

Installation Manual

Housing – Seat Roller
PART No. RA-13000

Approved Under PMA Number

PQ2415NM

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ROBAIR REPAIR
6381 NW AILERON CT., SILVERDALE, WA 98383 USA

ROBAIR REPAIR
INSTALLATION MANUAL
PART NO. RA-13000

TABLE OF CONTENTS

SUBJECT	PAGE
Scope	01
Instruction for Continued Airworthiness	01
Cessna Aircraft Master Eligibility List	02
Cessna Aircraft Master Eligibility List continued	03
General Removal and Installation Methods and Procedures	04
Supplemental Data	05
Performance	06

LIST OF ILLUSTRATIONS

TITLE	DRAWING
Housing- Seat Roller Installation	RA-13000
Bracket-Seat Adjust Installation	RA-13000-1

ROBAIR REPAIR
INSTALLATION MANUAL
PART NO. RA-13000

REV 0

PAGE TC-1
09 FEB 2012

1.0 SCOPE

The ROBAIR seat roller housing is a replacement for the Cessna seat roller housing part(s). This manual describes in detail the installation of the ROBAIR seat roller housing part list on page 2, for the appropriate Cessna aircraft. The seat roller housing part(s) installation process is carried out in section 4, without major structural modification. This manual consists of Six sections.

Refer to the Table of Contents for the page location of applicable sections.

The manual shall be revised as necessary to reflect current information.

THE ROBAIR HOUSING – SEAT ROLLER HAS BEEN APPROVED BY (FAA) THE FEDERAL AVIATION ADMINISTRATION (PMA) PARTS MANUFACTURING APPROVAL FOR CESSNA AIRCRAFT.

THE INSTALLATION OF THIS PART MUST CONFORM TO THE FAA APPROVED ROBAIR INSTALLATION DRAWINGS AND INSTRUCTIONS CONTINED IN THIS DOCUMENT.

CONFORMITY VERIFICATION OF THE INSTALLED PART(S) TO ROBAIR INSTALLATION DRAWINGS AND INSTRUCTIONS IS THE RESPONSIBILITY OF THE INSTALLATION FACILITY.

1.1 INSTALLATION AND FABRICATION DRAWINGS

ITEM NO.	DESCRIPTION	DRAWING/DOCUMENT NO.	REV LTR
	HOUSING – SEAT ROLLER INSTALLATION	RA13000	N/A
	BRACKET--SEAT ADJUST INSTALLATION	RA13000-1	N/A

1.2 REFERENCES

Cessna Service Manual

2.0 INSTRUCTION FOR CONTINUED AIRWORTHINESS

2.1.1. Comply with all applicable Cessna instructions.

REV 0

3.0 EFFECTIVE AIRCRAFT

This manual is applicable to the aircraft in this list:

