

EJECTOR PUMP DREDGE ZNS 300-120

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Assignment

Underwater mining and hydrotransportation of sand and gravel soils. The size limit of pumped particles is limited to the inner diameter of the suction pipe.

THE ESSENCE OF TECHNOLOGY

The main element of extraction system and hydrotransportation of ejector pump dredge ZNS 300-120 is the draghead SGZ 300-120. Hydraulic system of ejector suction-tube dredger presupposes the existence of high-pressure water pump 1 with intake 2 and sub artesian 4 pipe sleeves (Fig. 1). For protection of pipe sleeve includes installation of backpressure valve 3 with a protection grid.



Fig. 1. Hydraulic system ejector pump dredger ZNS 300-120: 1 – water pump; 2 – intake pipe; 3 – back pressure valve; 4 – pump water conduit; 5 – doorbolt; 6 – flexible pipeline; 7 – draghead SGZ 300-120; 8 – dredging pipe

Hydraulic system ejector pump dredger works like this: in water pump 1 is supplied pump water conduit 4, to suction head 7. Water pump run after the system was been filled with water by means of the auxiliary pump with closed damper valve 5. To protect the system from entering large pollution provided by protective grid. Suction head device 7 provides a fluid process of preparation of the face and hydrotransportation obtained pulp hydrotransport system 8 to the dumping or recycling place. The recommended technology applications developed of suction head at which is possible to achieve maximum efficiency, has become pit mining technology.

INDUSTRIAL APPLICATION

Ejector pump dredger ZNS 300-120 has passed experimental-industrial tests, which determined its operating characteristics:

- type of soils - incoherent sand, gravel size up to 120 mm;
- depth of development - up to 6 m;
- distance of sand and gravel pulp transportation horizontally - up to 250 m;
- working pump - CNS 300-120;
- the pump drive - 160 kW;
- the capacity of the pulp - 500 m³/h.

Ejector pump dredger ZNS 300-120 manufactured and used for production and processing of construction sand (Fig. 2).



Fig. 2. Ejector pump dredger ZNS 300-120

ADVANTAGES AND DISADVANTAGES

In the experimental-industrial tests ejector pump dredger ZNS 300-120 revealed these advantages and disadvantages:

Advantages:

- possibility of extraction and transportation of coarse-grained materials;
- constructive reliability jet pump due to the lack of rotating and moving parts;
- production simplicity and low cost of equipment;
- maintainability and ease of maintenance.

Disadvantages:

- the main disadvantage of ejector pump dredger is low pressure that creates by jet pump.

CONTACT INFORMATION

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