

AIRCRAFT WHEEL & BRAKE DIVISION  
PARKER HANNIFIN CORPORATION  
AVON, OHIO  
PARTS LIST

199-213 BRAKE DE-ICE MANIFOLD KIT

\* Beech Model (s) 1900C and 1900D  
Equipped with Brake De-ice and  
Cleveland 199-184 or 199-220  
Main Wheel & Brake Conversion Kit

<u>PART NO.</u>	<u>CODE NO.</u>	<u>DRAWING REVISION</u>	<u>DESCRIPTION</u>	<u>QUANTITY</u>
139-29900	139-29900	Rev. C dated 97-08-06	Manifold Assembly	1
	199-213 Manual	Rev. A dated 93-11-05	Installation Instructions	1
50-147		Rev. B dated 97-08-06	Installation Drawing	1
			Warranty Registration	1

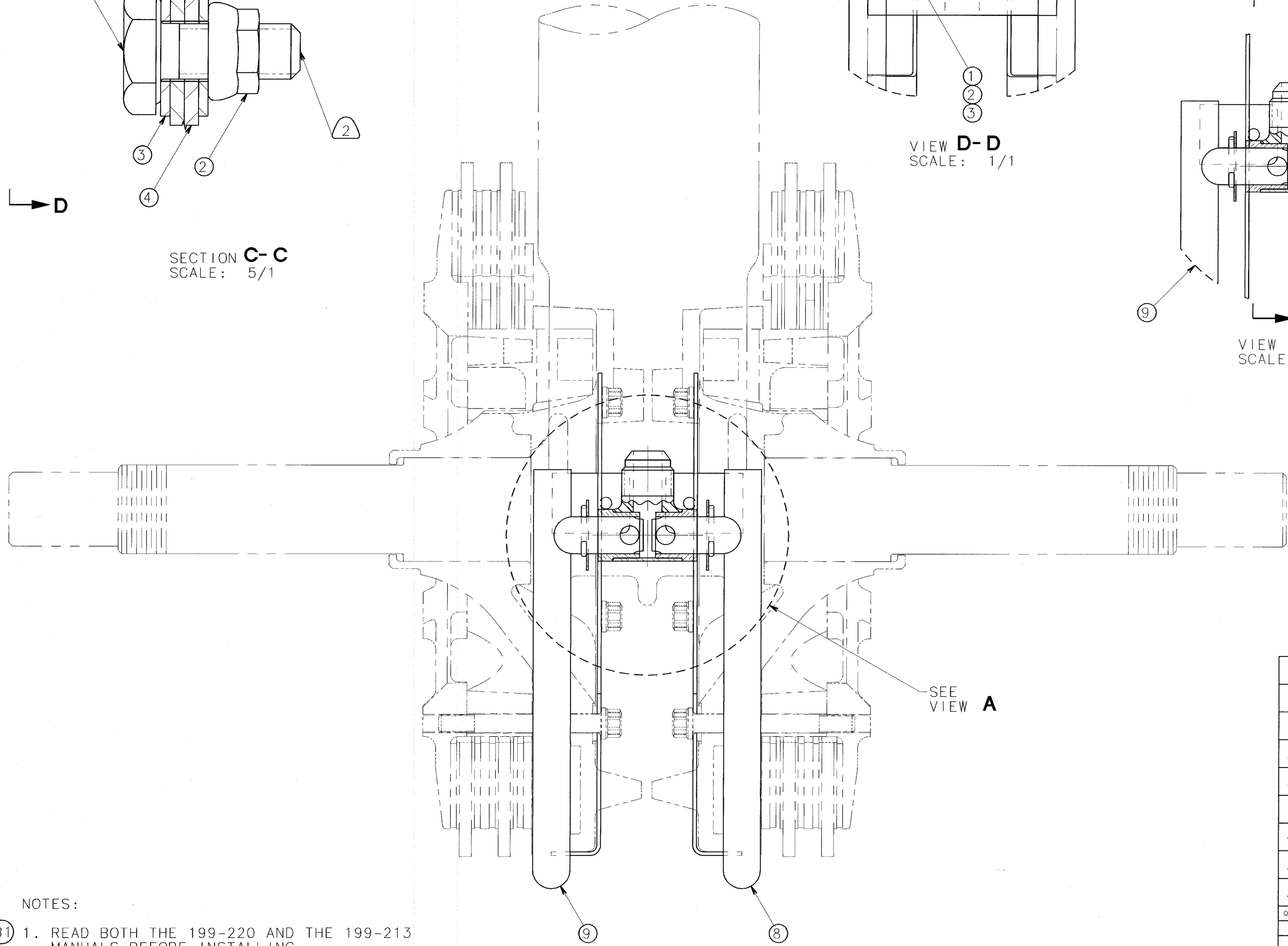
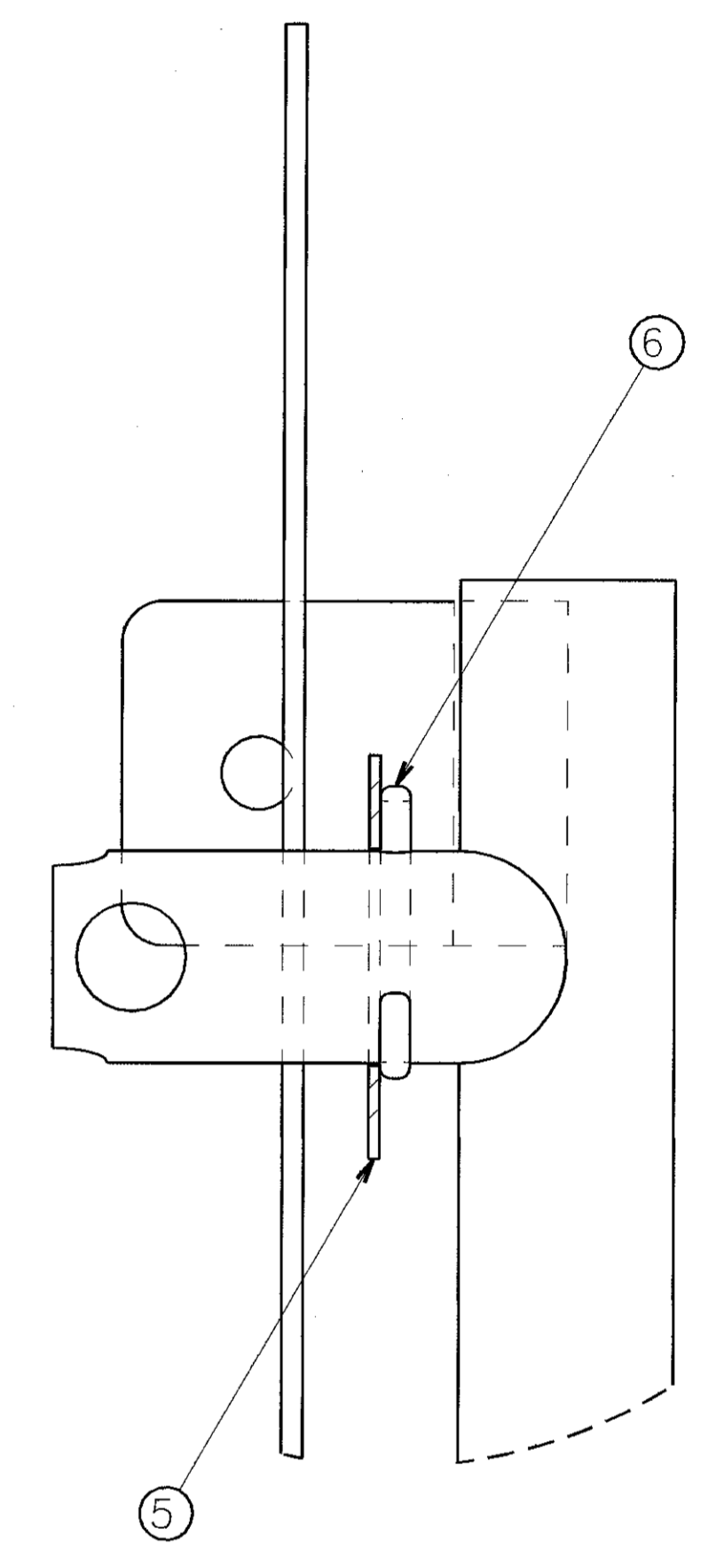
