

INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

For

**3 Place Aft Deluxe Couch Installation
With Oxygen System Kit**

Document No.: AF-508

Revision "IR"

Revision Date: 09/24/10

Applicable to:

Cessna 500/501 Series Aircraft

Modified by FAA STC's SA117RM & SA58RM

The information in the Instruction for Continued Airworthiness is FAA accepted material and complies with 14 CFR 25.1529, Instructions for Continued Airworthiness. It supersedes or adds to that provided in the Maintenance Manual for the Cessna 500 Aircraft, only where covered in the items contained herein. For limitations and procedures not contained in the Supplement, consult the Component Maintenance Manual, or other approved airplane data.

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REVISION PAGE

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Updates to the ICA will be made by Aviation Fabricators Inc. Updates will be listed in the log of revisions and the effective pages will be listed below.

Log of Revisions				
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ABBREVIATIONS AND DEFINITIONS

Abbreviations	Definitions
AML	FAA Approved Model List (AML)
Detailed Inspection (DET)	An intensive examination of a specific item, installation or assembly to detect damage, failure or irregularity. Available lighting is normally supplemented with a direct source of good lighting at an intensity deemed appropriate. Inspection aids such as mirrors, magnifying lenses, etc. may be necessary. Surface cleaning and elaborate access procedures may be required.
FAA	Federal Aviation Administration
FAA MIDO	FAA Manufacturing Inspection District Office
General Visual Inspection (GVI)	A visual examination of an interior or exterior area, installation or assembly to detect obvious damage, failure or irregularity. This level of inspection is made from within touching distance unless otherwise specified. A mirror may be necessary to enhance visual access to all exposed surfaces in the inspection area. This level of inspection is made under normally available lighting conditions such as daylight, hangar lighting, flashlight or droplight and may require removal or opening of access panels or doors. Stands, ladders or platforms may be required to gain proximity to the area being checked.
ICA	Instructions for Continued Airworthiness
Special Detailed Inspection (SDI)	An intensive examination of a specific item, installation , or assembly to detect damage, failure or irregularity. The examination is likely to make extensive use of specialized Inspection Techniques and/or equipment. Intricate cleaning and substantial access or disassembly procedure may be required.
STC	Supplemental Type Certificate

1.0 INTRODUCTION

The purpose of this Maintenance Manual Supplement and Instructions for Continued Airworthiness (ICA) is to provide the maintenance technician with the information necessary to ensure the continued airworthiness of the Aviation Fabricators 3 place aft couch installation, per installation numbers 90500-1, 90500-101, 90500-102, 90500-103 & 90500-104 when installed in accordance with Aviation Fabricators design data included on STC Drawing List AF-303 per Supplement Type Certificates (STCs) SA117RM & SA58RM.

Modifications to an aircraft obligates the operator to include the maintenance information provided by this document into the operators aircraft Maintenance Manual and operator's aircraft scheduled maintenance program. This document defines supplementary maintenance operations and frequencies recommended by Aviation Fabricators Inc., to ensure the aircraft's airworthiness.

The information contained herein addresses the requirements specified in 14 CFR 23.1529 & 14 CFR 25.1529, Instructions for Continued Airworthiness and supplements the basic Airplane Maintenance Manual only in those areas listed as pertains to the installation of the 3 place aft couch, as installed per the Aviation Fabricators STC Drawing List AF-303. For limitations and procedures not contained in this supplement, consult the Airplane Maintenance Manual.

DATA

All information to support the continued airworthiness of this modification is contained in:

STCs SA117RM & SA58RM
STC Drawing List: AF-303

Installation: STC Drawing List: AF-303

Drawings:

D-10458	Couch Installation
D-10459	Air Outlet Installation
D-10462	Oxygen Box Installation
D-10463	Toilet Cover Installation
D-10464	Anchor Point Installation

Parts: Refer to p/n's 90500-1, 90500-101, 90500-102, 90500-103 & 90500-104 and respective drawings as listed on STC Drawing List AF-303.

The 3 place aft couch is a self contained complete assembly that mounts to the existing frame structure that have addition strengthening brackets and gussets, using standard fittings and hardware, in accordance with approved floor plans. An additional oxygen container assembly is installed by adding it to the existing oxygen system and the air system will have an addition vent plumbed into the existing air system.

