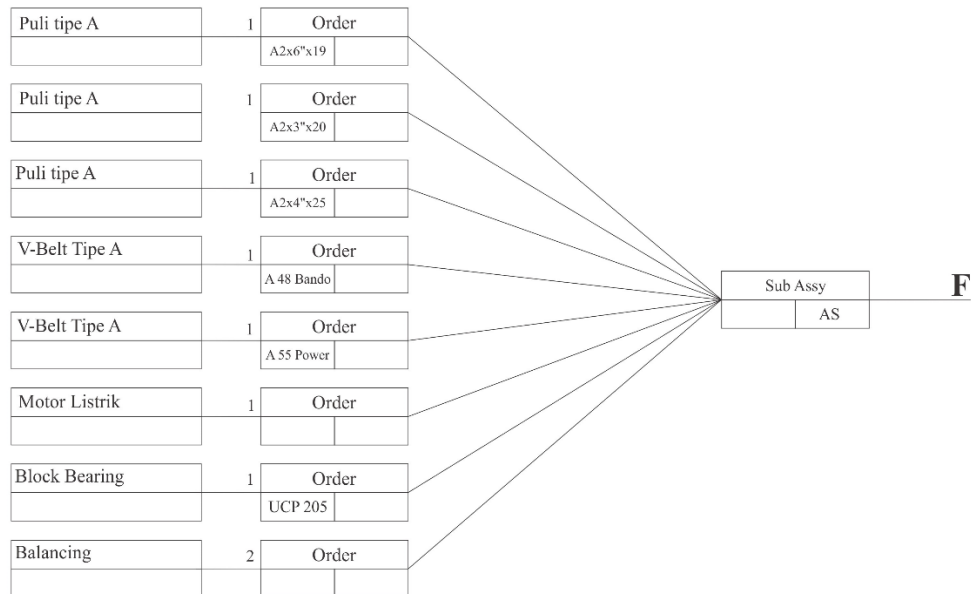
Hammer mill



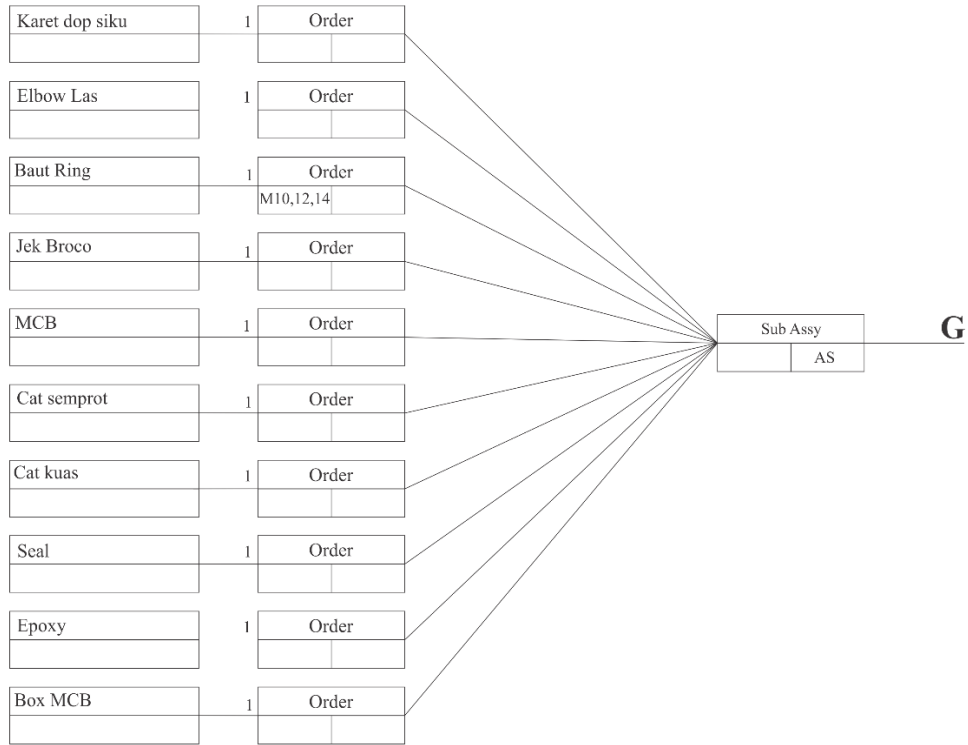
Blower dan Tangki Cyclone



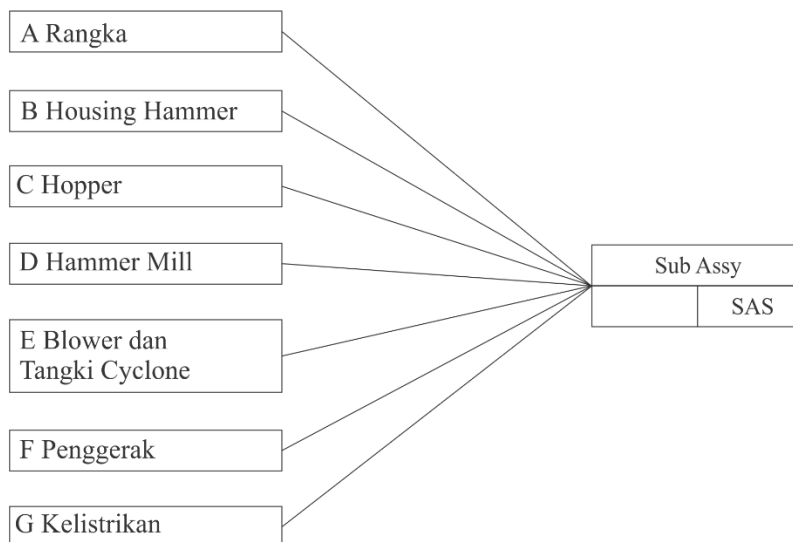
Penggerak



Kelistrikan



Assembly keseluruhan



Keterangan :

AS : *Assembly*

CAT : Pengecatan

CW : *Cutting Wheel*

CT : *Cutting Torch*

MB : Mesin Bubut






MG : Mesin Gurdi






CAT : Pengecatan



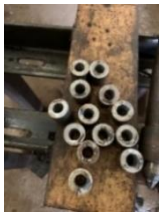







LAS : Pengelasan








LAMPIRAN 4
(PROSES PRODUKSI)

Tabel Laporan Harian Pengerjaan TA (Mesin Pembuat Tepung Mocaf)

| No. | Hari/Tanggal | Kegiatan | Dokumentasi |
|-----|-------------------|--|---|
| 1. | Minggu/14-05-2023 | Membuat gambar kerja (2D) Mesin penepung. |  |
| 2. | Selasa/16-05-2023 | Membeli material seperti besi siku 40x40x3 dan plat eser 2 mm. |  |
| 3. | Minggu/21-05-2023 | Memotong besi siku sesuai keperluan untuk membuat rangka mesin dan merakit rangka dengan las <i>tackweld</i> . |  |
| 4. | Senin/22-05-2023 | Mengulangi merakit rangka karena hari pertama hasilnya kurang lurus dan selesai membuat rangka bawah. |  |
| 5. | Selasa/23-05-2023 | Membongkar bagian rangka atas dan membalik posisi besi siku ke arah luar untuk memudahkan pemasangan baut. |  |

| No. | Hari/Tanggal | Kegiatan | Dokumentasi | |
|-----|-------------------|--|---|--|
| 6. | Rabu/24-05-2023 | Memotong besi siku dan membuat rangka untuk cover bawah. |  | |
| 7. | Kamis/25-05-2023 | Membeli plat 5 mm dan plat per untuk bahan pisau hammer. | | |
| 8. | Jumat/26-05-2023 | Memotong per membentuk persegi panjang untuk mata hammer sesuai dengan ukuran. Dan memotong plat 5 mm membentuk lingkaran untuk piringan hammer menggunakan blender. |  |  |
| 9. | Senin/29-05-2023 | Melubangi pisau hammer dengan diameter 12 mm dan piringan dengan diameter 1 inci. |  | |
| 10. | Selasa/30-05-2023 | Membuat cover atas (<i>hopper</i>) dengan plat 2 mm. |  | |

