



SPETS
TECHNO
EXPORT

MI-8MSB-V

MEDIUM ASSAULT-TRANSPORT HELICOPTER



HELICOPTER APPLICATION

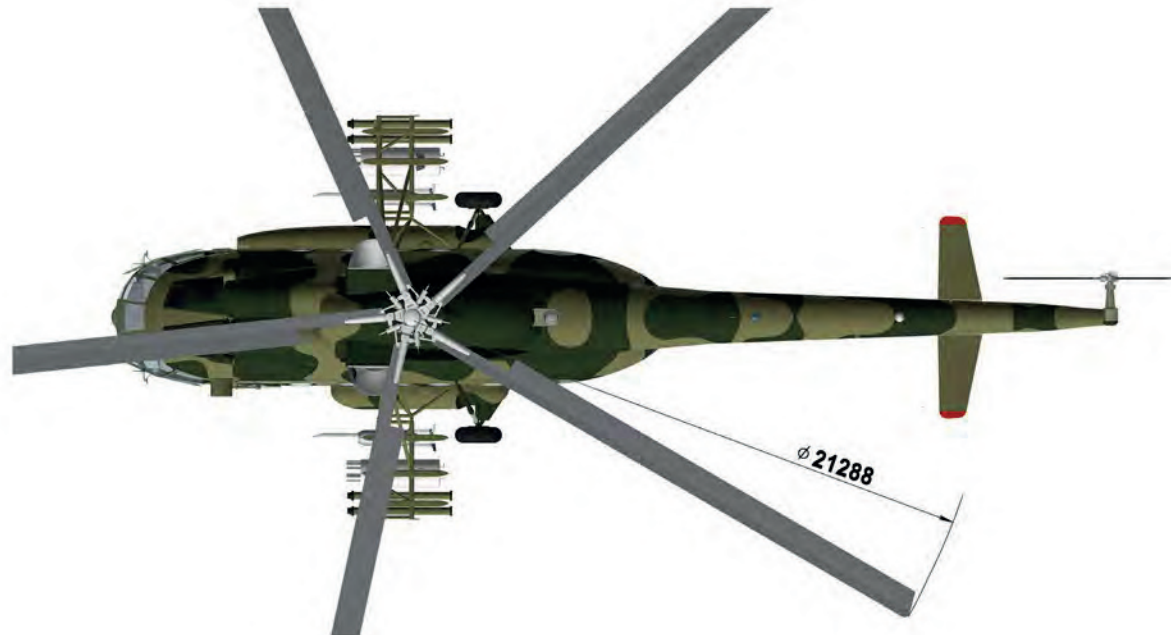
- transportation of cargo internally and externally;
- transportation and landing of troops and equipment;
- transportation of wounded casualties on stretchers;
- fire support of assault and ground troops;
- search and rescue;
- destruction of armored vehicles, weapon emplacements and enemy troops.





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OUTLINE DRAWING AND PRINCIPAL DIMENSIONS

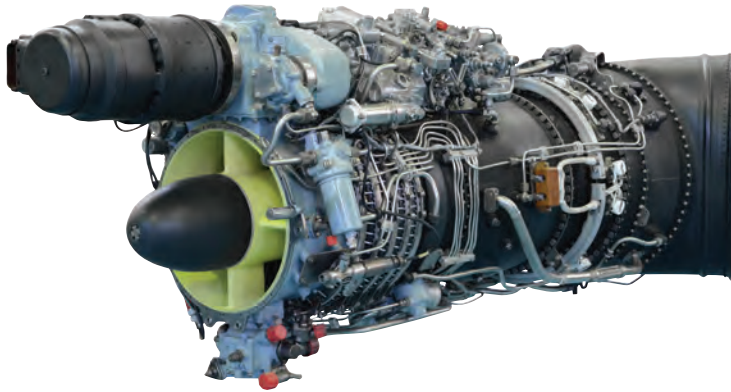


BASIC SPECIFICATIONS



Engines	TV3-117VMA-SBMIV, Series 4E
Engine takeoff power, shp	2x1,500
Engine starting system	electrical
Service ceiling, m – at takeoff weight of 9,000 kg and less	7,000
Fuel consumption (takeoff weight = loaded weight, altitude = 1,000 m, indicated airspeed = 180 km/h), l/h	500
Maximum takeoff weight, kg	12,500
Loaded weight, kg	11,100
Maximum internal cargo weight (at the cost of decrease in fuel amount), kg	4,000
Maximum external cargo weight, kg: – hinge-pendulum type load – sling load	2,500 up to 4,000
Cruise speed at altitude up to 1,000 m, km/h: – at loaded weight – at maximum takeoff weight	220 – 250 205 – 220
Maximum speed at altitude up to 1,000 m, km/h	280
Practical range (takeoff weight = 10,000 kg, altitude = 3,000 m, fuel weight = 1,450 kg), km	550
Practical range with two additional tanks (takeoff weight = 11,100 kg, altitude = 3,000 m, fuel weight = 2,500 kg), km	1,210

