



DAMEN CUTTER SUCTION DREDGER 350

DREDGING



DAMEN

LIST OF STANDARD EQUIPMENT

HULL AND SUPERSTRUCTURE

- The dredger is dismantlable in main pontoon, two side pontoons, operating cabin, cutter ladder, gantry and spudpoles, which permits easy transportation by road, rail or ship to nearly any location
- Heavy duty coupling system with hooks at hull bottom and bolt connection on deck level, making (dis)assembly on land or afloat possible in a very short time and an easy way
- Two separate engine room hatches for optimal maintenance of engine and dredge pump
- Single bollard on fore and aft at each side of the dredger
- Store with large hatch and wooden floor
- Chequered aluminium floor plates in engine room
- Marine coating system and cathodic protection for inland water use

OPERATING CABIN

- Comfortable, ergonomic designed operating cabin
- Mounted on shock absorbers to minimise vibration and noise levels
- Constructed of steel and well insulated and plated with coated plywood
- Two ergonomic designed control panels with a dredge master chair in between
- Dark tinted windows all around of which one can be opened, providing excellent view of all essential deck equipment
- Window wiper at front- and aft window

LIST OF OPTIONAL EQUIPMENT

GENERAL

- Decrease or increase cutter depth
- Anchor boom installation
- Spud carriage pontoon
- Plain suction installation with jet water pump
- Swivel connection for discharge pipeline
- Jib crane for changing pump-spare parts
- Anchors
- Toilet facility
- Air-conditioning
- Navigation lights and day signals in mast on top of cabin

DREDGE EQUIPMENT

- High efficiency dredge pump, built up with Ni-hard4 wearing plates and impeller and Baititic Nodular pumphousing. The shaft is sealed using a mechanical seal
- Cutter shaft supported by roller bearings mounted in an oil filled casing. The slow running hydraulic cutter motor is well protected in the cutter unit
- Well designed cutter with replaceable wear resistant serrated- or plain knives
- Straight suction pipe for optimal suction performance and low wearing characteristics
- Inspection pipe piece in front of dredge pump

ENGINE ROOM MACHINERY

- Latest model Caterpillar engine, complying with IMO regulations
- Closed freshwater cooling system for the engine with a box cooler
- Engine can be started from control panel both in engine room and in operating cabin
- Dredge pump driven through a gearbox with electric/ hydraulic clutch, operated from the operating cabin
- Various auxiliary equipment, such as bilge-, cooling water pumps

DECK EQUIPMENT

- Side wire swing winches operated with constant tension system, guaranteeing a stable cutter process
- Removable railing with stanchions and stainless steel wires

HYDRAULIC INSTALLATION

All hydraulic motors and cylinders are operated by one radial piston pump driven by the diesel engine. The system includes: stainless steel tank, all required electric operated valves, filters, gauges etc.

ELECTRIC INSTALLATION

Two separate 24 VDC battery circuits supplied by the alternator of the diesel engine, one for starting the engine the other for the boardnet. In engine room distribution board and in operating cabin switch panel for lights etc. Communication between operating cabin and engine room by PLC bus system. All cable connections to dismantlable parts with plugs for quick (dis)assembly without possibility of wrong connections.

MISCELLANEOUS

- Mooring lines, life saving equipment
- Set of tools including impeller hook and boatswain's inventory
- Start up spare parts

DREDGE PUMP

- Pump can be casted from various wear resistant materials to meet local dredging circumstances

VALVES IN DREDGE PIPES

- Non-return valve in discharge pipe
- Hydraulic operated valve in discharge pipe

ENGINE ROOM

- Generator set

DREDGING INSTRUMENTATION*

- Production calculation, existing of
 - Velocity meter
 - Concentration meter
 - Yield indicator
- Electronic revolution counter dredge pump
- Dredge Profile Indicator
- Positioning/ survey systems

Further we can modify the design to nearly any requirements

* This option requires a generator set

This leaflet is a brief summary from the original specification, which can be sent on request

Specifications are subject to modification without notice.

