REVISION	CHANGE	APPROVED	DATE
1	Published release	JTS	26/11/2025

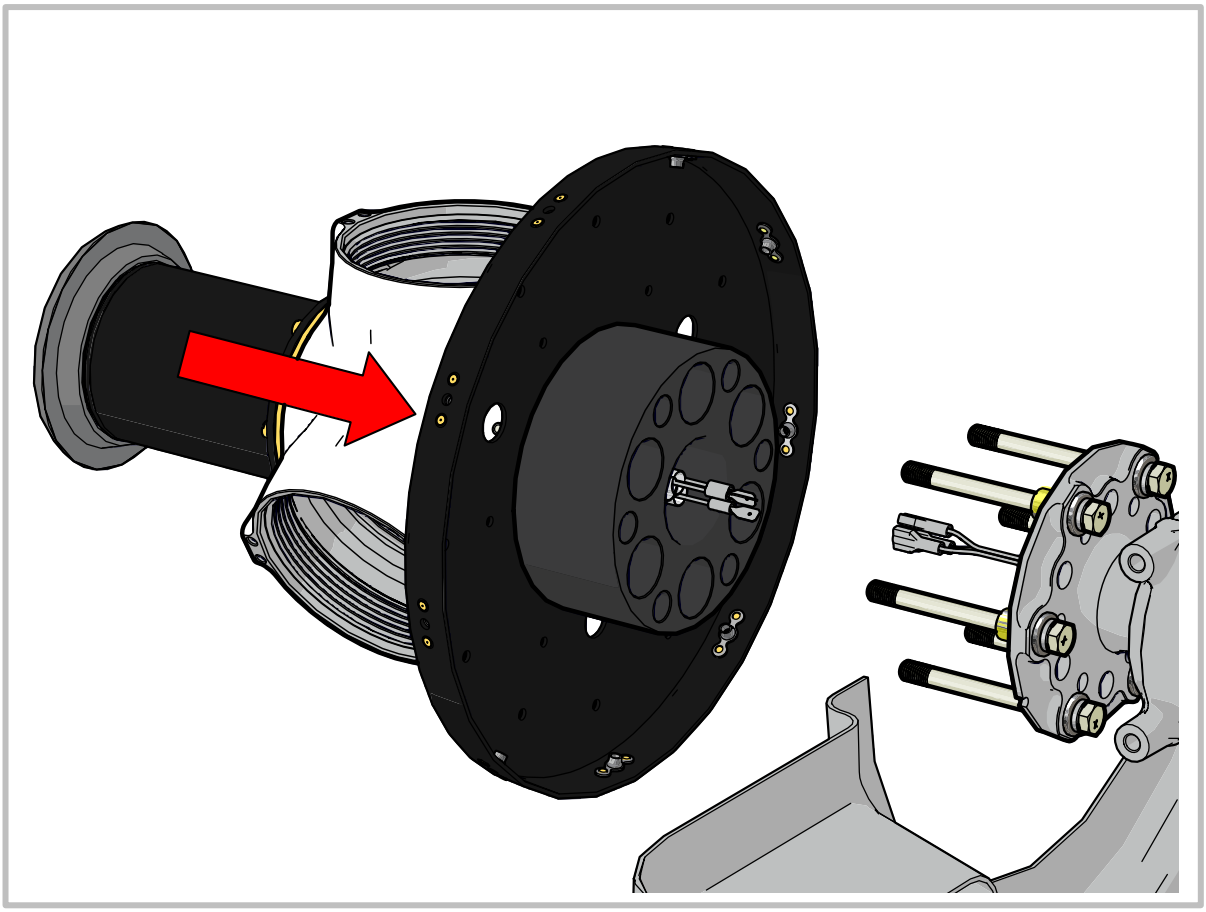
Airmaster Propellers Ltd
20 Haszard Rd, Massey,
Auckland 0614, NZ

Phone: (+64) 9 833 1794
E-mail: support@propellor.com
Web: www.propellor.com

ASI-4-4-2

HUB INSTALLATION (WITH SPACER)

PROCEDURE



SUBJECT:	
Hub Installation	
ASSEMBLY NO:	**APPLICABILITY:**
AH-xxx | AE-xSx	All propellers using a spacer kit assembly

1. TOPIC

1.1 Introduction

This document covers the procedure for mounting an Airmaster propeller hub to the engine flange in cases where a spacer assembly is used.

