APPROVED

Ми-17В-5.0000.00 РО ЛУ

Мм-17В-5 HELICOPTER

MAINTENANCE SCHEDULE

Ми-17В-5.0000.00 РО

AIRFRAME, HELICOPTER SYSTEMS, POWER PLANT

RECORD OF REVISIONS

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INTRODUCTION

The Maintenance Schedule of the helicopter determines the scope and schedule of all kinds of preparations of the helicopter for flights and maintenance operations. The I maintenance schedule has been compiled to cover the whole helicopter and consist of four parts:

Airframe, Helicopter systems, Power plant;
Helicopter equipment;
Avionics;
Pyrotechnic devices, Aerial-delivery system.

GENERAL

1. In carrying out any kind of pre-flight preparations, scheduled maintenance and other works refer to present maintenance schedule, maintenance practices and pre-flight procedures, service manuals for the helicopter and mounted equipment, as well as to bulletins in force.

2. The scheduled maintenance assigned for helicopter, power unit, aerial – delivery, avionics and helicopter equipment should be performed simultaneously in generally accepted time limits, determined by the helicopter flying time, i. e. every 50^{+10}_{-5}, 100^{+20}_{-10}, 200^{+40}_{-20}, 400^{+60}_{-30} h. In helicopter storage scheduled maintenance is performed in calendar time every 7^{+3}, 15^{+2}_{-1}, 30^{+6}_{-3} days, 3 months $^{+18}_{-9}$ days and 6 months $^{+36}_{-18}$ days, as stated in section «Maintenance in Storage)).

3. Preliminary preparation is performed on days, assigned for preliminary preparation and is valid for 6 flying shifts (days, nights) during 7 days.

On days of preliminary preparation, in addition to works described in section «Preparation for Flights)) of M.S., maintenance is also performed on ground servicing equipment and test means, shelters and parking lots.

4. In intervals between scheduled maintenance checks, after every (25±5) flight hours, but at least every 60^{+5} calendar days, periodic inspection of the helicopter should be effected in the scope, covered by section «Preparation for Flights)).

Periodic inspection of the helicopter is performed on the day of subsequent pre-flight preparation, this procedure includes serviceability checks of all systems and equipment with the help of test instruments and lubrication of units and assemblies in accordance with the lubrication charts.

5. In the course of pre-flight preparations of all kinds including servicing (replenishment) of working fluids and checking of their levels, the flight technician should make sure that these procedures are performed correctly, he must personally close and lock reliably the covers (plugs) of the filler necks.

6. In preparing the aerial - delivery equipment for flights, carry out only those works listed in columns «Preliminary preparation)), «Post-flight procedure)), which correspond to the operational items version, prescribed by the schedule of take-off or of forthcoming flight, and only those works from columns «Pre-flight procedure)) and ((Preparation for subsequent flight)), which correspond to the scheduled flight plan.

7. When rearranging the helicopter from one loading variant to another, the works prescribed for the new loading variant should be carried out.

8. Serviceability checks of energized holders ЭКСР-46, external stores and R-meter may be effected with power supply from the airborne power source.

Serviceability checks of energized avionics and helicopter equipment, КО-50 kerosene heater and electric winch should be effected with power supply from the ground power source, except for the cases when interference level measurements are taken with engines running.

In preparing the helicopter in the case of alarm and in exceptional cases of preparation in pre-flight preparation, the serviceability checks may be carried out by the helicopter crew with power, supplied from the airborne sources with the engines running.

9. In checking serviceability of avionics (both aboard the helicopter or outside), employ radio camouflage means in compliance with the relevant manuals, regulations and instructions in force.

10. When the engines, main gear box or other units and items of equipment have been replaced, carry out the scheduled maintenance in time limits, determined by the helicopter total flying time. On newly mounted engines or units, the nearest subsequent scheduled maintenance may be conducted ahead of scheduled lime.

All works on replacement of units and items of equipment should be recorded in the relevant logbooks and certificates.

11. With the purpose of ensuring trouble-free operation of the helicopter under various climatic conditions (excessive humidity, dustiness etc), and also if separate units are subject to intensive operation or if engines are replaced, it is allowed to perform out-of-schedule maintenance on all or individual helicopters (systems, units) in compliance with this M.S. The scope of works prescribed in this maintenance schedule should not be curtailed.

12. When the helicopter is parked, the air intakes (dust-protection devices) and exhaust branches should be blanked off with covers, while during long-term parking (storage) the power

unit should be covered with canvas. The main rotor of the parked helicopter should be always braked.

13. Place the chocks under the wheels, blanks, clamps for the swash plate, parking brakes and main rotor brake, moor the main rotor blades irrespective of the weather.

14. Inspect the helicopter, following a strict sequence according to prescribed circuits. Lubricate (fill with oil) the engines, transmission units, controls, main and tail rotor hubs, swash plate, etc in terms, prescribed in the supplements. Lubrication carried out every 10^{+3} or every (25±5) flight hours should be performed on days of preliminary preparation and during periodic inspections of the helicopter.

15. If the helicopter is operated under field conditions, avoid, if possible, starting up the engines on sandy or dusty areas. The area for starting up the engines and performing the engine test should be selected so as to protect the intakes from dust and foreign matters, arised by air, blown up by adjacent helicopters.

16. Prior to performing the inspections and scheduled maintenance, clean external surfaces of the helicopter and its units, equipment and armament from dirt, dust, frost, snow, ice and stale grease. To prevent damage of the paint-and-varnish coating, never attempt to pull off frozen canvas covers from the helicopter skin, main and tail rotor blades. First defreeze them with warm air from an external heater at a temperature not exceeding 60°C.

17. When replacing the engines, main gear box or other units, also in case of disconnection of the pipelines of the fuel, oil and hydraulic systems, prior to starling up the engines, initially pump through the systems to remove air blocks.

18. In case of unsuccessful start of the engine, crank it before restart.

19. When the disassembled engines and units are to be reinstalled the same helicopter, do not disturb the adjustment of eye bolts and fastening rods.

20. The engine fuel system should be filled with fuel for the whole time the engine is on the helicopter. Once the fuel system has been emptied, internal preservation not later than 24 h after the fuel has been drained is required.

21. Close at once all holes and cavities of units and pipelines opened in the course of removal with special blanks, and the plug-and-socket connectors - with p.v.c. film. Wooden blanks, paper, oakum, rags etc. are not allowed to use. When disconnecting plug-and-socket connectors of electric mains inspect the jacks and pins.

22. To protect the glazing from direct sun rays, dust and dirt, cover the cabin with clean canvas covers in parking.

23. Never flush with kerosene (gasoline) the enclosed-type ball bearings and bush-roll chain of the control system, but wipe with clean and dry cleaning rags and lubricate on the outside, applying a thin layer of lubricant.

24. Carry out the works on the helicopter with sound and marked-out tools and fixtures. Prior to work and on completion of work check the tools against the list, making sure that none have been lost or left inside the helicopter.

25. Carry out the scheduled maintenance and prepare for flight with serviceable test equipment having test certificates. Equipment without certificate or with expired test date should not be used.

26. Do not tear off cotter pins, wire or unbend tabs of locking strips by turning nuts or bolts, since it can damage thread or unscrew the studs. Do not use locking wire or locking strips as second-hand fasteners.

27. Press grease into the joints outfitted with grease cup till stale grease is pressed out. If grease fails to pass through the joint, check the grease cup, clean it, replace if necessary. If trouble is not eliminated, do not use the unit or assembly.

28. Fill the hydraulic system with fresh oil not later than 48 h after used the oil has been drained.

29. When inspecting and checking the accessories, units, structural components and systems of the helicopter, pay special attention to location and elimination of such probable troubles as:

- cracks, dents and other mechanical injuries of parts;
- damaged and slackened locking, loose fasteners, also loose union nuts of plug-and-socket connectors;
- leaks and wear of pipelines and units of fuel, oil, hydraulic, pneumatic and other systems;
- improper fitting of hoses and pipelines of all systems;
- damaged protective coating and corroded parts:
- increased play in hinged joints;
- friction or rubbing of moving parts against other parts and components of the helicopter structure;
- slackened rivets;
- untight fitting and loose fastening of covers, access doors, cowlings and fairings;
- defective attachment of pipelines and wire bunches;

damaged bonding.

SAFETY PRECAUTIONS

1. The helicopter equipment may be operated by personnel, who have studied the safety engineering rules and are certified for the maintenance.

2. Prior to carrying out the inspections and scheduled maintenance, ensure the safety for the personnel against static electricity discharge, spontaneous switching-on of the electrical equipment, fire and injuries.

For this purpose:

- place chocks under the helicopter wheels,
- ground the helicopter;
- set all automatic circuit breakers and energy consumers to OFF position,
- apply brakes to the main rotor.

3. When power supply sources are connected to the helicopter, hang out the poster "HELICOPTER ENERGIZED!" The sources may be connected to the airborne mains only by permission of the flight technician, and during the period of scheduled maintenance - by the maintenance superintendent.

4. On completion of scheduled or erection works make sure that all the systems are leak-tight, running the engines in idling, then check the engines in higher power ratings.

5. When the engines are running, nobody should stay in the engines and gear box compartments, as well as within the tail rotor area.

6. When the power unit is inspected after the engines shut down, exercise care to avoid burns caused by touching the hot parts.

7. Never carry out maintenance on suspended engine. Use a special cart from the ground equipment set to carry out works on disassembled engine.

8. Check that portable electric lamps used for inspection of the helicopter are intact, spark-proof, have protective nets.

9. Check that hydraulic hoists and cranes are serviceable. **NEVER** use faulty hoisting devices.

10. Inflate the landing gear tyres using a special reducer with pressure gauge, precluding excessive air pressure liable to destroy the tyre and injure the personnel.

11. When operating the avionics and helicopter equipment follow safety precautions to preclude short-circuiting, shocks of high-voltage current and spontaneous switching-on of the equipment.

12. During maintenance on the helicopter, DO NOT:

- touch the helicopter after taxiing it to the parking area, when no grounding is connected;
- lean the step-ladders and other airfield equipment, which are not lined with soft material, to the helicopter skin;
- keep free ends of wiring non-insulated;
- leave open electric switch panel of function boxes and terminal panels energized;
- carry out wiring, demounting works in electric circuits when the helicopter is energized:
- open dischargers of ignition unit CK-22-2K;
- apply on the valves of oxygen bottles any grease;
- carry out any works on the oxygen equipment with oily hands and tools with traces of oil and fat.

13. Prior to starting and test on the engines check for availability of fire-extinguishing means and chocks for the wheels, also, for proper arrangement of airfield ground equipment at the parking area and absence of foreign objects around the helicopter. Engine start and test may be performed by the pilot only in the presence of the crew. The crew, performing the engine test should not leave the cabin when the engines are running.

14. Prior to starting up, opening and closing the cargo compartment, cranking the main rotor blades, give warning commands and make sure there are no people and foreign objects in the vicinity of blades and rotating parts. The orders should be given to the crew and personnel near and inside the helicopter. The works may be done only after reports are accepted.

15. DO NOT repair (disassemble) systems under pressure.

16. When operating with oil 6-3B observe the following safety rules:

- avoid getting of oil on painted surfaces of units and mechanisms, rubber parts, wiring etc. If oil gets on these parts, wipe it off immediately, making use of cloth soaked in gasoline or kerosene;

– on completion of maintenance wash your hands with water and soap, especially before meal;
– do not mix oil 6-3B with mineral oils;
– DO NOT use the cans with contained mineral oils before.

17. When carrying out the maintenance on aerial - delivery equipment, strictly follow safety rules, excluding unintentional shots, firing of pyrotechnical means, release of cargoes.

18. When operating with the pyrotechnical means, DO NOT:
– expose squibs to mechanical actions (shocking, dropping, puncturing);
– use faulty or uncertified instruments for squibs test;
– disassemble the squibs;
– allow stray persons to be at the working station;
– smoke and use fire, place heating appliances and highly inflammable substances near the test area.

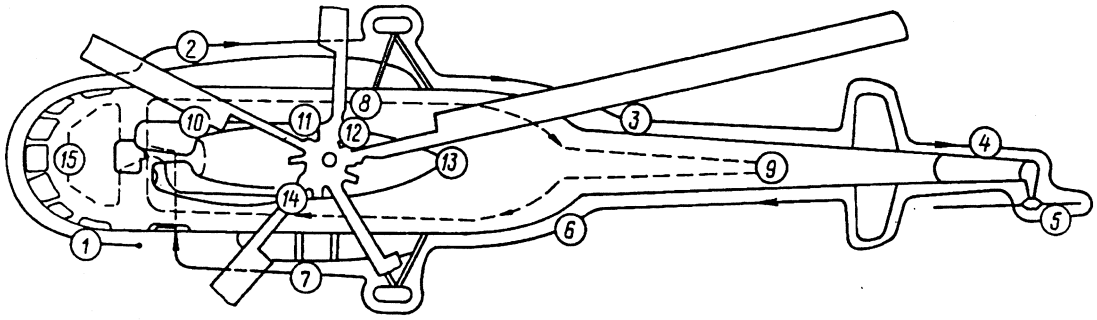
19. Before starting work on units and systems containing pyrotechnical devices and in the course of the helicopter service, unload them. Hand over the devices for storage in the accepted procedure.

20. In all cases when helicopter is on the ground the safety cap with red warning flag should be fitted on ДСЛ–40Т detector vibrator. Remove the protective casing before the flight, inspection and functional check of the detector and install the casing after flight, inspection and functional check of the detector.

21. When replacing the СК-22-2К ignition unit due to breakdown or expiration of life time of the СК-22-2К ignition unit discharger with a radio-active radiation source, send them to the manufacturer or to a specialized organization with compiling the respective statement. The СК-22-2К ignition unit discharger with a radioactive radiation source is not subject to destruction and burial-at the unit.

PREPARATION FOR FLIGHTS

The inspection route in the helicopter is shown in Fig. 1.



1 - engine compartment;
2 - gearbox compartment;
3 - swash plate and main rotor hub;
4 -tail compartment;
5 - main rotor blades;
6 – cockpit
7 - cargo cabin;
8 - radio compartment, tail boom and pylon;
9 - fuselage nose section;
10 - fuselage starboard;
11 - tail boom, stabilizer (starboard) and tail bumper;
12 – pylon;
13 -tail rotor;
14 – tail boom and stabilizer (portside), cargo ramp;
15 - fuselage port side.

Fig. 1 Helicopter Inspection Route (— external inspection, --- internal inspection)

Sign "+" stands for operations to be performed. The operations of items marked with an asterisk can be omitted when preparing for urgent sortie.

Task cards with "CMM" designation should be found in Component Maintenance Manuals (CMM).

MS item	Description of operations	Kinds of preparation				
		Preliminary	Pre-flight	Recurrent flight	Post-flight	Scheduled inspection
	Preliminary Operations					
1.	Take over the helicopter from the person on duty on the parking site, check the condition of lead seals and without removing the latter make sure there are no external damages	+	+	-	-	+
2.	Check the chocks installation, the helicopter grounding and Pitot tubes covering. **Note.** Remove chocks before starting the engines during pre-flight check.	-	+	-	+	-
3.	Remove canvas cover from the helicopter. Remove the stoppers. Open the cowlings and covers of maintenance access doors. Note. Stoppers from engines intake ducts, covers from dust-protection devices should be removed only before engines starting and for a time of engines intake ducts and dust-protection devices inspection.	+	+	-	-	+
4.	Prepare the ground servicing means, tools, accessories and test equipment necessary for the inspection	-	-	-	-	-
5.	Clean the helicopter of dust, dirt, while in winter - of snow, ice, frost CAUTION. IN CASE OF ICING OR AT SNOW-FALL REMOVE ICE AND FROST FROM THE FUSELAGE SURFACE, TAIL BOOM AND PYLON, MAIN AND TAIL ROTORS, FOR REMOVING ICE OR THAWING OUT THE CANVAS COVERS OF THE MAIN AND TAIL ROTORS USE HOT AIR AT A TEMPERATURE NOT EXCEEDING 60°C	+	+	-	-	+