Design Change Control

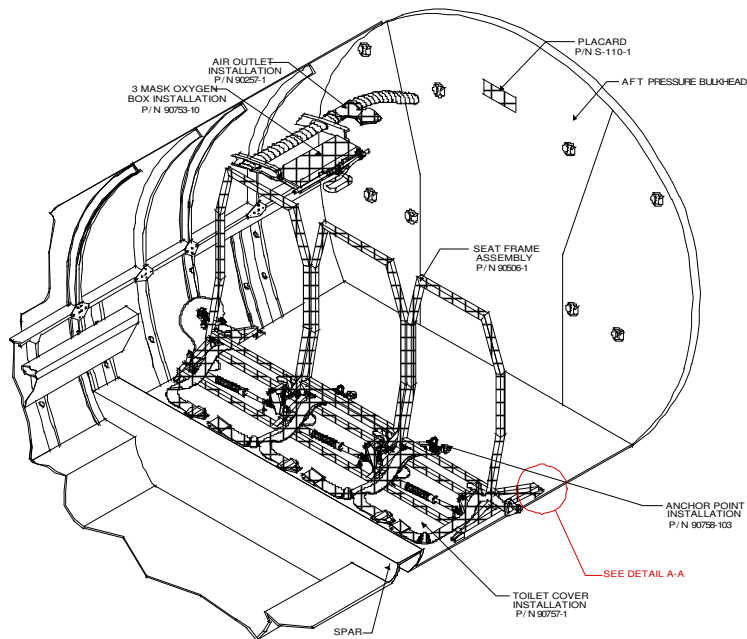
All data and changes to the parts and assemblies will be tracked per STC Drawing List AF-303 latest approved revisions.

Applicable Aircraft

Cessna 500 and 501 aircraft.

3 Place Couch Installation

P/N 90500-1, 90500-101, 90500-103, 90500-103 & 90500-104 (shown)



CE 500/501 3 PLACE AFT DELUXE COUCH INSTALLATION

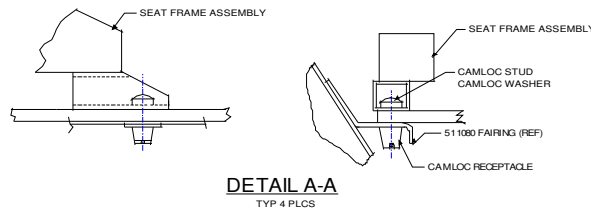
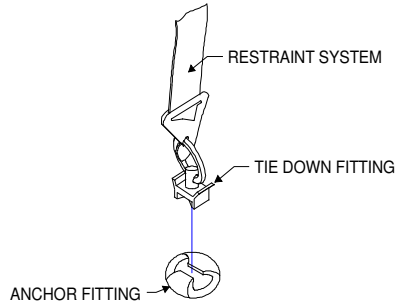


