BAB VI
KESIMPULAN

6.1. Kesimpulan

Berdasarkan penerapan metode pendekatan sitematis dihasilkan *paper embosser* yang memiliki dimensi 528 x 284x 698 mm dan berat 19,3 kg. Hasil rancangan ini ditujukan untuk mengemboss kertas yang memiliki dimensi 245 x 245 x 0,4 mm dengan berat 16 gram. Alat ini menggunakan tangan sebagai penggerak utama dan gaya yang dibutuhkan untuk menggerakan alat ini minimum 76 Newton. Perkiraan biaya yang dibutuhkan dalam pembuatan alat ini adalah Rp 2.286.478.

Perawatan dapat dilakukan dengan cara membersihkan alat dari kotoran dan pada bagian yang tidak dicat dan bergerak dapat dioles oli agar tidak mudah berkarat dan aus. Dari segi bahan, umur pakai *punch* dan *die* yang terbuat dari brass kurang lebih mencapai 1.000.000 kali *emboss.* Tinggi bukaan *punch* dan *die* sebesar 20 mm sedangkan *adjuster* yang digunakan untuk menyeting kesentrisan logo terhadap kertas dapat digerakan sejauh 5 mm. Spesifikasi yang lebih lengkap dapat dilihat di lampiran.

6.2. Saran

Penelitian ini masih terbatas pada produk tunggal dan *requirement list* disusun atas dasar identifikasi terhadap kebutuhan dari konsumen tunggal dan disain belum direalisasikan menjadi produk jadi. Untuk penelitian selanjutnya dapat dilakukan pengembangan produk lebih jauh dengan melakukan riset pasar yang lebih luas jangkauannya agar produk dapat diterima oleh konsumen yang lebih luas dan direalisasikan menjadi produk jadi.

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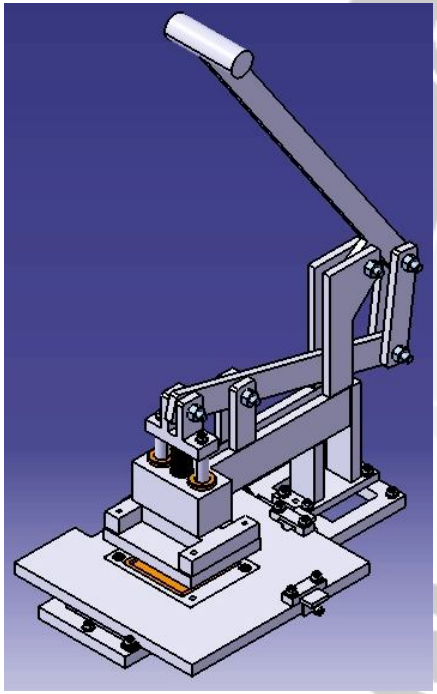
LAMPIRAN

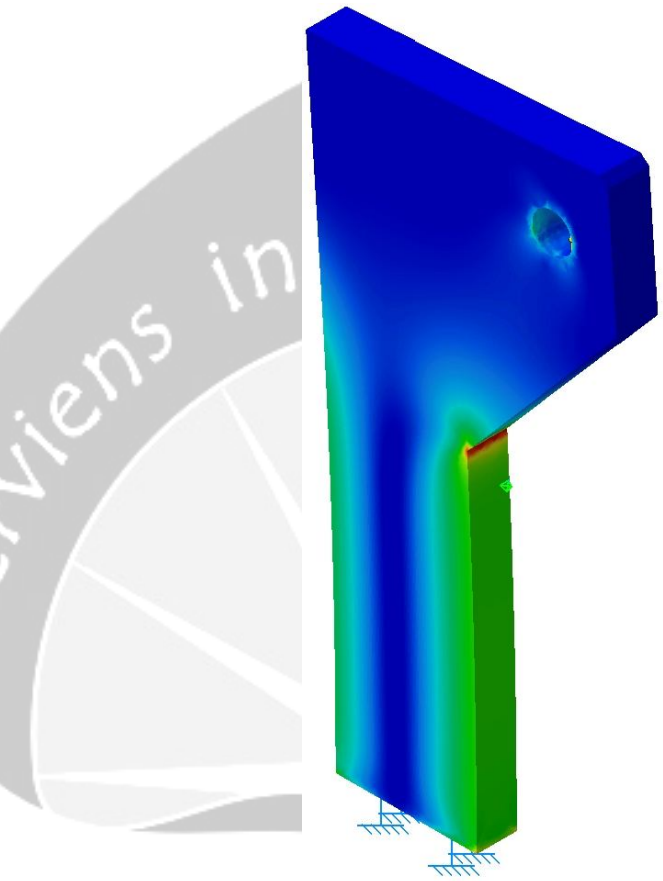
Lampiran 1 Spesifikasi *Paper Embosser*

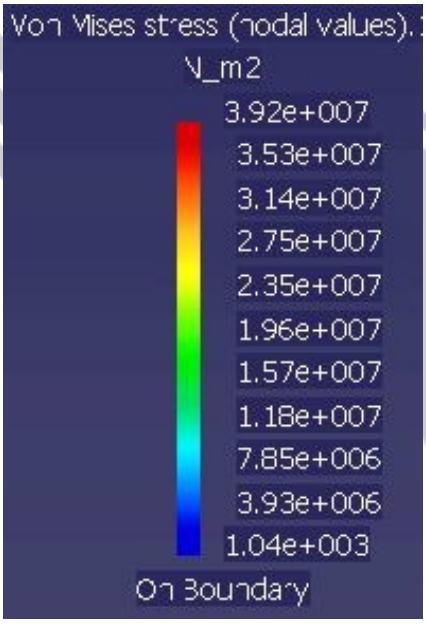


Dimensi	528 x 284 x 698 mm
Berat	19,3 kg
Tinggi bukaan *punch* dan *die*	20 mm
Penggerak	Tangan manusia
Gaya tangan yang dibutuhkam	76 Newton
Warna	Dominan putih
Perawatan	Oles oli pada bagian bergerak
Adjuster travel x dan y	5 mm
Punch dan die Insert	Brass
Umur pakai *punch* dan *die*	± 1.000.000 *shoots*
Bahan rangka, *laverage*, dan *handle*	Baja konstruksi umum (St 37 atau Ms)
Standart part	6 x dowel pin Ø6-20
	21 x SHCS Bolt M6-30
	5 x HHCS Bolt M10-50
	Coil Spring SWU 21-60
Dimensi kertas yang di-*emboss*	245 x 245 x 0,4 mm
Berat kertas	16 gram/lembar

Lampiran 2

Analsis Kekuatan Dari Komponen Laver Pad 3



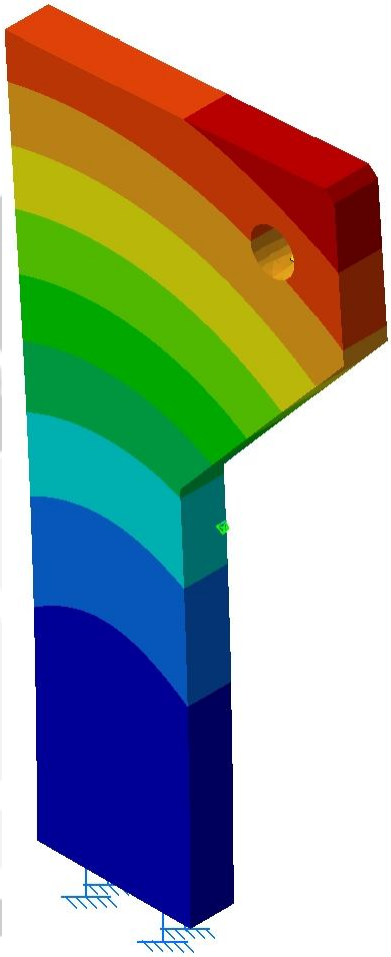


> Object name: Von Mises stress (nodal values).1

Display
On deformed mesh
On boundary
Over all the model
Extrema Values
Min: 1035.33 N_m2
Max: 3.92419e+007 N_m2

Filters
3D elements:
Components: All

Defined Materials
Material: Steel
Young Modulus: 2e+011N_m2
Poisson Ratio: 0.266
Density: 7860kg_m3
Thermal Expansion: 1.17e-005_Kdeg
Yield Strength: 2.5e+008N_m2

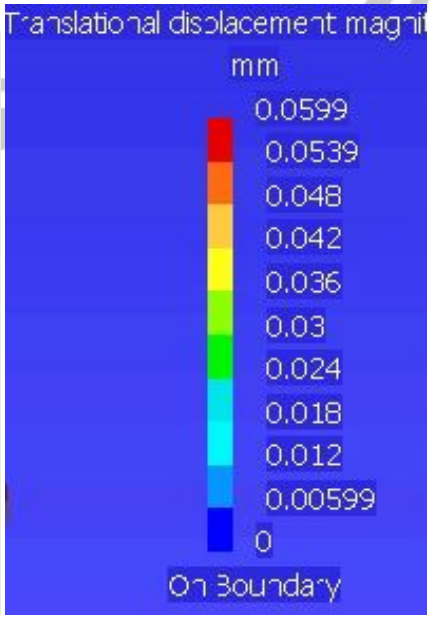


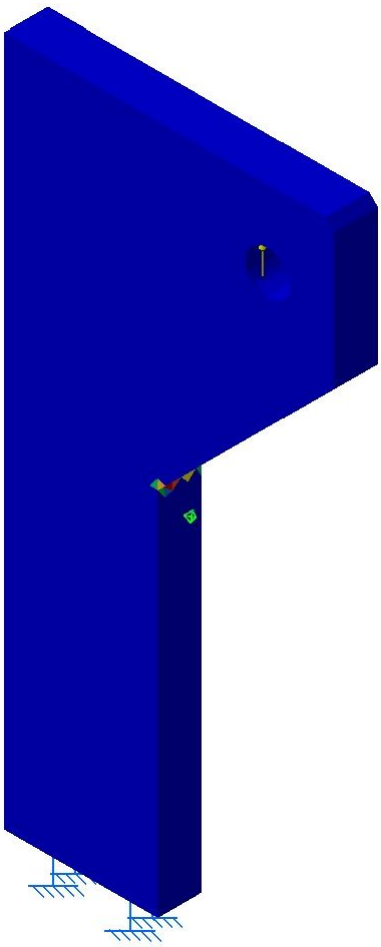
> Object name: Translational displacement magnitude.1

Display
On deformed mesh
On boundary
Over all the model
Extrema Values
Min: 0 mm
Max: 0.0599385 mm

Filters
3D elements:
Components: All

Defined Materials
Material: Steel
Young Modulus: 2e+011N_m2
Poisson Ratio: 0.266
Density: 7860kg_m3
Thermal Expansion: 1.17e-005_Kdeg
Yield Strength: 2.5e+008N_m2



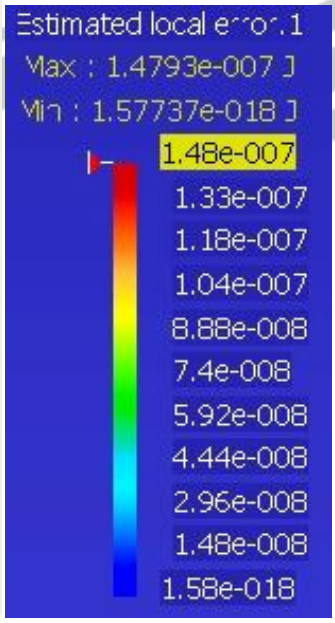


> Object name: Estimated local error.1

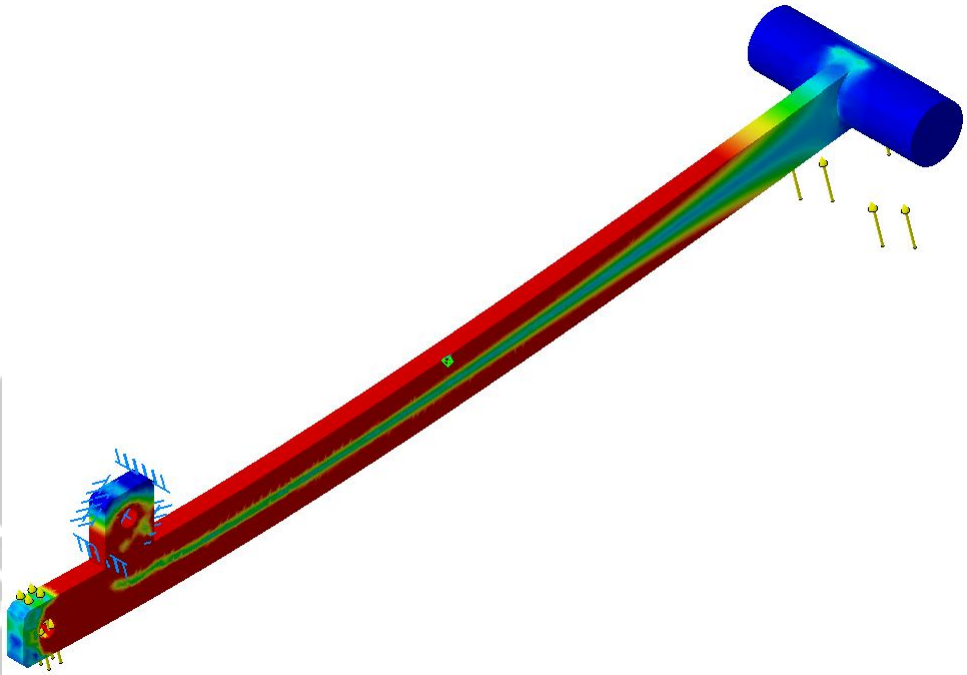
Display
  On all Elements
  Over all the model
Extrema Values
  Min: 1.57737e-018 J
  Max: 1.4793e-007 J

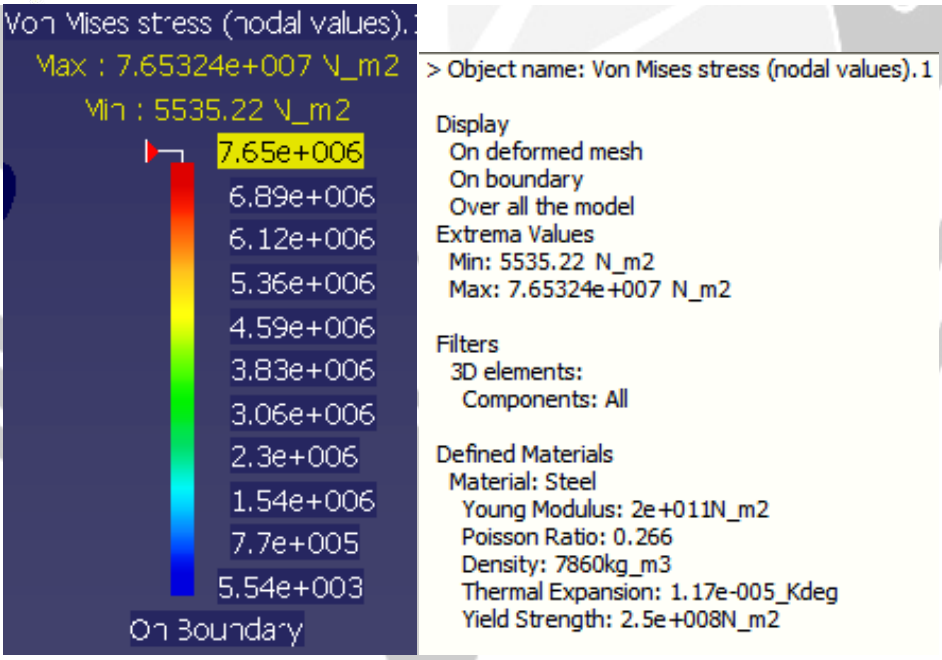
Filters
  3D elements:
    Components: All
Precision location: global
Estimated precision: 4.75288e-006 J
Strain energy: 0.00901503 J
Global estimated error rate: 1.62339 %

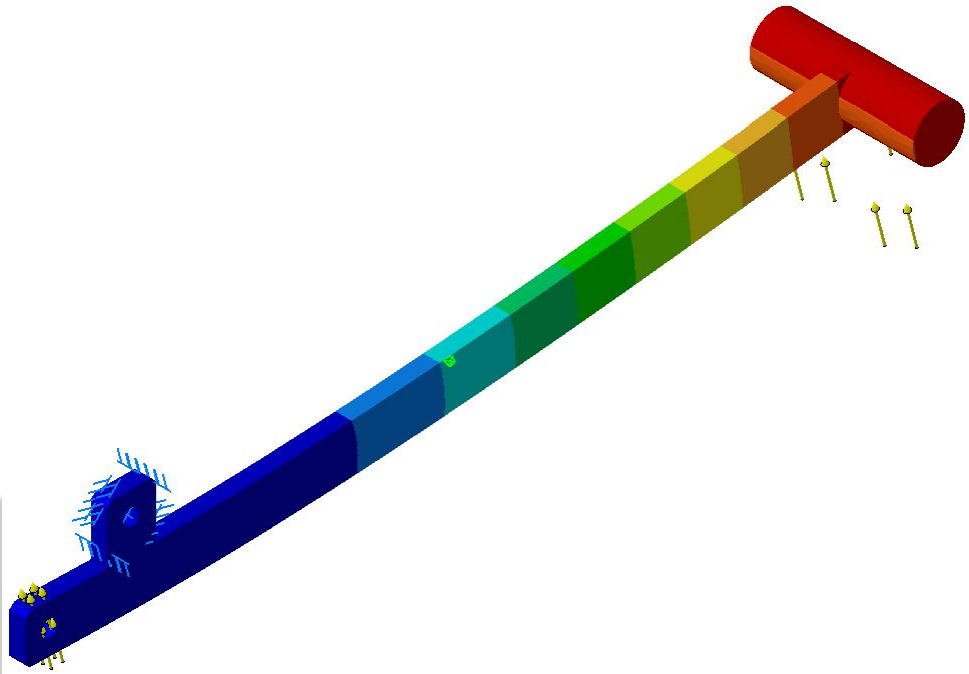
Defined Materials
  Material: Steel
    Young Modulus: 2e+011N_m2
    Poisson Ratio: 0.266
    Density: 7860kg_m3
    Thermal Expansion: 1.17e-005_Kdeg
    Yield Strength: 2.5e+008N_m2



Analsis Kekuatan Dari Komponen Handle 1





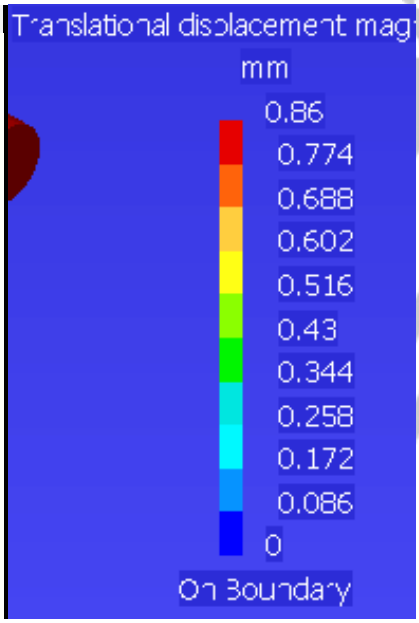


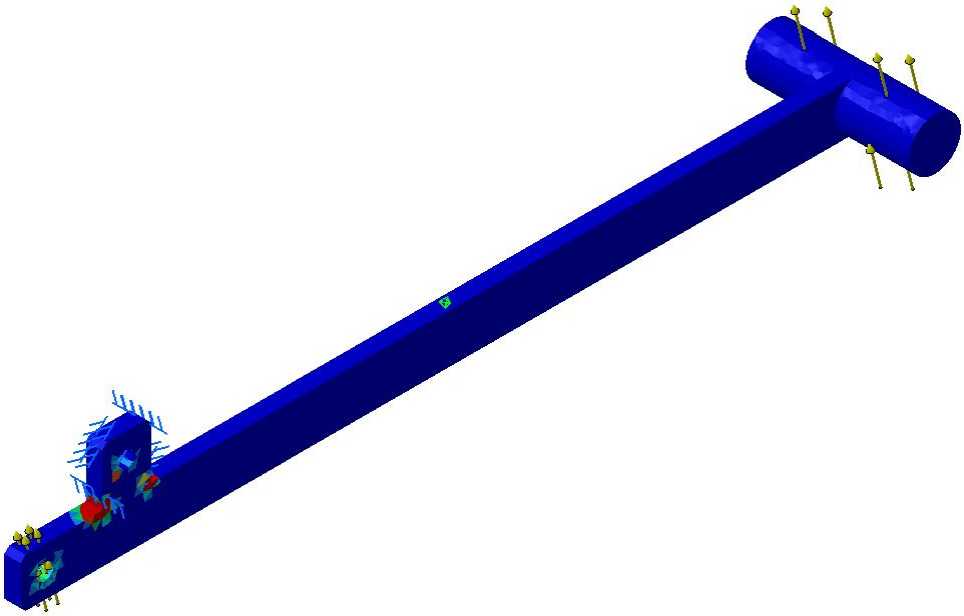
> Object name: Translational displacement magnitude.1

Display
  On deformed mesh
  On boundary
  Over all the model
Extrema Values
  Min: 0 mm
  Max: 0.859856 mm

Filters
  3D elements:
    Components: All

Defined Materials
  Material: Steel
    Young Modulus: 2e+011N_m2
    Poisson Ratio: 0.266
    Density: 7860kg_m3
    Thermal Expansion: 1.17e-005_Kdeg
    Yield Strength: 2.5e+008N_m2



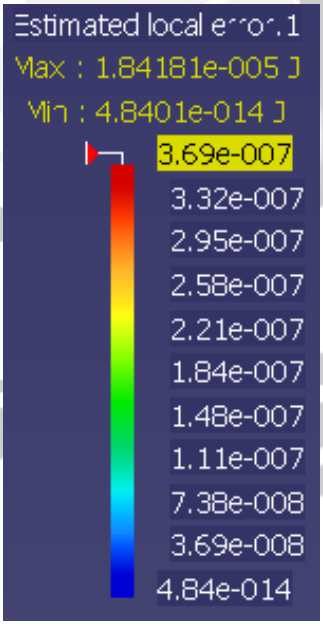


> Object name: Estimated local error.1

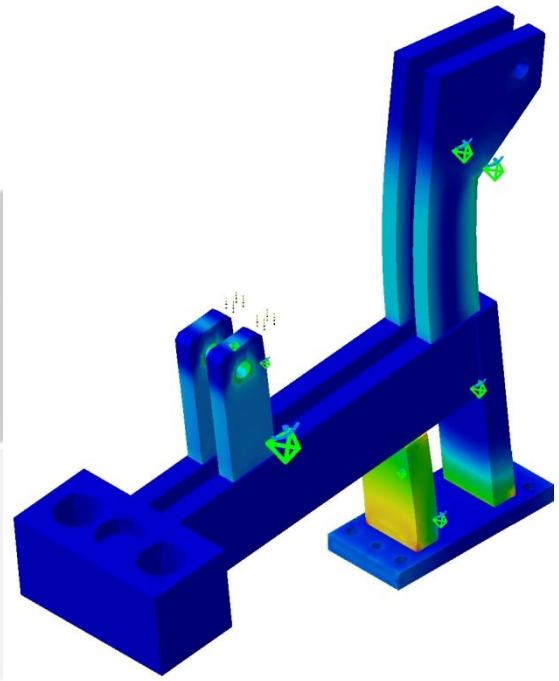
Display
On all Elements
Over all the model
Extrema Values
Min: 4.8401e-014 J
Max: 1.84181e-005 J

