

BEAR PAW, KIT INSTRUCTIONS FOR CONTINUING AIRWORTHINESS

MODELS: BELL 429

Read all of the Instructions for Continuing Airworthiness
thoroughly prior to performing any activities relating to this product

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Notes

1. If changes to this document are required, Alpine Aerotech LP shall revise all pages and reissue the entire document.
2. Alpine Aerotech LP shall make any subsequent revisions of this document available free of charge upon request. Alpine Aerotech LP also recommends that the end user of this product periodically verify the revision level of this document.

Description

The following information provides a functional description of the Bear Paw, Kit as defined in Alpine Aerotech LP authority dataset AAL-490-010-001.

- In soft terrain landing situations where the skid tubes can sink into the landing area, e.g., tundra, snow and sand, balancing issues can occur and in rare cases the tail rotor can strike the ground.
- The Bear Paw, Kit when installed adds additional flotation to the skid gear aft of the C of G, thus keeping the balance point forward of the C of G.



Section 1: Maintenance Manual Supplement

General Notes

1. The following information defines the instructions for continuing airworthiness, repair allowances and airworthiness limitations for the item(s) referenced within this document.
2. Refer to the current revision of the BHT Maintenance Manual, BHT-429-MM, for the chapter(s) and section(s) referenced within this document.
3. Refer to the Section 2: Installation & Removal Instructions and Section 3: Illustrated Parts Breakdown for the replacement and/or installation of the item(s) referenced within this section.
4. Scheduled inspection for the item(s) referenced within this document shall be accomplished in accordance with (IAW) the Inspection Procedures specified.
5. Repair allowances for the item(s) referenced within this document shall be accomplished IAW the Repair Procedures specified.
6. Limitations for the item(s) referenced within this document are IAW the Airworthiness Limitations specified.

Airworthiness Limitations

The Airworthiness Limitations section is approved by the Minister and specifies maintenance required by any applicable airworthiness or operating rule unless an alternative program has been approved by the Minister.

The Airworthiness Limitations Section is FAA approved and specifies inspections and other maintenance required under 14 CFR §§ 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.

Supplement to applicable Maintenance Manual, Chapter 4, Airworthiness Limitations Schedule

Notes

1. Refer to the applicable Maintenance Planning Information, Chapter 4, for general information on airworthiness limitations and airworthiness limitation schedules.
2. Item(s) **not** listed in the Scheduled Airworthiness Limitations section within this document have an unlimited airworthiness life.

Scheduled Airworthiness Limitations

1. There are no airworthiness limitations associated with the item(s) referenced within this document.



Inspection Procedures

Supplement to applicable Maintenance Manual, Chapter 5, Inspection and Component Overhaul Schedule

Notes

1. Refer to the applicable Maintenance Manual, Chapters 5-1, thru 5-14, for general information on inspections, inspection definitions, inspection intervals, inspection methods and inspection schedules.
2. General Inspections, as indicated within this document, are defined as visual, non-thorough checks.
3. Detailed Inspections, as indicated within this document, are defined as visual and thorough, searching checks.
4. Perform Daily Inspections/Pilot Pre-flight Check every day, prior to flight operation. If damage is detected, perform the 400 Hour/12 Month Inspections.
5. Perform 400 Hour/12 Month Inspections every 400 hours or every 12 months, whichever occurs first, prior to flight operation. If damage is detected, refer to the Repair Procedures section within this document.

Scheduled Inspections

1. Daily Inspections/Pilot Pre-flight Check





Data Reference: Section 2: Installation and Removal Instructions
Section 3: Illustrated Parts Breakdown

- i. Perform a General Inspection on the Bear Paw, Kit, Installation for general condition.
- ii. Perform a General Inspection on the Bear Paw, Kit, Installation for proper security.
- iii. Visually confirm the condition of the torque lacquer on the nuts securing the Bear Paw to the skid-tube. If the torque lacquer is broken, perform the 400 hour/12-month inspection.

Scheduled Inspections

2. 400 Hour/12 Month Inspections

Data Reference: Section 2: Installation and Removal Instructions
Section 3: Illustrated Parts Breakdown

- i. Perform a Detailed Inspection on all materials and finishes in the Bear Paw, Kit, Installation for evidence of corrosion, cracks and damage.
- ii. Perform a Detailed Inspection on all materials and finishes in the Bear Paw, Kit, Installation for proper integrity and condition.
- iii. Perform a Detailed Inspection on the Bear Paw, Kit, Installation for proper security.
- iv. Perform a Detailed Inspection on all hardware and fasteners in the Bear Paw, Kit, Installation for proper security and torque.
- v. In the shaded regions ,  of Figure 1 the Bear Paw may be worn to a maximum depth of 0.125.
- vi. In the shaded  region of Fig 1, it is acceptable to have damaged areas up to a maximum depth of 0.125 over a maximum area of 2 sq. in. Damage includes but not limited to scratches, gouges and deformed areas.
- vii. The edge of a damaged region must be a minimum of 2 in. away from the edge of the nearest damaged region.
- viii. Cracks are acceptable in the shaded  portion of Fig 1 as long as they are restricted to the pockets of the bear paws, and do not exceed 0.50 long. Cracks that penetrate the stiffening ribs of the same area are unacceptable. Stop drill all cracks up to 0.50 long with $\varnothing 0.188$ drill.
- ix. Inspect items 3 & 5, Strap, Assy's for cracks and hole elongation. If cracks are detected, or holes are elongated more than 0.025, replace the Strap, Assys (Items 4 & 7) immediately.
- x. Inspect items 2 & 4 Cap, Details for wear and damage and replace as required.

