

AIRCRAFT WHEEL & BRAKE DIVISION  
PARKER HANNIFIN CORPORATION  
AVON, OHIO

FAA-PMA

PARTS LIST

199-73 CONVERSION KIT

BEECH AIRCRAFT  
MODELS 58P, 58TC, 60, A60 & B60

<u>PART NUMBER</u>	<u>DRAWING REVISION</u>	<u>DESCRIPTION</u>	<u>QUANTITY</u>
30-93	Rev. E, dated 11-12-1980	Brake Assembly	2
40-128	Rev. H, dated 08-19-1993	Wheel Assembly	2
067-03200	Rev. J, dated 06-25-2003	Outboard Axle Spacer	2
104-03100		Elbow (4-C50X-S)	2
207-01000	Rev. F, dated 03-28-2007	Hose Assembly	2
<u>Publication Package (P/N PP199-73)</u>			
50-42	Rev. D, dated 06-22-1989	Installation Drawing	
SA178GL	Amendment dated 05-02-1986	Supplemental Type Certificate (58P, 58TC)	
SA179GL	Amendment dated 05-02-1986	Supplemental Type Certificate (60, A60, B60)	
PRM14A	-----	Product Reference Memo - "Conditioning Procedure for Metallic Brake Lining"	
PRM69	-----	Product Reference Memo - "Availability of General Maintenance Information & Torquing Procedures"	
-----		Product Registration Card	

NOTES:

1. This kit will convert one aircraft to Cleveland Wheels and Brakes.
2. The 30-93 brake assembly is designed for use with MIL-H-5606 hydraulic fluid.

199-73	Rev. NC	02-09-1977 / 05-02-1977
	Rev. A	12-10-1981 (268-99)
	Rev. B	02-26-1986 (277-89)
	Rev. C	06-22-1989 (297-02)
	Rev. D	07-09-2003 (0356-95)
	Rev. E	11-01-2004 (0363-54)
	Rev. F	07-30-2008 (0381-10)

