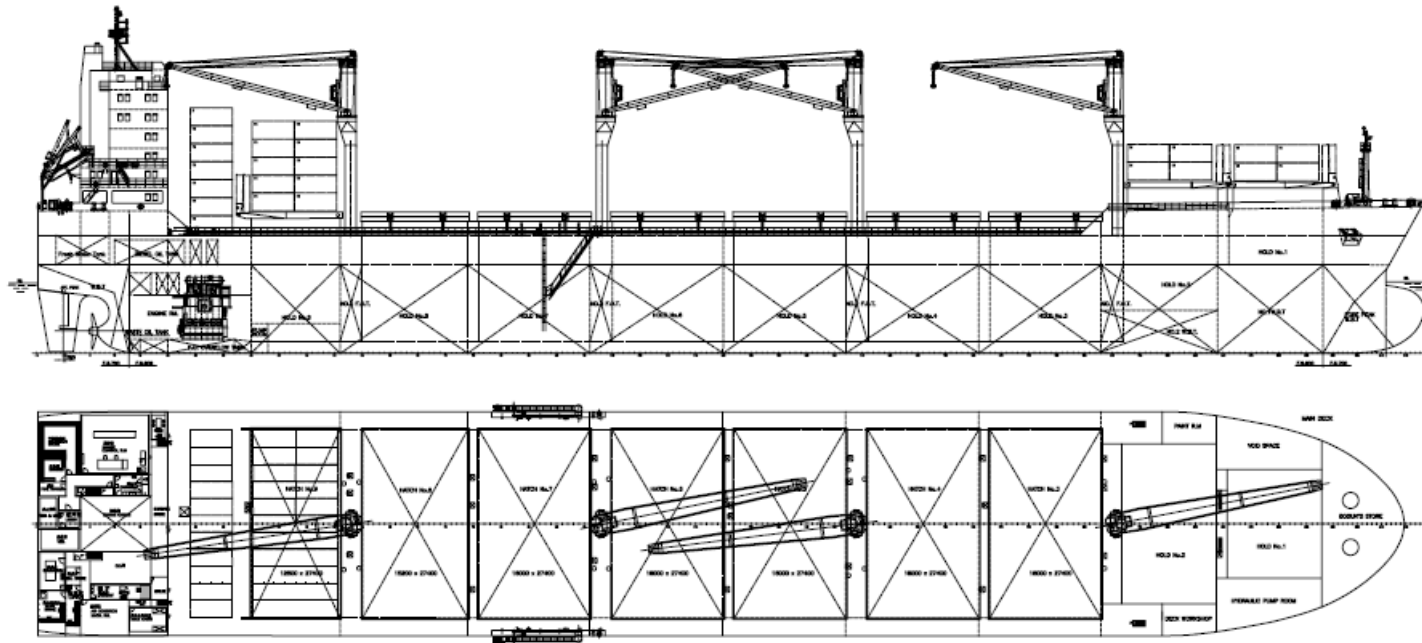


# Kai Xuan

Class notation: +1A1 General Cargo Carrier HC-A DG-BP E0 IB(+) HOLDS 2,4,6,8 OR 3,5,7)MAYBE EMPTY TMON NAUTICUS (New Building)

NOTE: Information given in this boklet is reflecting the situation at the time of being created, September 2015.



MAIN DIMENTIONS					
LOA:	199,90 m	Depth mld:	17,00 m	Cargo hold cap.:	58357 m <sup>3</sup>
LPP:	191,84 m	Draught design:	10,30 m	Max air draught:	51,640 m
Bredth mld.	32,26 m	Draught fully loaded	12,40 m		



