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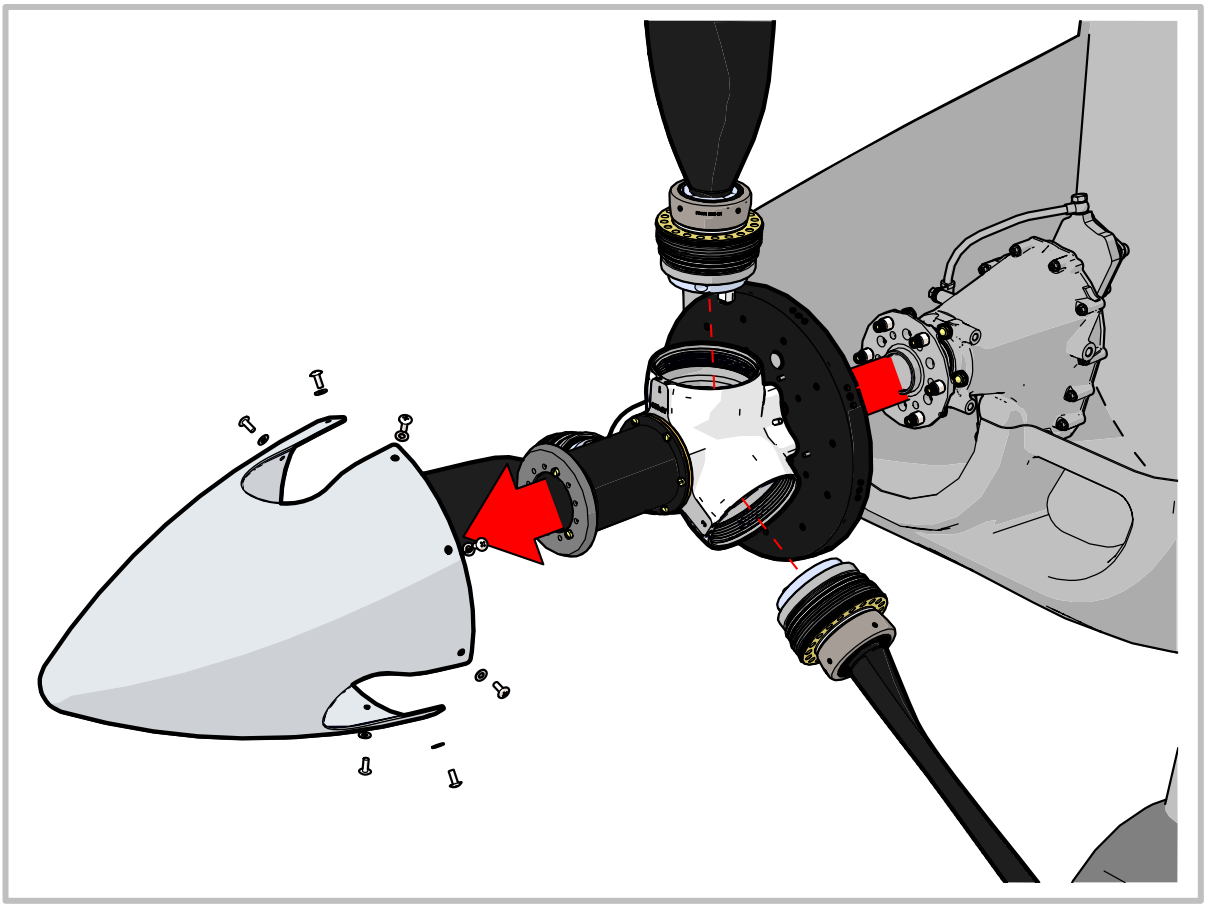
ASI-7-6

PROPELLER REMOVAL

PROCEDURE



SUBJECT:	
Propeller Removal	
ASSEMBLY NO:	**APPLICABILITY:**
AH-xxx | AE-xx0	All propeller models excl AP332(S)

1. TOPIC

1.1 Introduction

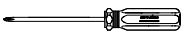
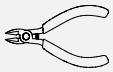
This document covers the recommended procedure for removing an Airmaster propeller from the engine flange. It is recommended that operators refer to the relevant assembly drawings to familiarise themselves with how the propeller is assembled. The blade assembly removal task in this procedure does not apply for AP332(S) propeller models.