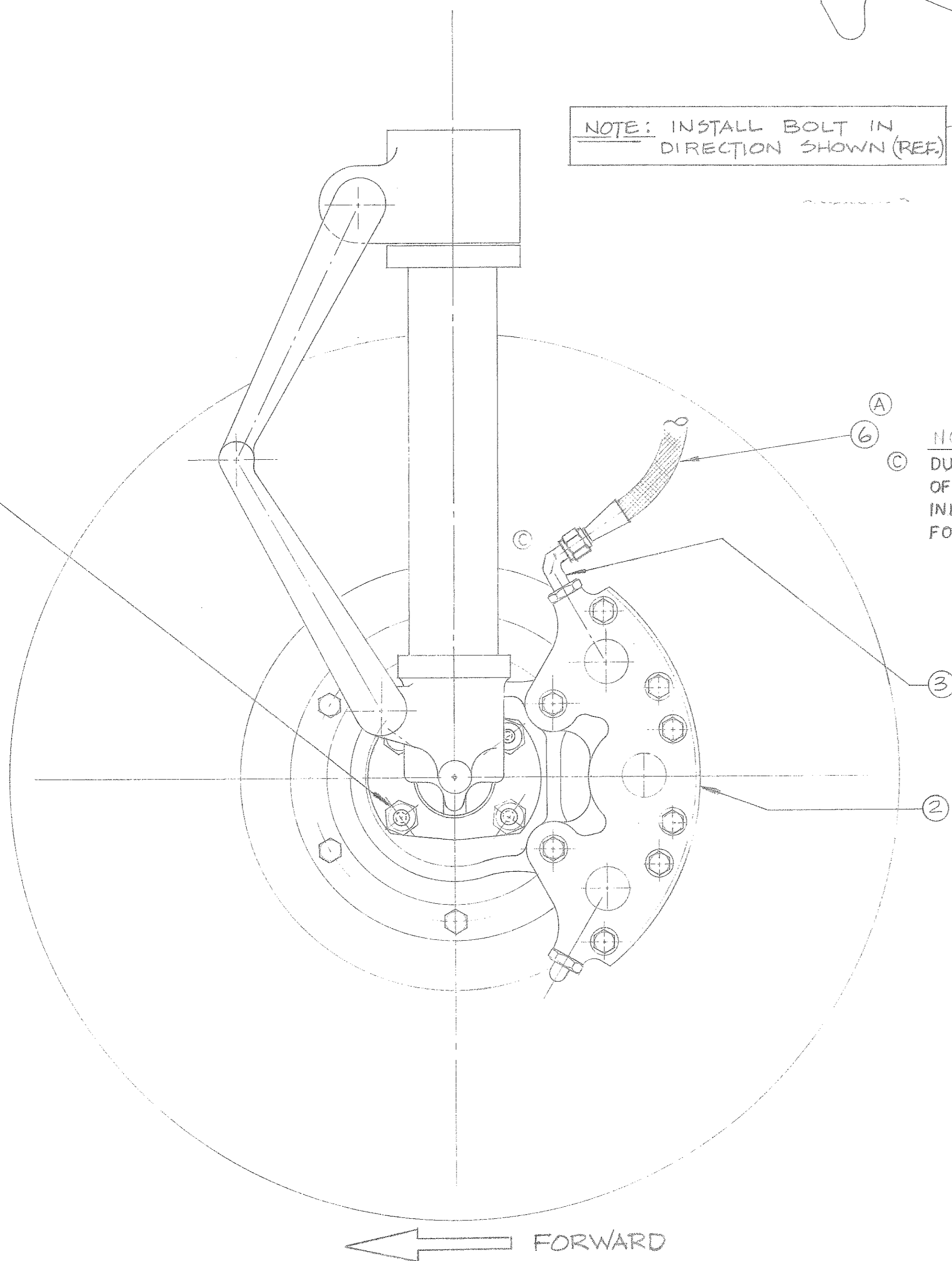
199-73 KIT  
INSTALLED PER THIS DRAWING  
IS APPLICABLE TO THE  
FOLLOWING AIRCRAFT MODELS  
BEECHCRAFT: 60, A60, B60  
58 P, 58 TC

WHEEL TORQUING PROCEDURE:

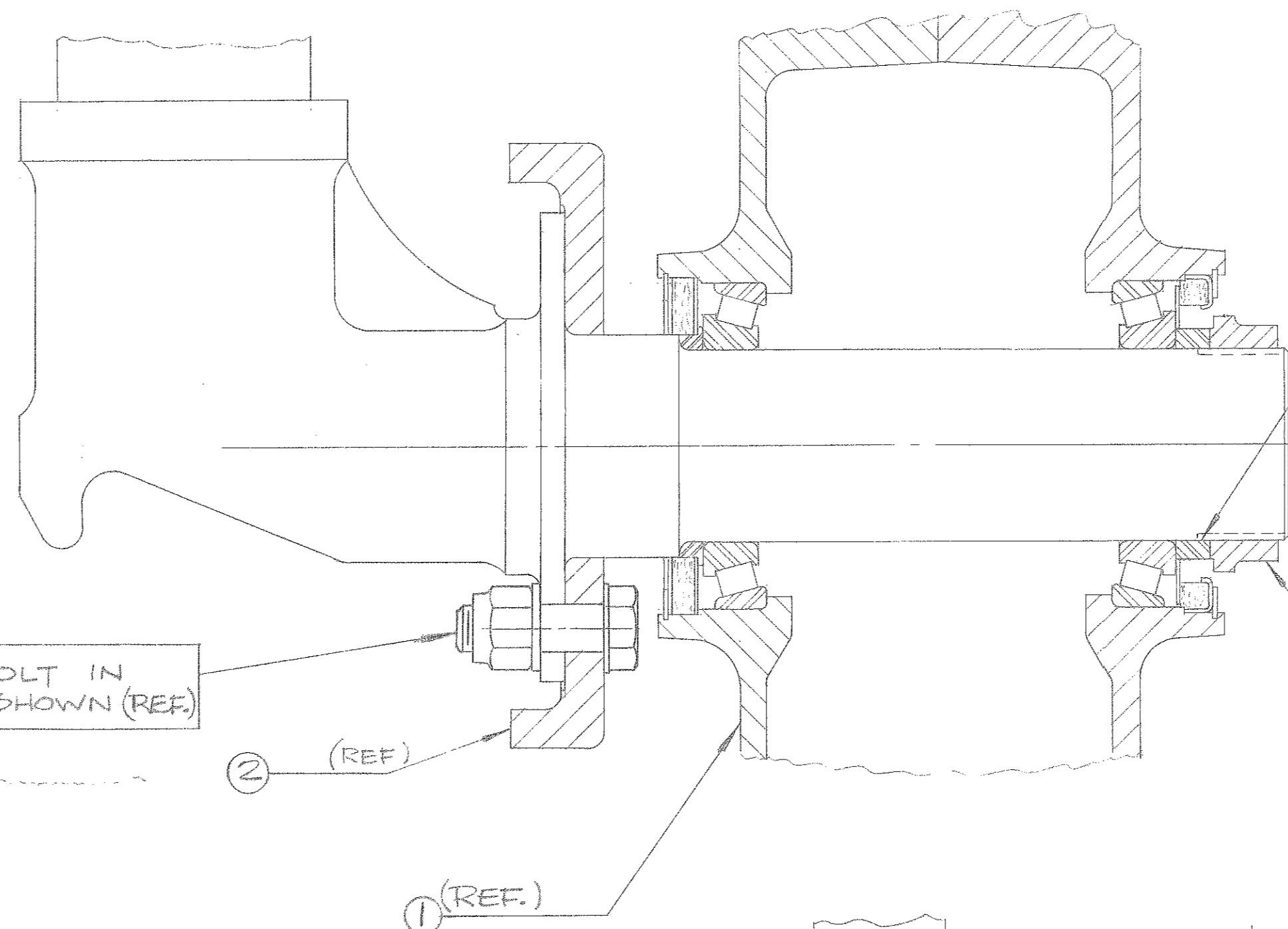
1. PLACE WHEEL, BUSHING AND AXLE NUT ON AXLE IN CORRECT POSITION.
2. WHILE ROTATING WHEEL, TIGHTEN AXLE NUT AND TORQUE TO 40 IN-LBS.
3. BACK AXLE NUT TO ZERO TORQUE.
4. WHILE ROTATING WHEEL, RE-TORQUE AXLE NUT TO 20-25 IN-LBS.
5. IF COTTER PIN HOLE DOES NOT LINE UP, ADVANCE TO NEXT SLOT AND INSERT COTTER PIN.

EXISTING HARDWARE (REF.)  
4-AN6-12A - BOLT  
4-AN960-616L WASHER  
(UNDER BOLT HEAD)  
4-AN960-616 WASHER  
(UNDER NUT)  
4-MS20365-624C NUT  
TORQUE TO 85 IN-LBS.

NOTE: INSTALL BOLT IN  
DIRECTION SHOWN



NOTE:  
DURING RETRACT, CHECK CLEARANCE  
OF HOSE TO WHEEL WELL RIB. ROTATE  
INLET FITTING 104-03100 AS NEEDED  
FOR HOSE CLEARANCE.



(REF.)  
BUSHING 95-810002-13 (EXISTING)

NOTE: PERMISSIBLE TO USE CLEVELAND SPACER P/N  
067-03200 IN PLACE OF EXISTING BUSHING,  
IF NEEDED FOR PROPER COTTER PIN TO NUT  
ALIGNMENT.