MS item	Description of operations	Kinds of preparation				
		Preliminary	Pre-flight	Recurrent flight	Post-flight	Scheduled inspection
6.	Open the engine and main gearbox cowling panels, hinge out the engine efflux shield (EES) beforehand (when it is installed on the helicopter).	-	-	-	-	-
7.	Drain condensate from the pneumatic system settling filter	-	-	+	+	+
8.	Disconnect main rotor blades mooring lines; remove the weather clamps from the swash plate.	+	+	-	-	+
9.	Make sure that all automatic circuit breakers, power sources and loads are deenergized.	-	+	-	-	+
10.	Install and connect the airborne batteries (if they have been removed) in the helicopter. Connect the helicopter with ground power source.	+	+	-	-	+
11.	For the time of inspection fit a rubber casing with red flag onto the visual ice detector (to prevent injuries to the servicing personnel)	+	+	-	-	+
12.	Drain fuel sediment from the tanks and make sure it is free of water, ice crystals and mechanical admixtures	-	+	-	-	-
13.	Warm up the engines and gear boxes, if necessary	-	+	-	-	-
14.	Remedy the troubles, specified by crew in the helicopter preparation for flight logbook. Note. If the helicopter is accepted to the inspection site with operating engines, while stopping them make sure there are no foreign noises. Before the pressure in the hydraulic system has dropped check charging of the hydraulic accumulators by displacing the control members and following the pressure gauge readings	-	-	+	+	-
	Inspections and Checks during for Flight Preparation Inspect and check (see Fig.1):					
	Engine Compartment					
15. (079.10.00 a)	Oil level in oil tanks of TB3-117BM engines	+	+	+	+	+
16. (079.10.00 b)	Oil tanks, making sure they are intact, reliably fastened and leak-tight	+	+	-	+	+
17. (071.10.00 b)	Panels of engine compartment cowling and locks, making sure of good condition, absence of mechanical damages and loose rivets	-	-	-	-	-
18. (071.20.00 a)	Units of TB3-117BM engines fastening to helicopter, rear support to main gear box, making sure of intact locking, reliable fastening, absence of mechanical damages and corrosion, oil leak from the spherical support	+	-	-	-	+
19*. (065.40.00 a)	Control cable and revolutions reset units of TB3-117BM engines, making sure of absence of mechanical damages, reliable fastening of wire cables and their locking	+	+	-	-	+
20*. (072.00.00) Task Card 602. (079.20.00a) (026.20.00a)	Pipelines and hoses of fuel, oil and fire-protection systems; make sure they are leak-tight, reliably fastened and the locking is intact. Check cleanliness of holes in fire-extinguishing manifolds.	+	+	+	+	+
21. (049.10.00a)	Air ducts of start system of TB3-117BM engines; make sure they are intact and reliably fastened	-	-	-	-	-
22. (071.00.00 a)	Air discharge branches from bleed valves of engines TB3-117BM	+	-	-	-	+
23*.	Engine compartment; make sure there are no foreign objects, dust and dirt	+	+	-	+	+
24*. (072.00.00 Task Card 601 CMM)	Engines TB3-117BM for absence of mechanical damages, damaged anti-corrosion coatings and corrosion	+	+	-	+	+
25. (072.40.00 Task Card 201 CMM)	Casings of combustion chambers for cracks, overheating spots and bulging	+	-	-	+	+
26. (072.00.00 Task Card 603 CMM)	Units of TB3-117BM engines and their fastening, rocking them by hand	+	-	-	-	+

MS item	Description of operations	Kinds of preparation				
		Preliminary	Pre-flight	Recurrent flight	Post-flight	Scheduled inspection
27. (072.00.00 Task Card 601 CMM)	Reliable fastening and locking of cotter pins on engines where accessible	+	-	-	-	+
28*. (072.30.00 Task Card 201 CMM)	Position of pointers of compressors guide vanes dials, which should be set at 27 to 28.5"	-	+	-	-	+
29. (078.11.00 a)	Inspect the EES, make sure of its good condition and reliable fastening	+	-	-	+	+
30. (072.58.00 Task Card 201 CMM)	Exhaust branches and free turbines within reach for absence of cracks, scores, corrosion, overheating.	+	+	-	+	+
31. (071.60.00 a)	Dust-protection device including removal of fairing; make sure of cleanliness of intake ducts and separators, absence of foreign objects, loose rivets, mechanical damages, abrasion wear and oil leak from the first supports of ТВ3-117ВМ engines	-	-	-	-	-
32. (071.60.00 b)	Dust-protection device excluding removal of fairing; make sure there are no foreign objects, mechanical damages and loose rivets	-	+	+	+	-
33.	Rotation of:					
(072.00.00	– gas generator rotor	-	-	-	-	+
Task card 305 CMM)	– free turbine rotor	-	+	-	+	+
34. (078.10.00a, 078.10.00b)	Attachments of exhaust pipes of ТВ3-117ВМ engines, tightening of bolts and their locking	+	+	-	+	+
35.	Fan unit, make sure of:					
(148.10.00 b)	– absence of damages of cowling covers, intake duct and fan cone;	+	-	-	-	+
	– proper mounting and good condition of guide blades;	+	-	-	-	+
	– absence of foreign objects in the intake duct and closing of universal joint shaft access door cover.	-	+	-	-	-
	Gear Box Compartment					
36. (071.10.00 a)	Covers of gear box compartment cowling, parts of locking system of cowlings in the closed position; condition of hinge assemblies	-	-	-	-	-
37. (084.10.00 b)	Gear box fastening to gearbox mounting frame, and mounting frame fastening to the fuselage	-	-	-	-	-
38.	Gearbox mounting frame:					
(084.11.00 a)	– visually make sure there are no cracks and corrosion	+	-	-	-	+
	– using four- or seven-power magnifying glass, illumination from portable lamp and mirror (in places inconvenient for inspection)	-	-	-	-	-
39*. (079.20.00b) (084.12.00a)	Air- and oil-coolers and pipelines of engines and main gearbox lubrication system; make sure of reliable fastening, absence of oil leaks through cells, shells and pipe unions; absence of shells swelling and cleanliness of radiator cells.	+	+	+	-	+
40. (084.10.00e)	Gearbox ВР-14, fastening flanges to under-gearbox frame, sump and covers of drives for absence of cracks and corrosion.	-	-	-	-	-
41. (084.10.00 e CMM)	Gear box lubrication system: make sure of leak-tightness of oil filter covers, П-1 chip-detectors; leak-tightness and locking of points of connections of pipelines and hoses	+	+	-	+	+
42. (084.10.00 c CMM)	Oil level in gearbox by oil level gauge. Refill, if required.	+	+	+	+	+

MS item	Description of operations	Kinds of preparation				
		Preliminary	Pre-flight	Recurrent flight	Post-flight	Scheduled inspection
43*. (026.20.00 a) (026.21.01a) CMM	Fire-extinguishing system bottles; security of attachment and pressure by pressure gauge in accordance with ambient air temperature	+	+	+	-	+
44. (026.20.00a)	Units, pipelines, atomizing rings of fire-extinguishing system	+	-	-	-	+
45. (065.40.006)	Hydraulic actuators fastening bracket; make sure that bracket is free from damages. Inspect the suspected places using seven-power magnifying glass. Pay special attention to areas of bosses of hydraulic actuators supports fastening. **Note.** The operation should be performed when bracket operating time is 3000 hours or greater.	+	-	-	-	+
46*. (065.40.00ξ)	Hydraulic actuators; make sure that they are leak-tight and reliably fastened and there are no mechanical damages.	+	+	-	-	+
47. (065.40.01 E)	Smooth travel of rods of hydraulic actuators to ensure full stroke of handles and control pedals with hydraulic systems switched on	-	+	-	-	+
48. (065.40.00 ι)	Parts of tail rotor pitch limit system СПУУ-52 and make sure that thev are reliably /fastened and free of mechanical damages	+	-	-	-	+
49*. (065.40.00a)	Helicopter and engines control pull rods, rockers and brackets; make sure of absence of plays and mechanical damages, security of attachment and locking of parts.	+	-	-	+	+
50. (065.40.00 f)	Sector and wire cable of tail rotor control, make sure their fastening, locking of parts and fixing of wire cables are reliable. Check for absence of mechanical damages	+	-	-	+	+
51. (148.10.00 a)	Air cooling system of units, make sure that fastening and locking of parts are reliable	-	-		-	-
52*. (029.10.00 a) (028.20.00a) (036.10.00b)	Condition, fastening and leak-tightness of units, pipelines and hoses of hydraulic, fuel and pneumatic system	+	+	+	+	+
53. (065.40.00 g)	Main rotor brake, making sure it is in good repair and reliably fastened	+	-	-	-	+
	Swash Plate and Main Rotor Hub					
54. (065.10.00 d)	Oil level in expansion tank of hydraulic dampers.	+	+	-	+	+
55. (065.10.00a) (065.50.00a)	Swash plate and hub housing; make sure of absence of corrosion, cracks on parts and assemblies, as well as intact locking and leak-tightness of bearings. In case of oil leak from main rotor hub bearings, check their filling and add, if necessary: – flapping hinge – up to 30 to 40 mm level; – drag hinge – up to 25 to 35 mm level' – feathering hinge – up to 15 to 20 mm level.	+	-	-	+	+
	Check oil with hinge cooled. On completion of flying day check again oil level to determine quantity of oil leakage.					
	Oil level after flying day should be: – 60 mm in flapping hinge (20 mm less than filling) – 55 mm in drag hinge (20 mm less than filling) – 35 mm in feathering hinge (15 mm less than filling)					
	In case of oil consumption during flying day exceeds rated value, send hub for repair. If leakage is less than mentioned above add oil.					
	On main rotor hubs, having pressure compensators in flapping, drag and feathering hinges, oil should be filled (refilled) up to the level of: – 30 to 35 mm by dip stick (81911М-02) – for flapping and drag hinges, or (8АТ.1250.098 with vibration absorber being installed); – in feathering hinge oil level should coincide with inner butt of hole for plug of feathering hinge housing (checked visually)					

MS item	Description of operations	Kinds of preparation				
		Preliminary	Pre-flight	Recurrent flight	Post-flight	Scheduled inspection
56. (065.50.00f)	Condition and fastening of swash plate lever clip displacement limiter. **Note.** The operation should be also performed after helicopter parking under storm conditions.	+	-	-	-	+
57. (065.10.00 b)	Blade pitch controls; make sure they are fastened reliably to housings of hub feathering hinges and their locking is intact	+	-	-	+	+
58. (065.50.00b)	Fastening of hydraulic actuators pull rods to swash plate, bracket, link and arm of lever.	+	-	-	+	+
59. (065.10.00 c)	Centrifugal droop limiters of main rotor blades, making sure their pawls and stops are free of wear and wear hardening	+	-	-	-	+
60. (065.10.00 o)	Condition of oil in main rotor hub feathering hinges through inspection cups	+	+	+	+	+
	Pendulum vibration damper					
60 a. (065.12.00a)	Condition of vibration damper and oil level in expansion tank	+	-	-	+	+
	Tail Compartment					
61. (071.10.00 a)	Covers of tail compartment cowling, making sure that the units and locks are intact and the skin is free of mechanical damages	+	-	+	-	+
62. (029.10.00 b)	Level of АМГ-10 oil in hydraulic tank	+	+	+	+	+
63*. (029.10.00 a) (029.10.00 c)	Units, pipelines and hoses of hydraulic system; make sure they are reliably fastened and leak-tight	+	+	-	+	+
64*. (028.20.00 a) (028.10.00 d-i.1)	Service tank plate, filler neck, pipelines and drain pipeline of fuel system; make sure they are reliably fastened, locked, clean and leak-tight	+	+	+	+	+
65*. (030.41.00a) items 1, 2, 3	Reliable fastening of alcohol tank, its filling, leak-tightness, cleanliness of drain holes in filler neck plug and intactness of its locking.	+	-	-	-	+
66. (026.20.00 a)	Fire-extinguishing system pipelines; make sure they are reliably fastened and drain holes are clean	-	-	-	-	-
67*. (049.10.00 a)	Auxiliary power unit AM-96; make sure its reliable fastening to the fuselage, as well as the attachment of units, pipelines of fuel and lubrication systems to it are reliable	+	+	+	+	+
68. 6.2.3 (2) CMM	Oil level in the oil tank of AM-96 auxiliary power unit should be between marks "ADD" and "FULL" on the vertical bar of oil tank sight glass	+	+	+	+	+
69. (049.80.00 a) (049.10.00a)	Air intake, exhaust pipe attachment, air bleed branches; make sure they are reliably fastened and free of mechanical damages	+	+	-	+	+
	Main **Rotor** Blades					
70. (065.10.00 i)	Pressure in spars of main rotor blades visually by indicators of spar damage	+	+	+	+	+
71. (065.10.001)	Minimum operational pressure of spars damage indicators of main rotor blades	-	-	-	-	-
72. (065.10.00 k)	Lugs of root end pieces and tightening of tail fairings of main rotor blades; make sure that there are no cracks and mechanical damages and that the screws are reliably fastened	-	-	-	-	-
73. (065.10.00 j)	Surfaces of spars, tail sections, end fairings of main rotor blades; make sure there are no:					
	– damages of paint coating, punctures, cracks and dents;	+	-	-	+	+
	– burns of anti-icing system sections, mechanical damages of edge tippings and rubber straps of nose spar;	+	-	-	+	+
	– bulging and unglueing of skin in the area of its glueing to honeycomb filler, ribs, spars and tail stringers;	+	-	-	+	+
	– cracking and spalling out of sealing compound in tail section-to-spar joints;	+	-	-	-	+
	– deformation of rear edges of tail sections.	+	-	-	+	+

MS item	Description of operations	Kinds of preparation				
		Preliminary	Pre-flight	Recurrent flight	Post-flight	Scheduled inspection
	Cockpit					
74. (052.20.00 b)	Cover of engines access hatch; make sure there are no mechanical damages; the lock operates reliably and sealing rubber is intact	-	-	-	-	-
75*. (025.10.00 a)	Pilots' and flight engineer seats; make sure that they move easy and are reliably locked, fastening belts are available and are reliably locked	+	+	-	+	+
76*. (025.10.00 a)	Instrument flight blinds, make sure they are intact (during instrument flight)	+	+	-	-	+
77*. (052.20.00 a)	Slide blisters; make sure the slide easy and are locked reliably. Condition of glazing, mounting and locking of emergency release handles, condition of sealing	+	+	-	-	+
78*. (030.41.00a) items 5, 6, 7	State of fastening and leak-tightness of windshield washing system units (shut-off valves, non-return valve, drain valve) and pipelines; make sure of absence of mechanical damages and contact with other parts.	+	+	-	-	+
79. (056.10.00 a)	Cockpit glazing; make sure that the glasses are clean and free of mechanical damages	-	-	-	-	-
80. (056.10.00 b)	Canopy frame sections, clamping facings and rubber seals; make sure there are no mechanical damages and that the sealing is reliable	-	-	-	-	-
81. (053.60.00a)	Armoured plates; make sure of reliable fastening of armoured plates.	+	-	-	-	+
82. (029.10.00f)	Serviceability of hydraulic system when operating from ground hydraulic unit	-	-	-	-	+
83. (052.30.00f)	Serviceability of cargo ramp hydraulic system and its leak-tightness	+	+	-	-	-
84. (030.41.00c)	Serviceability of cockpit windshields washing system and its leak-tightness	+	+	-	-	+
85. (065.40.00 a)	Helicopter control from pilot and copilot seats; make sure that smooth control is ensured over full stroke of handles and pedals, collective pitch/throttle control lever and separate control of engines, control levers of engine shut down and main rotor brake lever	-	-	-	-	+
86. (032.20.00a i.3)	Leak-tightness of main landing gear shock strut filler (open the hatch cover in the cockpit floor beforehand)	-	-	-	-	+
87. (065.40.00b)	Serviceability of tail rotor pitch limit system (with the hydraulic system operating)	-	-	-	-	-
88. (028.20.00 h)	Serviceability of fuel bypass valve and external tanks cross-feed valves	-	-	-	-	+
89. (065.40.00 c) (071.60.00c)	Serviceability of МП-100М mechanism in the engine reset system and operation of dust-protection device in the dust cleaning mode	+	+	-	-	+
90. (065.40.00 d)	Operation of hydraulic stop in the helicopter longitudinal control	-	-	-	-	+
91. (028.40.00 d)	Refueling of helicopter by fuel gauge	+	+	+	+	+
92. (036.10.00 c)	Charging of helicopter pneumatic system by pressure gauge	+	+	+	+	+
93*. (036.10.00 d)	Air-tightness of wheel brake pneumatic system	+	+	-	-	+
	Cargo Cabin					
94. (065.40.00 e) (065.40.00a)	Condition of pull rods, rockers and roller guides of helicopter control system, making sure there are no plays and mechanical damages. Check for locking intactness and clearance of 0.1 to 0.4 mm between rollers and pull rods (with removed housing cover on frame No.5H web and upper skin on the cargo cabin ceiling)	+	-	-	-	+
95. (052.10.00 a) (056.30.00a) (056.21.00a) (025.21.00a)	Sliding doors of cargo cabin entrance, making sure of tight closing, lock mechanisms operation, good condition of emergency release mechanism handle and its reliable locking, state of glazing, black-out blind and its locking in the open position.	+	+	-	-	+

