

133	22-00172-00	Dial cage
134	22-00204-00	Fixture, bearing insert retaining
135	23-00136-00	Branch, propeller hub
136	23-00170-00	Fixture, piston pin locking ring mount
137	23-00260-00	TDC indicator
138	23-01395-00	Crankshaft stand
139	24-00191-00	Extractor, front cover
140	3068-2	Fixture
141	6-94-SC 0053/14	Fixture, disassembling
142	6-94-SC 0053/15	Fixture, pressing
143	6-94-SC 0546/1	Fixture, testing
144	8-95-SC 0053/7	Fixture, impeller mounting
145	8-95-SC 0053/8	Fixture, impeller mounting
146	8-95-SC 0053/9	Fixture, impeller mounting

Ord. no. Reference  
 Designation and description

99	P 137-208	Fixture, Generator Dismounting
100	P 137-212	Lapping Fixture
101	P 137-228	Gage, Plug
102	P 137-229	Gage, Plug
103	P 137-239	Lapping Drift
104	P 137-240	Lapping Drift
105	P 137-262	Fixture, Tooth Clearance Check
106	P 137-263	Cutter, Hating Surface
107	P 137-264	Pressing Drift
108	P 137-265	Pressing Drift
109	P 137-266	Drift
110	P 137-267	Drift
111	P 137-268	Lapping Drift
112	P 137-269	Lapping Drift
113	P 137-270	Fixture, Pressing Out
114	P 137-276	Technological Exhaust Stacks
115	P 137-298	Guide, Reamer
116	P 137-304	Block
117	P 137-305	Block
118	P 137-306	Prolonger, Torque Wrench
119	P 137-332	Plug
120	P 137-336	Cap
121	P 137-338	Holder
122	P 137-340	Drift
123	P 137-392	Fixture, Lever Drilling
124	P 137-402	Pressing Drift
125	P 137-483	Pressing Drift
126	P 337-430	Grinding Stone
127	P 337-482	Drift
128	P 337-484	Protection Bevel
129	P 337-488	Drift
130	UN-72-1144	Special Wrench
131	Z00-0061	Test Installation
132	Z2-001501-00	Mounting Stand

Ord. no. Reference Designation and Description

MO32, M137/337 series

OVERHAUL MANUAL

Ord.no. Reference Designation and Description

66	P 137-087	Extractor
67	P 137-095	Spring, Technological
68	P 137-104	Special Wrench
69	P 137-105	Special Wrench
70	P 137-106	Wrench, Spark Plug
71	P 137-108	Special Wrench
72	P 137-109	Bushing, Technological
73	P 137-110	Special Wrench
74	P 137-111	Ring, Grounding
74	P 137-116	Washer, Technological
75	P 137-118	Fixture, Locking
76	P 137-120	Fixture, Valve Clearance Check
77	P 137-121	Bushing, Pressing-On
78	P 137-122	Britt, Bushing
79	P 137-128	Transversal Bolts, Technological
80	P 137-129	Presser, Bushing
81	P 137-141	Fixture, Overpressure Valve Test
82	P 137-142	Air Scoop, Technological Summer
83	P 137-143	Air Scoop, Technological Winter
84	P 137-154	Distributor
85	P 137-155	Release Valve
86	P 137-166	Fixture, Machining
87	P 137-167	Fixture, Machining
88	P 137-172	Drift, Pressing
89	P 137-174	Fixture, Locking
90	P 137-176	Fixture, Mounting, Seal
91	P 137-177	Fixture, Pin Extractor
92	P 137-178	Drift, Pin Pressing
93	P 137-179	Technological Pin
94	P 137-202	Drift, Shaft Pushing
95	P 137-203	Drift, Shaft Pressing
96	P 137-204	Drift, Seal Pressing
97	P 137-205	Technological Swivel
98	P 137-206	Fixture, Generator Mounting

