LUFTFARTSVERKET
Luftfartsinspektionen

LUFTVÄRDIGHETSDIREKTIV (LVD)

I. Nödutrustning
Uninsured Relative Workshop Inc.
LVD Nr 2948

Sektion 2. Utlandstillverkad flygmateriel

TITEL: **Kontroll av fallskärm**

GÄLLER: Alla Vector II och III fallskärmar tillverkade mellan 1 januari 1996 och 10 september 1998

ÅTGÄRD: Utför åtgärder angivna i bifogad kopia av FAA AD 99-01-11

TID FÖR ÅTGÄRD: Före nästa hopp räknat från detta LVD's beslutsdatum

UNDERLAG: FAA AD 99-01-11
Relative Workshop Product Service Bulletin #091098-B
daterad 10 september 1998

REFERENS: FAA AD 99-01-11

BESLUTSDATUM: 1999-03-02

LFS 1999:35

Åtgärder enligt LVD utgör nödvändig förutsättning för ifrågavarande flygmateriels luftvärdighet. Referens BCL M 1.11.
Anteckning om åtgärd, som vidtagits i enlighet med LVD, skall införas i teknisk journal för berörd flygmateriel med hänvisning till ifrågavarande LVD-nummer. Angivet underlag refererar till senast gällande revision/utgåva. LVD utges i luftfartsverkets författningssamling, LFS.

Postadress	Gatuadress	Telefonnummer	Telegram	Telex
			Civilair	
601 79 NORRKÖPING	Vikboplan 11	011-192000	Norrköping	62450

AIRWORTHINESS DIRECTIVE

REGULATORY SUPPORT DIVISION
P.O. BOX 26460
OKLAHOMA CITY, OKLAHOMA 73125-0460

U.S. Department
of Transportation
Federal Aviation
Administration

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Federal Aviation Regulations, Part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (reference FAR Subpart 39.3).

99-01-11 THE UNINSURED RELATIVE WORKSHOP INC. (doing business as and referred to herein as Relative Workshop): Amendment 39-10977; Docket No. 98-CE-101-AD.

Applicability: All Vector II and III Parachute Systems That Were Manufactured Between January 1, 1996, and September 10, 1998.

NOTE 1: This AD applies to any parachute system referenced in the Applicability section of this AD, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For those parachute systems that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (c) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

Compliance: Required prior to the next jump after the effective date of this AD, unless already accomplished.

To prevent the amp fittings from coming off the stainless steel breakaway housing, which could result in an unintentional partial breakaway of the main chute and interference with the deployment of the reserve parachute, accomplish the following:

(a) Inspect the amp fittings on the end of the breakaway housing for proper swaging, and re-swage any incorrectly swaged fittings using the Nicopress® or Swage-It swaging tool. Accomplish these actions in accordance with Relative Workshop Product Service Bulletin #091098-B, dated September 10, 1998.

NOTE 2: The above-referenced service bulletin may be obtained from the manufacturer at the address in paragraph (d) of this AD or through the Internet at "http://www.relativeworkshop.com/".

(b) As of the effective date of this AD, no person shall put into service any of the affected parachute systems, unless the parachute system has been inspected and modified (as necessary), as specified in paragraph (a) of this AD.

(c) An alternative method of compliance or adjustment of the compliance time that provides an equivalent level of safety may be approved by the Manager, Atlanta Aircraft Certification Office (ACO), One Crown Center, 1895 Phoenix Boulevard, Suite 450, Atlanta, Georgia 30349. The request shall be forwarded through an appropriate FAA Maintenance Inspector, who may add comments and then send it to the Manager, Atlanta ACO.

NOTE 3: Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Atlanta ACO.

(d) The inspection and modification required by this AD shall be done in accordance with Relative Workshop Product Service Bulletin #091098-B, dated September 10, 1998. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from Relative Workshop, 1645 North Lexington Avenue, DeLand, Florida 32724. Copies may be inspected at the FAA, Central Region, Office of the Regional Counsel, Room 1558, 601 E. 12th Street, Kansas City, Missouri, or at the Office of the Federal Register, 800 North Capitol Street, NW, suite 700, Washington, DC.

(e) This amendment becomes effective on January 29, 1999.

FOR FURTHER INFORMATION CONTACT:
Donald J. Young, Aerospace Engineer, FAA, Atlanta Aircraft Certification Office, One Crown Center, 1895 Phoenix Boulevard, suite 450, Atlanta, Georgia 30349; telephone: (770) 703-6079; facsimile: (770) 703-6097.

