



"The World's Leader in Portable Dredges"

8" Moray Class Dredge Model iMO-2000-18D Preliminary Specifications

General

Overall length	42'-10"
Transportation width	11'-11"
Operating width	18'-6"
Hull depth	4'
Mean operating draft (with fuel)	2'-9"
Fuel capacity	500 gallons
Dry weight <i>(estimated)</i>	35,000 lb

Operating Conditions

Minimum digging depth	3'
Maximum digging depth	17'-6"

Swing Width (swinging ladder):

@ minimum digging depth	19'-4"
@ maximum digging depth	13'

Nominal pump capacity (water) 2000 gpm @ 185 TDH

Underwater Dredge Pump



manufactured by DSC

Suction diameter	8"
Discharge diameter	8"
Impeller diameter	19 1/2"
Maximum particle clearance	3 1/2"

Prime Mover



- ❑ Caterpillar C7 ACERT industrial diesel engine, radiator cooled with residential grade silencer rated 275 bhp @ 2,200 rpm. EPA & CARB Tier III compliant
- ❑ Caterpillar premium gages, alarms, and shutdown systems

Dredge Pump Drive

Close-coupled closed loop hydrostatic transmission dredge pump drive

Cutter Drive



Sealed planetary drive with alloy cutter shaft and anti-friction bearings. 24" inside diameter 5-blade basket cutter with replaceable cast serrated edges

Nominal drive torque	31,512 in-lb
Cutter force	2,626 lb
Cutter force per linear inch	109 lb/in
Cutter speed	0-40
Nominal drive power	20 HP

Hoisting

Double acting hydraulic swing cylinder for swinging ladder operation

Extending force	27,600 lb
Retracting force	16,800 lb
Extending speed	12 ft/min
Retracting speed	20 ft/min

Double acting ladder lift hydraulic cylinder

Extending force	15,900 lb
Retracting force	28,000 lb
Extending speed	10 ft/min
Retracting speed	12 ft/min

Double acting stern kicker spud cylinder

Extending force	21,740 lb
Retracting force	21,740 lb
Advance @ minimum depth	2'
Advance @ maximum depth	4'-4"

Hydraulic System

Closed loop dredge pump circuit with infinite electronic speed control. Pressure compensated cutter, swing, ladder/spud circuits for simultaneous operation. All circuits protected by suction strainer, return filters, and relief valves. The Moray dredge features a variable displacement hoisting and cutter hydraulic drive.

Planetary spud winches with integral parking brake and API designed power up/power down drums.

Line pull	2,100 lb
Line speed	78 ft/min

Spuds

Three (3) tubular steel power up/power down construction

Diameter	8"
Length	24'
Weight each <i>(estimated)</i>	800 lb

Electrical System

- ❑ 24 VDC for starting, lighting, and controls
- ❑ 12 VDC (8 amp maximum) for convenience and user furnished radios
- ❑ All circuits fused for protection
- ❑ Two 950 cold cranking amp batteries

Service Pump

Deck mounted 1" x 2" - 7" hydraulically driven service water pump

Lever Room

Spacious heated control room with two lockable doors, tinted windows, operator's chair, dredge alarms, engine gages, operation gages, and fingertip electro-proportional controls.

Control System

The DSC control system provides the dredge operator with a simple, ergonomic, and user-friendly interface to efficiently operate the dredge. The system is designed, manufactured, programmed, and tested in house by trained professionals with years of dredge experience. The heart of the system is a PLC capable of monitoring digital and analog inputs, controlling digital and analog outputs, performing automatic loop control, displaying pertinent information, and recording historical data.

The standard dredge control system protects against pump engagement and disengagement at high speed and locks out all hydraulic functions during start-up and control activation. The system also alarms on poor engine conditions and hydraulic and transmission problems. All of the alarmed conditions, along with the time and date, are logged; the last sixty-four alarms are retained for review.

The standard dredge control system provides electronic operation of the prime mover throttle, pump engagement, and all hydraulic speeds and directions. Hydraulic controls are ramped to prevent jarring when controls are started, stopped or reversed.

The standard dredge control system records and displays the operating hours of all major dredge systems including engine, dredge pump, cutter, swing winches, spud winches, and ladder winch. This data is useful for servicing and for managing dredge utilization.

Dredge Features

- Climate control
- Spacious lever room
- Standard 18" manholes
- Ergonomic layout
- Hinged wing tanks with swing capability

Optional Features

- Conventional operating mode (see next paragraph)
- Stern spud carriage
- Production instrumentation
- Positioning Systems
- Automation

Optional Swing Winches for Conventional Mode



Planetary swing winches with integral parking brake, tension control, and API designed drums for conventional operation

Line pull (bare drum)	5,150 lb
Line speed (bare drum)	100 ft/min
Wire size	3/8"
Cable capacity	260'

Coatings

Non-immersion:

1. Blast all steel SSPC-SP6. Blast to achieve 1- to 2- mils profile as determined with a surface profile comparator
2. First coat; 2-4 mils (dry film thickness) Oxide red epoxy
3. Second coat; 4-6 mils (dry film thickness) Pearl Grey epoxy
4. Finish coat; 2 mils (dry film thickness) polyurethane

Engine room and equipment skids:

1. Blast all steel SSPC-SP6. Blast to achieve 1- to 2- mils profile as determined with a surface profile comparator
2. First coat; 1-3 mils (dry film thickness) Oxide red epoxy
3. Second coat; 4-6 mils (dry film thickness) Pearl Gray epoxy
4. Finish coat: 4-6 mils (dry film thickness) Pearl Gray epoxy

Decks:

1. Blast all steel SSPC-SP6. Blast to achieve 1- to 2- mils profile as determined with a surface profile comparator
2. First coat; 1-3 mils (dry film thickness) Oxide red epoxy
3. Second coat; 4-6 mils (dry film thickness) Pearl Gray epoxy
4. Finish coat: 4-6 mils (dry film thickness) Pearl Gray epoxy with non-skid added

Immersion:

1. Blast all steel SSPC-SP10. Blast to achieve 2- to 4- mils profile as determined with a surface profile comparator
2. One coat; 16 mils (dry film thickness) Coal Tar epoxy

Lever Room:

1. Blast all steel SSPC-SP10. Blast to achieve 1- to 2- mils profile as determined with a surface profile comparator
2. First coat; 2-4 mils (dry film thickness) Oxide red epoxy
3. Second coat; 4-6 mils (dry film thickness) Pearl Grey epoxy
4. Finish coat; 2 mils (dry film thickness) polyurethane

Hydraulic Tanks Interior:

1. Blast all steel SSPC-SP10. Blast to achieve 1- to 2- mils profile as determined with a surface profile comparator.
2. Apply an even coat 4-6 mils (dry film thickness) of White epoxy

Flotation Tank Interior:

1. The interior of flotation tanks are not coated.

Building Standards

Dredges manufactured by Dredging Supply Company, Inc. are designed and built using the most current versions of the following regulations as our guidelines:

- Manual of Steel Construction by the American Institute of Steel Construction.
- Joint Industrial Council Hydraulic Standards.
- Structural Welding Code – Steel by the American Welding Society and the American National Standards Institute.
- Mining Safety and Health Act.
- Occupational Safety and Health Act.
- Surface Preparation Specifications Steel Structures Painting Council.
- National Electrical Code Handbook.

Note: Specifications may change due to continual product improvement