# Kai Xuan

## Vessel's Particulars

**Owners:** BB CP to Grieg Shipping II AS  
**Management:** Grieg Star AS  
**Operator:** Grieg Star Shipping AS

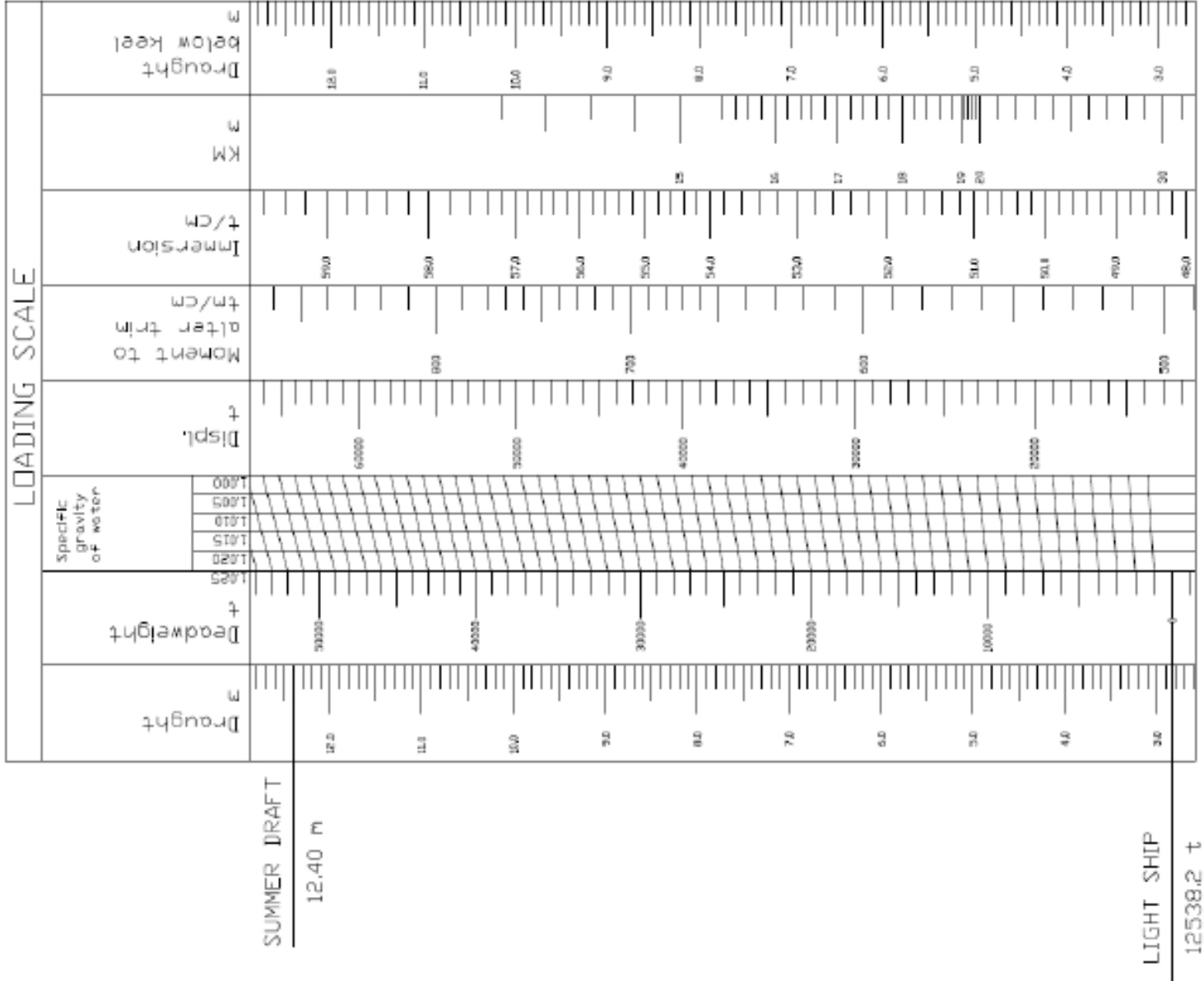
Nationality: Republic of Marshall Island  
Port of registry: Majuro  
Deadweight: 51.500 mt  
Gross ton: 33.689 mt  
Net ton: 16.318 mt  
Hold capacity: 58537 m3  
Number of holds: 9  
Speed: 14.5 knots

### General description:

Open hatch general cargo carrier with 4 x 40 mt slewing cranes on deck and 9 cargo holds intended for the carriage of bulk cargoes, standard containers on hatches, steelcoils and grain in bulk.baled pulp. Permissible uniformly distributed load on tanktop shall not exceed 196 kN/m2 (20mt/m2) Dehumidification system for all cargo holds. Accommodation aft for a total of 28 persons. Water ballast in fore- and Aft peak tanks, double bottom and double hull. Four Fuel Oil storage tanks in transverse bulkhead between holds.

Zone	Ordinary Freeboard	
	Freeboard (m)	Moulded Draught(m)
Tropical fresh water	4,100	12,982
Fresh water	4,358	12,670
Tropical sea water	4,370	12,658
Summer	6,628	12,400
Winter	4,886	12,142

# Kai Xuan



## CASE 1 BALLAST CONDITION

### VISIBILITY CALCULATION

$$H_0 = 39.00 \text{ m} \quad a = 84.20 \text{ m}$$

$$H_1 = 23.85 \text{ m} \quad b = 87.80 \text{ m}$$

$$L_{100} = 190.50 \text{ m} \quad c = 185.27 \text{ m}$$

Note:

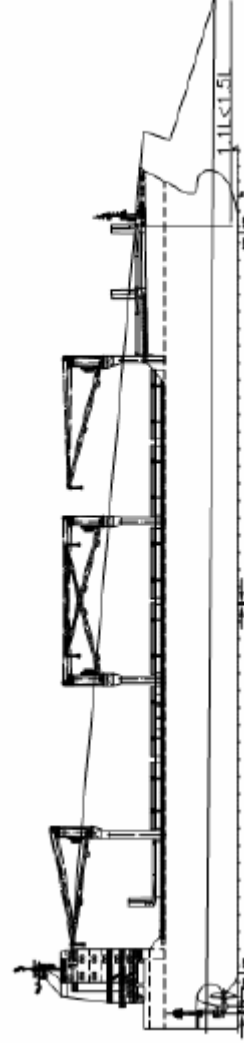
- $H_0$  the height of observer's eyes measured from B.L.
- $H_1$  the height of obstacle of visibility measured from B.L.
- $a$  the longitudinal distance of observer measured from midship
- $b$  the longitudinal distance of obstacle of visibility measured from midship
- $c$  the longitudinal distance from observer to fore end of the hull