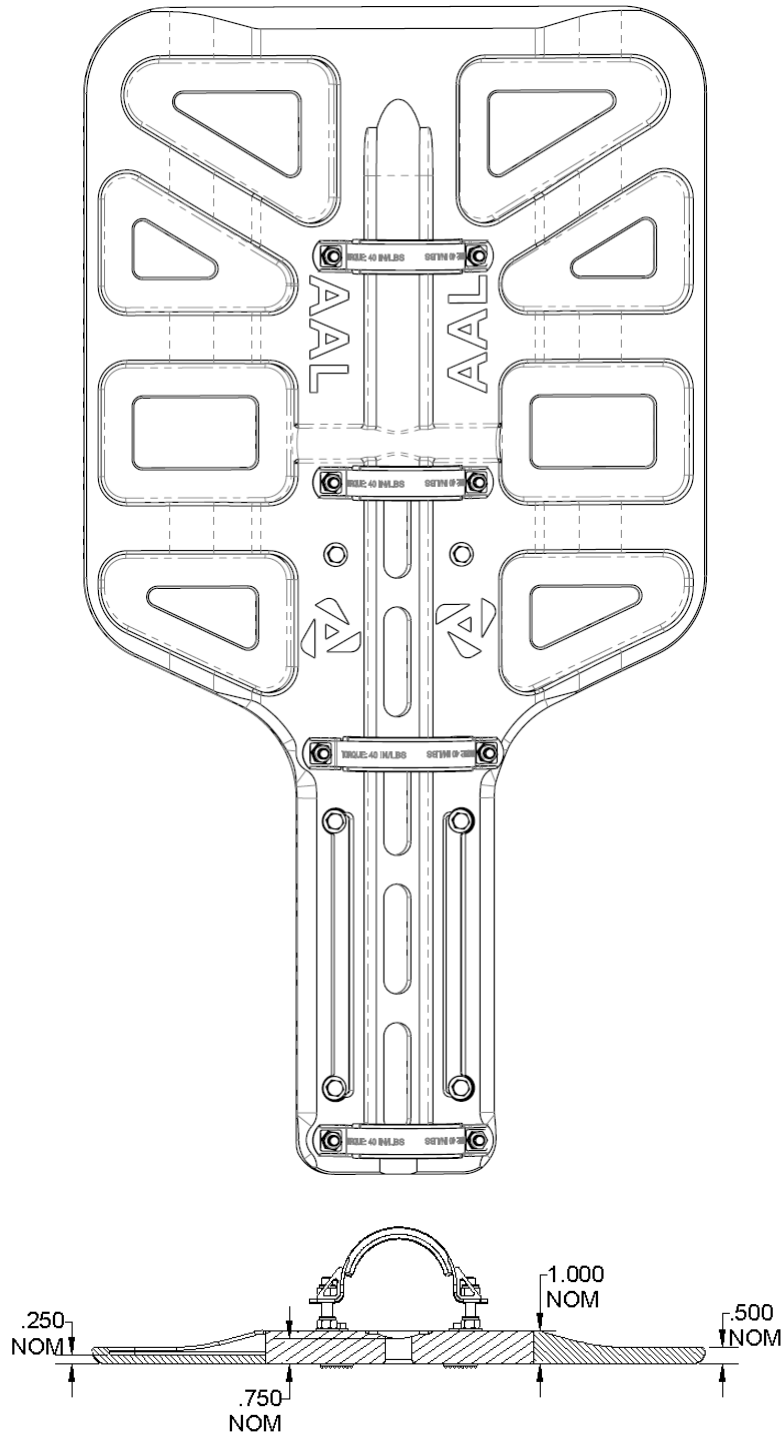


Figure 1



Repair Procedures

1. Repairs to the item(s) referenced within this document are **not** permitted. Contact Alpine Aerotech LP for further information if repairs are required to the item(s) referenced within this document.

Section 2: Installation & Removal Instructions

Weight & Balance

<u>Part Number</u>	<u>Description</u>	<u>Weight</u>	<u>Long. Arm</u>	<u>Lat. Arm</u>
AAL-490-010-001	Bear Paw, Kit †	21.71*	274.17	.00
		9.85 (Kg)	6.963 (m)	.00 (m)
AAL-490-010-001	Bear Paw, Kit ‡	20.28*	274.73	.000
		9.20 (Kg)	6.978 (m)	.00 (m)

† Applicable to installations with Grippers (Item 11) and associated hardware

‡ Applicable to installations without Grippers (Item 11) and associated hardware

* Total increase in weight to aircraft.

General Notes

1. All Installation Instructions shall be accomplished in accordance with (IAW) standard aircraft practices. Refer to the current revision of the FAA manuals AC 43.13-1B and AC 43.13-2B for details on standard aircraft practices.
2. Torque fasteners IAW the tension type torque limits indicated in the current revision of the FAA publication AC 43.13-1B, Table 7-1 plus tare torque, unless otherwise specified. Tare torque is defined as the amount of torque required to overcome the resistance of self-locking nuts against mating bolts or studs.
3. All Dimensions are in imperial measures (inches/pounds).
4. Refer to Section 1: Maintenance Manual Supplement for instructions on maintenance for the item(s) referenced within this section.
5. Refer to the Section 3: Illustrated Parts Breakdown for the part numbers of the item(s) referenced within this section.



