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Service Bulletin

Service Bulletin No. 068

Jasco Alternator Wire Harness Wire Chafing Protection or Replacement

1. Planning Information

A. Effectivity

- (1) All Hartzell Engine Technologies LLC (HET) Jasco type Alternator models with serial numbers H-Q041825 (April 2016) and prior are affected by this Service Bulletin.
 - (a) All Jasco Alternators 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WARNING: DO NOT USE OBSOLETE OR OUTDATED INFORMATION.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) All 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.
- (2) Compliance with the Accomplishment Instructions in this Service Bulletin is the terminating action for this Service Bulletin.

Service Bulletin

Service Bulletin No. 068

Jasco Alternator Wire Harness Chafing Protection or Replacement

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 alternators 7555H-72D and 7555T 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 6550T, 6555T, 6565T, 7555T, and 7565T.

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.)

Service Bulletin

Service Bulletin No. 068

Jasco Alternator Wire Harness Chafing Protection or Replacement

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.
- (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.

Service Bulletin

Service Bulletin No. 068

Jasco Alternator Wire Harness Chafing Protection or Replacement

- (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.
 - (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.

Service Bulletin

Service Bulletin No. 068

Jasco Alternator Wire Harness Chafing Protection or Replacement

- (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 7555H-72D or 7655T only or white wire (P/N 41072-1) from HET Kit P/N 79902 for alternator models 6550T, 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.
- (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.

Service Bulletin

Service Bulletin No. 068

Jasco Alternator Wire Harness Chafing Protection or Replacement

- (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.

