

No.	Name	Type & Model	Unit	Amt	Manufacture/ Drawing no.	Remark
1	Main Engine	X8320ZC6B-1 (S) X8320ZC7B-1 (P)	set	1 1	Wuxi Diesel Engine Works	main accessories to each M/E
		Line、4-Stroke、turbo-charging、air-cooling				1、 with supercharger/air cooler
		non-reversible marine diesel engine				/L.O. Input pump、 F.O. extraction
		Cylinder number : 8				pump、 Seawater pump、 fresh water pump
		Bore/ Stroke : 320/380mm				2、 with fresh water cooler/L.O.
		MCR : 3088kW				cooler /L.O. filter etc.
		Rated speed : 650r/min				3、 with 4 starting air containers in
		F.O. consumption rate : 204g/kW.h				total for 2 sets M/E (500L×3.0MPa)
		L.O. consumption rate : 2.0g/kW.h				4、 with temperature regulation
		Starting method : compressed air				valve, nozzle test device etc.
		Cooling type : closed water cooling				5、 fittings/spares/special tools refer to “technique specification”

		Running direction: clockwise(S); anticlockwise(P)				With “ZC” certificate、 “NOX” certificate
2	Highly elastic shaft coupling	HGT8020ⅢD type	set	2	Hangzhou Advance Coupling Co., LTD.	Refer to “technique specification”
		Rated torque : 80.0kN.m				To choose according to “torsional vibration calculation”
						With “ZC” certificate
3	Gearbox	GWC60/66 (one for port M/E and one for starboard M/E)	set	2	Hangzhou Advance gearbox Group Co., LTD.	refer to “technique specification”
		Reduce ratio : 3.0722 : 1				With spares/special tools
		Type : reversal clutch, homocentric arranged, with the rotation direction contrar				With 2 L.O. spare pumps
		Output ahead same with M/E direction				With “ZC” certificate

4	Diesel generators	CCFJ400J-WD	set	3		<p>1、 foundation of diesel engine and generator, buffer etc. related provision, with compressed air starting motor /fittings /air container。</p> <p>2、 main fittings: discharger gas turbo supercharger/seawater pump/fresh water pump/L.O. pump/F.O. pump/L.O. cooler/fresh water cooler/head tank/air container etc.</p> <p>3、 all spare and special tool provided</p> <p>4、 diesel engine with alarm: L.O. low pressure at inlet, high temperature of cooling water at</p>
	Diesel engine	8170ZC	set	3	Weichai Power Co.,Ltd.	
		Type : line、 4-stroke、 direct injection				
		Turbo-charge、 air cooling marine diesel engine				
		Cylinder : 8				
		Bore/ Stroke : 170/200mm				
		MCR : 441kW				
		Rated speed : 1000r/min				
		Starting method : compressed air motor				
		Cooling type : closed water cooling				

						outlet. 5、 with “ZC” certificate、“NOX” certificate of diesel engine /generator and other machinery
	generator	TFXW-H400-6	set	3	Lanzhou Electric corporation	
		Power : 400kW				
		Voltage : AC400V				
		Speed : 1000r/min				
		Frequency : 50Hz				
		Power factor : $\cos\varphi=0.8$				
		Servo mechanism : AC380V				
5	Emergency Diesel Generators	CCFJ90J-WJ	set	1		
	Diesel engine	TBD226B-6CD	set	1	Weichai Power Co.,Ltd	1、 with electric starting motor and

		Type: line、 4-stroke、 direct injection				compressed air starting motor
		Closed water cooling				2、 foundation of diesel engine and
		Bore/ Stroke : 105/120mm				generator, buffer etc. related
		MCR : 132kW				provision,
		Rated speed : 1500r/min				3、 main fittings : air cleaner、
		Starting method : electric and compressed air				cooling water pump、 head tank etc.
		(capable of cold start below 0°C)				4、 all spares and special tools provided
						5、 with “ZC” certificate、 “NOX” certificate of diesel engine 、 generator and other machinery
	Generator	TFXW-H90-4	set		Lanzhou Electric 3 corporation	
		Power : 90kW				
		Voltage : 400V				