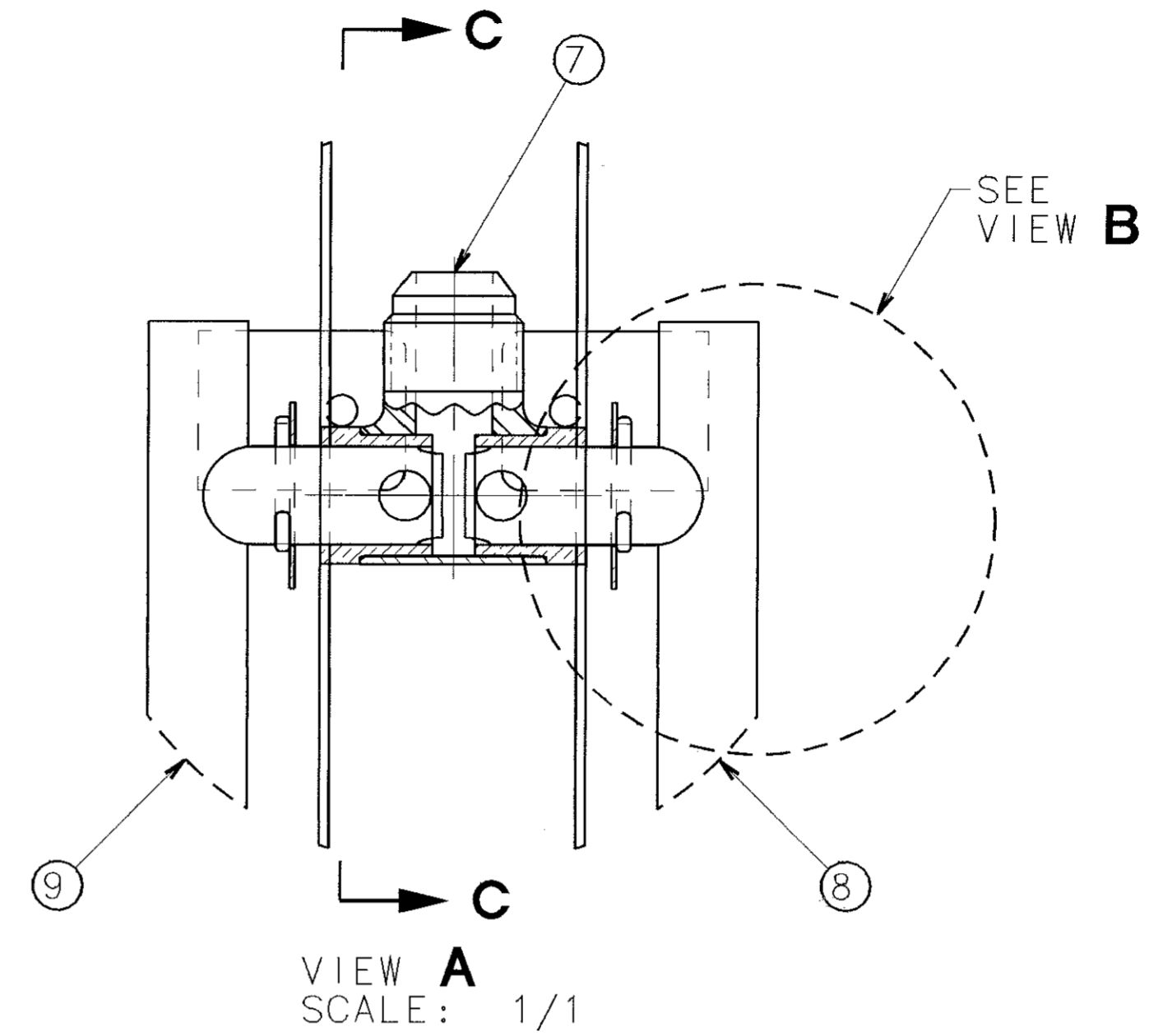
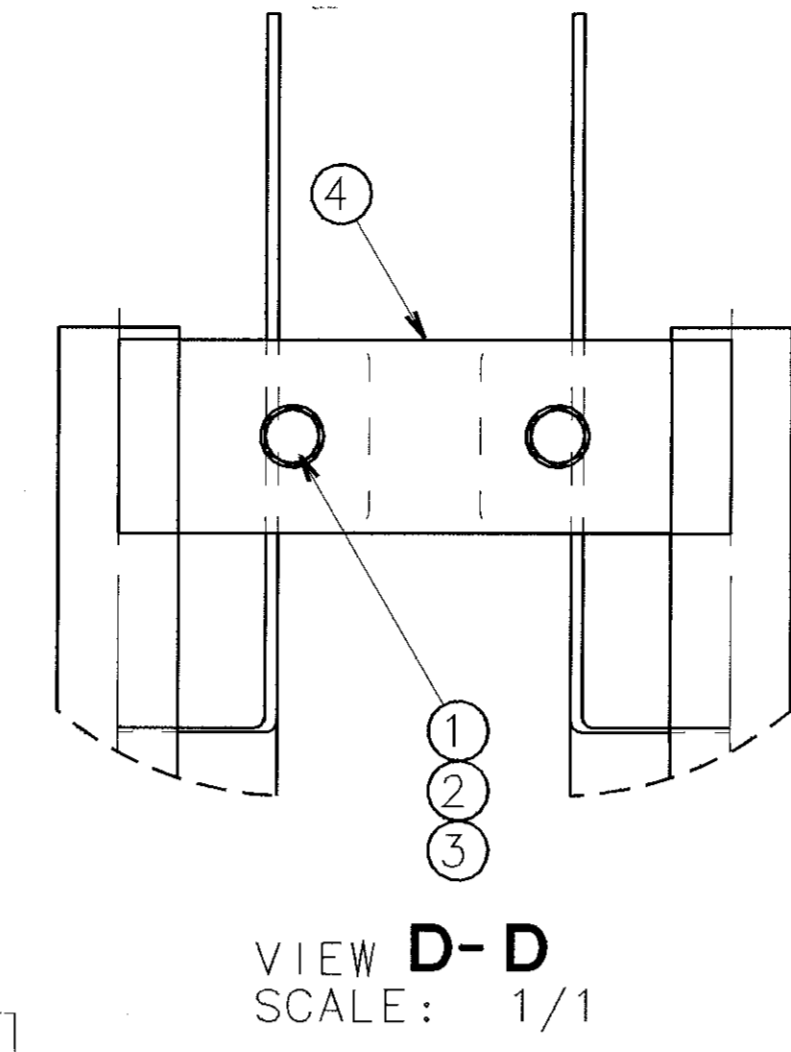
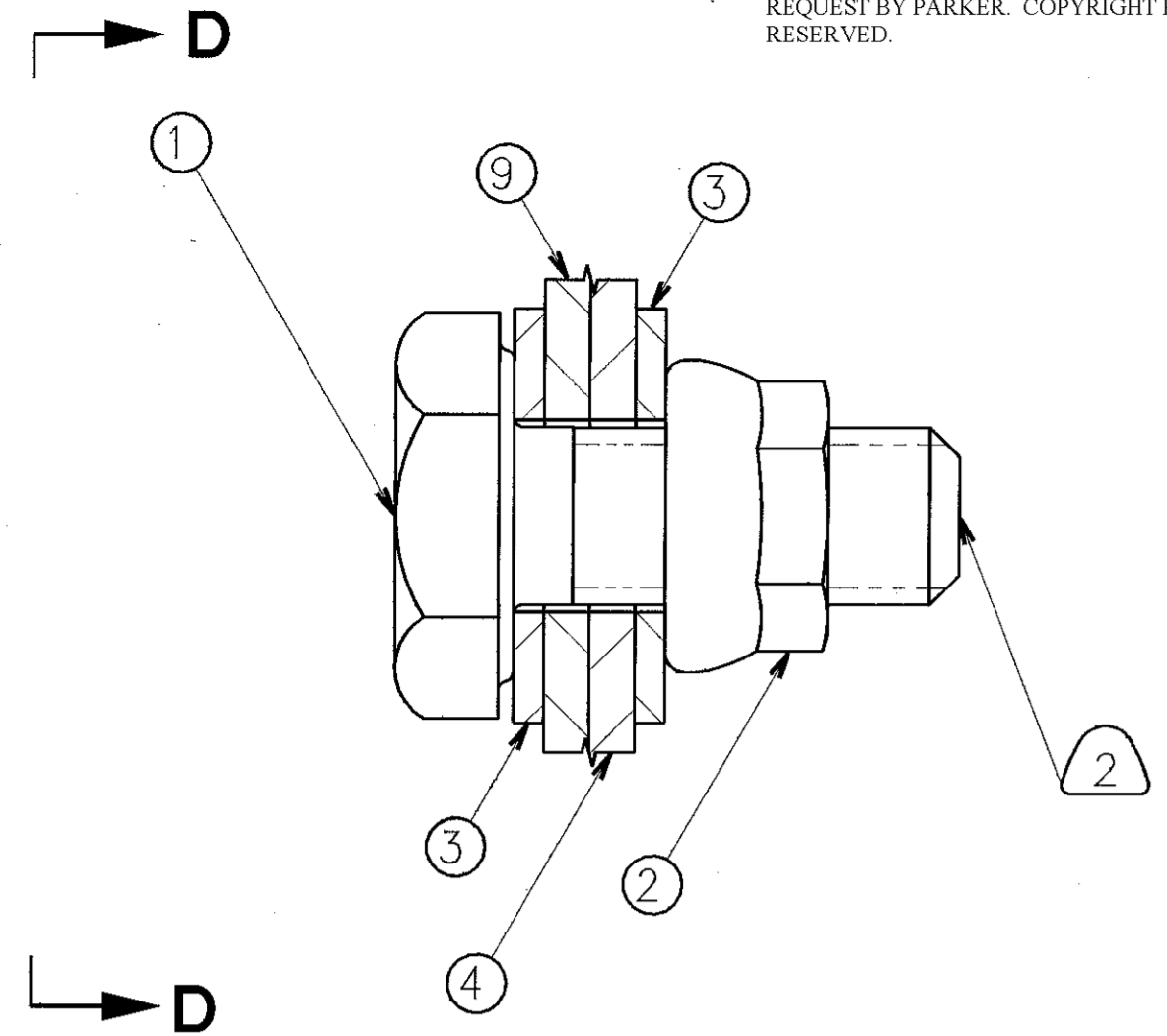
This Kit supplements the 199-184 or 199-220 Kit.  
Two 199-213 Kits are required to  
convert one Beech 1900C or 1900D with  
Brake De-ice to Cleveland  
Main Wheels & Brakes

