

标题：发动机安装套装表		
<b>AG-SIL-2021-05-CN</b>		发布日期：  2021 年 8 月 30 日
适用性		
旋翼机类型与型号：  MTO Sport, Calidus, Cavalon & MTO2017	受影响系列号：  所有旋翼机型，所有发动机类型	
以目前或后续版本的维护保养手册为准。		见 AutoGyro 网站。
<p>此表是 AutoGyro GmbH 针对产品使用中发现需要采取遏制或整改措施的问题作出的回应，或作为飞机改造公司的服务信息。</p> <p>要寻求帮助请拨打 49(0)5121 88056-00 联系 AutoGyro, 或发送电子邮件至 <a href="mailto:airworthiness@auto-gyro.com">airworthiness@auto-gyro.com</a>。</p>		

### 文件记录(服务信函完成)

本文件的目的是为维护保养人员提供《旋翼机维护保养手册》中现有信息之外的信息。如果有关机关要求遵守这样的程序，则必须有适当的文件证明。

<p><b>首席认证官</b> G. Speich Sep 2 2021 6:46 AM</p>  <p><small>This document has been issued according to an approved computer generated signature procedure</small></p> <p><b>G. Speich</b></p>	<p><b>首席技术官</b> Otmar Birkner Sep 15 2021 8:40 AM</p>  <p><small>DocuSign</small></p> <p><b>O. Birkner</b></p>
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### 联系信息：

[airworthiness@auto-gyro.com](mailto:airworthiness@auto-gyro.com)  
[www.auto-gyro.com](http://www.auto-gyro.com)

**AutoGyro GmbH**  
Dornierstr.14  
31137 Hildesheim

**本《服务信函》的原因及概述**

为了便于生产、备件的可用于性以及介绍，AutoGyro 将之前个别旋翼机型和发动机组合 (**30052** 发动机安装组件 (2010)、**32088** 发动机安装组件 Cavalon 915、**47567** 发动机安装组件 Calidus、**47071** 发动机安装组件 A2 915 (2017) 和 **44433** 发动机安装组件 A2 (2017)) 整合到一个套装中 (Cavalon 915iS 无发动机支撑臂 **48147**) 和 MTOsport 2017 915iS 的 **48251-85 支撑**; 其它所有变体机型的 **48114 – 65 支撑**)，包括了各旋翼机型和发动机组合必需的所有用品。

两个套装中都含有下发动机架橡胶隔热板 (**48002**)。

本说明提供的表格说明了各个旋翼机型和发动机组合每一个安装位置所需的零部件。还提供了安装发动机架隔热板的说明。

注：可能会有少量的 912 或 914 旋翼机/发动机特殊配置中可能需要调整隔热板位置，或者完全脱离才能安装。安装为可选安装。

**人工预算**

本《服务信函》不涉及人工预算。更换包括在维护保养要求之内。

**合规性**

本《服务信函》不涉及合规性要求。发动机（包括橡胶件）都要视情况而定，因此可按有关定期维修工作表的要求在下一次更换时进行更换。

**客户支持**

不适用

**所需工具**

标准工具

**重量与平衡影响**

无

**受影响的手册**

AutoGyro 的《飞行员操作手册》和《旋翼机维护保养手册》不受影响。本《服务信函》涉及所有机型的 25/100 小时/12 个月定期维修工作表。

**影响本《服务信函》的之前修订**

无

**联系信息：**

airworthiness@auto-gyro.com  
www.auto-gyro.com

**AutoGyro GmbH**  
Dornierstr.14  
31137 Hildesheim

**完成说明（执行本《服务信函》所需的措施）：**

所有工作必须按照最新机型相关的《旋翼机维护保养手册》和《定期维护工作表》进行。

**说明**

下表确认了 48114 套装中针对个别旋翼机和发动机组合在哪个位置上安装哪个标准件。

应了解，根据发动机推力线和位置安装，并不能反映出全部的实际装配零件情况。因此，首先要做的就是以相同的顺序用套装中相同规格的零件替换拆下的零件。唯一例外的情况就是 Cavalon 915 上部安装件，如果安装了两个垫片，则需要拆卸 1 个垫片(21507)。