Installation Notes

- △₁ Typical item number for all like items in this view unless otherwise specified.
- △₂ Align the center of the Cap, Assy (Item 5) with the center of the fastener row on the saddle, detail.
- △₃ Prior to final torque ensure that there is zero gap between the Bear Paw, Detail and the skid-tube.
- △₄ Apply Threadlocker (Item 15) to threads IAW manufacturer's recommendations (prior to torqueing fastener). Torque to 30-35 IN./LBS.
- △₅ Apply Torque Lacquer (Item 16) or equivalent, to Nut, Hex, Self-locking (Item 10) and Bolt, Round Head, Square Neck (Item 7) common to Strap, Assys only (Items 3 & 5) per manufacturer's recommendations.



Installation Instructions

NOTE: LHS installation shown, RHS opposite.

1. Install the Grippers (Item 11) and supplied hardware on the Bear Paw, Detail (Item 1) as shown. Ensure all serrated surfaces on the Grippers are facing down (serrations must be common to the ground). Ensure Threadlocker (Item 15) is applied (mandatory). Torque all Gripper fasteners IAW General Note 2. Reference Figure 1.

NOTE: Installation of Grippers (Item 11) and associated hardware is optional.

If Grippers are desired, all Grippers (6X) and associated hardware must be installed. Use applicable Weight & Balance data accordingly.

If Grippers are not desired, all Grippers (6X) and associated hardware must be removed. Use applicable Weight & Balance data accordingly.

CAUTION: Ensure Threadlocker (Item 15) is sufficiently applied to all Gripper fasteners. Omitting threadlocker is not acceptable and will create a non-airworthy installation.