MAIN CHARACTERISTICS OF ENGINE



2.5-min OEI power rating,
Continuous OEI 1 power rating – 60 minute (Cont 1)
(SLS, ISA +20°C):

Power, hp (kW)	1,700 (1,251)
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Continuous OEI 2 power rating – 60 minute (Cont 2)
Take-off power rating
Continuous take-off power rating (30 min)
(SLS, ISA):

Power, hp (kW)	1,500 (1,104)
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flat rated up to t_{amb} , °C	+55
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Specific fuel consumption, kg/hp·h	0.251
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Maximum continuous power rating
(SLS, ISA):

Power, hp (kW)	1,200 (883)
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flat rated to t_{amb} , °C	+60
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Specific fuel consumption, kg/hp·h	0.266
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Cruise power rating
(SLS, ISA):

Power, hp (kW)	1,000 (736)
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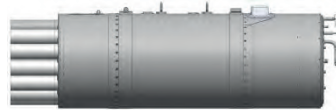
flat rated up to t_{amb} , °C	+60
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Specific fuel consumption, kg/hp·h	0.280
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Engine dry weight, kg	302
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ARMAMENT

1. Rockets



2. Bombs



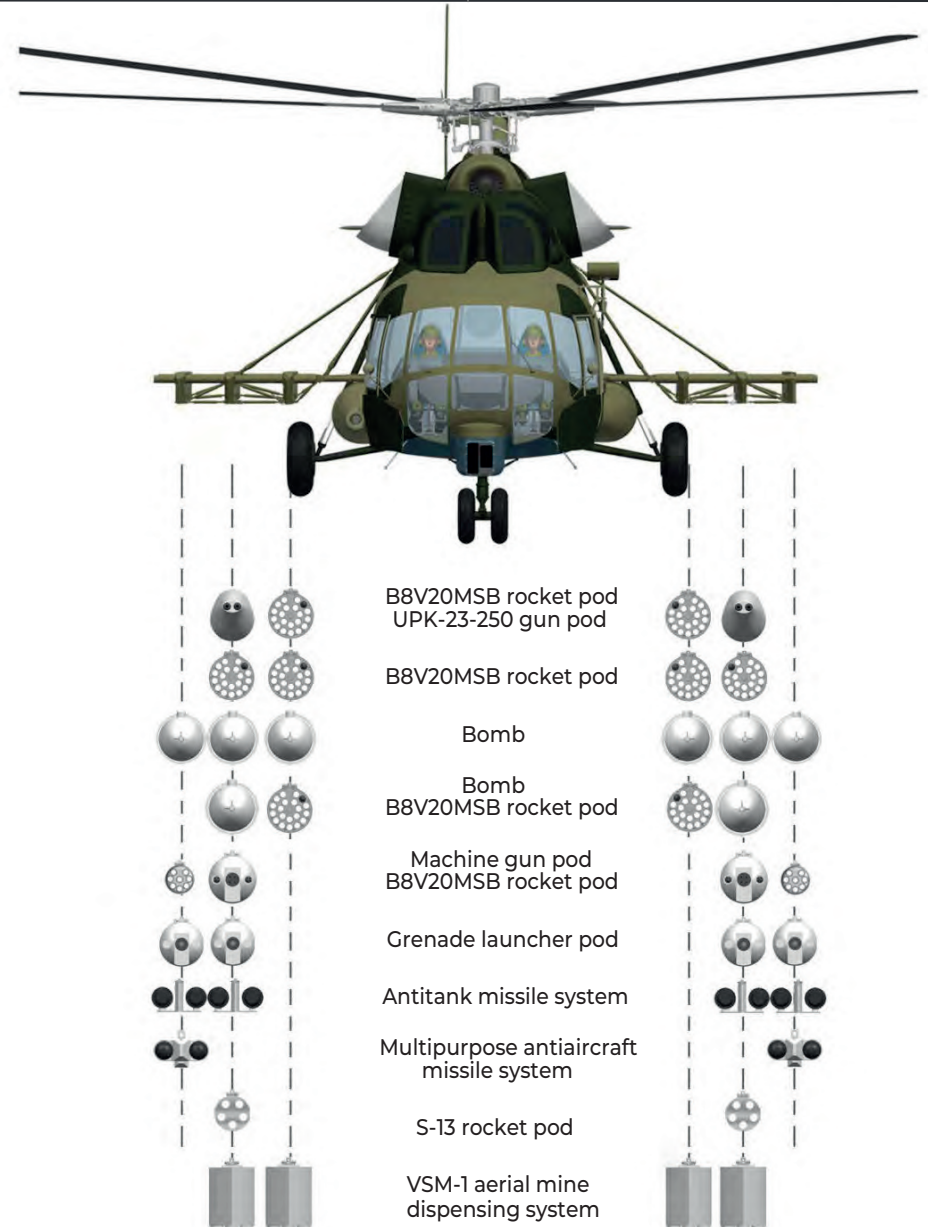
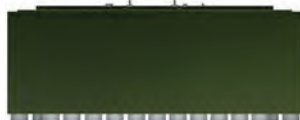
3. Guns