MS item	Description of operations	Kinds of preparation				
		Preliminary	Preflight	Recurrent flight	Postflight	Scheduled inspection
96. (052.30.00a)	State of attach fittings of cargo ramp inside the fuselage	+	+	-	-	+
97. (056.21.00 b)	Opening blisters, good condition of closing mechanisms and their fixing in the opened position	+	-	-	-	+
98. (025.21.00 a)	Furnishing equipment, making sure of good condition and reliable fastening of finishing panels, black-out blinds on windows and their fixing in the opened position, hooks for crew's clothes	+	-	-	-	+
99. (021.40.00 a)	Operation of flap control of KO-50 heater FROM ATMOSPHERE, FROM CABIN	-	-	-	-	+
100. (052.30.00e)	АМГ-10 oil level in the ramp hydraulic system tank	+	+	-	-	+
101. (028.20.00 a) (029.10.00 a) (052.30.00e) (036.10.00 b)	Condition and fastening of units, pipelines and hoses of fuel, hydraulic (ramp and helicopter control) and pneumatic system	+	-	-	-	+
102. (030.41.00a) items 4,5	Condition and fastening of alcohol pump 703B, pipelines; make sure of absence of mechanical damages and contact with the other parts.	+	+	-	-	+
103. (025.60.00 a)	Condition and fastening of emergency axe and handle lead-seal	+	+	-	-	+
104. (026.20.00 b)	Airborne portable fire extinguishers OY-2, making sure of locking and valve lead-seal	-	-	-	-	+
105. (052.20.00 c)	Hatch cover for access to external load sling cable, making sure of tight closing and fixing in the closed position, absence of mechanical damages	-	-	-	-	+
106. (028.10.00 c) (028.10.00u)	Auxiliary fuel tanks (upper and lower), making sure of their leak-tightness and absence of mechanical damages of skin of beds and upper auxiliary fuel tanks frames	+	+	-	+	+
107. (052.50.00 a)	Entrance door to the cockpit, making sure of tight fitting and locking of the door in the closed and opened positions. Condition of attachment hinges, lock operation and door glazing	+	-	-	-	+
	Radio compartment, Tail Boom and Pylon (from inside)					
108. (053.30.00 a) (053.10.00a)	Covering and parts of tail boom reinforcement; make sure there are no mechanical damages and loosen rivets	+	-	-	-	+
109. (084.40.00 a) (084.40.00 b)	Tail rotor drive shaft: make sure there are no twisting along the straight line painted on tubes of shafts, loosening of nuts of taper bolts, mechanical damages and corrosion on transmission shaft, displacement of rubber races of supports bearings, leaks of lubricant, turning of protecting washers	-	-	-	-	-
110. (065.40.00 f)	Tail rotor control cables tension. **Note.** The operation per item 110 is performed when shifting to winter and summer operation.					
111. (065.40.00 f)	Tail rotor control cable laying, making sure there are no abrupt sagging, cocking, jagging, broken strands, reduction of diameter, stretching out of wire cable from end-piece, corrosion on wire cable. Reliable fastening of all elements of the cable laying	+	-	-	-	-
112. (055.10.00 b)	Stabilizer from inside of the tail boom, making sure of proper fastening of jointing fittings and flanges, absence of cracks and lost rivets. Condition of hinge assemblies of stabilizer and bearings	-	-	-	-	+
113. (053.10.00a)	Jointing bolts of tail boom with fuselage and pylon.	-	-	-	-	+
	Fuselage Nose Section					
114. (053.30.00 a) (053.60.00a)	Skin of the fuselage nose section, making sure there are no cracks and punctures, dents and corrosion, loose or broken rivets. External condition and absence of damages on the nose section fairing, tightness and security of its closed position, as well as cleanliness of its drain hole.	+	+	-	-	+
115. (056.10.00b)	Frame, clamping lining and glass rubber sealing sections.	+	-	-	-	+

MS item	Description of operations	Kinds of preparation				
		Preliminary	Pre-flight	Recurrent flight	Post-flight	Scheduled inspection
116. (030.40.00g, p.1)	Condition and security of attachment of windshield wipers	+	+	+	+	+
116a. (056.10.00 a)	Glazing of the cockpit.	+	+	-	+	+
117. (030.41.00 a, p.8)	Condition and security of attachment of rubber tubes of alcohol supply to windshield wiper atomizers. Make sure that rubber tubes are free from damages and leaks.	+	+	+	+	+
	Nose Landing Gear					
118*.	Nose landing gear, making sure of:	+	-	-	+	+
(032.20.00 a)	– absence of mechanical damages of shock strut cylinder, swivel bracket, lever, protecting hood, forked brace, axle and their fasteners;	+	-	-	+	+
	– absence of leaks of АМГ-10 oil from under rubber packing rings of shock strut;	+	+	+	+	+
	– presence of ЦИАТИМ-201 grease on shock strut rod;	+	-	-	-	+
	– reliable fastening of shock strut to attach fittings on the fuselage, as well as fastening of several parts of shock strut to each other;	+	-	-	-	+
119. (032.40.00 a)	External condition of wheels, making sure there are no lamination and bulging, cuts and punctures of tyre tread, cracks; corrosion on wheel drums, displacement of tyre relative to drum. Reliable locking of nuts of wheels fastening and availability of nipple cap	+	+	+	+	+
120. (032.40.00 b)	Deflection of wheel tyres	+	+	+	+	+
121. (032.20.00 b)	Charging of front shock strut by the indicator	+	+	+	+	+
	Fuselage Starboard					
122*. (053.30.00 a)	Fuselage skin (board and lower part), making sure of:					
(052.60.00a)	– absence of cracks and punctures, dents and corrosion of the skin, loose and broken rivets;	+	-	-	-	+
	– reliable fastening and absence of mechanical damages of step at right-hand sliding door;	+	-	-	-	+
	– absence of traces of oil and fuel leakage;	+	+	+	+	+
123*. (056.21.00 a)	Glazing of cargo cabin blisters for cracks, scratches, notches	+	+	-	+	+
124. (021.40.00 b)	Intake part of КО-50 heater for mechanical damages	+	+	+	+	+
125.	КО-50 Heater:					
(021.40.00 a)	– drain fuel from drain tank;	+	-	-	-	+
	– make sure of reliable fastening and absence of external damages of the fuel pump, starting coil, temperature control unit, fuel preheater, fuel valve 772, pneumatic relay 1263, thermal switch; absence of fuel box overheating;	+	-	-	-	+
	– inspect the external condition of КО-50 heater cowling and reliable closing of lock	+	+	+	+	+
126. (053.30.00 b)	Cleanliness of drain holes in the fuselage	+	+	-	-	+
127. (052.40.00 a, b)	Closing of covers and maintenance access doors	+	+	+	+	+
128.	External fuel tank; make sure of:					
(028.40.00 a) (028.10.00 b)	– absence of tank damaging and fuel leakage, leak-tightness of fuel sediment drain valve;	+	+	+	+	+
	– inspect tank fasteners: brackets, bolts and tank attachment bands;	+	-	-	+	+
	– check cleanliness of drain pipe of pump	+	+	-	-	+
	– good condition and closing of filler neck plug	-	+	+	+	+

MS item	Description of operations	Kinds of preparation				
		Preliminary	Pre-flight	Recurrent flight	Post-flight	Scheduled inspection
	– protective housings of fuel gauge sensors	+	-	-	+	+
129*.	Main landing gear:					
(032.10.00 a)	– landing gear shock strut, making sure there are no cracks in welded seams, corrosion on bracing struts, half-axles and their fastening units;	+	-	-	+	+
	– no leaks of АМГ-10 oil along rods of shock struts;	+	+	+	+	+
	– reliable fastening and locking of nuts of bolts of the landing gear shock strut fastening;	+	-	-	+	+
	– leak-tightness of fillers and charging valves of shock strut;	+	-	-	-	+
	– grounding pin mounted on the half-axle of the main landing gear. – Permissible wear of the grounding pin tip is not more than 10 mm (minimum tolerated length of the tip being 55 mm)	+	-	-	-	+
	– state and reliable fastening of hydraulic stop and audio recorder switching mechanism parts;	+	-	-	-	+
	– lubricate the protruding parts of shock strut rods and wear faces of hydraulic stop switching mechanism rocker with ЦИАТИМ-201 grease;	+	-	-	-	+
130. (032.10.00 c)	Reliable fastening and proper adjustment of microswitch of hydraulic stop switching mechanism	+	-	-	-	+
131. (032.40.00 a)	External condition of the wheel, making sure there are no lamination, bulging, cuts, punctures and wear of the tyre tread, displacement of tyre relative to drum. Reliable locking of the wheel nut and availability of nipple cap	+	+	+	+	+
132. (032.40.00 b)	Deflection of tyre	+	+	+	+	+
133. (036.10.00b i.4)	State of pneumatic system pipelines	+	-	-	-	+
134. (032.10.00 b)	Charging of shock struts by compression	+	+	+	+	+
	Tail Boom and Stabilizer (Starboard), Tail bumper					
135.	Tail boom skin; make sure:					
(053.30.00 a)	– there are no cracks and punctures, dents and corrosion;	+	-	-	-	+
	– there are no loose and broken rivets.	+	-	-	-	+
136*.	Stabilizer, check:					
(055.10.00 a)	– there is no damage of the skin;	+	+	+	+	+
	– paint coating is intact;	+	-	-	-	+
	– drain holes are clean;	+	-	-	-	+
	– condition of fastening screws of tipping, stabilizer preset angle fixing units, tightening and locking of bolts	+	-	-	-	+
137. (032.70.00 a)	External condition and reliable fastening of tail bumper	+	-	-	-	+
	Pylon					
138*. (053.30.00 a)	Condition of pylon and fairing skin, making sure there are no:					
	– cracks, mechanical damages and deformation of the skin;	+	+	-	-	+
	– loosen rivets	+	-	-	-	+
139. (053.50.00 a)	Reliable fastening of fairing and covers of hatches	+	-	-	-	+
140. (084.20.00 b)	Oil level in intermediate gear box by the oil gauge glass	+	+	+	+	+
141. (084.20.00 a)	Tightness of seals of intermediate gear box	+	+	+	+	+
142. (084.30.00 a)	Tightness of seals of tail gear box	+	+	+	+	+

MS item	Description of operations	Kinds of preparation				
		Preliminary	Pre-flight	Recurrent flight	Post-flight	Scheduled inspection
143. (084.20.00 c) (084.30.00 c)	Remove, inspect, clean and reinstall the ПС-1 plug-detectors of the intermediate and tail gear boxes	-	-	-	-	+
144. (084.30.00 b)	Oil level in tail gear box	+	+	+	+	+
145. (065.40.00f)	State of tail rotor control cable run (through access doors in pylon)	+	-	-	-	+
	Tail Rotor					
146. (065.20.00 h)	Tail rotor blades, making sure there are no cracks, notches, dents, scores, corrosion, damaged paint coating, wear of rubber strips and edge tippings	+	+	-	-	+
147*. (065.20.00 h)	Glueing of skin of blades tail part, heating straps, rubber straps and edge tippings	+	+	-	+	+
148. (065.20.00 a)	Tail rotor hub, making sure there are no cracks, scores, corrosion and that the universal joint, feathering hinges, units of shafts and rod bearings are leak-tight. Proper locking of all nuts and bolts	+	+	-	-	+
149*. (065.20.00 b)	Oil level in hub feathering hinges by the check cups	+	+	+	+	+
150*. (065.20.00 c)	Operation of tail rotor hub hinges	+	+	-	-	+
151. (065.20.00 k)	Lugs of blades end-pieces and housings of hub feathering hinges for cracks and corrosion	-	-	-	-	-
	Tail Boom and Stabilizer **(Port** Side)					
152. (055.10.00 a; 053.30.00 a)	Tail boom and stabilizer in similar way as in items 135,136					
	Cargo Ramp					
153*. (052.30.00a)	Make sure of absence of cracks, punctures, dents and corrosion of skin, loosen and broken rivets of ramp and outer assemblies of its hinging.	+	-	-	-	+
	Fuselage Port Side					
154. (056.21.00a) (053.30.00b) (052.10.00a) (028.10.00b) (028.40.00a) (032.10.00a) (032.10.00c) (032.40.00a) (032.40.00b) (032.10.00b) (036.10.00b)	Fuselage port side in similar way as in items 95, 122, 123, 126, 127, 128, 129, 130, 131, 132, 133, 134.	+	+	-	-	+
155*. (052.60.00 a)	Entrance ramp and its serviceability, reliable locking in the operating and stowed positions	-	+	-	-	+
	Start, Warming **up** and Test **of** Engines					
156. (072.00.00 t.c. 506 CMM)	Perform the start, warming up and testing of the engines in compliance with requirements of "Flight Manual" and "Service Manual of ТВ3-117ВМ Engine"	-	+	-	-	-
157. (029.10.00d)	Check charging of hydraulic accumulators with nitrogen after the engines shutdown.	-	-	-	-	-

MS item	Description of operations	Kinds of preparation				
		Preliminary	Pre-flight	Recurrent flight	Post-flight	Scheduled inspection
	Final Operations					
158.	Remedy troubles detected during inspections and checks	+	+	+	+	+
159.	Make entry in the preparation register	+	+	+	+	+
160.	On completion of all operations on the helicopter, including inspections, checks and elimination of troubles, make sure of reliable closing and locking of filler neck covers of all systems and all drain valves. Securely lock all cowlings, ramp and hatches.	+	+	+	+	+
161.	Drain fuel from the drain tank	-	-	-	+	-
162.	Check availability of tools against the list. Make sure there are no foreign objects in the helicopter	+	+	+	+	+
163.	Place brake chocks under the wheels	+	-	-	+	+
164.	Ground the helicopter	+	-	-	+	+
165.	Install stopper on fan unit inlet, put covers on dust-protection devices and EES (engine efflux screen) (when EES is removed, install stoppers in engines gas outlet, or put covers on them).	+	-	-	+	+
166.	Moor the blades and fix weather safety rods (if necessary) to the swash plate	+	-	-	+	+
167.	Move aside from the helicopter the external servicing means, clear the spot from foreign objects	+	+	+	+	+
168.	Inspect the cockpit and make sure:	+	+	+	+	+
	– collective pitch/throttle control levers are in lower position:	+	-	-	+	+
	– main rotor brake handle is braked:	+	+	+	+	+
	– main landing gear wheels are braked	+	+	+	+	+
169.	Put covers on the helicopter	+	-	-	+	+
170.	Attach lead seals and hand over the helicopter to person on duty on the parking spot	+	-	-	+	+

TECHNICAL MAINTENANCE OF HELICOPTER WITH NEWLY MOUNTED UNITS

Operations performed when replacing engines, main, intermediate and tail gearboxes.

MS item	Description of operations	Schedule, h			
		engine	main gearbox	Intermediate gearbox	tail gearbox
	After First Test				
1. (072.00.00)	When the engine is shutdown during rundown, listen to foreign noise in the engine and make sure that the compressor and free turbine rotors rotate smoothly. Measure the compressor rotor "rundown" time.	+	-		
2.	After the engines shutdown do not use brakes to stop the main rotor. After stopping the main rotor check by hand absence of brake drum heating.	-	-	-	
3. (072.00.00 CMM) (084.00.00)	Carry out the operations in the volume of preliminary preparation	+	+	+	+
4. (012.20.00)	Change oil in the engine lubrication system	+	-		
5.	Remove, inspect and flush:				
(072.90.02 Task cards 201,202 CMM)	– engine oil filter;	+	-		
(084.10.00 g CMM)	– main gear box oil filter;	-	+	-	
(084.10.00 i CMM)	– ПС-1 plug-detector;	-	+	+	+
(084.20.00 c) (084.30.00 c) (073.11.04 CMM)	– fine fuel filter	+	▪	▪	-
6. (073.12.05 task card 303 CMM)	Bleed air from the engine fuel system	+	-		
7. (065.40.00 h)	Check by dials the deflection of the swash plate and make sure of the absence of play in the control system	-	-	-	
8. (072.00.00 CMM)	Start and test the engine to check its operation after maintenance operations have been performed	+	+	+	+
	After First Flight				
9. (072.00.00 CMM) (084.00.00)	Carry out the inspection in the volume of preliminary preparation	+	+	+	+
10.	Remove, inspect and flush:				
(072.90.02 task cards 201. 202 CMM)	– engine oil filter;	+	-		
(084.10.00 g CMM)	– main gear box oil filter;	-	+	-	
(084.10.00 i CMM) (084.30.00 c) (084.20.00 c)	– ПС-1 plug-detectors;	-	+	+	+
11. (072.00.00 Task Card 606 CMM)	Check and adjust, if necessary, the alignment of engine and gear box	+	+	-	
12. (078.10.00 b)	Check tightening of turnbuckle of fastening clip of engine exhaust attachment	-	-		

MS item	Description of operations	Schedule, h			
		engine	main gearbox	Intermediate gearbox	tail gearbox
13. (084.11.00b)	Check tightening torque of bolts fastening the gearbox frame to the fuselage	-	-	-	-
14. (065.10.00f)	Check tightening torque of nut fastening the gearbox hub	-	+	-	-
15. (065.20.00d)	Check tightening torque of nuts of bolts fastening the tail rotor hub to tail gearbox shaft. Tighten it, if necessary.	-	-	-	+

TECHNICAL MAINTENANCE OF HELICOPTER AFTER INITIAL 5 ± 1 FLYING HOURS

M.S. item	Description of operations
1.	Carry out the operations in the volume of preliminary preparation
2. (053.10.00 b)	Check tightening torque of bolts of tail boom and pylon fastening **Note:** If there is no loosening of nuts of two adjacent bolts in the area of tail boom and pylon joint near stringers No. 2, it is allowed not to check tightening torque of bolt nut at the joint near stringer No. 1. For additional control of joints near stringer No. 1 paint the nut and the protruding part of the bolt.
3. (065.10.00 e)	Check tightening torque of bolts of blade pitch controls fastening and nuts of bolts of fastening the hydraulic dampers brackets to trunnions of feathering hinges
4. (065.10.00 f)	Check tightening of nut of the main rotor hub fastening on main gear box shaft
5. (065.20.00 e)	Check tightening torque of nuts of bolts of the main rotor blades fastening to hub feathering hinges
6. (065.20.00 d)	Check tightening torque of nuts of bolts of tail rotor hub fastening to tail gear box shaft
7. (065.40.00 h)	Check by dials the deflection of the swash plate and for absence of plays in control system
8. (071.20.00 a)	Inspect units and rods of fastening of ТВ3-117ВМ engines
9. (072.00.00 Task card 606 CMM)	Check and adjust, if necessary, the alignment of engines with main gear box
10. (072.90.02 Task cards 202. 210 CMM)	Inspect and flush oil filters of engines
11. (084.10.00 i CMM)	Inspect and flush ПС-1 plug-detector of main gear box. If there are chips on ПС-1 plug-detectors remove and inspect oil filter of main gear box
12. (079.20.00 h)	Remove, flush and check serviceability of СС-78 chip detector.
13. (084.11.00 b)	Check tightening torque of bolts of the gear box mounting frame fastening to fuselage
14. (084.11.00 c)	Check tightening torque of bolts of the gear box bracing struts fastening to gear box feet and the articulated struts to main ones
15. (084.11.00 e item 9)	Check tightening of nuts of fastening the feet to main gear box
16. (084.11.00 e)	Check tightening of nuts of fastening the units on main gear box
17. (084.20.00 c)	Inspect and flush ПС-1 plug-detector of intermediate gear box
18. (084.20.00 d)	Check tightening torque of nuts of bolts of fastening the intermediate gear box
19. (084.30.00 c)	Inspect and flush ПС-1 plug-detector of tail gear box
20. (084.30.00 d)	Check tightening torque of nuts of the tail gear box fastening bolts
21. (078.10.00 b)	Check tightening of turnbuckles of clips of the engine exhaust attachment fastening
22. (029.10.00 o)	Remove, inspect and clean the filtering elements of ФГ-11БН and 8А2.966.017-2 with the super-sonic bath
23. (029.10.00 p)	Inspect visually the АМГ-10 oil condition in hydraulic system.

