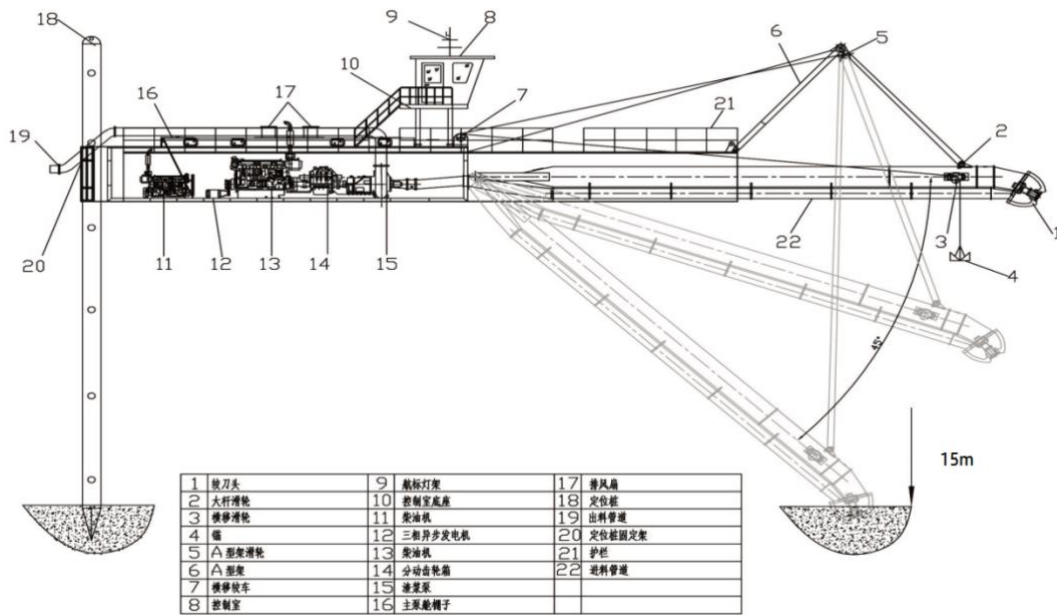
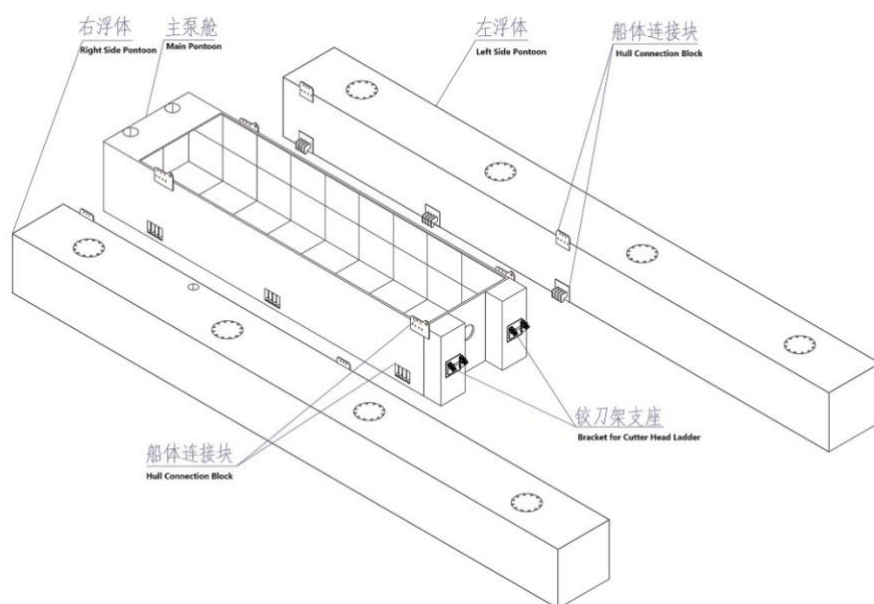


20inch (3500m³/h) Hydraulic Cutter Suction Dredger (Non-propelled)



