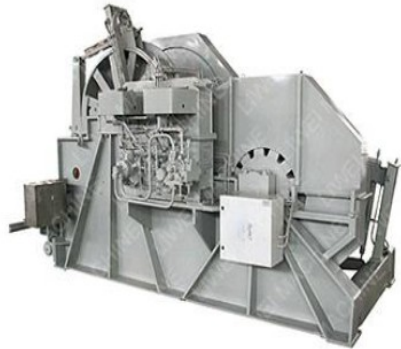


Lampiran

A-1 Katalog Winch dan Mesin penggerak pompa

JuangshuTowingWinch.co.ltd

Main technical parameter model	Wire cable rated pull KN	Wire cable rated speed m/min	Wire cable Dia mm	Roll canister capacity m	Motor		Outer dimension			Total weight KG
					Model	PowerKW	Length	Width	Thickness	
JM2A	20	16.7	φ12.5	100	Y160M-6	7.5	1010	960	587	480
JM3	30	11.6	φ15.5	150	YZR160M2-6	7.5	1230	1230	880	980
JM3A	30	18	φ15.5	150	Y160M-4	11	1230	1230	880	900
JM5	50	10	φ21.5	250	YZR160L-6	11	1330	1330	880	1380
JM5A	50	15	φ21.5	250	Y160L-4	15	1330	1330	880	1380
JM8	80	11	φ26	400	YZR225M-8	22	1775	1175	1175	3500
JM8A	100	11	φ31	350	YZR225M-8	22	1775	1175	1175	3600



Gambar A.1 Towing Winch
Sumber : Juangshu Towing Winch.co.ltd

A-2 Katalog Mesin Caterpillar

Monitoring Displays: Caterpillar offers three different engine monitoring and display options for electronic engines. Each will give you the critical information you need to know — when you need to know it. And all are durable enough to withstand the most demanding marine environments. From the workhorse Engine Monitoring System to unique, innovative Engine Vision, Caterpillar displays are simply a cut above.

- Engine Monitoring System
- Marine Power Display
- Engine Vision

Custom Paint Options: A new custom paint process, accompanied by other appearance improvements, is now available as an option package on your Cat 3412E, 3406E, or 319E engine. A high-grade, ultra-smooth paint is professionally applied to the entire engine. Heat-sensitive components receive a textured black finish.

Benefits include:

- Long-lasting appearance — a shiny, premium quality finish
- Color and paint type choices
- Durable, peel-resistant polyurethane paint
- Ease in cleaning

See your local dealer for more details.

Rating Range: 63 to 3000 bhp

Warranty: Five years for pleasure craft (non-revenue-producing boats).

3034, 3054, 3054B, 3056, 3126, 3126B, 3206


- Two years/1,000 hours full service
- Five years/2,000 hours on major components
- Three years/3,000 hours on major components
- Two years/unlimited hours full service
- Five years/unlimited hours on major components

Extended Service Coverage (ESC): Optional engine protection which covers most engine components is available through your local Caterpillar dealer. A deductible applies. ESC provides protection for up to five years/4,000 hours on 3034, 3054, 3054B, 3056, 3126, 3126B, and 3206 engine models; up to 3 years/5,000 hours on 319E, 3406E, 3412C, and 3412E engine models; and up to 5 years/15,000 hours on 3508B, 3512B, and 3516B engine models.

Financing: Available from Cat Financial Services (1-615-341-6000) for new Cat powered pleasure craft documented by the U.S. Coast Guard.


Service Support: Available 24 hours a day in the U.S., Canada, and Puerto Rico by calling toll-free 1-877-CAT-9000 or 1-813-765-6165. Or check out our new Dealer Locator on the Internet at www.Cat-Marine.com.