31	P 137-001	Special Wrench
32	P 137-002	Special Wrench
33	P 137-003	Measuring Gage
34	P 137-005	Fixture, Drilling
35	P 137-006	Torque Wrench with Prolonger
36	P 137-007	Rule Set
37	P 137-016	Visc Bushing
38	P 137-017	Fixture, Shrink Fit
39	P 137-028	Distributor
40	P 137-029	Plug, Crankshaft
42	P 137-035	Extractor, Plug
43	P 137-049	Torque Wrench
44	P 137-054	Insertion, Longer Rocker
45	P 137-057	Plate, Ratchet Gear Recess Seizing
46	P 137-058	Locker
47	P 137-059	Plate, Magnetic Stand
48	P 137-060	Extractor, Gear
49	P 137-061	Fitting
50	P 137-062	Plug, Inlet
51	P 137-063	Plug, Bearing
52	P 137-064	Drill, Forming
53	P 137-066	Pilot Screw
54	P 137-067	Holder, Cyl. Head, for Valve Cutting
55	P 137-068	Case, Valve
56	P 137-072	Fixture, Valve Grinding
57	P 137-073	Fixture, Valve Grinding
58	P 137-076	Support, Cyl. Head
59	P 137-078	Flange
60	P 137-081	Extractor
61	P 137-082	Driver, Rocker
62	P 137-083	Wrench, Central Gear Nut
63	P 137-084	Drill, Pushing
64	P 137-085	Extractor, Breather Tube
65	P 137-086	Extractor