1	Cutter Head	9	Signal Light Support	17	Ventilator
2	Pulley for Ladder	10	Control Cabin Base	18	Spud
3	Pulley for Swing	11	Diesel Engine	19	Discharge Pipe
4	Anchor	12	3 phase Electric Motor	20	Spud Holder
5	Pulley for A-shape Frame	13	Diesel Engine	21	Rail
6	A-shape Portal Frame	14	Gearbox	22	Suction Pipe
7	Swing Winch	15	Slurry Pump		
8	Control Cabin	16	Main Pontoon Cover		

Structural Drawing



Yongli Cutter Suction Dredger Specification:

1. Dredger pontoon dimensions 船舱参数

Item Name	Descriptions /Specifications
Model	YLCS D-500
Water flow	3500m³/h
Discharge distance	1500m
Slurry concentration, %	10 -20%
Dredging depth at 45 degree	15 m
Min. dredging depth	1.4 m
Inner Diameter of suction pipe	600 mm (24")
Inner Diameter of discharge pipe	500 mm (20")
Average Draught	1.4 m
Maximum draught	1.6 m
Total weight	170Ton
Total installed power	1193KW
Fuel tank capacity	50000L
Item Name	Dimension
Length overall (including ladder and cutter head)	37m
Breadth	7.5m
Depth	2.2 m
Engine room pontoon length x width x depth	16.0 x 3.5 x 2.2 m
Side pontoon Length x width x depth	25.0 x 2.0 x 2.2 m
Cutter ladder length	21m

2. Main pontoon (engine room)主舱室

Item Name	Dimension
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Deck plate thickness	10 mm
Bottom plate thickness	12mm
Side plate thickness	10 mm
Front plate thickness	18 mm
Back plate thickness	18 mm
Steel material	CCSB

3. Side pontoons 左右舱室

Item Name	Dimension
Deck plate thickness	8 mm
Bottom plate thickness	8 mm
Side plate thickness	8 mm
Front plate thickness	14mm
Back thickness	12mm
Steel material	CCSB

4. Marine diesel engine 主发动机

Item Name	Descriptions /Specifications
Make	Cummins Marine engine, China
Model	KTA38-M2
Continuous Power	895KW
Speed	1800r/min
No. of cylinders	12
Type	V12-cylinder,4-stroke,Heater exchange
Starting Method	24V electric start
Cooling system	Water cooling

5. Auxiliary engine 辅发动机

Item Name	Descriptions /Specifications
Make	Cummins marine engine, China
Model	NTA855-M
Power	298 KW
RPM	1800 r/min
No. of cylinders	6
Type	Inline 6-cylinder, 4-stroke, Heater Exchange
Starting Method	24V electric start
Cooling system	Water cooling

6. Generator set 发电机组

Item Name	Descriptions /Specifications
Engine Make	CUMMINS, China
Model	4BT3.9
Power	37 KW
Alternator Make	SUNVIM, China
Power	30 KW 50Hz

7. Coupling 液力耦合器

Manufacturers	CNPC JICHAO power equipment co. China
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Model	YOTFJBX650
Input speed	1800r/min
Power	895KW
Transmission efficiency	≥95%
Gear reduction ratio	3.52: 1
Control way	Electric control(Engine room control or remote control)
Hydraulic transmission oil	6# or 8# same type with used on the torque converter of wheel loader

8. Transfer Gear Box 分动齿轮箱

Make	Hangzhou Weihao, China
Model	3P500
Ratio	1.1:1
Cooling ways	Water cooling

9. Dredging pump 疏浚泵

Item Name	Descriptions /Specifications
Make	Shijiazhuang Pump, China
Model	450WN
Dredge pump water flow (cubic metre per hour)	3500 cbm/hr
Diameter of Inlet	600 mm (24 inch)
Diameter of Outlet	450 mm (18 inch)
Head	54 m
Speed	485RPM
Pump shaft power	770 KW
Blade quantity	5
Material	Cr26
Hardness of pump casing	≥58 Rockwell
Hardness of Impeller	≥58 Rockwell
Max. dia. Granule	125 mm