Airmaster offer several types of spacer assemblies. Generally, spacers that are 0.75 inches or longer must be pre-fitted to the propeller hub, where both assemblies are mounted to the engine flange simultaneously. Otherwise, spacers shorter than 0.75 inches are mounted to the engine flange first and the hub is mounted afterwards.

Some spacer assemblies incorporate electrical wiring (such as when a standard slipring assembly is used), while others do not (such as when a mini slipring assembly is used). Installers should follow the steps applicable for their specific setup.

1.2 Prerequisites

Complete the following tasks before proceeding:

- If applicable, replace OEM engine flange with the Airmaster-supplied engine flange.

> *Note*
> *Currently this only applies to some Jabiru engines. The Jabiru flange is replaced with the Airmaster-supplied flange in accordance with procedure* ***ASI-4-1-1***.

- If applicable, remove OEM threaded drive lugs from engine flange in accordance with procedure ***ASI-4-1-2***. Replace with alternative Airmaster-supplied drive lugs in accordance with procedure ***ASI-4-1-3***.

> *Note*
> *For spacer assemblies greater than 0.75in, there may be insufficient clearance available to pass the hub mounting bolts through the Airmaster drive lugs once these are installed. This should be checked beforehand. If this condition applies, both parts should be installed simultaneously in accordance with the alternative method covered in* ***ASI-4-1-3***.

- Prepare engine flange for propeller installation in accordance with procedure ***ASI-4-1-4***.
- If applicable, install mini slipring assembly in accordance with procedure ***ASI-4-3-1*****.**
- If applicable, (i.e. if spacer is greater than 0.75in), attach spacer assembly to hub in accordance with procedure ***ASI-4-2-1***.
- If applicable, attach standard slipring assembly to spacer assembly in accordance with procedure ***ASI-4-3-2-2***.

2. MATERIAL REQUIREMENTS

2.1 Parts

ITEM	QTY	PART NO.	DESCRIPTION	IMAGE
1.	1	AE-xSx	Airmaster Spacer Assembly	
2.	1	AH-xxx	Airmaster Hub Assembly	
3.	As required	AR-RM(E)	Airmaster Mini Slipring Assembly	

2.2 Tooling

ITEM	QTY	DESCRIPTION	IMAGE
1.	1	Torque Wrench (1/2” Socket) **Size requirements may vary*	
2.	As required	Crow’s Foot Extension (1/2”) **Size requirements may vary*	
3.	As required	Heat Gun	

2.3 Consumables

ITEM	QTY	DESCRIPTION	IMAGE
1.	As required	Anti-Seize Compound (Paste) *(e.g. Duralac, Tef-Gel, Loctite® Moly-50)*	
2.	As required	Cleaning Agent (Non-Corrosive) *(e.g. Loctite® SF 7063, Methylated Spirits)*	
3.	As required	Paper Towels, Clean Cloth (or similar)	
4.	As required	Small Paintbrush (Glue Brush)	
5.	As required	Torque-Seal	

2.4 Paperwork

ITEM	QTY	CODE	DESCRIPTION
1.	1	AE-xSx	Airmaster Spacer Kit Assembly Drawing & BoM
2.	1	AH-xxx	Airmaster Hub Assembly Drawing & BoM
3.	1	As applicable	Control System Circuit Diagram

2.5 PPE

ITEM	QTY	DESCRIPTION	IMAGE
1.	As required	Protective Gloves	

3. PROCEDURE

WARNING

Ensure that aircraft power is turned off throughout this procedure, especially before rotating the engine flange.

WARNING

Take care when working with the engine flange. Any damage observed at this region should be considered highly significant and advice from the engine manufacturer should be sought.

Caution

The OEM threaded drive lugs (engine flange) provided by the engine manufacturer should be replaced with the alternative Airmaster drive lugs supplied with the spacer kit assembly.

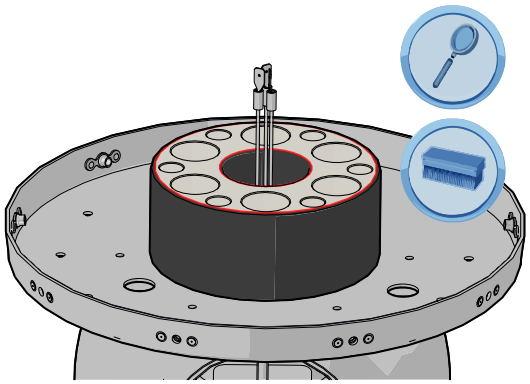
3.1 Preparation

PROCEDURE

Step 1 Prepare Hub / Spacer Assembly

- Verify that all prerequisites are complete.
- Clean mounting face of spinner backplate (or spacer assembly if this is pre-fitted to the hub).
- Inspect this area for damage or defect.

