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

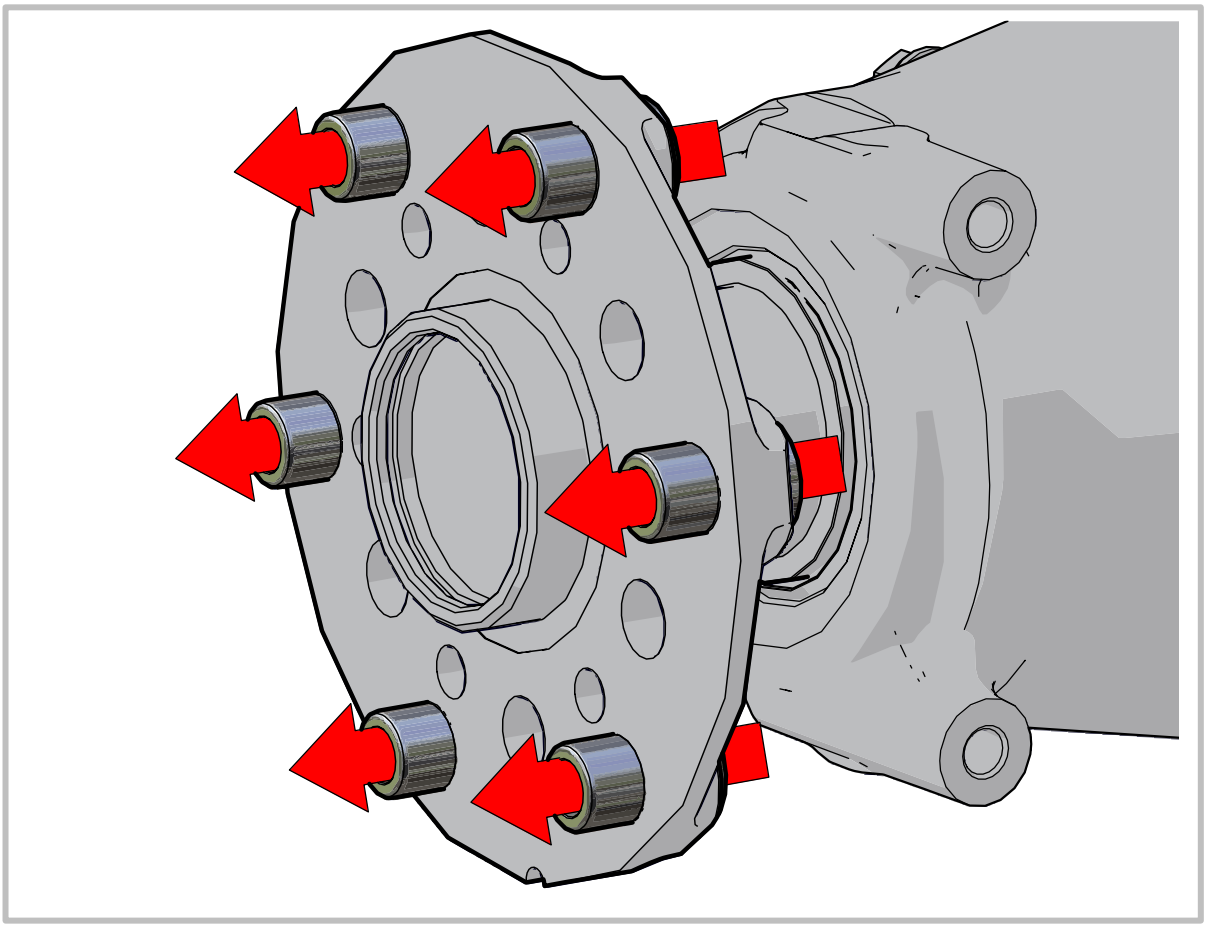
Airmaster Propellers Ltd
20 Haszard Rd, Massey,
Auckland 0614, NZ

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

ASI-4-1-3

DRIVE LUG INSTALLATION

PROCEDURE



SUBJECT:	
Mount Kit Installation	
ASSEMBLY NO:	**APPLICABILITY:**
AE-xxx	All propeller models excluding some which use an extension kit assembly

1. TOPIC

1.1 Introduction

This document covers the procedure for installing Airmaster drive lugs into the engine flange.

In some cases (e.g. for spacers assemblies greater than 0.75in, or extension assemblies incorporating non-threaded drive lugs), there is insufficient clearance behind the engine flange to pass the mounting bolts through the drive lugs once they have been inserted into the engine flange. As a result, an alternative method must be used to install the drive lugs and mounting bolts simultaneously. Installers should check whether this applies before installing the drive lugs; by checking there is sufficient clearance behind the engine flange to pass the mounting bolts through the rear. Installers should refer to the method that is applicable for their setup.

