

ALERT SERVICE BULLETIN



A Textron Company

NO. 427-10-30

DATE Feb 08, 2010

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DATE
REV

MODEL AFFECTED: 427

SUBJECT: CARGO HOOK EQUIPMENT KIT P/N 427-706-900-101 AND -109 IMPROVEMENT OF.

HELICOPTERS AFFECTED: Model 427 helicopters serial number 56001 through 56077 and 58001 and 58002 equipped with cargo hook equipment kit P/N 427-706-900-101 or -109.

[Model 427 helicopters serial numbers 56078 and subsequent and 58003 and subsequent will have the intent of this bulletin accomplished prior to delivery.]

COMPLIANCE: As soon as practical following receipt of this bulletin but no later than August 31, 2010.

DESCRIPTION:

Bell Helicopter has received two reports of cargo hook uncommanded release during operations with external load.

Investigation has revealed that the current manual release cable installation may not provide for adequate movement of cargo hook assy during flight operations with external loads attached. This condition could result in damage to the manual release cable and subsequent actuation of the cargo hook release mechanisms

This bulletin provides instructions to replace the existing cargo hook manual release cable with new cable assy with modified routing and cable chaffing protection.

APPROVAL:

The engineering design aspects of this bulletin are Transport Canada Civil Aviation (TCCA) approved.

MANPOWER:

Approximately 6 man-hours are required to complete this bulletin. Man-hours are based on hands-on time, and may vary with personnel and facilities available.

WARRANTY:

Owners / Operators of Bell Helicopters who comply with the instructions in of this Bulletin will be eligible to receive a credit towards the replacement Kit part number

To receive this credit:

- Purchase the required Kit from a BHT approved supply source.
- Comply with the instructions contained in this Bulletin no later than the applicable date listed in the “compliance section” of this ASB.
- Submit an MMIR to the Bell Warranty Department for the replacement Kit part number.
- There are no labor provisions with this bulletin.

Customers who fail to comply with the instructions in this Bulletin before the 31st August 2010 are not eligible for the special warranty credit listed above.

MATERIAL:

Required Material:

The following material is required for the accomplishment of this bulletin and may be obtained through your Bell Helicopter Textron Supply Center.

<u>Part Number</u>	<u>Nomenclature</u>	<u>Quantity</u>
268-011-04	Release Cable	1
427-020-905-109	Support Assembly	1
427-706-900-115	Pad Assembly	1
427-020-912-101	Brackets Anti-Chaffing	1
427-020-912-103	Brackets Anti-Chaffing	1
CB4200G3AA8	Click Bond Stud	1
MS21919WDG5	Clamp	1
MS21042L3	Nut	1
NAS1149D0332J	Washer	1

206-075-224-105	Cable Assy Cargo Hook	1
MS27039C1-08	Screw	3
NAS1149C0332R	Washer	3
M85528/2-10A01	Retainer	1
MS35206-216	Screw	4
NAS1149DN416J	Washer	4
MS3357-5-9	Cable Strap	10

Consumable Material:

The following material is required to accomplish this bulletin, but may not require ordering, depending on the operator's consumable material stock levels. This material may be obtained through your Bell Helicopter Textron Supply Center.

<u>Part Number</u>	<u>Nomenclature</u>	<u>Quantity</u>	<u>Reference</u>
299-947-125 TY1	Adhesive	3oz	C-331
AS100026	Lockwire	24 inches	C-508
AMS-S-8802	Sealant	6 oz	C-308
MIL-PRF-81733	Sealant	6 oz	C-392
TT-N-95, TYII 1GAL	Aliphatic Naphtha	1(note A)	C-305

Note A: Toluene (C-306) or MEK (C-309) may be use as a substitute to Aliphatic Naphtha (C-305).

SPECIAL TOOLS:

None required

WEIGHT AND BALANCE:

Not affected

ELECTRICAL LOAD DATA:

Not affected

REFERENCES:

BHT-427-IPB-S-14 Illustrated Parts Breakdown supplement
BHT-427-MMS-14 Maintenance Manual Supplement

BHT-427-II-14 Installation Instructions for cargo hook
BHT-ALL-SPM Standard Practice Manual

PUBLICATIONS AFFECTED:

None affected

ACCOMPLISHMENT INSTRUCTIONS:

-NOTE-

This bulletin may be carried out with the cargo hook frame assy installed or removed from the helicopter.

