

STARTING FIRE PROCEDURE

0. DRAIN F.O & D.O TANK

1. Put the control to manual mode and operate manually.
2. F.D. FAN SWITCH AUTO -> MANU. ON
3. After 30 second, F.O. PUMP SWITCH AUTO -> MANU. ON
4. PILOT PUMP SWITCH AUTO -> MANU. ON
*REMARK : CHECK & ADJUST F.D FAN V/V (WHEN START, UP POSITION)
5. When FLAME PRESENT LAMP turn on, STM VALVE AUTO -> MANU. ON
6. F.O. VALVE SWITCH AUTO -> MANU. ON
7. After checking sight glass for main burner fired, HIGH/LOW SWITCH AUTO ->MANU. ON
8. PILOT PUMP SWITCH MANU. ON -> AUTO
*REMARK : ADJUST F.D.FAN V/V HALF POSITION
9. Check smoke on boiler funnel side and adjust F.O. by-pass v/v to 3.5~4.5kg/cm²

FIRE TROUBLE PROCEDURE

1. Open boiler control panel and push relay marking "MANUAL RESET"
2. HIGH/LOW SWITCH & F.O. VALVE SWITCH MANU. ON -> AUTO
3. PILOT PUMP SWITCH AUTO-> MANU. ON and check FLAME PRESENT LAMP lighted
4. F.O. VALVE SWITCH AUTO -> MANU. ON
5. After checking sight glass for main burner fired, HIGH/LOW SWITCH AUTO ->MANU. ON
6. PILOT PUMP SWITCH MANU. ON -> AUTO
7. Check smoke on boiler funnel side and adjust F.O. pressure

	작성 Preparer	검 토 Review	승 인 Approval
직책 / 서명 Rank / Signature	3/E BAE BYEONGYOON	1/E KIM KIHO	C/E KIM JONGGI
일 자 Date	26.NOV.2016	27.NOV.2016	28.NOV.2016

CAUTIONS FOR HANDLING OF PRESS. ATOMIZING BURNER

油圧噴霧方式バーナ取扱注意事項

- ** In case diesel oil is used, heater switch should be turned "OFF" and thermostat by-pass switch (cancell of low oil temp.) should be turned "ON".
 A 取油使用時は、油加熱器スイッチ“切”及びサーモスタット・バイパス（油温低下キャンセル）スイッチ“入”にして使用して下さい。
- ** For manual igniting, solenoid valve switch should be confirmed to be "OFF", then burner motor should be driven. And ignition switch should be turned "ON", ignition spark should be inspected visually, after then solenoid valve switch should be turned "ON".
 手動運転にて点火する時は、電磁弁スイッチが“切”になっている事を確認後バーナ・モータを回し、イグニッション・スイッチを“入”にしてイグニッション・スパークを目視で必ず確認後に電磁弁スイッチを“入”して下さい。
- ** Set temp. of thermostat (adjusted to reading value of thermometer: standard value shows for oil of 3,500 sec. RW. No. 1 at 38°C.)
 油温・設定値 (R.W.No1 3,500 秒/38°C 標準値/温度計目盛に依る)

	Standard 標準	For this ship 本船セット
F.o. temp. too high (burner cut) 油温過昇(バーナ・カット)	155°C	
F.o. temp. high (alarm) 油温過昇(警報)	145°C	
Oil heater control 油加熱器制御	115°C	
Pump control (F.o. circulation in ポンプ制御(油温低下時循環) low oil temp.)	105°C	
F.o. temp. low (alarm) 油温低下(警報)	95°C	
F.O. temp. too low (burner cut) 油温低下(バーナ・カット)	85°C	
Heating temp. of tank タンク加熱温度	80°C	

- ** Interval for inspection and maintenance
定期点検整備

	Standard 標準	For this ship 本船セット
Cleaning of atomizer アトマイザの洗浄	Weekly 一週間/一回	
Arrangement & cleaning of electrodes エレクトロッド点検・カーボン除去	Week/ Twice or more 一週間/二回以上	
Cleaning of flame eye glass フレイム・アイ前面掃除	Weekly 一週間/一回	
Cleaning of strainer screen ストレーナ網洗浄	Daily 一日/一回	

