OMNIPOL PZO
PRAHA – ČESKOSLOVENSKO

AVIA
NÁRODNÍ PODNIK
PRAHA

SERVICE BULLETIN

IT IS NECESSARY TO CARRY OUT !

No. M 6-III/2

Duplicate of the service bulletin
primarily issued by Závody Jana Švermy, national corporation, Praha 4.

Object: Replacement of the connecting rod of MINOR 6-III engine of the production Nos from 33650 to 33899.

Reason: In aircraft service two cases occured of damage of the connecting rod of the MINOR 6-III engines. This damage had been thoroughly investigated by the producer and no defects in the engine design or in the production proper were found. In view of the fact that the connecting rod breakages show the fatigue character, measures in the connecting rod production were taken to remove the risk of the internal stress. For this reason the technological process for the heat treatment was completed so as to absolutely eliminate the internal stress.

Service:
The producer on the basis of experience has decided that all engines of prod.Nos from 33650 to 33899 may be admitted for the aircraft service up to the total maximum period 100 hours of engine running without the risk from this reason.

Measures:
The producer for the purpose of securing an absolute certainty and safety of the aircraft service has decided to carry out the replacement of the connecting rods on the engines of prod.Nos from 33650 to 33899.

This replacement can be carried out either by airplane user's workers or in case of an agreement with the engine producer by his aerodrome technical service. For carrying out the replacement the keeping to the technological process which forms a part of this bulletin is obligatory.

M 6-III/2

Material:

The material necessary for the carrying out of connecting rod replacement, i.e. the connecting rod and the auxiliary material for the assembling needs and for the 2nd engine assembling will be supplied by the producer.

Documentation:

The connecting rod replacement must be entered in the engine log-book. The date of carrying out of the replacement, the place of the replacement and the names of the workers, who carried out the replacement must be stated. Further are to be entered the values, obtained at the engine test after the connecting rod replacement.

With the material necessary for the connecting rod replacement will be supplied:

1) The technological process of the connecting rod replacement including bushings.
2) List of material necessary for the connecting rod replacement for one MINOR 6-III engine.

Date: 22nd March 1958.

Signatures

Customer's representative
capt. Pospíšil m.p.

Chief engineer of JŠ Works
Franc m.p.

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SERVICE BULLETIN

IT IS NECESSARY TO CARRY OUT !

No. M 6-III/3

Duplicate of the service bulletin

primarily issued by Závody Jana Švermy, national corporation, Praha 4

Object: Putting the data in the book "Description, service instructions, maintenance" in accordance with the approved technical conditions for the Minor 6-III engine.

On the basis of the approved technical conditions for the Minor 6-III engine, the following data are altered:

in the paragraph "Fuel and oil and consumptions":

the initial specific weight of fuel from 0,732 to 0,720–0,730,

the initial - Fuel consumption at the take-off rated sea level output from 245 g/HP/Hr. to 240 $^{+10}_{-5}$ g/HP/Hr.,

the initial - Fuel consumption at the cruising output from 225 g/HP/Hr. to 220 $^{+10}_{-5}$ g/HP/Hr.,

the initial - Fuel consumption per hour at rated sea level output (specific weight 0,720–0,730) from 39,2 kg - 53,7 lit. to 37,8 kg - about 52,5 lit.,

the initial - Oil consumption per hour at rated sea level output from 1,25 kg - 1,4 lit. to 1,2 kg, i.e. about 1,35 lit.,

in the paragraph "Ignition" the initial marking of the screened sparking plugs from PAL 12P/250 SE to PAL 12R-250,

in the paragraph "Lubrication" the initial normal oil inlet temperature from 40 - 80°C to 40 - 60°C,

the initial maximum oil inlet temperature from 85°C to 80°C.

In the paragraph "Induction system" :

two types of carburettor are shown, namely:

W 45-1 (for transport and touring aircraft), or W 45-AK (for school and training aircraft) making possible the inverted flight and passing over to the same.

M 6-III/3

In the section "The top overhaul of the engine":

The initial text is altered in such a way, that the top overhaul of the engine is carried out after 300 hours of engine running in all kinds of service, instead of the initial text saying: "In the kind of service, where frequent take - offs and flying on full throttle near the ground take place."

in the section "The complete overhaul of the engine":

The initial text "The complete overhaul of the engine is carried out on the basis of the top overhaul results, but at latest after 1000 hours of engine running" is altered to: "The complete overhaul of the engine is carried out after 600 hours of engine running."

Date: 26th September 1958.

Franc m.p.
Technical Assistant-Manager

Borovanský m.p.
Customer's Representative

Ing.V.Všk m.p.
Ministry of Transport

OMNIPOL a. s. PRAHA

ZÁVODY JANA ŠVERMY n. p. PRAHA

INFORMATION - BULLETIN No. M 6-III/4

To be recommended.

Sheet: No. 1.

Number of sheets: 1

Object: Making uniform the overpressure value before the carburettor of the fuel delivered by the 2M-50 pump, for both the normal type and acrobatic carburettors with enlarged float chamber /W45-6-Z, W45-AK-6-Z/ on the Minor 6-III engine.

Reason: Possible fuel overpressure drop before the carburettor with respect to the resistance of the discharge jet, when replacing the initial normal-type carburettor or the acrobatic one /W45-I, W45-AK/, by the new carburettor with enlarged float chamber /W45-6-Z, W45-AK-6-Z/.

It is recommended:

Check over the overpressure before the carburettor of the fuel delivered by the 2M-50 pump when replacing the initial carburettor /W45-I, W45-AK/ by the carburettor with enlarged float chamber /W45-6-Z, W45-AK-6-Z/.

The specified overpressure before the carburettor of the fuel delivered by the pump:

for the initial carburettors:

W45-I normal type	0,2 - 0,28 kg/cm^2, at idling speed up to 0,30 kg/cm^2
W45-AK acrobatic modification	0,22 - 0,30 kg/cm^2

for the carburettors with enlarged float chamber:

W45-6-Z normal type W45-AK-6-Z acrobatic type	0,20 - 0,30 kg/cm^2

Note: If, by checking, it has been found out that the fuel pump gives the pressure inferior to that indicated by the specified range for the individual carburettor types, it is necessary to replace the 2M-50 fuel pump by a new one. In case the pump gives a pressure superior to that indicated in the description, it is no drawback.

Date: Jinonice, 21th April 1959.

Franc m.p.
Manufacturer

Borovanský m.p.
Customer's Representative

OMNIPOL a. s. PRAHA

ZÁVODY JANA ŠVERMY n. p. PRAHA

INFORMATION - BULLETIN No. M 4-III/7 M 6-III/5

To be recommended.

Sheet: No. 1.

Number of sheets: 1

Object: **Oil and fuel pressures and oil and cylinder head temperatures of the Minor 4-III and Minor 6-III engines.**

Reason: **Unification of values of both engine types with the validity from 1st November 1959.**

It is recommended: **As from 1st November 1959 the lower mentioned pressure and temperature values are valid, it is recommended to correct the values mentioned in the books "Description, service instructions and maintenance" of both engine type as follows:**

Oil pressure:	**normal pressure**	**3,5 - 4 atm.**
	minimum /emergency/ pressure	**2,5 atm.**
Oil temperature:		
	minimum temperature for the engine test	
	inlet	**25° C**
	outlet	**35° C**
	normal temperature	
	inlet	**40 - 70° C**
	outlet	**50 - 80° C**
	maximum long-period temperature	
	inlet	**80° C**
	outlet	**90° C**

Date: **Jinonice, 25th November 1959.**

Franc m.p.
Manufacturer

Borovanský m.p.
Supplier's Representative

OMNIPOL a. s. PRAHA

ZÁVODY JANA ŠVERMY n. p. PRAHA

INFORMATION - BULLETIN No. M 4-III/7
M 6-III/5

To be recommended.

Sheet: No. 1.

Number of sheets: 1

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	minimum /emergency/ pressure	**2,5 atm.**
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	minimum temperature for the engine test	
	inlet	**25° C**
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	normal temperature	
	inlet	**40 - 70° C**
	outlet	**50 - 80° C**
	maximum long-period temperature	
	inlet	**80° C**
	outlet	**90° C**

Date: **Jinonice, 25th November 1959.**

Franc m.p.
Manufacturer

Borovanský m.p.
Supplier's Representative

maximum short-period temperature /10 minutes/	
inlet	85° C
outlet	105° C

Cylinder head temperature under the spark plug:

minimum temperature at aircraft descent	70° C
normal temperature	190 - 220° C
maximum long-period temperature	230° C
maximum short-period temperature /5 minutes/	250° C

Fuel pressure:

minimum pressure	0,05 atm. /for oil supply by gravity flow/
normal pressure /for normal and acrobatic carburettors/	0,2 - 0,3 atm.
maximum pressure for a short period	0,32 atm.

Precaution! The short-period values must not in total exceed 6 % of the engine service period. The maximum oil temperature and that of the cylinder head under the spark plug, should not be reached at the same time.

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ZÁVODY JANA ŠVERMY n. p. PRAHA

INFORMATION - BULLETIN No. M 4-III/11 M 6-III/7

To be recommended.

Sheet: No. 1.

Number of sheets: 1.

Object: Adaptation of the screening caps /draw. No 150 1553 at M 4-III, 150 1593 at M 6-III/ at the Scintilla-Vertex OAF magnetos.

Reason: Difficulties at the assembly and dismantling of the caps, their deformation or the stripping of the threads of the fixing screws.

It is recommended:

To eliminate these difficulties, we recommend to recheck on the mentioned screening caps /draw. No. 150 1553 and 150 1593/ the ring groove for the spring /draw. No. 102 1161/ of a dia. of 98-0,2 with a radius r 2. In case of a deformation this diameter can be re-turned to a dia of 98,5-0,1 also with a radius r 2 mm.

