

Alpha

aviation, inc.

PRODUCT CATALOG



3-POINT DIAGONAL RESTRAINTS REPLACEMENTS and/or UPGRADES for ALPHA AVIATION INC STC KITS



Beechcraft F33A/36 Series/V35B)

Beech 19/23/24 Series

Cessna 150/ 152

Cessna 100 Series

Cessna 177B/177RG

Cessna 200 Series

Grumman

Widgeon

Mooney M20J / K

Navion

Piper

STC Kit Replacement Restraints;

Beechcraft

Beech

Cessna 150/152

Cessna 100 Series

Piper PA23

Piper PA24/30/39

Piper PA28/32

Ercoupe

Alon

3-POINT DIAGONAL REPLACEMENT RESTRAINTS

Alpha Aviation Inc offers Inertial Reel Equipped or Fixed Strap Style (Manually Adjustable) replacement / upgrade restraints for a wide variety of aircraft models with an outboard (side) mounted 3-point diagonal factory installed attachment points. Minor Change kits are available for aircraft that do not have factory installed attachment points (see next section). 2-point lap belts are also available.

Our restraints are manufactured for us by AmSafe®, are FAA / PMA meeting TSO-C114 and include an 8130-3 Airworthiness Certificate and Certificate of Conformance.

3-POINT REPLACEMENTS / UPGRADES INCLUDE;

- 1 Shoulder Harness - Pilot or Co-Pilot Position*
- 1 Lap Belt with New Buckle and End Fittings - Pilot or Co-Pilot Position*
- 8130-3 Airworthiness Certificate
- Certificate of Conformance

2-POINT REPLACEMENTS INCLUDE;

- 1 Lap Belt with New buckle and end fittings - Front or Rear Seat Positions
- 8130-3 Airworthiness Certificate
- Certificate of Conformance

ANSWERS to FAQ's

- A replacement restraint does not need to be the same part # as called out in the Illustrated Parts Catalog.
- Upgrading from a Fixed Strap style restraint to an Inertial Reel Equipped restraint does not require an STC. The same mounting point and hardware are being re-used.
- We are not able to provide a replacement shoulder harness only for an older TSO-c22f lap belt. It would need to be obtained through the aircraft manufacturer or an authorized dealer.
- All of our restraints are interchangeable between pilot and co-pilot *with the exception of the rear seat lap belts in a 172D Powermatic.*
- Navion's without existing harnesses require the addition of a Gusset Kit available at Sierra Hotel Aero.
- PA20/22 will require some parts obtained locally - tube clamps, washers, nuts, bolts, bushings, etc



ALPHA AVIATION INC REPLACEMENT / UPGRADE RESTRAINTS						
AIRCRAFT MAKE / MODEL	FRONT			REAR		
	INERTIAL REEL	FIXED STRAP	2-PT LAP BELT	INERTIAL REEL	FIXED STRAP	2-PT LAP BELT
BEEHCRAFT F33A/36/V35B	X		X	X	X (A36)	X
BEECH 19/23/24, 24R	X	X	X	X		X
BEECH 60 SERIES DUKE	X		X			X
BEECH BE76 DUCHESS	X			X		
BEECH 77 SERIES SKIPPER	X					
CESSNA 150F-K, L/M, 152*		X	X			
CESSNA 100 SERIES	X	X	X	X	X	X
CESSNA 177B / 177RG	X	X	X	X	X	X
CESSNA 200 SERIES	X	X	X		X	X
GRUMMAN	X	X	X			X
WIDGEON	X		X			
MOONEY M20 J / K	X	X	X	X	X	X
NAVION - SLIDING CANOPY	X		X			
NAVION - RANGEMASTER	X	X	X			X
PIPER PA18-135 SUPER CUB	X		X			X
PIPER PA20/22 PACER / TRIPACER	X		X			
PIPER PA23 APACHE / AZTEC	X		X			X
PIPER PA24 COMANCHE	X	X	X			X
PIPER PA28	X	X	X	X	X	X
PIPER PA30 TWIN COMANCHE	X					X
PIPER PA31 NAVAJO / CHIEFTAIN	X					X
PIPER PA32 SARATOGA/SENECA/CHEROKEE	X			X		X
PIPER PA34 SENECA II	X			X		X
PIPER PA38 TOMAHAWK	X					
PIPER PA39 TWIN COMANCHE	X			X		X
PIPER PA44 SEMINOLE	X			X		
PIPER PA46 MALIBU	X			X		X