** Set press. of relief valve for circulation line
by F.o. circulating pump
油循環ポンプ循環ライン・リリーフ弁の圧力設定

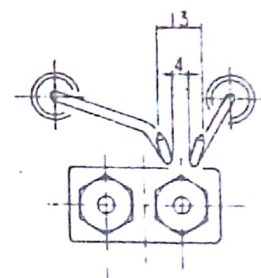
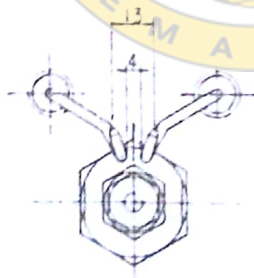
2.5 Kg/cm²

** Purpose and set time of timer
タイマ使用目的と標準設定時間

Symbol 記号	Purpose 用途	Standard 標準	For this ship 本船セット
2W-1	Boiler level too low (burner cut) ボイラ水位低下 (バーナ・カット)	10 sec.	
2W-2	Boiler level (alarm) ボイラ水位警報	10 sec.	
2W-3	On/off control of feed water pump 給水ポンプ発停制御	10 sec.	
2QL	Delay for establishing normal oil press. 正常油圧になる迄のキャンセル	10 sec.	
2Q	Alarm cancel against momentary drop of oil press. 瞬時油圧低下の誤作動防止	2 sec.	
2QC	Delay of opening damper at high combustion 高燃焼用電磁弁作動と空気ダンパの作動時間差	2 sec.	
2FR	Delay for settling flame from ignition to high combustion 点火後高燃焼移行迄の炎を安定さす低燃焼時間	5 sec.	

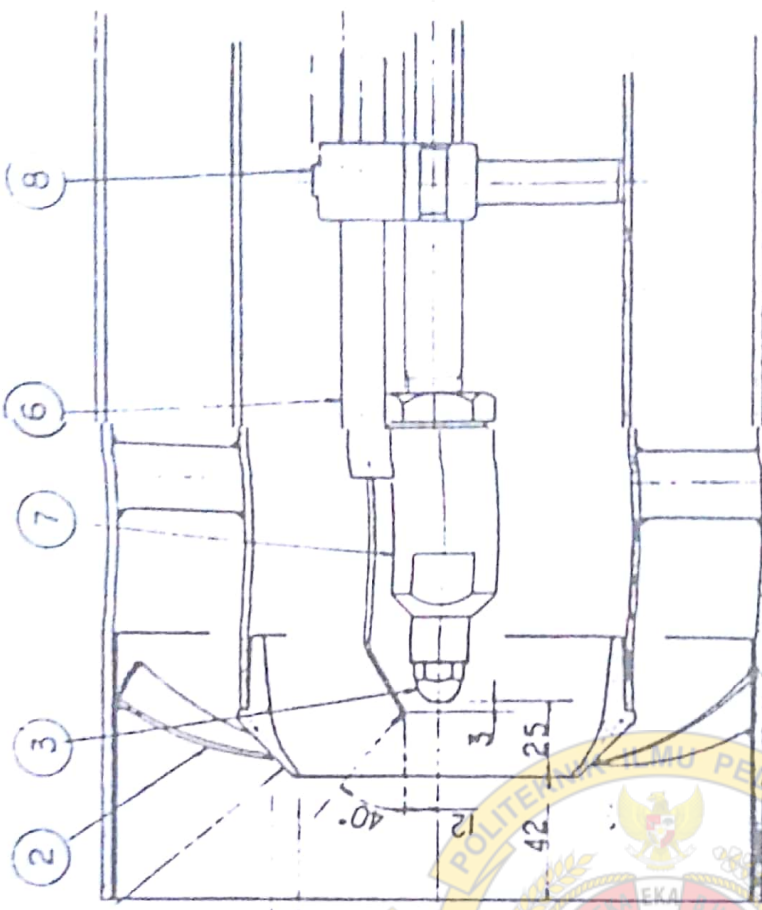
** Before finishing of burner for long interval of boiler running, diesel oil burning must be carried out for replacing of pipe line.
ボイラの蒸気圧を完全に落す場合には、必ず配管ラインは A 重油に切替えて運転してバーナを停止して下さい。