2. MATERIAL REQUIREMENTS

2.1 Parts

ITEM	QTY	PART NO.	DESCRIPTION
1.	1	AP-xxx	Complete Airmaster Propeller System

2.2 Tooling

ITEM	QTY	DESCRIPTION	IMAGE
1.	1	Breaker Bar (1/2” Socket) **Size requirements may vary*	
2.	As required	Crow’s Foot Extension (1/2”) **Size requirements may vary*	
3.	1	Airmaster Blade Spanner (AT-x)	
4.	1	PH2 Screwdriver	
5.	1	Wire Cutter	
6.	1	Flathead Screwdriver	
7.	2 (As required)	Long-Nose Pliers	

2.3 Paperwork

ITEM	QTY	CODE	DESCRIPTION
1.	1	AS-xxx	Airmaster Spinner Assembly Drawing & BoM
2.	1	AB-xxx	Airmaster Blade Assembly Drawing & BoM
3.	1	AH-xxx	Airmaster Hub Assembly Drawing & BoM
4.	1	AE-xxx	Airmaster Mount Kit Assembly Drawing & BoM
5.	1	AR-xxx	Airmaster Slipring Assembly Drawing & BoM

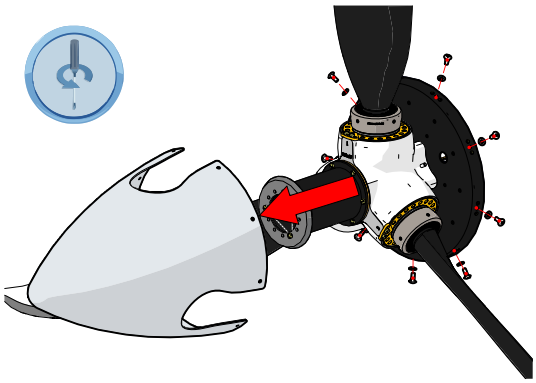
3. PROCEDURE

3.1 Remove Spinner Cone

PROCEDURE

Step 1 Remove Spinner Cone

- Carefully remove all truss-head screws (*P0150*) and fibre washers (*P0175*) securing spinner cone, in sequence of opposite pairs. Set aside.
- Withdraw spinner cone from backplate. Set aside.



Note
Do not remove spinner front support from motor cap.

Caution
Polished spinner cones are easily marked. Take care when handling.

Attention *PH2 Screwdriver*

3.2 Remove Blade Assemblies

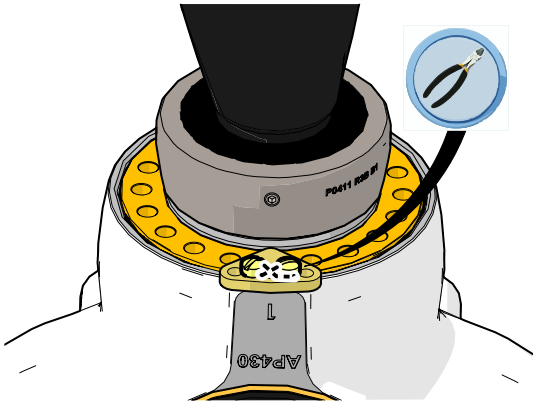
Note
The following blade removal procedure is slightly different for AP332(S) propeller models which utilize an alternative blade locking mechanism. Notes are provided in steps 1 and 2 to describe these differences, while the subsequent blade removal steps remain applicable.

Note
Complete the following procedure for one blade assembly at a time.

PROCEDURE

Step 1 Remove Lockwire

- Remove lockwire securing (2) panhead screws (*P0107*). Scrap



Caution
Lock wire can be sharp. Take care when handling.

Note
This step is not applicable for AP332 models.

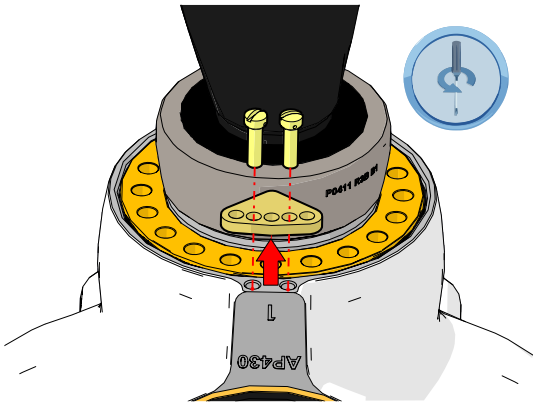
Attention *Wire Cutter, Pliers*

Step 2 Remove Blade Locking Mechanism

- Remove (2) panhead screws. Set aside.
- Withdraw retention nut securing plate (*P0442*). Set aside.

Attention
Flathead Screwdriver, 3/32 Hex key (AP332 only)

Note
AP332 models do not use a retention nut securing plate. Instead, retract the (4) 10-32 UNC set screws so they sit approx. 4mm proud of the retention nut. Insert the two holes in the blade spanner into any adjacent pair of these set screws to remove or install the blade assemblies.