TECHNICAL MAINTENANCE DURING STORAGE

1. The helicopter should be stored with the fuel, lubrication, hydraulic and air systems fully primed.

2. When fuel is drained the fuel system of engines should be preserved not later than 24 h after draining.

3. The helicopter placed for storage should be in good repair and outfitted with standard equipment, tools and ground equipment means.

4. The following operations should be carried out on the helicopter being stored:

TMI item	Description of operations	Kinds of preparation				
		7^{+3} days	15^{+2}_{-1} days	30^{+6}_{-3} days	3 months $^{+18}_{-9}$ days	6 months $^{+36}_{-18}$ days
1	Clean helicopter of dust, dirt	+	+	+	+	+
2	Inspect helicopter in the volume of operations of preliminary preparation	+	+	+	+	+
	Note: If the weather is bad (precipitation) the terms of inspections can be postponed.					
	CAUTION. AT OPERATION UNDER TROPICAL AND SEA CONDITIONS THE INSPECTIONS SHOULD BE CARRIED OUT EVERY 2 TO 3 DAYS.					
3	Open blisters, engines access hatch, doors and ramp to air the cabin and compartments	+	+	+	+	+
4	Change grease on rods of shock struts	+	+	+	+	+
5	In dry weather open covers of hatches, power plant cowling panels, air the compartments	-	-	+	+	+
6	Dry and air canvas covers	-	-	+	+	+
7	Crank rotor of APU АИ-9В by hand in the direction of its rotation making 15 to 20 revolutions, having removed stopper from exhaust branch	-	-	+	+	+
8	Start engines and run them in 2nd cruising power for 3 to 5 min	-	-	+	+	+
	CAUTION. AT OPERATION UNDER TROPICAL AND SEA CONDITIONS PERFORM THE OPERATION EVERY WEEK.					
9	With the engines running check serviceability of main and auxiliary hydraulic systems	-	-	+	+	+
10	Carry out post-flight inspection and remedy troubles revealed during inspection and tests of engines	-	-	+	+	+
11	Carry out operations stipulated in lubrication chart	-	-	-	+	+
12	Make a weighing check of charge of portable airborne fire extinguishers ОУ-2	-	-	-	+	+
13	When preparing the helicopter for flight (stored for 3 months and more) check emergency release of blisters, sliding doors, hatch covers in cargo cabin and make check flight for 20 to 30 min	-	-	-	+	+
14	Remedy troubles revealed during inspections and flight	-	-	-	+	+
15	Crank rotors of gas-generators and free turbines of engines	+	+	+	+	+
16	Re-preserve engines	-	-	-	-	+
17	Re-preserve main rotor hub	-	-	-	-	+
18	Re-preserve tail rotor hub	-	-	-	-	+
19	When storing main rotor blades on helicopter:					
	– remove and dry canvas covers of blades	+	+	+	+	+
	– air blades to remove accumulated moisture in tail sections and check glueing of joints by testing helicopter in hovering for 10 min	-	-	+	+	+
	Note: When frosts are anticipated after a period of 2 to 3 weeks of rains and logs, run blades for 1.5 to 2 h on ground or in flight to prevent accumulation of moisture in tail sections					
	– flush blades with fresh water when parking on saline soils, then wipe them with dry cloth	+	+	+	+	+
20	For storing main rotor blades removed from helicopter re-preserve them:					

TMI item	Description of operations	Kinds of preparation				
		7^{+3} days	15^{+2}_{-1} days	30^{+6}_{-3} days	3 months $^{+18}_{-9}$ days	6 months $^{+36}_{-18}$ days
	– after storing indoors	-	-	-	-	+
	– after storing under a shed	-	-	-	+	+
21	Re-preserve tail rotor	-	-	-	-	+
22	Re-preserve swash plate	-	-	-	-	+
23	Clean air release jets А3 and АП (73.12.05 Task card 603, Fig. 602, items 6 and 13) of НР-3ВМ fuel control unit (without removing and washing the jets).	+	+	+	+	+

SCHEDULED MAINTENANCE
AFTER EVERY 50^{+10}_{-5}, 100^{+20}_{-10}, 200^{+40}_{-20}, 300^{+60}_{-30} FLYING HOURS

Before attending to scheduled maintenance:
- check the service life left for each unit consulting the data contained in the logbook;
- check fulfillment of directions orders and modifications according to bulletins of manufacturing plants;
- carry out the operations in the volume of scheduled inspection.

M.S. item	Description of works	Schedule, h				Remarks
		50	100	200	300	
	Engine TB3-117BM					
1. (72.90.02 Task Cards 201, 202 CMM)	Remove, inspect and flush oil filter	+	+	+	+	
2. (73.11.04 Task Card 205 CMM)	Replace filtering element of fine fuel filter	-	+	+	+	Under conditions of increased dustiness, the scheduled terms are two times shorter
3. (73.12.05 Task Card 602 CMM)	Remove, inspect and flush intake air filter of HP-3BM fuel control unit	-	+	+	+	Under conditions of increased dustiness, the scheduled terms are two times shorter
4. (73.12.05 Task Card 603 CMM)	Remove, inspect and clean air jets of HP-3BM fuel control unit	+	+	+	+	Under conditions of increased dustiness, the scheduled terms are two times shorter
5. (73.12.05 Task Card 604 CMM)	Remove, inspect and flush fuel filters of HP-3BM fuel control unit	-	+	+	+	Under conditions of increased dustiness, the scheduled terms are two times shorter
6. (73.16.10 Task Card 205 CMM)	Remove, inspect and flush fuel filter of MM-3A actuating mechanism	-	+	+	+	Under conditions of increased dustiness, the scheduled terms are two /timesshorter
7. (080.12.00 Task Card 203 CMM)	Remove, inspect and flush air starter filter	-	+	+	+	Under conditions of increased dustiness, carry out the operations after 10±2 flying hours
8. (071.20.00c)	Check alignment of engine with main gear box	-	+	+	+	
9. (072.30.00 Task Cards 201, 202 CMM)	Measure wear-out of leading edges of blades of compressor rotor first stage:					
	– with dust-protection device	-	+	+	+	
	– with dust-protection device and wear of leading edges more than 1 mm	+	+	+	+	
	– without dust-protection device	+	+	+	+	
	– without dust-protection device and wear-out of leading edges more than 1 mm	+	+	+	+	After every 25^{+5}_{-2} flying hours
10. (071.00.00 b)	Drain condensate from moisture trap of power synchronizing system of TB3-117BM engine	+	+	+	+	
11. (071.60.00 d)	Inspect separator of engine dust-protection device	-	+	+	-	After 200 h of operation inspect every 50 flying hours
12. (071.60.00 e)	Inspect swivel branch and dust removal throat of dust-protection device	-	+	+	+	
13. (073.12.05 Task card 203 CMM)	Bleed air from engine fuel system	-	+	+	+	

M.S. item	Description of works	Schedule, h				Remarks
		50	100	200	300	
14. (072.00.00)	Start up, warm and test engine	-	+	+	+	
	After testing check leak-tightness of joints: a) oil filter; b) fine fuel filter; c) fuel filters of FCU, actuating mechanism ИМ-3А; d) plugs of air starter oil chambers.	-	+	+	+	Operations per item d on starters with independent lubrication system should be performed after every (250^{+50}_{-25}) flying hours
15. (078.10.00 b)	Check tightening of turnbuckle of clip of the engine exhaust attachment fastening	-	+	+	+	
16. (012.20.00) (080.12.00. Task card 205 CMM)	Change oil in engine and air starter lubrication system	-			-	Every (250^{+20}_{-10}) h of engine operation or after 12 months $^{+42}_{-36}$ day:
17. (072.90.00 Task card 204 CMM)	Remove, inspect and flush protective filter in IV and V supports of oil drain pipeline	+	+	+	+	
18. (72.90.13 Task card 201 CMM)	Remove, inspect, flush and check actuation of СС-78 chip detector	+	+	+	+	
19. (073.02.00 Task card 202 CMM)	Clean ejector nozzle hole	+	+	+	+	
	Main Gear Box					
20. (084.10.00 f CMM)	Remove, inspect and flush ПС-1 plug-detectors	+	+	+	+	
21. (084.10.00 g CMM)	Remove, inspect and flush oil filter	-	+	+	+	
22. (084.11.00 b)	Check tightening torque of bolts of the gear box frame fastening to fuselage	-			+	
23. (084.11.00 c)	Check tightening torque of bolts of fastening the bracing struts of gear box frame to gear box feet and the articulated struts to main ones	-			+	
24. (084.11.00 e item 9)	Check tightening torque of nuts of fastening the feet to main gear box	-			+	
25. (084.11.00 e item 64)	Check tightening of nuts of fastening the units on main gear box	-			+	
26. (084.10.00 d CMM)	Change oil in lubrication system of main gear box Note. Take sample of oil from gear box for check of presence of water every two months	-			-	Change oil: 1. Once a year when shifting to winter operation 2. With coking of more than 50 % of gauze surface
	Fuselage, Tail **Boom** and Pylon					
27. (053.10.00 a)	Inspect tail boom frame-work from inside and fastening units of the tail boom and pylon	-	+	+	+	
28. (053.40.00 c)	Inspect fitting and supports of tail rotor drive shaft, brackets of blocks for wire-cables of tail rotor control	-	+	+	+	
29. (053.10.00 b)	Check tightening torque of fastening bolts of the tail boom and pylon	-			+	
	Note. If there is no loosening of nuts of two adjacent bolts in the area of tail boom and pylon joint near stringers No. 2, it is allowed not to check tightening torque of bolt nut at the joint near stringer No. 1. For additional control of joints near stringer No. 1, paint the nut and the protruding part of the bolt					

M.S. item	Description of works	Schedule, h				Remarks
		50	100	200	300	
30. (055.10.00b)	Inspect stabilizer and its fastening units from inside of tail boom	-		+		
31. (052.20.00e) (052.10.00b)	Check operation of emergency release mechanism of blisters, entrance door to cargo cabin	-			-	When changing to summer or winter operation
32. (053.10.00g)	Check condition of frame No. 10 inside the cargo cabin in the area of frame intersection with the boom along stringerj No. 11 (points of fastening of shock struts of main landing gear) and make sure of the absence of cracks. When armament rack adapters are installed, inspect frames No.7 and 10, longitudinal structure and fuselage skin in the area of armament rack adapter assemblies fastening.	-	+	+	+	
	Rotor System					
33. (065.10.00e)	Check tightening torque of bolts of fastening the blade pitch controls and nuts of bolts of fastening the brackets of hydraulic dampers to trunnions of feathering hinges	-		+		
33a. (065.10.00f)	Check tightening torque of nut of fastening the main rotor hub on main gear box shaft	-			+	
34. (065.10.00m)	Remove main rotor blades				-	After initial 300^{+60}_{-30}, 500^{+100}_{-50}, 700^{+140}_{-70} flying hours and further on every 100^{+20}_{-10} h
35. (065.10.00i) (065.10.00j) (065.10.00k) (065.10.00l)	Inspect removed blades in the volume of preliminary preparation operations	-			-	After initial 300^{+60}_{-30}, 500^{+100}_{-50}, 700^{+140}_{-70} flying hours and further on every 100^{+20}_{-10} h
36. (065.10.00n)	Check condition of glueing of main rotor blades skin by knocking.	-			-	After initial 300^{+60}_{-30}, 500^{+100}_{-50}, 700^{+140}_{-70} flying hours and further on every 100^{+20}_{-10} h
37. (065.10.00o)	Reinstall main rotor blades on the helicopter	-			-	After initial 300^{+60}_{-30}, 500^{+100}_{-50}, 700^{+140}_{-70} flying hours and further on every 100^{+20}_{-10} h
38. (065.10.00t)	Remove and inspect magnetic plugs and check oil condition in main rotor hub feathering hinges	-			-	After 6 months, but at least every 100^{+20}_{-10} h after 400 h of operation
	Tail **Rotor**					
39. (065.20.00i)	Inspect tail rotor blades and check by knocking and by hand the condition of glueing of tail sections skin, heating straps, rubber straps and edge tippings (without removing the blades)	+	+	+	+	
40. (065.20.00j)	Remove tail rotor blades			+		
41. (065.20.00i)	Inspect removed blades and check by knocking and by hand the condition of glueing of tail sections skin, heating straps, rubber straps and edge tippings	-		+		
42. (065.20.00k) (065.20.00l)	Inspect lugs of blade end-pieces and housings of feathering hinges of tail rotor hub. Reinstall the blades	-		+		
43. (065.20.00m) (065.20.00n)	Measure axial play of bearing of tail rotor rod and play of shafts and blades control forks	-	+	+	+	
44. (065.20.00e)	Check tightening torque of nuts of bolts of fastening the tail rotor blades to hub feathering hinges	-		+		

M.S. item	Description of works	Schedule, h				Remarks
		50	100	200	300	
45. (065.20.00 d)	Check tightening toque of nuts of bolts of fastening the tail rotor hub to tail gear box shaft	-			+	
	Landing Gear and Tail bumper					
46. (032.10.00 c)	Check air gaps in microswitches AM-800K of hydraulic stop switching-on mechanisms in longitudinal control	-	+	+	+	
46a. (012.20.00)	Check the nitrogen pressure in landing gear shock-absorbers and tail bumper	-			-	When changing to summer or winter operation
47. (032.40.00 d) (032.40.00 e)	Remove, inspect and reinstall wheels of main and nose landing gears	-			-	When changing to winter operation
48. (032.40.00 c)	Check brakes of wheels of main landing gear	-			-	When changing to winter operation
	Transmission					
49. (084.40.00 a)	Check for twisting of the tail shaft and loose taper bolts	+	+	+	+	
50. (084.40.00 c)	Inspect universal-joint shaft of fan drive, check fixing of locks of needle bearings and tightening of nuts of fastening the gear box drive to flange	+	+	+	+	
51. (084.40.00 h)	Remove fan drive shaft and check condition of needle bearings of cardan shaft joints					After 750 h
52. (084.40.00 b)	Inspect tail rotor drive shaft and check for absence of large clearances between rubber holder and bumper housings	-	+	+	+	
53. (084.50.00 a)	Check adjustment of transmission brake shoes	-	+	+	+	
54. (084.40.00 d)	Check for eccentricity of shaft, misalignment in joints, side clearance in splined joints: check tightening torque of bolt connections of tail shaftflanges	-	+	+	+	
55. (084.20.00 c) (084.30.00 c)	Remove, inspect, flush and reinstall ПС-1 plug-detectors of intermediate and tail gear boxes	-	+	+	+	
56. (084.20.00 d) (084.30.00 d)	Check tightening torque of nuts of bolts of fastening the intermediate and tail gear boxes	-			+	
	Control					
57. (065.40.00 e)	Inspect condition of rods, bellcranks, rockers and roller guides of helicopter control	+	+	+	+	
58. (065.40.00 f)	Inspect cable run of tail rotor control	+	+	+	+	
59. (065.40.00 g)	Inspect condition and tension of wire-cables of engine shutdown control and main rotor brake control	+	+	+	+	
60. (065.40.00 i)	Check adjustment of microswitch of movable stop mechanism of tail rotor pitch limit system	+	+	+	+	
61. (065.40.00 h)	Check serviceability of control system operated by ground hydraulic unit, marking out by dials the deflections of swash plate and for absence of play in control system	-	+	+	+	
62. (065.50.00 c)	Check tightening torque of nuts of studs of the slide bracket fastening and those of studs of upper flange of swash plate fastening	-		+		
63. (065.50.00g)	Measure plays in swash plate	-	-	+		
	Fuel System					
64. (028.20.00 e)	Inspect and check condition and fastening of pump 4636 and electromagnetic valve 610200A of KO-50 heater	+	+	+	+	