Figure 1.0A

Seat Belt Installation



SEAT BELT INSTALLATION

Figure 1.0B

Air Outlet Installation

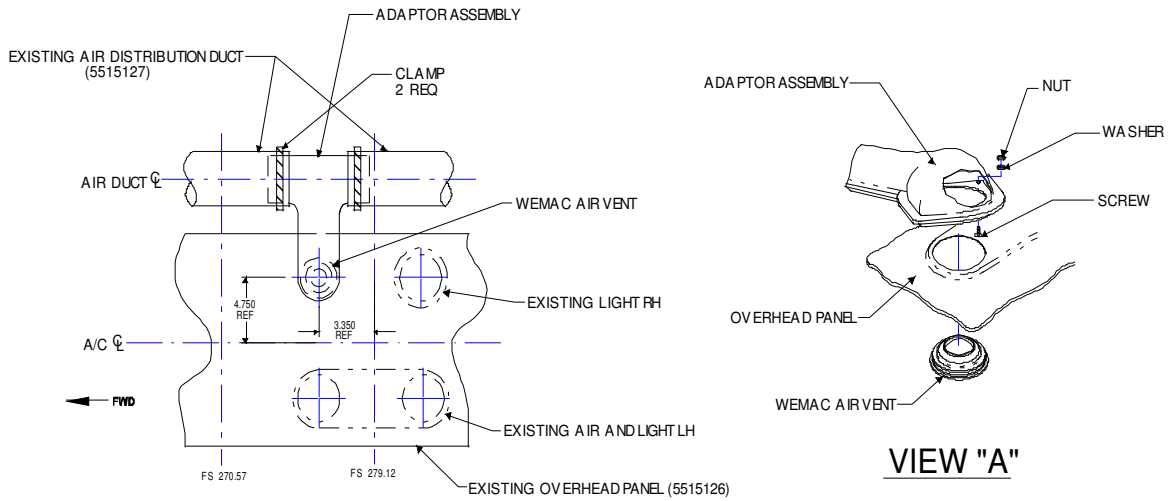


Figure 1.0C

Oxygen Container Assembly Installation

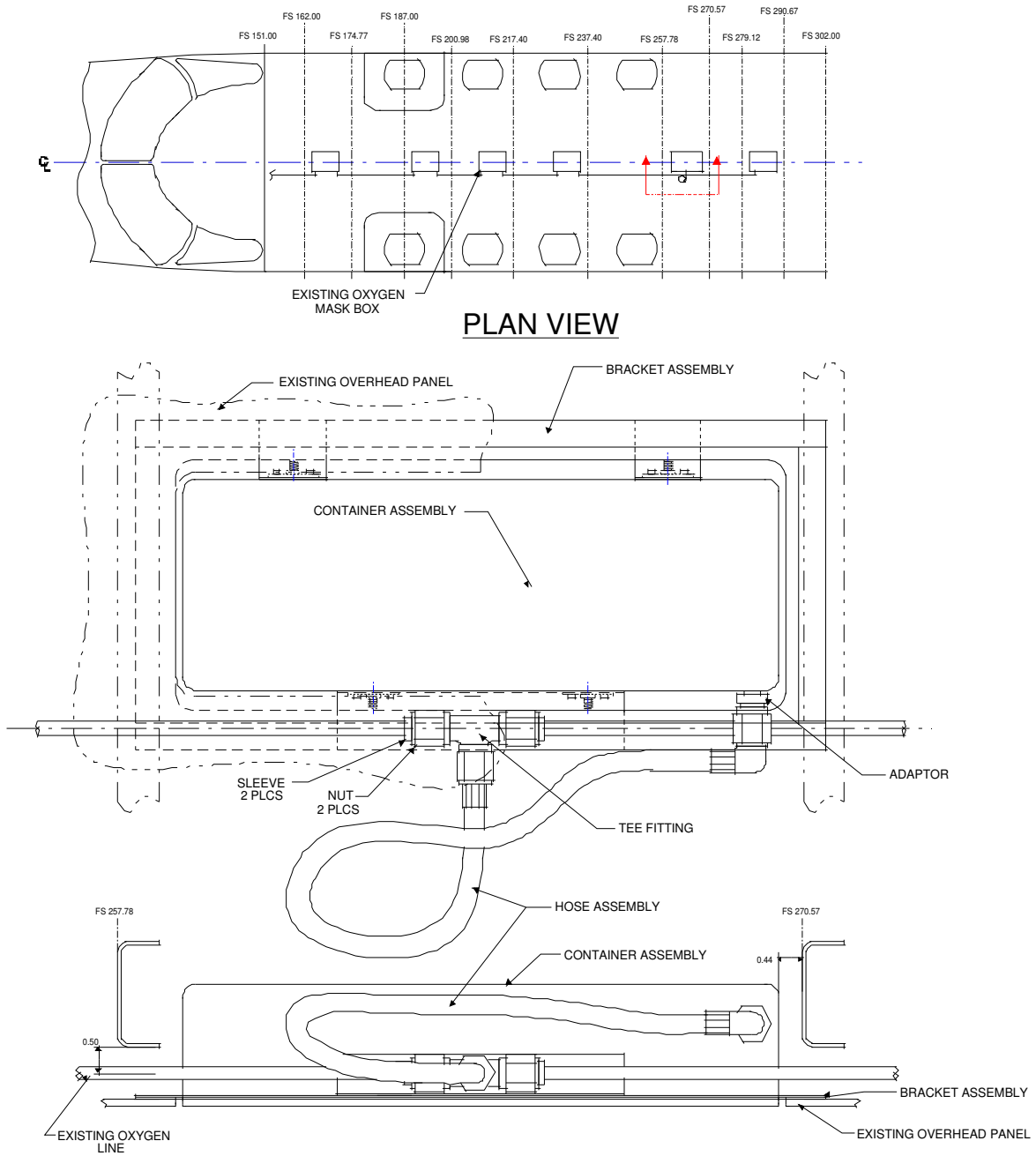


Figure 1.0D

Cushions

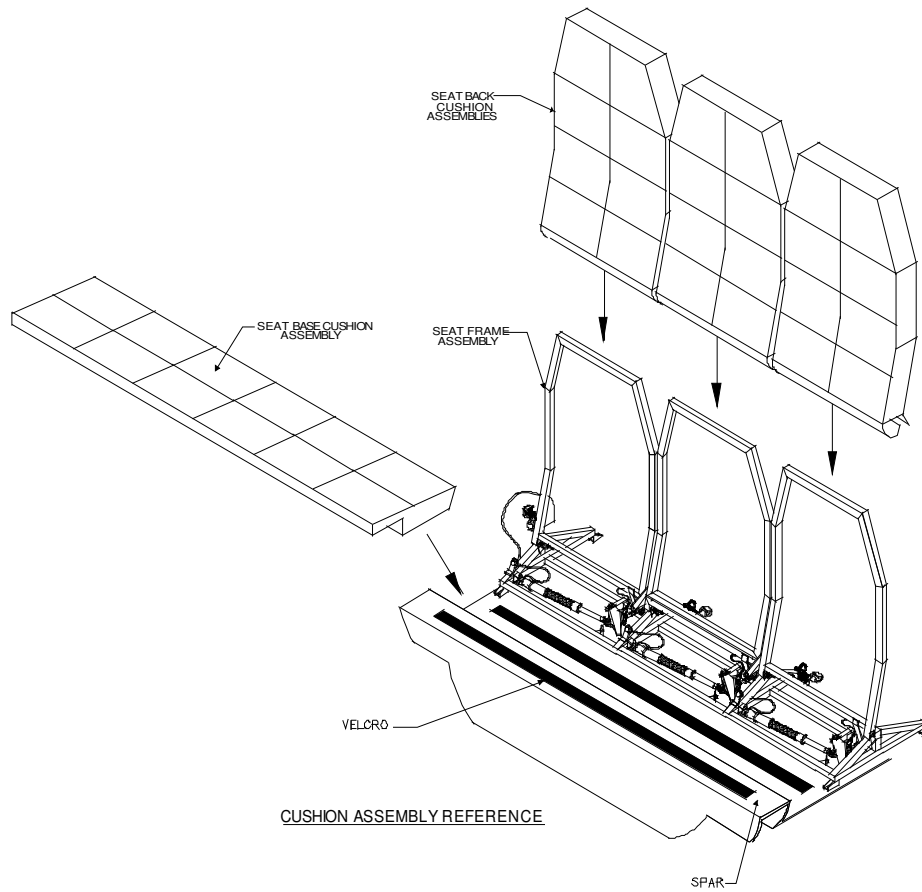


Figure 1.0E

2.0 INSPECTION REQUIREMENTS AND OVERHAUL SCHEDULE

1. To comply with 14 CFR Part 23.1529 and 14 CFR 25.1529, continue the new divan and restraint system on the same inspection and maintenance schedule used per the Cessna Maintenance Manual for seats.
2. The new 3 place aft couch and restraint systems require no service other than inspection at normal inspection interval of 100 hours or annually.
3. Perform a detailed visual inspection of the couch back and seat base coverings to detect apparent or obvious defects or irregularities.

On the upholstery assemblies, check for cracks and punctures within a 4" diameter circle. The mattress assembly can have no more than three defects found within the 4" diameter circle. If it develops a "lump", check to see if there are no more than two lumps within a 4" diameter circle. Any damage to the mattress assembly outside of the described limits will require it to be replaced.

Visually inspect the covering assembly for holes, punctures, and tears. If the damage to the covering is holes smaller than 1/2" in diameter or a cut at a maximum of 2" in length then the covering is satisfactory. The sewing of the cover assembly cannot have a tear or cut exceeding 1" in length. Any damage to the covering assembly outside of the described limits will require it to be replaced.