Attention *Cleaning agent, Paper towels*



Step 2 Protect Drive Lugs

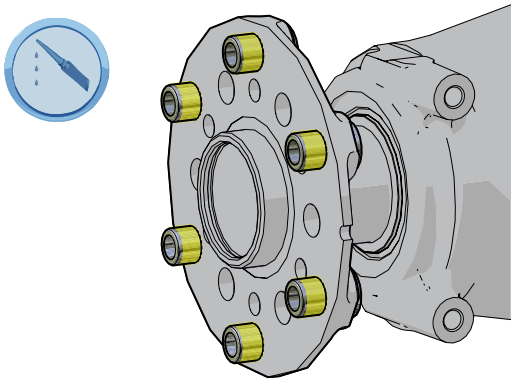
- Apply a light film of anti-seize compound to the engine flange drive lugs for corrosion protection.

Caution *See approved anti-seize compounds.*

Caution

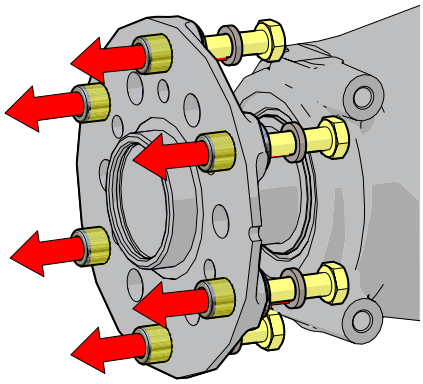
If hub mounting bolts are pre-inserted through engine flange, ensure that no anti-seize compound transfers to bolt threads, these must remain clean and dry for correct torque and clamping.

Attention *Anti-seize compound, Brush*



Step 3 Insert Hub Mounting Bolts

- Insert (6) hub mounting bolts with Nord-Lock® washer pairs through the engine flange drive lugs (from engine-side).



> ⚠ ***Caution***
> *Ensure that no anti-seize compound transfers to bolt threads, these must remain clean and dry for correct torque and clamping.*

> ⓘ *Note*
> *Refer to correct use of Nord-Lock® washers.*

> ⓘ *Note*
> *For spacers greater than 0.75 inches, there may be insufficient clearance behind the engine flange to insert the hub mounting bolts through the drive lugs once they are installed. In such case, both parts must be installed simultaneously using the alternative method shown in **ASI-4-1-3**.*

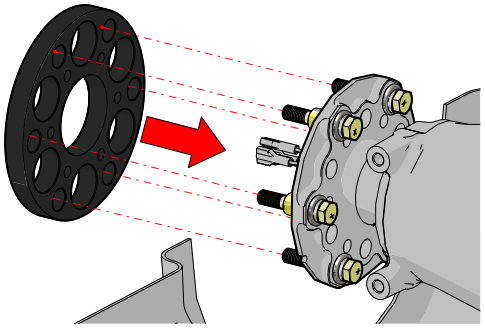
3.2 Fit Short Spacer to Engine Flange (As Required)

> ⓘ *Note*
> *This task only applies when the spacer is not pre-fitted to the propeller hub (i.e. spacer <0.75in).*

PROCEDURE

Step 1 Mount Spacer to Engine Flange

- Fit spacer over engine flange drive lugs.



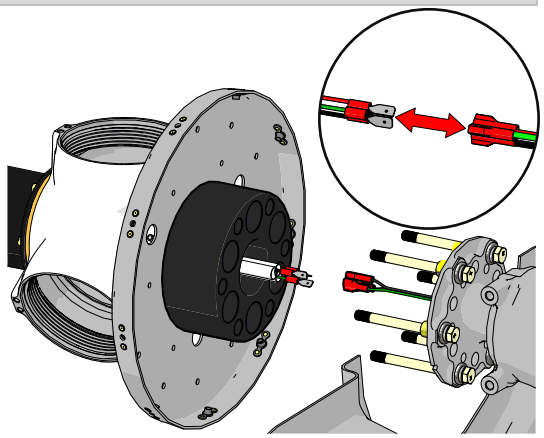
3.3 Connect Wiring (As Required)

> **Note**
> *This task only applies when a mini slipring assembly is used. It is easiest to perform with two people.*

PROCEDURE

Step 1 Connect Hub Wiring

- **Person 1:**
  Support hub assembly with two hands.
- **Person 2:**
  - Slide a 50mm tube of heat shrink (*P2041-50*) over each hub wire.
  - Connect hub and mini slipring assembly spade terminals of matching wire colour.

