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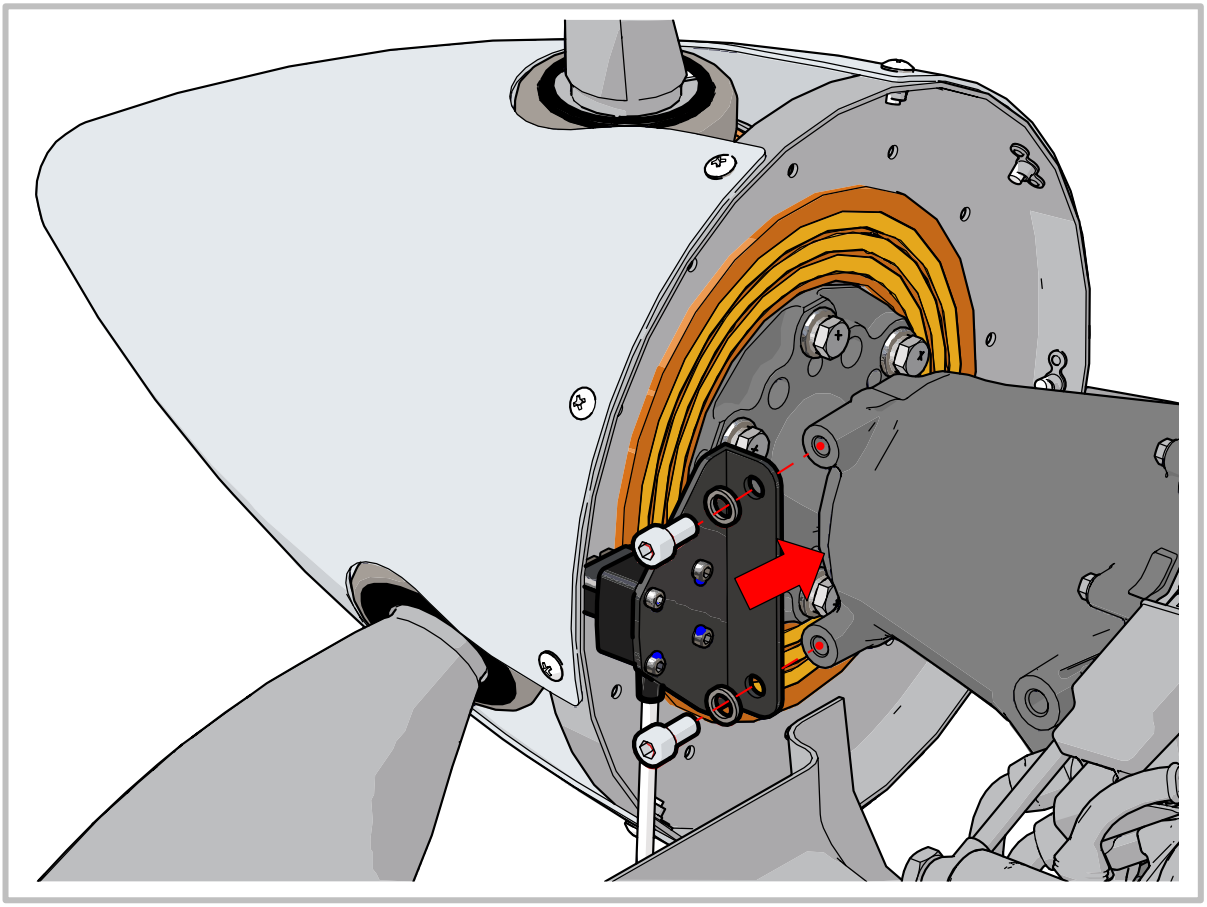
ASI-4-8-3

SENSOR-BRUSH INSTALLATION (ROTAX STANDARD SLIPRING)

PROCEDURE



SUBJECT:	
Sensor-Brush Installation	
ASSEMBLY NO:	**APPLICABILITY:**
AR-RS	Propeller models using a standard slipring assembly on a Rotax engine

1. TOPIC

1.1 Introduction

This document covers the procedure for mounting an Airmaster sensor-brush block to a Rotax engine in cases where a standard slipring assembly is used.

It is recommended that installers mount the hub to the engine flange and attach the sensor-brush block to the Rotax mounting bracket before proceeding.

1.2 Prerequisites

Complete the following tasks before proceeding:

- Mount hub to engine flange in accordance with the applicable installation procedure.
- Inspect brushes for signs of damage or defect. Check brushes travel smoothly and evenly through the brush holder when they are compressed.
- Attach sensor-brush block to standard Rotax mounting bracket (*P0259*) in accordance with procedure ***ASI-4-8-1***.

