

August 29, 2001

TO: All 212 Owners/Operators

SUBJECT: REVISION "B" TO TECHNICAL BULLETIN 212-88-105:

**TAILBOOM ASSEMBLIES, P/N 212-030-100-005 / -049 / -057
/ -063 / -069 / -097 / -103 / -115 / -121 / -133 / -147 / -159 / -177
/ -191 and -203, MODIFICATION FOR USE ON ALL MODEL
212 HELICOPTERS**

Revision "B" of this bulletin is issued to include the latest tailboom part numbers and bulletins. This revision clarifies some paragraphs. It also allows owners/operators to upgrade their tailboom(s) only to the level desired. The revised bulletin does not bear any revision bar, as it has been extensively re-written.

TECHNICAL BULLETIN

Bell Helicopter **TEXTRON**

A Subsidiary of Textron Inc.

No. 212-88-105

Date 9-8-88

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DATE 08-29-01

REV B

MODEL AFFECTED: 212

SUBJECT: TAILBOOM ASSEMBLIES, P/N 212-030-100-005 / -049 / -057 / -063 / -069 / -097 / -103 / -115 / -121 / -133 / -147 / -159 / -177 / -191 and -203, MODIFICATION FOR USE ON ALL MODEL 212 HELICOPTERS

HELICOPTERS AFFECTED: Model 212 helicopters serial number 30502 through 31311, 32101 through 32142 and 35001 through 35105.

[Model 212 helicopters serial number 35106 and subsequent will be delivered with the latest tailboom configuration.]

COMPLIANCE: At customer's option.

DESCRIPTION:

Operators of multiple 212 fleets desire to have interchangeable tailbooms and common spares. The tailboom aerodynamic shape and structural arrangement has not changed, however, product improvements have been incorporated over the years to facilitate produceability and reliability. A new tailboom assembly dash number was assigned with most product improvements. Service Letters, Alert Service Bulletins and Technical Bulletins have been issued for all changes practical for field incorporation.

This technical bulletin provides the instructions necessary to modify all existing tailbooms by incorporating applicable bulletins so that tailbooms so modified may be used on other model 212 helicopters.

APPROVAL:

The engineering aspects of this bulletin are FAA/DER approved.

MANPOWER:

See applicable bulletins. Approximately 8.0 man-hours are required to complete the installation of the 2-way stop (if required, refer to Table 1) as per step 2 of the accomplishment instructions. Approximately 2.0 man-hours are required to complete the installation of the top skin stiffener (if required, refer to Table 1) as per step 3 of the accomplishment instructions. Man-hours are based on hands-on time, and may vary with personnel and facilities available.

MATERIAL:

Required Material:

See applicable bulletins.

The following material is required only for the installation of the 2-way stop or the top skin stiffener as indicated in Table 1 (refer to Accomplishment Instructions paragraph 2 or 3). They may be obtained through your Bell Helicopter Textron Supply Center.

<u>Part Number</u>	<u>Nomenclature</u>	<u>Quantity</u>	<u>Required for Step:</u>
205-031-013-023	Support	1	2
205-031-013-139	Support	1	2
205-031-013-121	Support	1	2
205-031-013-137	Stop	1	2
412-030-103-109	Stop Assy	1	2
MS27039-1-11	Screw	7	2
NAS1149D0332J	Washer	7	2
MS21042L3	Nut	7	2
150-021-14C1-1 (See note below)	Repair Sheet	1	3
M7885/6-4-02	Rivet	8	3

- NOTE -

2024-T3 0.040" Al Alloy per QQ-A-250/4 may be used as an alternate.

Consumable Material:

This material is considered consumable (bench stock) material and 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>Reference</u>	<u>Required for Step:</u>
MS20426AD4	Rivet		2
MS20470AD4	Rivet		2
MIL -P-85582, TY1, CL2	Epoxy polyamide primer	C-204	3
MILS81733TY II-2 4OZ	Sealant	C-392	3

SPECIAL TOOLS:

See applicable bulletins.

WEIGHT AND BALANCE:

See applicable bulletins.

ELECTRICAL LOAD DATA:

See applicable bulletins.