4. Missiles





5. Mine dispensing systems



FLIGHT TEST OF HELICOPTER WITH ARMAMENT SYSTEM





ROCKETS

Caliber, mm	80	122
Destination	To destroy ground targets of different types (tanks, armored infantry vehicles, self-propelled guns, rocket launching device, radar stations, airplanes at parking, train cars loaded with ammo, trains, enemy troops).	To destroy airplanes in concrete shelters, enemy materiel and troops in reinforced shelters.
Rocket type	S-8, AR-8, AR-8L	S-13, S-13T, S-13OF, S-13D
External view		
Range, m	up to 4 000	up to 4,000
Rocket length, mm	1,590...1,725	2,540...3,120
Rocket weight, kg	12.9...14.7	57...75
Damage effects – - number of fragments, pc - armor penetration, mm - ground penetration, mm	not less than 400 not less than 500	450 (S-13OF) 1,000 (S-13T) 6,000 (S-13T)
Launching devices	B8V8MSB, B8V20MSB	B-13L, B-13L1
Number of rockets in launching device	8, 20	5

B8V20MSB ROCKET PODS

The rocket pods are designed for launching of 80 mm rockets and missiles. They are mounted on external store racks. B8V8MSB and B8V20MSB pods haven't got significant differences from one another.

Designation	B8V8MSB	B8V20MSB
Rounds of ammunition per pod	8	20
External view		
Launching interval, ms	80	40
DC power supply, V	27	27
Pod weight, kg – armed (depending on rockets used) – empty (max)	145 to 178 56	322 to 404 100
Overall dimensions, mm – length – diameter	1,778 350	1,786 521
Operating temperature range, °C	±60	±60
Ground firing range, km (depending on pitch angle)	5.5...8.0	5.5...8.0

ARMAMENT RACK ADAPTER

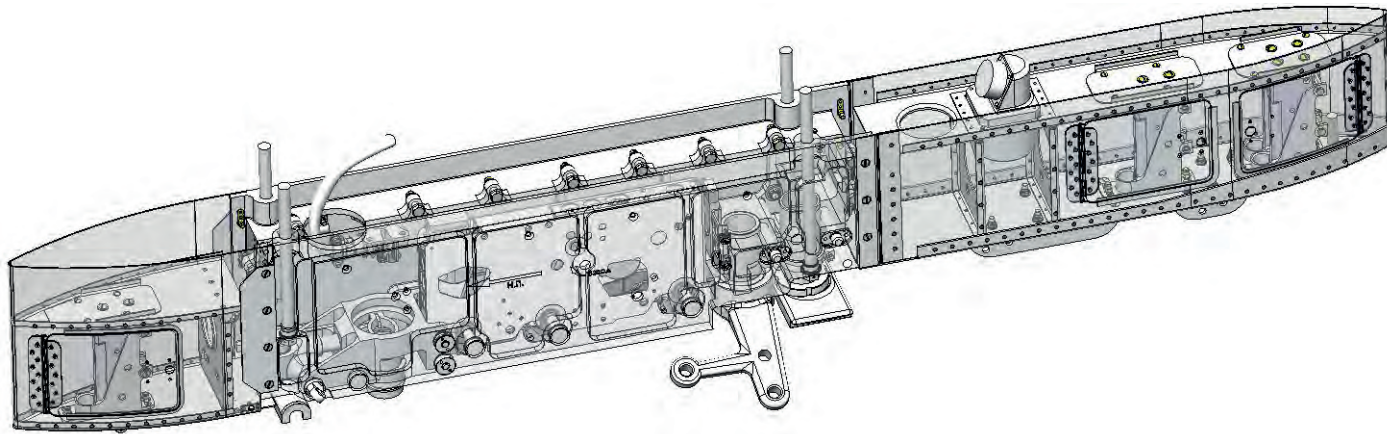


Main data

Number of BD3-KrV-MSB external store racks on the adapter, pc:	3
Weight, kg:	100
Dimensions, mm:	
- length	2,743
- height	1,588
- width	1,710

BD3-KrV-MSB EXTERNAL STORE RACK

The multipurpose external store rack is designed for transportation and use of all helicopter store types. The rack ensures tactical and emergency drop of loads, fuse arming after actual bomb release, transmission of command signals for aircraft rockets and guns.



