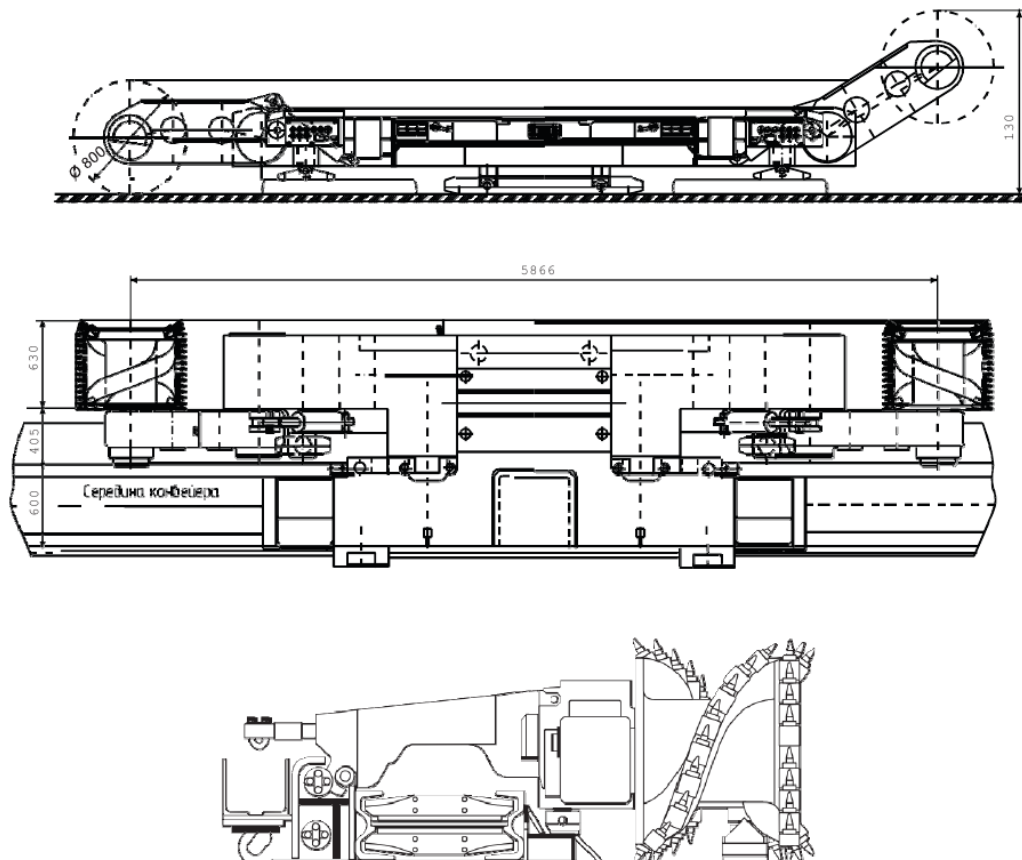


Technical characteristics

Sinking equipment Machines for coal extraction and conveying

NARROW-WEB SHEARER УКД-200

The shearer is designed for mechanized coal mining in highly-production stopes of gently and steeply sloping seams with the thickness of 0.85 m advancing to the seams strike with dip angles of up to 35° to the strike, as well as to the rise and the dip with angles of up to 10° with the coal cuttability up to 360 kN/m in mines which are hazardous by gas and dust.



The shearer УКД-200 is a cutting machine equipped with auger-type operating members for the coal destruction and loading on the conveyor. The auger-type operating members are located at the ends of the machine body, equipped with gearboxes of the cutting part and the electric motor, which are located between the augers in the stope face. By means of a portal attached to the cutting part gearboxes, the shearer is installed on the grid of the chain-and-flight conveyor. The shearer is moved along the chain-and-flight conveyor by means of a remote feeding system.

The shearer provides:

- mechanized coal extraction along the entire seam thickness and the length of the stope without preliminary preparation of stables when arranging the face conveyor drives and the remote feeding system on the gateway or with minimum stable dimensions for the length of the drives;
- extraction of the seam with bands and a possible “cutting off” of roof or soil rocks with the strength of up to 4 units on the scale of prof. M.M. Protodyakonov with the total thickness of up to 12% of the extracting seam thickness;
- work in the stope in the minimum seam thickness when the dip angle is changed to 1° for every 2.5 m of the stope length;
- shuttle extraction or extraction according to the unidirectional scheme with the cleaned-up shearer stroke;

- mechanized coal loading together with the clean-up agent (loading colter) of the chain-and-flight conveyor, excluding hand cleanup of the seam floor;
- moving along the chain-and-flight conveyor or conveyor attachment when pan flexes up to 3° in the vertical and horizontal planes and the height difference of pans relative to each other up to 10 mm;
- work with the chain-and-flight conveyor;
- coal extraction over the entire seam thickness excluding the irregularities leaving at the floor and the roof of the seam which impede the conveyor and chain movement;
- hydraulic regulation of the operating members according to the seam thickness and their keeping in the required position;
- start of the shearer movement from zero speed, regardless of the position of the speed setter;
- limitation of tractive force not more than 25% over the operating tractive forces;
- feed reversal;
- automatic and manual feed speed regulation.

Competitive advantages

The shearer in Ukraine is being created for the first time and has the following advantages:

- provides operation with the minimum extracting seam thickness of 0.8-0.9 m;
- has increased productivity of up to 5 t/min due to the increase in the power supply capacity of the cutting drive up to 180 kW;
- has increased reliability and durability of the parts and assembly units of the operating member drive, providing resource growth to overhaul of up to 700 ths. t instead of 200 ths. t of the serial machines;
- has increased level of mining safety for coal extraction through the use of traction chains closed in the troughs.

Due to the mentioned advantages, the УКД-200 shearer completely replaces the series-produced KA80, K103M, 1K101, 1K101Д shearers in the field of their application and is intended for operation in the 1МКДД, 1МКД90, 1МКД80 complexes, where other shearers cannot be effectively used due to the low operating reliability.

Technical characteristics

Parameter name	Value
Limits of the operating member height regulation from the conveyor supporting surface, mm	800-1300
Applicability according to the coal cuttability, kN/m	up to 400
Total normal rated power of electric drive, kW	290
including operating member drive	180
remote feeding system drive	2x55
Nominal rated voltage, V	660
Type of operating member	screw adjustable with waterproof irrigation
Diameter of the operating member, mm	800
Web width, mm	630, 700, 800
Value of operating member lowering below the supporting surface of the chain-and-flight conveyor, mm	100
Value of the operating member extension, mm	500
Type of feeding mechanism	remote feeding system
Traction chain pitch, mm	26
Maximum feeding speed, m/min	5
Tractive force at maximum operating speed, kN	200
Productivity, t/min:	
with coal cuttability 120 kN/m	5,0
with coal cuttability 240 kN/m	4,0
with coal cuttability 360 kN/m	3,0
with coal cuttability 400 kN/m	2,5
Main dimensions, mm:	
body length	4500

body height	415
width with operating member	1830, 1900, 2000
length over screw axes	5866
Body height in the area of the lining from the chain-and-flight conveyor supporting surface	530...615
Mass, t	14,5
Ambient temperature, °C	from +5 up to +35
Relative humidity, %	≤ 90
Longwall length, m	≤ 200
Length of the mining extracted area, m	≥ 800
Roof control method	total destruction
Daily load, t	≥ 1500