

AIRCRAFT WHEEL & BRAKE DIVISION

PARKER HANNIFIN CORPORATION

AVON, OHIO

PARTS LIST

199-64 CONVERSION KIT
CESSNA MODEL SERIES 310 AND 320

<u>PART NUMBER</u>	<u>IBM CODE</u>	<u>DESCRIPTION</u>	<u>QUANTITY</u>
40-40B	040-04002	Main Wheel Assembly	2
30-28D	030-02804	Brake Assembly	2
(B) 50-68 (2 sheets)	N/A	Installation Drawing	1
SA110GL		Supplemental Type Certificate (320 Series)	1
SA111GL		Supplemental Type Certificate (310 Series)	1
		Brake Lining Conditioning Procedure	1

This kit will convert one aircraft to
Cleveland wheels and brakes

199-64
02-19-76
06-21-76 REV A
03-18-81 REV B 267-15

DO NOT SCALE

THIS DOCUMENT CONTAINS INFORMATION THAT IS CONFIDENTIAL AND PROPRIETARY TO PARKER HANNIFIN CORPORATION. THIS DOCUMENT IS FURNISHED ON THE UNDERSTANDING THAT THE 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 THAN CONTRACTING BUSINESS WITH PARKER, AND WILL BE RETURNED AND ALL RIGHTS RESERVED.

SHEET 1 OF THIS DRAWING IS APPLICABLE TO EARLY CESSNA 310 AND 320 MODELS NOTED BELOW. THESE AIRCRAFT HAVE A WELDED TUBULAR STYLE LANDING GEAR AND USE CESSNA AXLE NUMBER 0841000-7

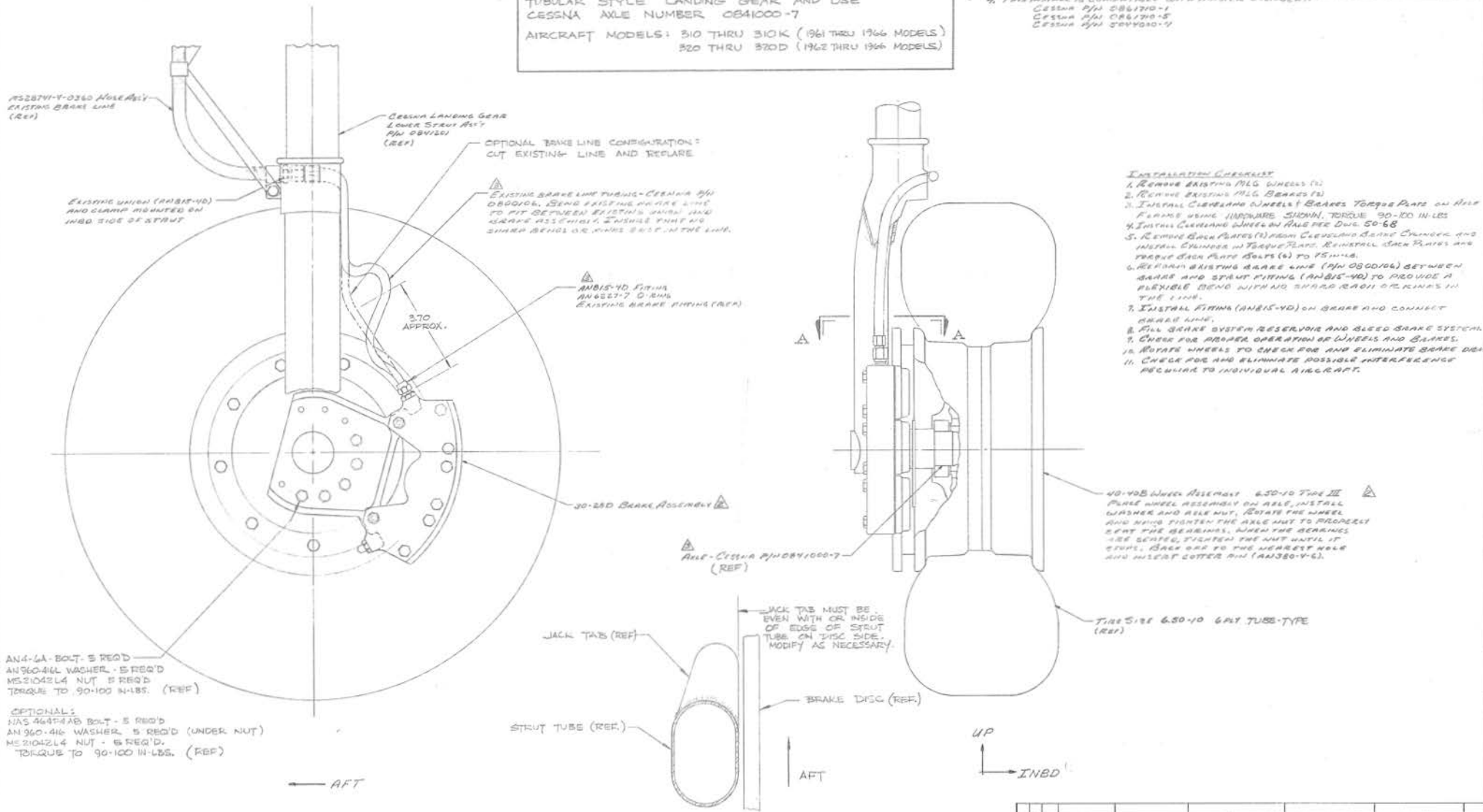
AIRCRAFT MODELS: 310 THRU 310K (1961 THRU 1966 MODELS)
320 THRU 320D (1962 THRU 1966 MODELS)