199-213  
04-16-93 Rev NC (308-21)  
05-21-93 Rev. A (308-48)  
11-05-93 Rev. B (309-82)  
12-09-93 Rev.C (0310-11)  
03-09-95 Rev.D (0315-61)  
12-10-97 Rev.E (0317-17)

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REVISIONS							
CHANGE NOTICE	ZONE	LTR	DESCRIPTION OF CHANGE	CHG BY	CHK BY	DATE	APPROVED
308/48	.	N/C	PRODUCTION RELEASE	PK	PH	93-05-28	P. KRONZ
0310/11	.	A	PRODUCTION CHANGE, SEE C/N	PK	PH	93-12-09	P. KRONZ
0325-55	.	B	SEE C/N	GL	JR	97-08-06	Paul Krone



- NOTES:
- (B1) 1. READ BOTH THE 199-220 AND THE 199-213 MANUALS BEFORE INSTALLING
  - (B2) 2. TORQUE BOLTS TO 40-50 IN.-LBS

QTY	ITEM NO.	CAGE CODE	PART NO.	DESCRIPTION	MATERIAL/SPECIFICATION	WGT. (LB)
1	9	.	139-30300	SUB-ASS'Y, MANIFOLD		
1	8	.	139-30200	SUB-ASS'Y, MANIFOLD		
1	7	.	139-30100	T-FITTING		
2	6	.	221-01100	COTTER PIN	MS24665-302	
2	5	.	095-05300	WASHER	AN960C1016	
1	4	.	139-30000	PLATE		
4	3	.	095-10800	WASHER	AN960-10L	
2	2	.	094-14000	NUT	MS21042-3	
2	1	.	103-01600	BOLT	NAS 1303-2	

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: 2 PLACE .XX ±.03 3 PLACE .XXX ±.010 DIMENSIONING AND TOLERANCING PER ANSI Y14.5M-1982 GENERAL MACHINED SURFACES 125 PER ANSI B46.1 REMOVE ALL BURRS BREAK CORNERS .005-.010 INTERNAL RADI .005-.010		PROGRAM/CONTRACT NO. <b>P855</b>	<b>CLEVELAND WHEELS &amp; BRAKES</b> Aircraft Wheel And Brake Division Parker Hannifin Corporation Avon, Ohio 44011
DRAWN P. KRONZ	DATE 93-05-24	CHECKED P. HUNYAD	DATE 93-05-28
ENGINEER P. KRONZ	DATE 93-05-28	DESIGN APPROVAL	
PROJ APPROVAL		RELEASE DATE:	
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DWG. NO. <b>50-147</b>		REV. <b>B</b>	SHEET: 1 OF 1

CLEVELAND WHEELS & BRAKES  
BRAKE DE-ICE MANIFOLD KIT  
INSTALLATION MANUAL  
KIT NUMBER 199-213  
BEECH MODEL 1900C and 1900D