**注意：**所有螺栓组装紧固后，螺杆上的螺纹须露出螺母至少 1.5 个螺距。

**注意：**安装发动机支撑臂 48147 时，在 Cavalon 915 上只能使用较软的发动机 65 支架。其他机型必须安装 85 支架（套装 48251）。

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airworthiness@auto-gyro.com  
www.auto-gyro.com

**AutoGyro GmbH**  
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31137 Hildesheim

## 零件表

在发动机安装组件 48114 & 48251 中含以下零件:

Article No.	Description	Qty	Illustration
13813 47530	Silent block engine mount 65 Shore HNBR (set 48114) Silent block engine mount 85 Shore HNBR (set 48251)	8	
47989	Spacer engine mount II	4	
20180	Washer engine mount	8	
12651	Engine mount support sleeve	4	
20184	U10 Washer	8	
20182	M10x110	4	
25092	M10x120	2	
23630	M10, Si full metal	4	
48002	Heat protection plate engine mount	2	
21507	Spacer tail 20-10,5/9	4	

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www.auto-gyro.com

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31137 Hildesheim

对于带 M10x110 螺栓与标准支架组件有区别的零部件，在表中用蓝色字母进行了突出标记。

### MT03/MTO Sport 2010

	912	914
Upper Left	47989 Spacer Engine Mount II 20182 M10x110 Bolt 23630 M10 SI Full Metal Nut 20180 Washer Engine Mount x 2 13813 Silent block engine mount 65 Shore HNBR x 2 12651 Engine Mount Support Sleeve	47989 Spacer Engine Mount II 20182 M10x110 Bolt 23630 M10 SI Full Metal Nut 20180 Washer Engine Mount x 2 13813 Silent block engine mount 65 Shore HNBR x 2 12651 Engine Mount Support Sleeve
Upper Right	47989 Spacer Engine Mount II 20182 M10x110 Bolt 23630 M10 SI Full Metal Nut 20180 Washer Engine Mount x 2 13813 Silent block engine mount 65 Shore HNBR x 2 12651 Engine Mount Support Sleeve	47989 Spacer Engine Mount II 20182 M10x110 Bolt 23630 M10 SI Full Metal Nut 20180 Washer Engine Mount x 2 13813 Silent block engine mount 65 Shore HNBR x 2 12651 Engine Mount Support Sleeve
Lower Left	47989 Spacer Engine Mount II 20182 M10x110 Bolt <sup>(1)</sup> 23630 M10 SI Full Metal Nut 20180 Washer Engine Mount x 2 13813 Silent block engine mount 65 Shore HNBR x 2 12651 Engine Mount Support Sleeve 48002 Heat protection plate engine mount	47989 Spacer Engine Mount II 25092 M10x120 Bolt <sup>(1)</sup> 23630 M10 SI Full Metal Nut 20180 Washer Engine Mount x 2 13813 Silent block engine mount 65 Shore HNBR x 2 12651 Engine Mount Support Sleeve 48002 Heat protection plate engine mount
Lower Right	47989 Spacer Engine Mount II 20182 M10x110 Bolt <sup>(1)</sup> 23630 M10 SI Full Metal Nut 20180 Washer Engine Mount x 2 13813 Silent block engine mount 65 Shore HNBR x 2 12651 Engine Mount Support Sleeve 48002 Heat protection plate engine mount	47989 Spacer Engine Mount II 25092 M10x120 Bolt <sup>(1)</sup> 23630 M10 SI Full Metal Nut 20180 Washer Engine Mount x 2 13813 Silent block engine mount 65 Shore HNBR x 2 12651 Engine Mount Support Sleeve 48002 Heat protection plate engine mount