By this adaptation the assembly and the adjustment of the cap when inserting the fixing screws without the danger of deformation of the threads will be facilitated. At the centering band propre of the magneto body /ø 90$^{+}_{-}$0,1/, a clearance up to an interference of 0,1 mm of the inserted spring will be thus ensured.

We recommend to carry out the measurement or the possible adaptation of the groove for the spring at the magneto overhaul in a specialised workshop.

At the screening caps of the new magnetos with the propre screening straight outlets /Scintilla-Vertex OBF magnetos/ this adaptation is already carried-out by the maker´s factory.

Date: 24 th September 1960

F r a n c m. p.
Manufacturer

Svatopolský m. p.
Supplier's Representative

OMNIPOL a. s. PRAHA

ZÁVODY JANA ŠVERMY n. p. PRAHA

INFORMATION - BULLETIN No. M 6-III/15

To be recommended.

Sheet: No. 1.

Number of sheets: 1.

Object: 1/ Change of clearance of the inlet valve in cold state from original V 0.15mm to V 0.10mm.
2/ Correction of clearance value for the inlet valve as given in the manual "Technical description of the 6-III Minor engine."

Reason: Improvement of operation of the valve operating mechanism of the 6-III Minor engine.

It is recommended:

1/ To improve operation of the valve operating mechanism of the M 6-III engine it is recommended to inspect the clearance of the inlet valve in cold state during a periodic inspection of the engine and adjust it to V 0.10 instead of V 0.15mm.

2/ Correct the values clearance of the valves in cold state as given in the manual "Technical description and instructions concerning maintenance, adjustment and servicing of the engine", page 14 as follows:

Valves clearance in cold state:

inlet	0.10mm
exhaust	0.15 mm

Caution: The clearance should be changed in cold state at the inlet valves only. At the exhaust valves the clearance should remain at 0.15mm.

Date: Praha, 30.7.1962

Franc m.p.
Manufacturer

Ing. Borovanský m.p.
Customer's Representative

Ing. Scherks m.p.
.....
State Aviation Directorate

OMNIPOL a. s. PRAHA

ZÁVODY JANA ŠVERMY n. p. PRAHA

SERVICE BULLETIN No. M 4-III/20 M 6-III/17

It is necessary to carry out!

Sheet No. 1

Number of sheets: 2

Concerns: Cylinder heads of the Minor 4-III and Minor 6-III engines.

Reason: In some cases cracks of the cylinder heads of the M 4-III and M 6-III engines have been detected. According to results gained from individual investigations the detected faults may be traced to:

1/ nonobservance of the operational conditions, mainly while towing the sailplanes, during acrobatics, as well as during overheating of the engine /during rapid cooling/.

2/ faulty installation of the cylinder heads and insufficient tightening of the nuts /using torque wrenches/ following removal of the cylinder heads and after a partial overhaul.

3/ faulty casting process /nonobservance of the prescribed dimensions/.

Arrangement: Since, as experience during engine operation has sfown, the lengthening of the head crack proceeds very slowly care should be taken that the following procedure is observed so as to detect the crack as soon as possible.

Because of this the following hints are recommended: engines with more than 200 logged hours, mainly when these were subject to power overloads should be rotated manually through some turns prior to each operational day, with the engine in cold condition and with the ignition off so as to safely detect the resistance of individual cylinders. Providing that identical and rated compressions are detected the engine can be left in operation. If, however some of the compressions cove detected as low the respective cylinder should be inspected for tightness. Detected leakage can be found either around any of the valves or can be troced to poor tightness of the piston rings or to leakage at the sparking plugs or to a crack which may have originated in the cylinder head. Leakage around the valves can be easily detected, following an aural inspection for proper valve clearance either at the exhaut piping or at the exhaust of the given cylinder. Leakage of the piston can also be detected aurally, this time at the vent of the engine or, following the engine starting when excessive escape of exhaust gases from the vent has been ascertained.

To remove detected leakage around the sparking plug either the sparking plug or the packing should be replaced. For detection of leakage of the cylinder head aural inspection is also required. During this inspection the engine should be rotated manually and the leaking cylinder should be in its compression stroke. Providing that leakage is detected or if any doubts about it exist be sure to remove the suction piping together with the carburetors, the fairing of the head and of the cylinder on the proper side and then be sure to inspect the surfaces of the cylinder head for proper condition. The ascertained crack might be detected as a black hair line /spot/ on the head fins, usually on the side where the suction as well the exhaust valve are situated, next to the nuts of the screws for attachment of the head and cylinder to the engine crankcase. To remedy detected leakage tightening of the nuts gives no results. Instead of this, when leakage has been ascertained it is necessary to replace the cylinder head by a new one.

The arrangement has to be carried out at the latest: These measures should be carried out on all engines with 200 or more logged hours, mainly following a previous service loading, prior to each operational day.

The arrangement will be carried out by: The engine operator.

Expenses will be borne by: There are no expenses.

The required materials will be supplied by: For required material contact the engine producer. For engines in guarantee material will be delivered free of cost.

The list of materials and the working procedure are given in the sheets No. 1 - 3 , which form an integral part of this Bulletin.

Enclosures: ∅

The Bulletin comes in force on: 25.1.1963

Franc m.p.	Ing. Borovanský m.p.
.....	.....
Manufacturer	Customer s Representative
Doubravský m.p.	Ing. Voráček m.p.
.....	.....
Omnipol	State Aviation Directorate

When replacing the cylinder head a modified one with vertical stiffening ribs under the passages is recommended for installation. For installation of new heads new packings should be made use of as well and the procedure as given in the engine manual /when carrying out a partial overhaul/ or as given here should be adhered to. If unavoidable the head may be replaced with the engine installed in the aircraft. It is more convenient, howerer, if the engine can be removed and situated on a proper assembly stand. In any case care should be exercized to secure proper cleanliness and proper inspection.

Caution! Interchangeability of the cylinder heads between individual engines is forbidden.

Entries should be made into the engine log book about the cylinder head replacement.

Caution! This Service Bulletin cancels the previously issued Bulletin No. M 4-III/12.

Procedure prescribed for replacement of the cylinder head of the M 4-III and M 6-III engines.

1. Place the engine on a stand with the cylinder heads upside down and be sure to install an adjusting disk on the crankshaft.

2. Loosen the needle of the sump and remove. Unscrew the nuts, remove the washers and the air sump.

3. Loosen the SKF clamps, unscrew the nuts of the drain pipe clips and remove the pipe.

4. Unscrew the cap nuts from the sparking plugs, unscrew the cover of the magneto and remove the ignition harness. Remove all sparking plugs.

5. Detach the inlet house from the carburetor. Unscrew the nuts of the suction and exhaust piping, remove and place aside the suction piping.

6. On the heads which are to be replaced unscrew the nuts of the rocker cover and be sure to remove the cover together with the packing. Unscrew the nuts of the head bolts and remove the respective heads.

7. Remove the split pin, unscrew the nut of the tappet clip, remove the clip and remove the cover tube together with the push rod and place aside.

8. Using a rag clean the contact surfaces of the cylinder and the head and install a new packing 0561662 on the assembled head /with valves and rockers/. Loosen the respective clips of the tappets, install the removed cover tubes into the clips and install into the head.

9. Prior to installation of the push rods into the head covers be sure to coat their ends with a slight layer of oil. After this install thus assembled heads on the proper cylinders and then install always four washers 1072081 on each, install the nuts 0211531 and finally tighten slightly.
   When installing the head care should be exercised that the cams of the head are in compression position, that is that the tappets are in the down position.

10. Be sure to align all heads according to suction flanges making use of a steel rule and then tighten succesively with the aid of a torque wrench to a moment of 2.75 kgm. Tightening should be carried out twice, each time on opposite situated nuts. Grease the threads with graphite.

    Note: Providing that a torque wrench is used for tightening care should be paid that this is passed through an inspection at least once a year.

    No torque wrench being available the tightening can be carried out so that the nuts are tightened by a force corresponding to that required for tightening a M10 screw. After application of this force new packing situated under the head and under the cylinder as well as washers under the nuts may be consedered as properly installed.

The final tightening should be carried out with the aid of a die stock inserted on a wrench; as soon as force is registered in the wrench the die stock should be rotated through 190 deg. This corresponds to a torque of 2.75 kgm. The tightening operation should be carried out always twice on opposite situated nuts.

11. Screw the nuts together with the washers on the screw of the tappet clip, properly tighten and lock with the aid of the 1.6x15 CSN 02 1781.02 split pin.
Carry out this operation succeiswely on all replaced heads.

12. To adjust the respective cylinder to compression stroke rotate the crankshaft and making use of the gauges adjust the clearance between the valves and the rocker rollers to 0.15mm at the exhaust valve and to 0.10mm at the suction valve and after this be sure to tighten properly the nuts of the adjusting screws.
The tightening torque of the adjusting screw nuts should equal 3.5 kgm.
Fill the rocker space with about 0.2 litres of engine oil, install the rocker cover together with the packing and finally screw on and tighten the nut of the rocker cover.

13. For installation of other removed assemblies on the engine be sure to reverse the removal procedure.

14. Be sure to enter the head replacement into the engine log book and hand the engine over for homologation.

15. Install the engine in a test stand and proceed with homologation. Providing that a proper test stand is not available homologation should be carried out with the engine installed in the aircraft.