4. Visually inspect the couch frame assembly tubing and diaphragm for cracks and deformation. Damaged conditions can be detected as a crack at the edge of the tube or along the length of the tubes or as a crack, tear or cut found on the seat bottom diaphragm. Visually inspect all hardware for excessive wear before and after installation.

Replace the seat back and base diaphragms if two cracks or deformations are found within a 4" diameter circle. If a tear or cut is found with a maximum 6" length, replace the diaphragm.

There shall be no broken tubes. There shall be no sharp corners, edges, or protrusions that may injure passengers. Replace the tubes if they are bent in such a way that they are more than 2" off center. Replace the frame assembly tubes if crack length is found to be .125" or greater. Replace the tube if a dent is found running longer than 3". Replace the frame assembly tubes if deformation is greater than .25" the overall thickness of the tube diameter.

Cracked or broken fasteners or fittings are to be replaced with new immediately.

For repair or replacement of damaged or broken parts or assemblies contact Aviation Fabricators Inc.

The modified systems require no service other than inspection at normal inspection intervals.

Task Code			Schedule	Date	Mech	Insp
AFI-100	a.	Inspect for damage to upholstery.				
AFI-101	b.	Inspect safety belts for wear, cuts, fraying, damage, and deterioration.				
AFI-102	c.	Inspect safety belt attachment fittings for wear and damage				
AFI-103	d.	Inspect foot fittings for damage, security, and function.				
AFI-104	e.	Inspect seat frame for damage, and corrosion.				
AFI-105	f.	Inspect overall seat for fit and function.				
AF-106	g.	Inspect oxygen mask and container.				
AFI-107	h.	Function Test Oxygen Container assembly. See Section 11.				

