

UkrOboronProm

Ukrainian Defence Industry

Your Reliable Partner
In Global Defence

CATALOGUE **2016-2017**

UKROBORONPROM

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CATALOGUE
2016-2017



“To become among the world’s top-five arms exporters is our strategic objective”

Petro Poroshenko

President of Ukraine

Ukraine has enormous industrial and intellectual potential in the defense field. And the greatest testimony to this is the events of the last two years. Ukraine is the only country that has managed in a very short period of time, amid an on-going war, not only to raise its military-industrial complex from the ruins, but also to become a strong player in the international arms market.

Today Ukrainian modern and high-quality equipment is among the most competitive on world markets. Evidence of this is the continuous increase in demand for Ukrainian high-tech weapon systems. By the end of 2014 Ukraine again was among the ten biggest arms exporters, as was stated by the Stockholm International Peace Research Institute (SIPRI). According to the prestigious periodical Defense News, last year a Ukrainian defense holding group «Ukroboronprom» for the first time was listed in the top-100 largest defense companies in the world.

Ukraine is rapidly increasing its military capacities. To become among the world's top-five arms exporters is our strategic objective. And we have all it takes - science, technology, and production capacity.



UKROBORONPROM FOR PARTNERS

UKROBORONPROM IS THE LARGEST STATE DEFENCE HOLDING GROUP IN UKRAINE WITH MORE THAN 100 ENTERPRISES

More than 10 design bureaus with sole focus on research, development and engineering allow UKROBORONPROM to be not only a serial producer, but also to ensure client's needs and demands by new leading and innovating designs and developments.

Over 70 000 of highly trained employees both in production and engineering are working for Ukroboronprom. 40%+ top specialists with degrees in engineering, applied math, physics, etc. The top management understands the need to attract skilled and educated professionals to move forward, that is why we expand long-term cooperation with the best universities of Ukraine.

Our mission is to provide security and peace for our country. Our ultimate aim is to ensure that Ukrainian army is strongly equipped to protect the nation against any threat.

WE ARE:

- world class design and development specialists in the area of armoured vehicles
- the network of enterprises and affiliated companies/subsidiaries, focused on engineering, research and development, science and technology
- the chain of subsidiaries, involved in complementary industries such as Radar, Radio Communication, Air Defence Systems and Rocket artillery weapons and munitions
- cooperating with more than 90 countries
- highly qualified production personnel and engineers
- offering reasonable prices

OUR GOALS ARE:

To raise equity and debt financing, bringing Defence Industry to world standards in both smart technology and operation

To ensure that UKROBORONPROM enterprises-participants are supplied with everything necessarry to perform at their best, so that we could expand the product line with the world class technologies

Implementation of the leading production approach to ensure operating and marginal efficiencies

To implement best management practices into the HQ operations, procedures as well as of our enterprises



“Our mission is to care for security and peace for our country”

Roman Romanov

CEO of Ukroboronprom State Holding Company

Ukroboronprom is the most unique and biggest defense-industrial holding company in Ukraine. It annually holds a worthy place in the world ranking of arms exporting countries. The Company, working in the most difficult conditions, has been able today to increase production by several dozen times, set up a range of crucial R&D projects, launch full-rate production of some of the most newest types of armaments and military equipment, expand and improve collaboration between domestic defense industries as part of an import substitution program, and identify ways of achieving NATO compliance.

Ukroboronprom brings together more than a hundred businesses operating in the five key sectors of the defense industry, which are armored military vehicles, aircraft, radar technologies and air defense, artillery rocket systems and shipbuilding. More than 70 000 extremely knowledgeable staff are working as a single, coordinated mechanism.

Ukroboronprom includes over a dozen R&D companies allowing it to sustain self-sufficiency in arms production. The Company possesses all the necessary R&D and production capacities to provide the requirements of the Ukraine Armed Forces and other security sector institutions. Our mission is to care for security and peace for our country.

Ukroboronprom has chosen a path of development favoring re-direction of exports to EU markets and cooperation with NATO. In full compliance with this strategy, we are expanding collaboration with international partners and initiating new investment projects for the benefit of the defense-industrial complex of Ukraine.

I am confident that the inevitable modernization of the Ukrainian defense industry, along with new successes by Ukroboronprom will even today bring Ukraine to a leading edge internationally as regards defense and security. Because we are working for the sake of peaceful world.



SHIPBUILDING INDUSTRY
19 ENTERPRISES





RADAR LOCATION AND AIR DEFENCE
29 ENTERPRISES





MISSILE ARTILLERY AND MUNITIONS
21 ENTERPRISES



AIRCRAFT ENGINEERING AND MAINTENANCE
29 ENTERPRISES



ARMORED COMBAT VEHICLES
20 ENTERPRISES

ARMORED MILITARY VEHICLES 12

TANKS 14

ARMORED PERSONNEL CARRIERS 19

OTHER WHEELED AND TRACKED VEHICLES 29

ARMAMENT SYSTEMS 41

ENGINES, UNITS AND AGGREGATES 44

DEVICES AND EQUIPMENT 53

OPTICAL AND OPTICAL-ELECTRONIC DEVICES 66

SIMULATORS **78**

AIRCRAFT ENGINEERING AND MAINTENANCE 80

AIRCRAFTS 82

UAVS 90

MISSILES 92

ENGINES 94

EQUIPMENT, KITS AND AGGREGATES 102

RADIO ELECTRONIC TECHNIQUE, EQUIPMENT AND SYSTEMS 123

OPTICAL-ELECTRONIC DEVICES AND SIMULATORS 124

TECHNICAL SUPPORTING MEANS 125

OTHER PRODUCTS **127**

SHIPBUILDING INDUSTRY 130

SHIPS AND VESSELS 132

FLOATING DOCKS 142

CONTENT

SHIPBOARD WEAPON SYSTEMS 145

ENGINES AND UNITS **147**

RADAR AND NAVIGATION EQUIPMENT 158

SONAR COMPLEXES AND SYSTEMS 161

OPTICAL-ELECTRONIC DEVICES **167**

RADAR LOCATION AND AIR DEFENCE 168

RADAR STATIONS AND AIR DEFENCE EQUIPMENT **170**

EQUIPMENT FOR RADIO-ELECTRONIC WARFARE AND RECONNAISSANCE **176**

DEVICES AND EQUIPMENT **178**

COMMUNICATION MEANS **187**

OTHER PRODUCTS 191

ROCKET ARTILLERY WEAPONS AND MUNITIONS 214

MISSILE SYSTEMS 216

GUIDED MISSILES AND BOMBS 219

ARTILLERY ARMAMENT 223

SMALL ARMS ARMAMENT 225

OPTICAL AND OPTICAL-ELECTRONIC DEVICES 230

COMPONENT PARTS 235

ELEMENTS OF MISSILES AND AMMUNITION 242

SHELLS AND ROUNDS 246

EXPLOSIVES **247**

OTHER PRODUCTS 250





ARMORED MILITARY VEHICLES

WE DO:

- production of
  - heavy and light armored vehicles
  - multi-purpose systems and devices
  - engines, units and aggregates
- repair and upgrade
- maintenance and repairing equipment
- simulators

OPLOT

MAIN BATTLE TANK



Main battle tank «Oplot» is intended for combat operations in offensive operations and defence, day and night, in different climate and road conditions, as well as in water and during using of weapons of mass distraction by enemy.

Dimensions:
9720x4176x2800

Crew:
3

Weight:
51 t

Engine:
diesel engine 6TD-2

Maximum Speed:
70 km/h

Armament:

Gun	KBA-3
Caliber	125 mm
Coaxial machine gun	KT-7,62
Caliber	7,62 mm
Anti-aircraft machine gun	KT-12,7
Caliber	12,7 mm

Oplot can be almost unnoticeable at battlefield:
- smokeless mode of engine start
- making of smoke curtain
- motor-transmission section has heat insulating cover, which decrease thermal visibility
- anti-radar coverage of the tank
- rubber shields on the front part of the turret
- protective nets set

Panoramic and thermal imaging sight.
Satellite navigation works using the Glonas and Navstar systems. Communication facilities provide control at the distance up to 50 km, with additional antenna – up to 350 km.

Tank turret rotate on 180 deg by 5 sec.

125mm gun has: armour-piercing, cumulative and high-explosive fragmentation shells



New combined armour with several layer of armoured plates and ceramic material, mounted dynamic protection "Nizh"type – exceeds armour of competitors.

It is important, that tank for export can be equipped with:
- pipe 120 mm caliber;
- communication system (communication facilities) of customer;
- Air-conditioner;
- additional power generator;
- camouflage modifications

Special difference of Ukrainian tank "Oplot" has:
- powerful two – stroke diesel engine 6TD-2 (1200 hp, 883 kW);
- combined system for moving control;
- digital board for driver-mechanic;
- dynamic protection of new generation;
- improved level of tank side security;
- sight of commander;
- up-to-date aiming and observation devices;
- ability to fire with guided missile through barrel;
- automatic loading mechanism;
- anti-aircraft machine gun of closed type.

YATAGAN

MAIN BATTLE TANK

Designed for support of military troops on the battle field, to overcome layered defence of an enemy, water obstacles and swamped areas, quick reaction for counterstrike of an enemy and carrying out other missions.



Dimensions: 9720x3775x2285
Crew: 3
Weight: 48,5 t
Engine capacity: 1200 h/p
Maximum Speed: 70 km/h

Armament:

Gun	120 mm
Coaxial machine gun	7,62 mm
Anti-aircraft machine gun	12,7 mm

T-64B (BV)

MAIN BATTLE TANK



T-64B (BV) Main Battle Tank is an upgraded version of T-64A tank. Essentially new constructive solutions were implemented in T-64b (BV) Tank

Dimensions: 9225x3600x2172
Crew: 3
Weight: 39 - 42,5 t.
Engine: 5TDFM
Maximum Speed: 60,5 km/h

Armament:

Gun	KBA-3 or 2A46M-1
Caliber	125 mm
Coaxial machine gun	KT-7,62 or PKT
Caliber	7,62 mm
Anti-aircraft machine gun	KT-12,7 or NSVT-12,7
Caliber	12,7 mm

BULAT

MAIN BATTLE TANK

The Bulat BM main battle tank is an upgrade of the T-64B. The purpose of upgrade is the significant enhancement of the tank specifications.
It is intended to be used to support troops during the fight, overcome deeply echeloned battle enemy order, overcome water obstacles and swamps, rapid counteraction the enemy counter-offensive and perform other tasks.



Dimensions:
9295x3560x2184

Crew:
3

Weight:
45 t

Engine:
diesel engine 6TD-2

Maximum Speed:
70 km/h

Armament:

Gun	KBA-3 or 2A46M-1
Caliber	125 mm
Coaxial machine gun	KT-7,62 or PKT
Caliber	7,62 mm
Anti-aircraft machine gun	KT-12,7 or NSVT-12,7
Caliber	12,7 mm

The modernization is carried out in three main directions:

firepower (modernization of weaponry , fire control system in order to enhance firepower efficiency)

higher protection level (due to vulnerability reduction from modern anti-tank means)

improved mobility performance (due to engine compartment upgrading)



In order to enhance the mobility the power unit of higher power capacity is installed in the engine transmission compartment. The 850 horsepower 5TDFM Engine, being a deeply modified 5TDF Engine version after conduction of power increase measures, is to be used as a new power unit.

T-72AG

UPGRADED TANK

T-72AG tank is combat tracked vehicle, which has powerful missile-artillery armaments, reliable armored protection and high maneuverability. It is intended to accomplish wide scope of tasks and is capable to defeat tanks and other armored objects of enemy, manpower, anti-tank and artillery means etc.



Dimensions:
9500x3600x2226

Crew:
3

Weight:
49.5 t

Engine:
6TD-2, diesel, 1200 hp

Maximum Speed:
70 km/h

Armament:

Gun	2A46M, with thermal cover
Caliber	125 mm
Guided missile	9M119
Coaxial machine gun	PKT
Caliber	12,7 mm
Anti-aircraft gun	NSV-12,7
Caliber	12,7 mm

T-72-120

UPGRADED TANK

The main offensive power of land forces, intended for combat actions in case of direct fire contact with an enemy.



Dimensions:
9725x3660x2795

Crew:
3

Weight:
48,5 t

Engine capacity:
1200 hp

Maximum Speed:
65 km/h

Armament:

Gun	120 mm
Coaxial machine gun	7,62 mm
Anti-aircraft machine gun	12,7 mm

T-55AGM

UPGRADED TANK

Designed for support of military troops on the battle field, to overcome layered defence of an enemy, water obstacles and swamped areas, quick reaction for counterstrike of an enemy and carrying out other missions.

Dimensions: 9853x3560x3004
Crew: 3
Weight: 46 t
Engine capacity: 850, 1000 hp
Maximum Speed: 70 km/h



Armament:

Gun	125 mm
Coaxial machine gun	7,62 mm
Anti-aircraft machine gun	12,7 mm

T-55AM

UPGRADED TANK



Designed to accomplish combat missions in offensive and defensive actions, as a mass efficient means of active military operations on land in conventional and nuclear war conditions.

Dimensions: 9000x3536x2226
Crew: 4
Weight: 41,5 t +1,5%
Engine: V-46-5M, 690 hp
Maximum Speed: 50 km/h

Armament:

rifled gun barrel with ThermoJacket	100mm
Anti-aircraft machine gun	DShKM

BTR-4

ARMORED PERSONNEL CARRIER



The BTR Armored Personnel Carrier (APC) is designed for transportation of infantry unit personnel and fire support providing in the combat. This APC is used for equipping units able to fight in various conditions, including NBC environment.

Dimensions:
7650x2900x2860

Crew:
3

Landing forces:
7-9

Modification mass:
17,5 t +3% with anti shot protection
25 t+3% with additional protection

Engine:
2-stroke diesel engine 3 TD

Maximum Speed:
100 km/h

Armament:

Automatic Gun	ZTM-1
Caliber	30 mm
Coaxial machine gun	KT-7,62
Caliber	7,62 mm
Grenade launcher	KBA-117(AG-17)
Caliber	30 mm
Antitank missile complex	complex 212
Maximum target defeating range	5000 m

The APC can be used as a basic vehicle for equipping quick-reaction forces and marine units. The APC can fulfil its tasks day-and-night, under various climatic conditions, on hard-surface roads and off-road. The operating temperature range of the APC is -40 to +55 °C.



The BTR-4 APCs can be fitted with the following weapon stations



«Grom»
remote-controlled weapon station



Bm-3 «Shturm»
remote-controlled weapon station



Bau-23x2
remote-controlled weapon station



Bm-7 «Parus»
remote-controlled weapon station

- Type and designation of engine: IVECO Cursar C 10
- Maximum power 316 (430) kW (hp)
- Transmission automatic, hydro-mechanical
- Number of gears 5 forward gears + 1 reverse gear
- Navigation system SN-3003 Bazalt satellite system

Additional protection:
against fragment of large-caliber projectiles gun and projectiles of small-caliber automatic guns

BTR-4K

COMMAND VEHICLE

The BTR-4 is intended to transport personnel of mechanized infantry units and to provide fire support in combat. Command Vehicle is a modification of the BTR-4 Armored Personnel Carrier.

Dimensions:
7650x2900x2350

Crew: 7 (commander, driver, gunner, unit commander, three officers)

Weight:
20,2 t +3%

Engine:
2-stroke diesel engine 3 TD

Maximum Speed:
100 km/h

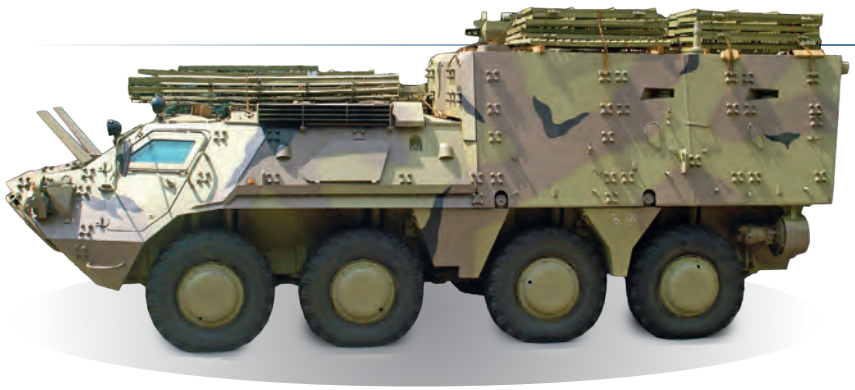
Auxiliary power unit:
EA-8



Armament:

Automatic Gun	ZTM-1
Caliber	30 mm
Machine gun	PKT-7.62
Caliber	7,62 mm

BTR-4KSH



COMMAND AND STAFF VEHICLE

The BTR-4 is intended to transport personnel of mechanized infantry units and to provide fire support in combat. Command and Staff Vehicle is a modification of the BTR-4 Armored Personnel Carrier.

Dimensions:
7650x2900x2350

Crew: 7 vehicle commander, driver (electrician and mechanic), commander, four officers

Weight:
18,5 t +3%

Engine:
FPT IVECO Tector

Maximum Speed:
100 km/h

Auxiliary power unit:
EA-8

Special equipment:

Communications devices:
T-173M radio set, 173PM radio receiver, R-163-50K radio set, R-163-KP radio receiver, R-159 radio set, Severok-K radio set, oral and written information cryptographic protection equipment, TA-57-U telephone set, TK-2 telephone spool
Navigation support systems:
TIUS-NM satellite navigation system, inertial navigation support system, SN-3003 Bazalt portable satellite navigation support system
Portable devices for observation and orientation:
Aiming circle, binoculars, long-distance night vision device, illuminator

BTR-3E1

ARMORED PERSONNEL CARRIER



The BTR – 3E1 Armored Personnel Carrier (APC) is intended to transport mechanized infantry units and to provide fire support in combat operations. It can be used as a basic vehicle forequipping quick-reaction forces and marine units. The APC can operate day-and-night, under various climatic conditions, on hard-surface roads, off-road, and in NBC environment.

Armament:

Automatic Gun	ZTM-1
Caliber	30 mm
Coaxial machine gun	KT-7,62
Caliber	7,62 mm
Grenade launcher	KBA-117(AG-17)
Caliber	30 mm
Antitank missile complex	complex 212
Range of fire maximum	5000 m

Dimensions: 7850x2900x2774

Crew: 3+10

Weight: 16 t.

Engine: MTU 6R106TD21

Maximum Speed: 100 km/h

Armament:
- "Shturm" combat module
- or "Shturm-S" combat module
- or " Shkval" combat module

Airtight and waterproof armored carrying hull is a basis of the vehicle structure. The hull is made of a very hard steel and is reinforced with Kevlar from inside.
The hull provides protection against 7.62mm bullets and it is possible to improve the protection level up to the level resisting to 12.7mm bullets.



- The crew is accommodated in the airtight and waterproof hull which protects them against nuclear radiation, chemical and biological effects.
- The number of hatches designed for boarding and dismounting of the crew is 6.
- The design of the armored hull and running gear provides high-level protection against explosion after hitting an anti-tank mine.
- The number of ports designed for firing from personal weapons is 8.

Auxiliary Equipment:
- Pull winch (force, t) 6
- Firefighting system (type) Automatic
- Filtration unit (type) With full-flow filter
- Heater (heating efficiency, kW) 18
- Air conditioner (cooling efficiency, kW) 10

- Engine (type and model): Diesel, MTU 6R106TD21 or DEUTZ BF6M 1015
- Power output, h.p.: 326
- Transmission: Automatic, Allison Transmission 3200 SP

BTR -3M1

81-MM SELF-PROPELLED MORTAR

Intended for direct fire support of infantry subunits, is capable to follow tanks, on the move overcome entrenchments, trenches and water obstacles.

Dimensions: 7850x2900x2600
Crew: 4
Weight: 16,5 t
Engine: MTU 6R106TD21
Maximum Speed: 100 km/h



Armament:

Main armament	81-mm mortar
Machine gun	NSVT (KT-12,7)
Caliber	12,7 mm

BTR -3M2

120-MM SELF-PROPELLED MORTAR



Intended for direct fire support of infantry subunits, is capable to follow tanks, on the move overcome entrenchments, trenches and water obstacles.

Dimensions: 2900x2600
Crew: 4
Weight: 16,5 t
Engine: MTU 6R106TD21
Maximum Speed: 100 km/h

Armament:

Main armament	120-mm mortar
Machine gun	NSVT (KT-12,7)
Caliber	12,7 mm

BTR-3E

ARMORED PERSONNEL CARRIER

The BTR – 3E is armored carried vehicle intended for transportation of personnel of motorized infantry sub-units and its firing support in combat conditions.

Dimensions: 7650x2900x2860
Crew: 3+7
Troops: 6
Weight: 16 t
Engine: UTD-20 (diesel), 300hp
Maximum Speed: 85 km/h



Armament:

Automatic Gun	ZTM-1
Caliber	30 mm
Machine gun	KT(PKT)
Caliber	7,62 mm
Grenade launcher	AG-17
Caliber	30 mm
Anti-tank guided missile	«Barrier»

BTR-3K

ARMORED PERSONNEL CARRIER



Vehicle is intended for control of mobile subunits of infantry forces, equipped with BTR-3E1 Armored Personnel Carriers, it is capable to follow tanks, on the move overcome trenches and water obstacles.

Dimensions: 7850x2900x2774
Crew: 3
Landing forces: 6
Weight: 16,5 t
Engine: MTU 6R106ND21
Maximum Speed: 100 km/h

Armament:

Automatic gun	ZTM-1
Caliber	30 mm
Machine gun	PKT (KT-7,62)
Caliber	7,62 mm
Grenade launcher	AG-17
Caliber	30 mm
Anti-tank missile system	ATMS «Barrier»

BTR-3RK

COMBAT VEHICLE WITH ATGM

Combat wheeled amphibious vehicle with armored protection, high level of mobility and armament (including control complex), it is able rapidly identify, recognize and destroy ground-based (as well as armored) and low-flying targets with high efficiency, and intended to transport mechanized infantry units. Armored personnel carrier is to follow tanks, on the move overcome trenches and water obstacles.

Dimensions: 7850x2900x2774
Crew: 4
Weight: 16,5 t
Engine: MTU 6R106TD21
Maximum Speed: 100 km/h



Armament:

Main armament	Anti-tank missile system
Auxiliary armament	Turret machine gun mount
Machine gun	NSVT -12,7
Caliber	12,7 mm

BTR-80UP

ARMORED PERSONNEL CARRIER



BTR-80UP is intended to transport personnel of mechanized infantry units and to provide fire support.

Dimensions: 7650x2900x2350
Crew: 3+7
Weight: 13,6 t
Engine: FPT IVECO Tector
Maximum Speed: 100 km/h

Armament:

Machine gun	KPVT
Caliber	14,5 mm
Machine gun	PKT
Caliber	7,62 mm

BTR-3S

ARMORED MEDICAL VEHICLE

BTR-3S Armored Medical Vehicle is intended to search and evacuate wounded men from fires of mass defeat and provide them with medical service (including first aid during transportation) under different natural-climatic conditions and during any time of the year, day and night, and also to be used as mobile bandaging room.



Dimensions:
7850x2900x2800

Crew:
3

Weight:
15,5 t

Engine:
MTU 6R106TD21

Maximum Speed:
100 km/h

Armament:

The self-powered open antiaircraft-machine-gun installation	
Machine gun	NSVT (KT-12,7)
Caliber	12,7 mm

Quantity of places for transportation of wounded men:

Lightly wounded (in a sitting position)	6
Critically wounded patients (on a litter)	4

BSEM-4K

CASUALTY EVACUATION VEHICLE

Intended for searching and evacuation of wounded from mass destruction places and medical service providing (incl. first aid during transportation) in different time and season as well as to use as mobile bandaging room. The vehicle constitutes a modification of the BTR-4 vehicle.



Crew:
3

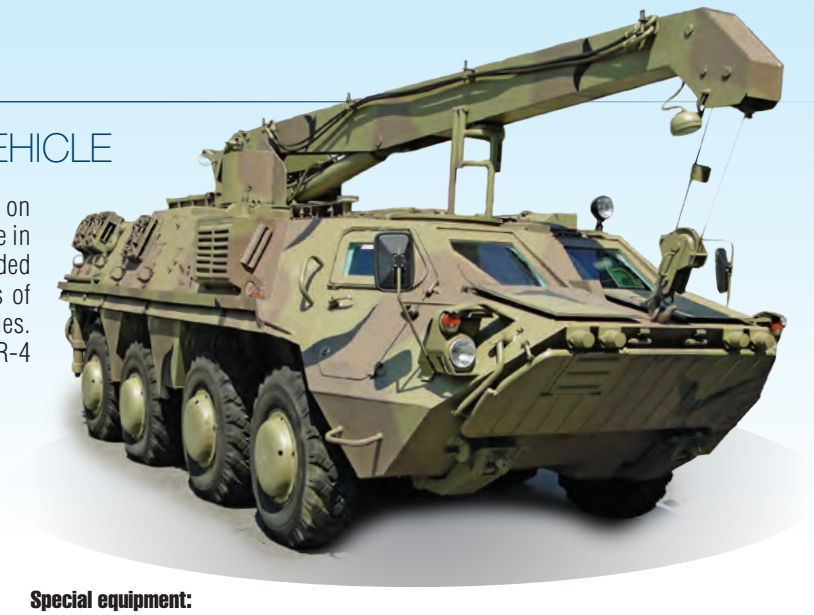
Weight:
18,6 t + 3%

BREM-4K

REPAIR AND RECOVERY VEHICLE

Intended to conduct technical reconnaissance on the battle area during the day-and-night time; take in tow disabled and damaged operated and unguided vehicles, carry out load-lifting works, the works of welding and support the crew of other vehicles. The vehicle constitutes a modification of the BTR-4 vehicle.

Dimensions: 8200x2932x3100
Crew: 4
Weight: 19 t + 3%
Engine: 2DT-AB
Maximum Speed: 100 km/h



Special equipment:

- crane equipment with lifting capacity of up to 3 t
- winch with cable pulling force of up to 6.8 t
- welding equipment with current intensity of up to 350A
- towing devices

BTR-3U1

ARMORED PERSONNEL CARRIER

Combat wheeled amphibious vehicle with armored protection, high level of mobility and armament (including control complex), it is able rapidly identify, recognize and destroy ground-based (as well as armored) and low-flying targets with high efficiency, and intended to transport mechanized infantry units. Armored personnel carrier is to follow tanks, on the move overcome trenches and water obstacles.



Dimensions: 7850x2900x2775
Crew: 3+6
Weight: 16 t
Engine: UTD-20
Maximum Speed: 80 km/h

Armament:

Automatic gun	ZTM-1
Caliber	30 mm
Coaxial machine gun	KT-7,62(PKT)
Caliber	7,62 mm
Combat module	BM-3S

BTR-3BR

ARMORED REPAIR AND RECOVERY VEHICLE

BTR-3BR Armored Repair and Recovery Vehicle is intended to conduct technical reconnaissance on the battle area during the day-and-night time; take in tow disabled and damaged operated and unguided vehicles to the nearest hiding place or assembling place for damaged cars; carry out load-lifting works with moving a cargo.



Dimensions: 7850x2900x2800

Crew: 3

Weight: 16,5 t

Engine: MTU6R106ND21

Maximum Speed: 100 km/h

Armament:

The open antiaircraft-machine-gun installation	
Machine gun	NSVT (KT-12,7)
Caliber	12,7 mm

Crane equipment:

Boom full-circle slewing crane with a hydraulic drive and remote control	
Load capacity, кН (hardware)	20 (2)
Working radius, m	5

BTR-3U

ARMORED PERSONNEL CARRIER



Combat wheeled amphibious vehicle with armored protection, high level of mobility and armament (including control complex), it is able rapidly identify, recognize and destroy ground-based (as well as armored) and low-flying targets with high efficiency, and intended to transport mechanized infantry units. Armored personnel carrier is to follow tanks, on the move overcome trenches and water obstacles

Dimensions: 7850x2900x2928

Crew: 3+6

Weight: 16 t

Engine: UTD-20

Maximum Speed: 80 km/h

Armament:

Automatic cannon	KBA-2, (ZTM-1 or 2A72)
Caliber	30 mm
Grenade launcher	AG-17
Caliber	30 mm
Coaxial machine gun	PKT
Caliber	7,62 mm

BTR-70DI-02

TRANSPORTATION BASE FOR ‘SVITIAZ’ FACILITY

‘Svitiaz’ is intended for provision of command and control over the troops, organization of communications within the operational-tactical level of command in motion, afloat and at stop, both independently and as part of the communications node.



Dimensions:
7535x2800x2300

Crew:
2 +3

Weight:
12,25 t

Engine:
FPT IVECO Tector

Maximum Speed:
100 km/h

BTR-70DI

ARMORED PERSONAL CARRIER



It is intended for transportation of mechanized unit personnel and for its fire support. The Armored personnel carrier can be equipped with various types of armament.

Dimensions:
7595x2800x2250

Crew:
3+7

Weight:
12,2 t + 3%

Engine:
FPT IVECO Tector

Maximum Speed:
100 km/h

Armament:

Mount type	turret, machine gun
Machine gun	KPVT
Caliber	14,5 mm
Machine gun	PKT (KT)
Caliber	7,62 mm

DOZOR-B

ARMORED VEHICLE



Light armored personnel carrier DOZOR-B is designed to protect the crew and troops from small arms fire, shrapnel and mines namely: from 7.62-mm armor piercing bullets at distance 30 meters and from shrapnel of 150 mm high-explosive shell which exploded at distance 50 meters.

Dimensions: 5600x2400x2700

Crew: 3+8

Weight: 8,45 t

Engine: DEUTZ BF4M 1013FC

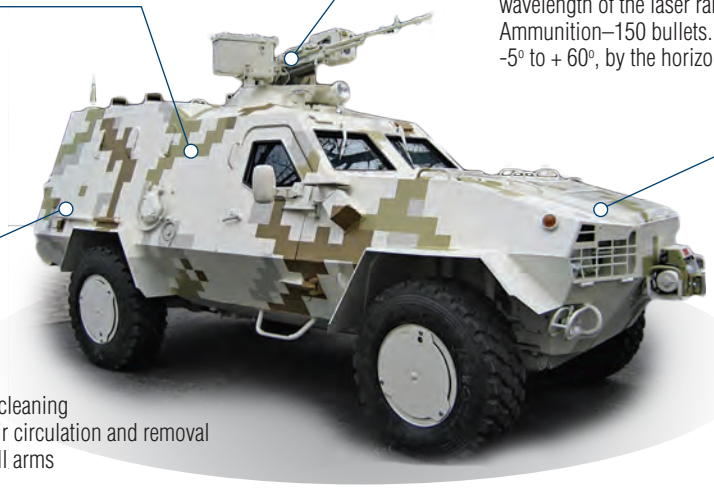
Maximum Speed: 120 km/h

Armament:

Machine gun	NSVT (KT-12,7)
Caliber	12,7 mm

Arms of light armored personnel carrier DOZOR-B allows to inflict damage on enemy manpower, light armored vehicles and as well to carry effective fire on air targets that fly at subsonic speed. The body within is covered with ballistic protection material such as «Kevlar».

Turret machine gun unit with remote control MGU-12,7, with a television camera, thermal vision cameras and laser rangefinder. Television camera with wide and narrow field of view. The spectral operating range of thermal imaging cameras 8-12 microns. The wavelength of the laser rangefinder is 1.06 microns. Ammunition–150 bullets. Aiming angles vertically-from -5° to + 60°, by the horizon-360°.



Engine - four stroke four cylinder diesel with turbocharging DEUTZ BF 4M1013FC capacity of 190 hp

Automatic transmission Allison LCT 1000

Independent suspension, torsion bar on wishbone.

The vehicle is equipped:

- air conditioning system and air cleaning
- ventilation system with forced air circulation and removal of powder gases when firing small arms
- liquid type heating system
- centralized paging wheels system
- communications equipment
- satellite navigation system
- winch with a pulling force of 4100 kg

BARS-6

ARMORED PERSONNEL CARRIER

Multipurpose 4x4 APC with the best off road capability. Meets high standards quality, so that was specifically developed for military purposes.



Dimensions:
2200/5500/2400

Troops:
6+3

Gross weight:
5650 kg

Engine type:
3,9 Diesel / Hyundai D4D / V4 in-line

Maximum Speed:
100 km/h

Main Specifications:

Drive configuration	4 x 4
Transmission	5MT
Horsepower/rev	130/2900
Max. torque/H.m/rev	370/1600
Payload, kg	1650
Tires, type	36x12,50R16. 5LT
Armoring level	CEN level BR6
Wheelbase, mm	3200
Ground clearance, mm	25
Max. Gradeability	60%
Angle of Departure	20 %
Angle of Approach	40 %
Fording depth (w/o) Kit	760 mm
Cruising Range	500 km
Warm / cold start	-35 / +50



- Strong and reliable chassis frame
- Roof-mounted 360' traversing turret with perimeter protection 7.62 mm Caliber PKM gum mount assembly
- Ballistic steel-case fuel tank protection
- Heavy duty front and rear ram bumpers
- Strengthened suspension – reinforced as necessary to compensate for additional weight of the vehicle

BARS-8

ARMORED PERSONNEL CARRIER



BARS - 8 - Ukrainian multi-purpose APC with 4×4 wheel formula, designed to perform tactical tasks, defend checkpoints and to conduct combat operations in urban areas.

Dimensions:
2200/6000/2400

Troops:
8+2(3)

Gross weight:
8000 kg

Engine type:
6,7 Cummins /V8/ Turbo diesel

Maximum Speed:
110 km/h

Main Specifications:

Drive configuration	4 x 4
Transmission	6AT/6MT Aisin
Horsepower/rev	385/2900
Max. torque/H.m/rev	1173/1600
Payload, kg	2 000
Tires, type	40x13.50R1
Armoring level	CEN level BR6
Armor defence	360 ° ballistic protection from 5,45 mm, 7,62 mm bullets
Wheelbase, mm	3 670
Ground clearance, mm	280
Flotation	road clearance 280 mm



- Strong and reliable chassis frame
- Roof-mounted 360' traversing turret with perimeter protection 7.62 mm Caliber PKM gum mount assembly
- Ballistic steel-case fuel tank protection
- Heavy duty front and rear ram bumpers
- Strengthened suspension – reinforced as necessary to compensate for additional weight of the vehicle

KOZAK II

LIGHT ARMOURED VEHICLE



Dimensions:
7050x2500x2610

Seating capacity:
up to 11

Full weight:
15000 kg

Engine type:
Iveco, 5,9 litres turbodiesel

Main Specifications:

Base chassis	Iveco Eurocargo 4x4
Wheel arrangement	4x4
Power, h.p.	279
Torque, Nm	950
Clearance, mm	392
Turning radius, m.	8,0
Transmission	ZF, mechanical 6-speed with synchronizers
Ballistic Protection	2 (according to STANAG 4569)
Blast Protection	Ia,Ib (according to STANAG 4569)

special anti-mine seats, installed back-to-back and attached to the roof turret with possibility of 7,62 PKMS and 12,7 automatic gun installation
evacuation-and-ventilation hatches
gun-ports in side windows landing door

special alloyed armor steel as major protection material antispall layer in all side walls
bulletproof glasses with internal antispall layer
V-shaped hull
multi-layer floor, absorbing blast energy



front and rear ram bumpers electrical winch
preparation for all special devices (radiostation, navigation device etc.)
front-view camera with night vision
rear-view camera
parktronic intercom

Wheels are equipped by «run-flat» that allows to move with penetrated tires air conditioner

TRITON - 01

LIGHT ARMORED VEHICLE



The 4 x 4 lightly-armoured platform is an armoured vehicle with the 4x4 axle configuration, designed for the transportation of military personnel, armor, ammunition, special cargo and light weapons station, communication facilities and special equipment.

Combat crew: 3+8

Total weight: up to 8 t

Engine type: TAD620VE diesel engine

Maximum Speed: 110 km/h

Main Specifications:

Swimming speed	up to 10 km/h
Endurance range	700 km
Weapon:	
▮ machine gun	12.7 mm
▮ grenade launcher	40 mm
Ammunition load:	
▮ 12.7 mm 50/100 shots (option of 200)	
▮ 40 mm 32 shots	
Weapon station weight	300 kg

The platform consists of: A wheeled, two-axis vehicle with a 4 x 4 wheel arrangement and an individual suspension, with a front engine.

The platform armoured shell protects the crew and the landing personnel from the 7.62 mm gauge basic weapons, antipersonnel mines and mass destruction weapon.

The platform shell is all-metal, welded, leak-free.



The platform is able to attain combat tasks any time of the day, both day and night, while moving along the roads with a smooth riding surface (highways), along the natural soil roads, as well off-road, move across water obstacles wading and floating.

BMP-1M

ARMORED INFANTRY COMBAT VEHICLE

BMP-1 Armored Infantry Combat Vehicle with 'KBA-105TB 'Shkval-A' Remote Weapon Station (RWS)
Enhanced fire power RWS is designed to defeat ground and low-flying targets. RWS is controlled by special fire control system and stabilizer.



Dimensions: 6735x2940x2450
Crew: 3+8
Weight: 13,2 t +2%
Engine: UTD-20
Maximum Speed: 65 km/h

Armament:

Automatic gun	ZTM-1
Caliber	30 mm
Machine gun	PKT
Caliber	7,62 mm
Antitank guided missile system	Complex 212
Missile type	RK-2S
Automatic grenade launcher	AG-17
Caliber	30 mm

BMP-55

ARMORED INFANTRY COMBAT VEHICLE

BMP-55 is designed and produced on the basis of T-55. From the existent samples BMP-55 differs by antiprojectile armor and forward location of engine transmission compartment, that significantly enhances the protection of crew. The particular difference of the vehicle is the location of troop's ramp in the stern that allows inserting the force under the shelter of armored vehicle hull. Engine and transmission are installed in one block adapted to quick replacement.



Dimensions: 6200x3210x1950
Crew: 3+8
Weight: 28,5 t
Engine: 5TDF
Maximum Speed: 60 km/h

Armament:

Machine gun	NSVT
Caliber	12,7 mm

BMP-64

ARMORED INFANTRY COMBAT VEHICLE

BMP-64 is designed and produced on the basis of T-64 Tank, has cannonproof armor and forward located engine transmission compartment, the bottom of which contains additional anti-mine protection. Vehicle can be subsumed into the MRAP category (Mine Resistant Ambush Protected), so as such with the enhanced sustaining power to countermining and protection from ambushing. The distance fire control, TV sight with self-sufficient stabilizer, cameras of wide and narrow range of vision, thermal camera, and laser rangefinder are also provided. Driver is equipped with TV surveillance scope.



Dimensions: 6500x3300x1950
Crew: 3+12
Weight: 34,5 t
Engine: 5 TDF
Maximum Speed: 60 km/h

Armament:

Launchers	2 AAC, 1 ATMS
Gun	2A42
Caliber	30 mm
Machine gun	PKT
Caliber	7,62 mm

BMP-K-64



WHEELED ARMORED INFANTRY FIGHTING VEHICLE

BMP-K-64 is designed and produced with the application of units and aggregates of T-64 Tank. From the existent samples of wheeled APC/IFV differs by anti-shell armor and forward location of engine transmission compartment that significantly enhances vehicle's protection.

Dimensions: 6000x3100x1900
Crew: 2-3+8
Weight: 21,5 t
Engine: 5TDF
Maximum Speed: 105 km/h

Armor protection:

Front armor	270 mm
Board armor	82+20 mm
Rear plating	40 mm
Bilge armor	mine protection
Doors for landing troops	Rear door location

BMT-72

HEAVY INFANTRY COMBAT VEHICLE

The Heavy Infantry Combat Vehicles are intended to carry out tactical operations either as integral part of tank combat formations in close co-operation with battle tanks or to operate on their own.



Dimensions: 10760x3770x2285
Crew: 3+5
Weight: 60 t
Engine: 5TDF
Maximum Speed: 60 km/h

Armament:

Gun	125 mm
Coaxial machine gun	7,62 mm
Anti-aircraft machine gun	12,7 mm

BREM



ARMORED REPAIR AND RECOVERY VEHICLE

"Atlet" ARRV is designed to fulfill a wide range of technical support tasks of tank units while performing all types of military operations under various weather and climatic conditions.

Dimensions: 9010x3560x2740
Crew: 3
Weight: 46 t
Engine: 1200 h/p
Maximum Speed: 40 km/h

Main Specifications:

Lifting capacity	25 t
Winch tractive power	25 t
Bulldozing kit effectiveness	150 m³/h
6TD-2 engine power output	882 (1200) kW (hp)

ADJUSTMENT OF BTR-4E

ARMORED PERSONNEL CARRIER

BTR-4E Armored Personnel Carrier is intended to transport personnel of mechanized infantry units and to provide fire support in combat.



Dimensions:
7878x2965x3050

Crew:
3

Weight:
21,9 t

Engine:
2-cycle diesel engine ZTD

Maximum Speed:
110 km/h

Main Specifications:

Maximum road speed	110 km/h
Maximum speed afloat	8-10 km/h
Fuel consumption on the highway	80 l/100 km
Fuel consumption on the roads	150 l/100 km
Maximum gradient	30°
The maximum angle	25°
Maximum cruising range on the highway	690 km

PTS-M (PTS-2)

AMPHIBIOUS VEHICLE

It is intended for assault water crossing of artillery systems, wheeled and tracked tractors, APCs, manpower and any other cargoes. PTS-M (PTS-2) amphibious vehicle has high level of performance, maneuverability, cross-country ability, has a significant water buoyancy reserve and can be used under the marine conditions with the waves of up to3 points.



Dimensions:
11990x3300x3170

Crew:
2

Weight:
22,4 t

Engine:
B-46-5

Maximum Speed:
on surface 60 km/h
on the water 11,7 km/h

Unit loading:

On surface	20 t
On the water	12 t

BTS-5B

UNIVERSAL MULTI-PURPOSE TRACTOR

Designed to conduct mechanical reconnaissance on the battlefield, work on the emergency evacuation of tanks from the enemy war zone, pulling tanks that stuck or sank, carrying lifting, digging, welding works and technical provision of armored units in the field.



Dimensions: 7890x3460x2687
Crew: 3
Weight: 41 t
Engine: V-84
Maximum Speed: 60 km/h

Armament:

Machine gun	NSV
Caliber	12,7 mm

Special equipment:

Tractive winch
Auxiliary winch
Bulldozer equipment
Crane unit
Electric welding equipment
Loading platform

IMR-2

COMBAT ENGINEER VEHICLE



Combat Engineer Vehicle IMR-2 is designed to create passageways, clearing blockages and destructions during engineer support of combat troops, for rescue operations in zones of mass destruction, support for lifting operations.

Dimensions: 9950x3735x3680
Crew: 2
Weight: 45,7 t
Maximum Speed: 45 km/h

Operational efficiency:

while creating passages:	
▮ in felled trees	340-450 m/h
▮ in stone road-blocs	300-350 m/h
when laying convoy paths	6-10 km/h
when moving soil	230-300 m/h

BMR-2

ARMORED DEMINING VEHICLE

Special tracked Armored Demining Vehicle BMR-2 is designed for demining roads, creation of passages in minefields.



Dimensions: 9650x3850
Crew: 5
Weight: 36 t

Armament:

Machine gun	NSV
Caliber	12,7 mm

Crane arm:

type	dismountable with manual transmission RUL-1,5
carrying capacity	3000 kg

Mounted equipment:

Mine trawl	KMT-7

MTU-20



MECHANIZED BRIDGE

Mechanized Bridge MTU-20 is designed to create passages up to 18 meters and make passways for tanks and other military vehicles weighing 50 tons, across rivers, ditches, cliffs.

Dimensions: 11640x3300x3400
Crew: 2
Weight: 32 t
Engine: 5TDF
Maximum Speed: 50 km/h

Main Specifications:

Time to set one bridge span	5 min
Width of barriers	18 m
Load-carrying capacity of the bridge	to 50 t

TRM-1U

TANK REPAIR WORKSHOP

Tank Repair Workshop TRM-1U is designed for technical support of tank divisions and units, repair and mounting, welding, locksmithing and mechanical works, and also to recharge the batteries in military repairing T-55, T-64, T-72, T-80, BMP-1 in the field conditions.
Undercarriage: automobile ЗІЛ-131 with a winch and power take. Body: full-metal КМ-157.



Dimensions:
7470x2385x3050

Workshop equipment allows to perform:

- Replacement of components and assemblies to motor unit (engine, mounted components, radiators and other) using a crane arrow КС-1,5
- Manual arc welding of ferrous metals and aluminum welding
- To perform locksmithing-mehanical works
- Recharging rechargeable batteries

MRV

CASUALTY EVACUATION VEHICLE



Casualty Evacuation Vehicle (CEV) on BMP-1 chassis.
CEV is a truck, armored, maneuverable, amphibious vehicle based on BMP-1 armored infantry fighting vehicle chassis. It can be used as:

- armored medical transporter for search and rescue of wounded;
- armored first aid medical clinic.

Special equipment:

- air conditioner
- heater
- bandaging table
- inhaler with spare air cylinders
- water tank
- medical stretchers
- washstand
- complete set of immobilizing splints
- lock box

Dimensions:
6755x3160x3600

Crew:
3

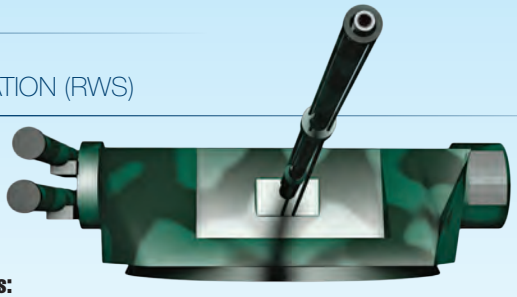
Places to transport wounded:
At the stretchers - 4, sitting - 8

Weight:
14 t

Engine:
UTD-20

BM.5 'KATRAN-C' REMOTE WEAPON STATION (RWS)

Enhanced fire power RWS is designed to be mounted on BMP-1 and Armored Personnel Carriers, and to defeat ground and low-flying targets. It is controlled by special centralized fire control system from turret.



Main Specifications:

Automatic gun	ZTM-1
caliber	30 mm
Machine gun	PKT
caliber	7,62 mm
Antitank guided missile system	Complex 212
missile type	RK-2S
Automatic grenade launcher	AG-17
caliber	30 mm

Full combat weight:
1.7 t +2%



REMOTE WEAPON SYSTEM KBA-105TB 'SHKVAL-A'

Enhanced fire power RWS is mounted on BMP-1-type Armored Fighting Vehicles as well as BTR-type Armored Personnel Carriers, and is designed to defeat ground and low-flying targets. RWS is controlled by special fire control system and stabilizer.

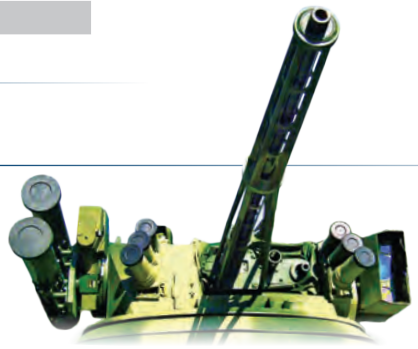
Armament:

Automatic gun	ZTM-1
caliber	30 mm
Machine gun	PKT
caliber	7,62 mm
ATGM system	Complex 212
missile type	RK-2S
Automatic grenade launcher	AG-17
caliber	30 mm
Fire control system	Tandem-2
Weapon stabilizer	SVU-500-ZTs

Full combat weight:
1.96 t +2%

BM-3M «SHTURM-M» COMBAT MODULE

BM-3M «Shturm-M» Combat Module is designed for installation on the light-armored combat vehicles (APC, ICV etc) for fighting against ground and low-flying targets and autonomic usage as immovable firing points for the defense purposes and can be mounted on the sea-craft's turret.



Main Specifications:

Automatic gun	ZTM-1
caliber	30 mm
Machine gun	KT-7,62 (PKT)
caliber	7,62 mm
Anti-tank missile system	«Barrier»
Automatic grenade launcher	KBA-117 (AG-117)
caliber	30 mm
Smoke-screening system	902B

GROM

COMBAT MODULE

Combat Module GROM with Remote Operated Weapon Systems for light armored fighting vehicles is intended to defeat the manpower, to fight against armored vehicles, fire emplacements and low-flying low-speed targets of the enemy.



Armament:

Automatic gun	ZTM-2 (2A42)
caliber	30 mm
Machine gun	KT-7,62 (PKT)
caliber	7,62 mm
ATGM system	9P135M «Konkurs»
Grenade launcher	AG-17
Sighting system	PNK-4S aor PNK-5, PZU-7

BAU-23X2

WEAPON STATION

BAU-23x2 remote operated Weapon Station is designed for firing at the men power and armored targets both ground and aerial.



Armament:

Gun	2 x 2A7M
caliber	23 mm
Machine gun	KT-7,62 (PKT)
caliber	7,62 mm
Smoke screen system	СП3

height (from the race mechanism surface)
962 mm

width
1500 mm

gun sweeping radius
1720 mm

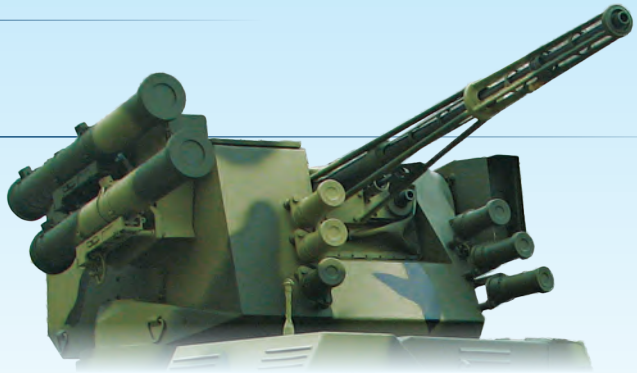
Weight without ammunition
860 kg

Weight with ammunition
985 kg

Combat crew
1

PARUS

COMBAT MODULE



Intended to be installed at armored vehicles such as wheeled infantry armored vehicles and tracked infantry combat vehicles. The main tasks of the module are: manpower defeat, fighting the armored targets and gun posts, low-flying and low-speed air targets.

Armament:

Automatic gun	ZTM-1
Caliber	30 mm
ATMS	«barrier»
Ammunition	2 rocket
Grenade launcher	KBA-117(AG-117)
Caliber	30 mm
Machine gun	KT-7,62 (PKT)
Caliber	7,62 mm
Smoke grenade launcher	902B

BM-3S

COMBAT MODULE



Designed for installation on the light-armored vehicles (APC, ICV etc.) for fighting against ground and low-flying targets and self-position usage as immovable firing point for defense purposes and can be mounted on sea-craft's turret.

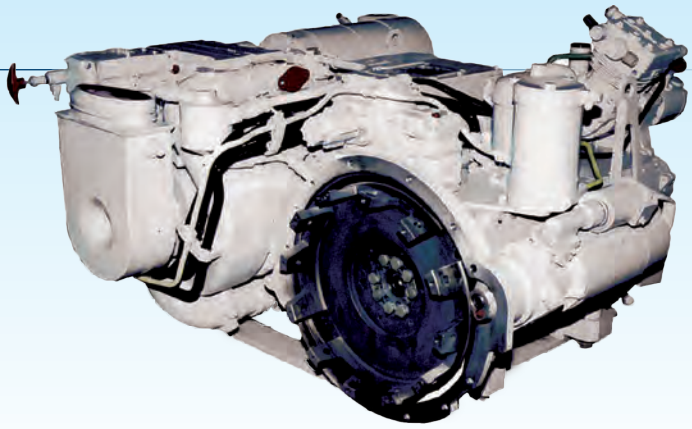
Armament:

Automatic gun	ZTM-1
Caliber	30 mm
Machine gun	KT-7,62 (PKT)
Caliber	7,62 mm
Armament stabilizer	SVU-500-10R
Fire control system	«Astra»

3TD-1

DIESEL ENGINE

Serves as a powerplant at modernization of wheeled armored vehicles: BTR-70, BTR-80, BREM on the base of BTR-70.



Dimensions: 1231x955x581

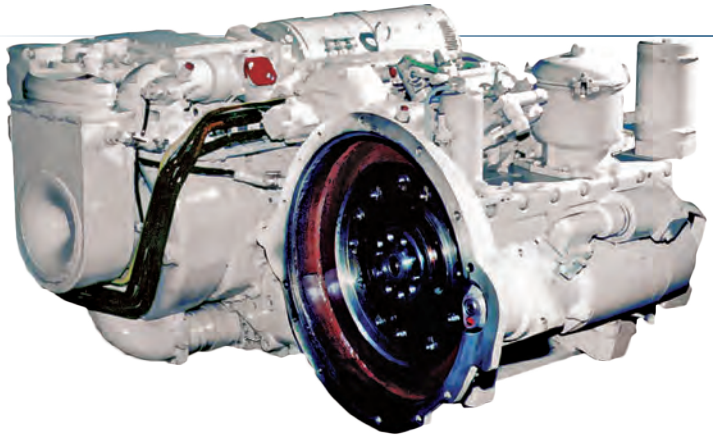
Rated power: 280 h.p.

Weight: 850 kg

Main Specifications:

Bore	120 mm
Stroke	2x120 mm
Number of cylinders	3
Nominal volume	8,15 l
Specific fuel consumption	158 g/e.h.p.h
Rotation frequency	2600 min^{-1}

3TD-2



DIESEL ENGINE

Serves as a powerplant at modernization of tracked: BTR-50, PT-76, OT - 62 «Topaz», BMP-1, BMP -2 and wheeled armored vehicles.

Dimensions: 1231x955x581

Rated power: 400 h.p.

Weight: 850 kg

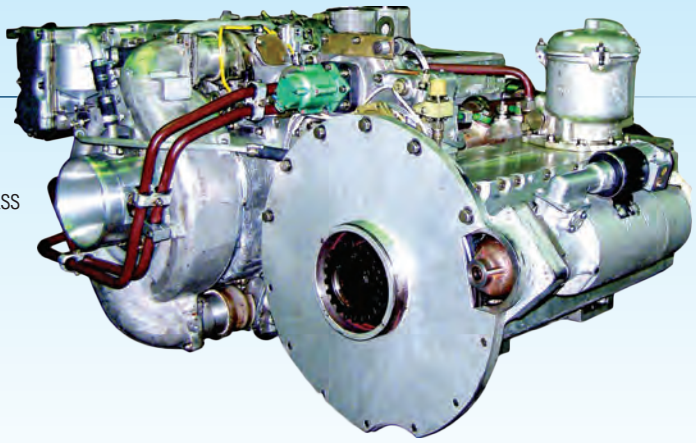
Main Specifications:

Bore	120 mm
Stroke	2x120 mm
Number of cylinders	3
Nominal volume	8,15 l
Specific fuel consumption	160 g/e.h.p.h
Rotation frequency	2600 min^{-1}

3TD-3A

DIESEL ENGINE

Serves as a powerplant at modernization of light class tracked and wheeled armored vehicles BTR-4.



Dimensions: 1182x955x581

Rated power: 500 h.p.

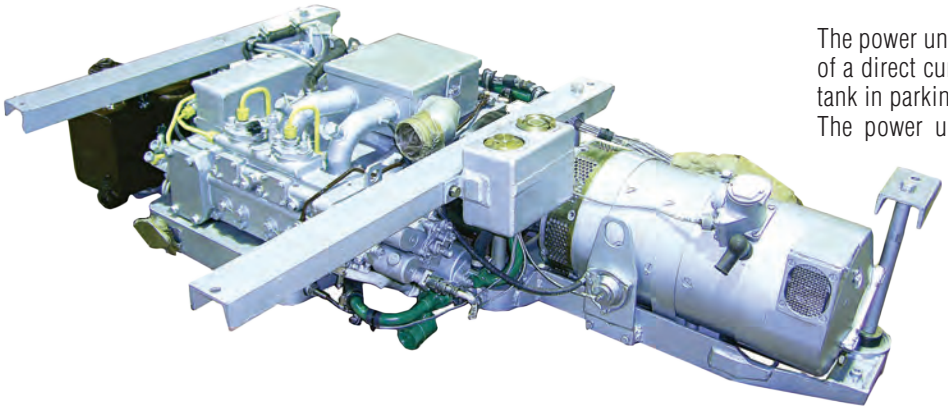
Weight: 800 kg

Main Specifications:

Bore	120 mm
Stroke	2x120 mm
Number of cylinders	3
Nominal volume	8,15 l
Specific fuel consumption	155 g/e.h.p.h
Rotation frequency	2600 min^{-1}

EA10-2

POWER UNIT



The power unit serves as a source of electric power supply of a direct current for all the necessary works of T-72UA1 tank in parking mode with the basic diesel engine off.
The power unit is mounted in the engine-transmission compartment. The cooling unit, starting control gear are installed in the armored compartment on the shelf over the caterpillar track.

Dimensions: 1368x552x355

Rated power: 10 kw

Weight: 250 kg

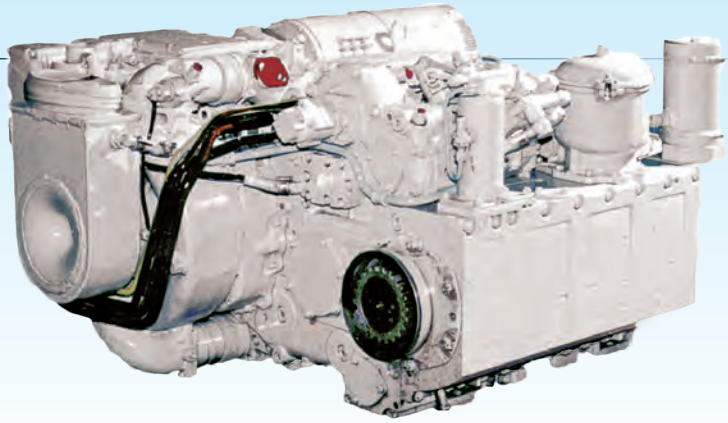
Main Specifications:

Rated voltage	28,5 V
Fuel consumption	4,2 kg/h
Loss of oil on burn-out	0,09 kg

3TD-4

DIESEL ENGINE

Intended for use as a powerplant for modernization of BMP-3 and other armored vehicles.



Dimensions: 1182x955x581

Rated power: 600 h.p.

Weight: 800 kg

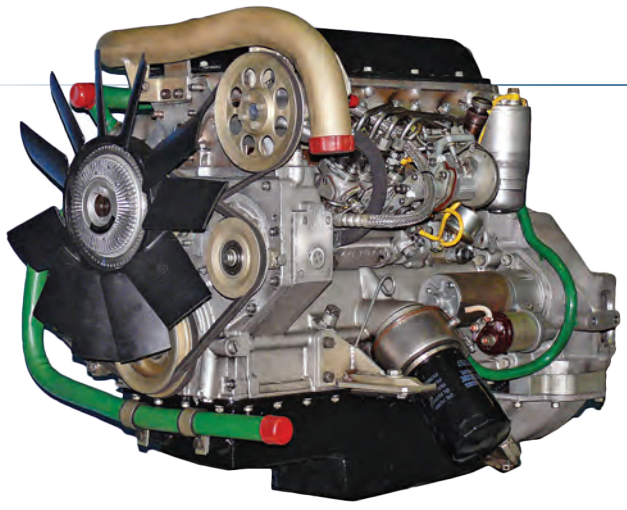
Main Specifications:

Bore	120 mm
Stroke	2x120 mm
Number of cylinders	3
Nominal volume	8,15 l
Specific fuel consumption	160 g/e.h.p.h
Rotation frequency	2600 min^{-1}

4DTNA1

DIESEL ENGINE

Designed for use as a powerplant for UAZ, Gazel, Sobol automobiles.



Dimensions: 700x520x700

Rated power: 66,2 (90) kw (h.p.)

Weight: 170 kg

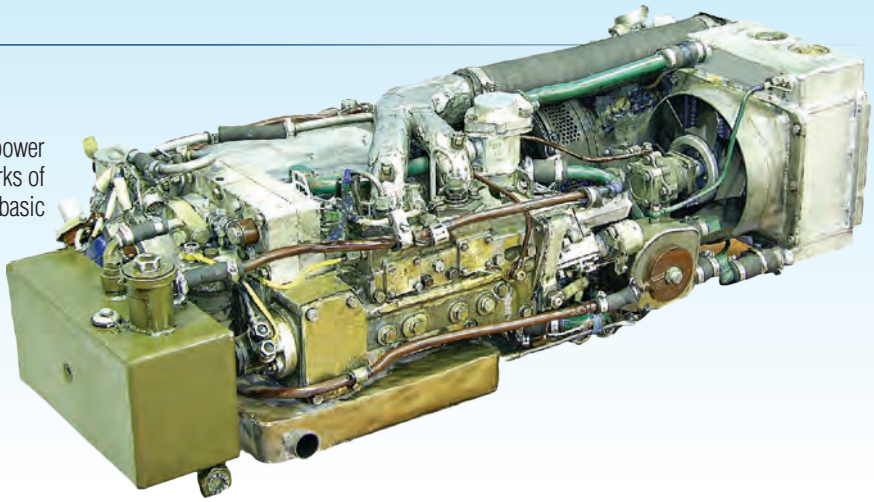
Main Specifications:

Rotation frequency	4200 min^{-1}
Bore	88 mm
Stroke	82 mm
Operating volume	2,0 l
Fuel specific consumption	16,2 g/kW-h

EA10-1

POWER UNIT

The power unit serves as a source of electric power supply of a direct current for all the necessary works of military tracked vehicles in parking mode with the basic diesel engine off.