REFERENCES:

BHT-212-MM Maintenance Manual.

BHT-212-IPB Illustrated Parts Breakdown.

BHT-MED-SRM-1 Structural Repair Manual.

Service Letter 212-54 Addition of a Doubler to the Tailboom Baggage Compartment.

ASB 212-01-73-1 Inspection and Modification/Repair of Model 212 Tailboom, P/N 212-030-100 (All Dash Numbers).

TB 212-76-11 Inspection and Rework of "J" Stringers Aft of Tailboom Baggage Compartment.

TB 212-79-20 Rework of the Baggage Compartment Forward Bulkhead, P/N 212-030-144.

TB 212-81-50 Inspection and Rework of the Vertical Fin Forward Spar and the Installation of a Doubler on the Upper Left Side Skin of Vertical Fin.

TB 212-82-63 Replacement of Upper Honeycomb Panel, Tailboom Baggage Compartment, with Sheetmetal Skin.

TB 212-86-92 Fin Spar Cap, P/N 212-030-447-101, Installation of.

TB 212-88-104 Fin, P/N 212-030-099-103, Modification of.

ASB 212-86-38 Fin Spar Assembly, P/N 212-030-121-005/-107, Spar Cap Assembly, P/N 212-030-447-001/-101, Inspection and Repair of.

ASB 212-93-85 Tailboom Doubler P/N 212-030-099-089/-129.

TB 212-94-147 Modification to Tailboom Assy P/N 212-030-100-005, -049, -057, -063, -069, -089, -097, -103, -115.

TB 212-94-148 Baggage Compartment Lower Skin Doubler.

TB 212-94-150 Doubler, Installation on L/H Side of Tailboom Fin.

TB 212-00-184 Fin Spar Cap 212-030-125-001 & 212-030-447-101, Replacement of.

PUBLICATIONS AFFECTED:

See applicable bulletins.

ACCOMPLISHMENT INSTRUCTIONS:

-Note-

Table 1 shows the Service Letters (SLs), Alert Service Bulletins (ASBs), Technical Bulletins (TBs) or tasks for which the accomplishment is required to achieve a later tailboom configuration. ASBs are listed in Table 1 as a reminder since all ASBs are required to maintain configuration and should have previously been accomplished.

1. On a separate piece of paper, make a list of all the bulletins/tasks marked with a (✓) beside the *original* configuration (dash number) in Table 1. If the *original* configuration has a split effectivity, pick the earliest. From that list, remove the bulletins/tasks marked with a (✓) beside the *desired* configuration. If the *desired* configuration has a split effectivity, pick the latest. The remaining bulletins/tasks on the list are the ones required to perform the upgrade. Verify and/or comply with all applicable ASBs, TBs and tasks on the list. See example below.

Example:

If a -115 tailboom (initially installed on S/N 31199) is to be upgraded to a -133 configuration (to be installed on A/C 35002), TB 212-86-92, TB 212-88-104, the 2-way stop installation and ASB 212-86-38 have to be accomplished.

2. Replace elevator horn stop, if required per Table 1, using the following procedure and referring to Figure 1 & 2:
 - a. Move elevator horn away from work area (or remove horn assembly) to gain access to stop. Refer to maintenance manual, Chapter 67 for removal.
 - b. Remove existing stop (1), clip (2) and support (3).
 - c. Install new support (3), support (4), stop (5) and support (6), locate as shown on Figure 1. Maintain an edge distance of 2D for all brazier-head rivets and 2.5D for all countersunk rivets. Refer to BHT-MED-SRM-1 for rivet installation.

