

IMS MODEL DM-60 DEPTH MASTER RESERVOIR & PORT MAINTENANCE DREDGE SYSTEM



The DM-60 Depth Master is IMS's solution to make deep reservoir and port maintenance dredging affordable. No longer will reservoir and port operators need to hire large commercial dredging outfits to do expensive deep maintenance dredging with oversized dredges that are built for offshore dredging. Now they can invest in their own maintenance dredging system that will allow them to maintain a maximum depth of 18.3m depending on configuration. This allows reservoir operators to maintain reservoir levels for drinking water, irrigation, and to keep silt out of the turbines. It also allows port operators to maintain a consistent depth to keep operations online.

The DM-60 system ships in two pieces on drop deck trailers greatly reducing mobilization and demobilization costs associated with larger dredges that are impractical to move over roads that are sometimes narrow or unmaintained on the way to dams or congested near major ports. It is easily installed in the field with quick connections for the hull, ladder, hydraulics, and electronics.

The DM-60 can dredge silts, mud, loose small grain sands and other light sedimentary materials using the dual marine prop drive system.

When dredging in heavier currents and removing coarser sand at deeper depths it is recommended to run the dredge on the included cable drive system

PROPULSION METHOD 1



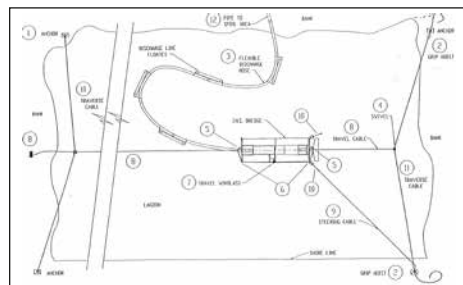
Dual prop drive self-propulsion system



Bow thruster for side current correction & quick turns.

which can run off of two, three, or four point anchor system. The cable drive system can be rigged in several configurations using a combination of the following anchor point types: land based anchor plates, trees, pilings, or any other heavy weight grounded object.

PROPULSION METHOD 2



4-Point Cable Rigging Configuration

The DM-60 comes standard with a state-of-the-art custom GPS System that tracks where the dredge is cutting, where it has already cut, and can log where material has been removed against a pre-dredging hydrographic survey.

The DM-60 comes with a heavy duty 10" (254mm) x 12" (304mm) GIW ladder mounted dredge pump constructed of hi-chrome white iron. The is ladder mounted to a heavy duty reinforced steel dredge ladder that can excavate sediment and sand down to a maximum depth of 60 ft. (18.3m).

The IMS SolidsMaster™ Cutterhead comes standard on the DM-60. The SolidsMaster Cutterhead™ is a horizontal shrouded cutterhead system that allows the dredge to cut a 26 inch (660mm) tall path of material. The shape of the cutter allows the dredge to cut a consistent path and take off layers of sediment in a uniform pattern without leaving ridges behind. The shroud creates a natural vacuum that allows the slurried materials to enter the suction vortex at a higher percentage of solids than basket type cutterheads. The angle of the cutterhead is adjustable with hydraulic rams that allow the cutter to maintain the best angle for maximum material intake. If there are large layers of more compacted materials like hard sands or a clay lens/layer then IMS recommends the optional Water Jet System that can break up more consolidated materials using emulsifying hi-PSI water jets in conjunction with the SolidsMaster Cutterhead™.

The cutterhead is also available with liner protection wheels in case the reservoir is lined. This will protect the polyethylene liner from the rotating teeth.

The DM-60 comes with two power units. The 375HP (280 kW) John Deere engine powers the dredge pump and cutter while the 275 HP (205 kW) power unit for self-propulsion and auxiliary functions. Fuel consumption is 20-26 gallons per hour (75-98) depending on whether the self-propulsion system is in use or the cable drive system is in use. The power units are Tier III and come standard with security locks and easy open panels to access any part of the engine or hydraulics. The hydraulic fluid is chosen based on climate, but optional biodegradable oil is available on highly sensitive environmental projects.



GPS is a standard feature

Easy-to-use joystick controls

The control cabin comes standard with an ergonomic air ride operator chair and easy to use joystick controls to manage all major dredge functions. The power units can be easily powered up and down from the cabin and have easy to use interfaces to trouble-shoot any problems. The cabin is climate controlled and comes standard with GPS, a 360 degree spotlight, navigation lights & day shapes for vessel identification, discharge line video monitor, front and rear work lights, interior lights, air conditioning, heat, fan, horns, oversized analog gauges, digital depth gauge, and stereo w/ CD player and USB port.

The DM-60 also comes standard with a complete US tool kit, life ring, life vests, and 300 ft. (91m) of flexible discharge hose to connect to the dredge discharge pipe.

IMS will send a field service technician to your job site to monitor set-up dredge set-up and to train your dredge operator(s) and personnel on operations and maintenance of the DM-60. In 60 days we will return to your job site to address any issues, provide refresher training, and make sure your project is on target.



