



2900 Selma Highway
Montgomery, AL 36108 USA
Tel: 334-386-5400 Fax: 334-386-5450
<http://www.hartzell.aero>

Service Bulletin

Service Bulletin No. 068 Rev. 1

Jasco Alternator Wire Harness Wire Chafing Protection or Replacement

This page transmits the revision of Service Bulletin 068 Rev. New to Service Bulletin 068 Rev. 1, dated August 28, 2017.

- Revision SB 068 Rev. New, dated November 15/16
- Revision SB 068 Rev. 1, dated August 22, 2017

FAA acceptance has been obtained on technical data in this publication that affects type design.

Changes are shown by a change bar in the left margin coinciding with the change in the affected page. A single bar to the left of the page footer indicates the entire page has been changed or that the page has been added.

Some of these changes that do not affect technical content may not be highlighted in this transmittal sheet.

This revision is issued to change the following:

- Remove HET P/N 7555H-72D and change 7555T typo to 7655T 2.B(1) first para.
- Remove HET P/N 6560T 2.B(1) second para.
- Remove HET P/N 7555H-72D and 6560T in 3.C(15).
- Remove HET P/N 6560-1 information from Table 1.
- Remove HET P/N 7555H-72D information from Table 1.

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1. Planning Information

A. Effectivity

- (1) Hartzell Engine Technologies LLC (HET) Jasco type Alternator models 6555T, 6565T, 7555T, 7565T, and 7655T with serial numbers H-Q041825 (April 2016) and prior are affected by this Service Bulletin.
 - (a) Jasco Alternator models 6555T, 6565T, 7555T, 7565T, and 7655T produced by Skytronics Incorporated are affected by this Service Bulletin.
 - (b) The affected Jasco alternators are used on various engine and/or aircraft installations. Refer to Table 1 for basic reference of certificated applications.

WARNING: DO NOT USE OBSOLETE OR OUTDATED INFORMATION. PERFORM ALL INSPECTIONS OR WORK IN ACCORDANCE WITH THE MOST RECENT REVISION OF THIS SERVICE BULLETIN. THE INFORMATION CONTAINED IN THIS SERVICE BULLETIN MAY BE SIGNIFICANTLY CHANGED FROM EARLIER REVISIONS. FAILURE TO COMPLY WITH THIS SERVICE BULLETIN OR THE USE OF OBSOLETE INFORMATION MAY CREATE AN UNSAFE CONDITION THAT MAY RESULT IN DEATH, SERIOUS BODILY INJURY, AND/OR SUBSTANTIAL PROPERTY DAMAGE. REFER TO THE HET WEBSITE FOR THE MOST RECENT REVISION LEVEL OF THE SERVICE BULLETIN.

B. Concurrent Requirements

- (1) None

C. Reason

- (1) Jasco alternator models with serial numbers per the Effectivity above may experience a chafing condition of the electrical harness during normal operation.
- (2) A chafing condition of the electrical harness may result in electrical arcing, tripped circuit breaker, and loss of alternator function. Refer to Fig. 1.
- (3) Regulatory action is unknown.

D. Description

- (1) This Service Bulletin provides Instructions for Continued Airworthiness (ICA).
- (2) This Service Bulletin requires inspection for a chafing condition on the alternator electrical harness wires with possible damage to the alternator from arcing of the field and output wires.
- (3) This Service Bulletin requires installation of chafing protection or the replacement of the wire harness.

E. Compliance

- (1) At the next regularly scheduled inspection or within twelve (12) months after the effective date of this Service Bulletin, whichever occurs first, in accordance with the Accomplishment Instructions of this Service Bulletin:
 - (a) install chafing protection on the electrical harness wires if the wires are not damaged or,
 - (b) install a new electrical wire harness if wires are damaged.

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- (2) Compliance with the Accomplishment Instructions in this Service Bulletin is the terminating action for this Service Bulletin.

F. Approval

- (1) FAA acceptance has been obtained on technical data in this publication that affects type design.

G. Manpower

- (1) If chafing protection is added to the alternator wiring harness at a regularly scheduled inspection, approximately one half (0.5) man hour is required.
- (2) If the alternator wiring harness is replaced at a regularly scheduled inspection, approximately one (1.0) man hour is required.

