INSTALLATION INSTRUCTIONS

ABI LLC and Cleveland Wheel and Brake Kits 199-62, 199-62A, and 199-71

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THIS MANUAL INCLUDES INFORMATION PROPRIETY TO ABI LLC. AND SHALL NOT BE USED TO MANUFACTURE OR REPRODUCE ANY PART OR ASSEMBLY WITHOUT THE PRIOR WRITTERN PERMISSION OF AIRFRAMES ALASKA.

These instructions are to be included in the aircraft maintenance material when Cleveland and ABI LLC. wheel and brake kits are installed.

The information contained in this manual supplements or supersedes the type design data only in those areas pertaining to this STC. For maintenance practices and procedures, not contained in this document, consult the maintenance material, or other information that was required by the applicable regulations under which this aircraft was type certified. An exemption does apply for all Piper J3 models. For wheels and brakes, all Piper J3 models should be maintained according to the PA-18 maintenance handbook.

Record of Revisions

Rev	Date	Page	Author	Explanation of Revisions
Level				
IR	6/6/2023	-	Jon Earl	Initial Release
Α	6/20/2023	-	Jon Earl	Revised Document Title
В	8/14/2023	-	Jon Earl	Added J3 maintenance statement to
				Page 2

Distribution of Changes

A current copy of this manual will be maintained on the ABI, LLC website.

Introduction and Product Description:

ABI-199-62, ABI-199-62A, and ABI-199-71 heavy duty wheel and brake kits are direct replacements for the Cleveland 199-62, 199-62A, and 199-71 heavy duty wheel and brake kits.

These installation instructions outline how both kits should be installed and maintained for a variety of aircraft.

The wheels for the Cleveland 199-62, 199-62A, and 199-71 kits are cast magnesium whereas the ABL LLC. ABI-199-62, ABI-199-62A, and ABI-199-71 kits are cast aluminum.

Installation Instructions:

Piper Aircraft with PA-18 Style Landing Gear with 1 ½ inch Axles (Cleveland and ABI LLC. 199-62 and 199-62A kits)

- 1. Raise the aircraft off the ground using applicable aircraft service manual guidance.
- Install brake torque plate part number 707505401 for Cleveland kits and ABI-75-13600 for ABI LLC. kits. Ensure brake caliper alignment holes are oriented forward and face inboard. Bolts and nuts are not included with either Cleveland or ABI LLC. kits.
- 3. When installing tires on wheels, refer to Cleveland's installation instructions IM199-62 for 199-62 kits and IM199-62A for 199-62A kits for correct torque specifications.
- 4. Ensure bearings are lubricated and grease seals are installed.
- 5. Ensure inboard bearing stop is positioned on axle.
- Slide wheel/tire assembly onto axle until inboard bearing sits against bearing stop.
- 7. Install/Torque axle nut to Cleveland's specification as outlined in their guidance. The axle nut is not included/provided with the Cleveland wheel kit for this application. If using old axle nuts, inspect for wear, cracks and overall condition.
- 8. Install brake assembly per Cleveland's installation manual guidance.
- Connect lower brake line at brake fitting and bleed brakes per applicable aircraft service manual instructions.
- 10. Ensure wheel/brake assembly functions as per manufacturer's recommendations outlined in the Cleveland instruction manual for conversion kit 199-62 and 199-62A.
- 11. All above work to be completed in accordance with standard maintenance procedures per FAA AC 43-13-1B/2A.
- 12. Update aircraft weight and balance records, complete FAA Form 337, and make applicable aircraft log book entries.

Reference "Cleveland Wheels and Brakes, Technician's Service Guide", AWBTSG0001-24, Issue 24 or later revision, and the Piper Service Manual for Instructions for Continued Airworthiness.