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www.auto-gyro.com

#### AutoGyro GmbH

Dornierstr.14  
31137 Hildesheim

## Calidus

	912	914
Upper Left	47989 Spacer Engine Mount II 20182 M10x110 Bolt <sup>(1)</sup> 23630 M10 SI Full Metal Nut 20184 U10 Washer <sup>(2)</sup> 20180 Washer Engine Mount x 2 13813 Silent block engine mount 65 Shore HNBR x 2 12651 Engine Mount Support Sleeve	47989 Spacer Engine Mount II 20182 M10x110 Bolt <sup>(1)</sup> 23630 M10 SI Full Metal Nut 20184 U10 Washer <sup>(2)</sup> 20180 Washer Engine Mount x 2 13813 Silent block engine mount 65 Shore HNBR x 2 12651 Engine Mount Support Sleeve
Upper Right	47989 Spacer Engine Mount II 20182 M10x110 Bolt <sup>(1)</sup> 23630 M10 SI Full Metal Nut 20184 U10 Washer <sup>(2)</sup> 20180 Washer Engine Mount x 2 13813 Silent block engine mount 65 Shore HNBR x 2 12651 Engine Mount Support Sleeve	47989 Spacer Engine Mount II 20182 M10x110 Bolt <sup>(1)</sup> 23630 M10 SI Full Metal Nut 20184 U10 Washer <sup>(2)</sup> 20180 Washer Engine Mount x 2 13813 Silent block engine mount 65 Shore HNBR x 2 12651 Engine Mount Support Sleeve
Lower Left	47989 Spacer Engine Mount II 20182 M10x110 Bolt <sup>(1)</sup> 23630 M10 SI Full Metal Nut 20184 U10 Washer <sup>(2)</sup> 20180 Washer Engine Mount x 2 13813 Silent block engine mount 65 Shore HNBR x 2 12651 Engine Mount Support Sleeve 48002 Heat protection plate engine mount	47989 Spacer Engine Mount II 25092 M10x120 Bolt <sup>(1)</sup> 23630 M10 SI Full Metal Nut 20184 U10 Washer <sup>(2)</sup> 20180 Washer Engine Mount x 2 13813 Silent block engine mount 65 Shore HNBR x 2 12651 Engine Mount Support Sleeve 48002 Heat protection plate engine mount
Lower Right	47989 Spacer Engine Mount II 20182 M10x110 Bolt <sup>(1)</sup> 23630 M10 SI Full Metal Nut 20184 U10 Washer <sup>(2)</sup> 20180 Washer Engine Mount x 2 13813 Silent block engine mount 65 Shore HNBR x 2 12651 Engine Mount Support Sleeve 48002 Heat protection plate engine mount	47989 Spacer Engine Mount II 25092 M10x120 Bolt <sup>(1)</sup> 23630 M10 SI Full Metal Nut 20184 U10 Washer <sup>(2)</sup> 20180 Washer Engine Mount x 2 13813 Silent block engine mount 65 Shore HNBR x 2 12651 Engine Mount Support Sleeve 48002 Heat protection plate engine mount