		Speed : 1500r/min				
		Frequency : 50Hz				
		Current : 163A				
		Power factor : $\cos\varphi=0.8$				
		Speed regulating : mechanical				
6	Port duty generators	CCFJ90J-WJ	set	1		1、 with electric starting motor and fittings
	Diesel engine	TBD226B-6CD	set	1	Weichai Power Co.,Ltd	2、 foundation of diesel engine and generator, buffer etc. related provision,
		Type: line、 4-stroke、 direct injection				
		Closed water cooling				3、 main fittings : air cleaner、 cooling water pump、 head tank
		Bore/ Stroke: 105/120mm				etc.
		MCR: 132kW				
		Rated speed: 1500r/min				4、 all spares and special tools
		Starting method: electric				provided

						5、 with “ZC” certificate、 “NOX” certificate of diesel engine 、 generator and other machinery
	Generator	TFXW-H90-4	set	1	Lanzhou Electric corporation	
		Power: 90kW				
		Voltage: 400V				
		Speed: 1500r/min				
		Frequency: 50Hz				
		Current: 163A				
		Power factor: $\cos\varphi=0.8$				
		Speed regulating: mechanical				
7	Air compressor	0.34/30BF	set	2	Jiangsu Taizhou machinery making industrial Co.,Ltd.	Related provision: buffer 、 control box、 spares
		Capacity: 20m ³ /h				

		Pressure: 3.0MPa			Ninbo Tianyuan compressor Co.,Ltd..	
		Type: vertical、 air-cooled、 2nd order、 reciprocating				With “ZC” certificate
		Crank shaft speed: 1000r/min				
		Motor speed: 1000r/min				
		Motor power: 5.5kW				
8	Air horn/general use air box	80l, 1.0MPa	set	1		With “ZC” certificate
	Control air box	80l, 1.0MPa	set	1		
	Emergency start air box	80l, 3.0MPa	set	1		
9	F.O. transport pump	2CY-5.0/0.33	set	4	China Huanggong machinery group	Related providing the foundation of F.O. pump and motor
		Type : horizontal gear pump				
		Capacity: 5.0m3/h				All spares provided

		Pressure: 0.33MPa				With “ZC” certificate
		Speed: 1420r/min				
		Motor type : Y100L1-4				
		Motor power : 2.2kW				
10	M/E L.O. input pump	YCB40-0.6	set	1	China Huanggong machinery group	Pump、 motor and foundation related provision
		Type : horizontal arc gear pump				All spares provided
		Capacity: 40m3/h				With “ZC” certificate
		Pressure : 0.6MPa				
		Speed : 970r/min				
		Motor power : 15kW				
11	M/E L.O. extraction pump	YCB40-0.6	set	1	China Huanggong machinery group	Pump、 motor and foundation related provision
		Type : horizontal arc gear pump				All spares provided
		Capacity: 48m3/h				With “ZC” certificate
		Pressure : 0.6MPa				

		Speed : 1180r/min				
		Motor power : 15kW				
12	Engine room bilge general pump	100CWZ-8	set	Respectively	China Jiangsu Yancheng Ocean Water Pump Factory	Pump、 motor and foundation related provision
	Engine room fire general pump	Type: horizontal self-priming centrifugal pump				Nodular are used to Body and casing, material of impeller is cast bronze, and material of shaft is stainless steel.
		Capacity: 100m ³ /h				
		Pressure : 60m				
		Speed : 2900r/min				All spares provided
		Motor power : 30.0kW				With “ZC” certificate
13	Ballast water pump	CIS150-125-250	set	1	China Jiangsu Yancheng Ocean Water Pump Factory	Pump、 motor and foundation related provision

		Type: horizontal centrifugal pump				Nodular are used to Body and casing, material of impeller is cast bronze, and material of shaft is stainless steel.
		Capacity : 200m ³ /h				
		Pressure : 20m				Al spares provided
		Speed : 2900r/min				With “ZC” certificate
		Motor power : 18.5kW				
1 4	Sanitary pump Service fresh water pump	Type:1.5CWX-2A, self-priming vortex pump	set	Re spe ctiv ely	China Jiangsu Yancheng Ocean Water Pump Factory	Pump、 motor and foundation related provision
	Seawater & fresh water spare pump	Capacity: 3m ³ /h				Nodular are used to Body and casing, material of impeller is cast bronze, and material of shaft is stainless steel.

