

AIRCRAFT WHEEL & BRAKE DIVISION

PARKER HANNIFIN CORPORATION

AVON, OHIO

PARTS LIST

199-121 CONVERSION KIT

Kit to rework 40-87 nose wheel to 40-87F configuration.  
This kit applies to all Mitsubishi MU-2 aircraft  
currently equipped with 40-87 nose wheels.

<u>PART NUMBER</u>	<u>DESCRIPTION</u>	<u>QUANTITY</u>
154-03200	Rubber Molded Lip Seal	4
067-06800	Inboard Spacer	2
067-06900	Outboard Spacer	2
N/A	50-851 Installation Drawing	1
SA684GL	Supplemental Type Certificate (copy) for San Angelo Aircraft	1
SA685GL	Supplemental Type Certificate (copy) for Japanese Aircraft	1

This kit will convert one aircraft

199-12100  
3-30-83  
5-31-83 (272/28)

DO NOT SCALE

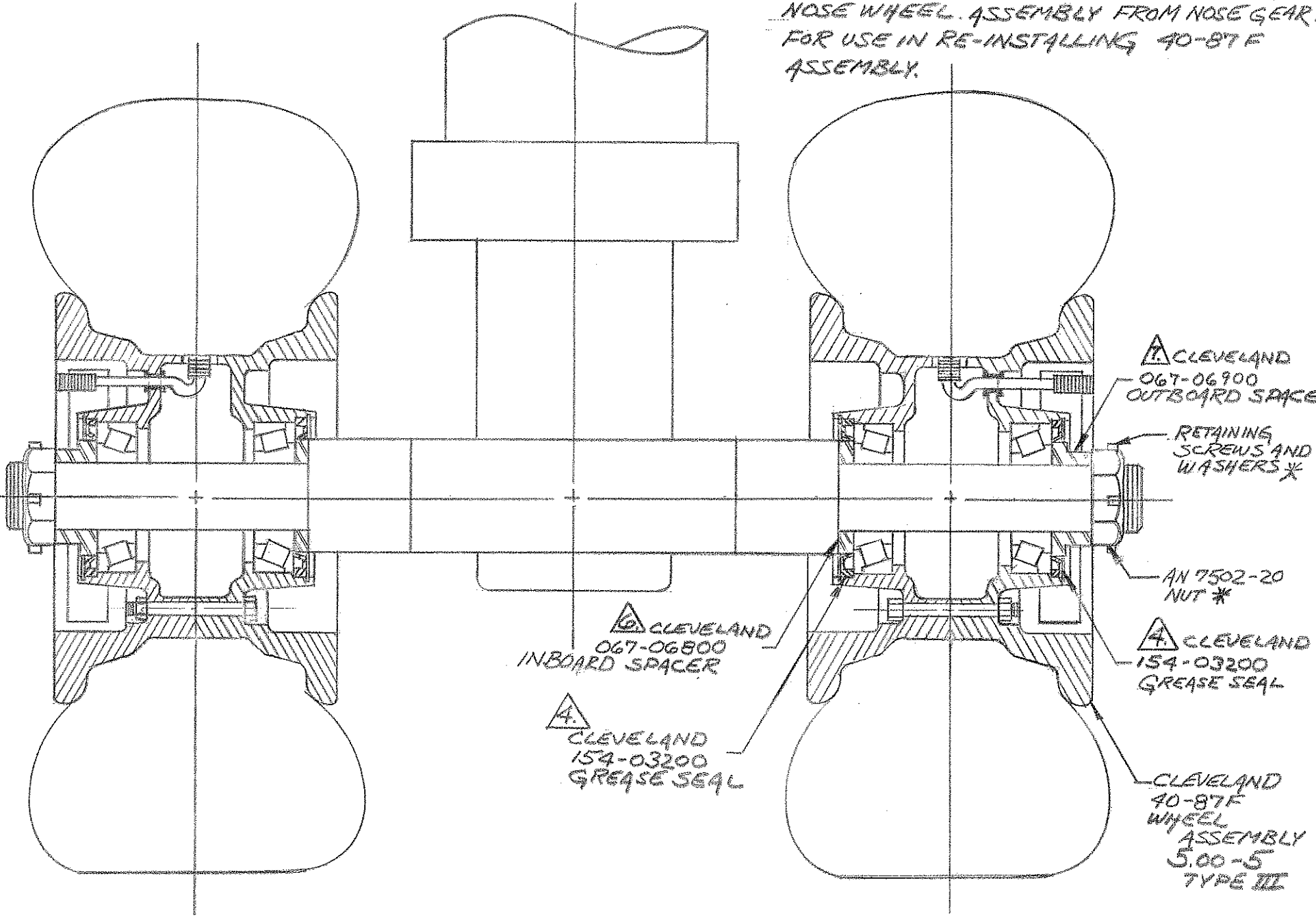
\* RETAIN THESE ITEMS WHEN REMOVING 40-87 NOSE WHEEL ASSEMBLY FROM NOSE GEAR. FOR USE IN RE-INSTALLING 40-87F ASSEMBLY.