M.S. item	Description of works	Schedule, h				Remarks
		50	100	200	300	
65. (028.10.00 d) (028.20.00 a)	Check fastening of service tank and tightening toque of bolts of bands of the external and auxiliary tanks fastening. Inspect and check condition, fastening and tightness of units, pipelines and hoses of fuel system	-	+	+	+	
65a. (028.10.00 v)	Check tightening toque of bolts securing the frame and joint straps of upper auxiliary fuel tanks fastening	-	+	+	+	
66. (028.20.00 i)	Check operation of fuel bypass line with filling of delivery tank	-		+		
67. (049.10.00 d)	Replace filtering element of fine fuel filter 11ТФ30СТ of auxiliary power unit АМ-9В	-	+	+	+	
	Hydraulic System					
68. (029.10.00 e)	Check charging of hydraulic accumulators using attachment 8А.9910.040	-	+	+	+	
69. (029.10.00 f)	Check leak-tightness and operation of hydraulic system from hydraulic unit	+	+	+	+	
70. (029.10.00 o)	Remove, inspect and flush filtering elements of fine filters of helicopter control hydraulic system	-	+	+	+	
70a. (052.30.00g)	Check adjustment of indicator of ramp retracted position	+	+	+	+	
70b. (052.30.00 h)	Check adiustment of lock microswitches	+	+	+	+	
70c. (052.30.00 f)	Check cargo ramp hydraulic system for serviceability	+	+	+	+	
71. (065.40.00 b)	Inspect and check fastening of bracket of hydraulic boosters mounting to main gear box. Make sure there are no cracks on bracket and check tightening torque of nuts of supports of hydraulic actuators	-	+	+	+	
72. (065.40.01 ŋ)	Flush filtering elements of hydraulic actuators	-	-	-	-	After every 500 ±10 hours
73. (065.40.00 v)	Lubricate bearings of hydraulic actuators		-	-	+	
74. (029.10.00 f) (029.10.00 r)	Check condition of АМТ-10 oil in the helicopter control hydraulic system. Replace oil when the oil viscosity is decreased up to 8 $СС_Т$ or in case of mechanical impurities in oil.					When changing to summer or winter operation
74a. (012.20.00) (052.30.00 i)	Change АМТ-10 oil in the ramp hydraulic system	-	-	-	-	Every 3 years ± 1 month
	Pneumatic System					
75. (036.10.00 f)	Remove, inspect and flush filter of АК-50Т1 compressor	-	+	+	+	
76. (036.10.00 e)	Drain condensate from pneumatic system cylinders	-			-	When changing to winter or summer operation or every 6months
	Fire-extinguishing Equipment					
77. (026.21.01 e CMM)	Check function of Y6W-4-4 tire extinguishers and pressure gauge	-			+	
78. (026.21.01d CMM)	Change fire-extinguishing compound in fire extinguishers УШБ-4-4, perform operations in compliance with maintenance documents on YW6-4-4	-			-	Every 3 years ±1 month
79. (026.20.00 f)	Check charge of fire extinguisher ОУ-2 by weighing	-			-	Every 3 months
	Air Conditioning System					
80. (021.40.00 a)	Check in heater КО-50:					
	– condition of jets of fuel box 2621 and fuel filter 774 of heater	-	+	+	+	
	– tightness of fuel box line BYPASS FROM INJECTOR which injects kerosene under pressure of 200 to 250 kPa (2 to 2.5 kgf/crn^2) for 5 min;	-	+	+	+	

M.S. item	Description of works	Schedule, h				Remarks
		50	100	200	300	
	– fuel box bypass line injecting kerosene for 10 min;	-	+	+	+	
	– tightness of fuel box line FUEL INLET FROM PUMP which injects kerosene under pressure of 200 to 250 kPa (2 to 2.5 kgf/cm^2) for 5 min;	-	+	+	+	
	– FUEL INLET FROM PUMP fuel box line which injects kerosene for 10 min;	-	+	+	+	
	– condition of injector, having unscrewed it from air heater;	-	+	+	+	
	– tightness of injector joints in places of copper gaskets mounting injecting kerosene, under pressure of 200 to 250 kPa (2 to 2.5 kgf/cm^2) for 5 min;	-	+	+	+	
	– injector in horizontal position for leaks at nozzle end for 1 to 2 min;	-	+	+	+	
	– injector with kerosene for 10 min;	-	+	+	+	
	– quality of atomizing and consumption of fuel through the injector:	-	+	+	+	
	– condition of air heater and inner cavity of combustion chamber;	-	+	+	+	
	– tightness of joints of pipelines from injector to heater and by-pass line for 1 to 2 min;	-	+	+	+	
	– tightness of joints of pipelines from fuel box to heater after installing the latter;	-	+	+	+	
	– flush gauze of pressure regulator 773H;	-			+	
	– start and test heater manual and automatic temperature control	-	+	+	+	
	Vibration damper					
81 (065.12.00b)	Check tightening torque of nuts of bolts of vibration damper hub fastening to hub bracket.	-			+	After initial 50 flying hours when performing initial scheduled maintenance operations at ambient air temperature drop up to minus 15°C and below.
82 (065.12.00c)	Inspect vibration damper hub sleeves for absence of cracks.	-			+	
83 (065.12.00d)	Inspect bolts fastening the hub to the bracket for external condition.	-			+	
84 (065.12.00e)	Inspect parts of vibration damper bifilar suspensions	-			+	

LUBRICATION CHART

The following lubricants are used: oil for hypoid gearings or ТСгип; МС-20 or МС-14 oil; 6-38 synthetic oil, АМТ-10 oil; ОКБ-122-7 grease; ЦИАТИМ-201 grease; СТ (НК-50) grease; ВНИИНП-25 grease; ПФМС-4С grease; АМС-3 grease; СМ-9 oil mixture (2\3 of ТСгип and 1\3 of АМТ-10 by volume); oil mixture "50/50" (50% of ТСгип and 50% of АМТ-10 by volume); СМ-10 oil mixture (75% of МС-14 and 25% of dioctylsebacate by volume); ВО-12 grease.

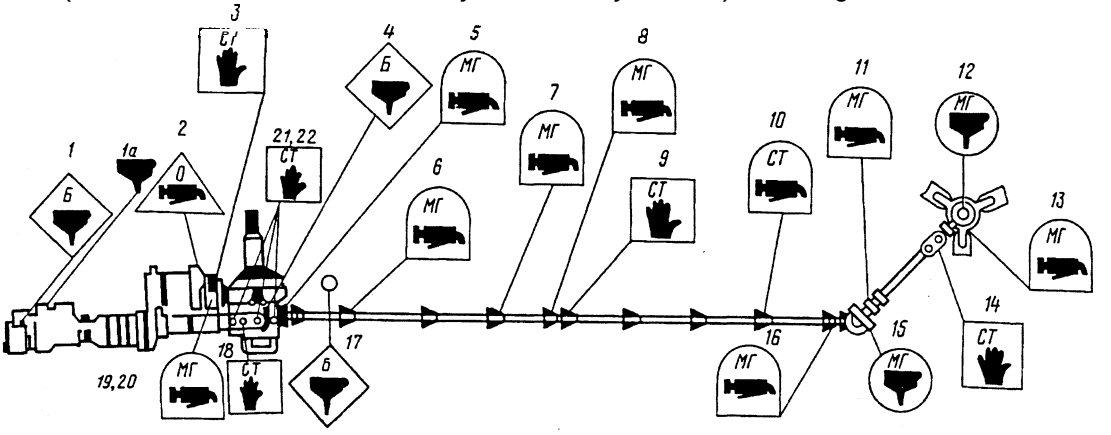


Fig. 1. Lubrication of Engines and Transmission units

Engines and transmission (Fig. 1)

Item No.	Lubricated point	Qty of lube points	Oil or grease grade	Operation performed	Schedule
1.	ТВ3-117ВМ Engine oil tank	2	6-38 oil	Fill (add) oil tank through priming filter with mesh size not over 63 μ Change oil	When mounted on helicopter. Add, if required. After first engine testing. When carbon deposit on oil filter occupies 50% of filtering element surface, or metallic powder is detected. Every 250^{+20}_{-10} hours of operation or every 12 months $^{+42}_{-36}$ days.
1a.	Starter gearbox СВ-78 with independent lubrication	2	6-38 oil	Change oil	Once in 12 months, but not less than every (250±10) flying hours
2.	8А-6311-00 series 2 and 3		ОКБ-122-7 grease	Force grease through cap nipple till it is squeezed out of check hole or slit	When fan is mounted on helicopter Every 500^{+10}_{-5} flying hours but at least once a year
3.	Splines of fan drive shaft	1	СТ (НК-50) grease	Grease abundantly	When fan is mounted on helicopter and during scheduled inspection.
4.	Filler neck of main gear box	1	6-38 oil	Fill (add) through priming filter with mesh size not over 63 μ. Change oil **Note.** Oil from gearbox for analysis of water presence (t.c. 084.10.00 v) should be taken	Add when mounting the gearbox on the helicopter. Then add, if required. Every 12 months when preparing to winter operation. When carbon deposit on oil filter occupies 50% of filtering element surface. In case of detection of metallic particles in oil.

Item No.	Lubricated point	Qty of lube points	Oil or grease grade	Operation performed	Schedule
				every two months.	
5, 6, 7, 8, 10, 11, 13, 16.	Splined joints of tail rotor and pylon drive shafts	8	Hypoid oil	Force grease through any two holes on flange till grease appears from other hole. **Note.** Appearance of separate drops doesn't mean that spline is filled.	When mounted on helicopter. Every 50^{+10}_{-5} flying hours
9.	Splines of tail rotor drive shaft	1	CT (HK-50) grease	Grease abundantly	When mounted in helicopter
12.	Tail gear box case	1	Hypoid oil gearings	Prime oil	When mounting the gearbox on the helicopter add, if required.
			In winter dilute oil. AMT-10 (213 of hypoid oil and 1/3 of АМГ-10)	Change oil	Every 100^{+10}_{-5} flying hours. With stable temperature rise above plus 5 C drain CM-9 oil (mixture) and fill fresh hypoid oil. With abrupt ambient temperature fluctuations in urgent cases the gear box can operate with CM-9 oil up to plus 25 C "50/50" oil mixture – after two years of operation.
14.	Splines of pylon drive shaft	1	CT (HK-50) grease	Grease abundantly	When mounted in helicopter
15.	Intermediate gear box case	1	Hypoid oil In winter dilute oil (213 of hypoid oil and 113 of AMT-10)	Prime oil Change oil	When mounting the gearbox on the helicopter add, if required. Every 100^{+10}_{-5} flying hours. With stable temperature rise above plus 5 C drain CM-9 oil (mixture) and fill fresh hypoid oil. With abrupt ambient temperature fluctuations in urgent cases the gear box can operate with CM-9 oil up to plus 25 C "50/50" oil mixture – after two years of operation.
17.	Oil tank of APU АИ-9В	1	Б-3Б oil	Prime (add) oil in oil tank through priming filter with maximum 63 μ mesh size. Change oil	Add when mounting the gearbox on the helicopter. Then add, if required. Every (12±1) months
18.	НШ-39М pump drive unit (main gear box drive - pump drive adapter)	2	ПФМС-4С grease CT (HK-50) grease also allowed	Grease abundantly splines of main gear box drive, HU-39M pump and adapter. Quantity of grease – 9 cm3, which corresponds to ca. 314 of drive gear internal space	When pump is mounted in helicopter and once every 3 years when changing to winter (summer) operation

Item No.	Lubricated point	Qty of lube points	Oil or grease grade	Operation performed	Schedule
19, 20.	Articulated joints of fan drive shaft	2	Hypoid oil	Force oil through nipple till it appears from under valve	When mounted in helicopter During scheduled inspections
	Threaded part of forks of engines fastening bracing struts	8	АМС-3 or ЦИАТИМ-201	Wipe and lubricate	When mounting in helicopter and changing to winter operation
21, 22.	Splines of tachometer generator drives and generator drives	4	СТ (НК-50) grease	Grease abundantly during installation	When mounted on gear box

Main Rotor Hub (Fig. 2)

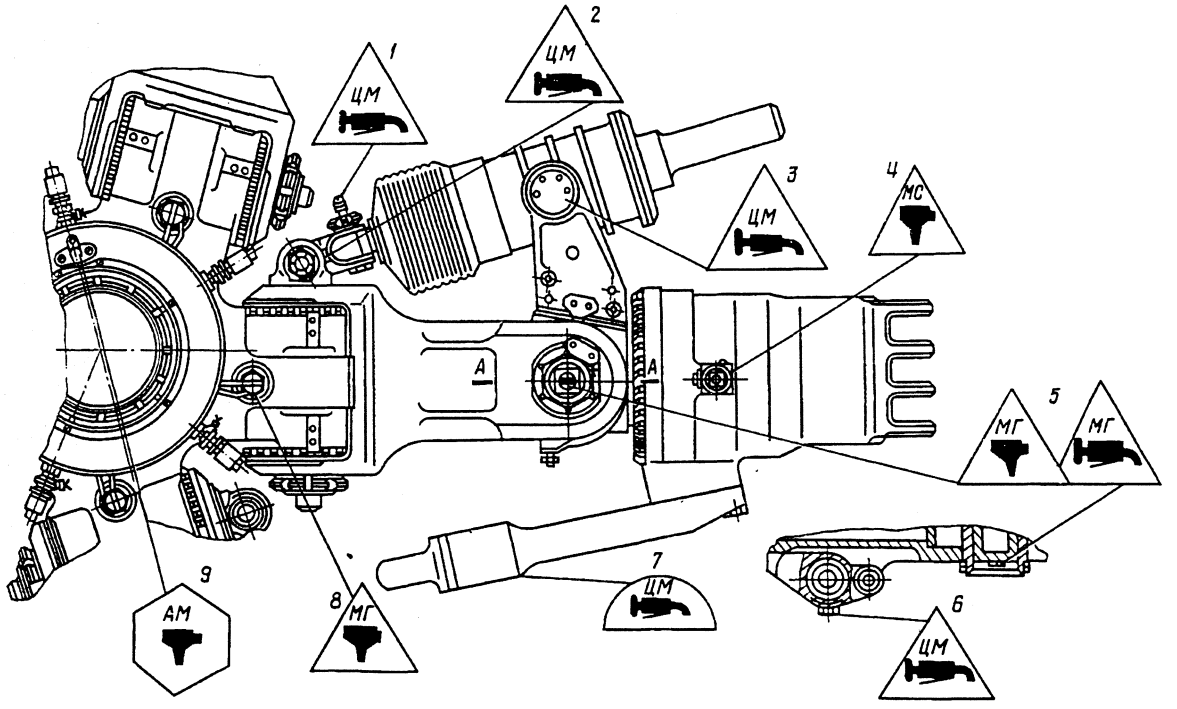


Fig. 2. Lubrication of Main Rotor Hub Units

Item No.	Lubricated point	Q-ty of lube points	Oil or grease grade	Operation performed	Schedule
1.	Fastening of hydraulic damper housing to clip	5	ЦИАТИМ-201 grease	Force grease through nipple	When mounted in helicopter During scheduled inspection
2.	Hinge of hydraulic damper fastening to flapping hinge pin	5	ЦИАТИМ-201 grease	Force grease through nipple	When mounted in helicopter During scheduled inspection
3.	Hinge of hydraulic damper fastening to feathering hinge trunnion bracket	10	ЦИАТИМ-201 grease	Force grease through nipple	When mounted in helicopter During scheduled inspection
4.	Feathering hinge of main rotor hub	5	Oil МС-20 at air temperature above zero or for a short time (up to 10 days) temperature drop down to minus 10°C. Oil ВНИИ НП-25 in winter at ambient air temperatures from plus 5 to minus 50°C or for a short time (up to 10 days) temperature rise to plus 10°C When MC-14 oil is available, its use is allowed at ambient air temperatures from +15°C to -25°C. ВО-12 grease – regardless of season. СМ-10 oil mixture – at ambient air temperature from +5°C to -40°C.	Fill (add) through holes for plugs	When mounted in helicopter, then add every 25±5 flying hours

Item No.	Lubricated point	Q-ty of lube points	Oil or grease grade	Operation performed	Schedule
				Change oil	МС-20, МС-14, ВНИИНП-25, СМ-10 - every 100^{+20}_{-10} flying hours. ВО-12 – every 200±10 flying hours. When oil is replaced by СМ-10 oil mixture, as well as oil and СМ-10 oil mixture are replaced by ВО-12 oil and vice-versa, make entry in the helicopter logbook, indicating oil (oil mixture) grade and date of replacement
5, 6.	Drag hinge of main rotor hub	5	Hypoid oil. With stable temperature drop below minus 15°C at minus 5…10°C change oil with **СМ-9** oil mixture of hypoid oil(2/3) and АМГ-10 oil (113)	Prime oil through holes for plugs in covers of drag hinge pins After priming force additionally oil through nipple in sleeve bottom till it appears from bypass valve, free of air bubbles.	When mounted in helicopter then add every 25±5 flying hours
			Operation of main rotor hub using hypoid oil in flapping and drag hinges at ambient air temperature below minus 15°C is not allowed.	Change oil	Every 100^{+20}_{-10} flying hours
7.	Axle of blade droop centrifugal limiter pawl	5	ЦИАТИМ-201 grease	Force grease through nipple till it appears from under seal	When mounted in helicopter During scheduled inspection
8.	Hinge of main rotor blade pitch control	5	ЦИАТИМ-201 grease	Force grease through nipples till it appears from under bearing protective washer	When mounted in helicopter During scheduled inspection
9.	Flapping hinge of main rotor hub	5	Hypoid oil. With stable temperature drop below minus 15°C at minus 5...10°C change oil with CM-9 oil mixture of hypoid oil(2/3) and AMT-10 oil (1/3)	Fill (add) oil through holes for plugs in hub housing	When hub is mounted in helicopter, then add every (25±5) flying hours
				Change oil	Every 100^{+20}_{-10} flying hours
10.	Hydraulic damper expansion tank	1	AMT-10 oil	Drain oil from tank through drain plugs in damper. Fill fresh oil through hole for plug. **Note.** Remove vibration damper hood (on helicopters equipped with pendulum vibration damper) to filling the expansion tank.	When mounted in helicopter and once a year, but at least every 300^{+20}_{-10} flying hours. Add if required before flight.

