

	No off Capacity	02 1500 L/H
Lub Oil Purifier	Type No off Capacity	MITSUBISHI SELF JECTOR TYPE, MODEL : SJ15F 01 1700 L/H
Evaporator	Type Capacity	WM-10 M 6 T/D
Fresh Water Sterilizer	Type Capacity	USC – 500 500 L/H
Fresh Water Mineraliser	Type / Capacity	NA
Waste Oil Incinerator (IMO MEPC 76 (40))	Type Capacity	BGW – 20N 25 L/h , WASTE OIL
Oily Water Separator	Type Capacity	USC – 20 2.0 m3 / h
Sewage Treatment plant	Type Capacity	SBT – 25 25 PERSON / DAY
Hot Water Set (Calorifier unit)	No off	01 SET
Steering Gear	Type Duty Capacity Hydraulic pump unit	MODEL : RV 21 – 013 WORKING PRESSURE : 22 MPA 02 SETS

Speed

Up to and Beaufort Scale 4 Douglas Sea state 3
About 13.0 KTS Laden/Ballast

CONSUMPTION/DAY

At Sea

Main Engine	HFO	About 11.5 MT/Day	Laden/Ballast
Auxiliary Engine	MGO	About 1.2 MT/Day	
In Port	MGO	About 1.0 MT/Day	Idle
	MGO	About 3.0 MT/Day	Discharging
	MGO	About 0.8 MT/Day Additional	Using N2 Generator

Permanent bunker capacity (100%)

HFO	:	534.68 M3
Diesel	:	124.34 M3
Fresh Water	:	118 MT

3.7 Hydrostatic Test Pressure : **27.0 bar g (2.66 MPag)**

4. LOADING RATE (TONS/HOUR) – For Full Cargo Parcels

Ex-atmospheric storage with gas : 1 tank : **450 m3 / h**

Return : 2 tanks : **790 m3/ h**

Remarks:

* Based on maximum velocity of 6.5 metres/sec except VCM, and 4.0 meters/sec for VCM in the liquid piping.

* If cargo temperature is less than 0 °C, shore heater to be used. If ship heater used, max rate is **250 m³** per hour.

* Loading by shore pump only, proper size gas return line to be connected

* Subject to both ship and shore tanks being under favourable conditions

5. CARGO PUMPS

5.1 Type : **DEEPWELL VERTICAL CENTRIFUGAL MULTI STAGE DESIGN**
Make : **TEIKOKU MACHINERY WORKS, LTD**
How many : **2**
Maximum specific gravity : **0.948**

5.2 Capacity (CMB/Hour) : **300 m/h X 110 m (0.647)**
250 m/h X 120 m (0.948)
Two speed or variable speed : **Single speed**
Rated kW (each) : **120 kw**
Working pressure maximum : **17.7 Bar g**

5.3 Location : **CARGO TANK TOP**
Removable : **YES**

5.4 Booster pumps : **NA**
Type : **NA**
Maker : **NA**

5.5 Capacity (CMB/Hour) : **NA**
Working pressure : **NA**

5.6 Location : **NA**

5.7 Time to discharge a full liquid cargo using all pumps against back pressure at pump
1 bar : **about 07 hours for LPG**
5 bars : **about 14 hours for LPG**
10 bars : **-----**

5.8 Nominal back pressure when working : **about 5 bar**
In series corresponding head : **N/A**
Maximum back pressure : **about 10 bar**
Nominal pressure at rail (propane) : **about 13 bar at 20 degree C of cargo temperature**

5.9 What amount of cargo remains in tanks after completion pumping before stripping:
- liquid : **No liquid remains in the tank**
- vapour : **about 20 ton per one tank for LPG**

6. STRIPPING

6.1 Stripping system, if any : **Nil**

6.2 Time required to remove all traces of liquid cargo as stated in 5.9 for:
- LPG : **NA**

7. CARGO COMPRESSORS

7.1 Type : **VERTICAL 01 STAGE WATER COOLED DOUBLE ACTING**
Make : **TANABE PNEUMATIC MACHINERY CO. LTD**
How many : **2**
Piston displacement : **460 m3/h**
Rated Kw : **75 KW**
Stroke : **177.8 mm**
Max discharge pressure : **20 Bar**
Pressure differential : **Normal 4.0 Bar / Maximum 7.0 Bar at single action**

No of Revolutions : **540 rpm**

7.2 Are compressors oil free : **YES**

7.3 Can they reliquify VCM without risk : **NO**

7.4 State time to bring full cargo of butane to atmospheric pressure from :

8. ~~INERT GAS SYSTEM~~ / NITROGEN PLANT

8.1 Does the vessel use inert gas? : **NO / N2 GENERATOR PLANT**
If so, state utilization and quantities : **Model: HPMB 6511 (MG GENERON)**

8.2 Can the vessel produce inert gas? : **NO / N2**
If so, state type and composition of gas produce: :

Discharge Capacity : **185Nm3/hr**

8.3 Maximum production obtainable : **185Nm3/hr**

NOTE:- Above quantities obtained at engine room temperature **45° C**

8.4 State if there are storage facilities for inert gas onboard: **N/A**
- Size : **N/A**
- Pressure : **N/A**

8.5 State if any shore supply of nitrogen may be required: : **NO**
- for what purpose : **N/A**
- what quantities : **N/A**

9. GAS FREEING

9.1 State method used giving all details : **Nitrogen Plant / Fans**

9.2 State time required including stripping : **APPROX. 09 DAYS**

10. CHANGING GRADE

10.1 From completion discharge of cargo Propane, time required in hours and inert gas in CBM required to reach a tank and gas installation atmosphere of less than 100 ppm of Propane in Vapour phase.