Main data




Drive type	electromechanical
Operating voltage, V	27
Rack weight, kg	≤ 30 kg
Dimensions, mm:	
- width (without braces)	110
- length	1,590
- height	220



B8V8MSB, B8V20MSB rocket pods and armament rack adapter with BD3-KrV-MSB external store racks designed and manufactured by Motor Sich

GUN PODS

The pods are fixed to multipurpose external store racks. Apart from cannon, machineguns (or grenade launcher) the pod includes ammunition and self-reloading mechanism. Helicopter can be equipped with other pods besides the ones mentioned above.

Type	Cannon pod	Grenade launcher pod	Machinegun pod
Destination	To fire at air and ground targets	To fire at ground targets	To fire at ground targets
Designation	UPK-23-250	GUV-1	GUV-2
External view			
Caliber, mm	23	30	7.62; 12.7
Configuration	GSh-23L Twin-barrelled cannon	AG-17 Grenade launcher	2 × GShG-7.62 machinegun YakB-12.7 machinegun
Ammunition	250 shells	300 grenades	2 × 1,700 7.62 mm rounds 750 12.7 mm rounds
Fire rate, rounds/min	3,000...3,400	420...500	3,500...6,000 (GShG-7.62) 4,000...4,500 (YakB-12.7)
Effective range, m	2,000	1,700	1,000 (GShG-7.62) 1,500 (YakB-12.7)
Armed pod weight, kg	218	274	452

BOMBS

100, 250 and 500 kg dumb and smart bombs

Blast bombs



Fragmentation mines



Disposable bombs containers



Incendiary bombs and tanks



Smart bombs



AERIAL MINE DISPENSING SYSTEM

The system is designed for mechanical mine planting on ground surface (or snow).

It includes:

- 4 pods;
- drop control system.

The pods are fixed to BD3-KrV-MSB universal external store racks.



Main data

Number of pods	4
Number of containers with mines in each pod	29
Dimensions, mm (length x width x height):	
– pod	1,884 x 410 x 630
– control console	512 x 348 x 229
Weight, kg:	
– one empty pod	80
– control console	16.5
Max. power consumption, W	20
Supply voltage, V	27
Current consumption, A	6
Drop control system: electric (combat and emergency)	

MISSILE SYSTEM

The system is designed for destruction of modern mobile or stationary armored targets, having composite, spaced or monolithic armor, including the ones with explosive reaction, as well as small targets like permanent fire positions, tanks in trenches, lightly armored objects and helicopters.



Main data

Max. range, m	7,000
Missile weight in pod, kg	43
Dimensions, mm	1,917
– pod length	130
– missile caliber	
Explosive reactive armor penetration, mm	800
Damage probability of one missile	0.7...0.85
Warhead type: tandem, cumulative	
Weapon guidance system: automatic, laser beam with video thermal automatic tracking	

System includes:

1. RK-2V Barrier-V pod missiles



2. Launching devices

3. PM-LKT turning optoelectronic module

4. Display

5. Control unit

6. Aiming aid (joystick)

7. Airspeed sensor

8. Junction box



SYSTEM ARRANGEMENT ON THE Mi-8MSB-V

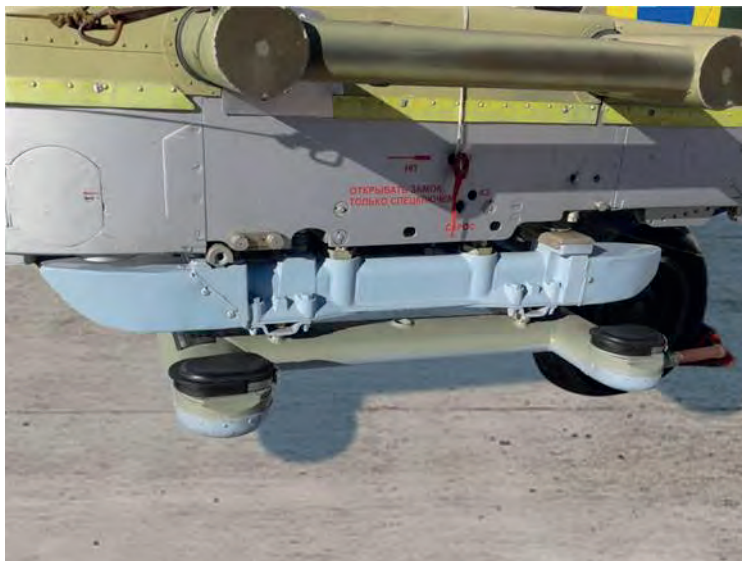
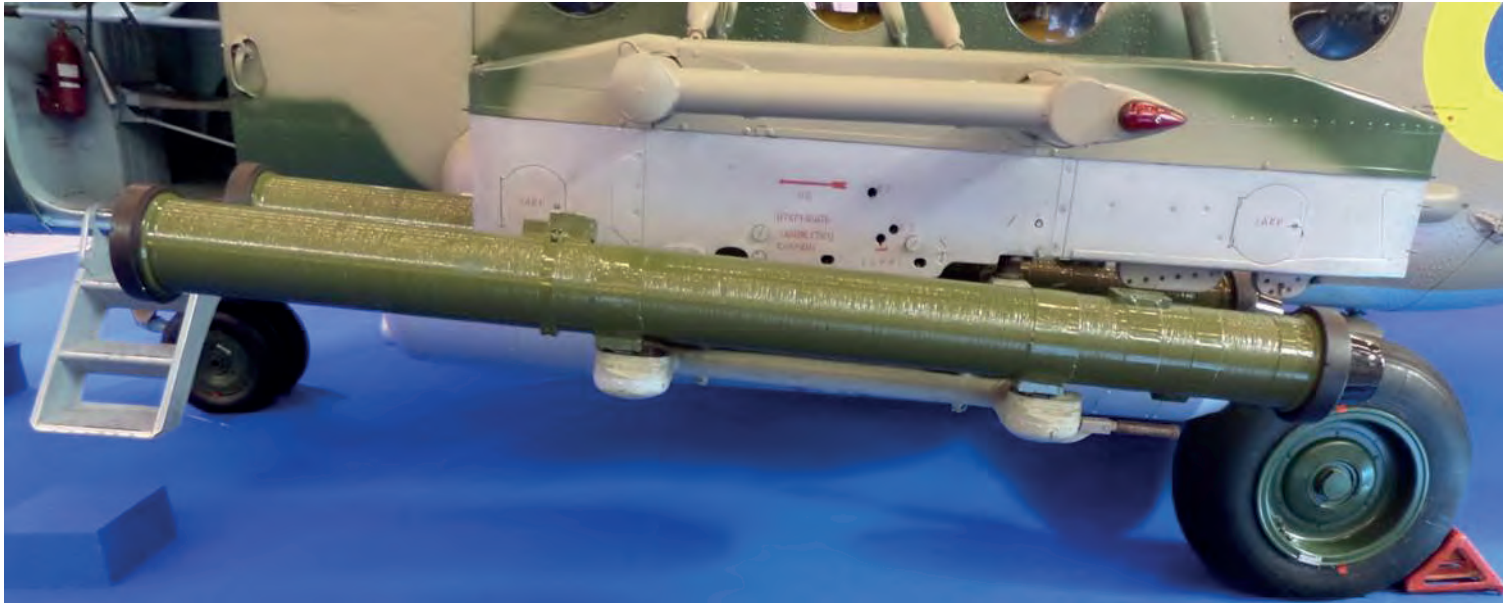