H. Weight and Balance

- (1) No change.

I. Electrical Load Data

- (1) No change.

J. References

CAUTION: DO NOT USE OBSOLETE OR OUTDATED INFORMATION. PERFORM ALL INSPECTIONS OR WORK IN ACCORDANCE WITH THE MOST RECENT REVISION OF A DOCUMENT.

- (1) Applicable aircraft maintenance manuals of the latest revision.
- (2) Applicable engine maintenance manual or service instructions of the latest revision.

K. Other Publications Affected

- (1) None.

2. Material Information

A. Chafing Protection

- (1) Four (4) each, lock nut, nylon insert, P/N MS21044N3.
- (2) Two inch length of PTFE spiral insulation, .375" outer diameter, .030" Min wall thickness, and rated for Temperatures of 250°C or greater. (obtain locally)
- OR -

B. Electrical Wire Harness Replacement

- (1) One (1) each, Wire Harness Kit, HET P/N 79903 for alternator 7655T only.

Kit contains four nylon insert lock nuts, P/N MS21044N3, one lock washer, HET P/N 41100, one wire assembly (white), HET P/N 41072-5, one wire assembly (black), HET P/N 41072-2, one wire assembly (red), HET P/N 41072-3, one wire assembly (green), HET P/N 41072-4 and two lock washer, P/N MS35338-43. (Wire assemblies come with terminals installed.)

- OR -

One (1) each, Wire Harness Kit, HET P/N 79902 for alternators 6555T, 6565T, 7555T, and 7565T.

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Kit contains four nylon insert lock nuts, P/N MS21044N3, one lock washer, HET P/N 41100, one wire assembly (white), HET P/N 41072-1, one wire assembly (black), HET P/N 41072-2, one wire assembly (red), HET P/N 41072-3, and one wire assembly (green), HET P/N 41072-4 and two lock washer, P/N MS35338-43. (Wire assemblies come with terminals installed.)

3. Accomplishment Instructions

WARNING 1: THIS PROCEDURE MUST BE PERFORMED BY QUALIFIED PERSONNEL WHO ARE FAMILIAR WITH ENGINE AND AIRFRAME MAINTENANCE THAT IS SPECIFIC TO THE ENGINE ALTERNATOR SYSTEM. FAILURE TO DO SO MAY RESULT IN ECONOMIC LOSS, EQUIPMENT DAMAGE, AND/OR PHYSICAL INJURY.

WARNING 2: DO NOT USE OBSOLETE OR OUTDATED INFORMATION. PERFORM ALL INSPECTIONS OR WORK IN ACCORDANCE WITH THE MOST RECENT REVISION OF THIS SERVICE BULLETIN AND THE APPLICABLE AIRCRAFT MAINTENANCE MANUAL AND/OR ENGINE SERVICE INSTRUCTIONS. INFORMATION CONTAINED IN THESE MANUALS OR THIS SERVICE BULLETIN MAY BE SIGNIFICANTLY CHANGED FROM EARLIER REVISIONS. FAILURE TO COMPLY WITH THE SERVICE BULLETIN OR THE USE OF OBSOLETE INFORMATION MAY CREATE AN UNSAFE CONDITION THAT MAY RESULT IN DEATH, SERIOUS BODILY INJURY, AND/ OR SUBSTANTIAL PROPERTY DAMAGE. REFER TO THE APPLICABLE ENGINE MANUFACTURER'S PUBLICATIONS AND/OR AIRCRAFT MAINTENANCE MANUAL INDEX FOR THE MOST RECENT REVISION LEVELS.

CAUTION: DO NOT DEPEND ON THIS SERVICE BULLETIN FOR GAINING ACCESS TO THE AIRCRAFT AND ENGINE. ACCESS REQUIRES USE OF THE APPLICABLE MANUFACTURER'S MAINTENANCE MANUALS OR SERVICE INSTRUCTIONS. IN ADDITION, ANY PREFLIGHT OR IN FLIGHT OPERATIONAL CHECKS REQUIRE USE OF THE APPROPRIATE AFM OR POH.