1. Prepare the helicopter for maintenance.
2. Gain access to the cargo hook frame assy P/N 427-020-901-101. Refer to the BHT-427-MMS-14 for details.
3. Remove the shock cord P/N 206-072-905-103 from the cargo hook. Retain clamp P/N MS21919WCG4 and washer P/N NAS1149CN832R for later re-installation.
4. Remove splice P/N 30-208-1 linking the mechanical release cable P/N 268-015-00 to mechanical release cable P/N 206-072-902-105. Retain splice connector P/N 30-208-1 for later re-installation.
5. Remove support assembly P/N 427-020-905-105 from underside of the helicopter as follow:
 - a. Disconnect the mechanical release cable P/N 268-015-00 from the support assy P/N 427-020-905-105. Discard retaining nut and washer.
 - b. Disconnect the electrical harness assy P/N 206-075-224-003 connector (reference designator P180) from electrical receptacle (reference designator 2580J1).
 - c. Disconnect the mechanical release cable P/N 206-072-902-105 from the support assy P/N 427-020-905-105 only. Retain nut and washer for later re-installation.
 - d. Remove the electrical harness assy P/N 427-076-021-107 receptacle (reference designator 2580J1) from the support assy P/N 427-020-905-105. Discard quantity 4 screws P/N MS35206-216, washer P/N NAS1149DN416J

and retainer P/N M85528/2-10A01. New hardware is provided for later re-installation.

- e. Remove quantity 3 retaining screws P/N MS27039C1-08 and washers P/N NAS1149C0332R securing support assy P/N 427-020-905-105 to helicopter underside. Discard the quantity 3 retaining screws P/N MS27039C1-08 and washers P/N NAS1149C0332R. New retaining hardware is provided for later re-installation.
 - f. Remove support assy P/N 427-020-905-105 and pad P/N 427-706-900-115. Discard the support assy P/N 427-020-905-105 and pad P/N 427-706-900-115.
 - g. Remove sealant residue from helicopter underside using solvent (C-305).
6. Disconnect and remove the mechanical release cable P/N 268-015-00 from cargo hook assy P/N 528-010-00. Refer to the BHT-427-MMS-14 for details.
7. Remove clamp P/N MS21919WDG5, washer P/N NAS1149D0332J and nut P/N MS21042L3 securing the mechanical release cable assy P/N 268-015-00 and the electrical harness assy P/N 206-075-224-003 to frame assy P/N 427-020-901-101. Discard the mechanical release cable P/N 268-015-00 and attaching hardware. New retaining hardware is provided for later re-installation.

CAUTION

Do not use excessive heat when removing Click Bond stud from helicopter structure.

-NOTE-

To remove Click Bond stud apply heat to base of stud using a heat gun, shield area immediately around stud from the heat. Do not exceed 250 °F (121°C) surface temperature. Maximum heating time is 30 seconds. Pull on stud with pliers to remove it.

8. Remove redundant click stud P/N CB4200G3AA8 from inside aft left beam of frame assy P/N 427-020-901-101. Remove old adhesive residue, clean and re-finish exposed metal surface. Refer to the BHT-ALL-SPM, chapter 4.
9. Disconnect the electrical harness assy P/N 206-075-224-003 connector (reference designator P181) from cargo hook P/N 528-010-00. Discard the harness assy P/N 260-075-224-003.

10. Install new anti-chaffing brackets P/N 427-020-912-101 and -103 as follow:

- a. Identify installation location of new nylon anti-chaffing brackets P/N 427-020-912-101 and -103 on cargo hook frame assy P/N 427-020-901-101. Refer to figure 1, 2 and 3 for location details.
- b. Prepare bonding surfaces of cargo hook frame assy P/N 427-020-901-101 by hand sanding painted surface with 320 grit abrasive cloth to remove gloss.
- c. Solvent clean using (C-305) to remove sanding residue.
- d. Prepare bonding surface of new nylon anti-chaffing brackets P/N 427-020-912-101 and -103 by hand sanding surface with 120 grit abrasive cloth to remove gloss.
- e. Solvent clean using (C-305) to remove sanding residue.
- f. Slightly heat surface before bonding for 4-5 minutes to approximately 150 °F (65°C) using heat gun or other suitable source.
- g. Bond new anti-chaffing bracket P/N 427-020-912-101 and -103 to frame assy P/N 427-020-901-101 using MIL-S-8802 sealant (C-308).
- h. Apply contact pressure and use tape to maintain anti-chaffing bracket in place while adhesive is curing.