NUT AN 7502-24 (EXISTING) (REF.)  
COTTER PIN MS24665-360  
(SEE WHEEL TORQUING PROCEDURE)

INSTALLATION INSTRUCTIONS:

1. PROPERLY JACK-UP AIRCRAFT.
2. DEFLATE MAIN WHEEL TIRES COMPLETELY.
3. REMOVE HYDRAULIC LINE AND CAP.
4. REMOVE EXISTING WHEELS AND BRAKES.
5. USING EXISTING HARDWARE INSTALL TORQUE PLATE (075-10901).
6. MOUNT WHEEL (40-128) USING NOTED WHEEL TORQUING PROCEDURE.
7. LOOSEN 6 TIE BOLTS ON NEW BRAKE ASSY. AND REMOVE 3 BACK PLATES.
8. SLIDE NEW BRAKE CYLINDER INTO TORQUE PLATE.
9. INSTALL INSULATOR SHIM ONTO TIE BOLTS.
10. INSTALL BACK PLATES BETWEEN BRAKE DISC AND INNER WHEEL FLANGE. ALIGN BACK PLATE WITH BOLTS AND TORQUE BOLTS TO 80-90 IN-LBS.
11. RECONNECT HYDRAULIC LINE. CHECK RESERVOIR FLUID LEVEL AND BLEED SYSTEM.
12. REINFLATE TIRES PER AIRCRAFT SPEC.
13. DEPRESS AND RELEASE TOE PEDALS SEVERAL TIMES. ROTATE WHEELS BY HAND TO CHECK FOR EXCESSIVE DRAG. A SLIGHT AMOUNT OF DRAG IS ACCEPTABLE AND NOT DETRIMENTAL. HOWEVER, A SEVERELY BOUND-UP SYSTEM SHOULD BE INVESTIGATED AND CORRECTED. DRAG COULD BE CAUSED BY COCKED LINING OR AIR IN HYD. SYSTEM ETC.
14. RETRACT LANDING GEAR AND INSPECT FOR CLEARANCE BETWEEN TIRE AND RIBS IN UPPER WHEEL WELL. (TIRE SHOULD ROTATE FREELY). IF INTERFERENCE OCCURS, MODIFY GEAR RIGGING PER BEECHCRAFT MAINTENANCE MANUAL. NOTE: INTERFERENCE CAN BE DETECTED BY VISUALLY OBSERVING TOP OF WING DURING GEAR RETRACTION.
15. INSPECT FOR CLEARANCE BETWEEN 30-93 BRAKE AND INBOARD DOOR. CLEARANCE SHOULD BE AT LEAST .25 IN. WHEN NECESSARY, ADJUST DOOR RIGGING PER BEECHCRAFT MAINTENANCE MANUAL.
16. REMOVE AIRCRAFT FROM JACKS, AND CONDITION LININGS PER ENCLOSED INSTRUCTION SHEET.

TIRE SIZE: (REF.)  
6.50-8 EIGHT PLY  
6.50-8 TEN PLY  
ALT. 19.5x6.75-8 EIGHT PLY

WEIGHT  
WHEEL: 12.3 LBS.  
BRAKE: 4.8 LBS.  
TOTAL 17.1 LBS.

QTY	QTY	ITEM	PART NO.	DESCRIPTION	MATERIAL & SPEC.	HEAT TREAT & SPEC.	FINISH & SPEC.	WGT.
1	1	6	207-01000	HOSE ASSY				
1	1	3	104-03100	FITTING				
1	1	2	30-93	BRAKE ASSY.				
1	1	1	40-128	WHEEL ASSY.				
1	1	1	50-42	WHEEL & BRAKE INSTALL				
NEXT ASSEMBLY								
THIS DESIGN IS THE PROPERTY OF CLEVELAND WHEEL & BRAKE AND IS NOT TO BE COPIED, DUPLICATED, OR USED AS THE BASIS FOR MANUFACTURE OR SALE OF EQUIPMENT WITHOUT WRITTEN PERMISSION.			2XGLO PER MIL-1-6866 STAMP M OR PART MAGNAFLUX PER MIL-1-6868 STAMP P ON PART MACHINED SURFACES PER MIL-STD-10 UNLESS OTHERWISE NOTED UNLESS NOTED ALL THREADS PER MILS-7742			WORK TO DIMENSIONS - DO NOT SCALE TOLERANCE FOR .XXX ± .010 TOLERANCE FOR .XXX ± .020 TOLERANCE FOR ANGULAR DIMS 1/16° TOLERANCE FOR FRACTIONAL DIMS ± .005 BREAK SHARP EDGES .010 UNLESS NOTED. REMOVE ALL BURRS BEFORE PLATING. DRILL PER INSP. PROCEDURE NO. 114.		
DRAWN BY CHECKED BY SCALE NAME CLEVELAND WHEEL & BRAKE INSTALLATION			DATE 12/16/76 12/16/76 NONE CLEVELAND WHEEL & BRAKE			50-42		

