

Diamond Aircraft Industries G.m.b.H N.A. Otto-Straße 5 A-2700 Wiener Neustadt

DAI SI 20-045 Page 1 of 1 11-Jul-2011

SERVICE INFORMATION NO. SI 20-045

NOTE: Si's are used only:

1) To distribute information from DAI to our customers.

2) To distribute applicable information / documents from our suppliers to our customers with additional

Typically there is no revision service for Si's. Each new information or change of that will be send

along with a new SI.

I. TECHNICAL DETAILS

1.1 Airplanes affected:

DV 20

all DV 20 airplanes equipped with Rotax A-series engine S/ N 4,410.888 through S/ N 4,410.899

1.2 Subject:

FAA Airworthiness Directive No 2011-14-09

ATA-Code: 74 - Ignition

1.3 Reason:

FAA AD No.: 2011-14-09

FAA has issued the Airworthiness Directive No.: AD 2011-14-09 mandating accomplishment with Rotax Service Bulletin SB-912-058/SB-914-041, which prescribes the replacement of the washer P/ N 944072 and associated Gasket ring P/ N 950141 on the Flywheel hub at certain engine serial numbers.

1.4 Information:

For detailed technical information refer to FAA AD 2011-14-09 which is applicable without any further additions or restrictions.

II. OTHERS

FAA AD No.: 2011-14-09 is attached to this SI.

Rotax Mandatory SB 912-058/SB 914-041 are attached to this SI.

In case of doubt contact BRP-Rotax GmbH & Co. KG.

[Federal Register Volume 76, Number 131 (Friday, July 8, 2011)]
[Rules and Regulations]
[Pages 40219-40222]
From the Federal Register Online via the Government Printing Office [www.gpo.gov]
[FR Doc No: 2011-17144]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2011-0714; Directorate Identifier 2011-CE-024-AD; Amendment 39-16744; AD 2011-14-09]

RIN 2120-AA64

Airworthiness Directives; Various Aircraft Equipped With Rotax Aircraft Engines 912 A Series Engine

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule; request for comments.

SUMMARY: We are adopting a new airworthiness directive (AD) for the products listed above that will supersede an existing AD. This AD results from mandatory continuing airworthiness information (MCAI) issued by the aviation authority of another country to identify and correct an unsafe condition on an aviation product. The MCAI describes the unsafe condition as:

During a production process review, a deviation in hardening of certain Part Number (P/N) 944072 washers has been detected, which exceeds the hardness of the design specification.

The affected washers are part of the magneto ring flywheel hub installation and have been installed on a limited number of engines. No defective washers have been shipped as spare parts.

This condition, if not corrected, could lead to cracks in the washer, loosening of the magneto flywheel hub and consequent ignition failure, possibly resulting in damage to the engine, in-flight engine shutdown and forced landing, damage to the aeroplane and injury to occupants.

This AD requires actions that are intended to address the unsafe condition described in the MCAI.

DATES: This AD becomes effective July 25, 2011.

As of June 16, 2011 (76 FR 31465, June 1, 2011), the Director of the Federal Register approved the incorporation by reference of Rotax Aircraft Engines Mandatory Service Bulletin SB-912-058 SB-914-041, dated April 15, 2011, listed in this AD.

We must receive comments on this AD by August 22, 2011.

ADDRESSES: You may send comments by any of the following methods:

- Federal eRulemaking Portal: Go to http://www.regulations.gov. Follow the instructions for submitting comments.
- Fax: (202) 493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC 20590.
- Hand Delivery: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this AD, contact BRP-Rotax GmbH & Co. KG, Welser Strasse 32, A-4623 Gunskirchen, Austria; phone: +43 7246 601 0; fax: +43 7246 601 9130; Internet: http://www.rotax-aircraft-engines.com. You may review copies of the referenced service information at the FAA, Small Airplane Directorate, 901 Locust, Kansas City, Missouri 64106. For information on the availability of this material at the FAA, call (816) 329-4148.

Examining the AD Docket

You may examine the AD docket on the Internet at http://www.regulations.gov; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (telephone (800) 647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Sarjapur Nagarajan, Aerospace Engineer, FAA, Small Airplane Directorate, 901 Locust, Room 301, Kansas City, Missouri 64106; telephone: (816) 329-4145; fax: (816) 329-4090; e-mail: sarjapur.nagarajan@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion

On May 10, 2011, we issued AD 2011-11-03, Amendment 39-16702 (76 FR 31465, June 1, 2011). That AD required actions intended to address an unsafe condition on the products listed above. Since we issued AD 2011-11-03, we determined that we inadvertently omitted certain airplanes equipped with Rotax 912 A series engines from the Applicability section. We have also determined that we included certain airplanes in the Applicability section that are not equipped with Rotax 912 A series engines.

