Illustrated Parts List and

Maintenance Instructions with Initial Installation Instructions

FOR

SEATING AND BELTS FOR FOUR INSTALLATION

Part No. 369H90035-501

USED ON HUGHES 500D (MODEL 369D) HELICOPTERS

AND

Part No. 369H90035-503

USED ON HUGHES 500E AND 530F (MODELS 369E AND 369F) HELICOPTERS



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HUGHES HELICOPTERS TECHNICAL MANUAL RECOMMENDED CHANGE REPORT

This manual has been prepared and distributed by the Commercial Service Publications Department and is intended for use by personnel responsible for the maintenance of Hughes Helicopters. Periodic revision of this manual will be made to incorporate the latest information. If, in the opinion of the reader, any information has been omitted or requires clarification, please direct your comments to this office via this form (or a duplicate). An endeavor will be made to include such information in future revisions.

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FOREWORD

- F-1. PURPOSE AND CONTENT OF THIS MANUAL.
- F-2. This manual supplements information contained in the Basic Handbook of Maintenance Instructions (HMI Vol 1) and the Illustrated Parts Catalog (IPC), and contains instructions for initial installation and continuing maintenance for the seating and belts for four installation. This passenger compartment installation is sometimes referred to as the "Four on the Floor" configuration. Weight and balance data is included. This manual also contains parts lists for procuring replacement parts for the seating and belts for four installation.

F-3. APPLICABILITY.

- F-4. The seating and belts for four installation is applicable for use on any Hughes 500D (Model 369D). 500E (Model 369E) and 530F (Model 369F) helicopter.
- F-5. COMPATIBILITY OF COMBINED OPTIONAL EQUIPMENT.
- F-6. For compatibility information on which optional equipment may or may not be used in combination at the same time, refer to section 21, HMI Vol 1.
- F-7. ORGANIZATION OF CONTENTS.
- F-8. The contents of this manual are grouped into sections as outlined in the Table of Contents.

Each section is organized to provide comprehensive coverage of entire systems, major equipment groupings, and major components that are similar or associated. Procedures for each of these are presented in sequence as defined in section 1, HMI - Vol 1.

F-9. USE OF THIS MANUAL.

F-10. This manual is for use by operators of the model 369D/E/F helicopter equipped with a seating and belts for four installation. Although this manual is a separate publication, it should be kept with HMI - Vol 1, HMI - Vol 2, the IPC and other handbooks listed in section 1, HMI - Vol 1 that form the primary information file for the helicopter.

F-11. RELATED PUBLICATIONS.

- F-12. Reference is made to applicable portions of HMI Vol 1, the IPC and applicable Opt Eqpt Manuals as required to accomplish instructions contained herein.
- F-13. LITERATURE CHANGES AND REVISIONS.
- F-14. Changes and revisions to contents of this manual are made as defined in section 1, HMI Vol 1.

SECTION 1 ILLUSTRATED PARTS LIST

1-1. SCOPE AND CONTENTS.

1-2. This illustrated parts list provides, by means of text (parts lists) and companion illustrations, a complete parts definition of the seating and belts for four installation configuration, manufactured by Hughes Helicopters, Inc., Culver City, California.

NOTE: The illustrated parts list is organized and presented in the same manner as the 369D and 369E/F Series Illustrated Parts Catalog. (For information on use, refer to 369D - IPC or 369E/F - IPC.)

1-3. GROUP ASSEMBLY PARTS LIST.

1-4. The parts list furnish information for procuring replacement parts for the seating and belts for four installation and shall not be used for any other purpose. For information or procurement of other replacement parts, refer to the appropriate IPC.

1-5. ILLUSTRATIONS.

1-6. Isometric illustrations are provided for each group assembly parts list. Each illustration is exploded to the extent necessary to show parts relationship for the seating and belts for four installation.

1-7. USABLE ON CODE.

1-8. The USABLE ON CODE column located at the right-hand side of the Group Assembly Parts List pages indicates the effectivity of parts by aircraft serial number. In many cases two different parts are listed, one representing the original installation and another representing an improved replacement item. Alphabetic codes are used to indicate the aircraft serial number applications of a given part. When no USABLE ON CODE is listed, items are understood to have full effectivity.