**Aircraft Wheel & Brake Division**

Parker Hannifin Corporation  
1160 Center Road U.S.A.  
Avon, OH 44011





**CLEVELAND WHEELS & BRAKES**

INSTALLATION MANUAL

WITH

ILLUSTRATED PARTS LIST

FOR

BRAKE DE-ICE MANIFOLD KIT

**199-213**

FOR

BEECH MODEL 1900C AND 1900D AIRCRAFT

REVISION A, NOVEMBER 1993

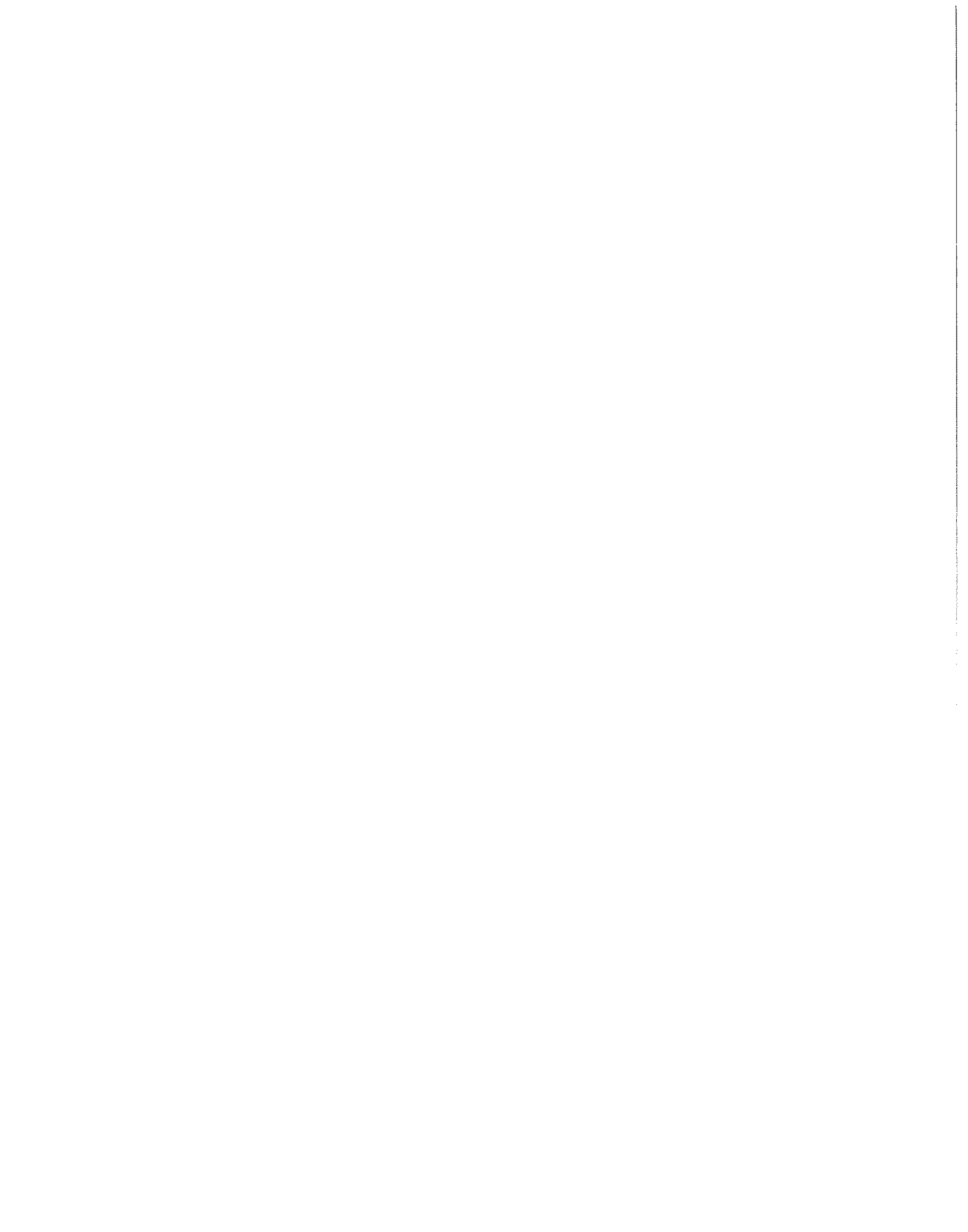
Aircraft Wheel & Brake Division

Parker Hannifin Corporation

1160 Center Road U.S.A.

Avon, Ohio 44011

NOVEMBER 1993



INSTALLATION INSTRUCTIONS  
Cleveland Wheels & Brakes Conversion Kit 199-213

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INSTALLATION INSTRUCTIONS  
Cleveland Wheels & Brakes Conversion Kit 199-213

LIST OF REVISIONS

REVISION	DATE	PAGE	DESCRIPTION	APVD
Initial Release	06/01/93	---	Installation Instructions Cleveland Wheels & Brakes Brake De-ice Manifold 199-213	BB
Rev. A	11/05/93	Title Pages	"1900C and 1900D" was "1900C"	BB
		1	<p>1.2 ... "The 199-213 Kit will replace a Beech Brake De-ice Manifold for UA-1 and after, UB-1 and after, UC-1 and after, UD-1 and after, and UE-1 and after." was</p> <p>1.2 ... "The 199-213 Kit will replace a Beech Brake De-ice Manifold for UA-1 and after, UB-1 and after, UC-1 and after, and UD-1 and after."</p> <p>1900C all serial numbers equipped with Beech Brake De-ice</p> <p>1900D all serial numbers equipped with Beech Brake De-ice was</p> <p>1900C all serial numbers equipped with Beech Brake De-ice.</p>	
		9	"1900C and 1900D" was "1900C"	



INSTALLATION INSTRUCTIONS  
Cleveland Wheels & Brakes Conversion Kit 199-213

1. INTRODUCTION.

1.1 This manual is published for the guidance of personnel responsible for the installation of Cleveland Brake De-ice Manifold Kit 199-213.

1.2 The Cleveland 199-213 Kit contains all materials and instructions needed to replace one Beech P/N 114-810088-5 Brake De-ice manifold with one Cleveland P/N 139-299 Brake De-ice Manifold. Aircraft equipped with the Beech Brake De-ice System will need to purchase two 199-213 Kits in order to convert their aircraft over to Cleveland Wheels and Brakes (Kit 199-184). The 199-213 Kit will replace a Beech Brake De-ice Manifold for UA-1 and after, UB-1 and after, UC-1 and after, UD-1 and after, and UE-1 and after.

2. PMA NOTICE.

2.1 The 139-299 Manifold used in this conversion kit carries a "PMA" marking which identifies them as having met the applicable Federal Aviation Agency (FAA) specifications and requirements.

2.2 Substitution of critical parts or changes of processes or materials are not permitted without requalification of the assemblies and resubmittal to the FAA for approval.

2.3 FAA regulations subject both Parker Hannifin, Aircraft Wheel and Brake Division and the user to constant surveillance to assure that uncompromising Quality Assurance materials and processing controls are maintained in order to provide replacement parts that are the same as the parts originally certified in the assembly.

3. APPLICABILITY.

3.1	"KIT 199-213":	MAKE	MODELS
		Beech	1900C all serial numbers equipped with Beech Brake De-ice
			1900D all serial numbers equipped with Beech Brake De-ice

June, 1993  
Revision A, November 1993

INSTALLATION INSTRUCTIONS  
Cleveland Wheels & Brakes Conversion Kit 199-213

4. ORDER INFORMATION.

4.1 To order spare parts, contact the nearest Parker Hannifin, Aircraft Wheel & Brake distributor in your area, or call Parker Hannifin, Aircraft Wheel & Brake Division, Customer Service for assistance at:

1-800-272-5464 (Outside Ohio)  
or  
(216) 937-6211  
Fax: (216) 937-5409

5 DESCRIPTION.

5.1 The Parker Hannifin 139-299 Brake De-ice Manifold is fabricated primarily from stainless steel. Its purpose is to blast the brake assembly with hot, dry air, bled from the PT6 turboprop engines. This manifold is designed to prevent the brake (which is partially exposed to the free-stream when fully retracted) from freeze lock-up.

6. OPERATION.

6.1 Please refer to the Flight Manual Supplement and the Flight Manual for the Description of Operation of the Brake De-ice System.