800 rpm	-	5 minutes	
1000 "	-	10 "	
1100 "	-	10 "	
1400 "	-	10 "	
1700 "	-	10 "	
2000 "	-	10 "	enter all detected data
2300 "	-	10 "	- " -
2500 "	-	10 "	- " -
2500-500 rpm	-	5 "	cooling down- shut-down

16. The homologation finished remove the rocker covers and inspect the valves for proper clearance and the heads for proper condition.

17. Reinstall the rocker covers together with the packings and be sure to tighten the nut.

18. After homologation install the engine in the aircraft.

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ZÁVODY JANA ŠVERMY n. p. PRAHA

M 4-III/21
M 6-III/18
M 208B/23
M 332/42
M 337/31

SERVICE BULLETIN No.

It is necessary to carry out!

Sheet No. 1

Number of sheets: 1.

Concerns: **Bonding of the magnetos of the engine during its transportation and handling.**

Reason: **While rotating the crankshaft undesirable starting of the engine may be ascertained.**

Arrangement: **Properly fixed connection of the short-circuit cable connections of both magnetos of the engine to the bolt of the starter motor /see figure/ with the aid of copper, uninsulated wire of 0.8 mm dia minimum should be provided.**

The arrangement has to be carried out at the latest: **Immediatly after disconnection of the motor from the short-circuit switches.**

The arrangement will be carried out by: **The engine operator.**

Expenses will be borne by: **No expenses will arise.**

The required materials will be supplied by:

The list of materials and the working procedure are given in the sheets No. / ....., which form an integral part of this Bulletin.

Enclosures:

The Bulletin comes in force on: **15.12.1962**

Franc m.p.

Manufacturer

Langová m.p.

Omnipol

Ing. Borovanský m.p.

Supplier's Representative

Approved by the Civil Aviation State Administration of Czechoslovakia

No. .....

of 7.12 1962.

Ing. Vlasák m.p.

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PRAHA – ČESKOSLOVENSKO

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PRAHA

INFORMATION BULLETIN

No.M 6-III/20

To be recommended.

CONCERNS : The Manual "Technical Description of the Minor 6-III Engine" - Revised edition 1961

REASON : Correction of misprints and alteration according to the bulletin previously issued.

MEASURES : The users of the above mentioned Manual are asked to correct kindly the errors made during the printing in the Manual as specified below:

On page 16:

In paragraph "Lubrication" correct the last line as follows:
(Oil temperature)
"max. short-time (10 minutes) ..... 105°C"

In paragraph

"Engine hood" (ending on page 36) the last but one sentence should read

"The oil outlet temperature may reach the level of 90°C only exceptionally".

In the same time correct also the data in the last sentence of the paragraph "Distribution gear and its adjustment" on page 14:
Valves clearances in cold state:

inlet valve ..... 0.10 mm
exhaust valve ..... 0.15 mm

The alteration of valves clearance was stated in Bulletin No.M 6-III/15 issued on 30.7.62.

Franc m. p.
.....
Manufacturer's representative

Ing. Borovanský m. p.
.....
Customer's representative

Ing. Scherks m. p.
.....
Government State Inspection

This Bulletin newly issued on 15.9.69 is a translation of the Czech version edited by Závody Jana Švermy, National Corporation, Prague-Jinonice in 1962.

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INFORMATION BULLETIN

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Ing. Borovanský m. p.
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OMNIPOL PZO
PRAHA – ČESKOSLOVENSKO

AUTOMOBILOVÉ ZÁVODY LETŇANY NÁRODNÍ PODNIK LETŇANY

SERVICE BULLETIN

IT IS NECESSARY TO CARRY OUT !

No. M 6-III/29

CONCERNS: Electric starters P 320 mounted on M 6-III engines.

REASON : Oil leakage from the starter mechanism into the starter electromotor and resulting faults of brushes and commutator.

MEASURE : Check of brushes and commutator in electromotor, immediately or at nearest convenience.

CARRIED OUT BY: Operator.

COSTS CARRIED BY: No costs will arise.

CHECKING PROCEDURE:

Tests have shown, that the oil lubricating the starter mechanism (approximately 30 cu. cm volume) can leak into the starter electromotor, if the starter has been stored over longer periods in vertical position with the electromotor at the bottom. This may happen when the starter has been dismounted and stored in the above position. To check whether this is so, or whether the starter has been put into this position during handling, at the earliest convenience remove the covering steel belt from the body of the P 320 starter and check visually the condition of brushes and of the commutator. To remove the belt unscrew the belt tightening screw. The commutator must be clean, without any traces of oil; the brushes and

M. Adamec m.p.	Ing. Homola m.p.
Manufacturer's representative	Customer's representative
Ing. Vlasák m.p.	Ing. Fr. Háva m.p.
Government Aviation Inspector	Omnipol

brush holders must also be free of any traces of oil. If the check has proven satisfactory, replace the covering belt and proceed to operate the starter in the normal way.

Should traces of oil appear on the commutator or on brushes, dismount the electromotor, disassemble and clean it, or if preferred, send the starter to a specialized engine shop for check out and maintenance.

Please note, that a dismounted starter must not be stored vertically with electromotor at the bottom. The correct storing position of the starter is vertical, with electromotor at the top, or horizontal.

28th September, 1966

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AUTOMOBILOVÉ ZÁVODY LETŇANY NÁRODNÍ PODNIK LETŇANY

SERVICE BULLETIN

IT IS NECESSARY TO CARRY OUT !

No. M 6-III/30
Sheet No: 1

Concerning : M 6-III engines: Oil leakage between cylinders and crankcase

Cause : Decrease in prestress of cylinder head clamp bolts

Measures to be taken: With some M 6-III engines, especially with some new ones, untightness between cylinders and crankcase was revealed; in such cases the following operations should be carried out at the earliest opportunity:

Dismantle the suction tubing with carburettors, remove the deflectors on the cylinders and the air sink to gain access to the cylinder head nuts. On cylinders where untightness was mostly evidenced loosen the nuts enough to be able to check the gasket between the cylinder and the crankcase. Damaged gaskets must be replaced after the removal of the head and of the cylinder according to the procedure described in the engine book in the chapter dealing with partial inspection. The metallo-plastic gasket in the cylinder head is not to be replaced, on the contrary it is desirable to keep in its place the original one, undamaged. After reassembling the dismantled cylinders according to the instructions in the above-mentioned engine book, tighten successively with a wrench all the nuts of all the cylinders, limiting the torque to 3.0 kpm.
It is recommended that, on this occasion, the washers under the nuts be turned with their chamfered edge towards the cylinder head and not towards the nut. In this way the bearing is improved.

After tightening all the nuts to a torque of 3 kpm wait half an hour at least until the plastic deformations of the gasket are stabilized.

Then loosen the nuts, one after another, by approximately 90° and retighten them to a torque of 2.5 kpm.

The nut must fit the bolt thread, have an easy run and an adequate play, the thread must be greased, best with colloidal graphite or graphite grease to prevent friction in the thread reducing the force of the bolt prestress.

It is recommended to check at the same time, whether the studs to the cylinders are not loosened in the crankcase. If any deficiency is detected, the manufacturer of engines is to be requested to send an expert for a check or a special repair.

To be carried out : by the engine manufacturer on user's request

Expenses : to be covered by the engine manufacturer

Applicability of this bulletin : Immediately on receipt.

Letňany, October 7, 1967

Ing. M. Hadrava, m.p.	Ing. B. Homola, m.p.
Manufacturer's Representative	Customer's Representative
Ing. Voráček, m.p.	Ing. F. Háva, m.p.
Government Aircraft Inspection	OMNIPOL

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INFORMATION BULLETIN

No. M 6-III/31

RE: Technical description and operating instructions for the M 6-III engine.

REASON: Completion of the instruction book with technical description of the W 45 AK 6 carburetter.

ARRANGEMENT: The manual "Technical description and operating instructions for the M 6-III engine" is to be completed in its 6th part: "Instruments and accessories" with the technical description of the W 45 AK 6 carburetter. This description is given separately as an annex to this bulletin.

Attention is drawn to the fact that the description of the W 45 AK 6 carburetter applies only to the acrobatic version of the carburetter for the M 6-III engine.

Letňany, September 23, 1968

M. Adamec m.p.
.....
Manufacturer's Representative

Ing. Homola m.p.
.....
Customer's Representative

Ing. Voráček m.p.
.....
Government Aircraft Inspection

M 6 - III/31

W 45 AK 6 C A R B U R E T T E R

Technical description.

Annex to the bulletin M 6 - III 31 of December 1967.

W 45 AK 6 C a r b u r e t t e r.

The carburetter is so constructed as to enable an economic running of the engine when the throttle disk is partially open and, on the other hand, to enable to reach the maximum performance by enriching the mixture through a supplementary jet when the throttle disk is fully open.

The acceleration pump enriches the mixture by injecting additional fuel when the throttle disk is being opened. The height correction is performed by a corrector which uniformly weakens the mixture in the whole range of the opening of the throttle disk.

The carburetter W 45 AK 6 is designed for high acrobatics performed at uninterrupted full gas.

Fuel supply.

The fuel is fed into the carburetter by means of a union /1/ - the fuel passes through a cylindrical screen /2/ and through 4 openings /3/ into the body of the needle valve /4/. The body of the needle valve is furnished with a steel ball /5/. During upside-down flight, the ball closes the opening /6/ and the fuel can be supplied only through the calibrated orifice /7/.

From the tube intake the fuel flows into the needle valve /9/ and from the valve /9/ the fuel comes partly into the float chamber and simultaneously into the antechamber /10/ of the off-take branch /11/.

The antechamber /10/ enables the float to move smoothly and the carburetter to function continuously by the fact that the fuel flows directly from the valve into the off-take branch and that the surpluses or the shortages only are equalized from the float chamber.