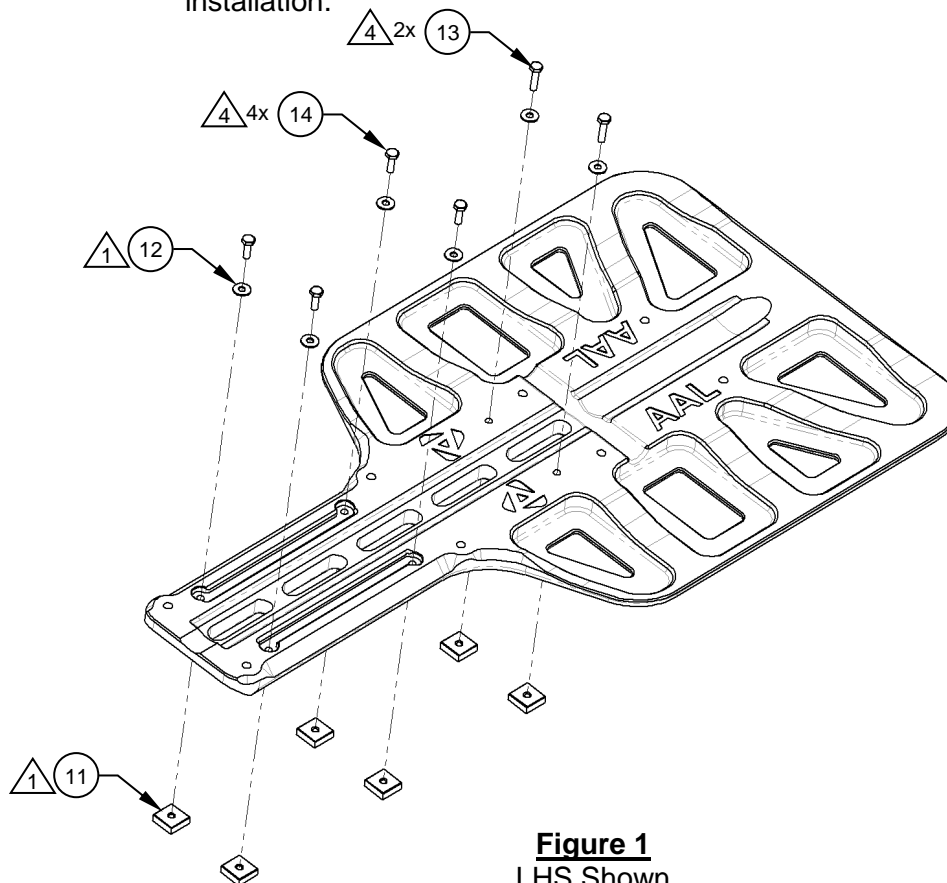


Figure 1
LHS Shown
RHS Opposite



Installation Instructions

2. Pre-install the supplied hardware as shown. Reference Figure 2.

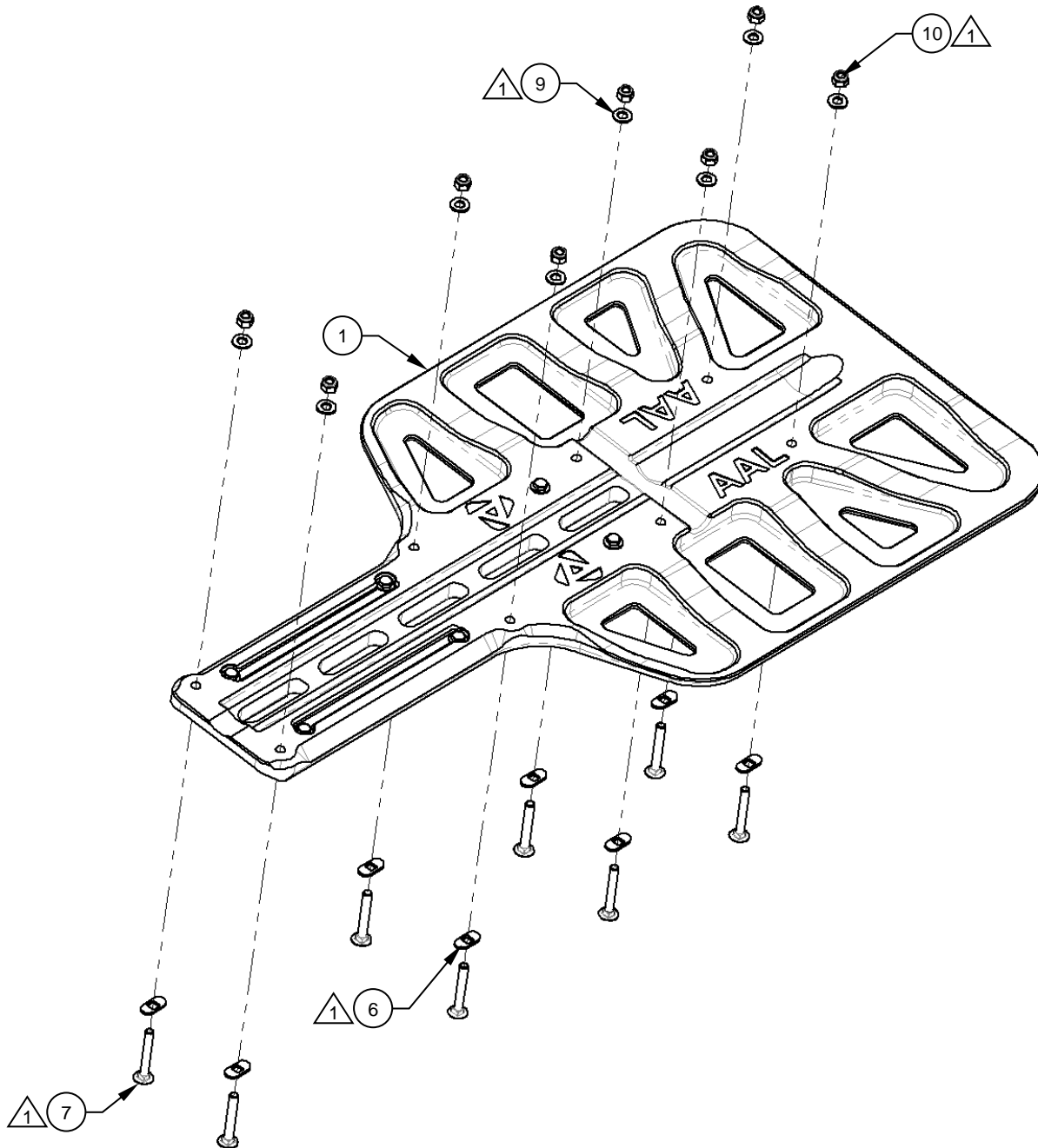
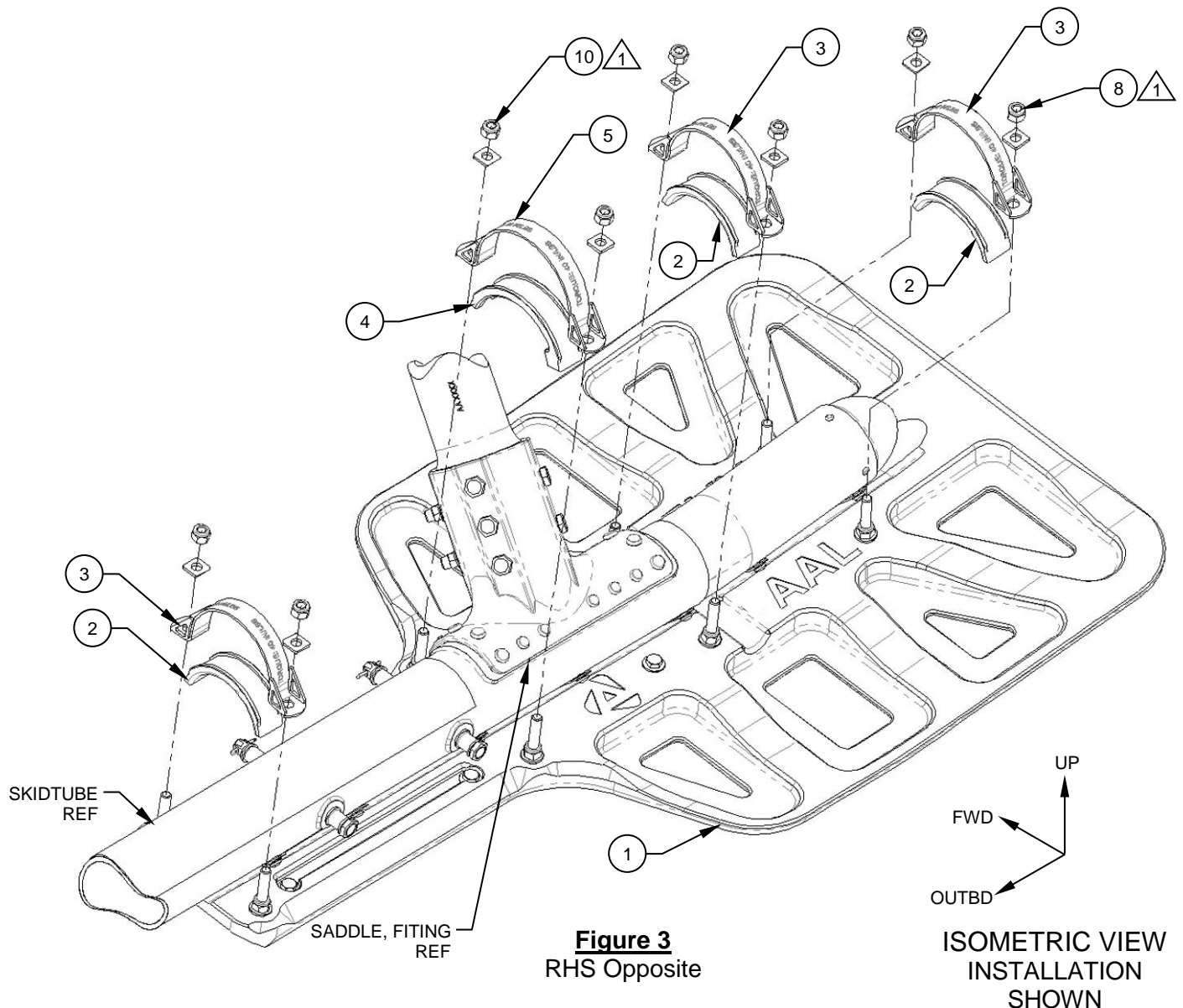