10. Hydraulic system 液压系统

Item Name	Descriptions /Specifications
Hydraulic valve	
Make, Model	Technology Imported from Japan, assembled in China (YUKEN)
Controlling system	Made by Yongli, China
Hydraulic pump	
Make, Model	Zhejiang yongling hydraulic machinery co.ltd, China
Quantity	2 sets Model 4535VQ double vane pump
Hydraulic pressure	16 MPa
Hydraulic motor	
Make, Model	Zhejiang xinhong hydraulic co. China (SAI Italy technology)
Quantity	4 units

Hydraulic pressure	16 MPa
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11. Winches 绞车

Item Name	Descriptions /Specifications
a. Ladder lifting winch	
Pull	100KN
Diameter of drum	456 mm
Hydraulic motor make	Zhejiang xinhong hydraulic co. China
Wire rope speed	0-18 m/min
Working pressure	16 Mpa
Dia. Of wire rope	Dia 24 mm
Wire rope length	130m
b. Swing winch	
Quantity	2sets
Pull	100KN
Diameter of drum	456 mm
Hydraulic motor make	Zhejiang xinhong hydraulic co. China
Wire rope speed	0-20 m/min
Working pressure	16 Mpa
Dia. Of wire rope	Dia 22 mm,
Wire rope length	length 120 m

12. Cutter head 绞刀头

Item Name	Descriptions /Specifications
Make	Yongli, China.
Diameter	1800 mm
Cutter shaft power	115KW
RPM	0-30
Hydraulic Motor Make	Zhejiang Xinhong hydraulic co. China
Working pressure	16 Mpa
Cutter teeth quantity	40 pcs
Cutter teeth material	K10.40Cr
Cutter blade quantity	5 pcs
Cutter blade material	ZG16SiMn

13. Alternator 发电机

Item Name	Descriptions /Specifications
Generator/Alternator	
Make	Sunvim, China
Model	SVH224C
Power	30KW 50hz

14. Deck crane 甲板吊

Item Name	Descriptions /Specifications
Make	Yongli, China
Capacity	50 KN
Lift diameter/outreach	4 m

15. Spud 定位桩

Item Name	Descriptions /Specifications
Make	Yongli, China
Spud length	19m
Spud diameter	610 mm
Spud wall thickness	20mm
Quantity	2pcs

16. Hydraulic cylinder 液压油缸

Item Name	Parameters
Quantity	2sets
Stroke travel distance	2.5m
Diameter of cylinder	160mm
Working pressure	16Mpa

17. Anchor 锚

Item Name	Descriptions /Specifications
Type	Lips type
Anchor weight	700 kg
Anchor quantity	2

18. Battery 电池

Item Name	Descriptions /Specifications
Voltage	24V DC
Battery capacity	195 Ah
Battery quantity	8

19. Painting and cathodic Protection 喷漆和阴极保护

Item Name	Description
Method of surface preparation	All steel surfaces will be prepared to near white, blasted to SA2½ standard. After sand/grit/wet blasting, surfaces will be brushed, blown off with compressed air or cleaned by vacuum to remove all traces of blast products and dust. Cleaning and painting will be so scheduled that detrimental amounts of dust or other contaminants do not fall on wet, newly painted surfaces. Paints must not be applied when humidity is above 85%.
Hull (under water portion) 船体(水下部分)	250 micron
Deck top/surface 甲板表面	170 micron
Inside hull 船体内	200 micron
Superstructure 上层船体	150 micron

Type and quantity of anode in hull and ladder 船体和绞臂阴极保护的类型和数量	Zinc Anode. In hull- 24 nos In ladder- 8 nos
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20. Firefighting appliances and life savings appliances 灭火和救生设备

Item Name	Description
Type and quantity of fire extinguisher	Portable powder type fire extinguishers, 6-7 kg- 4 nos
Description of life savings appliances	
Life jacket	6 nos
Life buoy, solid	6 nos
First aid kit	1 kit

21. Operating cabin 操作室

Item	Specification
Manufacturers	QINGZHOU YONGLI MINING AND DREDGING MACHINERY CO.
Characterization	<p>One single control cabin is provided on the front side of the main pontoon with glass windows overall which allow the operator to have an overview on all components on the deck and on the ladder.</p> <p>One door on each side of cabin. Two operation tables installed, all necessary instruments for operating the dredger, monitoring the dredge operations warnings are equipped on the operation table.</p> <p>Adjustable leather chair for dredger master</p> <p>A/C sockets equipped</p> <p>1.5HP Air conditioner(GREE Brand)</p>