MEAN DRAFT AT L.C.F. ( m )	TRIM BY STERN ( m )								
	-0.4	0.0	0.4	0.8	1.2	1.6	2.0	2.4	2.8
4.50	199.4	206.4	213.8	221.5	229.6	238.1	247.1	256.6	266.7
5.00	193.9	200.7	207.9	215.5	223.5	231.9	240.7	250.0	259.9
5.50	188.3	195.1	202.1	209.6	217.4	225.6	234.3	243.5	253.1
6.00	182.8	189.4	196.3	203.6	211.3	219.4	227.9	236.9	246.4
6.50	177.2	183.7	190.5	197.7	205.2	213.2	221.5	230.4	239.7
7.00	171.6	178.0	184.7	191.8	199.2	207.0	215.2	223.8	233.0
7.50	166.1	172.4	178.9	185.8	193.1	200.8	208.8	217.3	226.3
8.00	160.5	166.7	173.1	179.9	187.1	194.6	202.5	210.8	219.7
8.50	154.9	161.0	167.3	174.0	181.0	188.4	196.2	204.4	213.1
9.00	149.4	155.3	161.6	168.1	175.0	182.2	189.9	197.9	206.4
9.50	143.8	149.6	155.8	162.2	169.0	176.1	183.6	191.5	199.9
10.00	138.2	144.0	150.0	156.3	163.0	170.0	177.4	185.2	193.4
10.30	134.9	140.6	146.5	152.8	159.4	166.3	173.6	181.3	189.5
11.00	127.1	132.6	138.4	144.5	150.9	157.7	164.8	172.3	180.2
11.50	121.5	126.9	132.6	138.6	144.8	151.4	158.4	165.7	173.5
12.00	116.0	121.3	126.8	132.6	138.8	145.2	152.0	159.2	166.8
12.40	111.5	116.7	122.2	127.9	133.9	140.2	146.9	153.9	161.4
12.90	106.0	111.0	116.4	121.9	127.8	134.0	140.5	147.3	154.6

**OBSTACAL POINT: FORE END OF THE NO.1 HATCH COVER**

$$1.5 L = 299.9 \text{ m}$$

$$2.0 L = 399.8 \text{ m}$$



## CASE 2 FULL LOADED CONDITION

### VISIBILITY CALCULATION

$H_0 = 39.00$  m      $a = 84.20$  m  
 $H_1 = 29.15$  m      $b = 85.58$  m  
 $L_{op} = 196.50$  m      $c = 185.27$  m

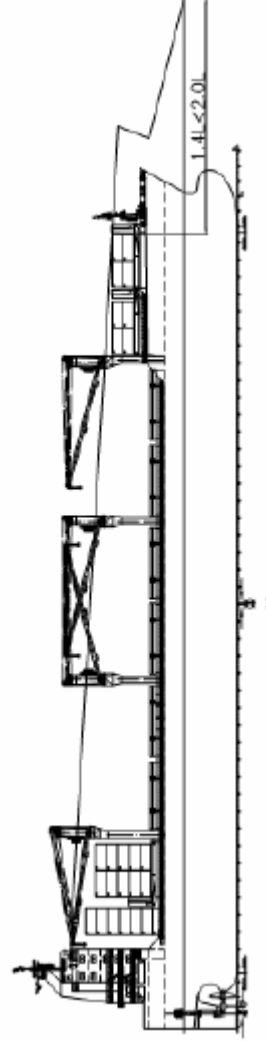
*Note:*

- $H_0$  the height of observer's eyes measured from B.L.
- $H_1$  the height of obstacle of visibility measured from B.L.
- $a$  the longitudinal distance of observer measured from midship
- $b$  the longitudinal distance of obstacle of visibility measured from midship
- $c$  the longitudinal distance from observer to fore end of the hull