Part Number	Effectivity
RA-13000-33	172K,L,M,N,P,Q,F172H,K,L,M,N,P,R172K,FR172K,172RG,177,A,B,F177RG,177RG,180H,J,K,A185E,F,182N,P,Q,R,T182,F182P,Q,FR182,R182,TR182,P206E,U206E,F,G,TU206E,F,G,TP206E,207,T207,207A,T207A,210K,L,M,N,R,T210K,L,M,N,R,337E,F,G,H,T337E,F,G,H,P337H,F337E,F,G,H,FT337E,F,GP
RA-13162-1	U206G,TU206G,207A,T207A
RA-13022-2	P206E,U206E,F,G,TU206E,F,G,TP206E
RA-13023-1	P206E,U206E,F,G,TU206E,F,G,TP206E,207,T207,207A,T207A
RA-13023-2	P206E,U206E,F,G,TU206E,F,G,TP206E,207,T207,207A,T207A
RA-13104-8	172D,E,F,G,H,I,K,L,M,N,P,Q,F172D,E,F,G,H,K,L,M,N,P,FR172K,P172D,R172K,FP172D,172RG,180F,G,H,J,K,185B,C,D,E,A185E,F,182F,G,H,J,K,L,M,N,P,Q,R,F182Q,P,T182,TR182,R182,FR182,205,A,206,P206,A,B,C,D,E,U206,A,B,C,D,E,F,G,TU206A,B,C,D,E,F,G,TP206A,B,C,D,E,207,T207,207A,T207A,210C,D,E,F,G,H,J,K,L,M,N,R,T210F,G,H,J,K,L,M,N,R,336,337E,F,F337E,F,T337E,F
RA-13104-39	172D,E,F,G,H,I,K,L,M,N,P,Q,F172D,E,F,G,H,K,L,M,N,FP172D,P172D,R172K,FR172K,180F,G,H,J,185B,C,D,E,A185E,F,182F,G,H,J,K,L,M,N,P,Q,R,FR182,FR182,TR182,F182P,Q,205,A,206,P206,A,B,C,D,E,U206,A,B,C,D,E,F,G,TU206A,B,C,D,E,F,G,TP206A,B,C,D,E,207,T207,207A,T207A,210C,D,E,F,G,H,J,T210F,G,H,J
RA-13104-40	172D,E,F,G,H,I,K,L,F172D,E,F,G,H,K,L,FP172D,P172D,180F,G,H,J,185B,C,D,E,A185E,F,182F,G,H,J,K,L,M,N,P,205,A,206,P206,A,B,C,D,E,U206,A,B,C,D,E,TU206A,B,C,D,E,TP206A,B,C,D,E,207,T207,210C,D,E,F,G,H,J,T210F,G,H,J
RA-13104-41	172M,N,F172M,N,R172K,FR172K,180F,G,H,J,185B,C,D,E,A185E,F,182F,G,H,J,K,L,M,N,P,Q,R,FR182,FR182,TR182,F182P,Q,205,A,P206,A,B,C,D,E,U206,A,B,C,D,E,F,G,TU206A,B,C,D,E,F,G,TP206A,B,C,D,E,207,T207,207A,T207A,210C,D,E,F,G,H,J,T210F,G,H,J
RA-13104-42	172D,E,F,G,H,I,K,L,M,N,F172D,E,F,G,H,K,L,M,FP172D,P172D,R172K,FR172K,180F,G,H,J,185B,C,D,E,A185E,F,182F,G,H,J,K,L,M,N,P,Q,R,FR182,FR182,TR182,F182P,Q,205,A,206,P206,A,B,C,D,E,U206,A,B,C,D,E,F,G,TU206A,B,C,D,E,F,G,TP206A,B,C,D,E,207,T207,207A,T207A,210C,D,E,F,G,H,J,T210F,G,H,J
RA-13104-61	172M,N,F172M,N,R172K,FR172K,180J,A185F,182P,Q,TR182,R182,F182P,Q,FR182,U206E,F,G,TU206E,F,G,207,T207,207A,T207A
RA-13104-65	172N,P,F172N,P,FR172K,R172K,172RG,182Q,R,R182,T182,U206G,TU206G,207A,T207A
RA-13104-67	172N,P,F172N,P,172RG,182Q,R,R182,TR182,T182,U206G,TU206G,207A,T207A
RA-13104-71	172P,Q,F172P,172RG,182R,R182,TR182,U206G,TU206G,207A,T207A
RA-13104-72	172P,Q,F172P,172RG,182R,R182,TR182,U206G,TU206G,207A,T207A
RA-13604-5	205,A,206,P206,A,B,C,D,E,U206,A,B,C,D,E,F,G,TU206A,B,C,D,E,F,G,TP206A,B,C,D,E,207,T207,207A,T207A
RA-13604-13	205,A,206,P206,A,B,C,D,U206,A,B,C,D,E,F,G,TU206A,B,C,D,E,F,G,TP206A,B,C,D,207,T207,207A,T207A
RA-13604-14	205,A,P206E,U206E,F,G,TU206E,F,G,TP206E,207A,T207A

ROBAIR REPAIR
 INSTALLATION MANUAL
 PART NO. RA-13000

REV 0

PAGE 2
 09 FEB 2012

3.0 EFFECTIVE AIRCRAFT (CONTINUE)

This manual is applicable to the aircraft in this list:

Part Number	Effectivity
RA-13604-28	U206G,TU206G,207A,T207A
RA-13604-29	U206G,TU206G,207A,T207A
RA-13603-38	205,A,206,P206,A,B,C,D,E,U206,A,B,C,D,E,F,G,TU206A,B,C,D,E,F,G,TP206A,B,C,D,E 207,T207,207A,T207A
RA-13603-41	205,A,206,P206,A,B,C,D,E,U206,A,B,C,D,E,F,G,TU206A,B,C,D,E,F,G,TP206A,B,C,D,E 207,T207,207A,T207A
RA-13603-42	205,A,206,P206,A,B,C,D,E,U206,A,B,C,D,E,F,G,TU206A,B,C,D,E,F,G,TP206A,B,C,D,E 207,T207,207A,T207A
RA-13645-1	172D,E,F,G,H,I,K,F172D,E,F,G,H 180F,G,H,185B,C,D,E,A185E,182F,G,H,J,K,L,M 205,A,206,P206,A,B,C,D,U206,A,B,C,D,TU206A,B,C,D,TP206A,B,C,D 207,T207,210C,D,E,F,T210F
RA-13645-2	172D,E,F,G,H,I,K,F172D,E,F,G,H 180F,G,H,185B,C,D,E,A185E,182F,G,H,J,K,L,M 205,A,206,P206,A,B,C,D,U206,A,B,C,D,TU206A,B,C,D,TP206A,B,C,D 207,T207,210C,D,E,F,T210F
RA-13645-3	172D,E,F,G,H,I,K,F172D,E,F,G,H 180F,G,H,185B,C,D,E,A185E,182F,G,H,J,K,L,M 205,A,206,P206,A,B,C,D,U206,A,B,C,D,TU206A,B,C,D,TP206A,B,C,D 207,T207,210C,D,E,F,T210F
RA-13645-4	172D,E,F,G,H,I,K,F172D,E,F,G,H 180F,G,H,185B,C,D,E,A185E,182F,G,H,J,K,L,M 205,A,206,P206,A,B,C,D,U206,A,B,C,D,TU206A,B,C,D,TP206A,B,C,D 207,T207,210C,D,E,F,T210F