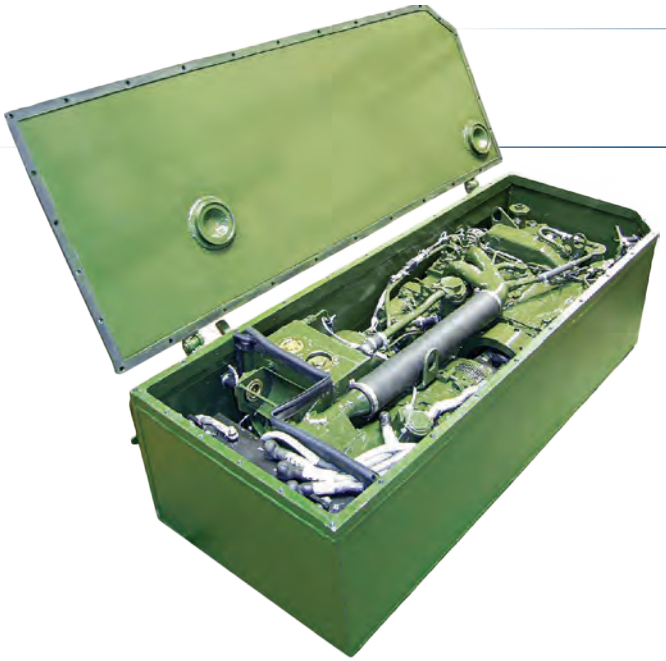
Dimensions:
1300x495x315

Rated power:
10 kw

Weight:
250 kg

Main Specifications:

Rated voltage	28,5 V
Fuel consumption	4,2 kg/h
Loss of oil on burn-out	0,09 kg



EA10MSB

POWER UNIT

The power unit serves as a source of electric power supply of a direct current for all the necessary works of military tracked vehicles in parking mode with the basic diesel engine off.
Provides basic diesel engine start.
The power unit is mounted in the armored compartment.

Dimensions:
1450x550x390

Rated power:
10 kw

Weight:
560 kg

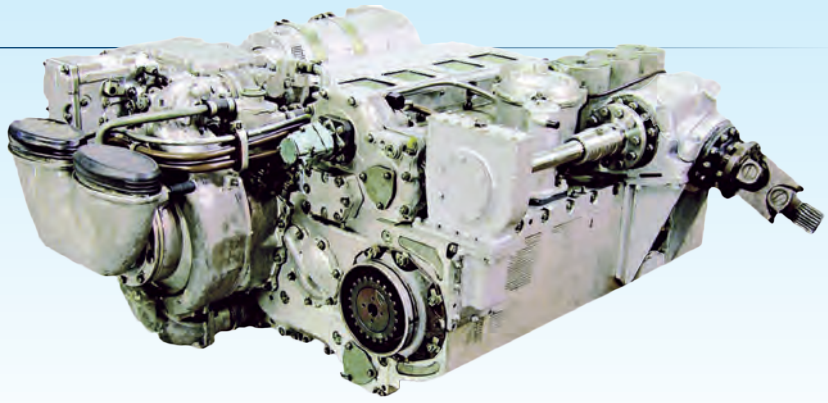
Main Specifications:

Rated voltage	28,5 V
Fuel consumption	4,2 kg/h
Loss of oil on burn-out	0,09 kg

5TDFMA-1

DIESEL ENGINE

Intended for modernization of T-72 tank without change of engine – transmission compartment volume, has the built-in tank fan drive.



Dimensions: 1413x955x581

Rated power: 1050 h.p.

Weight: 1080 kg

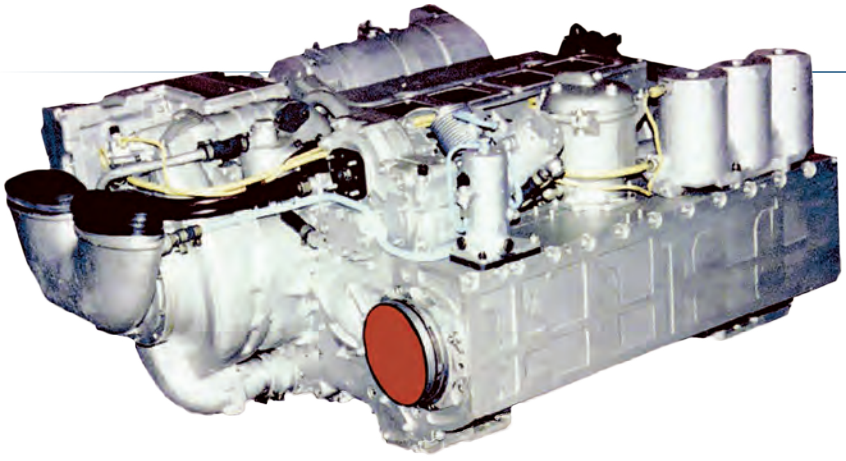
Main Specifications:

Rotation frequency	2850 min^{-1}
Number of cylinders	5
Bore	120 mm
Stroke	2x120 mm
Adaptation factor	1,2
Operating volume	13,6 l
Fuel specific consumption	165 g/e.h.p.-h

5TDFMA

DIESEL ENGINE

Intended for modernization of T-55, T-62, T-64 tanks.



Dimensions: 1413x955x581

Rated power: 1050 h.p.

Weight: 1080 kg

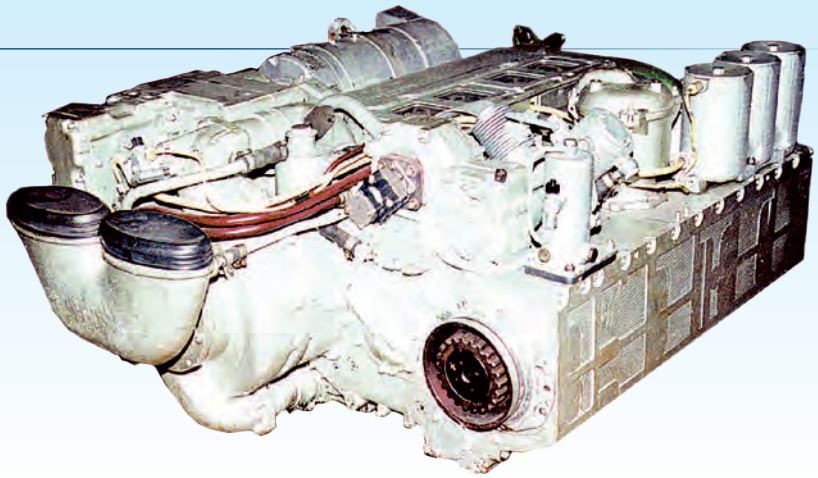
Main Specifications:

Rotation frequency	2850 min^{-1}
Number of cylinders	5
Bore	120 mm
Stroke	2x120 mm
Adaptation factor	1,2
Operating volume	13,6 l
Fuel specific consumption	165 g/e.h.p.-h

5TDFM

DIESEL ENGINE

Designed for use as a powerplant for tanks BM Bulat and T-55AGM. Can be used in modernization of T-54, T-55, T-59, T-62, T-64B tanks.



Dimensions: 1413x955x581

Rated power: 850 h.p.

Weight: 1040 kg

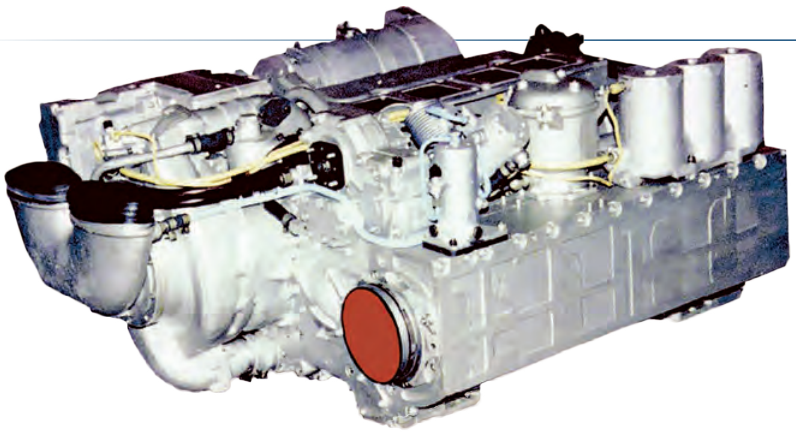
Main Specifications:

Rotation frequency	2800 min^{-1}
Fuel specific consumption	167 g/e.h.p.-h
Bore	120 mm
Stroke	2x120 mm
Operating volume	13,6 l

5TDF

DIESEL ENGINE

Designed for use as a powerplant of the T-64 tank.



Dimensions: 1413x955x581

Rated power: 515 (700) kw (h.p.)

Weight: 1040 kg

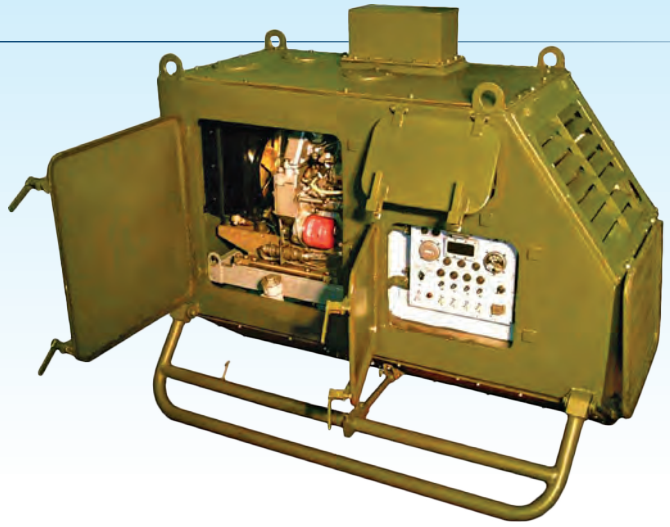
Main Specifications:

Rotation frequency	2800 min^{-1}
Fuel specific consumption	178 g/e.h.p.-h
Bore	120 mm
Stroke	2x120 mm
Operating volume	13,6 l

AD8-P28,5-2RP

POWERPLANT UNIT

Designed for power supply of the on-board complex «Polozhenie - 2».



Dimensions: 1360x620x1000

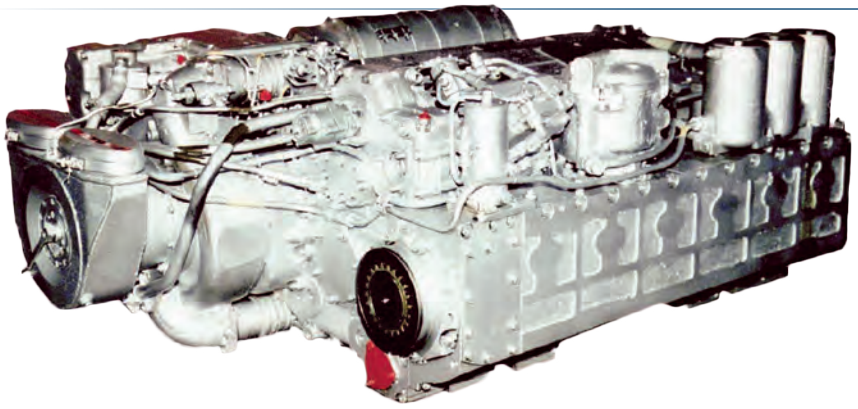
Rated power: 8 kw

Weight: 500 kg

Main Specifications:

Rated voltage	28,5 V
Current	direct
Rotation frequency	3000 min^{-1}
Fuel consumption	3,4 g/e.h.p.-h

6TD-2E



DIESEL ENGINE

Designed for use as a powerplant of the Oplot main battle tank. BM «Oplot». Equipped with additional elements of KSUD tank automatic control system.

Dimensions: 1602x955x581

Rated power: 1200 h.p.

Weight: 1180 kg

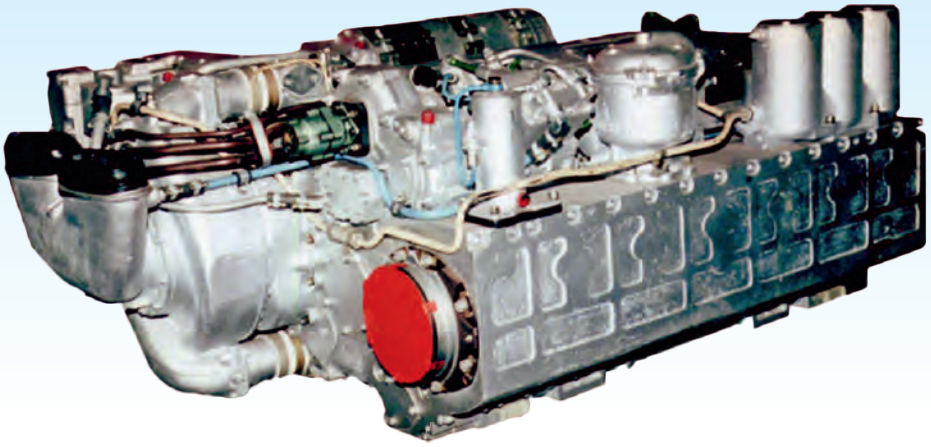
Main Specifications:

Bore	120 mm
Stroke	2x120 mm
Number of cylinders	6
Operating volume	16,3 l
Fuel specific consumption	160 g/e.h.p.-h (g/kW-h)
Rotation frequency	2600 min^{-1}

6TD-1

DIESEL ENGINE

Designed for use as a powerplant of the T-80UD tank. Can be used for upgrade of the T-72 tank.



Dimensions: 1602x955x581

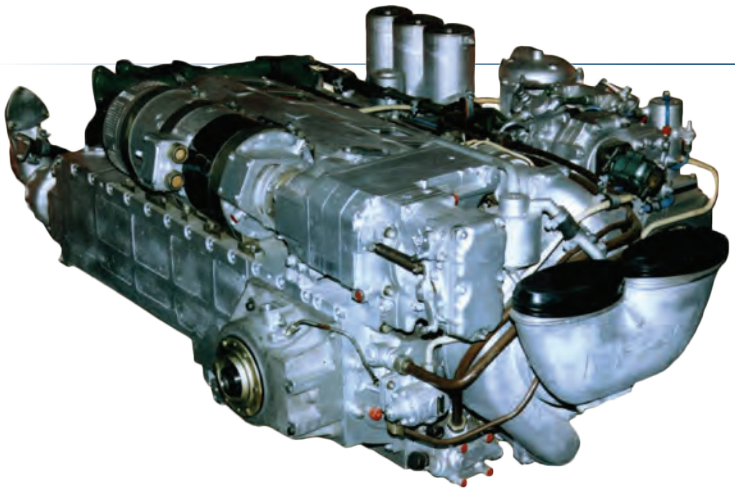
Rated power: 1000 h.p.

Weight: 1180 kg

Main Specifications:

Rotation frequency	2800 min^{-1}
Adaptation factor	1,15
Fuel specific consumption	158 g/e.h.p.-h (g/kW-h)

6TD-1R



DIESEL ENGINE

Designed for use as a powerplant for armored recovery and repair vehicles BREM-84, and also for modernization of BREM on the basis of T-72 tanks. Equipped with a transmission for additional BREM operating elements.

Dimensions: 1602x1093x581

Rated power: 735 (1000) kw (h.p.)

Weight: 1210 kg

Main Specifications:

Rotation frequency	2800 min^{-1}
Fuel specific consumption	158 g/e.h.p.-h (g/kW-h)
Bore	120 mm
Stroke	2x120 mm
Operating volume	16,3 l

UK-3,2 CRANE PLATFORM

Designed for loading and unloading operations, construction and assembly works as a part of BREM-4RM Armored Repair and Recovery Vehicle.



Main Specifications:

Load moment	12000.0 kg.m
Carrying capacity, max	3.2 t
Action radius	5.5 m
Max cargo lifting height (from crane mount plane)	5.5 m
Crane's rotation angle	360°
Max beam lifting angle	75°
Cargo lifting (lowering) speed	0-4 m/min

HYDRAULIC CYLINDERS

HYDRAULIC CYLINDERS PISTON-TYPE SPECIAL-PURPOSE

Hydraulic cylinders piston-type with single-end rod with polymeric sealing elements. Used in BTR-4 armored personnel carrier.



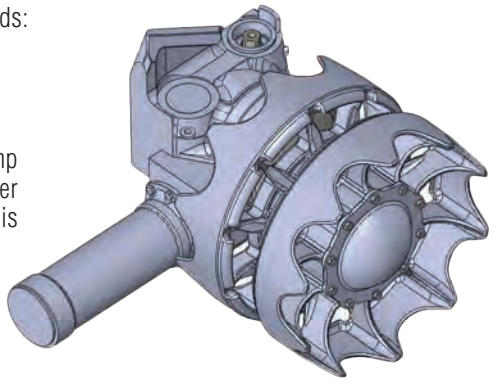
Main Specifications:

16ГЦ40/20ПП270-11-120	2.5 kg
16ГЦ63/32ПП338-11-120	5.6 kg

REMOTE TRACK MECHANISM

Installing the remote mechanism considerably decreases the efforts and time of the crew to stretch the tracks. The mechanism consists of crank with driving wheel, self-plugged worm-worm gear (worm, worm wheel)), hydraulic cylinder with piston enables to stretch the tracks from the driver's seat. Stretching can be done by two double methods:
1. Using the hydraulic drive inside from the driver's seat;
2. Manually by rotating the worm.

The stretch by the hydraulic drive is done by hydraulic pump The control of preliminary stretching is made by manometer in the driving compartment. The stretching and the control is made in 60° sector from the initial crank position



AU-AKR-4 EQUIPMENT TO CONTROL THE AUTOMATED TRANSMISSION GEAR

Designed to control switching off the transmission gear and stopping the hydraulic transformer from the driver's cabin in automated and manual modes as well as to enable the system to work in emergency condition.



BU-4 Unit
360×231×52,5

SUT-PU-4 board
288×190×250

Weight:
9 kg

Voltage:
27 V

Power, 27 V:
Not exceeding 15 Vt

Main Specifications:

Time of readiness after feeding	5 s
Endurance	Not exceeding 12 h
Temperature range	-20…+55 °C
Accepted temperatures range	-25…+70 °C

UNIT BIF-2M(T)



Functions as a part of PTT-2 sight and designed for transformation of service information, which inputs into Unit from the tank fire control system, and its transmission to infrared image-forming camera Catherine-FC in the RS-422 format for displaying on surveillance imager screen.

Dimensions:
197x146x39

Voltage:
27 V

Weight:
Not exceeding 1,4 kg

Main Specifications:

The Item provides transformation and transmission of service and readiness information in RS-422 format («Double», «Tsu» «Gunner»)	
The Item provides transformation and transmission of the target distance official information in RS-422 format.	
Time of readiness	Not exceeding 30 s

BPS-6 BPS-3 SPARKING PLUGS HEATING UNIT OF DIESEL ENGINES WITH EMBEDDED NETWORK 24 VOLTAGE

Designed to process the input signal of spark plugs heating coming from the object devises and forming input signals of the engine of this object.
Field of use: tanks, tracked and wheeled armored vehicles.



Dimension:
197×150×54

Weight:
1,9 kg

Voltage:
27 V

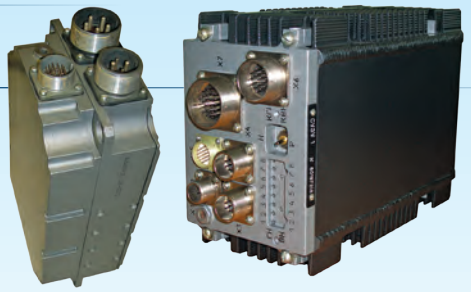
Power, 27 V:
Not more than 15 Vt

Main Specifications:

Endurance	not more than 12 h
Temperature range	-20…+100 °C
Input signals number	3 or 6
Output power of signal	no more than 130 Vt
Time duration of forming signals	45±5 s
Minimum time between signals switching off	15±3 s

SUZU(T) ITEM

Equipment for controlling the tank anti-aircraft system, designed to control and adjust anti-aircraft system horizontally and vertically. Item provides a wide speed range of the anti-aircraft system, diagnosis algorithm realization and identification of the emergency states.

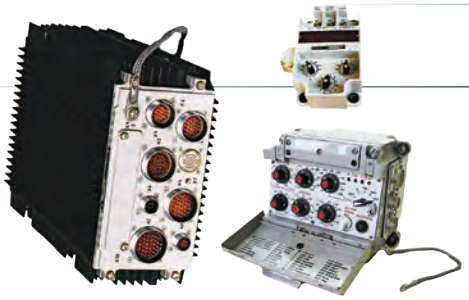


- SUZU1R unit 366x256x175
- SUZU 2 unit 270x140x87
- Weight: Not exceeding 15 kg
- Voltage: 27 V
- Power, 27 V: 50 Vt

Main Specifications:

Average squared homing error	Not exceeding 0,152 mRad
Harshness of homing	Not exceeding 0,33 mRad
Homing speed:	
▮ minimal	Not exceeding 0,01 ang/s
▮ maximal	No less 3,54 ang/s
Flip over speed	No less 45,05 ang/s
Endurance	24 h

ITEM TIUS-VM(T)



Designed for automated adjustment in the fire control system to increase hitting probability.

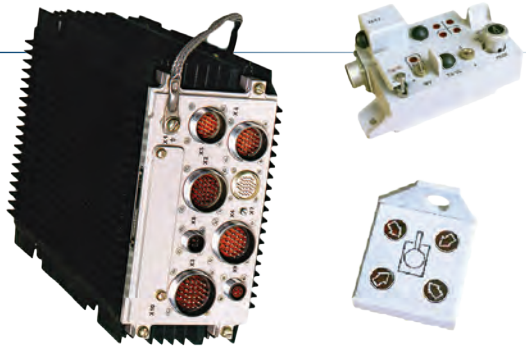
- Ballistic calculator block 224x123x296
- Board of entering parameter 209x166x160
- Indication board 125x200x70
- Weight: 15 kg
- Voltage: 27 V
- Power, 27 V: 20±0,5 Vt

Main Specifications:

Calculation accuracy and forming angular aiming signals and lateral lead of gun and machine-gun	0,052 ang.sec.
Time of readiness of the Item to functioning after feeding	10±0,53 s
Endurance	12 hours
Temperature range	-40…+50 °C

TIUS-Z(T) ITEM

Item designed for working as a part of opto-electronic interference system in order to detect lazer radiation of enemy, dispensing fume or aerosol screen, modulated light emission for enemy's guided missiles disorientation.



- Analysis and control unit 224x343x123
- Indication board 160x92x74
- Weight: 7,5 kg
- Voltage: 27 V
- Power, 27 V: 20±0,5 Vt

Main Specifications:

Spectral range of the analysers	0,6…1,2 mkm
General field of vision	360°
Time of readiness of the Item after feeding	15±0,5 s
Temperature range at accepted measure error ±2 %	-40…+55 °C

TIUS-D4(T) ITEM

Movement control equipment, designed to control speed changing and turns of the object in automatic and manual modes.

Weight:
Not exceeding 23,7 kg

Voltage:
27 V



Main Specifications:

Time of readiness	Not exceeding 10 s
Consumption	Not exceeding 200 Vt

ITEM TIUS-P(T)



Panel for control and display of the tank's driver operating data.

Weight:
max 21 kg

Voltage:
27 V

Power consumption:
max 90 W

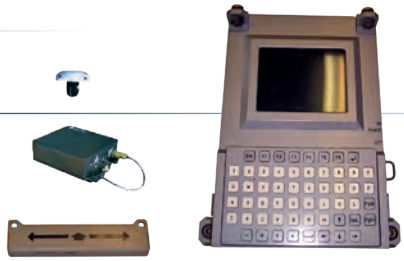
TIUS-NM(T) ITEM

The equipment of navigational support and coordination is intended to fulfill tactical tasks of subunit combat vehicles' control, up to battalion level inclusive.
Current time and co-ordinates of a combat vehicle place defined by means of satellite navigating system are used for calculation of a direction and movement speed and at the set destination – range, turn corners and arrival time.

Weight:
7,5 kg

Supply voltage:
27 V

Mains 27 V supply power:
max 50 W



Main Specifications:

Overall dimensions:	
Processing unit	224x123x296 mm
Display panel	300x263x113 mm
Control panel	160x42x17 mm
SN-3700 equipment including:	
Receiving-computing unit	205x144x57 mm
Antenna unit	73,6x119,4x102,8 mm
Item warm-up time for operating after power supply	180 s
Continuous running time	12 hours

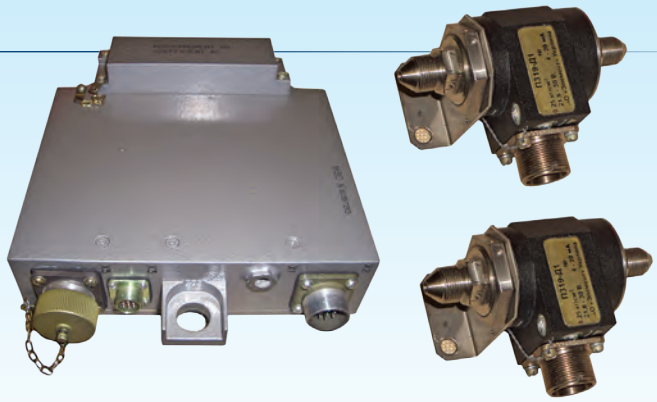
TIUS-O(T) EQUIPMENT

The equipment is intended for the continuous control of air cleaning system parameters of the diesel engine. Provides indicating of outcoming signal «FAILURE» at the moment of transition of air cleaner parametres out of admissible values limits.

Weight:
Max 4 kg

Supply voltage:
27 V

Power consumption:
Max 10 W



Main Specifications:

Available machining time	Max 10 s

ITEM TIUS-U(T)



It is designed to indicate the diesel fuel level in front and rear fuel tanks as well as the oil level in the installation object.

Weight:
max 6 kg

Power supply voltage:
27 V

Power consumption:
max 10 W

TIUS-TM1 TANK TRANSMISSION LOCKING CONTROL EQUIPMENT

Tank transmission locking control equipment is designed to carry out the following functions:

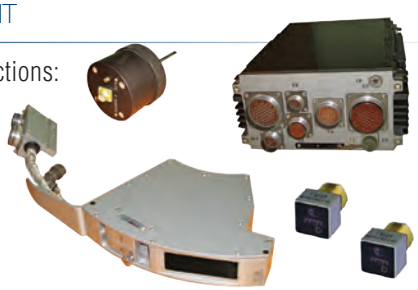
- Providing tank reverse transmission system control;
- Switching between forward and reverse modes;
- Locking the low gear at the relevant movement speeds;
- Measuring and displaying the tank speed on a speedometer;
- Providing speed detector communication line monitoring

BAR Unit
140x60x188

BDSh Unit
85x168 diameter

Weight:
4 kg

Power, 27 V:
12 W



Main Specifications:

Warm-up time at power on	32 s
Maximum duration of continuous operation (followed by a 1-hour power off interval)	12 h
Operating temperature range	-40...+55 °C
Relative humidity +25 °C	
Line sharing with the processing unit	95% ± 3

PPO FIRE EXTINGUISHING BOARD

Designed to receive and process the fire alarm signals from five thermal sensors and output of the signals to two carbon-dioxide cylinders, by sound system and two additional fire alarm indicators. Field of area: life-support equipment of BTR-4 crew.



Dimension:
140x124x79

Weight without packing:
1,4 kg

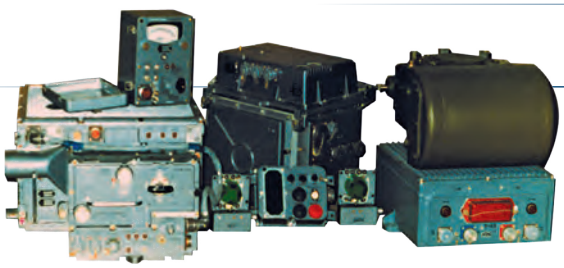
Weight with packing:
3,2 kg

Voltage:
27 V

Power, 27 V:
Not exceeding 5 Vt

Main Specifications:

Endurance	Not exceeding 12 h
Temperature range	-25…+55 °C
Accepted temperature range	-40…+70 °C



ITEM 9C485

Equipment is designed to form and transmit coded radio commands. It is a of 9P149 complex mounted on BMP (Infantry Combat Vehicle).

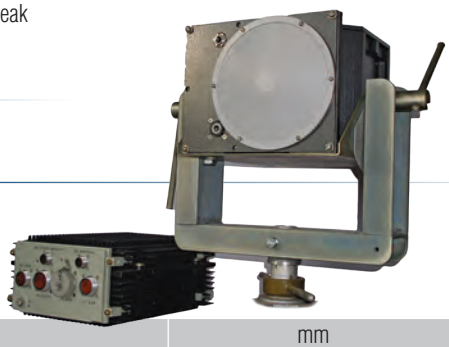
Weight:
max 150 kg

Main Specifications:

Range	4000 m
Pointing angle	
▮ At azimuth	±85°
▮ At tilt angle	Up +(15+1)° / Down -(15-1)°
Warm-up time	180 s
Continuous operation time	3 cycles per 5 h with 1 h break

BALLISTIC RADAR SYSTEM

It is designed to identify initial shell's launching speed for further shooting correction. It used stand-alone or with ballistic computer.



Main Specifications:

Frequency range	mm
Shell caliber	30-155 mm
Speed measuring range	50-2000 m/s
Measuring areas:	
At distance	<150 m
At azimuth	± 2 °
At tilt angle	± 2 °
Measurement error of convergence time	2 m/s
Measurement error of initial velocity	0,1 m/s
Line sharing with the processing unit	RS-232, RS-422

OTS-20.04 FIRE CONTROL SYSTEM



Designed for APCs and ACVs, provides sighting and fire control.

Main Specifications:

Field of view of TV	
TTC-2.03 (elevation x azimuth)	7°37'x10°9'
TTC-1.03 (elevation x azimuth)	1°50'x 2°27'
Angular resolution capability	
Narrow viewing field	30 Arc min
Wide viewing field	3,5 Arc min
Sight angles setting error of TTC-1.03	1,5 Arc min
Monitor screen size on a diagonal	21 cm

STABILIZERS SVU-500-3D, -4D



Designed for stable pointing and guiding in the horizontal and vertical planes land, air and surface targets for effective fire from fixed position, on the move and afloat.
Used in fire control systems for combat module «Shturm» of BTR-3E and BMP-1U (APC-500-3C) products, «Shtorm» and «Parus» combat units of BTR-3E1 (CBY-500-4C) and BTR 4 (CBY-500-4C-01) products.

Weight CBY-500-3C:
not more than 65 kg

Weight CBY-500-4C:
not more than 68 kg

Main Specifications:

Pointing angles range:	
▮ In horizontal plane	circular rotation
▮ In vertical plane	-7° ... +70°
Power of vertical and horizontal pointing drives	500 W
Service life:	
▮ warranty	7 year
▮ general	20 year

EPK-69 ELECTRICAL PNEUMATIC VALVE

It is designed to supply compressed air to the actuating devices by electronic command. Application: T-80U, T-84U.

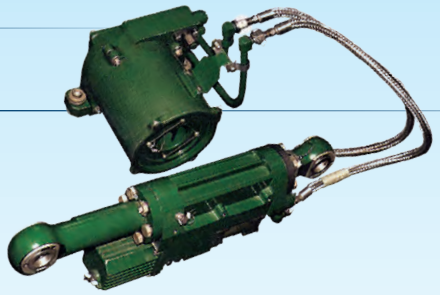
Rated motor supply voltage:
27 V



Main Specifications:

Working body	compressed air
operating pressure	180 ± 10 kgf/cm^2
temperature range	-60 ... +150 °C
Current force	no more 1,5 A
Diameter of of flow area port	no less 8 mm

PV-1888 VERTICAL DRIVE



It is intend for barrel stabilization. Used in weapons control system of the T-80U, T-84U.

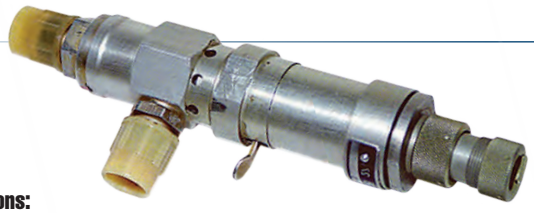
Weight:
51 kg

Rated motor supply voltage:
27 V

Main Specifications:

Current	45 A
Managing the maximum signal	320 mA
Maximum stroke	165 mm
braking force	900 kg/s
Rod speed when load is 225+75 kg	140 mm/s
Operating fluid:	
▮ main	МГЕ
▮ substitute	АМГ

ELECTROVALVE EC-48



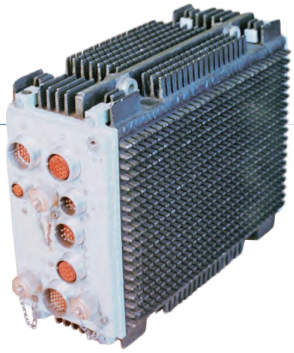
It is designed for compressed air supply 1 ... 8 MPa to 478DU unit's actuating devices by electronic or manual command. Application: T-80U, T-84U.

Weight:
0,5 kg

Main Specifications:

Operating pressure	1…8 MPa
Actuation pressure	no more 1,0 MPa
Minimum voltage tripping, no more (at a pressure of 8 MPa)	20 W
Reaction time	no more 0,025 s
Parameters of the current to the electromagnet:	
▮ voltage	20-28,5 W
▮ amperage	no more 3,5 A
Operating range of ambient temperatures	-60…+120 °C

CONTROL EQUIPMENT TANK MOVEMENT, ENGINE AND TRANSMISSION CONTROL EQUIPMENT



The equipment is intended for the tank mobility characteristics improvement due to the following automation processes: fuel feed, movement HIGH/LOW gear shift, turn control, and also transmission actuator, current and emergency parameter monitoring and indication.

Main Functions:

- ▮ monitoring of current and emergency parameters of the main engine and auxiliary systems of the tank
- ▮ control of road signaling, heating and cleaning of monitoring devices, outside and inside illumination control;
- ▮ air intake tube control with displaying its position;
- ▮ control of starting, stopping, motoring round and preservation of the auxiliary engine of the power generating unit and display of the operating modes of the power generation unit.
- ▮ termo-smoke equipment magnet control
- ▮ display of a fuel level in tanks and oil level in a tank oil system

TANK REVERSING TRANSMISSION CONTROL EQUIPMENT

The reversing transmission control equipment is intended for:

- control of the tank reversing transmission
- shift from the basic mode to the reverse mode and vice versa
- interlock of the low gear engaging with the appropriate motion speeds
- tank speed measurement and its display on the speedometer
- monitoring of the speed sensor unit communication line.



reversing automation unit
140x60x188

traversed path and speed sensor unit
diameter 85x168

unpacked
Not more 4 kg

Power, 27 V:
12 W

Main Specifications:

Readiness time for service after energizing	32 sec
Continuous operation time (with a subsequent interruption for 1 hour)	12 h
Operating temperature range with a permissible measurement error of ±2%	– 40 to +55 °C
Relative humidity at a temperature of +25 °C	95 ± 3%

TANK POWER GENERATING UNIT CONTROL EQUIPMENT



The auxiliary power generating unit (ЭА-10М) engine control equipment is intended for automation of starting and stopping of the auxiliary power generating unit engine, monitoring and signaling of current and emergency parameters of the auxiliary power generating unit engine, control of the process of producing the electric power by the power generation unit, as well as automatic interlock of emergency operating modes.

Main Specifications:

Readiness time for service after energizing	No more 5 s
Continuous operating time (with a subsequent interruption for 1 hour)	24 h
DC stabilizing voltage	27,5±1 V
Ripple voltage	No more 0,75 V
Generator excitation winding current	No more 7 A
Operating temperature range	-30…+55 °C
Relative humidity at a temperature of +25 °C	No more 98%

parameters monitoring and control unit
380x350x120

driver power panel
100x104x87

Weight:
Not more13,1 kg

Voltage:
27 V

Power, 27 V:
Not more 50 W

TANK TRANSMISSION INTERLOCK CONTROL EQUIPMENT

The equipment is intended for providing the interlock of the controls controlling the transmission of the armored vehicle objects of different types to protect the transmission from the wrong actions of the operator (driver) and also for controlling the speedometer.



Main functions:

- automatic determination of the types of the object and transmission on which the article is set up
- control of transmission actuators included as components of the object
- interlock of low gear engagement with the appropriate object motion speeds
- measurement of the object motion speed and its display on the speedometer
- monitoring, processing and testing of data from sensors and transmission actuators of the object
- display of the state of the sensors and transmission actuators of the object.

CONTROL EQUIPMENT

FOR CONTROLLING THE TANK SYSTEMS AND MODES OF THE MAIN ENGINE AND AUXILIARY SYSTEMS

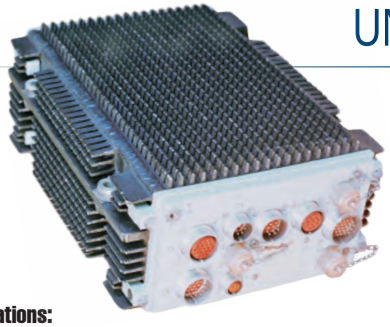
The system is intended for optimization of the operator (driver) operation due to automation of prestart preparation and start of the main engine (ME), control of the operating modes and protection systems of the ME, providing the operation of the road signaling and display of the current parameters of the ME and auxiliary tank systems.



Main functions:

- digital display of the tank engine and system modes and states
- emergency state indication
- control of the main engine prestart and start
- selection of movement conditions
- control of road signaling
- indication of the fuel level indicator

UNIFIED RADAR MOTION SPEED METER



Unified radar meter for measuring the ground object movement parameters is intended for mounting on vehicles, all-purpose wheeled and caterpillar vehicles, armored vehicle objects, armored carriers with the purpose of creation on its basis measuring, navigation and control complexes.

Transceiver
185x140x65

Measuring unit
330x225x70

Power supply: on-panel direct current mains
24, 12, 110 V

Power consumption
Not more 50 W

Main Specifications:

Relative speed measurement error	0,1%
Relative traversed path measurement error	0,13% (per kilimeter)
Relative movement time measurement error	0,1%
Refresh rate	10 (or 1 Гц upon request)
Ambient temperature	- 40 to +50 °C

BALLISTIC CALCULATOR

The tank ballistic calculator is intended for automation of correction input in the tank fire control system to increase the probability of hitting the target.



Ballistic calculator unit
224x123x296

Parameter input panel
209x166x160

Indication panel
125x200x70

Weight:
15 kg

Supply voltage
27 V

27 V mains power B
20±0,5 W

Main Specifications:

Accuracy of calculation and formation of angles of sight signals and lateral lead advance of a gun and a machine-gun	0,052 angular minutes
Time of the article availability for service after energizing	10±0,53 s
Continuous operating time	12 h
Operating temperature range	-40...+55 °C

NAVIGATION EQUIPMENT

COMPREHENSIVE NAVIGATION MONITORING AND OPERATIVE INTERACTION EQUIPMENT



Processing unit
224x123x296

Display panel
300x263x113

Control panel
160x42x17

Unpacked
17,5 kg

Supply voltage:
27 V

Power, 27 V:
Not more 50 W

Navigational support and interaction equipment is intended for solution of tactical tasks of controlling the fighting vehicles of the unit up to the battalion inclusive.

Main Specifications:

Time of the article availability for service after energizing	180 s
Continuous operating time	12 hours
GPS equipment (type CH-3700) consisting of	
▮ receiving-computing unit	205x144x57mm
▮ antenna unit	73,6x119,4x1028 mm

LOADING GEAR CONTROL EQUIPMENT



The loading gear control equipment is intended for creation of military equipment having the increased firing rate.

Commander panel
340x164x80

Gunner panel
240x136x77

Loading panel
100x155x110

Tank body conveyor control unit
24x123x300

Turret conveyor control unit
20x165x270

Voltage:
+ (21,5…29,5) V

Power, 27 V:
not more 110 W

Main Specifications:

Types of usable projectiles	hollow-charge, armour-piercing, guided
▮ in turret conveyor	22 pcs.
▮ in tank body conveyor	14 pcs.
Time of availability for service after energizing	no more 3 s
Continuous operating time	no more 12 hors

ANTIAIRCRAFT SYSTEM CONTROL EQUIPMENT



SUZU1P control unit
366x256x175

SUZU 2 amplifier power unit
270x140x87

Weight:
not more 15 kg

Voltage:
27 V

Power, 27 V:
50 W

The tank antiaircraft system control equipment is intended for control and stabilization of the antiaircraft system in horizontal and vertical planes.

Main Specifications:

Mean square pointing error	no more 0,152 mrad
Pointing nonsmoothness	no more 0,33 mrad
Pointing rate	
▮ minimum	no more 0,01 degree/sec
▮ maximum	no less 3,54 degree/sec
Conveying speed	no less 45,05 degree/sec
Continuous operating time	24 h

ARMAMENT CONTROL AND STABILIZATION EQUIPMENT

Control unitBU-K1TsL
366x256x175

Stabilizing unit СУЗУ-2ГН (СУЗУ-2ВН)
270x140x87

1KPI-M Display panel
300x263x88

PU Panel
205x142x88

Weight:
31,2 kg

Voltage:
27 V

27 V mains power at idling
60 Vt

The armament control and stabilization equipment (warfare modules) is intended for stabilization and stabilized pointing of the warfare module weapons unit in horizontal and vertical planes in the automatic mode by sight signals and with taking into account the information about firing conditions.



Main Specifications:

Pointing rate	
minimum	No more 0,02 °/c
maximum	No less 6 °/c
Mean stabilization error	No more 0,3 Th.range
Nonsmoothness of pointing rate	No more 0,3 Th.range
Time of the article availability for service after energizing	35 s
Continuous operating time	12 h

SMOKE SCREENING SYSTEM CONTROL EQUIPMENT



The system is intended for operation as a component of the optoelectronic suppression complex for the purpose of acquisition of the enemy laser emission, smoke or aerosol screening, emission of the modulated light for disorientation of the enemy guided missiles.

Nalysis and control unit
224x343x123

Display panels
160x92x74

Unpacked
7,5 kg

Voltage:
27 V

Power, 27 V:
20±0,5 W

Main Specifications:

Spectral range of analyzers	0,6…12 μm
Total field of vision in horizon	360°
Time of the article availability for service after energizing	15±0,5 s
Operating temperature range (with a permissible measurement) error of ±2 %	from – 40 to +55 °C

TANK CASE CONTROL EQUIPMENT

Parameters control unit
224x296x123

Information-control panel
105x90x45

Traffic signalization control panel
75x209x193

Traffic condition selection panel
201x86x70

Alarm signaling panel
160x45x17

Unpacked
1,4 kg

Packed
3,2 kg

The tank case control equipment is intended for the parameters control and auxiliary power set work control, air pipe, condensate drain, the road signaling, external and internal illumination control, and also for emergency parameters indication.



Main Specifications:

Endurance	no more than 12 h
Temperature range	-20…+100 °C
Input signals number	3 or 6
Output power of signal	no more than 130 Vt
Time duration of forming signals	45±5 s
Minimum time between signals switching off	15±3 s

CONTROL EQUIPMENT OF AUTOMATIC TRANSMISSION OF APC BTR-4E

Block BU-4
360x231x52,5

Panel SUT-PU-4
288x190x250

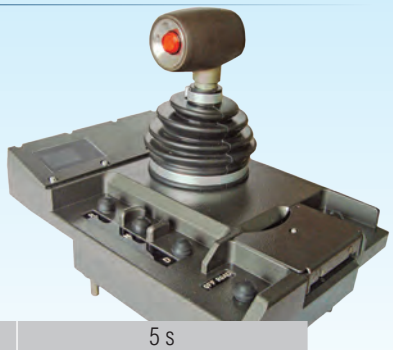
Without packing
7,9 kg

With packing
9,6 kg

Voltage:
27 V

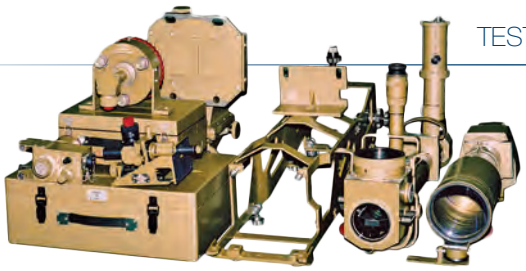
Power, 27 V:
not more 15 W

Control equipment of automatic transmission of APC BTR-4E is intended for control of gear change by automatic transmission a for blocking of the hydraulic torque convertor from a driver seat in the automatic and manual mode of movement, and also for a possibility of transition of a control system in emergency mode as a part of object of installation of APC BTR-4E.



Main Specifications:

Available machining time after power supply	5 s
Continuous work time	no more12 hours
Operating temperature range	-20...+55 °C
Limiting allowable temperature range	-25...+70 °C



TEST AND CONTROL EQUIPMENT KPA 9V940

Designed for Technical Maintenance II and parameters checking during repair of the tank hardware, guided weapons consisting of 9S516 data unit, 9S517 automatic control unit, 9S831 or 9S601 voltage transducer combined with 1A43 or 1A43U system in the tank as a part of a tank.

Main Specifications:

Raster rotation frequency check	1,000±10 Hz
Pancratic system displacement time:	
for 1K13 item	15.1-16.6 s
for 9C516 item	17.9-20.6 s
Checkup of data field parameters in the center and extreme points with error	Not more than 20%

Weight in packing boxes
184 kg

KPA 9V992 TEST AND CONTROL EQUIPMENT

It is designed for automated technical maintenance of 1K118 Thermal Imaging TV Control Device together with KPM 9V945 automated control system.

Control panel:
550x215x243

Optico-mechanical craft simulator unit:
425x215x174

Weight:
not more than 60 kg

Supply voltage from AC network 50Hz:
220±22 V



Main Specifications:

Preparation time	not more than 5 min
Continuous operation	not more than 8 h
Built-in self-control time	not more than 2 min

SE2PI PRE-HEATING PROTECTIVE GLASS

Designed for protection of monitoring devices against dust, dirt and precipitation, and also demisting or glass freezing in the heated zone.



Dimensions (incl. cable - 510 mm)
max. 108x67x54

Weight:
max. 0,63 kg

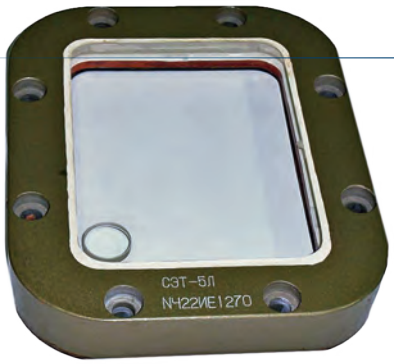
Constant current source
29 V

Power consumption
max. 11 W

Main Specifications:

Visual transmittance coefficient	min. 0,8
Operating conditions	-50 – +50 °C

PRE-HEATING PROTECTIVE GLASS SET-5L



Designed for protection of the observer or monitoring devices (sighting units) against dust, dirt and precipitation, and also demisting or glass freezing in the heated zone.

Dimensions (incl. cable - 510 mm)
max. 108x67x54

Weight:
max. 3,5 kg

Power consumption
max. 120 W

Main Specifications:

Visual transmittance coefficient	min. 0,92
Constant current source	29 V

4C20, 4C22 DESIGNED TO PROTECT ARMORED COMBAT VEHICLES FROM THE CUMULATIVE WEAPONS

Designed to protect Armored Combat Vehicles from the cumulative weapons.



Overall dimensions:
251,9x131,9x13

Mass fraction 4S20:
1,34 kg

Mass fraction 4S22:
1,37 kg

PVV-5A in item 4S20:
0,25 kg

PVV-12M in item 4S22:
0,28 kg

Main Specifications:

Operating temperature range	-50…+50 °C
Package – wooden box	40 piece

TKN-1SM NIGHT VISION DEVICE



TKN-1SM is an optoelectronic passive-active night vision device which is designed for a vehicle's commander to observe road, terrain and other unit's vehicles in night conditions.

Overall dimensions:
260x210x320

Weight:
not more than 5 kg

DC power supply voltage:
27+2-5 V

Power consumption:
not more than 6 W

Main Specifications:

Distance of seeing a MBT type of target in passive mode at target's contrast against background not less than 0.4, atmospheric transparency not less than0.7 and natural night illumination from 5×10^{-3} to 5 lx	no less 400 m
Distance of seeing a MBT type of target in active mode at illumination by the 'OU-3K' type searchlight with infrared filter at target's contrast against background not less than 0.4 and atmospheric transparency not less than 0.7	no less 300 m

TKN-3VM COMBINED OBSERVATION DEVICE



TKN-3VM' is a combined optoelectronic passive-active night-vision observation device. It is designed for the commander of a combat vehicle to survey the road, terrain and other unit's vehicles in day and night time environment.

Main Specifications:

Optoelectronic channel	
Distance of seeing of a surveillance object e.g MBT in passive mode at contrast of a surveillance object against background not less than 0.4, at atmospheric transparency not less than 0.7, at natural night illumination from 5×10^{-3} to 5 lx	no less 1,200 m
Distance of seeing of a surveillance object e.g MBT in active mode at illuminating by 'OU-3K' type illuminator with infrared filter at contrast of a surveillance object against background not less than 0.4, at atmospheric transparency not less than 0.7.	no less 1,000 m

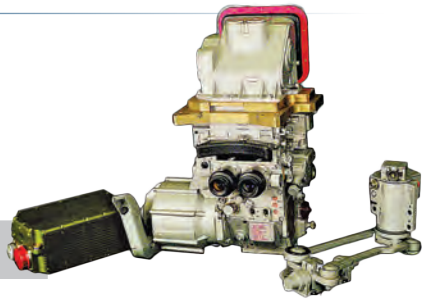
Overall dimensions
217x195x460

Weight:
not more than 12.5 kg

DC voltage
27 V

Eye piece heater's power consumption
not more than 13 W

PNK-4CR TANK SIGHTING AND OBSERVATION COMPLEX

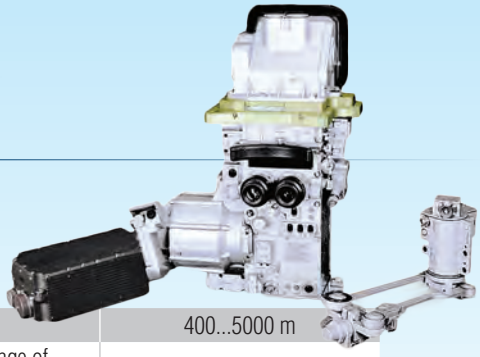


Designed for targets observation, detection, recognition and aimed fire by the commander from a tank gun and coaxial machine gun or anti-aircraft system in day-and-night time.

Main Specifications:

Target recognition range from site at meteorological range of vision not less than 10,000m and 0.5m target contrast	no less 4,000 m
Target visibility range in night channel in passive mode	no less 800 m
System readiness time upon stabilizer activation	no more 2 min
Magnification:	
▮ one-fold day channel	no less 1x
▮ multifold day channel	no less 8x
▮ night channel	no less 5.5x

PNK-5 TANK SIGHTING AND OBSERVATION COMPLEX



It is designed for search of targets, detection, recognition, measurement of range and aimed fire by commander from stationary position and on move at ground or lowaltitude targets from the antiaircraft system and dubbed fire from the tank gun and coaxial machine gun.aimed fire by commander from stationary position and on move at ground or lowaltitude targets from the antiaircraft system and dubbed fire from the tank gun and coaxial machine gun.

Main Specifications:

Target detection range by built-in laser rangefinder	400...5000 m
Target recognition range from site at meteorological range of vision not less than 10,000m and 0.5m target contrast	not less than 4000 m
Target visibility range in night channel in passive mode	not less than 800 m
System readiness time upon stabilizer activation	not more than 2 min
Magnification:	
▮ one-fold day channel	not less than 1x
▮ multifold day channel	not less than 7,5x
▮ night channel	not less than 5,5x

PNK-6 TANK PANORAMIC SIGHTING SYSTEM



Designed for the observation and recognition of ground and aerial targets from the tank commander's workstation in daylight and at night visibility conditions.

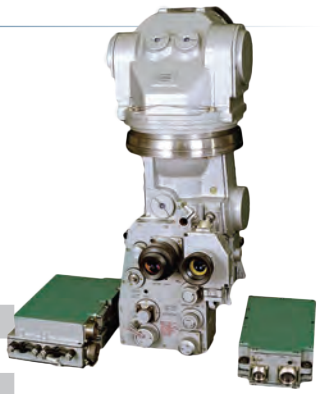
Weight:
not more than 400 kg

27V DC power consumption
not more than 500 W

Main Specifications:

Tank size targets detection range	
Via visual channel	not less than 5,500 m
Via IR channel in WFOV	not less than 4,000 m
Target distance measurement range	200...9,500 m
Rms error of target range measurement by the laser rangefinder	not more than ±5 m
Readiness time	not more than 5 min

T01- K01ER TANK NIGHT SIGHTING SYSTEM



Intended for observation, detection, identification of the targets and assurance of the aimed shot from a gun and coupled with it machine-gun at night.

Weight:
48 kg

Main Specifications:

Magnification	7.5 multiplicity
Vision field	not less than $5^{0}25'$
Target (tank) range of vision with brightness 3.10^{-3} lux	not less than 1400 m
Day sight mark tracking error	not more than 0,5 division point
Readiness time	not more than 10 s

OEM, OEM-V OPTOELECTRONIC MODULES

OEM and OEM-V optoelectronic modules are designed for surveillance of the background-target situation under the day time and lowered illumination environments as well as for measuring the distance to a chosen target.



OEM:
490x378x214

OEMV:
422x214x378

Weight OEM:
not more than 32,5 kg

Weight OEMV:
not more than 31,8 kg

Main Specifications:

Distance of detection of a ground object with frontal projection sized not less than 2.3 m×2.3 m:	
in day time at more than 25 km of meteorological visibility, natural illumination from 100 to 1.5×10^5 lx and at contrast of a surveillance object against background not less than 0.5	
for narrow field	not less than 5 km
for wide field	not less than 2 km
at lowered illumination not less than 1.5×10^{-3} lx in passive mode	not less than 800 m



OPTOELECTRONIC MODULES WITH LASER GUIDANCE CHANNEL OEM-L, OEM-L1

OEM-L and OEM-L1 optoelectronic modules with laser guidance channel are designed to register background and target situation, to find distance under natural and low illumination, and to form the space-and-time structure of the laser information guidance field ranging from 50 to 5000 m.

Main Specifications:

Distance of detection of a MBT type of target colored by the 'HV518' ('TU 610966–75' state standard) protective enamel, with its bard facing an observer, in open terrain:	
under day conditions and meteorological visibility distance of not less than 10 km and under illumination ranging from 100 to 10^5 lx:	
for narrow-field channel for shooting from 30-mm cannon	not less than 5000 m
for wide-field channel for shooting from 30-mm cannon	not less than 2500 m
for narrow-field channel for shooting by guided missile	not less than 7000 m

OEML:
430x235x395

OEML1:
430x395x235

Weight OEML:
not more than 36 kg

Weight OEML1:
not more than 40 kg

TPN-1M-49-23 TANK NIGHT SIGHT

TPN-1M-49-23 is the optoelectronic passive-active night vision device and is designed for battle field observation when inflicting direct fire firm tank cannon and coaxial machine gun from a halt and on the move against mobile and fixed targets in night conditions.



Overall dimensions:
280x256x430

Weight:
not more than 13 kg

DC power supply voltage:
27+2-5 V

Power consumption:
not more than 6 W

Main Specifications:

Distance of seeing a MBT type of target in passive mode at target's contrast against background not less than 0.4, atmospheric transparency not less than0.7 and natural night illumination from 5×10^{-3} to 5 lx	not less than 1300 m
Distance of seeing a MBT type of target in active mode at illumination by the 'L-2G' type searchlight with infrared filter at target's contrast against background not less than 0.4 and atmospheric transparency not less than 0.7	not less than 800 m
Magnification	5.2±0.5 magnification factor
Viewing field	not less than 6°

9SH350I1 SEARCH DEVICE



9SH350I1 device is designed for search and observation of background target and situation ranging in day/low illumination as well as for registering the heat emissions of objects and ground features.

Main Specifications:

Distance of detection (identification) of an object under meteorological visibility distance (MVD)	not less than 15 km
In day conditions under the ground illumination ranging from 100 to 105 lx:	
▮ for narrow viewing field	not less than 7 (5) km
▮ for wide viewing field	not less than 2 (1,7) km
Under low ground illumination not less than 0.5 lx:	
▮ for narrow viewing field	not less than 4 (2,5) km
▮ for wide viewing field	not less than 1,8 (1,5) km
Thermal imager' viewing field, horizontally and vertically	not less than 5°29' x 4°7'
Distance of detection	3,000 m
Distance of identification	1,500 m

ANTI-AIRCRAFT SIGHT BPK-2-42M



BPK-2-42M is a periscopic, combined sight of day and passive-active night type. It is designed for ground surveillance, target detection, identification and ranging with the help of rangefinder reticle as well as for sight shooting from the cannon by organic ammunition.

Main Specifications:

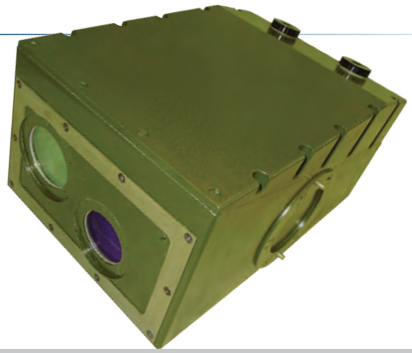
Magnification of the sighting device:	
▮ day system	6 magnification factor
▮ night system	5,5 magnification factor
Viewing field of the sighting device:	
▮ day system	10°
▮ night system	6°40'

Overall dimensions
337x357x458

Weight:
not more than 25 kg

DC power supply voltage
27+2-5 V

PN-90 GUIDANCE UNIT



PN-90 guidance unit is designed for visual tele-observation, target selection and tracking (by the gun pointer), formation of the guiding field inside laser beam within the range of programmed distances from 250 to 5000 m.

Overall dimensions:
377x252x170

Weight:
not more than 15,5 kg

DC power supply voltage:
from 18 to 32 V

Power consumption:
not more than 170 W

Main Specifications:

Distance of detection (identification) by the television channel of the onboard target projection of a MBT type, which has the contrast not less than 0.35 against the earth surface, buildings and vegetation, under meteorological visibility distance not less than 25 km:	
under natural illumination of terrain not less than 5 lx	not less than 2,5 (1,7) km
under natural illumination of terrain from 100 to 10^4 lx	not less than 8 (4) km

TNPO-160, TNP-165A, TNPT-3, TNPO-115T, TNPO-170A, NPA-65A, L36.65SB 2B, BMO -190B, TNPO-168V

DAY-TIME OBSERVATION DEVICES

Designed for road and terrain observation when driving armored vehicles.



Main Specifications:

	TNPO-160	TNP-165A	TNPT-3	TNPO-115T	TNPO-170A	TNPA-65A	L36.65sb2B	BMO-190B	TNPO-168V
Viewing field angle, in planes, deg, not less than:									
horizontal	78	71	118	108	91	140	116	69	138
vertical	28	33	54	29	19	35	42	20	31
Viewing field angle in vertical plane, deg, not less than:									
upper	12	12	35	9	12	16	15	9	16
lower	19	21	19	20	11	17	29	9	17
Field of view angle, in planes, deg, not less than:									
horizontal	36	34	45	42	44	52	49	32	–
vertical	5	7	12	5.30	5.5	6	8.5	5.16	7
Binocular viewing field angle in horizontal plane, deg, not less than	12	9	10	11	14	10	14	9.5	
On-axis beam deflection angle, deg, not less than	–	19	–	–	–	45 ± 2	–	–	–
Device periscope effect, mm	160	165	–	114±6	162±6	65±4	113±5	190±10	173±5
Visual coefficient of transmission, not less than	0.44	0.68	0.60	0.44	0.44	0.6	0.6	0.43	0.45
Weight, kg, not more than	3.4	2.85	2.35	2.8	2.9	0.74	2.26	3.4	7.5
Operating temperature range, °C	from –50 to +50								

TVN-5, TVNE-4PA, TVNE-4B, TVNE-1PA, TVNE-1B, TVNO-2BM, TVNO-2, TVN-2T, TVN-2B, TVN-2, TVN-5M

NIGHT VISION DEVICES





Designed for giving the possibility to drive armored vehicles at night both under conditions of up to 5×10–3 lux natural night luminosity (in passive mode), and with headlamp light (covered by the infrared filter) used (in active mode).