## 联系信息:

airworthiness@auto-gyro.com  
www.auto-gyro.com

## AutoGyro GmbH

Dornierstr.14  
31137 Hildesheim

## MTOsport 2017 &amp; MTOsport 2017 Pro

	912	914	915iS
Upper Left	47989 Spacer Engine Mount II 20182 M10x110 Bolt 23630 M10 SI Full Metal Nut 20180 Washer Engine Mount x 2 13813 Silent block engine mount 65 Shore HNBR x 2 12651 Engine Mount Support Sleeve	47989 Spacer Engine Mount II 20182 M10x110 Bolt 23630 M10 SI Full Metal Nut 20180 Washer Engine Mount x 2 13813 Silent block engine mount 65 Shore HNBR x 2 12651 Engine Mount Support Sleeve	47989 Spacer Engine Mount II <a href="#">25092 M10x120 Bolt<sup>(1)</sup></a> 23630 M10 SI Full Metal Nut <a href="#">20184 U10 Washer x 3<sup>(3)</sup></a> 20180 Washer Engine Mount x 2 <a href="#">48251 Silent block engine mount 85 Shore HNBR x 2</a> 12651 Engine Mount Support Sleeve
Upper Right	47989 Spacer Engine Mount II 20182 M10x110 Bolt 23630 M10 SI Full Metal Nut 20180 Washer Engine Mount x 2 13813 Silent block engine mount 65 Shore HNBR x 2 12651 Engine Mount Support Sleeve	47989 Spacer Engine Mount II 20182 M10x110 Bolt 23630 M10 SI Full Metal Nut 20180 Washer Engine Mount x 2 13813 Silent block engine mount 65 Shore HNBR x 2 12651 Engine Mount Support Sleeve	47989 Spacer Engine Mount II 20182 M10x110 Bolt 23630 M10 SI Full Metal Nut 20180 Washer Engine Mount x 2 <a href="#">48251 Silent block engine mount 85 Shore HNBR x 2</a> 12651 Engine Mount Support Sleeve
Lower Left	47989 Spacer Engine Mount II <a href="#">25092 M10x120 Bolt</a> 23630 M10 SI Full Metal Nut 20180 Washer Engine Mount x 2 13813 Silent block engine mount 65 Shore HNBR x 2 12651 Engine Mount Support Sleeve 21507 Spacer 20-10,5/9 <sup>(4)</sup> <a href="#">48002 Heat protection plate engine mount</a>	47989 Spacer Engine Mount II <a href="#">25092 M10x120 Bolt</a> 23630 M10 SI Full Metal Nut 20180 Washer Engine Mount x 2 13813 Silent block engine mount 65 Shore HNBR x 2 12651 Engine Mount Support Sleeve 21507 Spacer 20-10,5/9 <sup>(4)</sup> <a href="#">48002 Heat protection plate engine mount</a>	47989 Spacer Engine Mount II <a href="#">25092 M10x120 Bolt<sup>(1)(3)</sup></a> 23630 M10 SI Full Metal Nut <a href="#">20184 U10 Washer x 3<sup>(3)</sup></a> 20180 Washer Engine Mount x <a href="#">48251 Silent block engine mount 85 Shore HNBR x 2</a> 12651 Engine Mount Support Sleeve <a href="#">48002 Heat protection plate engine mount</a>
Lower Right	47989 Spacer Engine Mount II <a href="#">25092 M10x120 Bolt</a> 23630 M10 SI Full Metal Nut 20180 Washer Engine Mount x 2 13813 Silent block engine mount 65 Shore HNBR x 2 12651 Engine Mount Support Sleeve 21507 Spacer 20-10,5/9 <sup>(4)</sup> <a href="#">48002 Heat protection plate engine mount</a>	47989 Spacer Engine Mount II <a href="#">25092 M10x120 Bolt</a> 23630 M10 SI Full Metal Nut 20180 Washer Engine Mount x 2 13813 Silent block engine mount 65 Shore HNBR x 2 12651 Engine Mount Support Sleeve 21507 Spacer 20-10,5/9 <sup>(4)</sup> <a href="#">48002 Heat protection plate engine mount</a>	47989 Spacer Engine Mount II 20182 M10x110 Bolt <sup>(1)</sup> 23630 M10 SI Full Metal Nut 20180 Washer Engine Mount x 2 <a href="#">48251 Silent block engine mount 85 Shore HNBR x 2</a> 12651 Engine Mount Support Sleeve <a href="#">48002 Heat protection plate engine mount</a>