1.2 Drive Lug Requirements

The engine flange is often fitted with drive lugs to locate the propeller hub and transmit power to it. In some cases, the drive lugs supplied by the engine manufacturer should be removed from the engine flange and replaced with alternative drive lugs supplied for use with an Airmaster propeller.

When applicable, the propeller's mount kit assembly (AE-*xxx*) includes alternative Airmaster drive lugs, and a drive lug replacement kit may be provided for this purpose. A variety of bolts, nuts, washers, and spacers are supplied with the drive lug replacement kit to match with possible configurations of existing drive lugs. The drive lug replacement kit is a multi-purpose tool, and not all parts are used at once.

> ⓘ *Note* *The drive lug removal procedure is covered separately in **ASI-4-1-2**.*

1.3 Prerequisites

Complete the following tasks before proceeding:

- If applicable, replace OEM engine flange with 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 required, remove OEM threaded drive lugs from engine flange in accordance with procedure ***ASI-4-1-2***.

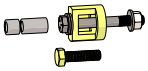
> ⓘ *Note*
> *In some cases (sometimes when an extension kit assembly is incorporated), the OEM threaded drive lugs do not need to be replaced and should remain installed for use with the Airmaster propeller.*

- If a spacer assembly is incorporated, check whether there is sufficient clearance behind the engine flange to pass the hub mounting bolts through the drive lugs after they are fitted. If not, refer to the alternative method provided.

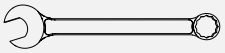
> ⓘ *Note*
> *For Rotax engines, this alternative method typically applies for spacers that are greater than 0.75in.*

2. MATERIAL REQUIREMENTS

2.1 Parts

ITEM	QTY	PART NO.	DESCRIPTION	IMAGE
1.	6	As applicable	Airmaster Drive Lug	
2.	1	A0210-*x* or A0211-x	Airmaster Drive Lug Replacement Kit	

2.2 Tooling

ITEM	QTY	DESCRIPTION	IMAGE
1.	2	Spanner *(1/2" or 9/16" depending on flange type*)	

2.3 Consumables

ITEM	QTY	DESCRIPTION	IMAGE
1.	As required	Anti-Seize Compound *(e.g. Duralac, Tef-Gel, Loctite® Moly-50)*	
2.	As required	Cleaning Agent (Non-Corrosive) *(e.g. Loctite® SF 7063, Methylated Spirits)*	

2.4 Paperwork

ITEM	QTY	CODE	DESCRIPTION
1.	1	AE-*xxx*	Airmaster Mount Kit Assembly Drawing & BoM

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 and inspect its condition closely. Any damage observed at this region should be considered highly significant and the engine manufacturer's advice should be sought immediately.

3.1 Insert Airmaster Drive Lug (Standard Method)

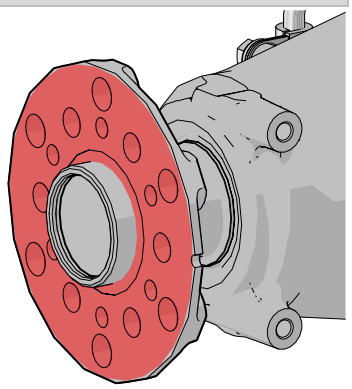
Note

This method applies when there is sufficient clearance available behind the engine flange to pass the hub mounting bolts through the Airmaster drive lugs after they are inserted into the engine flange.

PROCEDURE

Step 1 **Preparation**

- Verify that all prerequisites are complete.
- Remove any grease, debris, or oil from the mounting holes and face of the engine flange.
- Carefully inspect engine flange for damage or defect (e.g. nicks and burrs).

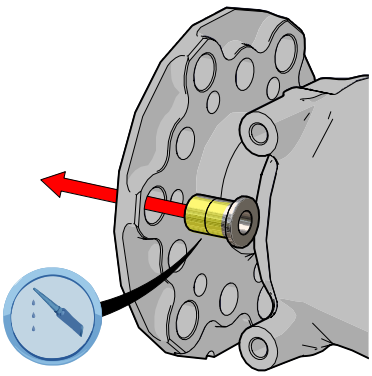


Step 2 **Partially Seat Drive Lug**

- Clean outer surface of drive lug.
- Apply a thin film of anti-seize compound (e.g. Duralac) to outer surface of drive lug.
- Partially seat the drive lug into one of the engine flange mounting holes (from engine-side).