Filters
3D elements:
Components: All
Precision location: global
Estimated precision: 0.000252693 J
Strain energy: 0.0387955 J
Global estimated error rate: 5.69751 %

Defined Materials
Material: Steel
Young Modulus: 2e+011N_m2
Poisson Ratio: 0.266
Density: 7860kg_m3
Thermal Expansion: 1.17e-005_Kdeg
Yield Strength: 2.5e+008N_m2



Analsis Kekuatan Upper Frame Assy

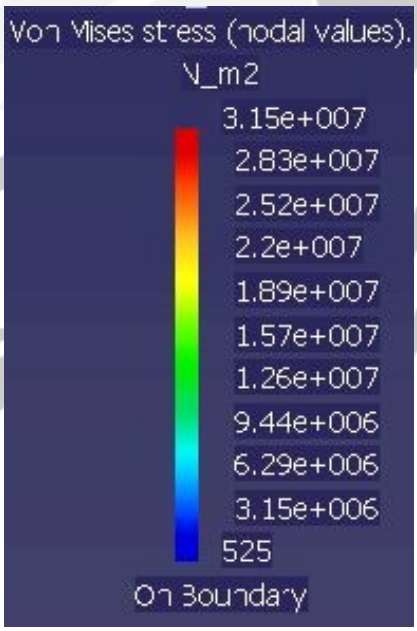


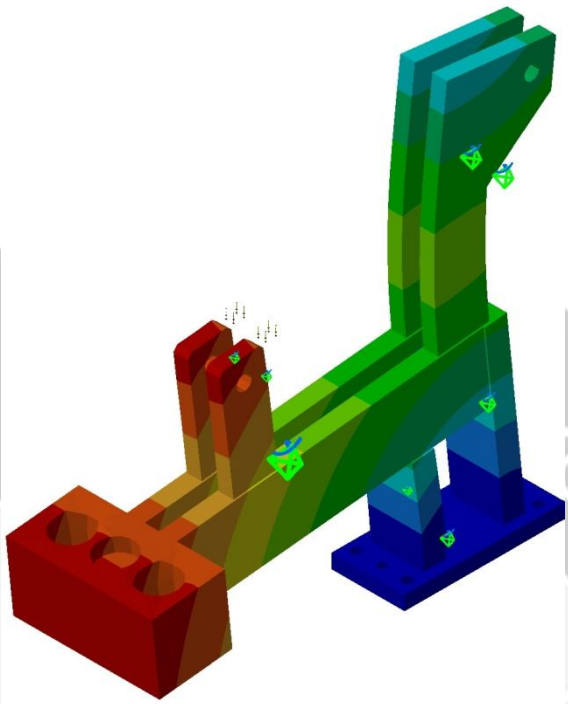
> Object name: Von Mises stress (nodal values).1

Display
On deformed mesh
On boundary
Over all the model
Extrema Values
Min: 525.36 N_m2
Max: 3.14699e+007 N_m2

Filters
1D elements:
Components: All
3D elements:
Components: All

Defined Materials
Material: Steel
Young Modulus: 2e+011N_m2
Poisson Ratio: 0.266
Density: 7860kg_m3
Thermal Expansion: 1.17e-005_Kdeg
Yield Strength: 2.5e+008N_m2



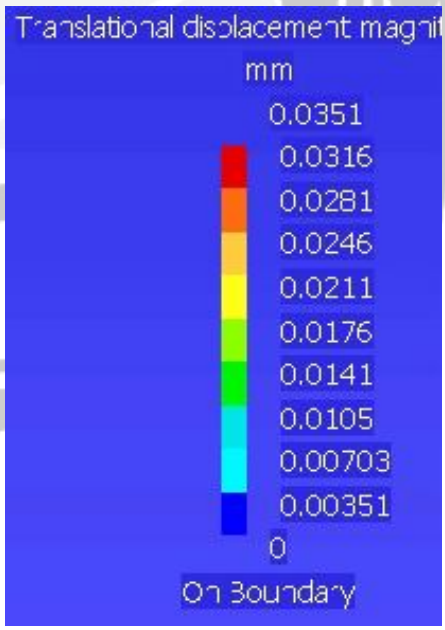


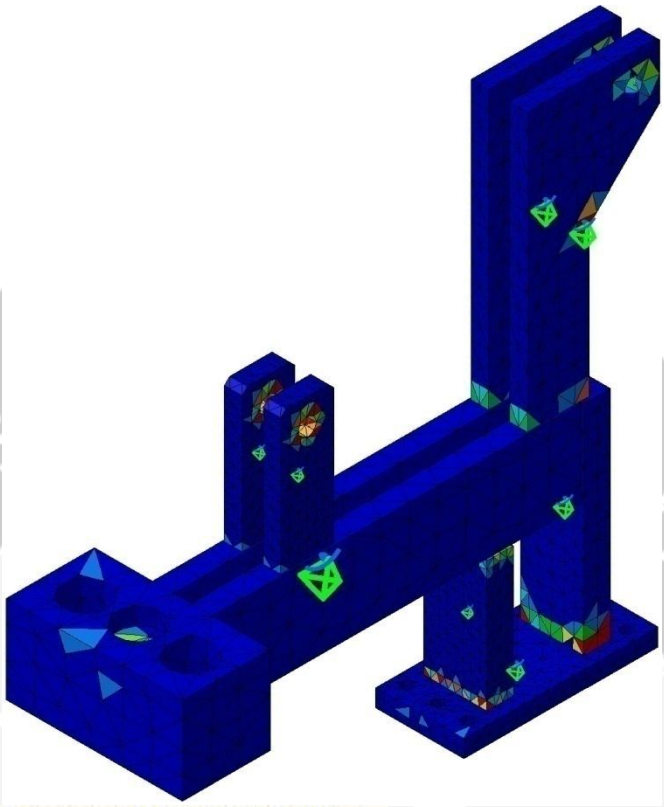
> Object name: Translational displacement magnitude.1

Display
  On deformed mesh
  On boundary
  Over all the model
Extrema Values
  Min: 0 mm
  Max: 0.0351466 mm

Filters
  1D elements:
    Components: All
  3D elements:
    Components: All

Defined Materials
  Material: Steel
    Young Modulus: 2e+011N_m2
    Poisson Ratio: 0.266
    Density: 7860kg_m3
    Thermal Expansion: 1.17e-005_Kdeg
    Yield Strength: 2.5e+008N_m2



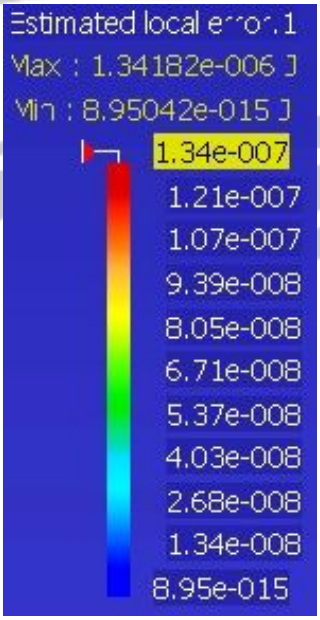


> Object name: Estimated local error.1

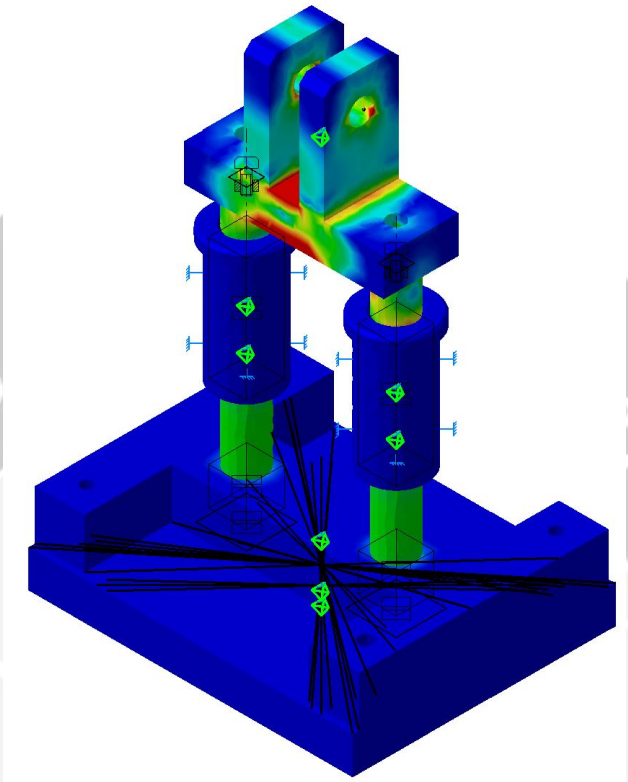
Display
  On all Elements
  Over all the model
Extrema Values
  Min: 8.95042e-015 J
  Max: 1.34182e-006 J

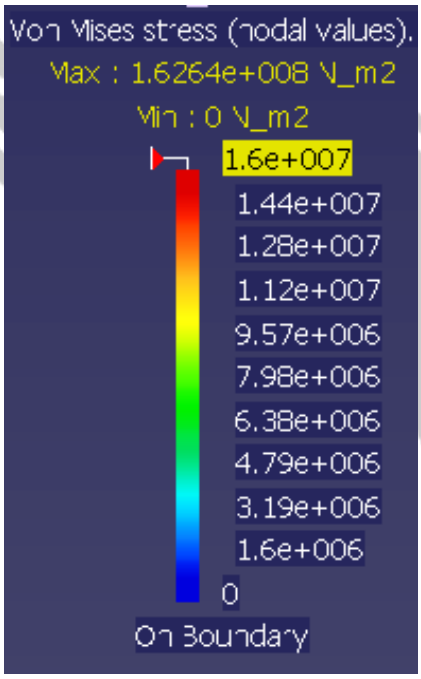
Filters
  1D elements:
    Components: All
  3D elements:
    Components: All
Precision location: global
Estimated precision: 9.69975e-005 J
Strain energy: 0.0367781 J
Global estimated error rate: 3.62898 %

Defined Materials
  Material: Steel
    Young Modulus: 2e+011N_m2
    Poisson Ratio: 0.266
    Density: 7860kg_m3
    Thermal Expansion: 1.17e-005_Kdeg
    Yield Strength: 2.5e+008N_m2



Analsis Kekuatan Upper Punch Assy



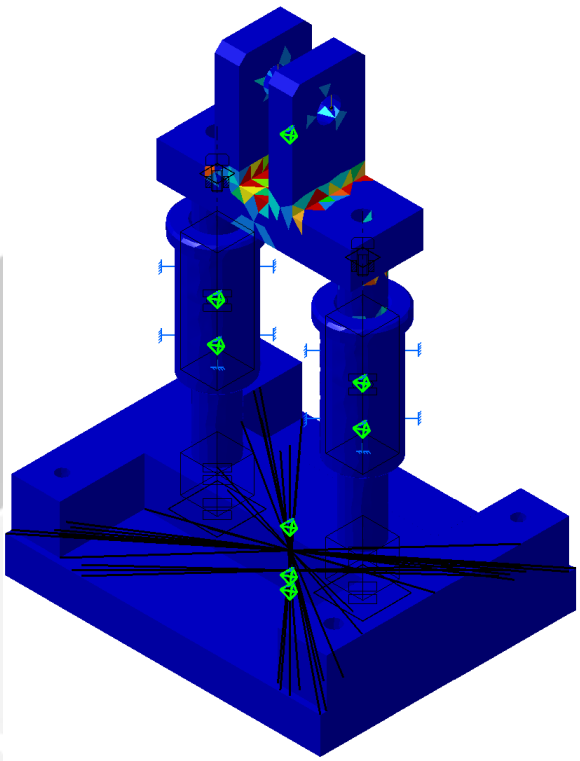


> Object name: Von Mises stress (nodal values).1

Display
On deformed mesh
On boundary
Over all the model
Extrema Values
Min: 0 N_m2
Max: 1.6264e+008 N_m2

Filters
1D elements:
Components: All
3D elements:
Components: All

Defined Materials
Material: Brass
Young Modulus: 1.31e+011N_m2
Poisson Ratio: 0.35
Density: 8216kg_m3
Thermal Expansion: 1.67e-005_Kdeg
Yield Strength: 3.5e+008N_m2
Material: Steel
Young Modulus: 2e+011N_m2
Poisson Ratio: 0.266
Density: 7860kg_m3
Thermal Expansion: 1.17e-005_Kdeg
Yield Strength: 2.5e+008N_m2

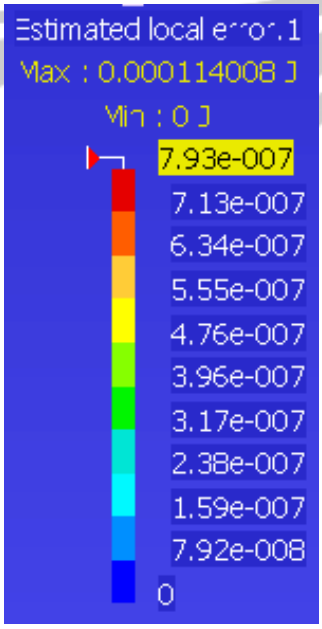


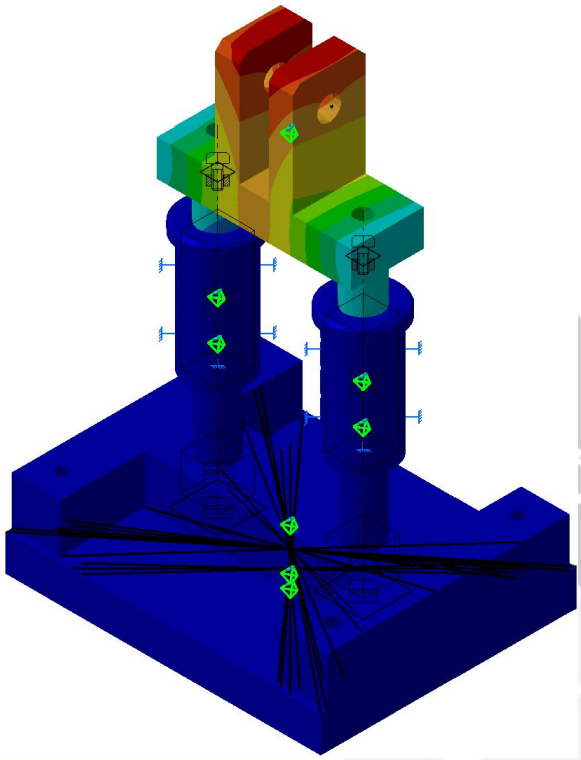
> Object name: Estimated local error.1

Display
On all Elements
Over all the model
Extrema Values
Min: 0 J
Max: 0.000114008 J

Filters
1D elements:
Components: All
3D elements:
Components: All
Precision location: global
Estimated precision: 0.00225987 J
Strain energy: 0.0145515 J
Global estimated error rate: 26.8432 %

Defined Materials
Material: Brass
Young Modulus: 1.31e+011N_m2
Poisson Ratio: 0.35
Density: 8216kg_m3
Thermal Expansion: 1.67e-005_Kdeg
Yield Strength: 3.5e+008N_m2
Material: Steel
Young Modulus: 2e+011N_m2
Poisson Ratio: 0.266
Density: 7860kg_m3
Thermal Expansion: 1.17e-005_Kdeg
Yield Strength: 2.5e+008N_m2





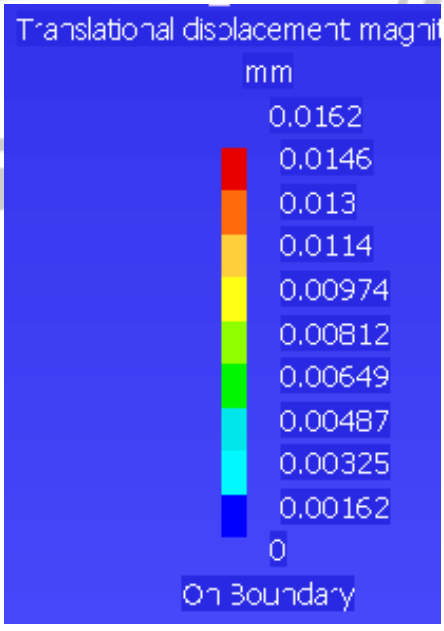
> Object name: Translational displacement magnitude.1

Display
- On deformed mesh
- On boundary
- Over all the model

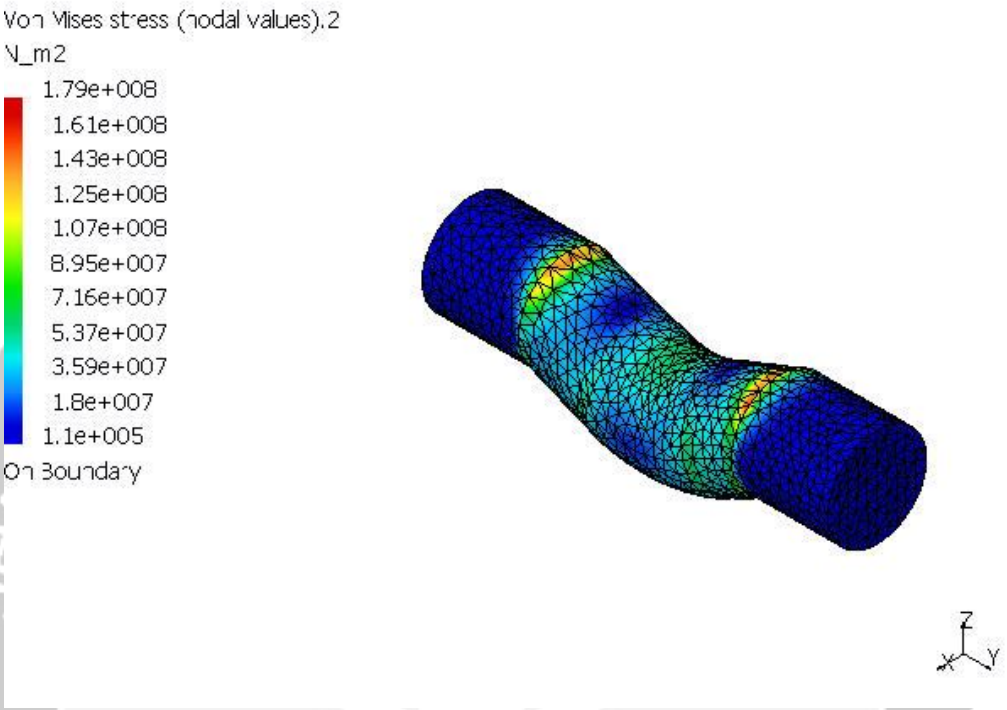
Extrema Values
- Min: 0 mm
- Max: 0.0162334 mm

Filters
- 1D elements:
  - Components: All
- 3D elements:
  - Components: All

Defined Materials
- Material: Brass
  - Young Modulus: 1.31e+011N_m2
  - Poisson Ratio: 0.35
  - Density: 8216kg_m3
  - Thermal Expansion: 1.67e-005_Kdeg
  - Yield Strength: 3.5e+008N_m2
- Material: Steel
  - Young Modulus: 2e+011N_m2
  - Poisson Ratio: 0.266
  - Density: 7860kg_m3
  - Thermal Expansion: 1.17e-005_Kdeg
  - Yield Strength: 2.5e+008N_m2



Hasil Analisis Kekuatan Pin Pengungkit

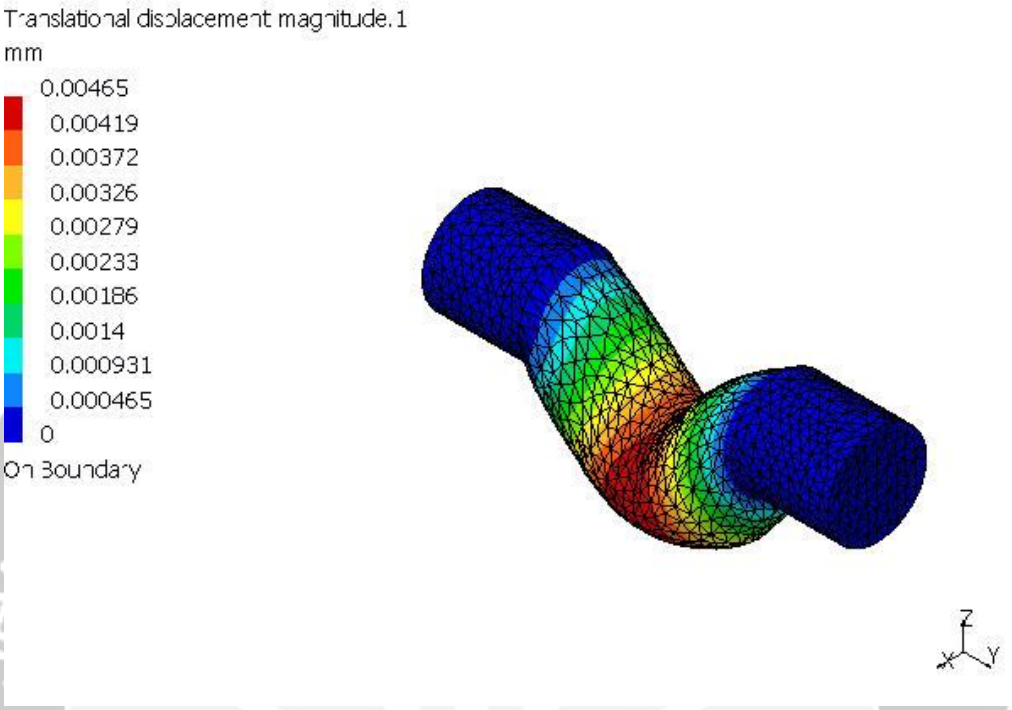


> Object name: Von Mises stress (nodal values).1

Display
  On deformed mesh
  On boundary
  Over all the model
Extrema Values
  Min: 292398 N_m2
  Max: 9.03498e+007 N_m2

Filters
  3D elements:
    Components: All

Defined Materials
  Material: Steel
    Young Modulus: 2e+011N_m2
    Poisson Ratio: 0.266
    Density: 7860kg_m3
    Thermal Expansion: 1.17e-005_Kdeg
    Yield Strength: 2.5e+008N_m2