Figure 2
LHS Shown
RHS Opposite



Installation Instructions

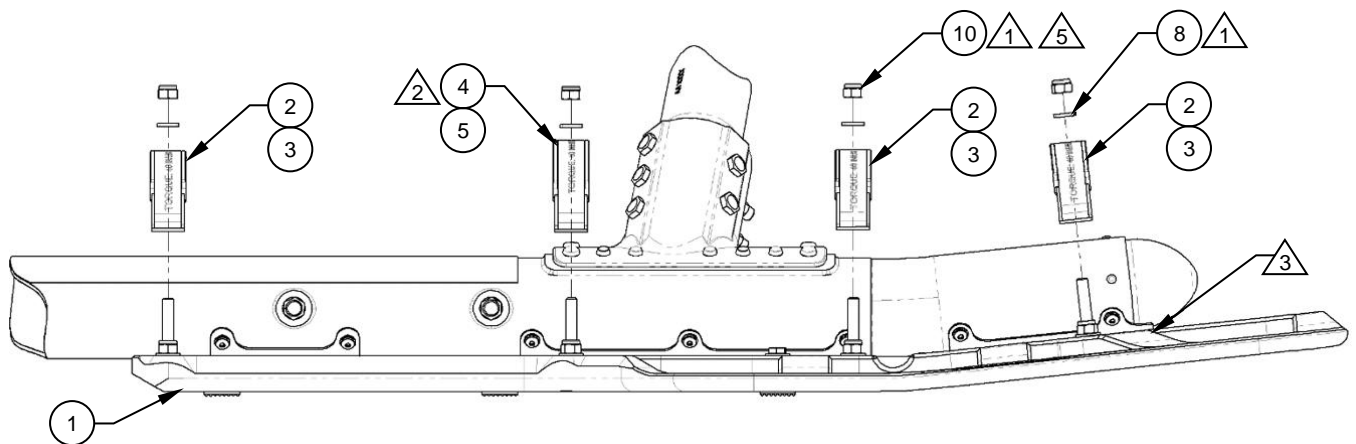
3. Raise the aircraft, so that the Bear Paw, Detail (Item 1) can slide under the skid-tube.
4. Once the Bear Paw, Detail (Item 1) is under the skid-tube in its approximate location place the Cap, Details (Items 2 & 4) and Strap, Assy's (Items 3 & 5) on their corresponding studs and capture the stud with its respective self-locking nut (Item 10) and washer (Item 8). Reference Figures 3 & 4.
5. Align the center of the Cap, Detail & Strap, Assy (Items 4 & 5) with the center of the fastener row on the saddle, detail. Reference Figure 4.





Installation Instructions

6. Lower the aircraft onto the Bear Paw, Detail (Item 1) and torque fasteners equally to 40 in/lbs. (plus tare torque). For the Aft most Cap, Detail & Strap Assy (Item 2 & 3), prior to final torque of the fasteners ensure there is zero gap between the Bear Paw, Detail (Item 1) and the skid-tube. Reference Figures 3 & 4.



UP
FWD
VIEW LKG INBD
INSTALLATION
SHOWN

Figure 4
LHS Shown
RHS Opposite



Installation Instructions

7. Installation complete.
8. Perform a General Inspection of all items to ensure proper installation.
9. Update the aircraft logbook for the installation of the Bear Paw, Kit.



Removal Instructions

1. As there are no special considerations or additional steps to remove the Bear Paw, Kit for either inspections, or mission configuration, the removal of the Bear Paw, Kit can be considered the opposite of installation.
2. Perform a General Inspection of all items to ensure proper removal.
3. Update the aircraft logbook for the removal of the Bear Paw, Kit.