** Electrods set position
エレクトロッド取付位置



ON/OFF control
ON/OFF & PROPORTIONAL control
オン/オフ制御
及び 比例制御

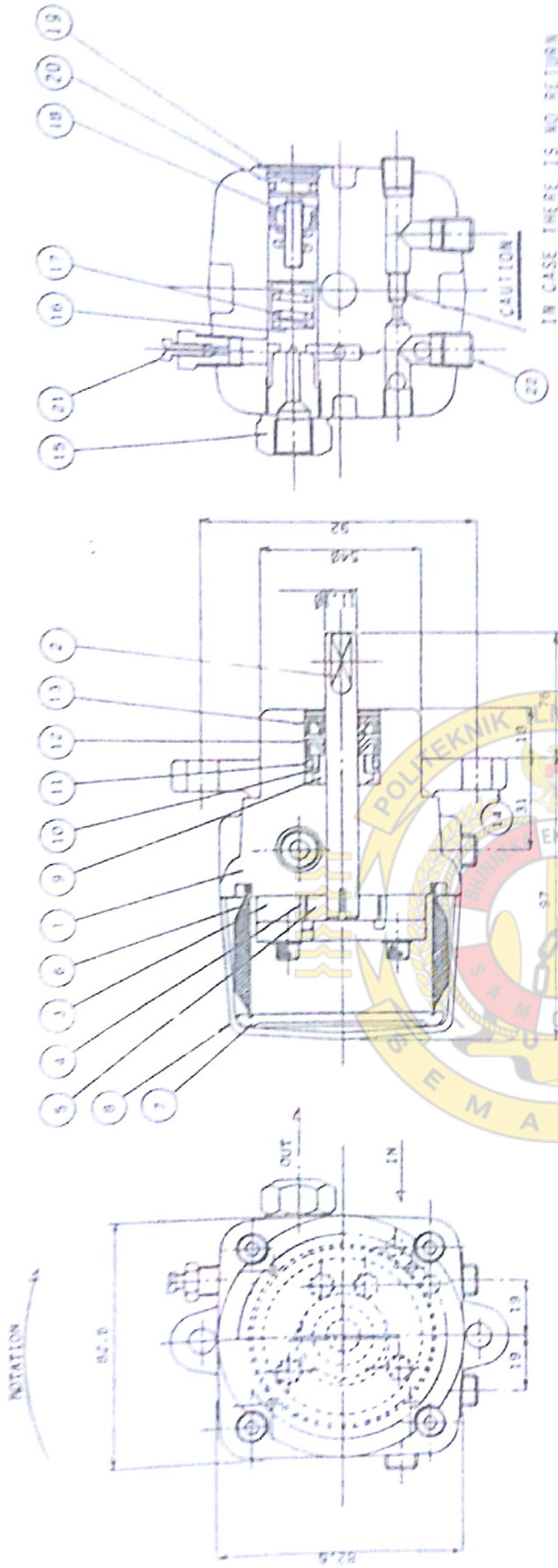
ON/OFF & HIGH/LOW control
ハイ/ロー制御



NO	NAME OF PART	QTY	MATERIAL	REMARKS
1	PRIMARY AIR NOZZLE S.S.P.I.F.N.	1 SET	S.S.-A	FC-19
2	SECONDARY AIR NOZZLE S.S.P.I.F.N.	1	S.S.-A	SUS 304
3	ATOMIZER S.S.P.I.F.N.	1	F-80 6/16 P.L.P	SUS
4				
5				
6	ELECTRONS S.S.P.I.F.N.	2	SS	
7	ASSEMBLY W/ AIR CONNECTION W/ S.S.P.I.F.N.	1	SPV-19H	
8	ASSEMBLY HOLDER S.S.P.I.F.N.	1	FC-19	