Ord. No. Reference Description and Description

Fig. 2-1. Cross sections

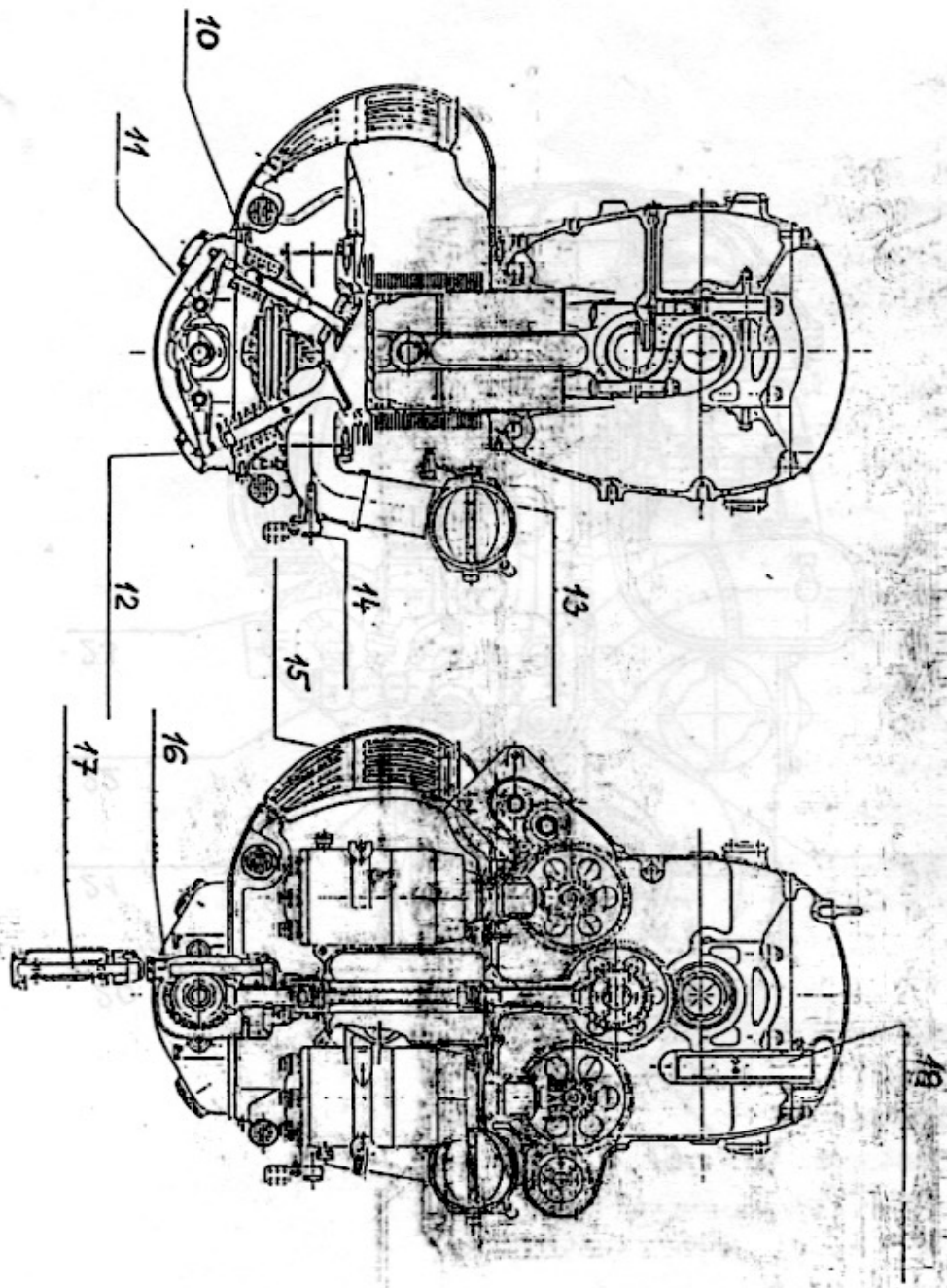
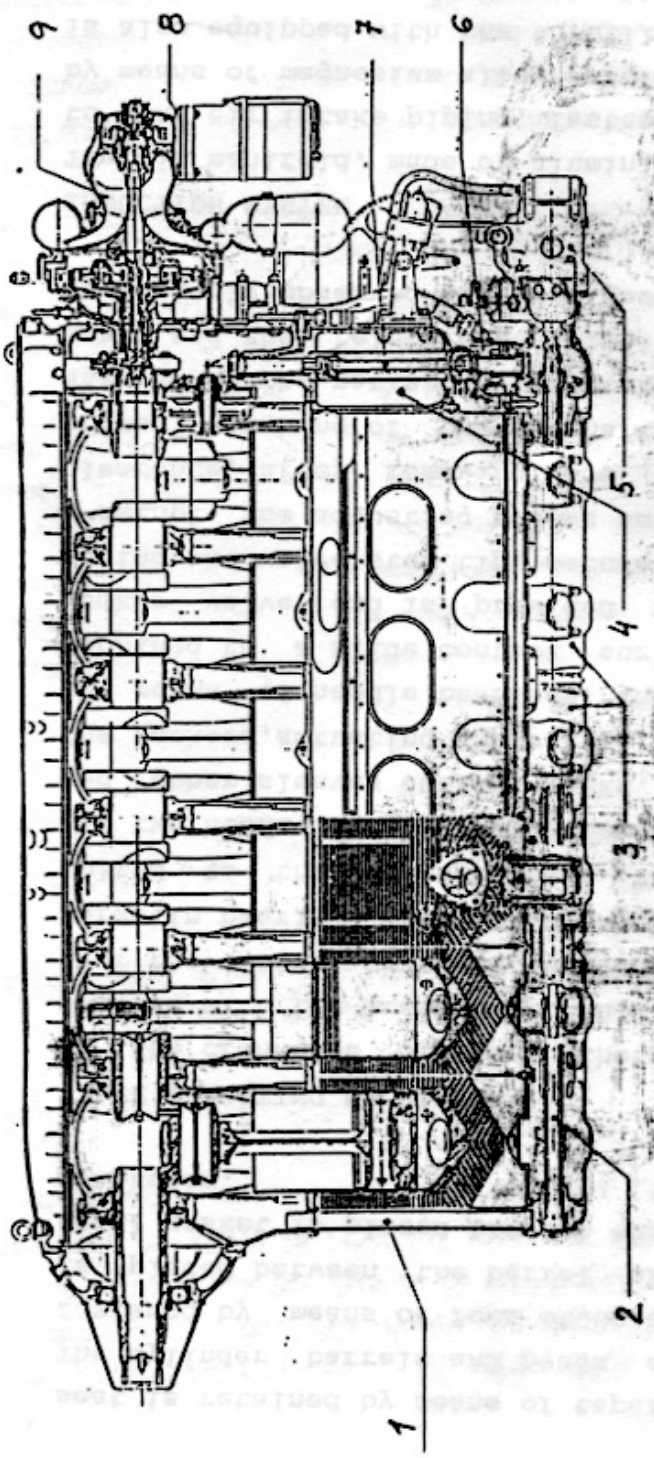


