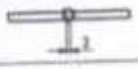
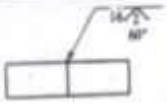
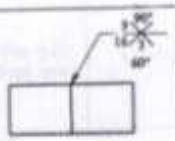
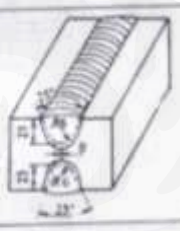
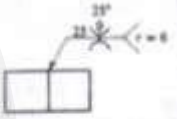
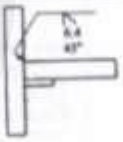
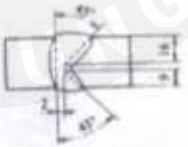
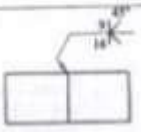
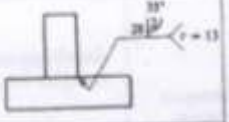
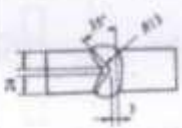
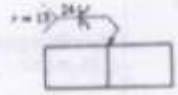
LAMPIRAN

Lampiran 1 Tabel hubungan elektroda, tebal bahan dengan Arus Pengelasan

Tebal bahan (mm)	Diameter elektroda (mm)	Kekuatan arus dalam ampere (A)
1	1.5	20 - 35
1 - 1,5	2	35 - 60
1.5 - 2.5	2.5	60 - 100
2.5 - 4	3.25	90 - 150
4 - 6	4	120 - 180
6 - 10	5	150 - 220
10 - 16	6	200 - 300
Diatas 16	8	280 - 400

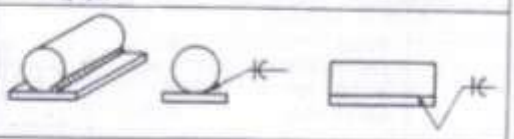
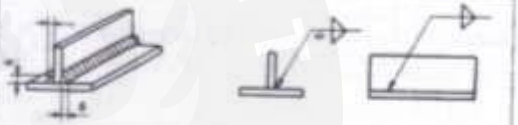
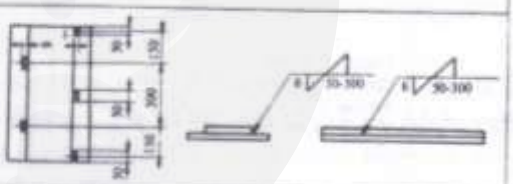
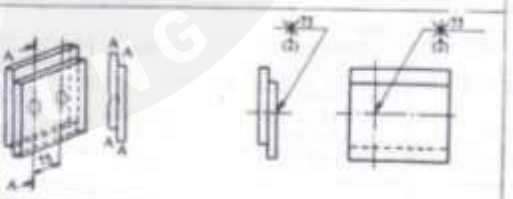
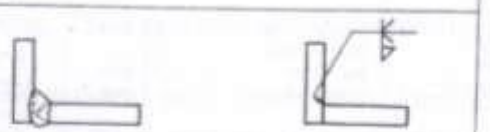
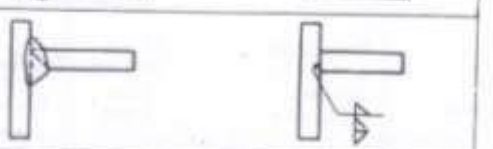
(Sri Widarto,1996:93)

Lampiran 2 Lambang-lambang Pengelasan

Sambungan las		Benda	Penunjukan
Las alur persegi	Celah akar 2 mm		
Las alur V	Tebal 19 mm Dalam alur 16 mm Sudut alur 60° Celah akar 2 mm		
Las alur V ganda	Dalam alur Sisi panah 16 mm Sisi sebelah 9 mm Sudut alur Sisi panah 60° Sisi sebelah 90° Celah akar 3 mm		
Las alur U ganda	Dalam alur 25 mm Sudut alur 25° Jari-jari alur 6 mm Celah akar 0 mm		
Las alur tirus	Dengan bilah Sambungan T Sudut alur 45° Celah akar 6,4 mm		
Las alur tirus ganda	Sisi panah Dalam alur 16 mm Sudut alur 45° Sisi sebelah Dalam alur 9 mm Sudut alur 45° Celah akar 2 mm		
Las alur J ganda	Dalam alur 28 mm Sudut alur 35° Jari-jari 13 mm Celah akar 2 mm		
Las alur J ganda	Dalam alur 24 mm Sudut alur 35° Jari-jari 13 mm Celah akar 3 mm		

Sumber : G. Takeshi Sato, 2008:239.

Lampiran 2 Lanjutan

Pengelasan		Benda	Penunjukan
Las alur U	Dalam alur 27 mm		
Las alur tirus ganda	Kedua sisi		
Las alur tirus	Sisi sebelah atau sisi jauh		
Las kontinyu	Sudut satu sisi tebal las 6 mm		
Las sudut kontinyu	Kedua sisi tebal las 6 mm		
Las sudut tidak kontinyu	Las sudut tidak kontinyu (Zig-zag) Tebal las 6 mm Panjang las 50 mm Jarak antara 300 mm		
Las titik	Pada sisi panah atau sisi dekat, dipergunakan kawat las pipih		
Gabungan lambang-lambang dasar	Sambungan las tirus ganda dengan las sudut		
	Sambungan las tirus dan las sudut		

Sumber : G. Takeshi Sato, 2008:239.