A = 369E S/N 0001 and subsequent and 369F S/N 0003 and subsequent

B = 369D S/N 0003 and subsequent

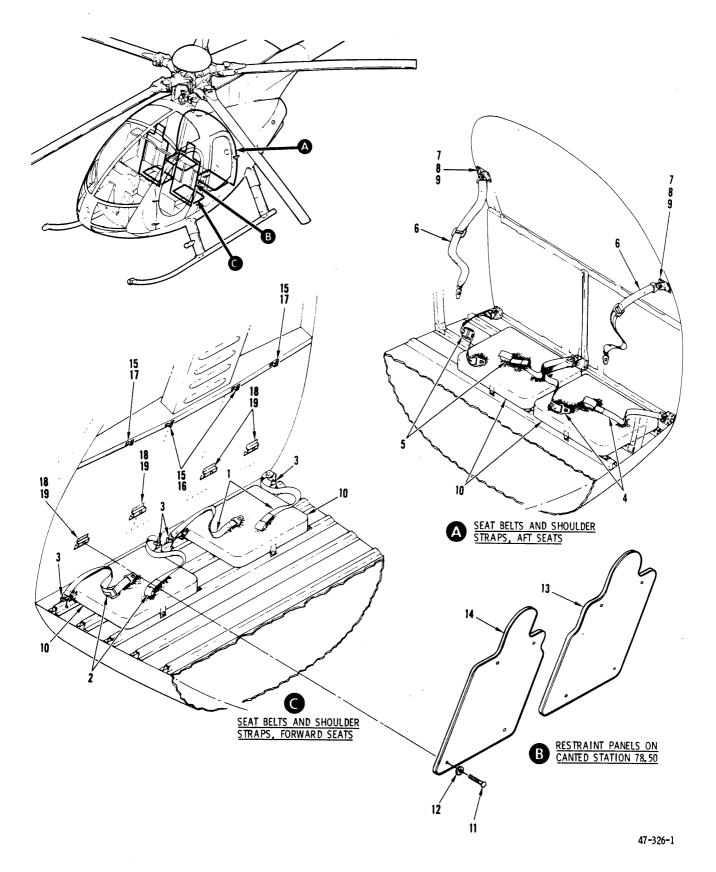


Figure 1-1. Seating and Belts for Four Assembly — 369E/F Helicopters

FIG. & INDEX NO.	PART NO.	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
1-1-	369H90035-503	SEATING AND BELTS FOR FOUR		A
-1	369H92252-27 369H92252-3	SEAT BELT ASSEMBLY, RH FWD SEAT BELT ASSEMBLY, RH FWD (For replacement order 369H92252-27)	1 1	
-2	369H92252-29 369H92252-5	SEAT BELT ASSEMBLY, LH FWD SEAT BELT ASSEMBLY, LH FWD (For replacement order 369H92252-29)	1 1	
-3 -4	369H6662 369H92252-31 369H92252-7	FITTING ASSEMBLY SEAT BELT ASSEMBLY, LH AFT SEAT BELT ASSEMBLY, LH AFT	4 1 1	
-5	369H92252-33 369H92252-9	(For replacement order 369H92252-31) SEAT BELT ASSEMBLY, RH AFT SEAT BELT ASSEMBLY, RH AFT	1 1	
-6 -7 -8 -9 -10	369H6513-3 NAS623-3-4 AN960PD10L 369H92250 369H92253-503 369H92253-501	(For replacement order 369H92252-33) SHOULDER STRAPS SCREW WASHER FITTING SUPPORT SEAT ASSEMBLY SEAT ASSEMBLY (Two way intrch with 369H92253-503 in ship sets)	2 8 8 2 4 4	
-11 -12 -13 -14 -15 -16 -17 -18 -19	NAS514P1032-8 5724-17 369H90035-19 369H90035-14 NAS1398B4-2 369H90035-5 369H90035-41 MS20470AD4 369H90035-9	SCREW WASHER RESTRAINT PANEL, RH RESTRAINT PANEL, LH RIVET BRACKET ASSEMBLY BRACKET ASSEMBLY RIVET BRACKET ASSEMBLY	8 8 1 1 8 2 2 AR 4	A