MEAN DRAFT AT L.C.F. (m)	TRIM BY STERN (m)									
	-0.4	0.0	0.4	0.8	1.2	1.6	2.0	2.4	2.8	
4.50	391.8	409.4	428.3	448.7	470.8	494.7	520.7	549.1	580.3	
5.00	383.5	400.8	419.4	439.4	461.1	484.6	510.2	538.2	568.9	
5.50	375.1	392.2	410.4	430.2	451.5	474.6	499.8	527.3	557.4	
6.00	366.8	383.5	401.5	420.9	441.9	464.6	489.3	516.4	546.0	
6.50	358.5	374.9	392.6	411.7	432.3	454.6	478.9	505.5	534.6	
7.00	350.1	366.3	383.7	402.4	422.7	444.6	468.5	494.7	523.3	
7.50	341.8	357.7	374.8	393.2	413.1	434.7	458.2	483.8	512.0	
8.00	333.4	349.1	365.8	383.9	403.5	424.7	447.8	473.1	500.7	
8.50	325.1	340.4	356.9	374.7	394.0	414.8	437.5	462.3	489.5	
9.00	316.7	331.8	348.0	365.5	384.4	404.9	427.2	451.6	478.3	
9.50	308.4	323.2	339.1	356.3	374.9	395.1	417.0	440.9	467.2	
10.00	300.0	314.6	330.3	347.2	365.4	385.3	406.8	430.4	456.2	
10.30	295.0	309.4	324.9	341.7	359.7	379.4	400.7	424.0	449.6	
11.00	283.3	297.4	312.5	328.7	346.4	365.4	386.2	408.9	433.9	
11.50	275.0	288.7	303.5	319.5	336.8	355.5	375.8	398.1	422.5	
12.00	266.6	280.1	294.6	310.2	327.1	345.5	365.4	387.2	411.1	
12.40	260.0	273.2	287.5	302.8	319.4	337.4	357.1	378.5	402.0	
12.90	251.6	264.6	278.5	293.6	309.8	327.4	346.6	367.5	390.5	

**OBSTACAL POINT: FORE END OF THE FOREWARD CONTAINER**

1.5 L = 299.9 m  
 2.0 L = 399.8 m



CASE 3 PASSING PANAMA CANAL CONDITION

VISIBILITY CALCULATION

$H_0 = 39.00$  m     $a = 84.20$  m  
 $H_1 = 26.55$  m     $b = 85.58$  m  
 $L_{pp} = 190.50$  m     $c = 185.27$  m

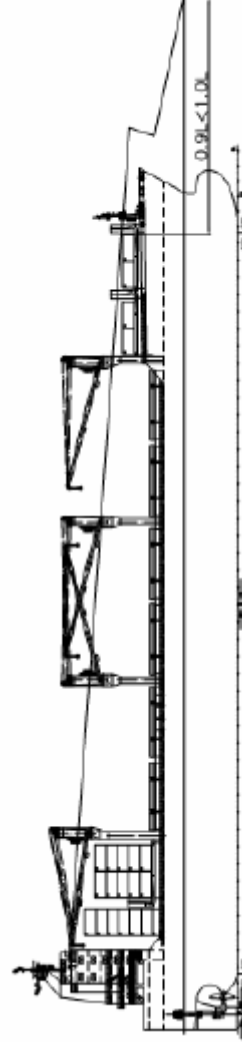
Notes:

- $H_0$  the height of observer's eyes measured from B.L.
- $H_1$  the height of obstacle of visibility measured from B.L.
- $a$  the longitudinal distance of observer measured from midship
- $b$  the longitudinal distance of obstacle of visibility measured from midship
- $c$  the longitudinal distance from observer to fore end of the hull

MEAN DRAFT AT L.C.F. (m)	TRIM BY STERN (m)								
	-0.4	0.0	0.4	0.8	1.2	1.6	2.0	2.4	2.8
4.50	274.6	285.2	296.4	308.3	320.9	334.3	348.6	363.9	380.4
5.00	268.0	278.4	289.4	301.0	313.4	326.6	340.7	355.8	371.9
5.50	261.4	271.6	282.4	293.8	306.0	319.0	332.8	347.6	363.4
6.00	254.7	264.7	275.4	286.6	298.6	311.3	324.9	339.4	355.0
6.50	248.1	257.9	268.4	279.4	291.2	303.7	317.0	331.3	346.6
7.00	241.4	251.1	261.4	272.2	283.8	296.1	309.2	323.2	338.2
7.50	234.8	244.3	254.4	265.0	276.4	288.5	301.3	315.1	329.9
8.00	228.1	237.5	247.4	257.9	269.0	280.9	293.5	307.1	321.6
8.50	221.5	230.7	240.4	250.7	261.6	273.3	285.7	299.0	313.3
9.00	214.8	223.8	233.4	243.5	254.3	265.7	277.9	291.0	305.0
9.50	208.2	217.0	226.4	236.4	246.9	258.2	270.2	283.0	296.8
10.00	201.5	210.2	219.4	229.2	239.6	250.7	262.5	275.2	288.7
10.30	197.5	206.1	215.2	224.9	235.2	246.2	257.9	270.4	283.8
11.00	188.2	196.6	205.5	214.9	224.9	235.6	246.9	259.1	272.1
11.50	181.5	189.7	198.4	207.7	217.5	227.9	239.1	251.0	263.8
12.00	174.9	182.9	191.4	200.5	210.1	220.3	231.2	242.9	255.3
12.40	169.6	177.5	185.8	194.7	204.1	214.2	224.9	236.3	248.6
12.90	162.9	170.7	178.8	187.5	196.7	206.5	217.0	228.1	240.1