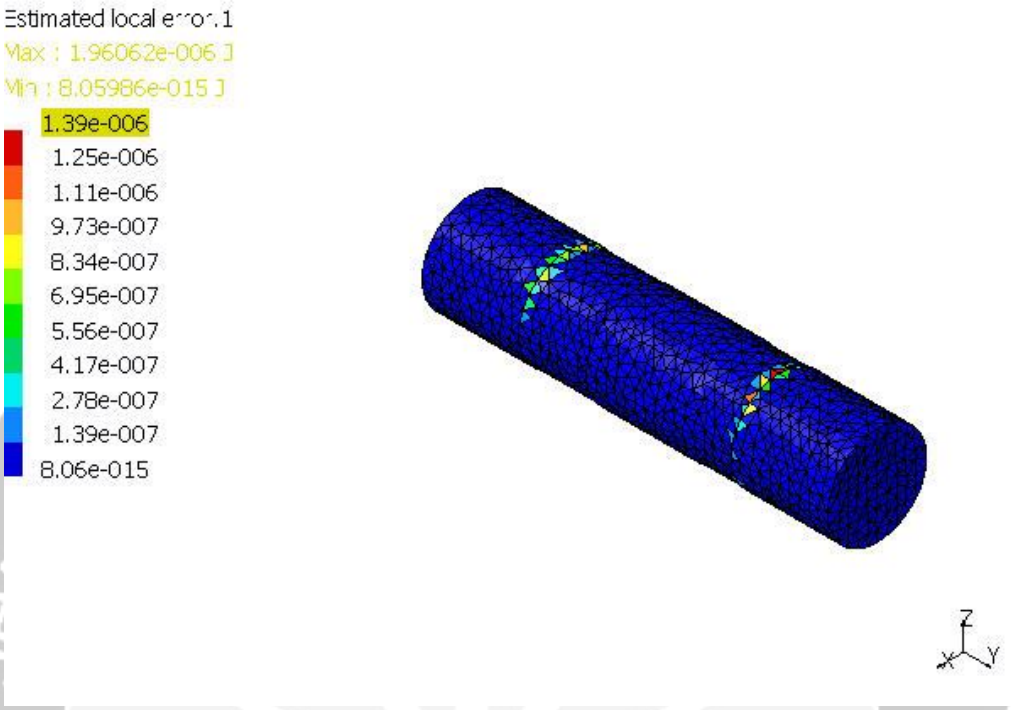


> Object name: Translational displacement magnitude.1

Display
  On deformed mesh
  On boundary
  Over all the model
Extrema Values
  Min: 0 mm
  Max: 0.485884 mm

Filters
  3D elements:
    Components: All

Defined Materials
  Material: Steel
    Young Modulus: 2e+011N_m2
    Poisson Ratio: 0.266
    Density: 7860kg_m3
    Thermal Expansion: 1.17e-005_Kdeg
    Yield Strength: 2.5e+008N_m2



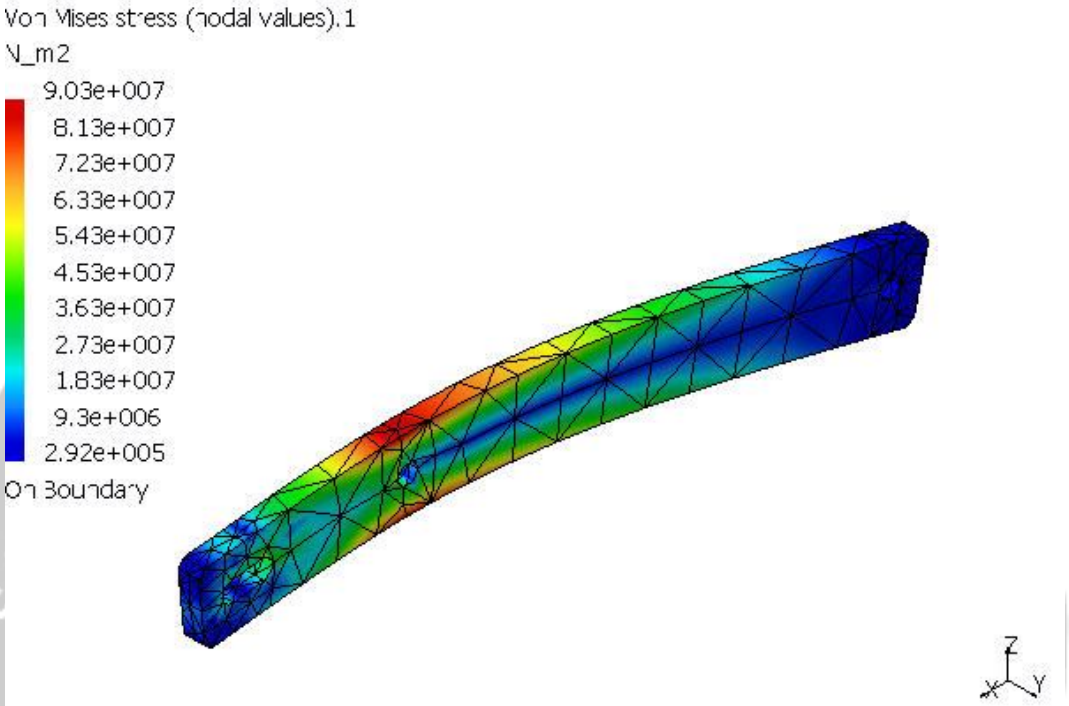
> Object name: Estimated local error.1

Display
  On all Elements
  Over all the model
Extrema Values
  Min: 3.67709e-010 J
  Max: 9.86209e-005 J

Filters
  3D elements:
    Components: All
Precision location: global
Estimated precision: 0.00244212 J
Strain energy: 0.250732 J
Global estimated error rate: 6.96159 %

Defined Materials
  Material: Steel
    Young Modulus: 2e+011N_m2
    Poisson Ratio: 0.266
    Density: 7860kg_m3
    Thermal Expansion: 1.17e-005_Kdeg
    Yield Strength: 2.5e+008N_m2

Hasil Pengujian Kekuatan *Handle* 2

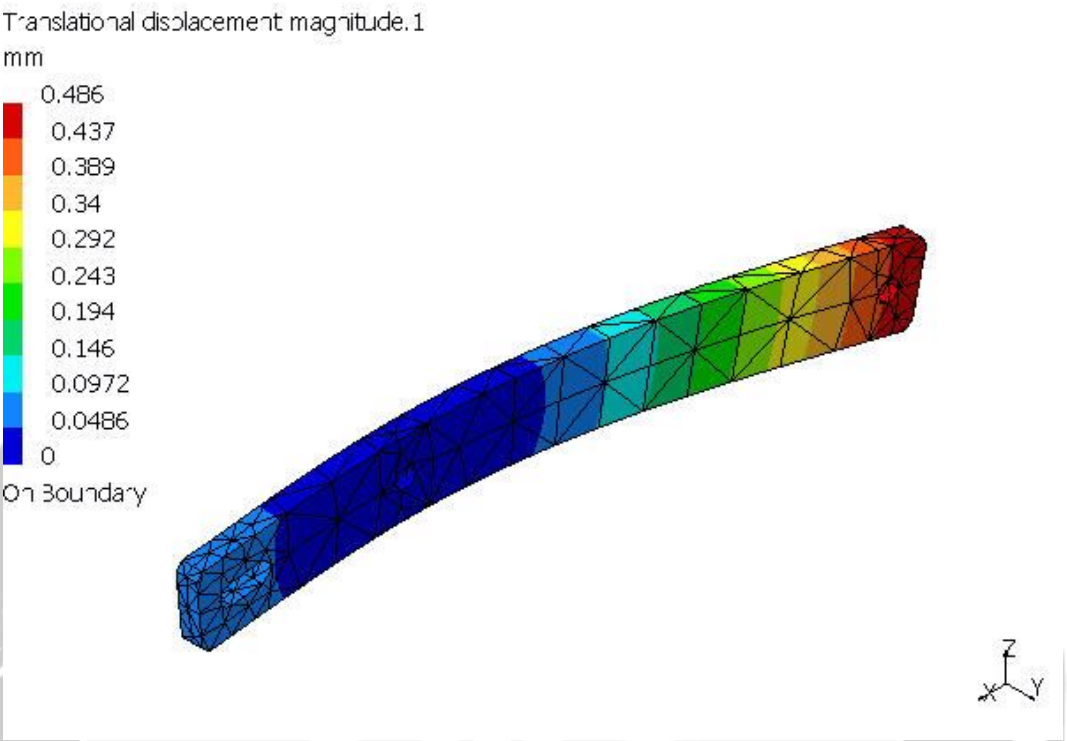


> Object name: Von Mises stress (nodal values).1

Display
  On deformed mesh
  On boundary
  Over all the model
Extrema Values
  Min: 292398 N_m2
  Max: 9.03498e+007 N_m2

Filters
  3D elements:
    Components: All

Defined Materials
  Material: Steel
    Young Modulus: 2e+011N_m2
    Poisson Ratio: 0.266
    Density: 7860kg_m3
    Thermal Expansion: 1.17e-005_Kdeg
    Yield Strength: 2.5e+008N_m2

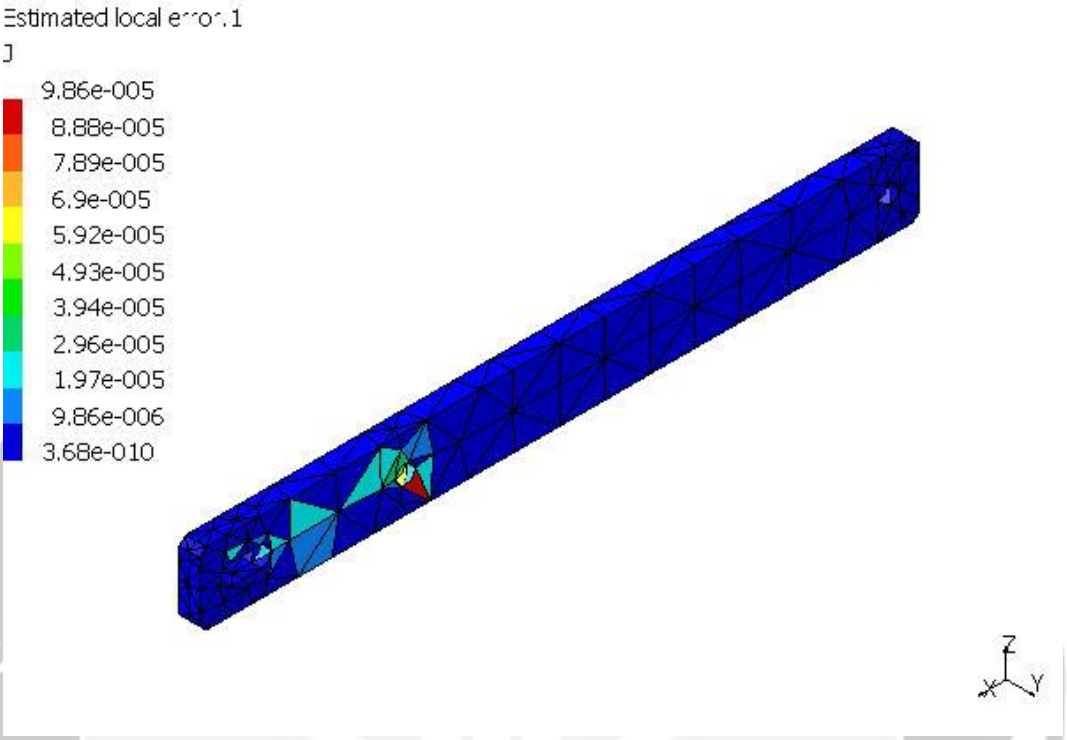


> Object name: Translational displacement magnitude.1

Display
  On deformed mesh
  On boundary
  Over all the model
Extrema Values
  Min: 0 mm
  Max: 0.485884 mm

Filters
  3D elements:
    Components: All

Defined Materials
  Material: Steel
    Young Modulus: 2e+011N_m2
    Poisson Ratio: 0.266
    Density: 7860kg_m3
    Thermal Expansion: 1.17e-005_Kdeg
    Yield Strength: 2.5e+008N_m2



> Object name: Estimated local error.1

Display
  On all Elements
  Over all the model
Extrema Values
  Min: 3.67709e-010 J
  Max: 9.86209e-005 J

Filters
  3D elements:
    Components: All
Precision location: global
Estimated precision: 0.00244212 J
Strain energy: 0.250732 J
Global estimated error rate: 6.96159 %

Defined Materials
  Material: Steel
    Young Modulus: 2e+011N_m2
    Poisson Ratio: 0.266
    Density: 7860kg_m3
    Thermal Expansion: 1.17e-005_Kdeg
    Yield Strength: 2.5e+008N_m2

Lampiran 3

Panduan Pemakaian

1. Perawatan dilakukan dengan cara memberi oli pada bagian-bagian yang bergerak dan tidak dicat. Oli cukup di oles tipis saja, dengan tujuan untuk mengurangi resiko terkena karat.
2. Sebelum digunakan untuk meng-*emboss* sebaiknya dibersihkan dahulu, terutama jika ada tetesan oli yang jatuh di bagian *paper base.* Setelah digunakan alat dibersihkan kembali dan dioles oli seperti No.1.
3. Sebelum digunakan sebaiknya dilakukan penyetingan kesentrisan logo dengan kertas. Penyetingan dilakukan dengan cara memutar baut *adjuster* dari *linear guide plate* yang terletak di kanan dan di belakang *paper base.* lakukan penyetingan sesuai kebutuhan.

Tabel TB.1

Simbol material (DIN)	Batas patah σ_B (N/mm²)	Batas mulur/regang σ_S , $\sigma_{0,2}$ (N/mm²)
Baja konstruksi umum (DIN 17 100)		
St. 33 - 1	330 ... 500	190
St. 37 - 3	370 ... 450	240
St. 42 - 3	420 ... 500	260
St. 50 - 2	500 ... 600	300
St. 52 - 3	520 ... 620	360
St. 60 - 2	600 ... 720	340
St. 70 - 2	700 ... 850	370
Baja otomatik (DIN 1651)		
9 S 20 K + N	370	200 ... 220
10 S 20 K + N	370	200 ... 220
35 S 20 K + N	500	280 ... 300
60 S 20 K + N	700	350 ... 370
Baja perlakuan panas (DIN 17 200)		
C 22 , Ck 22	500 ... 700	300 ... 360
C 35 , Ck 35	550 ... 780	330 ... 430
C 45 , Ck 45	630 ... 860	380 ... 490
C 60 , Ck 60	750 ... 1000	460 ... 580
40 Mn 4 } 46 Cr 2 }	700 ... 1100	450 ... 650
41 Cr 4	800 ... 1200	570 ... 800
25 Cr Mo 4	700 ... 1100	470 ... 700
42 Cr Mo 4	900 ... 1300	650 ... 900
50 Cr Mo 4	900 ... 1300	700 ... 900
30 Cr Ni Mo 8	1100 ... 1450	900 ... 1050

Tabel **Ukuran standar ulir kasar metris (JIS B 0205).**

Ulir			Jarak bagi p	Tinggi kaitan H_1	Ulir dalam		
					Diameter luar D	Diameter efektif D_2	Diameter dalam D_1
1	2	3			Ulir luar		
					Diameter luar d	Diameter efektif d_2	Diameter inti d_1
M 6			1	0,541	6,000	5,350	4,917
		M 7	1	0,541	7,000	6,350	5,917
M 8			1,25	0,677	8,000	7,188	6,647
		M 9	1,25	0,677	9,000	8,188	7,647
M 10			1,5	0,812	10,000	9,026	8,376
		M 11	1,5	0,812	11,000	10,026	9,376
M 12			1,75	0,947	12,000	10,863	10,106
	M 14		2	1,083	14,000	12,701	11,835
M 16			2	1,083	16,000	14,701	13,835
	M 18		2,5	1,353	18,000	16,376	15,294
M 20			2,5	1,353	20,000	18,376	17,294
	M 22		2,5	1,353	22,000	20,376	19,294
M 24			3	1,624	24,000	22,051	20,752
	M 27		3	1,624	27,000	25,051	23,752
M 30			3,5	1,894	30,000	27,727	26,211
	M 33		3,5	1,894	33,000	30,727	29,211
M 36			4	2,165	36,000	34,402	31,670
	M 39		4	2,165	39,000	36,402	34,670
M 42			4,5	2,436	42,000	39,077	37,129
	M 45		4,5	2,436	45,000	42,077	40,129
M 48			5	2,706	48,000	44,752	42,587
	M 52		5	2,706	52,000	48,752	46,587
M 56			5,5	2,977	56,000	52,428	50,046
	M 60		5,5	2,977	60,000	56,428	54,046
M 64			6	3,248	64,000	60,103	57,505
	M 68		6	3,248	68,000	64,103	61,505

Catatan: (1) Kolom 1 merupakan pilihan utama. Kolom 2 atau kolom 3 hanya dipilih jika terpaksa.

ISO-Toleransi

Description		Symbol	Nominal size									
			>3-6	>6-10	>10-18	>18-30	>30-50	>50-65	>65-80	>80-100	>100-120	>120-140
Clearance	Extreem much clearance	d 8	-0,030 -0,048	-0,040 -0,062	-0,050 -0,077	-0,065 -0,098	-0,080 -0,119	-0,100 -0,146	-0,100 -0,146	-0,120 -0,174	-0,120 -0,174	-0,145 -0,208
		d 10	-0,030 -0,078	-0,040 -0,098	-0,050 -0,120	-0,065 -0,149	-0,080 -0,180	-0,100 -0,220	-0,100 -0,220	-0,120 -0,260	-0,120 -0,260	-0,145 -0,305
	much clearance	e 6	-0,020 -0,028	-0,025 -0,034	-0,032 -0,043	-0,040 -0,053	-0,050 -0,066	-0,060 -0,079	-0,060 -0,079			
		e 8	-0,020 -0,038	-0,025 -0,047	-0,032 -0,059	-0,040 -0,073	-0,050 -0,089	-0,060 -0,106	-0,060 -0,106	-0,072 -0,126	-0,072 -0,126	-0,085 -0,148
	little much clearance	f 6	-0,010 -0,018	-0,013 -0,022	-0,016 -0,027	-0,020 -0,033	-0,025 -0,041	-0,030 -0,049	-0,030 -0,049	-0,036 -0,058	-0,036 -0,058	-0,043 -0,088
		f 7	-0,010 -0,022	-0,013 -0,028	-0,016 -0,034	-0,020 -0,041	-0,025 -0,050	-0,030 -0,060	-0,030 -0,060	-0,036 -0,071	-0,036 -0,071	-0,043 -0,083
		f 8	-0,010 -0,028	-0,013 -0,035	-0,016 -0,043	-0,020 -0,053	-0,025 -0,064	-0,030 -0,076	-0,030 -0,076	-0,036 -0,090	-0,036 -0,090	-0,043 -0,106
	little clearance	g 6	-0,004 -0,012	-0,005 -0,014	-0,006 -0,017	-0,007 -0,020	-0,009 -0,025	-0,010 -0,029	-0,010 -0,029	-0,012 -0,034	-0,012 -0,034	-0,014 -0,039
	just sliding	h 6	0 -0,008	0 -0,009	0 -0,011	0 -0,013	0 -0,016	0 -0,019	0 -0,019	0 -0,022	0 -0,022	0 -0,025
		h 7	0 -0,012	0 -0,015	0 -0,018	0 -0,021	0 -0,025	0 -0,030	0 -0,030	0 -0,035	0 -0,035	0 -0,040
		h 8	0 -0,018	0 -0,022	0 -0,027	0 -0,033	0 -0,039	0 -0,046	0 -0,046	0 -0,054	0 -0,054	0 -0,063
		h 9	0 -0,030	0 -0,036	0 -0,043	0 -0,052	0 -0,062	0 -0,074	0 -0,074	0 -0,087	0 -0,087	0 -0,100
Transition												
	can be moved with little force	js 5	± 0,0025	± 0,003	± 0,004	± 0,0045	± 0,0055	± 0,0065	± 0,0065	± 0,0075	± 0,0075	± 0,009
		js 6	± 0,004	± 0,0045	± 0,0055	± 0,0065	± 0,008	± 0,0095	± 0,0095	± 0,011	± 0,011	± 0,00125
		js 7	± 0,006	± 0,007	± 0,009	± 0,010	± 0,012	± 0,015	± 0,015	± 0,017	± 0,017	± 0,020
		k 6	——	+0,010 +0,001	+0,012 +0,001	+0,015 +0,002	+0,018 +0,002	+0,021 +0,002	+0,021 +0,002	+0,025 +0,003	+0,025 +0,003	+0,028 +0,003
	can be moved with little mucht	m 6	+0,012 +0,004	+0,015 +0,006	+0,018 +0,007	+0,021 +0,008	+0,025 +0,009	+0,030 +0,011	+0,030 +0,011	+0,035 +0,013	+0,035 +0,013	+0,040 +0,015
		m 7	+0,016 +0,004	+0,021 +0,006	+0,025 +0,007	+0,029 +0,008	+0,034 +0,009	+0,041 +0,011	+0,041 +0,011	+0,048 +0,013	+0,048 +0,013	+0,055 +0,015
		n 6	+0,016 +0,008	+0,019 +0,010	+0,023 +0,012	+0,028 +0,015	+0,033 +0,017	+0,039 +0,020	+0,039 +0,020	+0,045 +0,023	+0,045 +0,023	+0,052 +0,027
Interference	can be moved with high force	p 6	+0,020 +0,012	+0,024 +0,015	+0,029 +0,018	+0,035 +0,022	+0,042 +0,026	+0,051 +0,032	+0,051 +0,032	+0,059 +0,037	+0,059 +0,037	+0,068 +0,043
		r 6	+0,023 +0,015	+0,028 +0,019	+0,034 +0,023	+0,041 +0,028	+0,050 +0,034	+0,060 +0,041	+0,062 +0,043	+0,073 +0,051	+0,076 +0,054	+0,088 +0,063
	Shrink fit											
		s 6	+0,027 +0,019	+0,032 +0,023	+0,039 +0,028	+0,048 +0,035	+0,059 +0,043	+0,072 +0,053	+0,078 +0,059	+0,093 +0,071	+0,101 +0,079	+0,117 +0,092
Hole		H 6	+0,008 0	+0,009 0	+0,011 0	+0,013 0	+0,016 0	+0,019 0	+0,019 0	+0,022 0	+0,022 0	+0,025 0
		H 7	+0,012 0	+0,015 0	+0,018 0	+0,021 0	+0,025 0	+0,030 0	+0,030 0	+0,035 0	+0,035 0	+0,040 0
		H 8	+0,018 0	+0,022 0	+0,027 0	+0,033 0	+0,039 0	+0,046 0	+0,046 0	+0,054 0	+0,054 0	+0,063 0
		H 9	+0,030 0	+0,036 0	+0,043 0	+0,052 0	+0,062 0	+0,074 0	+0,074 0	+0,087 0	+0,087 0	+0,100 0
ISO-tolerance		H 10	+0,048 0	+0,058 0	+0,070 0	+0,084 0	+0,100 0	+0,120 0	+0,120 0	+0,140 0	+0,140 0	+0,160 0

Wrt. : 22.02.91 SULAR

Chk. : 31.07.91 SUMADI

Rev.