- d. Drill (Qty 7) holes in stop assy. (7) as per Figure 2.
 - e. Locate stop assy. (7), transfer holes to stop (5), support (6) and support (4).
 - f. Move elevator horn back to position (or reinstall). Refer to maintenance manual for reinstallation of elevator horn. Install stop assy. as per Figure 1 with screws P/N MS27039-1-11, washers P/N NAS1149D0332J and nuts P/N MS21042L3.
3. Install the top skin stiffener, if required per Table 1, using the following procedure and referring to Figure 3.
- a. Gain access to modification area by removing inspection panel in forward section of baggage compartment roof panel.
 - b. Open forward drive shaft cover and remove tail rotor drive shaft section above modification area as per BHT-212-MM, Chapter 65.
 - c. Layout position of -1 stiffener angle to be installed on tailboom top skin as per dimensions noted on Figure 3.
 - d. Remove (Qty 2) existing fasteners attaching L/H & R/H drive shaft cover angles to tailboom top skin.
 - e. Fabricate -1 stiffener angle from P/N 150-021-14C1-1 repair sheet dimensionally as per Figure 1 and section A-A. Alternate material 2024-T3 0.040" Al Alloy per QQ-A-250/4 may be used.
 - f. Fabricate a template to transfer the two (2) existing fastener locations of step 3d with # 27 drill to template. Note the L/H - R/H orientation on template. Cleco template in position using the two existing fastener locations drilled in template. Lay out and drill six (6) # 40 pilot holes through template and tailboom top skin for the remaining holes, using pattern shown on Figure 1. Maintain proper edge distance and spacing.
 - g. Use template to transfer the existing fasteners locations of step 3d with # 27 drill and the six (6) # 40 pilot holes into -1 stiffener angle. Note the L/H - R/H orientation and that the angle flange of the -1 stiffener angle is to be installed forward as per Figure 3. Maintain proper edge distance and spacing.
 - h. Open # 40 pilot holes in -1 stiffener angle and tailboom top skin to fastener hole size with # 27 drill.
 - i. Deburr all holes; remove debris and loose material. Clean and prime -1 stiffener angle with epoxy polyamide primer MIL-P-85582, TY1, CL2 and allow to dry.
 - j. Apply a thin coat of sealant P/N MILS81733TY II-2 4OZ to faying surface of -1 stiffener angle.

- k. Locate -1 stiffener angle in position on underside of tailboom top skin using lockwire. This is done by routing two (2) strands of lockwire down through two separate holes previously drilled in the tailboom top skin and out through the access panel hole. Attach the lock-wire to the same hole locations in the -1 stiffener angle in a manner that when the -1 stiffener angle is pulled up into position the wire can be released or pushed back through access panel opening, to facilitate removal of the lock-wire. Note that the -1 stiffener angle flange is to be installed forward as per Figure 1. Use clecos to hold in position. Secure using fasteners specified in Figure 3 with wet sealant P/N MILS81733TY II-2 4OZ

- NOTE -

Care should be taken not to drop the stiffener angle during this operation since recovery could be very difficult!

- l. Prime rivet heads with epoxy polyamide primer P/N MIL -P-85582,TY1,CL2 and allow to dry.
 - m. Install tail rotor driveshaft section previously removed as per BHT-212-MM, Chapter 65.
 - n. Inspect area of modification through baggage compartment access panel for cleanliness and install the access panel.
4. Using a vibrating stylus, mark tailboom mod plate with the new configuration part number with the suffix FM (e.g. 212-030-100-191FM), this technical bulletin number and the date of compliance.

-Note-

The presence of a bonded plate bearing this bulletin number and a date of compliance that is prior to the date of issuance of revision B indicates that the tailboom was upgraded to a 212-030-100-133 configuration as per an earlier revision of this bulletin.

-Note-

This Technical Bulletin only upgrades the tailboom assembly (structure only). All other components (i.e. Elevator Installation, Flight Control Installation, Drive System Installation, etc.) applicable to the serial number on which the upgraded tailboom assembly is to be installed are required.

-Note-

The upgraded tailboom assemblies may be installed on serial numbers corresponding to the upgraded configuration or on serial numbers corresponding to earlier configurations. Such tailbooms may also be used on Bell Helicopter model 412 and 412EP helicopters that are using the same part number tailboom, when fitted with the appropriate drivetrain, flight control components, etc. Refer to TB 412-01-177 for information related to model 412 tailboom upgrades. Prior to installing a tailboom on a model 412 or 412EP, the tailboom must be brought to the latest variant of the configuration. For example: *TB 212-94-148 must be accomplished on a -191 tailboom before it is fitted on a model 412EP using a -191 tailboom.*

-Note-

Compliance with all future ASBs applicable to both the original and the upgraded configurations is required.