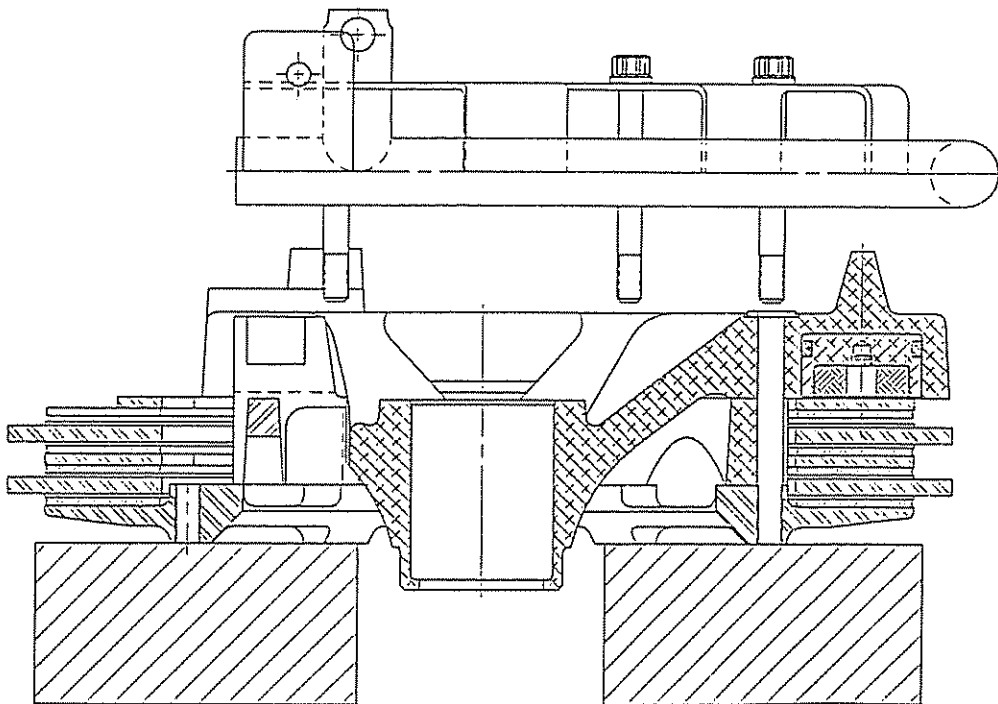
June, 1993

INSTALLATION INSTRUCTIONS  
Cleveland Wheels & Brakes Conversion Kit 199-213

7. INSTALLATION.

7.1 Follow the instructions in the 199-184 installation manual for installation of the main wheels and brakes, with the following exceptions:

7.2 Place one 30-204 brake assembly on a flat surface, cylinder side up, supported by two 2 x 4's and remove the five (5) backplate bolts as shown below:

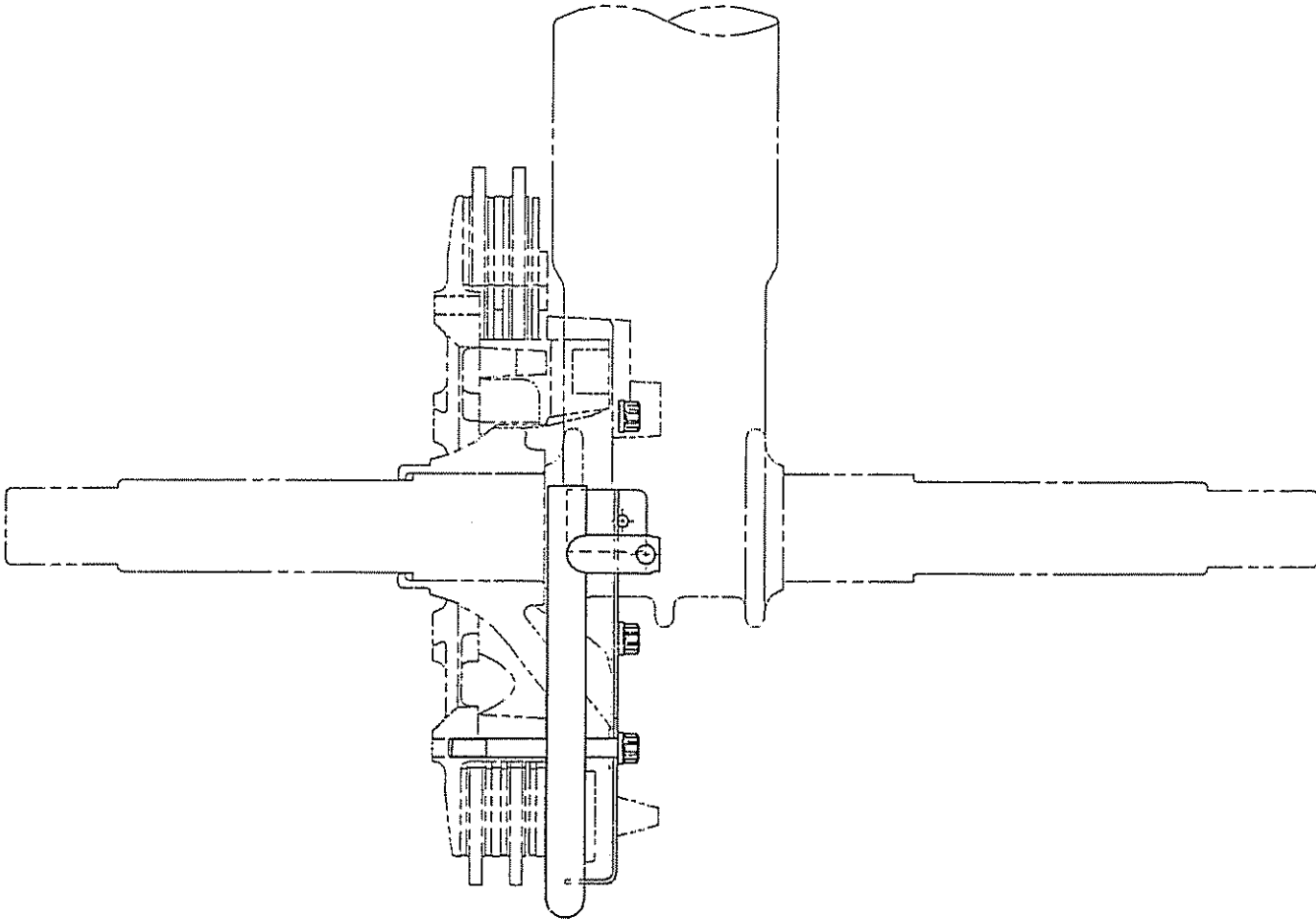


June, 1993

INSTALLATION INSTRUCTIONS  
Cleveland Wheels & Brakes Conversion Kit 199-213

7.3 Fasten a manifold subassembly on the brake as shown above using the five (5) backplate bolts with the bracket sandwiched between the washer and the bolt head as shown on the 50-137 installation drawing, View B.

