

**QMI, Inc.**  
**18714 Mink Creek**  
**Chugiak, AK 99567**

**Instructions for Continued Airworthiness**

**Manual No. 004**

**Cessna Tail Trim Wheel STC**

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### Record of Revisions

Rev Level	Date	Page	By	Explanation of Revision
IR	10/7/2019	-	Doug Keller	Initial Release
A	11/1/2019		Doug Keller	Changes per AEG

## Distribution of Changes

A current copy of this manual will be maintained on the QMI, Inc. Website  
[www.cessnarepairs.com](http://www.cessnarepairs.com)

### Introduction:

The QMI, Inc. Cessna aluminum trim wheel STC is designed to replace the OEM trim wheel.

### Description:

The QMI, Inc. Cessna aluminum trim wheel is a more durable lower maintenance version of the OEM trim wheel. The OEM trim wheel is manufactured from a phenolic-Bakelite material which is known to deteriorate over time. This deterioration has been known to cause failure in the trim wheel assembly. The QMI, Inc. Cessna aluminum trim wheel is a complete riveted assembly consisting of an aluminum trim wheel, sprocket, and shaft. The OEM trim wheel does not include the sprocket and shaft. The OEM trim wheel, sprocket, and shaft are removable via roll pins. Instructions for installation of this kit are detailed in the QMI, Inc. "Trim Wheel Installation Instructions for Cessna 180, early 182, and 185 Aircraft" which can be found on our web site: [www.cessnarepairs.com](http://www.cessnarepairs.com).

### Airworthiness Limitations

"The Airworthiness Limitations section is FAA approved and specifies maintenance required under 14 CFR, Sections 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved." Limitations: None

### Instruction for Continued Airworthiness:

#### Inspection Criteria

#### 100 Hour / Annual

#### (100 hour or Annual inspection interval, whichever comes first)

1. **Inspect** – The STC installed trim wheel assembly sprocket should be inspected for abnormal or excessive wear. Signs of abnormal sprocket wear include: missing teeth, grooves cut into the side of the sprocket, mis shaped sprocket teeth, if abnormal or excessive wear is noticed check chain alignment and tension. Reference the aircraft service manual for proper cable tensioning and alignment. Contact QMI, Inc. immediately for instructions for replacing the sprocket.
2. **Inspect** – The STC installed AN470AD 3-15 rivets for loosening. Rivet loosening can be spotted by aluminum dust around the head or shop end. If rivet loosening is evident replace the rivet(s).
3. **Inspect** – The trim wheel ratchet for proper interference with the Cessna spring plunger. Reference the aircraft service manual for proper adjustment.

4. **Inspect** –The STC installed NAS561P3-8 roll pin for placement. If not in place notify QMI, Inc. immediately and replace the roll pin.
5. **Lubricate** – The STC trim wheel assembly sprocket per the aircraft service manual.

-END-

# **Trim Wheel Installation Instructions for Cessna 180, Early 182, and 185 Aircraft**

**QMI, Inc.**

**18714 Mink Creek  
Chugiak, AK 99567**

**FAA Project Number: ST022202AK-A**

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## Record of Revisions

Rev Level	Date	Page	Author	Explanation of Revisions
IR	10/04/2019	-	Doug Keller	Initial Release

## Distribution of Changes

A current copy of this manual will be maintained on the QMI, Inc. website.

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## 1 Background

Reports have highlighted issues with the OEM Cessna 180, early 182, and 185 trim wheels. The OEM Cessna trim wheel has a shaft with the trim wheel and sprocket pinned to it separately. There have been many cases where the pin has either sheared or fallen out completely. This has resulted in loss of elevator trim and in some cases run away trim.

Additionally, the OEM trim wheel is made of a Bakelite-Phenolic material which has been known to crack at the spiral indicator grooves. This allows the indicator wire to jump grooves. In addition, this can allow the indicator wire to get caught and wedged between the grooves which could lock the trim wheel making the elevator trim immovable.