Relevant Service Information

Rotax Aircraft Engines has issued Mandatory Service Bulletin SB-912-058 and SB-914-041 (same document), dated April 15, 2011. The actions described in this service information are intended to correct the unsafe condition identified in the MCAI.

FAA's Determination and Requirements of the AD

This product has been approved by the aviation authority of another country, and is approved for operation in the United States. Pursuant to our bilateral agreement with this State of Design Authority, they have notified us of the unsafe condition described in the MCAI and service information referenced above. We are issuing this AD because we evaluated all information provided

by the State of Design Authority and determined the unsafe condition exists and is likely to exist or develop on other products of the same type design.

Differences Between This AD and the MCAI or Service Information

We have reviewed the MCAI and related service information and, in general, agree with their substance. But we might have found it necessary to use different words from those in the MCAI to ensure the AD is clear for U.S. operators and is enforceable. In making these changes, we do not intend to differ substantively from the information provided in the MCAI and related service information.

We might have also required different actions in this AD from those in the MCAI in order to follow FAA policies. Any such differences are described in a separate paragraph of the AD. These requirements take precedence over those copied from the MCAI.

FAA's Determination of the Effective Date

An unsafe condition exists that requires the immediate adoption of this AD. The FAA has found that the risk to the flying public justifies waiving notice and comment prior to adoption of this rule because cracks in the washer of the magneto ring flywheel hub could cause loosening of the magneto flywheel hub. This failure could result in ignition failure and/or damage to the engine, causing inflight engine shutdown leading to a forced landing. A forced landing could result in damage to the airplane and injury to the occupants. Therefore, we determined that notice and opportunity for public comment before issuing this AD are impracticable and that good cause exists for making this amendment effective in fewer than 30 days.

Comments Invited

This AD is a final rule that involves requirements affecting flight safety, and we did not precede it by notice and opportunity for public comment. We invite you to send any written relevant data, views, or arguments about this AD. Send your comments to an address listed under the ADDRESSES section. Include "Docket No. FAA-2011-0714; Directorate Identifier 2011-CE-024-AD" at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this AD. We will consider all comments received by the closing date and may amend this AD because of those comments.

We will post all comments we receive, without change, to http://www.regulations.gov, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this AD.

Costs of Compliance

We estimate that this AD will affect 112 products of U.S. registry. We also estimate that it would take about 24 work-hours per product to comply with the basic requirements of this AD. The average labor rate is \$85 per work-hour. Required parts would cost about \$20 per product.

Based on these figures, we estimate the cost of the AD on U.S. operators to be \$230,720, or \$2,060 per product.

According to the manufacturer, some of the costs of this AD may be covered under warranty, thereby reducing the cost impact on affected individuals. We do not control warranty coverage for affected individuals. As a result, we have included all costs in our cost estimate.

Authority for This Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. "Subtitle VII: Aviation Programs," describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in "Subtitle VII, Part A, Subpart III, Section 44701: General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

We determined that this AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a "significant regulatory action" under Executive Order 12866;
- (2) Is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and
- (3) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

We prepared a regulatory evaluation of the estimated costs to comply with this AD and placed it in the AD docket.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

Adoption of the Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

PART 39-AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by removing Amendment 39-16702 (76 FR 31465, June 1, 2011), and adding the following new AD:

FAA Aviation Safety

AIRWORTHINESS DIRECTIVE

www.faa.gov/aircraft/safety/alerts/ www.gpoaccess.gov/fr/advanced.html

2011-14-09 Various Aircraft: Amendment 39-16744; Docket No. FAA-2011-0714; Directorate Identifier 2011-CE-024-AD.

Effective Date

(a) This airworthiness directive (AD) becomes effective July 25, 2011.

Affected ADs

(b) This AD supersedes AD 2011-11-03; Amendment 39-16702.

Applicability

(c) This AD applies to all serial numbers of the following aircraft, equipped with a Rotax Aircraft Engines 912 A series engine, serial number 4,410.888 through 4,410.899, installed and certificated in any category:

Group 1 Airplanes (airplanes previously affected by AD 2011-11-03)

Type Certificate Holder	Aircraft Model	Engine Model 912 A2	
Aeromot-Indústria Mecânico-Metalúrgica Ltda	AMT-200		
Diamond Aircraft Industries	HK 36 R "SUPER DIMONA"	912 A	
Diamond Aircraft Industries Inc.	DA20-A1	912 A3	
HOAC-Austria	DV 20 KATANA	912 A3	
Iniziative Industriali Italiane S.p.A.	Sky Arrow 650 TC	912 A2	
SCHEIBE-Flugzeugbau GmbH	SF 25C	912 A2	

Group 2 Airplanes (airplanes not previously affected by AD 2011-11-03)

Type Certificate Holder	Aircraft Model	Engine Model
DIAMOND AIRCRAFT INDUSTRIES GmbH	HK 36 TS and HK 36 TC	912 A3

Subject

(d) Air Transport Association of America (ATA) Code 74: Ignition.