Relative Workshop

PRODUCT SERVICE BULLETIN

September 10, 1998
PSB#091098-B

AMP Fitting (with grommet) on Breakaway Housings

Status: "Amp Fittings" improperly swaged to the end of the stainless steel breakaway housings. The Amp fitting could twist off or fall off.

Identification: All Relative Workshop Vector Systems manufactured after January 1, 1996. Any Harness/container system which utilizes Relative Workshop or ParaStock Metal-Flex breakaway housings which were shipped with Amp Fittings attached after January 1, 1996.

Background: In mid 1997, a worker at Relative Workshop decided to "improve" the way he was swaging the Amp Fittings on the end of the breakaway housings. Instead of correctly using a complete single or double stroke with the NICOPRESS swaging tool, he thought a series of partial strokes, applied in a rotary fashion, looked better. This "improvement" made it through quality control because his handiwork was covered by the standard black shrink tubing, and 99% of the Amp Fittings swaged on by this method pass a straight pull test of 50 lbs. HOWEVER, a large number can be twisted off with finger pressure applied in a certain direction. Because an Amp Fitting coming off in use could cause an unintentional breakaway, fittings attached in this fashion must be identified and re-swaged. While the fix is rather simple and straightforward, The Relative Workshop is sorry for any inconvenience it will cause owners of Vector Systems. Please note we are also including systems produced in 1996 to be sure we locate all affected components.

Tools Required:
1) Dial or digital caliper in inches or millimeters.
2) NICOPRESS TOOL - 64-CGMP or 51-P; or
3) SWAGE-IT TOOL - P-26-0204

Service Bulletin: Inspect the "Amp Fitting" in the following manner:
1) Remove the heat-shrink tubing surrounding the Amp Fitting and housing.
2) Refer to the diagram on Page 2, figures 1 & 2. Determine if your Amp Fitting's swaged indentation resembles these correct diagrams. If so, double check by measuring the indentation diameter per figure 2. The correct dimension is 0.40 inches, +/-0.02 inches. (Refer to Page 2 for metric equivalents)
3) If your Amp Fitting resembles the incorrect version, as in Figure 3 & 4, then the Amp Fitting will have to be swaged again using the following procedure.

Note: If the Amp Fitting is completely removed from the housing, it cannot be properly mated with the housing again. A new Amp Fitting and housing must be used.

Note: As you gain experience inspecting Amp Fittings, you will be able to differentiate a correct swage versus one that is incorrect by looking at the shape and depth of the indentation without removing the shrink tubing.

Swaging Procedure:
1) Using the NICOPRESS TOOL (64-CGMP or 51-P), place the Amp Fitting into the P-groove; or using the SWAGE-IT TOOL, place Amp Fitting into the 1/8 groove.
2) Be sure only 1/16" of the fitting's round end extends beyond the P-groove or 1/8 groove. The fitting must be oriented in the NICOPRESS TOOL as shown in Figure 6 to prevent the Amp Fitting's seam from breaking open.
3) Compress the fitting by closing the NICOPRESS TOOL completely. One strike is all that is needed with a properly calibrated NICOPRESS TOOL. The SWAGE-IT TOOL however, should not be closed completely, as this may over swage the AMP Fitting and crush the housing. The housing's ferrule-end

should not be incorporated into the swage indentation, otherwise the housing and ferrule may be crushed.
4) Referring to Figure 2, measure the swaged indentation with a set of calipers. The correct dimension is 0.40 inches, +/-0.02 inches.
5) Install the breakaway handle. Be sure the yellow cable's movement is not impeded by the end of the housing with the Amp Fitting.
6) Install new shrink tubing, 1/2" diameter - 1" long. Heat the shrink tubing with a heat gun or cigarette lighter. Shrink tubing available free from Relative Workshop.

Qualified Personnel: A certificated rigger may inspect and re-swage Amp Fittings using the proper NICOPRESS TOOL or SWAGE-IT TOOL. Document work performed with the data card entry: "Conforms to PSB#091098"

Compliance Date: Immediately, before the next jump.

Authority: Relative Workshop, DeLand, Florida, USA

Distribution: Parachutist, PIA, Skydiving, USPA, FAA, Relative Workshop Web-Page.