11. Install Click Bond stud P/N CB4200G3AA8 as follow:

-NOTE-

Location of Click Bond stud may vary to suit installation by
.25 inches (6.35 mm)

- a. Identify installation location of Click Bond stud P/N CB4200G3AA8 on frame assy P/N 427-020-901-101. Refer to figure 2 view C for location details.
- b. Remove paint finish to bare metal from installation location on frame assy P/N 427-020-901-101.
- c. Install click Bond stud using adhesive 299-947-125 TY1 (C-331) and allow curing. Refer to the BHT-ALL-SPM, chapter 13.
- d. Re-finish exposed metallic surfaces as required. Refer to the BHT-ALL-SPM, chapter 4.

12. Install new support assembly P/N 427-020-905-109 to underside of the helicopter in same location as previously removed support P/N 427-020-905-105 as follow:
 - a. Locate pad P/N 427-706-900-115 to match footprint of support assy P/N 427-020-905-109 and seal faying surfaces of support assembly using sealant MIL-PRF-81733 (C-392). Refer to figure 1 view A and 2 view B for location details.
 - b. Install support assembly and pad to existing inserts on underside of helicopter with quantity 3 retaining screws P/N MS27039C1-08 and washers P/N NAS1149C0332R.
 - c. Edge seal around support assembly and pad with MIL-S-8802 sealant (C-308).
13. Connect the mechanical release cable P/N 206-072-902-105 to the support assy P/N 427-020-905-109 using retained nut and washer. Refer to figure 1 for location details.
14. Secure the electrical harness assy P/N 427-076-021-107 receptacle (reference designator 2580J1) to the support assy P/N 427-020-905-109. Using quantity 4 screws P/N MS35206-216, washer P/N NAS1149DN416J and retainer P/N M85528/2-10A01. Refer to figure 1 view A and 3 view D for location details.
15. Connect the new mechanical release cable P/N 268-011-04 to cargo hook assy P/N 528-010-00. Refer to figure 3 for location details.
16. Install the shock cord P/N 206-072-905-103 using the retained clamp P/N MS21919WCG4 and washer P/N NAS1149CN832R. Install the cargo hook cover and secure with lockwire P/N AS100026.
17. Route the new mechanical release cable P/N 268-011-04 as shown in figure 1, 2 and 3 and connect to support assy P/N 427-020-905-109 using washer and nut provided with cable.
18. Install splice P/N 30-208-1 linking the mechanical release cable P/N 268-011-04 to mechanical release cable P/N 206-072-902-105. Refer to figure 1 view A.
19. Connect the new electrical harness assy P/N 206-075-224-105 connector (reference designator P181) to cargo hook P/N 528-010-00. Secure connector with lockwire P/N AS100026. Refer to figure 2 view C.

20. Route the new electrical harness assy P/N 206-075-224-105 with mechanical release cable P/N 268-011-04 and connect the connector (reference designator P180) to electrical receptacle (reference designator 2580J1).
21. Secure the harness assy P/N 206-075-224-105 to the mechanical release cable P/N 268-011-04 using quantity 10 cable straps P/N MS3357-5-9.

-NOTE-

Orient clamp in desired position in order to permit full deflection of the cargo hook.

22. Attach the mechanical release cable P/N 268-011-04 and harness assy P/N 206-075-224-105 together to Click Bond stud P/N CB4200G3AA8 located on frame assy P/N 427-020-901-101 using clamp P/N MS21919WDG5, washer P/N NAS1149D0332J and nut P/N MS21042L3. Refer to figure 2 view C for location details.

WARNING

Insure that the cargo hook has been properly installed and that the manual and electrical release does not limit the movement of the hook.

Insure the bottle guard is installed if the emergency float kit is installed.

23. Perform electrical and mechanical functional test per BHT-427-MMS-14.
24. Annotate the helicopter records to show compliance with this bulletin.