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LIST OF EQUIPMENT

DAMEN

DAMEN DREDGING EQUIPMENT

Member of the DAMEN SHIPYARDS GROUP

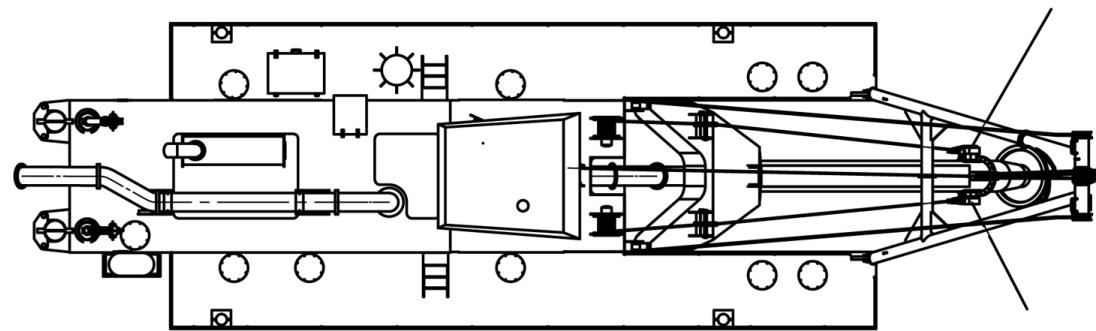


Edisonstraat 32
3861 NE Nijkerk

P.O. Box 1021
3860 BA Nijkerk
The Netherlands

phone +31 (0)33 247 40 40
fax +31 (0)33 247 40 60

info@damendredging.com
www.damendredging.com



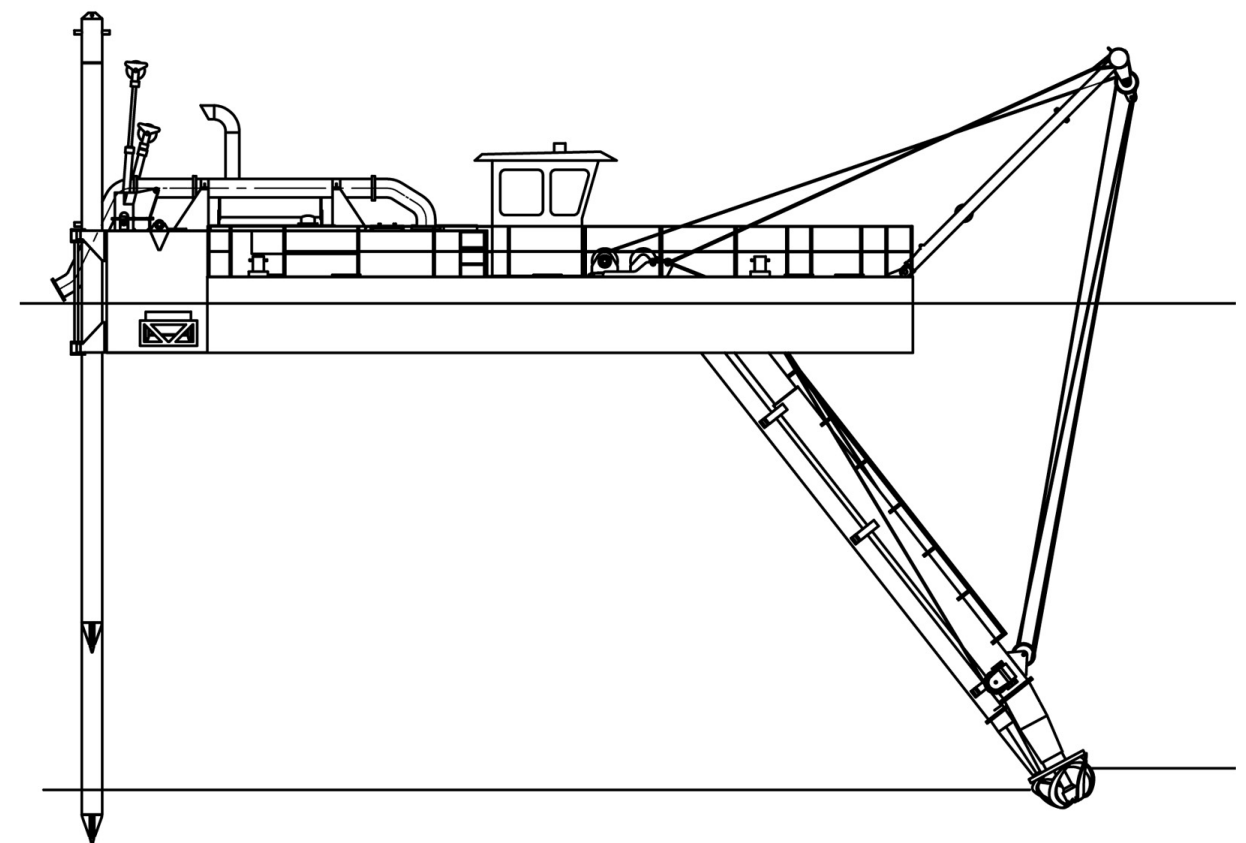
The DAMEN cutter suction dredger - model 350 - is one of the standard models within a range of well proven dismountable cutter suction dredgers. There are several options possible or even the design can be modified to specific wishes in meeting any operational requirement.