Product Service Bulletin

Page 2 of 2

September 10, 1998

PSB# 091098-B

Amp Fitting (with grommet) on Breakaway Housings

CORRECT

(Fig. 1 & 2)

Correctly Swaged Amp Fitting Has Two, Semicircular Indentations Indicating Full Compression in Nicopress Tool

0.40" (± 0.02")

Amp Fitting Seam

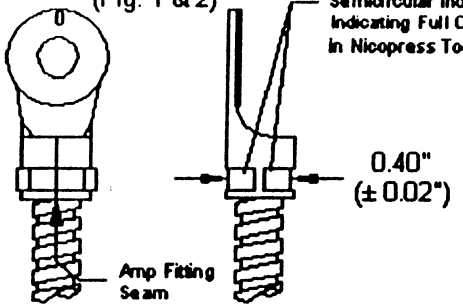


Fig. 1 Fig. 2

INCORRECT

(Fig. 3 & 4)

Incorrectly Swaged Amp Fitting Has Numerous, Small Indentations Around Circumference of Fitting

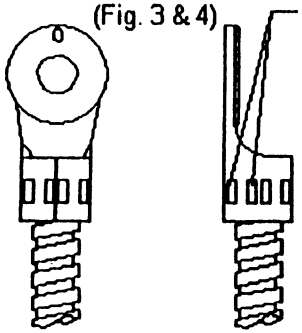


Fig. 3 Fig. 4

Note: The Nicopress Tool has an Allen Head Adjustment Screw which can be tightened or loosened to achieve the correct P-groove dimension shown below.

Dimension of P-groove Top to Bottom 0.376" (± 0.025)

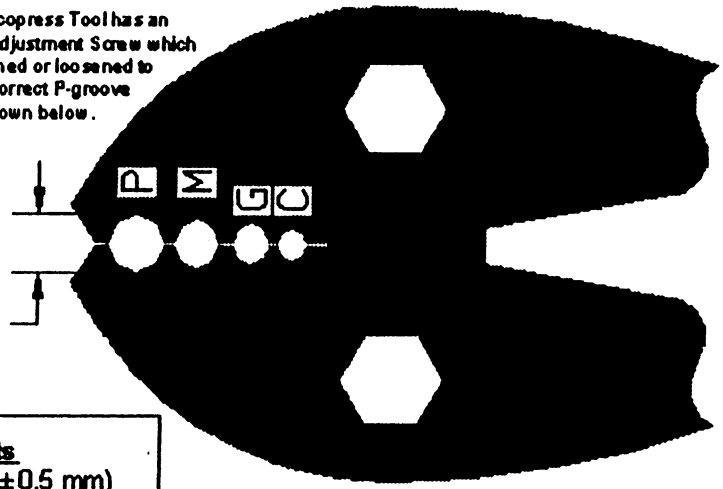


Fig. 5

Nicopress Tool (64-CGMP)

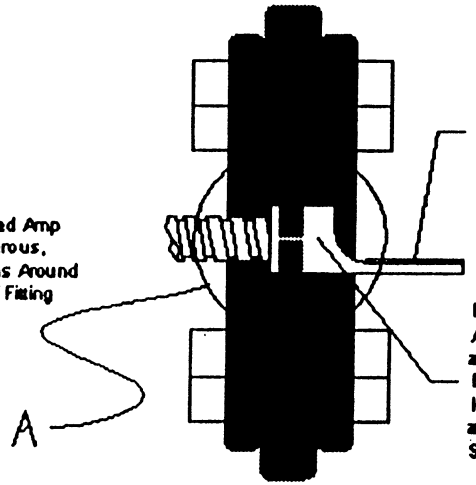
Side View

Metric Equivalents

0.40" (±0.02") = 10.2 mm (±0.5 mm)

0.375" (±0.025") = 9.525 mm (±0.635 mm)

1/16" (0.0625") = 1.588 mm



Amp Fitting Must Be Oriented in Nicopress Tool as Shown; The Amp Fitting Seam (See Fig. 1) Must Be Up!

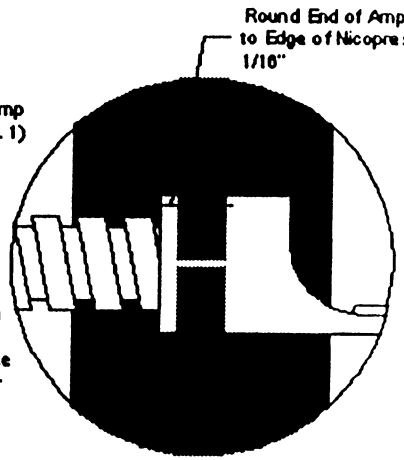
DO NOT Swage this Area of the Amp Fitting as this May Crush the Brass Ferrule End of the Housing; See Fig. 7 for a detail of the exact Swaging Location

A

Fig. 6

Nicopress Tool - Front View

Swaging Amp Fitting



Round End of Amp Fitting to Edge of Nicopress Jaw: 1/16"

Fig. 7-Detail A