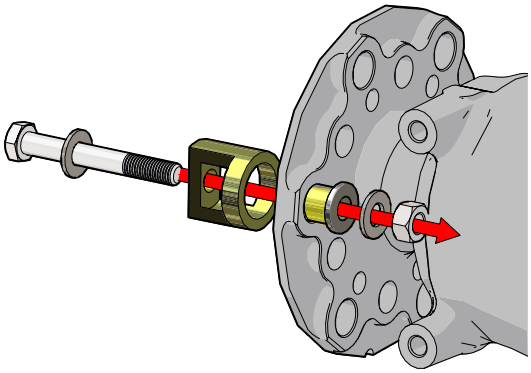
Attention

Cleaning agent, Anti-seize compound



Step 3 Assemble Drive Lug Replacement Kit

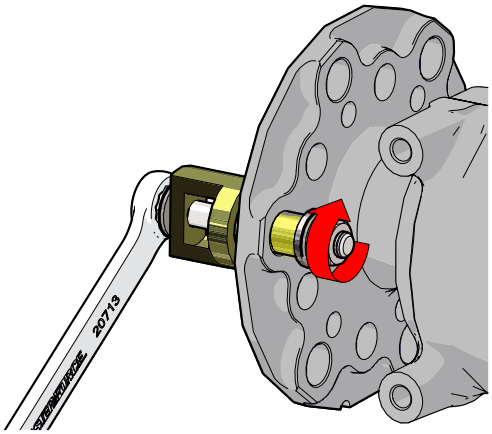
- Assemble drive lug replacement kit through the partially inserted drive lug as shown, using the 2.5in bolt provided.



> *Note*
> *Typically, this is as a 5/16 UNF bolt (P3303-2.5) for Rotax flanges, or a 3/8 UNF bolt (P3304-2.5) for SAE-1/SAE-2 flanges. Exceptions may apply.*

Step 4 Insert Drive Lug

- Restrain bolt head with a spanner to prevent it rotating during the insertion process.
- Gradually tighten nut until drive lug seats home (lip of drive lug contacts engine flange).

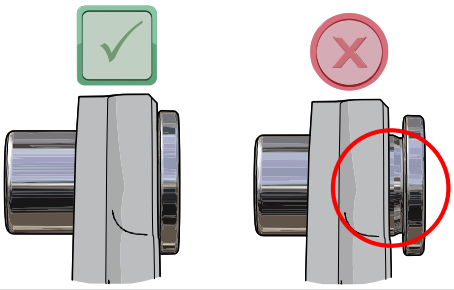


> *Note*
> *Due to the short, threaded section of the bolt, the spacer(s) supplied with the drive lug replacement kit may need to be assembled beneath the bolt head during the insertion process to ensure that the nut maintains sufficient thread engagement.*

> *Attention*
> *For 5/16 UNF bolt: use ½" Spanners*
> *For 3/8 UNF bolt: use 9/16" Spanners*

Step 5 Check Drive Lug Seating

- Check drive lug is inserted flush against rear face of engine flange and there is no gap.



> *Note*
> *A feeler gauge may be used to verify this.*

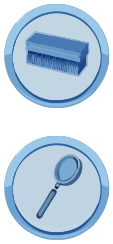
3.2 Insert Airmaster Drive Lug with Long Bolt (Alternative Method)

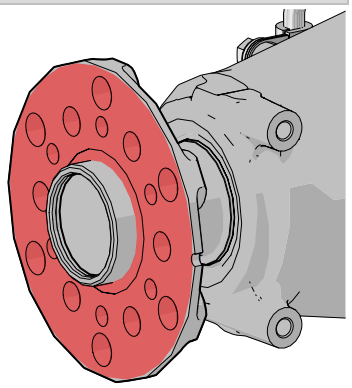
> **Note**
> *This method applies when there is insufficient clearance behind the engine flange to pass the hub mounting bolts (or extension assembly mounting bolts) through the Airmaster drive lugs after these are inserted into the engine flange. This typically applies when a spacer assembly greater than 0.75in is used on a Rotax engine, or an extension assembly incorporating non-threaded drive lugs is used.*

PROCEDURE

Step 1 Preparation

- Verify that all prerequisites are complete.
- Remove any grease, debris, or oil from the mounting holes and face of the engine flange.
- Carefully inspect engine flange for damage or defect (e.g. nicks and burrs).





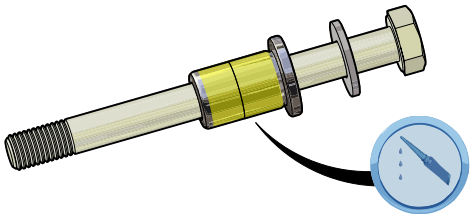
Step 2 Assemble Bolt, Washer, Drive Lug

- Assemble mounting bolt, Nord-Lock® washer pair, and Airmaster drive lug.
- Clean outer surface of drive lug.
- Apply a thin film of anti-seize compound (e.g. Duralac) to outer surface of drive lug.

