

SECTION 1 INTRODUCTION

1.1 General

This manual is written to support the experienced technician/operator during maintenance, repair and operation of the DYNACON, Inc. 22.5 kW (30 HP) MOOS Mooring Winch System manufactured for M.B.A.R.I.

1.2 System Description

The Winch System is a self-contained winch system which can be installed on ships of opportunity. The system is designed to deploy, tow and recover terminal equipment from the fantail of a ship. The system is electrically powered, hydraulically operated and is capable of operating in prolonged exposure to an adverse marine environment.

1.3 QUICK REFERENCE DATA

1.3.1 Power

- Primary 460 VAC +/- 10%, 3 Phase, 60 Hz
- Electric Motor Marathon, 22.5 kW (30 HP) @ 60 Hz, 460 VAC, 3 phase, 60 Hz + Magnetic Motor Starter

1.3.2 Hydraulic Fluid

Royal Purple Marine Hydraulic Oil, ISO-46

1.3.3 Mooring Winch Drum Features

- 1 bay to accommodate cable
- 1 bay to accommodate instrumentation package
- Cable pass thru from instrument bay to cable bay
- 4" Radial clearance between drum and frame members
- Lift points to be provided for lifting drum out of frame fully loaded with cable
- Countersunk bolt holes in flange to allow for installation of spacer plate for different cable diameters
- Drum core match drilled and tapped for Lebus Shells to be purchased later.

1.3.4 Levelwind

Conventional Electro-Active levelwind with vertical guide rollers. Vertical height is adjustable within minimum/maximum position.

1.3.5 HPU and Drivetrain

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|--------------------|---|
| • Winch Pump | Sunstrand 90 Series 100cc Closed Loop |
| • Levelwind Pump | Rexroth A10V 28cc Open Loop |
| • Heat Exchanger: | Air/Oil With Hydraulic Motor Driven Cooling Fan |
| • Winch Motors (2) | White 710 540 W88 51 ZAAAA |
| • Levelwind Motor | Charlynn 104-1002-006 |

1.3.6 System Ratings

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|----------------------------------|---|
| • Safe Working Load (SWL): | 6,000 lbs Bare Drum
3,800 lbs Full Drum |
| • Maximum Line Pull (1.25 x SWL) | 7,500 lbs Bare Drum
4,780 lbs Full Drum |
| • Brake Holding Capacity | 10,000 lbs Bare Drum
6,375 lbs Full Drum |

Note:

Bare Drum C/L Diameter	47.1 in.
Full Drum C/L Diameter	73.8 in

With 17,225 ft of 1.10 in. Cable Installed

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|--------------------|--|
| • Performance | |
| Low Tension Mode: | 3,000 lbs max at 200 fpm Bare Drum
1,900 lbs max at 300 fpm Full Drum |
| High Tension Mode: | 6,000 lbs max at 100 fpm Bare Drum
3,800 lbs max at 150 fpm Full Drum |
| • Cable Capacity: | 17,225 ft (5,250m) of Ø1.10" (28mm)
Cable |

1.3.7 Dimensions

1.3.7.1 Winch

- Drum Size

Core Diameter	1168 mm (46 in)
Flange Diameter	2184 mm (86 in)
Core Width	2140 mm (84 1/4 in) Main Bay
	254 mm (10 in.) Instrumentation Bay

- Footprint Dimensions

Baseframe Width	3391 mm (133 1/2 in)
Baseframe Depth	2400 mm (94 1/2 in)
Overall Height	2781 mm (109 1/2 in) Maximum

1.3.7.2 Levelwind Assembly

Maximum Height	2413 mm (109 1/2 in)
Depth	838 mm (33 in)

1.3.7.3 Power Unit

Length	2032 mm (80 in)
Width	830 mm (32 11/16 in)
Height	1387 mm (54 5/8 in)

1.3.7.4 Complete Assembly

Width	3429 mm (135 in) Across Drum
Depth	4070 mm (160 1/4 in)
Height	2781 mm (109 1/2 in) Maximum

1.3.8 Weight

Winch	6364 kgs. (14,000 lbs) Empty
Power Unit	1500 kgs. (3,300 lbs) Wet
Spare Drum	3591 kgs. (7900 lbs)

1.3.9 Minimum Operating Temperature 0 Degrees C

1.3.10 System Color, Hoses, Fittings, and Fasteners

- Color DYNACON Blue, DYNACON paint specifications and materials to be used
- Stainless Steel hose ends, fittings, and Quick Disconnects
- Fasteners 13mm (1/2") or less to be stainless steel, greater than 1/2" to be inorganic zinc coated

1.3.11 Customer Supplied Umbilical

- Manufacturer: JDR
- Part or Model Number: 010 A 099 Rev 1B
- Diameter: 28.0 mm (1.10 in)
- Weight in Air: .784 lbs/ft
- Weight in water: .140 lbs/ft
- Drum Spacers can be installed at a later date to accommodate specific cables.

1.3.12 Control Station

- Haul In/ Pay Out Joystick
- Emergency Stop
- Levelwind Override
- Power OK Indicator
- Low Tension/High Tension Switch and Indicator
- 10m (33 ft) Interconnect Cable
- Local Control Pedestal

1.3.13 Certifications None

1.3.14 Other Features

- 1 Spare Drum
- Suitable lifting points for crane lift
- Road transportable without permits
- Winch to Deck Tiedowns in form of 1" diameter bolt holes on 24" centerlines
- Design to facilitate rapid drum swap