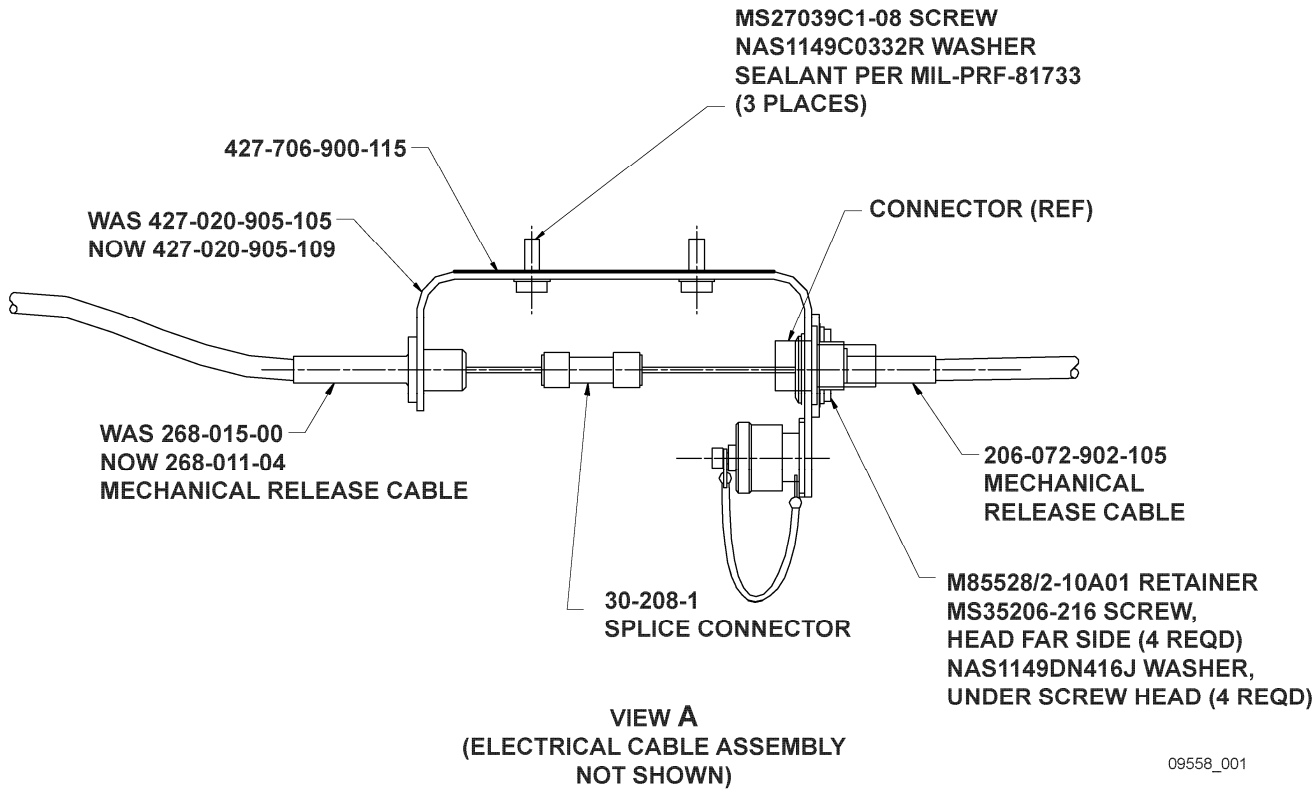
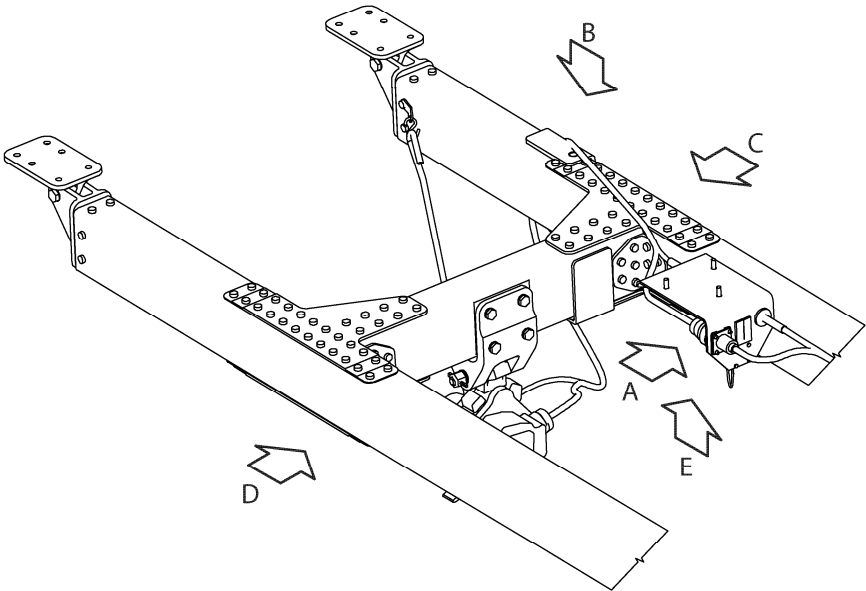
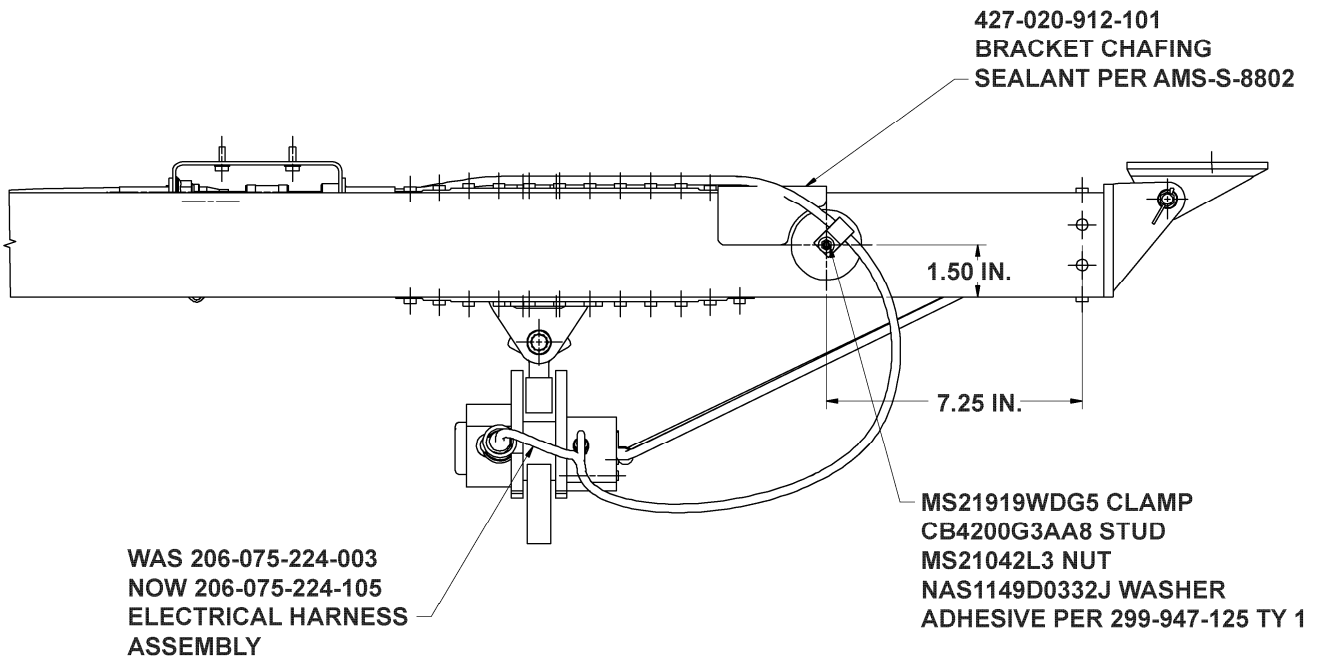