Piper Aircraft with PA-18 Style Landing Gear with 1 ¼ inch Axles (Cleveland and ABI LLC. 199-71 kit)

- 1. Raise the aircraft off the ground using applicable aircraft service manual guidance.
- Install brake torque plate part number 707505401 for Cleveland kits and ABI-75-13600 for ABI LLC. kits. Ensure brake caliper alignment holes are oriented forward and face inboard. Bolts and nuts are not included with either Cleveland or ABI LLC. kits.
- 3. When installing tires on wheels, refer to Cleveland's installation instructions IM199-07100 for 199-71 kits for correct torque specifications.
- 4. Ensure bearings are lubricated and grease seals are installed.
- 5. Slide wheel/tire assembly onto axle until inboard bearing sits against a bearing stop.
- Install/Torque axle nut to Cleveland's specification as outlined in their guidance. The axle nut is not included/provided with the Cleveland wheel kit for this application. If using old axle nuts, inspect for wear, cracks and overall condition.
- 7. Install brake assembly per Cleveland's installation manual guidance.
- 8. Connect lower brake line at brake fitting and bleed brakes per applicable aircraft service manual instructions.
- 9. Ensure wheel/brake assembly functions as per manufacturer's recommendations outlined in the Cleveland instruction manual for installation kit 199-71.
- 10. All above work to be completed in accordance with standard maintenance procedures per FAA AC 43-13-1B/2A.
- 11. Update aircraft weight and balance records, complete FAA Form 337, and make applicable aircraft log book entries.

Reference "Cleveland Wheels and Brakes, Technician's Service Guide", AWBTSG0001-24, Issue 24 or later revision, and Piper Service Manual for Instructions for Continued Airworthiness.

Cessna Aircraft Series

(Cleveland and ABI LLC. 199-62 and 199-62A kit)

Note: Both kits are not compatible with Cessna 172 tube gear models.

- 1. Raise the aircraft off the ground using applicable aircraft service manual guidance.
- 2. Install brake torque plate part number 707505401 for Cleveland kits and ABI-75-13600 for ABI LLC. kits. Ensure brake caliper alignment holes are oriented forward and face inboard. This may change on some Cessna aircraft. It is recommended to install new hardware. Refer to the appropriate Cessna maintenance manual for proper bolt torque and hardware requirements. Bolts and nuts are not included with either Cleveland or ABI LLC. kits.
- 3. When installing tires on wheels, refer to Cleveland's installation instructions IM199-62 for 199-62 kits and IM199-62A for 199-62A kits for correct torque specifications.
- 4. Ensure bearings are lubricated and grease seals are installed.
- 5. Ensure inboard bearing stop is positioned on axle.
- 6. Slide wheel/tire assembly onto axle until inboard bearing sits against a bearing stop.
- 7. Install/Torque axle nut to Cleveland's specification as outlined in their guidance. The axle nut is not included/provided with the Cleveland wheel kit for this application. If using old axle nuts, inspect for wear, cracks and overall condition.
- 8. Install brake assembly per Cleveland's installation manual guidance.
- 9. Connect lower brake line at brake fitting and bleed brakes per applicable aircraft service manual instructions.
- 10. Ensure wheel/brake assembly functions as per manufacturer's recommendations outlined in the Cleveland instruction manual for installation kit 199-62 and 199-62A.
- 11. All above work to be completed in accordance with standard maintenance procedures per FAA AC 43-13-1B/2A.
- 12. Update aircraft weight and balance records, complete FAA Form 337, and make applicable aircraft log book entries.

Reference "Cleveland Wheels and Brakes, Technician's Service Guide", AWBTSG0001-24, Issue 24 or later revision, and Cessna Service Manual for Instructions for Continued Airworthiness.

American Champion Aircraft Series

(Cleveland and ABI LLC. 199-62 and 199-62A kit)

Note: Wheels and brake kits are currently only compatible with 8GCBC, 7GCBC, 7GCAA, and 7ECA spring gear models and oleo gear models in conjunction with GSD Systems STC# SA02529AK and the 6-hole axle flange configuration. Refer to Scott drawing 4-2042 for spring gear model installation.

- 1. Raise the aircraft off the ground using applicable aircraft service manual guidance.
- Install brake torque plate part number 707505401 for Cleveland kits and ABI-75-13600 for ABI LLC. kits. Ensure brake caliper alignment holes are oriented forward and face inboard. Bolts and nuts are not included with either Cleveland or ABI LLC. kits.
- 3. When installing tires on wheels, refer to Cleveland's installation instructions IM199-62 for 199-62 kits and IM199-62A for 199-62A kits for correct torque specifications.
- 4. Ensure bearings are lubricated and grease seals are installed.
- 5. Ensure inboard bearing stop is positioned on axle.
- 6. Slide wheel/tire assembly onto axle until inboard bearing sits against bearing stop.
- 7. Install/Torque axle nut to Cleveland's specification as outlined in their guidance. The axle nut is not included/provided with the Cleveland wheel kit for this application. If using old axle nuts, inspect for wear, cracks and overall condition.
- 8. Install brake assembly per Cleveland's installation manual guidance.
- 9. Connect lower brake line at brake fitting and bleed brakes per applicable aircraft service manual instructions.
- 10. Ensure wheel/brake assembly functions as per manufacturer's recommendations outlined in the Cleveland instruction manual for conversion kit 199-62 and 199-62A.
- 11. All above work to be completed in accordance with standard maintenance procedures per FAA AC 43-13-1B/2A.
- 12. Update aircraft weight and balance records, complete FAA Form 337, and make applicable aircraft log book entries.