| No. | Hari/Tanggal | Kegiatan | Dokumentasi | |
|-----|-------------------|--|---|---|
| 11. | Rabu/31-05-2023 | Melanjutkan membuat cover atas dengan plat 2 mm. |  | |
| 12. | Kamis/01-06-2023 | Membuat ring untuk jarak pisau hammer. |  |  |
| 13. | Jumat/02-06-2023 | Membuat penutup cover bawah dan mengelasnya. |  |  |
| 14. | Senin/05-06-2023 | Merakit pisau hammer dan mengelas piringan pada poros. |  | |
| 15. | Selasa/06-06-2023 | Membuat rumah blower. |  |  |
| | | |  |  |

| No. | Hari/Tanggal | Kegiatan | Dokumentasi | |
|-----|-------------------|--|---|---|
| 16. | Rabu/07-06-2023 | Membeli v-belt, dan membuat kipas blower. |  |  |
| 17. | Kamis/08-06-2023 | Membuat dudukan bearing untuk poros blower dan membuat instalasi pipa saluran blower. |  | |
| 18. | Jumat/09-06-2023 | Bimbingan progress | | |
| 19. | Senin/12-06-2023 | Membuat tangki cyclone dengan plat 2 mm. |  | |
| 20. | Selasa/13-06-2023 | Melanjutkan membuat tangki cyclone dan membuat penyangga tangki cyclone pada rangka mesin. |  |  |
| 21. | Rabu/14-06-2023 | Memasang motor penggerak, hammer mill, blower dan tangki cyclone pada rangka mesin. |  | |

| No. | Hari/Tanggal | Kegiatan | Dokumentasi |
|-----|-------------------|--|---|
| 22. | Kamis/15-06-2023 | Melepas semua komponen mesin untuk proses pengecatan dan memulai mengecat bagian rangka. |  |
| 23. | Jumat/16-06-2023 | Mengecat hammer mill. |  |
| 24. | Senin/19-06-2023 | Melanjutkan mengecat hammer mill dan mengecat cover bagian bawah. |  |
| 25. | Selasa/20-06-2023 | Mengecat hopper, rumah blower, pipa saluran blower dan tangki cyclone. |     |

| No. | Hari/Tanggal | Kegiatan | Dokumentasi | |
|-----|-------------------|---|--|--|
| 26. | Selasa/20-06-2023 | Merakit kembali komponen mesin yang sudah dicat dan melakukan uji coba mesin. |   | |
| 27. | Senin/26-06-2023 | Membongkar puli penggerak untuk diganti ukuran karena putaran untuk blower penghisap kurang maksimal sehingga diganti puli dengan diameter 2 kali lipat puli yang digerakkan. | | |
| 18. | Selasa/27-06-2023 | Membuat perpak dengan ban bekas untuk setiap sambungan agar rapat dan tidak ada angin keluar pada saat mesin beroperasi dan memberi lem silicon pada tutup blower agar rapat. | | |

| No. | Hari/Tanggal | Kegiatan | Dokumentasi | |
|-----|------------------|---|--|---|
| 29. | Senin/03-07-2023 | Mencoba kembali kinerja mesin setelah diganti puli dan hasilnya berhasil, kemudian dicoba untuk menggiling chips singkong menjadi tepung. |  |  |
| | | |  |  |

LAMPIRAN 5

**(TABEL KECEPATAN POTONG, GERAK MAKAN PADA
MESIN BUBUT, GURDI DAN FRAIS)**


**Kecepatan Potong Proses Rata dan Proses Bubut Ulir Untuk Pahat HSS
(Widarto, 2008)**

| MATERIAL | STRAIGHT TURNING SPEED | | THREADING SPEED | |
|---------------------------|------------------------|-------------------|-----------------|-------------------|
| | FEET PER MINUTE | METERS PER MINUTE | FEET PER MINUTE | METERS PER MINUTE |
| LOW-CARBON STEEL | 80-100 | 24.4-30.5 | 35-40 | 10.7-12.2 |
| MEDIUM-CARBON STEEL | 60-80 | 18.3-24.4 | 25-30 | 7.6-9.1 |
| HIGH-CARBON STEEL | 35-40 | 10.7-12.2 | 15-20 | 4.6-6.1 |
| STAINLESS STEEL | 40-50 | 12.2-15.2 | 15-20 | 4.6-6.1 |
| ALUMINUM AND ITS ALLOYS | 200-300 | 61.0-91.4 | 50-60 | 15.2-18.3 |
| ORDINARY BRASS AND BRONZE | 100-200 | 30.5-61.0 | 40-50 | 12.2-15.2 |
| HIGH-TENSILE BRONZE | 40-60 | 12.2-18.3 | 20-25 | 6.1-7.6 |
| CAST IRON | 50-80 | 15.2-24.4 | 20-25 | 6.1-7.6 |
| COPPER | 60-80 | 18.3-24.4 | 20-25 | 6.1-7.6 |