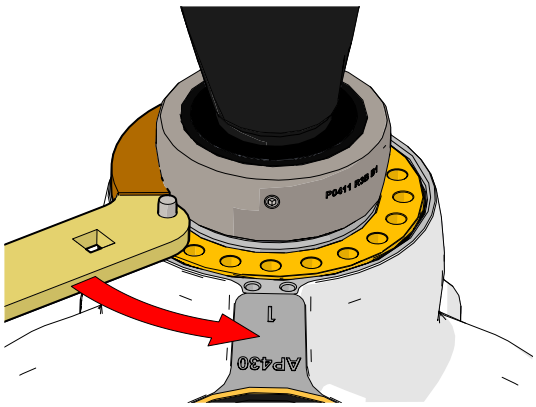
Step 3 Partially Loosen Retention Nut

- Fit blade spanner into retention nut.
- Loosen retention nut counterclockwise by two turns, or until the retention nut approaches the underside of the ferrule nut, ensuring both parts don't contact.

Caution
Use one hand to support the head of the spanner against the retention nut while loosening, to prevent the spanner from slipping out and causing damage.

Note
A torque wrench (or similar means of torque extension using a 3/8" square drive) may be required to overcome the initial locking force of the retention nut seal. Alternatively, use your palm to firmly knock the spanner CCW while supporting head of spanner.

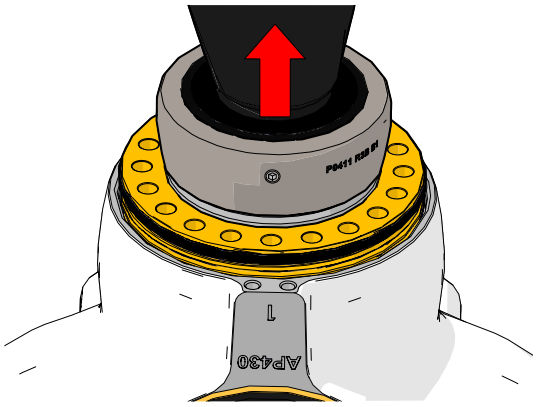
Attention *Blade Spanner*



Step 4 Release Alignment Bearing

- Hold blade approximately halfway along its length with two hands.
- Carefully wriggle the blade fore/aft whilst applying an outward force to release the blade's alignment bearing from inside the hub.

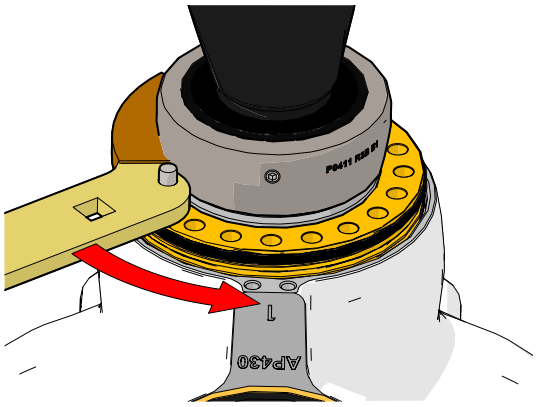
Note
A 'clunk' should be heard when this occurs, and additional clearance should become available between the retention nut and the ferrule nut, thus enabling further loosening of the retention nut.



Step 5 Fully Loosen Retention Nut

- Refit blade assembly spanner into retention nut.
- Continue unwinding retention until threads disengage fully.

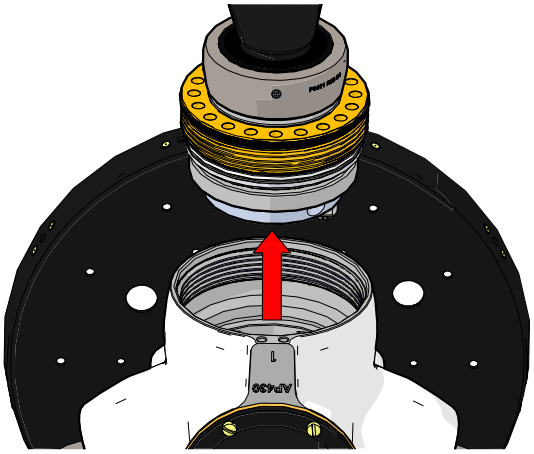
Attention *Blade Spanner*



Step 6 Withdraw Blade Assembly

- Carefully withdraw blade assembly from hub.
- Set aside on a clean, dry surface ensuring that blades are protected from potential damage or contamination of lubricated surfaces.

Note
It is recommended that the blade retention assembly is sealed using cling-wrap (or similar) to protect the lubricated components from contamination with dust, dirt, and moisture.