Reason

(e) The mandatory continuing airworthiness information (MCAI) states:

During a production process review, a deviation in hardening of certain Part Number (P/N) 944072 washers has been detected, which exceeds the hardness of the design specification.

The affected washers are part of the magneto ring flywheel hub installation and have been installed on a limited number of engines. No defective washers have been shipped as spare parts.

This condition, if not corrected, could lead to cracks in the washer, loosening of the magneto flywheel hub and consequent ignition failure, possibly resulting in damage to the engine, in-flight engine shutdown and forced landing, damage to the aeroplane and injury to occupants.

For the reasons described above, this AD requires, for the affected engines, the replacement of the P/N 944072 washer and associated gasket ring P/N 950141 with serviceable parts, having the same P/N.

This AD also prohibits installation of an affected engine on an aeroplane, unless the washer on that engine has been replaced as required by this AD.

Actions and Compliance

- (f) Unless already done, do the following actions:
- (1) Replace washer, part number (P/N) 944072, and associated gasket ring, P/N 950141, on the magneto ring flywheel hub with FAA-approved serviceable parts with the same P/Ns. Do the replacements following the Accomplishment Instructions in Rotax Aircraft Engines Mandatory Service Bulletin SB-912-058 and SB-914-041 (same document), dated April 15, 2011.
- (i) For Group 1 airplanes (airplanes previously affected by AD 2011-11-03): Within the next 10 hours time-in-service (TIS) after June 16, 2011 (the effective date retained from AD 2011-11-03) or within 4 months after June 16, 2011 (the effective date retained from AD 2011-11-03), whichever occurs first.
- (ii) For Group 2 airplanes (airplanes not previously affected by AD 2011-11-03): Within the next 10 hours TIS after July 25, 2011 (the effective date of this AD) or within 4 months after July 25, 2011 (the effective date of this AD), whichever occurs first.
- (2) Do not install a Rotax Aircraft Engines 912 A series engine listed in paragraph (c) of this AD unless the washer, P/N 944072, and the gasket ring, P/N 950141, have been replaced as required in paragraph (f)(1) of this AD.
- (i) For Group 1 airplanes (airplanes previously affected by AD 2011-11-03): As of June 16, 2011 (the effective date retained from AD 2011-11-03).
- (ii) For Group 2 airplanes (airplanes not previously affected by AD 2011-11-03): As of July 25, 2011 (the effective date of this AD).

FAA AD Differences

Note: This AD differs from the MCAI and/or service information as follows: EASA AD 2011-0067-E, dated April 15, 2011, requires returning the removed P/N 944072 to Rotax Aircraft Engines. We are not requiring this because FAA regulation, specifically 14 CFR 43.10, already requires disposition of unairworthy parts.

Other FAA AD Provisions

(g) The following provisions also apply to this AD:

- (1) Alternative Methods of Compliance (AMOCs): The Manager, Standards Office, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. Send information to Attn: Sarjapur Nagarajan, Aerospace Engineer, FAA, Small Airplane Directorate, 901 Locust, Room 301, Kansas City, Missouri 64106; telephone: (816) 329-4145; fax: (816) 329-4090. Before using any approved AMOC on any airplane to which the AMOC applies, notify your appropriate principal inspector (PI) in the FAA Flight Standards District Office (FSDO), or lacking a PI, your local FSDO.
- (2) Airworthy Product: For any requirement in this AD to obtain corrective actions from a manufacturer or other source, use these actions if they are FAA-approved. Corrective actions are considered FAA-approved if they are approved by the State of Design Authority (or their delegated agent). You are required to assure the product is airworthy before it is returned to service.
- (3) Reporting Requirements: For any reporting requirement in this AD, a federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB Control Number. The OMB Control Number for this information collection is 2120-0056. Public reporting for this collection of information is estimated to be approximately 5 minutes per response, including the time for reviewing instructions, completing and reviewing the collection of information. All responses to this collection of information are mandatory. Comments concerning the accuracy of this burden and suggestions for reducing the burden should be directed to the FAA at: 800 Independence Ave., SW., Washington, DC 20591, Attn: Information Collection Clearance Officer, AES-200.