A. Inspection of Electrical Harness

- (1) At the next regularly scheduled inspection, gain access to the alternator in accordance with the applicable aircraft and/or engine maintenance manual or service instruction.
 - (a) Inspection may be performed with the alternator mounted to the engine.
 - (b) Remove the cooling air duct from the alternator cover tube.
- (2) In accordance with 1.A(1) Effectivity, inspect the alternator electrical harness for arcing, chafing, or wire damage where the wires enter the conduit connector beneath the blue cover. Refer to Fig. 1.
 - (a) If the harness wire insulation shows no arcing or exposed wire and little or no chafing, continue with Corrective Action, section 3.B.
 - (b) If the harness wire insulation shows arcing or exposed wire, continue with Corrective Action section 3.C.
 - (c) If arcing has damaged or affected the performance the alternator, replace the alternator.

B. Corrective Action - Installation of Chafing Protection:

- (1) The addition of chafing protection may be performed with the alternator mounted to the engine.
- (2) Disconnect aircraft battery and other sources of electrical power.
- (3) Loosen the terminal strip protective cover knobs and remove the cover. Refer to Fig. 2.

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- (4) Remove and discard the four nylon insert lock nuts from the terminal strip wire studs.
- (5) Remove the four AIRCRAFT wires from their studs.
 - (a) Insulate and tag each wire function.
- (6) Remove and retain the four 10-24 jam nuts and washers from the terminal strip wire studs.
- (7) Remove the four color coded wires from the terminal studs and pull them straight.
- (8) Using a soft jaw connector plier, loosen the knurl collar completely. Refer to Fig. 4.
- (9) Move the knurl collar with retained grommet away from the conduit connector down the wire harness to allow room to install the chafing protection. Refer to Fig. 2 and Fig. 3.
 - (a) The chafing protection is a two inch piece of .375 inch PTFE spiral insulation that must be wrapped around all four wires of the wire harness. Refer to Fig. 3.
- (10) Wrap the spiral insulation over the four wires using a screw action, inserting it until the spiral insulation seats against the cable tie and passes the area of the conduit connector where chafing may occur.
 - (a) Tighten the spiral insulation wrap to limit any gaps. Refer to Fig. 1 and Fig. 3.
- (11) Push the knurl collar with retained grommet along the wire harness to the conduit connector.
- (12) Thread the knurl collar onto the conduit connector.
 - (a) Tighten the knurl collar finger tight then 1/4 turn more. Refer to Fig. 4.
- (13) Install each wire on the terminal strip stud that corresponds to the color of the wire and the color listed on the placard above the terminal strip. Refer to Fig. 2.
 - (a) Put the retained flat washer and jam nut on the terminal strip stud.
 - (b) Torque each AN315-3R jam nut to 30-40 in-lbs (3.39-4.52 nm).
- (14) Install each AIRCRAFT wire on the terminal strip stud that corresponds to the function of the wire as marked and as listed on the placard above the terminal strip. Refer to Fig. 2.
 - (a) Torque each MS21044N3 lock nut to 30-40 in-lbs (3.39-4.52 nm).
- (15) Put the terminal strip protective cover on the terminal strip and tighten the knobs.
 - (a) Connect aircraft battery and restore any other sources of electrical power removed.
 - (b) Continue to section 3.D Return to Service.

C. Corrective Action - Replacement of Electrical Harness Wires:

- (1) The electrical harness wire replacement may be performed with the alternator mounted to the engine if sufficient space is available. If not, remove the alternator for this procedure.
- (2) Disconnect aircraft battery and other sources of electrical power.
- (3) Loosen the terminal strip protective cover knobs and remove the cover. Refer to Fig. 2.
- (4) Remove and discard the four nylon insert lock nuts from the terminal strip wire studs.
- (5) Remove the four AIRCRAFT wires from the stud.
 - (a) Insulate and tag each wire function.
- (6) Remove and retain the four 10-24 jam nuts and washers from the terminal strip wire studs.
- (7) Remove the four color coded wires from the terminal studs and pull them straight.
- (8) Put an index mark on the blue cover extending onto the drive end housing. Refer to Fig. 2.