For Additional Information:
Caterpillar Inc., 94-AC6110
P.O. Box 610
Mossville, IL 61552-0610 U.S.A.
Phone: 1-800-321-7332 (North America)
01-309-578-8288 (worldwide)
Fax: 01-309-578-2559
E-mail: Cat-power@Cat.com
Web site: www.Cat-Marine.com



**HIGH PERFORMANCE
MARINE
DIESEL
ENGINES**

FOR PLEASURE CRAFT



©2001 Caterpillar

LE2H11416

Supersedes LE0A9596-01

CATERPILLAR

HIGH PERFORMANCE MARINE DIESEL ENGINES FOR PLEASURE CRAFT

Model	3034	3034	3054	3054B	3056	3056	3056	3126	3126	3126	3126	3126B	3126B	3206	3208	3208	3208	3208	3196	3406E	3412C	3412E	3508B	3512B	3516B		
Rated bhp @ rpm	63 2600	80 2600	108 2400	186 2400	125 2600	185 2100	205 2500	300 2800	350 2800	385 2800	420 2800	420 2800	450 2800	210 2800	375 2800	435 2800	450 2800	660 2300	800 2100	1000 2100	1400 2300	1500 1925	2250 1925	3000 1925			
Maximum Cruise								2600	2600	2600	2600	2600	2600	2600	2600	2600	2600	2600	2100	2100	1900	2100					
Continuous Cruise								2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	1900	1900	1700	1900					
Displacement - L (cu. in.)	3.0 (183)	3.0 (183)	4.0 (243)	4.2 (258)	6.0 (365)	6.0 (365)	6.0 (365)	7.2 (439)	7.2 (439)	7.2 (439)	7.2 (439)	7.2 (439)	7.2 (439)	10.4 (636)	10.4 (636)	10.4 (636)	10.4 (636)	12.0 (729)	14.6 (893)	16.6 (1015)	27.0 (1649)	27.0 (1649)	34.5 (2105)	51.8 (3158)	69.0 (4210)		
Weight (lbs.)	579	642	933	921	1,312	1,342	1,342	1,590	1,590	1,590	1,590	1,782	1,782	1,740	1,880	2,080	2,080	2,590	3,497	5,100	5,585	10,763	12,645	17,185			
Electronic Control	No	No	No	No	No	No	No	No	No	No	No	No	Yes	Yes	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Fuel Consumption (gph) @ rated rpm																											
2800																											
2600	3.5	4.5			8.2			15.6	18.0	20.1	22.9	23.2	24.8	12.7	21.1	24.0	26.3										
2500							11.2																				
2400			6.0	4.7	5.7		9.7	9.4	10.8	11.8	13.3	13.4	14.4	7.3	12.1	13.4	14.8										
2300																			8.2	10.6	11.7						
2200								7.3	7.3	8.3	9.0	10.1	10.4	11.2	5.7	9.3	10.2	11.1	28.0	34.1					72.4		
2100								9.7		6.3	7.3	7.8			4.8	8.1	8.9		23.9	29.0	51.9	52.7			61.8		
2000								3.3	8.1	5.4	5.5	6.3	6.8	7.8	8.1	8.6	4.3	7.0	7.7	8.3	20.5	24.9	43.9	45.1			
1925																											
1800								5.8	4.0	4.1	4.7	5.1	6.2	6.2	6.5	3.2	5.3	5.8	6.1	15.0	18.4	31.9	33.5				
1600								1.9	4.1	2.9	3.1	3.5	3.7	5.9	4.5	4.7	2.4	3.8	4.4	10.8	13.4	23.0	24.0				
1400								2.7	2.1	2.2	2.5	2.6	2.9	3.2	3.4			2.9	3.1	7.5	9.2	16.1	16.7				
1200								1.1	1.8	1.6	1.5	1.7	1.8	2.0	2.2	2.4				4.7	5.9	10.6	10.9				

CATERPILLAR

A-3 Katalog Plate

Plat kapal atau ship plate merupakan material berupa lembaran logam/besi yang mempunyai ukuran yang panjangnya mencapai 6 meter dan tebal bervariasi. Berdasarkan lebarnya material ini mempunyai 2 type:

1. Plat kapal/ship plate dengan ukuran lebar 5 feet

No	T mm	Ukuran W x L		Berat Kg
		meter	feed	
1	4.5	1.5 x 6	5 x 20	328.1
2	6	1.5 x 6	5 x 20	438.0
3	8	1.5 x 6	5 x 20	583.2
4	9	1.5 x 6	5 x 20	656.1
5	10	1.5 x 6	5 x 20	729.0
6	11	1.5 x 6	5 x 20	801.9
7	12	1.5 x 6	5 x 20	875.0
8	13	1.5 x 6	5 x 20	947.7
9	14	1.5 x 6	5 x 20	1021.0
10	15	1.5 x 6	5 x 20	1094.0
11	16	1.5 x 6	5 x 20	1167.0
12	18	1.5 x 6	5 x 20	1313.0
13	19	1.5 x 6	5 x 20	1386.0
14	20	1.5 x 6	5 x 20	1458.0
15	21	1.5 x 6	5 x 20	1531.0
16	22	1.5 x 6	5 x 20	1604.0
17	24	1.5 x 6	5 x 20	1749.6
18	25	1.5 x 6	5 x 20	1823.0
19	28	1.5 x 6	5 x 20	2042.2
20	30	1.5 x 6	5 x 20	2187.0
21	31	1.5 x 6	5 x 20	2260.0
22	32	1.5 x 6	5 x 20	2333.0
23	38	1.5 x 6	5 x 20	2770.2
24	40	1.5 x 6	5 x 20	2916.0
25	42	1.5 x 6	5 x 20	3062.0
26	45	1.5 x 6	5 x 20	3261.0
27	50	1.5 x 6	5 x 20	3645.0
28	60	1.5 x 6	5 x 20	4374.0
29	65	1.5 x 6	5 x 20	4739.0
30	75	1.5 x 6	5 x 20	5467.5
31	80	1.5 x 6	5 x 20	5832.0
32	90	1.5 x 6	5 x 20	6561.0
33	100	1.5 x 6	5 x 20	7290.0

created by www.gambarsteknik.co.cc

Tabel 1.3 Plate Kapal 5 feet

Sumber : www.daftar-material-besi.com PT. MULYA WIJAYA BAJA.com

2. Plat kapal/ship plate dengan ukuran lebar 6 feet

No	T mm	Ukuran W x L		Berat Kg
		meter	feed	
1	4.5	1.8 x 6	6 x 20	394.0
2	6	1.8 x 6	6 x 20	525.0
3	8	1.8 x 6	6 x 20	700.0
4	9	1.8 x 6	6 x 20	788.0
5	10	1.8 x 6	6 x 20	875.0
6	11	1.8 x 6	6 x 20	962.5
7	12	1.8 x 6	6 x 20	1050.5
8	13	1.8 x 6	6 x 20	1137.5
9	14	1.8 x 6	6 x 20	1225.0
10	15	1.8 x 6	6 x 20	1313.0
11	16	1.8 x 6	6 x 20	1400.0
12	18	1.8 x 6	6 x 20	1575.0
13	19	1.8 x 6	6 x 20	1664.0
14	20	1.8 x 6	6 x 20	1750.0
15	21	1.8 x 6	6 x 20	1838.0
16	22	1.8 x 6	6 x 20	1925.0
17	24	1.8 x 6	6 x 20	2100.0
18	25	1.8 x 6	6 x 20	2188.0
19	28	1.8 x 6	6 x 20	2450.0
20	30	1.8 x 6	6 x 20	2625.0
21	31	1.8 x 6	6 x 20	2713.0
22	32	1.8 x 6	6 x 20	2800.0
23	38	1.8 x 6	6 x 20	3325.0
24	40	1.8 x 6	6 x 20	3500.0
25	42	1.8 x 6	6 x 20	3675.0
26	45	1.8 x 6	6 x 20	3938.0
27	50	1.8 x 6	6 x 20	4375.0
28	60	1.8 x 6	6 x 20	5250.0
29	65	1.8 x 6	6 x 20	5887.5
30	75	1.8 x 6	6 x 20	6582.5
31	80	1.8 x 6	6 x 20	7000.0
32	90	1.8 x 6	6 x 20	7875.0
33	100	1.8 x 6	6 x 20	8750.0