RK-2V Barrier-V missiles

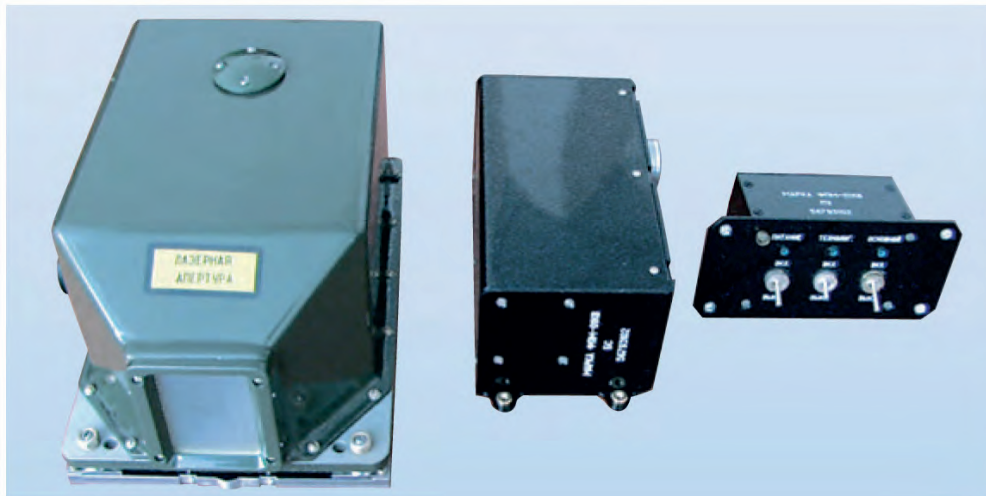
RK-2V Barrier-V missiles

PM-LKT turning
optoelectronic module

SYSTEM ARRANGEMENT ON THE Mi-8MSB-V



FPM-01KV LASER SYSTEM FOR SIGHT MARK FORMING



FPM-01KV laser system for sight mark forming ensures operative combat application of unguided weapons as well as firing from fixed helicopter guns while looking at the target through NVG in dark conditions.

FPM-01KV laser system for sight mark forming can be used either independently, or as a standby system when using FLIR type thermal sighting system.

The system is designed for the Mi-8, Mi-24 and Mi-2, their versions as well as for helicopters of similar class from other companies.

PIVOTED MOUNTS

Pivoted mounts are designed for gun mounting.

Mi-8MSB-V is equipped with:

- 5 pivoted mounts in window openings;
- Single-pivot installation in the sliding door opening;

It's also possible to set one more gun post at a rear loading ramp emergency hatch opening.

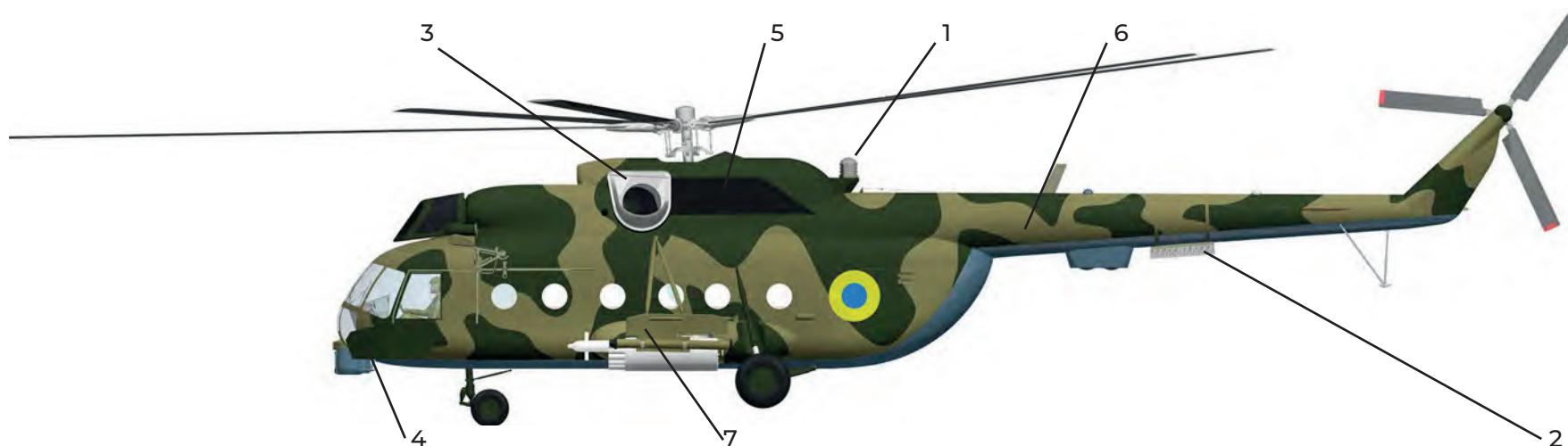


Pivoted mount



Pivoted mount arrangement at either side of helicopter with firing sectors

AIRCRAFT DEFENSE SYSTEM



Current systems:

1. IR countermeasure station – Adron Research and Development Company, Kyiv, Ukraine
2. Flare dispenser – Adron Research and Development Company, Kyiv, Ukraine
3. Exhaust IR suppression system – Adron Research and Development Company, Kyiv, Ukraine
4. Cockpit armor – MOTOR SICHJSC, Zaporozhye

Advanced systems:

5. Power plant and main gearbox armoring system
6. Missile warning system
7. Radar and laser warning system

ADROS KT-01AV IR COUNTERMEASURE STATION



Adros KT-01AV IRCM station is designed for active and effective protection of helicopters against guided missiles equipped with IR homing heads of different types. Adros KT-01AV station is capable of being equally and simultaneously effective against IR homing heads with amplitude-phase (APM), frequency-phase (FPM), pulse-length (PLM) signal modulation from a target, as well as with increased jamming resistance. The station ensures target acquisition failure for such guided missiles as Stinger, Iгла, Iгла-1, R-60M, R-73, Sidewinder and others.