22. Control System 控制系统

Item	Specification
Control System	SIEMENS PLC SYSTEM
Characterization	<p>In the control cabin dredge control console is provided to accommodate the following equipment and functions:</p> <p>Power supply</p> <p>Winch operating joysticks</p> <p>Dredge pump clutch in / clutch out</p> <p>Elector switch velocity side winches "normal/high"</p> <p>Selector switch (cutter speed drive)</p> <p>Alarm units including, lights, buzz, tests lamps, accept buttons</p> <p>Dredge pump diesel engine speed</p> <p>Emergency stop dredge pump engines</p> <p>Emergency stop auxiliary engine</p> <p>Spud hoisting cylinders</p> <p>Free fall spuds</p> <p>Emergency stop hydraulic</p> <p>Switch 'on/off' for head light</p> <p>Switches 'on/off' deck lighting</p> <p>Hydraulic oil pressure measuring instruments</p>

	Pressure indicator dredge pump Pressure indicator gland water pump Swing pressure gauge Multi-purpose pressure gauge
Assembly	Electronic control units, electronic components, electronic switch etc.
Amount	Whole set

23. Bollard 系栏桩

Item	Parameters	
Manufacturers	Qingzhou yongli mining and dredging machinery Co.	
Bollard number	6 sets	Each side 3 sets
Mooring wire length	50m (each)	2 sets

24. Other Installations and accessories

ITEM	
1. Dredge pump intake Inspection window: At the entry of the dredge pump suction pipe a disassembled type window should be provided for the inspection of suction part of dredge pump. 检验石头的口	Have
2. Lights: In addition to normal lights for operation of the dredger, for night time operation sufficient flood lights are to be provided in suitable locations. 灯	Have
3. Ventilation for the Engine room: Air Blowers and Exhaust fans are to be provided of adequate capacity and number for proper ventilation of engine room considering high temperature and humidity in Bangladesh. 排气扇	Have
4. Tanks: Fuel oil tanks, dirty oil tank, ballast tanks and dry tanks are to be provided. Necessary pipelines, i.e. filling, suction, air escape pipes and also access manholes will be provided for these tanks. 油舱等	Have
5. Store: One store with rack & floor shall be at Port side 储藏室	Have
6. Signal Mast: A steel mast will be erected on the operating cabin top with requisite signal lamps, search lights etc. complete for navigation. The mast should be collapsible. 信号桅杆	Have
7. Bollard: 6 Nos. double bollard shall be provided on the side pontoon of dredger for towing the dredger. 系栏桩	Have
8. Whistle/Horns: On the operating cabin top a horn will be fitted feed from A/C power system. 鸣笛	Have
9. Sanitary outfit: A steel frame toilet with a aluminium panel door to be fitted at the aft side of the dredger deck. 洗手间	Have

25. TOOLS 工具

1. Spud shaft/pin - 4 pcs 定位销 4 件
2. Circuit breaker of required capacity - 2 pcs 断路器 2 个
3. Tools with tool box for main engine maintenance- 1 set 主柴油机工具和工具箱 一套
4. Main engine(engine oil filter, fuel filter, air filter)- 1 set 主发动机三滤一套
5. Tools with tool box for auxiliary engine maintenance- 1 set 辅机带工具和工具箱一套
6. Auxiliary engine(engine oil filter, fuel filter, air filter)-1 set 辅发动机三滤一套
7. Tools with tool box for emergency generator engine maintenance- 1 set 应急机组工具和工具箱一套
8. Emergency generator(engine oil filter, fuel filter, air filter)-应急发电机组三滤一套
9. Open end spanner, - 1 set (min 16 pcs)开口板手 (至少 16 件)