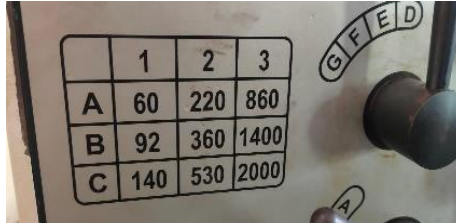
NOTE: Speeds for carbide-tipped bits can be 2 to 3 times the speed recommended for high-speed steel

Gerak Makan Pada Mesin Bubut dan Kecepatan Spindel

LONGITUDINAL FEED



| G | M | M | | | | G |
|-----|----|-------|-------|-------|-------|----|
| | | D | E | F | G | |
| 5 | 1 | 0.044 | 0.088 | 0.176 | 0.352 | 1 |
| 4 | 2 | 0.050 | 0.099 | 0.198 | 0.396 | 2 |
| 1/2 | 3 | 0.052 | 0.105 | 0.210 | 0.420 | 3 |
| | 4 | 0.055 | 0.110 | 0.220 | 0.440 | 4 |
| | 5 | 0.060 | 0.121 | 0.242 | 0.484 | 5 |
| 1/2 | 6 | 0.063 | 0.127 | 0.254 | 0.508 | 6 |
| | 7 | 0.066 | 0.132 | 0.264 | 0.528 | 7 |
| | 8 | 0.072 | 0.144 | 0.287 | 0.574 | 8 |
| 2 | 9 | 0.075 | 0.149 | 0.298 | 0.596 | 9 |
| | 10 | 0.077 | 0.154 | 0.308 | 0.616 | 10 |
| | 11 | 0.083 | 0.166 | 0.331 | 0.662 | 11 |



| | 1 | 2 | 3 |
|---|-----|-----|------|
| A | 60 | 220 | 860 |
| B | 92 | 360 | 1400 |
| C | 140 | 530 | 2000 |

Kecepatan Potong Untuk Proses Frais Untuk Pasangan Benda Kerja dan Pisau HSS (Widarto, 2008)

| MATERIAL | CUTTING SPEED (sfpm) : | | | |
|--------------------------------------|------------------------|--------------|---------------------|--------------|
| | PLAIN MILLING CUTTERS | | END MILLING CUTTERS | |
| | Roughing | Finishing | Roughing | Finishing |
| Aluminum | 400 to 1,000 | 400 to 1,000 | 400 to 1,000 | 400 to 1,000 |
| Brass, composition | 125 to 200 | 90 to 200 | 90 to 150 | 90 to 150 |
| Brass, yellow | 150 to 200 | 100 to 250 | 100 to 200 | 100 to 200 |
| Bronze, phosphor and manganese | 30 to 80 | 25 to 100 | 30 to 80 | 30 to 80 |
| Cast iron (hard) | 25 to 40 | 10 to 30 | 25 to 40 | 20 to 45 |
| Cast iron (soft and medium) | 40 to 75 | 25 to 80 | 35 to 65 | 30 to 80 |
| Monel metal | 50 to 75 | 50 to 75 | 40 to 60 | 40 to 60 |
| Steel, hard | 25 to 50 | 25 to 70 | 25 to 50 | 25 to 70 |
| Steel, soft | 80 to 120 | 45 to 110 | 50 to 85 | 45 to 100 |