The station distracts guided missiles from target trajectory with subsequent tracking loss due to constant increase of guidance error in the missile control loop. The station does not require information about type and frequency of a missile IR homing head, and does not need a missile firing detection system. The IR countermeasure station is used together with exhaust IR suppression systems which significantly reduce helicopter heat signature allowing to reach maximal helicopter protection effectiveness.

The station is designed to be used on every version of the Mi-8MSB, Mi-8MSB-V and Mi-24.

ADROS KUV 26-50 FLARE DISPENSER



The Adros KUV 26-50 is designed for dispensing 26 mm and 50 mm caliber flares and reflectors from one device. The device dispenses flares according to special programs to create complicated jamming situation for all existing IR homing head missiles including the ones with counter-countermeasure systems.

Dispensed flares provide false information on aircraft location and as a result missile attack fails. The flare dispenser can be used at all flight stages, at manual and automatic modes (together with missile firing detector).

ASH-01V EXHAUST IR SUPPRESSION SYSTEM



Adros ASH-01V exhaust IR suppression system is used for heat signature reducing (in IR band) of the Mi-8 and Mi-24 type helicopters (every version) powered by the TV3-117 type engines, in order to decrease IR homing head missile hit chance.

Required level of heat signature is achieved by using multistage ejector, shielding IR radiation and restricting direct visibility of hot exhaust section parts of the engine, and applying special materials reducing IR radiation intensity.

Reduction of aero dynamic and gas dynamic losses, caused by installation of the exhaust IR suppression system, is achieved by changing configuration (extracted-retracted) and optimization of flow channel geometry.

DIRECT DEPLOYMENT SYSTEM

System is designed for direct deployment and evacuation of troops.

It includes:

- load-carrying structure mounted in the rear section of cargo and passenger compartment;
- special Fast Rope landing ropes



Main data

Number of ropes	2
Maximum number of people on one rope at a time	3
Maximum weight of one person, fully equipped, kg	140
Helicopter speed, km/h: - landing of troops - evacuation	0...20 up to 70
Dimensions of landing rope: - length, m - diameter, mm	18.3 or 24 44
Weight, kg: - special landing rope - load-carrying structure	20 or 26 14
Max. allowed load on load carrying structure, kg	420

VARIANTS OF HELICOPTERS CABIN

VARIANT 1



VARIANT 2





1 (FIRST) VARIANT



- 1. УШВ-1 (UShV-1) Blade pitch indicator. Pilot
- 2. ИТЭ-1 (ITE-1) Main rotor rpm indicator. Pilot
- 3. RA-4500 Radio-altimeter switch
- 4. PFD (MFD10.SP0.00). Pilot
- 5. ТСДК-2 (TSDK-2) Lighting indicator panel, red. Pilot
- 6. ТСДК-2 (TSDK-2) Lighting indicator panel, yellow. Pilot
- 7. MFD (MFD10.SP0.00). Pilot
- 8. B18 SATHCOM Aviation clock. Pilot
- 9. LUN1106 Airspeed indicator
- 10. LUN 1241 Attitude indicator
- 11. EICAS (MFD10.SP0.00) Pilot central panel
- 12. LUN 1183 Vertical speed indicator
- 13. LUN 1128 Barometric altimeter
- 14. B18 SATHCOM Aviation clock. Copilot
- 15. RT-600 Radio compass control panel
- 16. MFD (MFD10.SPO.00). Copilot
- 17. ТСДК-2 (TSDK-2) Lighting indicator panel, yellow. Copilot
- 18. ТСДК-2 (TSDK-2) Lighting indicator panel, red. Copilot
- 19. PFD (MFD10.SPD.Q0). Copilot
- 20. ИТЭ-1 (ITE-1) Main rotor rpm indicator. Copilot

- 21. RIEKER Backlash indicator. Copilot
- 22. ACU6101 control panel of DVCS6100 digital voice communication system. Copilot
- 23. Garmin GTN 650. Copilot
- 24. АП-3452 (AP-34B2) Autopilot zero indicator
- 25. CLN-8 Control panel of RN-7 map generator. Copilot
- 26. ACU6101 Control panel of DVCS6100 voice communication digital system. Pilot central panel
- 27. 36V converter switch
- 28. Fuel bleeding switch
- 29. Engine electronic governor control panel
- 30. CLN-8 Control panel of RN-7 map generator. Pilot
- 31. АП-345 (AP-34B) Autopilot control panel
- 32. Garmin GTH 650. Pilot
- 33. ACU6101 control panel of DVCS6100 digital voice communication system. Pilot
- 34. RIEKER Backlash indicator. Pilot