Related Information

(h) Refer to MCAI European Aviation Safety Agency (EASA) AD No. 2011-0067-E, dated April 15, 2011, and Rotax Aircraft Engines Mandatory Service Bulletin SB-912-058 and SB-914-041 (same document), dated April 15, 2011, for related information.

Material Incorporated by Reference

- (i) You must use Rotax Aircraft Engines Mandatory Service Bulletin SB-912-058 SB-914-041, dated April 15, 2011, to do the actions required by this AD, unless the AD specifies otherwise.
- (1) On June 16, 2011 (76 FR 31465, June 1, 2011), the Director of the Federal Register previously approved the incorporation by reference of Rotax Aircraft Engines Mandatory Service Bulletin SB-912-058 SB-914-041, dated April 15, 2011.
- (2) For service information identified in this AD, contact BRP-Rotax GmbH & Co. KG, Welser Strasse 32, A-4623 Gunskirchen, Austria; phone: +43 7246 601 0; fax: +43 7246 601 9130; Internet: http://www.rotax-aircraft-engines.com.
- (3) You may review copies of the referenced service information at the FAA, Small Airplane Directorate, 901 Locust, Kansas City, Missouri 64106. For information on the availability of this material at the FAA, call (816) 329-4148.
- (4) You may also review copies of the service information incorporated by reference for this AD at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call (202) 741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

Issued in Kansas City, Missouri, on July 1, 2011. Earl Lawrence, Manager, Small Airplane Directorate, Aircraft Certification Service.



SERVICE BULLETIN

REPLACEMENT OF WASHER PART NO. 944072 (FLY WHEEL HUB) FOR ROTAX® ENGINE TYPE 912 AND 914 (SERIES) SB-912-058

SB-914-041

MANDATORY

Symbols used:

Please, pay attention to the following symbols throughout this document emphasizing particular information.

▲ WARNING: Identifies an instruction, which if not followed, may cause serious injury or even death.

CAUTION: Denotes an instruction which if not followed, may severely damage the engine or could lead to sus-

pension of warranty.

♦ NOTE: Information useful for better handling.

A revision bar outside of the page margin indicates a change to text or graphic. 11

1) Planning information

1.1) Engines affected

All versions of the engine type:

- 912 A from S/N 4,410.888 up to S/N 4,410.899 from S/N 4,412.986 up to S/N 4,412.987 - 912 F

from S/N 4,924.087 up to S/N 4,924.139 / 4,924.141 up to 4,924.166 - 9125

from S/N 4,420.970 up to S/N 4,420.990 / 4,420.997 / 4,421.001 up to 4,421.003 - 914 F

- Washers delivered as spare part no. 944072 are not affected.

1.2) Concurrent ASB/SB/SI and SL

none

1.3) Reason

A deviation in hardening process could cause an exceeding of hardness of certain washer. This deviation could lead to cracks in the washer and could cause loosening of fly wheel, ignition fallure or engine damage.

1.4) Subject

Replacement of washer part no. 944072 (fly wheel hub) for $ROTAX_{\oplus}$ engine type 912 and 914 (Series).

- Required within the next 10 flight hours of operation after the effective date of this Service Bulletin, but at the latest before 31 August 2011. The replacement of washer part no. 944072 identified by the engine serial number (S/N) listed in section 1.1) must be conducted according to the following instructions in section 3.

▲ WARNING:

Non-compliance with these instructions could result in engine damages, personal injuries or death.

1.6) Approval

The technical content of this document is approved under the authority of DOA ref. EASA.21J.048.

1.7) Manpower

Estimated man-hours:

engine installed in the aircraft - - - manpower time will depend on installation and therefore no estimate is available from the engine manufacturer.

1.8) Mass data

change of weight - - - none. moment of inertia - - - unaffected.

1.9) Electrical load data

no change

1.10) Software accomplishment summary

no change

1.11) References

In addition to this technical information refer to current issue of

- Maintenance Manual (MM)

♦ NOTE:

The status of Manuals can be determined by checking the table of amendments of the Manual. The 1st column of this table is the revision status. Compare this number to that listed on the ROTAX WebSite: www.rotax-aircraft-engines.com. Updates and current revisions can be downloaded for free.

1.12) Other publications affected

none

1.13) Interchangeability of parts

- All washers according to section 1.1) must be returned F.O.B to a ROTAX_® Authorized Distributor or their Service Center.
- ♦ NOTE: Used parts should be tagged with a respective "UNSERVICEABLE" mark.