ATMI Solo

Drill Diameter for Threads

M	P		d
M 1	0,25	0,785	0,75
M 1,1	0,25	0,885	0,85
M 1,2	0,25	0,985	0,95
M 1,4	0,3	1,142	1,1
M 1,6	0,35	1,321	1,25
M 1,7	0,35	1,346	1,3
M 1,8	0,35	1,521	1,45
M 2	0,4	1,679	1,6
M 2,2	0,45	1,838	1,75
M 2,3	0,4	1,920	1,9
M 2,5	0,45	2,138	2,05
M 2,6	0,45	2,176	2,1
M 3	0,5	2,599	2,5
M 3,5	0,6	3,010	2,9
M 4	0,7	3,422	3,3
M 4,5	0,75	3,878	3,7
M 5	0,8	4,334	4,2
M 6	1	5,153	5
M 7	1	6,153	6
M 8	1,25	6,912	6,8
M 9	1,25	7,912	7,8
M 10	1,5	8,676	8,5
M 11	1,5	9,676	9,5
M 12	1,75	10,441	10,2
M 14	2	12,210	12
M 16	2	14,210	14
M 18	2,5	15,744	15,5
M 20	2,5	17,744	17,5
M 22	2,5	19,744	19,5
M 24	3	21,252	21
M 27	3	24,252	24
M 30	3,5	26,771	26,5
M 33	3,5	29,771	29,5
M 36	4	32,270	32
M 39	4	35,270	35
M 42	4,5	37,799	37,5
M 45	4,5	40,799	40,5
M 48	5	43,297	43
M 52	5	47,297	47
M 56	5,5	50,796	50,5
M 60	5,5	54,796	54,5
M 64	6	58,305	58
M 68	6	62,305	62

MF	P		d
M 2,5×0,35		2,221	2,15
M 3 ×0,35		2,721	2,65
M 3,5×0,35		3,221	3,15
M 4 ×0,5		3,599	3,5
M 4,5×0,5		4,099	4
M 5 ×0,5		4,599	4,5
M 5,5×0,5		5,099	5
M 6 ×0,75		5,378	5,25
M 7 ×0,75		6,378	6,25
M 8 ×0,75		7,378	7,25
×1		7,153	7
M 9 ×0,75		8,378	8,25
×1		8,153	8
M 10 ×0,75		9,378	9,25
×1		9,153	9
×1,25		8,912	8,75
M 11 ×0,75		10,378	10,25
×1		10,153	10
M 12 ×1		11,153	11
×1,25		10,912	10,75
×1,5		10,676	10,5
M 14 ×1		13,153	13
×1,25		12,912	12,75
×1,5		12,676	12,5
M 15 ×1		14,153	14
×1,5		13,676	13,5
M 16 ×1,5		15,153	15
×1,5		14,676	14,5
M 17 ×1		16,153	16
×1,5		15,676	15,5
M 18 ×1		17,153	17
×1,5		16,676	16,5
×2		16,210	16
M 20 ×1		19,153	19
×1,5		18,676	18,5
×2		18,210	18
M 22 ×1		21,153	21
×1,5		20,676	20,5
×2		20,210	20
M 24 ×1		23,153	23
×1,5		22,676	22,5
×2		22,210	22

MF	P		d
M 25×1		24,153	24
×1,5		23,676	23,5
×2		23,210	23
M 26×1,5		24,676	24,5
M 27×1		26,153	26
×1,5		25,676	25,5
×2		25,210	25
M 28×1		27,153	27
×1,5		26,676	26,5
×2		26,210	26
M 30×1		29,153	29
×1,5		28,676	28,5
×2		28,210	28
M 32×1,5		30,676	30,5
×2		30,210	30
M 33×1,5		31,676	31,5
×2		31,210	31
×3		30,252	30
M 35×1,5		33,676	33,5
M 36×1,5		34,676	34,5
×2		34,210	34
×3		33,252	33
M 38×1,5		36,676	36,5
M 39×1,5		37,676	37,5
×2		37,210	37
×3		36,252	36
M 40×1,5		38,676	38,5
×2		38,210	38
×3		37,252	37
M 42×1,5		40,676	40,5
×2		40,210	40
×3		39,252	39
×4		38,270	38
M 45×1,5		43,676	43,5
×2		43,210	43
×3		42,252	42
×4		41,270	41
M 48×1,5		46,676	46,5
×2		46,210	46
×3		45,252	45
×4		44,270	44
M 50×1,5		48,676	48,5
×2		48,210	48
×3		47,252	47

G	T/1"		d
G ⅛	28	8,848	8,7
G ¼	19	11,890	11,8
G ⅜	19	15,395	15
G ½	14	19,172	19
G ⅝	14	21,128	20,7
G ¾	14	24,658	24,5
G ⅞	14	28,418	28
G 1	11	30,931	30,5
G 1⅛	11	35,579	35
G 1¼	11	39,592	39,5
G 1⅜	11	42,005	41,5
G 1½	11	45,485	45
G 1¾	11	51,428	51
G 2	11	57,296	57
G 2¼	11	63,382	63
G 2½	11	72,866	72,5
G 2¾	11	79,218	79
G 3		85,566	85,5

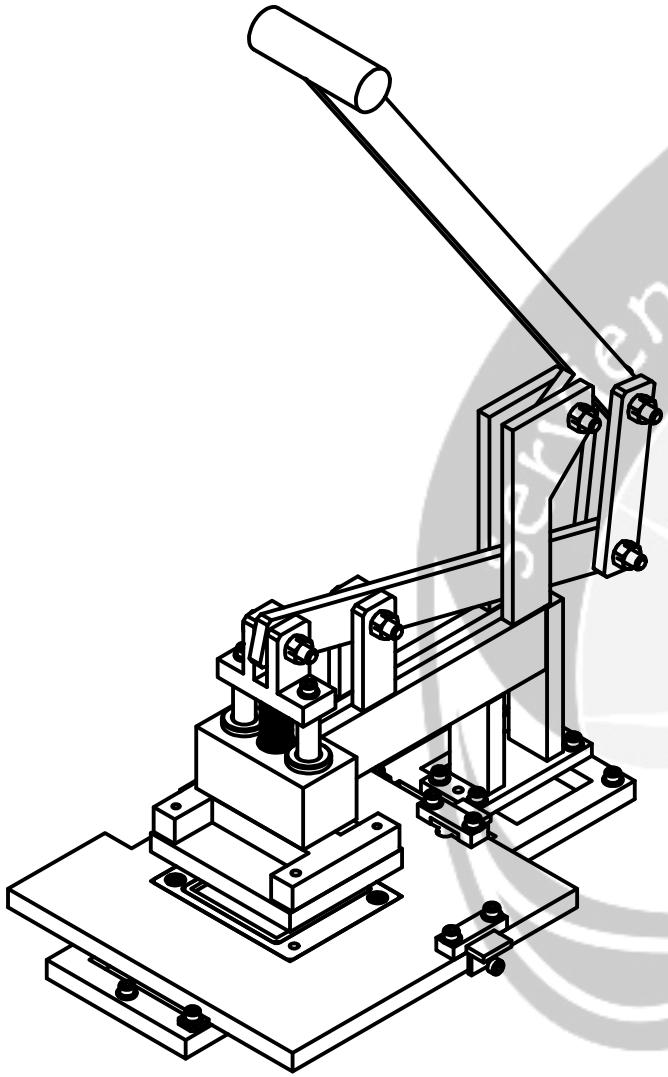
BSF	T/1"		d
3/16 BSF	32	4,005	4
7/32 BSF	28	4,676	4,6
¼ BSF	26	5,397	5,3
9/32 BSF	26	6,190	6,1
5/16 BSF	22	6,817	6,8
⅜ BSF	20	8,331	8,3
7/16 BSF	18	9,764	9,7
½ BSF	16	11,163	11,1
9/16 BSF	16	12,751	12,7
⅝ BSF	14	14,094	14
11/16 BSF	14	15,682	15,5
¾ BSF	12	16,939	16,7
⅞ BSF	11	19,908	19,7
1 BSF	10	22,835	22,7
1 ⅛ BSF	9	25,705	25,5
1 ¼ BSF	9	28,880	28,7
1 ⅜ BSF	8	31,674	31,5
1 ½ BSF	8	34,849	34,5
1 ⅝ BSF	8	38,024	38
1 ¾ BSF	7	40,706	40,5
2 BSF	7	47,056	47
2 ¼ BSF	6	52,753	52
1 ½ BSF	6	59,103	58,5

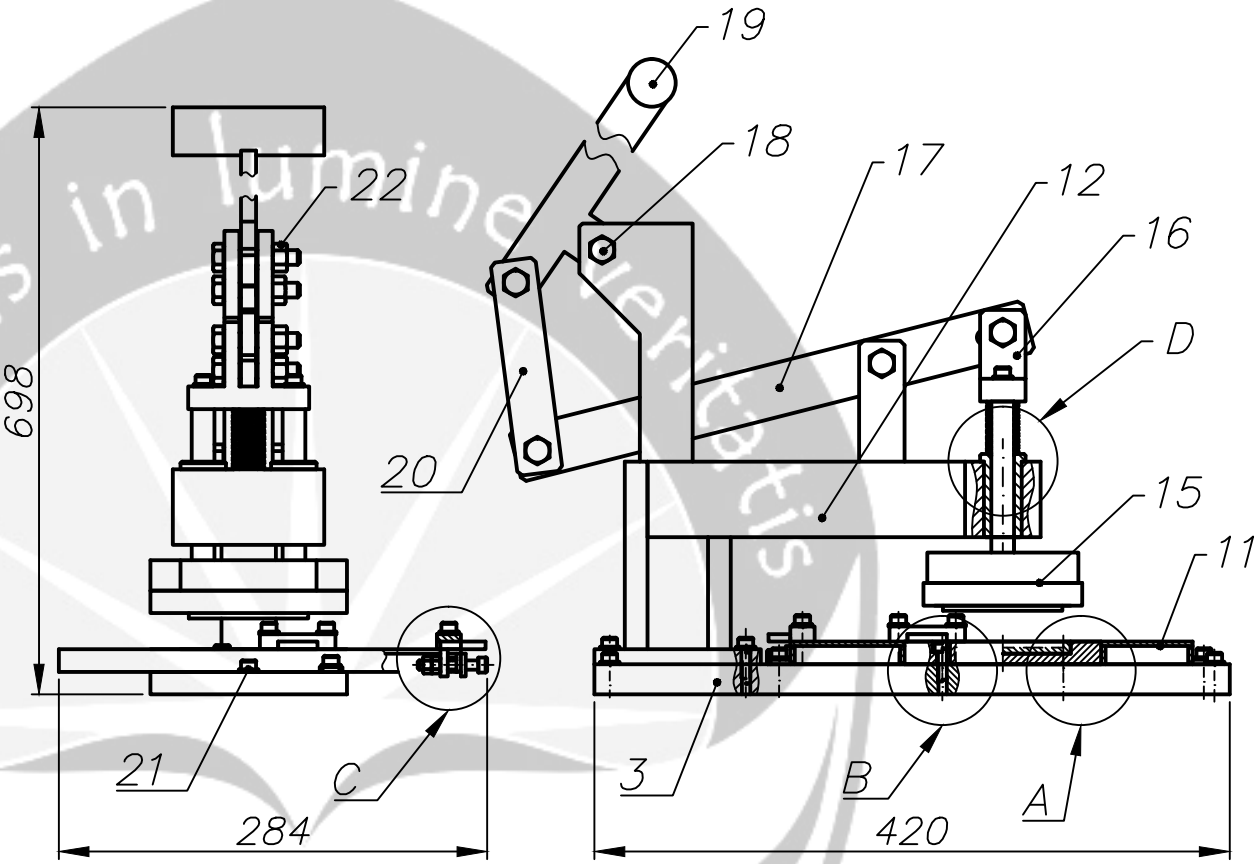
W	T/1"		d
1/16	60	1,218	1,1
3/32	48	1,894	1,85
⅛	40	2,570	2,5
5/32	32	3,189	3,2
3/16	24	3,690	3,6
7/32	24	4,483	4,5
¼	20	5,224	5,1
5/16	18	6,661	6,5
⅜	16	8,052	7,9
7/16	14	9,379	9,2
½	12	10,610	10,4
9/16	11	13,598	13,4
¾	10	16,538	16,2
⅞	9	19,411	19,2
1	8	22,185	22
1⅛	7	24,879	24,5
1¼	7	28,054	27,7
1⅜	6	30,555	30
1½	6	33,730	33,5
1⅝	5	35,921	35,5
1¾	5	39,096	38,5
1⅞	4½	41,648	41,5
2	4½	44,823	44,5
2¼	4	50,420	50
2½	4	56,770	56

UNC	T/1"		d
Nr. 1–64 UNC		1,582	1,5
Nr. 2–56 UNC		1,872	1,8
Nr. 3–48 UNC		2,146	2
Nr. 4–40 UNC		2,385	2,3
Nr. 5–40 UNC		2,697	2,6
Nr. 6–32 UNC		2,896	2,7
Nr. 8–32 UNC		3,531	3,5
Nr. 10–24 UNC		3,962	3,8
Nr. 12–24 UNC		4,597	4,5
¼ –20 UNC		5,258	5,1
5/16–18 UNC		6,731	6,5
⅜ –16 UNC		8,153	7,9
7/16–14 UNC		9,550	9,3
½ –13 UNC		11,024	10,7
9/16–12 UNC		12,446	12,3
⅝ –11 UNC		13,868	13,5
¾ –10 UNC		16,840	16,5
⅞ – 9 UNC		19,761	19,5
1 – 8 UNC		22,601	22,2
1 ⅛ – 7 UNC		25,349	25
1 ¼ – 7 UNC		28,524	28
1 ⅜ – 6 UNC		31,115	30,7
1 ½ – 6 UNC		34,290	34
1 ¾ – 5 UNC		39,827	39,5
2 –4½ UNC		45,593	45

UNF	T/1"		d
Nr. 0–80 UNF		1,306	1,2
Nr. 1–72 UNF		1,613	1,5
Nr. 2–64 UNF		1,913	1,8
Nr. 3–56 UNF		2,197	2,1
Nr. 4–48 UNF		2,459	2,4
Nr. 5–44 UNF		2,741	2,6
Nr. 6–40 UNF		3,023	2,9
Nr. 8–36 UNF		3,607	3,5
Nr. 10–32 UNF		4,166	4
Nr. 12–28 UNF		4,724	4,6
¼ –28 UNF		5,588	5,4
5/16 –24 UNF		7,036	6,9
⅜ –24 UNF		8,636	8,4
7/16–20 UNF		10,033	9,9
½ –20 UNF		11,608	11,5
9/16–18 UNF		13,081	13
⅝ –18 UNF		14,681	14,5
¾ –16 UNF		17,678	17,4
⅞ –14 UNF		20,575	20,4
1 –12 UNF		23,571	23,2
1 ⅛ –12 UNF		26,746	26,5
1 ¼ –12 UNF		29,921	29,5
1 ⅜ –12 UNF		33,096	32,7
1 ½ –12 UNF		36,271	36

UNEF	T/1"		d
Nr. 12–32 UNEF		4,826	4,7
¼ –32 UNEF		5,690	5,6
5/16–32 UNEF		7,264	7,2
⅜ –32 UNEF		8,865	8,8
7/16–28 UNEF		10,338	10,2
½ –28 UNEF		11,938	11,8
9/16–24 UNEF		13,386	13,2
⅝ –24 UNEF		14,986	14,7
11/16–24 UNEF		16,561	16,5
¾ –20 UNEF		17,958	17,7
13/16–20 UNEF		19,558	19,5
⅞ –20 UNEF		21,133	21
15/16–20 UNEF		22,733	22,5
1 –20 UNEF		24,308	24,2
1 1/16–18 UNEF		25,781	25,5
1 1/8 –18 UNEF		27,381	27,2
1 3/16–18 UNEF		28,956	28,7
1 1/4 –18 UNEF		30,556	30,5
1 5/16–18 UNEF		32,131	32
1 3/8 –18 UNEF		33,731	33,5
1 7/16–18 UNEF		35,306	35
1 1/2 –18 UNEF		36,881	36,7
1 9/16–18 UNEF		38,481	38,2
1 5/8 –18 UNEF		40,081	40





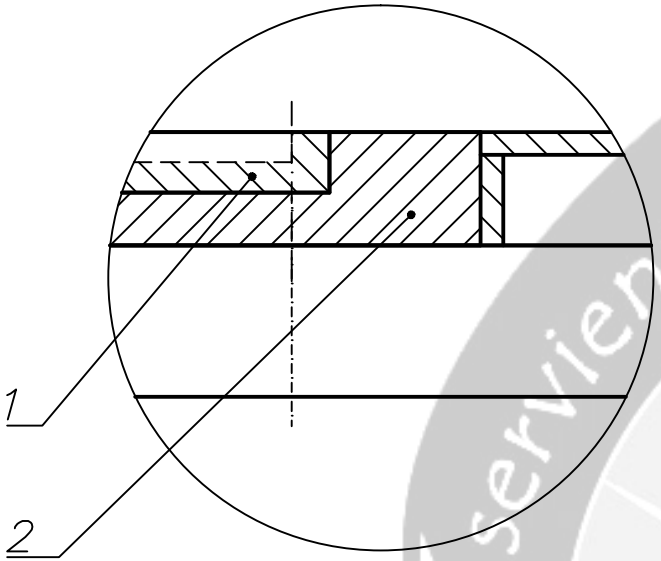
QTY	Description	Item	Material	Dwg. Nr.

Revision Index	Drawn by	: Ansgarius	Scale : 1:5
	Reg. Nr	:	Unit : mm
	Date	: 01/12/2010	Material :
	Checked by	: Hanandoko	Sign :

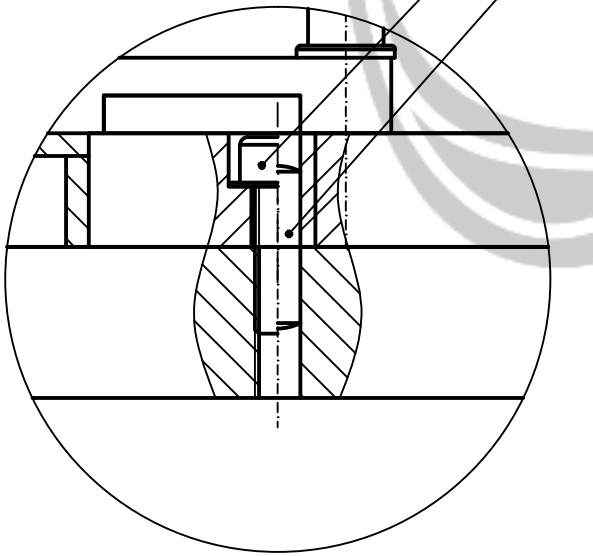
A4	Paper Emboss Assy		
Industrial Engineering UAJY		Operation	Dwg. Nr. 1000
Origin.	Rep.	Rep.by.	SN. 1 NS. 3

Lihat Detail A,B,C,D
dihalaman 2 dan 3

Det A Sc 1:1



Det B Sc 1:1



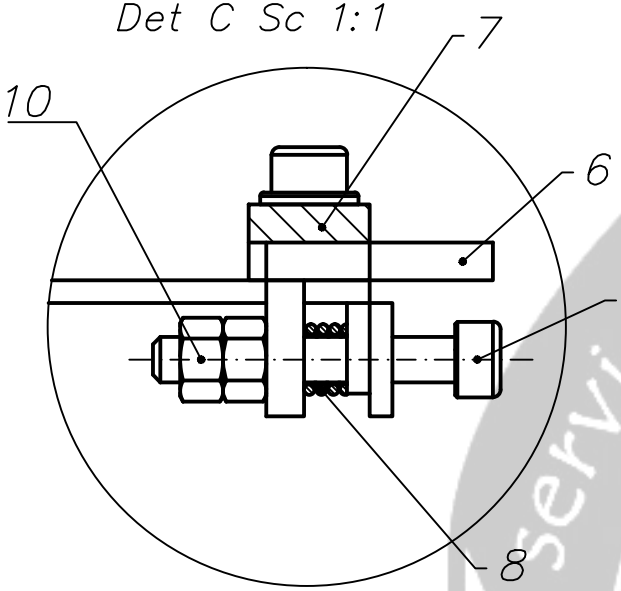
QTY	Description	Item	Material	Dwg. Nr.
5	HHCS M10-50	18	Standart	1018
1	Leverage	17	Ms	1017
1	Lever Pad 1	16	Ms	1016
1	Upper Punch Subassy	15		1015
1	Misumi SWU 21-60	14	Standart	1014
2	Bush	13	Brass	1013
1	Upper Frame Subassy	12		1012
1	Paper Base Subassy	11		1011
23	Nut M6	10	Standart	1010
2	SHCS M6-50	9	Standart	1009
2	Misumi SWY11-20	8	Standart	1008
2	Lower Guide Plate	7	Ms	1007
2	Upper Guide Plate	6	Ms	1006
16	SHCS M6-20	5	Standart	1005
6	Misumi Dowel Pin MS6-20	4	Standart	1004
1	Lower Frame	3	Ms	1003
1	Lower Die Plate	2	Ms	1002
1	Lower Die Insert	1	Brass	1001

Revision Index	Drawn by : Ansgarius	Scale : 1:5
	Reg. Nr :	Unit : mm
	Date : 01/12/2010	Material :
	Checked by : Hanandoko	Sign :

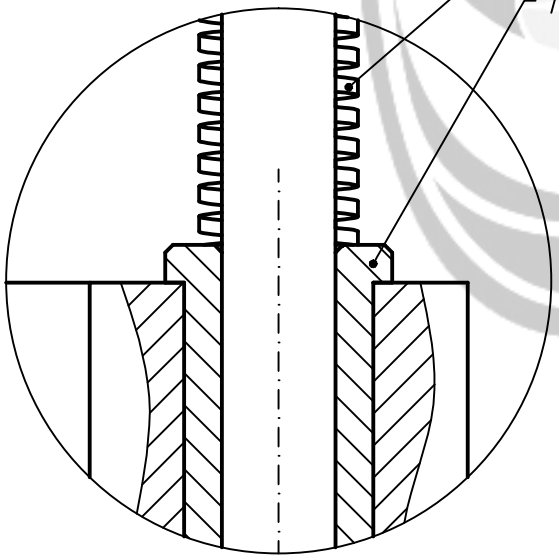
A4 | Paper Emboser Assy

Industrial Engineering UAJY		Operation	Dwg. Nr. 1000
Origin.	Rep.	Rep.by.	SN. 2 NS. 3