ROBAIR REPAIR
INSTALLATION MANUAL
PART NO. RA-13000

REV 0

PAGE 3
09 FEB 2012

4.0 GENERAL REMOVAL AND INSTALLATION METHODS AND PROCEDURES

Check and comply with all Airworthiness Directives and review appropriate model Service and Parts manuals.

4.1.0 Cessna Seat Roller Housing Replacement for Infinite Adjusting Seats:

- 4.1.1 Remove affected Seat rail limit stops and remove seat from aircraft.
- 4.1.2 Flip seat upside down and place on work bench. Remove existing plastic seat roller and plastic washers, axle screw, roller bushing, nut and washer .
- 4.1.3 Remove the 2 each roller housing attach screws, washers, nuts and set aside.
- 4.1.4 Install New Robair Infinite adjusting seat roller housing part number RA-13000-33 in reverse order using airworthy plastic roller washers, bushing, axle screw, nut and washer.
- 4.1.5 Reinstall seat onto aircraft seat rails. Check function of seat stop mechanism and for binding or dragging of seat on rails. Correct any discrepancies. Reinstall seat rail limit stops.

4.2.0 Cessna Seat Roller Housing Replacement for other than Infinite Adjusting Seats:

- 4.2.1 Remove seat travel limit stops for affected seat.
- 4.2.2 Remove seat from seat rails and aircraft.
- 4.2.3 Flip seat over and place on work bench. Remove and replace one seat roller housing at a time.
- 4.2.4 Remove seat roller housing plastic roller, plastic washers, bushing and axel screw with nut and washer.
- 4.2.5 Remove if applicable seat rail stop pin and associated hardware and set aside.
- 4.2.6 Remove unsatisfactory seat roller housing by drilling out attaching rivets and/or unscrew attaching fasteners.
- 4.2.7 Be aware some roller housings use a flat aluminum shim between the blade of the roller housing and the roller housing structure socket. Pay close attention to the location of this shim. You will need to reuse this shim in same location as Cessna original roller housing.
- 4.2.8 Install airworthy plastic seat roller, plastic washers, bushing, axle screw, nut and washer into new Robair seat roller housing.
- 4.2.9 Loosely install Robair seat roller housing into seat structure using original shim in same location. (Glue shim to roller housing blade). Install seat assembly back onto aircraft seat rails.
- 4.2.10 Position new Robair seat roller housing in seat structure, so that there is no binding or tilting out of true to seat rail.

REV 0

PAGE 4
09 FEB 2012

- 4.2.11 Drill attaching holes through Robair seat roller housing blade using the seat structure existing holes for guidance. (Use a clamp, clecos or other temporary fasteners to hold seat roller housing secure while drilling).
- 4.2.12 Remove seat from aircraft seat rails, flip seat over and place on work bench.
- 4.2.13 Remove temporary fasteners and attach new Robair seat roller housing by installing new rivets and/or airworthy fasteners into holes just drilled.
- 4.2.14 Reinstall seat rail stop pin and associated hardware if applicable.
- 4.2.15 Move on to second seat roller housing or if no further replacement of roller housing, reinstall the seat onto aircraft seat rails and check operation including seat stop operation and reinstall seat limit stops.

4.3.0 Bracket-seat adjustment installation:

- 4.3.1 Reference Drawing number RA13000-1 Bracket-seat adjustment Installation for housing assembly.
- 4.3.2 Position 1 each Bracket part number RA-13104-8 into applicable seat roller housing as depicted in drawing RA13000-1.
- 4.3.3 Be aware bracket must be installed with off center hole at rear of housing.
- 4.3.4 Install 4 each (per housing) MS20470AD4-5 rivets through bracket and housing. Reference AC43.13-1B Acceptable Methods and Techniques for rivet installation.