A. Add the new couch and restraint systems on the same inspection and maintenance schedule used per the Cessna Maintenance Manual for seats.

3.0 DIMENSION AND ACCESS

The installation of the 3 place aft couch does not change the dimensions of the aircraft or alter the access to any existing aircraft system.

4.0 LIFTING AND SHORING

No change.

5.0 LEVELING AND WEIGHING

3 Place Aft Couch Frame Assembly	= 28 lbs
Upholstery Allowance	= 25 lbs

6.0 TOWING AND TAXIING

No change.

7.0 PARKING AND MOORING

No change.

8.0 PLACARDS AND MARKINGS

1. Placard p/n S-110-1 is to be installed on the aft bulkhead behind the divan as depicted below.

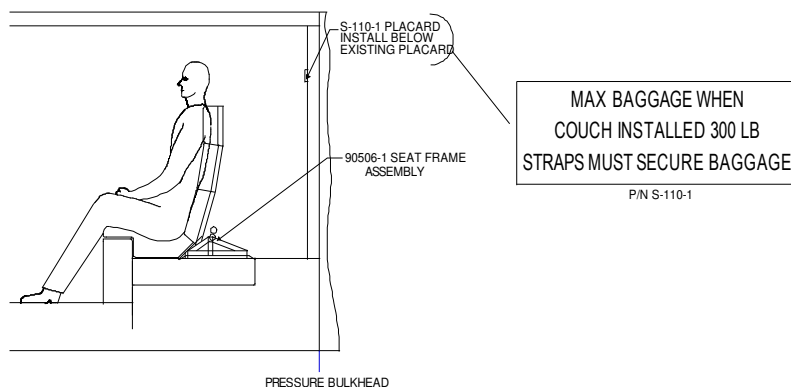


Figure 8.0A

- Placard p/n's 90758-9 & 90758-10 are to be installed on the lower side wall where the anchor fittings are located on the left and right sides of the aircraft as depicted below.

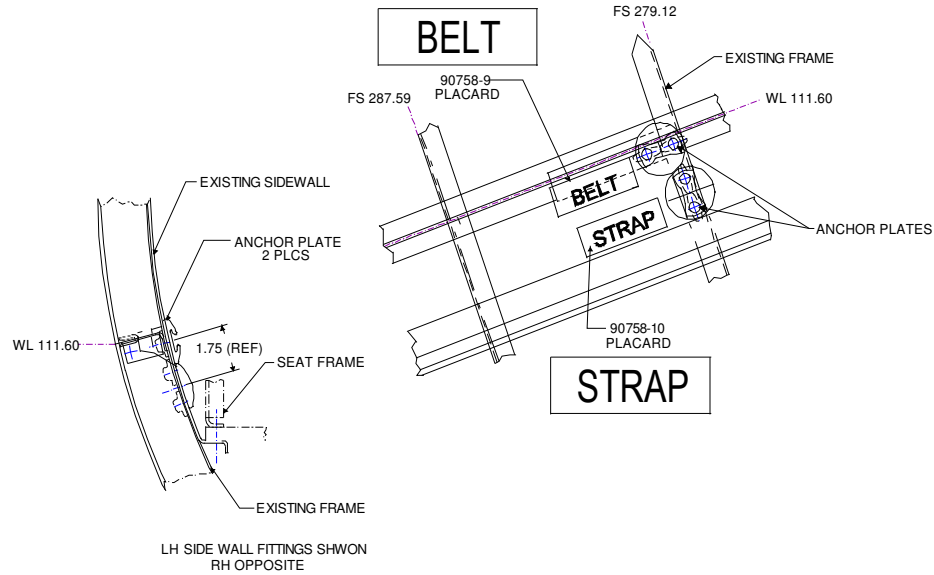


Figure 8.0B

- Placard p/n 5515126-28 is to be installed on the inside of the oxygen container lid assembly as shown below.