QMI, Inc. has come up with a new aluminum replacement elevator trim wheel design that alleviates the above-mentioned OEM trim wheel shortcomings. The QMI Trim wheel design utilizes rivets to fasten the trim wheel to the sprocket ensuring that the two parts do not separate. The trim wheel sprocket assembly is pinned to the shaft, the shear load on the pin is minimized because all the torque is taken up by the rivets that mate the trim wheel and sprocket. The shaft is now free to rotate on the airframe bearings without any torque load. In doing this, the possibility of loss of elevator trim control or runaway trim is greatly reduced.

By manufacturing the trim wheel out of aluminum, the risk of breaking the spiral groove barrier is greatly reduced if not entirely eliminated. This reduces or eliminates the potential of a trim indicator malfunction and a locked elevator trim wheel.

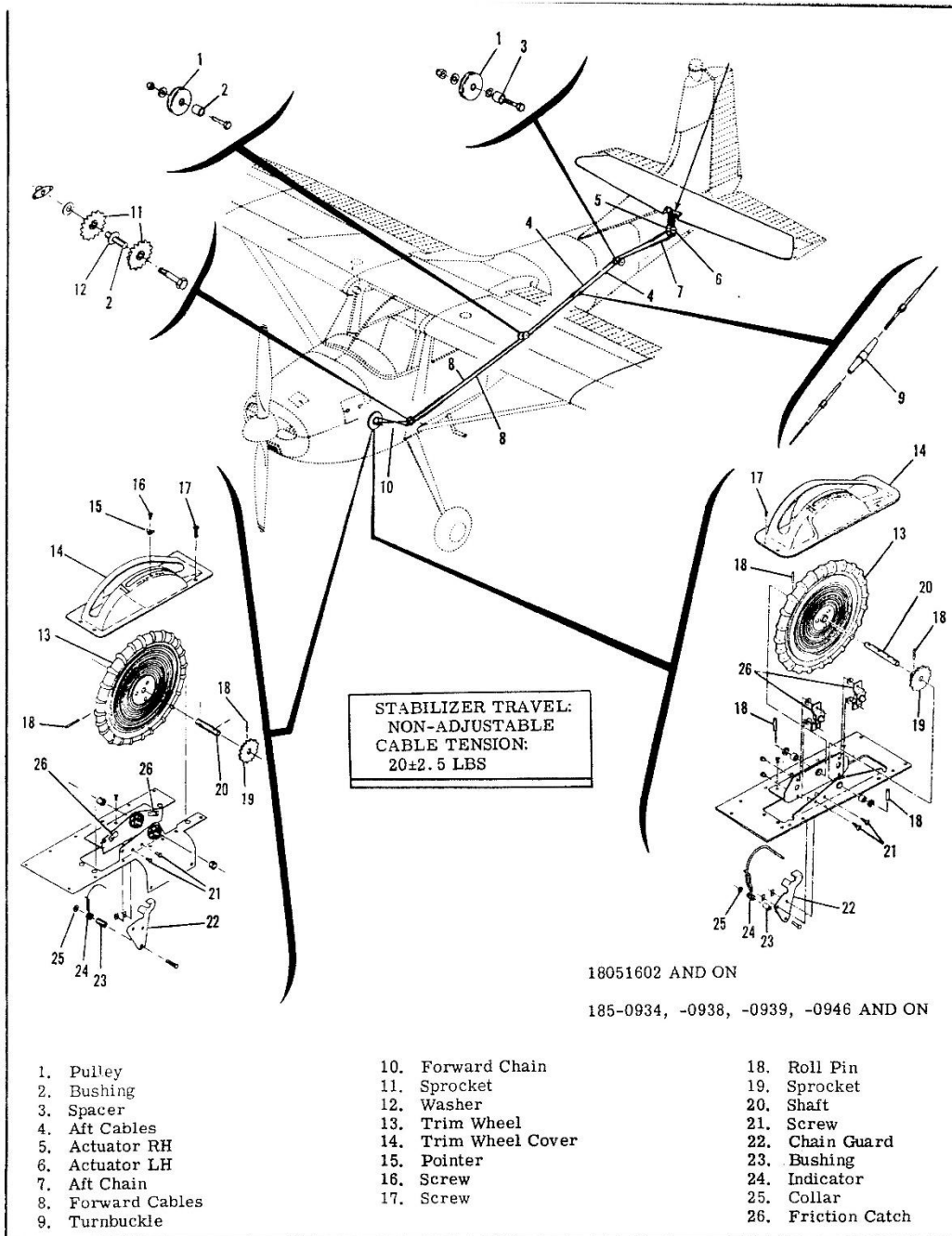
The new QMI aluminum elevator trim wheel is a low-cost direct replacement trim wheel for the ageing Cessna 180, early 182, 185 aircraft fleet.