The fuel passes through the off-take branch into the storage chamber /12/ and from it through an opening /13/ to the correction valve /35/ and simultaneously to the valve of the supplementary jet /14/. From the correction valve the fuel passes to the main jet /15/ and from the valve of the supplementary jet - as far as the valve is open - it passes to the supplementary jet /16/. Both the jets are easily accessible after the screwing-off of the plugs /17/ located on the front side of the carburetter. From the jets the fuel is fed through a channel /18/ into the spray nozzle pipe /19/. In the lower part of the spray nozzle pipe the fuel mixes up with air coming from the inlet branch of the carburetter through the air nozzle of rough adjustment /20/ and through the nozzle for the idling run /21/. A mixture is thus formed which proceeds through the circular ring /22/ to three spray orifices /23/.

The jet /24/ and pipe /25/ in the sprayer serve as equalizing elements when the position of the throttle disk suddenly changes. At transition from idling run into travelling speed, they adjust the mixture ratio. When travelling at full gas, the jet /24/ serves as auxiliary jet for spraying.

<u>Idling run.</u>

For the idling run the fuel is discharged from the lower part of the spray pipe and flows through the idling run jet /21/ in the opposite direction than the air for the main system and mixes up with air passing through the jet of rough adjustment /20/. The richness of the mixture for the idling run is regulated by means of an adjusting screw /26/ located on the rear side of the carburetter.

Full power

At full gas the absorbed mixture is being enriched by opening the supplementary valve /14/. The valve is controlled with a lever /27/ firmly connected with the throttle disk shaft by means of a draw bar /28/ and lever /29/ on the shaft /30/ located in the upper part of the carburetter body. In the cavity on the the shaft /30/, a cam /8/ is fixed. This cam presses on the rocker /31/ acting on the head /32/ of the supplementary valve /14/. The cam is connected by means of a drawbar /32/ and spherical joint with the cylinder of the acceleration pump. When the throttle disk is being opened, the fuel is pressed out of the pump and flows through a system of channels to the jet /39/. The jet of the acceleration pump serves simultaneously as the binding screw of the venturi.

Flight in altitude.

At altitude flight the mixture is weakened by limiting the flow of fuel by means of the correction valve /35/. This valve is controlled by a lever /36/ firmly connected with the shaft in the upper part of the carburetter body.

The control of the carburetter.

The carburetter is controlled by means of two levers located directly on the carburetter body. The first gas lever /37/ controls the opening and closing of the throttle disk. The second lever /38/ controls the valve of the height corrector.

W 45 AK 4 carburetter.

The W 45 AK 4 carburetter is the same in principle as the W 45 AK 6 carburetter. In design it differs only by the construction of the needle valve.

Fuel supply /illustration denoted AK 4/.

The fuel is supplied into the carburetter through a union /1/, it flows through a cylindrical screen /2/ and through 4 orifices

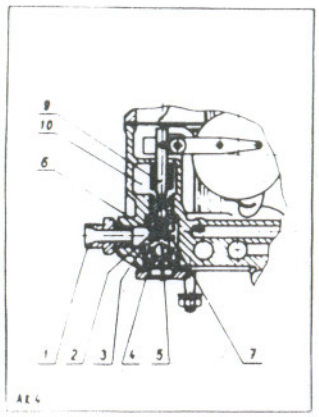
/3/

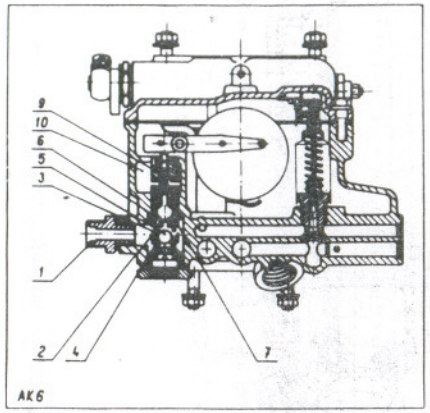
into the exchangeable jet of the intake /4/. The jet of the intake is furnished with a steel ball /5/ which closes the opening /6/ during upside-down flight, and the fuel can be supplied only through the calibrated orifice /7/ and comes from the intake pipe to the needle of the needle valve /9/.

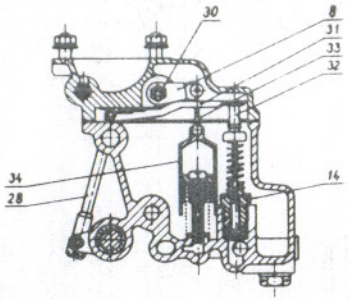
The other functions take place in the same way as they do with the carburetter W 45 AK 6.

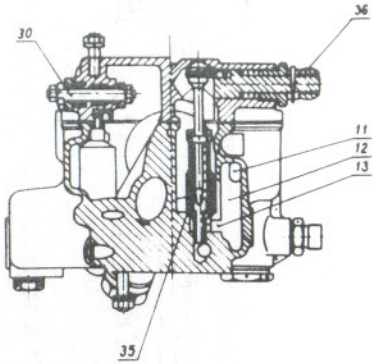
Carburetter W 45 AK 6 .

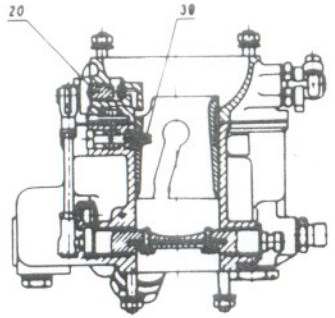
KARBURÁTOR · W45AK6

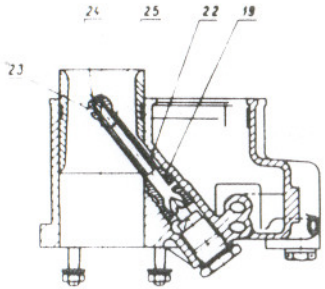


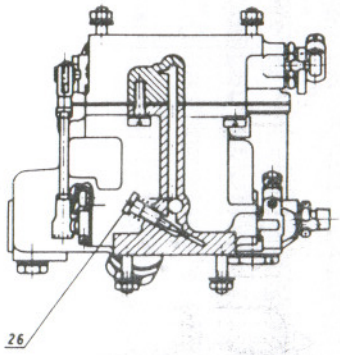


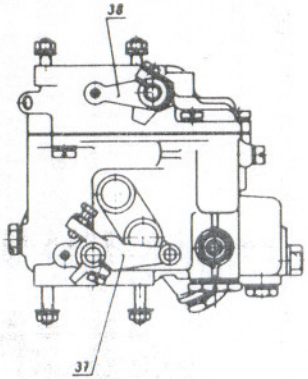


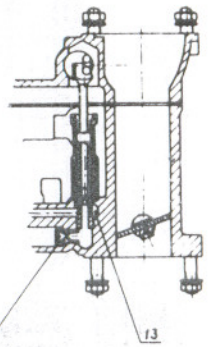


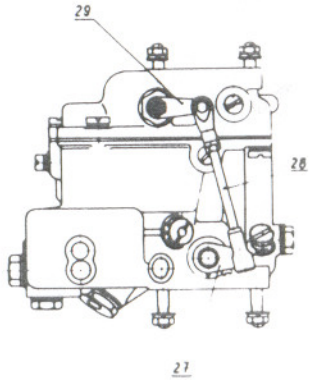


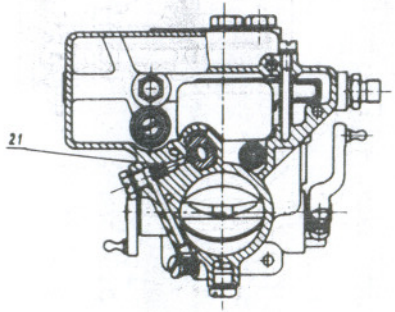


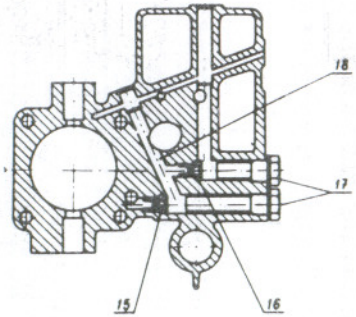


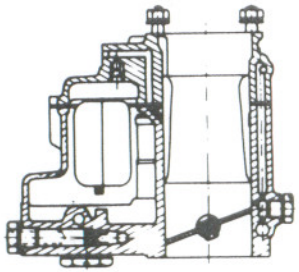












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SERVICE BULLETIN

IT IS NECESSARY TO CARRY OUT !

No. M 6-III/35

RE: The fixing of crankcase front plate of engine M 6-III.

REASON: Several occurrences of untightened screws fixing the front plate of the crankcase. From the effected investigations it can be concluded that the untightness can appear in engines M 6-III provided with the V 503 propeller, when the aircraft is employed for an intensified aerobatic performance.

MEASURE:

The untightness of locknuts and screws fixing the front plate of the crankcase is due to the pressing of washers into the material of the lid.
The existing washers in the engines M 6-III which are provided with V 503 propellers are therefore to be replaced with washers of a bigger outer diameter and of a bigger thickness too. The hexagonal head of the locknut is of a bigger diameter and it has catches for the safety wire.
Actually employed washer No. 0177851 is replaced by washer No. Sh 3320.
Actually employed locknut No. M 6 ČSN 313202.2 is replaced by locknut No. Sh 3321
Actually employed spring washer No. 6,1 ČSN 02 1740.04 is cancelled.
10 locknuts Sh 3321 and 2 fixing screws of front plate No. 0305871 are mutually secured with a wire against untightness.
To fix front plate according to the new pattern the following parts are needed; (for one engine)

12 pcs — washer — No. Sh 3320
10 pcs — locknut — No. Sh 3321

MEASURE TO BE TAKEN AT THE LATEST :

According to the user´s decision and the mode of the Z-526 aircraft exploitation.