OBSTACAL POINT: FORE END OF THE FORWARD CONTAINER

1.0L = 199.9 m  
 2.0 L = 399.8 m





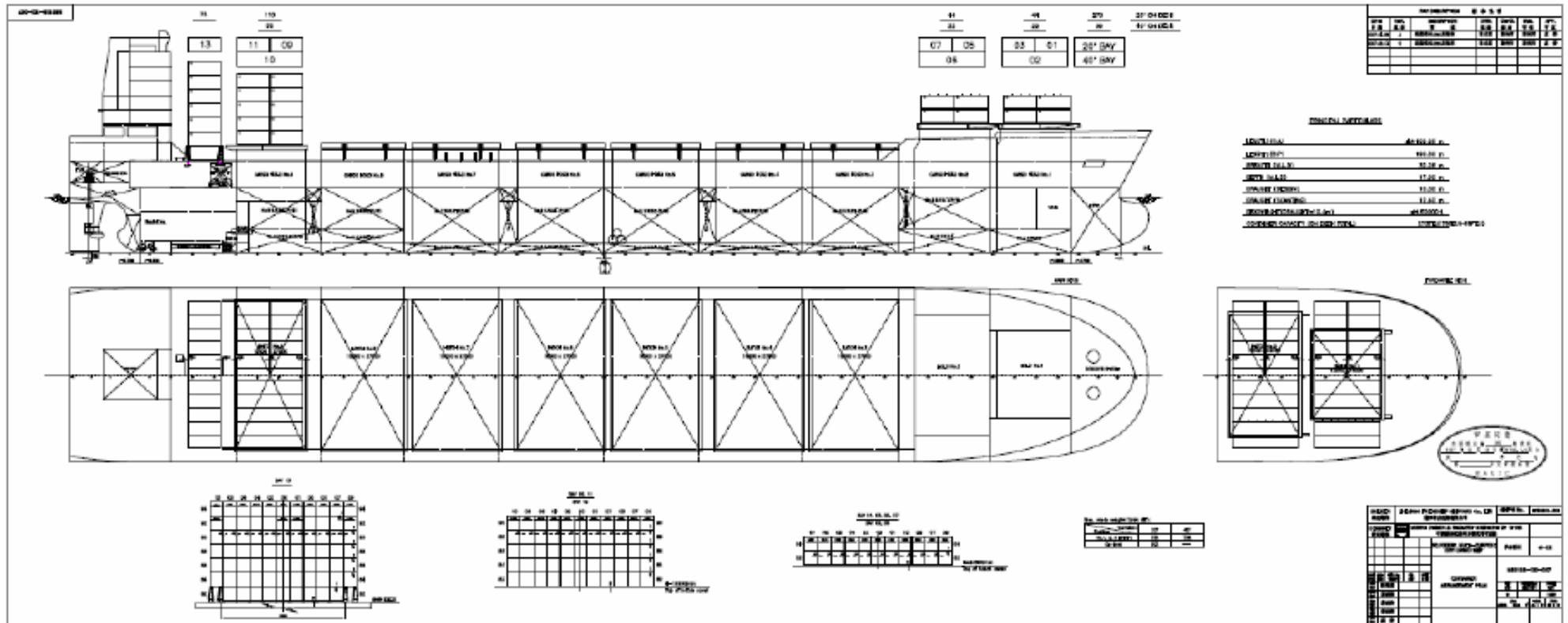
# Kai Xuan

NO.	COMPARTMENT	LOCATION Fr. to Fr.	VOLUME (m <sup>3</sup> ) 100% FULL	WEIGHT (t)	CENTER OF GRAVITY (m)			MAX.FREE SURFACE MOMENT (m <sup>3</sup> )
					LONG. (A.P.)	TRANS. (C.L.)	VERT. (B.L.)	
BALLAST WATER (ρ=1.025 t/m <sup>3</sup> )								
1	首尖舱 FP	228 ~	1056.7	1083.1	185.488	0.000	6.600	4163
2	第一压载水舱 No.1 D.B.W.T.	209 ~228	1142.3	1170.9	172.616	0.000	2.337	13017
3	第二压载水舱 No.2 D.B.W.T.	188 ~209	1859.7	1906.2	157.362	0.000	2.256	35829
4	第三压载水舱(左/右) No.2 S.B.W.T.(P/S)	188 ~209	511.9X2	524.7X2	156.907	±13.318	8.307	113X2
5	第三压载水舱(左/右) No.3 D.B.W.T.(P/S)	188 ~188	290.0X2	287.3X2	140.300	±8.370	0.850	1397X2
6	第三压载水舱(左/右) No.3 S.B.W.T.(P/S)	166 ~188	480.4X2	492.4X2	140.004	±14.518	6.088	81X2
7	第四压载水舱(左/右) No.4 D.B.W.T.(P/S)	142 ~166	316.4X2	324.3X2	121.900	±6.370	0.850	1524X2
8	第四压载水舱(左/右) No.4 S.B.W.T.(P/S)	142 ~166	567.5X2	581.7X2	121.888	±14.588	5.823	123X2
9	第五压载水舱(左/右) No.5 D.B.W.T.(P/S)	120 ~142	290.0X2	287.3X2	103.500	±8.370	0.850	1397X2
10	第五压载水舱(左/右) No.5 S.B.W.T.(P/S)	120 ~142	521.0X2	534.0X2	103.500	±14.587	5.816	113X2
11	第六压载水舱(左/右) No.6 D.B.W.T.(P/S)	96 ~120	316.4X2	324.3X2	85.100	±6.370	0.850	1524X2
12	第六压载水舱(左/右) No.6 S.B.W.T.(P/S)	96 ~120	568.3X2	582.5X2	85.100	±14.587	5.816	123X2
13	第七压载水舱(左/右) No.7 D.B.W.T.(P/S)	74 ~86	290.0X2	287.3X2	66.700	±6.370	0.850	1397X2
14	第七压载水舱(左/右) No.7 S.B.W.T.(P/S)	74 ~86	518.6X2	531.6X2	66.732	±14.566	5.837	110X2
15	第八压载水舱(左/右) No.8 D.B.W.T.(P/S)	55 ~74	437.6X2	448.5X2	50.797	±9.293	1.652	2651X2
16	第八压载水舱(左/右) No.8 S.B.W.T.(P/S)	55 ~74	273.7X2	280.5X2	50.361	±14.928	8.230	17X2
