

Aircraft Wheel & Brake 1160 Center Road Avon, Ohio 44011

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**FAA-PMA** 

### **PARTS LIST**

### 199-112 CONVERSION KIT

### PIPER AIRCRAFT CORP. MODELS PA-42 AND PA-42-720 **CHEYENNE III**

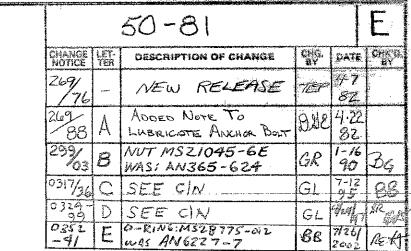
PART NO.	CODE NO.	<b>DRAWING REVISION</b>	<u>DESCRIPTION</u>	<b>QUANTITY</b>	
30-141	030-14100	Rev. F dated 04-24-1997	Brake Assembly	2	
40-166	040-16600	Rev. B dated 08-30-2010	Wheel Assembly	2	
101-00700	101-00700		O-Ring (MS28775-012)	2	
104-00200	104-00200		Fitting, Brake Inlet (AN815-4D)	2	
094-91500	094-91500		Nut, Self Locking (MS21045-6S)	) 12	
095-10100	095-10100		Washer (AN960-616L)  Qty 1 each under bolt head	12	
095-10600	095-10600		Washer (AN960-616)  Qty 1 each under bolt head	12	
103-31300	103-31300		Bolt (AN6-11A)	12	
	Publication Package (P/N PP199-11200)				
199-112			Kit Parts List (This Document)		
50-81		Rev. E, dated 07-26-2002	Installation Drawing		
SA600GL			Supplemental Type Certificate		
PRM14A			Conditioning Procedure for Metal Brake Lining	Ilic	
PRM69			Availability of General Maintenan Information and Torquing Proceed		
			Warranty Registration Card		

### NOTES:

1.	This kit will	convert one	aircraft to	Cleveland	Wheels and Brakes.

<sup>2.</sup> The 30-141 brake assembly is designed for use with MIL-H-5606 Brake Fluid.

ი	W	>
02-22-2011 (0392-56)	07-26-2002 (0352-41)	01-16-1990 (293-3)



## INSTALLATION INSTRUCTIONS

- 1. PROPERLY JACK UP AIRCRAFT.
- 2. REMOVE EXISTING M.C.G. WHEELS.
- 3, DISCONNECT EXISTING HYDRAULIE LINES FROM BRAKE ASSY'S.
- 4. REMOVE EXISTING BRAKE ASSY'S.
- (5) INSTALL CLEVELAND TORQUE PLATE ASSX. 75-137 USING ATTACHMENT HARDWARE GEA. ANG-11A BOLTS, ANGS-624 NUTS, AN 960-616 NUT WASHERS AND AN 960-616L BOLT WASHERS. TORQUE NUTS PER. AIRCRAFT SERVICE SPECS.
- 6. REMOVE SNAP RING, HUB CAP AND OUTBOARD BEARING FROM WHEEL ASS'Y. 40-166
- 7. INSTALL 40-166 WHEEL ASSY. ON AXLE. INSTALL MS 50/347 BEARING AND 45334-00 AXLE MUT. WHILE ROTATING WHEEL, TIGHTEN AXLE NUT TO 40 IN.-LBS., THEN BACK OFF TO O. THEN WHILE ROTATING WHEEL, TIGHTEN AXLE NUT TO 20 IN.-LBS. IF SLOT IN NUT, AND HOLE IN AXLE DO NOT ALIGN AT THIS POINT, ROTATE MUT (TIGHTENING OR LOOSENING) UNTIL NEAREST POSSIBLE ALIGNMENT IS REACHED AND INSERT MS 24665-360 COTTER PIN, INSTALL HUB CAPAND SNAP RING.
- 8. COOSEN 8 TIE BOLTS ON NEW BRAKE ASSY. AND REMOVE 4 BACK PLATE ASSY'S.
- 9. JUDE NEW BRAKE ASSY, INTO TORQUE PLATE.
- MAKING SURE THAT THE INSULATOR SHIMS ON THE CYLINDERS ARE IN POSITION ON THE TIE BOLTS, PLACE THE BACK PLATE ASSYS. BETWEEN THE BRAKE PISC AND WHEEL FLANGE, ALIGN BACK PLATES WITH TIE BOLTS AND TIGHTEN. TORQUE TIE BOLTS TO 145-155 /M-LOS. & LOCKWIRE TIE BOLTS PER AC4313-1A.
- (1) INSTALL ANDIS-40 FITTINGS, AND CONNECT EXISTING FLEXIBLE INCET HOSES TO BRAKE ASSY'S.
- 12. CHECK RESEVOIR LEVEL AND BLEED SYSTEM
- 13. DEPRESS AND RELEASE PEDALS SEVERAL TIMES ROTATE WHEELS
  BY HAND CHECKING FOR DRAG, A SLIGHT AMOUNT OF DRAG IS
  NOT DETRIMENTAL TO THE SYSTEM. A SEVERELY BOUND UNIT
  SHOULD BE INVESTIGATED AND CORRECTED, EXCESSIVE DRAG
  CAN BE CAUSED BY IMPROPERLY SEATED LINING.
- 14. CHECK TIRE INFLATION. REMOVE AIRCRAFT FROM LACKS AND CONDITION LINING PER, ENCLOSED INSTRUCTION SHEET.