Notes:

1. THIS INSTALLATION APPLIES TO CESSNA MODEL SERIES 320 THRU 320D (1962) AND 310 THRU 310K (1961)
2. COMPONENTS SUPPLIED BY CLEVELAND WHEEL & BRAKE
3. COMPONENTS NOT SUPPLIED BY CLEVELAND WHEEL & BRAKE
4. THIS INSTALL IS COMPATIBLE WITH MUSTER WHEELS:
 - CESSNA P/N 0841000-1
 - CESSNA P/N 0841000-5
 - CESSNA P/N 0841000-7

50-68 SHEET 1 OF 2

REV	DATE	DESCRIPTION OF CHANGE	BY	CHK
1	1/68	50-68 WBS		
2	2/68	50-24, REVISED C		



INSTALLATION CHECKLIST

1. REMOVE EXISTING MILG WHEELS (I)
2. REMOVE EXISTING MILG BRAKES (I)
3. INSTALL CLEVELAND WHEELS & BRAKES TORQUE PLATE ON WHEEL FRAME USING HARDWARE SHOWN. TORQUE 90-100 IN-LBS
4. INSTALL CLEVELAND WHEEL ON AIRCRAFT DUE TO 50-68
5. REMOVE BUSH PATES (I) FROM CLEVELAND BRAKE CHAMBER AND INSTALL CHAMBER IN BRUSH PLATE. REINSTALL STEEL PLATES AND BRUSH PATE PLATE BOLTS (I) TO PLATE.
6. RETURN EXISTING BRAKE LINE (P/N 0841000-7) BETWEEN BRAKE AND STRUT FITTING (ANBIS-40) TO PROVIDE A FLEXIBLE BEND WITH NO SHARP BENDS OR KINKS IN THE LINE.
7. INSTALL FITTING (ANBIS-40) ON BRAKE AND CONNECT BRAKE LINE.
8. FILL BRAKE SYSTEM RESERVOIR AND BLEED BRAKE SYSTEM.
9. CHECK FOR PROPER OPERATION OF WHEELS AND BRAKES.
10. ROTATE WHEELS TO CHECK FOR AND ELIMINATE BRAKE DRAG.
11. CHECK FOR AND ELIMINATE POSSIBLE INTERFERENCE REQUIRING TO INDIVIDUAL AIRCRAFT.

SECTION A-A
SCALE: FULL

QTY (BY ITEM)	PART NO.	DESCRIPTION	MATERIAL & SPEC.	HEAT TREAT & SPEC.	FINISH & SPEC.	NOTE
1	40-40B	WHEEL ASSEMBLY	STEEL			
1	30-2AD	BRAKE ASSEMBLY	STEEL			
1	AN4-4A	BOLT	STEEL			
1	AN360-416	WASHER	STEEL			
1	MS21042L4	NUT	STEEL			
1	AMBIS-40	FITTING	ALUMINUM			
1	AS287H-V-0360	HOLE ASSY	ALUMINUM			
1	0841000-7	BRAKE LINE TUBING	STEEL			
1	0841000-1	CESSNA WHEEL	STEEL			
1	0841000-5	CESSNA WHEEL	STEEL			
1	0841000-7	CESSNA WHEEL	STEEL			
1	AN380-V-6	LOTTER PIN	STEEL			

Cleveland Wheel & Brake
1180 Ann Arbor Road, Ann Arbor, Ohio 48101
a division of VanSickle Industries, Inc.
"The brake people"

NAME: Cleveland Wheel & Brake
ADDRESS: 1180 Ann Arbor Road, Ann Arbor, Ohio 48101
PHONE: (419) 961-1180
FAX: (419) 961-1180
E-MAIL: sales@cwab.com
WEBSITE: www.cwab.com