17	第九压载水舱(左/右) No.9 D.B.W.T.(P)	35 ~55	447.3	458.5	35.538	-6.114	2.295	1676
18	第九压载水舱(右) No.9 D.B.W.T.(S)	35 ~55	467.5	479.2	35.779	6.231	2.318	1701
19	第九压载水舱(左/右) No.9 S.B.W.T.(P/S)	35 ~55	465X2	476.6X2	35.420	±12.787	7.833	373X2
20	尾尖舱 AP	~13	843.6	864.7	3.250	0.000	11.265	14897
总计 TOTAL			17510.3	17948.1				

NO.	COMPARTMENT	LOCATION Fr. to Fr.	VOLUME (m <sup>3</sup> )		WEIGHT (t)	CENTER OF GRAVITY (m)			MAX.FREE SURFACE MOMENT (m <sup>3</sup> )
			100% FULL	98% FULL		LONG. (A.P.)	TRANS. (C.L.)	VERT. (B.L.)	
HEAVY FUEL OIL (ρ=0.975 t/m <sup>3</sup> )									
1	第一燃油(左) No.1 HFO.(P)	142 ~146	337.3	330.6	328.9	113.900	-5.994	6.520	383.8
2	第一燃油(右) No.1 HFO.(S)	142 ~146	369.3	361.8	360.1	113.900	5.645	6.888	383.8
3	第二燃油(左) No.2 HFO.(P)	96 ~100	337.3	330.6	328.9	77.100	-5.994	6.520	383.8
4	第二燃油(右) No.2 HFO.(S)	96 ~100	369.3	361.8	360.1	77.100	5.645	6.888	383.8
5	第三燃油(左) No.3 HFO.(P)	51 ~55	297.1	291.2	289.7	41.046	-5.443	6.734	295.7
6	第三燃油(右) No.3 HFO.(S)	51 ~55	298.8	292.8	291.3	41.235	4.852	7.282	383.8
7	第一燃油溢流舱 No.1 OVERFLOW	142 ~146	31.9	31.3	31.1	113.900	-1.955	10.781	15.9
8	第二燃油溢流舱 No.2 OVERFLOW	96 ~100	31.9	31.3	31.1	77.100	-1.955	10.781	15.9
9	第三燃油溢流舱 No.3 OVERFLOW	51 ~55	31.9	31.3	31.1	41.100	-1.955	10.781	15.9
10	第一燃油日用柜 HFOSEW1	29 ~34	20.7	20.3	20.2	23.863	-11.290	14.698	2
11	第二燃油日用柜 HFOSEW2	29 ~34	20.7	20.3	20.2	23.863	-9.850	14.698	2
12	第一燃油淡水柜 HFOSETT1	29 ~34	30.6	30.0	29.8	23.863	-13.325	14.698	5
13	第二燃油淡水柜 HFOSETT2	29 ~34	31.0	30.4	30.2	23.863	-7.600	14.698	5
总计 TOTAL			2207.8	2163.6	2152.6				

DIESEL OIL (ρ=0.84 t/m <sup>3</sup> )									
1	柴油日用柜 MDO.SERV.	23 ~35	27.3	26.8	22.5	25.100	7.600	14.538	4
2	柴油贮存柜 MDO.STOR.	31 ~35	109.2	107.0	89.9	22.700	11.905	14.538	52
总计 TOTAL			136.5	133.8	112.4				