	Hot water circulation pump	Pressure: 40m				
		Speed: 2900r/min				All spares provided
		Motor power: 2.2kW				With “ZC” certificate
15	M/E seawater spare pump	CIS125-100-200B	set	Re spe ctiv ely	China Jiangsu Yancheng Ocean Water Pump Factory	Pump、 motor and foundation related provision
	M/E fresh water spare pump	Type: horizontal centrifugal pump				Nodular are used to Body and casing, material of impeller is cast
		Capacity : 165m ³ /h				bronze, and material of shaft is stainless steel.
		Pressure : 34m				All spares provided
		Speed : 2900r/min				With “ZC” certificate
		Motor power : 22kW				

16	Pump room fire general pump	100CWZ-8	set	1	China Jiangsu Yancheng Ocean Water Pump Factory	Pump、 motor and foundation related provision
		Type: horizontal self-priming centrifugal pump				Nodular are used to Body and casing, material of impeller is cast bronze, and material of shaft is stainless steel.
		capacity : 100m ³ /h				
		pressure : 60m				All spares provided
		speed : 2900r/min				With “ZC” certificate
		Motor power : 30kW				
17	Pump room bilge general pump	100CWZ-18	set	1	China Jiangsu Yancheng Ocean Water Pump Factory	Pump、 motor and foundation related provision
		Type: horizontal self-priming centrifugal pump				Nodular are used to Body and casing, material of impeller is cast bronze, and material of shaft is
		Capacity : 100m ³ /h				

						stainless steel.
		Pressure : 21m				All spares provided
		Speed : 2900r/min				With “ZC” certificate
		Motor power : 11kW				
18	Hydraulic machinery cooling water pump	CIS125-100-200B	set	1	China Jiangsu Yancheng Ocean Water Pump Factory	Pump、 motor and foundation related provision
		Type: horizontal centrifugal pump				Nodular are used to Body and
		Capacity: 165m ³ /h				casing, material of impeller is cast bronze, and material of shaft is stainless steel.
		Pressure: 34m				All spares provided
		Speed: 2900r/min				With “ZC” certificate
		Motor power: 22kW				

19	Water-sealed pump for submersible pump	100CWL-11	set	2	China Jiangsu Yancheng Ocean Water Pump Factory	Pump、 motor and foundation related provision
		Type: horizontal centrifugal pump				Nodular are used to Body and casing, material of impeller is cast bronze, and material of shaft is stainless steel.
		Capacity: 100m ³ /h				
		Pressure: 42m				All spares provided
		Speed: 2900r/min				With “ZC” certificate
		Motor power: 18.5kW				
20	Water-sealed pump for dredge pump	CIH65-40-200	set	1	China Jiangsu Yancheng Ocean Water Pump Factory	Pump、 motor and foundation related provision
		Type: horizontal centrifugal pump				Nodular are used to Body and casing, material of impeller is cast bronze, and material of shaft is
		Capacity: 25m ³ /h				

						stainless steel.
		Pressure: 50m				All spares provided
		Speed: 2900r/min				With “ZC” certificate
		Motor power: 7.5kW				
21	Water-sealed pump for dredge pump	CIH65-40-250	set	1	China Jiangsu Yancheng Ocean Water Pump Factory	Pump、 motor and foundation related provision
		Type: horizontal centrifugal pump				Nodular are used to Body and casing, material of impeller is cast bronze, and material of shaft is stainless steel.
		Capacity: 25m ³ /h				
		Pressure: 80m				All spares provided
		Speed: 2900r/min				With “ZC” certificate
		Motor power: 15kW				
22	Pump room A/E		set	Resp	China Jiangsu Yancheng Ocean Water Pump Factory	Pump、 motor and foundation

	seawater spare pump	80CWL-11		ctive		related provision	
	Pump room A/E fresh water spare pump	Type: horizontal centrifugal pump				Nodular are used to Body and casing, material of impeller is cast bronze, and material of shaft is stainless steel.	
		Capacity: 60m ³ /h					
		Pressure: 30m					All spares provided
		Speed: 2900r/min					With “ZC” certificate
		Motor power: 7.5kW					
23	Boiler cooling water pump	CIS65-50-160	set	1	China Jiangsu Yancheng Ocean Water Pump Factory	Pump、 motor and foundation related provision	
		Type: horizontal centrifugal pump				Nodular are used to Body and casing, material of impeller is cast bronze, and material of shaft is stainless steel.	
		Capacity: 30m ³ /h					