BASIC FUNCTIONS

Maintenance dredging
Capital dredging
Mining

STANDARD DESIGN FEATURES

Heavy duty robust design
Scantlings well in excess of class regulations
Comfortable ergonomic designed operating cabin
Well powered, to ensure simultaneous operation of all functions
Highest quality of installed equipment and components to ensure continuous operation



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GENERAL ARRANGEMENT

DREDGING FEATURES

Min/ max dredging depth	1/ 9 m (cutterladder angle of 5/45°)
Dredging width at 40° swing angle	27 m (at max dredging depth)
Maximum mixture capacity	2000 m ³ /hr

DREDGE INSTALLATION

Dredge pump type	BP3530MD
Impeller design	high efficiency, double vane, 4 bladed
Impeller diameter / width / spherical passage	80 / 175 / 150 mm
Diameter suction- and discharge pipe	350 mm
Cutter	5- bladed, diameter: 1150 mm
Cutter power	55 kW
Cutter speed	0-9-18-36 rpm
Mooring system	two spud poles and two swing winches

ENGINE INSTALLATION

Total installed power	485 kW
Dredge pump diesel	Caterpillar 3412E DITA JWAC IMO version
Continuous power rating	485 kW (A-rating) @ 1800 rpm
Hydraulic installation	driving cutter, winches and spuds
Electric installation	24 Volt DC for controls, lighting, auxiliaries, engine room ventilation

PRINCIPAL DIMENSIONS

Length o.a. incl. ladder and spudkeepers	25.00 m
Length over pontoons	16.00 m
Beam o.a.	6.05 m
Depth	1.50 m
Draught (100 % filled bunkers) approx.	1.10 m
Air draught (spuds removed/ ladder up) approx.	4.70 m
Total weight approx.	55 ton

TANK CAPACITIES

Fuel oil approx.	2 x 4 m ³ (for ± 100 running hours)
Ballast water (fore and aft)	2 x 3 m ³ and 2 x 3 m ³

DECK MACHINERY

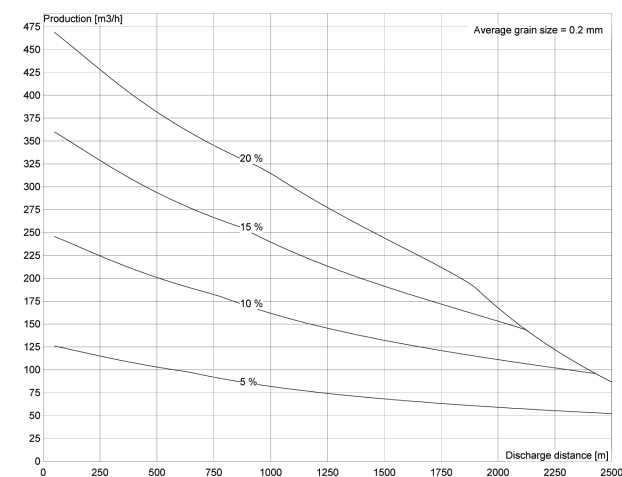
Ladder winch (1x)	50 kN, 0-15 m/min
Side wire winches (2x)	50 kN, 0-15 m/min
Spud hoisting (2x)	by hydraulic cylinder, stroke 1250 mm,

PROCESS INSTRUMENTATION

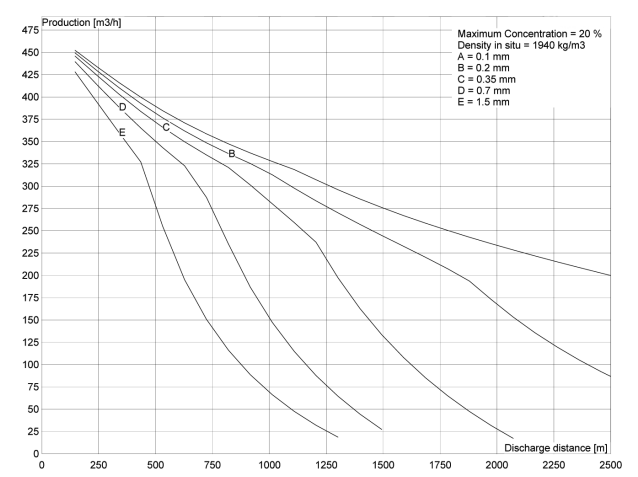
Vacuum and pressure indication
Mechanical dredging depth indicator

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PRODUCTION CURVES



Production of in situ cubic meters versus discharge distance for various volumetric concentrations for grain size 0,2 mm



Production of in situ cubic meters versus discharge distance for various grainsizes at concentration of 20%