Lampiran 3 Cutting Speed untuk Mata Bor

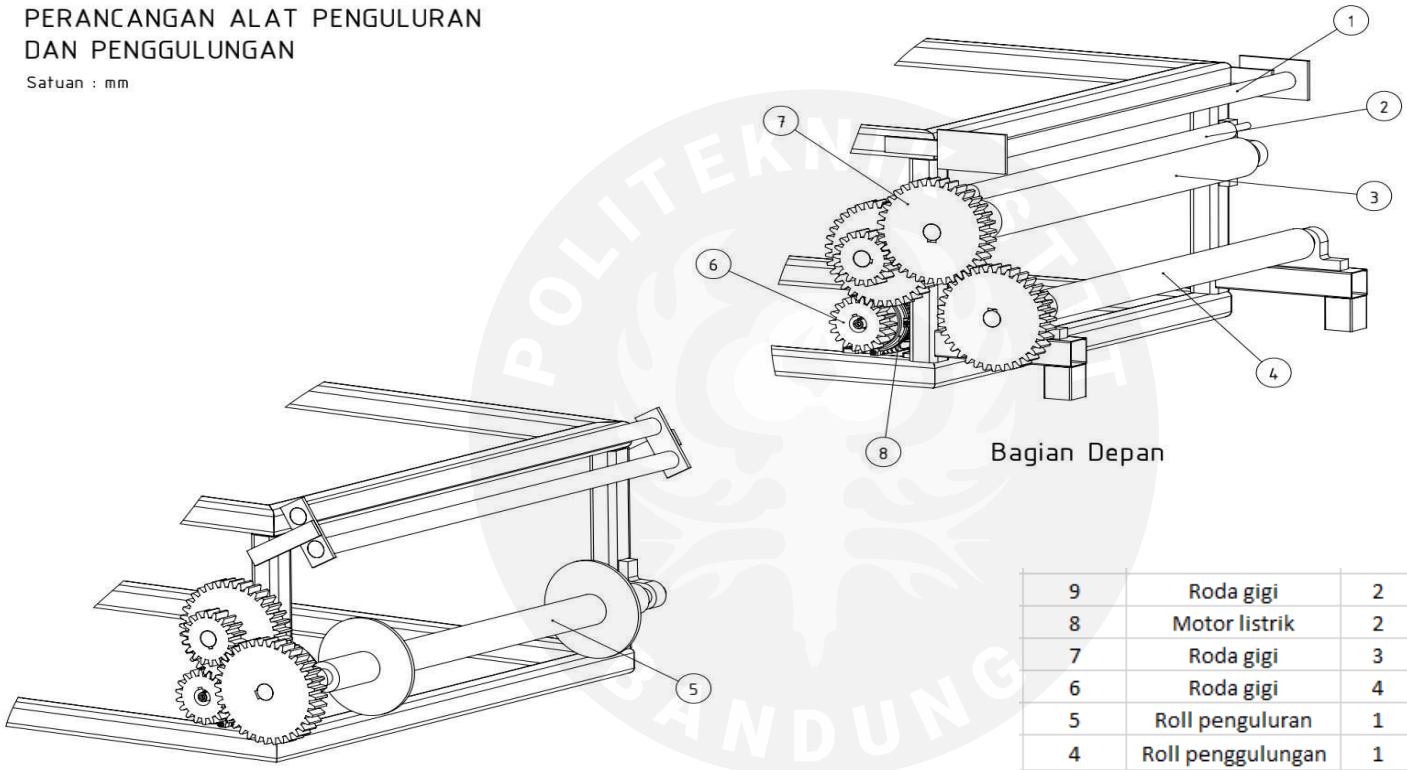
MATERIAL	CUTTING SPEEDS 1. (METERS/MINUTE) MPM	(FEET/MINUTE) FPM	POINT ANGLE	LIP CLEARANCE	COOLANTS
Aluminum And Alloys	61.00 - 91.50	200 - 300	90 - 130 deg	12 - 15 deg	Kerosene/Kerosene & Lard Oil/ Soluble Oil
Armor Plate	12.20 - 18.25	40 - 50	135 - 140 deg	6 - 9 deg	Light Machine Oil
Brass	61.00 - 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, 0.2-0.3ct	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 Brinnel	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

Sri Widarto, 2008:216

Lampiran 4 Perancangan Alat Penguluran dan Penggulungan

PERANCANGAN ALAT PENGULURAN
DAN PENGGULUNGAN

Satuan : mm



Bagian Depan

Bagian Belakang

No	Part name	QTY.	Dimension
9	Roda gigi	2	90T
8	Motor listrik	2	
7	Roda gigi	3	100T
6	Roda gigi	4	10T
5	Roll penguluran	1	Ø 47 x 825
4	Roll penggulungan	1	Ø 60 x 825
3	Roll penarik	1	Ø 60 x 825
2	Roll Penegang	1	Ø 26 x 750
1	Roll peregang	1	Ø 26 x 750

Lampiran 4 lanjutan