10. Box spanner - 1 set (min 16 pcs)套筒扳手 (至少 16 件)
11. Adjustable wrench, 250mm, 300mm, 350mm, 400mm- 4 nos 活扳手共 4 个
12. Pipe wrench, 300mm & 450 mm- 2 nos 管钳 300MM,450MM 2 件
13. Hammer, - 1 nos 锤子, 1 件
14. Pliers, sharp nose pliers each one pcs 老虎钳、尖嘴钳 各 1 件
15. Flat screw driver, 200mm, 250 mm, 300 mm - 3 nos 平头螺丝刀 200MM,250MM,300MM 共三件
16. Star screw driver, 200mm, 250 mm, 300 mm - 3 nos 十字螺丝刀 200MM,250MM,300MM 共三件
17. Digital voltage detection screw driver- 1no 数显电笔 1 把
18. Electric hand drill machine, - 1 set 手电钻 一套
19. Electric hand angle grinder, - 1 set 角磨机 一套
20. Grinding wheel/disc, - 25 nos 磨光片 25 件
21. Cup brush, - 25 nos 磨光刷 25 件
22. Water bucket, - 2 nos 水桶 2 个
23. Electronic multimeter - 1 no 万用表 1 件
24. Torch light - 2 nos 手电筒 2 个
25. Hack Saw frame - 1 nos 手锯 1 个
26. Hack Saw blade- 10 nos 锯条 10 支
27. Measuring steel tape, 5m- 1 nos 钢卷尺 5M 一把
28. Electric welding machine - 1 set 电焊机 一套
29. Gas cutting set including regulators and pipes - 1 set 气割 含管道等 一套
30. Hydraulic Jack, 10 ton - 1 nos 液压千斤顶 10 吨一件
31. Crowbar- 2 nos 撬棍 2 支
32. Grease gun - 2 nos 黄油枪 2 把
33. Grease nipple/cup - 12 nos 黄油嘴 12 个
34. Tinman's scissors, 1 no each 剪刀平的一把
35. Hand oil pump (for fuel transfer) - 1 no 手油泵(打柴油用) 1 把
36. Steel wire ropes clips/clamp of required size- 12 nos 钢丝绳卡 12 个
37. Anchor D shackle of required size- 12 nos 锚 D 型卡 12 个
38. MS Delivery reducing nozzle, dia 500 mm to 250 mm - 1 no 排管缩口 500MM 变 250MM 1 件
39. MS Delivery reducing nozzle, dia 500 mm to 350 mm- 1 no 排管缩口 500MM 变 350MM 1 件
40. Wooden hammer- 1 nos 木质锤子 1 个
41. Chain pulley block, 3t - 1sets 手拉葫芦 3 吨
42. Allen keys - 1 set 内六角扳手一套
43. Double end ring spanner, - 1 set (min 16 pcs)梅花扳手一套(至少 16 件)
44. Portable motor driven bilge pump(1.1Kw)- 1 set 便携式电动潜水泵(污水泵)
45. Engine room and control room light bulb- 5 nos.主仓室和控制室灯 5 个
46. Empty tool box- 1 no 空的工具箱 一个
47. Sealant one box 密封胶 1 箱
48. Glue gun 1 pc 胶枪 1 把
49. Asbestos pad 2m2 石棉垫 2 m ²
50. Black glue plate 1m2 黑胶板 1 m ²

51. Silica gel plate 1m2 硅胶板 1 m ²
52. O seal 2 sets O 型圈 2 套
53. Oil heads every kind 2 pcs 各种油头 各 2 个
54. Washers for hydraulic system:2 sets 液压系统组合垫 2 套
55. 220V electric wire 1 set 电源线 1 盘
56. Three phase wire line 30 m 三相电源线 30 米
57. Socket 1 pc 插排 1 个
58. Fuse 1 box 保险丝 1 盒
59. Vernier rotation switch: 4 pcs 微调旋转扭 4 个
60. Acceleration and deceleration switch: 2 pcs 增减速开关 2 个
61. Rubber gasket for suction and discharge pipe:2 sets 吸排管胶垫: 2 套
62. Packing for sand pump:1 box 砂泵盘根 1 箱
63. Butterfly valve: 1 set 蝶阀一套
64. Thermal insulation material for engine exhaust pipe 1 set 发动机排管保温材料 1 套