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

Service Bulletin

Service Bulletin No. 068

Jasco Alternator Wire Harness
Chafing Protection or Replacement

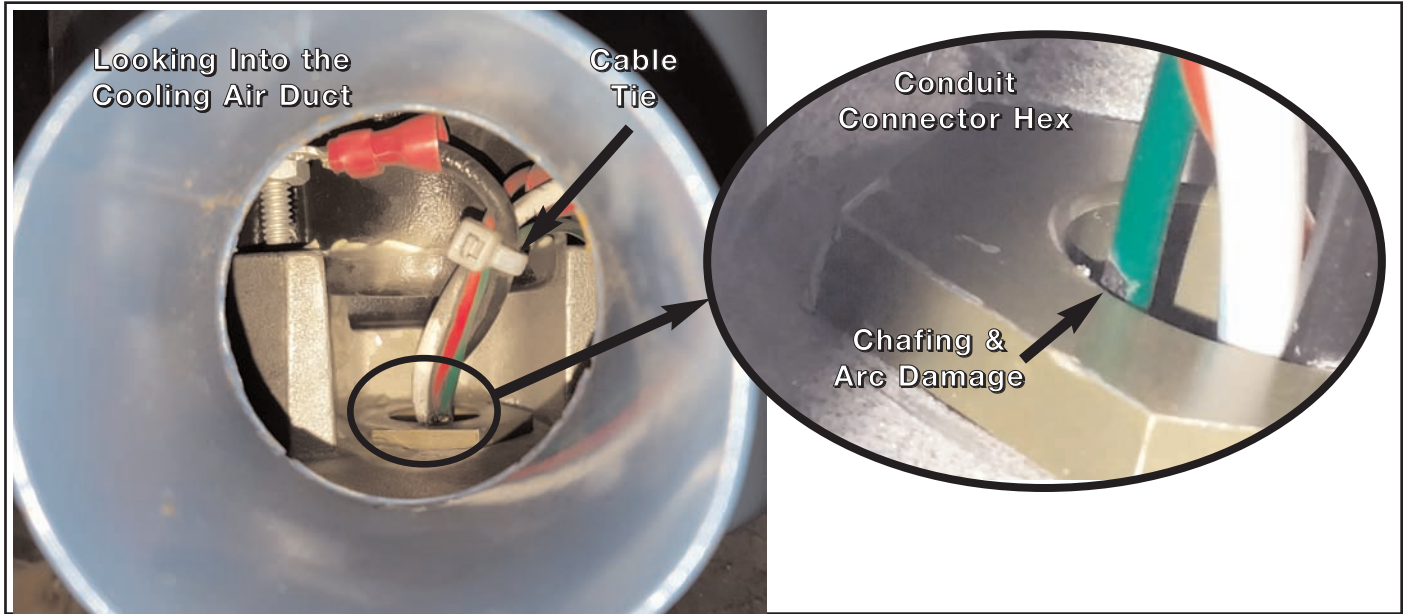


Figure 1 - Wire Harness Chafing Condition

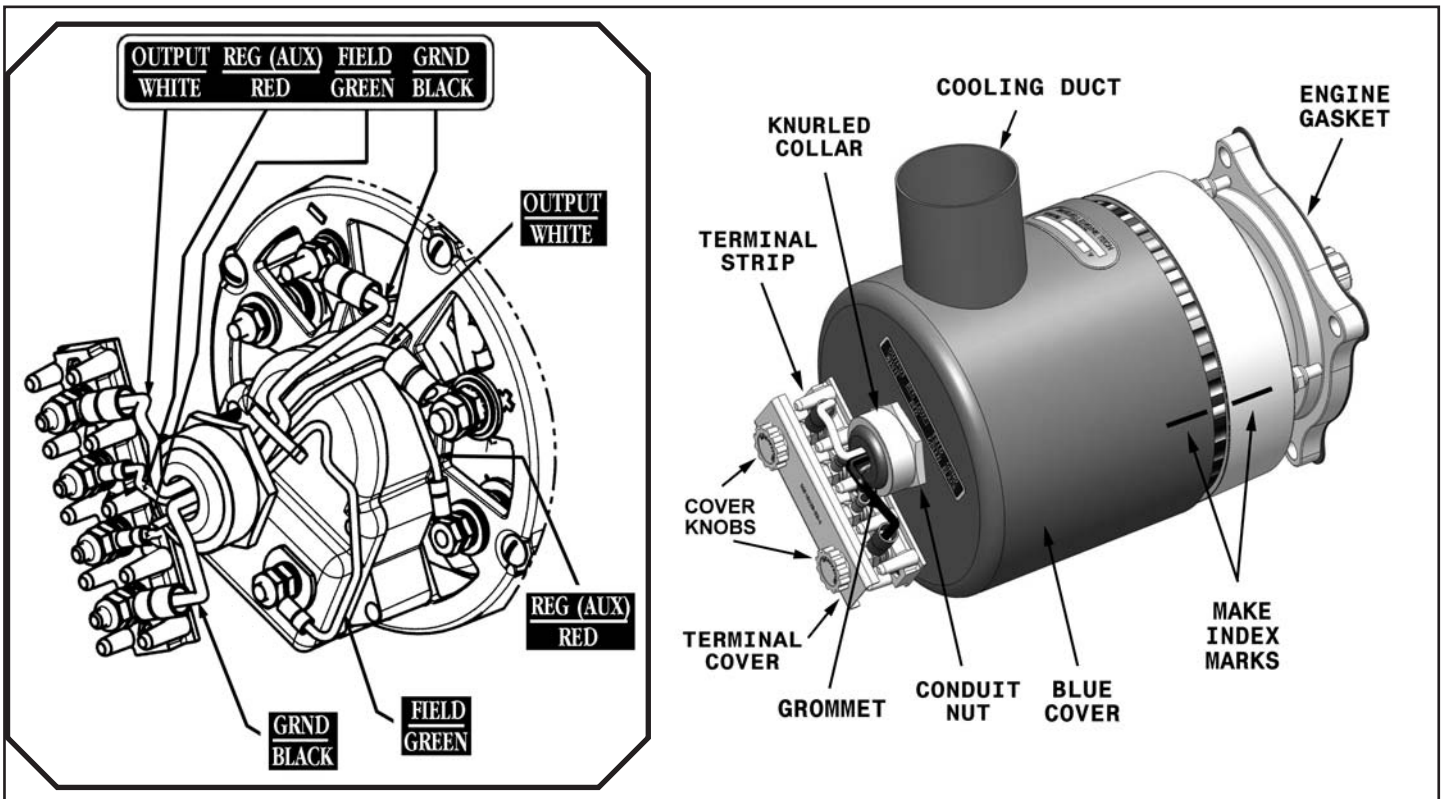


Figure 2 - Component Identification

Service Bulletin

Service Bulletin No. 068

Jasco Alternator Wire Harness Chafing Protection or Replacement

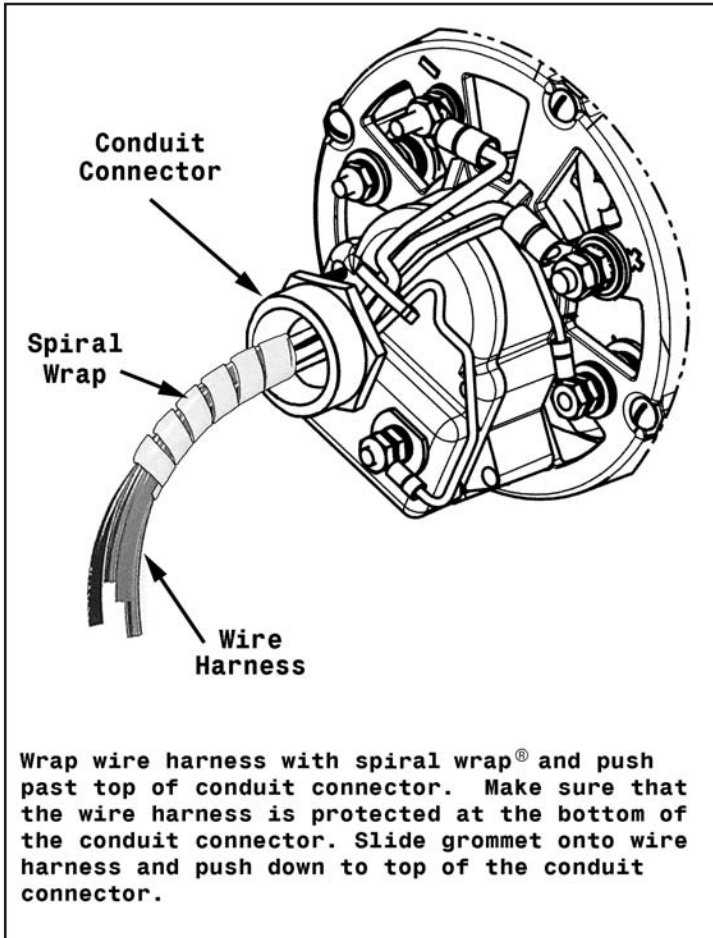


Figure 3 - Spiral Insulation Example

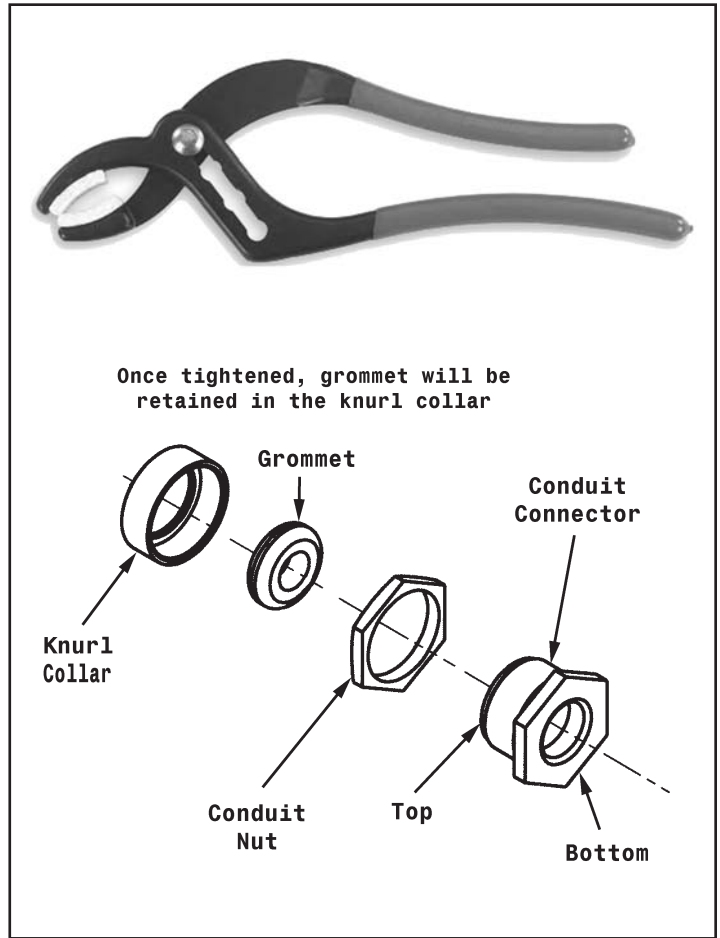


Figure 4 - Soft Jaw Connector Plier & Connector Stack Up