## 联系信息:

airworthiness@auto-gyro.com  
www.auto-gyro.com

## AutoGyro GmbH

Dornierstr.14  
31137 Hildesheim

## Cavalon &amp; Cavalon Pro

	912	914	915iS
Upper Left	47989 Spacer Engine Mount II <a href="#">25092 M10x120 Bolt</a> 23630 M10 SI Full Metal Nut <a href="#">20184 U10 Washer<sup>(2)</sup></a> <b>Max 3</b> 20180 Washer Engine Mount x 2 13813 Silent block engine mount 65 Shore HNBR x 2 12651 Engine Mount Support Sleeve 21507 Spacer 20-10,5/9 <sup>(4)</sup>	47989 Spacer Engine Mount II <a href="#">25092 M10x120 Bolt</a> 23630 M10 SI Full Metal Nut <a href="#">20184 U10 Washer<sup>(2)</sup></a> <b>Max 3</b> 20180 Washer Engine Mount x 2 13813 Silent block engine mount 65 Shore HNBR x 2 12651 Engine Mount Support Sleeve 21507 Spacer 20-10,5/9 <sup>(4)</sup>	47989 Spacer Engine Mount II <a href="#">27768 M10x125 Bolt</a> 23630 M10 SI Full Metal Nut 20180 Washer Engine Mount x 2 13813 Silent block engine mount 65 Shore HNBR x 2 <a href="#">Or 48251 Silent block engine mount 85 Shore HNBR x 2</a> 12651 Engine Mount Support Sleeve 21507 Spacer 20-10,5/9 <sup>(4)</sup>
Upper Right	47989 Spacer Engine Mount II <a href="#">25092 M10x120 Bolt</a> 23630 M10 SI Full Metal Nut <a href="#">20184 U10 Washer<sup>(2)</sup></a> <b>Max 3</b> 20180 Washer Engine Mount x 2 13813 Silent block engine mount 65 Shore HNBR x 2 12651 Engine Mount Support Sleeve 21507 Spacer 20-10,5/9 <sup>(4)</sup>	47989 Spacer Engine Mount II <a href="#">25092 M10x120 Bolt</a> 23630 M10 SI Full Metal Nut <a href="#">20184 U10 Washer<sup>(2)</sup></a> <b>Max 3</b> 20180 Washer Engine Mount x 2 13813 Silent block engine mount 65 Shore HNBR x 2 12651 Engine Mount Support Sleeve 21507 Spacer 20-10,5/9 <sup>(4)</sup>	47989 Spacer Engine Mount II <a href="#">27768 M10x125 Bolt</a> 23630 M10 SI Full Metal Nut 20180 Washer Engine Mount x 2 13813 Silent block engine mount 65 Shore HNBR x 2 <a href="#">Or 48251 Silent block engine mount 85 Shore HNBR x 2</a> 12651 Engine Mount Support Sleeve 21507 Spacer 20-10,5/9 <sup>(4)</sup>
Lower Left	47989 Spacer Engine Mount II 20182 M10x110 Bolt <sup>(1)</sup> 23630 M10 SI Full Metal Nut 20180 Washer Engine Mount x 2 13813 Silent block engine mount 65 Shore HNBR x 2 12651 Engine Mount Support Sleeve <a href="#">48002 Heat protection plate engine mount</a>	47989 Spacer Engine Mount II 20182 M10x110 Bolt <sup>(1)</sup> 23630 M10 SI Full Metal Nut 20180 Washer Engine Mount x 2 13813 Silent block engine mount 65 Shore HNBR x 2 12651 Engine Mount Support Sleeve <a href="#">48002 Heat protection plate engine mount</a>	47989 Spacer Engine Mount II 20182 M10x110 Bolt <sup>(1)</sup> 23630 M10 SI Full Metal Nut 20180 Washer Engine Mount x 2 13813 Silent block engine mount 65 Shore HNBR x 2 <a href="#">Or 48251 Silent block engine mount 85 Shore HNBR x 2</a> 12651 Engine Mount Support Sleeve <a href="#">48002 Heat protection plate engine mount</a>
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airworthiness@auto-gyro.com  
www.auto-gyro.com