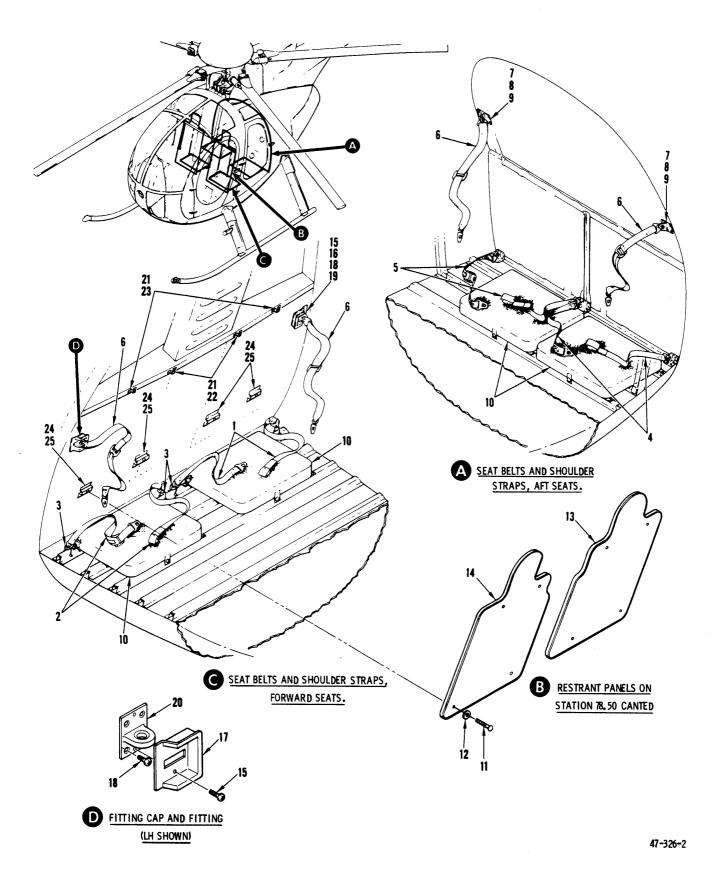


Figure 1-2. Seating and Belts for Four Assembly -369D Helicopters

FIG. & INDEX NO.	PART NO.	DESCRIPTION	UNITS PER ASSY	USABLE ON CODE
1-2-	369H90035-501	SEATING AND BELTS FOR FOUR		В
-1	369H92252-27 369H92252-3	SEAT BELT ASSEMBLY, RH FWD	 1 1	
-2	369H92252-29 369H92252-5	(For replacement order 369H92252-27) SEAT BELT ASSEMBLY, LH FWD	1	
-3	369H6662	SEAT BELT ASSEMBLY, LH FWD (For replacement order 369H92252-29) FITTING ASSEMBLY	4	
-4	369H92252-31 369H92252-7	SEAT BELT ASSEMBLY, LH AFT	1 1	
-5	369H92252-33 369H92252-9	(For replacement order 369H92252-31) . SEAT BELT ASSEMBLY, RH AFT . SEAT BELT ASSEMBLY, RH AFT	1 1	
-6 -7	369H6513-3 NAS623-3-4	(For replacement order 369H92252-33) SHOULDER STRAPS	4	
-8 -9	AN960PD10L 369H92250	. SCREW	8 8 2	
-10	369H92253-503 369H92253-501	SEAT ASSEMBLY	4 4	
-11 -12	NAS514P1032-8 5724-17	. SCREW	8 8	
-13 -14 -15	369H90035-19 369H90035-14 MS35206-245	RESTRAINT PANEL, RH	1 1	
-16 -17 -18	369H90035-4 369H90035-3 MS24603C272	CAP, FITTING, RH	4 1 1	
-19 -20	369H92508-2 369H92508-1	SCREW	8 1 1	
-21 -22 -23	NAS1398B4-2 369H90035-5 369H90035-7	. RIVET	8 2	
-24 -25	MS20470AD4 369H90035-9	RIVET	2 AR 4	

SECTION 2 MAINTENANCE INSTRUCTIONS

- 2-1. GENERAL INFORMATION.
- 2-2. <u>SCOPE</u>. This section provides description and maintenance instructions for the seating and belts for four kit.
- 2-3. REFERENCE DATA. Where directed in the following procedures, refer to the Handbook of Maintenance Instructions, Volume 1 (HMI Vol 1) for supplementary information and procedures.
- 2-4. <u>DESCRIPTION</u>. The seating and belts for four kit is designed for maximum use of the passenger compartment for transportation of personnel. The kit consist of four floor installed seat assemblies, with seat belts and shoulder straps at each position. The two aft facing seat positions include head & back restraint panels mounted on canted station 78.50 structure. Shoulder straps for aft facing passengers are installed on Model 369D helicopters only.