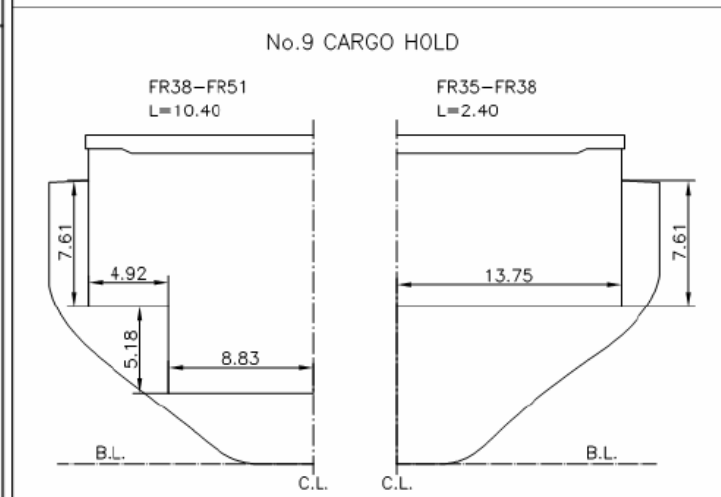
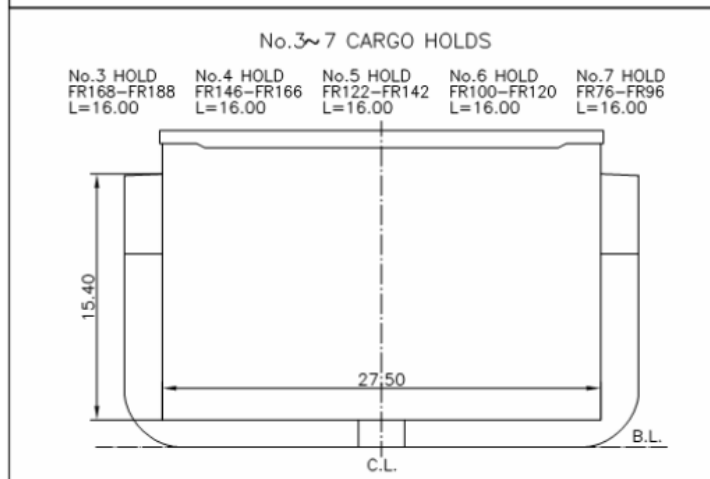
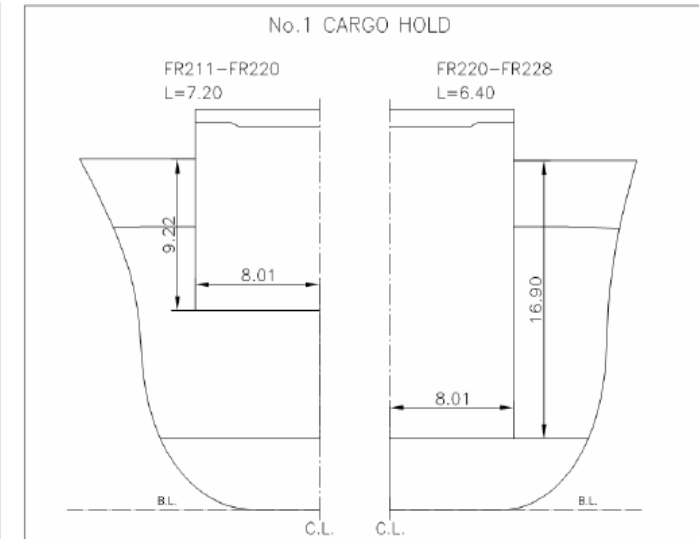
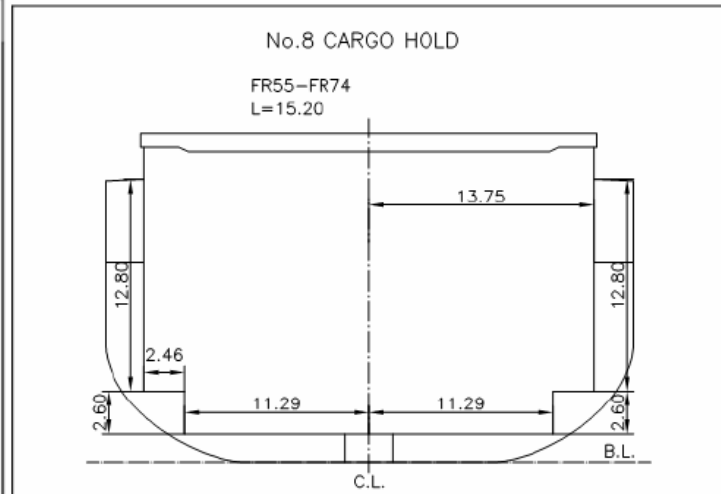
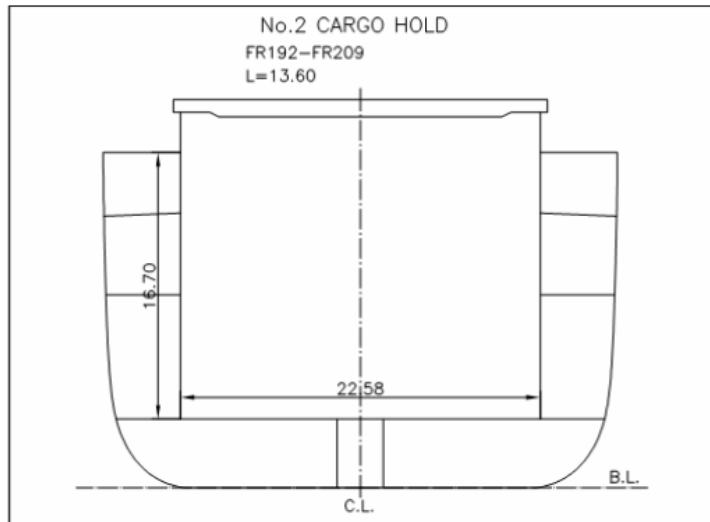
3.1.6 Containers to be arranged onboard should be followed as the drawing bellow:



For more detailed stowing information, please see Cargo Securing Manual.



## Cargo Hold Dimensions





# Kai Xuan

## Main engine

One 6-cylinder 2 stroke single acting cross head marine diesel engine

Type: MITSUBISHI UE 6UEC50SE:

MCR: 9960 kW at 120 rpm

NSR:

Turbo charger: 1 ea Mitsui NA48

## Diesel Generators

3 x Daihatsu Anqing 4cycle single acting

Type: 6DK-20

Generator output: 770kVA/450V at 720 rpm

## Emergency Diesel Generator

Maker: Cummins (6CTA8.3)

Generator output: 181 kW

## Incinerator

One incinerator Teamtech OG 200CS.

400.000 kcal/h capacity. Burning sludge oil and solid waste : 49 kg/H

## Air compressors

Two main air compressors:

Type: HD110.1.2.000.02.10.23

Maker: Neuenhausen Kompressorenbau Gmbh

Capacity: 150 m<sup>3</sup>/h capacity at 30 bar.

## Service air compressor

One working air compressor

Type: HD70.1.2.000.02.10.23

Maker: Neuenhausen Kompressorenbau Gmbh

Capacity: 180 m<sup>3</sup>/h capacity at 7 bar.

One emergency diesel air compressor

Type: 45.2.3.02.01.10.23

Maker: Neuenhausen Kompressorenbau Gmbh

Capacity: 8.7 m<sup>3</sup>/h at 30 bar.

## Boilers

Composite Boiler, Zhangjiang Greens Shazou Boiler

Type: ZYC 1.5/347.07

Steam production:

Oil burning side: 1500 kg/h

Exhaust gas side: 1500 kg/h

Working pressure: 7 kg/cm<sup>2</sup>

## Fresh Water Generator

One fresh water generator SONDEX AS

Type: SFD 13/20

Capacity: 20 tons/day

## Purifiers and Separators

Two HFO purifiers, Westfalia

Type OSD 18-0136-067/15.

Capacity 2920 l/h each.

One DO Purifier Westfalia

Type OSD2-02-137

Capacity 1020 l/h.

Two lube oil purifiers Westfalia

Type OSD6-91-067/6

Capacity 1840 l/h each.

One RWO (SKIT/S-DEB5.0) bilge separator.

Capacity 5m<sup>3</sup>/h, below 15 ppm

## Sewage Treatment Plant

1 x DVZ-Service Gmbh Type: DVZ-SKA-30

Capacity: 3120 l flow/day

## Technical data for Slewing cranes:

4 x TTS Germany

SWL - hook operation: 40 mt at 26 m

Hosting speed, low, load depending : 18 m/min fully loaded.

Hosting speed empty hook: 40 m/min

Slewing speed: 2,4 – 3,0 r.p.m.

Outreach from shipside: 3,6 m

## Cargo hold and deck arrangement

### Cargo holds clear opening:

hold no.1=13.6m x 16m

hold no.2=12.8m x 22.58m

hold no.3-7=16.0m x 27.50

hold no.8=15.2m x 27.50

hold no.9=12.8m x 27.50m

### Cargo hold height:

hold no.1 & 2 =18.7m

hold no.3-8 =17.30m

hold no.9 =15.20m

### Hatch cover size

hatch no.1= 13.6 m X 16 m

hatch no.2 = 13.6 m X 22.58m

hatch no.3 – no.7 = 16m X 27.50 m

hatch no.8 = 15.20m X 27.50m

hatch no.9 = 12.80m X 27.50m

## Container capacity

On hatch covers # 1 44 TEU

On hatch covers # 2 44 TEU

On hatch covers # 9 110 TEU

On deck bet. Dech house &

Hatch cover no.9 75 TEU

**TOTAL 273 TEU**