CHECKED BY 調査
DRAWN BY 製図
SCALE 尺度 1/2.5
DRAWING NO. 図番 G-1202F
DATE 日期 27-5-75

SUNFLAME CO., LTD.
株式会社 サンフレイム

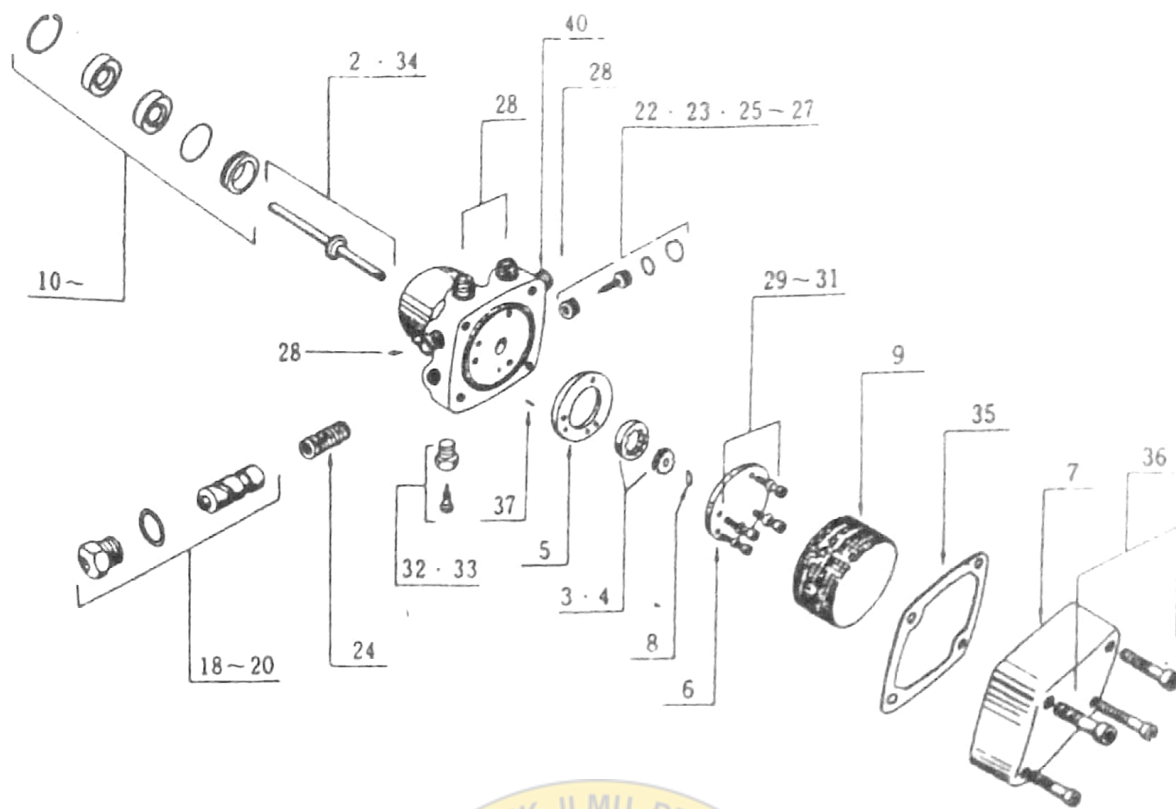


IN CASE THERE IS NO RETURN PIPING, THIS PLUG MUST BE REMOVED

CAUTION

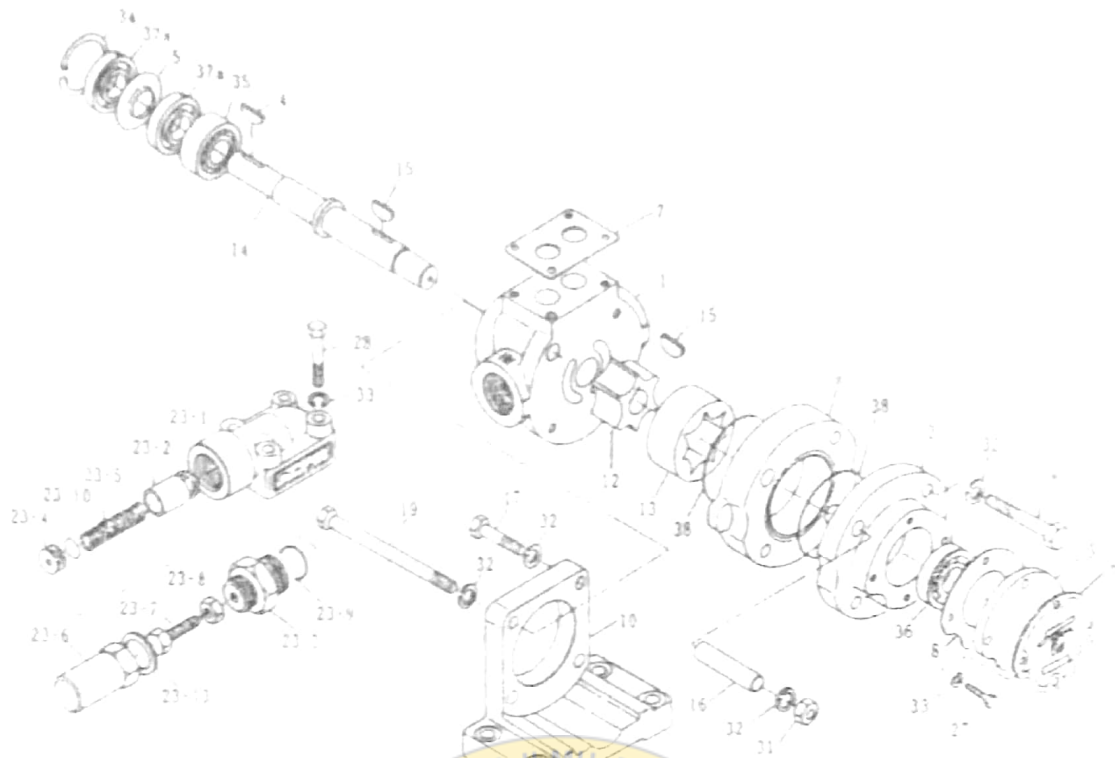
NO.	NAME	Q'TY	JIS STANDARD MATERIAL	EQUIV. U.S. STANDARD MATERIAL	NO. NAME	Q'TY	JIS STANDARD MATERIAL	EQUIV. U.S. STANDARD MATERIAL
12	OIL SEAL	1			24			
11	WIP RING	1			23			
10	THRUST SUPPORTOR	1			22	PLUG	3	SS 41 ASTM A36
9	HAFT SEAL RING	1	SUS 304	AISI 304	21	AIR VENT SCREW	1	S20C AISI 1020
8	SEAL RING	1	SS 41	ASTM A36	20	"O" RING	1	
7	SEAL RING COVER	1			19	ADJUSTING BOLT	1	S20C AISI 1020
6	SEAL RING HOLDER	1			18	ADJUSTING NUT	1	S20C AISI 1020
5	SEAL RING	1	SUS 304	AISI 304	17	CONTROL SPRING	1	SUP 3 AISI 1078
4	INNER ROTOR	1	SCM 415	(AISI 4118)	16	PISTON	1	S45C AISI 1045
3	OUTER ROTOR	1	FCD 40	ASTM A536	15	END PLUG	1	S20C AISI 1020