3.3 Remove Hub Assembly

WARNING *Ensure that power to the propeller is turned off throughout this procedure.*

PROCEDURE

Step 1 Remove Lockwire (As Required)

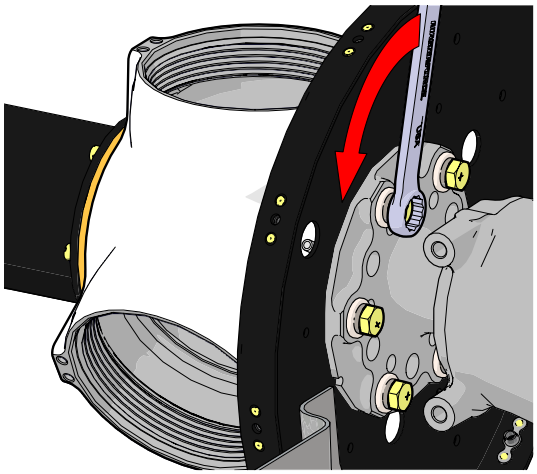
- If present, remove lockwire securing (6) hub mounting bolts. Scrap.

Caution *Lock wire can be sharp, take care when handling.*

Attention *Wire Cutter, Pliers*

Step 2 Loosen Hub Bolts

- Incrementally loosen each hub mounting bolt (in sequence of opposite pairs) by a few threads only, to loosen the hub assembly from the engine flange.



Note
A crow's foot extension may be required to access the hub mounting bolts.

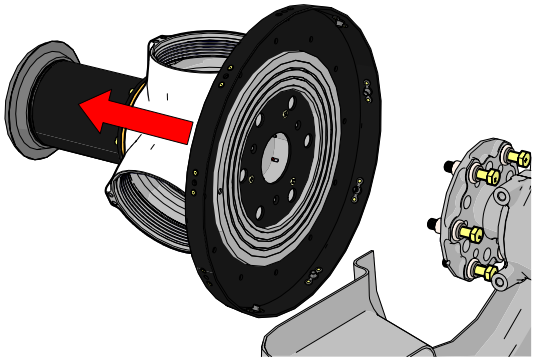
Note
A breaker bar (or similar) may be required to overcome the initial locking force of these bolts.

Note
If the hub is mounted to an extension assembly that is mounted separately to the engine flange, it is recommended that the hub is removed from the extension assembly first.

Attention
Spanner, Crow's Fit Extension, Breaker Bar

Step 3 Remove Hub Assembly

- Sequentially undo (6) bolts whilst restraining the hub assembly against the engine flange.
- Once all bolts are disengaged from the hub, carefully withdraw the hub assembly away from the engine flange in a parallel motion, ensuring it is supported with both hands.
- Set aside hub upright (on backplate).



Caution
Take care not to knock the brush block or side-load the brushes while the hub is removed.

Caution *Hub assembly may be heavy.*

Note
The hub may need to be gently wriggled as it is withdrawn from the engine flange, in order to unseat the central alignment spigot.

Note
It is recommended that the hub ports are sealed using cling-wrap (or similar) to protect the hub from contamination with dust, dirt, and moisture.

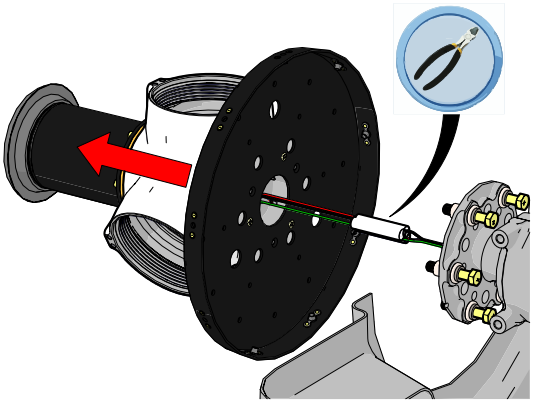
Attention
Spanner, Crow's Fit Extension, Plastic Wrap

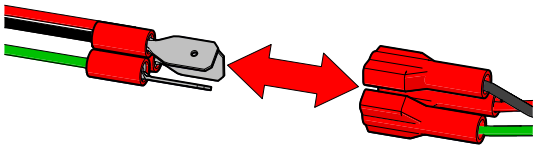
Step 4 Disconnect Wiring (As Required)

- If a mini-slipring assembly is used, the hub and slipring wires must be disconnected before the hub can be completely removed. This step is best performed with two people:
  - **Person 1:**
    Support hub assembly with two hands whilst it is partially removed from the engine flange.

    Ensure that wire connections are accessible but not under strain.
  - **Person 2:**
    Carefully cut along the length of each heat shrink tube (*P2041-50*) covering the hub and slipring wire connectors. Scrap.

    Carefully separate spade connectors.
- Set aside hub upright.





> ***Caution***
> *Take care not to damage wires underneath the heat shrink tubes when slicing.*

> ***Note***
> *Pliers may be useful for separating connectors. Ensure that plier jaws do not damage wires.*

> ***Attention*** *Wire Cutter, Pliers (Qty 2)*