Fig. 2-1 Longitudinal section



M 332, M 137/337 series

OVERHAUL MANUAL

The air manifold, made of aluminum alloy sheet, is joined to the air intake piping, fastened to the cylinder heads, by means of magnesium alloy padlocks. The air manifold is also equipped with the throttle housing containing the air throttle itself. The throttle is then connected, by means of a rod, with the main lever from the control cantilever. This cantilever is mounted on the oil sump. The main lever is connected, by means of a rod, with the throttle control in the cockpit.

2.7. INDUCTION SYSTEM

At the crankcase rear end there is the main drive gear solid with the crankshaft. This gear drives the camshaft over the central gear and the vertical shaft. The camshaft turns in bearings located in the three bearings, which are bolted to the cylinder heads. These bearings, one common for two heads, are connected by means of centering tubes and rubber sleeves against leaks. The rocker camshaft and is by means of needle bearings. The rocker camshaft and is machined to a slide contact surface mating the cam. The rocker valve end is provided with an adjusting screw mating the valve stem tip, secured in position by means of a setnut. The adjusting screws serve to adjust the valve clearance, after removing the plugs from camcases. The proper matching of the camshaft against the crankshaft, assured by the marks on the geared wheels of the valve train and the relative positioning of these marks, should be strictly observed during disassembly and reassembly.

2.6. VALVE OPERATING MECHANISM

The cylinder barrels and heads are mounted together and fastened by means of four studs and nuts. A bronze gasket is placed between the barrel and the head, while a thin steel gasket is placed between the cylinder flange and the crankcase.

helical springs. The upper spring  
 sodium-cooled. For these the valves there are mounted two  
 heat-resistant steel. The exhaust valves are internally  
 with one intake and one exhaust valve from special  
 for the camshaft mounting. Each cylinder head is provided  
 The heads are also provided with steel threaded inserts  
 studs for intake piping and exhaust studs mounting.

The intake and exhaust parts are provided with flanges and  
 installation.  
 screwed in threaded bronze inserts for spark plug  
 and the valve guides made from bronze. There are also  
 there are six the valve seats made from special steel  
 to the heads, which have a hemispherical combustion chamber,  
 canal is at the right side, the exhaust one is at the left.  
 on the exterior, are aluminum alloy castings. The intake  
 the cylinder heads, with a great density of cooling fins  
 finish to shorten the engine run-in period.

inside of the barrel is nitrided and it underwent a special  
 foreign. Cooling fins are machined on the exterior. The  
 the cylinder barrels are machined from nitriding steel  
 2.3. CYLINDER BARRELS AND HEADS

The piston surface is graphite.

The piston pin is secured against translation by means of  
 all tapered rings in a common groove.

The pistons are forged from aluminum alloy. Each piston  
 is provided with two compression rings and two knife-edge

2.4. PISTONS  
 pushing.

The piston pin is mounted directly, without any bearing  
 and agency of the bearing inserts cast from lead bronze.

retained to the crank by means of two bolts and through  
 alloy forgings having polished surfaces. The double cap is  
 the connecting rods with "H" section body are aluminum

2.3. CONNECTING RODS



fastened by means of aluminum alloy caps. The bearing inserts are bronze and galvanically lead-plated. The bearing inserts are casted from lead. The crankshaft is supported on seven slide bearings. The bearings consist of bearing inserts casted from lead. The crankshaft is supported on seven slide bearings. The gear drive and the supercharger drive. At the crankshaft rear end there are assembled the valve threaded for the propeller flange mounting nut. The crankshaft front end is beveled, with way for key and ends by means of plate-like obturators.