Reference "Cleveland Wheels and Brakes, Technician's Service Guide", AWBTSG0001-24, Issue 24 or later revision, and the American Champion Service Manual for Instructions for Continued Airworthiness.

Maule Aircraft Series

(Cleveland and ABI LLC. 199-62 and 199-62A kit)

- 1. Raise the aircraft off the ground using applicable aircraft service manual guidance.
- 2. Install brake torque plate part number 707505401 for Cleveland kits and ABI-75-13600 for ABI LLC. kits. Note: M-8 and M-9 models will need to use stock Maule torque plates. Ensure brake caliper alignment holes are oriented forward and face inboard. Bolts and nuts are not included with either Cleveland or ABI LLC. kits.
- 3. When installing tires on wheels, refer to Cleveland's installation instructions IM199-62 for 199-62 kits and IM199-62A for 199-62A kits for correct torque specifications.
- 4. Ensure bearings are lubricated and grease seals are installed.
- 5. Ensure inboard bearing stop is positioned on axle.
- 6. Slide wheel/tire assembly onto axle until inboard bearing sits against bearing stop.
- 7. Install/Torque axle nut to Cleveland's specification as outlined in their guidance. The axle nut is not included/provided with the Cleveland wheel kit for this application. If using old axle nuts, inspect for wear, cracks and overall condition.
- 8. Install brake assembly per Cleveland's installation manual guidance.
- Connect lower brake line at brake fitting and bleed brakes per applicable aircraft service manual instructions.
- 10. Ensure wheel/brake assembly functions as per manufacturer's recommendations outlined in the Cleveland instruction manual for conversion kit 199-62 and 199-62A.
- 11. All above work to be completed in accordance with standard maintenance procedures per FAA AC 43-13-1B/2A.
- 12. Update aircraft weight and balance records, complete FAA Form 337, and make applicable aircraft log book entries.

Reference "Cleveland Wheels and Brakes, Technician's Service Guide", AWBTSG0001-24, Issue 24 or later revision, and the Maule Service Manual for Instructions for Continued Airworthiness.

Helio Aircraft Series

(Cleveland and ABI LLC. 199-62 and 199-62A kit)

- 1. Raise the aircraft off the ground using applicable aircraft service manual guidance.
- 2. Install Helio brake torque plate part number 75-15A. Ensure brake caliper alignment holes are oriented forward and face inboard. Bolts and nuts are not included with either Cleveland or ABI LLC. kits.
- 3. When installing tires on wheels, refer to Cleveland's installation instructions IM199-62 for 199-62 kits and IM199-62A for 199-62A kits for correct torque specifications.
- 4. Ensure bearings are lubricated and grease seals are installed.
- 5. Ensure inboard bearing stop is positioned on axle.
- 6. Slide wheel/tire assembly onto axle until inboard bearing sits against bearing stop.
- 7. Install/Torque axle nut to Cleveland's specification as outlined in their guidance. The axle nut is not included/provided with the Cleveland wheel kit for this application. If using old axle nuts, inspect for wear, cracks and overall condition.
- 8. Install brake assembly per Cleveland's installation manual guidance.
- Connect lower brake line at brake fitting and bleed brakes per applicable aircraft service manual instructions.
- 10. Ensure wheel/brake assembly functions as per manufacturer's recommendations outlined in the Cleveland instruction manual for conversion kit 199-62 and 199-62A.
- 11. All above work to be completed in accordance with standard maintenance procedures per FAA AC 43-13-1B/2A.
- 12. Update aircraft weight and balance records, complete FAA Form 337, and make applicable aircraft log book entries.