Swash plate (Fig. 3)

Item No.	Lubricated point	Qty of lube points	Oil or grease grade	Operation performed	Schedule
1.	Bearings of swash plate end hinge	5	ЦИАТИМ-201 grease	Force grease till it appears from under collar	When mounted on helicopter and during scheduled inspection
2.	Bronze bushings of slide and bearings of swash plate universal joint shaft (on slide)	2	ЦИАТИМ-201 grease	Force grease till it appears from under rubber seal of bearing	When mounted on helicopter and during scheduled inspection
3.	Bearing of swash plate		ЦИАТИМ-201 grease	Force grease till it appears from valve. When forcing tum the swash plate after every 5 – 6 pushes of grease gun	When mounted on helicopter and after every 3 months ± 10 days, but at least every 25±5 hours of operation.
4.	Bearing 5-236203E of swash plate lever shaft	1	ЦИАТИМ-201 grease	Force grease through nipple in sleeve (pawl) of swash plate till it appears from under the collar, mounted in lever sleeve.	When mounted on helicopter and during scheduled inspection
5.	Bearing of swash plate lever clip	4	ЦИАТИМ-201 grease	Force till grease appears from clip bearings on the inside	When mounted on helicopter and during scheduled inspection
6.	Bearings of swash plate lever arm	1	ЦИАТИМ-201 grease	Force till grease appears from check hole in lever	When mounted on helicopter and during scheduled inspection
	Bearing 6-3056204 of blade control pull rod unit	5	ЦИАТИМ-201 grease	Force till grease appears from bleeding hole in nut 24-1940-941.	When mounted on helicopter and during scheduled inspection
	Needle bearing of lever shaft head	1	ЦИАТИМ-201 grease	Force till grease appears from under rings, mounted on the lever shaft	When mounted on helicopter and during scheduled inspection
	Tapered roller bearina of swash plate lateral control rocker	1	ЦИАТИМ-201 grease	Force till grease appears from under ring	When mounted on helicopter and during scheduled inspection
	Bearing of swash plate universal joint (located on external ring)	2	ЦИАТИМ-201 grease	Force till grease appears from bearing	When mounted on helicopter and during scheduled inspection
	Bearing of collective pitch lever	6	ЦИАТИМ-201 grease	Force till grease comes out through bleed holes in collective pitch lever cheek and from bearing (in swash plate slide)	When mounted on helicopter and during scheduled inspection
	Needle bearings of swash plate longitudinal control rocker	1	ЦИАТИМ-201 grease	Force grease till it appears from under collar	When mounted on helicopter and during scheduled inspection

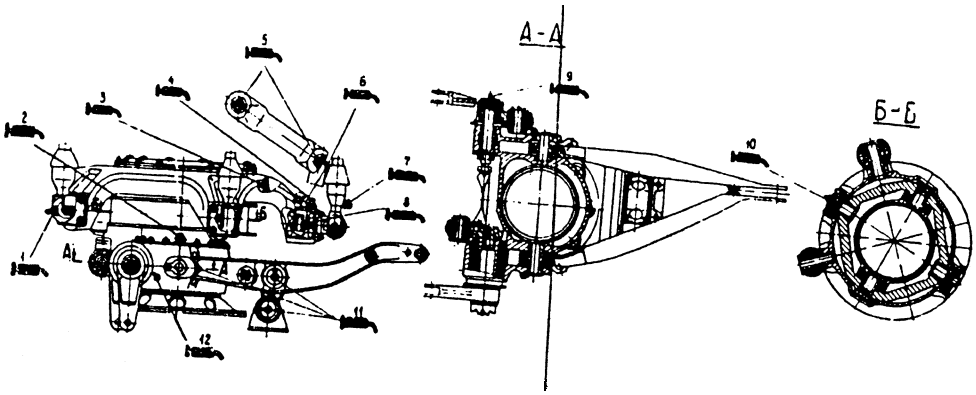


Fig. 3 Lubrication of Swash Plate units

Tail rotor hub (Fig. 4)

Item No.	Lubricated point	Qty of lube points	Oil or grease grade	Operation performed	Schedule
1.	Universal joint	4	ЦИАТИМ-201 grease	Force through nipple till fresh grease appears from under working edges of collars	When mounted in helicopter, then every 3 months ± 10 days, but at least 25±5 operation hours.
2.	Cavity of rod bearing	1	ЦИАТИМ-201 grease	Force through nipple till fresh grease appears from check valve A	When mounted in helicopter, then every 3 months ± 10 days, but at least 25±5 operation hours.
3.	Slide	2	ЦИАТИМ-201 grease	Set slide (using pedals) into position of maximum positive blade setting angle (slide pushed to maximum) and force grease through nipple till fresh grease appears from check hole F. After priming push slide from one extreme position to the other one at least three times using pedals. The time required to displace slide from one extreme position to the other is at least 10 s. Remove aged grease from slide surface	When mounted in helicopter, then every 3 months ± 10 days, but at least 25±5 operation hours.
4.	Feathering hinge	3	Oil MC-20 at air temperatures above zero or short-term (up to 10 days) temperature drop down to minus 10°C. Oil ВНИИНП-25 in winter at ambient air temperatures from plus 5 to minus 50°C or short-time (up to 10 days) temperature rise to plus 10°C. BO-12 – regardless of season. CM-10 – at ambient air temperatures from +5°C to -40°C.	Set blade horizontally and make sure that blade pitch control axle is in top position. Unscrew plug B on feathering hinge and plug C on tank (butt faces of plugs heads are painted yellow). Prime oil. Change oil	Prime when mounted in helicopter. Add oil or oil mixture when its level is decreased. Oil (oil mixture) level should be between marks drawn on check cup. MC-20, ВНИИНП-25, CM-10 - every 100^{+20}_{-10} flying hours. BO-12 – every (200±10) hours. When oil is replaced by CM-10 oil mixture, as well as oil and CM-10 oil mixture are replaced by BO-12 oil and vice-versa, make entry in the helicopter logbook, indicating oil (oil mixture) grade and date of replacement.
5.	Bearings of blade pitch control shaft	3	Grease ЦИАТИМ-201	Force till fresh grease appears from under protecting washers D (grease squeezing from under one washer is tolerated)	When mounted in helicopter and every 25±5 flying hours, but at least once a month or 30 days of parking before flight

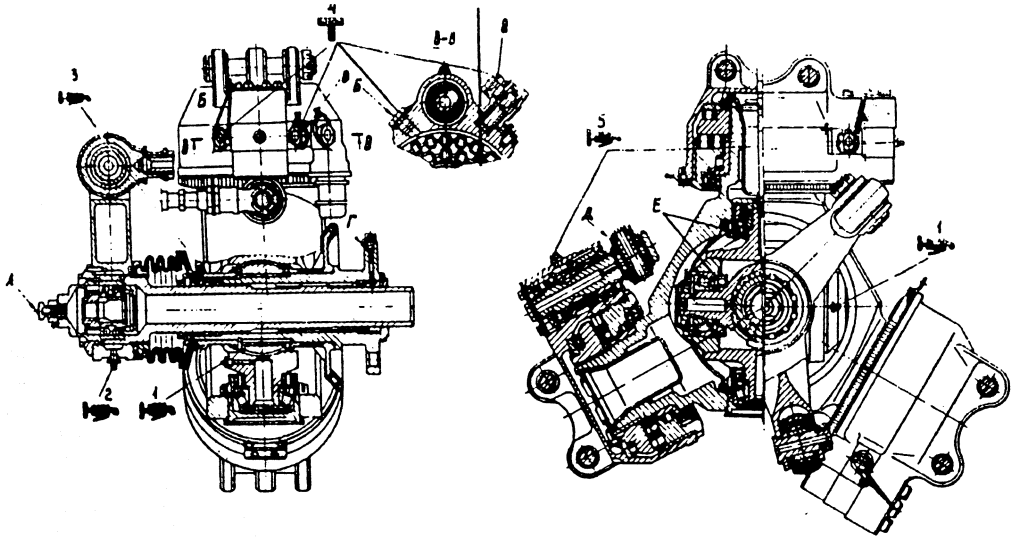


Fig. 7.Lubrication of Tail Rotor Hub units

Landing Gear (Fig. 5)

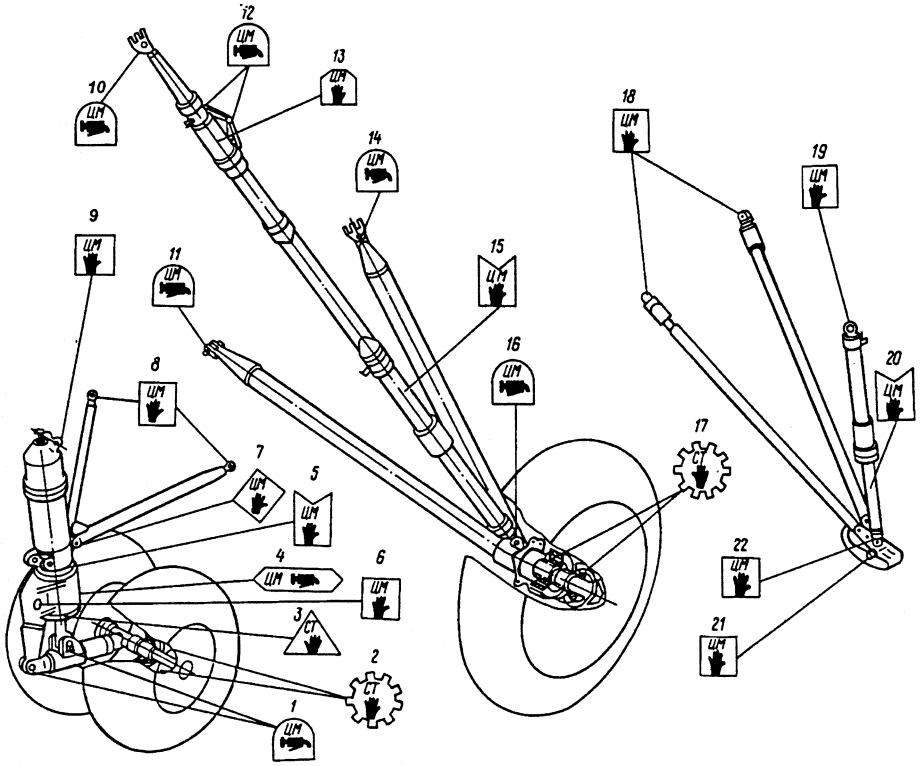


Fig. 5. Lubrication of Landing Gear Units

Item No.	Lubricated point	Q-ty of lube points	Oil or grease grade	Operation performed	Schedule
1.	Hinged joints of nose landing gear	2	ЦИАТИМ-201 grease	Force grease with grease gun	When mounting on the helicopter, every 12 months
2.	Bearings of nose landing gear wheels	2	CT (HK-50) grease	Change grease	When mounting on the helicopter, every 12 months
3.	Lock of nose landing gear	1	CT (HK-50) grease	Lubricate	During scheduled inspection
4.	Grease nipple 1-Б 1 of swivel bracket of nose shock strut	2	ЦИАТИМ-201 grease	Force grease with grease gun	During scheduled inspection
5.	Face of nose landing gear rod	1	ЦИАТИМ-201 grease	Remove stale grease with cloth and grease with new one	During preliminary preparation
6.	Carrier junction unit	1	ЦИАТИМ-201 grease	Lubricate	When carrier is mounted
7.	Lower point of bracing strut fastening to nose shock strut	1	ЦИАТИМ-201 grease	Lubricate	When mounting on the helicopter, every 12 months
8.	Upper point of bracing strut fastening of nose landing gear	2	ЦИАТИМ-201 grease	Lubricate	When mounted. Once a year.
9.	Upper fastening unit of nose shock strut	1	ЦИАТИМ-201 grease	Lubricate	When mounted. Once a year.
10.	Grease nipples 1-61 of bolts of fastening the shock strut	2	ЦИАТИМ-201 grease	Force with grease gun	When mounting on the helicopter, every 12 months
11.	Grease nipple 1-61 of fastening bolts of the bracing struts of landing gears to units on frame No. 11	2	ЦИАТИМ-201 grease	Force with grease gun	When mounting on the helicopter, every 12 months

Item No.	Lubricated point	Q-ty of lube points	Oil or grease grade	Operation performed	Schedule
12.	Bolts of splined joint, hydraulic support control rocker	8	ЦИАТИМ-201 grease	Force with grease gun	When mounting on the helicopter, every 12 months
13.	Face of L. P. cylinder of landing gears shock strut	2	ЦИАТИМ-201 grease	Remove stale grease with cloth and grease with new one	During preliminary preparation
14.	Grease nipples 1-61 of bolts of fastening the bracing struts of landing gears to frame No. 13	2	ЦИАТИМ-201 grease	Force with grease gun	When mounting on the helicopter, every 12 months
15.	Face of H. P. cylinder of shock strut of landing gear	2	ЦИАТИМ-201 grease	Apply a thin layer	During preliminary preparation
16.	Grease nipple 1-61 of bolts of fastening the shock strut of landing gears to lower universal joint	4	ЦИАТИМ-201 grease	Force with grease gun	When mounting on the helicopter, every 12 months
17.	Bearings of landing gear wheels	4	СТ (НК-50) grease	Lubricate	When mounting on the helicopter, every 12 months
18.	Upper fastening unit of tail bumper bracing struts	2	ЦИАТИМ-201 grease	Lubricate	When mounting on the helicopter When changing to winter and summer operation
19.	Upper fastening unit of tail bumper shock-absorber	1	ЦИАТИМ-201 grease	Lubricate	When mounting on the helicopter When preparing for winter and summer operation
20.	Face of tail bumper shock-absorber cylinder	1	ЦИАТИМ-201 grease	Apply a thin layer	During preliminary preparation
21.	Lower fastening unit of tail bumper shock-absorber	2	ЦИАТИМ-201 grease	Lubricate	When mounting on the helicopter When changing to winter and summer operation
22.	Tail bumper fastening bolt	1	ЦИАТИМ-201 grease	Lubricate	When mounting on the helicopter When changing to winter and summer operation

Fuselage (Fig.6)

Item No.	Lubricated point	Qty of lube points	Oil or grease grade	Operation performed	Schedule
1.	Cockpit door lock	1	ЦИАТИМ-201 grease	Manual packing	After every 12 months
2.	Cockpit door hinges	2	ЦИАТИМ-201 grease	Manual packing	When mounting on helicopter and changing to winter or summer operation
3.	Hinges of engines access hatch	2	ЦИАТИМ-201 grease	Manual packing	After every 12 months
4.	Mechanism of lock of engines access hatch	1	ЦИАТИМ-201 grease	Manual packing	After every 12 months
5.	Mechanism and pins of cowling panel lock of KO-50 heater	1	ЦИАТИМ-201 grease	Manual packing	After every 12 months
6.	Mechanism and pins of lock of engine compartment cowling panels	1	ЦИАТИМ-201 grease	Manual packing	After every 12 months
7.	Hinges of engine compartment panels	4	ЦИАТИМ-201 grease	Manual packing	After every 12 months
8.	Hinges of fan compartment panels	4	ЦИАТИМ-201 grease	Manual packing	After every 12 months
9.	Mechanisms and pins of locks of fan compartment panels	4	ЦИАТИМ-201 grease	Manual packing	After every 12 months
10.	Mechanism and pins of locks of gear box compartment panels	2	ЦИАТИМ-201 grease	Manual packing	After every 12 months
11.	Mechanism and pins of locks of tail compartment panels	2	ЦИАТИМ-201 grease	Manual packing	After every 12 months
12, 13.	Hinge of cowling rear compartment panels	4	ЦИАТИМ-201 grease	Manual packing	After every 12 months
14.	Jointing bolts of tail boom	52	ЦИАТИМ-201 grease	Manual packing	When mounting on helicopter
15.	Jointing bolts of pylon	18	ЦИАТИМ-201 grease	Manual packing	When mounting on helicopter
16.	Bearings and axles of stabilizer hinging	2	ЦИАТИМ-201 grease	Manual packing	When mounting on helicopter
17, 20.	Leather collar 8АТ.6900.054 of air cylinders of dampers of right- and left-hand covers of engines cowling	4	ЦИАТИМ-201 grease	Manual packing	When mounting on helicopter and changing to winter or summer operation
18.	Hinges and axles of fastening bands of external fuel tanks	6 (8)	ЦИАТИМ-201 grease with АКОР-1 additive	Manual packing	After every 12 months
19.	Fixing pins of external load sling hatch	2	ЦИАТИМ-201 grease	Manual packing	After every 12 months
21.	Upper guides of cargo cabin doors	1	ЦИАТИМ-201 grease	Manual packing	After every 12 months
22.	Emergency release mechanisms of cargo cabin doors	1	ЦИАТИМ-201 grease	Manual packing	After every 12 months
23.	Upper and lower guides of blisters	4	ЦИАТИМ-201 grease	Manual packing	After every 12 months
24.	Pins of emergency release of blisters	2	ЦИАТИМ-201 grease	Manual packing	After every 12 months
25.	Mechanism of locks of right- and left-hand blisters	2	ЦИАТИМ-201 grease	Manual packing	After every 12 months
26.	Mechanisms of windshield wipers of heated glasses	2	ЦИАТИМ-201 grease	Manual packing	After every 12 months
27.	Mechanism of locks of fuselage nose section fairing	2	ЦИАТИМ-201 grease with АКОР-1 additive	Manual packing	After every 12 months
28.	Hinge of fuselage nose section fairing fixing in opened position	2	ЦИАТИМ-201 grease with АКОР-1 additive	Manual packing	After every 12 months