1 (FIRST) VARIANT

No	Model	Description
1.	YLUB-1 (UShV-1)	Blade pitch indicator. Pilot
2.	I/IT3-1 (ITE-1)	Main rotor rpm indicator. Pilot
3.	RA-4500	Radio-altimeter switch
4.	PFD	(MFD10.SP0.00). Pilot
5.	TCfIK-2 (TSDK-2)	Lighting indicator panel, red. Pilot
6.	TCfIK-2 (TSDK-2)	Lighting indicator panel, yellow. Pilot
7.	MFD	(MFD10.SP0.00). Pilot
8.	B18 SATHCOM	Aviation clock. Pilot
9.	LUN1106	Airspeed indicator
10.	LUN 1241	Attitude indicator
11.	EI CAS	(MFD10.SP0.00) Pilot central panel
12.	LUN 1183	Vertical speed indicator
13.	LUN 1128	Barometric altimeter
14.	B18 SATHCOM	Aviation clock. Copilot
15.	RT-600	Radio compass control panel

1 (FIRST) VARIANT

No	Model	Description
1.	YLUB-1 (UShV-1)	Blade pitch indicator. Pilot
2.	I/IT3-1 (ITE-1)	Main rotor rpm indicator. Pilot
3.	RA-4500	Radio-altimeter switch
4.	PFD	(MFD10.SP0.00). Pilot
5.	TCfIK-2 (TSDK-2)	Lighting indicator panel, red. Pilot
6.	TCfIK-2 (TSDK-2)	Lighting indicator panel, yellow. Pilot
7.	MFD	(MFD10.SP0.00). Pilot
8.	B18 SATHCOM	Aviation clock. Pilot
9.	LUN1106	Airspeed indicator
10.	LUN 1241	Attitude indicator
11.	EI CAS	(MFD10.SP0.00) Pilot central panel
12.	LUN 1183	Vertical speed indicator
13.	LUN 1128	Barometric altimeter
14.	B18 SATHCOM	Aviation clock. Copilot
15.	RT-600	Radio compass control panel

1 (FIRST) VARIANT

No	Model	Description
16.	MFD	(MFDIO.SPO.OO). Copilot
17.	TCfIK-2 (TSDK-2)	Lighting indicator panel, yellow. Copilot
18.	TCfIK-2 (TSDK-2)	Lighting indicator panel, red. Copilot
19.	PFD	(MFD10.SPD.Q0). Copilot
20.	I/IT3-1 (ITE-1)	Main rotor rpm indicator. Copilot
21.	RIEKER	Backlash indicator. Copilot
22.	ACU6101	Control panel of DVCS6100 digital voice communication system. Copilot
23.	Garmin GTN 650.	Copilot
24.	АП-34Б2 (AP-34B2)	Autopilot zero indicator
25.	CLN-8	Control panel of RN-7 map generator. Copilot
26.	ACU6101	Control panel of DVCS6100 voice communication digital system. Pilot central panel
27.		36V converter switch
28.		Fuel bleeding switch
29.		Engine electronic governor control panel

1 (FIRST) VARIANT

No	Model	Description
30.	CLN-8	Control panel of RN-7 map generator. Pilot
31.	АП-34Б (AP-34B)	АП-34Б (AP-34B) Autopilot control panel
32.	Garmin GTH 650.	Pilot
33.	ACU6101	Control panel of DVCS6100 digital voice communication system. Pilot
34.	RIEKER	Backlash indicator. Pilot

2 (SECOND) VARIANT



2 (SECOND) VARIANT

No	Model	Description
1.	A-037	Altitude radio altimeter
2.	GTN-750	Airborne avionics navigation system equipment GRS/VOR/LOC/GS/COMM
	KX165A	Airborne avionics navigation system equipment GRS/VOR/LOC/GS/COMM
	KR-22	Marker receiver
	KN-63	DME
3.	Алмаз-УП	Voice warning equipment
4.	ST3400H	HTAWS
5.	AD 32	Air data system
6.	БАС-В	Airborne integrated built in test (BIT) and crew warning system
7.	Ice Detector 0871CT2	Ice detector
8.	CAS-67A	TCAS
9.	KT 76C/GTX-330D	Aircraft transponder
10.	RDR-2100	Weather surveillance radar
	EX600	MFD
	KVG350	AHS
11.	АГБ-3К сер. 3	Third (standby) artificial horizon
12.	AEROX MV54GH	Crew oxygen equipment
13.	LPG-150	Winch



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