

SYSTEM		II		HYDROSTATIC TEST PRESSURE: 21 bar				
DESIGN WORKING PRESSURE:		14 bar		JOINTS NDT:				
DESIGN WORKING TEMPERATURE:		-		PIPING MATERIAL:				
SYSTEM PRESSURE CLASS:		PN16/PN25		YARD SYSTEM TAG:				
MEDIA FLASHPOINT:		-						
PIPING SPECIFICATION	Nominal Diameter (ND)	Pipe Type	Standard	Material	Type	Standard	Rating (bar)	
	≤40	STEEL PIPES	ANSI B 36	ASTM A53 GR.B	FLANGED	EN-1092		
	>40 ≤/50	STEEL PIPES	ANSI B 36	ASTM A53 GR.B	FLANGED	EN-1092		
>200	STEEL PIPES	ANSI B 36	ASTM A53 GR.B	FLANGED	EN-1092			
Remarks For wall thickness on pipes in general, in tanks, on weather deck and for overboard pipes see respective pipe charts.								
ANSI B 36 SEAMLESS STEEL PIPES		Nominal diameter	ND65	ND80	ND100	ND125	ND150	ND200
Outer diameter		73,0	88,9	114,3	141,3	168,3	219,1	
Wall thickness, general (Schedule 40)		5,2	5,5	6,0	6,6	7,1	8,2	
Wall thickness, in tanks (Schedule 80)		7,0	7,6	8,6	9,5	11,0	12,7	
REMARKS:								
GENERAL NOTES:								
1. THIS DRAWING IS INDICATIVE ONLY. THE SCHEMATIC INCLUDING PUMP CAPACITY, VALVE TYPE & SIZE, PIPE SIZE etc. MAY VARY FOR DIFFERENT MAKES.								
2. ALL DETAILING HAS TO BE DONE BY THE BUILDER DURING DESIGN PROGRESS BASED ON OEM DATA & CLASS REQUIREMENTS.								
3. ALL WATER PIPES FROM PUMPS TO MONITORS TO BE HOT DIP GALVANIZED INSIDE AND OUTSIDE, AFTER FABRICATION.								
4. INTERLOCK SYSTEM SHALL BE ARRANGED TO PREVENT START OF FIFI PUMPS WHEN SUCTION VALVE IS CLOSED AND OUTLET VALVE IS OPEN. THESE VALVES SHALL BE OPERATED FROM WHEELHOUSE AND INTERLOCK ALARM SHALL BE PROVIDED IN WHEELHOUSE AND ECR								
5. THE MONITORS SHALL BE SINGLE BARREL DUAL PURPOSE MONITORS AND SHALL BE REMOTELY ELECTRICALLY CONTROLLED FROM THE WHEELHOUSE								
6. SEA CHEST SUCTION AND OVERBOARD VALVES SHALL BE CLASS APPROVED.								
7. FIFI PUMPS SHALL BE PROVIDED WITH MECHANICAL SEALS								
8. SHIPSIDE VALVES ARE TO BE PROVIDED WITH LOCAL MANUAL OPERATION IN ADDITION TO THE REMOTE OPERATION. VALVE TO BE FITTED DIRECTLY ON THE CHEST PLATING OR TO BE MOUNTED USING RIGHT STUB PIECE.								
9. BUTTERFLY VALVES WHERE FITTED TO THE SHELL ARE TO BE PROVIDED WITH LUGS.								
10. THE ARRANGEMENT FOR THE WATER-SPRAYING SYSTEM SHALL BE SUCH THAT NECESSARY VISIBILITY FROM THE WHEELHOUSE AND THE CONTROL STATION FOR REMOTE CONTROL OF THE FIRE FIGHTING WATER MONITORS CAN BE MAINTAINED DURING THE WATER SPRAYING.								
11. STEEL PIPES ARE CONSIDERED FOR FOAM PIPING. HOWEVER THE BUILDER MAY CONSIDER STAINLESS STEEL PIPING AS SOME FOAMS ARE CORROSIVE.								
12. WATER SPRAY SHUTOFF VALVE AND OVERBOARD SHUTOFF VALVE SHOULD BE REMOTE OPERABLE.								