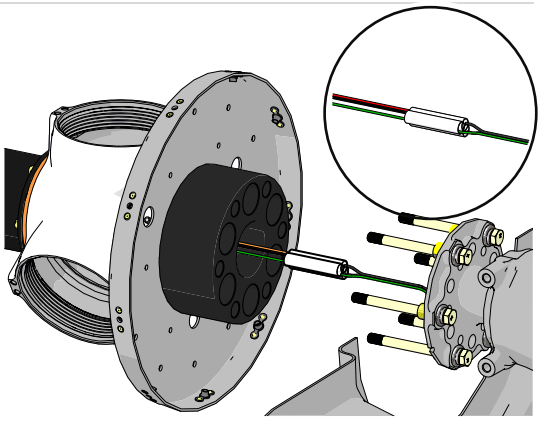


Step 2 Secure Heat Shrink

- Slide the heat shrink tubes over the terminal connections.
- Shrink the tubes in place.

> **Caution**
> *Take care not to apply excessive or prolonged heat as this can melt the wire insulation.*

Attention *Heat gun*



3.4 Mount Hub to Engine Flange

PROCEDURE

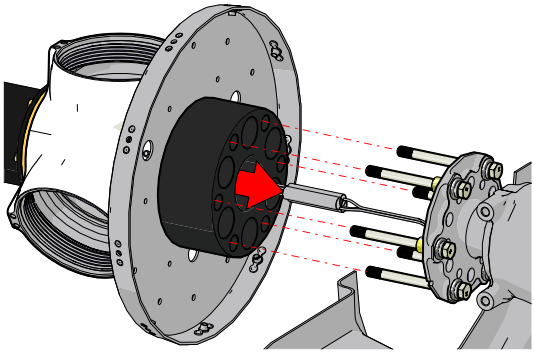
Step 1 Locate Hub Assembly

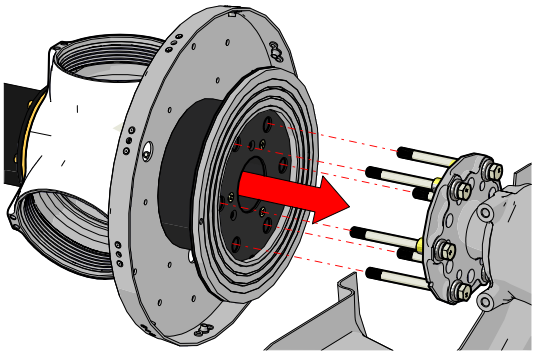
- Locate hub/spacer assembly over engine flange drive lugs and push into place.

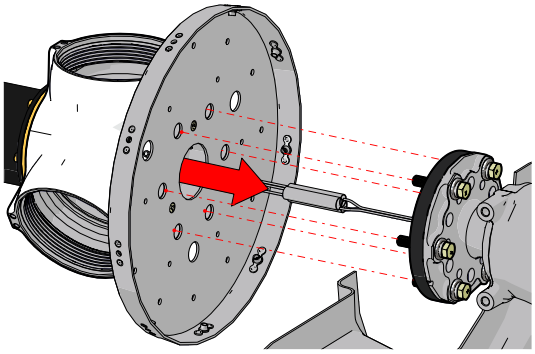
> *Note*
> *Arrange any excess wiring into the centre recess to prevent obstruction between mating faces.*

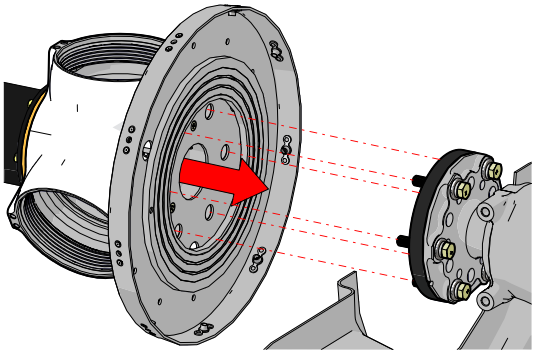
- Check the assembly is fully seated and square with mounting face of engine flange.