CHANGE	DATE	DESCRIPTION OF CHANGE	CHKD.	BY
260	5-2-77	ADDED ITEM 6	JCF	77
268	12-10-77	REVISED NOTES.	RS	77
269	12-10-77	104-47 W/ 104-00300	RS	77
271	12-10-77	SEE C/N	NA	77
297	5-22-89	ADDED NOTE	P0	89
02				88

# 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 30 to 35 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  
Avon, Ohio

Phone: 1-800- BRAKING (272-5464)  
FAX: 216-937-5409

Initial Release February 01, 1997



PRM69  
Page 1 of 1



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

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  
[Clevelandwbhelp@parker.com](mailto:Clevelandwbhelp@parker.com)  
Web-site: [www.clevelandwheelandbrake.com](http://www.clevelandwheelandbrake.com)  
Manufacturer of Cleveland Wheels & Brakes

United States of America  
Department of Transportation—Federal Aviation Administration  
**Supplemental Type Certificate**

*Number* SA178GL

*This certificate, issued to*

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

*certifies that the change in the type design for the following product with the limitations and conditions therefor as specified hereon meets the airworthiness requirements of Part 23 of the Federal Aviation Regulations.* See Type Certificate Data Sheet A23CE for complete certification basis.

*Original Product—Type Certificate Number* A23CE  
*Make* Beech  
*Model* 58P, 58TC

*Description of Type Design Change*

Install Cleveland Conversion Kit P/N 199-73, Revision B, dated February 26, 1986, in accordance with installation drawing 50-42, Revision C, dated February 27, 1986, or later FAA approved revisions.

*Limitations and Conditions*

This approval should not be extended to other aircraft of these models on which other previously approved modifications are incorporated unless it is determined by the installer that the interrelationship between this change and any of those other previously approved modifications will introduce no adverse effect upon the airworthiness of the aircraft.

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

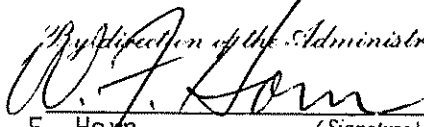
*Date of application* February 18, 1977

*Date issued* October 28, 1980

*Date of issuance* May 23, 1977

*Date amended* May 2, 1986



*By*   
W. F. Horn (Signature)  
Manager, Chicago Aircraft Certification Office  
Central Region, ACE-115C  
(Title)

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

United States of America  
Department of Transportation—Federal Aviation Administration  
**Supplemental Type Certificate**

*Number* SA179GL

*This certificate, issued to*

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

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

*therefor as specified hereon meets the airworthiness requirements of Part 23 of the Federal Aviation*

*Regulations. See Type Certificate Data Sheet A12CE for complete certification basis.*

*Original Product—Type Certificate Number* A12CE  
*Make* Beech  
*Model* 60, A60, B60

*Description of Type Design Change*

Install Cleveland Conversion Kit P/N 199-73, Revision B, dated February 26, 1986, in accordance with installation drawing 50-42, Revision C, dated February 27, 1986, or later FAA approved revisions.

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*Date of application* February 18, 1977

*Date issued* October 28, 1980

*Date of issuance* May 23, 1977

*Date amended* May 2, 1986



*By direction of the Administrator*

W. F. Horn

(Signature)

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

(Title)

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

*This certificate may be transferred in accordance with FAR 21.47.*