Time required: ABOUT 66 HRS / N2 12300 m3 per tank.

10.2 Can this operation be carried out at sea? : **YES**

10.3 Can the ship measure the number of ppm in vapour phase? : **NO**

10.4 Has vessel deck tank for changing grade/cooling operations? : **NO**

10.5 Deck tanks : **NIL**
Capacity : **N/A**
Purpose : **N/A**

11. **COOLING BEFORE LOADING** : **N/A**

12. CARGO HEATER

12.1 Type : **SHELL & TUBE**
12.2 Inside Diameter **650 mm**
12.3 Overall length **6000 mm**
12.4 Cargo flow rate **200 m3/ h (Propane)**
12.5 Min Inlet Temp **-48 deg. C**
12.6 Min Outlet Temp **0 deg. C**
12.7 Required Sea water Capacity **420 m3/ h with 16 deg C**
12.8 Design Pressure **20.0 Bar**
12.9 Hydrostatic Test Pressure **30.0 Bar**
12.10 Tightness Test Pressure **20.0 Bar**

12.0 State discharging rate for propane to be brought from atmospheric pressure: **300 m3/h basis pump**
Loading rate for Propane – **48 ° C / 0° C: about 200 m3/hr : (as per manual)**

13. CARGO VAPORIZER

In case vapour gas is needed to feed compressors, can vessel produce its own if no shore available:

No

14. **REFRIGERATING APPARATUS** : **NA**

14.1 Is it independent of cargo? : **NA**
Is so, state cooling agents : **NA**

14.2 What minimum temperature can be maintained : **NA**

14.3 What time required at sea to lower by 1°C the full cargo of : **NA**

15. MEASURING APPARATUS

What gauges on board? **Float type level gauge with HHL & HL alarm switch**

Type : **SP- 3511 S , intrinsically safe type**

Location : **At each cargo tank dome**

16. SAMPLES

16.1 State how tank atmosphere samples can be taken and where from?

From slip tubes at tank dome.

- Standard of fitting? : **NO**
- 16.2 Same question for cargo : **BY SAMPLING LINE , WITH STANDARD FITTING**
- 16.3 Are sample bottles available on board? : **NO**

17. CARGO LINES

- 17.1 Is ship fitted with a port and starboard cargo manifold? : **Yes**
- 17.2 Position of cargo manifold
- distance from stern (AP) (S / P) : **52.6 M**
 - distance form stem (FP) (S / P) : **47.0 M**
 - height above deck : **1.30 m for Liquid manifold**
 - distance from ship's rail : **2.45 M**
 - underside keel to manifold : **8.80 M**
- 17.3 Liquid line
- flange-size : **8 inch.**
 - type : **300 ANSI 300 lb**
- Gas line
- flange-size : **5 inch.**
 - type : **150 ANSI 300 lb**

17.4 What reducers on board? :

LIQUID REDUCER			
1	8" ANSI 300lb X 6" ANSI 300lb	pc	1
2	8" ANSI 300lb X 5" ANSI 300lb	pc	1
3	8" ANSI 300lb X 4" ANSI 300lb	pc	1
4	8" ANSI 300lb X 3" ANSI 150lb	pc	1
5	8" ANSI 300lb X 8" ANSI 150lb	pc	1
6	8" ANSI 300lb X 6" ANSI 150lb	pc	1
7	8" ANSI 300lb X 8" JIS 20k	pc	1
8	8" ANSI 300lb X 6" JIS 20k	pc	1
9	8" ANSI 300lb X 4" JIS 20k	pc	1
VAPOUR REDUCER			
1	5" ANSI 300lb X 8" ANSI 300lb	pc	1
2	5" ANSI 300lb X 6" ANSI 300lb	pc	1
3	5" ANSI 300lb X 4" ANSI 300lb	pc	1
4	5" ANSI 300lb X 3" ANSI 300lb	pc	1
5	5" ANSI 300lb X 2" ANSI 150lb	pc	1
6	5" ANSI 300lb X 5" ANSI 150lb	pc	1
7	5" ANSI 300lb X 3" ANSI 150lb	pc	1
8	5" ANSI 300lb X 3" JIS 20k	pc	1
9	5" ANSI 300lb X 4" JIS 10k	pc	1
10	5" ANSI 300lb X 3" JIS 10k	pc	1

17.5 Is ship fitted with stern discharge? : **No**
 - Liquid line - diameter : **N/A**
 - flange – size : **N/A**
 - type : **N/A**

18. HOSES

Are serviceable hoses available on board? : **None**

18.1 Length : **NA**
 Diameter : **NA**
 Flange-size : **NA**
 Type : **NA**
 Bending radius : **NA**

18.2 Minimum temperature acceptable : **NA**
 Maximum pressure acceptable : **NA**

18.3 For what products are hoses suitable? : **NA**

19. DERRICKS

- Hose cranes : **01**
 - Where situated : **CENTRE BETWEEN 1 & 2 CARGO TKS.**
 - Lifting capacity : **3.5 MT**
 - Working radius : **3.6 – 13.0 m**

20. SPECIAL FACILITIES

20.1 How many grades can be segregated? : **NO SEGREGATION POSSIBLE**
 20.2 How many cooled? : **N/A**
 20.3 Can vessel sail with slack cargo tanks? : **Yes**