2	ROTOR HOUSING	1	FCD 40	ASTM A536	14	FLANGE	1	ADC5 AISI 518.0
1	SHAFT	1	SCM 415	(AISI 4118)	13	SHIELDED OIL SEAL	1	
	BODY	1	FCD 40	ASTM A536				
	WIP RING	1	FCD 40	ASTM A536				

ORDER & S.M.O 注文及び船番	
CHECKED BY 検査員	
DRAWN BY 製図員	
SCALE 尺法	
DATE 日付	06-JAN-1987
DRAWING NO. 図番	M P - 1 5 4 5
F. O. BURNING PUMP	
SUNFLAME CO., LTD. 株式会社 サンフレイム	



NO.	NAME	NO.	NAME
2-34	shaft ring, thrust	18~20	valve & piston set
3-4	rotor set, trochoidal	22~27	adjust screw set, pressure
5	casing, rotor	28	plug PT $\frac{1}{4}$
6	cover, rotor	36	bolts, cover
7	cover, strainer	29-30-31	cu packing, rotor cover
8	key, inner	32-33	valve set, vent
9	strainer	35	packing, strainer cover
		37	pin, knock
10~14	seal set.	40	screw, two pipe

	RULE 規 格		ORDERER & S NO 注文主及び船番
	CHECKED BY 調 査		F. O. BURNING PUMP
	DRAWN BY 製 図		
	SCALE 尺 寸		
	DATE 日 付	15-DEC.-1982	DRAWING NO 番 号 M p - 1226
DRAWING HISTORY 図 歴 来 歴	PAINTING COLOUR 塗 装 色 MUNSELL マンセル		SUNFLAME CO., LTD 株式会社 サンフレルム