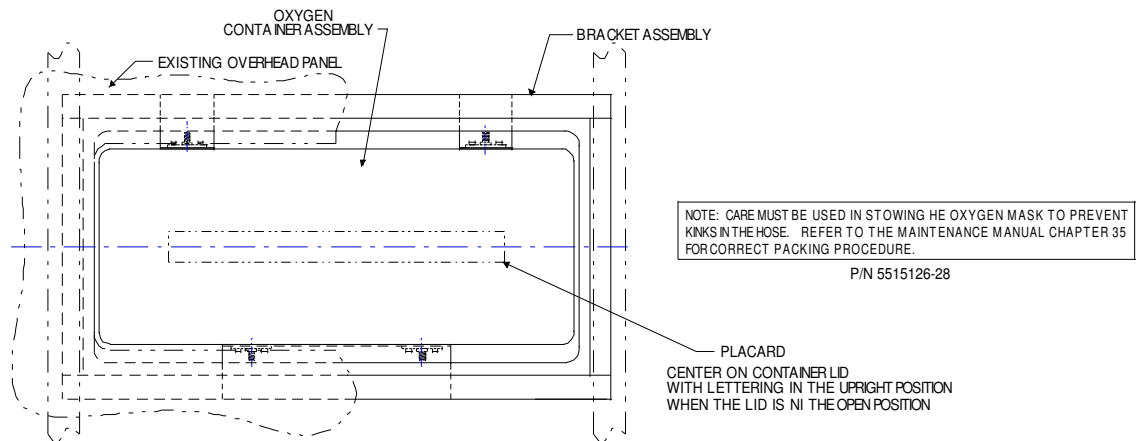


Figure 8.0C

9.0 SERVICE INFORMATION

Typical Couch Service Instructions:

A. Upholstery Cleaning:

Couch Service Instructions

1. Remove seat back and seat bottom cushion assemblies from couch.
2. Clean the cushions in accordance with instructions issued by the company responsible for the upholstery covering so that knowledge of the upholstery material's fire retardant properties are known and will not be compromised.
3. Clean and inspect restraint system for damage, fraying, cuts or seam deterioration.
4. Inspect all attachment fittings and replace if necessary.
5. Inspect overall seat for fit and function.

Note: Limit the cleaning area to the aft couch only so that the cleaner used will not affect the fire retardancy of any other components in the aircraft.

Typical Divan Maintenance Instructions:

Couch Assembly

The couch is a self contained completed assembly that mounts to the floor structure in four places. It is located in the aft of the aircraft cabin just behind the spar. Refer to Figure 1.0A.

Couch Installation:

The installation of the couch requires (1) setting the couch into the correct location and (2) tightening the frame into place using a camloc stud and washer into the receptacle located in the floor structure.

Couch Removal:

Removal of the couch assembly requires (1) loosening the attaching hardware and (2) lifting the couch from its previous location.

Seat Belts

Seat belt removal is accomplished by unhooking the belt end fittings from the tie down fittings attached to the anchor fitting attached to the sidewall or the floor of the aircraft. Ref. to Figure 1.0B

Cushions

The seat bottom cushion assembly is removed by simply pulling the cushion assembly upward away from the velcro on the floor board area around the spar. The back cushions are removed by pulling the slip cover that is velcroed at the bottom up over the seat back frames. The back cushions may also be assembled and velcroed to the back frames. Removal of this type of back cushion is accomplished by simply pulling the cushion assembly from the frames. All covering and upholstery materials must comply with 14 CFR 23.853 or 14 CFR 25.853 as stated on the installation instructions.

Typical Oxygen System Maintenance Instructions:

Oxygen System:

The passenger oxygen mask is an airline conical, constant flow type. When the system is actuated, the initial high pressure surge operates an actuator that opens the cover assembly. After the mask is removed from the container, a lanyard pin must be pulled from the mask valve. With the oxygen turned on, the mask supply tube contains a positive-flow indicator that is readily visible to the user when the mask is being worn. To shut off the flow of oxygen to the mask, install the lanyard pin in the mask valve.

See Section 11.0 for oxygen system maintenance instructions.

10.0 AIRWORTHINESS LIMITATIONS

The information contained herein supplements the basic Maintenance Manuals only in those areas listed, when the aircraft is modified in accordance with Aviation Fabricators STC Drawing List AF-303 Rev D or later approved revision. For limitations and procedures not contained in this supplement, consult the basic Airplane Maintenance Manuals.

The Airworthiness Limitations section is FAA approved and specifies maintenance required under Sec. 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.

AIRWORTHINESS LIMITATIONS - LOG OF REVISIONS			
REV.	EFFECTED PAGE (s)	DESCRIPTION of REVISION	DATE
(IR)	All	Initial Release	09/24/2010

AIRWORTHINESS LIMITATIONS

There are no Airworthiness Limitations to the aircraft with the addition of the 3 place aft couch installed by this STC.

Distribution:

Per the requirement of Appendix G of 14 CFR Part 23 paragraph G23.1 (c), and Appendix H of 14 CFR Part 25 paragraph H25.1 (c), the changes made to the ICA by the applicant will be distributed via mail by means of paper copy.