5. Make an entry in helicopter historical records indicating compliance with this technical bulletin.

Tailboom 212-030-100	Certified for helicopters S/N	SVCLTR 212-54	ASB 212-01-73-1	TB 212-76-11	TB 212-79-20	TB 212-81-50	TB 212-82-63	TB 212-86-92	TB 212-88-104	Elevator horn 2-way stop (1)	ASB 212-86-38	ASB 212-90-63	ASB 212-93-85	TB 212-94-147	Nose rib (2)	TB 212-94-148	TB 212-94-150	TB 212-00-184	High-Temp. Panels (3)	Tailboom Upper Skin Stiffener
-005	30502 thru 30578	✓	✓	✓	✓	✓	✓	✓	✓	✓	n/a	✓	✓	✓	✓	✓	✓	✓	✓	✓
-049	30579 thru 30596	n/a	✓	✓	✓	✓	✓	✓	✓	✓	n/a	✓	✓	✓	✓	✓	✓	✓	✓	✓
-057	30597 thru 30614	n/a	✓	✓	✓	✓	✓	✓	✓	✓	n/a	✓	✓	✓	✓	✓	✓	✓	✓	✓
-063	30615 thru 30679	n/a	n/a	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
-069	30680 thru 30849	n/a	n/a	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
-089	30875 thru 30897	n/a	n/a	n/a	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
-097	30850 thru 30874	n/a	n/a	n/a	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
-103	30898 thru 31176 32101 thru 32142	n/a	n/a	n/a	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
-115	31177 thru 31241	n/a	n/a	n/a	n/a	n/a	n/a	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
-115	31242 thru 31274	n/a	n/a	n/a	n/a	n/a	n/a	✓	n/a	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
-121	Spares	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	✓	✓	✓	✓	✓	✓	✓	(4)	✓	✓
-133	31275 & 31276	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	✓	✓	✓	✓	✓	✓	✓	(4)	✓	✓
-133	31277 thru 31311 35001 thru 35021	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	✓	✓	✓	✓	✓	✓	(4)	✓	✓
-147	35022 thru 35056 & 35062	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	✓	✓	✓	✓	✓	(4)	✓	✓
-147	35057 thru 35061 & 35063	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	✓	✓	✓	✓	(4)	✓	✓
-147	35064 thru 35067	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	✓	✓	✓	(4)	✓	✓
-159	Spares	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	✓	✓	(4)	✓	✓
-177	35068	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	✓	✓	(4)	✓	✓
-177	35069 thru 35088	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	✓	✓	n/a	✓	✓
-191	35089	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	✓	n/a	n/a	✓	✓
-191	35090 thru 35096	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	✓	✓
-203	35097 thru 35105	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	✓
-203	35106 thru subs	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Table 1

See notes on next page

Notes to Table 1:

- (✓) Accomplishment required to achieve the -203 configuration.
- (n/a) This task or bulletin is already accomplished on this serial number block.
- (1) Installation of elevator horn 2-way stop as per paragraph 2 of this bulletin.
- (2) Replacement of vertical fin nose rib with P/N 212-030-136-115. Trim aft flange as required (minimum amount) to clear left-hand spar cap. Maintain minimum edge distance of 1.5 d.
- (3) Installation of high temperature panels. The installation of these panels is recommended if any of the baggage compartment panels require replacement. However, it is only when ALL the mentioned panels are replaced that this task may be considered accomplished. The use of a Bell Helicopter approved fixture is required if more than one panel is replaced at a time.

Hi-Temp Panel	In Lieu Of	Location
205-032-811-165	-079	R/H forward baggage compartment panel.
205-032-811-167	-077	R/H aft baggage compartment panel
205-032-813-133	-067	L/H baggage compartment panel
205-032-814-103	-051	Baggage compartment floor panel
205-032-815-167	-137	Baggage compartment roof panel

- (4) When upgrading to P/N 212-030-100-121 configuration and subsequent, this bulletin must be accomplished, as these configurations are common to the model 412 & 412EP.