Main Specifications:

	TVN-5	TVNE-4PA	TVNE-4B	TVNE-1PA	TVNE-1B	TVNO-2BM	TVNO-2	TVN-2T	TVN-2B	TVN-2	TVN-5M
Magnification	×1										
Field of view, deg, in planes:											
horizontal	36	36	35	35	35	30	30	30	30	30	40
vertical	27	33	33	33	33	30	30	30	30	30	30
Road distance visibility in modes, m, not less than:											
active	80	60	60	60	60	50	50	50	50	50	150
passive	180	120	100	100	100	–	–	–	–	–	450
Supply voltage from vehicle-borne DC mains, V	27	27	27	27	27	27	27	27; 13	27	27; 13	27
Power consumed, W, not more than:											
with heating	94.5	50	50	50	90	50	50	–	–	–	95
without heating	5.4	6	6	6	3	6	6	6	6	6	5.5
Weight, kg, not more than	6	4.8	3.9	3.9	4.2	4.1	3.8	3.6	3.7	3.5	6
Operating temperature range, °C	from –50 to +50										

1PZ-3 DAYTIME ANTI-AIRCRAFT SIGHTS FOR ICVS



Intended for surveillance of air space when searching for air targets, tracking of air targets that move at a speed of up to 250 m/s and laying of guns and machine guns at them when firing from a stationary position, search for ground targets and laying of guns and machine guns at them when firing from a stationary position.

Overall dimensions:
570x375x230

Weight:
not more than 23,8 kg

Voltage:
27 V

Main Specifications:

Magnification of the sighting device	1,2/4 magnification rate
Viewing field of the sighting device	49/14°
Exit pupil diameter	5,4/3,6 mm
Distance of exit pupil from outer surface of the eye piece's last lens	26/26 mm

GUIDANCE DEVICE PN-B



PN-B' guidance device is designed to form the target video signal as well as the missile guidance field within the laser beam at distances of 50 to 5000 m.

Overall dimensions:
372x138x482

Weight:
not more than 14,6 kg

DC power supply voltage:
27+2-5 V

Power consumption:
not more than 200 W

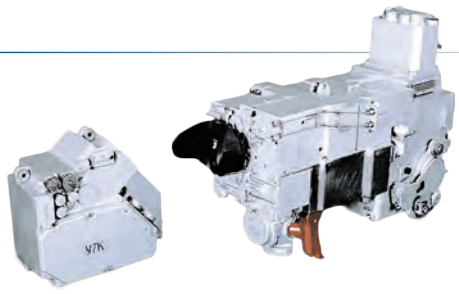
Main Specifications:

Distance of detection of a MBT type ground target sized 2.5 m×2.5 m in day time under meteorological visibility distance not less than 25 km:	
under natural illumination of terrain from 100 to10^4 lx and at contrast of a surveillance object against background not less than 0,5 km	not less than 6,5 km
under natural illumination of terrain not less than 0,5 lx	not less than 2,5 km

1G46, 1G46M GUNNER'S TANK SIGHTS

Designed for target observation, detection, recognition and aimed firing from a gun and coaxial machine gun, as well as for missile guidance in daylight.

Weight:
not more than 115 kg

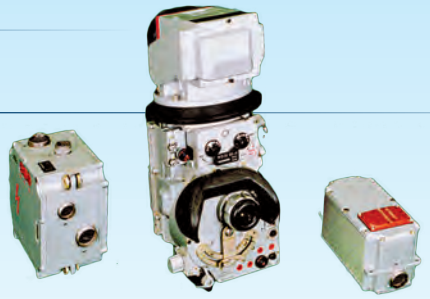


Main Specifications:

Zoom magnification	x 2,7...12
Laser rangefinder measurement range	400...5115 m
Maximum target range measurement error	±10 m
Guided missile firing range	5000 m
Readiness time	less than 3 min

1K13 SIGHTING AND GUIDANCE DEVICES

Designed for targets observation, search and detection in daylight and at night, aimed fire by standard missiles from a gun and coaxial machine gun under night visibility conditions, as well as for the aimed fire by guided missiles from a gun and their guidance during the flight in daylight.

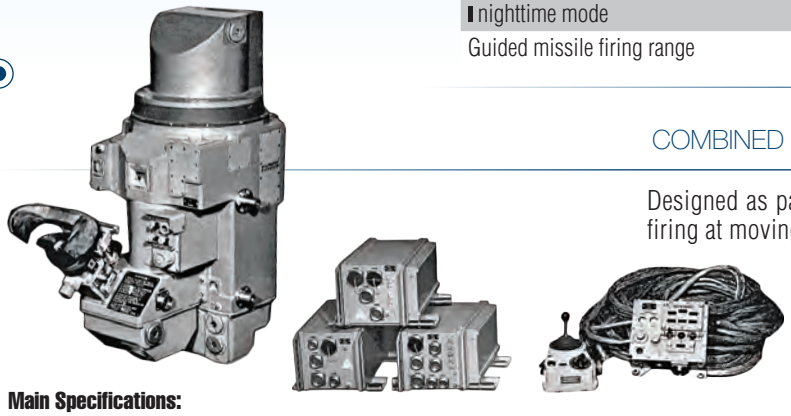


Main Specifications:

Visibility range:	
in daylight	not less than 5000 m
at night, passive mode	not less than 500 m
at night, active mode	not less than 1200 m
Magnification:	
daytime mode	not less than 8
nighttime mode	not less than 5,0
Guided missile firing range	4000

COMBINED OPTICAL CONTROL DEVICE 1K118

Designed as part of combat vehicle for missile guidance and firing at moving or stationary targets.



Weight without cables
not more than 145 kg

DC
27 +1,5 – 0,5 V

AC
115 ± 11,5 V

400Hz ± 40Hz
12±1,2 V

Main Specifications:

Magnification	3,5...12
Field of view	20...5 deg.
Eye relief	21 mm
Resolution	19,6...5,9 ang.s
Control field generation range	50-6000 m
Continuous operation	6 h

SUIT-1 OPTOELECTRONIC SYSTEM FOR BARREL BENDING MEASUREMENT

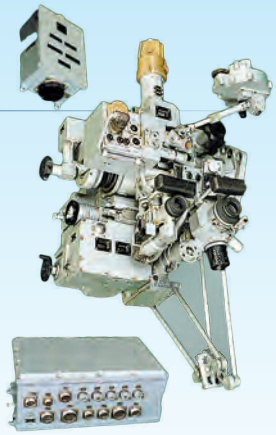
The system measures the current value of armoured and artillery armaments barrel bending which appears as a result of the barrel heating during fire, exposure to nonuniform solar heating and also mechanical deformations of the barrel.



Main Specifications:

Range of angles measurement	from -5 to +5 mrad
Measurement error	±0,1 mrad
Threshold measuring frequency	1 Hz
Dynamic range of output voltages	from - 5 to +5 V
Power supply voltage	24 ±3 V
Operating temperature range	from - 40 to +60 °C

1P-22 AUTOMATED SIGHTING SYSTEM



Designed for gun aiming when firing from indirect or direct laying positions.

Weight:
105 kg

Main Specifications:

Range of aiming angles:	
▮ from minus	1-00 mil
▮ to plus	11-66 mil
Elevation angle range	± 2...50 mil
Tangent sight sighting angle limit:	
▮ from minus	0-83 mil
▮ to plus	3-33 mil

1PN-TL TV AND LASER GUIDANCE UNIT



Designed for RK-2S missile system guidance and it further monitoring. Used as a part of BTR-4E armored personnel carrier or other analogue to it vehicles.

Dimensions
432x375x157

Supply voltage
27 V

Main Specifications:

TV-channel FOV angle	1^0 x 45'
Detection (recognition) range of a ground tank-type target sizing (2.5x2.5m) with a daylight contrast not less than 0.4, with terrain illumination from $5x10^5$ lux up to 1 lux and minimum visibility range not less than 15 km:	5000 (4000) m
Resolution in direction perpendicular to sweep (vertical lines)	not more than 25"

1PZ-3, 1PZ-7, 1PZ-10 DAYTIME ANTIAIRCRAFT SIGHTS FOR APC



Designed to be used as day sighting devices to fulfill the following tasks:
- airspace monitoring during search for aerial targets;
- aerial targets tracking at velocities up to 250 m/s and aiming of guns and machine-guns when firing from stationary position;
- search for ground targets and aiming of guns or machine-guns when firing from stationary position.

Weight:
not more than 23,5 kg

Main Specifications:

Magnification	1,2 and 4
Optical system angular field of view	49 and 14 deg.
Exit pupil diameter	6,0 and 4,0 mm
Transmission factor	not less than 30%
Resolution limit	50 and 20 deg.

1K118T THERMAL IMAGING TV CONTROL DEVICE



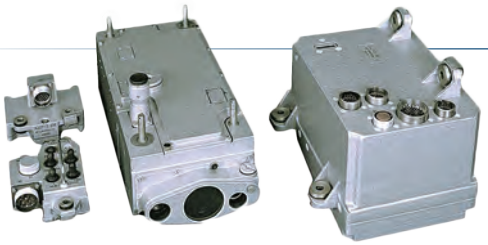
Designed for ground targets search, detection and recognition in daylight and at night, including adverse weather conditions, generation of a laser beam control field and missile guidance at a target.

Weight:
not more than 165 kg

Main Specifications:

Tank-size target detection range with 0.8 visibility:	
Detection range by TV channel at daytime	6000 m
Detection range by TI channel at nighttime	3500 m
Control field generation range with control field diameter from 5 to 6m	from 50 to 6000 m
Readiness time	not more than 6,0 min

RANGEFINDER KDT-2U



Designed for target range measuring and range data transfer to the indication unit and ballistic computer.
Consists of transceiver with installed laser emitter, photodetector and viewfinder, electric unit, indication unit, control unit, cables, protective glass and SPTA set.

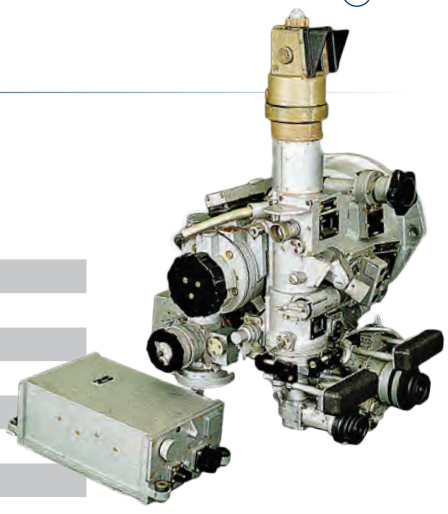
Main Specifications:

Distance measuring range	450...4000 m
Measurement error	not more than 10 m
Two-phase gating range	1400, 2400 m
Number of simultaneously ranged targets	3 pc
Viewfinder magnification	2,5

Weight:
25 kg

DC supply voltage
not more than 27 V

PG-2 PERISCOPIC SIGHT



Designed for gun aiming while firing from indirect laying positions and fire over sights.

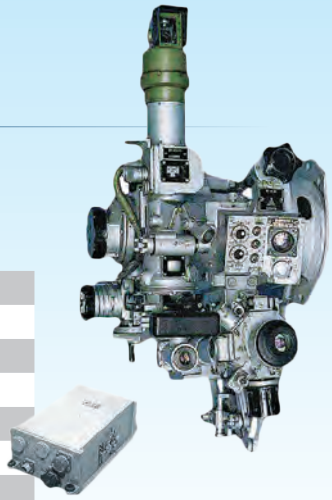
Weight:
45 kg

Main Specifications:

Range of aiming angles	
▮ from minus	1-00 mil
▮ to plus	11-66 mil
Target elevation range	±2-50 mil
Range of panorama goniometer aiming angles	±60-00 mil
Tangent sight aiming angles range	
▮ from minus	0-83 mil
▮ to plus	3-50 mil
Shot zone	2±0,5 angular minute

PG-4 PERISCOPIC SIGHT

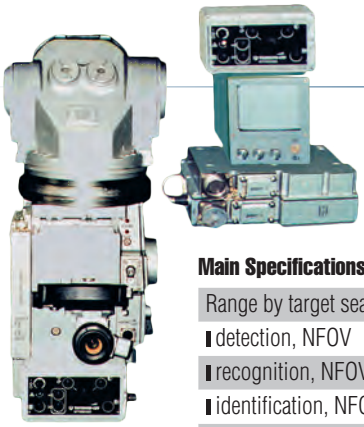
Designed for gun aiming while firing from indirect laying positions and fire over sights.



Weight:
46 kg

Main Specifications:

Range of aiming angles	
▮from minus	1-00 mil
▮to plus	11-66 mil
Target elevation range	±2-50 mil
Range of panorama goniometer aiming angles	±60-00 mil
Tangent sight aiming angles range	
▮from minus	0-83 mil
▮to plus	3-50 mil
Shot zone	2±0,5 angular minute



TANK THERMAL TV SIGHTING SYSTEM PTT-2

Designed for targets observation, detection, identification and aimed firing from a gun and coaxial machine-gun from the gunner's or commander's workstations in daylight or at night, including under adverse weather conditions.

Weight:
50 kg

Consumed power:
120 W

Main Specifications:

Range by target search stages, at $\Delta T \geq 2^{o}K$:	
▮detection, NFOV	12 km
▮recognition, NFOV	35 km
▮identification, NFOV	2,5 km
Identification under adverse weather conditions, NFOV	2,0 km
Angle tracking accuracy	0,5 mrad
Readiness time for operation in normal climatic conditions	6,0 min

TDM TV RANGE-FINDING MODULE

Designed for targets search, detection and recognition in daylight or under poor visibility conditions and range measuring to detected targets as a part of fire control system.



Main Specifications:

Detection (recognition) range of a ground tank-type target with a daylight contrast not less than 0.5, with terrain illumination from 1.5x105 lux up to 1 lux and minimum visibility range not less than 15 km:	
▮for NFOV channel	5000 (4000) m
▮for WFOV channel	3000 (1500) m
Detection (recognition) range of a ground tank-type target with a daylight contrast not less than 0.5, under low terrain illumination from 1 lux up to $5x10^{-3}$ lux and minimum visibility range not less than 10 km:	
▮for NFOV channel	1200 (800) m
▮for WFOV channel	600 (400) m

TDM-M

TV RANGE-FINDING MODULE

Designed for targets search, detection and recognition in daylight or under poor visibility conditions and range measuring to detected targets as a part of fire control system.



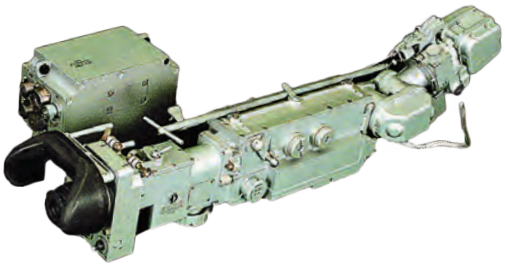
Main Specifications:

Detection (recognition) range of a ground tank-type target with a daylight contrast not less than 0.5, with terrain illumination from 1.5x105 lux up to 1 lux and minimum visibility range not less than 15 km:	
▮ for NFOV channel	5000 (4000) m
▮ for WFOV channel	3000 (1500) m
Detection (recognition) range of a ground tank-type target with a daylight contrast not less than 0.5, under low terrain illumination from 1 lux up to $5x10^{-3}$ lux and minimum visibility range not less than 10 km:	
▮ for NFOV channel	1400 (1000) m
▮ for WFOV channel	800 (600) m

TSHSM-32PV, TSHSM-41UK

TANK DAYTIME SIGHTS

Designed for target observation, detection and identification in daylight as well as for aimed fire at ground targets from a gun and coaxial machine gun.



Sight:
1100x160x250

Electric unit:
285x150x173

Total weight:
33 kg

Main Specifications:

Magnification	3,5; 6,9
Angular field of vision:	
▮ 3,5 magnification	18.0 deg
▮ 6,9 magnification	9.0 deg
Resolution limit:	
▮ 3,5 magnification	16 ang.s
▮ 6,9 magnification	10 ang.s
Max stabilization (tracking) error	±0.3 mil

BTR-3E1: T2027 TU INTEGRATED CREW TRAINING SIMULATOR

Use of the simulator during APC's crew training.



Main Specifications:

Ambient operating temperature	+5...+35 °C
Temperature during transportation	-25...+40 °C
Relative humidity at 25 °C, without condensing	no more 80%
Endurance	no more 4 h
Time of interval	no less 1 h
Readiness time	no more 30 min
Operation guaranty period 1 year	
Voltage, AC	
Alternating current network	380/50, 220/50 V/Hz
Average (peek) power AC	no more 6 (12) kW
Weight	no more 2200 kg

WITH "PARUS": T2033 TU COMBAT MODULE INTEGRATED BTR-4 CREW TRAINING SIMULATOR

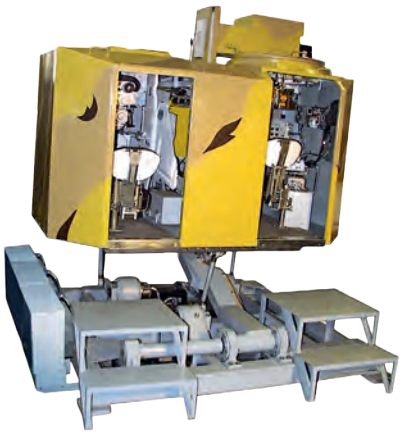
Use of the simulator during APC's crew training.

Main Specifications:

Ambient operating temperature	+5 ... +35 °C
Temperature during transportation	-25 ... +40 °C
Relative humidity at 25 °C, without condensing	Not more 80%
Endurance	Not more 4 h
Time of interval	Not less 1 h
Readiness time	Not more 30 min
Operation guaranty period 1 year	
Voltage, AC	380/50, 220/50 V/Hz
Average (peek) power AC	12 (24) KW
Weight	3100 kg



INTEGRATED DYNAMIC TRAINING SIMULATOR FOR ARMORED COMBAT VEHICLE CREW

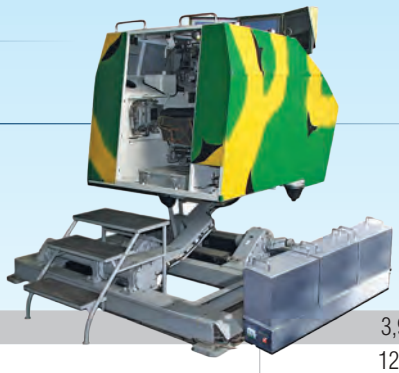


The simulator enables drill of the following tasks:
- studying common equipment, positioning of devices and tools of controls of the vehicle;
- mastering the tools and controls of the vehicle;
- drilling the pre-start and start operations of the car in winter and summer;
- drilling the movement techniques off the spot, switching transmission, turns, all types of brakes;
- driving the vehicle in any landscape of the 3D training ground with option of appropriate engine mode;
- drilling the techniques to negotiate natural and man-made obstacles;
- working out the fire control skills;
- working out firing skills;
- working out the crew interaction skills in close to real conditions.

The components of the comprehensive simulator of the armored vehicles can be used as separate simulators of workstations by remote control.

T2010 INTEGRATED DYNAMIC TRAINING SIMULATOR FOR BMP-2 INFANTRY COMBAT VEHICLE CREW

The simulator enables drill of the following tasks:
- studying common equipment, positioning of devices and tools of controls of the vehicle;
- mastering the tools and controls of the vehicle;
- drilling the pre-start and start operations of the car in winter and summer;
- drilling the movement techniques off the spot, switching transmission, turns, all types of brakes;
- driving the vehicle in any landscape of the 3D training ground with option of appropriate engine mode;
- drilling the techniques to negotiate natural and man-made obstacles;
- working out the fire control skills.



Main Specifications:

Total weight	3,95 t
Consumed power	12 kW
Time of readiness	5 min
Endurance	10 h
Drive charge	700-900 kgs
Seats	3 men.
Instructor seat	1 men.
Weight of the cabin	1,5 t

INTEGRATED DYNAMIC T80UD TANK CREW TRAINING SIMULATOR DTE1



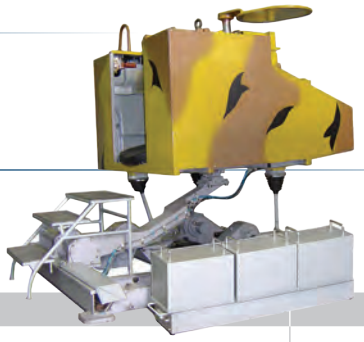
Main Specifications:

Total weight	4 t
Consumed power	12 kW
Time of readiness	5 min
Endurance	10 h
Drive charge	700-900 kgs
Seats	3 men.
Instructor seat	1 men.
Weight of the cabin	1 t

The use of the tank simulator for the crew training with no quality training drawbacks as compared to training procedures on the tank directly provides the following merits:
- Form efficient skills in the trainee's action;
- Prevent accidents in the course of the tank crew training;
- Exclude damage of fighting vehicles at wrong trainee's actions; due to saving the fuel, service life of fighting vehicles and ammunition;
- Carry out the training both for the whole crew and individually for a driver, a gunner and commander on the individual base.

INTEGRATED DYNAMIC T-64B; TE-64 TANK CREW TRAINING

The use of the tank simulator for the crew training with no quality training drawbacks as compared to training procedures on the tank directly provides the following merits:
- Form efficient skills in the trainee's action;
- Prevent accidents in the course of the tank crew training;
- Exclude damage of fighting vehicles at wrong trainee's actions; due to saving the fuel, service life of fighting vehicles and ammunition;
- Carry out the training both for the whole crew and individually for a driver, a gunner and commander on the individual base.



Main Specifications:

Total weight	4 t
Consumed power	12 kW
Time of readiness	5 min
Endurance	10 h
Drive charge	700-900 kgs
Seats	3 men.
Instructor seat	1 men.
Weight of the cabin	1,5 t

UKROBORONPROM
Ukrainian Defence Industry





AIRCRAFT ENGINEERING AND MAINTENANCE

WE DO:

- aircrafts research, design, production, overall repair and modernization
- design, development, production and certification of aircraft engines
- production of:
  - relevant equipment, systems, aggregates and devices
  - radio-electronic equipment
  - ground launchers, maintenance equipment
  - and control systems

AN -178

MEDIUM TRANSPORT MULTIPURPOSE AIRCRAFT

The AN -178 is medium transport multipurpose aircraft of the family AN -148/-158 (avionics and systems from AN-148/AN-158).
It was designed to replace AN -12 and C-160 and provides the following:
- full replacement through dimensions and cargo-lifting capacity;
- maximum efficiency over superiority of all flight and technical characteristics;
- reduce of operation cost over replacement of two turbojets instead of four or two turboprops;
- Compliance to all modern requirements and standards due to on-board equipment and avionics of new generation.



Cruising altitude:
12 200 m

Cruising speed:
825 km/h

Cabin volume with cargo ramp:
167 m^3

Cabin volume without cargo ramp:
122 m^3

Cargo compartment dimensions:
13,21 (16,54) m x 2,73 m x 2,73 m

Crew:
2+1

Engines:
2 x D436-148FM

Soldiers:
90 pers.

Paratroopers:
70 pers.

Wounded at the stretchers + at seats:
48+15 pers.

Main Specifications:

	Civil Aircraft	Military Airlifter		
	Ordinary runway	Ordinary runway		STOL
Maximum payload	16,0 t	15,0 t	18,0 t (overload)	7,0 t
Practical range with cargo, km				
18 t	-	-	990	-
15 t (16 t for civil aircraft)	1620	1610	2040	-
10 t	3950	3500	3890	-
5 t	4700	4620	4620	2000
ferry range	5300	5230	5230	4380



AN-178 – cargo compartment's capabilities:

Carriage	Items	Weight
Containers, inch (m):		
M1 96"x96"x125" (2,438x2,438x3,175)	4	16,0 t
M2 96"x96"x238,5" (2,438x2,438x6,058)	2	16,0 t
M3 88"x96"x125" (2,235x2,438x3,175)	4	16,0 t
1D 96"x96"x117,8" (2,438x2,438x2,991)	2	16,0 t
1C 96"x96" x238,5" (2,438x2,438x6,058)	2	16,0 t
Pallets, inch (m):		
88"x108" (2,235x2,743)	5	16,0 t
88"x125" (2,235x3,175)	4	16,0 t
96"x125" (2,438x3,175)	4	16,0 t
96" x238,5" (2,438x6,058)	5	16,0 t

AN-132

LIGHT MULTIPURPOSE TRANSPORT AIRCRAFT



The AN-132 aircraft is a new generation of light multipurpose transport aircraft. It is designed for transportation of personnel, paratroops and wounded persons, various special-purpose vehicles, as well as for cargo airdropping.

Main Specifications:

Flight range with max. payload (45 min. fuel reserve)	1400 km
Flight range with 6 t payload	3320 km
Ferry range	4540 km
Maximum payload	9,2 t

Cruising altitude: 9000 m

Cruising speed: 550 km/h

Cargo cabin volume: 65 m^3

Cargo compartment dimensions: 12,07 (15,275) m x 2,4m x 1,84 m

Crew: 2

Engines: 2 x PW 150A

AN-132 has main features:

- new avionics and two-man "Glass" cockpit
- R408 Dowty propellers
- PW 150A engines
- new control system
- new interior of the cargo compartment



Soldiers: 71 pers.

Paratroopers: 46 pers.

Wounded at the stretchers: 27 pers.

AN -225 MRIYA

SUPER HEAVY CARGO AIRCRAFT



The unique aircraft has been created to perform wide-range of cargo transportation services (large-sized, heavy, long-size) with total weight up to 250 t.

Main Specifications:

Flight range with 200 t payload	4000 km
Flight range ferry	14400 km
Runway lenght	3000-3500 m
Maximum payload	250 t

Cruising altitude:
up to 12000 m

Cruising speed:
850 km/h

Cargo compartment volume:
1160 m^3

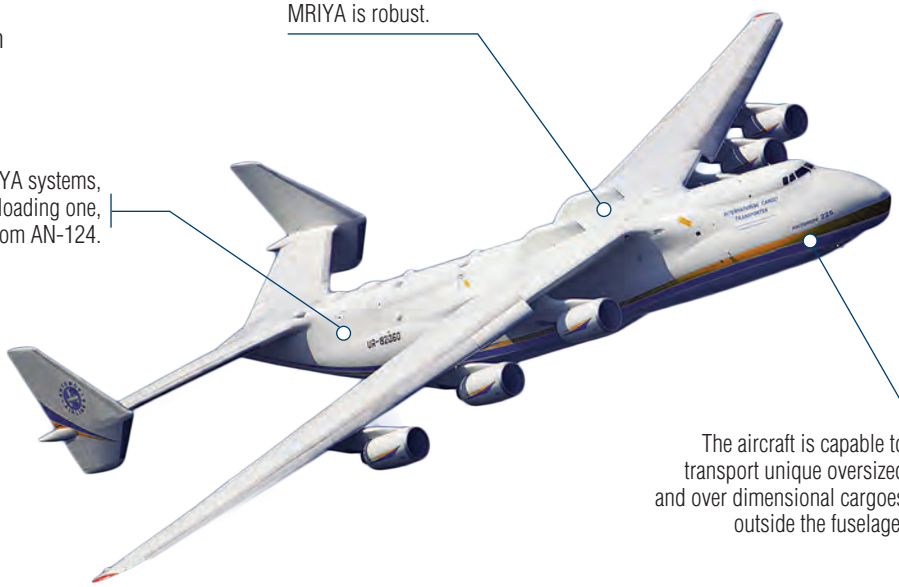
Cargo compartment dimensions:
43,32m x 6,4m x 4,4m

Crew:
4

Engines:
6 x D-18T Turbofan

MRIYA has set up 240 world records, including transportation of the heaviest cargo of 253 tons, the heaviest single piece cargo of 186,7 t, as well as the longest cargo with a total length of 42,1 m. MRIYA is robust.

Most of the MRIYA systems, including the loading/unloading one, were adopted from AN-124.



The aircraft is capable to transport unique oversized and over dimensional cargoes outside the fuselage.

AN -124 RUSLAN

HEAVY CARGO AIRCRAFT



The RUSLAN is heavy military transport aircraft. It is the biggest serial heavy lifter in the world. It is intended for the transportation of heavy and oversized cargo and various special-purpose vehicles.

Main Specifications:

	AN-124-100M-150 aircraft			AN-124-100 aircraft
	150 t	120 t	100 t	120 t
Flight range with payload	2600 km	4600 km	6200 km	4650 km
Flight range ferry	14400 km			14200 km
Runway lenght	3000 m			2800 m
Maximum payload	150 t			120 t

Cruising altitude: 8000-9000 m

Cruising speed: 775-850 km/h

Cargo cabin volume: 1160 m^3

Cargo compartment dimensions: 36,5 (43,7)m x 6,4m x 4,4m

Crew AN-124-100M-150: 6

Crew AN-124-100: 4

Engines: 4 x D-18T, Series 3

Types:

- The AN-124-100 aircraft is designed for transportation of cargoes with 120 t payload.
- The AN-124-100M-150 aircraft payload has been increased from 120 t to 150 t.

The aircraft has double-deck fuselage. Two crew cabins and cabin for cargo escort are located on the upper deck. The lower deck of cargo compartment is an airproof.



Design and dimensions of front and rear cargo doors of the aircraft provide quick and easy loading/ unloading operations. Loading/unloading operations arecarried out by means of on-board cargo complex without use of ground cargo handling equipment.

Multi-strut landing gear of high floatation, two APUs and mechanization of loading process provide the autonomous operation of the aircraft on poorly equipped airfields.

AN -70

MILITARY TRANSPORT AIRCRAFT

AN-70 is a short take-off/landing military transport aircraft, designed for transportation of a full range of airmobile equipment and weapons.

Cruising altitude:
9000-12000 m

Cruising speed:
700-750 km/h

Cargo compartment dimensions:
36,5 (43,7)m x 6,4m x 4,4m

Crew:
5

Engines:
4 x D-27, PROPFAN



Main Specifications:

Flight range with 47 t/ 35 /t 20 t payload	3000 km/ 5100 km/ 6600 km
Flight range ferry	8000 km
Runway length	
▮ Short	600-700m Unpaved /Ground
▮ Conventional	1550-1800m paved/concrete
Maximum payload	250 t

Four D-27 engines with SV-27 coaxial prop-fans ensure high cruising speed with 20-30% fuel saving, when compared to other modern aircrafts with turbojet engines.

The aircraft operates on both 1550-1800 m paved and 600-700 m unpaved runways, depending on use and take-off weight.

A built-in aerial delivery system ensures self-contained loading, unloading and air landing of a wide range of cargoes.



AN-70 ensures transportation of 35-47 t. cargoes at 3000 km, airborne assault of up to 110 paratroops and materiel, including single cargo items, weighing up to 21 t, for landing of 300 soldiers with individual weapons and evacuation of 206 injured and ill people.

AN -74T-200A

MILITARY TRANSPORT AIRCRAFT

It is designed for transportation of cargo in containers or on pallets. The aircraft can be converted to carry out the following missions:

- Transportation of personnel (67 people)
- Paratroops (42 people)
- Air-drop up to 3.5 t (seven airdrop platforms per 0.5 t each)



Cruising altitude: 10 100 m

Cruising speed: 650 km/h

Cargo compartment dimensions: 25,74 m x 3,10 m

Crew: 3

Main Specifications:

Engines	2 x D-36, Series 3A double –flow turbojet
Maximum payload	10 t

AN-74TK-200

CONVERTIBLE TRANSPORT/PASSENGER AIRCRAFT



The aircraft is designed for transportation of up to 10 t payload or 52 passengers; AN-74TK-200 can also perform both cargo and passengers transportation.
The aircraft can be converted from all-cargo to all-passenger layout and vice-versa. It can operate on paved, as well as on unpaved runways.

Cruising altitude: 10 100 m

Cruising speed: 650 km/h

Cargo compartment dimensions: 25,74 m x 3,10 m

Crew: 2-3

Main Specifications:

Engines	2 x D-36, Series 3A double –flow turbojet
Maximum payload	10 t

AN -74-MP

SEA PATROL AIRCRAFT



The aircraft is capable for maritime patrolling, search and rescue operations, sea-surface pollution detecting, fishing control, as well as for air transport operations.
Cabin is equipped with additional space for the navigator and radio operator. Both workplaces are located near the blisters to conduct visual inspection of the surface of the land or sea area.

Cruising altitude:
10100 m

Cruising speed:
600-700 km/h

Crew:
5-7

Main Specifications:

Patrolling altitude	500-1000 m
Patrolling speed	280 km/h
Engines	2x D-36, Series 4A double-flow turbojet
Maximum payload	10 t



AN -32P

FIRE-FIGHTING AIRCRAFT

The aircraft is designed for firefighting by draining-off the extinguishing liquids. It is also capable of delivering and airdropping the smoke jumpers and special equipment, fire-extinguishing means to
the fire sites. When dropping 8 t of extinguishing liquid out of two tanks from an altitude up to 50 m at speed of 260 km/h, a water spot of 120-160 m long and 10-35 m wide is formed on the ground.

Cruising speed:
500 km/h

Crew:
3

Engines:
2 x AI-20D, Series 5

Main Specifications:

Minimum flight speed when draining liquid off	220-240 km/h
Maximum weight of extinguishing liquid	8000 kg
Total volume of liquid dropped for an hour of work in the flight range of:	
▮15 km	32 t
▮150 km	16 t
▮300 km	8 t
Flight ferry range	1700 km
Runway length	1950 m
Operating range with maximum liquid and 30-min fuel reserve	330 km
Smoke jumpers, incl. special equipment	27-30 pers

AN-148-100EM

MEDICAL AIRCRAFT

The AN-148-100EM – convertible medical aircraft – aircraft convertible by technical crew into the medical evacuation aircraft in 2 hours due to ability to hold medical modules and seats in the aircraft cargo compartment. AN-148-100EM has a main passenger cabin (staff lounge) and six mobile medical modules to provide the necessary aid to sustain patient's life functions.



Cruising altitude:
12200 m

Cruising speed:
850 km/h

Crew:
2

Engines:
2 x D-436-148 double-flow turbojet

Main Specifications:

Maximum payload	9 t
Flight range with 35 pers	4800 km
Passenger capacity	51 pers
Runway length	1800 m

AN -158

REGIONAL JET AIRLINER

It is an upgraded version of AN-148 regional jet airliner. It can perform transportation of 86 passengers in a double-class layout with a flight range up to 3100 km and up to 99 passengers in a single-class layout with a flight range up to 2500 km.
An-158 is able to operate at high altitudes and get into the aerodromes, located at altitude of 4000 meters above sea level.



Cruising altitude:
12200 m

Cruising speed:
870 km/h

Crew:
2

Engines:
2 x D-436-148 double-flow turbojet

Main Specifications:

Maximum payload	9,8 t
Flight ferry range	3100 km
Passenger capacity	99 pers
Runway length	2000 m

FURIA

TACTICAL MULTIFUNCTIONAL UNMANNED AIRCRAFT SYSTEM

Multifunctional unmanned aircraft system, designed for target acquisition and adjusting of artillery fire.
FURIA can work at a depth of 30 km., it has a fly time more than 2 hours and can withstand the wind blast of up to 15m/s.
Launching: elastic catapult. Landing: semiautomatic.
Information saving: onboard memory card (HD quality); ground station memory (standard quality)

Flight time:
120 min

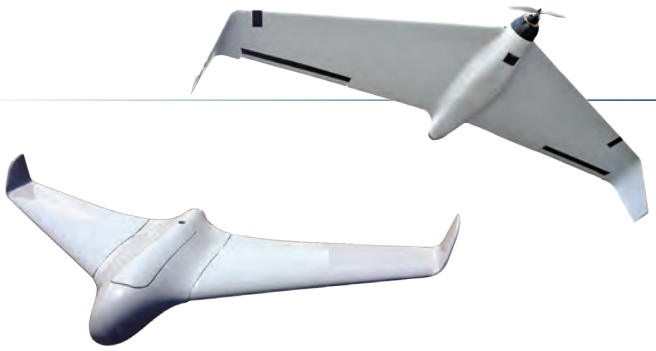
Speed:
65-100 km/h

Take-off weight:
4,5 kg



Main Specifications:

Payload weight	1,2 kg
Maximal altitude	up to 2500 m
Maximal flying distance	More than 100 km
Operating range	more than 30 km
Payload	Gyrostabilized Daylight HD Camera with 30x optical zoom; Gyrostabilized Night Vision System (Flir Tau 2 based)
Number of operators	2



APUS 1505, 1507

UNMANNED AERIAL VEHICLE

APUS – 1505 Reconnaissance and artillery fire control UAV designed for real-time video data transmitting under radio-electronic warfare conditions.
APUS – 1507 is a complex designed for real-time video data transmitting and precise determination of objects' coordinates.

Main Specifications:

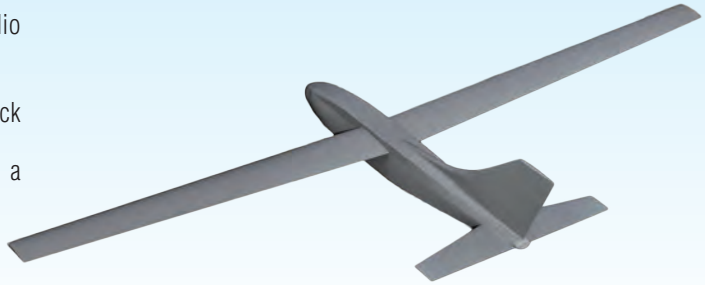
	APUS – 1505	APUS – 1507
Dimensions	2992x862x326 mm	700x2120x200 mm
Flight time	more than 120 min	90 min
Speed	60-120 km/h	50-100 km/h
Maximal altitude	2000 m	1500 m
Maximal flying distance	120 km	100 km
Control	Autopilot; encrypted correction of the mission during flight	
Landing	Parachute	
Mission planning	Operator's PC; option for changing the mission/task during flight	
Weight	10 kg	4,5 kg

SPECTATOR

UNMANNED AERIAL VEHICLE

The system consists of: 1-3 drones, ground station, radio control panel, plug-in battery kit, antennas, backpack.
Key Competitive advantages:

- Easy to transport, the optimum size when folded into back pack (1300x400x200mm)
- The minimum time for preparation for launch of a disassembled state (up to 2 minutes)
- Low noise and visibility
- Optimal ratio of payload weight to unit weight
- The high aerodynamic qualities



Flight time:
up to 120 min

Speed:
40-120 km/h

Take-off weight:
5,5 kg

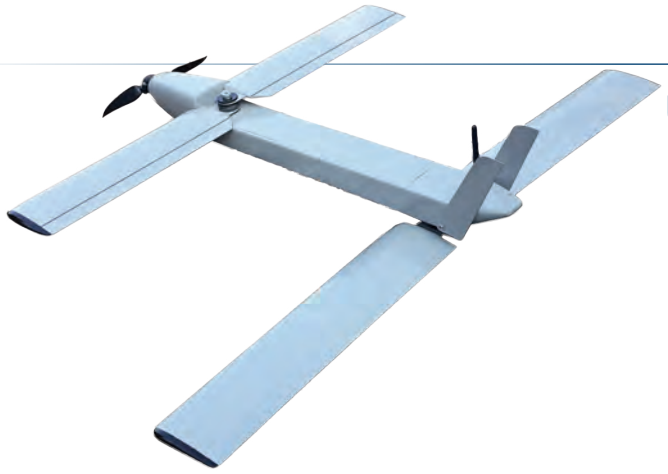
Main Specifications:

Weight without payload	2 kg
Maximal altitude	2000 m
Operating range	20 km
Taking off	hand lunch
Type of control	automatic, semi-automatic, manual

RAMA

UNMANNED AIRCRAFT COMPLEX

Device is designed for multiple battlefield reconnaissance. Able to fulfill operational reconnaissance tasks for the sake of Special Forces.



Flight time:
20-25 min

Speed:
60-70 km/h

Take-off weight:
12 kg

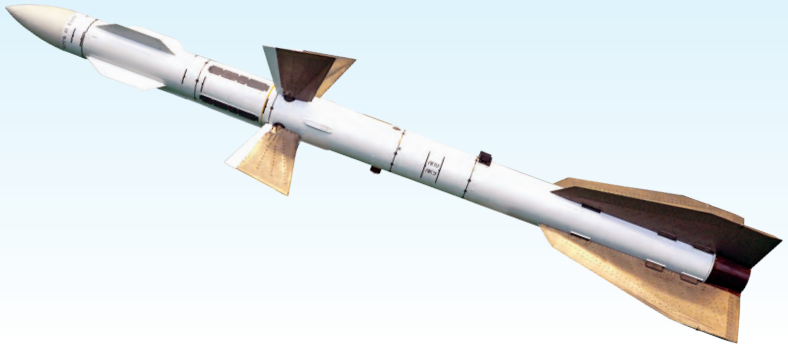
Main Specifications:

Weight payload	350 g
Maximal altitude	100-200 m
Maximal flying distance	50 km
Operating range	9 km
Payload	videocamera
Number of operators	1-2

R-27-AIR-TO-AIR

GUIDED MISSILES

R -27 medium range missile is designed for interception and destruction of piloted and unpiloted aircraft, as well as cruise missiles in long and close-range maneuvering air combat. The construction consists of unit with target-seeking device, payload and solid-propellant engine with three missile thrust fittings. It is a part of MiG and Su-types aircrafts' armament.



Length:
3,7 - 4,7 m

Caliber:
0,23 m

Weight:
245 - 350 kg

Main Specifications:

Launch range:	
▮ max range	50 — 95 km
▮ min range	0,5 km

GLIDE BOMB



The bomb is designed for destruction of the ground-based targets like railway bridges, concrete constructions, runways, radar stations, positions of operative and tactical missiles, antiaircraft missile systems as well as water-surface targets during the carrier's level flight, diving and pitch-up. It is equipped with a television seeker which ensures the targets locking-on under the aircraft and automatic target seeking in autonomy flight.

Main Specifications:

Operational range:	
▮ from the altitude of 0,5 km	up to 8 km
▮ from the altitude of 5 km	up to 20 km
Target aiming accuracy (CEP)	3 – 5 m
Aircraft velocity while dropping	200 – 300 m/s
Warhead type	high-explosive
Type of suspension	AKU-58

Diameter:
400 mm

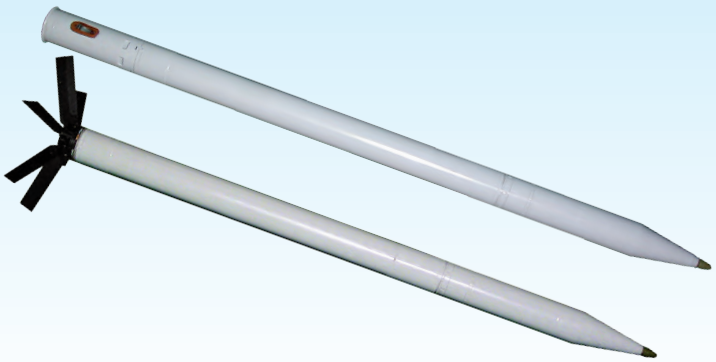
Weight:
850 kg

Warhead weight:
650 kg

AR-8

AIRCRAFT ROCKET

AR-8 aircraft rocket is designed for destruction of different kinds of ground targets (tanks, APC, self-propelled artillery launchers, missile launchers, radar stations, parked aircrafts, ammunition depots, special trains, manpower). The rocket is launched from the B8M and B8V20 launching units which constitute a part of the air-launched weapons of the following types of aircrafts: SU-17, SU-24, SU-25, SU-27, MiG-23, MiG-27, MiG-29 as well as helicopters: Mi-24, Mi-28 and Mi-8.



Missile length:
1590 mm

Caliber:
80 mm

Missile weight:
12,9 kg

Main Specifications:

Firing range	1200–4000 m
Warhead weight	4,3 kg
Warhead type	hollow-charge and fragmentation
Damage effect:	
▮ armor penetration	not less than 400 mm
▮ amount of fragments	not less than 500 pcs

GUIDED AIR-TO-AIR MISSILE

GUIDED AIR-TO-AIR MISSILE OF CLOSE AIR COMBAT



Main Specifications:

Carrier altitude	20 – 20000 m
Target altitude	20 – 20000 m
Carrier speed	650 – 2500 km/h
Target speed	not more than 2700 km/h
Target location above (under) carrier	0 – 5000 m
Angles of target designation	±60 °C

High maneuverable guided air-to-air missile of close air combat with infra-red homing head, noncontact radar target sensor in the millimetric range and controllable vector of the engine thrust is intended for interception and destruction of high maneuverable means of air attack and reconnaissance during assault:

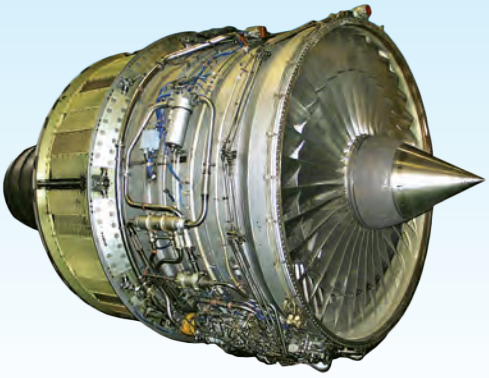
- at any time of day or night;
- at front and rear hemisphere of targets;
- against ground, sky and water surface backgrounds;
- under ordinary and adverse weather conditions;
- with active informational and maneuverable counteraction of the enemy.

The missile is designed for use in the weapons systems of fighters, front bombers and ground-attack aircrafts.

D-18T SERIES 3

TUBRBOFAN AERO ENGINE

It is designed to power the AN-124, AN-124-100 RUSLAN and AN-225 MRIYA ramp-equipped heavy cargo aircrafts. The engine design allows operating it on technical condition up to depletion of the engine main components life. The engine has Type Certificate. It meets the current environmental requirements of ICAO standards.

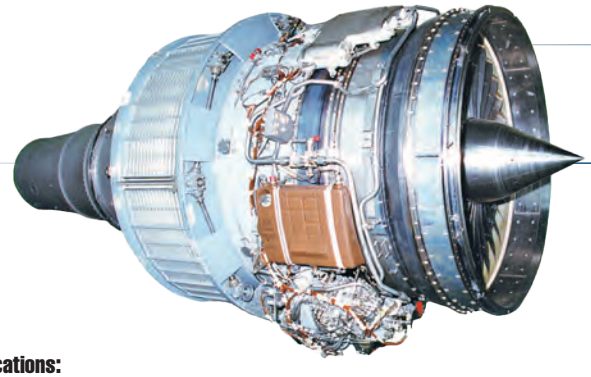


Dimensions:
5400x2937x2792 mm

Weight, dry:
4100 kg

Main Specifications:

Take-off performance (SLS; ISA)	
thrust	23430 kgf
specific fuel consumption	0,34 kg/kgf•h
Maximum cruise performance (H=11000 m; Mfl=0,75; ISA)	
thrust	4860 kgf
specific fuel consumption	0,546 kg/kgf•h



D-436-148FM

TUBRBOFAN AERO ENGINE

D-436-148FM Turbofan Aero Engine is designed to power the An-178 short-distance military transport aircraft and regional An-148 and An-158 passenger aircraft. The engine has Type Certificate. It meets the effective environmental requirements of ICAO standards.

Main Specifications:

Automatic control system adjustment types:	D-436-148B	D-436-148D	D-436TP	D-436T1
Emergency performance (SLS)				
thrust	7280* kgf	7690** kgf	-	-
Takeoff performance (S/L static; ISA)				
thrust	6570* kgf	7010** kgf	7500 kgf	7500 kgf
specific fuel consumption	0,351 kg/kgf•h	0,351 kg/kgf•h	0,37 kg/kgf•h	0,37 kg/kgf•h
Max cruise rating (H=11000 m, Mfl=0,75, MCA+10°C)				
thrust	1560 kgf	1560 kgf	1500 kgf	1670 kgf
specific fuel consumption	0,6 kg/kgf•h	0,6 kg/kgf•h	0,650 kg/kgf•h	0,608 kg/kgf•h
Dimensions	4,034 x 1,784 x 1,930 mm		4170x1640x1915 mm	4170x1802x1949 mm
Weight, dry	1400 kg		1450 kg	

*-tAMB =+37,5 oC / **- tAMB =+30 oC

D-36 SERIES 1/1A/2A/3A/4A

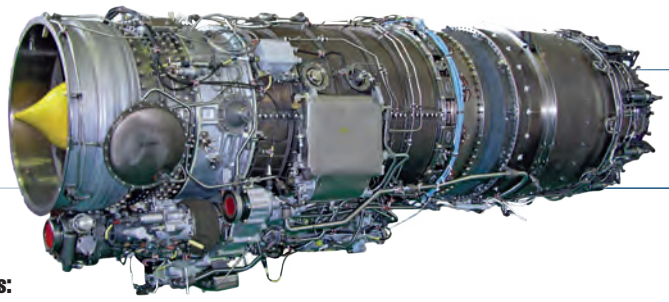
TUBRBOFAN AERO ENGINE

The engines are designed to power the Yak-42 passenger aircraft and the AN-74 transport aircraft. There is the Type Certificate for this engine. The engine series 4a is designed to power the AN-74TK-300 convertible aircraft.
It also meets the current environmental requirements of ICAO standards.



Main Specifications:

Series	1	1A/2A	3A	4A
Emergency performance (SLS; ISA +15°C)				
▮ thrust	-	-	6500 kgf	6500 kgf
Take-off performance (SLS; ISA)				
▮ thrust	6500 kgf	6500 kgf	6500 kgf	6500 kgf
▮ specific fuel consumption	0,365 kg/kgf•h	0,365 kg/kgf•h	0,358 kg/kgf•h	0,358 kg/kgf•h
Maximum cruise performance (H=8000 m; Mfl=0.75; ISA)				
▮ thrust	1600 kgf	1600 kgf	1600 kgf	1600 kgf
▮ specific fuel consumption	0,650 kg/kgf•h	0,650 kg/kgf•h	0,630 kg/kgf•h	0,630 kg/kgf•h
Dimensions	3470x1541x1412	3192x1541x1712	3192x1541x1712	3732,5x1802,3x1987,4
Weight, dry	1124 kg	1124 kg	1124 kg	1130 kg



AI-222-25F

TUBRBOFAN ENGINE WITH AFTERBURNER

The engine is designed to power training, combat training and light combat aircrafts and complies with strict requirements for the engines of this class. The turbine compressor section of the engine is fully unified with the AI-222-25 baseline engine.

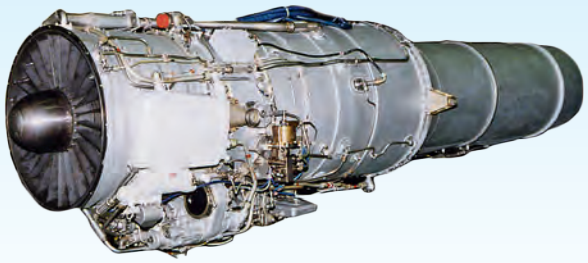
Main Specifications:

Series	AI-222-25F	AI-222-25
Full afterburning power (SLS, ISA, Qinlet = 1,0):		
▮ thrust	4200 kgf	-
▮ specific fuel consumption	1,9 kg/kgf•h	-
Full afterburning power (H 11000 m, M 1,4, ISA, Qinlet = 0,97):		
▮ thrust	2760 kgf	-
Maximum power (SLS, ISA, Qinlet = 1,0):		
▮ thrust	2500 kgf	2500 kgf
▮ specific fuel consumption	0,66 kg/kgf•h	0,64 kg/kgf•h
Maximum performance (H-5000M; Mfl =0,6; ISA; Qinlet =0,97):		
▮ thrust	-	1450 kgf
Cruise performance (H=10000m; Mfl =066; ISA; Qinlet =0,97)		
▮ thrust	-	300 kgf
▮ specific fuel consumption	-	0,875 kg/kgf•h
Dimensions	3070x1084x860	2238x1093x860
Weight, dry	560 kg	440 kg

AI-25TLSH

TUBRBOFAN AERO ENGINE

Designed to power other existing trainers and combat trainers used as light attack aircraft. In this respect, a combat maximum power rating of enhanced thrust, employed for strike operations, has been additionally introduced and engine acceleration time has been substantially reduced.

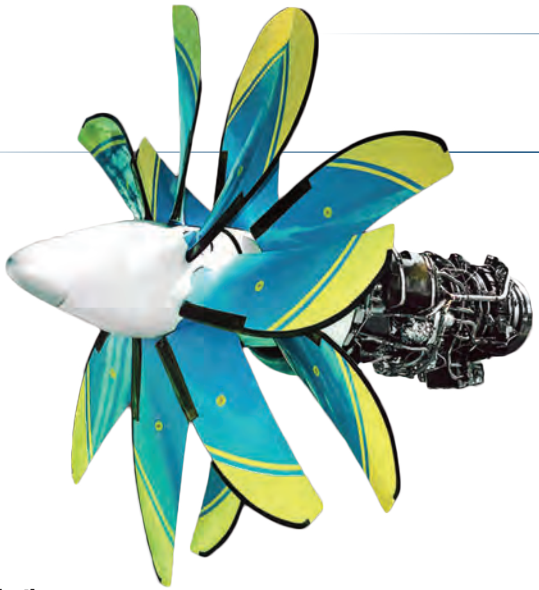


Dimensions:
3358x985x958 mm

Weight, dry:
350 kg

Main Specifications:

	Combat	Training
Maximum performance (SLS; ISA)		
thrust	1850 kgf	1720 kgf
specific fuel consumption	0,58 kg/kgf•h	
Maximum cruise performance (H=0 m; Mfl=0,6; ISA+15°C)		
thrust	1250 kgf	1100 kgf
Acceleration time	6 sec	



D-27

TURBOFAN AERO ENGINE

D-27 Tubofan Aero Engine is designed for installation on An-70 highly efficient transport aircraft featuring improved takeoff and landing characteristics. It offers efficiency increased by 30% to aircraft. It meets the effective environmental requirements of ICAO standards. It is passing flight and state bench tests.

Dimensions:
4575x1570x1372

Propfan diameter:
4500 mm

Weight, dry:
1650 kg

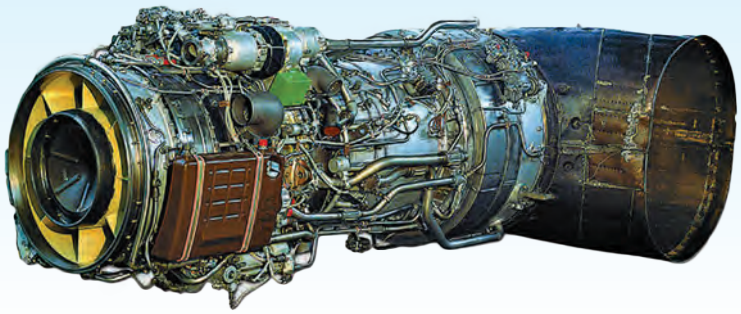
Main Specifications:

Take-off performance (SLS; ISA)	
power	14000 ehp
specific fuel consumption	0,170 kg/ehp•h
Maximum cruise performance (H=11000 m; Mfl=0,7; ISA)	
power	6750 ehp
specific fuel consumption	0,130 kg/ehp•h

D-136, D-136 SERIES 1

TURBOSHAFT AERO ENGINE

Designed to power the largest in the world Mi-26, Mi-26T transport helicopters. The most powerful turboshaft engine in the world has low specific fuel consumption and gravity of engine. It has undergone state bench tests and certification. The engine has Type Certificate. It meets the effective environmental requirements of ICAO standards.



Dimensions:
3715x1382x1124

Weight, dry:
1077 kg

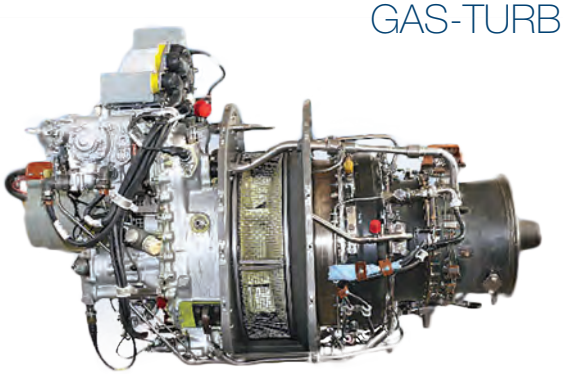
Main Specifications:

Take-off performance (SLS; ISA)	
power	11400 hp
specific fuel consumption	0,194 kg/hp•h

AI-450M

GAS-TURBINE TURBOSHAFT AERO ENGINE

Gas Turbine Turboshaft Aero Engine AI-450M is intended for upgraded Mi-2M helicopter and multipurpose helicopters MSB-2, Rusmas.



Dimensions:
1047x538x684

Weight, dry:
115 kg

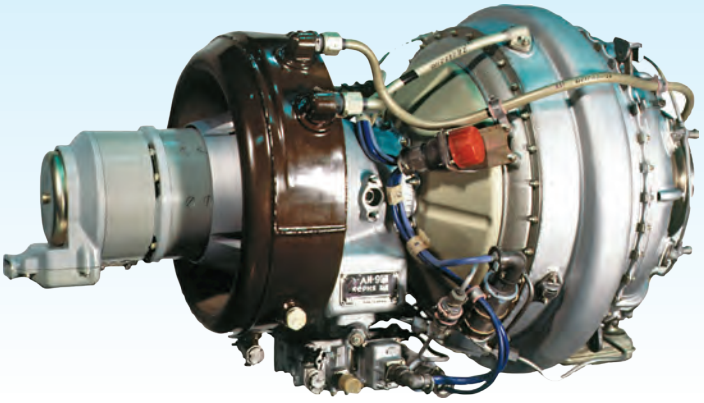
Main Specifications:

Take-off performance (SLS; ISA; Ointel=1,0)	
power	400 hp
specific fuel consumption	0,280 kg/hp•h
Maximum cruise performance (SLS; ISA; Ointel=1,0)	
power	285 hp
specific fuel consumption	0,320 kg/hp•h

AI-9V, AI-9V SER. 1

AUXILIARY TURBINE ENGINE

AI-9V, AI-9V SER. 1 used as power source effecting supply of compressed air to starting system of helicopter engines and electric power supply to helicopter electric power system when checking helicopter electrical and radio equipment. Installed on Mi-8 (Mi-8AMT, Mi-8MTV, Mi-17, Mi-171, Mi-172), Mi-24 (Mi-35), Mi-28 helicopters.



Bled air temperature:
160 °C

Weight, dry:
57 kg

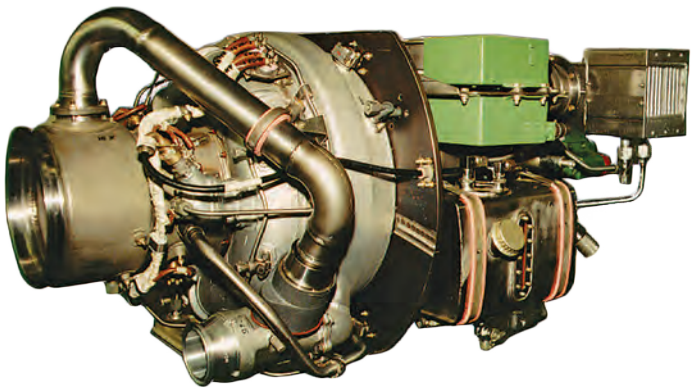
Main Specifications:

Engine	AI-9V	AI-9V ser. 1
Bled air consumption	0,4 kg/s	
Bled air total pressure	not less than 2,9 kgf/cm^2	not less than 3,1 kgf/cm^2
Electric power takeoff in generator operating mode	3 kW	4,5 kW

AI9-3B

AUXILIARY TURBINE ENGINE

AI9-3B used for starting aircraft propulsive engines and conditioning cockpits and cabins, and also for powering airborne electric equipment.