*Cessna 150F, G, H, J & K have existing nut plates to accommodate the installation of Fixed Strap 3-point diagonal restraints. An STC is not required. If wishing to upgrade to Inertial Reels the STC Kit will be required to install 2 additional nutplates as there is not enough room for the reel at the current location. Cessna 150L/M and 152 with Fixed Strap restraints will require the STC Kit to upgrade to Inertial Reel Restraints.

REPLACEMENTS for ALPHA AVIATION INC 3-PT DIAGONAL STC INSTALLATIONS

Replacements are available for restraints that were installed using an Alpha Aviation Inc Shoulder Harness Installation STC.

All of our restraints are manufactured by AmSafe®, include an 8130-3 Airworthiness Certificate and Certificate of Conformance, are FAA / PMA and meet TSO-C114.

3-Point Replacement/ Upgrade Restraints Include;

1 Shoulder Harness - Pilot or Co-Pilot Position*

Inertial Reel Equipped or Fixed Strap Style (Manually Adjustable)

1 Lap Belt with new Buckle and End Fittings - Pilot or Co-Pilot Position*

8130-3 Airworthiness Certificate

Certificate of Conformance



Replacements are sold as per seat, and are available for the following STC Installation Kits;

AIRCRAFT MODEL	FAA STC	FIXED STRAP	INERTIAL REEL
Alon A-2	SA02481AK	X	n/a
Beechcraft	SA01880CH	X	X
Beech	SA04310CH	X	X
Cessna 150/152	SA04389CH	X	X
Cessna 100 Series	SA02211CH	X	X
Ercoupe	SA02493CH	X	n/a
Piper PA23	SA02298CH	X	X
Piper PA24/30/39	SA02492CH	X	X
Piper PA28/32	SA02015CH	X	X

Please Note: the aircraft serial # and tail #* will be required to verify original STC purchase.

***Example Tail #'s-** US = N, Canada = C-, Australia = VH, etc.

ALPHA AVIATION INC

3-POINT DIAGONAL RESTRAINTS

by MINOR CHANGE INSTALLATION



Cessna Cardinal 177 / 177A

Cessna 205 / 206 / 210

Mooney M20 A thru G, early J



CESSNA CARDINAL 177 / 177A 3-POINT DIAGONAL RESTRAINTS by MINOR CHANGE



Your Cardinal 177 or 177A can be upgraded with the addition of 3-Point Diagonal Shoulder Harnesses in the front by the incorporation of our "Minor Change" Installation Kit. The restraints are OEM quality AmSafe® TSO-C114 restraint assemblies.

Sold individually, each 3-point restraint includes;
1 Shoulder Harness - Fixed Strap or Inertial Reel Equipped
1 Lap Belt with new buckle and end fittings
8130-3 Airworthiness Certificate
Certificate of Conformance

The "Minor Change" Installation Kit includes; (2 seats shown)
Bolts, Washers, Spacers and Installation Instructions



The installation of 3-Point Diagonal Shoulder Harness assemblies using this "MINOR CHANGE" Installation Kit will require a log book entry by a A & P rated mechanic.

**The Minor Change Kit includes installation hardware and instructions only.
The restraint assemblies are sold separately.**

CESSNA 200 SERIES 3-POINT DIAGONAL RESTRAINTS by MINOR CHANGE



Your Cessna 205/206/210 can be upgraded with the addition of 3-Point Diagonal Shoulder Harnesses in the front by the incorporation of our "Minor Change" Installation Kit. The restraints are OEM quality AmSafe® TSO-C114 restraint assemblies

Sold individually, each 3-point restraint includes;
1 Shoulder Harness - Fixed Strap or Inertial Reel Equipped
1 Lap Belt with new buckle and end fittings
8130-3 Airworthiness Certificate
Certificate of Conformance

The "Minor Change" Installation Kit includes; (2 seats shown)
Bolts, Washers, Spacers and Installation Instructions



The installation of 3-Point Diagonal Shoulder Harness assemblies using this "MINOR CHANGE" Installation Kit will require a log book entry by a A & P rated mechanic.