11.0 SERVICE INSTRUCTIONS FOR OXYGEN SYSTEM

PASSENGER OXYGEN MASK AND CONTAINER INSPECTION (AUTODEPLOYMENT OXYGEN SYSTEM)

It is recommended that the passenger oxygen masks be inspected at the proper interval (See Section 2.0)

Check that none of the following exist:

- a. The oxygen mask sticks to the container or to itself.
- b. Contamination of the oxygen mask or the container.
- c. Excessive force (over four pounds) to remove lanyard pin.
- d. Improper installation of lanyard pin in valve actuator.
- e. Tears, cracks or deterioration of the mask or reservoir bag (unfold bag if necessary).
- f. Hose linking.
- g. Improper connection of oxygen hose to oxygen outlet.

PASSENGER OXYGEN MASK CLEANING (AUTODEPLOYMENT OXYGEN SYSTEM)

Should the oxygen masks need cleaning, wipe the surface to be cleaned with a clean, soft, lint-free cloth that has been moistened with a mild detergent and warm solution (not to exceed 110° F; 43° C). Rinse thoroughly with clean water and allow to completely air dry.

NOTE

Isopropyl alcohol (3, Chart 1) can also be used for cleaning as well as for disinfecting. Refer to CABIN OXYGEN MASK AND CONTAINER DISINFECTING.

PASSENGER OXYGEN MASK AND CONTAINER DISINFECTING (AUTODEPLOYMENT OXYGEN SYSTEM)

- a. Clean the mask and container as instructed in CABIN OXYGEN MASK CLEANING.
- b. Disinfect the mask and container with an aqueous solution of zephiran chloride (5, Chart 1), disinfectant (4, Chart 1) or isopropyl alcohol (3, Chart 1).
- c. Use a clean, lint-free cloth moistened with a solution per step b. Wipe quickly and lightly over the entire area.
- d. After disinfecting, thoroughly air dry the mask or container.
- e. After drying, lightly dust the outside of the face piece with neo-novacite (6, Chart 1).
- f. Install passenger mask in container per PASSENGER OXYGEN MASK PACKING.

PASSENGER OXYGEN MASK PACKING (AUTODEPLOYMENT OXYGEN SYSTEM)

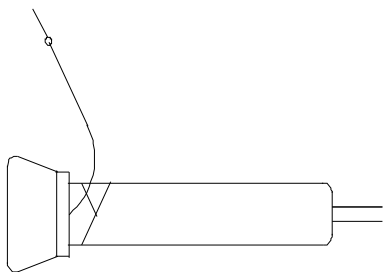
WARNING

Packing and installation of the passenger masks shall be performed by personnel familiar with the procedures and warnings presented in these instructions. Failure to properly pack and install the passenger masks can result in damage to the mask or failure of the mask to deploy properly.

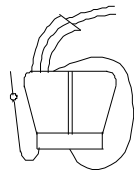
All procedures describe in these instructions shall be performed in an area free of oil, grease, flammable solvents or other contaminants.

PASSENGER OXYGEN MASK PACKING (AUTODEPLOYMENT OXYGEN SYSTEM)

- a. Inspect the mask and container as instructed in PASSENGER OXYGEN MASK AND CONTAINER INSPECTION.
- b. Fold the outside thirds of the reservoir bag over the center third (Detail A).
- c. Place the head strap inside the face piece. Then fold the reservoir bag into the face piece on top of the head strap (Detail B).
- d. Coil the oxygen hose on top of the reservoir bag (Detail C).
- e. If disconnected, connect the end of the oxygen hose to the valve outlet.
- f. Install the lanyard pin in the valve actuator.
- g. Place the mask in the container with the coiled hose on top (Detail D).
- h. Position the door so that the plunger can strike the block on the door, when activated.
- i. Close the door, making sure that the hose is not crimped and the lanyard cord is free of obstructions and not caught in the container door.



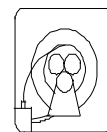
DETAIL A-A



DETAIL B-B



DETAIL C-C



DETAIL D-D

OXYGEN SYSTEM PLUMBING MAINTENANCE

When oxygen lines are being connected, the first three male (external) threads of the fittings should be wrapped with anti-seize tape (1, Chart 1) prior to being connected back into the system.

When the oxygen system plumbing has been connected after maintenance, the new connections should be checked for leakage by applying leak detector fluid (2, Chart 1) to the connections and pressurized. Wipe dry immediately after testing.