Section 3: Illustrated Parts Breakdown

General Notes

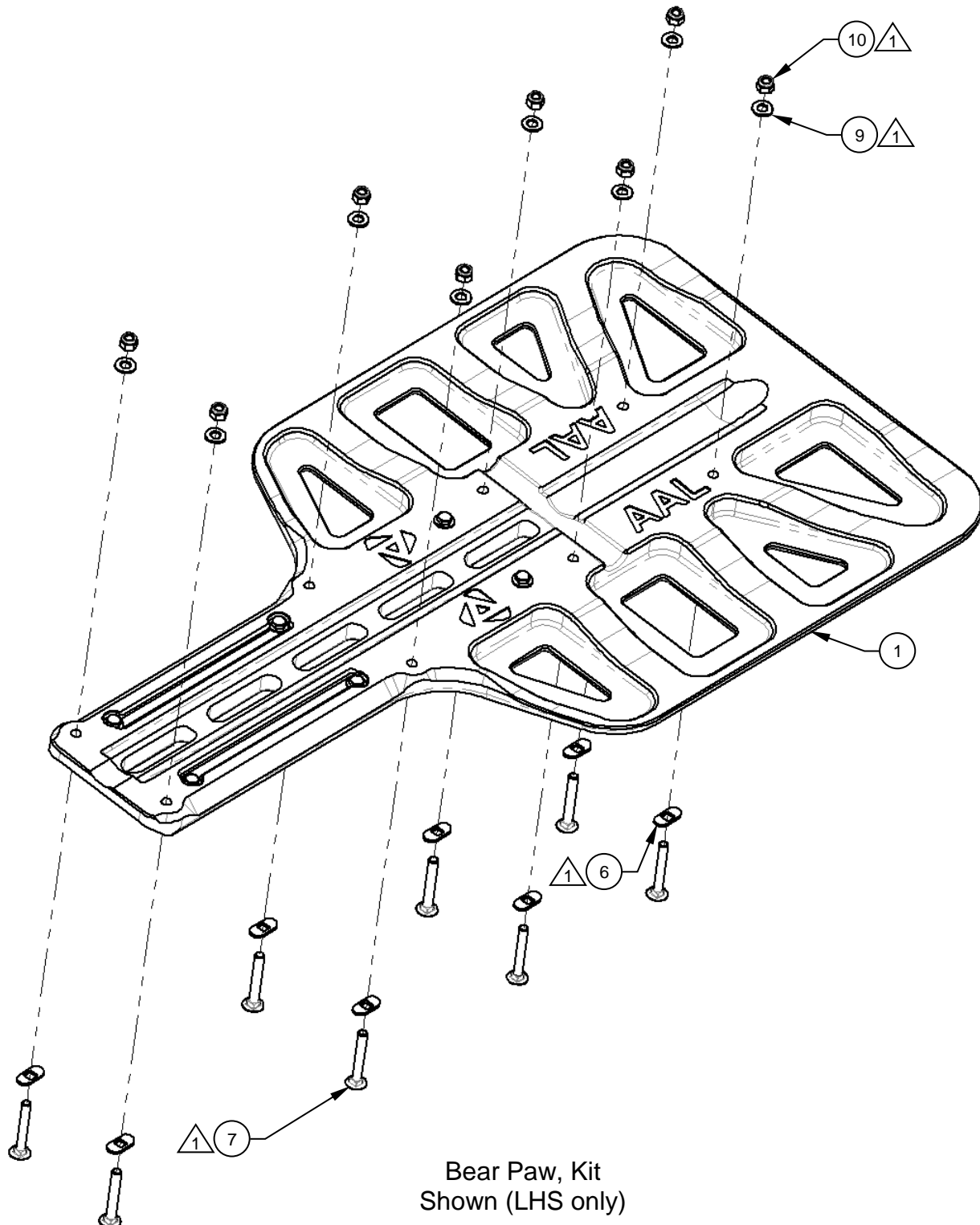
1. Alternate items listed.

△₁ Typical item number for all like items in this view unless otherwise specified.

△₂ Threadlocker (Item 15) and Torque Lacquer (Item 16) not shown and not supplied. Procure locally. |