		Pressure: 31m				All spares provided
		Speed: 2900r/min				With “ZC” certificate
		Motor power: 5.5kW				
2 4	Cooling water pump for Port duty generators	CIS65-50-160	set	1	China Jiangsu Yancheng Ocean Water Pump Factory	Pump、 motor and foundation related provision
		Type: horizontal centrifugal pump				Nodular are used to Body and casing, material of impeller is cast bronze, and material of shaft is stainless steel.
		Capacity: 15m ³ /h				
		Pressure: 34m				All spares provided
		Speed: 2900r/min				With “ZC” certificate
		Motor power: 5.5kW				
2	L.O. transporting pump	2CY-3.3/0.33	set	1	China Huanggong machinery group	Pump、 motor and foundation related provision

5						
		Capacity : 3.3m ³ /h				
		Pressure : 0.33MPa				All spares provided
		Speed : 1420r/min				With “ZC” certificate
		Motor type : Y90L-4				
		Motor power : 1.5KW				
2 6	Dirty oil pump	2CY-3.3/0.33	set	2	China Huanggong machinery group	Pump、 motor and foundation related provision
		Capacity: 3.3m ³ /h				
		Pressure : 0.33MPa				All spares provided
		Speed : 1420r/min				With “ZC” certificate
		Motor type : Y90L-4				
		Motor power : 1.5KW				
27	Manual pump of chain locker	CS-32H	set	2	Outsourcing	
		Capacity: 2.4 m ³ /h				

	Pump room A/E L.O. presupply pump	CS-40Y	set	4		
2 8	Oil and water separator	YSFL-2	set	2		Related provided machinery: control box、 special purpose pump、 three-way valve、 sampling port of oil concentration alarm 、 sampling device 、 drain valve etc. All spares provided With “ZC” certificate
		Capacity: 2.0 m3/h				
		Emission standard : <10ppm				
		Pressure : 0.2MPa				
		Emission method : automatic and manual				
		Motor power : 3.0kW				
2 9	Marine sewage treatment system	WCXY-36	set	1	Taixing Youbang ship machinery factory	Refer to “technique specification”
		Capacity: 4000L/d				Supplied with whole set

		Person : 36 P				
		Power : 3.0kW				All spares provided
		Battery : AC380V 50Hz				With “ZC” certificate
30	Fresh water pressure tank	0.5m ³ CB455-74	set	1	Taixing Youbang ship machinery factory	
	Seawater pressure tank	0.5m ³ CB455-74	set	1	Taixing Youbang ship machinery factory	
	Hot water pressure tank	0.5m ³ CB/T3686-95	set	1	Taixing Youbang ship machinery factory	Steam heating and electrical heating
31	Dry extinguish muffler	VTJZ-400	set	4	Taixing Youbang ship machinery factory	
	Dry extinguish muffler	VTJZ-200	set	3	Taixing Youbang ship machinery factory	
	Dry extinguish muffler	VTJZ-100	set	2	Taixing Youbang ship machinery factory	
	Spark arrester	THF-300	set	1		

32	Wave expansion joints	500-40 CB*613-81	set	2	Taixing Youbang ship machinery factory	For M/E
		400-40 CB*613-81	set	4	Taixing Youbang ship machinery factory	
		250-40 CB*613-81	set	6	Taixing Youbang ship machinery factory	
		100 CB*613-81	set	3	Taixing Youbang ship machinery factory	
33	Engine room fan	JCZ-90B (reversible)	set	2	Qingdao Henet Co.,Ltd..	Motor related provided
		Type : vertical axis fan				All spares provided
		Capacity: 36000m3/h				With “ZC” certificate
		Total pressure : 540Pa				Casing Thick: 8mm
		Speed : 1460r/min				
		Motor type : Y-J160M-4-H				