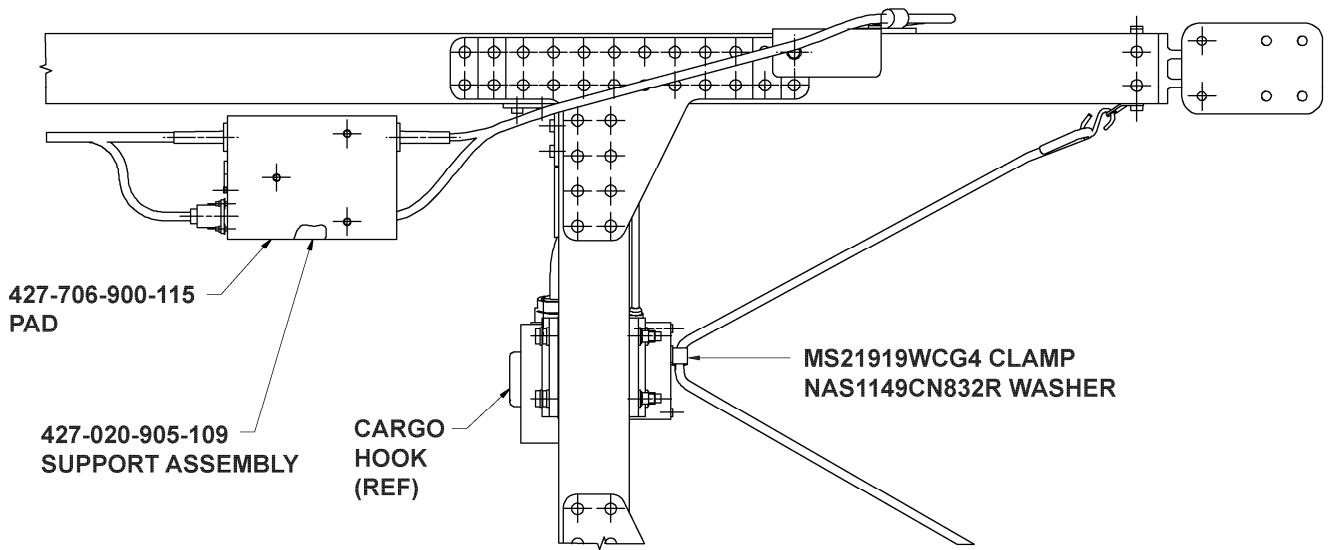
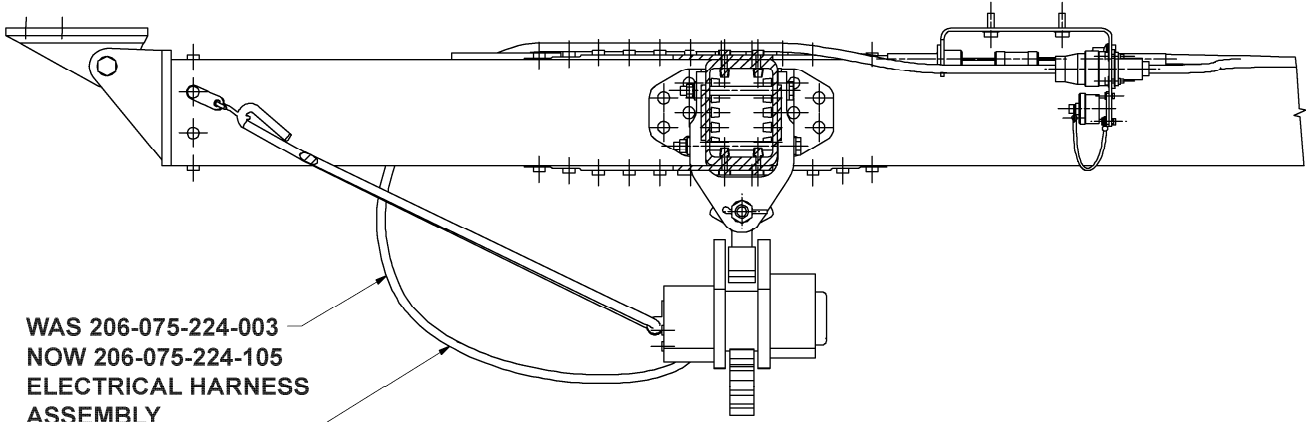