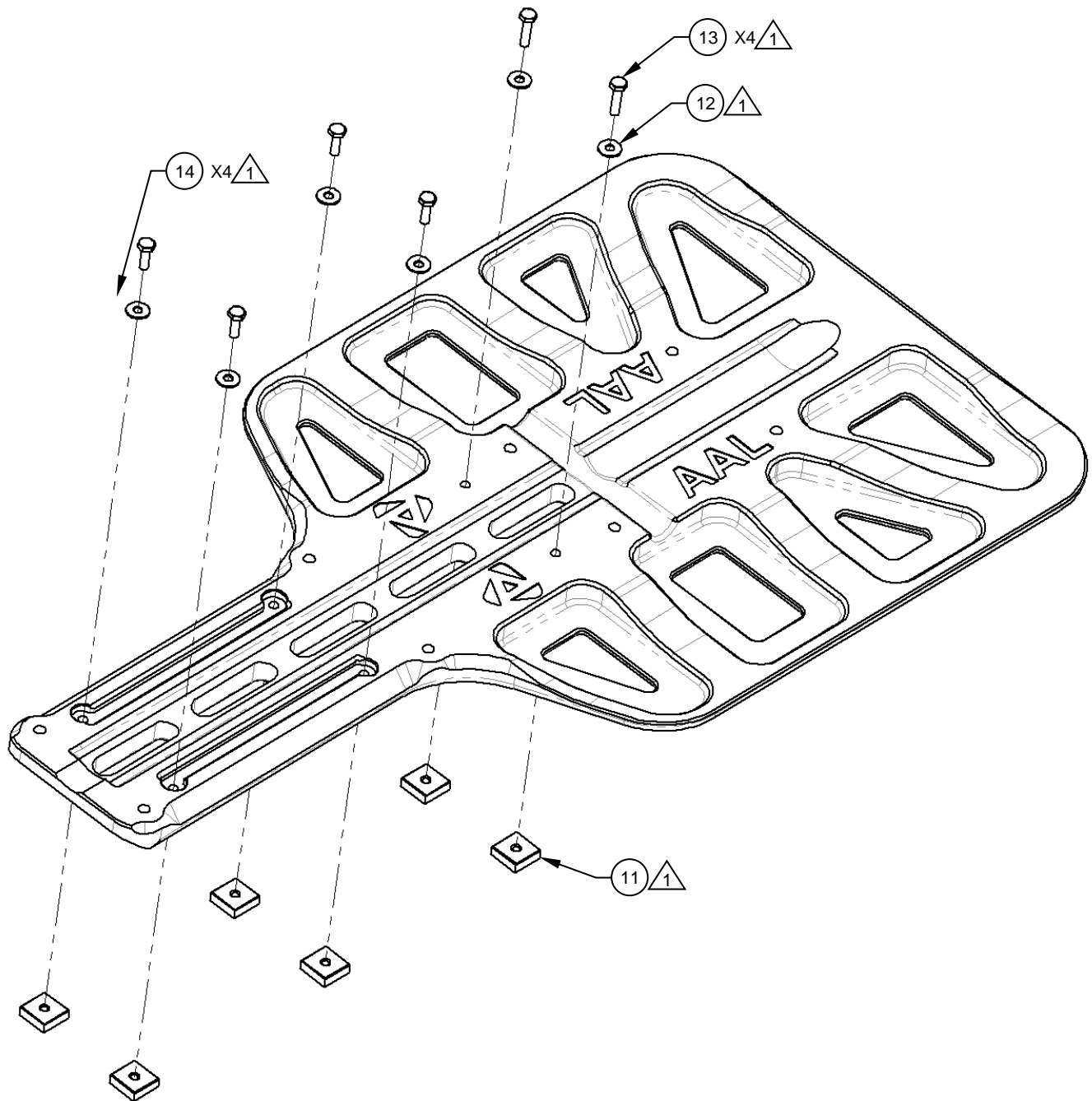


Illustrated Parts Breakdown (cont.)





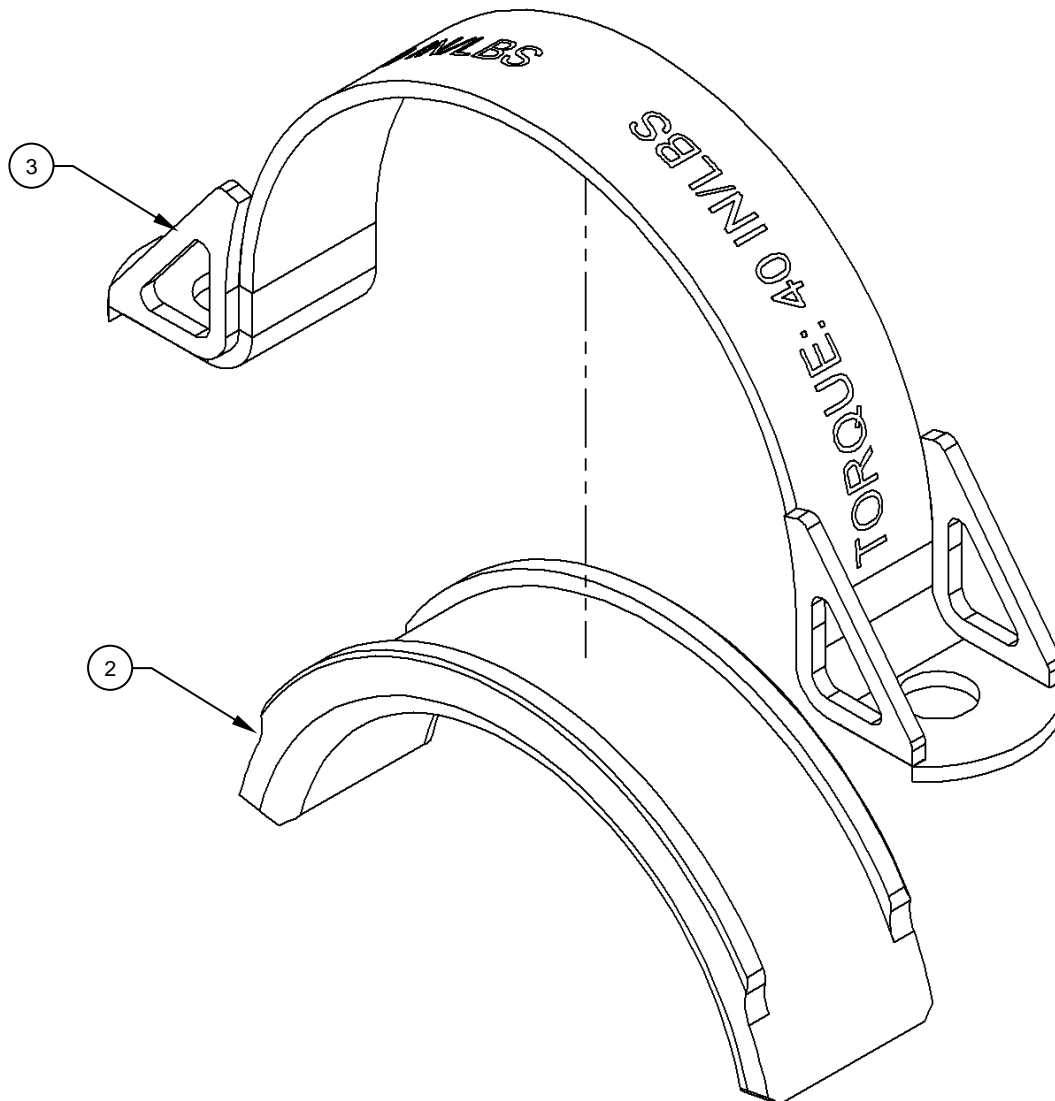
Illustrated Parts Breakdown (cont.)