M 6-III/35

MEASURE TO BE TAKEN BY :

Users of engines M 6-III which are provided with the propeller type V 503 (aircraft Z-526).

MATERIAL:

Necessary material is supplied free of charge by manufacturing works on user s request.

The present bulletin comes into force immediately.

Letňany 13.11.1968

M. Adamec m.p.
.....
Manufacturer s
Representative

Ing. Humplo m.p.
.....
Customer s
Representative

Ing. Uhlovský m.p.
.....
Government Aircraft
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Ing. F. Nováček m.p.
.....
Omnipol

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BULLETIN D'INFORMATION

No. M 6-III/36

OBJET : Prolongement de la durée de marche du moteur M 6-III, portée à 900 heures jusqu'à la révision générale, sans visites partielles, lorsque les huiles et carburants utilisés sont des marques Shell ou Esso.

MOTIVATION :

Expérience acquise au cours de l'exploitation des moteurs d'avions M 6-III alimentés en carburants et huiles Shell ou Esso.

MESURES :

Se basant sur l'expérience acquise au cours de l'exploitation du moteur M 6-III dont l'utilisation a été trouvée correcte et, sur la recommandation de nos agents qui ont pris part aux visites des moteurs M 6-III alimentés en carburants et huiles de marques Shell ou Esso, correspondant aux qualités prescrites par la notice d'utilisation du moteur, le constructeur donne son consentement au prolongement de la durée de marche du moteur qui précède la révision générale à 900 heures de marche. Pour que le moteur M 6-III marche sans défaillance pendant les 900 heures qui précèdent une révision générale, il faut observer les conditions suivantes:

1° Nombre d'heures d'exploitation soutenue.

Comme le constructeur n'a généralement pas la possibilité d'examiner les conditions dans lesquelles le moteur fonctionne chez tel ou tel utilisateur, il recommande de fixer le nombre d'heures pendant lesquelles le moteur peut être sollicité davantage (remorquage, évolutions acrobatiques) à la base d'une surveillance qualifiée de l'état du moteur, assurée par l'utilisateur. Ce nombre d'heures ne doit pas dépasser la moitié du nombre prévu pour la période qui se termine par la révision générale.

2° L'entretien du moteur en cours d'exploitation (visites périodiques) doit être à un niveau tres élevé et on doit y prêter le maximum de soins.

3° Outre les opérations prescrites par la notice d'utilisation et d'entretien du moteur qui doivent être exécutées avec soin, on recommande de prêter une attention accrue au serrage des écrous des culasses après les premières 50 heures et apres les 400 à 450 heures suivantes. Le couple nécessaire au ser-

rage de contrôle des écrous des vis fixant les culasses doit être égal a 2,5 mkg, mais il faut tout d abord démonter la tuyauterie d admission avec les carburateurs et le préchauffeur, le collecteurs d air et les déflecteurs entre cylindres du côté admission.

4° Dans le cas où il serait nécessaire de remplacer le joint de culasse par un joint neuf, le serrage des écrous des vis fixant les culasses doit être opéré selon les instructions données par le Bulletin n° M 6-III/30.
La mise en place du joint de culasse neuf doit être suivie, à peu pres apres 3 heures de marche du moteur, par un resserrage de contrôle des écrous des vis de culasses dès l instant où l on a obtenu les températures de régime du moteur, le couple de serrage étant de 2,5 mkg. Dans le cas où ces trois heures de marche du moteur n auraient pas eu lieu en vol, on recommande, conformément a la technique de montage utilisée a l usine, de procéder encore a un serrage de contrôle apres 3 a 4 heures de vol, le couple de serrage étant toujours de 2,5 mkg. Ensuite, on procède selon les instructions données au paragraphe 3.
Apres chaque serrage de contrôle des écrous des vis de culasses, il faut vérifier les jeux aux soupapes.

5° Lors des évolutions acrobatiques, il faut exécuter non seulement les opérations prescrites par la notice d utilisation et d entretien du moteur, mais faire aussi des appoints d huile, toutes les 5 ou 6 heures de marche du moteur, aux culbuteurs.

6° Après environ 450 heures, il faut vérifier:

a) l arbre flexible du compte-tours et le lubrifier avec un mélange de graisse consistante et de graphite,

b) l état du roulement à billes à l avant du moteur.

7° Quant aux moteurs destinés exclusivement à l acrobatie aérienne, la durée de 600 heures recommandée qui précede la premiere visite générale reste inchangée.
Lorsqu on utilise des carburants et huiles de marques Shell ou Esso répondant aux qualités prescrites par la notice d utilisation et d entretien du moteur, le constructeur est d accord quant à la suppression de la visite partielle qui devrait avoir lieu après 300 heures de marche.

Les mesures recommandées, mentionnées aux paragraphes 2, 3, 4, 5 et 6 et s appliquant au moteur M 6-III dont la durée de marche précédant la premiere visite générale eqt de 900 heures, doivent être prises même lorsqu il s agit d un moteur destiné exclusivement à l acrobatie aérienne, mais avec cette différence que la visite recommandée après env. 450 heures de marche (par. 3 et 6) aura lieu après env. 300 heures de marche.

Letňany, le 7 juillet 1969.

M. Adamec m.p.
.....
Pour le constructeur

Ing. Homola m.p.
.....
Pour l utilisateur

OMNIPOL PZO
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INFORMATION BULLETIN

No. M 6-III/37

RE: The valve of the W 45 AK 6 Z aircraft carburettor fuel supply

MOTIVE:

Some cases of loosening of valve parts of the fuel supply, drawing No. 3000094

MEASURES:

At the next regular inspection of the M 6-III engine or at the incidental control of the adjustment of carburettors, the manufacturing plant recommends that the control of the strength of the thread interconnection at the top and bottom part of the fuel supply valve be carried out.

The working procedure:

1) Release and screw off the fuel supply plug, drawing No. 10000612
2) Remove the cleaner spring, drawing No. W 45-720-004.10 with sealing washer, drawing No. 20 x 24, Czechoslovak Standard 02 9310
3) Remove the sieve, drawing No. 3000022
4) Unscrew the fuel supply valve, drawing No. 3000094 with sealing washer 14 x 18, Czechoslovak Standard 02 9310
5) Fix at the hexagon head, i.e. into the nut wrench the dismantled fuel supply valve, put the lateral spanner on the cut-out of the valve 9 top part and perform check tightening. In case that the sealing washer drawing No. 1-5201 between the two valve parts is damaged, it must be replaced by a washer of the same thickness.
6) Put the original or a new washer 14 x 18 on to the valve Czechoslovak Standard 02 9310 of the same thickness (on account of observing the original adjustment of the fuel head in the float chamber) and mount the valve with

the washer back into the carburettor.

7) Put in the sieve, drawing No. 3000022

8) Put on the sealing washer 20 x 24, Czechoslovak Standard 02 9310

9) Put in the spring of the cleaner, drawing No.W 45-720--004.10

10) Screw in and secure the fuel supply plug, drawing No. 10000612

NOTICE:

epoxide resin will be made use of for the carburettor W 45 AK 6 Z from the prod. No. M-911380 for strengthening the thread interconnection.
In relation to this measure we recommend that eventual additional adjustment of the fuel head in the float chamber of carburettors W 45 AK 6 Z should be done by only adjusting the thickness of the washer, drawing No. 14 x 18, Czechoslovak Standard 02 9310.

Letňany, 28th August 1969.

M. Adamec m. p.	Ing. Homola m. p.
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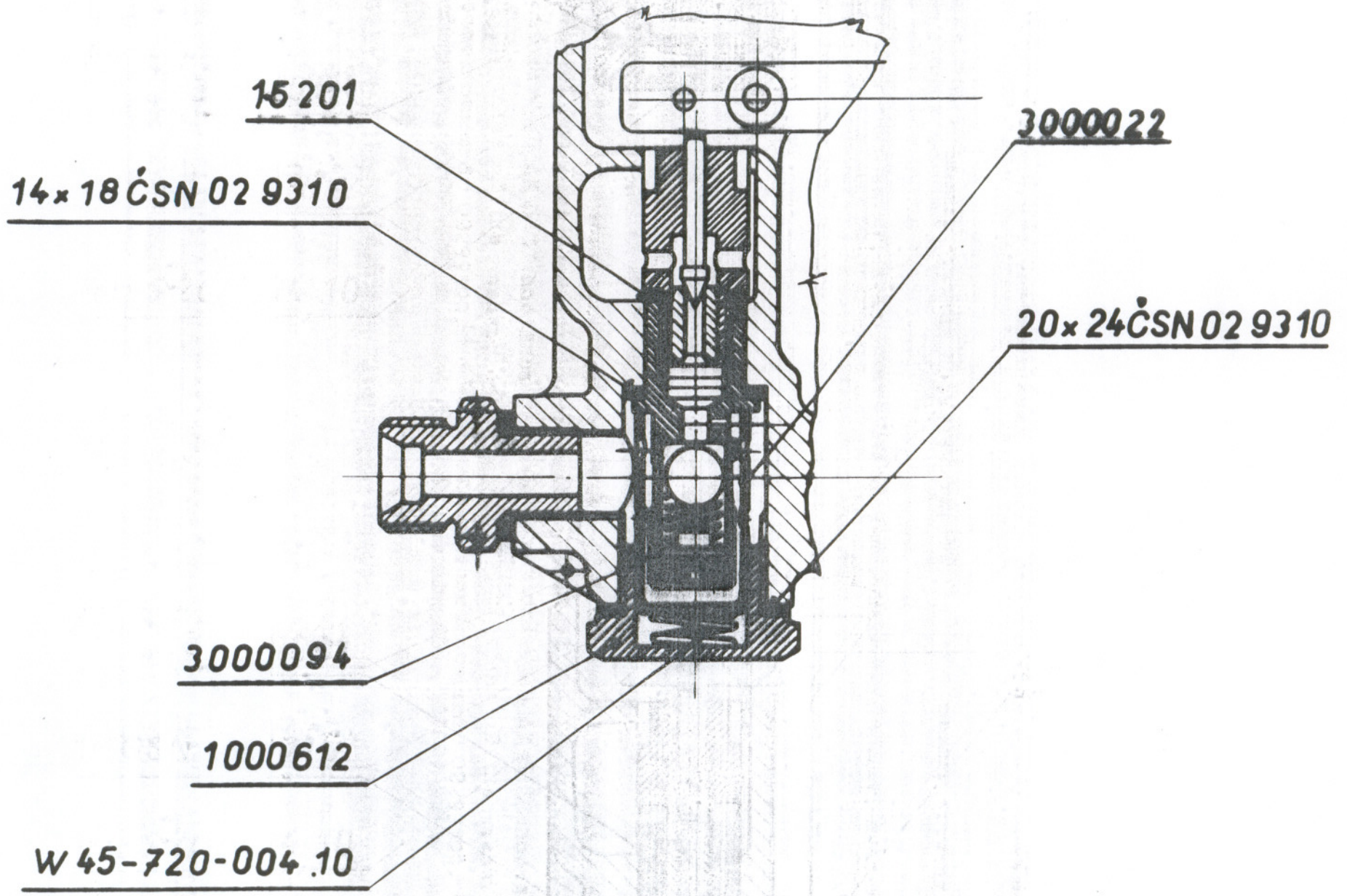
Manufacturer´s Representative	Customer´s Representative