Bled air temperature:
260 °C

Weight, dry:
128 kg

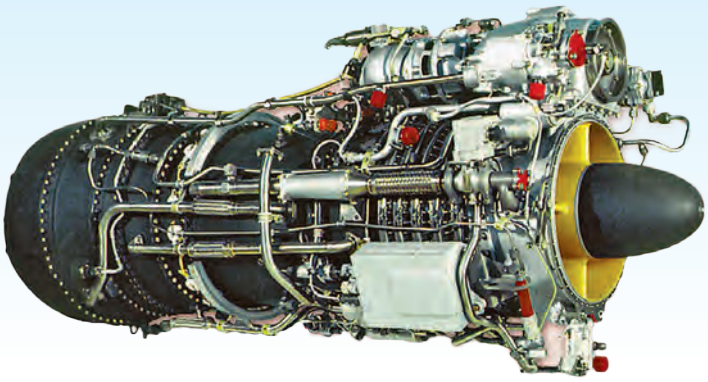
Main Specifications:

Aircraft electric system DC power	16 kV•A
Bled air consumption	0,4 kg/s
Bled air total pressure	not less than 4,0 kgf/cm^2
Fuel consumption	92 kg/h

TV3-117 (-KM, -M, -MT) SERIES 3

TURBOSHAFT ENGINES

The engines are intended for the following helicopters:
- TV3-117 ser.3 – for Mi-24, Mi-25, Mi-35;
- TV3-117 KM ser.3 – for Ka-27, Ka-29;
- TV3-117 M ser.3 – for Mi-14;
- TV3-117 MT ser. 3 – for Mi-8MT, Mi-17.



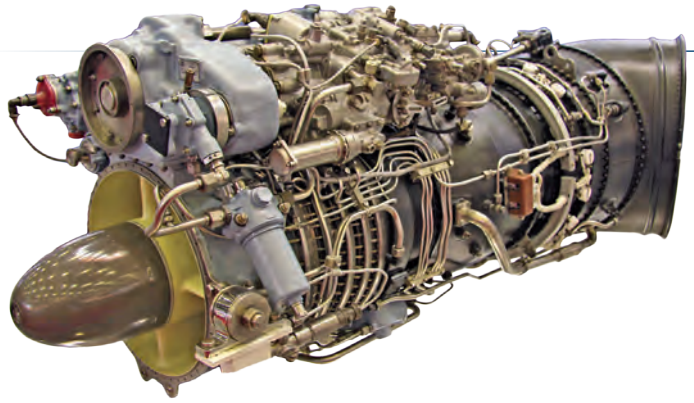
Power:
2225 hp

Weight, dry:
285 kg

Main Specifications:

Take-off performance (SLS; ISA)	
specific fuel consumption	0,230 kg/hp•h

TV3-117VMA



TURBOSHAFT ENGINE

The TV3-117VMA turboshaft engine is used to power in various-purpose helicopters. The TV3-117VMA turboshaft is one of the world`s best engines as regards its fuel efficiency and weight performances. High-tech development and perfect mass-production process have ensured the engine`s superior reliability and extensive service life.

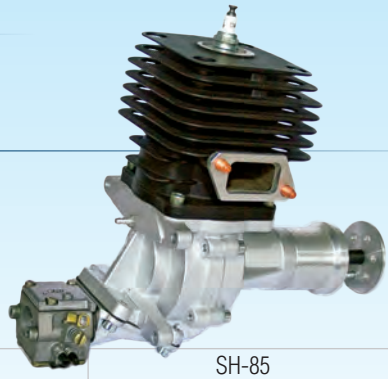
Main advantages of the engine:
- low specific fuel consumption;
- low weight-to-power ratio;
- high reliability;
- high reliability;
- long service life;
- high maintainability;
- high repairability;
- steady operation in harsh dust and smoke conditions;
- possibility of long-time operation in maritime conditions.

Main Specifications:

2.5- minute power rating, with one engine inoperative (OEI) (SLS, ISA):	
power	1765 kW
30- minute power rating, with one engine inoperative (OEI) (SLS, ISA):	
Power	1618 kW
Specific fuel consumption	0.286 kg/kW•h
Cruise power condition (SLS, ISA):	
Power	1103 kW
Weight dry	294 kg

SH-30, SH-85

TWO-CYCLE SINGLE-CYLINDER ENGINE WITH AIR-COOLING



Main Specifications:

	SH-30	SH-85
Take-off weight	up to 12 kg	up to 35 kg
Cylinder capacity	28,9 cm^3	85 cm^3
Bore	35 mm	52 mm
Stroke	30 mm	40 mm
Degree of compression	9,5	9,5
Maximum torque (at 6800 rpm)	2,1 N/m	6,74 N/m
RPM range	1300…9800 rpm	1100…8800 rpm
Fuel	A 95-98 Gasoline with synthetic oil for two-cycle engines in the ratio 50:1	
Specific Fuel Consumption (at 75% power)	370 gHP/hr	
Carburetor	Floatless with integral fuel pump	
Ignition system	Contactless electronic, battery ignition	
Weight	980 g	2460 g



SH-60, SH-170

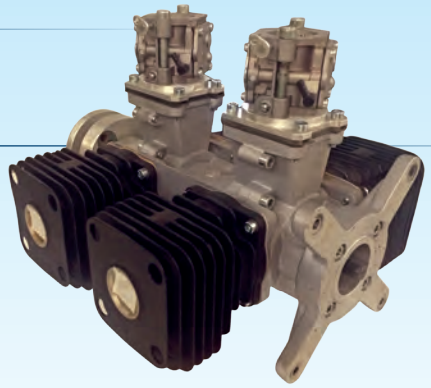
TWO-CYCLE TWO-CYLINDER ENGINE WITH AIR-COOLING

Main Specifications:

	SH-60	SH-170
Take-off weight	up to 20 kg	up to 75 kg
Cylinder capacity	60 cm^3	170 cm^3
Bore	35 mm	52 mm
Stroke	40 mm	40 mm
Degree of compression	9,5	9,5
Maximum torque (at 6800 rpm)	2,9 N/m (at 6800 rpm)	15,4 N/m (at 5900 rpm)
RPM range	1300…9500 rpm	1100…8800 rpm
Power	3,2 h.p. (at 9000 rpm)	17,4 h.p. (at 7800 rpm, without silencer)
Fuel	A 95-98 Gasoline with synthetic oil for two-cycle engines in the ratio 50:1	
Specific Fuel Consumption (at 75% power)	370 gHP/hr	
Carburetor	Floatless with integral fuel pump	
Ignition system	Contactless electronic, battery ignition	
Weight (without silencer)	1460 g	3990 g

SH-340

TWO- STROKE FOUR-CYLINDER AIR-COOLED ENGINE

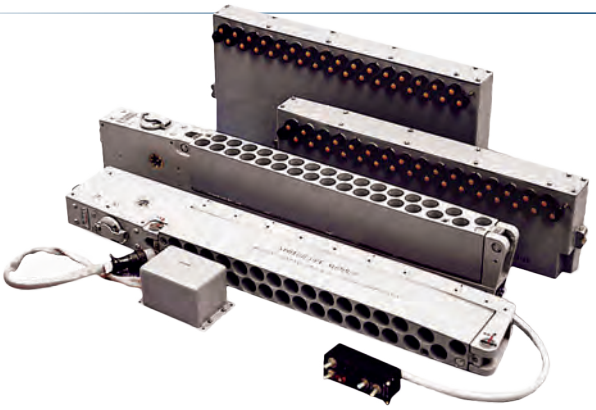


Main Specifications:

Take-off weight	up to 160 kg
Cylinder capacity	340 cm^3
Bore	52 mm
Stroke	40 mm
Degree of compression	9,5
Maximum torque (at 6750 rpm)	22,8 N/m
RPM range	1100…8800 rpm
Fuel	A 95-98 Gasoline with synthetic oil for two-cycle engines in the ratio 50:1
Specific Fuel Consumption (at 75% power)	370 gHP/hr
Carburetor	Two floatless Walbro WB with integral fuel pump
Ignition system	Magneto or contactless electronic, battery ignition
Weight	8220 g

ASO-2V, ASO-2VM

AUTOMATIC CHAFF DISPENSER



It is used on the An-Series aircrafts and Mi-Series helicopters and designed for jamming missile radars and IR seekers.

Main Specifications:

Operating voltage	27 V
Magazine capacity (Qty of rounds in 1 section)	32
Overall dimensions (without connectors)	768,5x125,5x60,5
Weight:	
▮ ASO-2V	12,7 kg
▮ ASO-2VM	14,9 kg

“ADROS” KT-01 AVE

ELECTRO OPTICAL JAMMING STATION

The electro optical jamming station “Adros” KT-01 AVE is designed for active protection of helicopters against guided missiles with infrared seekers. Stations of this type are designed for suppression of infrared homing heads with amplitude-phase modulation (APM).



Power supply:
DC, 7V

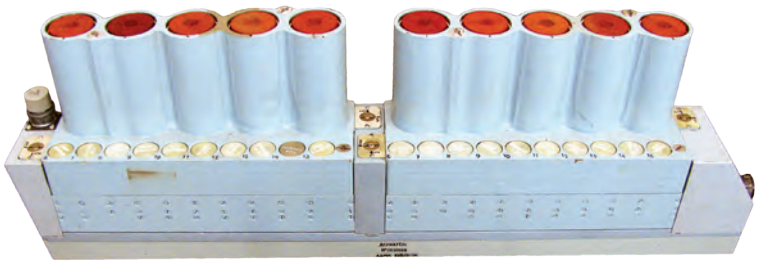
Weight:
25 kg

Main Specifications:

Locking-in failure probability of «Stinger»-type missile attack	0,7... 0,8
Time of full locking in failure for MPAD «Stinger»	0,5...0,8 sec
Supplied by helicopter on-board power system, AC:	
▮three-phase	208 V, 400 Hz
▮single-phase	115 V, 400 Hz

“ADROS” KUV 26-50

COMBINATION JAMMING DISPENSER



Combination jamming dispenser “Adros” KUV 26-50 is designed to contain and throw-out false thermal targets (FTT) and passive radar clutters of 26 mm and 50 mm caliber from each unit. Dispensing is implemented with special programs, thus a complex jamming environment for infrared seekers of all type missiles is creating, and as well there is a system of FTT selection.
“Adros” KUV 26-50 can be installed on helicopters, military transport and attack aircrafts.

Caliber of rounds:
26 mm and 50 mm

Power supply:
+27 V

Power consumption:
not more 250 W

Main Specifications:

Quantity of rounds in one section	20 of 26 mm caliber, 10 of 50 mm caliber
Quantity of section	up to 16
Readiness time	30 s
Integrated Control System	yes

"OSMINOG-E" TARGET SEARCH AND TRACK SYSTEM



"OSMINOG-E» target search and track system is installed in KA-28 naval helicopter and designed to accomplish tasks of searching, tracking and data producing to weapon systems about detected submerged or surfaced targets, as well as radar-visible targets.

Detection range of submerged objects: 8 km

Detection range of surfaced objects: 30 km

Weight: not more than 459 kg

Main Specifications:

Power consumption (not more than):	
on mains 200 V; 400 Hz	2,0 kVA
on mains 36 V; 400 Hz	0,1 kVA
on mains 27 V	1,0 kVA

INERTIAL SEMI-ACTIVE SEEKER 9B 1101K



It is designed to be used in R-27R "air-to-air" class aircraft missile. The homing head is used in armament systems of MiG-29, Su-27 aircraft and their versions.

Case diameter: 219 mm

Length, from fairing edge: 1173 mm

Weight: not more than 33.5 kg

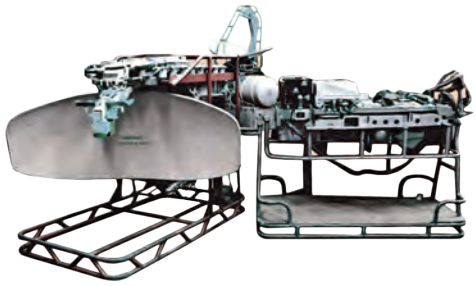
Main Specifications:

target lock-on in the altitude range	0,02-25 km
target lock-on range with electronic paramagnetic resonance	$3m^2$ - 25 km
time of inertial pointing with radio correction under maximum moving away from the carrier up to 25 km	30s
simultaneous launch of two missiles aiming at two targets	
development of the law of missile control at the inertial zone and in the self-homing mode	
readiness for use in 2 s after receipt of the target designation from the fire control system of the carrier of the MIG-29, SU-27 type.	

PNS-24M

Sighting-navigation system PNS-24M is installed on SU-24M aircraft and provides solution of following complex tasks:

- automatic flight as per set programmed and strategical itinerary points with correction of current position;
- detection of objects and aimed pointing of all kinds of aviation armament on ground (hidden and open), air and water-surface targets;
- safe fly-around at the altitudes from 50 to 600 m automatic and semi-automatic modes.



Power supply: three phase, 200V, 400Hz

Power supply: direct current, 27V

Weight: not more than 837 kg

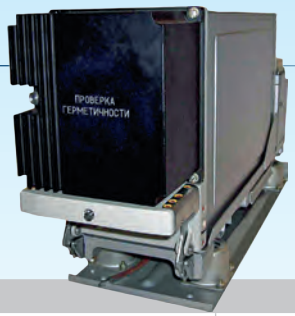
Main Specifications:

Power consumption, not more than:	
in 200 V, 400 Hz circuit, V	7800
in 27 V circuit, W	3100

A-511 AIRCRAFT TRANSPONDER

Device is designed to work with secondary air traffic control radar systems of ATC and RBS standards. It transmits information automatically on their request about the aircraft tail number, altitude, fuel load, a signal of plane selection from the group, «Alarm» signal, landing gear extension signal.

Transmitter pulse power:
300…800 W



Main Specifications:

Receiver sensibility:	
RBS mode	minus (84±4) dB/Wт
ATC mode at 837,5 MHz	minus (66±4) dB/Wт
ATC mode at 1030 MHz	minus (104±4) dB/Wт
Transmitting frequency:	
ATC and RBC mode	(740±2) MHz
A and AC mode	(1090±3) MHz

ONBOARD METEO-NAVIGATION RADAR STATIONS "BURAN-A"



Provides: navigation ground survey; detection of meteorological formations dangerous for flight, including turbulent zones and oncoming aircrafts; analysis and display of the vertical profile meteo-objects.

Main Specifications:

Antenna transmitter/receiver unit BR 702	
weight, not more than	8,9 kg
Control unit BR 483	
weight, not more than	0,5 kg
Power supply:	
on 27 V power system	70 W; 1,5 A
on 115 V, 400 Hz power system	80 VA-? (W-?); 0,7 A

Carrier frequency:
9345 MHz

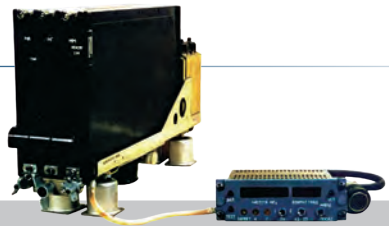
Pulse power:
5 kW

Beam width:
4/6x10 degree

Antenna gain:
33/27 dB

"KURS-93M" ONBOARD INTEGRATED NAVIGATION AND LANDING EQUIPMENT

The Equipment provides aircrafts navigation by radio beacons of VOR system, pre-landing maneuvers and approach landing by ILS and SP-50 radio beacons, as well as marker radio beacons flyby signaling.
The Equipment comprises radio receiving block RRB on damper frame and control panel CP.



Main Specifications:

Radio receiving block RRB:	
overall dimensions	200x94, 5x368 mm (1,5 K) (without frame)
weight	4,7 kg (without frame)
weight with the frame	6,3 kg
power consumption	30 W from the onboard 27 V power system
ventilator supply from the onboard power system	115 V, 400 Hz
Pulse duration	0.3-1.0 mcs
overall dimensions	155x48x145 mm
weight	1 kg
power consumptionw	10 W from the onboard 27 V power system

"BEEP-M" CLOSE NAVIGATION AND LANDING EQUIPMENT

Equipment is designed for automatic transmission of the aircraft direction and distance data relative to a ground-based radar station. In the "landing" mode it provides landing approach and generates signals of deviation from the equisignal area of course and glissade, and slant range distance to a landing beacon.



Main Specifications:

Range at 10,000 m altitude	≥ 350 km
Directional reading error	±0,125 grades
Distance reading error	±(250±0.05%D) m

TRAFFIC COLLISION AVOIDANCE SYSTEM "SPS-2000"



"SPS-2000" Traffic Collision Avoidance System is designed to provide safe separation between aircrafts if path forecast shows the probability of a collision and simultaneously minimize the deviation from the prescribed flight parameters.

Main Specifications:

Transponder characteristics at TCAS mode:	
▮ frequency	1030±0,01 MHz
▮ Max power	55,0 dBm
Transponder characteristics at S mode:	
▮ frequency	1090±3 MHz
▮ Max power	52,0 dBm

"SO-72M" AIRCRAFT TRANSPONDER

It is designed for operation with secondary ATC RBS radar systems as well under the UVD standard while flying in the Commonwealth of Independent States airspace.

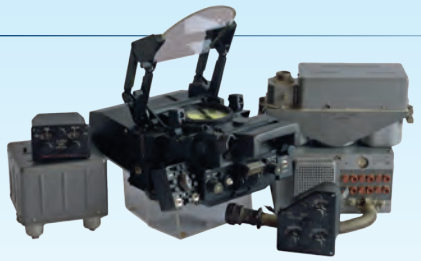


Main Specifications:

Sensitivity of the receiver:	
▮ in RSP mode	minus (84±4) dB/W
▮ in UVD mode at 837.5 MHz frequency	minus (66±4) dB/W
▮ in UVD mode at 1,030 MHz frequency	minus (104±4) dB/W
Frequency of the transmitter:	
▮ in UVD, RSP modes	(740±2) MHz
▮ in A and AS modes	(1,090±3) MHz
Impulse power of the transmitter	300…800 W

"S-17" TYPE AEROGUN-SIGHTS

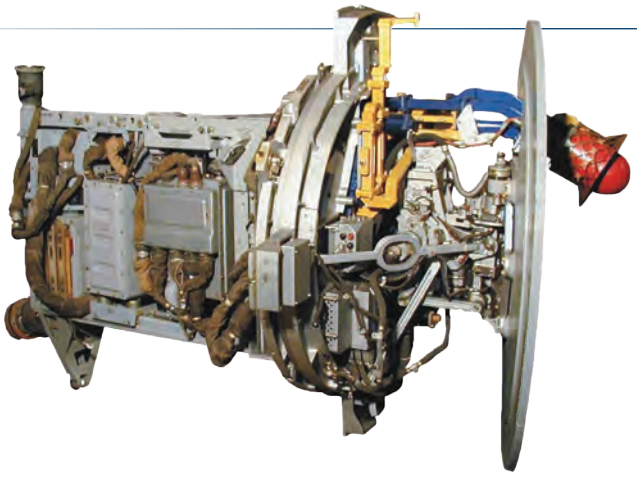
"S-17" type Aerogun-Sights are designed to be installed:
- S-17Bts-8 – on Su-25, Su-25UB aircrafts;
- S-17Bts – on Su-17M3, Su-22, Su-25 aircrafts;
- S-17 – on Su-17 aircrafts;
- S-17V – on Mi-24, Mi-24P, Ka-252 helicopters;
- S-17V-P – on Mi-24, Mi-24P helicopters.



It provides the following:

- automatic construction of sighting data when firing air and ground targets from guns, unguided missiles firing and conventional and braked bomb- dropping
- providing of target designation signals to missiles with infrared homing heads
- launching of guided missiles with laser homing heads
- gun-firing, unguided missiles firing, guided missiles launching and bomb-dropping in the manual mode.

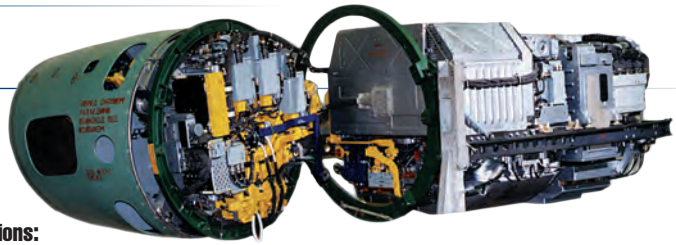
RADAR SIGHTING SYSTEM N001



It is designed for operation in weapon control systems of Su-27, Su-30, Su-30MK aircrafts.

N019 RADAR SIGHTING SYSTEM

It is designed to operate as part of the weapon control system in the MiG-29 aircraft.



Main Specifications:

Transmitter output pulse power at any carrier frequency in the HRF and MRF Scanning mode, kW:	
minimal	2.4
maximal	7.8
Number of carrier frequencies in the Scanning mode	28
Transmitter output peak power at any carrier frequency in the Illumination mode, kW:	
minimal	0.45
maximal	2.16
Number of carrier frequencies in the Illumination mode	10
Number of repetition frequencies	8

NR-3VM-T(VMA-T.VN)

FUEL CONTROL UNIT

DTK-7,62 effectively reduces recoil power and compensates throwing up while shooting.



IM-3A

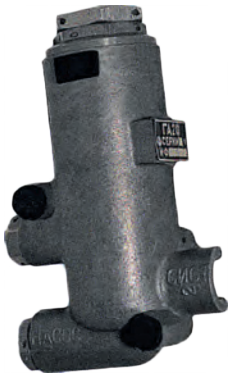
ACTUATING UNIT

It is designed to cut off the turboshaft engine fuel supply system by the electric signal in case of the free turbine RPM increase.



GA213, 215

PRESSURE REGULATORS (REDUCING GEAR)



They are designed for systems operating at reduced pressure from system with a high-pressure; protects hydraulic system from the pressure increased over allowable level.

NS 46-2 (3), (6)

PUMP STATIONS

Pump stations are designed to supply hydraulic fluid booster system object in the case of failure of the primary hydraulic system. Ka-32 application.



MULTILOCK RACKS

They are designed for use on aircrafts as a device that provides suspension, shipment and cargo drop (from 50 to 500 kg), fuel tanks, launching devices, units, plants, containers of small loads with forced split-off and without it.



GP-21, 23

DRIVE GENERATORS

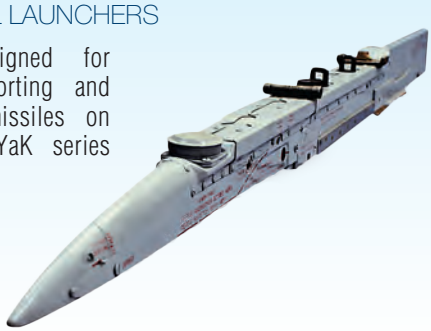


Devices are designed for electric power supply for the main unit electrical system. Application: Tu-22M3, An-124.

APU-68-85, APU-68UM3, APU-68-85E, APU-68-UM3-UD, APU-68-UM3-UR

AIRCRAFT RAIL LAUNCHERS

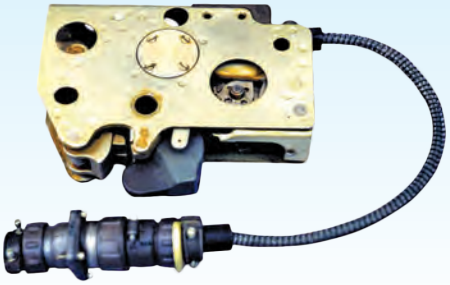
They are designed for hanging, transporting and launching of missiles on MiG, Su and YaK series aircrafts.



BDZ -56EM

EJECTOR RACK

Ejector Rack is used on MiG type aircrafts and designed for suspension and dropping of fuel tanks weighting 400, 500 and 800 kg.



EPK-35-N, EPK-35-1, EPK-20, EPK-35

ELECTRIC DRIVEN FAUCET

The faucets are designed to be used in aircraft fueling lines.



ZKTP-4900-0 -(01)

BRAKING PARACHUTE CONTAINER KEYLOCK

It is used on the Su series aircrafts for keeping of braking parachute container doors closed during the flight and for unlocking them for braking parachute release during the aircraft landing.



PGL-40

HYDROVANE DRIVE

The drive is a primary electric power supply source of aircraft electrical system.



SO-120, AO-120A

SUPPLY WITH SPARE PARTS AND AIRCRAFT GLAZING ELEMENTS

The technical data of the items corresponds to the data of 1st category item.



9S475, 9S475-1, 9S475-2, 9S475-3

CONTROL EQUIPMENT

Equipment is designed for targets search, detection and recognition, launcher selection, launching and semiautomatic guidance of "SHTURM" jet projectile at ground targets.



9M120

CONTROL CHANNEL EQUIPMENT

Designed to ensure the operation of 9K113K-8 helicopter guided weapon system – a component of OPS-24N target sight system.



KPA 9S475

TEST AND CINTROL EQUIPMENT

Test equipment is used for checking the 9S475 products on MI-24, MI-8AMTSh or KA-252TB helicopters and on "14310 project" patrol boats (Mirage).



USB-1

UNIVERSAL ROUNDS COUNTER

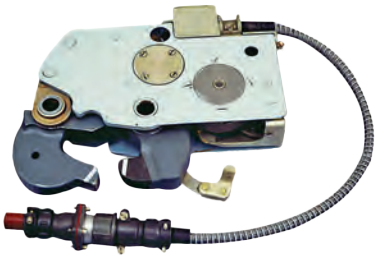
It is designed to quantify remaining rounds, as well as to indicate the arms ready-to-fire status. It is installed on Mi-series helicopters.



ZTP-D-1, ZTP-D-2

BRAKE PARACHUTE KEYLOCKS

They are installed on Su-series aircrafts and designed for the aircraft brake parachute locking and it release after landing and aircraft speed reducing.



MILLIMETER RANGE LOCATOR

It is designed for day and night and all-weather operation as a part of helicopter-based radar system for warning of helicopter collision with stationary obstacles such as pylons and power lines, towers, tall buildings, etc.



AOD42

AGGREGATE OF HOT STREAK

AOD42 is designed for maintenance of submission of fuel to fuel injection nozzle «hot streak» on commands from the electronic block.



ARP-1,2,3

AUTONOMOUS ELECTROHYDRAULIC STEERING GEAR

Gear provides reciprocating movement of operating and power elements of robots, manipulators, simulators, elevators, machine tools, injection molding machines, aircrafts and other devices by control commands of remote control systems.



87P6, 86P6, 9B893, 84P6T

AUTONOMOUS ELECTROHYDRAULIC STEERING GEAR

The electro hydraulic gear provides reciprocating movement of operating elements of robots, manipulators, simulators, elevators, machine tools, injection molding machines, aircrafts and other devices by control commands of remote control systems.



REMA-6

ELECTROMECHANICAL DRIVE

Drive is designed to provide rotary movement of executive elements. Electromechanical drive consists of electronic motor and reducing gear.



EMA-2000

ELECTROMECHANICAL DRIVE

Drive is designed for linear movement of executive elements of the aircraft's machinery.



ARM150

INTEGRATE STEERING GEAR

ARM150 is designed to deflect the rudder of civil aircraft by an external control signal from the flight control system.



DA-0.25, 0.5, 0.5N

THREE-PHASE INDUCTION MOTOR

Designed for driving of actuating elements.



APU-470

LAUNCHING DEVICE

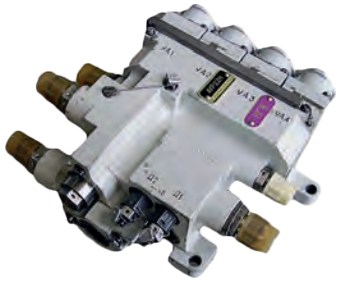
Designed for suspension, delivery and launching of combat aircraft missiles. Used in the Su-27, MiG-29 and Su-30MK aircrafts.



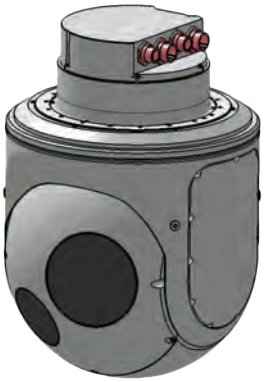
AUR-22H, 18

THRUST REVERSAL CONTROL UNIT

AUR-22H is used for distribution of working fluid to actuating devices of reversal mechanism by electric command. Application: engine D-436-148 (An-148), engine D-18T (An-124-100).



ELECTRO-OPTICAL SYSTEM №. 1,2,3



Purpose: Gyro-stabilized platform with 2 cameras

AUZ-02A

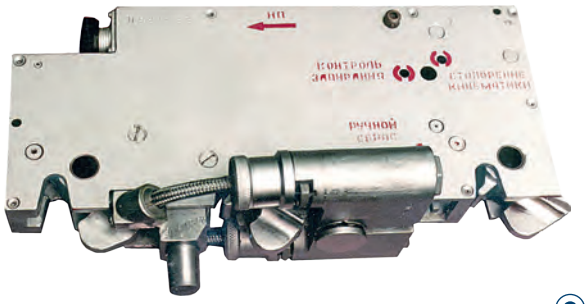
FLAPS CONTROL UNIT

It is designed for fixing aircraft flaps in any extended position, stabilizing their operating speed. Application: An-28, An-38.



LOCK D3-UM

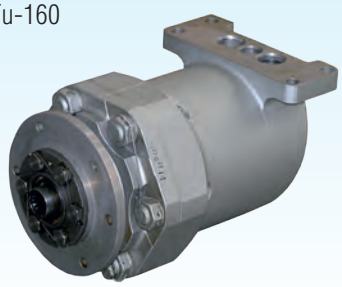
Designed for suspension, delivery and dropping of cargo weighting 50 ... 500 kg. Designed for standard loads, having one or two rhymes with spacing of 250 mm.



D1V-03

HYDRO-MOTOR

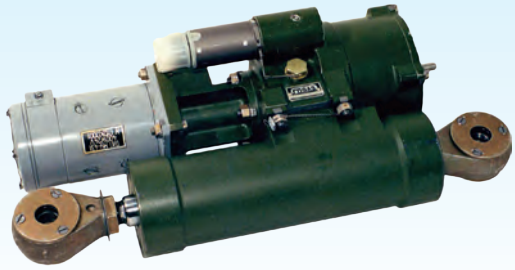
The hydraulic motor is used as a source of mechanical energy. It is the hydraulic motor of axial type with unregulated capacity with high specific parameters. Application: Tu-160



GPOAZ

HYDRAULIC ACTUATOR

Hydraulic actuator is designed for lifting up and putting down of the attached load.



GNP135

HYDRAULIC PLUNGER PUMP

It feeds high-pressure hydraulic systems with working fluid.



GMT, GMT-1

HYDRO-MOTORS

It is a source of mechanical power for hoisting-and-conveying equipment and press-and-forging plants in processing lines of foundry and stamping, machine-tool building, road-transporting and other branches of industry.



GM56A, GM56H, GM56, GM56-1

HYDRO-MOTORS

The hydraulic motor is used as a source of mechanical power for hoisting-and-conveying equipment and press-and-forging plants in processing lines of foundry and stamping, machine-tool building, road-transporting and other fields of industry. Application: An-124, An-148



GOP

HYDROSTATIC DRIVE

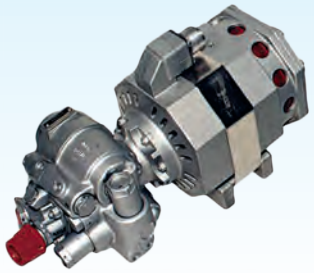
GOP is designed for transmission of mechanical energy from the engine to the chassis with stepless speed regulation and traction of the vehicle.



BPE-1

ELECTRICALLY OPERATED SUPPLY UNIT

BPE-1 is designed to supply working fluid delivery into hydraulic system of object and to keep pressure in specified range. Application: An-28



BPRP-1

HAND-OPERATED SUPPLY UNIT

It used for supplying of working fluid delivery to hydraulic system of an object at emergency conditions and ground-based checking-up. Application: An-72, An-72P, An-74.



GGA-800N

HYDRAULIC ACCUMULATOR

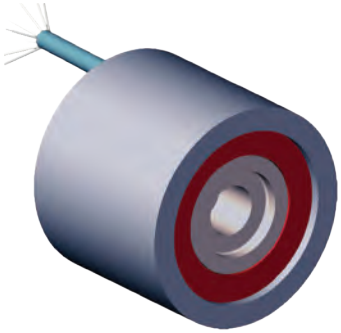
It is used as emergency hydraulic power source in aircraft hydraulic system. Piston type accumulator with gas and hydraulic fluid cavities



VT32- 8

DUAL-CHANNELS INDUCTIVE ROTATORY SENSOR

It is designed for measurement of executive element angular position, as well as for use in feedback circuits of servo systems.



BH-400

AIRHEATER

It is designed for air heating in the aircraft's air-conditioning system. Air heater consists of the heating element, thermoswitches, case and an electric socket.



ATK-02-01, ATK-02-01H, ATK -02

WHEELS BRAKE/ANTISKID UNIT

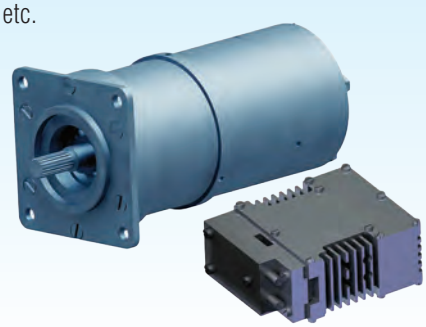
It is designed for aircraft wheels antiskid control by controlling the pressure in the brake lines. Application: An-140, An-148, An-28, An-38, An-140



DV-2000, 800, 40, 15, 15-1

NON-CONTACT DC ELECTRO-MOTORS

They are designed to drive aircraft actuators mechanisms, pump-stations, different air gears of direct and reverse action, etc.



DA-8, 7, 5.5, 3-2, 3, 1.5, 0.55T

THREE-PHASE INDUCTION MOTORS

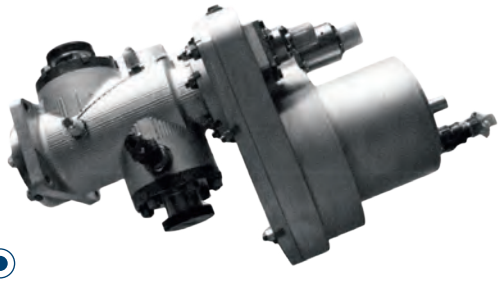
Designed for pump station driving. Electro-motor with short-circuited rotor, general climatic construction, protected, vibration-proof. Cooling – self-ventilation. Working mode – repeatedly – short-timed.



DG-97-7

GAS METERING DEVISE

It is designed for working fuel dispensing into the combustion chamber of the gas turbine engine by input signals from the control system.



DI4, DIL55, DI2

LINEAR DISPLACEMENT SENSORS

Linear displacement sensors.



DV-6000, 12000, 3000, 3000-3

NON-CONTACT DC ELECTRO-MOTORS

Designed for pump-stations driving. Electro-motor consists of electro-mechanic unit and control block.



DVPT-7

NON-CONTACT DC MOTOR

DC motor is used to drive different aircraft linear and rotary mechanisms.



DCN42

ENGINE DRIVEN CENTRIFUGAL PUMP

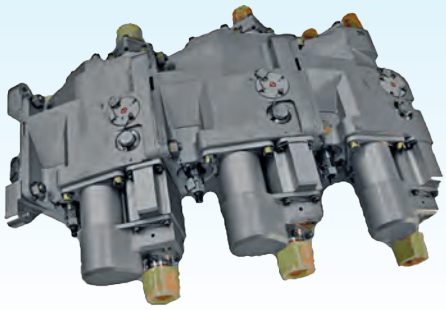
It is a fuel system booster pump. The engine driven centrifugal pump consists of the screw pump, impeller pump, shaft seal unit.



DF42

AFTERBURNER FUEL METERING DEVISE

It is designed for fuel dispensing into afterburner ducts of AI-222K-25F turbojet engine by input commands from engine control system.



EMA-750, 100

ELECTROMECHANICAL ACTUATORS

Designed for linear movement of mechanisms' executive elements. Electromechanical actuator consists of valve electro-motor and gearbox.



EMP3

ELECTROMECHANICAL ACTUATOR

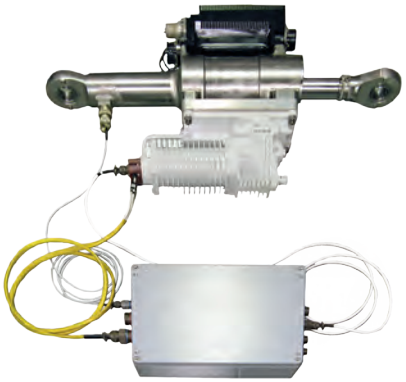
Designed for linear movement of mechanisms' executive elements. Electromechanical actuator consists of valve electro-motor and gearbox.



ENA15

INDEPENDENT FLIGHT CONTROL ACTUATOR

EHA 15 is used for civil aircraft rudder actuation by input control signal from the flight control system.



KV-38

CAT-IN VALVE

It is designed to control the working fluid flow to the actuator by pressure connection under the edge of the pilot distribution spool. Application: AN-38, AN-140



KPB

COMPENSATION-PRESSURIZATION TANK

Tank is used in closed hydraulic systems of machine or handling equipment to provide the reserve of working fluid and its pressurization at the pump inlet, as well as compensation of thermal expansion of working fluid.



KG42

BYPASS VALVE

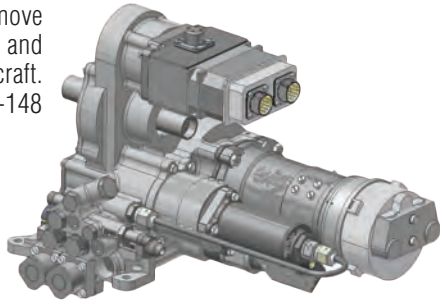
Valve is designed to provide stable operation of the torque converter NS-53 at low pump flow through the bypass of the working fluid from the pump outlet line to drain.



KPM-148N

COMBINED MECHANIZATION DRIVE

KPM 148N is designed to move the wing flaps and slats of the aircraft. Application: An-148



KR158N

ELECTRO-HYDRAULIC CRANE

It is designed to provide pressure relief in the hydraulic wheel brake system of AN-148, AN-158, AN-140 aircrafts and their modifications, when crane's electromagnet responds to electrical signal.



KP-38, KP-38A

ROTARY FAUCETS

The faucet is designed to control the flow of hydraulic fluid to the actuator by rotation of the control spool and the feedback spool, which is mechanically connected to the actuator's user.



KV-38N, KV-38N-1

SWITCHING FAUSETS

The faucet is designed for switching the object's front wheel from the controlled position to the self-castoring and back and forth, as well as to feed the cavities of wheel's hydraulic drive from the drain line. Application: An-148



MPK-14U

FAUCET'S DRIVE MECHANISM

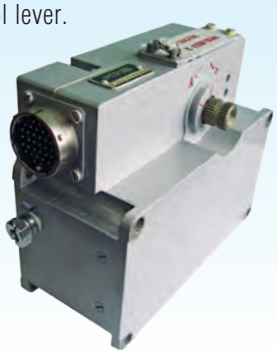
MPK-14U is designed to drive the faucets or valves gates/ shatters in different engine systems and aircrafts.



MPR148

ELECTROMECHANISM

It is designed for conversion of the control signal from monitor and control unit into angular displacement position of the engine control lever.



MTZH-15N

THREE-PHASE INDUCTION MOTOR

Electro-motor with short-circuited rotor, general climatic construction, protected, vibrationproof. Cooling – by working fluid. Designed for pump station driving.



ND-450

DOSING PUMP



Designed for automatic control of fuel supply in the engine AI-450 on two main channels of electronic control system, and also dosage of fuel in the engine is proportional to a position of the engine control lever in a mode of standby hydromechanical control.

NP114

PLUNGER PUMP

The pump is designed to supply working fluid delivery to object's hydraulic system under high pressure.



NP40, NP40A

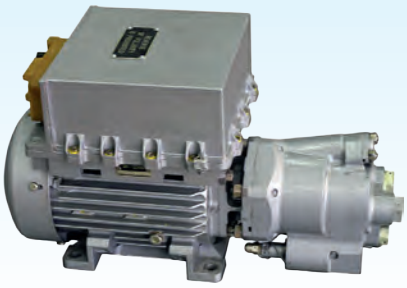
PLUNGER PUMPS

Pumps feed high-pressure hydraulic systems with working fluid. Application: Ka-60, Ka-62.



ELECTRICALLY DRIVEN PUMPING STATION

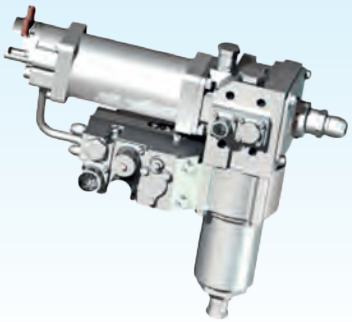
Supply of working fluid into the object's hydraulic system, keeping pressure in the hydraulic system in assigned range. Application: aircraft hydraulic system.



NR-9E

MOTOR DRIVEN PUMP-REGULATOR

Fuel supply to starting and main jets of the small gas turbine engine by input commands from the engine control system



NR30, NR 32

PLUNGER PUMPS

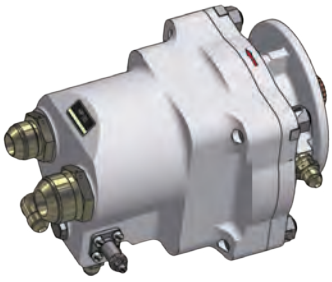
It feeds high-pressure fuel systems with working fluid. Variable capacity axial-plunger pump consists of pumping unit, pump capacity controller and pressure regulator.



NR180

FUEL PUMP

It is designed to feed fuel to the gas turbine engine's fuel system.



NS15E, NS 15A, NS15N

ELECTRICALLY DRIVEN PUMPING STATIONS

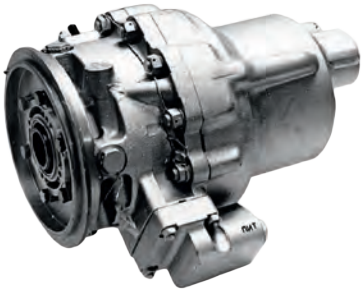
Supply of working fluid into the object's hydraulic system, keeping pressure in the hydraulic system in assigned range. Application: aircraft hydraulic system.



NP107A

PUMP-MOTOR

It is the main drive in the hydraulic actuation system of the cable-lain rope on Tu-142 aircraft.



NS58, 53, 204N

HYDRAULIC PUMPING UNIT

It transforms fluid power from one object's self-contained hydraulic system to another without working fluid exchange between systems. Application: MiG-29, An-124, An-225 aircrafts emergency system.



NS 29, 30, 15R, 5NR, 103, 140-5R, 140-3, 140-4, 10-2, 140-2N, 140-1, 140-7, 140-7N, 140-5, 140-6, 140-10, 226

ELECTRICALLY DRIVEN PUMPING STATIONS

Supply of working fluid into the object's hydraulic system, keeping pressure in the hydraulic system in assigned range. Application: aircraft hydraulic system.



NS-68, 68-1, 62, 60, 40A, 69, 73M, 75-1, 148-1, 148, 148N, 148P, 148PN

PUMP STATIONS

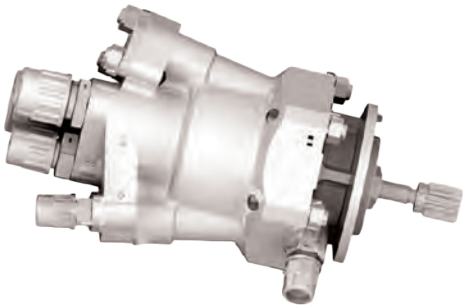
It is a source of high pressure of working fluid in hydraulic systems of hoisting-and-conveying machines and press-and-forging plants, in processing lines of foundry and stamping, machine-tool building, massive transmission and other fields of industry. It is a pressure source in aircraft's hydraulic systems.



NT4

FUEL PUMP

Fuel supply to the adjustable jet nozzle control loop of AI-222K-25F gas turbine engine



HP9B-3Б, HP9B, HP9B1

REGULATOR PUMPS

Fuel supply to the AI9V 3B engine main jets by input command from the engine control system, engine speed control



148N, 139, 138, 134, 130-2K, 130-2, 130-2A, 117

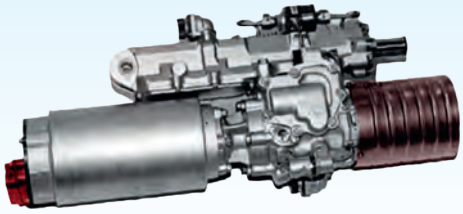
PLUNGER PUMPS



It is a source of high pressure of working fluid in hydraulic systems of hoisting-and-conveying machines and press-and-forging plants, in processing lines of foundry and stamping, machine-tool building, massive transmission and other fields of industry.

AUTONOMOUS ELECTROHYDRAULIC STEERING GEAR RPO

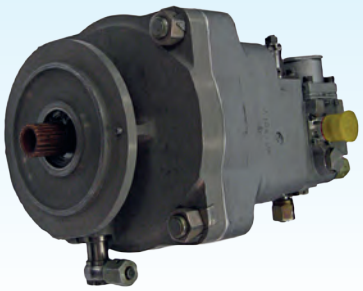
The electrohydraulic gear is used for reciprocating movement of actuating mechanism of robots, manipulators, simulators, elevators, machine tools, injection molding machines, aircrafts and other devices by control commands of remote control system.



NT40

FUEL PUMP

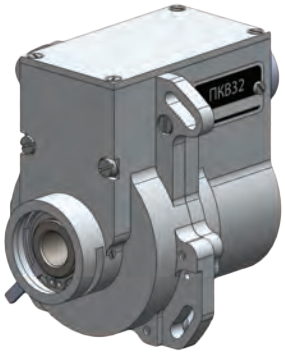
The fuel supply into the AI-222K-25F turbine engine afterburner dispenser.



PKV32

ELECTROMECHANISM

It is designed to provide angular displacement of executive organs. Electromechanical device consists of AC electronic motor with control unit, multiple-reduction gear unit, non-contact sensor of extreme positions.



NSRT

MOTOR DRIVEN PUMPING STATION

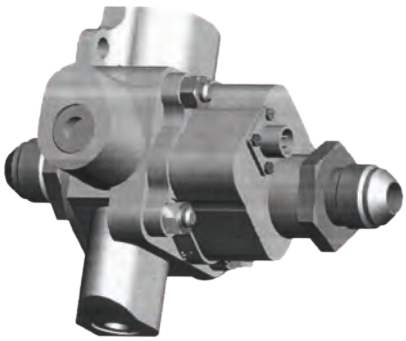
The Pumping Station is designed to feed working fluid into the object's hydraulic system and to keep pressure in the hydraulic system in specified range.



R-02

FLOWMETER

Measurement of working fluid flow. The piston type flowmeter with transducer produces impulses per unit time in proportion to consumption of fuel flowing through the flowmeter.



RM-140, RM-140A

STEERING GEAR

Movement of object's executive organs.
Application: An-140, An-148



D-12T-V, D-25F, D-38T, D-90, D-90-140, D-100L, D-10F, DK-120

AVIATION ELECTRIC MOTOR

The DC electric motor with current voltage 27 V, wattage from 10 to 140V



EMP-25

ELECTRO-MECHANICAL DRIVE

EMP-25 is designed for use in the propeller parking brake mechanism and other aircrafts' systems.



EPL -1

ELECTROMOTOR OF BLADE FEATHERING SYSTEM



It is designed to drive the blade feathering system of the wind turbine-generator.

PEM-2

ELECTROMAGNETIC TRANSFORMER



It is designed to rotate the dispensing element of the dose-pump. Two-channel transmitter of control signals from an external electronic controller into the angular mechanical movement of the shaft (flat/slide valve); all weather climatic construction, leak-proof, vibration-proof.

C-01, 02

POWER CYLINDERS

Cylinder is designed for moving of lever mechanisms of machine. The piston type cylinder is swinging, with brake zones at the end of piston stroke at its extraction and retraction.



RS42

NOZZLE CONTROL UNIT

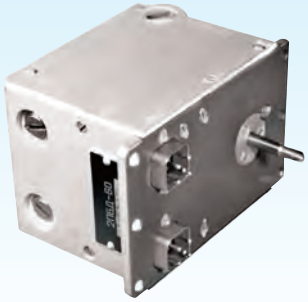
Control of fuel supply to the nozzle flaps displacement cylinders of the AI-222K-25F engine by input command from the engine control system.



2PBD-60, PBD-59V, PBD-59MV, PBD-59IV

ELECTROMECHANICAL DRIVES AND ACTUATORS

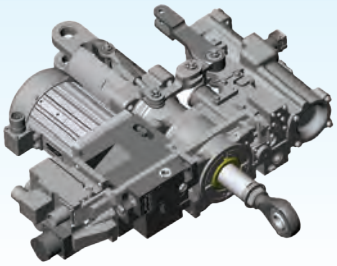
They are mounted on cluster holders and dispensers of "Tu-series" aircrafts and are designed for opening of load-carrying shackles and drop blocking.



ARP-20, 20H, 21

AUTONOMOUS ELECTROHYDRAULIC CONTROL ACTUATOR

ARP-20, 20H, 21 are designed to deflect the rudder according to the input mechanical signal in reversion mode of the aircraft wheel steering system. Application: An-148



MPF-2B, MPF-6B

MOTOR-OPERATED MECHANISMS

They are designed for landing lamp control, used on aircrafts.



MVR-2B 2, MVR-2P, MVR-2A, MVR-2M

MOTOR-OPERATED MECHANISMS

They are designed for control of aero-engine oil radiator shutter, used on aircrafts.



UT-11M, UT-15,UT-10V, UT-6D

MOTOR-OPERATED MECHANISMS

They are designed for altitude relay aileron control, used on aircrafts.



PUS-36DM, PUS-36-68, PUS-36-71

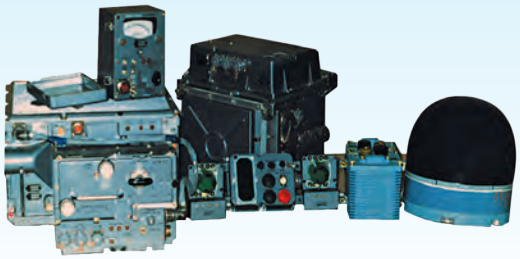
CONTROL DEVICES

The devices are mounted on the MiG, Su and An series aircraft and are designed for serial processing of 36 electric impulses in multichannel system and their distribution in user circuits in definite order.



9C477

Equipment for transmitting of coded radio commands; constitutes a part of 9K113 weapon system of Mi-24V Helicopter.



I-256.20-2M

Designed for formation of control radio commands in accordance with input guided voltage and transmitting of these commands to onboard receiver of the aircraft. Included in the armament of Mi-28N Helicopter.



I-505.20-2, 20-2M

It is designed for maintenance and troubleshooting up to constructively plug-in unit of 256.20-2 product without removing the equipment from the site and cables placement.



CH-3700-03

NAVIGATION TRANSCEIVERS

GNSS sensor is designed for determination of current position coordinates, track angle, speed and time on GLONASS and GPS signals at any point and any time aside from weather conditions.



1ATB-2



Radio transmitting unit designed to generate microwave radio commands based on input modulation signals, and transmit these commands to an antenna unit. This unit is part of I-256.20-2.

I-256.20-2

Designed for formation of control radio commands in accordance with input guided voltage and transmitting of these commands to onboard receiver of the aircraft. Constitutes an integral part of 9K113 weapon system of Mi-8 Helicopter.



LKK-V

LASER GUIDANCE CHANNEL

«LKK-V» laser guidance channel (hereinafter - device) is designed to form the space-and-time structure of the laser information field of missile guidance within the programmed distance. The device is an integral part of the missile guidance system installed on helicopters.



PN-V

HOMING DEVICE

«PN-V» homing device is designed to form, on a programmed distance, of the space-and-time structure of the missile guidance laser information field. The device is an integral part of the helicopter-mounted missile guidance system.



ELECTRO-OPTICAL SCANNING SYSTEM

Purpose: digital camera system for aerial photography.



SIMULATOR

SIMULATOR FOR L-39 AIRCRAFT

Designation and application field - Training of Air Force personnel.



SIMULATOR

SIMULATOR FOR MIG-29 AIRCRAFT (ART. 9-13)

Designation and application field - Training of Air Force personnel.





FLIGHT-CONTROL

HARDWARE-SOFTWARE COMPLEX OF L-39 PARAMETERS GROUND CONTROL

The Complex is designed for gathering, display, decoding and analysis of parametrical and verbal information obtained from the aircraft's on-board sensors and devices.



ERP-SO-72M

OPERATION AND REPAIR PANEL

The panel is used to control the parameters as well as to repair the SO-72M aircraft transponders in the laboratory and workshop conditions



KASO-V

The 'KASO-V' is designed to test performance, sensitivity, acceptable control of the working frequencies, encoding response signals' assessment in accordance with ICAO standard for SO-72M, A-511, SOM-64, SO-69 -type aircraft responders in terms of aerodrome, laboratory and workshop environment.



PSO4-316

POWER METER

The 'PSO4-316' power meter is designed to measure the peak value of impulse power of the SO-70, SO-72M, A-511, SOM-64, SO-69 aircraft responders and other on-board equipment in aerodrome, laboratory and workshop conditions.



IBK EU2.890.172

BIPOLAR CODE SIMULATOR



Bipolar Code Simulator IBK EU2.890.172 is used for testing of SB-72M, A-511, SB-96 aircraft responders' parameters during routine maintenance and repair work.

PS16-521

PS16-521 Device – ground radar signals' portable simulator UPR (UVD). Designed to control SB-72M, A-511, COM-64, SB-69 aircraft responders' parameters, and provides verification of efficiency, operating frequencies control, encoding signals evaluation.



MULTI-PURPOSE PANEL FOR AUTOMATIC TESTING OF ONBOARD ELECTRIC WIRING HARNESS

Designation and field of application – Operation and repair of aircraft equipment.



PANEL FOR AUTOMATIC TESTING OF ENGINE'S START SYSTEMS AND CONTROL OF AIRCRAFT'S ENGINE MODES

Designation and field of application – Operation and repair of aircraft equipment.



SPA KURS MP-70

TEST-BENCH EQUIPMENT

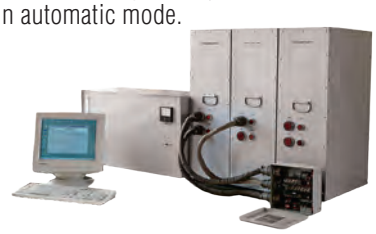
SPA KURS MP-70 is designed for testing of blocks and onboard equipment "Kurs MP-70"



MULTI-PURPOSE PANEL

MULTI-PURPOSE PANEL FOR AUTOMATED CONTROL OF COMMUTATION DEVICES

Panel is designated to test commutation devices (relay-contact boxes, energy assemblies, energy panels, electrical shields, breaker assemblies, switches, relays, buttons, electrical lamps etc.) installed on aircraft/ helicopter in automatic mode.



SERVICE BENCH 2.761.778

Service Bench 2.761.778 is designed for performance testing of SD-75 and SD-75M air range scopes, troubleshooting and electrical data checking



MULTIPURPOSE AUTOMATIC COMPUTER COMPLEX

The panel provides high quality operating testing of almost all systems, units, separate devices, printed circuit boards etc.



FLEXIBLE FUEL TANKS PRODUCTION



Production of flexible fuel tanks for "L-39-type" aircrafts, Ka-27(28), Ka-32 helicopters. The technical data of the items corresponds to the 1st category items data.

GROUND SUPPORT EQUIPMENT

Designed for aircraft technical maintenance at stationary airfields.



MANUFACTURING AND MECHANICAL PROCESSING OF METAL ITEMS FOR AIRCRAFT ENGINES' OVERHAUL

Designation and field of application: aircraft engines AL-21F-3, AL-31F, RD-33, GTDE-117(-1), engine's aggregates D-30KP(KP-2) external aggregates box VKA-99. Metal make – from common materials to high-tensile, heat-resisting steels. Polishing, boring, cutting, turning works. Chemical processing. Thermal processing in vacuum.



MANUFACTURING OF INDUSTRIAL RUBBER GOODS

Designation and field of application: aircraft engines AL-21F-3, AL-31F, RD-33, GTDE-117(-1), aggregates of engines D-30KP (KP-2), external aggregates box VKA-99.



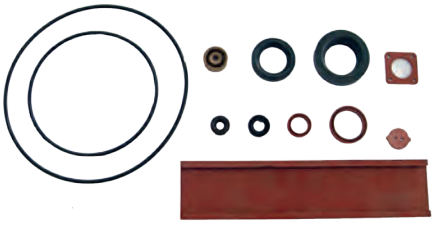
PRODUCTION OF HIGH AND LOW PRESSURE HOSES

Supply of spare parts for aeronautical equipment. The technical data of the items corresponds to the 1st category items' data.



MANUFACTURING OF RUBBER MECHANICAL GOODS

Designation and field of application: aircraft engines AL-21F-3, AL-31F, RD-33, GTDE-117(-1), aggregates of engines D-30KP (KP-2), external aggregates box VKA-99.
Assortment: rings of round and rectangular profile, multi-purpose gaskets, seals, bushings, tubes, metal-rubber details.



COATING AND RENEWAL

COATING AND RENEWAL OF GALVANICAL, CHEMICAL, ANODIZED ANTI-FRICTION AND HIGH-TEMPERATURE COATINGS ON THE ITEMS SURFACE

Designation and field of application: aircraft engines AL-21F-3, AL-31F, RD-33, GTDE-117(-1), engine's aggregates D-30KP(KP-2) and external gearboxes VKA-99. There are 32 types of coating. Most common – silver, copper, zinc , cadmium, lead-indium, passive film, oxy- phosphate film, anode films.



0.222

FUEL-OIL HEAT EXCHANGER

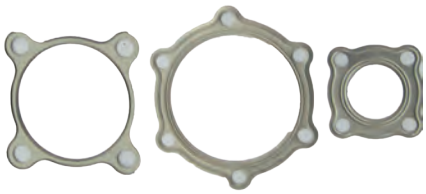
Designed to cool the oil circulating in the oil system of an aircraft engine AI-222-25, heating and filtering of the fuel supplied to the engine.



MANUFACTURING OF ITEMS

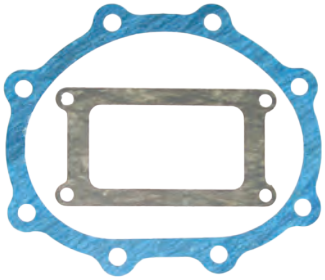
MANUFACTURING OF ITEMS BY COLD-PRESSING, ELECTROEROSION AND LASER PROCESSING

Designation and field of application: aircraft engines AL-21F-3, AL-31F, RD-33, GTDE-117(-1), engine aggregates D-30KP(KP-2) and external gearboxes VKA-99. Items nomenclature: washes and locks, gaskets, covers and screens made of stainless steel, copper and aluminum alloys.



MANUFACTURING OF PARONITE PACKINGS

Designation and field of application: aircraft engines AL-21F-3, AL-31F, RD-33, GTDE-117(-1), engine aggregates D-30KP (KP-2) and external gearboxes VKA-99.



PNDN-7M

ROLL AERIAL MATERIALS DECODING DEVICE

Designed for review and decoding of wet and dry aerial films.



PRODUCTION OF SO-120 ORGANIC GLASS ITEMS

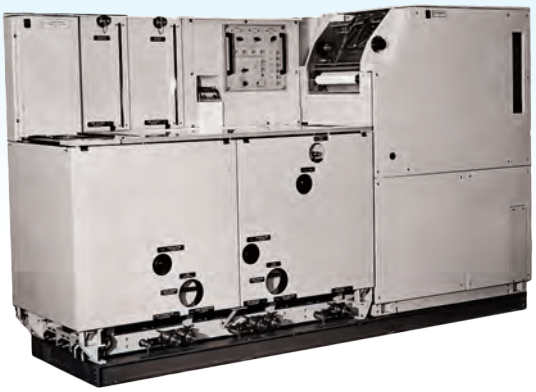
The technical data of the items corresponds to the 1st category items data.



PM-32

FILM PROCESSOR

Designed for rapid liquid chemical and phographical processing and drying of B&W negative aerial films suitable for rapid machine processing.



RUBBER UNSHAPED EXTRUSIONABLE PROFILE

'8AT-0700-00-331', '8AT-0700-00-405', '8AT.0200.161', '50.10020.05.00', 'PR-570NG', '24-0350'

The profile is designed to complete special and general purpose products. It is used to seal components and assemblies of the aviation equipment. Working environments: air, atmospheric fallouts, dust.



UKP-4

UNIVERSAL COPY MACHINE

Designed for nonstop contact printing from the roll B&W aerial films on the roll and format aerial photopaper with a pad that cannot get soaked. Printing is also possible on other types of B&W aerial photopaper.



UKPL-M UNIVERSAL COPY MACHINE

Designed for contact printing from B&W, colored and multispectral aerial films on the roll and format positive photo materials in stationary and mobile laboratories.