Reference "Cleveland Wheels and Brakes, Technician's Service Guide", AWBTSG0001-24, Issue 24 or later revision, and the Helio Courier Service Manual for Instructions for Continued Airworthiness.

Topcub Aircraft Inc./Cubcrafters Inc. Aircraft Series with 1 ¼ Axles (Cleveland and ABI LLC. 199-71 kit)

- 1. Raise the aircraft off the ground using applicable aircraft service manual guidance.
- Install brake torque plate part number 707505401 for Cleveland kits and ABI-75-13600 for ABI LLC. kits. Ensure brake caliper alignment holes are oriented forward and face inboard. Bolts and nuts are not included with either Cleveland or ABI LLC. kits.
- 3. When installing tires on wheels, refer to Cleveland's installation instructions IM199-07100 for 199-71 kits for correct torque specifications.
- 4. Ensure bearings are lubricated and grease seals are installed.
- 5. Slide wheel/tire assembly onto axle until inboard bearing sits against a bearing stop.
- Install/Torque axle nut to Cleveland's specification as outlined in their guidance. The axle nut is not included/provided with the Cleveland wheel kit for this application. If using old axle nuts, inspect for wear, cracks and overall condition.
- 7. Install brake assembly per Cleveland's installation manual guidance.
- 8. Connect lower brake line at brake fitting and bleed brakes per applicable aircraft service manual instructions.
- 9. Ensure wheel/brake assembly functions as per manufacturer's recommendations outlined in the Cleveland instruction manual for installation kit 199-71.
- 10. All above work to be completed in accordance with standard maintenance procedures per FAA AC 43-13-1B/2A.
- 11. Update aircraft weight and balance records, complete FAA Form 337, and make applicable aircraft log book entries.

Reference "Cleveland Wheels and Brakes, Technician's Service Guide", AWBTSG0001-24, Issue 24 or later revision, and Topcub/Cubcrafters Service Manual for Instructions for Continued Airworthiness.

Topcub Aircraft Inc./Cubcrafters Inc. Aircraft Series with 1 ½ Axles (Cleveland and ABI LLC. 199-62 and 199-62A kit)

- 1. Raise the aircraft off the ground using applicable aircraft service manual guidance.
- 2. Install brake torque plate part number 707505401 for Cleveland kits and ABI-75-13600 for ABI LLC. kits. Ensure brake caliper alignment holes are oriented forward and face inboard. Bolts and nuts are not included with either Cleveland or ABI LLC. kits.
- 3. When installing tires on wheels, refer to Cleveland's installation instructions IM199-62 for 199-62 kits and IM199-62A for 199-62A kits for correct torque specifications.
- 4. Ensure bearings are lubricated and grease seals are installed.
- 5. Ensure inboard bearing stop is positioned on axle.
- 6. Slide wheel/tire assembly onto axle until inboard bearing sits against bearing stop.
- 7. Install/Torque axle nut to Cleveland's specification as outlined in their guidance. The axle nut is not included/provided with the Cleveland wheel kit for this application. If using old axle nuts, inspect for wear, cracks and overall condition.
- 8. Install brake assembly per Cleveland's installation manual guidance.
- Connect lower brake line at brake fitting and bleed brakes per applicable aircraft service manual instructions.
- 10. Ensure wheel/brake assembly functions as per manufacturer's recommendations outlined in the Cleveland instruction manual for conversion kit 199-62 and 199-62A.
- 11. All above work to be completed in accordance with standard maintenance procedures per FAA AC 43-13-1B/2A.
- 12. Update aircraft weight and balance records, complete FAA Form 337, and make applicable aircraft log book entries.

Reference "Cleveland Wheels and Brakes, Technician's Service Guide", AWBTSG0001-24, Issue 24 or later revision, and the Topcub/Cubcrafters Service Manual for Instructions for Continued Airworthiness.