15 201
14 x 18 ČSN 02 9310
3000094
1000612
W 45-720-004.10
3000022
20 x 24 ČSN 02 9310

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INFORMATION BULLETIN

No. M 4-III/34
M 6-III/39
M 137 A/5
M 332/66
M 337/70
M 337 A/1

CONCERNS: Serviceability of the aviation gasoline (petrol), mark AVGAS 100 L (Grade 100/130), for air service of the M 4-III, M 6-III, M 137 A, M 332, M 337 and M 337 A aeroengines.

REASON : Usable for air service in countries and regions where the above stated sort of aviation gasoline (petrol), containing a low percentage of lead tetraethyl (TEL), has been introduced into the aircraft fuel market.

In accordance with the Standard Regulation D.ENG.RD 2485 the specified percentage of lead tetraethyl (TEL) in the above stated sort of aviation gasoline equals to 2.0 ml/U.S.G. = 2.4 ml/I.G. = 0.0528 per cent by volume, not reaching the specified top limit 0.06 per cent by volume of TEL and, being thus serviceable for the above stated aeroengines.

MEASURES: No special measures arise through this Bulletin. However, the commercial users of the above stated engines are liable to follow the storage and other instructions of the gasoline producers.

Prague, December 28, 1973.

M. Adamec m.p.
.....
Manufacturer's Representative

Ing. B. Homola m. p.
.....
Customer's Representative
at the Manufacturers

Ing. O. Holovský m. p.
.....
State Aviation Inspection

Ing. F. Háva m. p.
.....
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INFORMATION BULLETIN

No. M 6-III/40

CONCERNS: Substitution of Scintilla Ignition Magnetoes by PAL Magnetoes, Model LUN 2221.13, on the M 6-III Type Aeroengines.

REASON: The Manufacturing Works Scintilla Co. will no more produce the model of ignition magnetoes used in air service of the M 6-III aeroengines.

MEASURE: Any defective Scintilla ignition magnetoes, each separately or both the magnetoes at once, are to be replaced with substantive PAL magnetoes.

1) When replacing a defective Scintilla ignition magneto provided with a break-off coupling, Part No. OBF 6R 701 Z 170 (or the primary design, Part No. OAF 6R 602 Z 170 or AVK 6-Z2) with a PAL ignition magneto, it is necessary to fit additionally a start-signalling buzzer, Part No. LUN 2231, into the ignition circuit of the engine and to replace the starter motor switch pushbutton (see Bulletins Nos. Z 226(126)/25, Z 326/71 and Z 526/42).

2) When replacing, however, a defective ignition magneto without any break-off coupling, Part No. OBF 6R 501 Z 170 (or the primary design, Part No. OAF 6R 402 Z 170, or NVK 6-Z2) with a PAL ignition magneto, no start-signalling buzzer is to be fitted in.

Important Note:

a) The PAL magnetoes, Model LUN 2221.13, Part No. Sh 0744, are in any case supplied together with the magneto drive bevel gear wheel as the mate-drilling of the bevel gear wheel has to be carried out by means of a special fixture.

b) Before going to use in service the PAL ignition magnetoes, the ignition cable terminals to be fitted in the magnetoes have to be serviceably adapted so as instructed in fig. 1.

TO BE CARRIED OUT: By the commercial users of the above mentioned magnetoes (see the "Procedure of Mounting Operations" specified in this Bulletin).

COSTS TO BE COVERED: By the commercial users of the ignition magnetoes.

MATERIAL: The material needed for a replacement of the magnetoes will be supplied on presentation of a separate order.

1) For replacement of each ignition magneto, Part No. OBF 6R 501 Z 170, not provided with a break-off coupling (or a magneto of the primary design) will be supplied:

1 pc.	PAL ignition magneto assy., Part No.	Sh 0744
6 pcs.	component part	No. 102 1151
6 pcs.	component part	No. 102 1081
6 pcs.	component part	No. Sc 7433
6 pcs.	component part	No. Sc 7432

All these parts will be supplied by the Manufacturing Works of the M 6-III aeroengines.

2) For replacement of each ignition magneto, Part No. OBF 6R 701 Z 170, provided with a break-off coupling (or a magneto of the primary design) will be supplied:

1 pc.	PAL ignition magneto assy., Part No.	Sh 0744
1 pc.	Start-signalling buzzer, Part No.	LUN 2231
6 pcs.	component part . . . . . No.	102 1151
6 pcs.	component part . . . . . No.	102 1081
6 pcs.	component part . . . . . No.	Sc 7433
6 pcs.	component part . . . . . No.	Sc 7432

All these parts will be supplied by the Manufacturing Works of the M 6-III aeroengines.

3) The fixing screws, ignition cables and the pushbutton- type switch according to Bulletins Nos. Z 226(126)/25, Z 326/71 and Z 526/42 will be supplied by the aeroplane fuselage Manufacturers on presentation of a separate order, too.

4) When replacing both the ignition magnetoes at once it is necessary to order all the materials stated under points 1) and 2) together.

PROCEDURE OF MOUNTING OPERATIONS:

a) The ignition magnetoes to be replaced should be dismounted so as instructed in the "Operator's Manual" of the M 6-III Aeroengine in the passage "Disassembly of Engine Into Separate Subassemblies and Component Parts".

b) The ignition cable terminals are serviceably adapted so as instructed in fig. 1.

Prior to this adapting operation the ignition cable screening has to be shortened (cut-off) by 15 millimetres. Then after fitting on all the respective parts should be the conductors soldered onto the contact plate, Part No. 502-0904.27.

Note: The component parts Nos. 402-0760.36, 502-4200.74, 502-7211.82 and 502-0904.27 are supplied together with each PAL magneto.

c) The reassembly is to be carried out so as instructed in the "Operator's Manual" of the M 6-III aeroengine in the passage "Reassembly of Engine".

Pay a careful attention to the correct basic operating adjustment of the engine ignition advance and adjustment of the specified gearing backlash of the ignition magnetoes.

Praha, 13. 6. 1975

M. Adamec m.p.
.....
Manufacturers' Representative

Ing. B. Homola m.p.
.....
Customer's Representative

Ing. P. Hýla m.p.
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State Aviation Inspection

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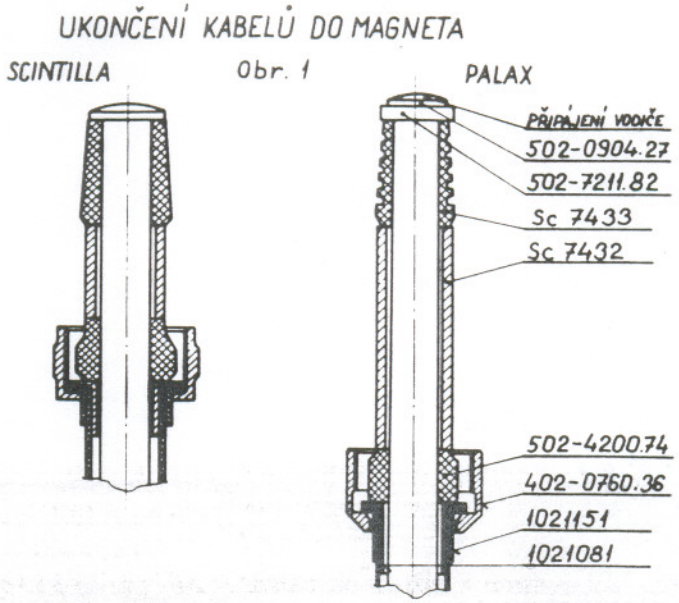
OMNIPOL