UkrOboronProm
Ukrainian Defence Industry





SHIP BUILDING INDUSTRY

WE DO:

- design and construction of combat ships and civil vessels
- development and production of gas turbine engines
- hydro-acoustic systems and complexes
- floating docks construction
- repair and upgrade of marine equipment
- component parts for shipboard systems and equipment

“PROJECT 958”

AMPHIBIOUS ASSAULT HOVERCRAFT

It is designed for loading of military equipment and seaborne assault personnel from hard and unprepared beaches, their sea lifting, beach landing and fire support.



Air cushion overall length:
about 57,3 m

Air cushion overall beam:
about 25,6 m

Air cushion overall height:
about 21,9 m

Full speed at normal displacement of 525,9 t:
not less than 60 kn

Complement:
27

Main Specifications:

Full displacement	about 554,4 t
Maximum fuel capacity for 1000 miles transportation	about 150,0 t
Endurance as for the provisions and fresh water for crew	5 days

“KALKAN-MP”

PATROL WATER-JET BOAT

It is designed for line of duty on state borders protection on the rivers, lakes, sea coastal areas and services providing for maritime checkpoints.



Length, overall:
11,75 m

Beam, overall:
3,30 m

Height midships:
1,67 m

Draft midships:
0,56 m

Speed:
not less than 36 knots

Complement:
3

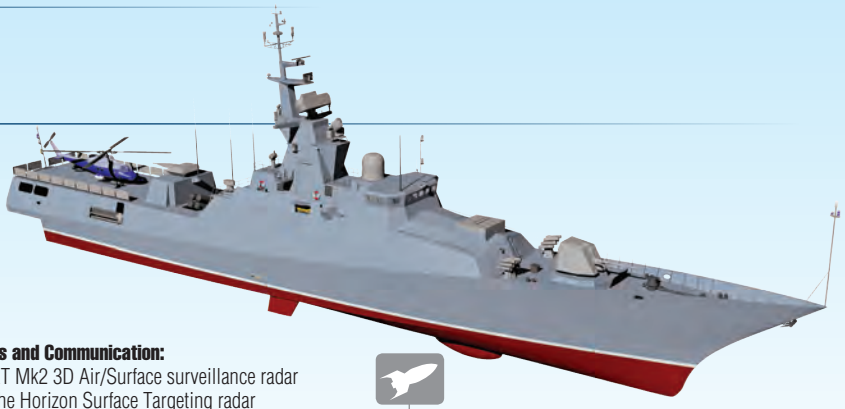
Main Specifications:

Displacement, full load	8,66 t
Cruising range	270 (500) miles (km)

GAYDUK-M

MULTIPURPOSE CORVETTE

The corvette searches and detects surface and underwater targets, as well as takes air, surface and underwater countermeasures.



Length, overall: 85,5 m

Beam, overall: 10,2 m

Draught, on design WL: 3,1 m

Max speed: not less 28-32 kts

Complement: 52

Sensors and Communication:
- SMART Mk2 3D Air/Surface surveillance radar
- Over the Horizon Surface Targeting radar
- Sting EO Optical-Radar Fire Control System
- Optoelectronic Fire Control System
- TACTICOS CMS
- ESM and Chaff decoy launcher
- OESM
- Hull mounted sonar
- Intruder detection sonar
- Navigation radar
- Integrated bridge system

Weapons:
- 2x4 MM40 Block3 SSM
- 8 MICA VL SAM system
- 76 mm OTO Melara gun
- 35 mm Millennium gun
- 2x12,7 mm machine guns
- 2x2 - 324 mm torpedo launchers
- 2 ASW Rocket Launchers (option)
- Helicopter up to 6 t

Main Specifications:

Displacement, full load	1200 t
Endurance	14 days
Range (at 14 kts)	not less 3500 NM
Propulsion	CODAD /CODAG

GYURZA

ARMORED RIVER GUNBOAT



Designed to guard state borders, monitor shipping on border rivers, lakes and other basins.

Length, overall: 20,3 m

Beam, overall: 4,9 m

Draught, max: 0,9 m

Max speed: not less 28 kts

Complement: 5

Sensors and Communication:
- Navigation radar
- Optoelectronic monitoring system
- Integrated bridge system

Weapons:
- BMP-2 turret: 1x30 mm double-belt automatic gun; 1, ATGM Launcher; 7,62 mm machine gun
- BTR-70/80 turret: 1x14,5 mm Heavy machine gun; 1x7,62 mm machine gun

Main Specifications:

Displacement, full load	38,4 t
Endurance	5 days
Range (at 11 kts)	not less 450 NM
Propulsion	2 diesels

“PROJECT 58130S”

FAST PATROL BOAT

It is designed for fulfilling the following tasks:

- national sea border protection;
- providing service of maritime checkpoints;
- interception and inspection of non-compliant vessels;
- patrolling sea economical area;
- participation in maritime rescue operations;
- implementation of maritime people transport operations.

Length, overall: 24,40 m
Beam, overall: 5,20 m
Height midships: 2,82 m
Draught, max: 1,57 m
Speed: 37 knots
Complement: 9



Main Specifications:

Displacement, full load	39,70 t
Cruising range	not less than 500 miles

“CORAL”

PATROL CRAFT

Designed to guard the inviolability of the state borders and the state sovereign rights in its EEZ, to take a part at the organized crime control, to counteract the illegal immigration at the state boarders, as well as to take a part at the search and rescue operations.



Sensors and Communication:

- Surveillance radar
- Navigation radar
- Optoelectronic fire control system
- Integral bridge system

Weapons:

- Combat module: 30 mm gun; 7,62 mm machine gun
- 2 x 12,7 mm MGs
- Fast interceptor boat (6 prs)

Main Specifications:

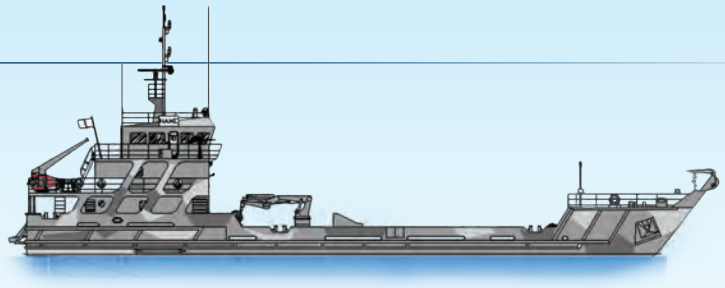
Range (at 14 kts)	2500 NM
Propulsion	2 diesels
Endurance	15 days

Length, overall: 49,0 m
Beam, overall: 9,4 m
Draught, max: 2,2 m
Max speed: 29 kts
Displacement, full load: 300 t
Complement: 24

"BOBR"

LANDING CRAFT/ MILITARY TRANSPORT

Designed to land the marines and its weapons and equipment to the unequipped shore.



Length, overall: 53,00 m
Beam, overall: 10,00 m
Draught, max: 1,90 m
Displacement, full load: about 700 t
Complement: 12

Sensors and Communication:
- 2 Navigation radar
- FLIR system
- Integrated bridge system

Weapons:
- 2x12,7 mm MGs

Main Specifications:

Propulsion	2 diesels
Max speed	12 kts
Range (at 10 kts)	not less 1800 NM
Endurance	8 days
Landing force capacity:	
3 MBT or 5 APV	
up to 70 commandos	

"TRITON"

LANDING SHIP TANK

Designed to land the marines and its weapons and equipment to the unequipped shore.



Sensors and Communication:
- Surveillance radar
- Navigation radar
- Optoelectronic Fire Control system
- Integrated bridge system

Weapons:
- 122 mm gun
- 2x20 122 MBLS, BM-21 type
- 1x30 mm Combat module
- 2 Close-in SAM systems

Length, overall: 87,9 m
Beam, overall: 10,0 m
Draught, max: 2,6 m
Displacement, full load: 1390 t
Complement: 25

Main Specifications:

Propulsion	2 diesels
Max speed	not less 17 kts
Range (at 12 kts)	3500 NM
Endurance	15 days
Landing force capacity:	
5 MBT or 10 APV	
up to 100 commandos	

"BRIZ-40M"

FAST PATROL BOAT

Is designed to operate at the inland seas and at the coastal regions of the open seas for the combat duty, the struggle against enemy boats, the protection of warships and ships at the outer harbor mooring.



Length, overall: 25,5 m
Beam, overall: 5,2 m
Draught, max: 1,5 m
Displacement, full load: 47,8 t
Max speed: not less 35 kts

Sensors and Communication:
- Navigation Radar
- OE surveillance System
- Intruder detection Sonar
- Laser detection System
- Chaff decoy System
- Integrated internal and external communication system
- Integrated bridge system

Weapons:
- Naval Missile Guided Weapon System
- Light weapon-system (module): 12,7 mm machine gun, 40 mm grenade launcher
- Small arms

Main Specifications:

Diesels	2x1430 kW
Range (at 15 kts)	not less 500 NM
Endurance	5 days

"BRIZ-40P"

FAST COAST GUARD BOAT



Is designed for the safeguarding of the state's borders, the safeguarding of the state's sovereign rights at the EEZ, participating at the fight against organized crime and at the countermeasures against illegal migration at the state's borders.

Length, overall: 25,5 m
Beam, overall: 5,2 m
Draught, max: 1,6 m
Displacement, full load: 46,5 t
Max speed: not less 38 kts

Sensors and Communication:
- Navigation Radar
- OE surveillance System
- Intruder detection Sonar
- Laser detection System
- Chaff decoy System
- Integrated internal and external communication system
- Integrated bridge system

Weapons:
- Light weapon-system (module): 12,7 mm machine gun, 40 mm grenade launcher
- Small arms

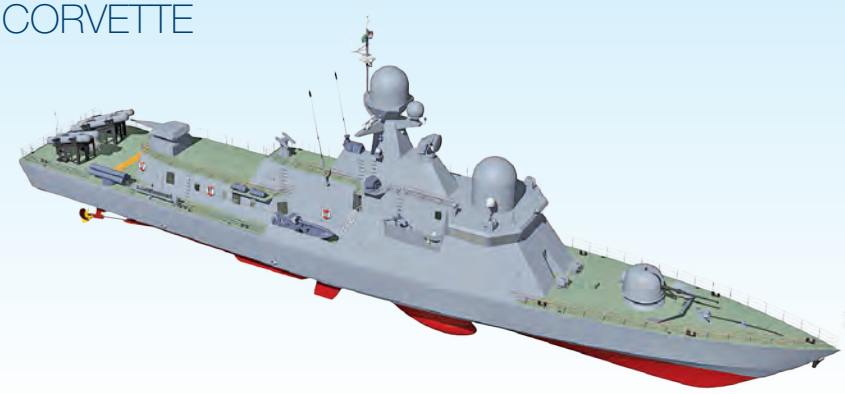
Main Specifications:

Diesels	2x1430 kW
Range (at 15 kts)	not less 500 NM
Endurance	5 days

"PC655"

MULTIPURPOSE FAST CORVETTE

Designed to counteract surface ships of «corvette» or «missile boat» class; search and destroy diesel submarines, guard convoys and transport vessels.



Length, overall: 67,70 m
Beam, overall: 10 m
Draught, max: 4,7 m
Displacement, full load: 640 t
Max speed: not less 32 kts

Main Specifications:

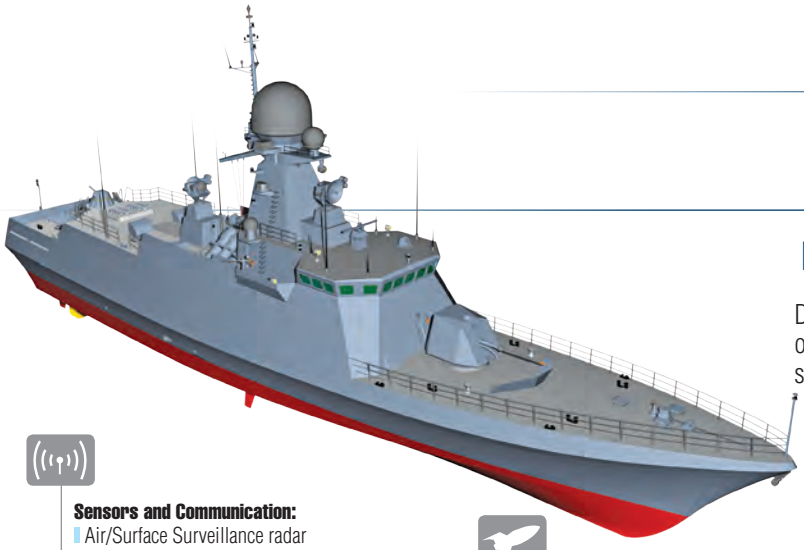
Propulsion	4 diesels
Endurance	8 days
Range (at14 kts)	4000 NM

The weapons and sensors could be specified in accordance with the Customer's requirements

"MUSSON"

MULTIPURPOSE CORVETTE

Designed to counteract surface ships of «corvette» or «missile boat» class; search and destroy diesel submarines, guard convoys and transport vessels.



Sensors and Communication:
- Air/Surface Surveillance radar
- Long range over the Horizon Targeting Radar
- Optical Radar Fire Control System
- Optoelectronic Fire Control System
- ESM
- Sonar System
- Navigation Radar
- Integrated bridge system

Weapons:
- 2x4 SSM
- Short range SAM system
- 57-76 mm gun
- 30-35 mm gun
- Torpedo Launchers (option)
- Chaff decoy launchers

Main Specifications:

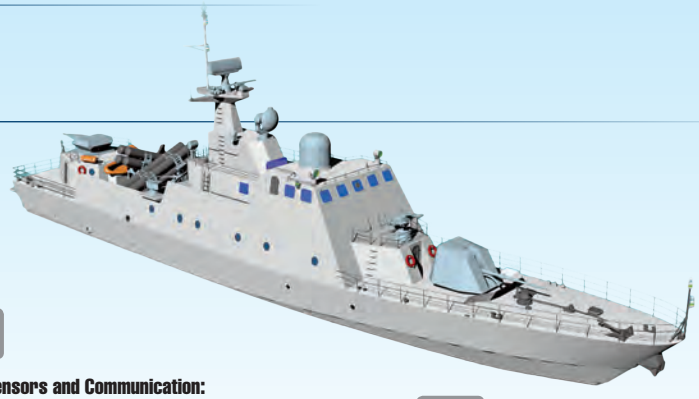
Range (at 14 kts)	2000 NM
Endurance	14 days
Propulsion	CODAG

Length, overall: 60,50 m
Beam, overall: 11,50 m
Draught, max: 4,00 m
Displacement, full load: 680 t
Max speed: not less 32 kts
Complement: 35

"CARACAL"

FAST ATTACK CRAFT

Purpose: The craft searches and detects surface and underwater targets, as well as takes air, surface and underwater countermeasures.



Length, overall: 54,2 m
Beam, overall: 9,3 m
Draught, max: 2,5 m
Displacement, full load: 455 t
Max speed: not less 28 kts

Sensors and Communication:
- Air/Surface Surveillance radar
- Long range over the Horizon Targeting radar
- Optical Radar Fire Control System
- Optoelectronic Fire Control System
- ESM
- Navigation Radar
- Intruder detection Sonar
- Integrated bridge system

Weapons:
- 2x4 SSM
- Close-in SAM system
- 57-76 mm gun
- 30-35 mm gun
- Chaff decoy launchers

Main Specifications:

Endurance	15 days
Complement	35
Propulsion	CODAG
Range (at 14 kts)	not less 2000 NM

"58250 PROJECT"

CORVETTE



Designed to fulfill peacetime missions, conduct combat and special operations; to conduct the battle operations and special operations independently either as part of naval task forces or groups of diverse forces.

Sensors and Communication:
- 3D Air/Surface long range Surveillance radar
- 3D Air/Surface middle range Surveillance radar
- Long range over the Horizon Targeting radar
- CMS
- Optical Radar Fire Control System
- Optoelectronic Fire Control System
- Hull mounted sonar and Towed array sonar
- ESM/ECM/OECM
- Navigation Radar
- Integrated bridge system

Weapons:
- 2x4 SSM launchers
- SAM system middle range
- 76 mm gun
- 2x1 35 mm guns
- 2x3 324 mm torpedo launchers
- 2x12,7 mm machine guns
- Chaff decoy launchers
- Multipurpose helicopter up to 11 t

Length, overall: 112,0 m
Beam, overall: 13,50 m
Draught, max: 3,50 m
Displacement, full load: 2650 t
Max speed: not less 30 kts
Complement: 110

Main Specifications:

Range (at 14 kts)	4000 NM
Propulsion	CODOG

GURZA-M

SMALL ARMORED BOAT



Length, overall: 23,0 m

Beam, overall: 4,8 m

Draught, max: 1,0 m

Displacement, full load: 54 t

Max speed: not less 25 kts

Sensors and Communication:
- Navigation radar
- Optoelectronic monitoring system
- Detection sensors of laser emission
- Integrated bridge system

Weapons:
- 2 combat modules type of «Katran-M»:
  - 30 mm gun
  - 30 mm grenade launcher
  - 7.62 mm machine gun
  - ATGM "Barrier" type
- Portable SAM
- Mining facility

Main Specifications:

Endurance	5 days
Complement	5
Propulsion	2 diesels
Range (at 12 kts)	not less 900 NM

"DOZOR"

OFFSHORE PATROL VESSEL



Designed to secure the state borders and the state sovereign rights in the Exclusive (Sea) Economic Zone.

Length, overall: 73,70 m

Beam, overall: 10,98 m

Draught, max: 3,5 m

Displacement, full load: 960 t

Sensors and Communication:
- Surveillance radar
- Navigation radar
- Optoelectronic fire control system
- Integrated bridge system

Weapons:
- 76 mm gun
- 30 mm gun
- Fast interceptor boat

Main Specifications:

Range (at 12 kts)	3800 NM
Endurance	15 days
Propulsion	2 diesels

“KENTAVR”

FAST ASSAULT CRAFT

Purpose: Fast and secret delivery of marines or special forces, fire-support of land flank under engagement in littoral and inland waters (estuaries, rivers and water-storage basins) at the range from safe port up to 100 miles.



Length, overall: 24,3 m
Beam, overall: 4,8 m
Draught, max: 1,0 m
Displacement, full load: 47 t
Max speed: not less 35 kts

Sensors and Communication:
- Navigation radar
- Optoelectronic monitoring system
- Detection sensors of laser emission

Weapons:
- 2 combat modules:
  - 12,7 mm machine gun;
  - 40 mm grenade launcher (NATO standard)

Main Specifications:

Propulsion	2 diesels
Range (at 11 kts)	not less 500 NM
Endurance	5 days
Landing force capacity	26-28 commandos

“PEARL - FAC”

ATTACK CRAFT-MISSILE

Designed to counteract the surface ships of missile boat type.



Length, overall: 48,95 m
Beam, overall: 9,40 m
Draught, max: 2,35 m
Displacement, full load: 340 t
Max speed: not less 26 kts

Sensors and Communication:
- Air/Surface Surveillance radar
- Long range over the Horizon Targeting Radar
- Optical-radar Fire Control System
- ESM
- Navigation radar
- Integrated bridge system

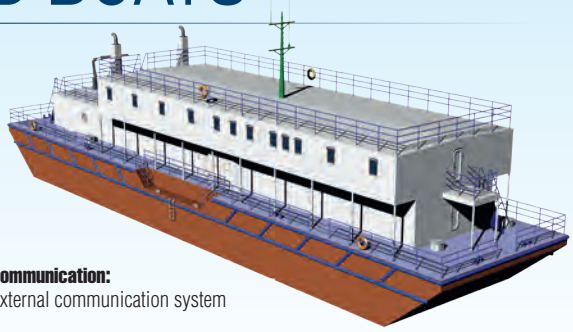
Weapons:
- 35 mm gun
- 2x2 SSM

Main Specifications:

Range (at 15 kts)	2000 NM
Endurance	10 days
Propulsion	2 diesels

NON-SELF-PROPELLED INTEGRATED SUPPORT VESSEL FOR COAST GUARD BOATS

Designed to base at the sea coast, navigable waterways and lakes for the purpose of locating the coast guard boats and supporting them by fuels and lubricants, fresh water, collection and utilization of sewage water. 25 persons of crews from boats could be accommodated at the single and double cabins.



Sensors and Communication:
Internal and external communication system

Length, overall:
43,0 m

Beam, on design WL:
41,0 m

Draught, max:
10,0 m

Displacement, full load:
900 t

Main Specifications:

2 Diesel generators	2 x 125 kW
Main switchboard	
Specifics:	
Repair areas: machine-shop – about 65 m^2, equipped with machine tool holding.	
Tanks capacity:	
fuel	45,0 m^3
fresh water	12,0 m^3
oil-containing water	3,0 m^3
sewage	12,0 m^3



"KONAN 750BR"

FAST ARMORED BOAT

The boat is designed for rescue operations, patrolling and other similar tasks. The patrol boat has complete armored protection for the crew. The bulletproof wheelhouse is made of armored glass. 12,7mm machine-gun mount is used as armament and controlled from the wheelhouse hatch.

Main Specifications:

Transom deadrise angle	22 deg.
Midship deadrise angle	25 deg.
Capaciousness	6 person
Number of seats	5 pcs.
Weight, empty	2,400 kg
Carrying capacity	1,000 kg
Weight, full	3,400 kg
Fuel volume	400 L
Cruising range at max speed	130 mile
Cruising range at economical speed 22 knots	250 mile

Length, max (with engine):
8,0 m

Hull length:
7,5 m

Width, max:
2,7 m

Hull draught, max:
0,6 m

Diesel engine power:
290 h.p.

Speed, max:
40-43 knot

FLOATING DOCKS

FLOATING DOCKS WITH LOAD-CARRYING CAPACITY OF 400 TO 30 000 T



There are the marine constructions designed for shipbuilding and ship repair in sea (ocean) and harbor conditions.
Dock types: metal and composite. A hallmark of composite docks is that their pontoon parts are made of reinforced concrete and wing-walls are metallic, which is dictated by the maximum optimality of this very construction. The use of unique non-caisson technology of the longitudinal and transversal jointing afloat of the separate parts of reinforced concrete pontoons gives the possibility to construct the docks of unlimited dimensions.
Mechanical, electromechanical and painting shops are placed in metal towers which permit to carry out the ships and vessels repair in autonomous mode.
The floating docks are characterized by high safety factors and be towed to any part of the world by sea.









Main Specifications:

Class:	Dimensions:	Systems and Equipment:
FLOATING DOCK 400 T Lifting Capacity is intended for all kinds of repairs of vessels and floating craft		
K*III Floating Dock, non-self-propelled, non-self-contained regarding power supply, steel	▮ Length with overall: 36,7 m (together with the crinolines) ▮ Length of pontoon: 29,7 m ▮ Height of pontoon: 1,7 m ▮ Height from BP to Top Deck: 7,4 m ▮ Breadth between outer sides: 16,0 m ▮ Breadth between the sidewalls: 12,0 m ▮ Operation depth of pontoon deck: 6,1 m	▮ shore power supply system, AC, U=380V, frequency 50 Hz ▮ two (2) ballast electric pumps, Q=200 m3/h, H=0,2 MPa, (20 m of water column) ▮ one (1) fire-fighting electric pump Q=25 m3/h, P=0,65 MPa (6,5 kgf/cm2), shore water supply ▮ four (4) capstans Ш2, traction force 1,5 t
FLOATING DOCK 4,500 T Lifting Capacity is intended for all kinds of repairs of vessels and floating craft		
K*III Floating Dock, non-self-propelled, non-self-contained regarding power supply, composite (reinforced concrete pontoon, steel sidewalls)	▮ Length with overall: 118,0 m (together with the crinolines) ▮ Length of pontoon: 102,0 m ▮ Height of pontoon: 4,8 m ▮ Height from BP to Top Deck: 12,5 m ▮ Breadth between outer sides: 20,9 m ▮ Breadth between the entry fenders: 19,8 m ▮ Operation depth of pontoon deck: 7,5 m	▮ one (1) emergency diesel-generator, N=100 kW ▮ two (2) high-voltage transformers ▮ four (4) electric pumps, Q=2340...1650 m3/h, H=0,04...0,18 MPa (4...18 m of water column) ▮ one (1) fire service electric pump Q=160 m3/h, P=1,0 MPa (10 kg/cm2) ▮ one (1) fire service electric pump Q= 72 m3/h, P=1,0 MPa (10 kg/cm2) ▮ six (6) capstans LLI6, traction force 80 kN (8 t).
FLOATING DOCK 8,500 T Lifting Capacity is intended for all kinds of repairs of vessels and floating craft		
K*III Floating Dock, non-self-propelled, non-self-contained regarding power supply, composite (reinforced concrete pontoon, steel sidewalls)	▮ Length with overall: 155,0 m (together with the crinolines) ▮ Length of pontoon: 139,5 m ▮ Height of pontoon: 4,8 m ▮ Height from BP to Top Deck: 12,8 m ▮ Breadth between outer sides: 32,4 m ▮ Breadth between the entry fenders: 24,5 m ▮ Operation depth of pontoon deck: 7,0 m	▮ one (1) emergency diesel-generator, N=100 kW ▮ two (2) high-voltage transformers ▮ four (4) electric pumps, Q=2340...1650 m3/h, H=0,04...0,18 MPa (4...18 m of water column) ▮ one (1) fire service electric pump Q=160 m3/h, P=1,0 MPa (10 kg/cm2) ▮ one (1) fire service electric pump Q= 72 m3/h, P=1,0 MPa (10 kg/cm2) ▮ six (6) capstans LLI6, traction force 80 kN (8 t).
FLOATING DOCK 16,500 T Lifting Capacity is intended for all kinds of repairs of vessels and floating craft		
K*III Floating Dock, non-self-propelled, non-self-contained regarding power supply, composite (reinforced concrete pontoon, steel sidewalls)	▮ Length with overall: 164,0 m (together with the crinolines) ▮ Length of pontoon: 144,0 m ▮ Height of pontoon: 7,0 m ▮ Height from BP to Top Deck: 20,0 m ▮ Breadth between outer sides: 44,0 m ▮ Breadth between the entry fenders: 35,8 m ▮ Operation depth of pontoon deck: 9,5 m	▮ two (2) high-voltage transformers, U/U1=6,3/0,4kV; N=1000 kW ▮ one (1) auxiliary diesel generator, N=50 kW ▮ 4 ballast electric pumps, Q=2340...1650 m3/h, H=0,04...0,18 MPa (4...18 m of water column) ▮ two (2) fire fighting electric pumps Q=160 m3/h, P=1,0 MPa (10 kgf/cm2) ▮ one (1) fire fighting electric pump Q= 40 m3/h, P=0,65 MPa (6,5 kgf/cm2) ▮ two (2) dock portal cranes with lifting capacity 5..3,2 t at outreach of 15...23 m(according to separate contract) ▮ six (6) capstans Ш6, traction force 80 kN (8 t).
FLOATING DOCK 25,000 T Lifting Capacity is intended for all kinds of repairs of vessels and floating craft		
K*III Floating Dock, non-self-propelled, non-self-contained regarding power supply, composite (reinforced concrete pontoon, steel sidewalls)	▮ Length with overall: 207,0 m (together with the crinolines) ▮ Length of pontoon: 177,0 m ▮ Height of pontoon: 7,05 m ▮ Height from BP to Top Deck: 18,75 m ▮ Breadth between outer sides: 50,0 m ▮ Breadth between sidewalls: 38,85 m ▮ Operation depth of pontoon deck: 10,0 m	▮ one (1) high-voltage transformer, U/U1=6,3/0,4 kV; N=1000 kW ▮ two (2) diesel generators, N=1000 kW ▮ one (1) auxiliary diesel generator, N=50 kW ▮ twelve (12) ballast electric pumps, Q=2340...1650 m3/h, H=0,04...0,18 MPa (4... 18 m of water column) ▮ two (2) fire fighting electric pumps Q=160 m3/h, P=1,0 MPa (10 kgf/cm2) ▮ one (1) electric pump Q= 40 m3/h, P=0,65 MPa (6,5 kgf/cm2) ▮ two dock portal cranes with lifting capacity 10...20 t according to separate contract ▮ six (6) capstans Ш6, traction force 80 kN (8 t).

“HETMAN SAHAIDACHNY”

FRIGATE

Designed for long patrols to search and destroy enemy submarines, as well as for protection of escorted warships and vessels.

- Length, overall: 123,00 m
- Length on design WL: 113,00 m
- Beam, overall: 14,20 m
- Draught on design WL: 4,20 m
- Depth to upper deck: 9,56 m
- Displacement, full load: 3750 t
- Max speed: 30-31 kts



Main Specifications:

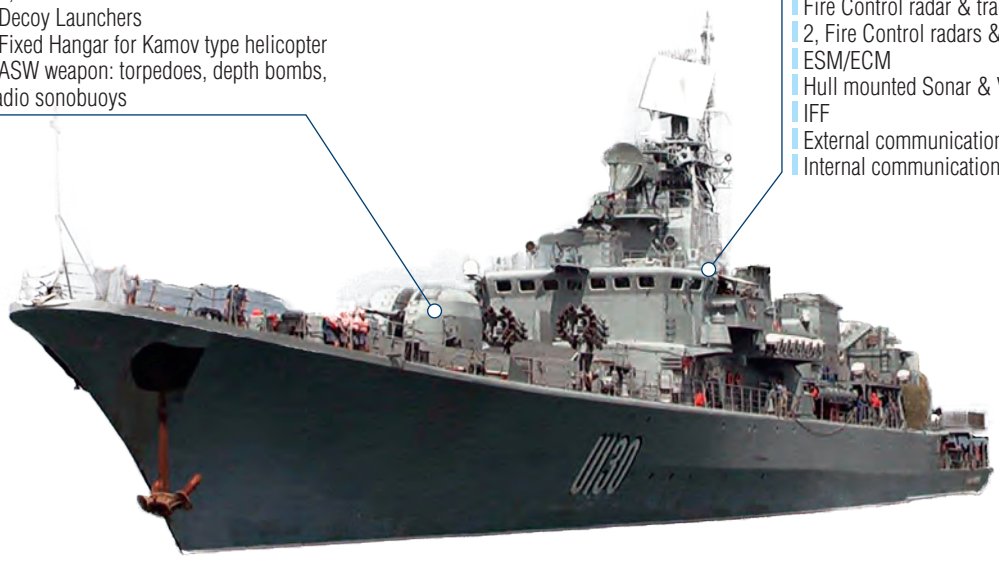
Propulsion/Speed:	
Main power plant	COGAG
Range	3900 NM at 14 kts
Endurance	30 days

Weapons:

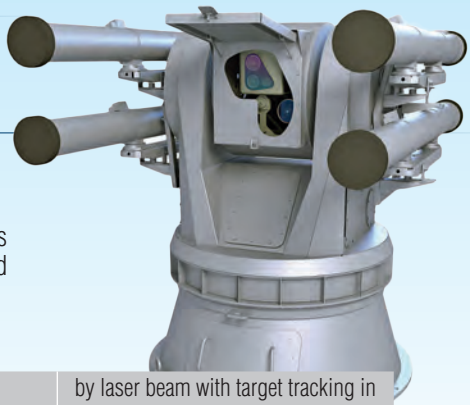
- 1-100 mm Gun
- SAM OSA-MA2 (SA-N-4 mod.)
- 2, CIWS AK 630M (2x6-30 mm)
- 2x4 Torpedo Launchers ChTA-53
- 2, RBU-6000 ASW rocket launchers
- Decoy Launchers
- Fixed Hangar for Kamov type helicopter
- ASW weapon: torpedoes, depth bombs, radio sonobuoys

Sensors and communication:

- Data highway/Distributed processors
- Data Link System
- 3-D Long Range Air/Surface Surveillance radar
- 2, Navigation radars
- Surface Surveillance radar
- Fire Control radar & tracker for SAM
- 2, Fire Control radars & EO trackers for Gun&CIWS
- ESM/ECM
- Hull mounted Sonar & VDS
- IFF
- External communication system
- Internal communication system



"BAR'ER-VK"



NAVAL MISSILE GUIDED WEAPON SYSTEM

"Bar'er-VK" Naval Missile Guided Weapon System is designed to destroy ships as well as coastal moving and stationary modern armoured targets, light-armoured objects, coastal fortified firing positions and helicopters with missiles RK-2V.

Maximum firing range:
not less than 7000 m

Flight time to maximum range:
62,00 m

Weight system:
1100 kg

Weight missile in container:
47,2 kg

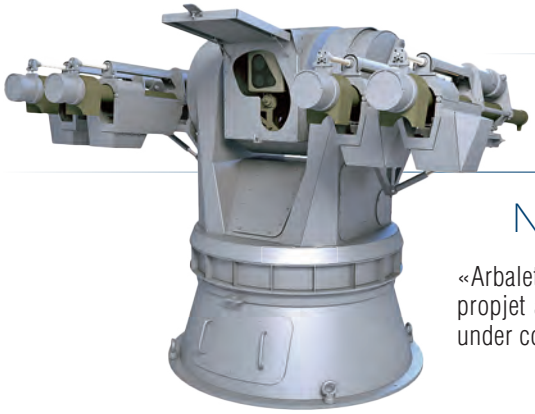
Target detection range at day time:
10 km

Target detection range at night time:
7 km

Operating temperature range:
from -40 to +60 °C

Main Specifications:

Missile control system	by laser beam with target tracking in automatic mode
Warhead:	
▪ tandem shaped charge with armour penetration behind explosive reactive armour	not less than 800 mm
▪ high-explosive fragmentation with number of fragments of 2-3 g weight	up to 900 pcs
Weight:	
▪ system	1100 kg
▪ missile in container	47,2 kg
Overall dimensions:	
▪ launching unit with two missiles RK-2V	2412x1334x1876 mm
▪ missile caliber	130 mm
▪ container diameter	180 mm
▪ container length	1917 mm



"ARBALET-K"

NAVAL SHORT RANGE AIR DEFENSE SYSTEM

«Arbalet-K» naval short range air-defense missile system is designed to destroy jet, propjet and propeller-driven aircrafts and helicopters at head-on and pursuit courses, under conditions of a target direct visibility using surface-to-air missile of «Igla» type.

Main Specifications:

Maximum altitude of targets destruction:	
▪ jet aircrafts at head-on courses	2000 m
▪ jet aircrafts at pursuit courses	2500 m
▪ helicopters and propjet aircrafts at head-on courses	3000 m
▪ helicopters and propjet aircrafts at pursuit courses	3500 m
Minimum altitude of targets destruction	10 m
Velocity of engaging targets:	
▪ at head-on courses	360 m/s
▪ at pursuit courses	320 m/s
Rotation angles of traverse platform	
▪ heading angle	from -150° to +150°
▪ angle of elevation	from -25° to +60°
▪ angle of roll	±25°

Target destruction range:
500 - 5000 m

Weight system:
1020 kg

Overall dimensions:
1700x1856x1876

Target detection range at day time:
10 km

Target detection range at night time:
7 km

Operating temperature range:
from -40 to +60 °C

BM.5-1 "KATRAN-M1"

REMOTE WEAPON STATION (RWS)



Enhanced fire power RWS is designed to be mounted on boats and ships, and to hit surface and low-flying targets. It is controlled by special centralized fire-control system from both turret and remote-control console.

Full combat weight:
1,7+2% t

Length (with cannon):
3,750 mm

Width:
2,000 mm

Height (without half-platform):
780 mm

Fire control system:
Joint, centralized

Armament:

Cannon:	
type	ZTM-1, automatic
caliber	30 mm
rate of fire	400 rounds/min.
effective range of fire at surface targets	4,000 m
effective range of fire at air targets	2,500 m
Machine gun:	
type	PKT
caliber	7,62 mm
Antitank guided missile system:	
type	Complex 212
missile type	RK-2S
effective range of fire	5,000 m

"SARMAT"



REMOTE WEAPON STATION (RWS)

The SARMAT System is designed to be mounted at wide range of combat vehicles, light ships and coast guard boats.
It is used to hit static and moving modern armoured targets that have combined, spaced or monolithic armour, including explosive reactive armour, small-size targets like permanent fire positions, tank in a trench, light-armoured objects, hovered helicopters, surface targets and enemy manpower at any time of day.

The SARMAT system comprises:

Combat Module consisting of:
Rotating Platform with Launching Rails for Missiles
Power Unit
Guidance Device
Thermal Imager, at Customer's request
Guided Missiles in Transport and Launching Containers
Machine Gun
Remote Control Panel

Full combat weight:
410 kg

Overall Dimensions with Armaments:
2120x1300x610

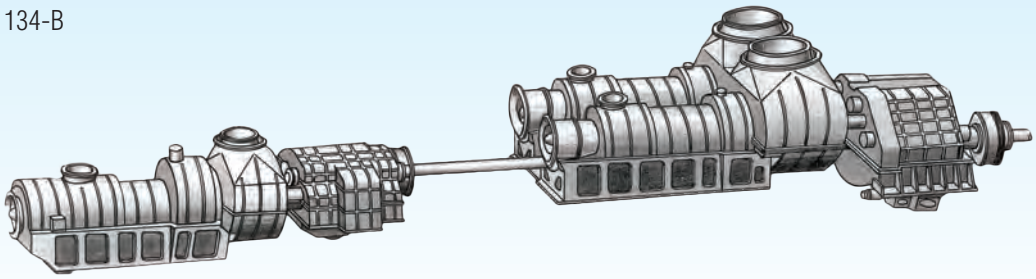
Readiness Time:
20 s

Operating Temperature Range:
from -40 up to +60 °C

M5N

MARINE POWERPLANT

Designed for ships of project 1134-B (Berkut-B).



Displacement: 9,500 t

Speed: 32,5 knot

Power: 92,000 h.p.

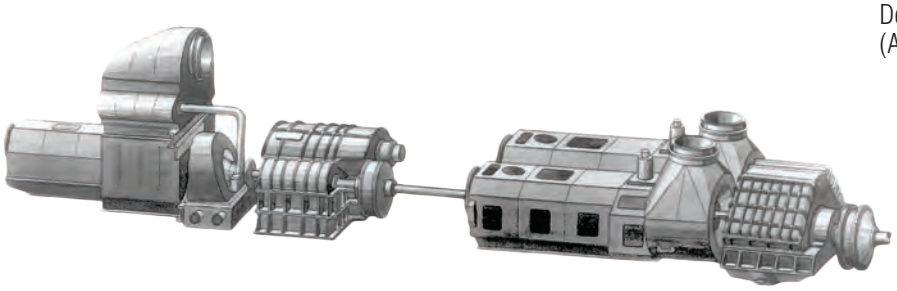
Main Specifications:

Engines:	
UGT16000	4 unit
UGT6000	2 unit
Reducers:	
RG54	2 unit
R063	2 unit

M21

MARINE POWERPLANT

Designed for ships of project 1164 (Atlant)



Displacement: 11,500 t

Speed: 32,5 knot

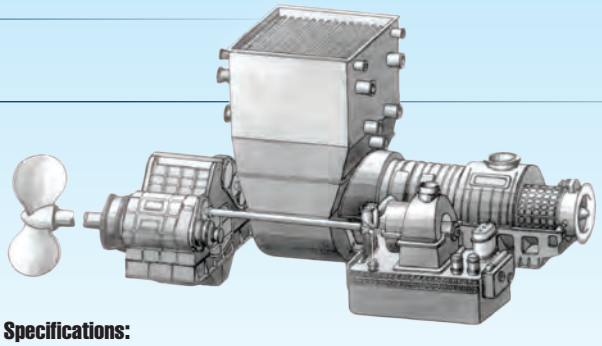
Power: 110,000 h.p.

Main Specifications:

Engines:	
UGT16000	4 unit
UGT6000	2 unit
Reducers:	
RG54	2 unit
R028	2 unit

M25 MARINE POWERPLANT

Designed for ships of project 1609 (Atlantika / Roy Vit).



Displacement: 35,000 t

Speed: 25 knot

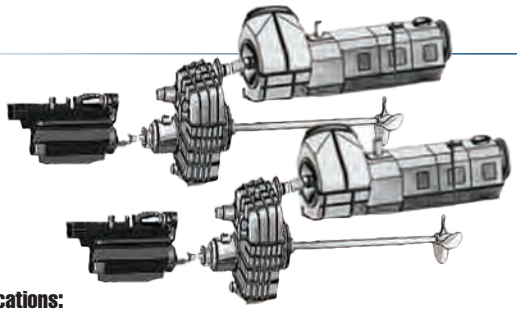
Power: 50,000 h.p.

Main Specifications:

Engines:	
▮ UGT16000	2 unit
Steam turbine:	2 unit
Reducers:	
▮ P025	2 unit

MARINE POWERPLANT M55R

Designed for ships of project 22350 (Admiral Gorshkov).



Displacement: 4,500 t

Speed: 29 knot

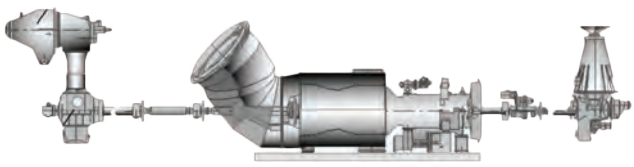
Power: 65,000 h.p.

Main Specifications:

Engines:	
▮ UGT15000+	2 unit
Diesel:	2 unit
Reducers:	
▮ P055	2 unit

M73 MARINE POWERPLANT

Designed for amphibious assault air-cushion ships “ACV-1”.



Displacement: 175 t

Speed: over 50 knot

Power: 24,000 h.p.

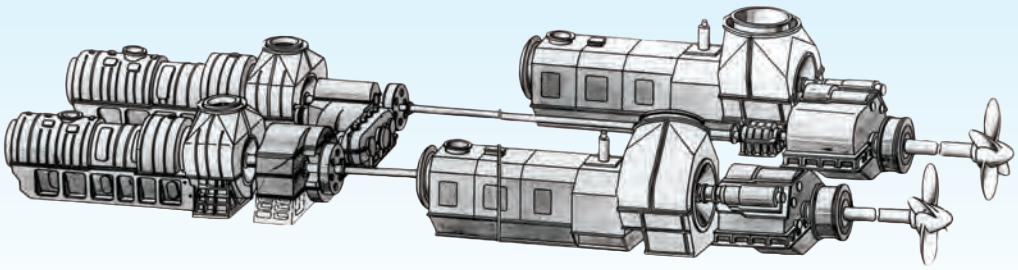
Main Specifications:

Engines:	
▮ UGT6000+	2 unit
Reducers:	
▮ RS73-10	2 unit
▮ RS73-20	2 unit
▮ RS73-30	2 unit

M9B

MARINE POWERPLANT

Designed for ships of project 1155 (Frigate).



Displacement: 8,500 t

Speed: 29 knot

Power: 74,000 h.p.

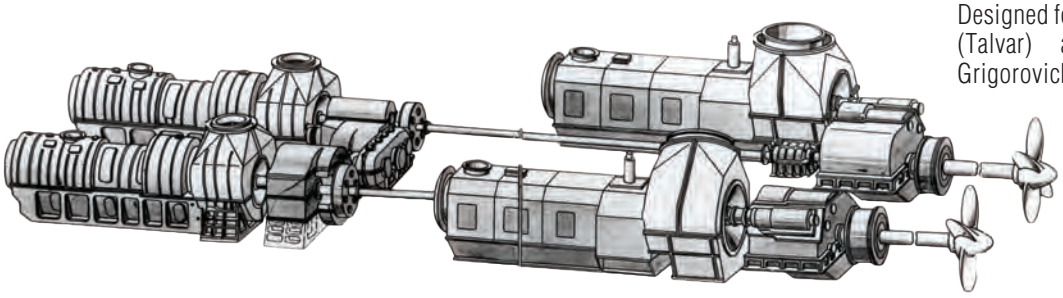
Main Specifications:

Engines:	
UGT15000	2 unit
UGT16000	2 unit
Reducers:	
R058	2 unit
RA28	2 unit
R1A63 (with power transfer to other board)	1 unit

M7N1

MARINE POWERPLANT

Designed for ships of projects 1135.6 (Talvar) and 11356M (Admiral Grigorovich).



Displacement: 3,500 t

Speed: 30 knot

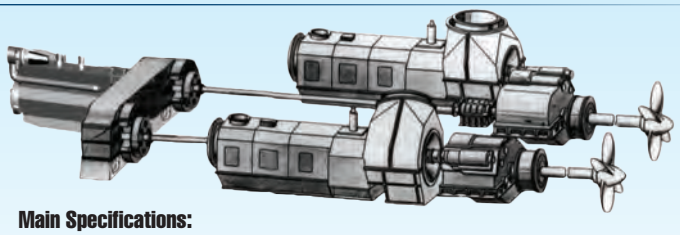
Power: 58,000 h.p.

Main Specifications:

Engines:	
UGT15000	2 unit
UGT16000	2 unit
Reducers:	
R058	2 unit
R063	1 unit
R1063 (with power transfer to other board)	1 unit

M44 MARINE POWERPLANT

Designed for ships of project 11661 (Gepard).



Displacement: 1,500 t

Speed: 32,5 knot

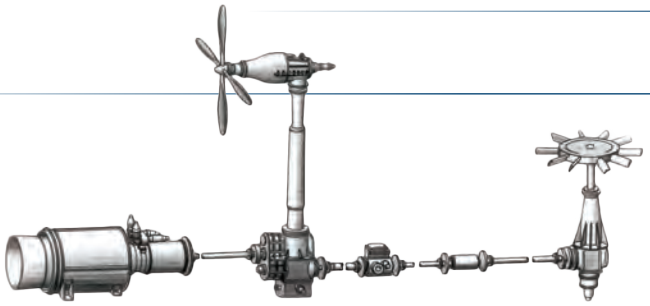
Power: 33,000 h.p.

Main Specifications:

Engines:	
UGT15000	2 unit
Diesel:	1 unit
Reducers:	
RA28	2 unit
R044	1 unit

MT70 MARINE POWERPLANT

Designed for ships of project 12061 (Murena).



Displacement: 130 t

Speed: 60 knot

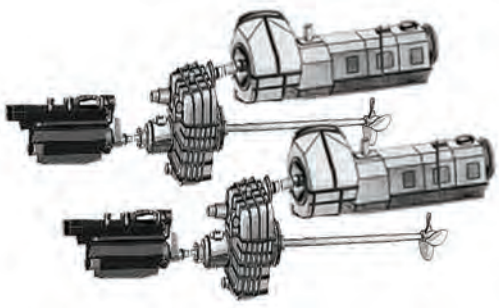
Power: 20,000 h.p.

Main Specifications:

Engines:	
UGT6000	2 unit
Reducers:	
R071	2 unit
RS73-20	2 unit
RS73-30	2 unit

GODAG PLANT COMBINED DIESEL AND GAS (CODAG) POWERPLANT

Designed for ships of project 052V, 052S.



Displacement: 7,000 t

Speed: 30 knot

Power: 92,000 h.p.

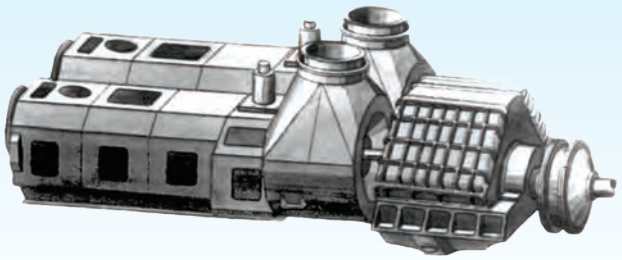
Main Specifications:

Engines:	
UGT25000	2 unit
Diesel:	2 unit

M36

MARINE POWERPLANT

Designed for ships of project 15 (Delhi).



Displacement: 8,000 t

Speed: 34 knot

Power: 88,000 h.p.

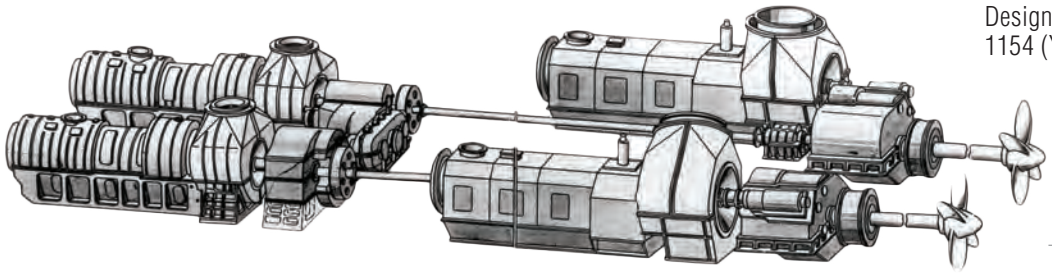
Main Specifications:

Engines:	
UGT16000	4 unit
Diesel	2 unit
Reducers:	
RG54	2 unit

M27

MARINE POWERPLANT

Designed for ships of project 1154 (Yastreb).



Displacement: 3,700 t

Speed: 30 knot

Power: 54,000 h.p.

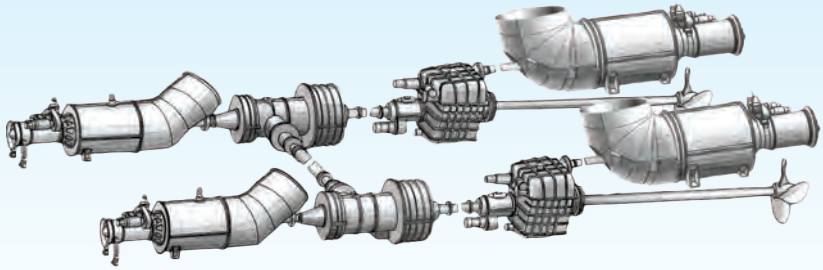
Main Specifications:

Engines:	
UGT15000	2 unit
UGT6000	2 unit
Reducers:	
R058	2 unit
R063	1 unit
R1063 (with power transfer to other board)	1 unit

M15-V

MARINE POWERPLANT

Designed for ships of project 1241 (Molniya).



Displacement: 500 t

Speed: 43 knot

Power: 32,000 h.p.

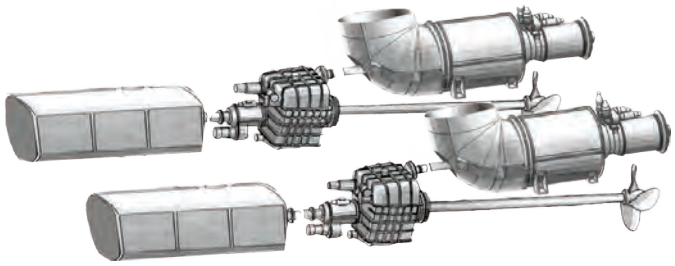
Main Specifications:

Engines:	
UGT3000	2 unit
UGT6000	2 unit
Reducers:	
R076 (with power transfer to other board)	2 unit
R077	2 unit

M15-A

MARINE POWERPLANT

Designed for ships of project 1241 (Molniya).



Displacement: 470 t

Speed: 41 knot

Power: 30,000 h.p.

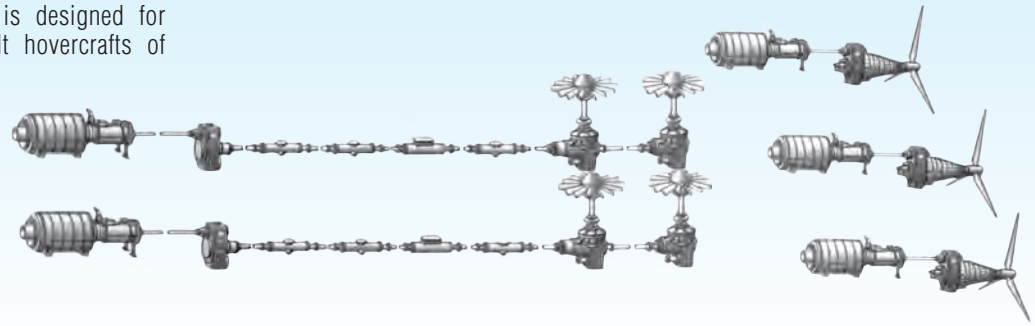
Main Specifications:

Engines:	
UGT6000+	2 unit
Diesel	2 unit
Reducers:	
R077	2 unit
Hydro-mechanical gearbox GMP	2 unit

M35

MARINE POWERPLANT

This propulsion system is designed for small amphibious assault hovercrafts of project 12322 (Zubr).



Displacement: 550 t

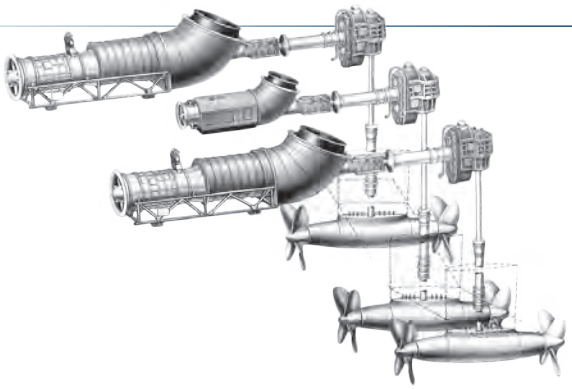
Speed: 63 knot

Power: 50,000 h.p.

Main Specifications:

Engines:	
▮ UGT6000	5 unit
Reducers:	
▮ R035-10	3 unit
▮ R035-20	2 unit
▮ R035-22	2 unit

M10/M16



MARINE POWERPLANT

Designed for corvettes ASW of project 11451 (Sokol).

Displacement: 510 t

Speed: 60 knot

Power: 48,000 h.p.

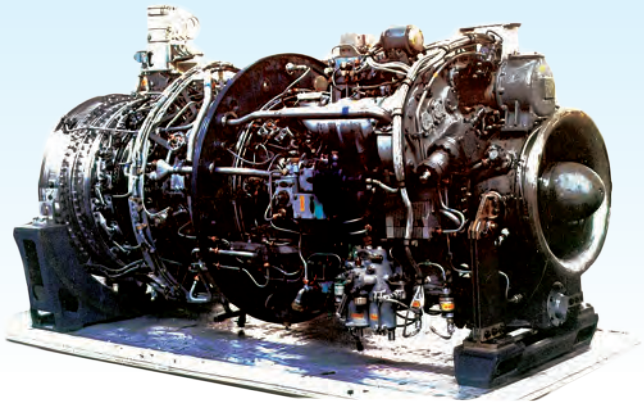
Main Specifications:

Engines:	
▮ UGT6000	1 unit
▮ UGT16000	2 unit
Reducers:	
▮ RD50	3 unit
▮ R1D50	3 unit

UGT 3000R

GAS-TURBINE ENGINE

Engine is designed for marine propulsion systems of displacement-type ships.



Efficiency: 29,0%

Power turbine rotary speed: 8,800 rot/min

Power: 3,360 kW

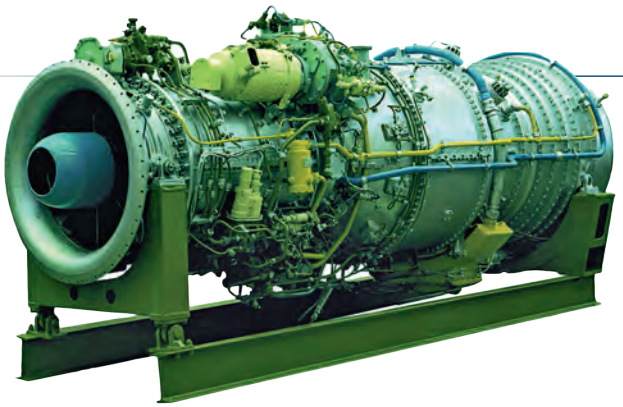
Main Specifications:

UGT 3000R (DS76) according to ISO 2314	
Specific liquid fuel consumption (Hu=10200 kcal/kg)	0,291 kg/(kW h)
Exhaust gas mass flow	16,0 kg/s
Exhaust gas temperature	470 °C

UGT 6000

GAS-TURBINE ENGINE (DP71, DM71)

Engine is designed for marine propulsion systems of displacement-type and dynamically-supported ships.



DP71, DM71	DS71
Efficiency: 32,0%	Efficiency: 30,0%
Power turbine rotary speed: 7,000 rot/min	Power turbine rotary speed: 4,750 rot/min
Power: 7,350 kW	Power: 7,350 kW

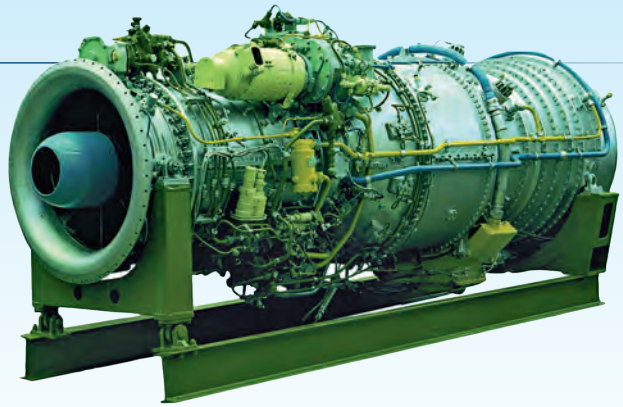
Main Specifications:

UGT 6000 (DP71, DM71) according to ISO 2314	
Specific liquid fuel consumption (Hu=10200 kcal/kg)	0,263 kg/(kW h)
Exhaust gas mass flow	32,0 kg/s
Exhaust gas temperature	440 °C
UGT 6000 (DS71) according to ISO 2314	
Specific liquid fuel consumption (Hu=10200 kcal/kg)	0,281 kg/(kW h)
Exhaust gas mass flow	32,5 kg/s
Exhaust gas temperature	470 °C

UGT 6000+

GAS-TURBINE ENGINE

Engine is designed for marine propulsion systems of displacement-type and dynamically-supported ships.



UGT 6000+	UGT 6000R+
Efficiency: 33,0%	Efficiency: 31,0%
Power turbine rotary speed: 7,000 rot/min	Power turbine rotary speed: 7,300 rot/min
Power: 8,800 kW	Power: 8,800 kW

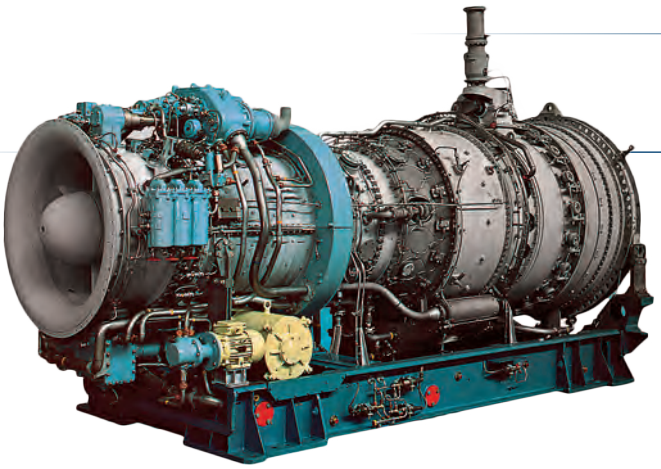
Main Specifications:

UGT 6000+ (DP79) according to ISO 2314	
Specific liquid fuel consumption (Hu=10200 kcal/kg)	0,255 kg/(kW h)
Exhaust gas mass flow	34,0 kg/s
Exhaust gas temperature	470 °C
UGT 6000R+ (DS77) according to ISO 2314	
Specific liquid fuel consumption (Hu=10200 kcal/kg)	0,272 kg/(kW h)
Exhaust gas mass flow	34,5 kg/s
Exhaust gas temperature	500 °C

UGT 15000

GAS-TURBINE ENGINE (DA90)

Engine is designed for marine propulsion systems of displacement-type ships.



UGT15000	UGT15000R
Efficiency: 35,4%	Efficiency: 32,0%
Power turbine rotary speed: 5,300 rot/min	Power turbine rotary speed: 4,400 rot/min
Power: 17,650 kW	Power: 14,700 kW

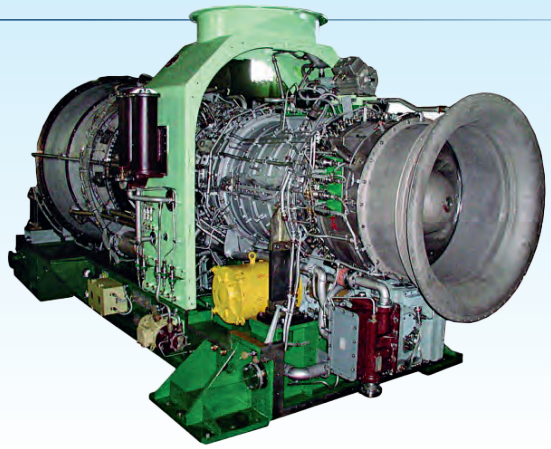
Main Specifications:

UGT15000 (DA90) according to ISO 2314	
Specific liquid fuel consumption (Hu=10200 kcal/kg)	0,238 kg/(kW h)
Exhaust gas mass flow	73,0 kg/s
Exhaust gas temperature	430 °C
UGT 6000R+ (DS77) according to ISO 2314	
Specific liquid fuel consumption (Hu=10200 kcal/kg)	0,263 kg/(kW h)
Exhaust gas mass flow	70,0 kg/s
Exhaust gas temperature	430 °C

UGT 15000+

GAS-TURBINE ENGINE

Engine is designed for marine propulsion systems of displacement-type ships.