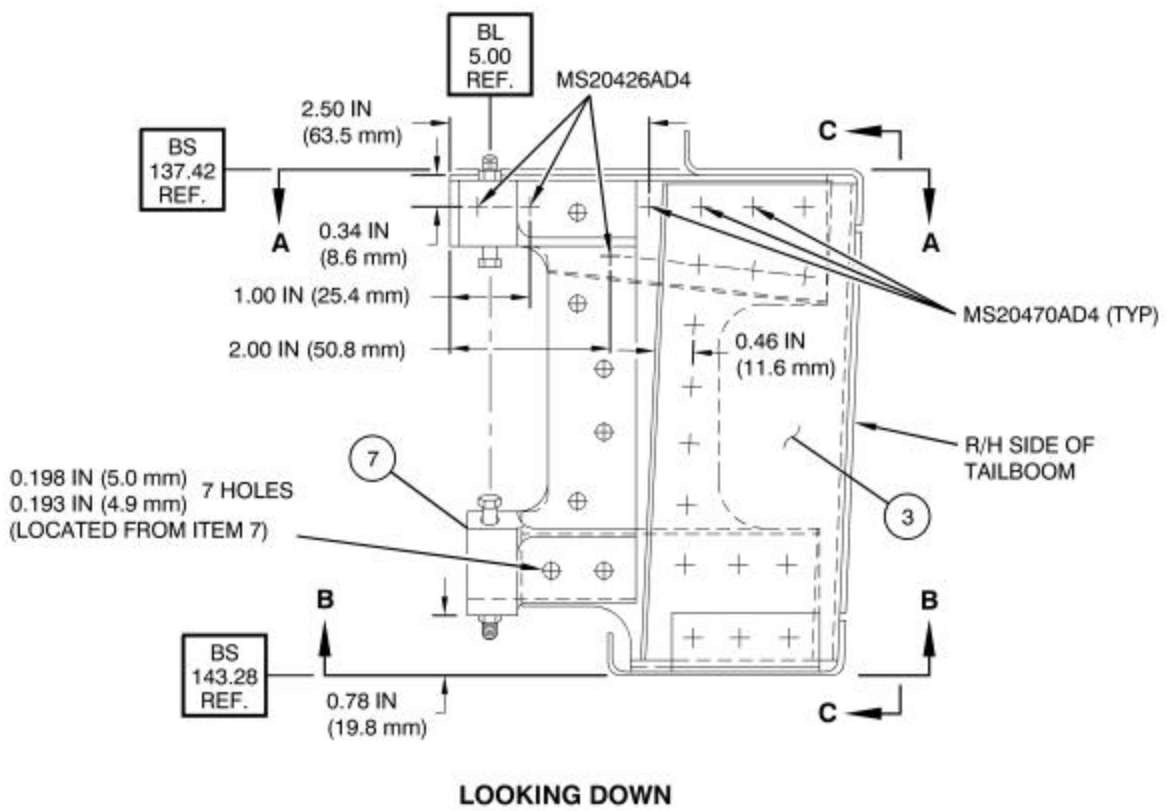
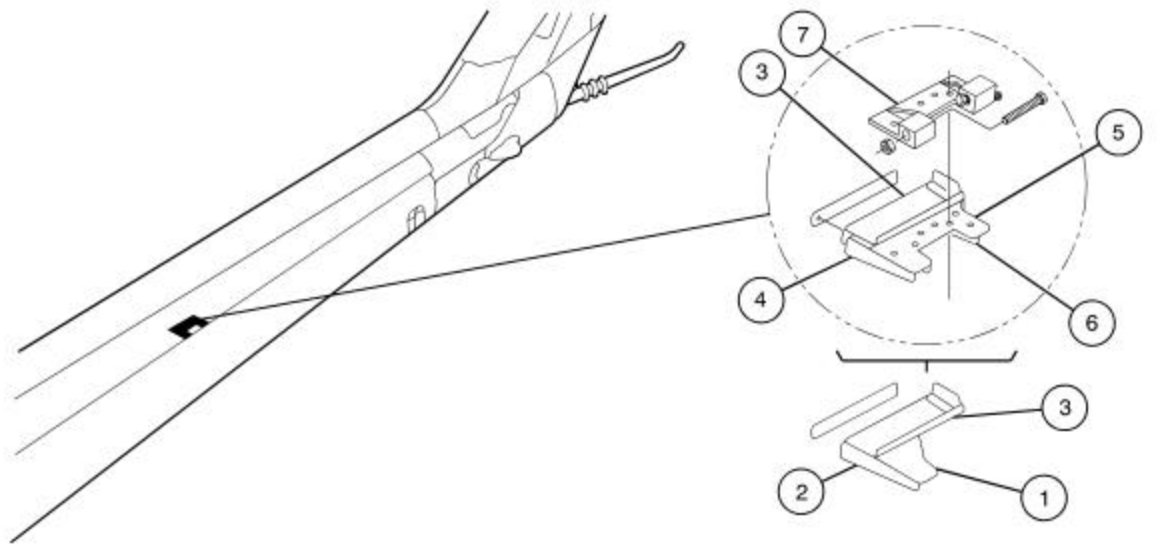