**The Minor Change Kit includes installation hardware and instructions only.
The restraint assemblies are sold separately.**

CESSNA CARDINAL 177 / 177A & CESSNA 200 SERIES 3-PT DIAGONAL RESTRAINTS by MINOR CHANGE

This upgrade is applicable to those CESSNA 177 / 200 Series aircraft that were not factory equipped with front 3-Point Diagonal Shoulder Harnesses.

These aircraft require the installation of upper attachment points to accommodate the installation of shoulder straps.

The shoulder strap upper attachment points are created by the use of an **existing** factory installed nut plate, adjacent to and aft of each pilot's outboard shoulder.

The design of the shoulder strap upper attachment is similar to that provided by Cessna on later Model 177 and 200 Series aircraft. The installation is accomplished through the installation of attachment hardware using the existing nut plate on the aft doorpost vertical frame. The installation is accomplished without airframe structural modification.

This installation is considered by the FAA to be a "MINOR ALTERATION" per AC 43.13-2B, Chapter 9, Par 903, a, 1. An airframe mechanics logbook entry is required.

Seat belt assemblies are available as a Fixed Strap or Inertial Reel Equipped Restraint Assembly.

These replacement restraint assemblies are constructed to meet the 3000-pound requirements of TSO-C114 and are superior to older TSO-22 belt assemblies. They are fabricated using upgraded hardware components and the polyester webbing will provide a longer service life than the previously used nylon material.

Installation Hardware Provided

- 2 ea AN3-6A Bolt
- 2 ea AN3-7A Bolt
- 8 ea AN960-10 Washer
- 4 ea AN970-3 Washer
- 2 ea NAS42DD6-8 Spacer

Typical Cessna 177 Series Installation



NUT PLATE LOCATION



INERTIAL REEL EQUIPPED

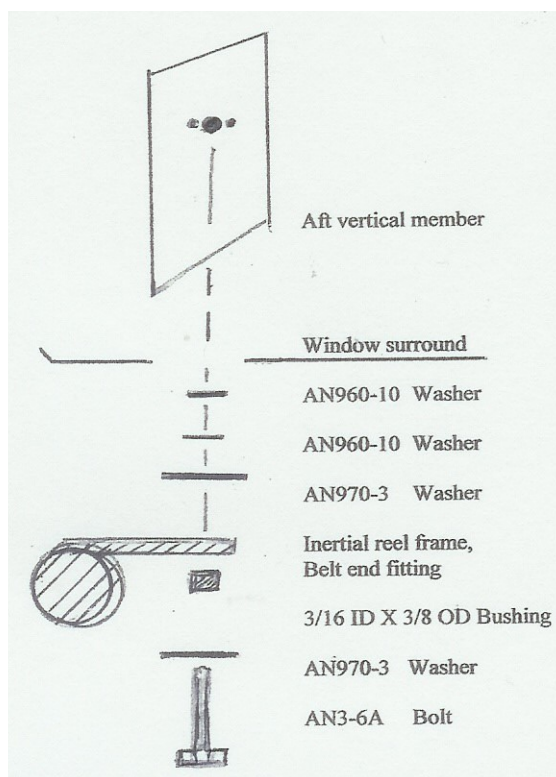


FIXED STRAP STYLE

Continued on Next Page

CESSNA CARDINAL 177 / 177A & CESSNA 200 SERIES by MINOR CHANGE Cont'd

Hardware Configuration, Fixed Strap / Inertial Reel



C177 CARDINAL INSTALLATION INSTRUCTIONS

1. Remove the existing lap belt assemblies and install the new TSO-C114 lap belts.
Note – The buckle portion of the assembly is installed inboard.
2. Remove the screws that secure the Royalite window surround above the passenger assist strap and aft of the door post. Carefully pull open the gap between the window surround and headliner to reveal the aft doorpost vertical members.
3. On the aft doorpost vertical frame locate the unused nut plate. This location is aft of and just above the top passenger assist strap mounting hole on the rear facing flange.
4. Using an ice pick or sheet metal scribe, determine the location of the opening required in each Royalite window surround and push through the Royalite into the nut plate opening.
5. Enlarge the required hole in each Royalite window surround to a diameter of 1/2". The hole is best done with a step drill or power ream.
6. Reinstall the Royalite window surrounds.
7. Assemble the shoulder upper attachment point as shown.
8. Torque attachment bolts to 25 inch pounds.