DIS. WEIGHT AND BALANCE INFORMATION:

30-141 BRAKE ASSY. —— 14.0 LBS.

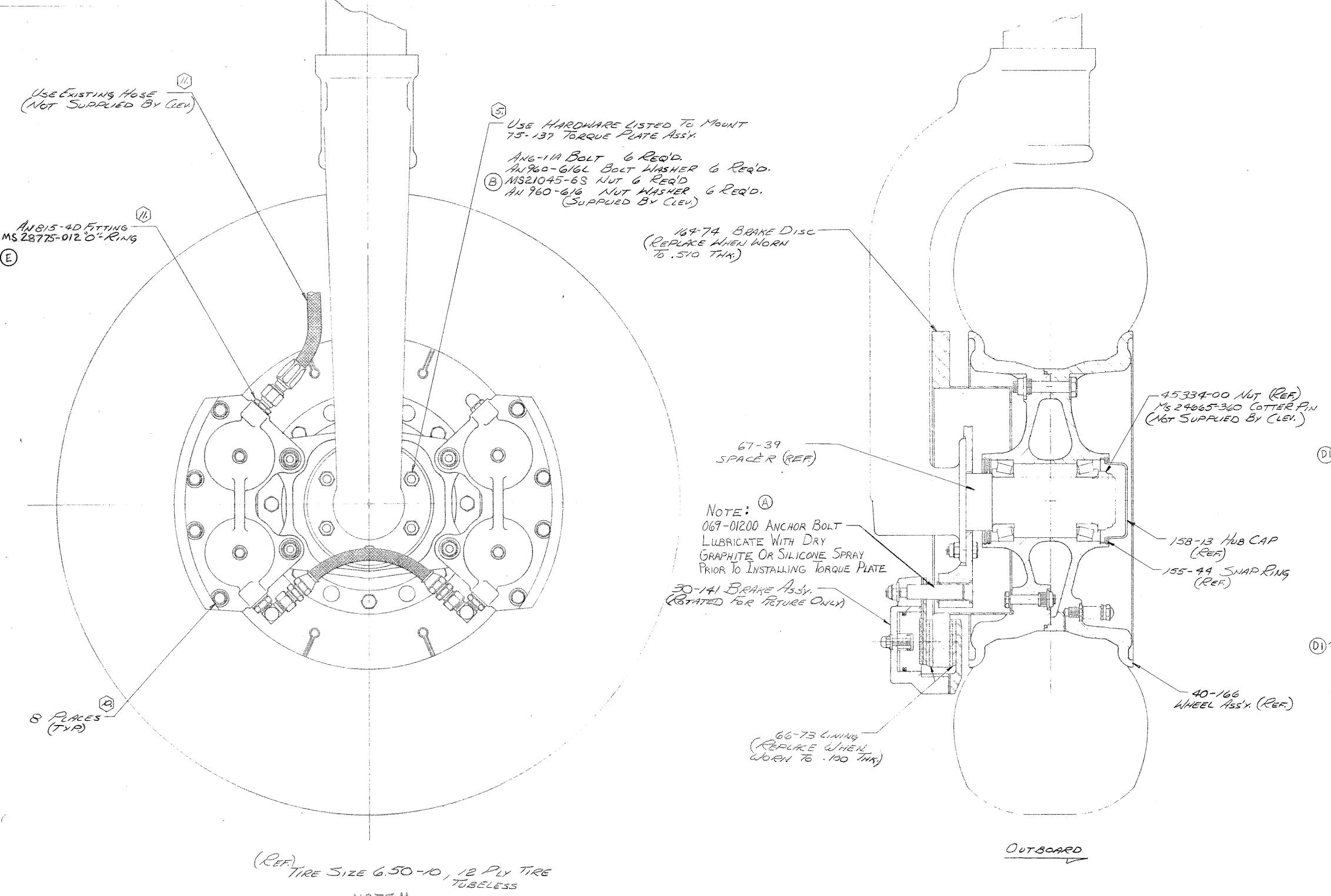
40-161 WHEEL ASSY. —— 24.2 LBS.

