

CCGS PIERRE RADISSON

MOORING WINCH

SECTION 4.1

RATING

DRUM DIAMETER	24"
DRUM WIDTH	27"
DRUM CAPACITY OF 1" DIAMETER WIRE ROPE	800'-0"
NUMBER OF LAYERS ON DRUM	FOUR (4)
RATED ROPE PULL	11,200 LB
RATED ROPE SPEED	70 F.P.M.
MAXIMUM ROPE SPEED	200 F.P.M.
WARPING HEAD DIAMETER	18"
RATED PULL AT WARPING HEAD	15,000 LB
RATED SPEED AT WARPING HEAD	52 F.P.M.

CCGS PIERRE RADISSONMOORING WINCHSECTION 4.2DESCRIPTION

- 4.2.1 The HEPBURN mooring winch is of robust construction with all components mounted on a structural steel base.
- 4.2.2 Power to the mooring winch is provided by a remote mounted hydraulic power unit driven by a 35 HP electric motor. A detailed description of the hydraulic circuit is given in Section 4.3.
- 4.2.3 The electric motor starter is remote mounted and supplied by others.
- 4.2.4 The winch gearbox is driven by a hydraulic piston motor, flange mounted to the gearbox.
- 4.2.5 The double output shaft of the gearbox supports the warping head on one side and the dog clutch on the other side.
- 4.2.6 All gears and pinions in the gearbox rotate in anti-friction bearings. All gearing is oil bath lubricated. The winch drum rotates in spherical roller bearings.
- 4.2.7 The outboard end of the winch drum is supported on a structural steel pedestal with a split bearing housing to facilitate dismantling, when required.

4.2.8 A dog clutch assembly, Figure 4-3, Section B-B, provides for independent operation of the winch drum.

4.2.9 A manually operated band brake, Figure 4-4 is provided for the winch drum.

4.2.10 The remote mounted hydraulic power unit is illustrated in Figure 4-5.

4.2.11 The winch control console is illustrated in Figures 4-2 and 4-7.

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SECTION 4.3

HYDRAULIC SYSTEM AND CONTROLS

4.3.1 The hydraulic system and itemized components are detailed in the following:-

Figure 4-5 - Hydraulic Power Unit

Figure 4-6 - Hydraulic Connections

4.3.2 The hydraulic drive system consists of a variable, reverse flow pump, Figure 4-5, Item 3, with mechanical control and pressure compensator over-ride, driving a variable volume, reverse pressure compensated hydraulic motor, Figure 4-3, Item 67.

4.3.3 This system provides constant horsepower drive in the range of the motor pressure compensator and low power demand with the transmission stalled.

4.3.4 The hydraulic motor compensator, is to be set at 1900 p.s.i. and the pump compensator, set at 2100 p.s.i. This results in a mooring load at the winch of 5-tons.

4.3.5 Should lower tension be required, both the pump and the motor compensator settings must be reduced, maintaining the 200 p.s.i. differential indicated in para. 4.3.4.

CCGS PIERRE RADISSONMOORING WINCHSECTION 4.4ELECTRICAL CONTROLS

4.4.1 The hydraulic pump is driven by a 35 H.P., squirrel cage motor, power to which is turned on and off by a full voltage starter, supplied by the shipyard.

4.4.2 The hydraulic fluid reservoir heating controls are fed from the 440-volt, 1-phase, 60 Hertz ships power supply and are thermostatically controlled.

4.4.3 A further 115-volt supply is fed to the operator's control console to provide power to the anti-condensation heaters in the local control push button station.