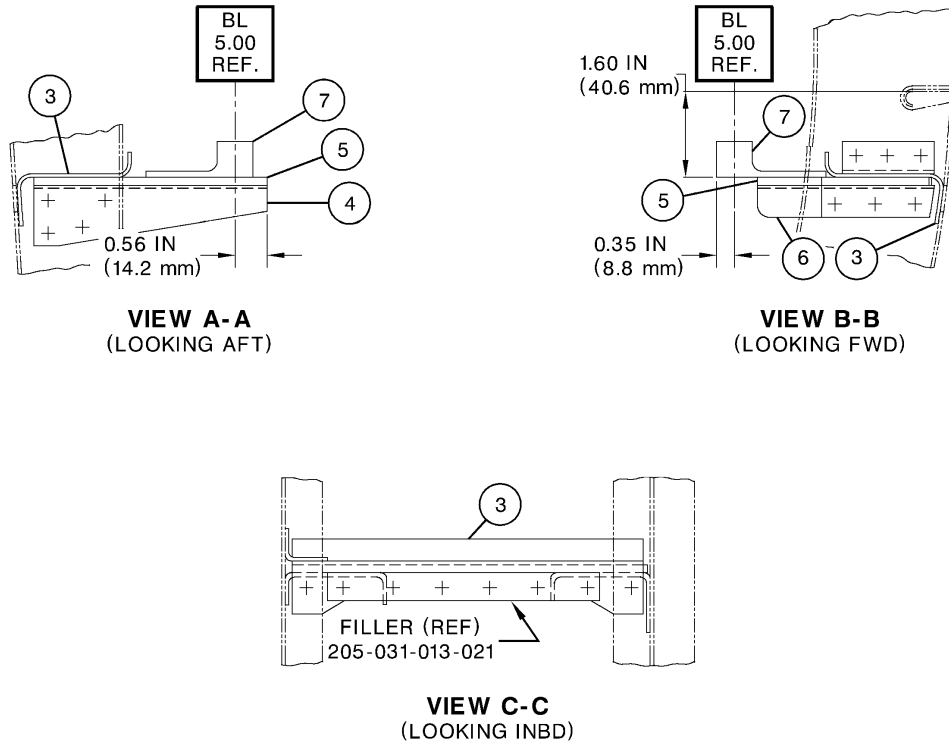