14	MAIN SHAFT シャフト	1	14	FIXING BOLT ボルト	4	42		
13	OUTER-ROTAR アウト・ロータ	1	27	FIXING BOLT ボルト	4	41		
12	INNER-ROTAR インナ・ロータ	1	26		4	40		
11		1	25		1	39		
10	BRACKET ブラケット	1	24		1	38	NON-BRING ノングリ	
9	PUMP HOUSING ポンプハウジング	1	23	RELIEF VALVE SET リリーフバルブセット	1	37	OIL SEAL オイルシール	
8	TOP COVER PACKING トップカバーパッキング	1	22		1	36	BALL BEARING ボールベアリング	
7		1	21		1	35	BALL BEARING ボールベアリング	
6	NAME PLATE 銘板	1	20		1	34	SNAP RING スナップリング	
5	BACK-UP RING バックアップリング	1	19	FIXING BOLT ボルト	2	33	SPRING WASHER ワッシャースプリング	
4	SHAFT KEY シャフトキー	1	18	FIXING BOLT ボルト	2	32	SPRING WASHER ワッシャースプリング	
3	TOP COVER トップカバー	1	17	FIXING BOLT ボルト	2	31	NUT ナット	
2	BEARING HOUSING 軸受ハウジング	1	16	PIPE KNOCK パイプノック	2	30		
1	PUMP BODY ポンプ本体	1	15	INNER KEY インナキー	1	29		
No.	NAME OF PARTS 名 称	QTY 数量	No.	NAME OF PARTS 名 称	QTY 数量	No.	NAME OF PARTS 名 称	QTY 数量

	RULE 規 格		ORDERER & S NO 注文主及び船番
	CHECKED BY 調 査		
	DRAWN BY 製 図	<i>[Signature]</i>	DISASSEMBLING DRAWING OF OIL PUMP 油 泵 の 取 外 し 図
	SCALE 尺 度	NO	
	DATE 日 付	31-08-'87	DRAWING NO 番 号 M p - 1 6 1 6
DRAWING HISTORY 図 面 変 更 歴	PAINTING COLOR 塗 装 色		SUNFLAME CO., LTD. 株 式 会 社 サ ン フ レ ム
	M. NISELL マンセル		

SHIP'S PARTICULARS

SHIP NAME..... M/V JK BORYEONG
 CALL SIGN..... DSRN6
 I.M.O.NO..... 8309206
 MMSI NO..... 441924000
 OFFICIAL NO..... JJR-131022
 NATIONALITY..... REPUBLIC OF SOUTH KOREA
 PORT OF REGISTRY..... JEJU
 OWNER..... JK MARITIME INCOPORATED
 OPERATOR..... JK MARITIME INCOPORATED
 Address..... 8F, STARGALLERY BRIDGE BLDG. 250, SEOCHO-DAERO,
 SEOCHO-GU, SEOUL 137-873, KOREA
 ISSC NO.&EXPIRE DATE..... DS-13-012 / 11TH DEC. 2018
 DOC.NO&EXPIRE DATE..... SELDC0002113 / 20TH MAY. 2018
 SMC NO.&EXPIRE DATE..... GNSNC0001113 / 12TH DEC. 2018
 BUILDER..... MITSUBISHI HEAVY INDUSTRIES CO., LTD
 YARD HULL NO..... S1949
 KEEL LAID 22ND MAR. 1984
 LAUNCHED 24TH AUG. 1984
 DELIVERY DATE..... 14TH DEC. 1984
 TYPE OF SHIP..... BULK CARRIER
 TYPE OF FREEBOARD..... SINGLE DECK
 CLASS.SOCIETY..... KR
 CLASS.SOCIETY NO(KR) ... 8471754
 CLASSIFICATION..... KR

DIMENSION

LENGTH (over all)..... 240.00 M
 LENGTH (bet.perpendiculars)..... 231.00 M
 BREADTH (moulded)..... 38.00 M
 DEPTH (moulded)..... 19.10 M
 DEADWEIGHT..... 80,984 MT
 GROSS TONNAGE..... 48,844 TONS
 NET TONNAGE..... 23,403 TONS
 LIGHTSHIP 13,890 MT
 TPC 81.9 MT
 HATCH SIZE(L X B)..... NO.1 : 14.4M x 15.3M / NO.2-7 : 15.2M x 17.0M /

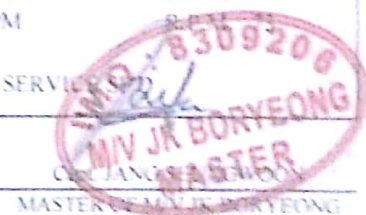
CONTACT NUMBERS

INM-C2 Tlx: 444092410
 INM-F. Tel: 773111277
 INM-E. Fax: 783112682
 E-Mail: kbr@sea-one.com