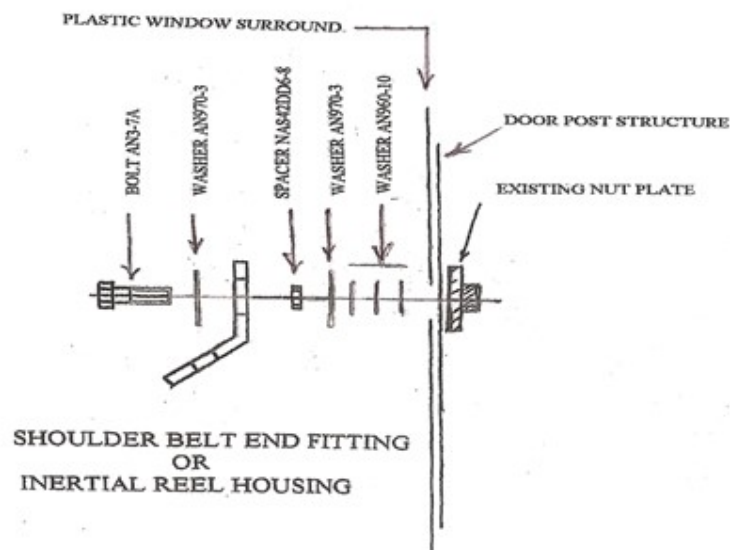
Continued on Next Page

CESSNA CARDINAL 177 / 177A & CESSNA 200 SERIES by MINOR CHANGE Cont'd

Typical Cessna 200 Series Installation



Hardware Configuration, Fixed Strap / Inertial Reel



CESSNA 200 SERIES INSTALLATION INSTRUCTIONS

1. Remove the existing lap belt assemblies and install the new TSO-C114 lap belts.
Note – The buckle portion of the assembly is installed inboard.
2. Remove the screws that secure the passenger assist strap aft of the doorpost.
3. Enlarge the upper assist strap mounting hole in each Royalite window surround to a diameter of ½".
The hole is best done by loosening the window surround and the use of a step drill or power ream using caution to avoid damaging the nutplate.
4. Assemble the shoulder upper attachment point as shown.
Note – An additional AN960-10 washer may be required depending upon the condition and thickness of the plastic window surround.
5. Torque attachment bolts to 25 inch pounds.

MOONEY M20 A thru G, early J 3-POINT DIAGONAL RESTRAINTS by MINOR CHANGE



Your Mooney M20 A thru G or early J can be upgraded with the addition of 3-Point Diagonal Shoulder Harnesses in the front by the incorporation of our "Minor Change" Installation Kit. The restraints are OEM quality AmSafe® TSO-C114 restraint assemblies

Sold individually, each 3-point restraint includes;

- 1 Shoulder Harness - Fixed Strap or Inertial Reel Equipped
Push Button Buckle or Lift Lever Buckle
- 1 Lap Belt with new buckle and end fittings
- 8130-3 Airworthiness Certificate
- Certificate of Conformance

M20 restraints are available with a push button belt release or a lift lever buckle. End fittings are available with a bolt on end or a hook/clip/quick release end.



The "Minor Change" Installation Kit includes; (2 seats shown) Bolts, Washers, Spacers and Installation Instructions



The installation of 3-Point Diagonal Shoulder Harness assemblies using this "MINOR CHANGE" Installation Kit will require a log book entry by a A & P rated mechanic.

**The Minor Change Kit includes installation hardware and instructions only.
The restraint assemblies are sold separately.**

MOONEY M20 A thru G, early J

3-POINT DIAGONAL RESTRAINTS by MINOR CHANGE

This upgrade is applicable to those MOONEY M20 aircraft that were not factory equipped with 3-Point Diagonal Shoulder Harnesses; aircraft that require the installation of upper attachment points to accommodate the attachment of the shoulder strap.