2-5. ADJUSTMENTS.

2-6. The shoulder strap is adjusted to cross passengers chest from outboard shoulder to center of lap where it joins the seat belt assembly. Seat belts are adjusted by individual passengers for a close and comfortable fit.

2-7. REMOVAL.

- 2-8. Remove components of the seating and belts for four kits as follows:
- a. Remove seat assemblies by lifting tabbed rivets from holes in floor stiffeners, (two per seat), then lift seat up.
- b. Remove restraint panels by removing four bolts and washers from each panel.
- <u>c</u>. Remove seat belts assemblies and shoulder straps by unsnapping hooks at structure mounted fittings.

2-9. INSPECTION.

- 2-10. Inspect components of the seating and belts for four as follows:
- <u>a</u>. Inspect seat and restraint panel covering for tears, cuts, breaks or other evidence of unserviceable condition.
- <u>b</u>. Inspect full length of seat belts and shoulder straps for loose stitching, fraying and fabric wear and deterioration.
- c. Inspect seat belt and shoulder strap end fittings, buckles, and latches for cracks, corrosion, deformation and excessive wear.

2-11. CLEANING.

2-12. Refer to HMI - Vol 1 for interior cleaning procedures.

2-13. REPAIR/REPLACEMENT.

- 2-14. Refer to HMI Vol 1 for repair of minor tears and cuts to the seat and restraint panel coverings.
- <u>a</u>. Replace unserviceable seats and restraint panels.
- <u>b</u>. Seat belts or shoulder straps that show signs of wear, deterioration, fraying and loose stitching must be replaced.

2-15. INSTALLATION.

- 2-16. Install components of the seating and belts for four kits as follows:
- \underline{a} . Install seat assemblies by placing seat in position and inserting tabbed rivets into holes in floor stiffeners.
- b. Install restraint panels by securing each panel with four bolts with accompanying washers.
- <u>c</u>. Install seat belt assemblies and shoulder straps by snapping hooks to structure mounted fittings.

SECTION 3 **INSTALLATION INSTRUCTIONS**

- 3-1. GENERAL INFORMATION.
- 3-2. SCOPE. Procedures in this section may be performed at the operator's discretion and are applicable to all 369D/369E/369F series helicopters. These instructions provide for the installation of the seating and belts for four kit and include modifications to canted station 78.50 structure.
- 3-3. REFERENCE DATA. Reference is made in the instructions to applicable data in HMI -Vol 1 required for the seating and belts for four installation. Table 3-1 lists consumable materials and expendable items required for installation of the complete seating and belts for four kit. Items listed are recommended items of a commercial nature which may be procured locally. Alternate, but equivalent, items are acceptable.
- 3-4. PREPARATION FOR INSTALLATION. Preparation for installation of the seating and belts for four kit includes the following:
- a. Check all electrical switches for off position, and ensure that master switch is set to OFF.
- b. Identify all components, including attaching hardware, to be removed for access to work areas.

Protect components from damage and foreign matter until reinstalled.

c. After drilling or cutting, remove burrs and metal particles. Apply a thin coat of zinc chromate to bare metal areas.

NOTE: An application of color-matched paint may be applied to primer painted reworked areas and to installed hardware.

- 3-5. REMOVAL OF HELICOPTER EQUIPMENT.
- 3-6. Prior to installing the seating and belts for four kit, a limited number of items must be removed from the helicopter aft compartment to accommodate kit installation. Refer to HMI -Vol 1 and remove the following:
- a. Aft compartment seats by releasing quick disconnects on seating structure at floor and firewall fittings.
- b. Existing aft seat belt and shoulder strap assemblies.
- disconnect cigarette lighter wiring.
- e. Bulkhead trim panels or insulation blankets at station 124.00 in area of WL 40.00 and BL 20.00 right and left sides.
- f. Forward compartment outboard seat backs $(3\overline{6}9D \text{ only}).$