5.4.0 Final Assembly

- 5.4.1 Ensure all tools and remaining parts have been removed from aircraft.
- 5.4.2 Complete aircraft logbook entry and return aircraft to service.

6.0 SUPPLEMENTAL DATA

The seat roller housing is a replacement for Cessna seat roller housing parts.

6.1.1 AIRWORTHINESS LIMITATIONS

There is no change to the aircraft limitation procedures when the seat roller housing is installed

6.1.2 EMERGENCY / ABNORMAL PROCEDURES

There is no change to the aircraft emergency procedures when the seat roller housing window is installed

6.1.3 NORMAL PROCEDURES

There is no change to the aircraft normal procedures when the seat roller housing window is installed

REV 0

PAGE 5
09 FEB 2012

6.1.4 PERFORMANCE

There is no change to the aircraft performance when the seat roller housing is installed

6.1.5 WEIGHT AND BALANCE

There is no change to the aircraft weight and balance when the seat roller housing is installed

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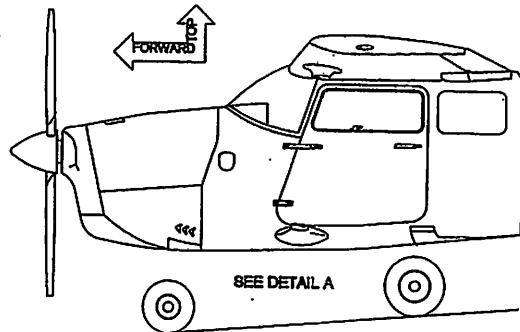
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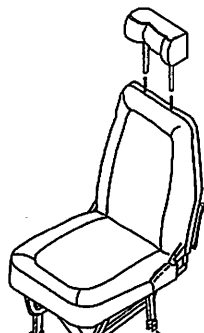
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NOTES:
1. REFERENCE AC 43.13-1B ACCEPTABLE METHODS, TECHNIQUES.

DATE	BY	DESCRIPTION	DATE	APPROVED



SIDE VIEW - PILOT SIDE



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QTY	PART NO.	DESCRIPTION	QTY REQ.
4	RA-13000-33	HOUSING - BEAT ROLLER	28
1	RA-13003-42	HOUSING - BEAT ROLLER	27
1	RA-13003-41	HOUSING - BEAT ROLLER	26
2	RA-13003-36	HOUSING - BEAT ROLLER	26
2	RA-13004-29	HOUSING - BEAT ROLLER	24
2	RA-13004-28	HOUSING - BEAT ROLLER	23
2	RA-13004-14	HOUSING - BEAT ROLLER	22
2	RA-13004-13	HOUSING - BEAT ROLLER	21
2	RA-13004-5	HOUSING - BEAT ROLLER	20
1	RA-13023-1	HOUSING - BEAT ROLLER	19
2	RA-13023-2	HOUSING - BEAT ROLLER	18
2	RA-13022-1	HOUSING - BEAT ROLLER	17
1	RA-13022-2	HOUSING - BEAT ROLLER	16
1	RA-13104-72	HOUSING - BEAT ROLLER	15
1	RA-13104-71	HOUSING - BEAT ROLLER	14
2	RA-13104-66	HOUSING - BEAT ROLLER	13
1	RA-13104-67	HOUSING - BEAT ROLLER	12
1	RA-13104-65	HOUSING - BEAT ROLLER	11
1	RA-13104-61	HOUSING - BEAT ROLLER	10
1	RA-13104-42	HOUSING - BEAT ROLLER	9
1	RA-13104-41	HOUSING - BEAT ROLLER	8
1	RA-13104-40	HOUSING - BEAT ROLLER	7
1	RA-13104-30	HOUSING - BEAT ROLLER	6
2	RA-13104-6	BRACKET - BEAT ADJUSTMENT	6
1	RA-13045-4	HOUSING - BEAT ROLLER	4
1	RA-13045-3	HOUSING - BEAT ROLLER	3
1	RA-13045-2	HOUSING - BEAT ROLLER	2
1	RA-13045-1	HOUSING - BEAT ROLLER	1

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DRAWING NO. RA-13000		TITLE HOUSING - SEAT ROLLER		DRAWING NO. RA-13000		REV IR		SCALE D	