2) Material Information

2.1) Material - cost and availability

Price and availability will be supplied on request by ROTAX_{\oplus} Authorized Distributors or their Service Center.

2.2) Company support information

- Shipping cost, down time, loss of income, telephone costs etc. or cost of conversion to other engine versions or additional work, as for instance simultaneous engine overhaul is not covered in this scope and will not be borne or reimbursed by $ROTAX_{\oplus}$.

2.3) Material requirement per engine

parts requirement:

Fig.no.	New p/n	Qty/engine	Description	Old p/n	Application	
	944072	1	washer 17/36/5		fly wheel hub	
	950141	1	gasket ring A8x13		crank case	
2.4)	Material requirement per spare part					
	none					
2.5)	Rework of parts	3				
	none					
2.6)	Special tooling/lubricant-/adhesives-/sealing compound					
	none					

3) Accomplishment / Instructions

♦ NOTE:

Before maintenance, review the entire documentation to make sure you have a complete understanding of the procedure and requirements to prevent mistakes from an incomplete review of all of the information in this document.

Accomplishment

All the measures must be taken and confirmed by the following persons or facilities:

- ROTAX_® -Airworthiness representative
- ROTAX® -Distributors or their Service Centers
- Persons approved by the respective Aviation Authority

▲ WARNING: Proceed with this work only in a non-smoking area and not close to sparks or open flames. Switch off ignition and secure engine against unintentional operation. Secure aircraft against unauthorized operation. Disconnect negative terminal of aircraft battery.

▲ WARNING: Risk of scalds and burns! Allow engine to cool sufficiently and use appropriate safety gear while performing work.

▲ WARNING: Should removal of a locking device (e.g. lock tabs, self-locking fasteners, etc.) be required when undergoing disassembly/assembly, always replace with a new one.

♦ NOTE:

All work has to be performed in accordance with the relevant Maintenance Manual.

3.1) Replacement of washer part no. 944072

See fig. 1.

1. Remove ignition cover (1).

2. Lock the crankshaft in accordance with the relevant Maintenance Manual (Line).

- 3. Remove hex. screw (4) in accordance with the relevant Maintenance Manual (Heavy).
- ♦ NOTE:

Fly wheel hub does not have to be removed unless it has become loose.

CAUTION:

If the fly wheel hub has loosened during the dissassembly and/or in case of doubt, then remove, clean and install the fly wheel hub in accordance with the relevant Maintenance Manual. In this case the tightening torque is 45 Nm (33.2 ft.lb) + 180° angle to rotation.

- 4. Install hex. screw (4). Tightening torque 120 Nm (89 ft.lb).
- **CAUTION:**

During installation the new washer (2) part no. 944072 must be used.

- 5. Remove locking pin of crankshaft in accordance with the relevant Maintenance Manual.
- Check trigger coil gap, if necessary adjust it in accordance with the relevant Maintenance Manu-
- 7. Install ignition cover (1). The hex. screws (6) are locked with Loctite 221. Tightening torque 5 Nm (44 in. lb.).
- Restore aircraft to original operating configuration.
- Connect negative terminal of aircraft battery.

3.2) Test run

Conduct test run including ignition check and leakage test.

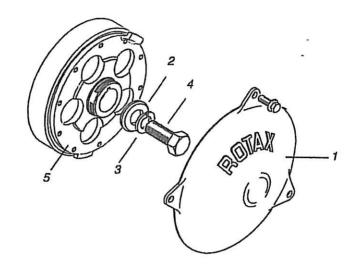
3.3) Summary

These instructions (section 3) have to be conducted in accordance with compliance in section 1.5. The execution of the mandatory Service Bulletin must be confirmed in the logbook.

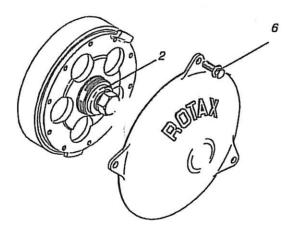
Approval of translation to best knowledge and judgement - in any case the original text in German language and the metric units (SI-system) are authoritative.

4) Appendix

the following drawings should convey additional information:



- 1 ignition cover
- 2 washer 17/36/5
- lock washer
- 4 hex. screw M16x1,5x40
- 5 fly wheel hub
- 6 hex. screw M6x16



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Fig. 1

magneto ring, fly wheel hub, ignition cover

♦ NOTE:

The illustrations in this document show the typical construction. They may not represent full detail or the exact shape of the parts which have the same or similar function. Exploded views are **not technical drawings** and are for reference only. For specific detail, refer to the current documents of the respective-engine type.