Table 3-1. Consumable Materials and Expendable Items

Item No.				Commercial Product ⁽²⁾		
	Material		Specification No. (1)	Name/No.	Manufacturer	
1		mer, zinc omate	TT-P-1757	(3)		
NOTES:	(1) Numbers are U.S.A. Specifications and Standards. The prefix symbols are defined as follows: AMS - American Material Standard; MS - Military Standard; MIL - Military Specification; Single, double or triple alpha prefix of the same letter - Federal Specification; AN - Air Force-Navy Aeronautical Standard; NAS - National Aerospace Standard.					
NOTES:	(1)	Specification;	- American Material Stand Single, double or triple alr	lard; MS - Militar tha prefix of the sa	y Standard; MIL - Military	
NOTES:	(,	Specification; cation; AN - A	- American Material Stand Single, double or triple alr	lard; MS - Militar bha prefix of the sa al Standard; NAS -	y Standard; MIL - Military ame letter - Federal Specifi- · National Aerospace Standard	

- 3-7. INSTALLATION OF SEATING AND BELTS FOR FOUR KIT.
- 3-8. Installation of the seating and belts for four kit includes procedures for installing restraint panels on canted station 78.50, seat assemblies, shoulder straps and seat belt assemblies.

NOTE: Use Cleco clamps and fasteners as required to facilitate rivet installation and install rivets with wet zinc chromate primer (1, table 3-1).

Rivets are equally spaced and are normally positioned twice the diameter of the rivet shank from the outside edge of the material, edge joggle or flange radius.

3-9. <u>CANTED STATION 78.50</u>, <u>BRACKETS</u>, <u>FITTINGS AND RESTRAINT PANELS</u>.

- a. On canted station 78.50, WL 22.45, remove four existing rivets in area of LBL 8.25 and four rivets in area of LBL 19.25 as shown in figure 3-1 (369E/F helicopters) or 3-2 (369D helicopters).
- b. Position two bracket assemblies (19, fig. 1-I or 25, fig. 1-2), locate and drill four 0.1285-inch diameter holes in each bracket, matching holes in removed rivet pattern. See figure 3-1 for 369E/F helicopters or figure 3-2 for 369D helicopters.
- c. Hold brackets in position with Cleco fasteners and drill four 0.1285-inch diameter holes through upper flange of each bracket and through canted station 78.50 web.
- d. Install bracket assemblies with 16 rivets (18, fig. 1-1 or 24, fig. 1-2).
- e. Repeat steps a through d to install two bracket assemblies (19, fig. T-1 or 25, fig. 1-2) to opposite side.
- \underline{f} . Install bracket assemblies (22 and 23) on 369D helicopters as follows. (Refer to step \underline{g} for 369E or 369F installation.)
- (1) On WL 45.33, position bracket assembly (23) at LBL 15.50 and drill two 0.1285-inch diameter holes through bracket and canted station 78.50 channel as shown in figure 3-1.
- (2) Install bracket assembly with two blind rivets (21, fig. 1-1).
- (3) On WL 45.33 LH, position bracket assembly (22) LBL 8.50 and drill two 0.1285-inch diameter holes through bracket and canted station 78.50 channel.
- (4) Install bracket assembly with two blind rivets (21).
- (5) Repeat steps (1) through (4) to install two bracket assemblies (22 and 23) RH opposite.
- ${\rm g.}$ Install bracket assemblies (22 and 23) on 369E and 369F helicopters as follows.
- (1) On WL 37.85, position bracket assembly (17) at BL 19.50 LH. Drill two 0.1285-inch diameter holes through bracket and canted station 78.50 channel. (See figure 3-1.)

- (2) Install bracket assembly with two blind rivets (15).
- (3) On WL 37.85, position bracket assembly (16) BL 8.50 LH. Drill two 0.1285-inch diameter holes through bracket and canted station 78.50 channel. (See figure 3-1.)
- (4) Install bracket assembly with two blind rivets (15).
- (5) Repeat steps (1) through (4) to install bracket assemblies (16 and 17) RH opposite.

NOTE: Continue with step h for installation of fittings (19 and 20) on 369D helicopters. For 369E/F helicopters, continue with step o.