7.4 Slide the brake/manifold sub-assembly onto the strut as shown.



June, 1993

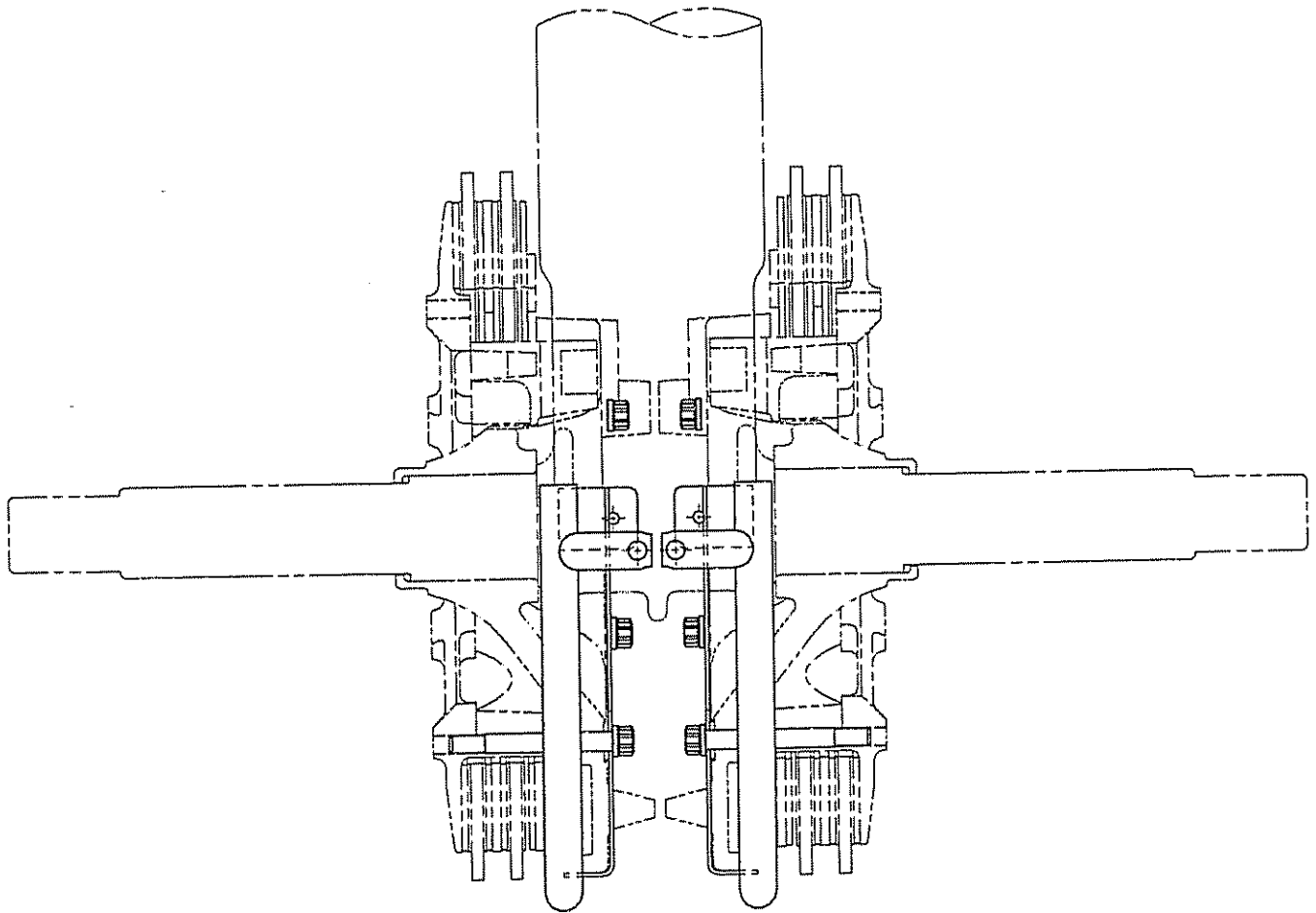
INSTALLATION INSTRUCTIONS  
Cleveland Wheels & Brakes Conversion Kit 199-213

7.5 Place the remaining 30-204 brake assemblies on a flat surface, cylinder side up, supported by 2 x 4's and fasten a manifold sub-assembly to each.

7.6 Slide a mating brake/manifold sub-assembly on the opposite side of the strut as shown below:

- NOTE -

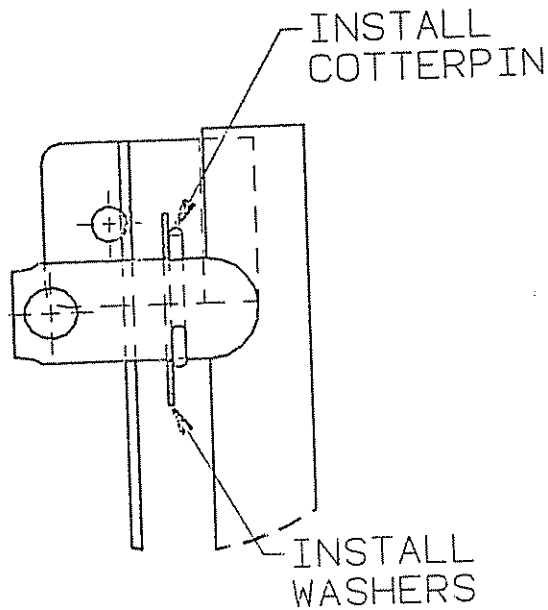
The brake is non-handed. The plug and the inlet fitting may be interchanged as needed. The manifold sub-assemblies are handed, however, and mating manifold sub-assemblies must be matched up accordingly.