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- (9) Using a soft jaw connector plier, loosen the knurl collar completely. Refer to Fig. 4.
- (10) Pull and remove the knurl collar with retained grommet from the conduit connector. This allows removal of the blue alternator cover to expose the other end of the wire harness. Refer to Fig. 2.
- (11) Place a narrow, flat ended bucking bar or chisel into the cooling duct of the blue alternator cover to hold the conduit connector hex nut end.
- (12) Using a spanner wrench, loosen and remove the conduit connector nut. Refer to Fig. 4.
- (13) Remove the blue alternator cover to expose the wire harness connections. Refer to Fig. 2.
 - (a) Cut the small cable tie that secures the wire harness. Refer to Fig. 2.
- (14) With the rectifier plate exposed, locate the white power wire and remove the 1/4 inch jam nut and lock washer.
 - (a) Discard lock washer and retain the jam nut.
- (15) Remove the white power (+) wire and replace it with the new white wire (P/N 41072-5) from HET Kit P/N 79903 if alternator is model 7655T only or white wire (P/N 41072-1) from HET Kit P/N 79902 for alternator models 6555T, 6565T, 7555T, and 7565T.
 - (a) Thread the white power wire through the conduit connector and connect it to the stud.
 - (b) Install a new lockwasher, HET P/N 41100 and the existing 1/4 inch AN315-3R jam nut.
 - (c) Torque the 1/4 inch jam nut to 40-50 in-lbs (4.52-5.65 nm).
- (16) Remove the black ground (-) wire and replace it with the new P/N HET P/N 41072-2 wire.
 - (a) Thread the black ground wire through the conduit connector and connect it to the stud.
 - (b) Torque the #10-24 jam nut to 30-40 in-lbs (3.39-4.52 nm).
- (17) Remove the red field wire and replace it with the new P/N HET P/N 41072-3 wire.
 - (a) Thread the red field wire through the conduit connector and connect it to the stud.
 - (b) Torque the #10-24 inch jam nut to 30-40 in-lbs (3.39-4.52 nm).
- (18) Remove the green AUX wire and replace it with the new P/N HET P/N 41072-4 wire.
 - (a) Thread the green AUX wire through the conduit connector and connect it to the stud.
 - (b) If torque of the green AUX wire nut cannot be achieved, it is permissible to remove the machine support by removing the two HET P/N 41070 screws and lockwashers. Refer to Fig. 5.
 - (c) Torque the #10-24 inch jam nut to 30-40 in-lbs (3.39-4.52 nm).
 - (d) If removed, reinstall the machine support using the existing screws with new lockwashers P/N MS35338-43.
 - (i) Torque the HET P/N 41070 screws to 25-35 in-lbs (2.83-3.95 nm).
- (19) Install a cable tie to secure the wire harness at the base of the conduit connector shown in Fig. 1.
- (20) With the new wire harness extending through the conduit connector, put the blue cover onto the alternator assembly and align it with the index mark applied in step 3.C(8). Refer to Fig. 2.
- (21) Put a narrow, flat ended bucking bar or chisel into the cooling duct of the blue alternator cover to hold the conduit connector hex nut.

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- (22) Put wire harness through the conduit nut and carefully thread it onto the conduit connector.
 - (a) Torque the conduit nut to 85-100 in-lbs (9.60-11.30 nm) using a calibrated torque wrench with a crows foot or spanner wrench.
- (23) Put each wire of the wire harness through the grommet in the Knurl Collar and move down to the conduit connector.
 - (a) Push the Knurl Collar with the retained grommet against the conduit connector.
- (24) Put the knurl collar with the retained grommet onto the conduit connector threads.
 - (a) Tighten the knurl collar finger tight then 1/4 turn more. Refer to Fig. 4.
- (25) Install each wire on the terminal strip stud corresponding to the color of the wire and the color listed on the placard above the terminal strip.
 - (a) Put the retained flat washers and jam nuts on the terminal strip studs.
 - (b) Torque each AN315-3R jam nut to 30-40 in-lbs (3.39-4.52 nm).
- (26) Install each AIRCRAFT wire on the terminal strip stud corresponding to the function of the wire as marked and as listed on the placard above the terminal strip. Refer to Fig. 2.
 - (a) Torque each MS21044N3 lock nut to 30-40 in-lbs (3.39-4.52 nm).
- (27) Put the terminal strip protective cover on the terminal strip and tighten the knobs.
 - (a) Connect aircraft battery and restore any other sources of electrical power removed.
 - (b) If the alternator was removed to accommodate this procedure:
 - 1 Install a new alternator to engine crankcase gasket obtained from the applicable engine or aircraft manufacturer.
 - 2 Reinstall the alternator using the applicable engine, aircraft, or STC instructions of the latest revision.
 - (c) Continue to section 3.D Return to Service.

