

# UAVHELI

UNMANNED HELICOPTERS



## **KB UNMANNED HELICOPTERS –**

A LEADER IN THE UNMANNED INDUSTRY  
SPECIALIZING IN THE DEVELOPMENT  
AND PRODUCTION OF UNMANNED  
HELICOPTERS AND MULTIFUNCTIONAL  
HELICOPTER-TYPE COMPLEXES.

**29 YEARS OF DESIGN AND ENGINEERING  
EXPERIENCE OF EMPLOYEES IN THE FIELD  
OF UNMANNED AVIATION**

**MORE THAN 400 EMPLOYEES**

**MORE THAN 50 DEVELOPMENTS**

**OWN PRODUCTION BASE**

**TESTING CENTRES AND LABORATORIES**

**SERVICE MAINTENANCE**

**OWN AIRFIELD AND FLIGHT  
TESTING STATION**

THE PRODUCTS UNDER DEVELOPMENT  
HAVE A WIDE RANGE OF APPLICATIONS  
AND CAN BE EQUIPPED WITH  
VARIOUS PAYLOADS, DEPENDING  
ON THE PURPOSE AND USE.



# UNMANNED HELICOPTER SKY-TRUCK

It allows for a comprehensive solution to the issue of supplying offshore oil and gas platforms in all climatic zones, as well as being used for a wide range of cargo transportation tasks.

It is an aircraft with a turboshaft gas turbine engine powered by aviation kerosene.






The UAV is equipped with an avionics complex that provides in automatic mode: takeoff, flight, landing of the UAV with the possibility of hovering over the object to complete the mission, as well as control of the payload and the onboard part of the data transmission system.

The drive column of the **SKY-TRUCK** helicopter provides the installation of coaxial rotors, the transmission of torque to them from the engine gearbox, the change in the cyclic pitch of the screws according to autopilot commands for flight control.







**A mechanical unit** based on a power housing, inside which a drive distribution gearbox is located in the lower part.

**In the upper part of the housing** there are nodes of supports of two coaxial shafts of opposite rotation. The upper and lower bushings of the main screws are mounted on the shafts, each with three trunnions for mounting the blades.

**Two hydraulic cylinders** are fixed on the side walls of the gearbox - to control the blades along the pitch and course channels, in the lower part two hydraulic cylinders - to control the step-gas channel.

**The trunnions of the upper sleeve** are equipped with hydro dampers. Two kinematically rigidly connected automatic skewing and cyclic pitch control of the rotors consist of washers and a group of control rods.

Engine in the SKY-TRUCK modification	ROLLS-ROYCE 250-C20   ROLLS-ROYCE 250-C30	
Engine in the SKY-TRUCK/R modification	–	ODK VK-650V
Fuel type	JET A, JET A-1 DERD 2494 TC-1, T2, PT FOCT-10227-86	
Full Authority Digital Engine Control (FADEC) system	In-house development by the KB UNMANNED HELICOPTERS	By the engine manufacturer
Take-off power is not more than 30 minutes	310 kW	<b>450 kW</b>
Power in continuous mode	276 kW	<b>425 kW</b>
Hourly fuel consumption in take-off mode	133 kg/h	<b>140 kg/h</b>
Hourly fuel consumption at cruising speed (ISA)	70 kg/h	<b>103 kg/h</b>
Specific fuel consumption at takeoff	0.424 kg/kW/h	<b>0.456 kg/kW/h</b>
Assigned engine life	3000 h	<b>4500 h</b>
<b>Basic geometric characteristics</b>		
Maximum theoretical take-off weight (ISA)	2350 kg	<b>3000 kg</b>
Normal take-off weight	1950 kg	<b>2500 kg</b>
Empty helicopter weight (without service load)	1100 kg	<b>1200 kg</b>
Maximum capacity of the fuel tank	500/375 l/kg	<b>600/500 l/kg</b>
Maximum payload including container	500 kg	<b>600 kg</b>
Diameter of the main rotor	12.8 m	12.8 m
The number of rotor blades	6 pcs	6 pcs
The length of the helicopter without blades	7.7 m	7.7 m
Helicopter height	4 m	4 m
Chassis track	2.6 m	2.6 m
Assigned glider resource	6000 h	6000 h
Airframe overhaul life	1000 h	1000 h
<b>Main flight characteristics</b>		
Maximum flight speed	140 km/h	<b>160 km/h</b>
Cruising speed for maximum range flight	120 km/h	120 km/h
Economic speed for maximum duration	80 km/h	<b>90 km/h</b>
Dynamic Ceiling (ISA)	3000 m	<b>5000 m</b>
Static Ceiling (ISA)	1500 m	<b>4500 m</b>
Maximum range with full tanks and a payload of 200 kg at a cruising speed of 120 km/h	360 km	<b>480 km</b>
The maximum duration of the flight with a load of 200 kg at a speed of 90 km/ h (ISA)	3,5 h	<b>5 h</b>
The maximum duration of the flight with a load of 200 kg at a speed of 120 km/ h (ISA)	2,5 h	<b>4 h</b>
Maximum flight duration with a load of 500 kg at a speed of 90 km/h (ISA)	2 h	<b>3.5 h</b>
Maximum headwind speed during takeoff	16 m/s	16 m/s
Maximum crosswind speed during takeoff	7 m/s	7 m/s



# CONTAINER

## AIR BOX

The heart of the project is an unmanned SKY-TRUCK helicopter complete with AIR BOX shipping containers.

