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Item	Name, dimensions	Dwg. no. standard or codification	Pcs.	Material or characteristics	Remarks
1	LIFTING EYE BOLT M20		2	Steel	SWL 1,6T
2	BOLT M12 X 45		16	Stainless Steel	
3	LOCK WASHER		16	Steel	Galvanized
4	LOCK WASHER FOR BEARING		2	Steel	
5	AXIAL&RADIAL BEARING	BS2-2222-2CS5/VT143	2		SKF
6	RUDDER STOCK SEAL		4	THORFLEX 95A	130x162,5x20
7	RUDDER STOCK	6094-56200-01	2		230
8	RUDDER BEARING HOUSE COVER		2	Steel	5
9	NUT FOR BEARING	KM 22	2	Steel	0.87
10	RUDDER TRUNK		2	Steel Grade A	140
11	RUDDER BEARING		2		Self lubricating type
12	SCREW M8 X 25		28	Stainless Steel	
13	DISTANCE PLATE FORWARD		2	Nylon	
14	DISTANCE RING		2	Nylon	
15	DISTANCE PLATE AFT		2	Nylon	
16	PLUG M10 X 1	DIN 912	4	Stainless Steel	0.02
17	SEALING RING Ø17xØ11x1,5		4	Copper	
18	SEALING KIT		1	Sikaflex	
19	STEERING GEAR		2		125
20	STEERING GEAR FOUNDATION		2	Steel	50
21	STOPPER		2	Steel	40
22	PUMPS/MOTORS ASSEMBLY		2		58
23	PUMPS/MOTORS FOUNDATION		2	Steel	25
24	STORAGE RESERVOIR		1		Including oil
25	STORAGE RESERVOIR FOUNDATION		1	Steel	60
26	HAND WHEEL PUMP		1		45
27	HAND WHEEL PUMP FOUNDATION		1		15
28	RUDDER FEEDBACK UNIT	RFU 2000-2210	2		JASTRAM
29	RUDDER FEEDBACK UNIT FOUNDATION		2		3
30	ADJUSTING RING		6		165x145x1
31	KEY B 20x12x120	DIN 6885	2		0.22
32	ECCENTRIC SAFETY RING		2		0.19
33	GUARD RAIL		2		25
34	MANIFOLD AND RESERVOIR		2		Including oil
35	MANIFOLD FOUNDATION		2		25
TOTAL WEIGHT = 1,980 KG					



NOTES

- The ship shall be provided with a main steering gear and an auxiliary steering gear.
- The rudders shall be capable of being individually locked in the amidships position.
- Each rudder shall be capable of being worked from each of the steering operating stations over the full range of 35° port and starboard while the other rudder is locked amidships.
- Minimum installed diametric clearance between lower bearing and shaft in dry condition: 2 mm - in accordance with LR Rules and Regulations for the Classification of Special Service Craft 2009 - July, Part 3,Chapter 3 - Control Systems, Section 2 - Rudders,Table 3.2.10
- Fairing to be painted before locating rudder.
- Inside of trunk to be painted except bearing surfaces and seal positions.
- Rudders are not to be painted.
- Both rudders to be grounded to the ship structure.
- Bearings to be mounted after welding trunk in hull (overheating the bearings will cause damage).
- The screws, item#12, to be secured by LOCTITE or similar.
- Item 18 to be approved type. The sealing layer shall be continuous without air pockets between the structure and distance plates 13, 14, 15.

STEERING GEAR

TECHNICAL CHARACTERISTICS

- Rudder angle = 2 x 35°
- Steering gear torque = 2,45 tm
- Power = 3 KW
- Power supply = 600V, Frequency = 60 Hz
- The main steering gear shall be designed to put the rudder over from 35 degrees on either side to 30 degrees on the other side in not more than 28 seconds
- The auxiliary steering gear shall be designed to put the rudder over from 15 degrees on one side to 15 degrees on the other side in not more than 60 seconds

0	04/07/2011	ISSUED FOR CONSTRUCTION	D. MONU	E.ZAINESCU	M.MOCANU
Rev	Date	Description	Perform	Check	Appr.
Client: CANADIAN COAST GUARD			Title: STEERING SYSTEM MECHANICAL PART		
 international contract engineering			MID-SHORE PATROL VESSEL		
 IRVING SHIPBUILDING INC.			Scale: 1:20	Size: A1	Project No: 6094
P.O. Box 9110, 3099 Barrington Street, Halifax NS, Canada B3K 5M7, Tel: 902.423.9271, Fax: 902.429.4510			Drawn by: D.MONU	Checked by: E.ZAINESCU	Dwg. date: 04/07/2011
Draw.no: 6094-56100-01			Rev. 0		
Contract No. F7045-06001/002/NQ			© IRVING SHIPBUILDING INC.		
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Form code Dwg. A1 - Rev.2, apr.2009

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