> *Note*
> *Various combinations of spacer and slipring assembly types are shown from top to bottom as follows:*
>
> *(i.) Pre-fitted spacer assembly (≥0.75in) with mini slipring assembly.*
>
> *(ii.) Pre-fitted spacer assembly (≥0.75in) with standard slipring assembly.*
>
> *(iii.) Non-fitted spacer assembly (<0.75in) with mini slipring assembly.*
>
> *(iv.) Non-fitted spacer assembly (<0.75in) with standard slipring assembly.*





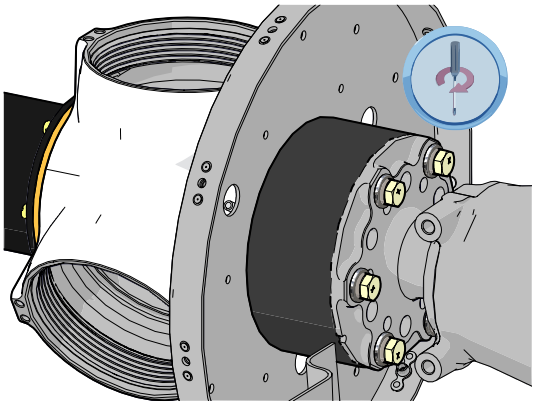




Step 2 Attach Hub Assembly

- Attach hub to engine flange by fastening (6) mounting bolts hand tight.

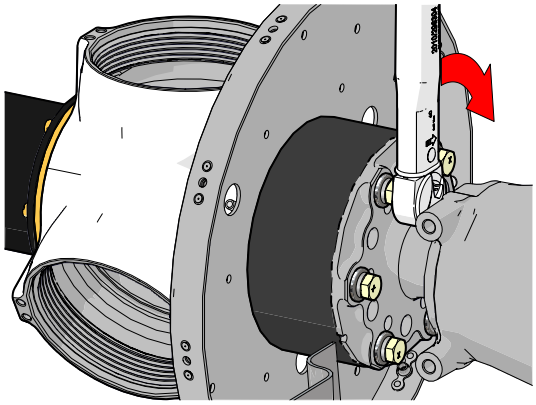
> *Note*
> *Refer to correct use of Nord-Lock® washers.*



Step 3 Torque Bolts

- Torque hub mounting bolts in increments and in sequence of opposing pairs:

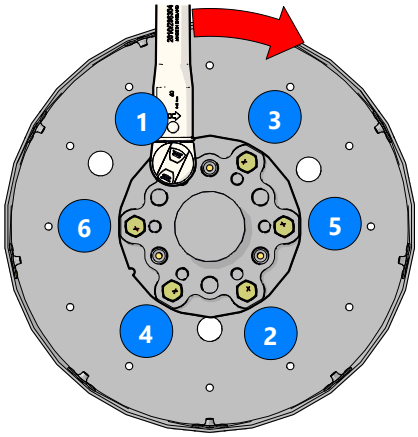
BOLT SIZE	TORQUE [NM]	TORQUE [FT-LBS]
AN5 (5/16in or M8)	24	18
AN6 (3/8in)	42	31
AN7 (7/16in)	66	49
AN8 (1/2in)	103	76



> ***Caution***
> *Do not over-tighten bolts as this may damage the hub's threaded inserts.*

> *Note*
> *A crow's foot extension (or similar) may be used if insufficient clearance is available for the head of the torque wrench. Fit crow's foot 90°offset to the torque wrench to maintain correct torque setting.*

> *Attention*
> *Torque wrench (Crow's foot extension)*



Step 4 Check Bolt Fastening Method

- Verify that Nord-Lock® washer pairs are correctly fitted to all (6) hub mounting bolts.

> *Note* *For more information on the correct use of Nord-Lock® washers, refer to **ASI-3-2-3**.*

  - If Nord-Lock® washers are not used, these bolts must be lock-wired. Drill out the head of each mounting bolt if necessary and secure with 0.032" lock-wire following standard aviation methods and practices.

- Mark bolts with torque-seal (or similar)

> *Attention* *Twist Pliers, 0.032" S.S lock-wire, Wire cutter, Torque-seal*

3.5 Subsequent Action

Perform the following tasks once this procedure is complete:

- Lubricate hub and blade assemblies in accordance with procedure ***ASI-4-5***.
- Install blade assemblies in accordance with procedure ***ASI-4-6***.