Efficiency: 36,0%

Power turbine rotary speed: 3,500 rot/min

Power: 20,000 kW

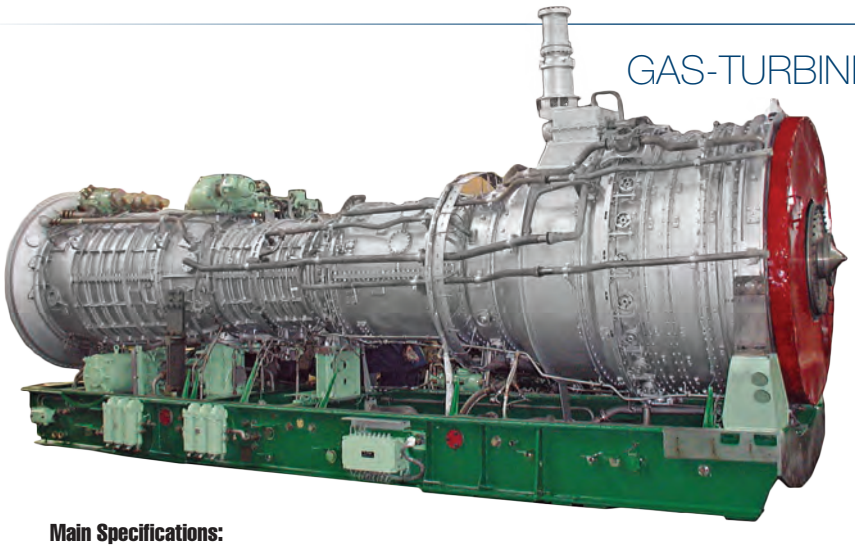
Main Specifications:

UGT 15000+ (DA91) according to ISO 2314	
Specific liquid fuel consumption (Hu=10200 kcal/kg)	0,234 kg/(kW h)
Exhaust gas mass flow	76,5 kg/s
Exhaust gas temperature	450 °C

UGT 16000R

GAS-TURBINE ENGINE (DP71, DM71)

Engine is designed for marine propulsion systems of displacement-type and dynamically-supported ships.



Efficiency: 30,0%

Power turbine rotary speed: 3,600 rot/min

Power: 16,550 kW

Main Specifications:

UGT 16000R (DT59) according to ISO 2314	
Specific liquid fuel consumption (Hu=10200 kcal/kg)	0,281 kg/(kW h)
Exhaust gas mass flow	100,0 kg/s
Exhaust gas temperature	380 °C

UGT 25000

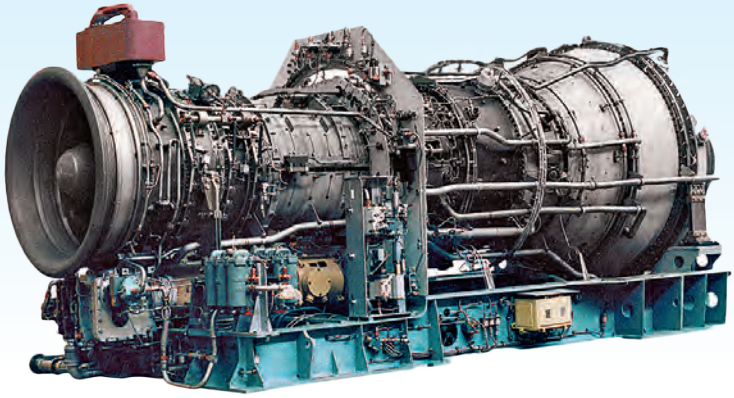
GAS-TURBINE ENGINE (DA80)

Engine is designed for marine propulsion systems of displacement-type ships.

Efficiency: 37,0%

Power turbine rotary speed: 3,400 rot/min

Power: 28,700 kW



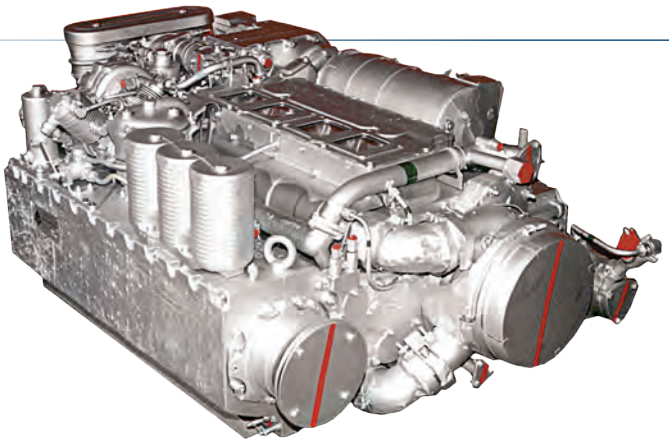
Main Specifications:

UGT 25000 (DA80) according to ISO 2314	
Specific liquid fuel consumption (Hu=10200 kcal/kg)	0,228 kg/(kW h)
Exhaust gas mass flow	94,0 kg/s
Exhaust gas temperature	500 °C

457KM

DIESEL ENGINE

For civilian purposes, used as the main propulsion system installed on fast small-size vessels (Kalkan-R).



Length: 1,413 mm

Width: 955 mm

Height: 581 mm

Engine dry weight: 1,050 kg

Main Specifications:

Max engine output operating with diesel fuel	368 (500) kW (h.p.)
Crankshaft rotation speed at max power output	2,200 min^{-1}
Specific fuel consumption	167 g/e.h.p.-hr
Cylinder diameter rated	120 mm
Piston stroke rated	2x120 mm
Diesel displacement volume rated	13,6 l

NAVAL AUTOMATED TACTICAL DATA SYSTEM

It is designed for automation of combat use of weapons and radio-electronic means of the ship (Naval Task Force), commanding officers providing with tactical environment data.



Main Specifications:

Number of simultaneously processed targets (flags)	Up to 600
Platform number	Up to 10
Combat information field	1000, in height – up 30 Km
Maximum duration of task solving concerning target distribution (since information identification up to making target designation)	Not more than 0,8 Sec
Target types	aerial, surface underwater
Speed rang of aerial targets	Up to 1000 m/sec
Number of operator console	Up to 30
Servers number	Up to 8
Exchange of information by the network Ethernet 1000Base-SX	
Technology of exchange – Data Distribution Service	

MULTIBEAM ACTIVE ARRAY SURVEILLANCE RADAR STATION

Radar Station is designed for automatic search and detection, tracking of surface and air targets and target acquisition.

Main Specifications:

Frequency band	C-band (NATO G-band)
Extended Long Range mode	Up to 200 km
Elevation coverage	0 – 70 Degree
Number of simultaneously tracked targets	More than 100 Unit
Multibeam antenna phased array with digital diagram formation	

"SENS-2"

OPTICAL ELECTRONIC SYSTEM OF GUN MOUNT FIRE CONTROL



It is designed for surface picture monitoring, target detection and fire control.

Measured range:
from 100 to 7000 m

Maximum speed of tracked targets at zero parameter:
Aerial: 0-700 m/sec

Maximum speed of tracked targets at zero parameter:
Marine: 0-60 units

Main Specifications:

Working sectors of optical electronic devices (OED):	
▮ course angle	From -175° to +175°
▮ Elevation angle	From -25° to +85°
Speed of retargeting of OED:	
▮ course angle	Not less than 70 degree/sec
▮ Elevation angle	Not less than 50 degree/sec
Viewing field of optical electronic sensors of OED:	
TV camera (smoothly varies in the range):	
▮ Horizontally	from 1,5° to 28°
▮ Vertically	from 1° to 21°
Thermal camera (smoothly varies in the range):	
▮ Horizontally	5,5°
▮ Vertically	4,1°

"SAGA"

OPTICAL ELECTRONIC SYSTEM OF THE PROVISION OF HELICOPTER TAKE-OFF, HOMING AND SHIP LANDING



It is designed for helicopter take-off, in-flight safety, homing into landing zone (on ship board), and also for provision of objective control and analysis of flight information.

Main Specifications:

The range of radio communications 'helicopter-ship-helicopter' (within direct visibility)	Up to 75 km
MW omnirange:	
angular sector work:	
▮ azimuth	360°
▮ angle of elevation	From -15° up to +30°
▮ output power	Up to 200 W
▮ frequency range	265...525 kHz

Power supply of the system is provided by ship single-phase network of 50 Hz, 220V, and DC 27V

Energy consumption:
Not more than 1,5 kW

Weight of system:
Not more than 230 kg

Helicopter segment weight:
Not more than 7 kg

"SARMAT"



MARINE OPTOELECTRONIC FIRE CONTROL SYSTEM OF SMALL AND MIDDLE ARTILLERY CALIBER

Designed for fire control of small and medium artillery caliber against aerial, surface and coastal targets

Weight without SPTA:
416 kg

Including Weight of optoelectronic direction unit:
217 kg

Power consumption:
2 kW

Main Specifications:

Mean square error of total training and elevation gun angle	Not more than 1,5-2,0
Mean square error of total of determining the coordinates of tracked targets:	
▮ angular coordinates	Not more than 0,2 millirad
▮ distance	Not more than 5 m
Operating sectors of carrier-based coordinate system:	
▮ By angle on the bow	±175
▮ elevation	From -20° up to +85°
▮ Operating time of the system (from catching autotracking till the readiness to firing start)	Not more than 3 sec
Швидкість перенаціlення:	
▮ By angle on the bow	70 degree/sec
▮ elevation	50 degree/sec
The field of optoelectronic sensors:	
▮ TV camera	narrow field of view 1°27 horizontally 1°5 vertically; wide field of view 28°31 horizontally 21°23 vertically
▮ Thermal camera	narrow field of view 2,5° horizontally 1,67° vertically; wide field of view 12° horizontally 8° vertically
Detection range of air target under the meteorological visibility range of 25 km:	
▮ TV chanel	Not less than 12 km
▮ thermal channel	Not less than 10 km

SONAR STATION MG – 361 ("CENTAUR")

MG-361 Sonar Station is a digital sonar station with towed flexible extended antenna for surface vessels.

The station is designed for the detection and classification of underwater and surface objects by their noise emission in the low and the sound frequency range, tracking and determining of the submarines coordinates, providing data for the weapons control system for targeting.

Main Specifications:

Submarine detection range	30-70 km
Torpedoes detection range	at least 30 km
The signal analysis band	0,3-3,8 Hz
Surveillance Sector	360°
Antenna's towing depth	50-200 m
Towing speed	2-8 knots Max - 13 knots

"TRONKA-MK" HYDROACOUSTIC STATION FOR SEARCHING OF SABOTEUR UNDERWATER SWIMMERS

Hydroacoustic station is designed for searching and detection of saboteur underwater swimmers and provides protection of:

- ships of different purpose on moorage at the high sea, in the road, in stationing site;
- hydrotechnical objects in ports, harbors;
- object of oil-producing industry located in sea basins

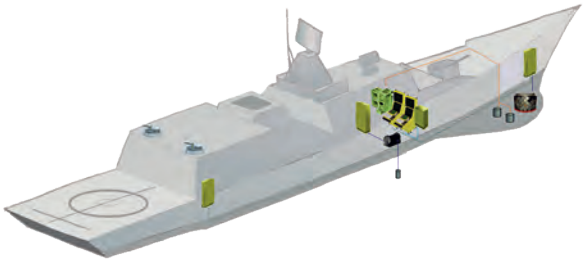
Detection range of saboteur underwater swimmers in flippers:
up to 800 m

Antenna immersion depth:
up to 50 m

Main Specifications:

Detection range with delivery vehicles	up to 1000 m
Range accuracy	1,0%
Azimuth accuracy	0,8°
Angular field of horizontal view	30, 360°
Angular field of vertical view	18°
Automatic target tracking	up to 20

FOR SHIPS OF «CORVETTE-FRIGATE» CLASS: HAS MGK-345 «BRONZA», «BOSFOR», HAS MGK-365 HYDROACOUSTIC STATION



Hydroacoustic stations are designed for detection, position and parameters determination of underwater movable objects, including different small-size objects.

Hydroacoustic station main functions:

- searching and detection of underwater objects;
- measuring of bearing, range and radial velocity of up to 8 movable objects;
- control of the own-ship's noise;
- Hydroacoustic station operators training.

Coverage range:
up to 40 km

Power:
20 kW

SONAR SYSTEM MGK-369 ("ZVEZDA/STAR M1-01")

MGC-369 is a modification of the MGK-365 with the dipping antenna (DA) for surface vessels with dynamical support - hydrofoil ships or hovercrafts.

The system is designed to be operated on ship's foot, for detection, tracking and determining of submarines coordinates, coordinates providing for the ship fire control systems of anti-submarine weapon, sonar communication and identification.

Main Specifications:

Submarines detection range in active mode: When working on the foot	40-45 km
The coordinates determining accuracy of detected objects:	
At a distance	1% of the scale nominal
In bearing	1.7°
The target detection probability	0.9
The number of simultaneously tracked targets	10
The horizontal surveillance	360°
Antenna immersion depth (towing)	up to 200 m
Sonar System carrier - hydrofoil ship of 11451project	

"CATRAN" HYDROACOUSTIC STATION FOR SEARCHING OF SEA MINES AND SMALL UNDERWATER OBJECTS

Designed for searching, detecting, classifying, position determination of underwater objects such as sea mines and provides the following:

- protection of ships of different purposes;
- searching for sunk objects.
- Detection of lying on bottom, silted, drifting, anchored and mobile objects, Sound speed measurement at depth and range forecast, Data indication on the monitor at panorama kind, Localization and display of detected objects, Data documenting, Automatic control of sonar complex operation.

Effective radius of detected objects:
0,3 m

Array dipping depth:
up to 200 m

Towing speed:
up to 8 KN

Main Specifications:

Range of underwater	up to 2 km
Range accuracy	1%
Azimuth accuracy	2^0
Horizontal covering sector	360^0
Service life	10 years

SELF-CONTAINED ANCHOR HYDROACOUSTIC STATION (AS) HYDROACOUSTIC STATION



Designed to:

- detect the moving underwater objects and find direction;
- detect, register and determine the direction on the sources of seismic waves emission due to earthquakes, underwater volcanic eruptions in seismically unsafe coastal marine areas.

Setting depth:
max 200 m

Total weight:
max 500 kg

Main Specifications:

Signals detection from underwater objects more than 1000 tonnes of water tonnage moving at 2 m/s speed	Up to 4 km and more
Detection, registration and finding of direction on the source of seismic waves emission	Up to 100 Hz

SONAR SYSTEM "ZVEZDA/STAR-2"

The system is designed for detection, tracking and determining of submarines coordinates, coordinates providing for the Data Collection and Processing System (DCPS) and fire control systems of anti-submarine weapon (ASW FCS), for target classification; detection of torpedoes and sonar signals, hydroacoustic communication and identification.

The energy potential of the complex provides the submarine active location with access to the 2nd distant zone of the acoustic lighting.

Main Specifications:

Submarines detection range in active operation mode:	
On the bottom antenna (BA)	60 km
On the towed antenna (TA)	120 km
The coordinates determining accuracy of detected objects:	
At a distance	1 % of the scale nominal
In bearing	1.5^0
The target detection probability	0.9
The number of simultaneously tracked targets	up to 5
The horizontal surveillance:	
By the BA	$\pm 130^0$
By TA or OA	360^0
Antenna immersion depth (towing)	up to 400 m

HYDROACOUSTIC STATION

HYDROACOUSTIC STATION OF UNDERWATER SEARCHING OF SMALL FAST-MOVING OBJECTS

Designed for search, detection, tracking and providing of targeting data concerning the for the small underwater fast-moving objects, and provides protection for ships of various purposes.

Acquisition range:
Up to 5 km

Main Specifications:

positioning accuracy:	
in range	Up to 25^0
on bearing	Up to 1^0
Surveillance sector:	
in horizontal direction	360^0
in vertical direction	20^0

HELICOPTER'S SONAR STATION

Sonar station is designed for search and detection of underwater moving objects.

Operating range:
Up to 40 km

Antenna immersion depth:
Up to 150 m

Search sector :
360^0

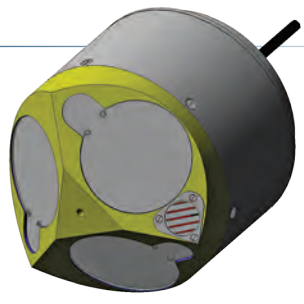
Main Specifications:

Weight of outboard equipment	Up to 100 kg
Weight of on-board equipment	Up to 150 kg

HYDROACOUSTIC DOPPLER LOG "LAG"

Designed to measure:
- The absolute speed of the carrier relatively to the bottom at a depth of 300 meters,
- The relative speed of the carrier at depths greater than 300 meters.

Intended use:
- For underwater and surface vehicles. The measurement data of carrier speed and position (heel, pitch, depth, course) for displaying on a computer monitor and recording is transferring by cable (interface RS232, RS485).



Main Specifications:

Measurement of the absolute speed at the maximum distance: from the antenna to the bottom at least	300 m
Measurement of the relative speed in the absence of the echo from the bottom: The maximum measured speed	10 m/s
Orientation of the speed vector	0 - 3600

CABLE STATIONARY SONAR STATION (KCGAC) WITH AUTOMATED WORKING PLACE (ARM)

Service lifetime:
24 month

Distance to coastal receiving post:
30 km

Weight, (without cable):
40 – 70 kg

Main Specifications:

Object detection range with the level of noise emission 0,05 Pa	4 - 10 km
The average bearing error, not more	5^0
Operation frequencies	Infrasonic and bass
Operation depth	40 - 200 m
Automated working place	Detection, bearing, classification, motion path display

AERONAUTICAL SONAR BUOY RSL-16



Passive undirected Sonar buoy with automatic threshold is designed for searching and detecting of underwater moving objects.

Sonar operating range:
2-5000 Hz

Hydroacoustic antenna immersion depth:
Up to 300 m

Weight:
10 ± 0,5 kg

Main Specifications:

Carrier transmitter frequency	Up to 173,45 MHz
Overall dimensions	⌀ 120 x 1260 mm

RGB-NM 1 AERONAUTICAL SONAR BUOY

Passive undirected sonar buoy of RGB-NM type with automatic threshold is designed for searching and detecting of underwater moving objects.

Sonar operating range:
infrasonic

Hydroacoustic antenna immersion depth:
25, 75 and 150 m

Weight:
7,5 kg



Main Specifications:

Radio transmitter carrier frequency	to 53,45 MHz
Overall dimensions	⌀120 x 1000 mm

RGB-26 AERONAUTICAL SONAR BUOY



Overall dimensions, diameter: 150 mm

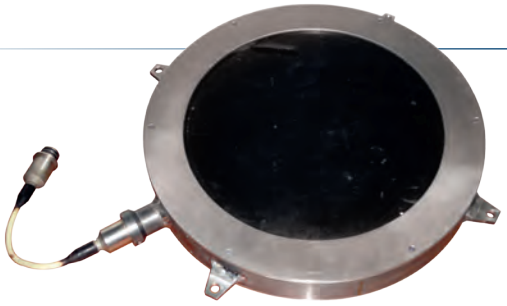
Overall dimensions, length: 1260 mm

Weight, (without cable): Not more 15 kg

Main Specifications:

operating principle	Passive directed
sonar data processing	Inside RGB
frequency range	10 -120 Hz / 10- 250 Hz
compass error	± 6^0
Antenna immersion depth	25; 150; 300 m
Transmitter power, not less	1,0 W
responder beacon channel	GPS
number of radiochannels	16
destruction	Self-destruction

HYDROACOUSTIC CONVERTER PZ-270



Designed for hydroacoustic signals emission in liquid environment during laboratory research.

Resonance frequency: 270 Hz

Overall dimensions: 515x67 mm

Weight: 48 kg

Main Specifications:

Emission power	25 W
Operating voltage	600 V
Operating depth	Up to 80 m

PZ-525 POWER LOW-FREQUENCY CONVERTER

Designed for hydroacoustic signals emission in liquid environment during laboratory research.



Resonance frequency: 525 Hz

Overall dimensions: 1250x830x400

Weight: 650 kg

Main Specifications:

Emission power	2000 W
Operating voltage	1000 V
Operating depth	up 200 m

PZTS-900

POWER LOW-FREQUENCY CYLINDRICAL CONVERTER

Destined to emit the hydrosonic signals in liquid during laboratory research.

Resonance frequency:
900 Hz

Overall dimensions:
1200x210x470

Weight:
170 kg



Main Specifications:

Emitted power	1000 W
Operating voltage	1600 V
Operating depth	Up to 100 m

PZTS -1200

POWER LOW-FREQUENCY CYLINDRICAL CONVERTER

Designed to emit the hydrosonic signals in liquid during laboratory and marine research.

Resonance frequency:
1200 Hz

Overall dimensions:
⌀700 x 900

Weight:
600 kg

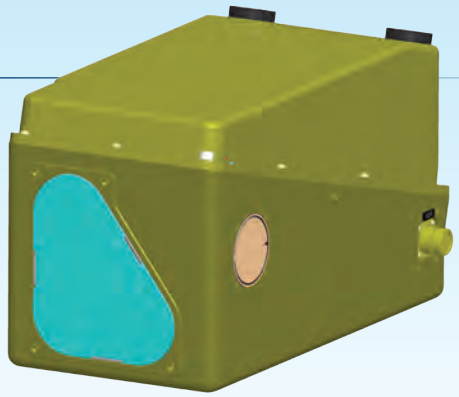


Main Specifications:

Emitted power	9000 W
Operating voltage	1000 V
Operating depth	Up to 300 m

PN-VK GUIDANCE DEVICE

The guidance device for the «Barrier VK» naval guided missile system is designed to search and monitor a target as well as to form the information control field for missile guiding within the structured laser beam using the method of teleorientation.



Overall dimensions:
413x227x224

Weight:
not more than 15,0 kg

Main Specifications:

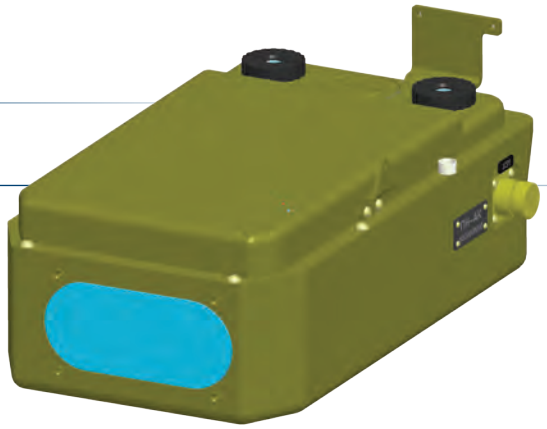
Distance of detection of a MBT type ground target sized 2,5 m×2,5 m in day conditions under meteorological visibility distance not less than 25 km:	
▮ under natural illumination of terrain from 100 to 10^4 lx and at contrast of a surveillance object against background not less than 0,5 km	not less than 10 (4) km
▮ under natural illumination of terrain not less than 3 lx	not less than 2,5 (1,7) km

LOW-FREQUENCY SONIC MEASURING SYSTEM

Low-frequency sonic measuring system is destined to accomplish the laboratory research of the materials acoustic features in liquid ranged at frequencies range from 200 to 4000 Hz.

PN-AK GUIDANCE UNIT

Designed to create video imagery. The device is a part of the short-range missile system «Arbalet - K».



Target detection range:
2,5x2,5 m

Overall dimensions:
359x214x148

Weight:
max. 9,0 kg

Main Specifications:

At daytime with meteorological range of visibility of 25 km:	
▮ natural illumination from 100 to 10^4 lx and with target contrast as to the background min. 0,5	min. 10 (4) km
▮ natural illumination min. 3 lx	min. 2,5 (1,7) km


VOLAT
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RADAR LOCATION AND AIR DEFENCE

WE DO:

- production of artillery armament
- repair and upgrade of air defense equipment, communications
- design and production of radars, electronic warfare stations and optical electronic countermeasure stations

36D6-M1

MOBILE THREE-DIMENSIONAL RADAR STATION

The 36D6-M mobile 3D airspace surveillance radar station is designed to be used as a part of modern automated Air Defence Systems, Anti-Aircraft Missile Complexes and to detect low flying air targets under active or passive jamming, as well as for military and civil air traffic control.



Radar SPP-15	Power station KP-10
Dimension: 13882x2890x3325	Dimension: 9040x2870x3300
Weight: 21,54 t	Weight: 10,8 t
Transport vehicle: on the customer's	Transport vehicle: on the customer's

Main Specifications:

Detection range for low flying targets: RCS – 1 m^2	
▮ at 50 m flight altitude	31 km
▮ at 100 m flight altitude	42 km
▮ at 1000 m flight altitude	110–115 km
RCS – 0.1 m^2 (cruise missile) at 50 m flight altitude	27 km
Azimuth coverage	360°
Elevation coverage	-0.5°…30°
RPM	6 and 12 rpm
Suppression factor	>48 dB



80K6

MOVABLE THREE-DIMENSIONAL RADAR STATION OF ALL-ROUND VIEW

Movable three-dimensional radar station of all-round view at small, medium and high altitudes with the coordinate and the trace outputs; works independently or as part of regional and national Automated Control Systems (ACS).

Main Specifications:

Limits of the station in range:	
▮ minimal	31 km
▮ maximum	42 km
▮ by azimuth	110–115 km
▮ elevation	27 km
▮ adjustment	360°
Target detection range, RCS = 3–5 m^2	
▮ at an altitude 100 m	40 km
▮ at an altitude 1000 m	110 km
▮ at an altitude 10 ... 30 km	300-350 km

Operating Frequency Range: S

Time of inspection: 5 or 10 sec

80K6M

MOBILE THREE-DIMENSIONAL RADAR STATION OF ALL-ROUND VIEW

The 80K6M mobile radar station is designed to be used as a part of radiotechnical and anti-aircraft missile troops for targeting providing.



Operating band: S

Frequency quantity: 6

Indicator range: 400 km

Quantity of elevation scanning modes: 2

Time of mode switch-over: not more than 0.1 sec

Main Specifications:

Elevation coverage area:	
in mode 1	0…35 degrees
in mode 2	0...55 degrees
Scanning rate	5, 10 sec
Clutter suppression	≥50 dB
Beam shaping method	digital
Quantity of antenna beams	12
Target detection range, RCS = 3–5 m^2 (Probability of adequate detection P=0.8 and false alarm probability F=10–6)	
at 10 km flight altitude	200 km
at 100 km flight altitude	40 km



1L220U, 1L220U-KS

COUNTER-BATTERY RADAR

Multifunctional complex 1L220U (1L220U-KS) has a flexible hardware and algorithmic tools that can be easily adapted for various combat missions.

1L220U	1L220U-KS
Dimension: 9214x3250x3350	Dimension: 11500x3160x3800
Weight: 39,5 t	Weight: 23,5 t
Transport vehicle: ГМ 5951	

Main Specifications:

Range exploration VP:	
artillery	30 km
mortars	30 km
MLRS	30/40 km
tactical missiles	55 km
Range control Accuracy:	
artillery	30 km
MLRS	30/40 km
tactical missiles	80 km
Throughput goals	50 per minutes

"DELTA"



NAVAL 2D SURVEILLANCE SOLID-STATE RADAR

«Delta» is a modern naval/land two-dimensional pulse coherent solid-state radar for surface and air surveillance with low interception probability of its electromagnetic emission.
It delivers the current coordinates of any target located within its detection range in a fully automatic way.

Frequency:
I band

Number of targets tracked:
not more than 50

Antenna rotation period:
3, 6, 12 s

Range scales:
12, 24, 48, 96 km

Power supply:
220 V, 50 Hz

Power consumption:
not more than 500 W

Equipment weight:
150 kg

Main Specifications:

Coverage:	
▮ in range	96 km
▮ in azimuth	0–360 °
Maximum target detection range:	
▮ small size air type	8–20 km
▮ ground-based (automobiles)	16–20 km
▮ surface type	radio horizon range
Coordinates determination accuracy:	
▮ range	20–40 m
▮ azimuth	8–10 mrad
Communication with command post	RS-422
Deployment time with full operation mode preparation	not more than 2 min



TRACE-1

MOVABLE AUTONOMOUS SECONDARY RADAR

A solid state movable autonomous secondary radar (PAVRL) with phased array antenna(AFD), working in the system of radar identification (SART) NATO Mk XA (Mk XII) and international ATC system RBS. It provides radio-locating information for radio- engineering Air Defence units, Air Force and Anti-Aircraft Missile Troops SMP, as well as for Air Traffic Control services.

Main Specifications:

The rms error of determining the coordinates:	
▮ in range	≤ 100 m
▮ in azimuth	≤ 50 min
Indicators of quality en-route information:	
▮ coefficient wiring	0,95
▮ factor false trails	0,0001
Number of simultaneously accompanying air objects	not less than 250

Field of view in range:
2 ... 360 km

Field of view in azimuth:
360°

Field of view in height:
25 km

"POLOZHENIYE 2" (1AR1)

SOUND RANGING SYSTEM

Automated Sound Ranging System "Polozheniye 2" (1AR1) is intended for reconnaissance of enemy's artillery guns and mortars positions and for servicing its artillery's firing.

Fire positions reconnaissance range:
25 km

Deployment time:
45 minutes

Clotting time:
30 minutes

Crew:
8



Main Specifications:

Accuracy of target location:	
by the range	0.6 - 0.8 %
by azimuth	0-03 - 0-04
Target engagement rate	30 Objective / min
Time of identification of one target's coordinates	less than 3 sec.
Number of vehicles	1 armored chassis MTLB- 1



RCU-1

MOBILE RADAR COMMAND AND CONTROL UNIT

It is intended for organization of the Air Defense automated systems, aviation control, radar remote control, data recording, staff training
The main functions:
- remote command and control of RLS 36D6-M;
- collection and processing of radar data from the RLS 36D6-M and RLS P-18 as part of radio air defense units with air situation information providing to command posts over wired and satellite channels;
- collecting radar information from remote sources, the formation of a unified picture of the air situation;
- fighter aircraft pilots' control;
- target indication providing for PU-12M command and control centers and mobile Anti-Aircraft Systems (optional).

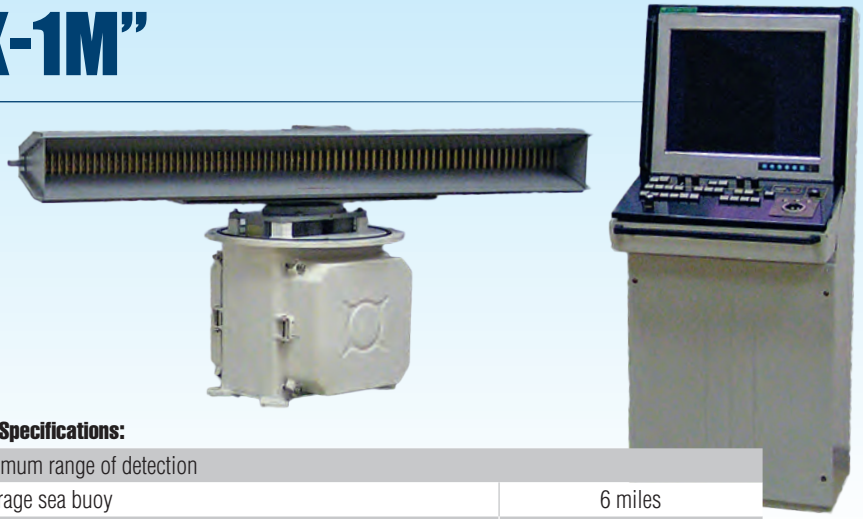
Main Specifications:

Communication channels PCU-1 provide:	
Receiving radiolocation information from the RLS 36D6-M and P-18, control RLS 36D6-M	on wired communication channels
Transmit / receive of radar data:	
through satellite modem	
through modems «TAYNET» on commutation or dedicated telephone line	
Radar data transmission	on a radio channel to CP-12M (ZRK) in the frequency range UKV radio station (optional)
Operational-command communication through radio channels:	
with the staff management of command posts in the operating frequency range radio station Micom-2TS (1,6-30 MHz)	
the navigator with the pilots of the aircraft in the operating frequency range radio station R-862 (100-149, 975 МГц) и (220-399, 975 MHz)	
with the staff control point PU-12M (ZRK) in the the operating frequency range of VHF radio station (20-52 MHz)	

"BUREVESTNIK-1M"

RADAR UNIT

Purpose: installation on the sea-, river- and high-speed vessels, including those with the dynamic suspension, on the shore-based look-out stations



Pulse power of the transmitter:
20 kW

Power supply:
170 – 265 V, 1 F, 47- 440 Hz

Power consumed:
1.0 kW

Main Specifications:

Maximum range of detection	
▮ average sea buoy	6 miles
▮ vessel of the displacement of 5000 tons	40 miles
▮ beacons, motor boats	4 miles
Minimal range of detection with the aerial lifted over the sea level 10 meters	10 – 36 m
Diameter of the picture on the plan-position indicator (color liquid-crystalline monitor, 18 inches)	260 mm
Ranging scales	0.25; 0.5; 1; 2; 4; 8; 16; 32; 64 miles

"OBOLON"

AUTOMATED ARTILLERY COMMAND AND CONTROL SYSTEM



The system consists of:

- navigation and geo location devices
- data transmission equipment
- Reconnaissance, survey and measure means
- means of information processing
- cryptographic means
- internal communication means

Automation means system designed for:

- New prospective control systems creation for tactical level of Land Forces (LF);
- Modernization of current tactic level control systems of the LF;
- Re-equipment of current control systems;
- Upgrade and re-equipment of the combat means, independent usage of combat means enabling.

MM-36D6 MAINTENANCE MODULE

The maintenance module (MM) is designed to control serviceability, diagnostics and renewal of line replacement units (LRU) being integrated into the Radar System:

- Digital, digital-to-analogue and analogue cells;
- High frequency units and subunits;
- PCBs and secondary power supply units.

The complex consists of:

- RF and UHF units of oscillators being controlled;
- Digital oscilloscope unit;
- Built-in spectrum analyser.



DATA TRANSMISSION EQUIPMENT



The data transmission equipment (DTE) is designed for the tele-code information interchange by the radio communication channels derived by using short-wave, ultra-short wave radio stations, and also by non-switched two-wire telephone communication lines based on the P-274M (P-275M) cable.

Main Specifications:

Number of packet radio networks	from 1 to 3
Number of the allocated telephone lines	from 1 to 10
Interface with the data processing equipment	RS-232 or RS-422
Data transfer rate by the RS-232	from 1,2 to 19,2 kbit/sec
Interface with radio stations	И-РС or С1-ТЧ
Data transfer rate by a radio channel	1200, 2400, 4800 or 9600 bit/sec
Interface with telephone lines	С1-ФЛ-БИ
Data transfer rate by telephone lines:	from 38,4 to 150 kbit/sec
Length of telephone communication lines	up to 10 km

Overall dimensions: 300x220x120

Power consumption: not more than 25 W

Power supplies onboard mains: +27 V

Power supplies storage battery: 10-16 V

R-163-10K RADIOSTATION

Dimensions: 321x297x114

Frequency range: 2 – 30 MHz

Interval: 1.0 KHz

Receiver Sensitivity: 3 мкW

Transmitter output power: 10 Wt

Operating temperature range: -50…+55 °C

Weight: 13,2 kg



Main Specifications:

Number preset reserved frequency	8
Time adjustment from one frequency to another	0.5 s
Time settings	15 s
Power Supply Voltage	10.5 – 14 V (battery: 10NKHz-6-1, 12.5 V)
Consumption current	
receiving	0,34 A
transmitting	4,5 A
MTBF	6000 hours

"KASHTAN 3M"

COMBINED SYSTEM OF ELECTRONIC RECONNAISSANCE AND COUNTERACTION

The system is intended for protection of all type combat and auxiliary surface ships against high-precision weapons (HPW) – missiles, projectiles and air bombs equipped with semi active laser homing heads (SALHH).



Operating wave length of laser objects detected:
1.06 μm

Photo-electronic devices sensitivity:
not worse than 5–10-11 J/cm^2

Power supply parameters:
380 V, 3~50 Hz

Maximum power consumption in combat mode:
10 kV•A

Main Specifications:

Angle range of laser radiation detection:	
▮ in azimuth	0...360 deg
▮ in elevation	0...90 deg
Laser decoy radiation wavelength	1.06 μm
Laser radiation pulse repetition	6–30 Hz
Laser transmitter pulse energy	not less than 0.5 J
Angle range of laser decoy beam pointing:	
▮ in azimuth	±170 deg
▮ in elevation	-15...+20 deg
Probability of the HPWs seduction from SALHH to the laser decoy (LD)	not less than 0.7

SMALL-BASE PASSIVE COMPLEX



SMALL-BASE PASSIVE COMPLEX FOR SPACE MONITORING AND RADIO EMISSION SOURCES POSITION FINDING

Small-base passive complex for space monitoring and radio emission sources position finding is designed for search, location detection and identification of air, ground and water objects due to their radio emission.

Field of view in range:
from 10 to 400 km

Field of view in azimuth:
120°

Frequency range:
1000 - 1250 MHz

Capacity at one time:
up to 100 objects

Database:
up to 5000 objects

Main Specifications:

Angle of sight	from -2 to 45 degrees
Mean-square error:	
▮ distance (base from 100 to 300 м)	£ 1% from nominal value (at distance to 150 км)
▮ azimuth	< 1° (RMS)
▮ Angle of sight	< 1° (RMS)
Play Mode observation sessions	

ENGINEERING COMPLEX

ENGINEERING COMPLEX FOR RECEIPT, TECHNICAL ANALYSIS AND PROCESSING OF SATELLITE COMMUNICATIONS

Engineering Complex, developed by the State Company UKROBORONSERVICE, is designed for receipt, frequency and digital conversion, demodulation and further technical analysis of signals from satellite communication systems to determine technical and structural characteristics.

The Complex can be used by:

1 Providers of satellite communication systems:
- As receiving part of communication system;
- For monitoring of quality and availability of signals from separate satellite within monitoring region.

2 Control Service of Radio Frequency Usage for monitoring of signal quality, and usage of radio frequency resources of satellite communication systems.

3 Corresponding sections of law enforcement (military) authorities to monitor communication signals for technical and structural analysis.



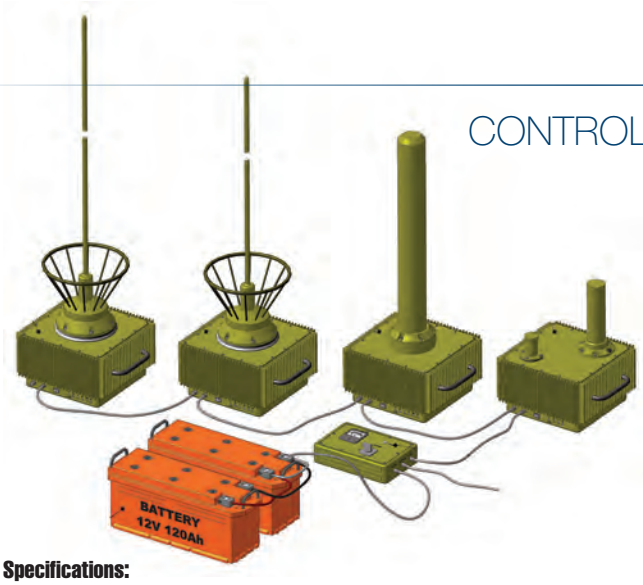
- Satellite communication system THURAYA
- Satellite communication system IRIDIUM

The Complex is a set of equipment for receipt, frequency and digital conversion, demodulation and further technical analysis of signals from satellite communication systems, and determination of their technical and structural characteristics.

The Complex is used for operation in general-use of frequency bands for satellite communication – L-band. Receipt and further processing of signals is executed using intermediate frequency 950.2050MHz.

"GARANT"

CONTROL RADIO LINKS JAMMING SYSTEM



The system is designed for radio jamming of various radio-technical equipment, radio communication channels of fixed, mobile and portable radio stations, satellite communication systems, and for protection of the moving means (moving columns and individual vehicles) by disabling detonation of the radio-controlled explosive devices (mines, roadside bombs etc.) via emitting of disabling radio signal in full frequency range where such control radio links are used.

Power consumption: not more 900 Wт

Power supply voltage: from 9 to 36 V

Environmental temperature: from-40° to +60° C

Main Specifications:

Frequency Range of of interference emission	20 - 2500 MHz
Kind of interference (noise)	wideband, barrage
Total output noise power	230 W
Distance of radio jamming (depending on the parameters of a jammed radio line)	75 - 1000 m

KG-1 OSCILLATING KLYSTRON



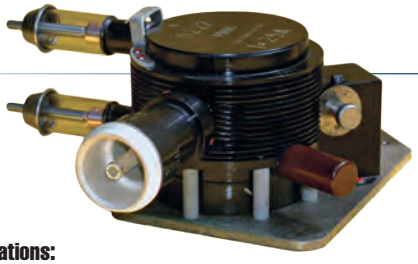
The oscillating klystrons of uninterrupted action, metal ceramic, low-noise, medium power, centimetric wave band.

Operating band: centimetric
Dimensions: 65x84x127,5
Min running time: Not less than 1000 h
Readiness time: not more than 3 min
Weight: not more than 0,8 kg

Main Specifications:

Output capacity	medium
Filament voltage	6,3 ± 3% V
Filament current	1,6 - 2,0 A
Cathode voltage	4,0 ± 0,5% kV
Cathode current	44 - 58 mA
Cooling liquid temperature	45...65 °C

PULSED MAGNETRON MI-119



The pulsed magnetron of non-packaged metal ceramic construction, high power, with precise tuning mechanism on either programmed fixed frequencies, centimeter wave band, intended for operation as microwave oscillators.

Main Specifications:

Operating frequency range	830...882 MHz
Filament voltage	6-8 V
Anode voltage	not more than 23 kV
Output power, pulse	not less than 315 kW
Filament current	12-16 A
Anode current, pulse	22-32 A
Pulse duration	1.8-2.2 mcs

Dimensions: 330x270x120
Readiness time: not more than 120 s
Min running time: 2000 h
Weight: 7 kg

MI-270 PULSED MAGNETRON

The pulsed magnetron of non-packaged metal ceramic construction, medium power, with precise tuning mechanism on either programmed fixed frequencies, centimeter wave band, intended for operation as microwave oscillators.

Dimensions: 80x50x57
Readiness time: Not more than 20 s
Min running time: 120 h
Weight: 425 g

Main Specifications:

Operating frequency range	14,300...14,500 MHz
Filament voltage	5.7 – 6.9 V
Anode voltage	2,125 – 2.4 kV
Output power, pulse	0.3-1.5 kW
Filament current	0.77 – 1.0 A
Anode current, pulse	1.4-2.6 A
Pulse duration	0.3-1.0 mcs

KS-4, KS-7, KS-8, KS-9 SUBMINIATURE KLYSTRON



Subminiature, metal ceramic, low-voltage, reflecting (generator) klystron of uninterrupted action, designed for operation as oscillators on the fixed centimeter wave band.

Main Specifications:

	KS-4	KS-7	KS-8	KS-9
Dimensions	21x26x32	43x40x25		24x33,4x37
Weight	36 g	100 g		70 g
Readiness time	2 min	3 min		0.40 min
Min running time	1,000 h	1,000 h		300 h
Operating frequency range	9,660-9,740 MHz	Centimetric		
Filament voltage	2.85-3.15 V	3.15±0.11 V	3.15±0.11 V	3.15±0.4% V
Filament current	0.7 – 1.6 A	0.9 – 1.6 A	0,9 – 1.6 A	1.0 – 1.7 A
Resonator voltage	84-86 V	100±1% V	80±1% V	85±3% V
Reflector voltage	20-120 V	50 - 200 V	50 - 200 V	30-170 V
Cathode current	Not more than 100 mA	60 – 110 mA	50 – 90 mA	50 - 105 mA

VHF MODULE M31207



M 31207 is a small-size generator on Gunn diodes on 8mm wave band, functional, single-channel, used in pulse modulation mode to feed coded modulated signals.

Main Specifications:

Operating frequency range	34.5 – 36.5 GHz
Active element supply current	0.05 – 0.08 A
Ambient temperature range	-60 … +85 °C
Admissible relative air humidity at +25 °C	98%
Reduced air pressure	120 Pa
Power source voltage	Not less than 33 V

Dimensions: 16x14x24.7

Min running time: 4,000 h

Weight: 19.5 kg

M34702 ATTENUATOR ON P-I-N DIODES



M34702 is a coaxial-wave controlled device intended to control the microwave signals in the wave paths. The attenuator changes smoothly the attenuation of microwave oscillations in the wave path on one determined by the part type frequency subband in centimeter wave band.

Min running time: Not less than 2000 h

Weight: not more than 160 g

Main Specifications:

Control current	not more than 100 mA
Input power (uninterrupted)	not more than 2 W
Operating temperature range	-60 … +85 °C (up to 30 min. - +125 °C)
Admissible relative air humidity at +40 °C	98%
Reduced atmospheric pressure	666 Pa

MI-307 PULSED MAGNETRON

The pulsed magnetron of packaged metal ceramic construction, medium power, with precise tuning mechanism on either programmed fixed frequencies, centimeter wave band, intended for operation as microwave oscillators.



Dimensions: 53x88x44
Min running time: 500 h
Readiness time: Not more than 50 s
Weight: 500 g

Main Specifications:

Operating frequency range	16,050 -16,800 MHz
Filament voltage	6.0 – 6.9 V
Anode voltage	2.45 – 2.8 kV
Output power, pulse	0.4 kW
Filament current	0.48-0.6 A
Anode current, pulse	1.5-2.25 A
Pulse duration	0.1 – 0.5 mcs

AMPLIFIER KLYSTRON UA KIU-5



Drift amplifier pulsed, centimeter wave band, packaged, metal ceramic klystrons. Cooling – forced, liquid.

Dimensions: ⌀ 256x870
Readiness time: not more than 3 min
Min running time: 1,500 h
Weight: 35 kg

Main Specifications:

Operating frequency range	2,923...3,142 MHz
Filament voltage	12 – 14.7 V
Cathode voltage, pulse	not more than 50-55 kV
Input power	5-50 W
Output power, pulse	355 -525 kW
Filament current	4-6 A
Cathode current, pulse	19-24 A
Focusing solenoid current	18-27 A
Cooling liquid temperature	+55...+85 °C
Cooling liquid consumption	not less than 20 l/min

M321001 SHF MODULE

M321001 SHF module is a 2cm wave band amplifier, intended for operation in TTR reception paths of 9A33BMZ combat vehicle (part of “OSA-AKM” Air Defense Missile System).



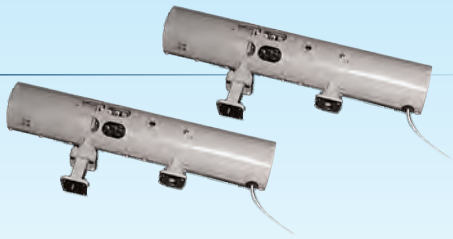
Operating frequency range: 14.28-15.79 GHz
Dimensions: 208x62x80
Min running time: 10,000 h
Supply voltage: 10-14 V
Weight: not more than 0.9 kg

Main Specifications:

Gain factor	33-39 dB
Noise factor	not more than 4.8 dB
Admissible input power:	
▮ uninterrupted	not more than 0.8 W
▮ pulse	not more than 100 W
Supply current:	
▮ by supply network +12 V	150 mA
▮ by supply network -12 V	20 mA
▮ by management network	0.1 mA

UV-267, UV-435 RUNNING WAVE TUBE

The traveling wave tubes of continuous operation, metal ceramic, packaged, with waveguide energy output, intended for operation as VHF power amplifiers in centimeter wave band.

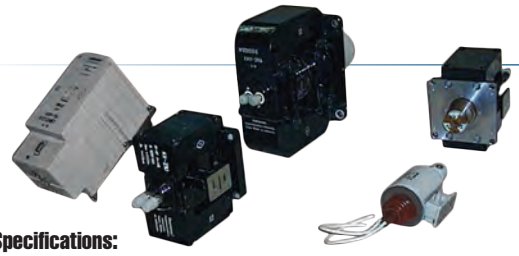


UV-267	UV-435
Dimension: 370x77x140	Dimension: 370x77x97
Readiness time: 3 min	Readiness time: 3 min
Min running time: 500 h	Min running time: 500 h
Weight: 2.75 kg	Weight: 2.75 kg

Main Specifications:

	UV-267	UV-435
Operating frequency range	10,160 – 17,545 MHz	
Input power	200-300 mW	200-880 mW
Output power	80-90 W	60-85 W
Filament voltage	5.85 – 6.8 V	5.85 – 6.8 V
Filament current	1.4 -1.8 A	1.4 -1.8 A
Collector voltage, constant	3.0-4.0 kV	3.0-4.0 kV
Collector current	160 mA	160 mA

KLYSTRONS KU-217, KU-312



Klystrons types: drift, amplifier, continuous operation, packaged and non-packaged, low-noise, medium power, operating as VHF power amplifiers in centimeter wave band.

Main Specifications:

	KU-217	KU-312
Operating frequency range	centimeter	
Filament voltage	12.6 ±5% V	11.3 – 12.3 V
Filament current	not more than 2.8 A	1.6 – 2.0 A
Cathode voltage	7-8 (negative) kW	8.5 kW
Cathode current	not more than 785 mA	360 - 425 mA
Cooling liquid temperature	70...80 °C	45...65 °C

KU-217	KU-312
Dimension: 113x340x181	Dimension: 138x185x235
Readiness time from cold position: not more than 3 s	Readiness time from cold position: not more than 3 s
Min running time: 1,500 h	Min running time: 1,000 h
Weight: 4 kg	Weight: 11 kg

OVS-5, OVS-14 BACKWARD-WAVE TUBE

Backward-wave tubes with electrostatic focusing, electronic frequency tuning on two electrodes, waveguide energy output. Intended to be used as oscillators or low-noise generators of centimeter and millimeter wave band.



OVS-5	OVS-14
Dimension: 97x43x64	Dimension: 88x61x93.5
Readiness time: not more than 3 s	Readiness time: not more than 4 s
Min running time: 5000 h	Min running time: 1000 h
Weight: 325 g	Weight: 600 g

Main Specifications:

	OVS-5	OVS-14
Operating frequency range	9.091 -9.677 GHz	11.71 – 17.86 GHz
Filament voltage	6.0 – 6.6 V	6.0 – 6.6 V
Filament current	0.6 A	0.3 – 0.5 A
Voltage on control electrode	250 - 450 V	360 – 1,550 V
Control electrode current	25 mA	14; 20 mA
Output power	20 mW	20; 40 mW
Cathode current	15-45 mA	15-40 mA

69L01 SYSTEM MK XA, MK XII AND RBS BUILT-IN RADAR INTERROGATOR



Built-in radar interrogator (BRI) 69L01 system Mk XA and Mk XII RBS is designed to fulfill tasks:
- General identification of air objects equipped with radar responders;
- Individual identification of air objects equipped with radar responders;
- Cryptosecured identification of air objects equipped with radar responders and crypto calculators;
- Determination of aircraft identification code for ATC tasks

Power system:
DC voltage 27 V

Power:
< 130 W

Mean time between failure:
10000 h

Mean time to recovery:
30 min

Main Specifications:

Continuous operation time	without restriction
On Time	<3 min
The pulse power from each transmitter capable of reducing it by 12 dB in 3 dB	> 2000 W
receiver sensitivity	> minus 126 dBWt
suppression signals of side lobes on request	yes
Channel pulse amplitude difference PBL and the main channel	<1 dB
suppression signal of side lobe response in dynamic range	70 dB



TELEMETRIC SYSTEM RADIO SIGNAL RECEIVING EQUIPMENT BRS-4 "BRESKUL"

BRS-4 telemetric system radio signal receiving equipment is intended for missile-carrier's telemetric launch control.

Main Specifications:

Number of telemetric signal receiving channels	2
Separation and generation of measurement information from a telemetric signal	
Information transmission to a user:	
▮ analog video	
▮ parallel 8-bit binary code	
Frequency letters	044, 054, 064, 070, 080,090

Supply voltage:
220±22/50 ±10 V/Hz

Power consumption:
not more 60 W

Weight:
not more 20 kg

"BUTTON" MAGNETRON



The pulsed magnetrons of non-packaged metal ceramic construction, high and medium power, with precise tuning mechanism on either programmed fixed frequencies, centimeter wave band, intended for operation as microwave oscillators.

Dimensions:
160x140x100

Min running time:
3,000 h

Readiness time:
0.5 s

Weight:
800 g

Main Specifications:

Operating frequency range	9,445...30 MHz
Output power, pulse	
Admissible input power:	
▮ with pulse duration 0,05 mcs	not less than 5 kW
▮ with pulse duration 0,25 mcs	not less than 10 kW
▮ with pulse duration 0,9 - 6 mcs	not less than 20 kW
Anode voltage	7.35-8.05 kV
Anode current, pulse	6.75-9.0 A
Pulse duration	0.05-6.0 mcs
Anode current, pulse	6.75-9.0 A

L-BAND RADAR TRANSCEIVER

The radar transceiver is designed for application in electronic countermeasures (ECM) systems for manned aircraft protection in case of bombardment by surface-to-air, air-to-air missiles.



Operating frequency band:
20-centimeter

Transmitter peak power:
> 240 W

Weight of a dual-channel transceiver unit:
7,4 kg

Total weight of the power unit and four transceivers:
19,2 kg

Main Specifications:

Radio pulse parameters:	
pulse train duration:	50 ms
interval duration between pulse trains:	150 ms
maximum pulse duration	16 mcs
repetition frequency of pulse trains	16 Hz

ON-BOARD FRIEND/FOE STATE IDENTIFICATION SYSTEM TRANSCEIVER "PAROL-M"



The transceiver is designed for use in on-board friend/foe state identification systems.

Overall dimensions:
150x200x300

Mass:
10,5 kg

Main Specifications:

Received signal type	signals of the Parol friend-or-foe identification system
Generated signal type	signals of the Parol friend-or-foe identification system
Mean time between failures	1500 h
Construction	ARING 600

SUPERHIGH-FREQUENCY TV SIGNAL RADIO RECEIVER (RP-7.000K)

The receiver is designed for application in on-board systems for remote television guidance of cruise missiles and air-to-surface aircraft missiles.



Operating frequency band:
centimeter

Power supply:
AC 115 B, 400 Гц, +27 B

Power:
Not more 25 W

Weight:
9,5 kg

Main Specifications:

Signal type	FM TV signal
Number of receiving channels	4
Receiver sensitivity(with signal/noise ratio of 26 dB at the output)	Not more minus 117 dBW
Continuous input power handling ability at the receiver input	25 мВт
Temperature range	- 60 to + 60 °C

SPECIALIZED DATA PROCESSING COMPUTER



Specialized data processing computer is designed for operation on tracked and wheeled transport vehicles as a computer of automated commander's workstation.

Overall dimensions:
200x300x150

Size of monitor by diagonal:
10,4 (26) inch (cm)

Power consumption:
not more than 50 W

Main Specifications:

Central processor	AMD GEODE LX800
Core storage volume	128-1024 MB
Disk memory volume	512 MB (1024 MB – on flash-disk)
Interfaces:	
▮ RS-232(422/485) with operating speed 250 Kbit/sec (up to1,5 Mbit/sec)	8 pcs.
▮ USB V2.0	4 pcs.
Resolution	640 × 480

COMPACT COMMAND RADIO LINE FOR ANTITANK SYSTEMS



The compact command radio line is designed for radio-command control of antitank guided missiles and "Shturm", "Ataka" – type and other projectiles.

Main Specifications:

The command radio line includes:	
▮ command transmission equipment (CTE) mounted on a carrier (helicopter, boat, ground installation);	
▮ On-board shockproof receiving equipment mounted on a missile (projectile);	
▮ Test and control equipment for CTE monitoring;	
▮ Test and control equipment for monitoring the missile (projectile) receiver.	
Operating frequency band	millimeter
Radio control range	up to 8 km

Universal application (Air Forces, Navy and Land Forces), compact and miniature design, high noise immunity.

PORTABLE COMMANDER'S TERMINAL



The Commander's Terminal is designed for use in a command, control and communication system of the land forces on tactical level as a radio terminal in a complete set with portable radio station and data communication equipment.

Overall dimensions:
220x110x60

Supply voltage:
12 V

Power consumption:
2,4 W

Weight:
not more than 2 kg

Main Specifications:

Operational device:	
▮ processor type	I486
▮ clock rate	66 MHz
▮ Volatile memory space	2 MB
▮ RAM memory space	2 MB
▮ Input/output port	COM1, COM2
▮ type of interface	RS-232/422/485
▮ data transfer rate	up to 115 kbit/sec
Display:	
▮ character cell number	4 × 20
▮ size of displaying zone	77 × 26 mm

CH-4312 ON-BOARD SATELLITE NAVIGATION EQUIPMENT



CH-4312 equipment is designed for aircraft's control as a part of complex aircraft avionics system in all flight phases, including the inaccurate landing activities.

Voltage supply:
+27 V

Power consumed:
not more than 20 W

Main Specifications:

Transceiver	GPS / Glonass/ SBAS: 24 channels
Data updating frequency	10 Hz
Information field range of color LCD monitor	78,7x53,6 mm
User's data base	1000 WPT and 90 routes
Digital interfaces	
ARINC 429	8 inputs / 4 outputs
1PPS	1 channel
Analog interfaces	
outlets (± 10 V)	1 channel
current outlets (± 150 mV)	3 channels

EQUIPMENT OF SATELLITE NAVIGATION GLONASS AND GPS SYSTEMS USERS CH-3307



SNS CH-3307 user equipment is intended for interoperability with avionics of Su and MiG aircrafts in standalone and automatic modes.

Supply voltage:
27 V

Power consumption:
30 W

Total weight of a complete set:
10,5 kg

Main Specifications:

Precision of definition:	
coordinates	20 m
altitude	30 m
current time	1 sec
ground speed vector	0.2 m/sec
UTC time mark	100 nsec
track angle	0.5
Receive and sending of information	from digital and analogue interfaces of Su and MiG type Aircrafts

CH-4311 EQUIPMENT



CH-4311 equipment is intended for: navigation problems solving and aeronavigation control according to RNP 0.3, RNP 1, RNP5, RNP12, RNP20 in all stages of flight; aircraft instrumentation centralized control in automatic and manual modes; aircraft navigation using.

Weight, CU:
no more than 4 kg

Weight, MCDP:
no more than 4 kg

Weight, AU:
no more than 0.5 kg

Main Specifications:

24-channel receiver of GLONASS/GPS/SBAS signals	
Inputs/outputs of ARINC-429 interface:	
CU	32/16
MCDP	16/8
Inputs/outputs of one-time commands:	
CU	20/26
MCDP	8/8

BRSN-2

ON-BOARD SATELLITE NAVIGATION RECEIVER

BRSN is 24-channel GLONASS / GPS / SBAS Class C1 navigation receiver for use in integrated assemblies of airborne equipment in Civil Air Transport. BRSN is used as an information system, navigation parameter sensor, for problem solving in en-route navigation, terminal area, non-precision approach and categories 1, APV-1, APV-2 approach.



Dimensions, antenna:
119,4x73,6x59

Dimensions, RCU:
244x140x73

Dimensions, antenna amplifier:
147,5x70x21

Supply voltage DC:
27 V

Power consumption:
15 W

RCU weight:
not more than 2,31 kg

Main Specifications:

Receiver GPS/GLONASS	L1-range
Accuracy	
for coordinates	10 m
for altitude	15 m
updating rate	10 Hz
RAIM function (FDE algorithm)	
RAIM prediction:	up to 24 hours;

CH-3210



NAVIGATION SYSTEM OF SURVEY AND TIME POSITION

CH-3210 Navigation system of survey and time position CH-3210 is providing:
- setting of coordinates, speed, moving direction, current time in system UTC;
- initiation, storage and displaying the chart in selected scale;
- route planning and remote monitoring of object maneuver execution;
- on-line navigation information exchange with interacting objects;
- integrated processing of navigation and cartographic information;
- solution of service and special objectives;
- receiving and accountiong of diffential corrections in accordance with recommendations RTCM SC -104.

Main Specifications:

24 receiving channels: GPS/GLONASS/SBAS, L1- range	
Algorithm of identification of the receiving channel	All-in-view
Positional/altitude accuracy in off-line mode (RMS):	10/15 m
Operating temperatures DME	from -20°C to +55°C
Operating increased humidity DME	98% at 25 °C
Interface	RS232- 1p., RS – 485/422-1p., 1PPS-1p., USB 2.0- 4p., USB 2.0 for external flash card (mounted on the front desk)-1p., Ethernet (1 Gb) -1p.