Aviat Husky Aircraft Series

(Cleveland and ABI LLC. 199-71 kit)

- 1. Raise the aircraft off the ground using applicable aircraft service manual guidance.
- Install brake torque plate part number 707505401 for Cleveland kits and ABI-75-13600 for ABI LLC. kits. Ensure brake caliper alignment holes are oriented forward and face inboard. Bolts and nuts are not included with either Cleveland or ABI LLC. kits.
- 3. When installing tires on wheels, refer to Cleveland's installation instructions IM199-07100 for 199-71 kits for correct torque specifications.
- 4. Ensure bearings are lubricated and grease seals are installed.
- 5. Slide wheel/tire assembly onto axle until inboard bearing sits against a bearing stop.
- Install/Torque axle nut to Cleveland's specification as outlined in their guidance. The axle nut is not included/provided with the Cleveland wheel kit for this application. If using old axle nuts, inspect for wear, cracks and overall condition.
- 7. Install brake assembly per Cleveland's installation manual guidance.
- 8. Connect lower brake line at brake fitting and bleed brakes per applicable aircraft service manual instructions.
- 9. Ensure wheel/brake assembly functions as per manufacturer's recommendations outlined in the Cleveland instruction manual for installation kit 199-71.
- 10. All above work to be completed in accordance with standard maintenance procedures per FAA AC 43-13-1B/2A.
- 11. Update aircraft weight and balance records, complete FAA Form 337, and make applicable aircraft log book entries.

Reference "Cleveland Wheels and Brakes, Technician's Service Guide", AWBTSG0001-24, Issue 24 or later revision, and the Aviat Husky Service Manual for Instructions for Continued Airworthiness.

GippsAero GA8 Airvan

(Cleveland and ABI LLC. 199-62 and 199-62A kit)

- 1. Raise the aircraft off the ground using applicable aircraft service manual guidance.
- 2. Install GippsAero brake torque plate part number GA200-321001-079. Ensure brake caliper alignment holes are oriented forward and face inboard. Bolts and nuts are not included with either Cleveland or ABI LLC. kits.
- 3. When installing tires on wheels, refer to Cleveland's installation instructions IM199-62 for 199-62 kits and IM199-62A for 199-62A kits for correct torque specifications.
- 4. Ensure bearings are lubricated and grease seals are installed.
- 5. Ensure inboard bearing stop is positioned on axle.
- 6. Slide wheel/tire assembly onto axle until inboard bearing sits against bearing stop.
- 7. Install/Torque axle nut to Cleveland's specification as outlined in their guidance. The axle nut is not included/provided with the Cleveland wheel kit for this application. If using old axle nuts, inspect for wear, cracks and overall condition.
- 8. Install brake assembly per Cleveland's installation manual guidance.
- Connect lower brake line at brake fitting and bleed brakes per applicable aircraft service manual instructions.
- 10. Ensure wheel/brake assembly functions as per manufacturer's recommendations outlined in the Cleveland instruction manual for conversion kit 199-62 and 199-62A.
- 11. All above work to be completed in accordance with standard maintenance procedures per FAA AC 43-13-1B/2A.
- 12. Update aircraft weight and balance records, complete FAA Form 337, and make applicable aircraft log book entries.

Reference "Cleveland Wheels and Brakes, Technician's Service Guide", AWBTSG0001-24, Issue 24 or later revision, and the GippsAero GA8 Airvan Service Manual for Instructions for Continued Airworthiness.

Weight and Balance

Weigh existing wheels and brakes. Subtract new weights to derive weight increase created by the kit installation. Multiply weight increase by applicable aircraft moment and revise weight and balance information in logbook.

Cleveland 199-62

New installed (per gear leg) Wheel assy7.25 lbs. Brake assy3.02 lbs.

Total10.27 lbs.

Cleveland 199-62A

New installed (per gear leg) Wheel assy8.70 lbs. Brake assy3.00 lbs. Total11.70 lbs.

Cleveland 199-71

New installed (per gear leg) Wheel assy6.54 lbs. Brake assy2.48 lbs. Total9.02 lbs.

Alaskan Bushwheels ABI-199-62

New installed (per gear leg) Wheel assy9.40 lbs. Brake assy3.02 lbs. Total12.42 lbs.

Alaskan Bushwheels ABI-199-62A

New installed (per gear leg) Wheel assy10.80 lbs. Brake assy 3.00 lbs. Total13.8 lbs.

Alaskan Bushwheels ABI-199-71

New installed (per gear leg) Wheel assy 8.40 lbs. Brake assy 2.48 lbs. Total 10.88 lbs.

Troubleshooting

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

Engineering Changes and Amendments

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

Cleveland Wheel and Brake Kit Assembly Drawings

Cleveland 199-62, 199-62A, and 199-71 assembly drawings can be found in the Cleveland 199-62, 199-62A, and 199-71 installation manuals.

ABI LLC. Wheel and Brake Kit Assembly Drawings