Figure 1



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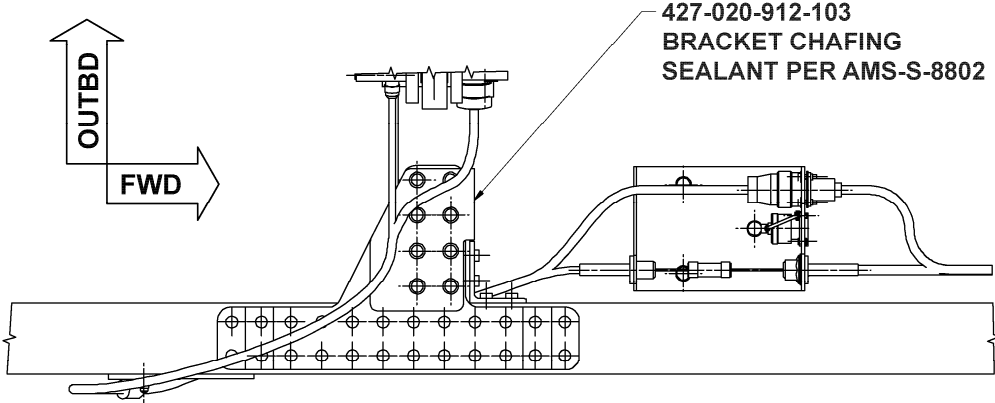
Figure 2



WAS 206-075-224-003
NOW 206-075-224-105
ELECTRICAL HARNESS
ASSEMBLY

WAS 268-015-00
NOW 268-011-04
MECHANICAL RELEASE
CABLE

VIEW D



427-020-912-103
BRACKET CHAFING
SEALANT PER AMS-S-8802

VIEW E
(VIEW LOOKING UP)

09558_003

Figure 3