IMS MODEL DM-60



Dimensions

Length	81 ft. (24.9 m)
Width	12 ft. (3.66 m)
Height	10 ft., 5 in. (3.2 m) pre cleaner removed
Weight (less fuel)	83,500 lbs. (37,875 kg)

Flotation

Pontoons	Four (4) pontoons, 45 in. x 43 in. x 390 in. (1,143 mm x 1,092 mm x 9,906 mm); 3/16" steel sides and bottom w/ 1/4" anti-skid deck; internal bulkheads and stiffeners; and painted w/ a marine grade paint system
Displacement	83,600 lbs. (37,920 kg)
Draft	34.75 in. (883 mm)

Working Capacity

Cut	135 in. wide x 26 in. deep (3,430 mm wide x 660 mm deep)
Working Depth	20 - 60 ft. (6.1 - 18.3 m)

Engine 1

Type	John Deere Diesel Model 6091HF485, 6 cylinder 9.0L, 375 HP (279 kw) @ 2,200 rpm.
Fuel Capacity	200 gal. (757 liters)
Fuel Consumption	26 gal./hr. (98 lit/hr.) for self-propelled mode

Engine 2

Type	John Deere Diesel Model 6068HF485, 6 cylinder 6.8L, 275 HP (205 kw) @ 2,400 rpm.
Fuel Capacity	105 gpm (6,62 lit/s) @ 5 500 psig (379,2 bar)
Fuel Capacity	200 gal. (757 liters)

Hydraulic System

Circuit #1	Slurry Pump 11.4 in ³ /rev. hydrostatic pump 97 gpm (6.12 liter/sec.) @ 5,000 psig 60 gal. (227 liters)
Reservoir 1	
Circuit #2	Cutterhead, Boom, Winch and Propellers 6.1 in ³ /rev. and 4.6 in ³ /rev. tandem piston pump 57 gpm (3.59 liter/sec.) @ 4,200 psig 42 gpm (2.65 liter/sec.) @ 2,500 psig
Reservoir 2	140 gal. (530 litres)
Filtration	1 tank mounted return filter with a 10-micron (min.) rating with indicator and cab warning light charge filter for the slurry pump circuit 6-micron rating (min.) with indicator and cab warning light. Water removal filters as an option

Cutterhead

Cutterbar	Diameter: 26 in. (660 mm) Length: 135 in. (3,430 mm) Replacable hardened steel excavator blades available with paddlebar for materials that are not easily slurried
Drive	Recessed dual hydraulic motor; direct drive with no gear reduction
Speed (variable)	0 to 60 rpm
Torque	23,885 in-lbs (2,969 N-m) @ 2500 psi (peak) (172,38 bar)
Cutter Tip Force	1,837 lbs (8,173 N)

Dredge Pump

Type	GIW Cast Iron (LCC-M 250-660)
Discharge Diameter	10 in. (254 mm)
Suction Diameter	12 in. (304 mm)
Impeller Diameter	26 in. (660 mm)
Sphere Passage	5 in. (127 mm)
Pump Performance	5,000 gpm (315 liter/sec) @ 134 ft. (40.8 m) TDH (slurry s. g. 1.25) @ 752 rpm w/2000 ft (609 m) discharge length & 20 ft (6.1 m) Static lift
Speed (variable)	0 to 791 rpm

Controls

Electronic joystick controls are provided in a climate controlled cab.

Propulsion

Dual propeller drive
Bow thruster for added maneuverability
Cable drive optional
Propellers operate independently

Speed (variable)

0 to 2,644 lbf (1,200 kg) Thrust (Propeller drive)
0 to 55 fpm (cable drive)

Electrical System

Voltage	12 volt, negative ground
Alternator Output	130 Amp

Corrosion Protection

Standard Paint
Superstructure and hull are sandblasted and painted with two coats of marine epoxy and top coated with a marine urethane suitable for saltwater service. A self healing zinc clad undercoating is applied to above deck surfaces. The cab is made with galvaneal steel. Submerged hull surface are top coated with two coats of anti-fouling paint. Average paint is 12 mils (DFT) minimum.

Cathodic protection

Standard

Standard Equipment

- > 12 qty. sections of 305mm x 7.6m discharge hose
- > 12 qty. discharge floats
- > Excavator cutterbar or Environmental Cutterbar
- > US Tool Kit & Tool Box
- > Safety package
- > Climate controlled cab with CD / stereo
- > Dredging GPS System

Optional Equipment

- > 305mm x 11.9m sections of discharge pipe
- > Spare Parts (wear of full)
- > Water jets on cutterhead
- > Navigation Lights

Shipping Dimensions (Two Sections)

	Length	Height	Width
Fore Section	44 ft. 4 in.	10 ft. 3 in.	12 ft.
Aft Section	42 ft. 6 in.	9 ft. 7 in.	12 ft.

Requires 20 ft. Ocean Container for hoses and floats