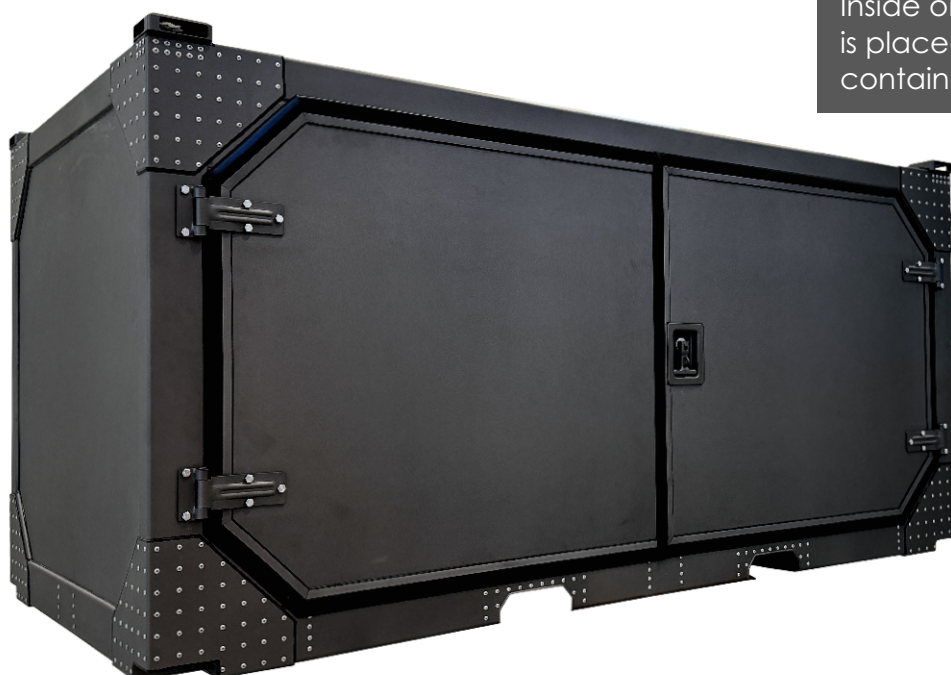
The use of AIR BOX containers for the delivery of goods by unmanned systems allows you to preserve all the advantages of container transportation.

Overall dimensions	2209x1168x1130 mm
Internal dimensions	2146x1068x969 mm
Tare weight	100 kg
Weight of the transported cargo	500 kg
Internal volume	2,1 m <sup>3</sup>

10 AIR BOX containers can be placed inside one 20-foot container

The universal design of the AIR BOX makes it easy to pack them into 40-foot and 20-foot standard cargo containers and on aviation pallets

Inside one 40-foot container is placed 20 AIR BOX containers



# GROUND CONTROL STATION

Designed to provide remote control of the UAV, its equipment, as well as the reception and display on monitors of information from the course and landing camera.

Allows you to control two helicopters at the same time.

It is equipped with a telescopic antenna orientation system mast, an automatic lifting mechanism of the weather station and two operational communication antennas.

Provides Ethernet connectivity to enable the integration of GCS into other systems and complexes, thus ensuring that information is received and transmitted through agreed channels and protocols.





## GCS PROVIDES:

- Telemetry data exchange with UAV in real-time;
- Information receiving, displaying, recording, storing and reproducing on monitor screens in real-time;
- Flight mode control;
- Flight task preparation and its loading into the onboard complex;
- Technical condition control of the UAV onboard complex;
- UAV pre-flight preparation and post-flight maintenance;
- Determination of weather conditions and other atmospheric parameters;
- Management of communication lines;
- Maintaining logs and records of task execution;
- Task simulation.



In a typical configuration, the GCS is manufactured in the shelter body (KUNG), which is an all-welded aluminum structure. The construction of special removable eyelets in the upper part of the side racks and the base makes it easy and reliable to reload, move and transport the container. The container is made without the use of combustible materials. The air extraction and inflow are regulated by the automatic filter-ventilation system. The station is equipped with autonomous heaters and air conditioning. The exhaust and air supply are regulated by an automatic filter ventilation system.



The Ground control station has four automated workstations for two UAV operators and two technicians.

Monitors quantity	17 pcs
Monitors screen size	22 inch
Weather station	1 pcs
Data link range for exchange with UAV	150 km
GCS time of deployment	10 minutes
Autonomous operation time of GCS from batteries	6 hour
Generator power	7 kW
Air conditioner power	2x2 kW
Size of the transport container (KUNG)	218x267x520 cm
Weight	1981 kg
Operating temperature	-30 to +65 °C

At the request of the customer, it is possible to install a console with GCS workstations on the basis of any vehicle or stationary object, the dimensions of which allow you to place standard equipment.









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