Figure 1 (Sheet 1 of 2)
 2-way stop installation



- | | |
|--------------------|--------------------|
| REMOVE: | INSTALL: |
| 1. 205-031-013-019 | 3. 205-031-013-023 |
| 2. 205-031-013-015 | 4. 205-031-013-139 |
| 3. 205-031-013-023 | 5. 205-031-013-137 |
| | 6. 205-031-013-121 |
| | 7. 412-030-103-109 |

WTB00103

Figure 1 (Sheet 2 of 2)
2-way stop installation

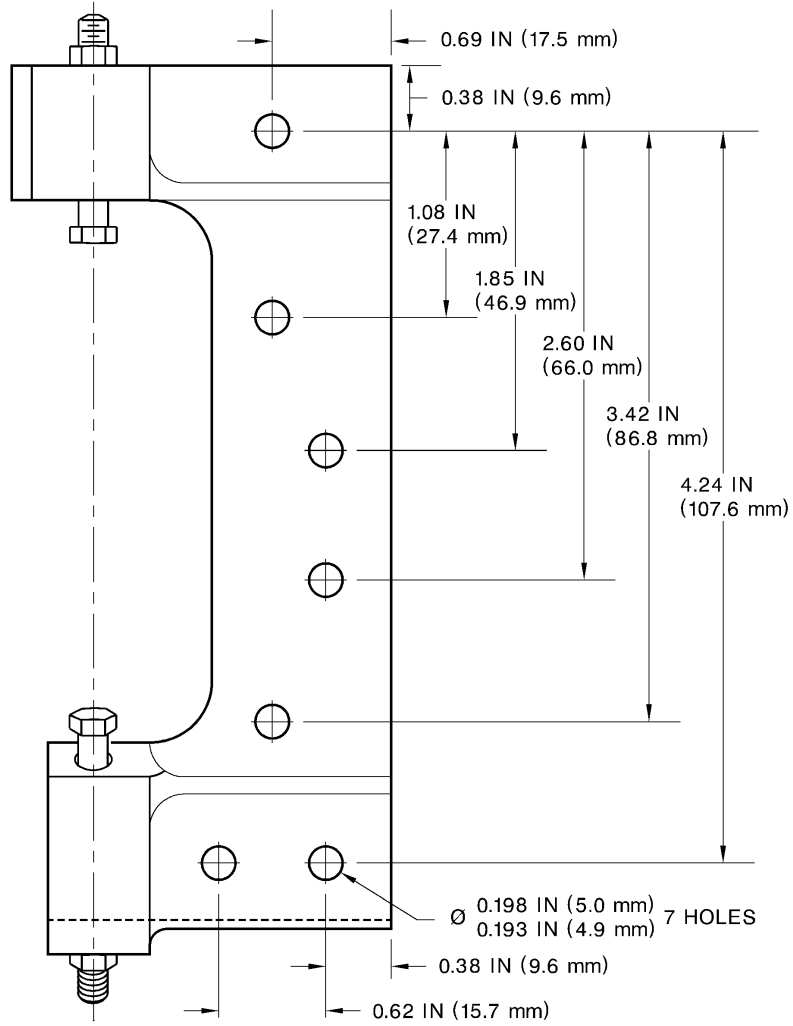


Figure 2
Stop assembly

WTB00102

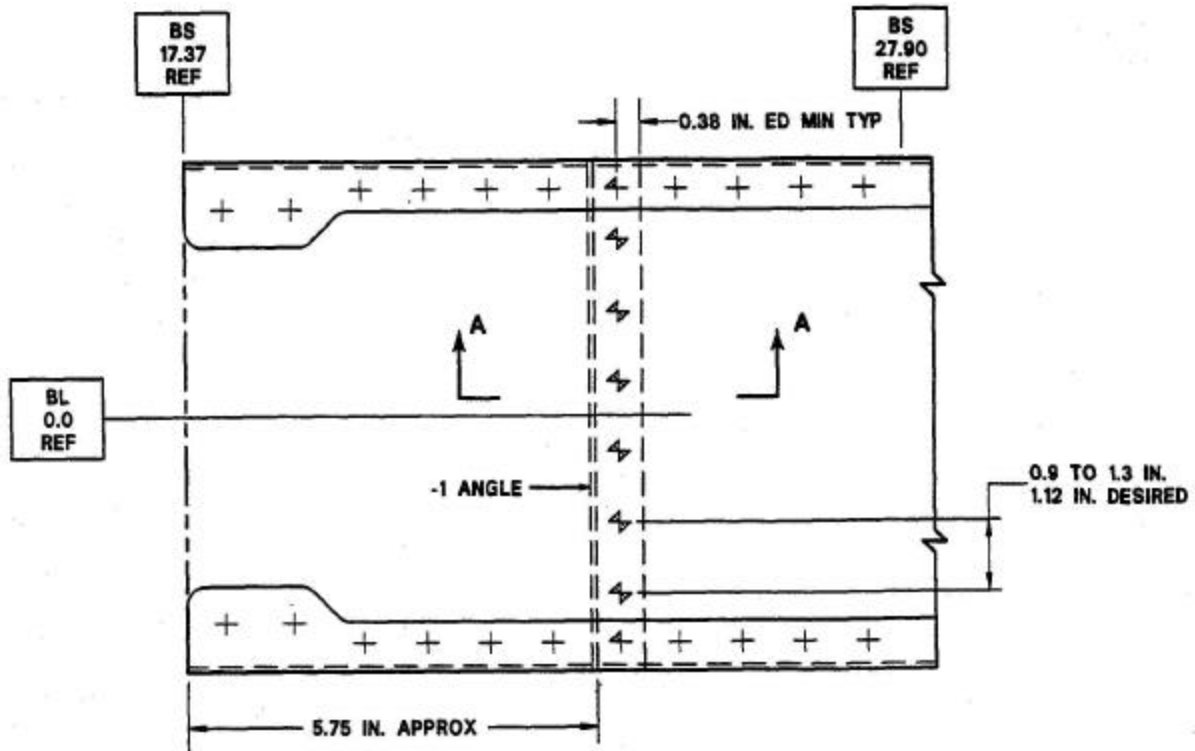


FIGURE 1

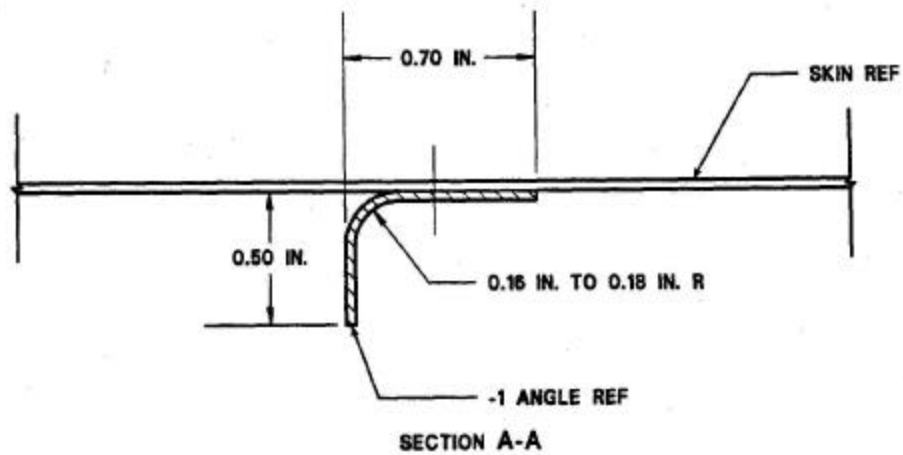
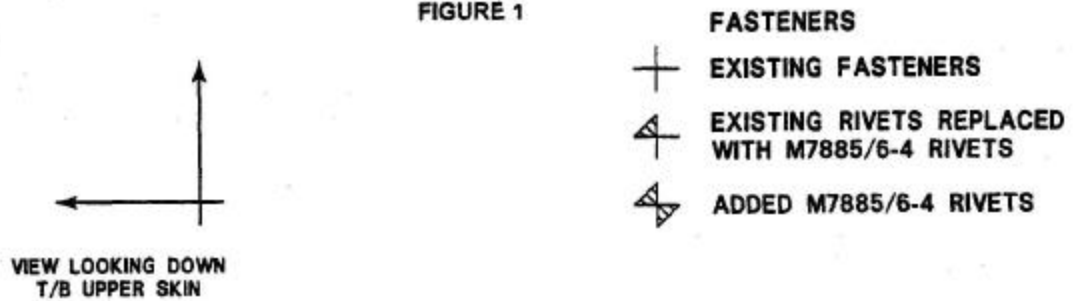


Figure 3
Installation of stiffener