		Motor power : 11kW				
34	Pump room fan	JCZ-75 (reversible)	set	³	Qingdao Henet Co.,Ltd..	Motor related provided
		Type : vertical axis fan				All spares provided
		Capacity: 24000m3/h				With “ZC” certificate
		Total pressure : 295Pa				Casing Thick: 10mm
		Speed : 1460r/min				
		Motor power : 4.0kW				
3 5	CO2 room fan	JCL-16	set	¹	Qingdao Henet Co.,Ltd..	Motor related provided
		Type : vertical centrifugal fan				All spares provided
		Capacity: 800m3/h				With “ZC” certificate
		Total pressure : 600Pa				
		Speed : 2900r/min				
		Motor power : 0.75kW				
36	Galley fan	JCZ-35A	set	¹	Qingdao Henet Co.,Ltd..	Motor related provided
		Type : vertical axis fan				All spares provided
		Capacity: 3000m3/h				With “ZC” certificate

		Total pressure : 440Pa				Casing Thick: 8mm
		Speed : 2900r/min				
		Motor power : 1.1kW				
37	Emergency generators room fan	JCZ-35A	set	1	Qingdao Henet Co.,Ltd..	Motor related provided
		Type : vertical axis fan				All spares provided
		Capacity: 3000m3/h				With “ZC” certificate
		Total pressure : 440Pa				Casing Thick: 8mm
		Speed : 2900r/min				
		Motor power : 1.1kW				
38	Stern shaft’s L.O. tank and pump	50 l, CS-25Y type manual pump	set	2		
39	Fore-end sealing device of stern shaft	YQ2-330	set	2	Jiangsu Dongtai marine fittings factory	With “ZC” certificate
	after-end sealing device of stern shaft	YH4DW-330(length customized)	set	2		With “ZC” certificate

40	large froth apparatus	MPT-135, 135 l	set	1		With winding drum、 soft hose and portable foam gun. With “ZC” certificate.
41	large froth apparatus	MPT-45, 45 l	set	4		
42	Piggy-back foam gun	PQB8C,with barrel 20l and foam gun box			Shanghai Zhendan fire equipment factory	
43	CO ₂ extinguish device	1PZ12/A×2, 1PZ14/A×1	bottle	38	Shanghai Duanxiang mechanical & electrical Co.,Ltd..	all spares provided
		68 L×38 bottle				refer to “technique specification”
		Main fittings :				
		1、 weighing device (ZD-150)	set	1		
		2、 pneumatic ball valve(with manual) (DN80)	item	1		
		3、 pneumatic ball valve(with manual) (DN65)	item	1		
		4、 CO ₂ bottle, including bottle valve/vertical non-return valve etc.	bottle	38		

			e		
		5、 back pressure valve	item	1	
		6、 pressure switch	item	1	
		7、 CO ₂ nozzle ; BG-1 type	item	3 6	
		8、 pressure meter (0~25MPa)	item	1	
		9、 marine integral alarm	item	2	
		10、 operation nameplate	item	1	
		11、 leak alarm	item	1	
		12、 release control box	item	1	
44	Portable foam extinguisher	9L	item	8	
	Portable CO₂ extinguisher	5kg	item	7	
	Portable dry powder extinguisher	5kg	item	2	

45	heavy oil centrifuger	KYDH206CD-23	set	2	Wuxi Kangwei Environment And Energy Equipment Co., Ltd.	Refer to contract; Separating 1500set heavy oil
		Capacity : 3000L/h				Related provided machinery:
		Self-discharging				transporting oil pump、 heater、 control box、 temperature controller;
		Motor : 380V 50Hz 5.5kW				“ZC”certificate.
46	M/E F.O. supply unit	FOU6040 type	item	1	Anqing Changguchuan Machine Manufacture Co., Ltd	With control box、 homogenizer、 fine mesh filter
		Reciprocating pump capacity : 3.3m ³ /h				
		With 2 F.O. supply pump、 F.O.				“CCS”certificate
		Reciprocating pump、 A homogenizer and fine mesh filter				
		Automatic viscosity controller、 steam heater				