D. Return to Service

- (1) Inspect the alternator installation on the aircraft or engine as instructed in the latest revision of the applicable aircraft maintenance manual and/or engine service instruction.
- (2) Perform the recommended functional tests in accordance with the appropriate aircraft maintenance manual, STC instruction, and POH or AFM.
- (3) Using the latest revision of the applicable aircraft maintenance manual, install any portion of the aircraft that was removed to gain access.
- (4) Upon successful completion, the aircraft is ready to return to service.

E. Maintenance Record

- (1) Make an aircraft logbook entry to indicate the completion of this Service Bulletin as applicable, noting compliance with this Service Bulletin as terminating action.

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4. Contact Information

A. Contact **HET Product Support** for all communications regarding the technical content of this Service Bulletin and to obtain **RMA** return information.

(1) Phone +1.334.386.5400 (Option 2)

(2) Fax +1.334.386.5450.

(3) E-mail at techsupport@HartzellEngineTech.com.

(4) Address

Hartzell Engine Technologies
LLC 2900 Selma Highway,
Montgomery, AL 36108
USA

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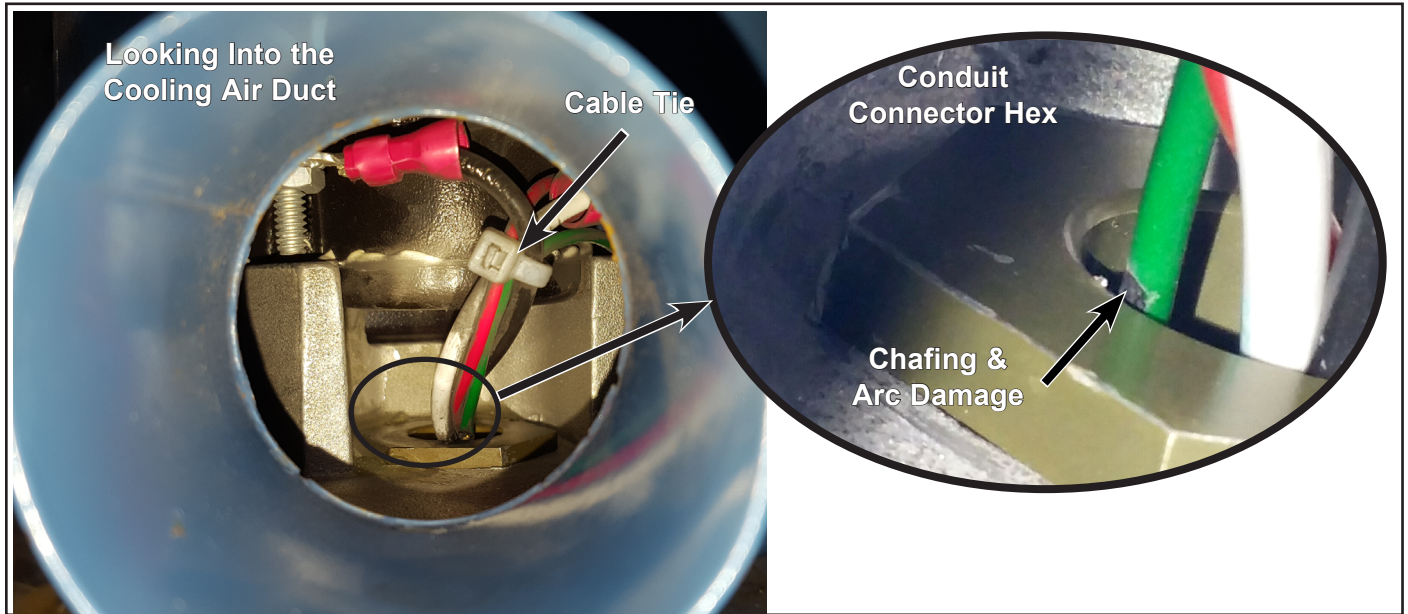