- h. On left side of canted station 78.50 bulkhead frame, locate four existing nutplates in area of WL 41.06 and BL 24.74.
- i. Attach shoulder strap fitting (20) with four screws (18).
- j. On right side of canted station 78.50 bulkhead frame, locate four existing nutplates in area of WL 41.06 and BL 24.74.
- k. Attach shoulder strap fitting (19) with four screws (18).
- 1. Attach LH fitting (20) to nutplates in LH tee using four screws (18).
- m. Attach RH fitting (19) to nutplates in RH tee using four screws (18).
- n. Cut out slots in removed, passenger compartment forward trim panels to accommodate lugs of shoulder strap fittings.
- o. Drill four 0.217/0.229-inch diameter holes in forward trim panel and four holes in each restraint panel (13 and 14). Locate holes from bracket assemblies (16, 17, 19, fig. 1-1 or 22, 23, 25, fig. 1-2) and install as in steps a through j.
- p. Reinstall forward trim panel, connect cigarette lighter wiring.
- q. Install fitting cap (17) to LH shoulder strap fitting with two screws (15) (369D helicopters only).
- r. Install fitting cap (16) to RH shoulder strap fitting with two screws (15) (369D helicopters only).
- s. Install restraint panel (14) to LH side over trim panel with four each, washers (12) and screws (11).
- t. Install restraint panel (13) to RH side over trim panel with four each, washers (12) and screws (11).
- $\underline{\mathbf{u}}$. Reinstall forward compartment seat back assemblies.

3-10. SEAT ASSEMBLIES.

- a. Position seat assemblies (10) on floor structure to locations specified in figure 3-3.
- b. Secure seats in position by pressing tabbed rivets into holes in floor stiffeners.

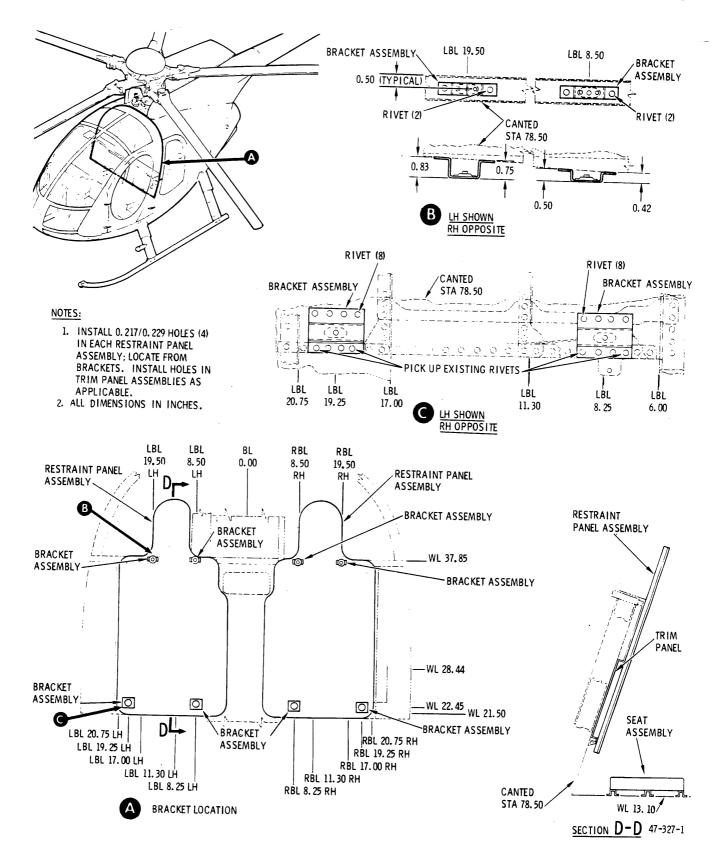


Figure 3-1. Restraint Panel Assemblies and Hardware Installation -369E/F Helicopters