FREEBOARD TABLE

LOAD LINE MARK	Freeboard	Draft	Displ.	Dead weight	
	(mtr.)	(mtr.)	MT	MT	LT
TROPICAL FRESH (TF)	5.970 M	13.178 M	96,981 TONS	83,091 TONS	81,799 LT
FRESH WATER (F)	6.233 M	12.915 M	94,872 TONS	80,982 TONS	79,703 LT
TROPICAL (T)	6.259 M	12.889 M	97,030 TONS	83,140 TONS	81,827 LT
SUMMER (S)	6.522 M	12.625 M	94,874 TONS	80,984 TONS	79,670 LT
WINTER (W)	6.785 M	12.363 M	92,726 TONS	78,836 TONS	77,591 LT

MAIN ENGINE..... MITSUBISHI SULZER 5 RTA 76 1 SET
 MCR 12,000 P/S 8,826 KW X RPM R.P.M. 77
 NCR 10,200 P/S 7,502 KW X RPM R.P.M. 73
 SPEED..... 14.8 KTS Ballast
 14.0 KTS Laden 13.5 KTS SERVICE



IMO CREW LIST

ARRIVAL			DEPARTURE	PAGE No	
1. NAME OF SHIP	2. CALL SIGN	3. IMO NUMBER	4. NATIONALITY OF SHIP		
M V JK BORYEONG	DSRN6	8309206	REPUBLIC OF KOREA		
5. PORT OF ARRIVAL	KARACHI PAKISTAN	6. SHIP ARRIVED FROM	SINGAPORE		
7. DATE OF ARRIVAL	2017 08 12	8. DATE OF DEP.			
9.No.	10. FAMILY NAME, GIVEN NAME	11. RANK OR RATING	12. NATIONALITY	13. DATE AND PLACE OF BIRTH / DATE OF ONBOARD	14. NATURE AND No. OF IDENTITY DOCUMENT Passport No. & Expired Date
1	JANG SEUNGWOON	MASTER	S KOREA	1958 11 01/BUSAN/2018 11 23	M42114075/2022-01-12
2	JO YONGSOK	C/O	S. KOREA	1978 08 08/SEOUL/2016 11 23	M56417385/2023-12-02
3	ISWANTO BAYU	2/O	INDONESIA	1978 08 08/CIREBON/2017 01 23	B5772545/2022-01-18
4	TRIANARES	3/O	INDONESIA	1989 09 03/JAKARTA/2016 06 06	B2248842/2020-10-21
5	KIM JONGGI	C/E	S KOREA	1982 11 01/BUSAN/2016 07 24	M27746375/2024-09-07
6	KIM KIHO	1/E	S KOREA	1956 09 17/INCHEON/2016 07 14	M51428660/2024-06-19
7	YOFAN SUTYANTORO	2/E	INDONESIA	1990 08 06/TEMANGGUNG/2017 05 05	A8543774/2024-06-19
8	BAE BEONGYOON	3/E	S KOREA	1989 11 20/BUSAN/2016 07 14	M44719656/2021-07-27
9	MUHAMAD NUR	BSN	INDONESIA	1989 05 02/JAKARTA/2017 01 23	B0786440/2020-03-12
10	HARRY SIMON DE FRETES	AB/A	INDONESIA	1971 02 02/JAKARTA/2016 08 05	B3550264/2021-03-11
11	HASBULLAH	AB/B	INDONESIA	1970 01 12/OLANG/2017 01 23	A6323296/2018-08-23
12	ARDIANSYAH GASING	D/C	INDONESIA	1996 04 11/PANGKAJENE/2016 08 05	B4025687/2021-05-09
13	IBEDI	NO 1 OLR	INDONESIA	1989 12 20/PALOPO/2017 05 05	A5956005/2018-06-28
14	IKO PANDU PRASETYO	OLR/A	INDONESIA	1982 03 13/PEMALANG/2016 08 05	A5183265/2018-04-08
15	SIRRI	OLR/B	INDONESIA	1977 06 19/BANGKALAN/2017 05 05	B1891882/2020-09-02
16	FARLJAL	E/C	INDONESIA	1995/BREBES/2016 08 05	B3325748/2021-03-02
17	JOHNY PAULUS GIGIR	C/CK	INDONESIA	1970 01 10/MANADO/2017 05 05	B6067016/2022-02-08
18	M AMIRUDDIN	MSM	INDONESIA	1988 06 23/BANGKALAN/2016 08 05	A5708352/2018-06-07

15. DATE AND SIGNATURE BY MASTER, AUTHORIZED AGENT OR OFFICER.