Figure 1 - Wire Harness Chafing Condition

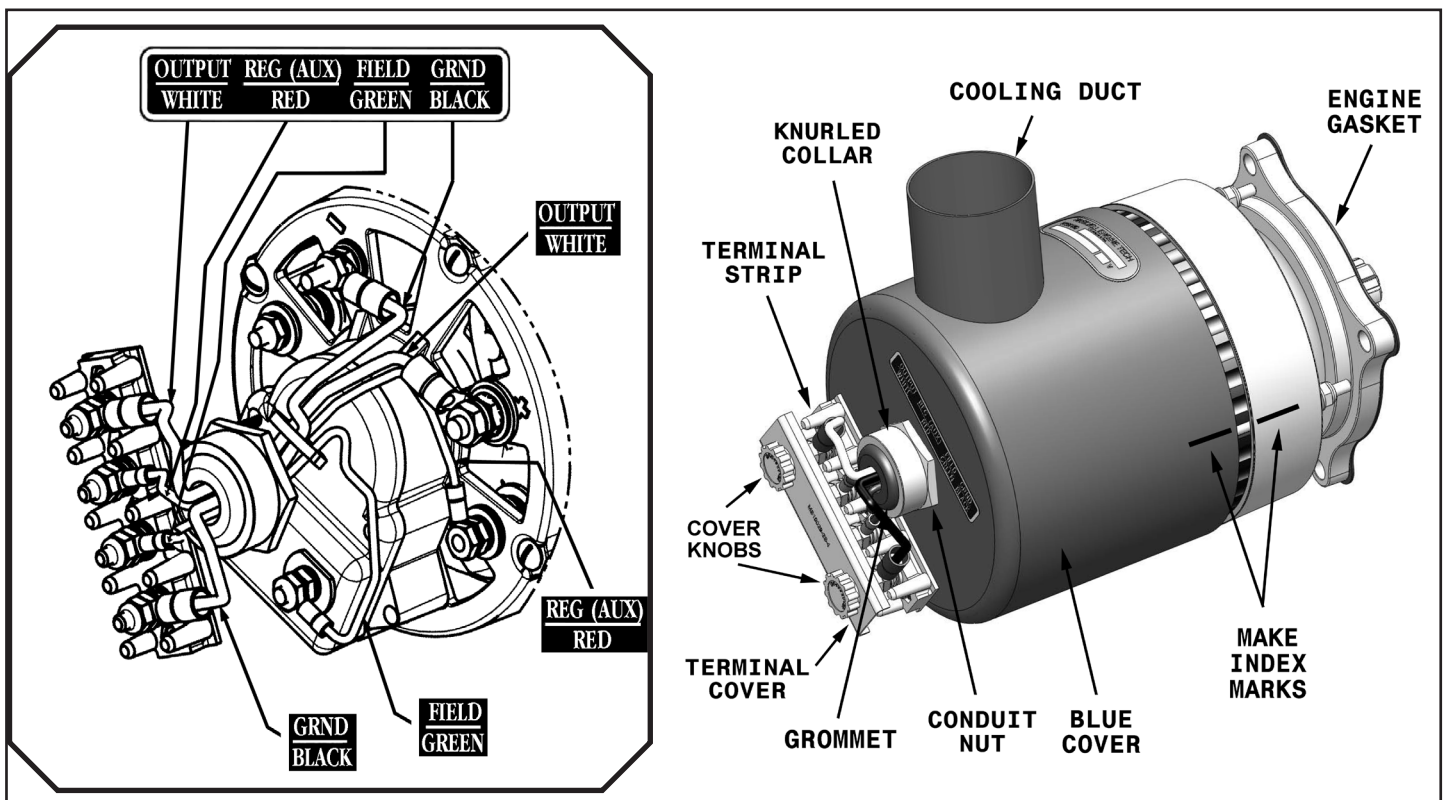


Figure 2 - Component Identification