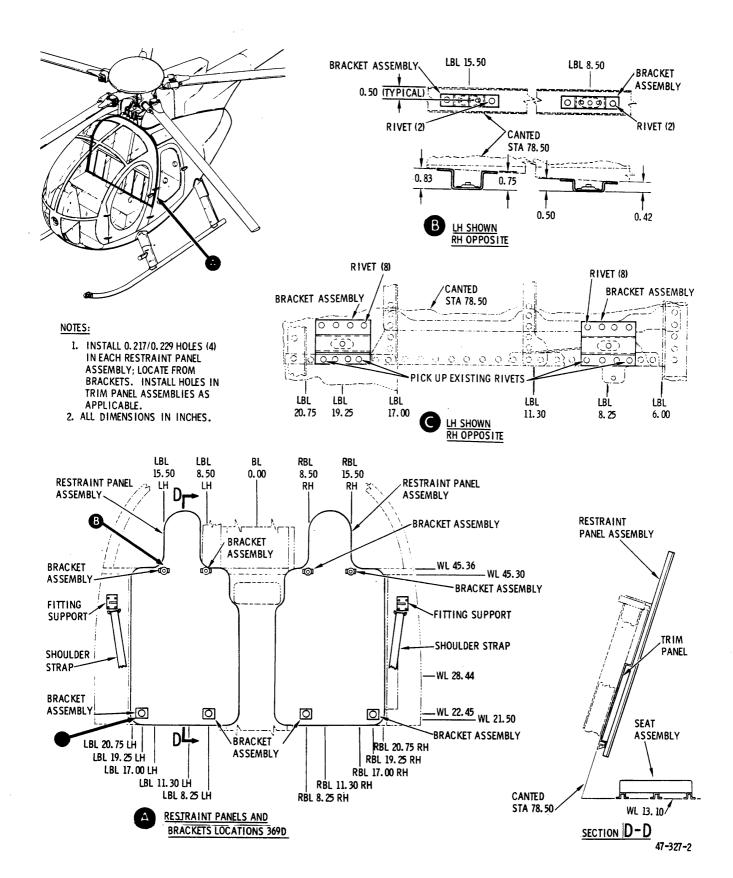


Figure 3-2. Restraint Panel Assemblies and Hardware Installation - 369D Helicopters

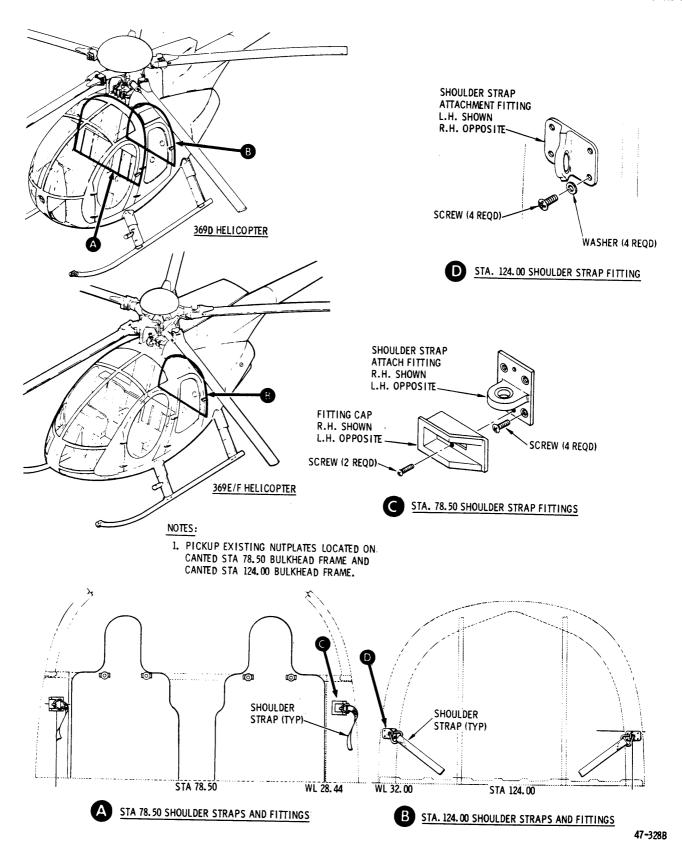


Figure 3-3. Shoulder Straps and Fittings Installation — 369D/E/F Helicopters

<u>NOTE</u>: Seat assemblies are position interchangeable.

3-11. AFT SEAT BELT ASSEMBLIES AND SHOULDER STRAPS.

- a. On both left and right sides of canted station 128.00 locate four existing nutplates in areas of WL 40.00 and BL 20.00 (reference figure 3-1 or 3-2).
- b. Attach a shoulder strap support fitting (9, fig. 1-1) on each side using four washers (8) and four screws (7) for each fitting.
- c. Cut out slots in removed trim panels or insulation blankets to accommodate lugs of new support fittings.
 - d. Reinstall trim panels or insulation blankets.
- e. Connect a shoulder strap (6), to each support fitting.