Item No.	Lubricated point	Qty of lub points	Oil or grease grade	Operation performed	Schedule
29.	Hinge joint of nose section fairing	1	ЦИАТИМ-201 grease with АКОР-1 additive	Manual packing	After every 12 months

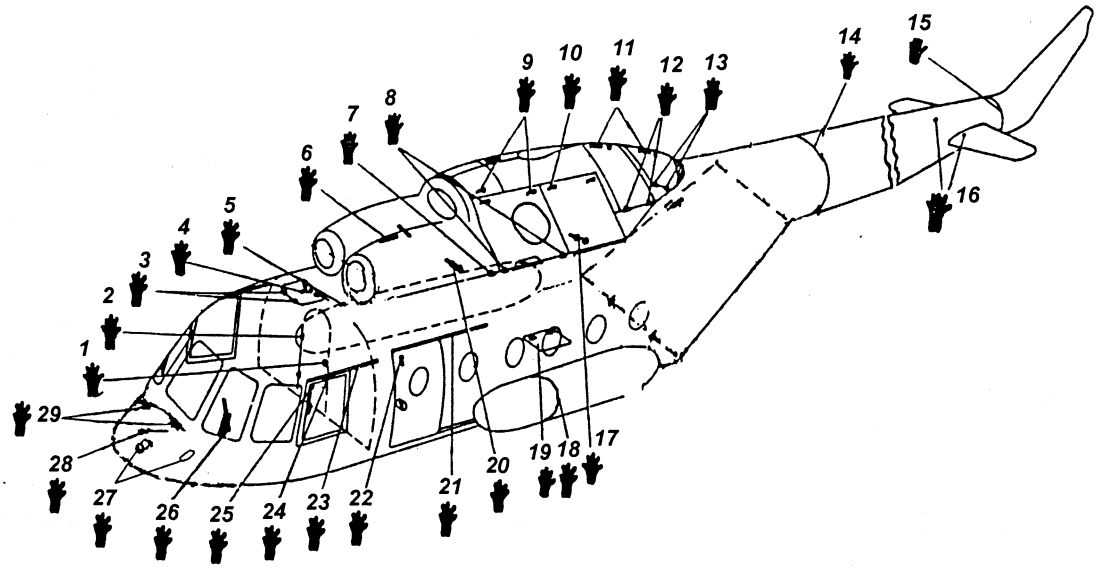


Fig. 6 Lubrication of Fuselage Units

Helicopter control (Fig. 7)

Item No.	Lubricated point	Qty of lube points	Oil or grease grade	Operation performed	Schedule
	Bearing of COLLECTIVE PITCH/THROTTLE CONTROL system shaft	1	ЦИАТИМ-201 grease	Wipe and lubricate surface of bearing and protecting washer	When preparing the helicopter to winter or summer operation. In humid tropical climate every 3 months
2.	Engines control rod	2	ЦИАТИМ-201 grease	Force grease into bearings through nipples	When changing to winter operation.
	Collective pitch control rod	2	ЦИАТИМ-201 grease	Force grease into bearings through nipples	When changing to winter operation.
	Manual control rod	1	ЦИАТИМ-201 grease	Force grease into bearings through nipples	When changing to winter operation.
5.	Manual control rod	2	ЦИАТИМ-201 grease	Force grease into bearings through nipples	When changing to winter operation.
6.	Manual control rocker	1	ЦИАТИМ-201 grease	Force grease into bearings through nipples	Every 12 months
7.	Bearing of pedal control rocker	1	ЦИАТИМ-201 grease	Force grease into bearings through nipples	Every 12 months
8.	Pedal control rod	2	ЦИАТИМ-201 grease	Force grease into bearings through nipples	Every 12 months
9.	Bearings of pilot's pedals	2	ЦИАТИМ-201 grease	Wipe and lubricate surface of bearings and protecting washer	When preparing for winter or summer operation. In humid tropical climate every 3 months
10.	Bearing of pilot's manual control column	1	ЦИАТИМ-201 grease	Force grease into bearing through nip ples	When changing to winter operation.
11.	Bearings of pilot's manual control column	2	ЦИАТИМ-201 grease	Wipe and lubricate surface of bearings and protecting washer	When preparing for winter or summer operation
12.	Bearings of pilot's pedals	2	ЦИАТИМ-201 grease	Wipe and lubricate surface of bearings and protecting washer	In humid tropical climate every 3 months
13.	Pedal control rod	2	ЦИАТИМ-201 grease	Force grease into bearings through nip ples	When changing to winter operation.
14.	Manual control rocker bearing	1	ЦИАТИМ-201 grease	Force grease into bearings through nip ples	When changing to winter operation.
15.	Manual control rocker bearing	1	ЦИАТИМ-201 grease	Force grease into bearings through nip ples	When changing to winter operation.
16.	Manual control rod	2	ЦИАТИМ-201 grease	Force grease into bearings through nip ples	When changing to winter operation.
17.	Bearing of COLLECTIVE PITCH/THROTTLE CONTROL lever shaft	1	ЦИАТИМ-201 grease	Wipe and lubricate surface of bearings and protecting washers	When changing for winter or summer operation. In humid tropical climate during scheduled inspection.
18.	Manual control rod	2	ЦИАТИМ-201 grease	Force grease into bearings through nipples	Every 12 months

Item No.	Lubricated point	Qty of lube points	Oil or grease grade	Operabon performed	Schedule
19, 20.	Bearings of co-pilot's pedals	4	ЦИАТИМ-201 grease	Wipe and lubricate surfaces of bearings and protecting washers	When preparing for winter or summer operation. In humid tropical climate every 3 months
21.	Bearings of co-pilot's manual control column	1	ЦИАТИМ-201 grease	Force grease into bearings through nipples	Every 12 months
22.	Bearings of co-pilot's manual control column	2	ЦИАТИМ-201 grease	Wipe and lubricate surfaces of bearings and protecting washers	When changing for winter or summer operation. In humid tropical climate during scheduled inspection.
23.	Bearings of co-pilot's manual control column	2	ЦИАТИМ-201 grease	Force grease into bearings through nipples	Every 12 months
24.	Bearing of rockers of pilot and co-pilot's manual control columns	1	ЦИАТИМ-201 grease	Remove stale grease and pack new one	When changing for winter or summer operation. In humid tropical climate during scheduled inspection.
25.	Bearing of manual control column rod	1	ЦИАТИМ-201 grease	Force grease into bearing through nipple	Every 12 months
26.	Bearing of co-pilot's COLLECTIVE PITCH/THROTTLE CONTROL lever carrier	2	ЦИАТИМ-201 grease	Remove stale grease and apply new one	When changing for winter or summer operation. In humid tropical climate during scheduled inspection.
27.	Bearing of co-pilot's collective pitch/throttle control lever rod	1	ЦИАТИМ-201 grease	Force grease into bearing through nipple	Every 12 months
28.	Bearings of co-pilot's collective pitch/throttle control lever rocker	2	ЦИАТИМ-201 grease	Wipe and lubricate surface of bearings and protecting washers	When changing for winter or summer operation. In humid tropical climate during scheduled inspection.
29.	Collective pitch/throttle control rod	2	ЦИАТИМ-201 grease	Force grease into bearings through nipples	Every 12 months
30.	Engines control rod	2	ЦИАТИМ-201 grease	Force grease into bearings through grease nipple	Every 12 months
31.	Manual control rod	2	ЦИАТИМ-201 grease	Force grease into bearings through grease nipple	Every 12 months
32.	Manual control rod	2	ЦИАТИМ-201 grease	Force grease into bearings through grease nipple	Every 12 months
33.	Bearings of manual control rocker	2	ЦИАТИМ-201 grease	Force grease into bearings through grease nipple	Every 12 months
34.	Bearings of brake control stick	2	ЦИАТИМ-201 grease	Wipe and lubricate surface of bearings and protecting washers	When changing for winter or summer operation. In humid tropical climate during scheduled inspection.
35.	Manual control rod	2	ЦИАТИМ-201 grease	Force grease into bearings through grease nipple	Every 12 months
36.	Rod of COLLECTIVE PITCH/THROTTLE CONTROL system	2	ЦИАТИМ-201 grease	Force grease into bearings through grease nipple	Every 12 months

Item No.	Lubricated point	Qty of lube points	Oil or grease grade	Operation performed	Schedule
37.	Rod of COLLECTIVE PITCH/THROTTLE CONTROL system	2	ЦИАТИМ-201 grease	Force grease into bearings through grease nipple	Every 12 months
38.	Pedal control rod	2	ЦИАТИМ-201 grease	Force grease into bearings through grease nipple	Every 12 months
39, 40.	Rockers of COLLECTIVE PITCH/THROTTLE CONTROL system	4	ЦИАТИМ-201 grease	Wipe and lubricate surface of bearings and protecting washers	When changing for winter or summer operation. In humid tropical climate during scheduled inspection.
41, 42.	Rods of collective pitch/throttle control system	4	ЦИАТИМ-201 grease	Force grease into bearings through nipples	Every 12 months
43, 44.	Bearings of collective pitchithrottle control system rockers	4	ЦИАТИМ-201 grease	Wipe and lubricate surface of bearings and protecting washers	When changing for winter or summer operation. In humid tropical climate during scheduled inspection.
45.	Manual control rods	2	ЦИАТИМ-201 grease	Force grease into bearings through nipples	Every 12 months
46, 47.	Rods of collective pitch/throttle control system	4	ЦИАТИМ-201 grease	Force grease into bearings through nipples	Every 12 months
48.	Bearings of manual control rocker	2	ЦИАТИМ-201 grease	Force grease into bearings through nipples	Every 12 months
49.	Rollers of engines shut-down control system	16	CT (HK-50) grease	Wipe and lubricate hinged joints and bearings	When changing for winter or summer operation. In humid tropical climate during scheduled inspection.
50.	Wire-cables of engines shut-down control system		CT (HK-50) grease	Wipe and lubricate surface of wire-cables	When changing for winter or summer operation. In humid tropical climate during scheduled inspection.
51, 52.	Bearings of collective pitchithrottle control system	4	ЦИАТИМ-201	Force grease into bearings through nipples	Every 12 months
53, 54.	Rods of collective pitch/throttle control system	4	grease	Force grease into bearings through nipples	Every 12 months
54a, 54b.	Bearings of rods of engine RPM reset	2	ЦИАТИМ-201 grease	Wipe and lubricate hinged joints and bearings	When changing for winter or summer operation. In humid tropical climate during scheduled inspection.
55.	Rod of longitudinal and lateral control	1	ЦИАТИМ-201 grease	Force grease into bearings through nipples	Every 12 months
55a.	Bearing of rod of engine RPM reset	1	ЦИАТИМ-201 grease	Wipe and lubricate hinged joints and bearings	When changing for winter or summer operation. In humid tropical climate during scheduled inspection.
56, 61.	Rods (2 pcs) of engines shut-down control system	2	ЦИАТИМ-201 grease	Force grease into bearings through nipples	Every 12 months

MAINTENANCE SCHEDULE

Item No.	Lubricated point	Qty of lube points	Oil or grease grade	Operation performed	Schedule
	Bearings of shaft supports	2	ЦИАТИМ-201 grease	Wipe and lubricate surfaces of bearings and protecting washers	When changing for winter or summer operation. In humid tropical climate during scheduled in- s ection.
57a, 60a.	Bearings of rods of RPM reset	2	ЦИАТИМ-201 grease	Wipe and lubricate hinged joints and bearings	winter or summer operation. In humid tropical climate during scheduled inspection.
58, 62.	Hinged bearings Ш5 of engine shut-down system	2	ЦИАТИМ-201 grease	Remove stale grease and pack fresh one	When. changing for winter or summer operation. In humid tropical climate during scheduled inspection.
59, 63.	Hinged bearings Ш6 of collective pitch/throttle control system	2	ЦИАТИМ-201 grease	Remove stale grease and pack fresh one	When changing for winter or summer operation. In humid tropical climate during scheduled inspection.
60, 64.	Rods of collective pitch/throttle control system	2	ЦИАТИМ-201 grease	Force grease into bearings through nip ples	Every 12 months
	Wire-cables of main rotor brake control system	1	CT (НК-50) grease	Wipe and lubricate wire-cables surfaces	When changing for winter or summer operation. In humid tropical climate during scheduled inspection.
66.	Manual control rod	2	ЦИАТИМ-201 grease	Force grease into bearings through nipples	Every 12 months
67.	Pedal control rod	2	ЦИАТИМ-201 grease	Force grease into bearings through nipples	Every 12 months
68.	Manual control rod	1	ЦИАТИМ-201 grease	Force grease into bearings through nipples	Every 12 months
69.	Pedal control rod	1	ЦИАТИМ-201 grease	Force grease into bearings through nipples	Every 12 months
70.	Rollers of main rotor brake control system	3	CT (НК-50) grease	Wipe and lubricate hinged joints and bearings	When changing for winter or summer operation. In humid tropical climate during scheduled inspection.
71.	Bearings of movable stop mechanism of tail rotor pitch limit system СППУ-52	2	ЦИАТИМ-201 grease grease	Force grease into bearings through nipples	Every 12 months
71a, 73, 74, 86.	Bearings of hydraulic actuators supports	8	ЦИАТИМ-201	Force grease into bearings through nipples	When mounted on the helicopter, every 12 months
72.	Manual control rod	2	ЦИАТИМ-201 grease	Force grease into bearings through nipples	Every 12 months
75, 83.	Manual control rod	4	ЦИАТИМ-201 grease	Force grease into bearings through nipples	Every 12 months

Item No.	Lubricated point	Qty of lube points	Oil or grease grade	Operation performed	Schedule
76, 84.	Manual control rockers	4	ЦИАТИМ-201 grease	Force grease into bearings through nipples	Every 12 months
77, 78, 79, 85.	Bearings of end-pieces of hydraulic actuators	4	ЦИАТИМ-201 grease	Force grease into bearings through nipples	Every 12 months
80.	Bearing of pedal control rocker	2	ЦИАТИМ-201 grease	Wipe and lubricate surface of bearings and protecting washers	When changing for winter or summer operation. In humid tropical climate during scheduled inspection.
81.	Rod (link) of pedal control	2	ЦИАТИМ-201 grease	Force grease into bearings thmugh nipples	Every 12 months
82.	Bearing of pedal control sector	2	ЦИАТИМ-201 grease	Wipe and lubricate surface of bearing and protecting washers	When changing for winter or summer operation. In humid tropical climate during scheduled inspection.
87.	Rollers of pedal control system	4	CT (НК-50) grease	Wipe and lubricate hinged joints and bearings	When changing for winter or summer operation. In humid tropical climate during scheduled inspection.
88.	Rod of COLLECTIVE PITCH/THROTTLE CONTROL system	2	ЦИАТИМ-201 grease	Force grease into bearings through nip ples	Every 12 months
89.	Pedal control rod	1	ЦИАТИМ-201 grease	Force grease into bearings through nip ples	Every 12 months
90.	Manual control rod	2	ЦИАТИМ-201 grease	Force grease into bearings thmugh nipples	Every 12 months
91.	Manual control rod	1	ЦИАТИМ-201 grease	Force grease into bearings through nipples	Every 12 months
92.	Control system rod	1	ЦИАТИМ-201 grease	Force grease into bearings through nip ples	Every 12 months
93.	Rollers of control rods	24	ЦИАТИМ-201 grease	Lubricate axles of rollers	When mounted on the helicopter, every 6 months, in humid tropical climate – every 3 months.
94.	Manual control rod	2	ЦИАТИМ-201 grease	Force grease into bearings through nip ples	Every 12 months
95.	Rod of collective pitch/throttle control system	2	ЦИАТИМ-201 grease	Force grease into bearings through nipples	Every 12 months
96.	Manual control rod	1	ЦИАТИМ-201 grease	Force grease into bearings through nip ples	Every 12 months
97.	Rods of pedal control and collective pitchithrottle control	3	ЦИАТИМ-201 grease	Force grease into bearings through nip ples	Every 12 months
97a.	Bearing of МП-100-2с housing	1	ЦИАТИМ-201 grease	Wipe and lubricate hinged joint and bearing	When changing for winter or summer operation. In humid tropical climate during scheduled inspection.