created by www.gambarsteknik.co.cc

Tabel 1.4 Plate Kapal 5 feet

Sumber : www.daftar-material-besi.com. PT. MULYA WIJAYA

Plat streep atau sering disebut juga plat bar merupakan profil besi yang umum dipakai dalam konstruksi dan fabrikasi mesin, maupun untuk konstruksi sipil. Untuk anda yang memerlukan dimensi dan berat, anda bisa melihat dalam tabel dibawah ini:

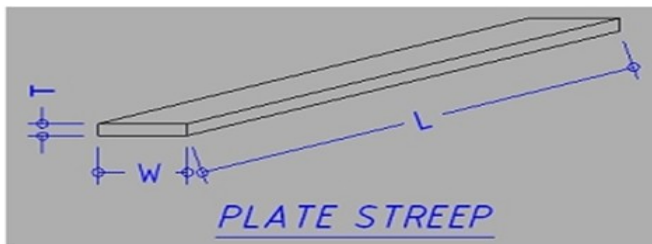


PLATE STREEP (PLAT BAR)

No	Ukuran T x W		Panjang L meter	Berat Kg
	mm	inch		
1	3 x 16	1/8 x 5/8	6	2.30
2	3 x 19	1/8 x 3/4	6	2.71
3	3 x 25	1/8 x 1	6	3.56
4	3 x 30	1/8 x 1 1/4	6	4.28
5	3 x 38	1/8 x 1 1/2	6	5.37
6	4.5 x 19	3/16 x 3/4	6	4.03
7	4.5 x 25	3/16 x 1	6	5.40
8	4.5 x 32	3/16 x 1 1/4	6	6.80
9	4.5 x 38	3/16 x 1 1/2	6	8.30
10	4.5 x 50	3/16 x 2	6	10.60
11	6 x 19	3/16 x 3/4	6	5.40
12	6 x 25	3/16 x 1	6	7.13
13	6 x 32	3/16 x 1 1/4	6	9.20
14	6 x 38	3/16 x 1 1/2	6	10.83
15	6 x 50	3/16 x 2	6	14.55
16	6 x 65	3/16 x 2 1/2	6	18.53
17	6 x 75	3/16 x 3	6	21.50
18	6 x 85	3/16 x 3 1/2	6	25.50
19	6 x 100	3/16 x 4	6	28.51
20	6 x 125	3/16 x 5	6	35.63
21	6 x 150	3/16 x 6	6	44.50
22	9 x 25	3/8 x 1	6	10.70
23	9 x 32	3/8 x 1 1/4	6	14.00
24	9 x 38	3/8 x 1 1/2	6	16.25
25	9 x 50	3/8 x 2	6	21.50
26	9 x 65	3/8 x 2 1/2	6	27.80
27	9 x 75	3/8 x 3	6	32.10
28	9 x 85	3/8 x 3 1/2	6	38.30
29	9 x 100	3/8 x 4	6	42.76
30	9 x 125	3/8 x 5	6	53.45
31	9 x 150	3/8 x 6	6	64.14

created by www.aeribarteknik.co.cc

Tabel 1.5 Plate Streep (Plate Bar)

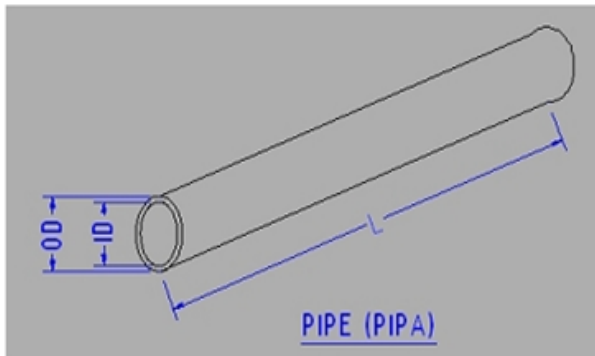
Sumber : www.daftar-material-besi.com. PT. MULYA WIJAYA BAJA.com