TOTAL WEIGHT - GEAR —— 38.2 LBS.

WEIGH EXISTING WHEELS AND BRAKES, SUBTRACT FROM NEW WEIGHTS

TO DERIVE WEIGHT WEREASE CREATED BY 199-112 KIT INSTALLATION.

MULTIPLY WEIGHT INCREASE BY MOMENT (APPLICABLE ALRCRAFT) AND REVISE WEIGHTS AND BALANCE INFORMATION IN LOG BOOK.



DO NOT SCALE

ESECLEVILAND No. 10-9155

HANNIFIN CORPORATION. THIS DOCUMENT IS FURNISHED ON THE UNDERSTANDING THAT THE

THAN CONDUCTING BUSINESS WITH PARKER, AND WILL BE RETURNED AND ALL FURTHER USE

YEAR INDICATED ON THIS DOCUMENT. ALL RIGHTS RESERVED

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NOTE

1. 6.50 - 10, 12 PLY, 160 MPH RATED, BF GOODRICH PIN 021-357-1 (PIPER PIN 55/ 652)

2,6.50-10 12 PLY TYPE III, RIBBED TREAD, TUBELESS, MCCREARY (PIPER PIN 551 604)

INFLATE PER PIPER MANUAL

(C) USE ONLY THE FOLLOWING TIRES, (PIPER ORIGINAL EQUIPMENT)

DOCUMENT AND THE INFORMATION IT CONTAINS WILL NOT BE COPIED OR DISCLOSED TO OTHERS EXCEPT WITH THE WRITTEN CONSENT OF PARKER. WILL NOT BE USED FOR ANY PURPOSE OTHER

> 50-81 INSTACKATION HEAT TREAT & SPEC FINISH & SPEC TY OTY ITEM PART NO MATERIAL & SPEC Cleveland Wheels & Brakes
>
> Arcraft Wheel and Brake Division PATTERN, CASTING OR BLANK NO. NEXT ASSEMBLY THIS DESIGN IS THE PROPERTY ZYGLO PER MIL 1 6866 STAMP M ON PART WORK TO DIMENSIONS DO NOT SCALE Parker Hannifin Corporation 三2月17年 OF PARKER HANNIFIN CORP. 1160 Center Road MAGNAFLUX PER MIL I 6868 AIRCRAFT WHEEL AND BRAKE BE OT TOM SI CMA MOLEWIN STAMP P ON PART Avon, Ohio 44011 COPIED, DUPLICATED, OR USED BREAK SHARP EDGES .010 UNLESS NAME AS THE BASIS FOR MANUFAC-MIL STO 10 UNLESS OTHERWISE NOTED INSTACCATION DRAWING NOTED, REMOVE ALL BURRS BEFORE PLATING, DRILL PER INSP. PROCEDURE 50-81 TURE OR SALE OF EQUIPMENT WITHOUT OUR WRITTEN PER-UNLESS NOTED ALL

THREADS PER MILS-7742

AND INSTRUCTIONS

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# Ergänzung zur Musterzulassung Supplemental Type Certificate

Nr.: SA 1283

Ausgabestand: 2

Status of Issue

Die nach den Bestimmungen der Luftverkehrs-Zulassungs-Ordnung ergänzte Musterzulassung des Luftfahrtgeräts wird durch diese ERGÄNZUNG ZUR MUSTERZULASSUNG beurkundet. Sie erweitert die Angaben des Musterzulassungsscheins und des zugehörigen Geräte-Kennblatts und ist nur in Verbindung mit diesen gültig.

