NEFTEKAMSK MACHINERY PLANT
OF SPECIAL EQUIPMENT

DECANTER CENTRIFUGE

CRUISER NG

MK 758-30-56-UKhL3.1-10

WITH INTELLIGENT CONTROL SYSTEM

PURPOSE AND DESCRIPTION OF THE CENTRIFUGE

High-speed decanter with a horizontal axis of rotation, high capacity and a high degree of cleaning of the solution.

The centrifuge is equipped with an intelligent control system (ICS).

DESIGN FEATURES

- Use of high-tech components and materials
- Availability of an intelligent control system
- The main components are made of stainless steel
- Parts subject to increased abrasive action have additional protection
- The most efficient solids separation
- Explosion-proof version of electrical equipment
- High balancing class
- The equipment is approved by the Russian Maritime Register of Shipping
- The centrifuge is designed and manufactured in the Russian Federation using Russian components.

DESCRIPTION AND PRINCIPLE OF OPERATION OF THE INTELLIGENT CONTROL SYSTEM (ICS)

The control system includes:

- operator console;
- control and switching cabinet.

During operation, the control system constantly monitors the load on the screw and drum drive motors.

The system receives indications of the load from frequency converters. When the load increases, the system automatically adjusts the pump flow, or turns off the pump, if necessary, increases the speed of the auger rotation to speed up cleaning of the drum.

After cleaning of the drum and reducing the load, the system automatically returns to the values set for the screw rotation frequency and pump flow. If the load increases frequently, the system reduces the pump flow and informs the operator about it.

In case of exceeding the maximum allowable load, exceeding the allowable temperatures of bearings, exceeding vibration, actuation of limit switches of protective covers and other emergency situations, the system makes an emergency stop of the centrifuge.

It is possible to start and stop the centrifuge both manually and automatically.

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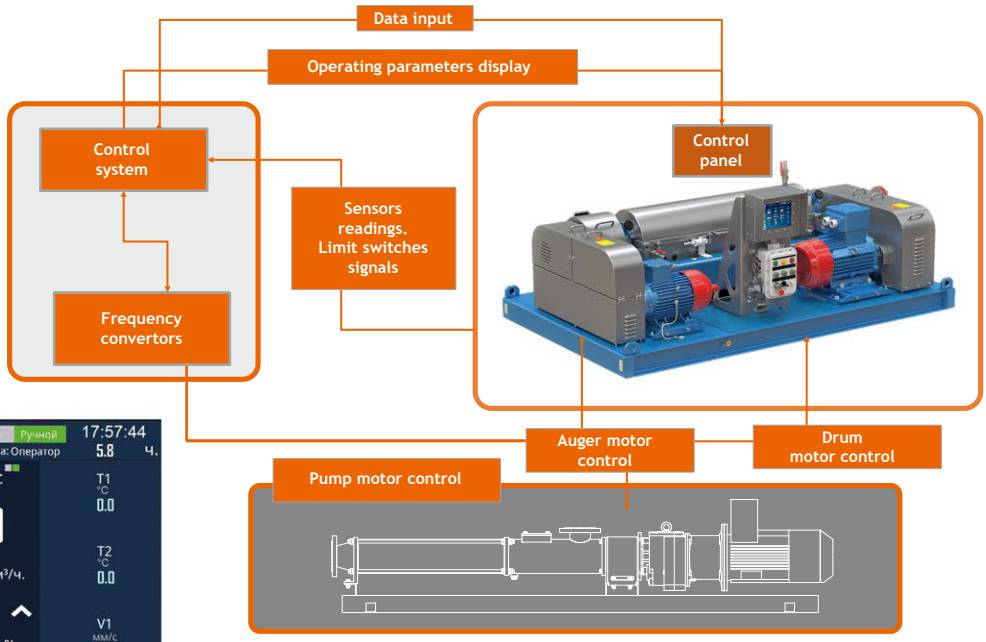
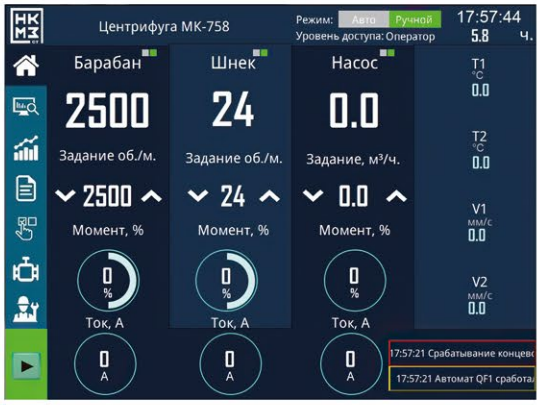


ICS WORK SCREEN INTERFACE



SENSORS

- **Bearings temperature sensors** are mounted on the bearing housings and centrifuge motors and prevent overheating of the bearings.
- **Vibration sensors** are mounted on bearing housings and monitor vibration readings.
- **Winding temperature sensors** are thermistors that give a signal to the control system when the permissible temperature is exceeded.
- **Drum speed sensors** and auger pulley control the actual speed readings and compare them with the specified ones.
- **Dry run protection sensor** is made in the form of a temperature sensor measuring the temperature of the stator of the pump.

TECHNICAL SPECIFICATIONS

Parameter		Meaning
Processed material type		Polymer glycol inhibiting mud and oil based mud
Working fluid temperature	°C	+5...+95
Working fluid density	g/cm³	2.2
Explosion hazard type of the centrifuge area		Hazardous area class 1
Explosion hazard type of control cabinet location area		Electrical room (explosion-proof zone)
Mains frequency	Hz	50
Voltage	IN	3PE~50Hz 380V
Control system voltage	IN	2PE ~50Hz 220V
Centrifuge dimensions, (L x W x H), no more than	mm	3000x1778x1100
Mass	kg	3100
Solution supply		Screw pump
Smallest particle size to be removed	mm	0.002
Main drive power, no more than	kW	37
Reverse drive power, no more than	kW	11
Maximum performance	m³/h	30

In connection with constant work to improve the centrifuge in order to increase reliability and performance, design changes may be made that are not reflected in this description.

Manufacturer: NKMZ-ST, Ltd.
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