**SEE LETTER E-126093-180434
REVIEWED**

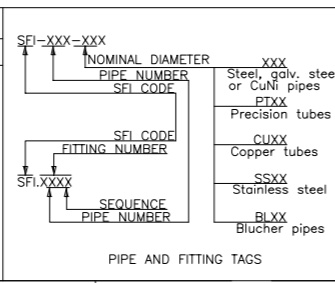


**11-SEP-2021
PLAN ENDORSED FOR IN-PRINCIPLE APPROVAL**

NSFI	QTY	DESCRIPTION	CAPACITY	TYPE
814/101.no	1	FI-FI PUMP	Approx. 1200 m3/hour	Main Engine driven
814/101.no	2	FI-FI PUMP	Approx. 530 m3/hour	Main Engine driven
814/102.no	2	FI-FI MONITOR	Approx. 350 m3/hour	Single Barrel Dual Purpose

8 TWO EXTERNAL FIRE FIGHTING CONFIGURATIONS MAY BE CONSIDERED.
CONFIGURATION 1:
 ONE NO. EXTERNAL FI-FI PUMP OF APPROX. 1200 m³/hr CONNECTED TO ONE OF THE MAIN ENGINES AND THE OTHER ENGINE IS USED FOR STATION KEEPING WHILE CARRYING OUT FIFI OPERATION.
CONFIGURATION 2:
 TWO NOS EXTERNAL FI-FI PUMPS (BOTH MAIN ENGINE DRIVEN) OF CAPACITY APPROX. 530m³/hr, PROVIDED WITH SLIPPING CLUTCH.
 9 THE PRESENT DESIGN IS BASED ON CONFIGURATION 1. FOR CONFIGURATION 2, THE DESIGNER HAS TO DEVELOP P&ID BASED ON OEM DATA.

ARMATURE AND FITTINGS LEGEND				REFERENCE DRAWINGS	
Symbol	Designation	Symbol	Designation	Drawing No.	Drawing title
	BUTTERFLY VALVE		ORIFICE	CT3240-101-001	GENERAL ARRANGEMENT
	SDNR VALVE		BUTTERFLY VALVE (ELECTRICALLY ACTUATED)		
	FI-FI PUMP (MAIN ENGINE PTO)		INJECTOR/CHECK VALVE		
	GATE VALVE		PRESSURE INDICATOR		
	BALL VALVE		VENT HEAD		
	REDUCER		CHECK VALVE		



MAIN PARTICULARS	
LENGTH O.A	abt 32.00 [m]
LENGTH B.P	abt 30.80 [m]
BREADTH (MLD)	abt 10.50 [m]
DEPTH (MLD)	abt 5.00 [m]
DRAFT (HULL)	abt 3.70 [m]
COMPLEMENT	10 PERSONS
BOLLARD PULL	40 T @100% MCR
INSTALLED POWER	abt 2600 [kW]
CLASS NOTATION	SWASTIKA SUL, SWASTIKA IY, TUG, INDIAN RIVER SEA VESSEL TYPE - 4

Rev. I	30 Aug 2021	For publishing on IPA website	ANJ	AK	NFC
No.	Date	Description	Drawn	Checked	Approved
ASTDS		40T BP HARBOUR TUG			
DESIGN NO: CT3240		TITLE EXTERNAL FIRE FIGHTING SYSTEM			
COCHIN SHIPYARD LIMITED P.O. Bag 1653, COCHIN-682015, INDIA		NTS	A3	CT3240	CT3240-814-001
This design was developed by Cochin Shipyards Ltd. for Indian Ports Association as a part of ASTDS Package. CSI does not make any representation or warranties, express or implied as to the completeness, accuracy, suitability of the design and it shall be the responsibility of the respective builder/end-user to make its own assessment / evaluation of any such completeness, accuracy, suitability of the design prior to construction and any consequence thereof.		Scale	Format	Project No.	Dwg. no.