The crankshaft with four/six cranks is forged from a special nitriding steel. The journals and crankpins are hollow and both journals and crankpins are hollow and together with the cranks distribute lubricating oil to the connecting rod main bearing. These canals in journals and crankpins are obturated from both ends by means of plate-like obturators.

2.2. CRANKSHAFT

and with the crankcase breather located at the rear. The top cover is provided with three lifting eye-screws rear end bottom.

The rear end. The flanges for magnetos and oil sump are at the supercharger, oil pump and propeller governor are at the generator and RPM transmitter drives. The flanges for flanges for engine mounts pin assemblies and for the cylinder barrels and heads. On the lateral sides there are bottom of the crankcase there are studs to fasten the walls, which support the bearings of the crankcase. At the The main crankcase is divided by double transversal interposed gaskets.

fastened to the crankcase by means of studs and nuts and are magnesium alloy castings (electronum). The covers are upper cover and the front cover. All these mentioned parts The crankcase is composed from the proper crankcase, the

2.1. CRANKCASE

2. GENERAL DESCRIPTION

The engine is equipped with a centrifugal compressor connected, by means of an air conduct, to the air inlet manifold. The compressor is driven over a geared clutch from the rear end of the crankshaft. It can be engaged or disengaged over an elastic coupling by means of a control rod situated in the cockpit. This can be achieved during both engine run or stop. The compressor engaging succeeds by braking the bell gear of the epicyclic gear by means of the belt brake and thereby making the impeller free, this makes the epicyclic gear function like a geared clutch and thus the impeller turns with the same RPM like the crankshaft. When the engine runs with disengaged compressor, the air is aspirated through the air inlet strainer, the compressor scroll and the air manifold to cylinders. In this case, the compressor neither delivers compressed air nor creates resistance for the aspirated air. When engaged, the compressor delivers compressed air to cylinders and thereby the engine performance is increased. To provide combustion mixture, the engine is equipped with an injection pump. The pump is mounted on the flange at the drive housing and it is driven by the camshaft over a ratched gear. The injection pump is provided with its own fuel pump, which surges fuel from the fuel tank over a fuel strainer and then injects the fuel by means of the nozzles mounted at the air elbows and connected to the injection pump by means of injection fuel lines. The fuel is injected to the air intake before the intake port. A part of the fuel returns to the tank, because of venting reasons. Drain valves are installed at the lower side of the air elbows, to drain the fuel in excess collected upon combined action of the injection pump correction and air manifold pressure. The air manifold pressure is caught at the throttle housing and transmitted by means of a rubber hose and through the fuel corrector adjust screw to the injection pump correction compartment. The correction

The magneto is driven by beveled gears, the left magneto from the left drive outlet and the right magneto from the right drive outlet. The ignition harness is provided with shielding braid and is protected in shielding tubes on its conduit to spark plugs: from the left magneto to spark plugs on the exhaust side and from the right magneto to the intake side spark plugs. The wires are connected to both spark plug and magneto by means of terminals with socket nuts. For proper connection, the wires are provided

and nuts. The magneto rotor shaft end and the adapter is fastened on the end of the crankcase on both sides of the oil pump, against which they are fastened by means of fixing belts. Prior to mounting on engine, a beveled gear is assembled at the magneto stator by means of threaded pins. The adaptor is than fastened on the crankcase flange by means of two studs

2.8. IGNITION SYSTEM

The engine ignition system consists of two shielded, independent ignition installations. Two shielded magnetos are mounted on engine. They are provided with automatic mechanism for ignition advance change with respect to the engine RPM. The magnetos are vertically mounted at the rear end of the crankcase on both sides of the oil pump, against which they are fastened by means of fixing belts. Prior to mounting on engine, a beveled gear is assembled at the magneto rotor shaft end and the adapter is fastened on the end of the crankcase on both sides of the oil pump, against which they are fastened by means of fixing belts. Prior to mounting on engine, a beveled gear is assembled at the magneto stator by means of threaded pins. The adaptor is than fastened on the crankcase flange by means of two studs