Det C Sc 1:1



Det D Sc 1:1

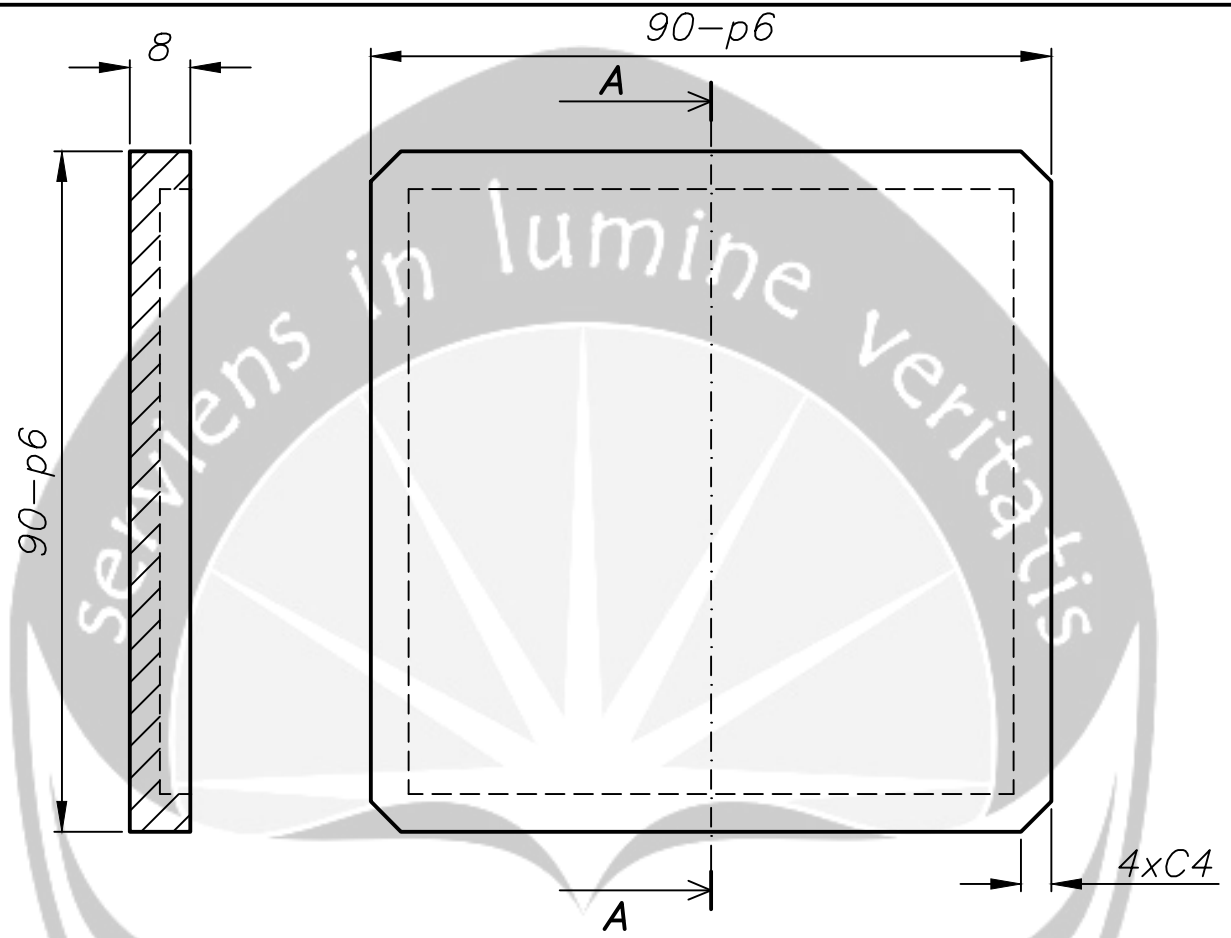


QTY	Description	Item	Material	Dwg. Nr.
21	Ring M6	24	Standart	1024
8	Ring M10	23	Standart	1023
8	Nut M10	22	Standart	1022
3	SHCS M10–50	21	Standart	1021
1	Lever Extension	20	Ms	1020
1	Handle Subassy	19		1019

Revision Index	Drawn by : Ansgarius	Scale : 1:5
	Reg. Nr :	Unit : mm
	Date : 01/12/2010	Material :
	Checked by : Hanandoko	Sign :

A4 | Paper Emboser Assy

Industrial Engineering UAJY		Operation	Dwg. Nr. 1000
Origin.	Rep.	Rep.by.	SN. 3 NS. 3

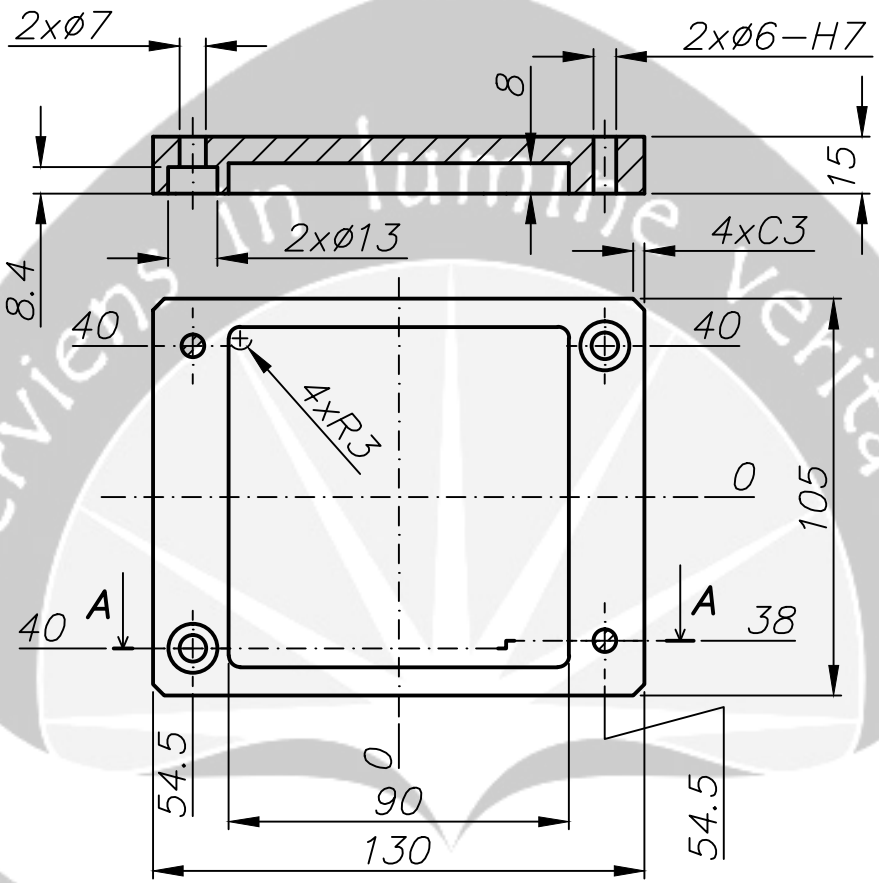


1		1	Brass 95 x95 x13	
QTY	Description	Item	Material	Dwg. Nr.

Revision Index	Drawn by	: Ansgarius	Scale : 1:2
	Reg. Nr	:	Unit : mm
	Date	: 01/12/2010	Material : Brass
	Checked by	: Hanandoko	Sign :

A4	Lower Die Insert	
Industrial Engineering UAJY	Operation: Mill CNC, N6	Dwg. Nr. 1001
Origin.	Rep.	Rep.by. SN. 1 NS. 1

--- Kontur Logo dikerjakan di CNC

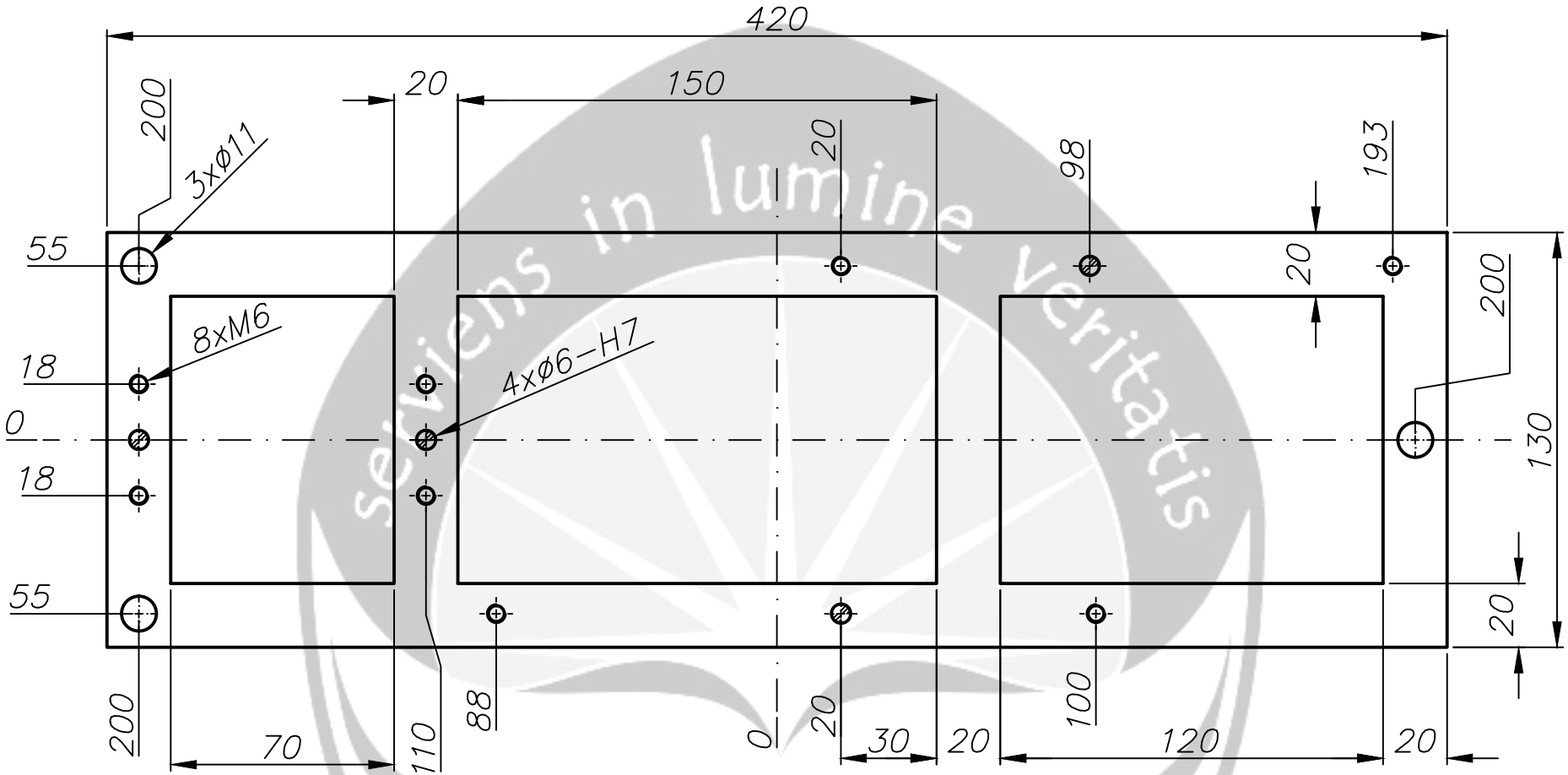


1		2	Ms 135x110x20	
QTY	Description	Item	Material	Dwg. Nr.

Revision Index	Drawn by : Ansgarius	Scale	: 1:2
	Reg. Nr :	Unit	: mm
	Date : 01/12/2010	Material	: Ms
	Checked by : Hanandoko	Sign	:

A4 — **Lower Die Plate**

Industrial Engineering UAJY		Operation: Mill, N6	Dwg. Nr. 1002
Origin.	Rep.	Rep.by.	SN. 1 — NS. 1

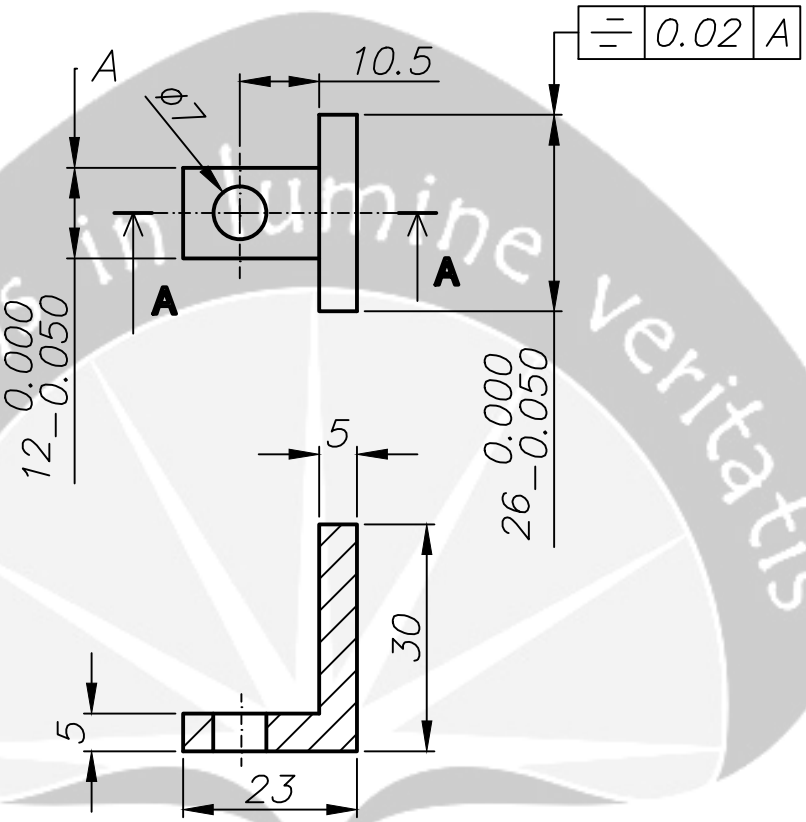


2		3	Ms	
QTY	Description	Item	Material	Dwg. Nr.

Revision Index	Drawn by : Ansgarius	Scale : 1:1	
	Reg. Nr :	Unit : mm	
	Date : 01/12/2010	Material : Ms	
	Checked by : Hanandoko	Sign :	
	A4	Lower Frame	
Industrial Engineering UAJY		Operation N7 Mill	Dwg. Nr. 1003
Origin.	Rep.	Rep.by.	SN. 1 NS. 1

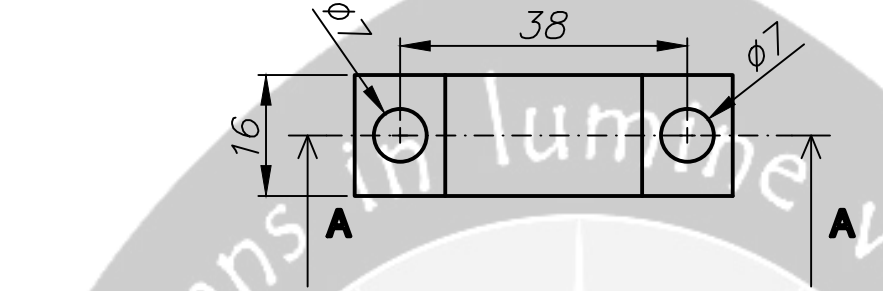
Raw Material
1. Ms 25 x 25 x 90 mm x 4 Pcs
2. Ms 25 x 25 x 425 mm x 2 Pcs

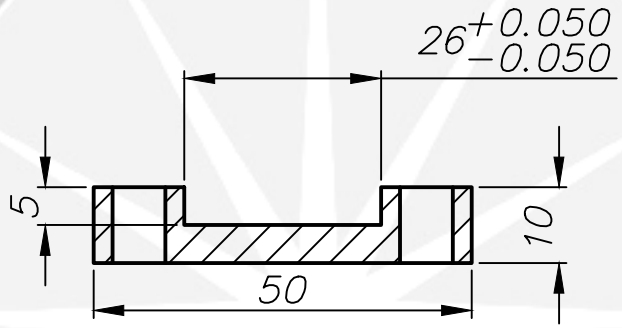
Raw material disatukan dengqn cara dilas



2		6	Ms 35x30x25	
QTY	Description	Item	Material	Dwg. Nr.

Revision Index	Drawn by : Ansgarius	Scale : 1:1
	Reg. Nr :	Unit : mm
	Date : 01/12/2010	Material : Ms
	Checked by : Hanandoko	Sign :
	A4	Lower Guide Plate
Industrial Engineering UAJY		Operation: Mill, N7 — Dwg. Nr. 1006
Origin.	Rep.	Rep.by. — SN. 1 — NS. 1





Sec A–A Sc 1:1

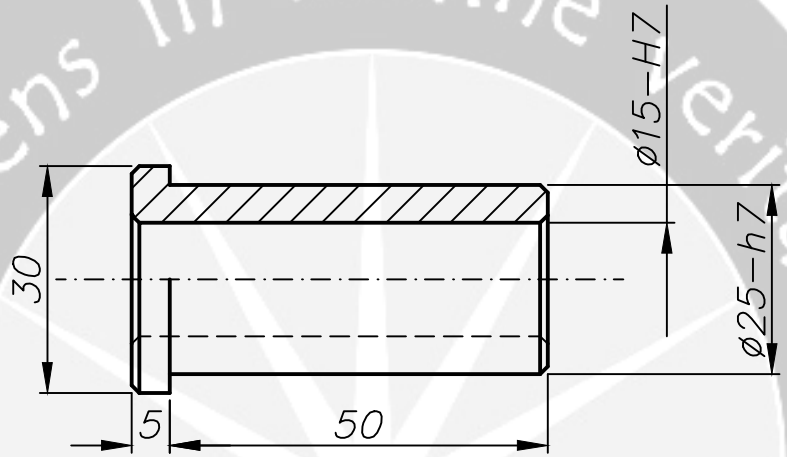
2		7	Ms 55x20x15	
QTY	Description	Item	Material	Dwg. Nr.

Revision Index	Drawn by : Ansgarius	Scale : 1:1
	Reg. Nr :	Unit : mm
	Date : 01/12/2010	Material : Ms
	Checked by : Hanandoko	Sign :

A4	Upper Guide Plate

Industrial Engineering UAJY		Operation N7 Mill	Dwg. Nr. 1007

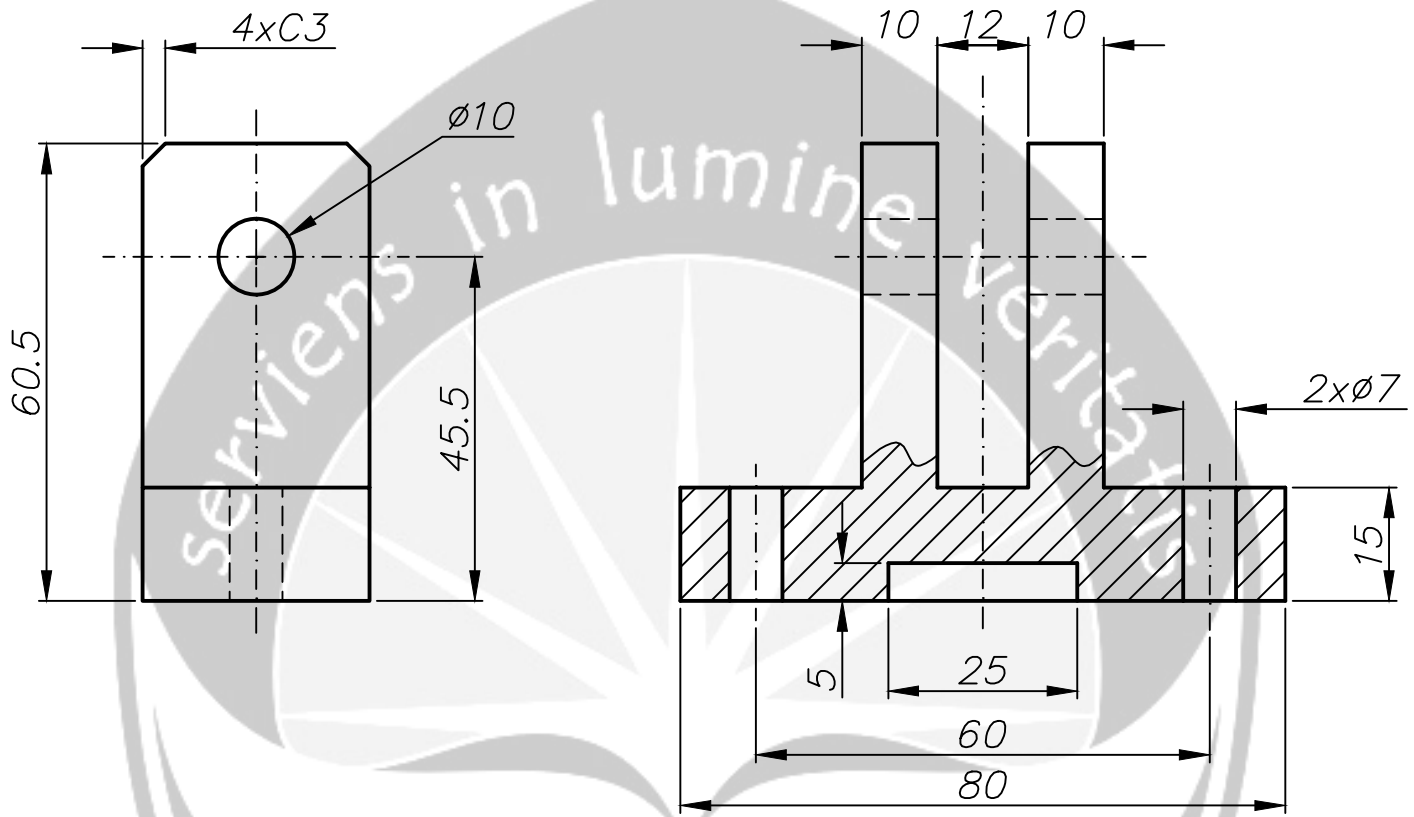
Origin.	Rep.	Rep.by.	SN. 1	NS. 1



2		13	Brass ø1 1/5" x 65	
QTY	Description	Item	Material	Dwg. Nr.