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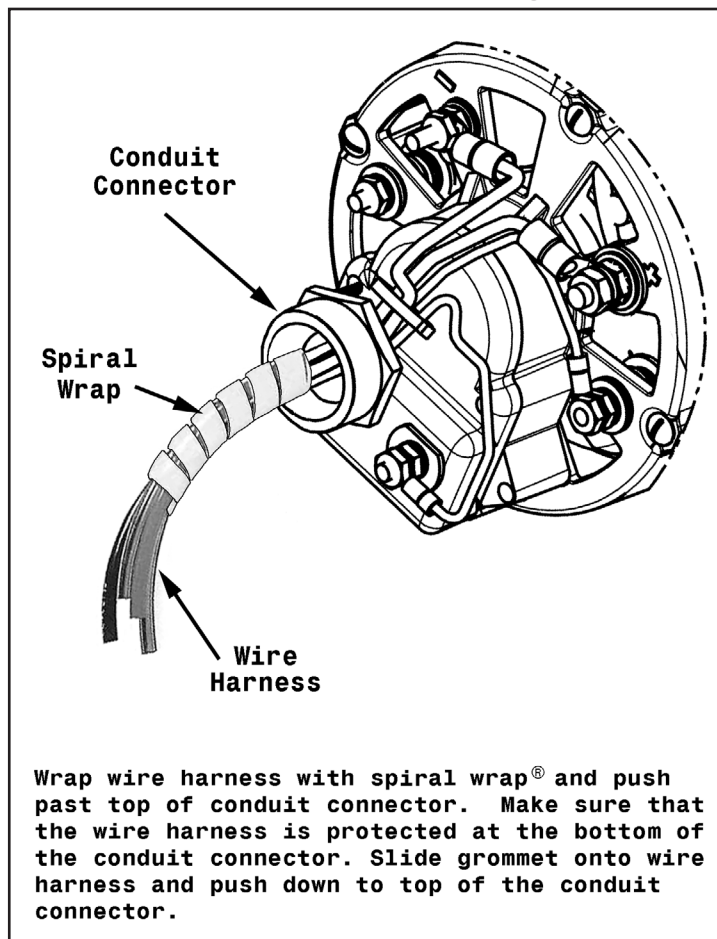