Obr. 2

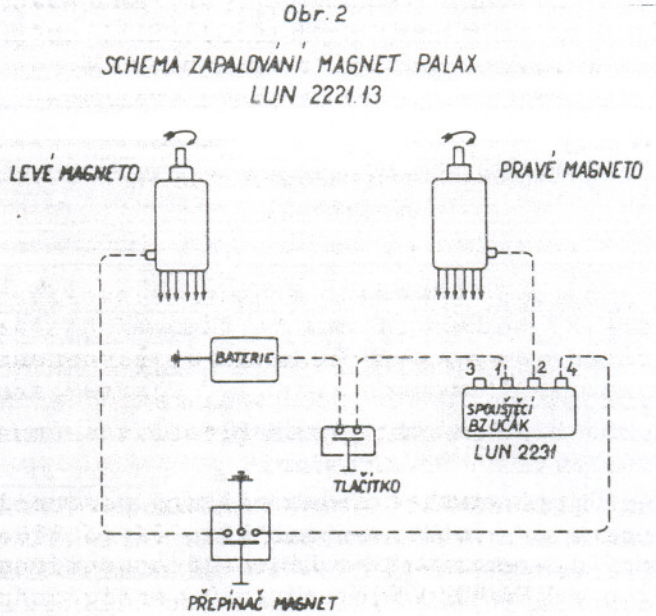


Fig. 1 - Adaptation of ignition cable terminals
1 - Mode of conductor soldering

Abb. 1 - Zurichtung der Zündkabelendverschlüsse
1 - Auflötungsweise des Leiters

Fig. 2 - Wiring diagram of PALAX ignition magnetoes, model LUN 2221.13
1 - L.H. side magneto
2 - R.H. side magneto
3 - Accumulator (battery)
4 - Pushbutton switch
5 - Start-signalling buzzer
6 - Change-over switch of ignition magnetoes

Abb. 2 - Schaltplan der Zündmagnete PALAX von Bauart LUN 2221.13
1 - Zündmagnet links
2 - Zündmagnet rechts
3 - Akkumulatorenbatterie
4 - Druckknopfschalter
5 - Anlass-Signalsummer
6 Zündmagneten-Umschlater

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SERVICE BULLETIN

IT IS NECESSARY TO CARRY OUT !

No. M 6-III/41
M 137 A/6
M 137 AZ/1
M 337/71
M 337 A/1

CONCERNS : Replacement of capacitors, Part No. 402-8498.49, marked by the "L" letter on the shell and fitted in the "Palax" ignition magnetoes of model 52-9276.57, LUN 2221.13.

REASON : Appearance of a failure on a capacitor during a test of the LUN 2221.13 ignition magneto service life.

MEASURES : In order to avoid any possible service failures of the LUN 2221.13 ignition magnetoes used in service on the M 6-III, M 137 A, M 137 AZ, M 337 and M 337 A aeroengines, it is necessary to replace the capacitors marked on their shells by the letter "L".

Ignition magnetoes of following series Nos. are to be replaced:

U3 001 to 030	S3 001 to 030	L4 001 to 069	C4 001 to 069
B3 001 to 070	Z3 001 to 059	V4 001 to 049	S4 001 to 060
K3 001 to 050	R3 001 to 060	B4 001 to 080	R4 001 to 070
N3 001 to 057	03 001 to 060	D4 001 to 090	04 001 to 060
C3 001 to 040	P3 001 to 014	K4 001 to 060	

The capacitors marked on the shell by the letter "L" of the magnetoes stated above are to be replaced with new capacitors marked by the letters "R" or "Ji".

The above stated magnetoes have been dispatched from the Manufacturing Works fitted on aeroengines and, also as spare parts separately.

When going to replace the capacitor, there have to be first unscrewed the fixing screws, pos. Nos. 1, 2 and 3, shown in the draft overleaf. After having replaced the capacitor, the fixing screws are to be screwed in, retightened and secured separately against possible self-loosening by some white paint.

At last the replacement should be entered in the Engine Log Book.

TO BE CARRIED OUT : By the Commercial User of the aeroengines referred to.

EXPENSES TO BE SETTLED BY : No extra expenses will arise when realizing these measures.

MATERIAL DELIVERED BY : The new capacitors, Part No. 402-8498.49 for the replacement to be carried out will deliver free of charge the Magneto Manufacturers.

FORCE OF THIS BULLETIN : It comes in force since the day of issue.

Prague, July 28, 1975.

M. Adamec m.p.
Aircraft engine manufacturers' representative

Ing. B. Homola m.p.
Customer's representative at the engine manufacturers

Ing. V. Hájek m.p.
Magneto manufacturers' representative

Ing. M. Voráček m.p.
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Ing. Bena m.p.
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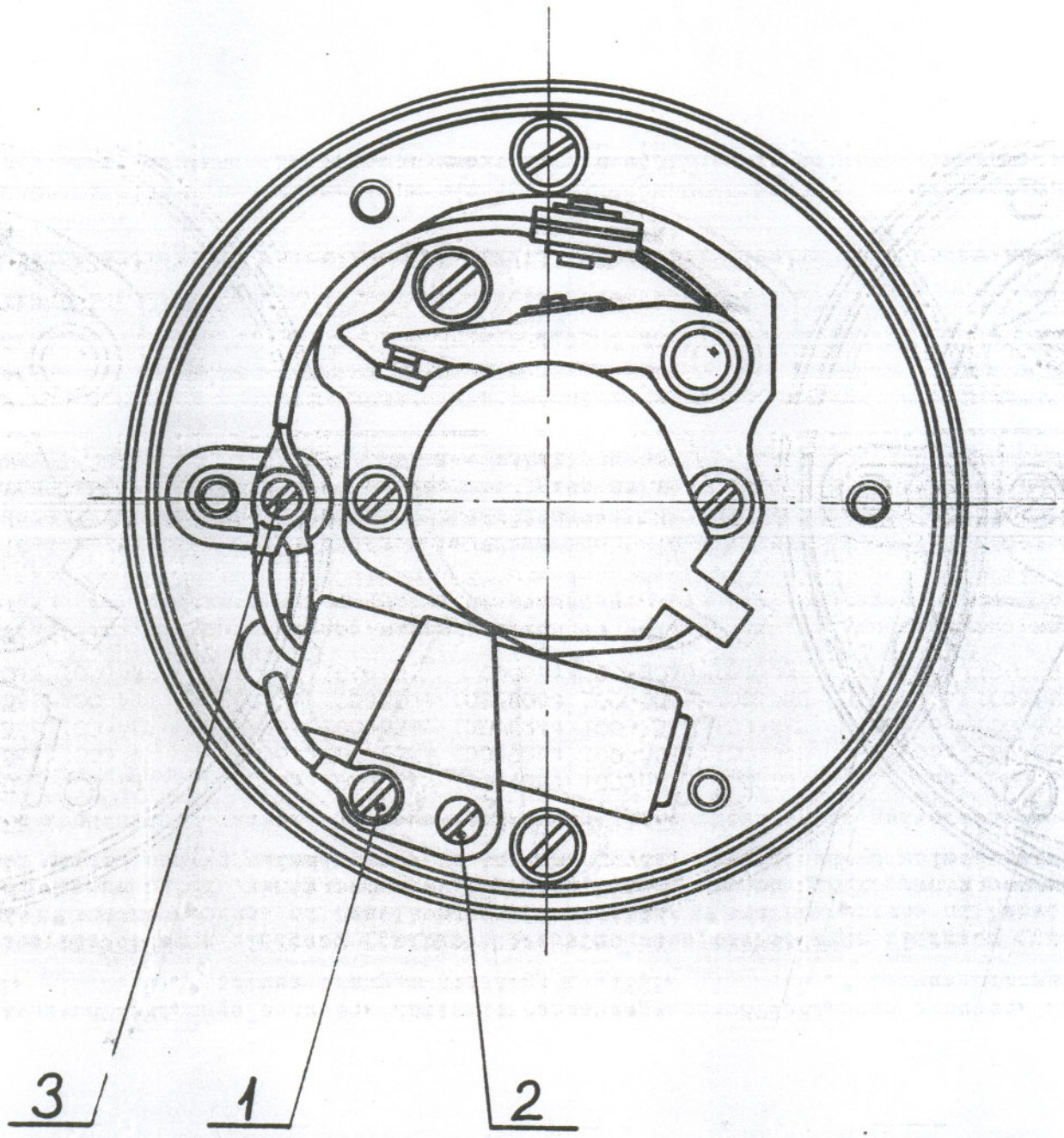
3
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INFORMATION BULLETIN

No. M 6-III/42
M 137 A/9
M 137 AZ/3
M 337/72
M 337 A/3

CONCERNS: Reconstruction of distributor rotor arm and contact breaker cam of the LUN 2221.13, 52-9276.57 type of ignition magneto.

REASON: To increase the service life and reliability of operation of the ignition magneto distributor rotor arm.

MEASURE: In order to increase the service life and reliability of operation of the ignition magneto distributor arm, a reconstruction of attachment of the distributor rotor arm onto the contact breaker cam has been carried out. The ignition magnetoes manufactured since 2nd half-year 1975 comprise already the new design of distributor rotor arms and cams, too. The primary (original) design of ignition magnetoes is no more produced, however, it is replaceable with the new design.

If necessary to replace a distributor rotor arm of the primary (original) design with a distributor rotor arm of the new design, in such a case has to be replaced also the contact breaker cam of the primary (original) design with a cam of the new design, as the primary design in comparison with the new design of the contact breaker cam is rather different.

List of Component Parts of the Primary and New Designs

Component Parts of the Primary Design:

1 pc.	Distributor rotor arm	Part No.	402-8416.21
1 pc.	Contact breaker arm	"	302-3890.62

Component Parts of the New Design:

1 pc.	Distributor rotor arm	Part No.	402-8437.43
1 pc.	Contact breaker arm	"	302-3890.77
1 pc.	Ring (collar)	"	402-6014.75
2 pcs.	Screw	"	402-0522.07
125+3 mm	Locking wire, 0.8 mm dia.	"	ČSN 42 6410.5

(See the following illustration on the back page - P.T.O.)