50-68
BRAKE INSTALLATION SHEET 1 OF 2

050-06800

DO NOT SCALE

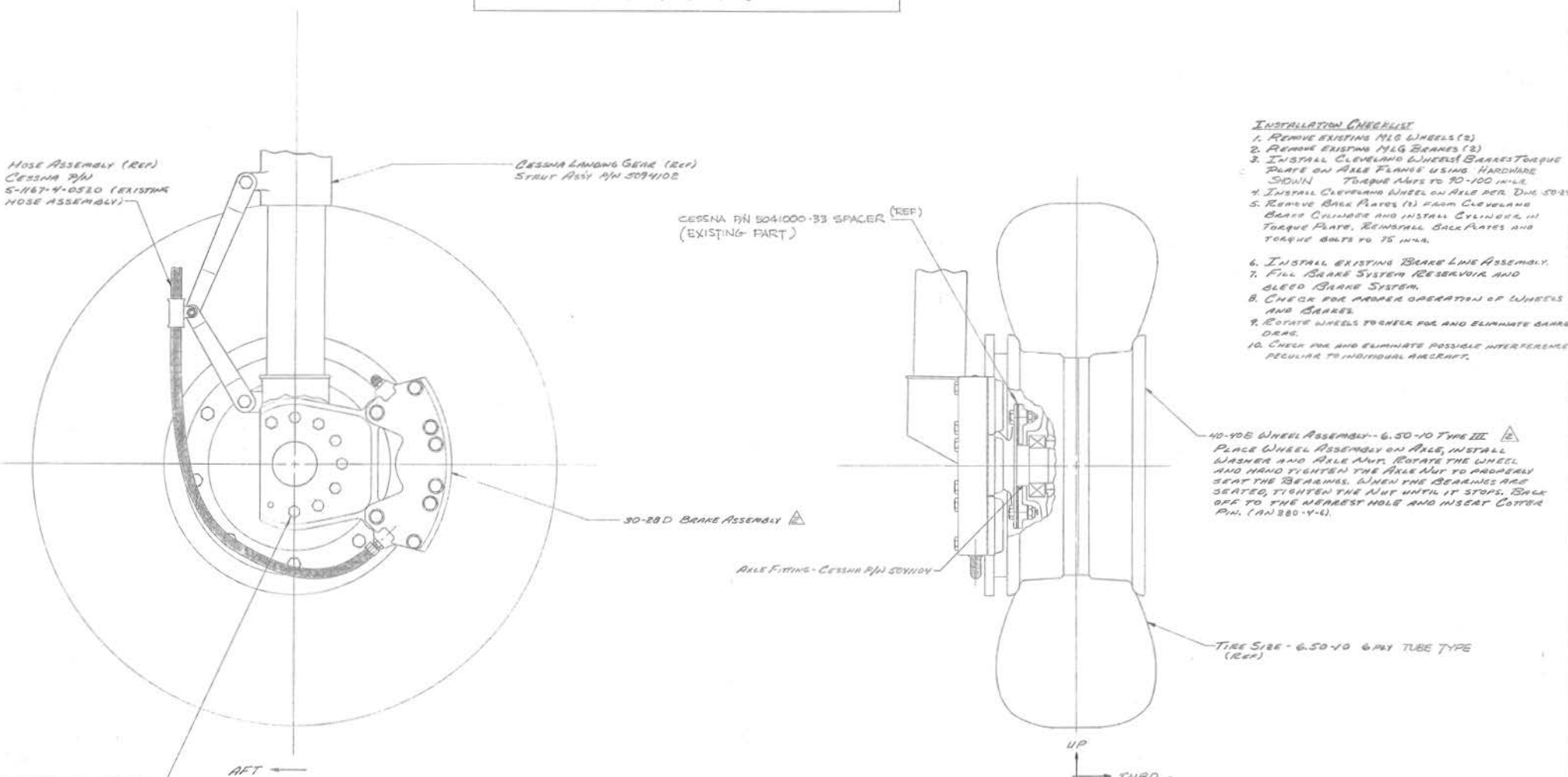
SHEET 2 OF THIS DRAWING IS APPLICABLE TO 1967 AND ON CESSNA 510 AND 520 MODELS SHOWN BELOW. THESE AIRCRAFT HAVE A FORGED LOWER LANDING GEAR LEG.