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

> **⚠ Caution**
> *Avoid any anti-seize compound on bolt threads.*

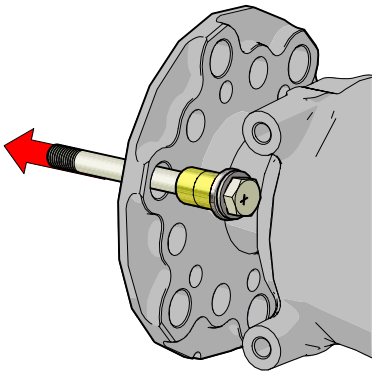
> **Attention**
> *Cleaning agent, Anti-seize compound*



Step 3 Partially Seat Drive Lug

- Hold assembled parts at an angle and slide the bolt through one of the mounting holes in the engine flange (from the rear).
- Partially seat drive lug into mounting hole.

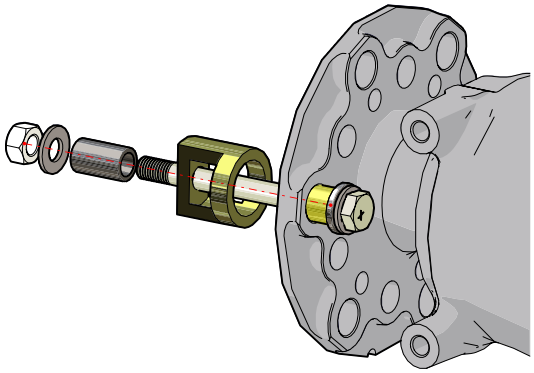
> **Note**
> *The engine flange may need to be rotated to a position that offers sufficient clearance to pass the bolt through from the rear. This may be the 3 o'clock position for some Rotax engines.*



Step 4 Assemble Drive Lug Replacement Kit

- Assemble drive lug replacement kit over partially inserted bolt as shown.

> *Note*
> *The correct combination of different length spacer(s) and washer(s) should be chosen to allow the nut to maintain sufficient thread engagement with the bolt.*

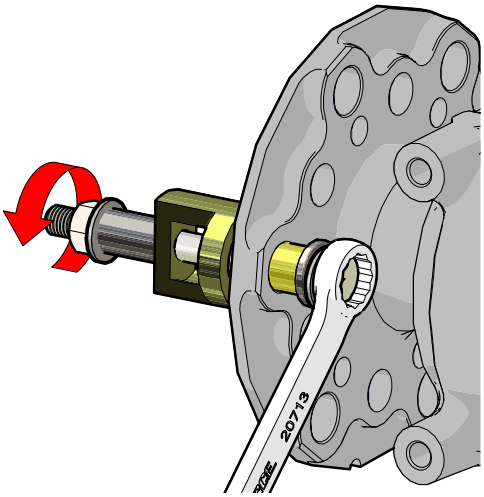


Step 5 Insert Drive Lug

- Restrain bolt head with spanner to prevent it rotating during insertion process.
- Gradually tighten nut to insert drive lug into engine flange until there is insufficient bolt thread available for further insertion.

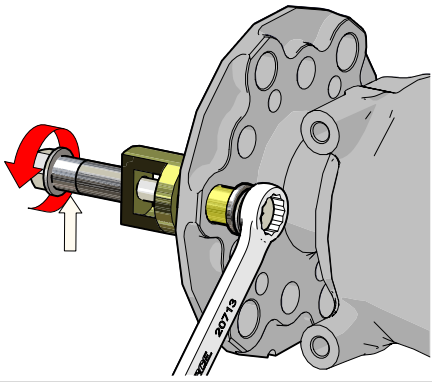
> ***Caution***
> *Do not tighten nut beyond the threaded section of the bolt. This process must be performed in two stages.*

> *Attention*
> *For 5/16 UNF bolt: use (2) ½" spanners*
> *For 3/8 UNF bolt: use (2) 9/16" spanners*



Step 6 Assemble Spacer

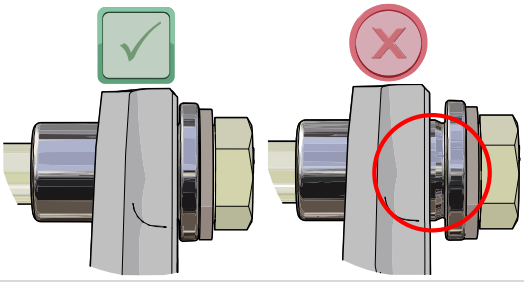
- Assemble spacer(s) as necessary to ensure that nut maintains sufficient thread engagement.
- Continue tightening nut until drive lug seats home (lip of drive lug contacts engine flange).



Step 7 Check Drive Lug Seating

- Check drive lug is inserted flush against rear face of engine flange and there is no gap.

> *Note*
> *A feeler gauge may be used to verify this.*



3.3 Subsequent Action

Perform the following tasks once this procedure is complete:

- Repeat this procedure to install all remaining Airmaster drive lugs (and hub mounting bolts if the alternative installation method is required) into the engine flange.
- Prepare engine flange for propeller installation in accordance with procedure ***ASI-4-1-4***.