Prague, Nov. 22, 1976.

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Engine Manufacturers' Representative

Ing. B. Homola m.p.
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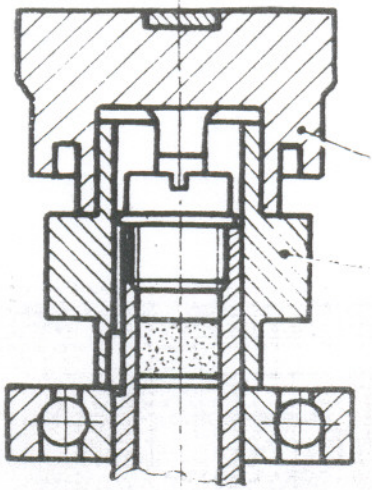
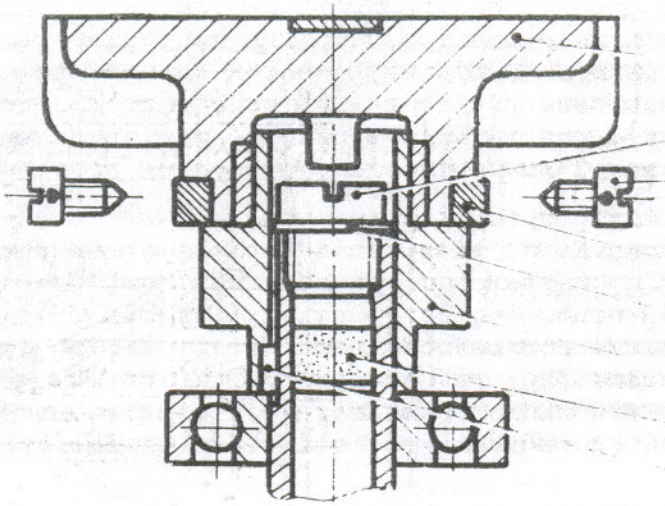
PŮVODNÍ PROVEDENÍ
БЫЛО
PRIMARY DESIGN



402-8416.21
302-3890.62

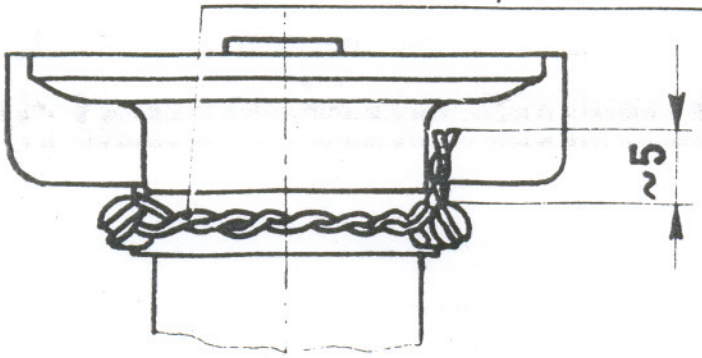
NOVÉ PROVEDENÍ
СТАЛО
NEW DESIGN



402-8437.43
(502-0261.22)
402-0522.07

402-6014.75
(502-5012.10)
302-3890.77
(502-7213.67)
402-5005.31

POJIŠŤOVACÍ DRÁT POZINKOVANÝ ø0,8mm
СТОПОРНАЯ ПРОВОЛОКА, ОЦИНКОВАНА, ø0,8мм
LOCKING WIRE, ZINC-PLATED, 0,8mm DIA.



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SERVICE BULLETIN
IT IS NECESSARY TO CARRY OUT !

No. M 6-III/43
M 137 A/9
M 137 AZ/4
M 337/74
M 337 A/3

CONCERNS: The LUN 2221.13 (52-9276.57) ignition magneto and its separately delivered accessories, Drwg. No 8802.05 - Low-voltage cable shoe - which is mounted on the short-circuit shielded cable of the aircraft wiring.

REASON: Prevention from contacting the cable shoe sleeve with the short-circuit hexagonal screw head on the ignition magneto screening shield.

MEASURES: The diameter of some cable shoe sleeves became reduced down to 8,2 mm while flanging the insulation bush and washer.

In case of an eventual radial displacement of the cable shoe sleeve to the union, the flanged edge of the sleeve may come in contact with the hexagonal head of the bolt screwed in the ignition magneto screening shield.

In order to prevent from this fault, it is necessary to enlarge the diameter of the flange edge of the sleeve to dia. 9,5 mm. This adaptation can be carried out by hand reaming by means of a serviceable reamer. Then deburr the sharp edges and at last clean the sleeve inner surface carefully.

TO BE CARRIED OUT BY: The inspection and adaptation are to be carried out by the Commercial Users of the engine types stated above.

MATERIAL NEEDED FOR THE ADAPTATION:

1) Machining reamer adapted to dia. of 9,5 - 0,1 mm.

2) 3 pcs. of sleeves (of subassembly No. 8444.39) per every 10 pcs. of ignition magnetoes to be repaired and adapted.

This material is to be delivered free of charge by the ignition magneto Manufacturing Works.

COSTS TO BE COVERED BY: No additional costs are arising through these measures.

Prague, 17. 8. 1977.

M. Adamec m.p.	Ing. B. Homola m.p.	Vrbecký m.p.
Engine Manufacturers' Representative	Customer's Representative at Engine Manufacturers	Magneto Manufacturers' Representative

Ing. P. Hýla m.p.	V. Houdek m.p.
State Aviation Inspection	OMNIPOL

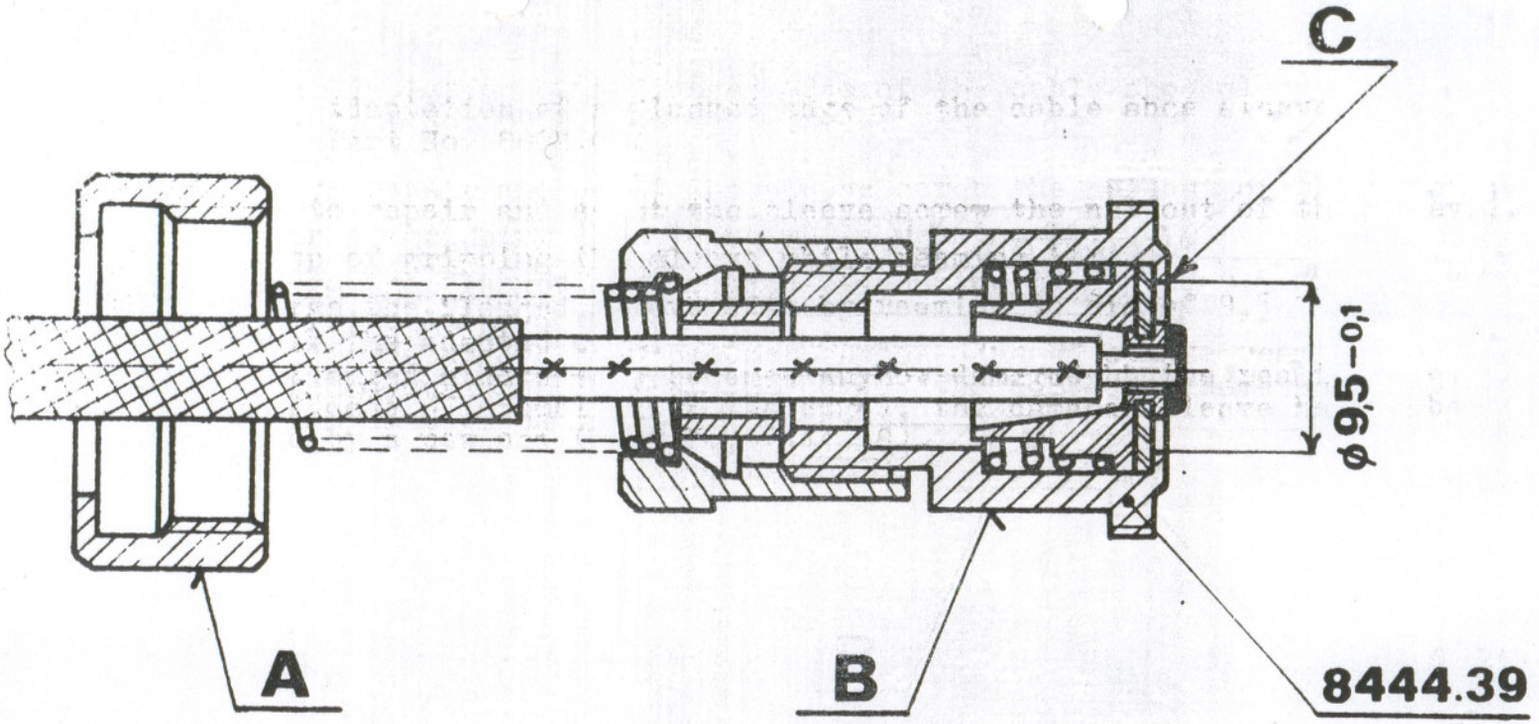

Fig. 1 - Adaptation of a flanged edge of the cable shoe sleeve, Part No. 8802.05.

A - When going to repair and adapt the sleeve screw the nut out of the sleeve;

B - The location of gripping the sleeve while reaming it;

C - 1) To enlarge the flanged sleeve edge by reaming to dia of 9,5 $-0,1$mm;
2) To deburr the adapted edge;
3) If the flanged sleeve edge becomes anyhow damaged by the reaming (e.g. in case of crumbling of the edge), the damaged sleeve has to be replaced by a new one (Part No, 8444.39).