50-85

CHANGE NOTICE	LET-TER	DESCRIPTION OF CHANGE	CHG. BY	DATE	CHK'D. BY
272/123	-	INITIAL RELEASE	DAB	5.31.83	

INSTRUCTIONS

1. PROPERLY JACK-UP AIRCRAFT.
2. REMOVE BOTH NOSE WHEELS, DISCARDING EXISTING MITSUBISHI SPACERS, PIN 010A-39142-5 (2 PER WHEEL) AND PIN 010A-39157 (1 PER WHEEL).
3. REMOVE EXISTING FELT GREASE SEALS PIN 154-00100 AND RINGS PIN 153-00100 FROM EACH WHEEL.
4. INSTALL NEW RUBBER MOLDED GREASE SEALS, PIN 154-03200, 2 IN EACH WHEEL POSITIONED AS SHOWN AND RETAINED BY EXISTING PIN 155-00200 SNAP RINGS. RUBBER SIDE TOWARDS BEARING.
5. LOCATE WHEEL NAMEPLATE AND IMPRESSION STAMP AN "F" AFTER 40-87 TO DESIGNATE WHEEL NUMBER CHANGE.
6. SLIDE 067-06800 INBOARD SPACER ONTO AXLE, FOLLOWED BY 40-87F WHEEL.
7. NEXT, SLIDE ON 067-06900 SPACER, POSITIONED AS SHOWN.
8. INSTALL EXISTING AN 7502-20 NUT. TORQUE TO 20 FT-LB, THEN BACK-OFF. RETIGHTEN TO 10 FT-LB, THEN TIGHTEN OR LOOSEN TO ALIGN AXLE CROSS HOLES TO NEAREST NUT SLOTS. INSTALL RETAINING SCREWS AND WASHERS AND SAFETY WIRE AS REQUIRED.
9. REMOVE A/C FROM JACKS AND MAKE LOG BOOK ENTRY OF THIS ACTIVITY.



APPLICATION: ALL MITSUBISHI MU-2 AIRCRAFT CURRENTLY EQUIPPED WITH CLEVELAND WHEEL AND BRAKE NOSE WHEEL PIN 40-87

SUBJECT: INSTALLATION OF KIT NO. 199-12100 TO MODIFY EXISTING 40-87 NOSE WHEELS (2 EA.) TO USE RUBBER MOLDED GREASE SEALS AND BECOME MODEL 40-87F.

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 CONDUCTING BUSINESS WITH PARKER, AND WILL BE RETURNED AND ALL FURTHER USE DISCONTINUED UPON REQUEST BY PARKER. COPYRIGHT PARKER. YEAR OF COPYRIGHT IS FIRST YEAR INDICATED ON THIS DOCUMENT. ALL RIGHTS RESERVED.

QTY	QTY	ITEM	PART NO.	DESCRIPTION	MATERIAL & SPEC.	HEAT TREAT & SPEC.	FINISH & SPEC.	WGT.
NEXT ASSEMBLY			QTY	FINAL ASSEMBLY	QTY	PATTERN, CASTING OR BLANK NO.	DRAWN BY D. BARNES 3-30-83	
THIS DESIGN IS THE PROPERTY OF PARKER HANNIFIN CORP. AIRCRAFT WHEEL AND BRAKE DIVISION AND IS NOT TO BE COPIED, DUPLICATED, OR USED AS THE BASIS FOR MANUFACTURE OR SALE OF EQUIPMENT WITHOUT OUR WRITTEN PERMISSION.			ZYGL0 PER MIL-I-6866 STAMP M ON PART		WORK TO DIMENSIONS - DO NOT SCALE TOLERANCE FOR .XXX ± .010 TOLERANCE FOR .XX ± .030 TOLERANCE FOR ANGULAR DIMS. ± 1/2° TOLERANCE FOR FRACTIONAL DIMS. ± .030		CHECKED BY B.B.	
			MAGNAFLUX PER MIL-I-6868 STAMP P ON PART		BREAK SHARP EDGES .010 UNLESS NOTED. REMOVE ALL BURRS BEFORE PLATING. DRILL PER INSP. PROCEDURE NO. 114.		SCALE NONE	
			MACHINED SURFACES PER MIL STD 10 UNLESS OTHERWISE NOTED		NAME INSTALLATION DRAWING AND INSTRUCTIONS		50-85	
			UNLESS NOTED ALL THREADS PER MIL-S-7742					

Cleveland Wheels & Brakes  
Aircraft Wheel and Brake Division  
Parker Hannifin Corporation  
1160 Center Road  
Avon, Ohio 44011



# 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  
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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* SA684GL

*This certificate, issued to* Parker Hannifin Corporation  
Aircraft Wheel & Brake Division  
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 TCDS A10SW for the complete certification basis.)

*Original Product — Type Certificate Number* A10SW  
*Make* Mitsubishi  
*Model* MU-2B-25, -26, -26A, -35, -36, -36A, -40, -60

*Description of Type Design Change*

To convert a Cleveland nose wheel from Model 40-87 to Model 40-87F, install Parker Hannifin 199-121 Conversion Kit according to Cleveland Wheels and Brakes Installation Drawing No. 50-85, original issue dated March 30, 1982.

*Limitations and Conditions*

1. The installer must determine the compatibility of this modification with other previously approved modifications.
2. This approval is limited to those airplanes which have Cleveland Model 40-87 nose wheels installed.

*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* April 5, 1983

*Date reissued*

*Date of issuance* May 27, 1983

*Date amended*



*By direction of the Administrator*

*Ronald J. Wajnar*  
for W. F. Horn (Signature)

Manager, Chicago Aircraft Certification  
Office, ACE-115C, 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.*

*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* SA685GL

*This certificate, issued to* Parker Hannifin Corporation  
Aircraft Wheel & Brake Division  
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 10 of the Civil Air Regulations.* (See TCDS A7PC for the complete certification basis.)

*Original Product—Type Certificate Number* A7PC  
*Make* Mitsubishi  
*Model* MU-2B-20, -25, -26, -30, -35, -36

*Description of Type Design Change*

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