June, 1993

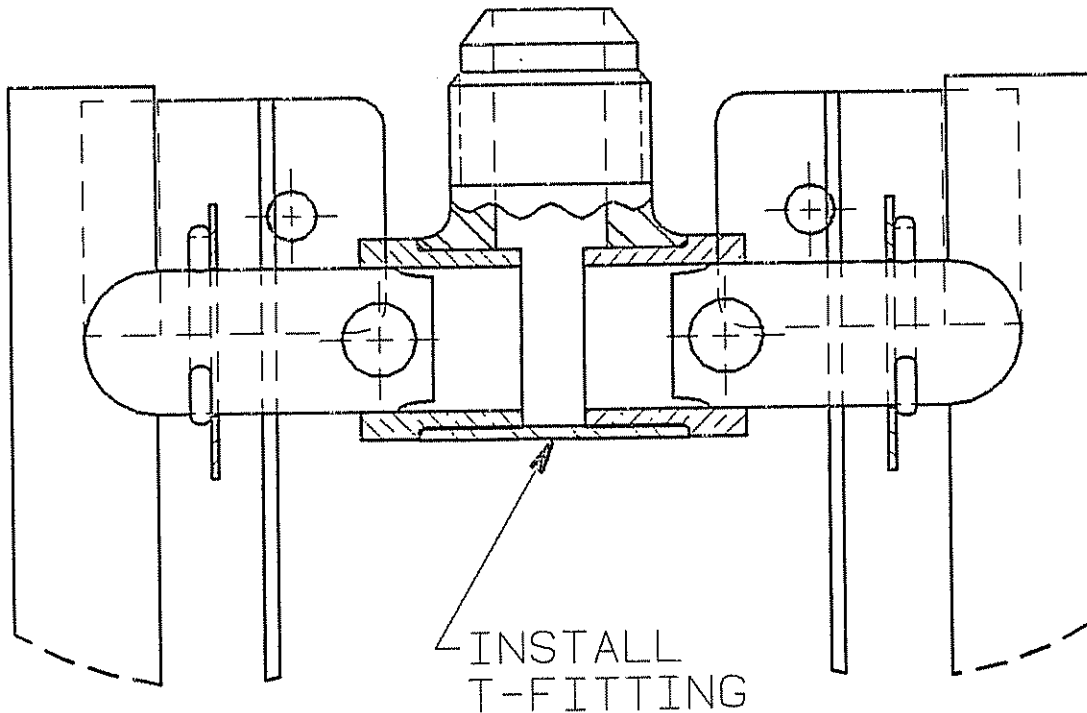
INSTALLATION INSTRUCTIONS  
Cleveland Wheels & Brakes Conversion Kit 199-213

7.7 Install a cotter pin into the manifold sub-assembly as shown below.



7.8 Slide a washer onto the manifold sub-assembly as shown above.

7.9 Install the T-fitting between the two manifold sub-assemblies as shown below. If there is a fitment problem, loosen the backplate bolts on one of the two brakes, and position the manifold sub-assembly as required; once the manifold is adjusted to fit, re-torque the backplate bolts to 175-190 in-lbs.

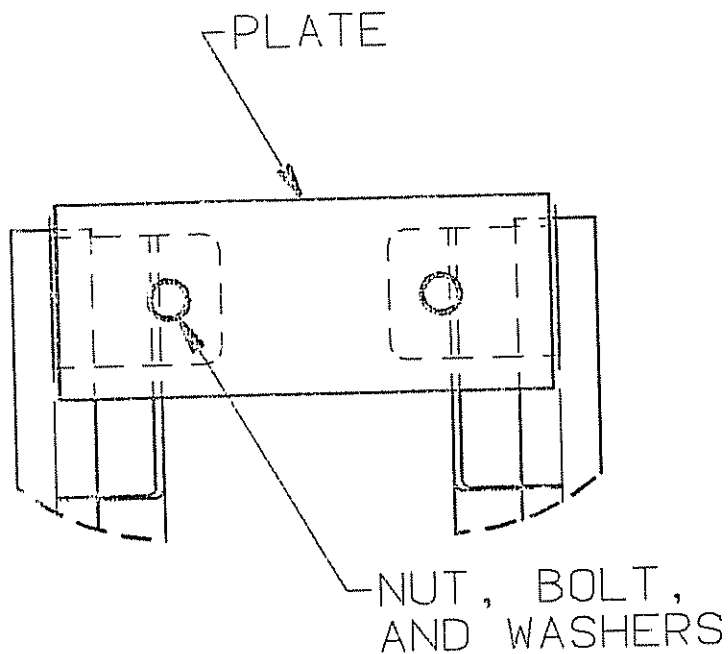


INSTALLATION INSTRUCTIONS  
Cleveland Wheels & Brakes Conversion Kit 199-213

7.10 Install the swivel fitting (hydraulic T-fitting), and the brake de-ice T-fitting between the two brake assemblies.

7.11 Draw the two cylinder assemblies together using the two brake tie bolts, two nuts, and four washers shown as items 3, 4, and 5 on the 50-137 installation drawing. Lubtork these bolts to 150 in-lbs.

7.12 Fasten the 139-30000 Plate to the 139-30200 and the 139-30300 sub-assemblies using the 103-01600 bolts, 094-14000 nuts, and the 095-10800 washers provided. Torque to 40-50 in-lbs.



7.13 Repeat this procedure for the opposite strut.

7.14 Follow the remaining instructions in the 199-184 Kit Installation Manual to complete kit installation.

June, 1993

INSTALLATION INSTRUCTIONS  
Cleveland Wheels & Brakes Conversion Kit 199-213

8. WEIGHT AND BALANCE COMPUTATIONS

The weight difference between Parker P/N 139-29900 and the Beech P/N 114-810088-5 Brake De-ice Manifold is negligible.

June, 1993



INSTALLATION INSTRUCTIONS  
Cleveland Wheels & Brakes Conversion Kit 199-213

9.0 KIT PARTS LIST.

AIRCRAFT WHEEL & BRAKE DIVISION

PARKER HANNIFIN CORPORATION

AVON, OHIO

PARTS LIST

199-213 BRAKE DE-ICE MANIFOLD KIT

BEECH 1900C AND 1900D

<u>PART NO.</u>	<u>CODE NO.</u>	<u>DESCRIPTION</u>	<u>QUANTITY</u>
139-29900	139-29900	Assembly, Brake De-ice Manifold	1
103-01600	103-01600	Bolt, NAS1303-2	2
094-14000	094-14000	Nut, MS21042-3	2
095-10800	095-10800	Washer, AN960-10L	4
139-30000	139-30000	Plate	2
095-05300	095-05300	Washer, AN960C1016	2
221-01100	221-01100	Cotterpin, MS24665-302	2
139-30100	139-30100	T-Fitting	1
139-30200	139-30200	Sub-Assembly Manifold	1
139-30300	139-30300	Sub-Assembly Manifold	1
199-213	Manual	Installation Manual	1
50-147		Drawing	1

THIS KIT SUPPLEMENTS THE 199-184 KIT  
TO CONVERT ONE BEECH 1900C AND 1900D  
WITH BRAKE DE-ICE TO  
CLEVELAND MAIN WHEELS & BRAKES.

June, 1993  
Revision A, November, 1993

