

AGRIUM ENGINEERING CONSULTANTS PVT. LTD.
ELECTRICAL ENGINEERING DIVISION
10th FLOOR, 10/10, 10/10

Sea Sand Pump System

Electrically Driven Submersible Sand Pump KSP-1100ESP

Manufacture Specifications

Materials & Machinery Division

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1					
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No.	History	Date	Approval	Check	Eng.

Electrically Driven Submersible Sand Pump KSP-1100ESP

1. Outline of the Pump

We have designed and manufactured sea sand extraction systems for years and kept a position as a leading manufacturer in this field.

The electrically driven submersible sand pump has been developed as an excellent sea sand extraction system by making use of abundant experiences in hydraulically driven submersible sand pumps and pursuing higher performance, durability, reliability and controllability. We already have supplied 50 electrically driven submersible sand pumps to our customers and enjoyed good reputation.

The submersible motor, which drives the pump, uses a double mechanical seal made of special cemented carbide for the shaft seal, and in addition, since the bellows type pressure regulating mechanism can keep the submersible motor internal pressure higher than the sea water pressure, the pump structure is sufficiently reliable in prevention of sea water intrusion. As a result, the pump can work up to 100 m deep in water.

Since our ultra-wear resistant castings (CIX-2N, etc) are used for the sand pump impeller, liner and other major wetted parts, you can expect sufficient lifespan even if it is used for the highly concentrated sediment water.

2. Submersible Sand Pump Specifications

Type	Single suction centrifugal submersible pump
Model	Electrically driven submersible sand pump KSP-1100ESP
Bore	Suction 24-inch, discharge 24-inch
Pumping rate	7,000 m ³ /hr (sea water), 6,000 m ³ /hr (muddy water)
Total head	23 m (sea water), 30 m (muddy water) * These are the values in our catalog.
Max. passage diameter	φ250 mm
Materials	CIX-2N and others (ultra-wear resistant castings) for major wetted parts
Weight	Approx. 40,000 (kg) * Including a submersible motor

3. Submersible Motor

Type	Oil sealed 3-phase induction motor
Output	800 kW (service factor 1.15 = 920 kW)
Voltage	3φ AC 3,300 V 60 Hz
Current	220 A (service factor 1.15 = 247 A)
Number of poles	14P
Rotation speed	505 min ⁻¹
Shaft seal	Special cemented carbide Double mechanical seal type
Pressure regulating device	Bellows type submersible motor

4. High-voltage CV cable (with multiple connectors)

Type	3.3 kV bending resistant CV cable
Construction	100 mm ² × 4-cores
Length	110 M
Finished outside diameter	φ73.7 mm (φ77.4 mm or less)
Weight	8.71 kg/m

5. Coating

The exterior of your pump is coated as follows:

Chlorinated rubber antirust	Once
Chlorinated rubber topcoat (RAL 1003= yellow color)	Twice

6. Warranty

- 1) The pump is guaranteed for 12 months after start-up or 16 months after shipment whichever comes earlier.
- 2) If any failure or trouble, which is apparently caused by the manufacturer's defect in design or manufacture or the material defect, is found in 1 year after the installed pump started up, we will repair the pump free of charge through discussions with your side.
- 3) The following items shall be exempted from the warranty:
 1. Things worked by your side
 2. Matters relating to the ship body
 3. Remodeling expenses incurred by any of defects in the drawing submitted by us
 4. Matters relating to the performances of the items supplied from your side
 5. Failures and force majeure occurred during storage
 6. Wear and tear of the items considered consumable and their replacement
 7. Cases where any other parts than our genuine parts are used
 8. All of secondary compensations
 9. All other matters which are not mentioned in this specifications

7. Product Liability

If any issue in product liability for human or physical losses has arisen from any of following cases, solve the issue under your responsibility and expense and exempt us from the payment for the issue-related expenses unless you prove that the relevant losses were caused by the defect already existed in the product we supplied at the time of delivery to your side:

- You use or let a third part use the product supplied by us without observing what written on the warning label or in the user's manual.
- You relocate the product supplied by us out of Japan (or an overseas country) and use or let a third party use it without preliminarily obtaining our written approval.
- You use or let a third party use the product supplied by us after repairing, remodeling or relocating without preliminarily obtaining our written approval.
- You use or let a third party use the product supplied by us for any other purposes than those stipulated in the specifications attached to the delivered product without preliminarily obtaining our written approval.
- You use or let a third party use the product supplied by us in a way noncompliant with the conditions of use stipulated in the specifications attached to the delivered product without preliminarily obtaining our written approval.
- You transfer the ownership of the product supplied by us without preliminarily obtaining our written approval.

8. Intellectual Property Right

- 1) We assure that the product we supply does not infringe any of third parties' patent rights and other industrial property rights. If you have infringed any of third parties' industrial property rights using the product we supplied, solve the issue under your responsibility and expense.
- 2) If you use or let a third party use the product we supply after relocating it out of Japan (or an overseas country) or remodeling it and if an issue of intellectual property right infringement arises from the use outside of Japan (or an overseas country) or remodeling, solve the issue under your responsibility and expense and exempt us from the payment of the relevant expenses to the issue.

9. Conditions of Acceptance

The product is considered having been accepted on CIF Pusan port.

We however perform witnessed testing at sea, and complete our service when we have confirmed that there is no mechanical problem.

Item		KURIMOTO	Customer	Remarks
1. Sand pump KSP-1100ESP-related items				
1	Sand pump (incl. a 800 kW submersible motor)	○		From Bell mouth to S-Pipe
2	The base for sand pump		○	
3	High voltage generator		○	
4	High voltage generator panel		○	
5	High-voltage starter panel		○	
6	Sand pump remote control panel and other panels		○	
7	CV cable procurement	○		
8	All cable procurement except the cable in 7 above		○	
9	CV cable terminal treatment	○		
10	CV cable intermediate connection		○	
11	CV cable laying in long tubes		○	
12	All cable connection and terminal treatment except cables in 9-11 above		○	
13	Sand pump installation	supervisor only	○	
14	Sand pump hoisting machine manufacture and installation		○	Winch, davit, pulley, wire and hydraulic source
15	Sand pump test run and adjustment	○	○	
2. Others				
1	Export packing	○		
2	CIF Pusan Port	○		
3	Transport from Pusan Port to installation site		○	
4	Expenses for installation (welding, gas cutting and crane charges)		○	
5	All device and part procurement except these procured by us		○	