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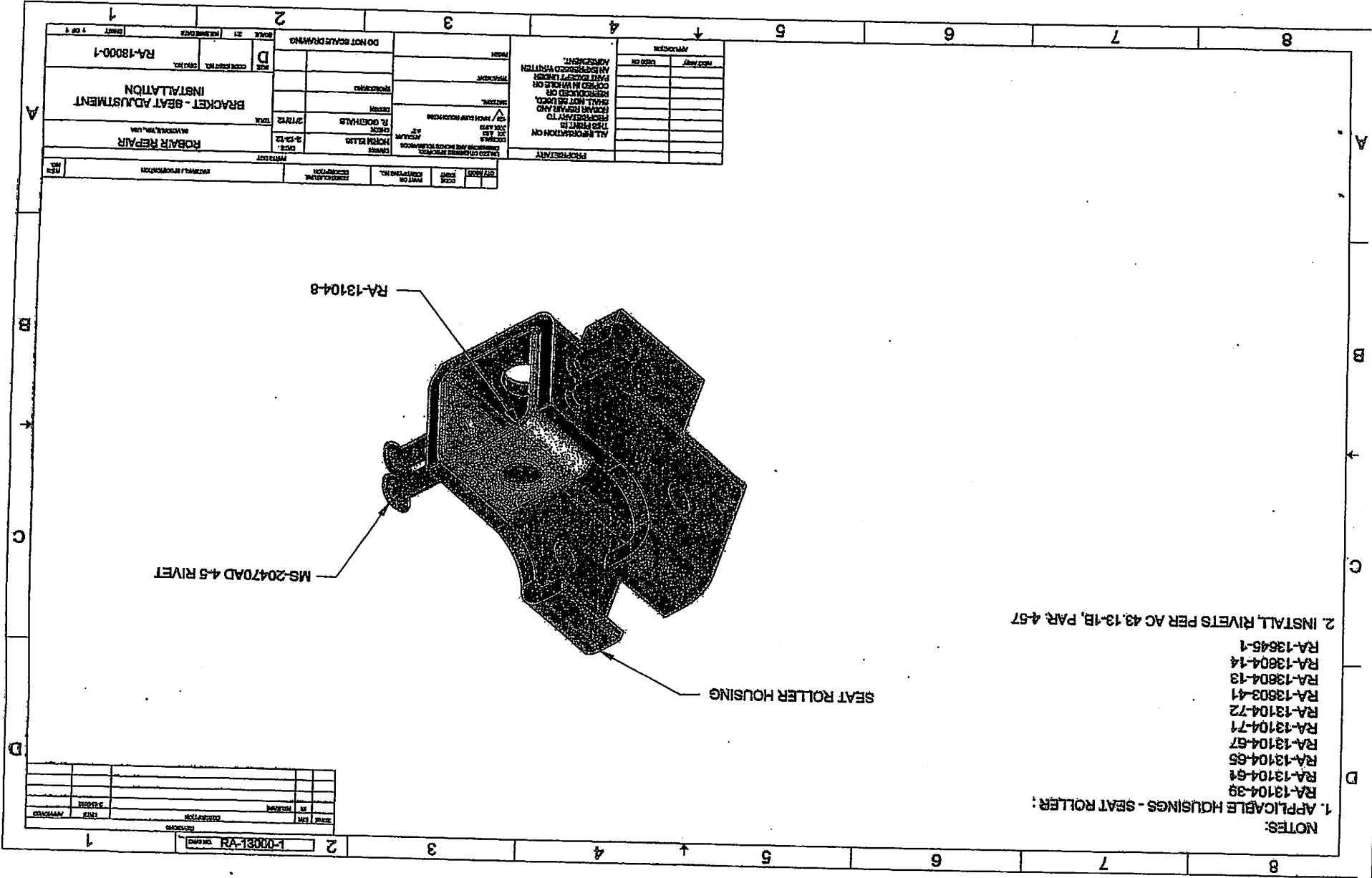
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DO NOT SCALE DRAWING

1 OF 1



- NOTES:
1. APPLICABLE HOUSINGS - SEAT ROLLER:
 - RA-13104-39
 - RA-13104-61
 - RA-13104-65
 - RA-13104-67
 - RA-13104-71
 - RA-13104-72
 - RA-13903-41
 - RA-13604-13
 - RA-13604-14
 - RA-13646-1
 2. INSTALL RIVETS PER AC 43.13-1B, PAR. 4.57

PROPERTY		PROPERTY	
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DATE: 2-13-12	TIME: 07:12	DATE: 2-13-12	TIME: 07:12
ROBAR REPAIR		ROBAR REPAIR	
BRACKET - SEAT ADJUSTMENT INSTALLATION		BRACKET - SEAT ADJUSTMENT INSTALLATION	
RA-18000-1		RA-18000-1	

DATE	TIME	DATE	TIME