AIRCRAFT MODELS:
 510L0001 THRU 510R0500 (1967 THRU 1975)
 520E0001 AND ON (1967 MODEL)
 520F0001 AND ON (1968 MODEL)

NOTES:

1. THIS INSTALLATION APPLIES TO CESSNA MODELS 510L, 520E AND 520F. (1967) DATE COMPONENTS SUPPLIED BY CLEVELAND WHEELS AND BRAKES.
2. THIS INSTALLATION IS COMPATIBLE WITH MASTER CYLINDERS: CESSNA P/N 0861710-1
 CESSNA P/N 0861710-5
 CESSNA P/N 5044008-4

50-68 SHEET 2 of 2	
REV	DESCRIPTION OF CHANGE
1	SEE SHEET 1



- INSTALLATION CHECKLIST**
1. REMOVE EXISTING NLG WHEELS (2)
 2. REMOVE EXISTING NLG BRAKES (2)
 3. INSTALL CLEVELAND WHEELS BRAKES TORQUE PLATE ON AXLE PLATE USING HARDWARE SHOWN. TORQUE NUTS TO 90-100 IN-LB.
 4. INSTALL CLEVELAND WHEEL ON AXLE PER DIM. 5037
 5. REMOVE BACK PLATES (2) FROM CLEVELAND BRAKE CYLINDER AND INSTALL BACK PLATE IN TORQUE PLATE. REINSTALL BACK PLATES AND TORQUE BOLTS TO 75 IN-LB.
 6. INSTALL EXISTING BRAKE LINE ASSEMBLY.
 7. FILL BRAKE SYSTEM RESERVOIR AND BLEED BRAKE SYSTEM.
 8. CHECK FOR PROPER OPERATION OF WHEELS AND BRAKES.
 9. ROTATE WHEELS TO CHECK FOR AND ELIMINATE BRAKE DRAG.
 10. CHECK FOR AND ELIMINATE POSSIBLE INTERFERENCE REGULAR TO INDIVIDUAL AIRCRAFT.

NAS 464FMSB BOLT - 8 REQ'D
 AN 960-416L WASHER - 8 REQ'D
 MS 21042L4 NUT - 8 REQ'D
 TORQUE 90-100 IN-LBS.
 (REF.)

REV	ITEM	PART NO.	DESCRIPTION	MATERIAL & SPEC.	HEAT TREAT & SPEC.	FINISH & SPEC.	WGT.
1	WHEEL ASSEMBLY	40-40E	WHEEL ASSEMBLY	STEEL	AS SUPPLIED	AS SUPPLIED	
1	BRAKE ASSEMBLY	30-28D	BRAKE ASSEMBLY	STEEL	AS SUPPLIED	AS SUPPLIED	



CLEVELAND WHEELS & BRAKES
 50-68
 BRAKE INSTALLATION SHEET 2 of 2
 050-06800

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.

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

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
Web-site: www.clevelandwheelandbrake.com
Manufacturer of Cleveland Wheels & Brakes

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

Number SA110GL

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 3 of the Civil Air

Regulations. (See Type Certificate Data Sheet 3A25 for complete certification basis)

Original Product — Type Certificate Number 3A25
Make Cessna
Model 320, 320-1, 320A, 320B, 320C, 320D, 320E,
320F (320 series S/N's 0001-D9999;
320E0001-F9999)

Description of Type Design Change.

Install Cleveland Conversion Kit P/N 199-64 in accordance with installation drawing 50-68 dated March 17, 1981. Kit 199-64 consists of main wheel 40-40B(2), brake 30-28 D(2) and installation instructions.

Limitations and Conditions This approval should not be extended to other aircraft of this model 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 determination should include consideration of significant changes in weight distribution such as an increase in the fixed disposable weight in the fuselage.

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 19, 1976

Date reissued October 28, 1980

Date of issuance. June 30, 1976

Date amended April 1, 1981



By direction of the Administrator
W. F. Horn, Jr.

W. F. Horn, Jr. (Signature)
Chief, Engineering & Manufacturing Branch,
Great Lakes Region AGL-210

(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

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

Number SA111GL

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 3 of the Civil Air

Regulations. (See Type Certificate Data Sheet 3A10 for complete certification basis)

Original Product — Type Certificate Number 3A10
Make Cessna
Model 310, 310A thru 310H, E310H, 310I, 310J,
310J-1, E310J, 310K, 310L, 310N, 310P,
T310P, 310Q, T310Q, 310R, T310R

Description of Type Design Change.

Install Cleveland Conversion Kit P/N 199-64 in accordance with installation drawing 50-68 dated March 17, 1981. Kit 199-64 consists of main wheel 40-40 B(2), brake 30-28 D(2) and installation instructions.

Limitations and Conditions. This approval should not be extended to other aircraft of this model 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 determination should include consideration of significant changes in weight distribution such as an increase in the fixed disposable weight in the fuselage.

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 19, 1976

Date issued October 28, 1980

Date of issuance June 30, 1976

Date amended April 1, 1981



By direction of the Administrator
W. F. Horn, Jr.
(Signature)

W. F. Horn, Jr. (Signature)
Chief, Engineering & Manufacturing Branch,
Great Lakes Region AGL-210

(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