Revision Index	Drawn by	: Ansgarius	Scale : 1:1
	Reg. Nr	:	Unit : mm
	Date	: 01/12/2010	Material : Brass
	Checked by	: Hanandoko	Sign :
	A4	Bush	

Industrial Engineering UAJY		Operation N6 Tr	Dwg. Nr. 1013
Origin.	Rep.	Rep.by.	SN. 1 NS. 1



Raw material
1. Ms 30x46x10 – 2 pcs
2. Ms 30x80x20 – 1 pcs

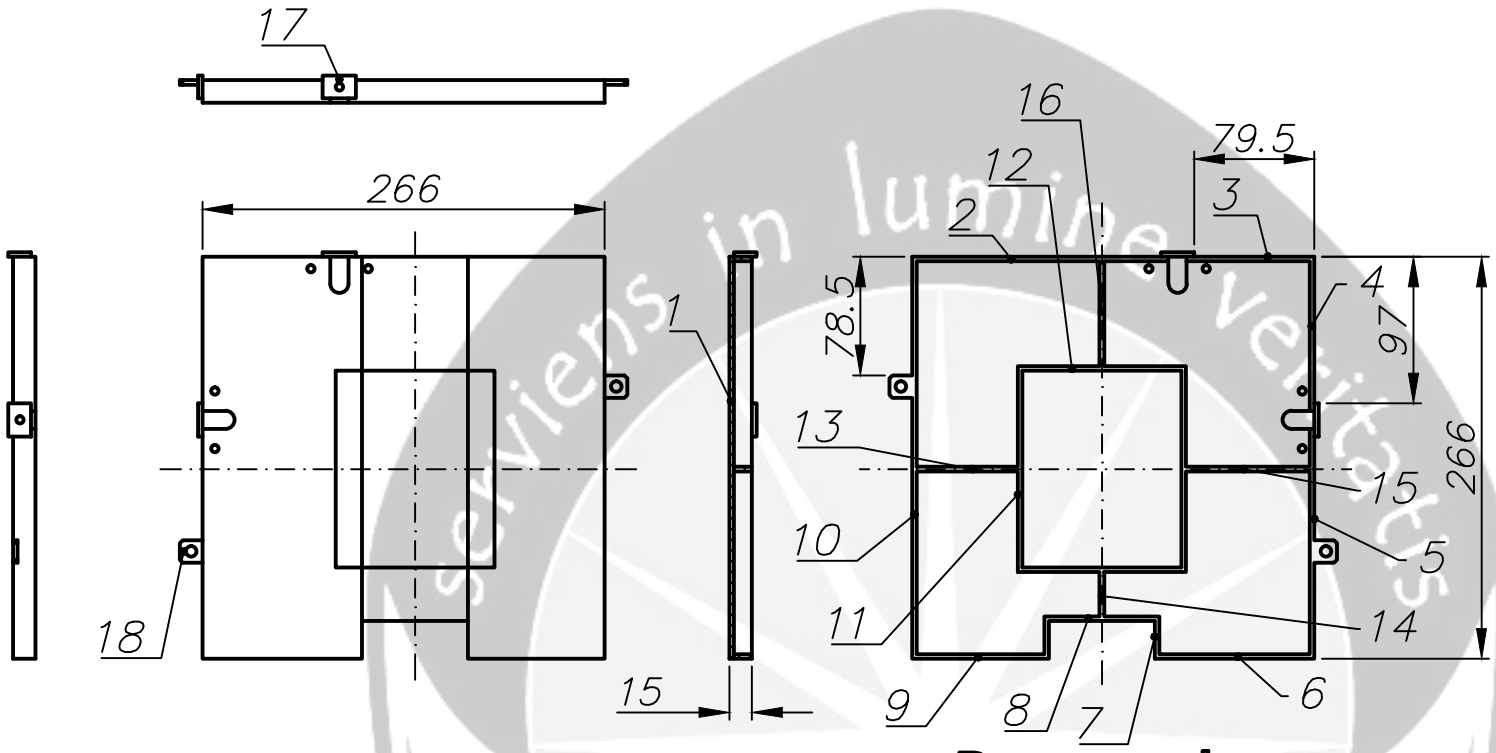
Sebelum di–milling, raw material disatukan menggunakan sambungan las

1		16	Ms	
QTY	Description	Item	Material	Dwg. Nr.

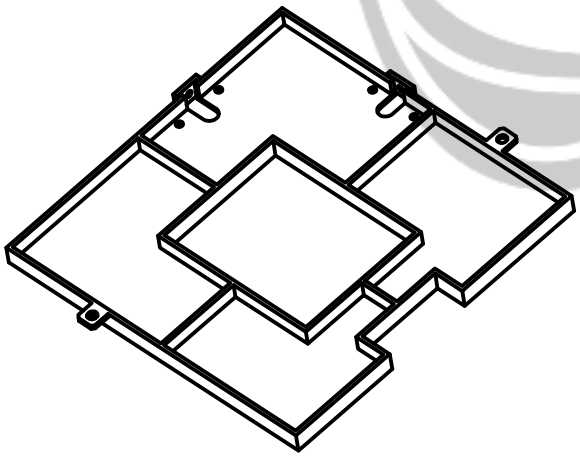
Revision Index	Drawn by : Ansgarius	Scale	: 1:1
	Reg. Nr :	Unit	: mm
	Date : 01/12/2010	Material	: Ms
	Checked by : Hanandoko	Sign	:

A4 — **Lever Pad 1**

Industrial Engineering UAJY		Operation: Weld, Mill (N7)	Dwg. Nr. 1016
Origin.	Rep.	Rep.by.	SN. 1 / NS. 1

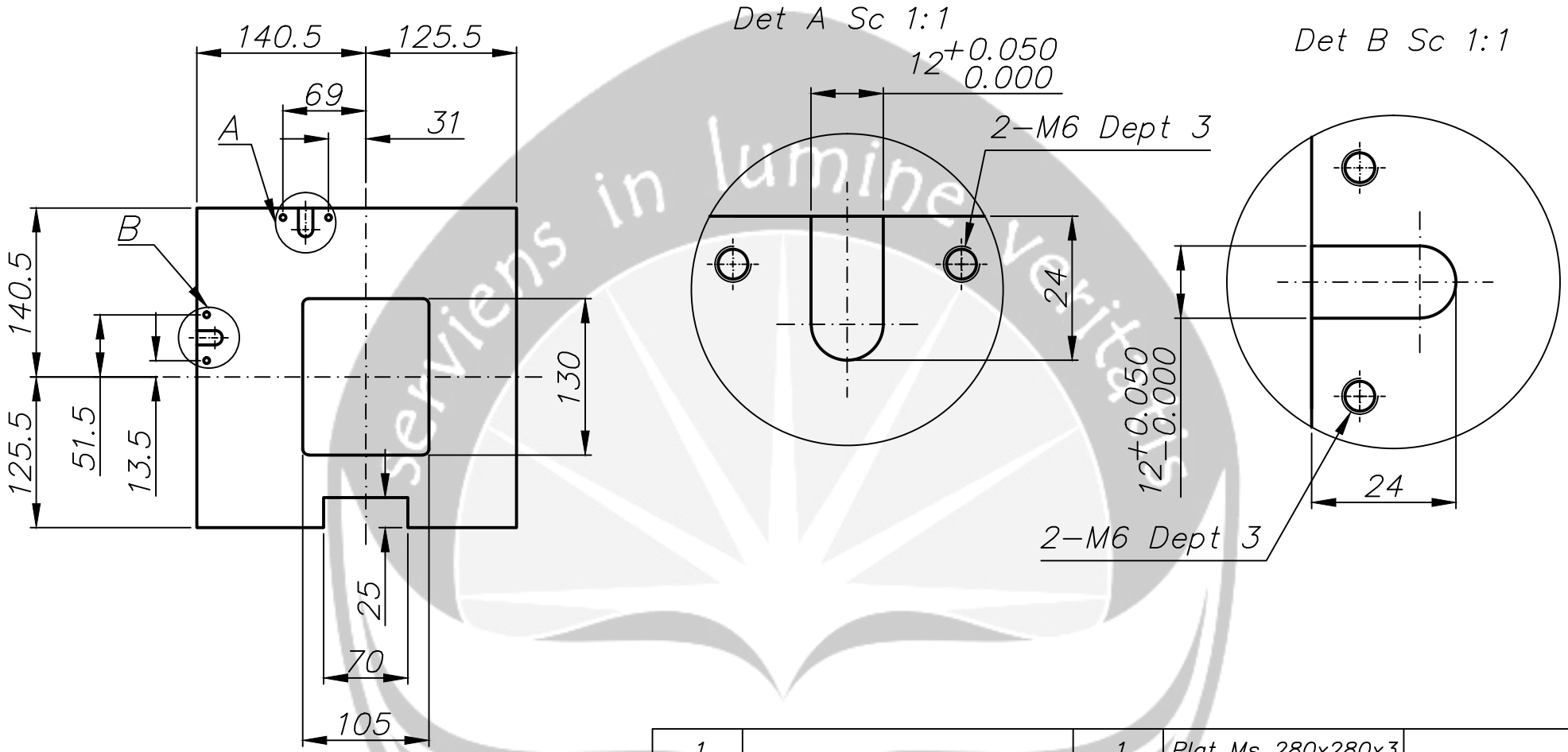


Rear view



Isometric view

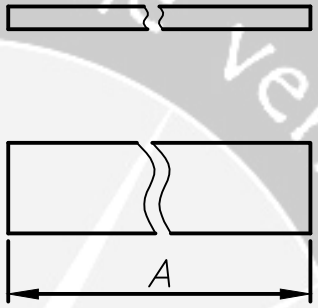
		11		
QTY	Description	Item	Material	Dwg. Nr.
Revision Index	Drawn by : Ansgarius		Scale : 1:5	
	Reg. Nr :		Unit : mm	
	Date : 01/12/2010		Material : Ms	
	Checked by : Hanandoko		Sign :	
	A4	Paper Base Subassy		
Industrial Engineering UAJY		Operation N7 Weld, Mill	Dwg. Nr. 1011	
Origin.	Rep.	Rep.by.	SN. 1	NS. 1



1		1	Plat Ms 280x280x3	
QTY	Description	Item	Material	Dwg. Nr.

Revision Index	Drawn by : Ansgarius	Scale : 1:5
	Reg. Nr :	Unit : mm
	Date : 01/12/2010	Material : Ms
	Checked by : Hanandoko	Sign :
	A4	Base

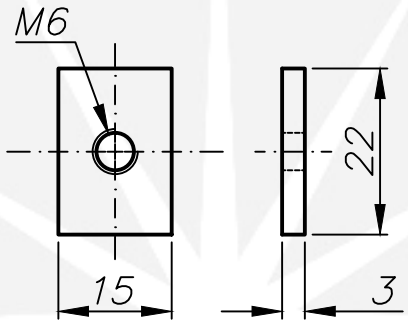
Industrial Engineering UAJY		Operation N7 Mill	Dwg. Nr. 1011001
Origin.	Rep.	Rep.by.	SN. 1 NS. 1



Material Besi Plat 20x5xA			
Item	Qty	Dwg. Nr.	A
2	1	1011002	169.5
3	1	1011003	84.5
4	1	1011004	99
5	1	1011005	152
6	1	1011006	102.5
7	2	1011007	22
8	1	1011008	76
9	2	1011009	87.5
10	1	1011010	263
11	2	1011011	136
12	2	1011012	105
13	1	1011013	67
14	1	1011014	29.5
15	1	1011015	82
16	1	1011016	69.5

QTY	Description	Item	Material	Dwg. Nr.

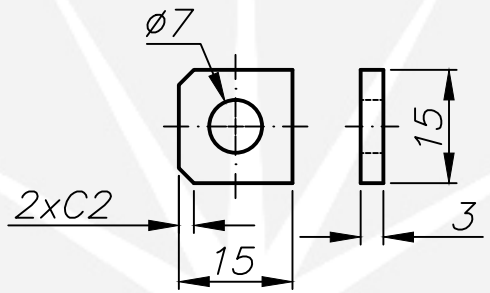
Revision Index	Drawn by	: Ansgarius	Scale : 1:1
	Reg. Nr	:	Unit : mm
	Date	: 01/12/2010	Material :
	Checked by	: Hanandoko	Sign :
A4	Rib		
Industrial Engineering UAJY		Operation: Cutting Wheel NG	Dwg. Nr.
Origin.	Rep.	Rep.by.	SN. 1 NS. 1



		17		
QTY	Description	Item	Material	Dwg. Nr.

Revision Index	Drawn by	: Ansgarius	Scale : 1:1
	Reg. Nr	:	Unit : Metric
	Date	: 01/12/2010	Material : Ms
	Checked by	: Hanandoko	Sign :
A4	Adjuster post		

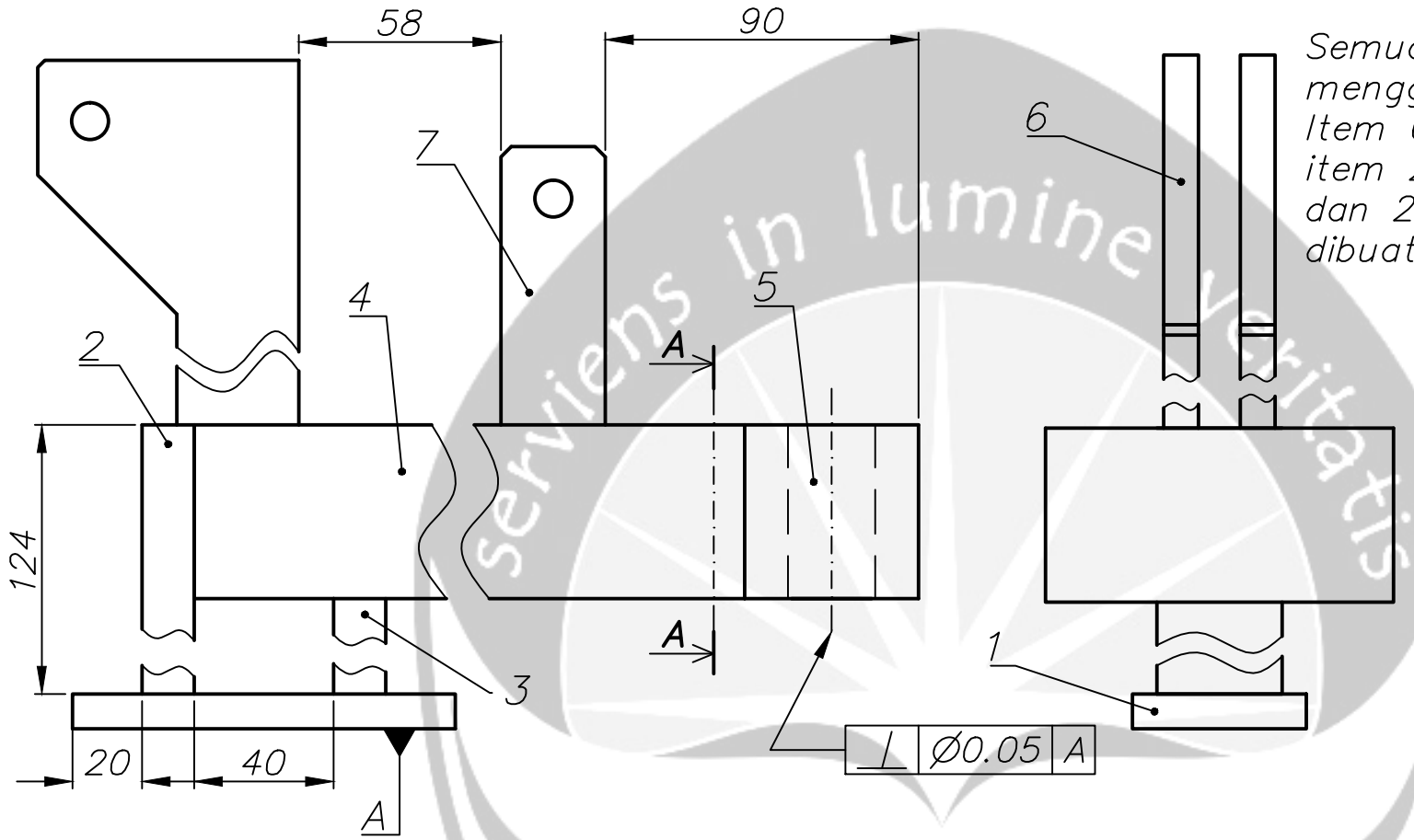
Industrial Engineering UAJY		Operation N7 Mill	Dwg. Nr. 1011017
Origin.	Rep.	Rep.by.	SN. 1 NS. 1



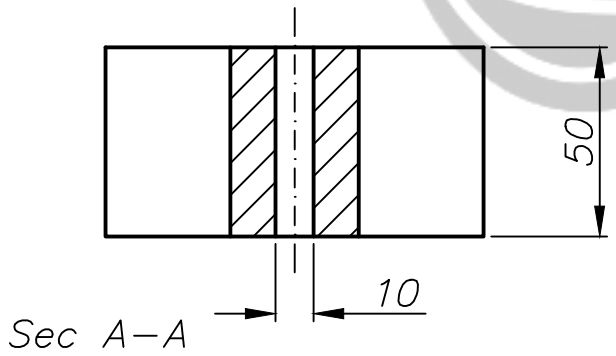
		18		
QTY	Description	Item	Material	Dwg. Nr.

Revision Index	Drawn by : Ansgarius	Scale : 1:1
	Reg. Nr :	Unit : Metric
	Date : 01/12/2010	Material :
	Checked by : Hanandoko	Sign :
	A4	

Industrial Engineering UAJY		Operation N7	Dwg. Nr. 1011018
Origin.	Rep.	Rep.by.	SN. 1 NS. 1



Semua part dirakit menggunakan sambungan las Item 6 dan 7 dilas dengan item 2 dan 4 setelah item 1 dan 2 dimilling dan lubang dibuat.



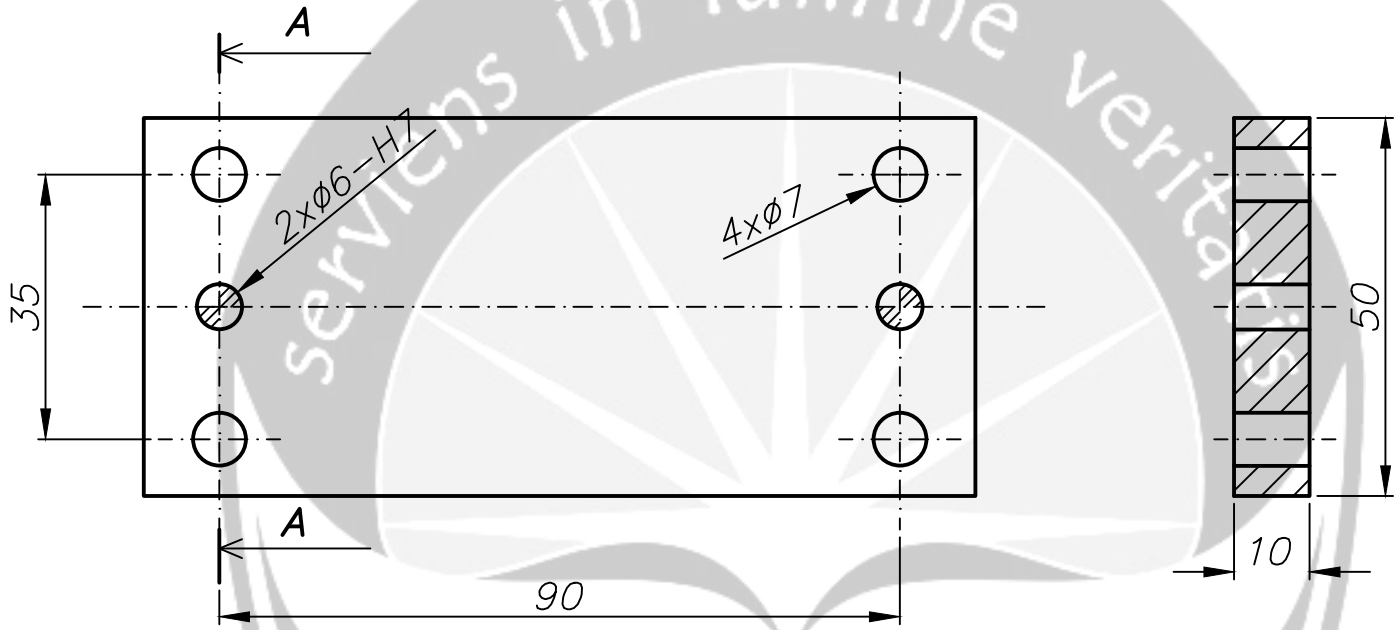
Sec A–A

1		12		
QTY	Description	Item	Material	Dwg. Nr.

Revision Index	Drawn by	: Ansgarius	Scale : 1:2
	Reg. Nr	:	Unit : mm
	Date	: 01/12/2010	Material : Ms
	Checked by	: Hanandoko	Sign :

A4 | Top Frame Subassy

Industrial Engineering UAJY		Operation N7	Dwg. Nr. 1012
Origin.	Rep.	Rep.by.	SN. 1 NS. 1



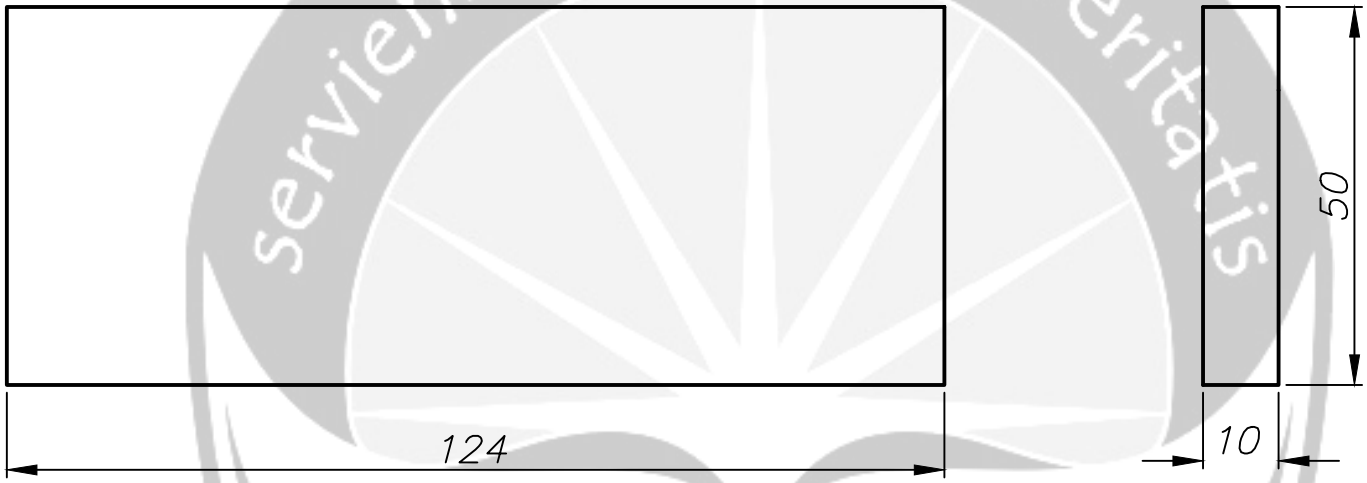
Proses milling dan pembuatan lubang dilakukan setelah dilas bersama dengan item 2, 3, 4 dan 5 pada subassy Upper Frame

QTY	Description	Item	Material	Dwg. Nr.
1		1		

Revision Index	Drawn by	: Ansgarius	Scale : 1:1
	Reg. Nr	:	Unit : mm
	Date	: 01/12/2010	Material : Ms
	Checked by	: Hanandoko	Sign :

A4 — Joiner Plate

Industrial Engineering UAJY		Operation: Mill, N7	Dwg. Nr. 1012001
Origin.	Rep.	Rep.by.	SN. 1 NS. 1



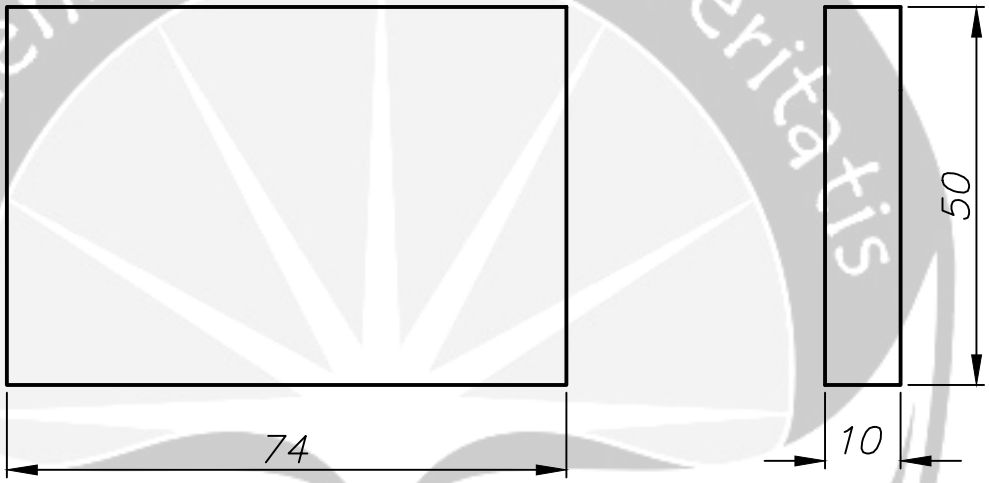
1		2		
QTY	Description	Item	Material	Dwg. Nr.