4.4.4 All electrical components of the mooring winch are described in the following page of Unit Parts Lists 8789-A-1.

DATE		LINE	REVISION		BY	CH'D	DATE		LINE	REVISION		BY	CH'D	DATE		LINE	REVISION		BY	CH'D														
S. STEEL MAT'L-MECH. DESCRIPTION																					MECHANICAL MATERIAL										INDEX NO.	SHIPPING		REMARKS
QUAN PER UNIT	PCS PER FAB	PCS TO CUT	SHAPE	DESCRIPTION	THICKNESS	WEIGHT PER FT	FIN. LENGTH		MILL ENDS	EST WEIGHT	MATERIAL SPECS.	PATTERN NO. FAB NOTES	CAT. ITEM	DRAWING NUMBER	PART NO. OR MARK NO.	SOURCE	ORDER NO.	DATE RECD	DATE PROMISED	DATE TO ASDY														
				ELECTRICAL DIAGRAM										60022-A2 S/H.	UNION	4393-EG																		
1	4			OPERATORS CONSOLE HAMMOND TYPE 1414 N4PMSSE CONTAINING THE FOLLOWING:-										60046-A3																				
2	8			DALE WIREWOUND RESISTORS TYPE RH50 300Ω 5% TOL.						ENCLOSURE HEATERS				CARST. EL.	6518-EG																			
1	4			SQ. D OPERATOR CAT. KRIU										VALL-BROWN	6619-EG																			
1	4			" BLOCK CAT. KA-2										"	"	"																		
1	4			" CAP CAT. KUS (GREEN)						"MOTOR RUN"				"	"	"																		
1	4			" LEGEND PLATE CAT. SKN-836										"	"	"																		
1	4			SQ. D OPERATOR CAT. KRIU										"	"	"																		
1	4			" BLOCK CAT. KA-3										"	"	"																		
1	4			" CAP CAT. KU2 (RED)						"MOTOR STOP"				"	"	"																		
1	4			" LEGEND PLATE CAT. SKN-837										"	"	"																		
3	12			BUCHANAN TERMINALS CAT. 221											STOCK																			
1	4			BUCHANAN END PIECES CAT. 230											- " -																			
CONTROL UNITS FOR MOORING WINCHES.																					CUSTOMER BURRARD DRY DOCKS										NO. OF UNITS IN JOB FOUR		DALED ORDER NO. 75-M-0531	
DISTRIBUTION - W1 W2 W3 W4 W5 W6 DD-1																					SPECIAL		UNIT PARTS LIST NO. 8789-A-1		JOB PARTS LIST NO. 7389-A-2									
FY 00 P1 P2 P3 P4 P5 P6 DD-4																					STD													

DATE		LINE		REVISION		BY		CH'D		DATE		LINE		REVISION		BY		CH'D		DATE		LINE		REVISION		BY		CH'D																			
S. STEEL MAT'L-MECH. DESCRIPTION																												MECHANICAL MATERIAL												INDEX NO.		SHIPPING		REMARKS			
QUAN PER UNIT	PCS PER FAB	PCS TO CUT	SHAPE	DESCRIPTION	THICKNESS	WEIGHT PER FT	FIN. LENGTH		MILL ENDS	EST WEIGHT	MATERIAL SPECS.	PATTERN NO	FAB NOTES	CAT. ITEM	DRAWING NUMBER	PART NO. OR MARK NO.	SOURCE	ORDER NO.	DATE RECD	DATE PROMISED	DATE TO ASBY																										
ELECTRICAL DIAGRAM																												60022-A2 SHI. UNION 4393-EG																			
1	4			OPERATOR'S CONSOLE HAMMOND TYPE 1414 N4PMSSE CONTAINING THE FOLLOWING:-							60046-A3																																				
2	8			DALE WIREWOUND RESISTORS TYPE RH30 300R 5% TOL.							ENCLOSURE HEATERS												CARST. EL.		6518-EG																						
1	4			SQ. D OPERATOR CAT. KRIU							"MOTOR RUN"												VALL- BROWN		6619-EG																						
1	4			" BLOCK CAT. KA-2																			"		"		"																				
1	4			" CAP CAT. KUS (GREEN)																			"		"		"																				
1	4			" LEGEND PLATE CAT. SKN-836																			"		"		"																				
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																																								FOUR		75-M-0531					
																												DISTRIBUTION - W2 W3 W4 W5 W6 00-2 00-4												SPECIAL		UNIT PARTS LIST NO.		JOB PARTS LIST NO.			
																												FY 00 P1 P2 P3 P4 P5 P6												STD		8789-A-1		7389-A-2			

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MOORING WINCH

SECTION 4.5

OPERATING INSTRUCTIONS

4.5.1 Start the electric motor, Figure 4-5, Item 2

NOTE: The motor will not start if the hydraulic oil temperature is 10° C or less.

4.5.2 De-clutch the winch drum, and apply the winch drum band brake, Figure 4-1, Item 3.

4.5.3 Set the control hand lever, Figure 4-7, Item 3 to the "SELF-TENSIONING" (INHAUL) position.

4.5.4 Allow the motor to run for 5 minutes in this mode.

4.5.5 Return the control handle to "NEUTRAL" and inch the drive to engage the clutch.

4.5.6 Release the winch drum band brake and pay out the mooring line as required.

4.5.7 When the mooring line is made fast, haul-in to tension the line and place the hand lever on the control station to the self tensioning position.

4.5.8 Insert the retaining pin, Figure 4-7, Item 16, to hold the lever in position.