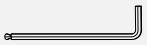
> ⓘ *Note*
> *Generally, new propellers are supplied with the sensor-brush assembly pre-fitted to its mounting bracket, however in some cases this must be performed by the installer.*

2. MATERIAL REQUIREMENTS

2.1 Parts

ITEM	QTY	PART NO.	DESCRIPTION	IMAGE
1.	1	A0120	Airmaster Sensor-Brush Assembly	
2.	1	AR-RS	Airmaster Standard Slipring Assembly	

2.2 Tooling

ITEM	QTY	DESCRIPTION	IMAGE
1.	1	6mm Hex Key	
2.	1	Torque Wrench (6mm Hex Bit) [20Nm]	
3.	As required	Digital Multimeter (with probes)	

2.3 Consumables

ITEM	QTY	DESCRIPTION	IMAGE
1.	As required	Cleaning Agent (Non-Corrosive) *(e.g. Loctite® SF 7063, Methylated Spirits)*	
2.	As required	Paper Towels, Clean Cloth (or similar)	
3.	As required	Torque-Seal	
4.	As required	Piece of Card	

2.4 Paperwork

ITEM	QTY	CODE	DESCRIPTION
1.	1	AR-RS	Airmaster Standard Slipring Assembly Drawing & BoM

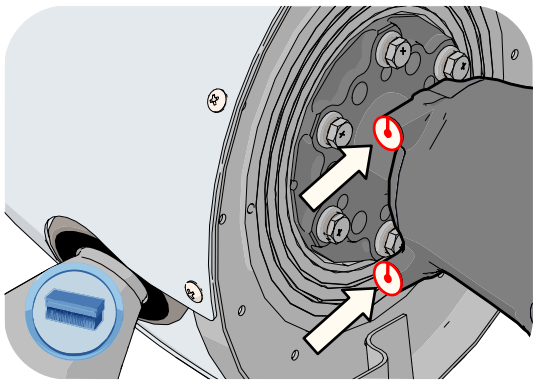
3. PROCEDURE

3.1 Mount Sensor-Brush Bracket (Rotax Standard)

PROCEDURE

Step 1 Clean Gearbox Mounting Holes

- Clean (2) mounting holes and surface surrounding the boss located on the right-side (facing engine) of the Rotax gearbox.



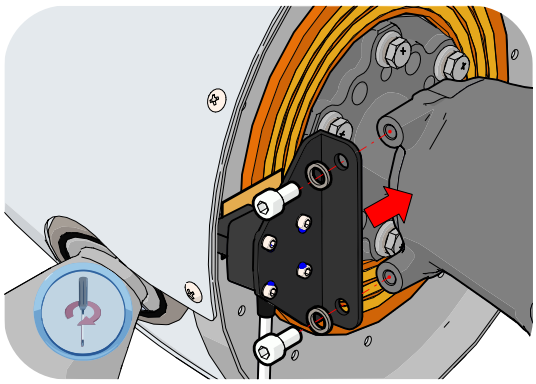
Caution
Any paint or debris left remaining in this area may lead to misalignment of the brushes and sliprings.

Attention *Cleaning agent, Paper towel*

Step 2 Mount Sensor-Brush Bracket

- Mount sensor-brush bracket (*P0259*) to Rotax gearbox using (2) M8 cap screws (*P0093*) and Nord-Lock® washer pairs (*P0310*).

Caution
While the sensor-brush assembly is positioned, use a piece of card to compress the brushes as they slide across the propeller's slipring assembly. These brushes are very delicate, and side-loading should be avoided.



- Torque cap screws to **20Nm (15ft-lbs)**.
- Indicate with torque-seal.

Note
There is no requirement to lock-wire cap screws when Nord-Lock® washers are used. Refer to correct use of Nord-Lock® washers.

Attention
6mm Hex key, Torque Wrench (6mm Hex Bit), Torque-seal

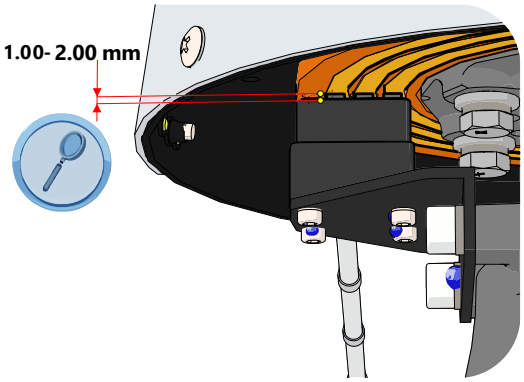
3.2 Check Sensor-Brush Installation

PROCEDURE

Step 1 Check Sensor-Brush Block Stand-Off

- Check distance from front of brush block to sliprings does not exceed **1-2mm (0.08in)**.

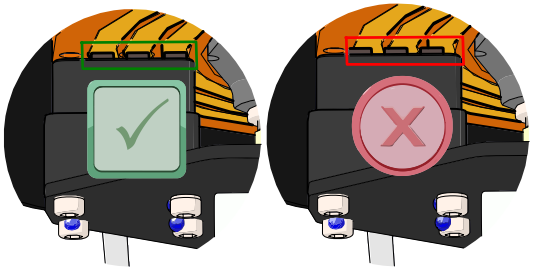
Note
If this condition is not met, small modifications to the mounting bracket may be required. A round file may be used to elongate the bracket mounting holes to correct brush stand-off.



Step 2 Check Sensor-Brush Block Alignment

- Check carbon brushes align centrally with their respective sliprings and do not overlap.

Note
If this condition is not met, small modifications to the mounting bracket may be required. A round file may be used to elongate the bracket mounting holes to correct brush alignment.



Step 3 Check for Electrical Shorts

- Check there is no electrical continuity between each brush/slipring and the sensor-brush mounting bracket/ground (>1kΩ).

Attention
Digital multimeter (with probes)

3.3 Subsequent Action

Perform the following tasks once this procedure is complete:

- Connect sensor-brush assembly cable to extension loom (*A0125-x*). This loom is routed through the engine bay and connected to the controller [CN2].