The shoulder strap upper attachment points are created by adding a MS27405-6 clamp to the fuselage tubing structure, adjacent to and aft of each pilot's outboard shoulder.

The design of the shoulder strap upper attachment is similar to that provided by Mooney on M20J aircraft; Serial numbers 24-001 thru 0083 and 24-0085 thru 0629. The installation is accomplished through the installation of the attachment hardware to the existing 4130-chrommolly fuselage structure, without modification.

Installation may be considered by the FAA to be a "Minor Alteration"; per AC 43.13-2B, chapter 9, par 903, a, 1/2. And requires an authorized mechanic to document the change with a logbook entry.

Seat belt assemblies are available as a Fixed Strap or Inertial Reel Equipped Restraint Assembly, and with tradition lift levers or a push button release (shown)

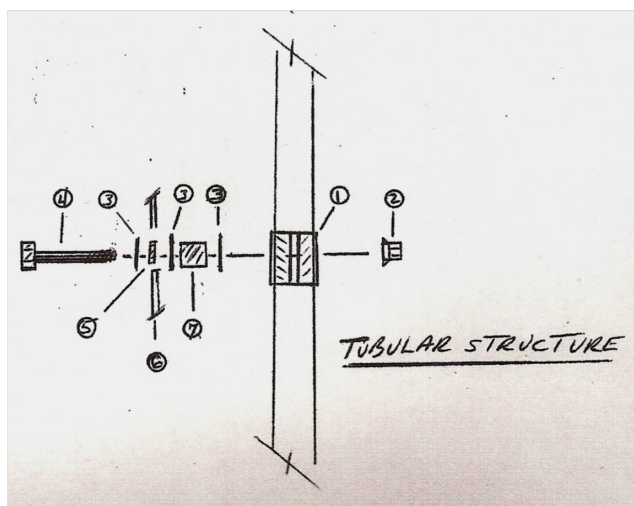
These replacement restraint assemblies are constructed to meet the requirements of TSO-C114 and are superior to the older TSO-22 belt assemblies. They are fabricated using upgraded hardware components and the polyester webbing will provide a longer service life than the previously used nylon material.



Continued on Next Page

MOONEY M20 A thru G, early J by MINOR CHANGE Cont'd

Hardware Configuration, Fixed Strap / Inertial Reel



HARDWARE CONFIGURATION

Required Item

- | | | |
|--------|---------------|-----------------|
| 1. 2ea | - MS27405-6 | CLAMP |
| 2. 2ea | - MS21042-4 | NUT |
| 3. 6ea | - AN960-416 | WASHER |
| 4. 2ea | - AN4-15A | BOLT |
| 5. 2ea | - NAS75-4-004 | BUSHING |
| 6. | TSO-C114 | HARNESS FITTING |
| 7. 2ea | - AAI 4.2006 | BUSHING |

INSTALLATION

1. Remove the existing lap belt assemblies and install the new TSO-C114 lap belts. Note: The new belt assemblies are provided with solid end connectors for added security.
2. Remove the Royalite window surrounds from each passenger side window and open the headliner to the extent needed to provide access to the tubular structure.
3. On the vertical fuselage tube, adjacent to each pilot's shoulder; locate and mark a point halfway between the top and bottom of the passenger window opening.
4. On each side, remove the fuselage skin attachment screws, as necessary, from the previously marked vertical location up to the first available point where the MS27405-6 clamp can be installed over the tube structure.
5. Install the MS27405-6 Clamps on each side and work them down to the marked location, with the bolt mounting flanges oriented aft. Note: The clamp can be opened without distortion by the use of two #1 Phillips screw drivers worked from the outside through the bolt holes. Close the clamp using a slip jaw pliers.
6. Reinstall the fuselage skin attachment screws and secure the headliner
7. Temporarily install the attaching hardware and determine the location of the opening required in each Royalite window surround.
8. Open the required hole in each Royalite window surround to a diameter of 9/16". The hole is best done with a step drill and finished with a rotary ream.
9. Assemble the shoulder upper attachment point as shown – leaving the window surround loose until the bolt is brought to final torque.
10. Torque attachment bolt to 60 inch pounds and complete the reinstallation of the window surrounds.