

# **INSTALLATION INSTRUCTIONS**

for

## **GROVE MODEL 40-108 & 40-208 MAIN WHEELS**

**DOCUMENT 12013-22 REV IR**

**January 16, 2012**

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### RECORD OF REVISIONS

This “Record of Revisions” identifies all revisions to this document. When changes to this document are needed, revisions will be issued by the Applicant.

This “Record of Revisions” shall remain in this document at all times. Upon the receipt of revisions, insert the revised page(s) into this document and enter the revision number, revision date, insertion date and signature of person incorporating the revision into the document in the appropriate spaces below.

Revision Number	Description	Pages Affected	Revision Date	Inserted By
IR	Initial Release	1-4	01/16/2012	 Robert P. Grove, Chief Engineer

## 1. Introduction

This document is designed to provide qualified aircraft technicians with sufficient information to determine product eligibility and installation instructions of Grove 40-108 or Grove 40-208 wheels. Information relating to inspection, troubleshooting, adjustment and repair are found in the Instructions for Continued Airworthiness, Grove Document #12012-12.

## 2. Description and Aircraft Eligibility

The Grove P/N 40-108 main wheel has the following properties:

- Cast From A356-T6 Aluminum
- Weight: 3.38lbs.
- Static Load Rating: 1,100 lbs.
- Eligible Tire size: 800x4 4 Ply rating
- Maximum Inflation Pressure: 25 psi

The Grove P/N 40-208 main wheel has the following properties:

- Cast From AZ81A-T4 Magnesium
- Weight: 2.66 lbs.
- Static Load Rating: 1,100 lbs.
- Eligible Tire size: 800x4 4 Ply rating
- Maximum Inflation Pressure: 25 psi

Both wheels are designed to be direct replacements for the B.F. Goodrich/Hayes Models 840 and 841 four inch wheels and require riveting of the original brake drum or Grove STC SA01704LA brake disc to the wheel prior to installation on the aircraft.

**NOTE:** The existence of TSO approval of the article, displaying the required marking, does not automatically constitute the authority to install and use the article on an airplane. The conditions and tests required for TSO approval of this article are minimum performance standards. It is the responsibility of those desiring to install this article either on or within a specific type or class of airplane to determine that the airplane operating conditions are within the capacity of the article demonstrated in accordance with the TSO standards. The article may be installed only if further evaluation by the user/installer documents an acceptable installation, and the installation is approved by the Administrator. Additional requirements may be imposed based on airplane specifications, wheel and brake design, and quality control specifications. In-service maintenance, modifications, and use of replacement components must be in compliance with the performance standards of this TSO, as well as any additional specific airplane requirements.

### **3. Installation Instructions**

- 3.1. Determine aircraft eligibility and suitability.
- 3.2. Rivet brake drum to wheel in accordance with B.F. Goodrich Manual 1441 dated 30 April 1965 or Grove brake disc in accordance with Grove STC SA01704LA using AN441-6-7P rivets.
- 3.3. Jack the aircraft in accordance with aircraft manufacturer's instructions.
- 3.4. Inspect the axle to ensure that it is clean, dry and in serviceable condition.
- 3.5. Install the wheel onto the axle.
- 3.6. Install the axle nut and hand tighten ensuring that the wheel bearings are fully seated into the wheel.
- 3.7. While slowly rotating the wheel, tighten the axle nut until it is hand-tight. Care must be taken to ensure that the valve stem is not damaged during this process.
- 3.8. Check that wheel runs free, or with very little drag. If not, loosen the axle nut only enough so that the wheel runs free, or with little drag.
- 3.9. Align the axle nut to the nearest hole in the nut with the cotter pin slot in the axle. If you need to move the nut for alignment, first try to tighten it. If the wheel still moves with little or no resistance, use that alignment. If there is increased resistance to rotation, loosen the nut to the next hole.
- 3.10. Install a new cotter pin. One end of the cotter pin should fold out and bend over the end of the axle to its center. The other end should be bent back toward the wheel and shortened if necessary to avoid contact with the wheel. Extreme care must be taken to ensure that the cotter pin does not interfere with the valve stem or other parts of the wheel when the wheel is rotated.
- 3.11. Reinstall the wheel hub cap if so equipped.
- 3.12. If aircraft is equipped with Grove brake disc STC, install brake caliper IAW Grove STC Instructions for Continued Airworthiness.
- 3.13. Rotate the wheel to ensure that it is secure and rotates freely.
- 3.14. Lower the aircraft to the ground following aircraft manufacturer's instructions.