Figure 3 - Spiral Insulation Example

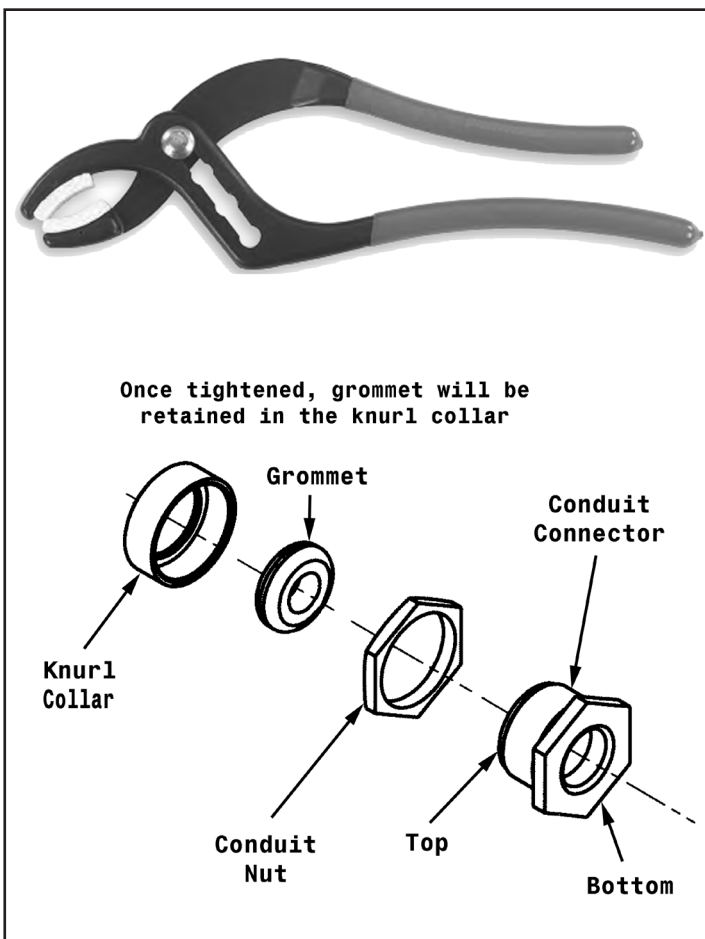


Figure 4 - Soft Jaw Connector Plier & Connector Stack Up

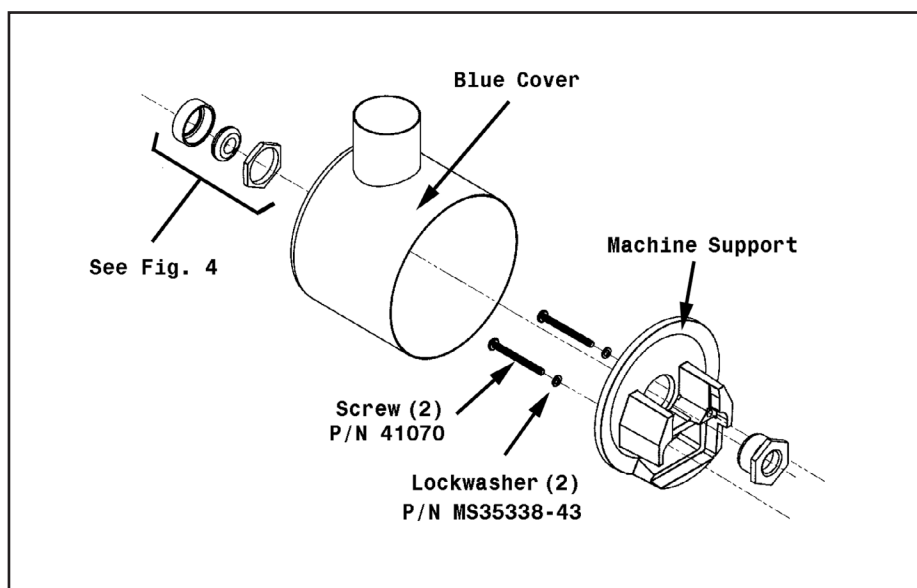


Figure 5 - Machine Support Removal

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Table 1 - Reference Guide*

Aircraft OEM	Aircraft Models	Alternator Model	STC Kit
Air Tractor	AT-300, AT-301, AT-401, AT-401B, AT-501	7655T	None
Bell Helicopter	47G & 47G2	7555T	SH191WE
Bell Helicopter	47G-2A, 47G-2A-1, 47G-3, 47G-3B, 47G-3B-1, 47G-3B-2, 47G-3B-2A, 47G-4, 47G-4A, 47G-5, 47G-5A	7555T	SH193WE
Bell Helicopter	47J, 47J2, 47J2A, 47K	7555T	SH194WE
Cessna Aircraft	A188, A188A, A188B A188, A188A, A188B	7555T 6555T	SA2279SW (24 volt) SA2279SW (12 volt)
Cessna Aircraft	190, 195, 195A, 195B	6555T	SA1809SW
Email	MA-1B	7565T	None
Grumman Aircraft	G164A G164A	6555T (12 volt) 7555T (24 volt)	SA2015WE
Helio	GH-295 (USAF U-10D), HT-295, H-391 (USAF YL-24), H-391B, and H-395 (USAF L-28A or U-10B)	6565T	SA987SO
Texas Helicopter Company	OH-13H, Tomcat Mark 5A and Tomcat Mark 6B (US Army)	7555T	SH2303SW
Thrush Aircraft	S-2R and S-2R-R1340	7555T	None
Weatherly Aviation Company	620A and 620B	7655T	None

* Use for reference purposes only. Aircraft/engines listed are inclusive of but not limited to these models. The applicable engine and aircraft manufacturer's Type Certification information should be consulted as the official source. (Units with suffix "R" indicate factory overhaul and are affected by this service bulletin.)

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