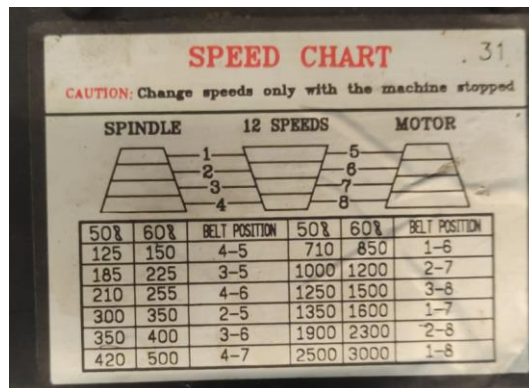
Beram Per Gigi Untuk Beberapa Tipe Pisau Frais dan Benda Kerja Yang Dikerjakan (Widarto, 2008)

| TYPE OF CUTTER | ALUMINUM | | BRONZE | | CAST IRON | | FREE MACHINING STEEL | | ALLOY STEEL | |
|-----------------------|----------|----------|--------|----------|-----------|----------|----------------------|----------|-------------|----------|
| | HSS | CAR BIDE | HSS | CAR BIDE | HSS | CAR BIDE | HSS | CAR BIDE | HSS | CAR BIDE |
| FACE MILLS | .007 | .007 | .005 | .004 | .004 | .006 | .003 | .004 | .002 | .003 |
| | to | to | to | to | to | to | to | to | to | to |
| HELICAL MILLS | .022 | .020 | .014 | .012 | .016 | .020 | .012 | .016 | .008 | .014 |
| | to | to | to | to | to | to | to | to | to | to |
| SIDE CUTTING MILLS | .006 | .006 | .003 | .004 | .004 | .002 | .002 | .003 | .002 | .003 |
| | .018 | .016 | .011 | .010 | .018 | .018 | .010 | .013 | .007 | .012 |
| END MILLS | .004 | .004 | .003 | .003 | .002 | .003 | .002 | .003 | .001 | .002 |
| | .013 | .012 | .008 | .007 | .009 | .012 | .007 | .009 | .005 | .008 |
| FORM RELIEVED CUTTERS | .003 | .003 | .003 | .002 | .002 | .003 | .001 | .002 | .001 | .002 |
| | to | to | to | to | to | to | to | to | to | to |
| CIRCULAR SAWS | .011 | .010 | .007 | .006 | .008 | .010 | .006 | .008 | .004 | .007 |
| | to | to | to | to | to | to | to | to | to | to |
| FORM RELIEVED CUTTERS | .002 | .002 | .001 | .001 | .002 | .002 | .001 | .002 | .001 | .001 |
| | .007 | .006 | .004 | .004 | .005 | .006 | .004 | .005 | .003 | .004 |
| CIRCULAR SAWS | .002 | .002 | .001 | .001 | .001 | .002 | .001 | .001 | .005 | .001 |
| | to | to | to | to | to | to | to | to | to | to |
| | .005 | .005 | .003 | .003 | .004 | .006 | .003 | .004 | .002 | .004 |