No	Ukuran T x W		Panjang L meter	Berat Kg
	mm	inch		
32	10 x 38	3/8 x 1 1/2	6	18.00
33	12 x 25	1/2 x 1 1/2	6	14.20
34	12 x 38	1/2 x 1 1/2	6	21.66
35	12 x 50	1/2 x 2 1/2	6	28.50
36	12 x 65	1/2 x 2 1/2	6	37.10
37	12 x 75	1/2 x 3	6	42.80
38	12 x 100	1/2 x 4	6	57.01
39	12 x 150	1/2 x 6	6	85.00
40	16 x 38	5/8 x 1 1/2	6	29.00
41	16 x 50	5/8 x 2 1/2	6	38.00
42	16 x 65	5/8 x 2 1/2	6	49.00
43	16 x 75	5/8 x 3	6	56.50
44	16 x 100	5/8 x 4	6	76.00
45	16 x 150	5/8 x 6	6	113.00
46	19 x 38	3/4 x 1 1/2	6	34.00
47	19 x 50	3/4 x 2 1/2	6	45.00
48	19 x 65	3/4 x 2 1/2	6	58.50
49	19 x 75	3/4 x 3	6	67.50
50	19 x 100	3/4 x 4	6	89.50
51	19 x 125	3/4 x 5	6	112.00
52	19 x 150	3/4 x 6	6	134.00

Tabel 1.6 Plate Streep (Plate Bar)

Sumber : www.daftar-material-besi.com. PT. MULYA WIJAYA BAJA.com

Material pipa mempunyai berbagai macam jenis dan penggunaan yang berbeda-beda. Pipa-pipa ini antara lain Schedule 40, Schedule 80, Conduit, Seam less boiler, pipa galvanis, dan pipa hitam.



CARBON STEEL PIPE SCHEDULE 40

NO	Size (Inch)	OD (mm)	ID (mm)	T (mm)	L (m)	Weight (kg)
1	1/2	21.7	16.1	2.8	6	7.86
2	3/4	27.2	21.4	2.9	6	10.44
3	1	34.0	27.2	3.4	6	15.42
4	1 1/4	42.7	35.5	3.6	6	20.82
5	1 1/2	48.6	41.2	3.7	6	24.60
6	2	60.5	52.7	3.9	6	32.64
7	2 1/2	76.3	65.9	5.2	6	54.72
8	3	89.1	78.1	5.5	6	67.80
9	4	114.3	102.3	6.0	6	96.00
10	5	139.8	126.6	6.6	6	130.20
11	6	165.2	151.0	7.1	6	166.20
12	8	216.3	199.9	8.2	6	252.60
13	10	267.4	248.8	9.3	6	355.20
14	12	318.5	297.9	10.3	6	469.80
15	14	355.6	333.4	11.1	6	565.80
16	16	406.4	381.0	12.7	6	738.00

Tabel 1.7 Carbon Steel Pipe Schedule 40

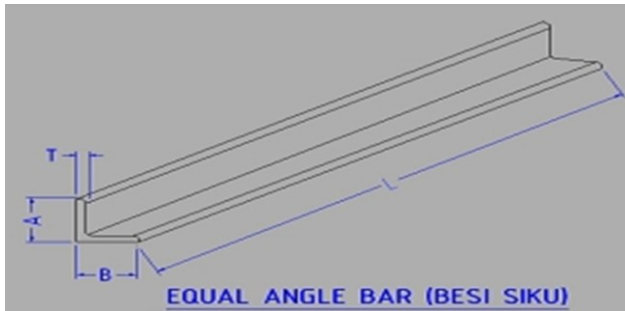
Sumber : www.daftar-material-besi.com. PT. MULYA WIJAYA BAJA.com