The Supplemental Type Certificate of the aeronautical product supplemented in accordance with the provisions of the Luftverkehrs-Zulassungs-Ordnung (Air Navigation Certification Order) is documented by means of this LERGÄNZUNG zur MUSTERZULASSUNG (SUPPLEMENTAL TYPE CERTIFICATE) It amends the data of the Type Certificate and of the pertinent Type Certificate Data Sheet and will only be valid in conjunction with them

### Anwendbarkeit:

Applicability:

• Gerätemuster/Baureihen: Type / variants : PA-42, PA-42-720

Geräte-Kennblatt Nr.:

No of Type Certificate Data Sheet.

2063 ab Ausgabe:

since Issue :

6

Antragsteller:

Applicant:

Parker Hannifin Corporation Aircraft Wheel & Brake 1160 Center Road Avon, Ohio 44011

USA

### Beschreibung der Ergänzung:

Description of the Supplement :

Main Wheel & Brake Conversion Kit 199-112

### Zulassungsbasis:

Certification Basis :

Bezugsdokument:

Reference Document :

Installation Drawing No. 50-81, Rev. A vom 22. April 1982 oder spätere FAA-anerkannte Revisionen



Zulassung im Ursprungsland:

Certification in the Country of Origin:

Halter der Zulassung:

STC Holder:

Parker Hannifin Corporation Aircraft Wheel & Brake Division

Nr. der Zulassung:

STC No

SA600GL

4

zugelassen von:

certified by :

Federal Aviation Administration, USA

### Betriebs- und Instandhaltungsanweisungen

Operating and Maintenance Instructions

1. Anweisungen für den Betrieb:

Instructions for operation:

2. Anweisungen für die Instandhaltung und die Nachprüfung:

Instructions for maintenance and inspection

Es gelten die Anweisungen für das Originalmuster The instructions for the type are applicable

#### Bemerkungen und Beschränkungen

Notes and Limitations

1. Die Verträglichkeit dieser Modifikation mit anderen zugelassenen Modifikationen ist von dem Betrieb, der die Änderung einrüstet, sicherzustellen.

The compatibility of this modification with other approved modifications has to be ensured by the company installing the modification

2. Die Installationshinweise seitens Cleveland PRM14A und PRM69 sind zu beachten.

Diese Ergänzung zur Musterzulassung kann in den in § 4 Abs. 3 der Luftverkehrs-Zulassungs-Ordnung vorgesehenen Fällen widerrufen werden.

This Supplemental Type Certificate may be revoked in the cases provided for by § 4 section 3 of the Luftverkehrs - Zulassungs -Ordnung" (Air Navigation Certification Order)

LBA-Zulassung:

Certificate Issued by LBA:

Braunschweig, 14. Oktober 2002

Düsing

## Cleveland

Wheels & Brakes

Parker Hannifin Corporation
Aircraft Wheel & Brake
1160 Center Road
Avon, Ohio 44011 USA
1-800-BRAKING (272-5464)
216-937-1272 ● FAX 216-937-5409

# PRODUCT REFERENCE MEMO

#### METALLIC BRAKE LINING CONDITIONING PROCEDURE

The brake lining material used in this brake assembly is an iron based metallic composition. This material must be properly conditioned (glazed) in order to provide optimum service life.

Dynamometer tests have shown that at low braking energies, unglazed linings experience greater wear and the brake discs can become severely scored.

Conditioning may be accomplished as follows:

- 1. Perform two (2) consecutive full stop braking applications from <u>30</u> to <u>35</u> kts. Do not allow the brake discs to cool substantially between stops.
- 2. On aircraft with tail wheels, exercise caution during stopping to prevent tail lifting. Due to the efficiency of these brakes, extremely hard braking could result in lifting the tail from the ground.

This conditioning procedure will wear off high spots and generate sufficient heat to glaze the linings. Once the linings are glazed, the braking system will provide many hours of maintenance free service.

Visual inspection of the brake disc will indicate the lining condition. A smooth surface, without grooves, indicates the linings are properly glazed. If the disc is rough (grooved), the linings must be reglazed. The conditioning procedure should be performed whenever the rough disc condition is evident.

Light use, such as in taxiing, will cause the glaze to be worn rapidly.

Use caution in performing this procedure, as higher speeds with successive stops could cause the brakes to overheat resulting in warped discs and/or pressure plates.



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# PRODUCT REFERENCE MEMO

## AVAILABILITY OF GENERAL MAINTENANCE INFORMATION AND TORQUING PROCEDURES

EFFECTIVITY: All Parker Hannifin (Cleveland Wheels & Brakes) External Disc Design wheel & brake

assemblies.