Material, Cutting Speed dan Spesifikasi kecepatan putaran spindel Mesin Gurdi

| MATERIAL | CUTTING SPEEDS L. | | POINT ANGLE | LIP CLEARANCE | COOLANTS |
|---------------------------------------|-------------------|---------------|---------------|---------------|---|
| | (METERS/MINUTE) | (FEET/MINUTE) | | | |
| | MPM | FPM | | | |
| Aluminum And Alloys | 61.00 - 91.50 | 200 - 300 | 90 - 130 deg | 12 - 15 deg | Kerosene/Kerosene & Lard Oil/ Soluble Oil |
| Armor Plate | 12.20 - 18.25 | 40 - 50 | 135 - 140 deg | 6 - 9 deg | Light Machine Oil |
| Brass | 61.00 - 91.50 | 200 - 300 | 118 - 118 deg | 12 - 15 deg | Dry/ Soluble Oil/Kerosene/Lard Oil |
| Bronze | 61.00 - 91.50 | 200 - 300 | 110 - 118 deg | 12 - 15 deg | Dry/ Soluble Oil/Mineral Oil/Lard Oil |
| Bronze, High Tensile | 21.35 - 45.75 | 70 - 150 | 100 - 110 deg | 12 - 15 deg | Dry/ Soluble Oil/Mineral Oil/Lard Oil |
| Cast Iron, Soft | 30.50 - 45.75 | 100 - 150 | 90 - 100 deg | 12 - 15 deg | Air Jet Dry/ Soluble Oil |
| Cast Iron, Medium | 21.35 - 30.50 | 70 - 100 | 100 - 110 deg | 12 - 15 deg | Air Jet Dry/ Soluble Oil |
| Cast Iron, Hard | 21.35 - 30.50 | 70 - 100 | 100 - 118 deg | 8 - 12 deg | Air Jet Dry/ Soluble Oil |
| Cast Iron, Chilled | 9.15 - 12.20 | 30 - 40 | 118 - 135 deg | 5 - 9 deg | Air Jet Dry/ Soluble Oil |
| Copper | 61.00 - 91.50 | 200 - 300 | 100 - 118 deg | 12 - 15 deg | Air Jet Dry/ Soluble Oil |
| Copper Graphite Alloy (Carbon Drills) | 18.30 - 21.35 | 60 - 70 | **_** | **_** | Soluble Oil/Dry/Mineral Oil/Kerosene |
| Glass (Carbon Drills) | 6.10 - 9.15 | 20 - 30 | **_** | **_** | Soluble Oil/Dry/Mineral Oil/Kerosene |
| Iron, Malleable | 15.25 - 27.45 | 50 - 90 | 90 - 100 deg | 12 - 15 deg | Light Machine Oil |
| Magnesium And Alloys | 76.25 - 122.0 | 250 - 400 | 70 - 118 deg | 12 - 15 deg | Soluble Oil |
| Monel Nickel | 4.15 - 15.28 | 30 - 50 | 118 - 125 deg | 10 - 12 deg | Compressed Air/Mineral Oil |
| Nickel Alloys | 12.20 - 18.30 | 40 - 60 | 135 - 140 deg | 5 - 7 deg | Lard Oil/Soluble Oil |
| Plastic, Hot Set | 30.50 - 91.50 | 100 - 300 | 60 - 90 deg | 10 - 12 deg | Lard Oil/Soluble Oil |
| Plastic, Cold Set | 30.50 - 91.50 | 100 - 300 | 118 - 135 deg | 12 - 20 deg | Soap Solution |
| Steel, Low Carbon, 0.2-0.3c | 24.40 - 33.55 | 80 - 110 | 110 - 118 deg | 7 - 9 deg | Soap Solution |
| Steel, Medium Carbon 0.4-0.5c | 21.35 - 24.40 | 70 - 80 | 118 - 125 deg | 7 - 9 deg | Soluble Oil/Mineral Oil/Sulfur Oil/Lard Oil |
| Steel (High Carbon 1.2c) | 15.25 - 18.30 | 50 - 60 | 118 - 145 deg | 7 - 9 deg | Soluble Oil/Mineral Oil/Sulfur Oil/Lard Oil |
| Steel, Forged | 15.25 - 18.30 | 50 - 60 | 118 - 145 deg | 7 - 12 deg | Soluble Oil/Mineral Oil/Sulfur Oil/Lard Oil |
| Steel, Alloy | 15.25 - 21.35 | 50 - 70 | 118 - 125 deg | 10 - 12 deg | Mineral Lard Oil |
| Steel, Alloy 300 To 400 Brinell | 6.10 - 9.15 | 20 - 30 | 130 - 140 deg | 7 - 10 deg | Soluble Oil |
| Steel, Stainless, Free Machining | 9.15 - 24.40 | 30 - 80 | 110 - 118 deg | 8 - 12 deg | Soluble Oil |
| Steel, Stainless, Hard | 4.57 - 15.25 | 15 - 50 | 118 - 135 deg | 6 - 8 deg | Soluble Oil |
| Steel, Manganese | 3.66 - 4.57 | 12 - 15 | 140 - 150 deg | 7 - 10 deg | Soluble Oil |
| Stone (Carbide Drills) | 7.63 - 9.15 | 25 - 30 | **_** | **_** | Water Solution |
| Wood | 91.50 - 122.2 | 300 - 400 | 60 - 70 deg | 10 - 15 deg | Dry |

Tabel 11 kecepatan spindel mesin gurdi



LAMPIRAN 6
(Hasil Penepungan)

Penepungan menggunakan blower



Penepungan tanpa menggunakan blower