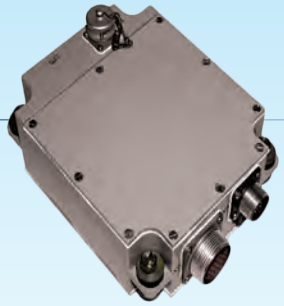
Dimensions DME:
365×247×96

Power consumption of DME:
30 W

Power supply DC:
10-30 V

DME weight:
6,0 kg

DATA ENCRYPTION DEVICE



The data encryption device (code processor) is designed for encoding, generation of a simulation insertion and codes of the data electronic digital signature (EDS) and voice data transmitted by control and communication channels of the land forces on tactical level.

Overall dimensions:
220x310x100

Power supply:
+(9+30) V

Weight:
not more than 2 kg

Main Specifications:

Algorithm of cryptographic conversion	ГОСТ 28147-89
Algorithm of EDS generation/check-up	ГОСТ 34.310-95, ДСТУ 4145-2002
Hardware implementation of random-sequence generator	
Probability of false data appearance	2^{-32}
Length of an encryption key	256 Bit
Encryption rate	up to 2 Mbit/sec
Length of key protection parole in key data storage	8 symbols



DIGITAL RADIO RELAY STATION

The compact radio relay station (RRS Contact) is designed for deriving the local duplex communication channels in a “Ku” band to receive-transmit on radio the information stream at a rate of 2.048 Mbit/sec or 8.448 Mbit/sec.

Main Specifications:

Communication range (with transmitter power up to 50 mW)	Up to 30 km
Number of duplex channels	1
Operating frequency band	Ku-range
Number of tuning frequency channels	12
Linear polarization	vertical or horizontal
Modulation type	FSK (Frequency three-level manipulation without phase discontinuity)
Information stream coding	HDB-3 or AMI or NRZ
Information stream rate	2,048 (8,448) Mbie/sec

R-174T INTERPHONE AND COMMUTATION EQUIPMENT

It is designed to provide internal and external radio communication on land mobile objects.



Main Specifications:

Maximum quantity of radio sets to be connected to R-174T	6 units
Number of fully available working places (with the excess to all sets)	6 units
Maximum amount of subscribers of internal communications	8 units
Maximum power consumption from object’s main	does not exceed 30 Wt
Equipment operation rate temperature	from -50 to +50 °C

R-173M1 RADIO STATION



Radio Station R-173M1is a transceiver radio communication HVF simplex device with frequency modulation. It is designed to provide two way radio communications between mobile objects in motion and on stop.

Dimensions of transceiver:
428x222x239

Power of transmitter:
not less than 30 W

Weight of main set:
not more than 43 kg

Main Specifications:

Frequency rate	30000-75999 kHz
Frequency spacing	1 kHz
Acuracy or the receiver frequency	+1,5 kHz
Receiver sensitivity	1,5 microvolt
Transition time from one preset frequency to another	3 sec
Receiver sensitivity on digital channel, with the error rate 1x10-2	not more than 2 uV
Current consumption (not more than):	
▮ while receiving	1,5 A
▮ while transmissing	9,0 A
Data transmission speed from personal computer over the impulse channels	9,6 Kbit/sec

RADIO STATION R-130M



Designed to provide short wave radio communications at the fixed frequencies in the range of 1.5-10.99 MHz.

Maximum power of transceiver under the loading of 75 ohm
40 W

Main Specifications:

Current consumed (not more than)	
▮ while transmitting	13 A
▮ while receiving	3,5 A
▮ frequency stability	not less than 0,7 x10-6
Receiver sensibility (not worse than)	
▮ Narrow band reception	2 microvolt
▮ Wide band reception	5 microvolt
▮ Single-sideband modulation	3 microvolt
▮ Amplitude Modulation	10 microvolt

R-134 RADIO STATION



Radio Station R-134 provides telephone and telegraphic radio communications in simplex mode between stationary and mobile objects on tracked and wheeled base, including armored combat vehicles.

Dimensions of transceiver:
300x496x303

Power supply:
22 - 30 V

Weight of the working facility:
54 - 74 kg

Main Specifications:

Frequency rate	1,5 - 30 mHz
Frequency spacing	1,0 kHz
Preset frequencies	8
Transceiver peak power	50 W
Antennas:	
▮ whip	3 m
▮ whip	4 m
Communication distance	350 km
Working mode:	telegraph, telephone
Modulation	telephony on SSBM, AM, telegraph modulation
transceiver sensibility	4 microvolt

R-173 PM1 RADIO TRANSCEIVER



Radio transceiver R-173 PM1 is designed to receive telephone information with frequency modulation under the ultra-high frequency range; to be installed on mobile objects.

Overall dimensions of radio set together with shock-absorber:
222x210x239

Consumption current:
1,2 A

The radio receiver power supply is vehicular VDC:
+27 (22-29) W

Weight:
not more than 30 kg

Main Specifications:

Frequency rate	30000 - 75999 kHz
Frequency spacing	1 kHz
Radio receiver set sensibility:	
▮ during analog signal receiving, not worse	1,5 uV
▮ with noise reducer, not worse than	3 uV
▮ during digital information receive in the frequency range and under the error coefficient of 1x10-2, not worse than	2 uV
output voltage of the radio receiver set:	
▮ mode intercom system, not worse than	11 W
▮ terminal equipment mode	(0,52 ± 0,1) W

TELEPHONE SET TA-57-U



It is designed to provide telephone communication under the field conditions.

Overall dimensions:
206x165x80

Weight:
2.5 kg

Main Specifications:

Module of input resistance on the frequency of 1000 Hz	600 (+400; -100) Ohm
out voltage on a frequency of 1000 Hz	0.2-0.6 W
electrical insulation resistance, нnot less than	100 Ohm
reliability indexes of the device:	
▮ time between failures	10000 hours
▮ average operation time	15 years
▮ mean recovery time	20 min
Working temperature range	from -40 to +50 °C

R-163-50K RADIO STATION



It is designed to operate in short-wave band, provides telephone and telegram radio communications in simplex two-frequency modes between stationary and mobile objects.

Transceiver overall dimensions:
300x290x414

Power supply:
22-30 W

Weight of the working facility:
60 kg

Main Specifications:

Frequency rate	2-30 MHz
retuning time between preset frequencies	15 sec
Peak power of transceiver	50 W
transceiver sensibility	3 microvolt
Current, consumed by transceiver from power source, not more than:	
▮ receive mode	1.3 A
▮ transmitting mode	14 A
Power supply	22-30 W
communications range	350 km

TSH4-U INTERPHONE HEADSET

Interphone headset TSh4-U together with Interphone and Commutation Equipment AVSK R-174T, or with similar, is designed to provide communication in armored combat vehicles and transiting of sound signals, operator protection against the external noise and climate factors, as well as from hitting the structural elements of the vehicle.



Weight of middle size Interphone headset:
1.1 kg

Main Specifications:

Verbal speech intelligibility under conditions of acoustic noise of up to 135 dB, not less than	90%
noise reduction coefficient under the frequency of 1000Hz, not less than	13 dB
Total noise stability of laryngaphone under the conditions of acoustic noise up to 135 dB, not less than	16
optimal level of voltage applied at headphones	5-8 V
Working temperature range	-50 ... +50 °C

COMPACT ANTIJAM SHORT-WAVE LOW-POWER RADIO STATION



Main Specifications:

Frequency range	2.29,999 MHz
frequency spectrum pitch	100 Hz
OFPC mode:	
▮ the quantity of frequency hopes per second	20 hops
▮ modulation type	G1B
▮ data transfer rate	75, 150, 300 bit/sec
▮ time of synchronization	not more than 10 sec
▮ data transmitting protocol	ARQ

Overall dimensions of for the radio station:
320x250x80

Weight of the radio station:
3,8 kg

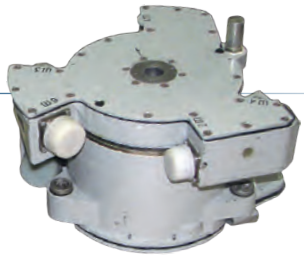
Overall dimensions of additional power amplifier:
325x250x52

Weight of additional power amplifier:
2,5 kg

Power supply for the radio station:
from rechargeable battery 12,6 V

VKU-1 REVOLVING CONTACT DEVICE

VKU-1 REVOLVING CONTACT DEVICE of 1.10 Group in accordance with DSTU V20.39.304-76 is designed for transmission of electrical current from a stationary part to a rotating one during their rotation with the speed of 6 revolutions/min.



Overall dimensions:
310x310x200

Weight:
not more than 14 kg

Main Specifications:

electro transmission:	
DC	1 A (30 V), 2 A (30 V), 3 A (30 V), 5 A (30 V), 20 A (30 V), 360 A (30 V)
A.C. 30 Hz	3 A (30 V)
A.C 300-400 Hz	0,2 A (1-20 V)
A.C 400 Hz	1 A (36 V)
A.C 500 Hz	1 A (40-300 V)
Mode	continuous
Rotation rate about stationary section	6 rev/min

RADIO MODEM OF SPECIAL PURPOSE

Radio Modem is designed for operation in the HF radio stations.



Overall dimensions:
88x332x222

Power from the direct-current mains:
27 V

Power from single-phase line:
220 V

Power from single-phase line:
110 V

Weight:
4,5 kg

Main Specifications:

Power up readiness time to work	2 min
Error probability per bit during signal to noise level 5,5 dB when the speed rate is equal to100 bits per second	0,01
Error probability per bit during signal to noise level 8.0 dB when the speed rate is equal to 250 bits per second	0,01
The input signal level of radio receiving device on intermediate frequency 128 kHz or 215 kHz when loading is 75 ohm	not less than 2 mV
The input signal level of radio transmitting device on intermediate frequency 128 kHz when loading is 75 ohm	180…220 mV

ANGULAR COORDINATE PIKOFF DEVICE "SALGIR-M"



It is designed to measure the angular position of the axes of the locomotor system in a numeric code.

Power ~ 220 V 50 Hz:
3800 B*A

Power ~ 220 V 400Hz:
610 B*A

Main Specifications:

Ambient temperature	-50…+50 °C
Humidity +35 °C	до 98%
Feeding with voltage:	
▮ Voltage 220 ± 22V, with frequency of 50 Hz ± 15	
▮ Voltage 220 ± 11V with frequency of 400Hz ± +12	
Endurance	24 h
Measuring angular axis position with error of ±10 from angle.	
The Item enables measuring of the angular position with resolution 360°/220	
The Item enables uniform measuring of the angular position within 0…360 deg.angle.	

MM WAVE BAND ALL-ASPECT RADIOMETRIC SENSOR

Radiometric Sensor is designed for all-aspect thermal radio determining (in one plane) of dimensionally extended objects.
It comprises four identical radiometric channels.



Frequency range:
mm

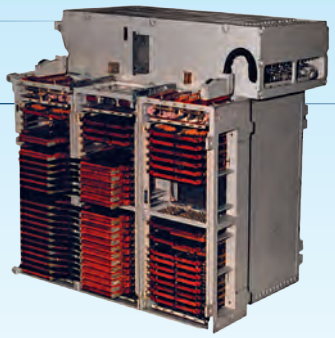
Weight:
2,35 kg

Main Specifications:

Zone detection, angular degrees	360x30
The threshold sensitivity for the integration time of 2 ms	Not more 3 °K
Detection of radio signals of dimensional objects with thermal contrast of 15 ° to the right with the possibility of not less than 0.98 determination if possible erroneous alarms are not more - 0.01	

B UNIT

Read-only memory is designed for storing and reading information. Record and change information is carried out only with the recording equipment.



Main Specifications:

mass:	
▮ Memory assembly	145 kg
▮ Control assembly	30 kg
power consumption	120 W
Memory space	32768 36-bit words

FIRE EXTINGUISHING BOARD



Designed to receive and process the fire alarm signals from five thermal sensors and output of the signals to two carbon-dioxide cylinders, by sound system and two additional fire alarm indicators.

Overall dimensions: 140x124x79

Supply voltage: 27 V

27 V mains power: not more 5 W

Weight of the item: unpacked 1,4 kg

Weight of the item: packed 3,2 kg

Main Specifications:

Continuous operating time	not more 12 h
Operating temperature range	minus 25...+55 degree
Maximum permissible temperature range	minus 40...+70 degree

F UNIT

Read-write memory is designed for recording, saving, and reading of information.
The memory element is a ferrite rod F with a rectangular hysteresis loop.



Main Specifications:

power consumption	400 W
mass	41 kg
Memory space	4096 36-bit words

35YA6 SYSTEM

The system is designed to work with the F2, F2K, F2M, F9, D2, D2M products as internal station data recording equipment. When the system is operated with the abovementioned units in a normal operating mode, the interchange data is converted and recorded on a magnetic tape.

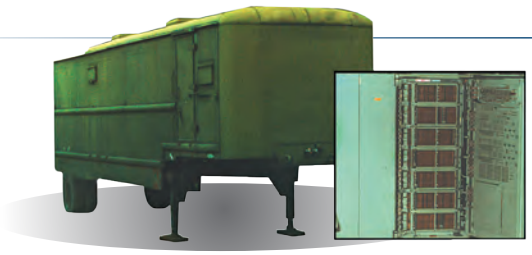


Weight:
not more than 12 t

Main Specifications:

Power consumption:	
3~, 50HzГц, 380V network	not more than 20 kW
3~, 400Hz, 220V network	not more than 15 kW

ITEM 12U6



It is designed for maintenance of a group of the 5E26 units, comprising one 5E265 unit and four 5E266 units (used in S-300 Missile System). Item provides search and troubleshooting in blocks that are came-in from 5E26 units for repair.

Weight:
39 t

Main Specifications:

Power consumption:	
3~, 50 Hz, 380V network	not more than 35 kW
3~, 400 Hz, 220V network	not more than 9 kW
Operating-temperature range	-50…+50 °C
RH at +30 °C	98%

ITEM 13U6

Item designed for maintenance providing of a group of seven 40U6 computer systems (in S-300 Missile System).



Weight:
18,2 t

Main Specifications:

Power consumption:	
3~, 50Hz, 380V network	not more than 28 kW
3~, 400Hz, 220V network	not more than 7,3 kW
Operating-temperature range	-50…+50 °C
RH at +30 °C	98%

9B549 CHECKOUT EQUIPMENT

Checkout equipment is designed to test the 9C477 units in operation.



Weight:
not more than 250 kg

Main Specifications:

Readiness time	3,5 min
Primary supply voltage	~220V, 50Hz
This equipment is operated at five fixed frequency values and with two codes.	

ITEM DD91



Is designed to receive data from the data communication special-purpose computer channel and convert it into a data format suitable for magnetic tape recording.

Weight:
300 kg

Main Specifications:

Power consumption:	
3 ~ 400Hz, 220V network	not more than 84,8 kW
27V network	not more than 11 W

ITEM FD92

Accurate recording equipment designed for recording and playback of digital/voice data in 24 channels using I4406-25-111 magnetic tape with flux density of up to 20 flux reversals per mm.



Weight:
not more than 300 kg

Main Specifications:

Power consumption:	
three-phase network 220V, 400Hz	not more than 800 W
network 27V	not more than 20 W

"ARKAN" CONTROL SYSTEM

Radio Modem is designed for operation in the HF radio stations.



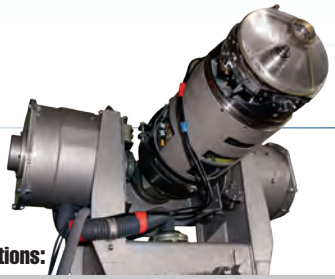
Power supply:
D.C. with power of 27 V

Operating power consumption:
1000 W

Weight:
not more than 25 kg

Main Specifications:

Operating mode	constant
Duration of operating mode with the followed break not less than 1:00	6 hour



MISSILE ANGULAR MOTION SIMULATOR

Three-axis angular motion simulator is intended for physical simulation of missile roll, pitch and yaw angles, target tracking angles in detection and tracking modes during laboratory tests of radar seekers and their components.

Power supply:
380/50 V/Hz

Seeker loaded mass:
10 kg

Main Specifications:

Angular displacement (relative to the appropriate axes of the platform construction coordinate system) within:	
in angles of roll	Not less ±15 deg.
in angles of pitch	Not less ±30 deg.
in angles of yaw	Not less 30 deg.
Angular sinusoidal vibrations (relative to set mean values of platform position angles):	
in angles of roll	Not less ±10° with 1 ~ 3 Hz frequency
in angles of pitch	Not less ±8° with 1~ 3 Hz frequency
in angles of yaw	Not less ±8° with 1 ~ 3 Hz frequency

"REBUS" COOLANT UNIT

Designed to dissipate heat emission and ensure stabilized thermal regime of the air defense radar equipment.

Ambient temperature:
from -50 to +50 °C

Main Specifications:

Coolant	antifreeze 65
Pressure	5 kgf/sm^2
Consumption	20 L/min
Coolant temperature	from -50 to +90 °C



"KPM-HF" RADIO MONITORING AND DIRECTION FINDING OF RADIOFREQUENCY EMISSION SIGNALS SHORT-WAVE STATION



"KPM-HF» is computer appliance designed for automatic panoramic positioning and direction finding of radiofrequency emission signals.

Operating frequencies range:
1,5 ... 30 MHz

Swath in panoramic mode:
400-3000 kHz

Main Specifications:

Minimal duration of signal taken a fix	10 ms
Instrumental error (mean-squared error) of direction finding of signals by azimuth in the range of 0-360 (not more)	1 degree
Instrumental error (mean-squared error) of direction finding of signals angularly in the range of 0-360 (not more)	5 degree
Central frequency step of narrow-band analysis receivers	10 Hz
Quantity of narrow-band channels of signal analysis	6 units
bandwidth	6 bands from 4 kHz up to 22 kHz

DIGITAL SUPERHETERODYNE HF FREQUENCY RANGE RADIO RECEIVER



Digital superheterodyne receiver is designed to operate as a part of medium power radio station.

Energy consumption:
not more than 30 W

Weight:
7 kg

Main Specifications:

Working frequencies range	from 1,5 up to 30 MHz
adjacent channel selectivity	not less than 86 dB
Sensibility while unmodulated signal receiving in bandpass of 2kHz	not more than 0,3 mkV
Suppression of outband reception channels	not less than 90 dB

RADIO MONITORING SHORT-WAVE STATION



RADIO MONITORING STATION provides:
- Automatic panoramic positioning and direction finding of radiofrequency emission signals (RFE);
- Fulfilling the tasks of the executive direction finding of RFE;
- Automatic assessment of direction finding of RFE on the basis of "over recognition" algorithm in the space;
- Automatic (automated) calculation of the location of RI of one point with the ionospheric wave propagation (SSL);
- Fulfilling the tasks of automatic classification of modern radio systems' signals;
- Automatic (automated) measurement of technical parameters of radio systems' signals.

ACTIVE COMBINED SHORT-WAVE ANTENNA SYSTEM



Antenna system is designed to be used in radio monitoring complexes.

Length with base:
5500 mm

Weight:
25 kg

Main Specifications:

Operating frequency range	from 1,5 up to 30 MHz
Effective length	not less than 1 m
impedance corrector noise factor	not more than 5 dB
Spike impedance corrector Gain factor	from 12 dB at frequency 1MHz up to 6 at frequency of 30 MHz
Operating temperature range	-50 ... +50 °C
Time of installation by a team of 6	not more than 5 hours

MULTICHANNEL SHORT-WAVE DIGITAL RADIO RECEIVER



Multichannel Short-Wave Digital Radio Receiver is designed to operate within radio monitoring systems and complexes. The specific feature of Multichannel Short-Wave Digital Radio Receiver is program hopping of operation modes (narrow and wideband modes)

Main Specifications:

Digital bandpass filters	400,24,18,14,10,8,6,4,2,0.3 kHz
adjacent-channel selectivity	Not less than 86 dB
Receive sensitivity of CW signal at pass band of 2kHz	not more than 0,5 microV
frequency hopping resolution	10 (2) Hz
Relative error and adjustment frequency instability	not more than 210-8
Control and data transmission interface	USB-2 or Ethernet LAN100
Time of panoramic observation of full frequency range with resolution for two adjacent 1.5 kHz signals	not more than 1,5 sec

Working frequency range:
from 1,5 up to 30 MHz

Electric power supply:
220V/50Hz

Power consumption:
not more than 150 W

Weight:
16 kg

SHORT-WAVE ACTIVE ANTENNA ELEMENT



Short-wave active antenna element is used in radio communication systems. It is designed to receive vertical radio waves with polarization.

Power supply through HF cable:
15 V

Length with base:
1500 mm

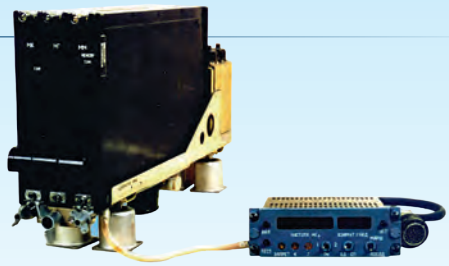
Weight:
12 kg

Main Specifications:

Working frequency range	from 1,5 up to 30 MHz
Effective length	not less than 1 m
impedance corrector noise factor	not more than 5 dB
Spike impedance corrector gain factor	from 12 dB at the frequency of 1MHz up to 6 at the frequency of 30 MHz
Operating temperature range	-50 ... +50 °C

"KURS-93M" ON-BOARD INTEGRATED NAVIGATION-LANDING EQUIPMENT

The system provides aircraft's flight navigation by radio beacons of VOR system, pre-landing maneuvers and approach landing by ILS and SP-50 radio-beacons, as well as marker radio-beacons fly-by signaling.



Overall dimensions of the RRB: 200x94, 5x368

CP overall dimensions: 155x48x145

Weight of the RRB with frame: 6,3 kg

RRB power consumption: 30 W

CP power consumption: 10 W

Main Specifications:

Ventilator feed from the airborne circuit	115 V, 400 Hz
Code of external influences of the RRB mounted on the frame	BVI/V, zone B, ground-U1-UL-DRIII-TII*-VLI-TMI-RO-PPI-PSKh-PG-VDKh-AShII
Code of external influences of the CP	BIV, zone A1, ground – U1-UL-DRIII-TII*-VLI-TMI-ROX-PPI-RS-PG-VDKh-AShII
Operating temperature range:	- 55... + 60 °C

UAV'S FORCED LANDING AND FLIGHT TRAJECTORY RECORDING SYSTEM "BAS-GPS"



The 'BAS-GPS' system generates the "FLIGHT TERMINATION" command for UAV's forced landing in automatic mode or in case of ground control post command.

Main Specifications:

UAV's coordinates determination accuracy (at the time of measurement)	not less than 50 m
Time for UAV's coordinates determination for the case when at least 4 satellites are available (starting from the power-up time)	not less than 50 sec
Forced landing signal accuracy in automatic mode (relative to boundaries of authorized area)	not less than 300 m
Radio communication channel coverage range, (for a UAV's altitude 1000 meters not less than)	120 km
On-board equipment operability is provided for:	
▮ drone altitude	up to 4000 m
▮ drone speed	up to 1000 km/h
▮ drone acceleration	up to 10 g

AKAP4-02 SELF-BALANCING COMPENSATOR FOR P-18 RADAR PROTECTION AGAINST ACTIVE NOISE BARRAGE JAMMING OF HIGH INTENSITY

The compensator can be integrated into VHF radars such as P-14, 5N84, 5N84A and others.

Main Specifications:

	Value		
	without jamming	with jamming	
		ISBC is off	ISBC is on
Distant target locating area edge due to jamming with integrated spectral density 200 W/MHz (with equivalent distance 200 km):			
at altitude of 3000 m	110 km	does not detect	70 km
at altitude of 10000 m	175 km	does not detect	110 km
at altitude of 20000 m	230 km	does not detect	140 km
Suppression factor (when jamming/noise ratio is 25-40 dB)		0	22-33 dB
Quantity of suppressed jamming			Up to 4 units

MEGANOM SHIPBORNE OVER-THE-HORIZON PASSIVE RADAR SYSTEM



Over-the-horizon location of ground-based and shipboard radars by their pulse radiation; provides spatial and frequency search of pulse radar's signals in four frequency bands: X, C, S, L; determination of angular direction to radiating objects.

Main Specifications:

Frequency range	
▮ X	8500-9500 MHz band
▮ C	5100-6000 MHz band
▮ S	2600-3600 MHz band
▮ L	960-1440 MHz band
Signal parameters measurement is performed under the following signal deviations:	
▮ in carrier frequency	within the operating frequency range
▮ in pulse duration	0.3-100μs
▮ in pulse repetition frequency	.1-10 kHz

NAVAL SURVEILLANCE MULTI-BEAM ACTIVE PHASED ARRAY RADAR MAARS



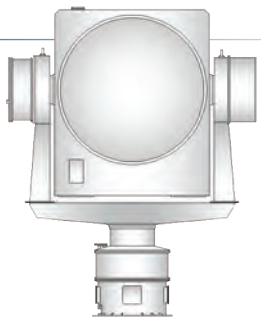
MAARS is multimode C-band acquisition radar for surveillance and weapon assignment. It perform automatic detection, track initiation and tracking of surface air and low-flying targets.

Frequency band:
5.2…5.8 GHz

Main Specifications:

Number of measured coordinates	4
Coverage zone without interference:	
▮ in range	200 km
▮ in bearing	360°
▮ in elevation	0-70°
▮ in height	0-20 km
▮ in target radial velocity up to	1000 m/s

STILET-2 FIRE CONTROL SYSTEM WITH ACTIVE ARRAY RADAR



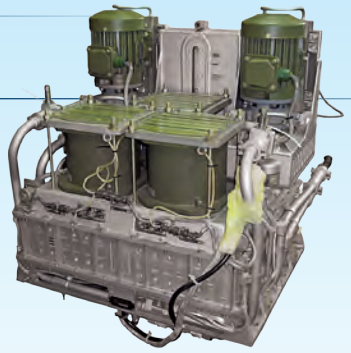
Main tasks:
- autonomous search and automatic detection of air, low-flying, surface and coastal targets;
- automatic acquisition of air, low-flying, surface and coastal targets according to the primary target designation.

Main Specifications:

Frequency band	8.6…9.5 GHz
Working zone for autonomous search:	
▮ in bearing	0° to 360°
▮ in elevation in the deck frame	0° to +50°
▮ in range	0,25 - 50 km

"MIRAGE" LIQUID-COOLING SYSTEM

Designed for cooling of devices and systems of «Buk» Air Defense Missile System's means.

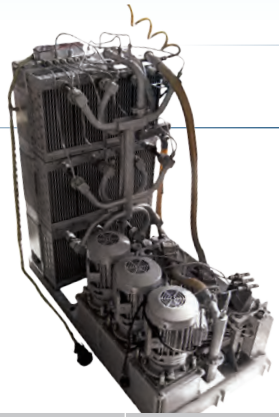


Ambient temperature:
from -50 to +50 °C

Main Specifications:

Coolant	66 % ethylene glycol aqueous solution
Pressure	9,5...10 kgf/m²
Consumption	not less than 65 L/min
Coolant temperature	not more than 65 °C

LIQUID-COOLING SYSTEM "ZARYA"



Designed for cooling of devices and systems of "S-300" Air Defense Missile System's means.

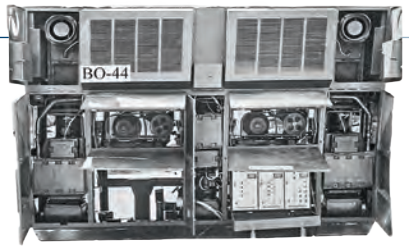
Ambient temperature:
from -50 to +50 °C

Main Specifications:

Coolant	66% ethylene glycol aqueous solution
Pressure	7,5 and 9,0 kgf/m²
Consumption	not less than 150 L/min
Coolant temperature	not more than 67 °C

"VO-44" AIR COOLER

Designed to maintain air temperature of "S-300" Air Defense Missile System's devices.



Ambient temperature:
from -50 to +50 °C

Main Specifications:

Coolant	Air
Pressure	392 Pa / 40 kgf/m²
Consumption	800 m³/h
Coolant temperature	
▮ operator's compartment	from 35 to 20 °C
▮ instrument bay	from 5 to 50 °C

COOLANT FILLING DEVICE FOR “CACTUS”

LIQUID-COOLING SYSTEM

Designed for technological coolant purification from mechanical impurities, metal ions and filling in the Liquid-Cooling System.

Ambient temperature:
from -50 to +50 °C



Main Specifications:

Coolant	66% ethylene glycol aqueous solution
Pressure	1,0±0,5 kgf/sm^2
Consumption	4,0±18,0 L/m



CH-3003M

INDIVIDUAL USE NAVIGATION RECEIVER FOR GPS NAVSTAR AND GLONASS NAVIGATION SYSTEMS

It is designed for automatic non-stop position determination, speed and movement direction. It provides for indication the current coordinates in 1942, 1995 coordinate systems, on worldwide ellipsoid of 1990, WGS-84, MGRS and UTM, line coordinates in Gauss chart projection, as well as in system which parameters are specified by the user.

Dimensions:
170x75x44

Power supply accumulator, CD:
10-30 V

Power consumption:
2,5 W

Weight:
0.8 kg

Main Specifications:

24 receiving channels	GPS/GLONASS/SBAS, L1-range
Algorithm of receiving channel selection	All-in-view
Positional/altitude accuracy in off-line mode (RMS)	10/15 m
Operating temperatures	from -20 up to +50 °C
Operating increased humidity	100 % at 25 °C
Interface	two input-output ports RS232
Built-in and remote antenna	

AXIAL-FLOW FANS

Fans are designed for use in temperature range monitoring systems of radio electronic equipment.

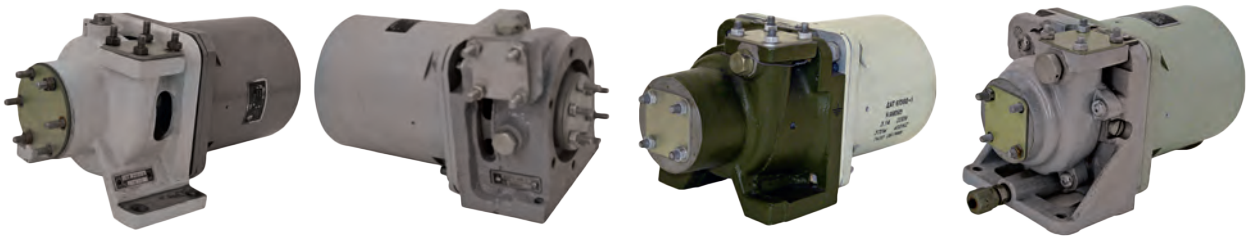


Main Specifications:

	25VO-5-2	250VO-18-2C	220VO-12-2A	35VO-1 ,5-1	40VO-6,5-2A	12VO-2-2AM	18VO-1-1
Full pressure	45 kgf/m^2	180 kgf/m^2	120 kgf/m^2	13 kgf/m^2	60 kgf/m^2	18 kgf/m^2	9 kgf/m^2
Efficiency	250 m^3/hour	2500 m^3/hour	2000 m^3/hour	350 m^3/hour	400 m^3/hour	120 m^3/hour	180 m^3/hour
Ambient temperature	from -50 to +50 ^{o}C						

PUMPS

Pumps are designed for coolant priming in temperature range monitoring systems of radio electronic equipment.

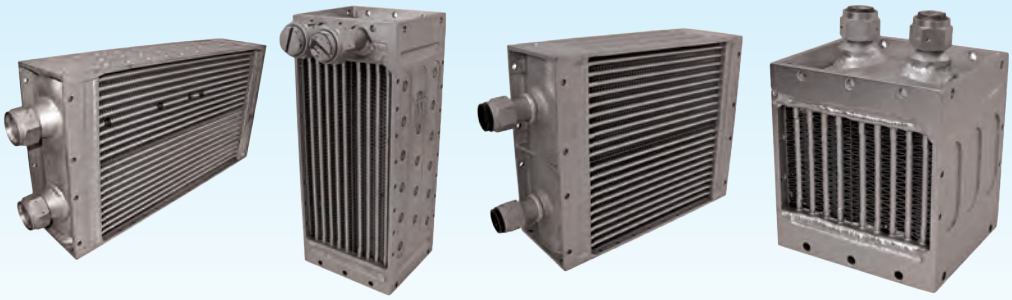


Main Specifications:

	ETSN70-20H-2	ETSN70-20A-2	ETSNG25-20AP	ETSN2-15M1-2
Full pressure	6,3 kgf/m^2	6,3 kgf/m^2	2,5 kgf/m^2	2,0 kgf/m^2
Efficiency	20 L/min	20 L/min	20 L/min	15 L/min
Ambient temperature	from -50 to +50 ^{o}C			

HEAT EXCHANGERS

Exchangers are designed to transfer heat from one coolant to another through the wall that divides them in temperature range monitoring systems of radio electronic equipment.



Main Specifications:

	VZH7, 9	VZH2, 4	VZH4,8	VZH1, 1
Heat exchange surface area	7,9 m^2	2,4 m^2	4,8 m^2	1,1 m^2
Operating pressure				
Liquid	98 $Pa*10^4$	98 $Pa*10^4$	98 $Pa*10^4$	98 $Pa*10^4$
Air	20 $Pa*10^4$	20 $Pa*10^4$	20 $Pa*10^4$	20 $Pa*10^4$
Ambient temperature	from -50 to +50 °C			

ION-EXCHANGE FILTERS



Filters are designed for coolant purification from contamination with metal ions in temperature range monitoring systems of radio electronic equipment.

Main Specifications:

	07 ION	03 ION
Filter volume	7,9 L	0,3 L
Operating pressure	98 kgf/sm^2	from 2 to10 kgf/sm^2
Ambient temperature	from -60 to +70 °C	

TYPE 60-II-40

HYDRAULIC FILTER

Filter is designed for coolant purification from mechanical impurities in temperature range monitoring systems of radio electronic equipment.



Main Specifications:

Ambient temperature	from -60 to +80 °C
Degree of filtration	40 micron
Rated consumption	60 L/min

HYDRAULIC VALVE CONNECTORS



Device is designed for connecting and disconnecting of pipelines in temperature range monitoring systems of radio electronic equipment.

Main Specifications:

	242	229	239
Nominal bore diameter	19,0 mm	19,0 mm	9,5 mm
Rated consumption	100 L/min	100 L/min	10 L/min
Operating pressure	20 kgf/sm^2	20 kgf/sm^2	20 kgf/sm^2
Ambient temperature	from -60 to +85 °C		

PRESSURE INDICATOR 101, 111

Indicator is designed for coolant pressure monitoring in temperature range monitoring systems of radio electronic equipment.



Main Specifications:

Ambient temperature	from -60 to +85 °C
Actuating pressure	from 0,04 to 0,15 kgf/sm^2
Actuating basic error	±5%
Maximum operating pressure	0,4

SURFACE TEMPERATURE SENSOR 150



Sensor is designed to monitor the surface temperature in temperature range monitoring systems of radio electronic equipment.

Main Specifications:

Ambient temperature	from -65 to +85 °C
Adjustment range	from 0 to + 40 °C
Basic actuating error	±1,5 °C
Temperature differential	0,5 °C
Dead band	not more than 2 °C

TEMPERATURE ALARM 071-1

Designed for control and two-position adjustment of coolant temperature in temperature range monitoring systems of radio electronic equipment.



Main Specifications:

Ambient temperature	from -60 to +80 °C
Subband of temperature adjustment	from -60 to -45 °C
Temperature differential	0,5 °C
Basic error (at temperature change rate of liquid not more than 0,5°C/ min. and of air not more than 0,2°C/min. at normal conditions)	not more than ±1%

"CH-3841M" STAND-ALONE TIME-AND-FREQUENCY SYNCHRONIZATION DEVICE ON GLONASS/NAVSTAR GPS SATELLITE NAVIGATION SYSTEMS, DESIGNED FOR EQUIPPING CDMA COMMUNICATION MEANS.

It fulfills the following tasks:
- Generation of 1PPS pulse signal with discretion 1Hz, it constant output in 24 hours;
- provides known coordinates operation using one NSV (navigation space vehicle);
- provides the operation in WGS-84 coordinate system or user's coordinate system.



Dimensions: 105x48x132

DC power supply: 7-12 V

Power consumption: not more than 9 W

Weight: 0,45 kg

Main Specifications:

1PPS» signal is generated on RS422 port with an accuracy	no more than 100 nsec
Signal waveform:	
▮ pulse time	from 25 up to 1,6 nsec
▮ pulse amplitude	not more than 5 V
leading edge is synchronized with UTC time scale	
leading edge of a pulse meets the second bound	

SURFACE TEMPERATURE RELAY "PR4"



Relay is designed to control the surface temperature in temperature range monitoring systems of radio-electronic equipment.

Ambient temperature: from -65 to +95 °C

Main Specifications:

Adjustment range	from -20 to +120 °C
Discreteness	1 Degree
Contacts that open when the temperature rises to the pickup value.	

"OR4" VOLUME TEMPERATURE (PARTS OR AIR) RELAY

Relay is designed for volume temperature control (parts or air) in temperature range monitoring systems of radio electronic equipment.

Ambient temperature: from -65 to +95 °C



Main Specifications:

Adjustment range	from -20 to +120 °C
Discreteness	1 Degree
Contacts that open when the temperature rises to the pickup value.	

S1.153.UP1 MICROASSEMBLAGE



is designed for use in special purposes products as an intermediate frequency amplifier.
Microassemblage is made in climatic design UHL OST 4GO.073.212-85.
Microassemblage is manufactured on thin-film technology. The board is installed in a standard enclosure on 153.15-2 adhesive film MPF-1.
The body sealing is performed with laser welding.

Supply voltage:
5,7...6,3 V

Weight:
≤ 5,7 g

Main Specifications:

Current consumption from the sources + 6.0 v	20 mA
Current consumption from the source - 6.0 v	4 mA
The upper cut-off frequency bandwidth	160 MHz
The lower cut-off frequency bandwidth	3 MHz
The dissipation power	150 mW
Voltage gain	24 dB
Noise index	4 dB
Load Impedance	50...80 ohm

MICROASSEMBLAGE S1.153.UP2



Microassemblage S1.153.UP2 is designed for use in special purposes products as a voltage amplifier and intermediate frequency signals amplitude limiter.
Microassemblage is made in climatic design UHL OST 4GO.073.212-85.
Microassemblage is manufactured on thin-film technology. The board is installed in a standard enclosure on 153.15-2 adhesive film MTF-1. The body sealing is performed with laser welding.

Main Specifications:

Current consumption from the sources + 6.0 v	18 mA
Current consumption from the source - 6.0 v	5 mA
Gain voltage at frequency 40 MHz	20 dB
The upper frequency bandwidth limit	100 MHz
Lower cutoff frequency bandwidth	8 MHz
The output voltage limit Level at frequency 15 MHz	300...500 mV

Dissipation Power:
150 mW

Weight:
≤7,0 g

S1.155.KN1 MICROASSEMBLAGE



It is used in radio receivers of different purposes.
Microassemblage S1.155.KN1 is designed for use in 67N6, 96H6, 35N6, 96H6-01, 39NB, 71KB, 64LB, 97UB, 96L6, 23B6, E-821, 1L29, 64N6, 9S112, 9S112-1, 9S15M2, 91N6 units. The functional purpose of Microassemblage: intermediate frequency signals commutation.
Microassemblage is water/airproof.

The dissipation power:
600 mW

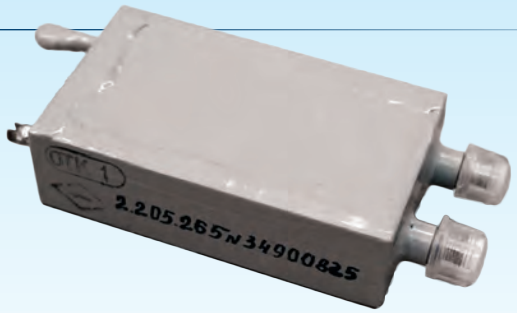
Weight:
≤ 7,5 g

Main Specifications:

Voltage attenuation at frequency 40 MHz	≥ 50 dB
Voltage gain at frequency 40 MHz	≥ 0,55
Current consumption from sources +12V	≤ 27 mA
Current consumption from sources +6V	≤ 18 mA
Current consumption from sources -6V	≤ 4 mA

EU2.205.265 HETERODYNE

Heterodyne EU2.205.265 is designed for generation of two fixed frequencies drifts, being stabilized by resonators and has two different outputs. Microassemblage is made on thin-film technology.



Overall dimensions:
82x32x15,5

Power voltage:
+12,5 + 4,5 V

Weight:
≤ 70 g

Main Specifications:

Output voltage at the loading of 100 Ohm	> 0,13 V
Nominal output frequency of 1 channel	89000 kHz
Nominal output frequency of 2 channel	91000 kHz

GYROCOMPASS SET "1G25-1"



It is designed to determine a true azimuth of oriented direction during set operation on a stable basement relatively to the ground. Installed on the objects 1V12, 1V14, 1RL235, 1RL140, 1ZH3, 9S15, 9K81, 1B32, Surgut V etc.

Weight:
90 kg

Main Specifications:

Maximum permissible azimuth detrmination error	not more than 00-02.2 grid angle
Azimuth time determination	not more than 10 min

S1.155.UP1 MICROASSEMBLAGE



Microassemblage S1.155.UP1 is designed for use in special purposes products as intermediate frequency voltage amplifier.
Microassemblage is manufactured on thin-film technology. The board is installed in a standard enclosure on 155.15-2 adhesive film MPF-1. The body sealing is performed with laser welding.

Weight:
≤ 8,0 g

Main Specifications:

Current consumption from the sources 12 v	60 mA
Current consumption from the sources - 6,0 v	11 mA
Voltage gain at 40 MHz	20 dB
The upper cut-off frequency bandwidth	110 MHz
The lower cut-off frequency bandwidth	2 MHz
The gain instability	2 dB
Voltage power supply	
	10,8...13,2
	- 6,6...- 5,4
Load impedance	50...80 ohm

INTEGRATED ANECHOIC CHAMBER-BASED STAND

Integrated anechoic chamber-based stand is intended for testing new radio MMW antenna, transceiver and radar prototypes of millimeter-wave range.
Application: testing of millimeter-wave article prototypes



MANUFACTURING OF PRODUCTS FROM LINEN CLOTH, CANVAS, BELTS, REAL LEATHER AND ARTIFICIAL LEATHER FOR MISSILE AND ARTILLERY ARMAMENTS PIECES



Products are designed for equipping missile and artillery weapons pieces, including individual set of spare parts, tools and accessories.
Covers, awnings, tents, bags, belts and other products made from special fabrics and leather for missile and artillery weapons pieces in accordance with appropriate technical documentation.

PRODUCTION OF NON-STANDARD TECHNOLOGICAL EQUIPMENT, CHECK-OUT EQUIPMENT AND TEST BENCHES FOR THE MISSILE AND ARTILLERY ARMAMENTS REPAIRING

Designed to equip the maintenance points, stationary military repair facilities and repair plants for the purpose of maintenance and repair of missile and artillery armaments pieces.
List and technical characteristics of non-standard technological equipment, check-out equipment and test benches is provided in repair documentation and technical conditions for the pieces of missile and artillery armaments.

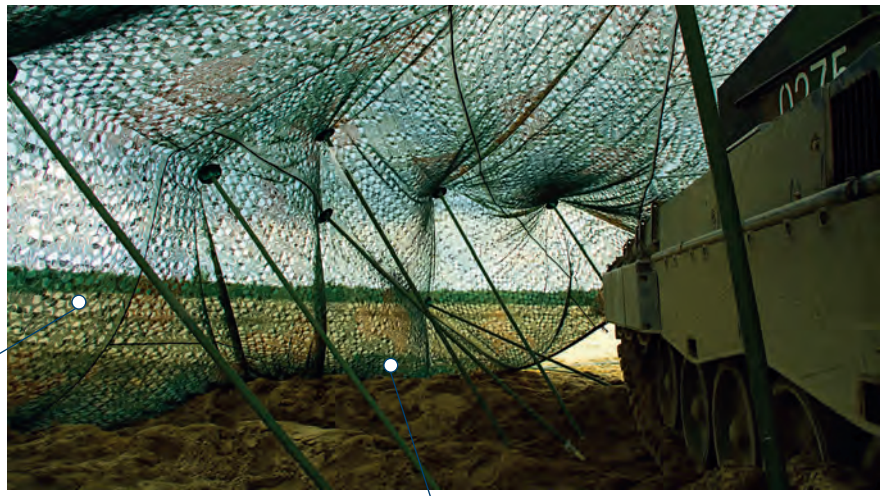




MULTISPECTRAL CAMOUFLAGE



- Multispectral Protection VIS, NIR, TIR, RADAR and UV (winter version)
- 2D version - double sided print available which allows for two terrain types on the same net e.g. Woodland + desert
- VIS specialised camouflage pattern design dedicated to seamless integration with the natural environment providing effective protection from visual sensors and observation by the unaided and aided eye



- NIR reflection properties effectively replicate the natural environment giving increased protection from noctovision devices
- TIR reduction of thermal signature of up to 85%
- RADAR two way attenuation of up to 30db (according to tests performed by WITU - Military Institute of Armament Technology Warsaw Poland)

- UV reflection properties intended to simulate sow bound terrain offering advanced protection from UV imaging devices (winter version)
- low water absorption under 20% (ASTM D 570 M-1)
- high tensile strength and resistance to tearing
- light weight designs available

FALCON TENT



The FALCON is a universal tent. Designed to serve as a command post, hospital, barracks, camp, or warehouse. Furthermore it is ideal for tasks that require isolation from the influences of atmospheric conditions. The tent can be used in any terrain and climate, including high humidity and high temperature environments (-30 ° Cto +50 ° C).
Dimensions 6 x 6,65 x 3m



canopy suspended from frame using rubber mounts (to minimize the impact of adverse weather conditions (wind, snow, rain, etc.)
inner lining to provide thermal comfort
the three-layer design of windows, provides maximum comfort, regardless of prevailing weather conditions

the technical openings, allowing for cabling, ventilation, heating and A/C systems
available in versions with a fixed or detachable floor
available in steel or aluminum frame
mechanical seam sealing, ensuring water resistance of the structure

MCH MID HELMET

Ultra-Lightweight helmet for maximum protection of the head on the modern battlefield.
SKYDEX cartridges provide increased protection against dynamic deflection of the helmet, improve comfort, are resistant to low and high temperatures. The inserts can be washed in regular detergents , the inserts do not cause allergic reactions. The helmet is resistant to water. MCH-MID Lubawa is available in different colors.







Available in sizes:		
S, M		a total weight of 1.33 kg
L		weighing 1.35 kg
XL		weighing 1.50 kg

- protection class NIJ IIIA
- Fragmentation Resistance V50> 650 with debris weighing 1.1 grams according to STANAG2920
- Includes Skydex padding inserts – 7 pcs
- Helmet is guaranteed for 10 years of ballistic properties for the remaining properties
- two years warranty.
- Compatible with communication and hearing protection



RECCON QR





Size:
L

Weighs:
only 6,2 kg

- bulletproof vest RECCON QR is intended inter alia for special forces operators
- dual quick release mechanism. by using the Emergency Quick Release mechanism (1.5 seconds) or by releasing shoulder buckle and side zipper (4 seconds)
- MOLLE/PALS system for attaching pouches and accessories

- four vests in one: a simple carrier for two ballistic plates, a carrier for four ballistic plates (front, back, both sides), a light and integrated bulletproof vest with a soft
- ballistic package and a complete integrated bulletproof vest with a basic and an additional ballistic package
- functionality thanks to, among others, height adjustment for ballistic inserts, shifting a part of the load to the hip region or an elastic strap adjustment system





- a wide range of accessories and additional elements (underbelly protection, collar, shoulder protection)
- low weight, e.g. a protection class IIIA in accordance with NIJ 0101.04 vest with a set of additional elements

UKROBORONPROM
Ukrainian Defence Industry





ROCKET ARTILLERY WEAPONS AND MUNITIONS

WE DO:

- high-precision guided weapons
- various caliber artillery systems
- propelling charges, explosives, powder and blast initiation means
- design and development of ammunitions
- recycling of ammunitions

SKIF

MAN PORTABLE ANTI-TANK MISSILE SYSTEM

Skif man-portable antitank missile system is designed to destroy stationary and moving modern armored targets with combined, carried or monolithic armor, including ERA (explosive reactive armor), and also pinpoint targets like permanent fire positions, a tank in a trench, light-armored objects and helicopters.

RK-2S, RK-2OF		RK-2M-K, RK-2M-OF
Firing range at day time: 100-5000 m		Firing range at day time: 100-5500 m
Firing range at night time: 100-3000 m		Firing range at night time: 100-3000 m
Flight time at maximum range: not more than 25 s		Flight time at maximum range: not more than 25 s
Weight of missile in container: 29,5 kg		Weight of missile in container: 38 kg
Missile calibre: 130 mm		Missile calibre: 152 mm
Container length: 1360 mm		Container length: 1435 mm
Container outer diameter: 140 mm		Container outer diameter: 162 mm
Operating temperature range: from -40 to +60 °C		Operating temperature range: from -40 to +60 °C



The system is equipped with 130 mm and 152 mm missiles in transport and launching containers with tandem hollow-charge (RK-2S, RK-2M-K) and high-explosive fragmentation (RK-2OF, RK-2M-OF) warheads.

Skif can guide the missile at the target from closed emplacements and shelters to reduce the risk of the operator destruction by return fire attack of the enemy.

Main Specifications:

	RK-2S, RK-2OF	RK-2M-K, RK-2M-OF
Guidance system	by laser beam with target tracking in automatic mode	
Warhead:		
▮ tandem hollow-charge, armour penetration behind ERA	not less than 800 mm	not less than 1100 mm
▮ high-explosive fragmentation with EFP, armour penetration	not less than 60 mm	not less than 120 mm
Weight:		
▮ launcher	32 kg	
▮ guidance device	15 kg	
▮ remote control	10 kg	
▮ thermal imager	6 kg	

BARRIER

VEHICLE CARRIED ANTITANK MISSILE SYSTEM

"Barrier" is a vehicle-carried antitank missile system, mounted on a turret of a fighting vehicle (like ICV or APC), designed to destroy stationary and moving modern armoured targets with combined, carried or monolithic armour, including ERA (explosive reactive armour), as well as pinpoint targets such as permanent fire positions, a tank in a trench, light armoured objects and helicopters.



Maximum firing range: 5000 m

Flight time at maximum range: 23 s

Weight of missile in container: 29,5 kg

Missile calibre: 130 mm

Container length: 1360 mm

Container outer diameter: 140 mm

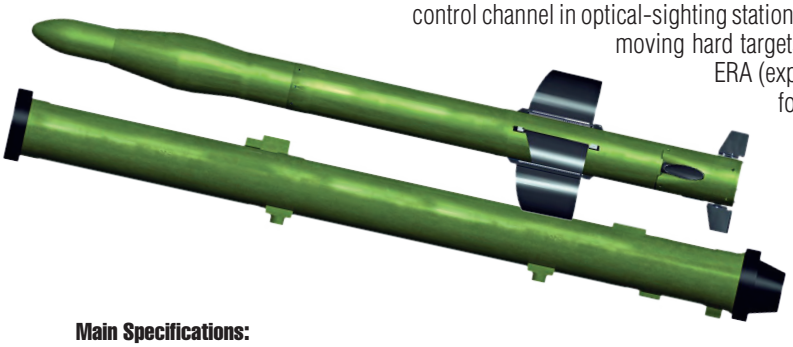
Main Specifications:

Guidance system	Semi-automatic by laser beam
Warhead:	
▮ type	tandem hollow-charge
▮ armour penetration behind ERA	not less than 800 mm
▮ high-explosive fragmentation with EFP, armour penetration	not less than 60 mm
Operating temperature range	from - 40 to +60 °C

BARRIER-V

HELICOPTER ANTITANK MISSILE SYSTEM

"BARRIER-V" is a helicopter antitank missile system, used for modernization of MI-24 helicopters, which consists of an antitank guided missile (in a transport and launching container) and laser control channel in optical-sighting station. "BARRIER-V" is designed for destruction of stationary and moving hard targets with combined, carried or monolithic armour, including ERA (explosive reactive armour) as well as pinpoint targets such as fortified emplacements, a tank in a trench, light-armoured objects and helicopters.



Maximum firing range: 7500 m

Weight of missile in container: 47 kg

Missile calibre: 130 mm

Container length: 1917 mm

Container outer diameter: 140 mm

Main Specifications:

Guidance system	by laser beam with target tracking in automatic mode
Warhead:	
▮ type	tandem hollow-charge
▮ armour penetration behind ERA	not less than 800 mm
Operating temperature range	from -40 to +60 °C

CORSAR

LIGHT PORTABLE ANTITANK MISSILE SYSTEM

Corsar light portable antitank missile system is designed for destruction of stationary and moving armoured targets and other objects with combined, carried or monolithic armour, including ERA (explosive reactive armour), as well as pinpoint targets such as permanent fire positions, a tank in a trench, light-armoured objects and helicopters.



Maximum firing range: 2500 m

Flight time at maximum range: 13 s

Weight of missile in container: 26 kg

Missile calibre: 107 mm

Container length: 1120 mm

Container outer diameter: 113 mm

Main Specifications:

Guidance system	Semi-automatic by laser beam
Warhead:	
▮ type	tandem hollow-charge
▮ armour penetration behind ERA	not less than 550 mm
▮ high-explosive fragmentation with EFP, armour penetration	not less than 50 mm
Operating temperature range	from -40 to +60 °C

GUIDED MORTAR ARMAMENT SYSTEM



Guided mortar armament system is designed to destroy modern armoured and unarmoured, moving and stationary equipment as well as pinpoint engineering constructions.

The system includes:

- 120-mm high-precision guided mine;
- laser target designator range-finder;
- shot synchronization system;
- installable device that provides initial data input into the guided mine control system;
- radio stations that ensure digital and voice communication.

Maximum firing range: 7500 m

Weight of missile in container: 28,7 kg

Guided mine calibre: 120 mm

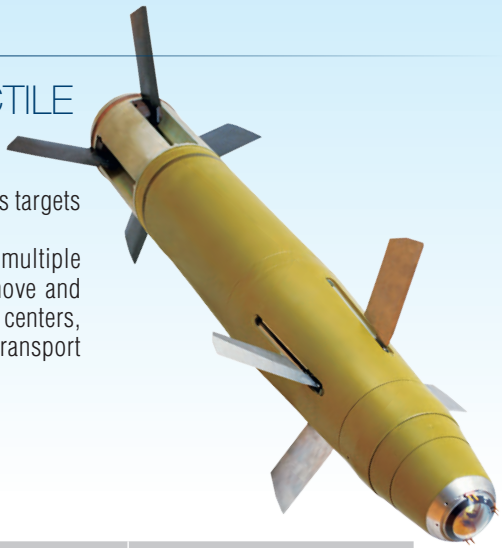
Container length: 1490 mm

Main Specifications:

Guidance system (on the end of trajectory)	laser semiautomatic homing
Warhead:	
▮ type	high-explosive fragmentation
Target hit probability	0,75-0,80
Operating temperature range	from -40 to +60 °C

KVITNYK

HIGH PRECISION GUIDED ARTILLERY PROJECTILE WITH LASER SEMI-ACTIVE HOMING



The projectile of «Kvitnyk» type is designed for high-precision defeat of the various targets at fire from artillery system as a part of a complex of guided artillery arms.
«Kvitnyk» is designed for effective defeating of: tanks, IFVs, armored vehicles, multiple rocket launchers, self-propelled artillery systems, artillery pieces, both on the move and stationary, located in the open or in pits, command, control, communications centers, bridges, crossings, defensive fortifications, surface targets (combatant, landing or transport ships) etc. with a high probability by one shot.

Maximum firing range:
not more than 20 km

Missile calibre:
152 (155) mm

Length:
1250 mm

Main Specifications:

Combat part type	high-explosive fragmenting
Weight of explosives	not more than 8 kg
Weight of projectile	not more than 52 kg
Operating temperature range	from -40 to +50 °C

STUGNA

ROUND COMPRISING ANTITANK GUIDED MISSILE



STUGNA gun-launched missile is designed for firing from the T-55 tank or MT-12 anti-tank artillery gun against stationary and moving modern armored objects with combined, carried or monolithic armor, including ERA (explosive reactive armor), as well as against pinpoint targets like permanent fire positions, a tank in a trench, light-armored objects and helicopters.

Maximum firing range:
5000 m

Flight time at maximum range:
16,8 s

Missile calibre:
100 mm

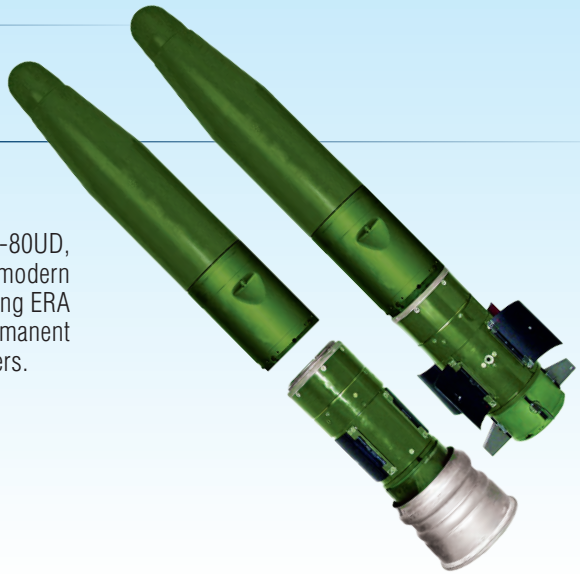
Round length:
1196 mm

Main Specifications:

Guidance system	Semi-automatic by laser beam
Warhead:	
▮ type	tandem hollow-charge
▮ armour penetration behind ERA	not less than 550 mm
Round weight	not more than 24,5 kg
Operating temperature range	from -40 to +60 °C

KOMBAT

ANTITANK GUIDED MISSILES



KOMBAT gun-launched missile is designed for firing from tanks T-80UD, T-84, T-72, modernized T-64 against stationary and moving modern armored targets with combined, carried or monolithic armor, including ERA (explosive reactive armor), and also against pinpoint targets like permanent fire positions,a tank in a trench, light-armored objects and helicopters.

Maximum firing range: 5000 m

Flight time at maximum range: 16,3 s

Round weight: not more than 30,45 kg

Missile calibre: 125 mm

Main part length: 675 mm

Tail part length: 408 mm

Main Specifications:

Guidance system	semiautomatic by laser beam
Warhead:	
▮ type	tandem hollow-charge
▮ armour penetration behind ERA	not less than 750 mm
Operating temperature range	from -40 to +60 °C

KONUS

ROUND COMPRISING ANTITANK GUIDED MISSILE



Round comprising antitank guided missile is designed to destroy, when firing from tanks T-84-120, T-72-120, stationary and moving modern armoured targets with combined, carried or monolithic armour, including ERA (explosive reactive armour), and also against pinpoint targets like permanent fire positions, a tank in a trench, light-armoured objects and helicopters.

Maximum firing range: 5000 m

Flight time at maximum range: 16,3 s

Round weight: 28 kg

Missile calibre: 120 mm

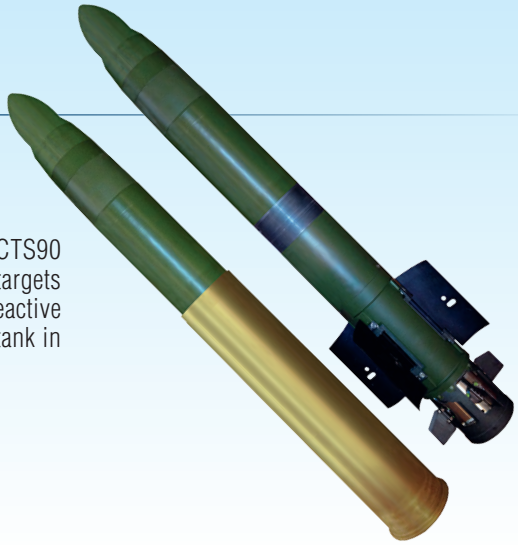
Round length: 1074 mm

Main Specifications:

Guidance system	semiautomatic by laser beam
Warhead:	
▮ type	tandem hollow-charge
▮ armour penetration behind ERA	not less than 700 mm
Operating temperature range	from -40 to +60 °C

FALARICK 90

ROUND COMPRISING ANTITANK GUIDED MISSILE



Round comprising antitank guided missile is designed for firing from the LCTS90 weapon system gun against stationary and moving modern armoured targets with combined, carried or monolithic armour, including ERA (explosive reactive armour), and also against pinpoint targets like permanent fire positions, a tank in a trench, light-armoured objects and helicopters.