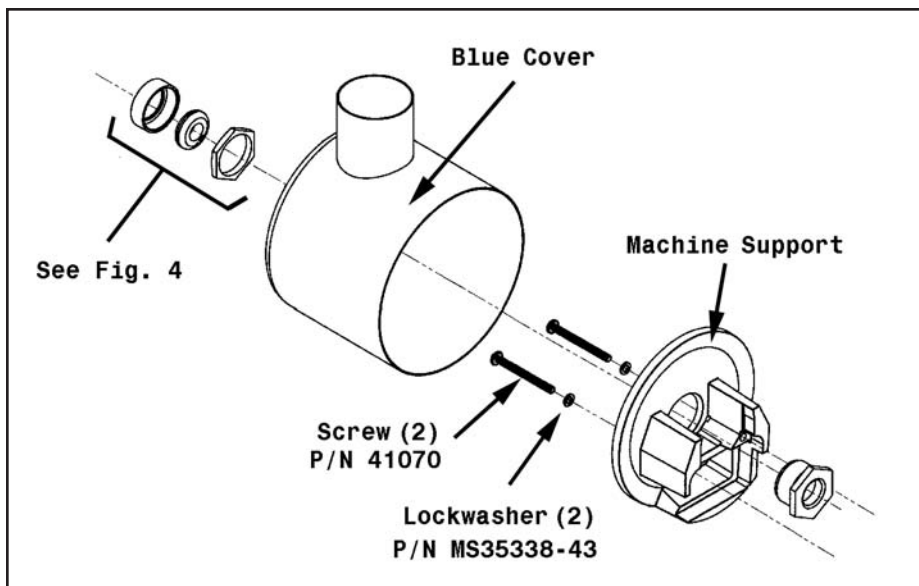


Figure 5 - Machine Support Removal

Service Bulletin

Service Bulletin No. 068

Jasco Alternator Wire Harness Chafing Protection or Replacement

Table 1 - Reference Guide*

Aircraft OEM	Aircraft Models	Alternator Model	With STC Kit
Air Tractor	AT-300, AT-301, AT-401, AT-401B, AT-501	7655T	None
Bell Helicopter	47G & 47G2	Kit	SH191WE with kit P/N 7555-1
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	Kit	SH193WE with kit P/N 7555-1
Bell Helicopter	47J, 47J2, 47J2A, 47K	Kit	SH194WE with kit P/N 7555-1
Beechcraft	35, A35, B35, C35, D35, E35, F35, G35 & 35R with serial number's D-1 through D-4865	Kit	SA999WE with kit P/N 6560-1
Cessna Aircraft	A188, A188A, A188B A188, A188A, A188B	7555T 6555T	SA2279SW (24 volt) SA2279SW (12 volt)
Cessna Aircraft	150, 170, 172, 175	Kit	SA971SW with kit P/N 6560-1
Cessna Aircraft	190, 195, 195A, 195B	6555T	SA1809SW
Emair	MA-1B	7565T	None
Grumman Aircraft Grumman Aircraft	G164A G164A	Kit Kit	SA2015WE with kit P/N 6555-1 (12 volt) SA2015WE with kit P/N 7555-1 (24 volt)
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
Navion	Navion A, (L-17B & L-17C)		SA1246WE with kit P/N 6560-1
Siam Hiller	UH-12D & UH-12E	7555H-72D or Hiller P/N 83230	None
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.)