When connections leak, check that they are tightened to the proper torque value for that fitting. If this does not stop the leakage, disassemble the connection and check all mating surfaces for damage. Smooth rough mating surfaces if possible to provide a tight connection or install new fittings.

OXYGEN SYSTEM FUNCTIONAL TEST

This procedure checks the oxygen system for flow to the mask outlets (manifold) and system pressure at the outlets.

- a. Connect an oxygen pressure gage to the pilot's oxygen outlet.
- b. Pull out on the control knob.
- c. Observe the system pressure increase. The pressure gag should indicate 70 ± 10 psi.
- d. Verify oxygen flow through each mask and outlet fitting by plugging the mask into the fitting and checking for oxygen flow.
- e. Remove the test gage from the pilot's oxygen outlet.
- f. Push in on the oxygen controls to shut off the oxygen supply.

CHART 1

RECOMMENDED MATERIALS

MATERIAL	SPECIFICATION	PRODUCT	SUPPLIER
1. Tape, anti-seize, polytetrafluoroethylene	MIL-T27730		Obtain locally
2. Leak Detector Fluid, Oxygen System	MIL-L-25567		Obtain locally
3. Isopropyl	TT-I-735		Obtain locally
4. Disinfectant, Oxygen system		QS4	Brulin and Co., Inc. 2920 Dr. Andrew J. Brown Ave. PO Box 270 Indianapolis, IN 46206
5. Zephiran Chloride		00-2572	Scott Aviation 123 E. Montecito Ave. Sierra Madre, CA 91024
6. Neo-novacite		00736	Scott Aviation 123 E. Montecito Ave. Sierra Madre, CA 91024

12.0 TROUBLESHOOTING INFORMATION

Refer to the existing Aircraft Maintenance Manual for troubleshooting the aft couch installation kit and other sub kits that are required beyond the information found on the installation drawings listed below.

D-10458	Couch Installation
D-10459	Air Outlet Installation
D-10462	Oxygen Box Installation
D-10463	Toilet Cover Installation
D-10464	Anchor Point Installation

Seat Actuators

If the seat does not recline properly it may be necessary for the seat actuators to be removed and repaired or replaced. To remove the actuator, loosen hardware at each. Installation is done with the same hardware.

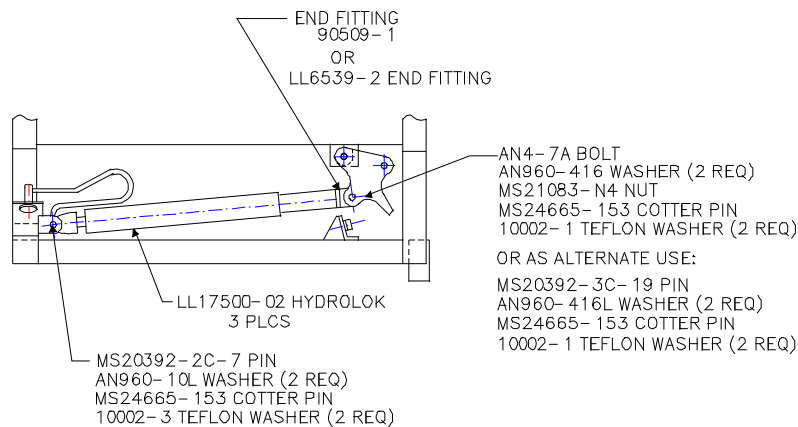


Figure 12.0A

Seat Control Cables

If the control cable button does not “push” to allow the seat actuator to function properly it will need to be repaired or replaced. To remove the controller, loosen it from the end of the actuator by loosening the attaching set screw. To remove controller from the seat frame bracket remove the attaching clip and pull the button end away. Re-install using the clip to attach it to the bracket and tighten the set screw to the end of the actuator.

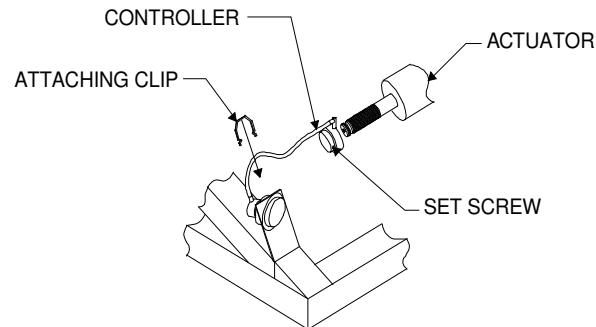


Figure 12.0B

For replacement parts or repair of damage parts contact Aviation Fabricators at (660) 885-8317.

Troubleshooting this installation should only be accomplished by FAA approved repair stations with the appropriate ratings or appropriately rated operator/individuals, with required test equipment and service data.