Maximum firing range: 4000 m

Flight time at maximum range: 14 s

Round weight: 20,05 kg

Missile calibre: 90 mm

Round length: 977 mm

Main Specifications:

Guidance system	semiautomatic by laser beam
Warhead:	
▮ type	tandem hollow-charge
▮ armour penetration behind ERA	not less than 550 mm
Operating temperature range	from -40 to +60 °C

FALARICK 105

ROUND COMPRISING ANTITANK GUIDED MISSILE



Round comprising antitank guided missile is designed for firing from the CT-CVTM weapon system gun against stationary and moving modern armoured targets with combined, carried or monolithic armour, including ERA (explosive reactive armour), and also against pinpoint targets like permanent fire positions, a tank in a trench, light-armoured objects and helicopters.

Maximum firing range: 5000 m

Flight time at maximum range: 17 s

Round weight: 24 kg

Missile calibre: 105 mm

Round length: 1015 mm

Main Specifications:

Guidance system	semiautomatic by laser beam
Warhead:	
▮ type	tandem hollow-charge
▮ armour penetration behind ERA	not less than 550 mm
Operating temperature range	from -40 to +60 °C

ROUND COMPRISING ANTITANK **GUIDED MISSILE FOR BMP-3**



Round comprising antitank guided missile is designed for firing from the armoured vehicle BMP-3 against stationary and moving modern armoured targets with combined, carried or monolithic armour, including ERA (explosive reactive armour), and also against pinpoint targets like permanent fire positions, a tank in a trench, light-armoured objects and helicopters.

Maximum firing range: 5500 m

Flight time at maximum range: not more than 20 s

Round weight: 21,6 kg

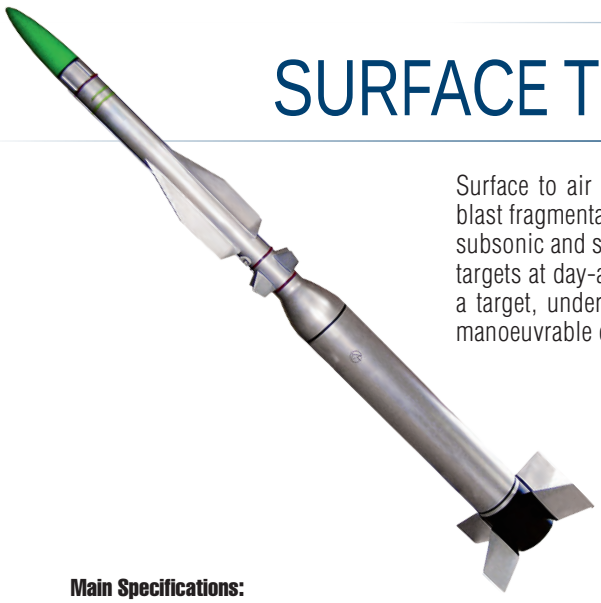
Missile calibre: 100 mm

Round length: 1180 mm

Main Specifications:

Guidance system	semiautomatic by laser beam
Warhead:	
▮ type	tandem hollow-charge
▮ armour penetration behind ERA	not less than 550 mm
Operating temperature range	from -40 to +60 °C

SURFACE TO AIR GUIDED MISSILE



Surface to air guided missile (SAGM) is designed to destroy with high-explosive blast fragmentation manned and unmanned means of air attack that are flying at both subsonic and supersonic speeds on the head-on and pursuit courses. SAGM defeats targets at day-and-night time, under any aspect angle at front and aft hemisphere of a target, under ordinary and adverse weather conditions, under informational and manoeuvrable enemy's counteractions.

Weight SAGM with transport and launching container: 180 kg

Weight warhead: 18 kg

SAGM calibre: 130/260 mm

Length SAGM: 3160 mm

Length transport and launching container: 3235 mm

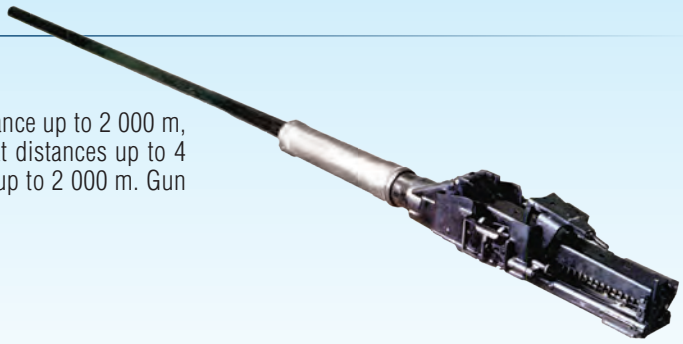
Main Specifications:

Impact area:	
▮ by range, km	1,5 – 20,0 km
▮ by altitude	0,025 – 10,000 km
Guidance system	radio command
SAGM maximum speed	850 m\s
SAGM maximum normal overload	25 g
SAGM launching mass	140 kg

ZTM-1

AUTOMATIC MACHINE GUN

It is designed for fighting against light armored targets at distance up to 2 000 m, ATMS mounts, non-armored means and enemy's manpower at distances up to 4 000 m, as well as against air low-flying targets with altitudes up to 2 000 m. Gun firing may be realized both single shoots and bursts.



Calibre: 30 mm

Number of rifles: 16

Rifle step: 715,5 (± 20) mm

Projectile muzzle velocity: 960 (+30/-10) m/sec

Gun weight: not more than 86 kg

Barrel weight: not more than 37 kg

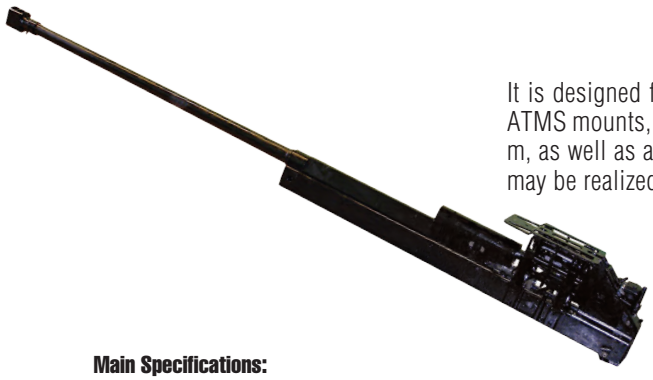
Gun length: not more than 3006 mm

Main Specifications:

Firing rate	not less than 330 rounds/min
Return intensification	not more than 60 (6000) kN (kgs)
Voltage supply of electro-startup from source of direct current	27 (+2, -5) W
Electro-startup input current	not more than 14,2 A
Gun feed	two belted
Reloading	manual or electromechanical
Warranty operating life	6000 shots

ZTM-2

AUTOMATIC MACHINE GUN



It is designed for fighting against light armored targets at distance up to 1 500 m, ATMS mounts, non-armored means and enemy's manpower at distances up to 4 000 m, as well as against air low-flying targets with altitudes up to 2 000 m. Gun firing may be realized both single shoots and bursts.

Calibre: 30 mm

Number of rifles: 16

Rifle step: 715,5 (± 20) mm

Projectile muzzle velocity: 960 (+30/-10) m/sec

Gun weight: not more than 115 kg

Barrel weight: not more than 38,5 kg

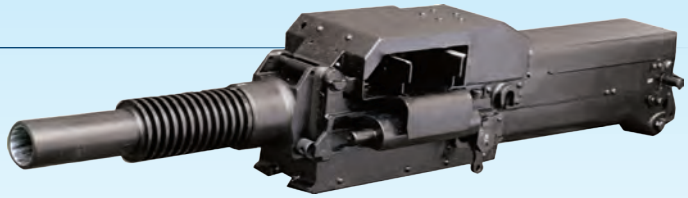
Gun length: not more than 3027 mm

Main Specifications:

Firing rate	not less than 330 rounds/min
▮ big	not less than 550 rounds/min
▮ small	200 – 330 rounds/min
Return intensification	40-50 (4000-5000) kN (kgs)
Voltage supply of electro-startup from source of direct current	27 (+2, -5) W
Electro-startup input current	not more than 14,2 A
Gun feed	two belted
Warranty operating life	6000 shots

KBA-117 AUTOMATIC GRENADE LAUNCHER

It is designed to defeat enemy's manpower and fire weapons located in the open terrain or entrenched. It is used in a combat module mounted on lightly armoured vehicles (ICVs, APCs, etc.).



Caliber:
30 mm

Grenade muzzle velocity:
185 m/s

Rate of fire:
not less than 400 shots/min

Length:
840 mm

Main Specifications:

Minimum high-angle fire range	1000 m
Maximum ordinate of a trajectory	905 m
Effective range	1700 m
Belt capacity	29 garnet
Weight without belt	18 kg
Weight of loaded belt	14.5 kg

30MM BARREL OF KBA-2 AUTOMATIC CANNON



Designed to be used as a part of KBA-2, 2A72, ZTM-1, to equip combat moduls "Shkval", "Shturm", "Parus", which are to be mounted on armored vehicles.

Caliber:
30 mm

Length:
2413 mm

Weight:
36 kg

Main Specifications:

Number of rifles	16
Pitch of rifling	715.5 mm
Barrel life	6000 shots

82 MM CALIBER MORTARS KBA48M (KBA48M1)

Designed to defeat manpower and enemy's facilities, especially those located outside the shelter: in trenches, gullies and at reverse hill slopes, to destroy fortifications. It is used in quick-reaction special units and infantry units of Land Forces.



Caliber:
82 mm

Weight KBA48M:
51 kg

Weight KBA48M1:
46 kg

Main Specifications:

Rate of fire	10-15 shots/min
Firing range	100-4000 m
Gradient	45-85 degree
Crew	3 pers.

K-12.7, KT-12.7 MACHINE GUN



It is designed for fighting against light armored targets at distance up to 800 m, enemy's manpower, firing means and low-flying targets at ranges up to 1 500 m.

Calibre: 12,7 mm

Fire rate: 700-800 rds/min

K-12, 7 Machine gun length: not more than 1560 mm

KT-12, 7 Machine gun length: not more than 1607 mm

K-12, 7 Machine gun weight: not more than 25 kg

KT-12, 7 Machine gun weight: not more than 26,8 kg

Main Specifications:

Combat firing rate	not more than 80-100 rds/min
Bullets used in cartridges	B-32, BZT-44 MDZ
Number of cartridges	250 cartridges
Bullet muzzle velocity	855 m/sec
Sighting range	2000 m
B-32 bullet maximum range	6000 m
Supply voltage from constant-current source	27 (+3, -5) W
Consumed voltage	not more than 5,7 A
Warranty operating life	10000 shoots

GR-1 GRENADE LAUNCHER



Designed to defeat unprotected enemy's manpower, located on open terrain, behind reverse hill slopes and other similar obstructions, by high-angle and low-angle fire. Highly effective against large-area unprotected targets and concentrated manpower. Mounted on modern combat vehicles and remote weapon stations (RWS), e.g. BMP-1M, BTR-3E1, BTR-4, 'KBA-105TB'1 RWS.

Caliber: 30 mm

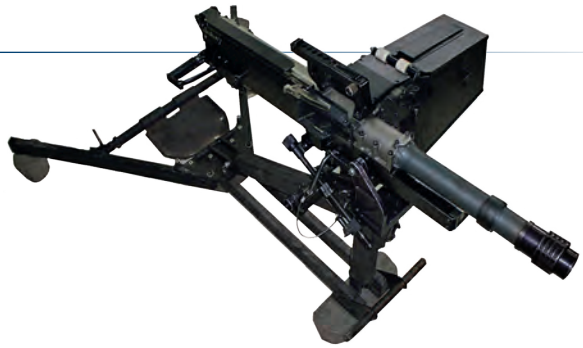
Maximal rate of fire: 400 rounds/min

Weight of the fully loaded cartridge belt: 14.5 kg

Main Specifications:

Effective range of fire	1,700 m
Weight without cartridge belt	18 kg
Cartridges	VOG-17, VOG -17A
Effective casualty radius	not less than 7 m

UAG – 40 AUTOMATIC GRENADE LAUNCHER



Automatic grenade launcher with 40 mm bore shoots for the distance of over 2200 meters. It is intended for firing in enemy's infantry, light-armored vehicles and protected shelters.

Calibre: 40 mm

Fire rate: 370-400 shot/min

Length: 960 mm

Height: 210 mm

Weight (without grenade): 17 kg

Main Specifications:

Grenade launching speed	242+-6 m/sec
The maximum shooting range	2200 m
The maximum rifle range	1500 m
Weight with tripod	33 kg

KT-7,62 "MAJAK"

KT-7,62 machine gun is made for 7,62 x 54R cartridges. This item is designed to be installed on armored combat vehicles and aircrafts.

Cartridges: 7,62×54 mm
Length: 1098 mm
Weight: 8 kg
Muzzle velocity: 855 m/s
Rate of fire: 800 rounds/min
Firing range: 2000 m



Main Specifications:

Feed system	belt with 100, 200 and 250 cartridges
Barrel length	722 mm
Rifling	4 grooves (right)

KM-7,62

MACHINE GUN "MAJAK"



KM-7,62 machine gun is made for 7,62 x 54R cartridges. The machine gun is designed for regular military and special forces units.

Cartridges: 7,62×54 mm
Length: 1173 mm
Weight: 9 kg
Muzzle velocity: 825 m/s
Rate of fire: 650 shots/min
Firing range: 1500 m

Main Specifications:

Feeding	belt with 100, 200, 250 rounds
Barrel length	645 mm
Rifling	4 grooves (right)

AKMS SB

UPGRADING OF AKM ASSAULT RIFLE (WITH SIDE-FOLDING BUTSTOCK)

AKMS Sb assault rifle 7,62 x 39 is designed for regular military and special forces units.

- Caliber: 7,62x39 mm
- Length: 870 mm
- Weight: 4,3 kg
- Muzzle velocity: 715 m/s
- Rate of fire: 600 shots/min
- Firing range: 1000 m



AKMS SN

UPGRADING OF AKM ASSAULT RIFLE (WITH DOWN-FOLDING BUTSTOCK)

AKMS Sn assault rifle 7,62 x 39 is designed for regular military and special forces units.

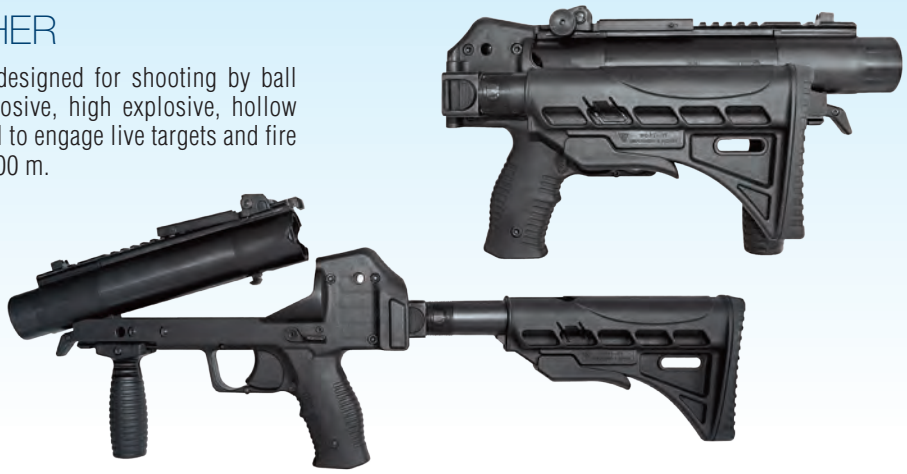


- Cartridges: 7,62×54 mm
- Length: 1173 mm
- Weight: 9 kg
- Muzzle velocity: 825 m/s
- Rate of fire: 650 shots/min
- Firing range: 1500 m

"FORT-600"

GRENADE LAUNCHER

Grenade launcher "Fort-600" is designed for shooting by ball grenades (low velocity high explosive, high explosive, hollow charge grenade or other) with goal to engage live targets and fire objects at a distance from 50 to 400 m.



- Caliber: 40 mm
- Barrel length: up to 280 mm
- Weight without grenade: up to 2,8 kg
- Maximum firing range: 400 m
- Minimum firing range: 50 m

Main Specifications:

Dimensions with butt-stock extended, mm (LxHxW)	670x196x54
Dimensions with butt-stock folded, mm (LxHxW)	365x196x89
Type of butt-stock	Telescoping side-folding with damper

"FORT-500MS"

PUMP ACTION SHOTGUN



"Fort-500MS" is the pump action smoothbore shotgun of 12/76 mm caliber with manual reloading. Shotgun is equipped with set of Picatinny rails for installing of tactical accessories and also to the barrel can be attached special devices for shooting gas grenades and lock breaking.

- Caliber: 12/76 mm
- Barrel length: up to 345 mm
- Weight with an empty magazine: up to 4,1 kg
- Length with folded butt-stock: 878 mm
- Length with extended butt-stock: 780 mm

Main Specifications:

Magazine capacity	4 rds
Type of butt-stock	Telescoping

"FORT-19"

PISTOL

"Fort-19" is modification of the pistol "Fort-14PP" of 9 mm Luger caliber. In design of this model widely were used highly durable polymers. As a result the weight of the pistol was decreased significantly without damage to the combat characteristics.



Caliber: 9 mm Luger

Overall length: 207 mm

Barrel length: up to 112 mm

Weight with an empty magazine: up to 0,82 kg

Accuracy range: 25 m

Main Specifications:

Operation mode	Short recoil system
Magazine capacity	16 rds
Practical rate of shooting/min	50
Rifling	6 grooves

"FORT-14PP"

TACTICAL COMPLEX

Tactical complex includes pistol "Fort-14PP", device for lowering sound level of shot and tactical light "LT 6A". Pistol "Fort-14PP" was designed for more powerful cartridge cal. 9 mm Luger. Pistol operation mode is short recoil system. "Fort-14PP" operates flawlessly in even the most adverse conditions.



Caliber: 9 mm Luger

Overall length: 218 mm

Barrel length: up to 116 mm

Weight with an empty magazine: up to 0,95 kg

Accuracy range: 25 m

Main Specifications:

Magazine capacity, rds	16 rds
Practical rate of shooting/min	50
Rifling	6 grooves

OP1, OP4, OP4M

DIRECT OPTICAL SIGHT



'OP4', 'OP4M' are designed for aiming the barrel of a field artillery cannon, which inflicts direct fire against fixed and mobile targets. The sight is installed on various types of field artillery cannons; the distance scales of the sight meet the ballistic data of the firing cannon.

Main Specifications:

	OP1	OP4	OP4M
Zooming, rate	from 3.15 to 3.85	5.5	from 5.25 to 6.0
Viewing field	not less than 12.5 grades	not less than 11 grades	not less than 10.5 grades
Distance of exit pupil from the outer surface of eyepiece's last lens	not less than 22 mm	not less than 22 mm	not less than 22 mm
Border of resolution in the center	not more than 15"	not more than 8"	not more than 8"
Parallax between the image of infinitely distant object and the aiming reticule's flat	not more than 2	not more than 1	not more than 1
Parallax between the aiming reticule's flat and the thread	not more than 2	not more than 2	not more than 2
Light transmission	not less than 50%	not less than 50%	not less than 50%
Limit of the diopter setup of eyepiece	from -0.5 to +1.5 diopter	from -0.5 to +1.5 diopter	from -0.5 to +1.5 diopter
Weight	not more than 2.1 kg	not more than 5.1 kg	not more than 5.1 kg
Overall dimensions	not more than 362×78×110 mm	not more than 333x173x198 mm	not more than 333x173x198 mm

PZU-7, PZU-7M



ANTI-AIRCRAFT SIGHTS

'PZU-7' and 'PZU-7M' anti-aircraft sights are designed for direct aiming when shooting from the tank anti-aircraft system. The sights are monocular, periscopic with rotating prism, with electric heating and illuminated eyepiece's aiming reticle.

Main Specifications:

Zooming of the sighting device	1.2 rate
Distance of exit pupil from the outer surface of eyepiece's last lens	23 mm
Resolution border in the central third of the optical system's viewing field	not more than 60
Visual transmission coefficient	not less than 0.2
Periscope line-of-sight height of the device	220 mm
Diopter alignment of the eyepiece	from - 4 to + 4 diopter
Range of angle of sight	-10°...+85°
Horizontal travel of the aiming reticle from zero mark	±(00-25) t.d.
Guaranteed life	not less than 500 hours
Power supply voltage	27 V

Viewing field of the sighting device
50

Exit pupil diameter:
5 mm

Weight:
not more than 11 kg

Overall dimensions:
415x325x195

9SH135 GUIDANCE DEVICE



The device is designed for visual observation, detection, selection and tracking of a target by the operator as well as for forming the guidance field within laser beam. '9Sh135' is used as an integral part of the 'KASTET' system.

Viewing field of the sighting device
5°

Zooming of the sighting device
9-11 rate

Weight:
29 kg

Operating temperature range
-50...+50 °C

Main Specifications:

Borders of diopter alignment	from - 5 to + 5 diopter
Periscope line-of-sight height of the device	320 mm
Search and detection of a target	5 km
Distance of guiding the antitank missile	4 km

GUIDANCE DEVICE 9-SH119M1



The device is designed for visual observation of the terrain, selection of a target and further tracking of its movements by the operator. The device provides guidance of anti-tank guided missile to a target within the field of direction-finding channels. '9-Sh119M1' is an integral part of the 'KONKURS' anti-tank missile system.

Viewing field of the sighting device
6°

Zooming of the sighting device
10 rate

Weight:
4,6 kg

Temperature conditions of operation
-50...+50 °C

Main Specifications:

Borders of diopter alignment	from - 4 to + 4 diopter
Periscope line-of-sight height of the device	300 mm
Search and detection of a target	5 km
Distance of guiding the antitank missile	4 km

9S816, 9S816M GUIDANCE DEVICE



'9S816', '9S816M' guidance device is designed for visual ground surveillance, target selection and further monitoring of the target movements by the operator. After launch, the device provides guidance of the anti-tank guided missile to a target via wires, assisted by semi-automatic guidance system.

9S816	9S816M
Viewing field of the sighting device 6°	Viewing field of the sighting device 6°
Zooming of the sighting device 6 rate	Zooming of the sighting device 6 rate
Weight: 3,25 kg	Weight: 3 kg
Temperature conditions of operation -50...+50 °C	Temperature conditions of operation -50...+50 °C

Main Specifications:

	9S816	9S816M
Borders of diopter alignment	-4…+4	-4…+4
Periscope line-of-sight height of the device	108 mm	108 mm
Search and detection of a target	3 km	3 km
Distance of guiding the antitank missile	1,2 km	2 km

USK-1

GUIDING DEVICE

"SK-1" provides air defense missile's guiding to the target in the command field of tracking signals.
"USK-1" is used as an integral part of the 9K22 "Tunguska" artillery-and-missile anti-aircraft system.



Weight:
20 kg

Temperature conditions of operation
-50...+50 °C

Main Specifications:

Range of visibility of the tracking channel I:	
with constant diaphragm	6
with changed diaphragm	30
Range of visibility of the tracking channel II:	
with constant diaphragm	40
with changed diaphragm	6
Control distance	13.5 km

OEM SO

OPTOELECTRONIC MODULE OF THE TARGET ACQUISITION AND DESIGNATION SYSTEM

Main Specifications:

Television channel	
Distance of acquisition (designation) of a target sized 2.5 x 2.5 under meteorological distance of visibility not less than 15 km, at terrain illumination from 100 to 20,000 lx and target's contrast against background not less than 0,4	7 (3,5) km
Angular viewing field ranging	from 1,66x 1,25° to 59,76x 45°
Thermal imaging channel	
Viewing fields horizontally and vertically	5,13x 3,85°
Distance of acquisition (designation) of a target sized 2.5 x 2.5 under meteorological distance of visibility not less than 15 km and thermal contrast coefficient not less than 1°	4.5 (2) km
Time required to reach working mode at -10 °C temperature	-10°...+85°
Range-finding channel	
Wavelength of laser range finder' emission shall be	(1,060 ± 15)
Angular divergence between the television camera's axis of sight at zoom's end point and optical axis of the rangefinder's transmitter	not more than 3

Overall dimensions
340x250x280

Weight:
not more than 14 kg

Power consumption:
not more than 4.5 W

Power supply voltage:
from 24 to 27 V

Working temperature:
from -10 to +50 °C

PN-I, PN-T

GUIDANCE DEVICE

PN-I', 'PN-T' guidance device is designed to form the target video signal as well as missile guidance field within laser beam at distances of 50 to 5,000 m.



Main Specifications:

	PN-I	PN-T
Distance of detection of a MBT type ground target sized 2.5 m x 2.5 m in day time under meteorological visibility distance not less than 25 km:		
under natural illumination of terrain from 100 to 104 lx and at contrast of a surveillance object against background not less than 0.5 km	not less than 6.5 (TVK-U), 2 (TVK-Sh)	not less than 6.5 (TVK-U), 2 (TVK-Sh)
under natural illumination of terrain not less than 0.5 lx	not less than 2.5 (TVK-U), 2 (TVK-Sh)	not less than 2.5 (TVK-U), 0.7 (TVK-Sh)
Overall dimensions, mm	not more than 390x196x235	not more than 390x196x250
Weight of the device, kg	not more than 15	not more than 15.5

PN-K



GUIDANCE DEVICE

The device is an integral part of the 'Kastet' system and is designed to search, detect, identify (by the operator) a target and to guide to a target as well as to form the missile guidance field within laser beam at distances of 250 to 5,000 m.

Overall dimensions:
390x196x235

Weight:
not more than 15 kg

Main Specifications:

Distance of detection of a MBT type ground target sized 2.5 m x 2.5 m in day time under meteorological visibility distance not less than 25 km:	
under natural illumination of terrain from 100 to 104 lx and at contrast of a surveillance object against background not less than 0.5 km	not less than 8 (5)
The angle of view of the visual channel, no less	5^0
Zooming, rate	10

AK-1

GROUND CONTROL EQUIPMENT

AK-1 ground control equipment is designed for a target observation, selection and tracking, as well as for guiding of the item 111 (MT-12) to a target while firing from the MT-12 anti-tank gun by method of teleorientation in the laser beam.
AK-1 ground control equipment consists of:
- guidance device PN-K;
- traverse platform;
- power supply;
- set of cables.



Weight:
not more than 50 kg

Operating temperature range:
-40...+60 °C

Main Specifications:

Range	from 50 to 5000 m
AK-1 equipment angles of turn:	
▮ horizontally	from -45 to +45
▮ vertically	from -10 to +30
AK-1 equipment readiness time to fire once the power is supplied	not more than 1 min
AK-1 equipment transition time from stowed position to combat	not more than 2 min

ONB-300



NIGHT VISION GOOGLES

Designed to be used for land navigation, hidden observation, target search and surveillance under limited visibility conditions or complete darkness using IR-illuminator.
A laser illuminator and objective lenses with 3X zooming are easily built into their construction to increase observation range and quality.

Main Specifications:

Detection range:	
▮ men's height figure	not less than 250 m
▮ armored vehicles	not less than 400 m
Zooming	1
Angular field of view	36 deg
Power source (type of battery)	CR 123 A Lithium
Supply voltage	3 V
Googles dimensions	140x112x58
Weight	0,62 kg

Set weigt:
1,6 kg

Dimensions in a packing bag:
250x180x220

BRTS-9-7

The on-board compact shockproof radio-telemetering unit designed to communicate data related to the operation of equipment mounted on guided projectiles, small missiles, and other systems using a MA-9MK ground station for data receiving and recording.

Weight:
0,43 kg



Main Specifications:

Maximum power consumption from the supply voltage source	not more than 7,2 W
Timing pulse generator frequency	25,6 MHz
High-frequency pulse duration at half height:	
▮ for reference pulses	1,5 μs
▮ for monitoring pulses	1,5 μs
High-frequency pulse power	2,5 W
Pulse rate maximum deviation from nominal	not more than ±1 MHz

CARTRIDGE-IGNITER PS-MS-400

Designed for fuel-air mixture ignition when starting the MS-400 turbojet engine.



Length:
140 mm

Weight:
0,345 kg

Operating temperature range
-50...+60 °C

Main Specifications:

Running time	2,5 s
Combustion gas temperature	2000 °C

GTT-MS-400 GAS GENERATOR

Designed for MS-400 turbojet engine rotor acceleration.

Length:
148 mm

Weight:
5 kg

Operating temperature range
-50...+50 °C



Main Specifications:

Diameter by the centers of engine fastener apertures	156 mm
Operation time	2,55-4,55 s
Max pressure in gas generator chamber	180 kg/cm^2
Average gas productivity	0,336 kg/s

RUBBER SHOCK ABSORBERS AND STOPPINGS

The shock absorbers are designed for use in general purpose products.

Main Specifications:

	Width	Height	Length	Working temperatures range
432.31.168, 432.32.358, 432.32.359, 432.33.118, 478A.33.175	8…20 mm	25 mm	47…320 mm	from -45 to +100 °C
RUBBER, ARMORED, LARGE RADIAL COMPRESSION SHOCK ABSORBERS	80…175 mm	53 mm	420 mm	from +5 to +25 °C
432.33.692, 432.33.699	25 mm	14…16 mm	305…670 mm	from -45 to +100 °C
17×L PO2879.95, 21×L PO2879.95	22…25 mm	3.5…4 mm		from -50 to +125 °C
478D.02.051	12 mm	37 mm	1,192 mm	from -50 to +100 °C

RUBBER SEAL

The rubber seal is used in special products.

Main Specifications:

	Width	Height	Length	Working temperatures range
432.71.055	4,5 mm	9 mm	595 mm	from -45 to +100 °C
LARGE, AXIAL COMPRESSION RUBBER ARMORED SEALER	110 mm	48 mm	516,5 mm	2300 °C

RUBBER SEALING RINGS

The rings are designed for use in special products.

Main Specifications:

	Width	Height	Diameter	Working temperatures range
432.12.034-1	10 mm	10 mm	2000 mm	from -50 to +125 °C
457.15.005-4, 457.15.008-4, 457MA-1.15.009-1	3.2…4.6 mm	4.2…5.2 mm	120…136 mm	not more then +200 °C
94B.9307.119	4,3 mm			from -50 to +125 °C
DN05.1268 (41.9301.042)		25 mm	1181 mm	from -40 to +50 °C

RUBBER RINGS

Are designed for use in special products.

Main Specifications:

	Pressure	Internal diameter	Working temperatures range
CIRCULAR CROSS-SECTION RUBBER RINGS WITH PARTING LINE UNDER 180°	from 1,33x10-17 to 40 mPa	2…8000 mm	from -60 to +200 °C
CIRCULAR CROSS-SECTION RUBBER RINGS WITH PARTING LINE UNDER 45°±1°	from 1,33x10-17 to 40 mPa	3…409 mm	from -60 to +200 °C
RUBBER RINGS OF RECTANGULAR CROSS SECTION	from 1,33x10-17 to 40 mPa	4…1000 mm	from -60 to +200 °C
DUST AND WATERPROOF RUBBER RINGS OF RECTANGULAR CROSS SECTION FOR DRAINAGE HOLES		3,4…125 mm	from -50 to +50 °C

RABBER GOFFER-OIL SEAL 457.21.126-4

Used to provide workability of an assembly unit under the influence of oil and liquid environments.

Main Specifications:

External diameter	38 mm
Internal diameter	20,5 mm
Height	23 mm
Working temperatures range	22…25 mm
478D.02.051	from -30 to +150 °C

RUBBER ROD WIPER

Used to protect the voids that can be condensed into hydro and pneumatic cylinders from dust.

Main Specifications:

Internal diameter	3…496 mm
Cross-section width	5,5…18 mm
Height	4…14 mm
Pressure	from 0.1 to 20 MPa (no difference)
Working temperatures range	from -50 to +70 °C

ELASTIC SUPPORT ARMORED JOINT-HINGES

The joint-hinges are designed to provide nozzle vectoring at a certain angle as well as connector seal between fixed and moving parts of an object.

Main Specifications:

Internal diameter	188…700 mm
External diameter	312…980 mm
Height	122…364 mm
Pressure	from 0,25 to 11,7 MPa
Working temperatures range	from -40 to +50 °C

RUBBER-METAL VALVE

Used for assembling special purpose products.

Main Specifications:

	Diameter	Pressure	Working temperatures range
Type 1	6…10 mm	not more than 23 MPa	from -50 to +50 °C
Type 2	2…201 mm	not more than 10 MPa	from -60 to +60 °C
457.28.202СБ	14,3 mm		from -50 to +125 °C

RUBBER RING PLATE 459.28.331-1

Used to provide working capacity of the assembly unit under the air exposure.

Main Specifications:

Internal diameter	1.5 mm
External diameter	15 mm
Height	5.5 mm
Working temperatures range	from -45 to +60 °C

RUBBER GLAND

The rubber gland is designed for use in special products.

Main Specifications:

	Diameter	Height	Pressure	Working temperatures range
RUBBER SEALING RING FOR HYDRAULIC DEVICE	2,5…1092 mm	3…35 mm	from 0,1 to 50 MPa	from -60 to +200 °C
REINFORCE RUBBER SEALING RING FOR ROLLERS	6…480 mm	4…22 mm	from 0,1 MPa	from -60 to +170 °C
TWO- TONGUE LARGE RUBBER GLANDS	1760…2377 mm	68 mm	from 0,2 to 1,16 MPa	from 1800 to 2300 °C (short-time)
ARMORED, LARGE RUBBER GLAND BLOCK	2284 mm	50 mm	from 0,17 MPa	not more than 2800 °C
432.40.036-2	191,3 mm	9 mm	not more than 4,9 MP	from -20 to +200 °C
478DU4.43.005-1	403,5 mm	12 mm	not more than 4,9 MP	from -20 to +200 °C
432.40.037-2, 432.40.127-2	154…254 mm	5…9 mm	not more than 4,9 MP	from -20 to +200 °C
432.40.035-3, 432.40.047-4, 476.40.115	394.5…458.5 mm	8 mm	not more than 4,9 MPa	from -20 to +200 °C
457.02.101SB, 457.21.107 SB -2, 457.07.306 SB -1, 494SA.10.050	19.35…133.9 mm	8…15 mm	not more than 0,05 MPa	from -50 to +200 °C

RUBBER COAT 494SA.07.025

Used as a muff and provides the workability of an assembly unit under the wind influence.

Main Specifications:

Internal diameter	74 mm
External diameter	125 mm
Height	40 mm
Working temperatures range	from -40 to +100 °C

RUBBER TUBES

Used for dust and splashes protection of the assembly units, as well as for supplying working substances under the influence of oils, liquids and gases.

Main Specifications:

432.33.756, 432.91.210, 432.95.286, 432.95.287, 434.83.171, 457.18.055-1, 457.18.068, 457.28.090, 459.28.094	
Internal diameter	5.5…16 mm
Thickness	1.25…3.0 mm
Length	18…1,085 mm
Working temperatures range	from -45 to +100 °C

RUBBER HUNG SLEEVES

They are designed for supply of thermostatic air into an object.

Main Specifications:

Internal diameter	131…202 mm
External diameter	225…295 mm
Length	415…620 mm
Pressure	not more than 0.02 MPa
Working temperatures range	from -5 to +25 °C



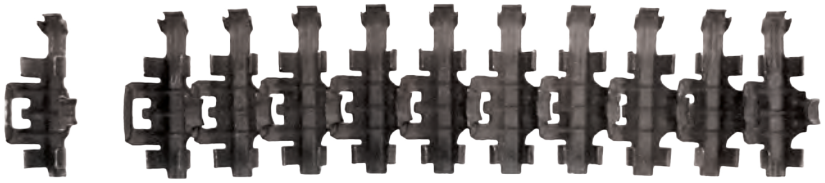
LINKS L-30, L-30-1

They are designed for cartridge belt formation, 30mm cartridges placement and feeding to ZTM1, ZTM2, 2A42 and 2A72 gun receiving unit.



LINK LA-12.7

It is designed for cartridge belt formation, 12.7mm cartridges placement and feeding to 9-A-624 (YakB-12.7) machinegun receiving unit.

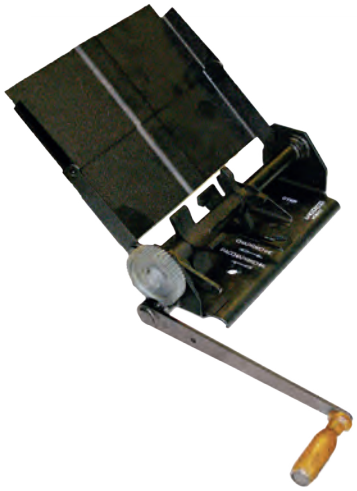


LINK BELT S-12.7

It is designed for 12.7mm caliber cartridges placement and it feeding to receiving unit of K-12.7, KT-12.7, NSV-12.7, NSVS-12.7, NSVT-12.7 machine guns.

Main Specifications:

	L-30, L-30-1	LA-12.7	S-12.7
Pushing force for cartridge placement into the link	not less than 80 kgs	not less than 45 kgs	not less than 25-40 kgs
Overall dimensions	not more than 121x63x38 mm	not more than 86x37,5x20 mm	not more than 323 mm
Weight	not more than 0,130 kg	not more than 0,03 kg	not more than 0,235 kg
Warranty operating life	12	5	30



MSS-30 DEVICE

It is designed for cartridge belts unloading and loading with 30mm caliber cartridges which are used in ZTM1, ZTM2, 2A72 and 2A42 guns.

Weight:
not more than 7,5 kg

Overall dimensions:
455x355x225

Main Specifications:

Maximum force on grip while reloading	not more than 10,0 kgs
Maximum force on grip while unloading	not more than 20,0 kgs
Productivity while filling cartridge belts	not more than 1200 cartridges/hour
Productivity while unloading cartridge belts	not less than 1000 cartridges/hour

TV-85, TV-100, TV-115 GUN-TO-SIGHT ALIGNMENT TUBE

Gun-to-sight alignment tubes are designed to verify the zero line of sight alignments of various artillery systems according to adjusting point or special verification shooting target.



Overall dimensions:
not more than 340 ⌀60 mm

Wight:
not more than 1,1 kg

Main Specifications:

Amplification	within 2,8 to 3
Angular field of view	not less than 38
Resolution limit	not more than 20
Border of diopter of the eye piece's setting-up	from 0 to -5
Light transmittance	not less than 80 %

ELECTRIC SPARK IGNITER EVP-MS-400



It is designed for ignition of powder-charge primer of GTT-MS-400 gas generator solid fuel charge as well as for ignition of pyrotechnic composition of PS-MS-400 cartridge-igniter.

Length:
30 mm

Weight:
20 g

Operating temperature range
- 50 to + 50 °C

Main Specifications:

Diameter	15 mm
Pressure generated in free volume, 3 cm^3	0,3 () MPa 3,0 (kgf/cm^2)

EVM-4 PYROCARTRIDGE

It is designed for ignition of powder-charge primers of Cyclone-4 solid-fuel missile engine (missile).



Length:
51.5 mm

Wight:
0.087 kg

Main Specifications:

Diameter	23 mm
Operating current	1.5…2.0 A
Pressure generated during pyrocartridge activation	560…700 MPa

DTK-7,62

DTK-7,62 effectively reduces recoil power and compensates throwing up while shooting.



MOUNTING FOR KM-7,62

The three-legged mounting for KM-7,62 machine gun.



MOUNTING FOR KT-7,62

The three-legged mounting with cradle for KT-7,62 using (installed on armored vehicles) in the infantry version.



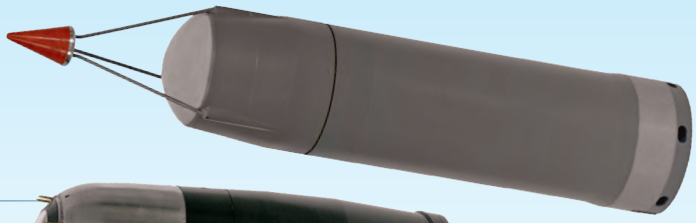
SOFT AMMO BOX

Soft ammo box for cartridge belt with holding capacity of 100 – 200 rounds (cartridge 7,62 x 54R) for 7,62 mm machine gun.



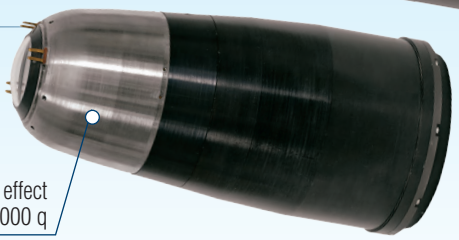
9E418 INFRARED HEAD

9E418 is designed for equipping the mobile anti-aircraft system 'Igla-1' of 'Surface-to-Air' type.



9E421 LASER SEMI-ACTIVE HEAD

9E421 is designed for furnishing as part of 152 mm guided artillery projectile.



Resistance to single shock effect up to 10000 q

9E431 LASER SEMI-ACTIVE HEAD

9E431 is designed for using as part of 120-155 mm guided artillery projectiles and guided mines.



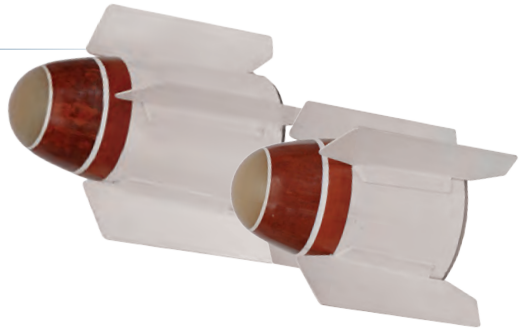
Resistance to single shock effect up to 10000 q

Main Specifications:

	9E418	9E421	9E431
Length	365 mm	250 mm	156 mm
Diameter	72 mm	120 mm	114 mm
Weight	1,5 kg	2,6 kg	2,5 kg
Working temperatures range	from -40 to +50 °C	from -40 to +50 °C	from -40 to +50 °C

60TI, 75T INFRA-RED HEADS

60TI (75T) Infra-Red Head is designed for using as part of aircraft missile of "Air to Air" type R60 (R-62M) for aircrafts of "Su" and "MiG" type.



RADIOTRANSPARENT RADOME



Main Specifications:

	MADE OF GLASS AND CERAMIC	MADE OF QUARTZ CERAMICS
Height	500…1000 mm	1200 mm
Diameter	200…350 mm	400 mm
Working temperatures range	not more than 800 °C	not more than 1200 °C

RADAR COORDINATOR

The radar coordinator is designed for use as part of homing combat elements working in any kind of weather and at any time of day.
Principle of construction - combination of active and passive (radiometric) radar channels.
Structure: antenna; transmit-receive module; module processing, control and power supply.
Application: artillery systems, anti-tank missiles, rocket systems of volley fire.



Main Specifications:

Frequency range	millimetres
Crossing the midsection object	100 and more
Target lock-on range with ESR at least 10 square meters. m (tank type) antennas with a diameter of 80 mm:	
▮ active channel	600-1000 m
▮ passive channel	200 m
Angle capture zone Exchange and pitch axis relative to construction	± 15 %
Target types	ground mobile and stationary equipment



MMW RADAR HEAD

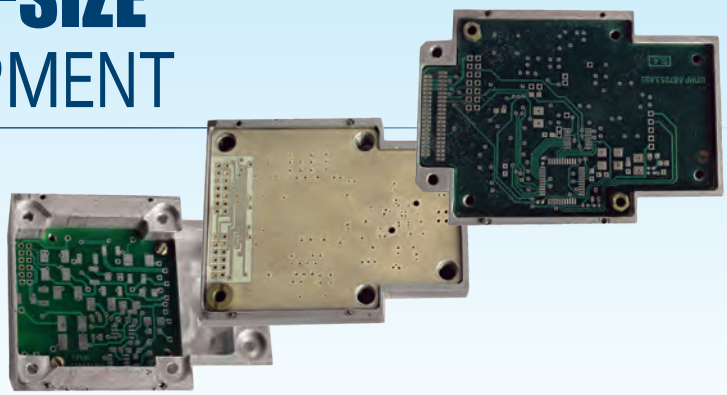
MMW Radar Head is designed for tank-type targets detection, lock-on and tracking and for generation of "air-to-surface" aircraft missile guidance signals at the terminal flight phase.
Application: Air Forces, Antitank Missile Systems.

Main Specifications:

Frequency range	millimetres
Operating mode	active/passive
Maximum target detection and lock-on range	3 km
Range measurement error	±3 m
Angular target tracking rate	0,1 – 10
Angular rate measurement error	not more than 5 %
Tracking angle range:	
▮ in azimuth	±27
▮ in elevation	±15
Dimensions:	
▮ diameter	170 mm
▮ length	400 mm
Mass	8 kg

AIRBORNE SMALL-SIZE TELEMETRY EQUIPMENT

The equipment is intended for installation on guided missiles and artillery projectiles with their experimental development, for remote monitoring of the operating condition of the engineering systems of these objects, and for transmission of the information to the ground monitoring aids.



Main Specifications:

Number of signals from sensors	100
Signal interrogation frequency	up to 32 kHz
Signal conversion code	16-bit NRZ-L
Overall self-descriptiveness	up to 2,0 Mbit/sec
Video code structure	in accordance with STANDARD 106-04
Supply voltage	28 ±10%
Power consumption	2,5 W
Equipment volume	0,021 dm^3
Mass	0,5 kg

PERCUSSION-REMOTE ACTION IGNITER UDZ

Percussion-remote action igniter UDZ is intended to complete hand grenade RGO and RGN types



Height: 90 mm

Diameter: 42 mm

Weight: 77 g

Working temperature: from - 50 to + 50 ^{0}C

Guarantee shelf life: 11 years

Main Specifications:

Max. cocking time	1,0 –1,8 sec

COMPLETE SET OF THE AIRBORNE MISS MEASURING EQUIPMENT

The complete set is intended for all-aspect measuring of mutual position parameters of a destruction object and a target and for delivery of the current information about measured parameters to the airborne telemetry target equipment for the purpose of transmission and calculation of the following data by the ground processing means.

Application: air targets, missiles
Measured parameters: R, X, Y, Z, m
R, X, Y, Z measurement range: 1 – 80 m
m measurement range: 0 – 180 °



SLEEVE, GALVANIC & PERCUSSION ACTION GUV-7

Sleeve, galvanic & percussion action GUV-7 is intended to complete artillery rounds



Height: 24 mm
Diameter: 30 mm
Weight: 88 g
Working temperature: from - 50 to + 50 °C
Guarantee shelf life: 16 years

TRACER № 12, T-20-1

Tracer №12, T-20-1 are intended to complete artillery rounds

№12	T-20-1
Height: 31,2 mm	Height: 30,8 mm
Diameter: 19,98 mm	Diameter: 19,98 mm
Weight: 29,4 g	Weight: 30,6 g
Working temperature: from - 40 to + 40 °C	Working temperature: from - 40 to + 40 °C
Guarantee shelf life: 11 years	Guarantee shelf life: 12 years



125-MM SHELL

125 mm projectile with armor-piercing projectiles for “D-81” gun.



Main Specifications:

	125-MM SHELL WITH ARMOR-PIERCING SUB-CALIBRE PROJECTILE IND. 3VBM7	125-MM SHELL WITH ARMOR-PIERCING SUB-CALIBRE PROJECTILES IND. 3VBM9	125-MM SHELL IND. 3VBM17
Length			
VM18	591,7 mm		
4ZH40/4ZH52	408 mm	408 mm	
VM23		609,37 mm	
VM44			620,6 mm
4ZH63			408 mm
Weight	19,6 kg	20,45 kg	20,43 kg

125-MM BLANK SHELL IND. 4H33

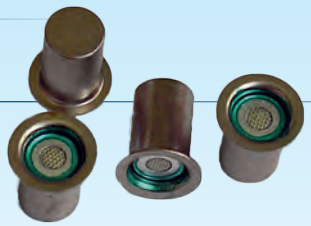


125 mm blank shell 4H33 for “D-81” tank gun. Shell consists of propelling charge X33 and top. Top X33 consists of powder 12/1 Tp, and cardboard cylinder. Propelling charge consists of pan, combustible cartridge-case, primer cartridge GUV-7, powders 15/1 Tp and 9/7.

Main Specifications:

Length:	
4H33.010	398 mm
4H33.020	408 mm
Weight	13 kg

BLASTINGTING CAP



Main Specifications:

	Height	Diameter	Mass	Guaranteed shelf life	Designed
Blasting cap	29-0,62 mm	8,85-0,15 mm	2,3 g	20	for hand fragmentation grenade
KD-L-17	11,5-0,24 mm	5,12-0,1 mm	0,59 g	20	for detonating chain of blasting devices
KD-N-10	3,6-0,2 mm	3,75-0,15 mm	0,12 g	16	for detonating fuses of cluster ammunition
KD-L-2	6,5-0,3 mm	3,5-0,16 mm	0,15 g	15	for safety-detonating mechanisms of compact artillery heaters AR-5
A-30-T	15-0,3 mm	6,1-0,2 mm	1,6 g	20	for artillery fuses
TAT-1- PT	9,7-0,2 mm	6,1-0,2 mm	1,18 g	20	for detonating chain of artillery fuses

BLASTING FUZES OSHA AND OSHP



Blasting fuzes OShA and OShP designed to initiate blasting caps, black charges of gunpowder and special products.

Main Specifications:

Reel Length	10 m

PYROXILINE POWDERS

97VA, 127V, 151TR VA, 161TR VA, 181TR VA, 41, 67, 81TR, 97, 47CGR, VT, 67P-5BPFL, P-125, VTX-10 VTX20, 57 CFL, P-125.
Pyroxiline powders designed for manufacturing of propellants for ammunition and small-caliber weapons, close combat weapons, mortars, land and naval artillery.



BLASTING CAPS

They are designed for use in detonating chains and air ammunitions' fuze mechanisms.



Main Specifications:

FUZE	Height	Diameter	Mass	Guarantee shelf life	Applicability
RGM	3,05-0,25 mm	6,1-0,09 mm	0,332 g	20 years	detonating chain in artillery fuses
KV-3-1	9,30-0,25 mm	10,54-0,1 mm	4,5 g	20 years	ammunition detonating chain for automatic guns and assault rifles
KV-3	7,25-0,25 mm	10,54-0,1 mm	4,0 g	20 years	detonating chain for antiaircraft ammunition
№ 2-T	4,0-0,3 mm	3,85-0,1 mm	0,21 g	15 years	fuses in aviation ammunition
T-5-T	4,6-0,3 mm	4,25-0,1 mm	0,27 g	15 years	fuses in air ammunition
№ 1 (MG-8)	3,2-0,3 mm	3,05-0,1 mm	0,105 g	20 years	detonating chain of artillery fuses
№ 1, HUB	2,55-0,1 mm	5,9-0,15 mm	0,39 g	20 years	detonating chain for automatic guns and assault rifles
KV-N-1	3,2-0,3 mm	3,05-0,1 mm	0,1 g	20 years	fuses of aviation ammunition
ATK	3,05-0,3 mm	6,1-0,1 mm	0,35 g	15 years	fuses of aviation ammunition and in detonating chain of artillery fuses
KV-3V	4,2-0,3 mm	3,85-0,12 mm	0,23 g	20 years	detonating chain of air ammunitions' and artillery fuses
KV-10	2,4 mm	4,6 mm	0,14 g	25 years	pistol 5,45 mm cartridges
KV-16	2,7 mm	5,06 mm	0,23 g	25 years	machine-guns of 5,45 mm
KV-24	2,65 mm	5,5 mm	0,244 g	25 years	7,62 mm cartridges
KV-25	4,15 mm	9,07 mm	1,04 g	25 years	machine-gun 12,7 &14,5mm cartridges
KV-26	2,79 mm	5,06 mm	0,183 g	25 years	7,62 & 9mm cartridges
KVM-3	7,85 mm	5,67 mm	0,961 g	20 years	charge of gunpowder in mortar and grenade-mortar rounds

ELECTRIC DETONATOR ED-0,5-9

Electric detonator ED-0,5-9 is designed as integral part of compact explosion systems.

- Wire legs length: 20^{+5} mm
- or (in version -01): 45^{+5} mm
- Electric resistance: from 5 up to 10 Ohm
- Condenser capacity: 0,2 mkF±10%
- Voltage charge: up to (48±1) V
- Piercing lead thickness: (3,0±0,1) mm



ELECTRIC DETONATOR HUB EKV-30M

Electric detonator hub EKV-30M is designed to fire powder in rounds for rapid firing artillery.



- Diameter: 16-0,2 mm
- Height: 14,6-0,43 mm
- Mass: 10,8 g
- Guarantee shelf life: 20 years

Main Specifications:

Thread	SPD13,3x18 Cl.2
Resistance	from 0,5 up to 2,0 Ohm

DETONATOR MB-5, MB-2N

Detonator MB-5 and MB-2N is designed to fire powder charge.



MB-5	MB-2N
Diameter 4,1-0,1 mm	Diameter 4,1-0,1 mm
Mass 1,6 g	Mass 1,6 g
Guarantee shelf life 15 years	Guarantee shelf life 15 years

Main Specifications:

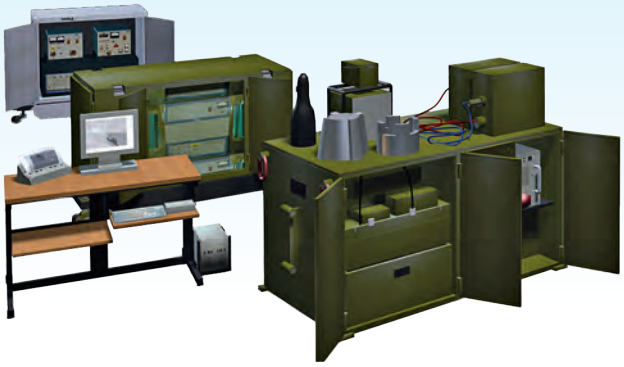
	MB-5	MB-2N
Length	150 mm	295-15 mm
Electrical resistance	from 0,3 up to 0,6 Ohm	from 2,5 up to 4,5 Ohm
Effective current	2,0 A	0,4 A

GURT

UNIVERSAL COMPLEX

It is designed for preparation for use and maintenance of guided weapons (missiles and bombs) on preparing positions, warehouses and bases of operating organizations.

- The diagnostic capability of more than 40 various modification of missiles
- Operating in heavy climatic conditions
- Connecting to computer of IBM-type
- Self-monitoring with the definition of a defect up to structural or functional unit
- Independent gas and energy supply
- Mobile transportation





GURT-M

UNIVERSAL COMPLEX

Complex Gurt-M is a modification of the complex Gurt

- The diagnostic capability of more than 50 various modifications of guideded air missiles and air bombs
- Missile's Final inspection at manufacturing plants
- Fault diagnostics during repair of missiles
- Forecast of missiles' technical state while prolonging their service life

GURT-M system advantages:

- overall and weight characteristics of the AKPA are reduced;
- characteristics of operational reliability are improved;
- up-to-date methods of visualization and documenting of the test results are introduced. The usage of the modern industrial computer allows to document the results in various languages and also to correct check routines while in operation;
- long-term storage of missiles testing results for the whole operation period is secured that allows to forecast their technical state while prolonging their service life;
- power supply units, created on the basis of static converters of enhanced comfort (economic, noiseless, easy to maintaine), are applied in the AKPA6.2M;
- specialized equipment, in addition to the AKPA, can also include diagnostic equipment sets (DES) which allow to localize faults in missiles for their repairing.

CONTROL SYSTEMS AND SERVO ELECTRIC CONTROL SURFACE ACTUATORS

Control systems can be single-channel, double-channel and three-channel. They have changeable adaptive structure and ensure high guidance accuracy.
Executive control elements:
- aerodynamic,
- gas-dynamic control surfaces
- combined control elements

Main Specifications:

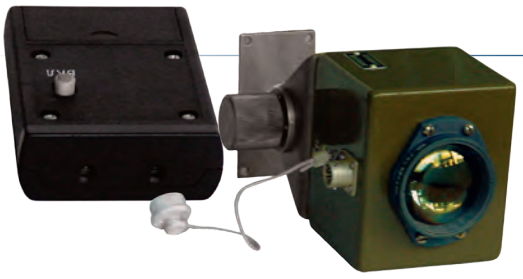
Maximum torque on control surfaces	from 1,2 to 150,0 N•m
Range of reproduced frequencies of control surfaces oscillations	up to 35 Hz
Angular rate of turn of control surfaces	up to 2000 °/s
Weight of electric control surface actuators units	from 1 to 25 kg
Calibre (outer diameter)	from 100 to 400 mm



No. control surface actuator	1	2	3	4	5	6	7	8	9
Maximum torque on control surfaces	50 N•m	150 N•m	30 N•m	30 N•m	30 N•m	2 N•m	1,5 N•m	1,5 N•m	1,2 N•m
Range of reproduced frequencies of control surfaces oscillations	10 Hz	20 Hz	20 Hz	25 Hz	35 Hz	25 Hz	25 Hz	25 Hz	25 Hz
Range of operating angles	±22°	±30°	±20°	±36°	±30°	±20°	±20°	±20°	±18°
Angular rate of turn of control surfaces	250°/s	360°/s	150°/s	350°/s	450°/s	2000°/s	2000°/s	2000°/s	2000°/s
Outer diameter (calibre)	400 mm	360 mm	277max mm	200 mm	170 mm	125 mm	120 mm	108 mm	100 mm
Length	244 mm	400 mm	297 mm	180 mm	300 mm	110 mm	75 mm	70 mm	121 mm
Weight	25* kg	26** kg	21* kg	7,6* kg	10* kg	1* kg	1,1* kg	1,05* kg	1,2** kg
Type of executive element (control surface)	***	***	***	****	*****	***	***	***	***

* Including weight of control surfaces. ** Without weight of control surfaces. *** Plane. **** Lattice. ***** Plane and gas-dynamic.

KTK1



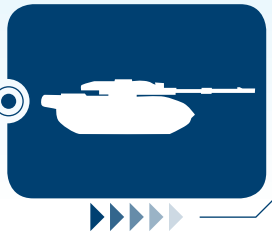
TRAINING AND CHECKING KIT

KTK1 training and checking kit is designed for acquisition of professional skills by a gunner in aiming of guided missiles without allowance of ammunition usage.

Main Specifications:

Range of action	not less than 6000 m
Time of non-stop work	not less than 6 h
Operating temperature range	from -40 to +60 °C

WE DO:



REPAIR AND UPGRADING OF ARMOURED VEHICLES:

- Tanks
- Armoured personnel carrier
- Other wheeled and tracked vehicles
- Engines and aggregates



REPAIR OF NAVAL EQUIPMENT:

- Repair of ships engines and power units



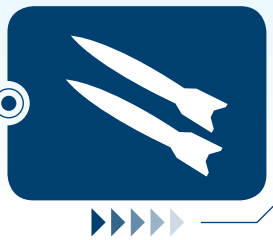
REPAIR AND UPGRADING OF AVIATION EQUIPMENT:

- Repair and upgrading of planes
- Repair and upgrading of helicopters
- Engines, units and aggregates
- Technical supporting means
- Upgrading of simulators



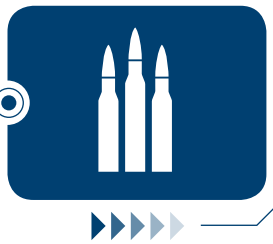
REPAIR AND UPGRADING OF RADAR EQUIPMENT, AIR DEFENCE AND COMMUNICATIVE EQUIPMENT

- Radar equipment
- Air defence equipment
- Electrical aggregates
- Equipment
- Technical supporting means



REPAIR AND UPGRADING OF SMALL-ARM AND ARTILLERY ARMAMENT

- Small arms
- Artillery armament
- Grenade
- The optical and optical-electronic devices



FILLING, RECONDITIONING AND SALVAGING OF AMMUNITION

- Comprehensive ammunition utilization
- Utilization of the rocket missiles
- Repair, renew (restoration) for all artillery, engineering, rocket salvo fire ammunition
- Equipping of various types of ammunition



MILITARY AND TECHNICAL SERVICES

- Designing of training aviation equipment
- Designing of optionally-manned aviation equipment
- Physical and chemical analysis of smokeless and smoke powders, explosives, industrial explosives, pyrotechnical mixtures
- Physical and chemical analysis of chemical materials
- Development, monitoring of the state special-purpose scientific and technical programs fulfillments in the aircraft industry and other high tech industries fields
- Integrated design of production facilities for special chemicals, industrial explosives, ammunition, explosive ordnance disposal
- Services on demilitarization of armored vehicles into museum exhibit

GOVERNMENT-AUTHORIZED ARMS DEALERS

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aira@ukrspecexport.com
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