Service Bulletin

Service Bulletin No. 068

**Jasco Alternator Wire Harness
Chafing Protection or Replacement**

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Service Bulletin Appendix

Service Bulletin No. 068

Jasco Alternator Wire Harness Chafing Protection or Replacement

1. ELIGIBILITY:

- A. All Hartzell Engine Technologies, LLC (HET) Jasco type Alternator models with serial number's through H-Q041825 (April 2016) or prior are eligible.
- B. Skytronics produced Jasco Alternator models are not eligible for commercial assistance.

2. COMMERCIAL ASSISTANCE PROGRAM:

The following will be provided with the submission of a completed SB 068 Claim Form, copies of invoices showing breakdown of material and labor charges, and log book entries. **Any commercial assistance or other consideration shall expire twelve (12) calendar months from the original published date of Service Bulletin No. 068.**

- A. Materials Required in section 2.A will be reimbursed at \$10.00 (ten dollars).
- B. Materials Required in section 2.B will be provided under HET's limited warranty for components.
- C. Labor for Inspection to determine if an alternator is affected is negligible when performed during a regularly scheduled Inspection or event.
- D. Labor for Corrective Action for affected alternators will be paid at a shop rate of \$75 per hour up to the amount specified below :
 - (1) Up to one half (0.5) hour labor for applying chafing protection.
 - (2) Up to one (1.0) hour labor for replacing the wire harness.

3. COMMERCIAL ASSISTANCE ADMINISTRATION:

- A. Complete the Service Bulletin SB 068 Claim Form attached to this appendix.
 - (1) Mail, e-mail, or fax the SB 068 Claim Form to the attention of Product Support as indicated on the Service Bulletin Claim Form.
- B. Upon receipt of the Service Bulletin Claim Form, HET will:
 - (1) If required by the Service Bulletin, ship the material required by section 2.B, to the service provider indicated.
 - (2) The service provider must return proof of service within thirty (30) days or the service provider shall be invoiced for the HET supplied materials.
- C. For labor and material charges:
 - (1) Aircraft/engine service facility must submit an invoice up to the amount specified in section 2, copies of logbook entries, and a completed SB 068 Claim Form for reimbursement.

4. WARRANTY STATEMENT:

- A. The sole warranty for the actions of SB 068 are contained in the HET Limited Warranty Policy issued with the purchase of each new/overhauled alternators (see terms and conditions therein).
- B. Commercial assistance may apply as stated in this Appendix.
- C. Issuance of SB 068 in no way constitutes an implied or expressed warranty of any kind.
- D. This publication does not imply or state any responsibility for the workmanship of any person or entity performing work or maintenance on the engine or aircraft electrical system.

Service Bulletin Appendix

Service Bulletin No. 068

Jasco Alternator Wire Harness Chafing Protection or Replacement

5. CONTACT INFORMATION:

A. Contact **HET Product Support** for all communications regarding the technical content of this Service Bulletin.

- (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

Service Bulletin Appendix

Service Bulletin No. 068

Jasco Alternator Wire Harness Chafing Protection or Replacement

SB 068 CLAIM FORM

Owner information

Name: _____ Date: _____ Tel: _____ Fax: _____
Company Name: _____ E-mail: _____
Address: _____
City: _____ State: _____ Postal Code: _____
Country: _____

Aircraft/Engine Service Facility information

Name: _____ Date: _____ Tel: _____ Fax: _____
Company Name: _____ E-mail: _____
Address: _____
City: _____ State: _____ Postal Code: _____
Country: _____
Aircraft Mfg: _____ Model: _____ Time in Service: _____ S/N: _____
Engine: _____ Model: _____ Time in Service: _____ S/N: _____

Payment Information

Same as Owner: Same as Facility: Other _____ Name
_____ Address

Component Information

Nomenclature: _____ Part Number: _____
Serial Number: _____ (Alternator) Date Removed: _____
Part Time in Service: _____ (Alternator) Original Date Installed: _____

For RMA Number

Send this SB 068 Claim Form to:

Hartzell Engine Technologies Product Support
Fax: +1.334.386.5450
E-mail: techsupport@hartzellenginetech.com

RMA Number:

(write in HET assigned RMA number)

Hartzell Use Only - do not write below this line.

Warranty No: _____ Authorized by: _____