APPLICABILITY: Aircraft converted per STC approved kits to use Cleveland External Disc Design

wheel & brake assemblies.

REASON: This PRM is issued to inform Wheel & Brake Conversion Kit users and installers

that information regarding general maintenance and proper bolt / nut torquing procedures is available. This information is contained in the Cleveland Wheels & Brakes Component Maintenance Manual (CMM) and in the Cleveland Technicians Service Guide, PRM64. Most Cleveland Conversion Kits were designed prior to creation of the CMM. Parker Hannifin is in process of upgrading kit paperwork to include a requirement to use the CMM and PRM64 as wheel & brake service information. This PRM serves the same purpose for kits whose paperwork has not

yet been upgraded.

DESCRIPTION: The Cleveland Wheels & Brakes Component Maintenance Manual and PRM64,

Technician's Service Guide shall be used as service information when performing general maintenance on Cleveland External Disc Design wheels & brakes. Particular attention should be paid to instructions regarding wheel bolt torquing procedures.

NOTE: Refer to the CMM or PRM64 to determine the required torque procedure

(Dry or Lubtork). While using the required torque procedure, observe the torque required to turn the nut (free running torque). This value must be added to the value stated on the casting or nameplate (or in the CMM or PRM64) to obtain a true torque value. Proper torque is imperative to

prevent premature bolt or mating component failure.

COMPLIANCE: Highly Recommended.

APPROVAL: The engineering contents of this Product Reference Memo are FAA DER approved.

WEIGHT & BALANCE: Not applicable.

PUBLICATIONS: Cleveland Wheels & Brakes Component Maintenance Manual and PRM64 are

available from:

**Customer Support** 

Parker Hannifin Corporation Aircraft Wheel & Brake

1160 Center Road Phone: 1-800- BRAKING (272-5464)

Avon, Ohio FAX: 216-937-5409





Parker Hannifin Corporation Aerospace/Aircraft Wheel & Brake 1160 Center Road Avon, OH 44011

Clevelandwbhelp@parker.com

Web-site: <a href="www.clevelandwheelandbrake.com">www.clevelandwheelandbrake.com</a> Manufacturer of Cleveland Wheels & Brakes

Date://20
Subject: Letter of Authorization for Installation of STC'd Conversion Kits
To whom it may concern:
Parker Hannifin Corporation, Aircraft Wheel & Brake Division, hereby states that the following $item(s)$ :
KIT NUMBER: 199
FAA APPROVAL: 1) STC #
NO OTHER APPROVALS NECESSARY
AUTHORIZATION TO INSTALL: With the sale of this STC KIT, OWNER of the Supplemental Type Certificate agrees to permit the buyer or buyer's agent or agency to use the certificate to alter the product under the terms and conditions of this STC.
A/C MAKE:
A/C MODEL
TAIL #
Regards,
Technical Support Team Technical Hotline (800) 272-5464

#### United States of America

### Department of Transportation—Federal Aviation Administration

# Supplemental Type Certificate

Number SA600GL

This certificate, issued to

Aircraft Wheel & Brake Division Parker Hannifin Corporation

1160 ≪enter Road Avon, Ohio 44011

certifies that the change in the type design for the following product with the limitations and conditions

23 of the Federal Aviation therefor as specified hereon meets the airworthiness requirements of Part See Type Certificate Data Sheet A23SO for complete certification basis.

Original Product - Type Certificate Number A2350

Make Piper

Model PA-42, PA-42-720

Description of Trype Design Change

Installation of Cleveland Wheel & Brake Conversion Kit No. 199-112 per Installation Drawing No. 50-81, rev. A, dated April 22, 1982, or later FAA approved revisions.

### Limitations and Conditions

Compatibility of this modification with other previously approved modifications must be determined by the installer.

This certificate and the supporting data which is the basis for approval shall remain in affect until surrendered, suspended, revoked, or a termination date is otherwise established by the Administrator of the Federal Aviation Administration.

Date of application February 4, 1982

Late reissurd

Date of issuance

March 31, 1982

Tale amended May 4, 1982, August 20, 1984

Manager, Chicago Aircraft Certification Office, ACE-115C, FAA Central Region

(Title)

Any alteration of this certificate is punishable by a fine of not exceeding \$1,000, or imprisonment not exceeding 3 years, or both.