NOTE: Adjust shoulder strap to cross passengers chest from outboard shoulder to inner center of lap.

- f. Locate the three existing cargo floor seat belt fittings on the aft compartment floor at station 124.00.
- g. Connect adjustable portion of seat-belt assembly (5) to the RH fitting and nonadjustable portion to center fitting.

NOTE: All seat belt assemblies are to be installed as illustrated in figure 3-4 and as noted on cloth identification labels attached to each seat belt assembly. The two center belts are installed with hooks down.

h. Connect adjustable portion of seat belt assembly (4, fig. 1-1 or 4, fig. 1-2) to LH fitting and nonadjustable portion of seat belt assembly to center fitting.

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3-12. FORWARD SEAT BELT ASSEMBLIES AND SHOULDER STRAPS.

a. Connect a shoulder strap to each shoulder strap support fitting (19 and 20) on canted station 78.50 (369D helicopters only).

<u>NOTE</u>: Adjust shoulder strap to cross passengers chest from outboard shoulder to inner center lap area.

- b. Locate the four tiedown fitting holes on the first floor stiffener aft of canted station 78.50 (fig. 3-4).
- c. Install a cargo tiedown fitting (3, fig. 1-1 or 3, fig. 1-2) in each floor stiffener hole.
- d. Connect adjustable portion of seat belt assembly (2) to the LH fitting and the nonadjustable portion to the LH center fitting.
- e. Connect adjustable portion of seat belt assembly (1) to the RH fitting and the nonadjustable portion to the RH center fitting.

3-13. WEIGHT AND BALANCE.

a. Record necessary weight and balance changes.

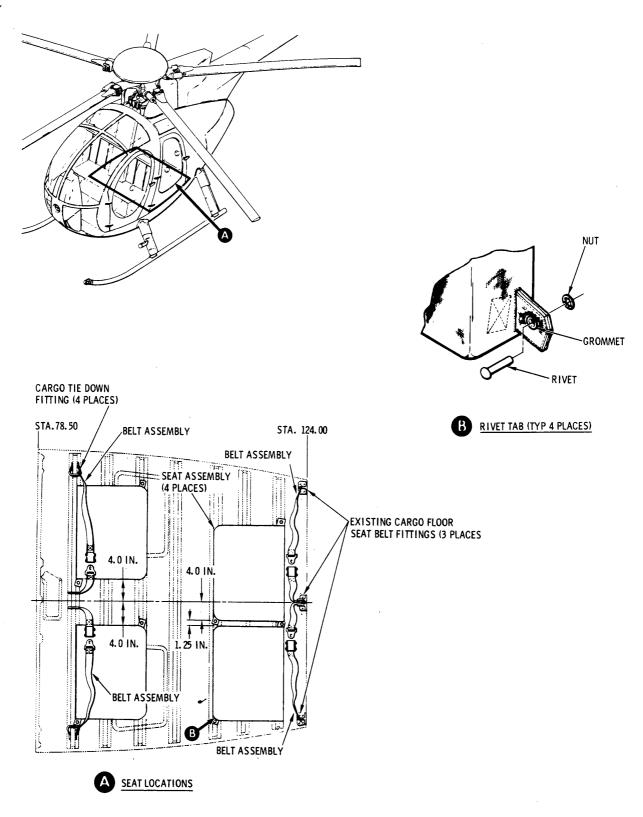
NOTE: Refer to table 3-2 for applicable weight and balance data for 369D Series helicopters and to table 3-3 for 369E and 369F Series helicopters.

Table 3-2. Weight and Balance Data - 369D Helicopters

Item	Weight (lb)	Longitudinal Arm (in.)	Longitudinal Moment (inlb/100)
-501 Kit			
Added	+30.2	+93.5	+2824
Removed	-32.7	+108.6	-3551
Net Change	-2.5	+290.8	-727

Table 3-3. Weight and Balance Data - 369E/F Helicopters

Item	Weight (lb)	Longitudinal Arm (in.)	Longitudinal Moment (inlb/100)
-503 Kit			
Added	+31.2	+92.1	+2873
Seat Belts (2)	-5.1	+117.2	- 598
Bench Seat	-24.7	+111.0	-2742
Net Change	+1.4	-	-467



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Figure 3-4. Seat Belt and Seat Assemblies Installation - 369D/E/F Helicopters