CARBON STEEL PIPE SCHEDULE 80

NO	Size (Inch)	OD (mm)	ID (mm)	T (mm)	L (m)	Weight (kg)
1	1/2	21.7	14.3	3.7	6	9.84
2	3/4	27.2	19.4	3.9	6	13.44
3	1	34.0	25.0	4.5	6	19.62
4	1 1/4	42.7	32.9	4.9	6	27.42
5	1 1/2	48.6	38.4	5.1	6	32.82
6	2	60.5	49.5	5.5	6	44.76
7	2 1/2	76.3	62.3	7.0	6	72.00
8	3	89.1	73.9	7.6	6	91.80
9	4	114.3	97.1	8.6	6	134.40
10	5	139.8	120.8	9.5	6	183.00
11	6	165.2	143.2	11.0	6	250.80
12	8	216.3	190.9	12.7	6	382.80
13	10	267.4	237.2	15.1	6	563.40
14	12	318.5	283.7	17.4	6	774.00
15	14	355.6	317.6	19.0	6	948.00
16	16	406.4	363.6	21.4	6	1218.00

Tabel 1.7 Carbon Steel Pipe Schedule 80

Sumber : www.daftar-material-besi.com. PT. MULYA WIJAYA BAJA.com



EQUAL ANGLE BAR (BESI SIKU)					
No	A mm	B mm	T mm	L meter	Berat Kg
1	20	20	3	6	5.31
2	25	25	3	6	8.72
3	25	25	5	6	10.60
4	30	30	3	6	8.16
5	40	40	3	6	11.00
6	40	40	4	6	14.50
7	40	40	5	6	18.00
8	45	45	4	6	16.44
9	45	45	5	6	20.50
10	50	50	4	6	18.40
11	50	50	5	6	22.70
12	50	50	6	6	27.58
13	60	60	5	6	27.42
14	60	60	6	6	32.52
15	65	65	6	6	35.46
16	70	70	6	6	38.28
17	70	70	7	6	44.28
18	75	75	6	6	41.22
19	75	75	7	6	47.64
20	75	75	8	6	54.18
21	75	75	9	6	59.80
22	80	80	8	6	57.96
23	90	90	7	6	57.54
24	90	90	9	6	73.20
25	90	90	10	6	79.80
26	100	100	7	6	64.25
27	100	100	10	6	90.72
28	120	120	8	6	88.20
29	120	120	10	6	109.00
30	120	120	11	6	119.40
31	120	120	12	6	130.00
32	125	125	12	6	140.00
33	130	130	9	6	107.10
34	130	130	12	6	140.10
35	150	150	10	6	140.00
36	150	150	12	6	164.00
37	150	150	15	6	202.00
38	200	200	15	6	272.00
39	200	200	16	6	292.50
40	200	200	20	6	358.00
41	200	200	25	6	442.00
42	250	250	25	6	562.00

Tabel 1.7 Equal Angle Bar (Besi Siku)

Sumber : www.daftar-material-besi. PT. MULYA WIJAYA BAJA.com

PERNYATAAN TIDAK MELAKUKAN PLAGIAT

Saya yang bertanda tangan dibawah ini :

Nama : Heru Kurniawan

NIM : 20121334026

Fakultas : Teknik

Prodi Studi : Teknik Perkapalan

Menyatakan bahwa skripsi / TA / Tesis yang saya tulis ini benar-benar tulisan karya sendiri bukan hasil plagiasi, baik sebagai maupun keseluruhan, bila dikemudian hari terbukti hasil plagiasi, maka saya bersedia menerima sanksi akademik sesuai ketentuan yang berlaku di Universitas Muhammadiyah Surabaya.

Surabaya , 30 September 2014
Yang membuat pernyataan



(Heru Kurniawan)
NIM.20121334026