MAINTENANCE SCHEDULE

Item No.	Lubricated point	Qty of lube points	Oil or grease grade	Operation performed	Schedule
98, 99, 100.	Rockers of pedal, manual and collective pitch/throttle control	3	ЦИАТИМ-201 grease	Force grease into bearings through nipples	Every 12 months
101, 102, 103.	Rods of pedal, manual and collective pitchithrottle control	6	ЦИАТИМ-201 grease	Force grease into bearings through nipples	Every 12 months
104, 105, 106.	Feel mechanisms	6	ЦИАТИМ-201 grease	Force grease into bearings through nipples	Every 12 months
107.	Rockers	4	ЦИАТИМ-201 grease	Force grease	When changing to winter operation, in humid tropical climate . every 3 months.
108, 109, 110, 111.	Control rods	8	ЦИАТИМ-201 grease	Force grease into bearings through nipples	Every 12 months
112, 113, 114, 115.	Control rockers	4	ЦИАТИМ-201 grease	Force grease into bearings through nipples	Every 12 months
116, 117.	Control rods	4	ЦИАТИМ-201 grease	Force grease into bearings through nipples	Every 12 months
118.	Bearing of rod of pilot's collective pitch/throttle control lever	1	ЦИАТИМ-201 grease	Force grease into bearings through nipples	Every 12 months
119.	Bearing of collective pitch/throttle control system shaft	1	ЦИАТИМ-201 grease	Wipe and lubricate surface of bearing and force grease	When changing for winter or summer operation. In humid tropical climate during scheduled inspection.
120, 121.	Control system rods	4	ЦИАТИМ-201 grease	Force grease into bearings through nipples	Every 12 months
122.	Bearing of pilot's collective pitchithrottle control lever carrier	2	ЦИАТИМ-201 grease	Change grease	When changing for winter or summer operation. In humid tropical climate during scheduled inspection.
123.	Bearings of pilot's collective pitch/throttle control lever rocker	2	ЦИАТИМ-201 grease	Wipe and lubricate surface of bearings and protecting washer	When changing for winter or summer operation. In humid tropical climate during scheduled inspection.
124.	Wire-cable of pedal control system	4	СТ (НК-50) grease	Wipe and lubricate wire-cables	When preparing for winter or summer operation. In humid tropical climate every 3 months
125.	Rollers of pedal control system	4	СТ (НК-50) grease	Wipe and lubricate axles of rollers	When preparing for winter or summer operation. In humid tropical climate every 3 months
126.	Bushing-roller chain of pedal control system	1	СТ (НК-50) grease	Wipe and lubricate chain and tail gear box sprocket	Every 6 months. When preparing for winter or summer operation.

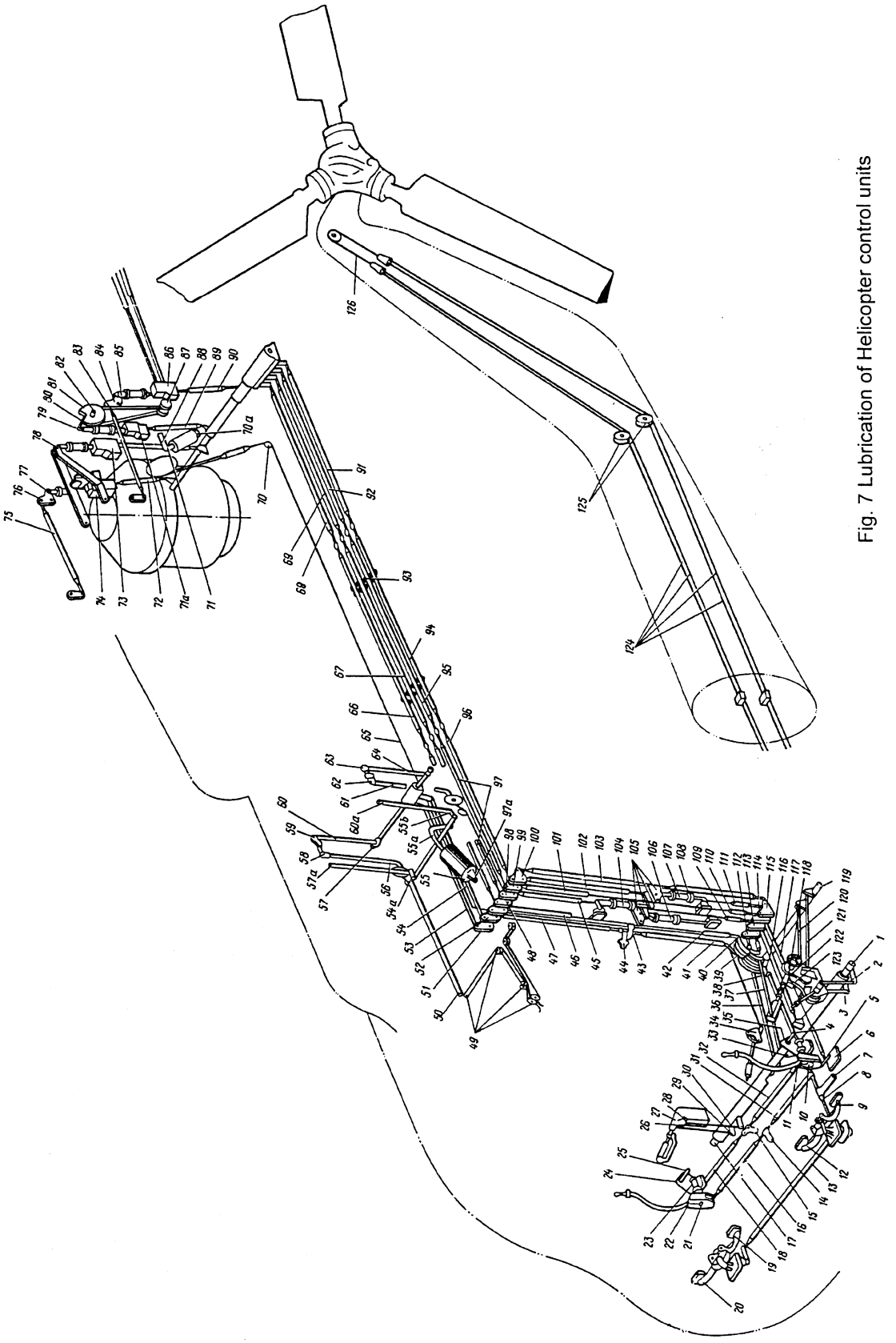


Fig. 7 Lubrication of Helicopter control units

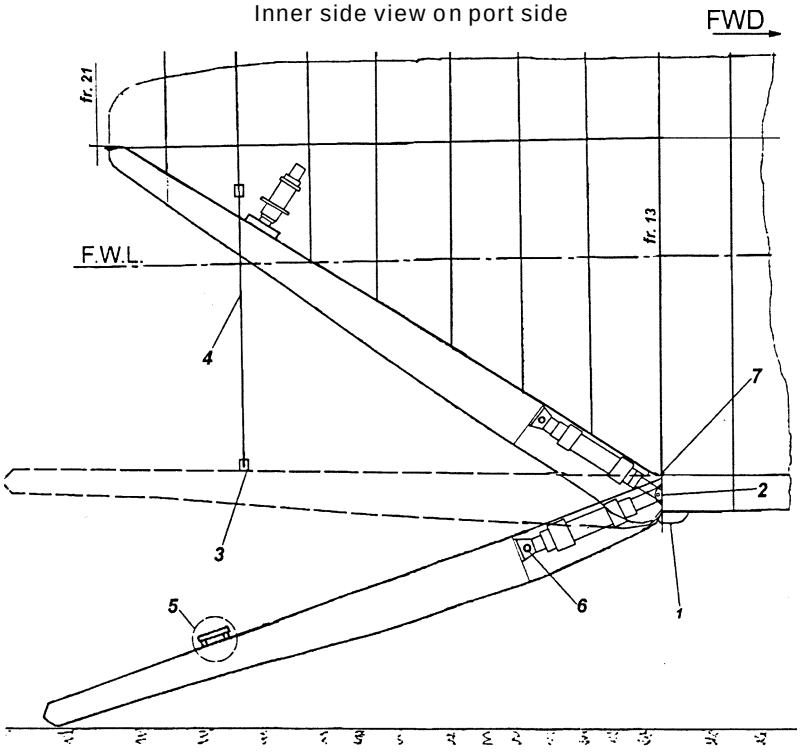


Fig. 8 Lubrication of cargo ramp units

Cargo ramp (Fig. 8)

Item No.	Lubricated point	Qty of lube points	Oil or grease grade	Operation performed	Schedule
1.	Ramp hinging joint	2	ЦИАТИМ-201	Manual packing	When changing for winter or summer operation. In humid tropical climate during scheduled inspection.
2.	Ramp retraction-extension hydraulic cylinder rod end-piece bearing	2	ЦИАТИМ-201	Manual packing. Wipe and lubricate surface of bearings, protecting washers and rod	When changing for winter or summer operation. In humid tropical climate during scheduled inspection.
3.	Ramp cable support lower end-piece hinged joint.		ЦИАТИМ-201	Manual packing	When changing for winter or summer operation. In humid tropical climate during scheduled inspection.
4.	Cable of ramp cable support.	2	QMATMM-201	Manual packing	Every 12 months
5.	Wear surfaces	2	ЦИАТИМ-201	Manual packing	When changing for winter or summer operation.
6.	Bearing fastening the ramp retraction-extension hydraulic cylinder lug to the fuselage side panel.	1	ЦИАТИМ-201	Manual packing. Wipe and lubricate surface of bearings and protecting washers.	When changing for winter or summer operation. In humid tropical climate during scheduled inspection.
7.	Hinges of hinged flaps.	2	ЦИАТИМ-201	Manual packing. Wipe and lubricate surface of bearings and protecting washers.	When changing for winter or summer operation. In humid tropical climate during scheduled inspection.

External load sling system

Item No.	Lubricated point	Qty of lube points	Oil or grease grade	Operation performed	Schedule
1.	Universal joint assembly bushings of ВТ-ДГ6 lock hanging	1	ЦИАТИМ-201	Force grease through nipple	Every 12 months

SUPPLEMENT 2

CALIBRATED TIGHTENING OF NUTS AND BOLTS OF HELICOPTER

Description of part	Drawing (Standard) No.	Quantity of parts	Torque N•m (kgf•m)	Tools No.
Fuselage				
1. Nut of screws of glasses of cockpit and sliding blisters fastening	56.0400.003		$0,4^{+0,2}$ ($0,04^{+0,02}$)	6442-56/И-175
2. Nut of bolts of fastening the tail boom to fuselage	3327A-10 кд 3327A-12 кд	24 28	31,5±3,15 (3,15±0,315) 56±5,6 (5,6±0,56)	8AT.9102.130 8AT.9102.130
3. Nut of fastening the tail boom to pylon	3327A-10 кд 3327A-12 кд	7 11	31,5±3,15 (3,15±0,315) 56±5,6 (5,6±0,56)	8AT.9102.130 8AT.9102.130
4. Nut of bolt of stabilizer flanged joint	8А-3150-14	4	60...80 (6...8)	8AT.9102.080
5. Nut of bolt of fastening the bracing strut of gear box frame to fuselage	8-0800-09	4	820...980 (82...98)	8AT.9103.010
6. Nuts of bolts 140-0800-01 of fastening the main gear box to gear box frame and the articulated strut of gear box frame to base	3341A-24	12	70...100 (7...10)	8AT.9102.080
7. Nut of stud of fastening the transmission unit on main gear box to connect bracing struts of gear box frame	3336A-14	22	90...100 (9...10)	8AT.9102.080
Main rotor blades				
1. Nut of bolt of fastening the main rotor blades	3336A-22	10	80 ... 100 (8 ... 10)	8AT.9102.080
2. Bolt of the spar stopper fastening	Pfl-2700-141-3 Pfl-2700-141-4	30 15	10 (1) 10 (1)	8AT.9102.130 8AT.9102.130
Pendulum vibration damper				
1. Nuts of bolts of hub fastening to hub bracket	8Кд	35	13...15 (1.3 ...1.5)	8AT.9102.130
2. Bolt of adapter fastening to the main rotor hub.	8 - 46 Кд	5	14...16 (1.4 ...1.6)	8AT.9102.130
3. Pin	8MT.1280.007	5	160...180 (16...18)	8AT.9102.080 8AT.9101.470
4. Nuts of bolt of bifilar suspension	18Кд	10	120 ...150 (12...15)	8AT.9102.080 8AT.9101.470
Main rotor hub				
1. Nut of fastening the damper to bracket of feathering hinge trunnion	8.1910.084	10	70...80 (7...8)	8AT.9102.080
2. Nut of fastening the bracket to feathering hinge trunnion	8.1910.327	40	40-60 (4-6)	8AT.9102.130
3. Nut of fastening the main rotor hub on main gear box shaft	8.1910.089	1	2400-2800 (240-280)	8AT.9124.300
4. Nut of flapping hinge pin	8.1910.023	5	350-450 (35-45)	8AT.9103.010
5. Bolt of main rotor blade pitch control fastening	8.1910.088	20	100-110 (10-11)	8AT.9102.080
6. Nut of drag hinge pin	8.1910.049	5	300-400 (30-40)	8AT.9103.010
7. Screw of blade droop limiter stop fastening	8.1910.013	10	10-12,5 (1-1,25)	8AT.9102.130
Swash plate				
1. Nuts of stud of fastening the guide of swash plate slide to main gear box	3327A-12 Кд	8	50-60 (5-6)	8AT.9102.130
2. Nut of stud of upper flange of swash plate fastening	3336A-10 Кд (for studs M10x1,5)	25	23-27 (2,3-2,7)	8AT.9102.130
3. Nut of stud of bracket of swash plate slide fastening	8.1920.835	14	13-16,5 (1,3-1,65)	8AT.9102.130
4. Nuts of upper fork shaft of main rotor blade	24.1940.168	5	45-50	8AT.9102.130

Description of part	Drawing (Standard) No.	Quantity of parts	Torque N•m (kgf•m)	Tools No.
control pull rod			(4.5-5)	
5. Nut of stud of the bracket of swash plate collective pitch lever fastening	3327А-12 Кд	4	50-60 (5-6)	8АТ.9102.130
6 Nut of bracing bolt of the swash plate lever clip fastening	8.1920.811	2	60-70 (6-7)	8АТ.9102.080
7. Nut of bolt of the bracket of transmitter УП21-15 fastening		2	13-16,5 (1,3-1,65)	8АТ.9102.130
8. Nut of bracing bolt of the swash plate lever clip displacement limiter fastening	ЭР.8АТ.19.1430	2	20^{+5} $2^{+0,5}$	6442-56\И-175
Tail rotor				
1. Nut of bolt of the tail rotor blades fastening	8.3914.039	6	40-60 (4-6)	8АТ.9102.130
2. Nut of tail rotor hub fastening to tail gearbox shaft	3327А-14 Кд	8	80-110 (8-10)	8АТ.9102.080
3. Tail rotor bearing cavity cover	8-3914-603	1	110-130 (11-13)	8АТ.9102.080
Helicopter control				
1. Screw fastening the brackets of pedal control cables guide blocks mounting .		16	5-6 (0,5-0,6)	8АТ.9102.130
2. Nut of bolt of longitudinal and lateral control rockers	3327А-12 Кд	2	10-20 (1-2)	8АТ.9102.130
3. Nuts of stud of the hydraulic actuators bracket fastening on main gearbox	3336А-12 Кд	12	45-60 (4,5-6)	8АТ.9102.130
4. Nuts of studs of hydraulic actuators supports fastening on bracket	3336А-12 Кд	16	60-70 (6-7)	8АТ.9102.080
5. Nut of hydraulic actuator power rods end-pieces locking		4	50-70 (5-7)	8АТ.9102.080
Fuel **system**				
1. Bolt of joint straps of external fuel tanks of increased capacity	50.6120.13	8	60-70 (6,0-7,0)	8АТ.9102.130
2. Bolt of joint straps of lower auxiliary fuel tanks	8МТВ ГА 6116.011	4	25 (2,5)	8АТ.9202.130
3. Bolt fastening the frame of upper auxiliary fuel tanks suspension	8МТВ ГА 6118011-03 8МТВ ГА 6118011-05	4	47 (4,7)	
4. Bolt of joint straps of upper auxiliary fuel tanks	50.6120.013	4	27 (2,7)	8АТ.9102.130
Landing gear				
1. Stopper of landing gear shock – absorber power connections	2194А-8 Кд	**3** 2	10 (1) 10 (1)	8АТ.9102.130 8АТ.9102.130
2. Bolt fastening the upper brackets of main landing gear shock-absorbers hinging	2194А-13 Кд	2	31-34,1 (3,1-3,41)	8АТ.9102.130
Power plant				
1. Bolt of clamps for exhaust branch attachments	78570041	4	3,5-4 (0,35-0,40)	8АТ.9102.130
2. Threaded pin of engines dust-protection device separators fastening	246-6820-53	2	30-35 (3,0-3,5)	8АТ.9102.130
3. Bolts of clamps of a.c. generators	804М55-165	4	35-40 (3,5-4,0)	8АТ.9102.130

Description of part	Drawing (Standard) No.	Quantity of parts	Torque N•m (kgf•m)	Tools No.
Transmission				
1. Nut of bolt of the intermediate gear box fastening	3327A-12 кд	4	55-65 (5,5-6,5)	8AT.9102.130
2. Nut of bolt of the tail gear box fastening	3327A-10 кд	9	25-30 (2,5-3,0)	8AT.9102.130
3. Nut of bolt of fastening the universal joint shaft of fan to drive flange on main gear box	3336A-8 кд	4	12-14 (1,2-1,4)	8AT.9102.130
4. Bolt of fastening the tail rotor drive shaft to rotor brake	РШ-1600-07	4	70-80 (7-8)	8AT.9102.080
5. Bolt of fastening the tail rotor drive shaft to intermediate gear box	РШ-1600-08	8	70-80 (7-8)	8AT.9102.080
6. Nut of bolt connecting tail rotor drive shaft	3327A-12 кд	12	70-80 (7-8)	8AT.9102.080
7. Nut of tail gear box rod	8.3914.402	1	40-50 (4-5)	8AT.9102.130

Вертолет Ми-176-5

Регламент технического обслуживания

(MAINTENANCE SCHEDULE)

ПЛАНЕР, ВЕРТОЛЕТНЫЕ СИСТЕМЫ И СИЛОВАЯ УСТАНОВКА

(AIRFRAME, HELICOPTER SYSTEMS, POWER PLANT)

(На английском языке)