## 2 Installation Instructions

If the aircraft has the OEM trim wheel in place, it needs to be removed.

1. Disconnect the trim cables at the turnbuckles aft of the baggage compartment.
2. Remove trim wheel cover assembly by removing attaching screws.
3. Remove the screws attaching right bearing support bracket and remove the bracket. On later serial numbered aircraft, remove the roll pins and washers at the ends of the trim wheel shaft to remove the bracket.
4. Remove the trim wheel. Disengage the chain from the sprocket as trim wheel is being removed.

To install the new QMI aluminum trim wheel, reverse the steps above. See the diagram on the next page for clarification:



### 3 Weight and Balance

The QMI aluminum trim wheel STC exchange weight is negligible therefore no changes to the aircraft Weight and Balance is required after installing this STC.

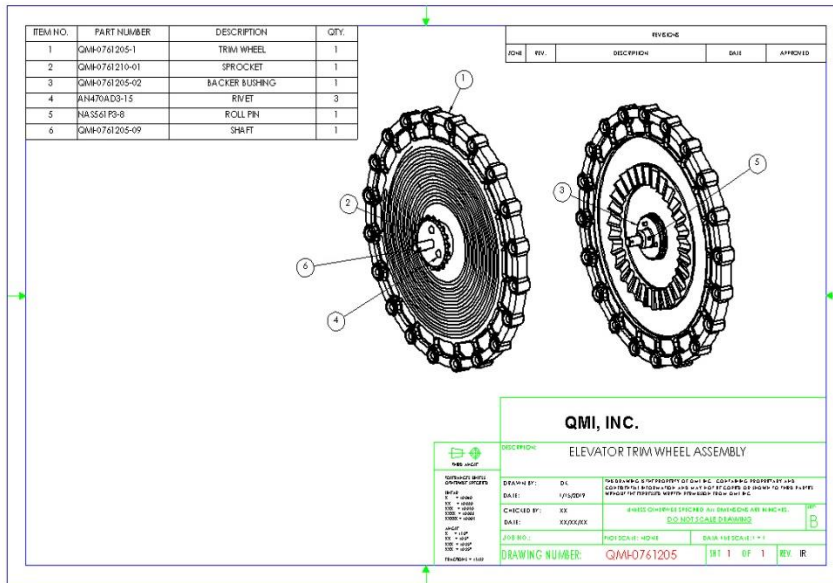
### 4 Trouble Shooting

To be updated with common Problems and Corrections if necessary when and if they arise when more kits are installed in the field.

### 5 Drawings and Diagrams

Descriptive Data List

<b>Document Title</b>	<b>Document Number</b>	<b>Revision Level</b>	<b>Pages</b>	<b>Date</b>
Instructions for Continued Airworthiness	Report 004	IR		
Elevator Trim Wheel Assembly	Drawing QMI-0761205	IR		1/15/2019



## 6 Engineering Changes and Amendments

In the event that a change or amendment is made to the design, components, or procedures contained within this manual or STC that affect airworthiness of the installation; QMI, Inc. will notify the recorded owners in writing of the affected element(s) and provide the necessary data for compliance.