Revision Index	Drawn by	: Ansgarius	Scale : 1:1
	Reg. Nr	:	Unit : mm
	Date	: 01/12/2010	Material : Ms
	Checked by	: Hanandoko	Sign :

A4	Midle Plate 1

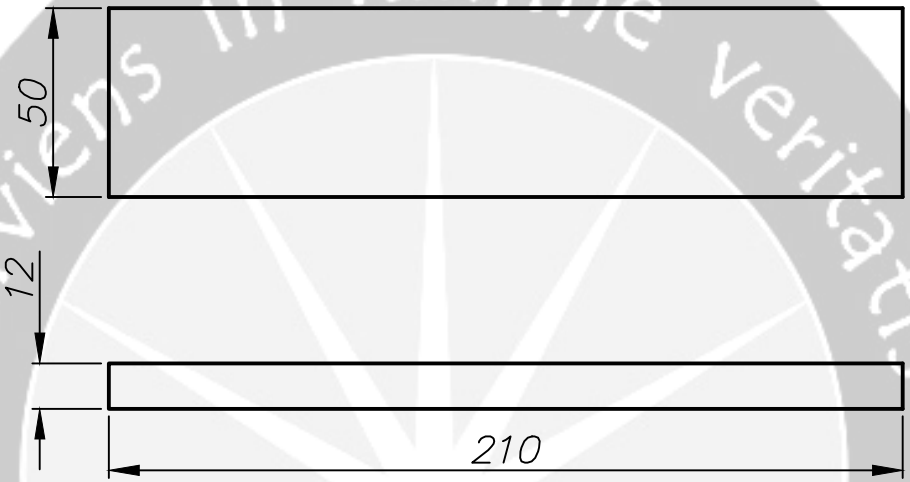
Industrial Engineering UAJY		Operation N7 Mill	Dwg. Nr. 1012002

Origin.	Rep.	Rep.by.	SN. 1	NS. 1



1		3		
QTY	Description	Item	Material	Dwg. Nr.

Revision Index	Drawn by	: Ansgarius	Scale : 1:1
	Reg. Nr	:	Unit : mm
	Date	: 01/12/2010	Material : Ms
	Checked by	: Hanandoko	Sign :
A4	Midle Plate 2		
Industrial Engineering UAJY		Operation N7 Mill	Dwg. Nr. 1012003
Origin.	Rep.	Rep.by.	SN. 1 NS. 1

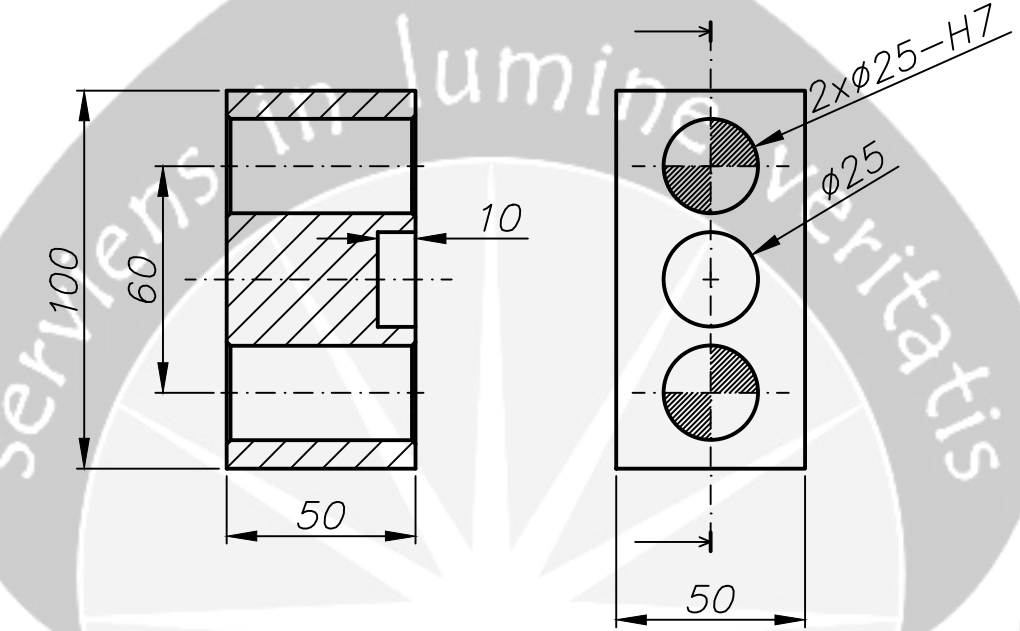


2		4		
QTY	Description	Item	Material	Dwg. Nr.

Revision Index	Drawn by	: Ansgarius	Scale : 1:2
	Reg. Nr	:	Unit : mm
	Date	: 01/12/2010	Material : Ms
	Checked by	: Hanandoko	Sign :

A4 **Post Extension Block**

Industrial Engineering UAJY		Operation N7 Mill	Dwg. Nr. 1012004
Origin.	Rep.	Rep.by.	SN. 1 NS. 1

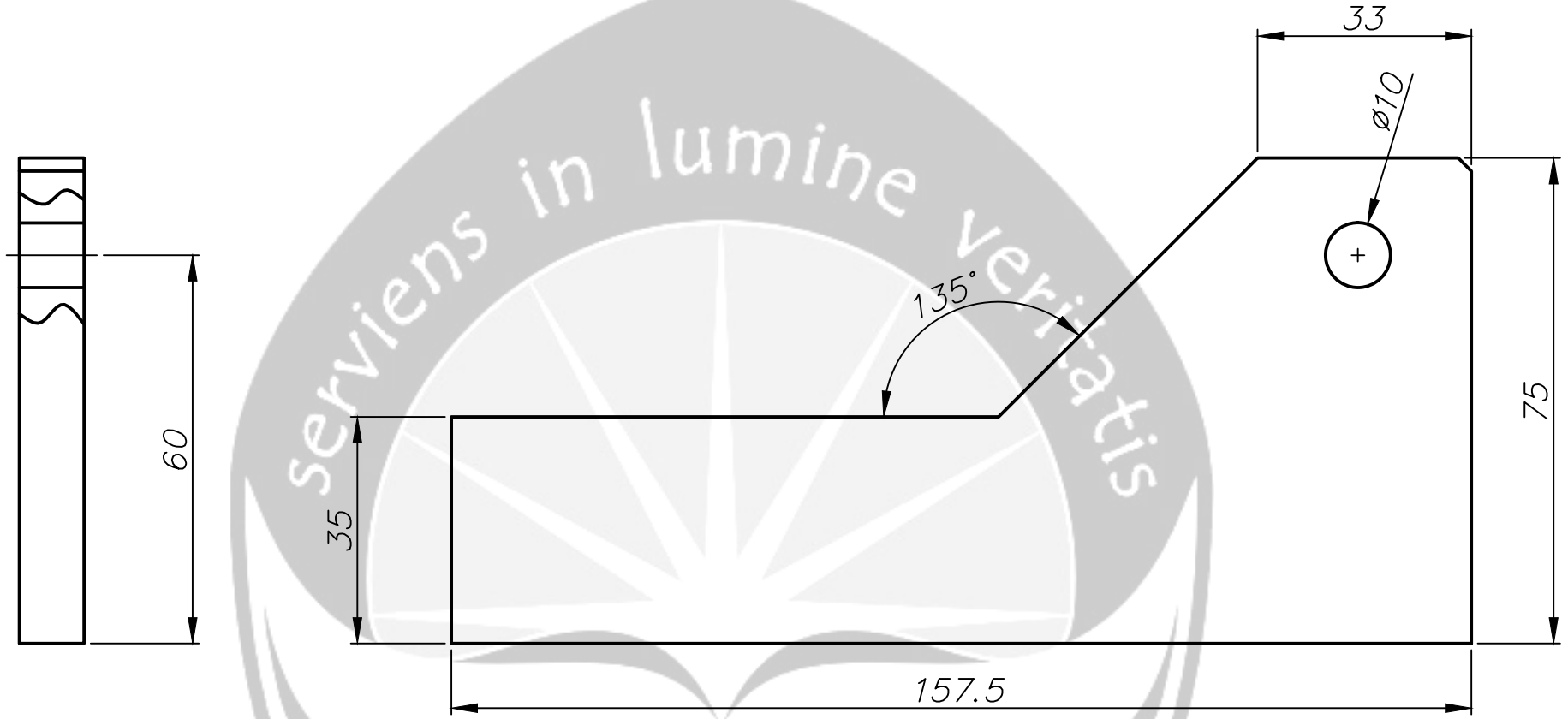


BASE 0.5

1		5		
QTY	Description	Item	Material	Dwg. Nr.

Revision Index	Drawn by : Ansgarius	Scale : 1:2
	Reg. Nr :	Unit : mm
	Date : 01/12/2010	Material : Ms
	Checked by : Hanandoko	Sign :
	A4	Block Post
Industrial Engineering UAJY	Operation N7 Mill	Dwg. Nr. 1012005
Origin.	Rep.	Rep.by. SN. 1 NS. 1

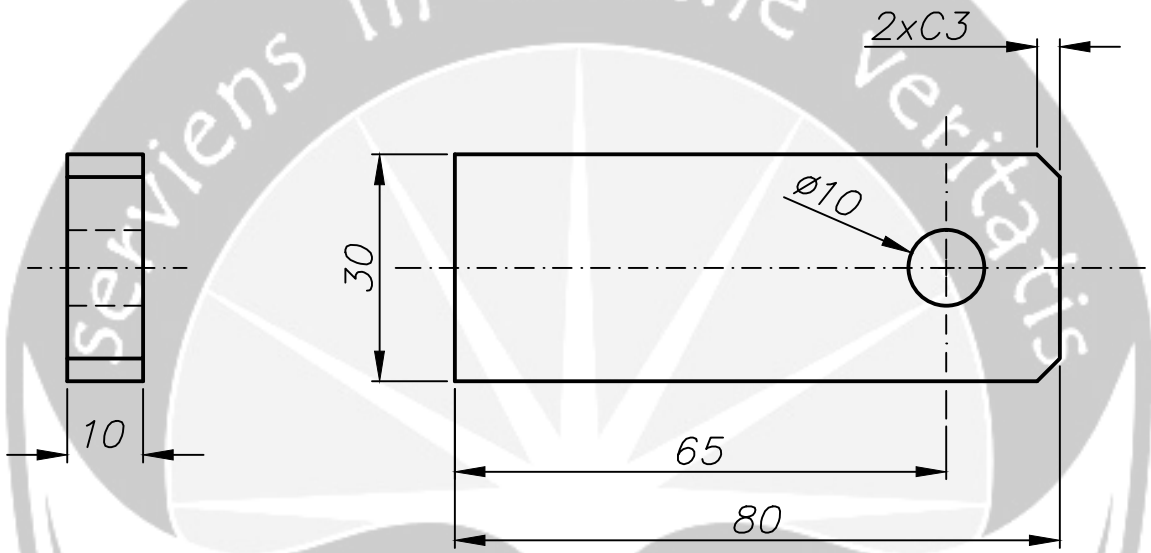
Proses milling dan pembuatan lubang dilakukan setelah dilas bersama dengan item 2, 3, 4 dan 5 pada subassy Upper Frame



2		6		
QTY	Description	Item	Material	Dwg. Nr.

Revision Index	Drawn by	: Ansgarius	Scale : 1:1
	Reg. Nr	:	Unit : mm
	Date	: 01/12/2010	Material : Ms
	Checked by	: Hanandoko	Sign :
	A4	Laver Pad 3	

Industrial Engineering UAJY		Operation N7 Mill	Dwg. Nr. 1012006
Origin.	Rep.	Rep.by.	SN. 1 NS. 1

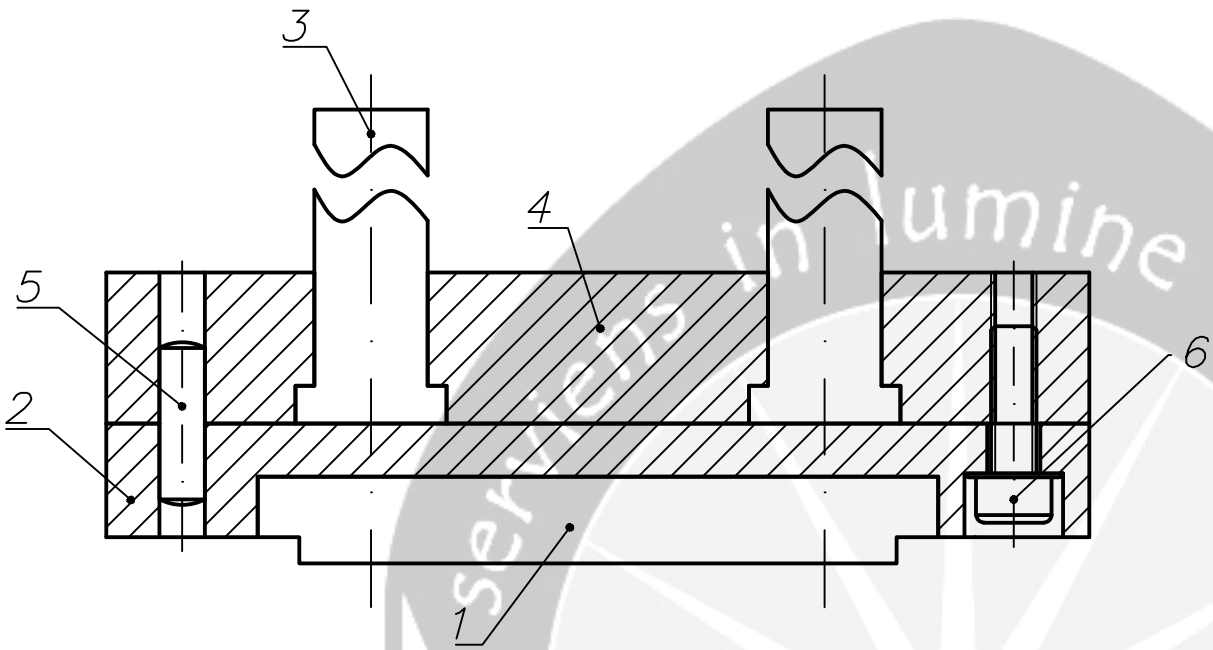


2		7	Ms 80x30x10	
QTY	Description	Item	Material	Dwg. Nr.

Revision Index	Drawn by	: Ansgarius	Scale : 1:1
	Reg. Nr	:	Unit : mm
	Date	: 01/12/2010	Material : Ms
	Checked by	: Hanandoko	Sign :

A4	Laver Pad 2		
Industrial Engineering UAJY		Operation N7 Mill	Dwg. Nr. 1012007

Origin.	Rep.	Rep.by.	SN. 1	NS. 1

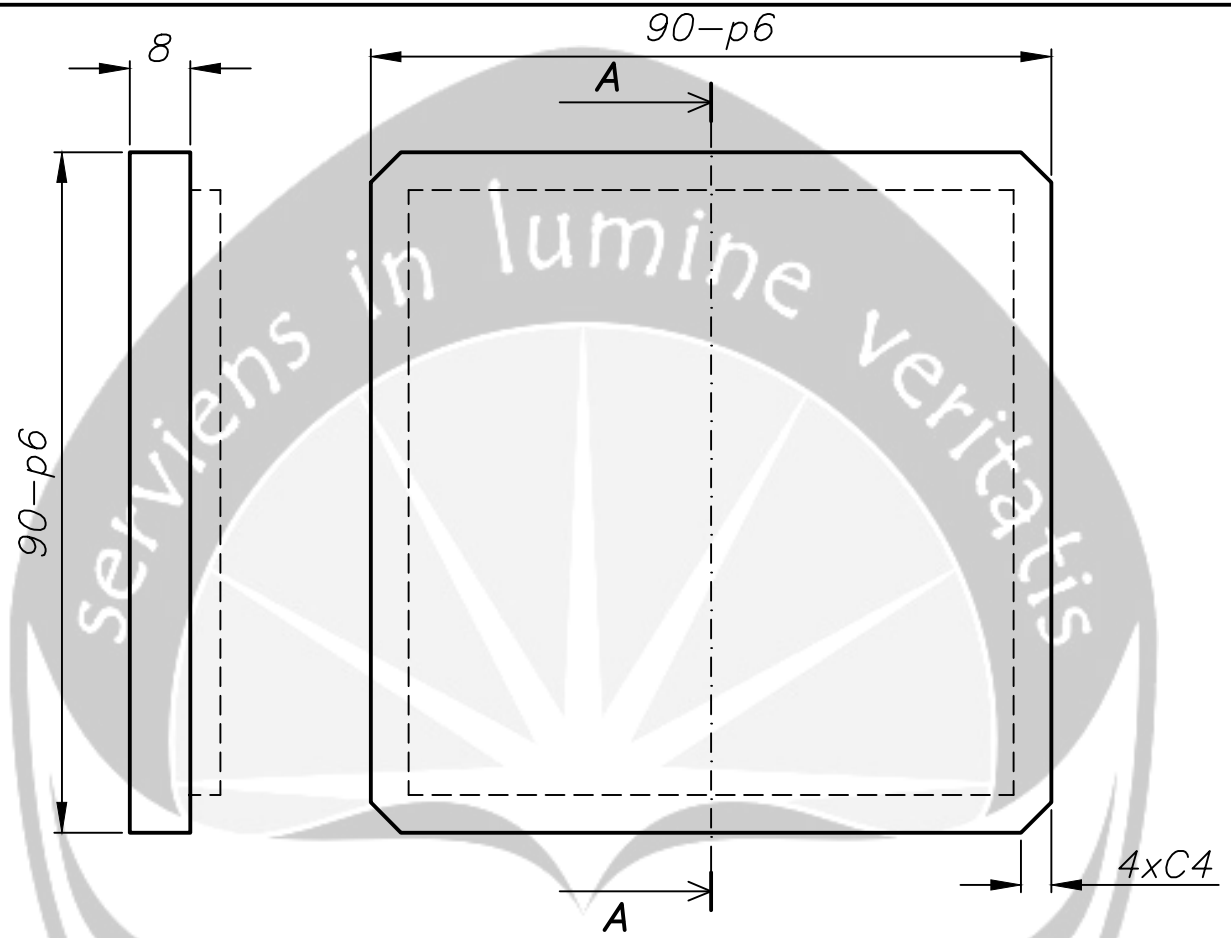


QTY	Description	Item	Material	Dwg. Nr.
2	SHCS M6−50	6	Standart	1005
2	Misumi Dowel Pin MS6−20	5	Standart	1004
1	Extension Block	4	Ms	1015004
2	Linear Guide Pin	3	Ms	1015003
1	Upper Punch Plate	2	Ms	1015002
1	Upper Punch Insert	1	Brass	1015001

Revision Index	Drawn by : Ansgarius	Scale : 1:1
	Reg. Nr :	Unit : mm
	Date : 01/12/2010	Material : Ms
	Checked by : Hanandoko	Sign :

A4 **Upper Punch Subassy**

Industrial Engineering UAJY		Operation N7	Dwg. Nr. 1015
Origin.	Rep.	Rep.by.	SN. 1 NS. 1



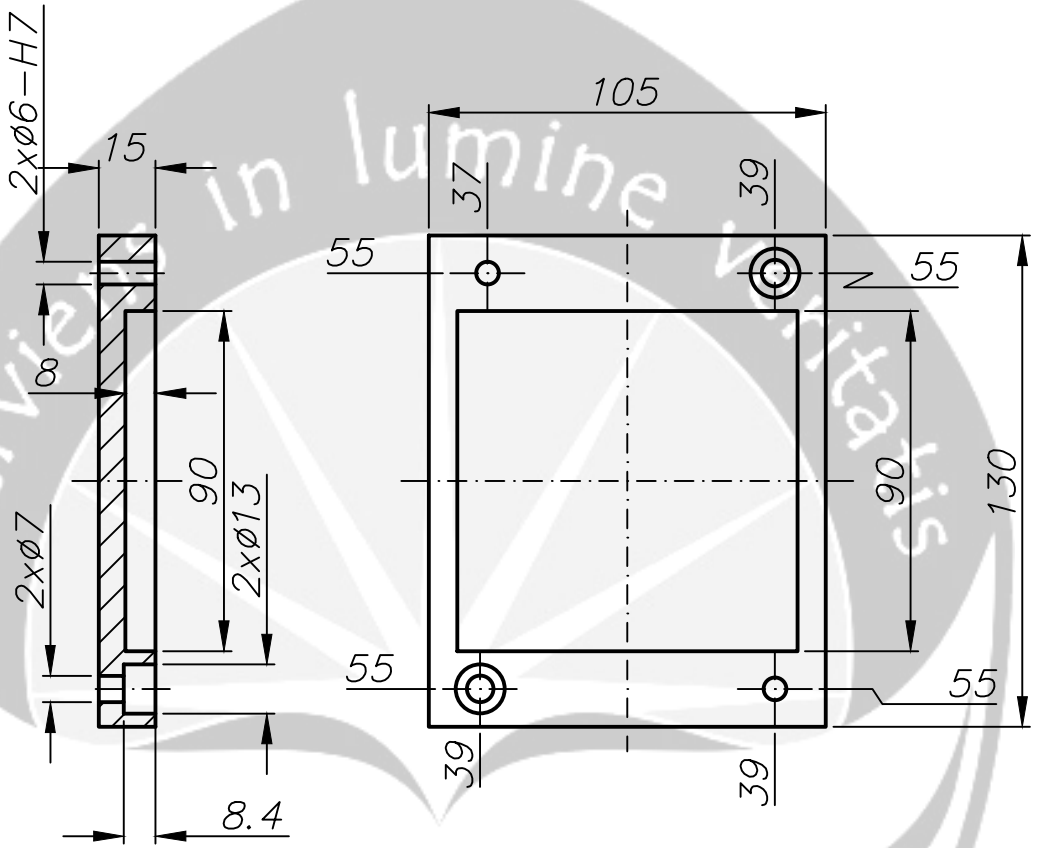
--- Kontur Logo dikerjakan di CNC

QTY	Description	Item	Material	Dwg. Nr.
1		1	Brass 95x95x15	

Revision Index	Drawn by : Ansgarius	Scale	: 1:2
	Reg. Nr :	Unit	: mm
	Date : 01/12/2010	Material	: Brass
	Checked by : Hanandoko	Sign	:

A4 **Upper Punch Insert**

Industrial Engineering UAJY		Operation: N7 mill	Dwg. Nr. 1015001
Origin.	Rep.	Rep.by.	SN. 1 / NS. 1

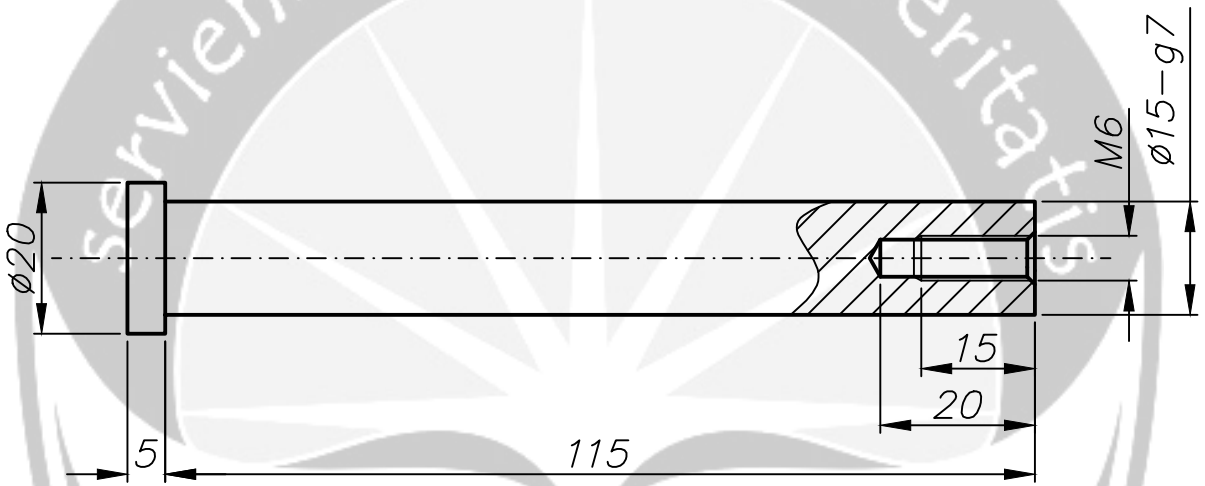


1		2	Ms 135x105x20	
QTY	Description	Item	Material	Dwg. Nr.