		for F.O. etc.				
		Electrical source :3-φ、AC380V、50Hz				
		Defending class of Motor and control box : IP44				
47	L.O. centrifuger	KYDR203CD-23	item	1	Wuxi Kangwei Environment And Energy Equipment Co., Ltd.	Refer to contract
		Capacity : 1500L/h				Separating 1500set heavy oil
		Automatic discharging				Related provided machinery: transporting oil pump、 heater、 control box、 temperature controller
		Motor : 380V 50Hz 2.2kW				“ZC” certificate
4 9	Grinder	S3ST-200	set	2		
		Double-ended (thick and thin Respectively)				
		Diameter : Φ200 mm				

		Motor : 0.6kW, 1500r/min				
		380V, 50Hz				
50	Bench drill	Z512	set	2	Outsourcing	
		Electrical , board type				
		Maximum drill diameter:Φ12 mm				
		Mmotor : 0.75kW, 1390r/min				
		380V, 50Hz				
51	Manual I-beam trolley	WA2 capacity:2t	set	2		
52	Chain block	2t、 3t、 1t	set	each 2		
53	Bench clamp	150mm	set	2		

54	Fuel oil and discharge gas combined boiler	LYF1.0/180-0.7	set	1	Wuxi Weilit marine boiler Co. Ltd..	1、 boiler body is consist of upper and low smoke boxes 、 valves、 inlet of dual discharge gas.
		Heated area by fuel oil: : 22.5m ²			Qingdao marine boiler works Co.,Ltd..	
		Heated area by discharge gas : 180m ²				2、 one boiler control box
		Operating pressure : 0.7MPa				3、 two F.O. supply pumps
		Discharge gas capacity : 800kg/h				4、 two supply water pump of boiler
		Fuel oil capacity:1000kg/h				5、 one set for steam bypass
		Motor power of water Supply pump:2.2kW				6、 with automatic control function for supply water pump
		Motor power of F.O. supply pump:1.5kW				Refer to “technique specification”
		Electrical heater power of Burner:6.6kW				7. with “ZC” certificate
		Fan power of burner:6.6kW				

55	condenser	Area : 18m ²			Taixing Youbang ship machinery factory	With “ZC” certificate
56	hotwell	volume : 2.5m ³			Taixing Youbang ship machinery factory	With “ZC” certificate
57	Starting ratio valve control box				Jiangsu jingjiang aowei valves factory	
58	Diesel generators of submersible pump					
1)	Diesel engine :	CW12V200ZD-1			Weichai Power Co.,Ltd	1、 Diesel engine with compressed air motor and fittings
		Type : V type、 4-stroke、 direct injection				2、 main fittings : discharge gas turbo-charger 、 seawater pump、 fresh water pump、L.O. pump、F.O.
		、 turbo-charge、 air cooling marine diesel engine				pump、 L.O. cooler、 fresh water cooler、 air bottles, etc.
		Cylinder : 12				
		Bore/stroke : 200/270mm				
		MCR: 1440kW				

		Rated speed : 1000r/min				3、 with meter box and remote meter box
		Starting method : compressed air motor				4、 two air bottles (160×3.0MPa)
		Cooling method : closed dual reciprocating cooling system				5、 all spares and special tools provided
		F.O. consumption rate : 200g/kW.h				6、 diesel engine with alarm: L.O.
		L.O. consumption rate : 1.0g/kW.h				low pressure at inlet, high temperature of cooling water at outlet.
		Running direction : clockwise				7、 with “ZC” certificate、 “NOX” certificate
2)	Highly elastic shaft coupling	HGT3020IID type	set	2	Hangzhou Advance Coupling Co., LTD.	Refer to “technique specification” To choose according to “torsional vibration calculation”
		Rated torque : 31.5kN.m				Diesel engine with spares and special tools

