



Technical proposal

USO-20R1-20 The mixing-averaging unit

The mixing-averaging unit is designed for jet mixing of cement slurry in a container by mixing it with a belt screw, as well as recirculating it with a centrifugal pump. The unit provides the possibility of averaging and simultaneous delivery of cement slurry by centrifugal pumps to the pumping unit for subsequent injection into the well.

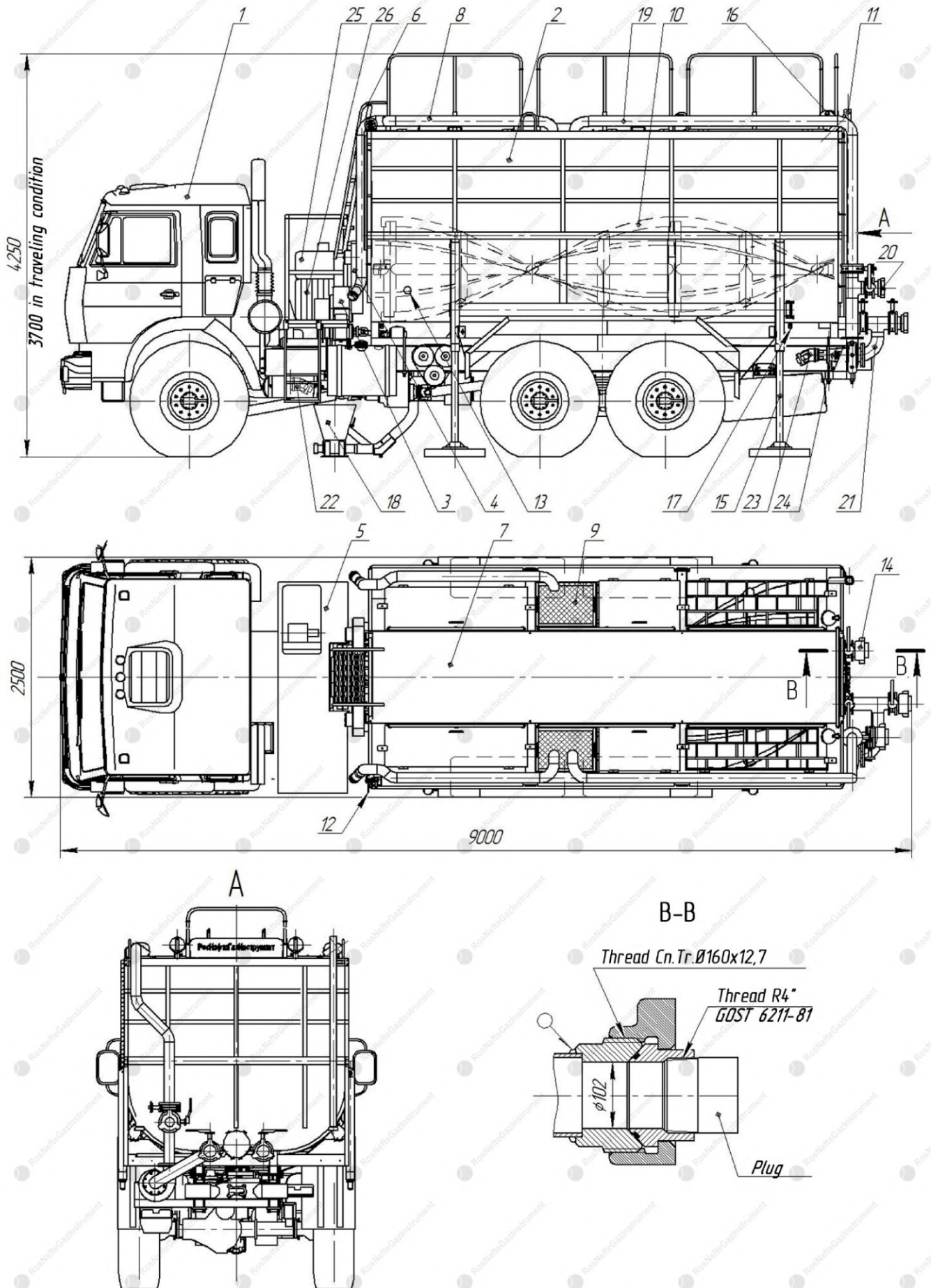
Unit consists of the following components:

1 - Chassis KAMAZ 43118; 2 – Bulk storage tank; 3 – Reducer; 4 – Chain gearing; 5 – Transition platform; 6 – Ladder; 7 – Servicing platform; 8 – Loading pipeline; 9 – Baskets; 10 – Stirrers; 11 – hydraulic feeder; 12 – slurry level indicator; 13 – Sampler; 14 - Discharge pup joint; 15 – Jacks; 16 – Interior space lights of the container; 17 – Steam supply fitting pipe; 18 – Hydro-pressure mixer; 19 – The recirculation pipeline; 20 – Pump flow connection to an external source; 21 – Suction pipe; 22 – Hydraulic pump; 23 – Hydraulic motor; 24 – Centrifugal pump NC-100R1; 25 – Hydraulic tank; 26 – Heat exchanger (Asa hydraulic, Austria).

Parameter name	USO-20R1-20
Tank volume, m ³	20
Accumulating slurry density up to, g/cm ³	2,5
Allowable fluctuation in slurry density, g/cm ³	0,01
Maximum feed of the original cementing slurry to the plant, dm ³ /s	50
Tilt angle of the tank, deg., min	0,5
Mixer specifications:	
- Functional principle;	Mechanical
- Type;	two-shaft auger-drill
- Rotation rate min, rpm	20-25
Hydraulic pressure mixer performance, dm ³ /s	25
Centrifugal pump rate speed, rpm	1900-2400*
Maximum feed at speed 2400 rpm, l/s	58
Maximum pressure at speed 2400 rpm, kg/cm ² (bar)	3,7
Chassis:	
- Name	43118-3027-50
- Cargo Trip tank, tonnes	12
- Wheel arrangement	6x6
- Engine EURO-5	KAMAZ 740.735-400
- maximum power, kW (HP)	221 (300)
- Gear box	154

The stirrers are driven from the power take-off box installed on the transfer case of the car, through the driveshaft, gearbox and chain transmission. The speed rate of the stirrers is regulated by changing the engine speed and shifting gears in the gearbox.

The centrifugal pump has a hydraulic drive, from the power take-off box installed on the right side of the chassis gearbox, has an independent activation from the stirrer drive, the rotation speed is regulated by changing the engine speed.



Pic. 1 USO-20R1-20 The mixing-averaging unit.