## AutoGyro GmbH

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31137 Hildesheim



表格说明:

- (1) 在开始改造时, 如果需要插入垫圈对发动机定位, 或在初始安装 48002 发动机支架隔热板时, 就可能需要下一个尺寸的螺栓。在更换安装螺栓时, 确保安装的螺栓与拆卸的规格相同并已经组装完毕。
- (2) 在各位置和组合横向和纵向对中时, 在环形支架和发动机底座之间可能插入了额外的 U10 垫圈。在更换时, 确保在相应位置上更换安装的垫圈数量要和拆下的垫圈数量一致。
- (3) 在螺栓头下面安装了 3 个 U10 垫圈, 以确保螺栓末端和涡轮机壳体之间有最小 2 毫米的间隙。
- (4) 在安装环和发动机底座之间装有一个垫片 21507。注: 对于较早版本的 Cavalon 915iS 机型, 在左上和右上位置插入了 2 个垫片作为标配。需要从两侧各拆下一个。

**注意:** 对于装有涡轮增压的发动机, 在左下安装螺栓的末端和涡轮外壳之间必须留有最小 2 毫米的间隙。

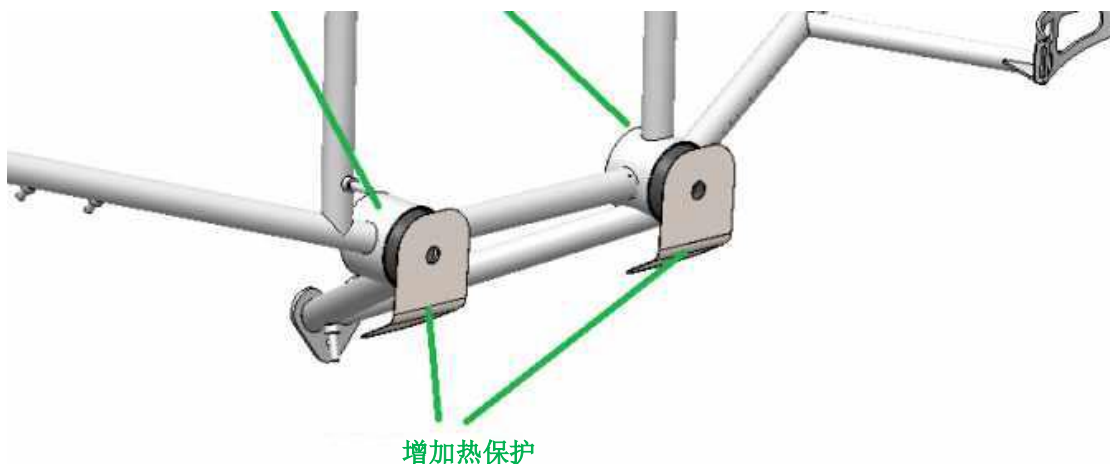
联系信息:

airworthiness@auto-gyro.com  
www.auto-gyro.com

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Dornierstr.14  
31137 Hildesheim

### 发动机支架 48002 隔热板的安装

1. 如果左下和右下发动机底座没有安装隔热板（48002），则应在下一次更换发动机支架时装入隔热板。
2. 隔热板 48002 应该安装在下面所示的位置，即发动机支架的左下和右下安装橡胶和环形支架之间。
3. 下图所示为 Cavalon 上的位置，但适用于所有旋翼机型。



必须按运营国的要求，在旋翼机文件中记录本指示极限的变化。

材料信息（执行此《服务信函》需要制造的零件）：

无

零部件清单（及采购零件号）

48114 发动机安装套装 65 支架

48251 发动机安装套装 85 支架

互换性

不受影响

零件处置

- a) 处置要求 - 套装中不需要的用品应就地处置。
- b) 含有害材料零件，对环境的危害 - 无
- c) 报废要求（如破坏报废件使其不能使用） - 无

### 联系信息：

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