3)	Clutch transfer gear box	4LJF1440 type	set	2	Hangzhou Advance gearbox Group Co., LTD.	Refer to “technique specification”
		Type : clutch, reduce			Hangzhou FADA gearbox Group Co., LTD	With spares and special tools
		Single power input, double power output				With “ZC” certificate
4)	Shaft generator		set	2	Lanzhou Electric corporation	Refer to “technique specification”
		Power : 1200kW				With spares and special tools
		Voltage : AC1000V				With “ZC” certificate
		Speed : 1000r/min				
		Frequency : 50Hz				
5)	Drain sludge pump	DM8000-31	set	2	Shanghai dongliang Co. LTD.	Refer to “technique specification”
		Horizontal centrifugal pump				
		Capacity: 8000m3/h				
		Pressure : 31m				

		Speed : 360r/min				
		Power : 1200kW				
5 9	Flush water pump		set	2		1、 diesel engine with spares and special tools
	Diesel engine	CW12V200ZD-1	set	2	Weichai Power Co.,Ltd	2、 main fittings : discharge gas
		Type: V type、4-stroke、direct injection、turbo-charge、 air cooling marine diesel engine				turbo-charger 、 seawater pump、 fresh water pump、L.O. pump、F.O. pump、 L.O. cooler、 fresh water cooler、 air bottles, etc.
		Cylinder : 12				3、 with meter box and remote meter box
		Bore/stroke : 200/270mm				4、 two air bottles (160×3.0MPa)
		MCR : 1440kW				5、 all spares and special tools provided
		Starting method : compressed air motor				6、 diesel engine with alarm: L.O. low pressure at inlet, high
		Cooling method : closed dual reciprocating				

						temperature of cooling water at outlet. 7、with “ZC” certificate、“NOX” certificate
	highly elastic shaft coupling	HGT3020IIID type	set	2	Hangzhou Advance Coupling Co., LTD.	Refer to “technique specification” To choose according to “torsional vibration calculation” Diesel engine with spares and special tools
		Rated torque : 30kN.m				
	Flush water pump	SDS500-900A	set	2	Shanghai boman pumps Co. LTD.	
		Type: Horizontal centrifugal pump				
		Capacity: 3000m ³ /h				
		Pressure : 110m				
		Speed : 960r/min				
6	Drag head	DB development type ; φ800mm	set	2	Shanghai dongliang Co.	

0					Ltd.	
	Drag rabble assembly	φ800mm	set	2	Shanghai dongliang Co. Ltd.	
		Including cross connection、 straight connection、 high pressure flush water pipe、 lifting plate、 rotating connection and rubber pipes				
6 1	Submersible sludge pump assembly		set	2	Shanghai dongliang Co. Ltd.	
	sludge pump	DM9000-21 type	set	2	DOM Inc.	
		Capacity : 9000 m ³ /h				
		Pressure : 21m				
		Speed : 360r/min				
	Submersible motor	Power : 1000kW	set	2	PUYOU Inc.	

		Voltage : 3-phase AC1000V				
		Frequency : 50Hz				
	Elect-shaft control device		set	2	Shanghai xingyu Inc.	
6 2	Pipe bending bridge	Parallelogram			Shanghai dongliang Co. Ltd.	
	Drag rabble bridge	A type ; 100 T			Shanghai dongliang Co. Ltd.	
	Drag head bridge	A type ; 35 T			Shanghai dongliang Co. Ltd.	
6 3	Hydraulic system		set	1	Shanghai Shengcheng Inc.	
	Hydraulic pumps	Including hydraulic pump、 hydraulic oil				
		tank、 hydraulic oil cooler、 hydraulic oil				
		filter、 control valves、 hydraulic pumps control box				

	Hydraulic cylinder	Including drag head、drag rabble、bend				
		pipe 、 bottom door 、 oil cylinder				
	Hydraulic electric control system					
	Wave compensator	SX-BBQ-A type	set	2		
	Hydraulic winch	Drag rabble : 50t, 10m/min ;	set	2		
		φ56×85m				
		Drag head : 35t, 18m/min ;				
		φ44×100m				
6	Bottom door	Conical bottom door, φ3000mm	item	14		
4						
6	Overflow barrel	φ1800mm×3.5m	item	1		

5						
6	Loading piping		set	1		
6	and gate valves					
	Unloading piping					
	and hydraulic valves					
6	High pressure		set	1		
7	flush water					
	piping and					
	hydraulic control valves					