Revision Index	Drawn by : Ansgarius	Scale : 1:2
	Reg. Nr :	Unit : mm
	Date : 01/12/2010	Material : Ms
	Checked by : Hanandoko	Sign :

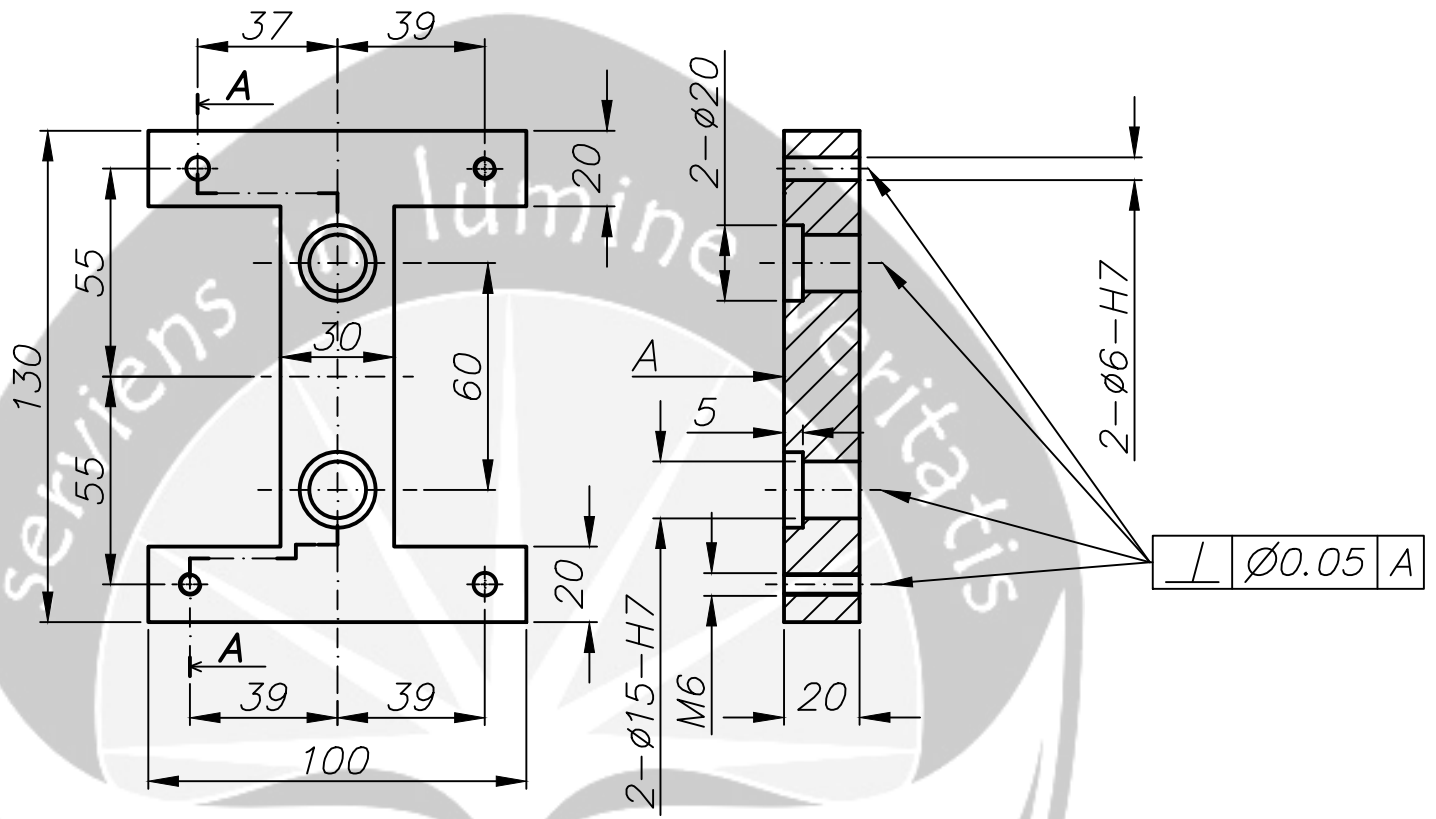
A4 **Upper Punch Plate**

Industrial Engineering UAJY		Operation N6 Mill	Dwg. Nr. 1015002
Origin.	Rep.	Rep.by.	SN. 1 NS. 1



1		3	Ms	
QTY	Description	Item	Material	Dwg. Nr.

Revision Index	Drawn by : Ansgarius	Scale	: 1:1
	Reg. Nr :	Unit	: mm
	Date : 01/12/2010	Material	: Ms
	Checked by : Hanandoko	Sign	:
A4	Linear Guide Pin		
Industrial Engineering UAJY		Operation: Turn N6	Dwg. Nr. 1015003
Origin.	Rep.	Rep.by.	SN. 1 NS. 1



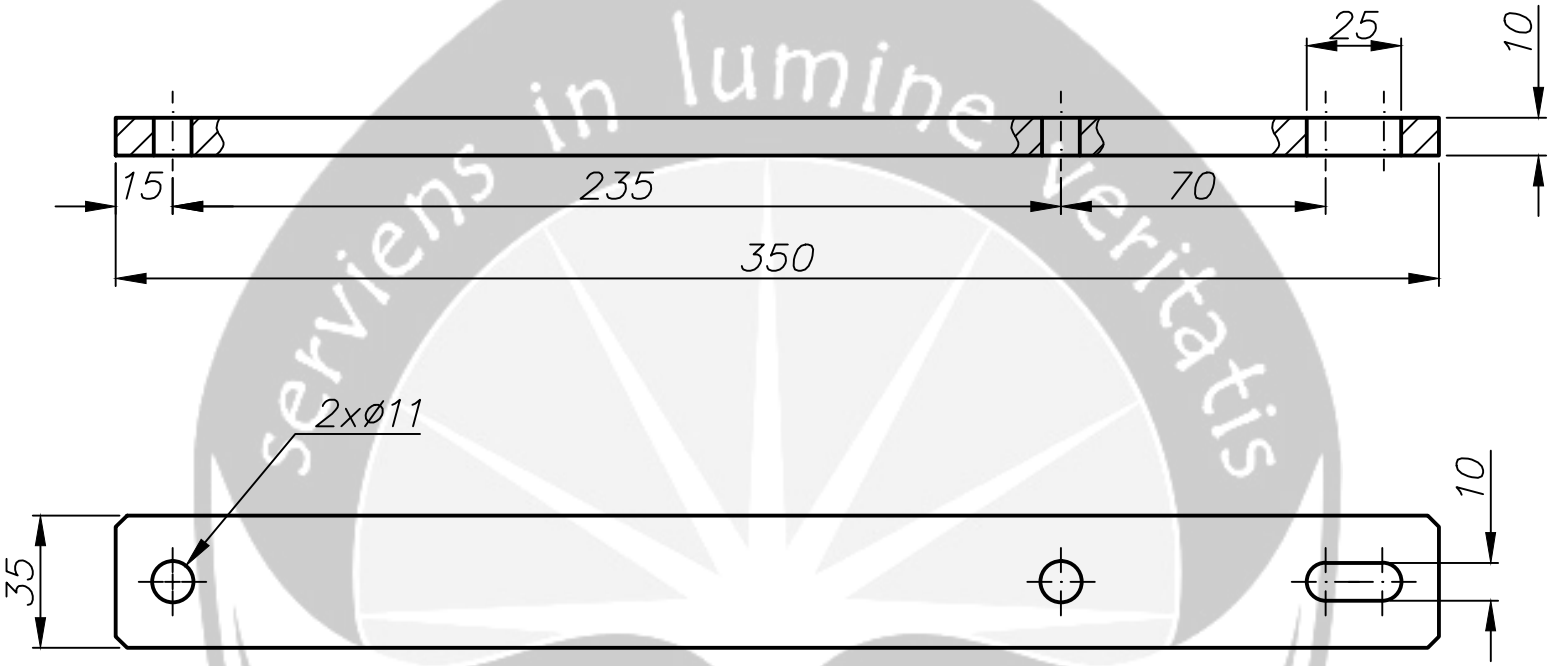
Raw material
1. Ms 100x25x25 – 2 pcs
2. Ms 90x30x25 – 1 pcs

1		4	Ms	
QTY	Description	Item	Material	Dwg. Nr.

Revision Index	Drawn by : Ansgarius	Scale : 1:2
	Reg. Nr :	Unit : mm
	Date : 01/12/2010	Material : Ms
	Checked by : Hanandoko	Sign :

A4 **Extension Block**

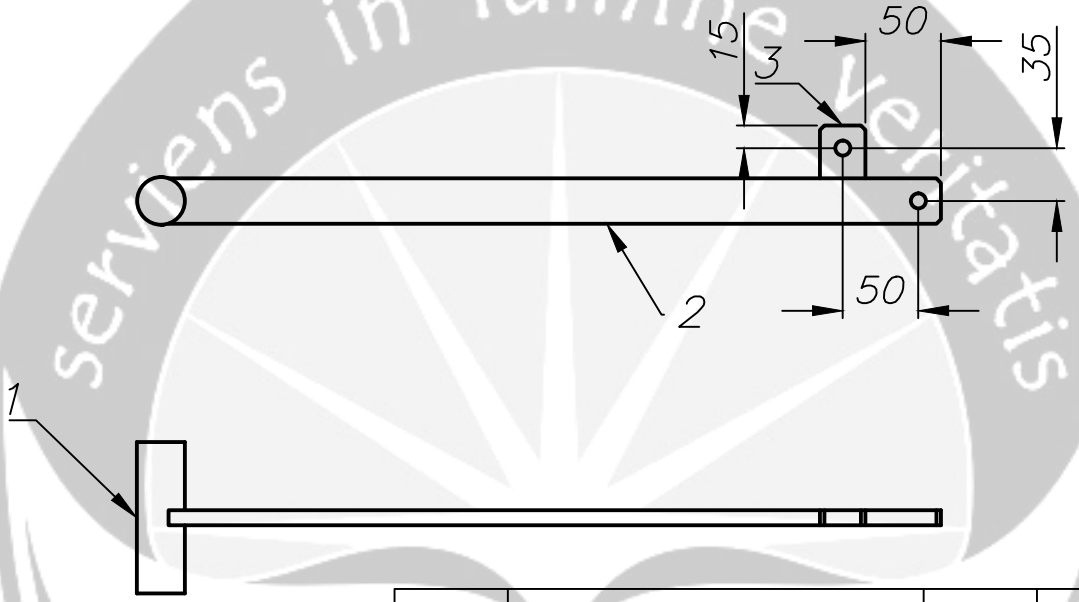
Industrial Engineering UAJY		Operation N7 Mill	Dwg. Nr. 1015004
Origin.	Rep.	Rep.by.	SN. 1 NS. 1



1		17	Ms 350x35x10	
QTY	Description	Item	Material	Dwg. Nr.

Revision Index	Drawn by	: Ansgarius	Scale : 1:2
	Reg. Nr	:	Unit : mm
	Date	: 01/12/2010	Material : Ms
	Checked by	: Hanandoko	Sign :
	A4	Leverage	

Industrial Engineering UAJY		Operation N7 Mill	Dwg. Nr. 1017
Origin.	Rep.	Rep.by.	SN. 1 NS. 1

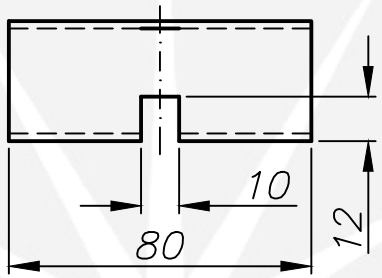


1	Shank Extension 2	1		1019003
1	Shank Extension 1	1		1019002
1	Grip	1		1019001
QTY	Description	Item	Material	Dwg. Nr.

Raw material :
1. *Pipa ø1.5inch x 2mm x 100mm*
2. *Plat 10mm x 30 mm 510 mm*
3. *Plat 10 mm x 30 mm x 30 mm*

Semua komponen dirakit menggunakan sambungan las.

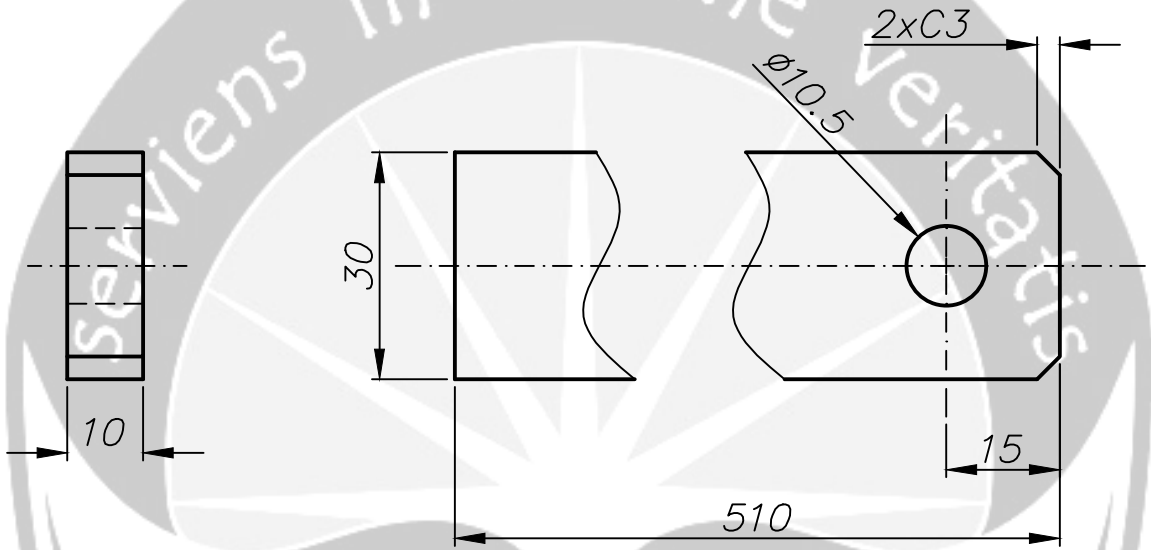
Revision Index	Drawn by : Ansgarius	Scale : 1:2
	Reg. Nr :	Unit : mm
	Date : 01/12/2010	Material : Ms
	Checked by : Hanandoko	Sign :
	A4	Handle assy
Industrial Engineering UAJY		Operation N7 / Dwg. Nr. 1019
Origin.	Rep.	Rep.by. / SN. 1 / NS. 1



1		1	Pipa ø 1 1/4" x 80	
QTY	Description	Item	Material	Dwg. Nr.

Revision Index	Drawn by	: Ansgarius	Scale : 1:2
	Reg. Nr	:	Unit : mm
	Date	: 01/12/2010	Material :
	Checked by	: Hanandoko	Sign :
	A4	Grip	

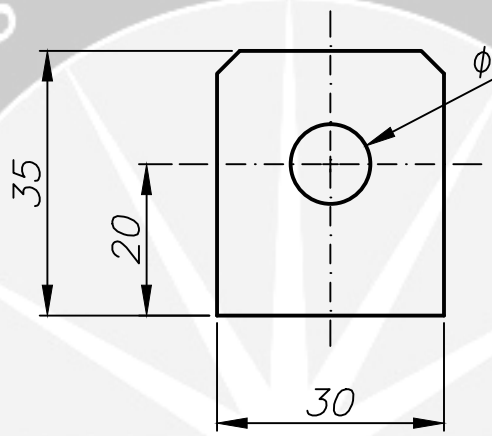
Industrial Engineering UAJY		Operation N7 Mill	Dwg. Nr. 1019001
Origin.	Rep.	Rep.by.	SN. 1 NS. 1



1		2	Ms 35 x 10 x 510	
QTY	Description	Item	Material	Dwg. Nr.

Revision Index	Drawn by : Ansgarius	Scale : 1:1
	Reg. Nr :	Unit : mm
	Date : 01/12/2010	Material : Ms
	Checked by : Hanandoko	Sign :
	A4	Shank Extention 1

Industrial Engineering UAJY		Operation N7 Mill	Dwg. Nr. 1019002
Origin.	Rep.	Rep.by.	SN. 1 NS. 1

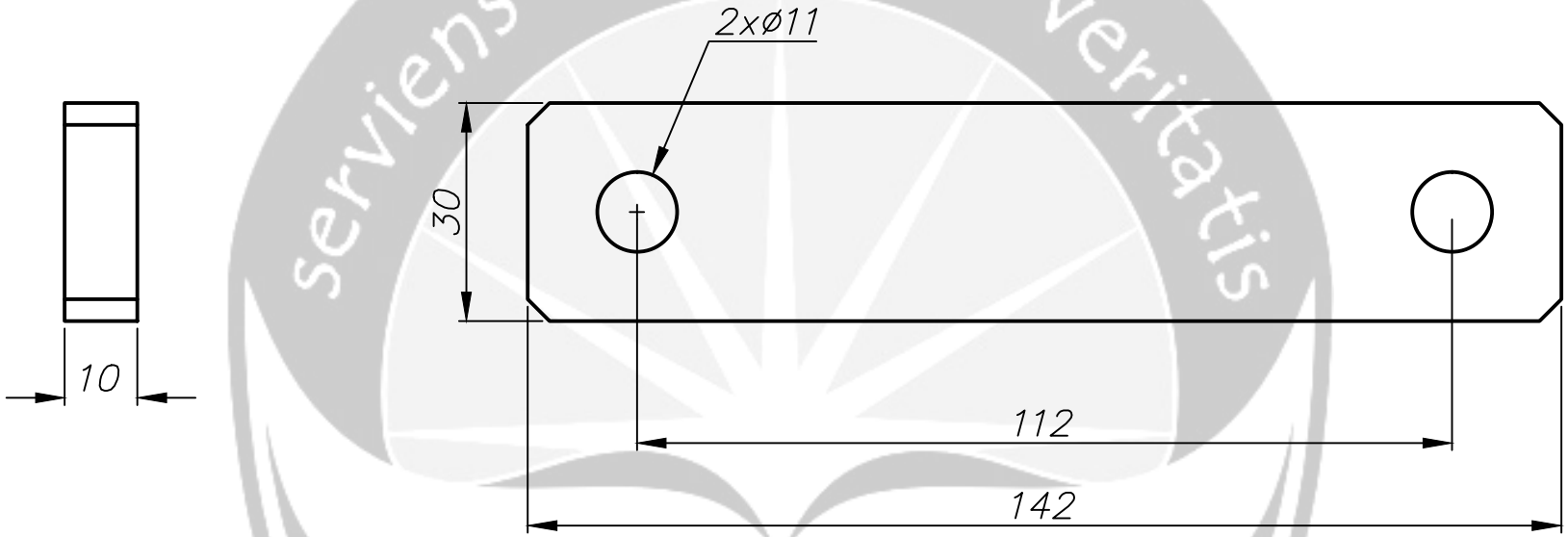


1		3	Ms 30 x 10 x 35	
QTY	Description	Item	Material	Dwg. Nr.

Revision Index	Drawn by : Ansgarius	Scale : 1:1
	Reg. Nr :	Unit : mm
	Date : 01/12/2010	Material : Ms
	Checked by : Hanandoko	Sign :
	A4	Shank Extension 2

Industrial Engineering UAJY		Operation N7 Mill	Dwg. Nr. 1019003

Origin.	Rep.	Rep.by.	SN. 1	NS. 1



1		20	Ms 145x30x10	
QTY	Description	Item	Material	Dwg. Nr.

Revision Index	Drawn by : Ansgarius	Scale : 1:1
	Reg. Nr :	Unit : mm
	Date : 01/12/2010	Material : Ms
	Checked by : Hanandoko	Sign :

A4 — Lever Extension

Industrial Engineering UAJY		Operation: N7 Mill	Dwg. Nr. 1020
Origin.	Rep.	Rep.by.	SN. 1 / NS. 1