Bear Paw, Kit
Shown (LHS only)



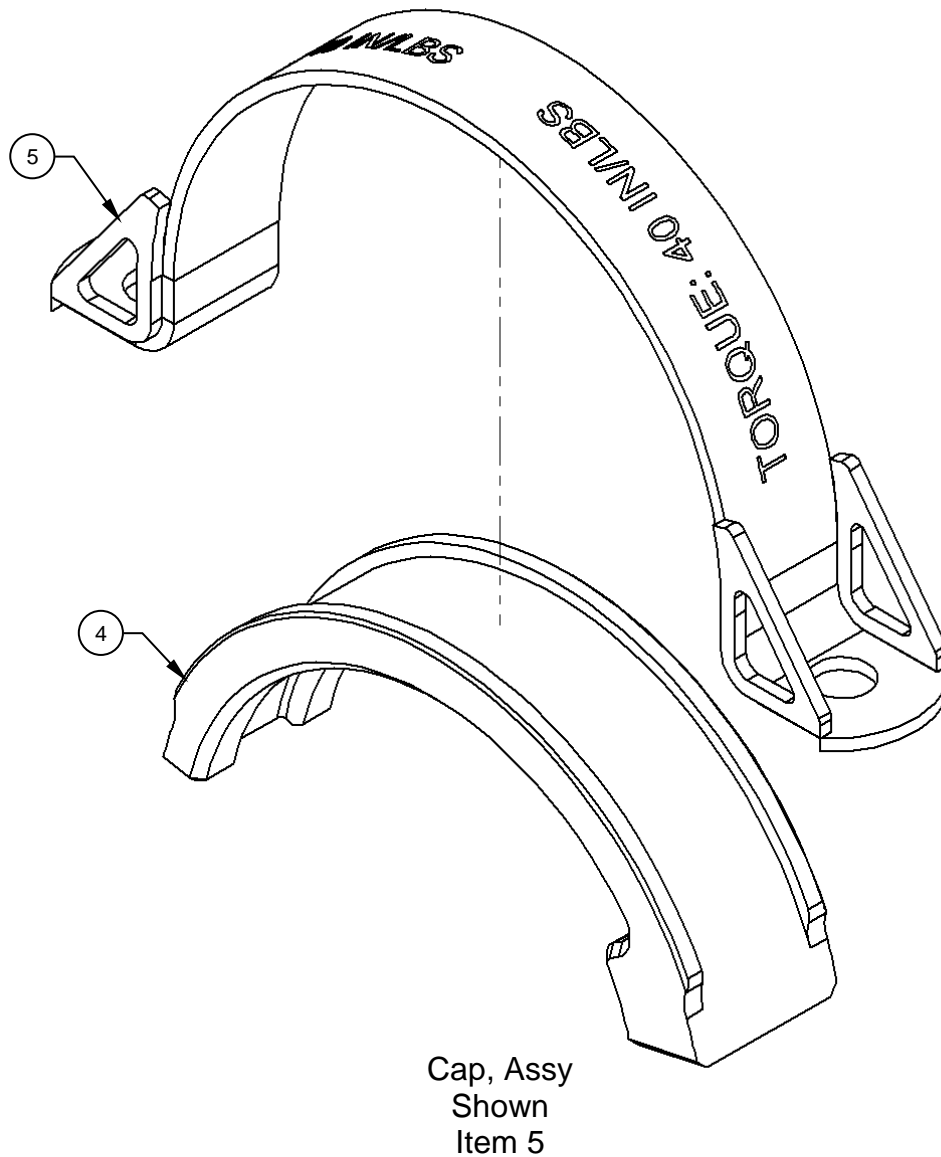
Illustrated Parts Breakdown (cont.)



Cap, Assy
Shown
Item 2



Illustrated Parts Breakdown (cont.)




Illustrated Parts Breakdown (cont.)

ITEM	QTY	NUMBER	DESCRIPTION	MATERIAL	REF STOCK SIZE	SPEC	FINISH	MANUFACTURER	NCAGEC
-	-	AAL-490-010-001	BEAR PAW, KIT						
1	2	AAL-490-012-001	BEAR PAW, DETAIL	UHMWPE	1	SEE NOTES	SEE SPEC	ALPINE AEROTECH LP	L0171
2	6	AAL-490-012-002	CAP, DETAIL	UHMWPE	1	SEE NOTES	SEE SPEC	ALPINE AEROTECH LP	L0171
3	6	AAL-490-011-003	STRAP, ASSY	NA	NA	NA	NA	ALPINE AEROTECH LP	L0171
4	2	AAL-490-012-003	CAP, DETAIL	UHMWPE	1	SEE NOTES	SEE SPEC	ALPINE AEROTECH LP	L0171
5	2	AAL-490-011-004	STRAP, ASSY	NA	NA	NA	NA	ALPINE AEROTECH LP	L0171
6	16	AAL-290-042-006	TAB, DETAIL	HASTELLOY X	0.09	AMS 5536	SEE SPEC	ALPINE AEROTECH LP	L0171
7	16	Ø.3125-18 x 2.250 x 2.250	BOLT, ROUND HEAD, SQUARE NECK	ASTM A307 GRADE A	SEE SPEC	ASTM B18.5	ZINC PLATED	SOURCE AS REQUIRED	NA
8	16	NAS1401-5C3	WASHER, RADIUS	SEE SPEC	SEE SPEC	NAS1401	SEE SPEC	SOURCE AS REQUIRED	NA
9	16	MS15795-812	WASHER, FLAT	SEE SPEC	SEE SPEC	NASM15795	SEE SPEC	SOURCE AS REQUIRED	NA
10	32	Ø.3125-18, STYLE NE	NUT, HEX, SELF-LOCKING	ASME B18.16.6 GRADE N2	SEE SPEC	ASME B18.16.6	ZINC PLATED	SOURCE AS REQUIRED	NA
11	12	CL-16-SG	SQUARE, GRIPPER	M2 TOOL STEEL	.375 x 1.000 x 1.000	SEE MFR	SEE MFR	CARR LANE MFG CO.	99862
12	12	MS15795-853	WASHER, FLAT	SEE SPEC	SEE SPEC	NASM15795	SEE SPEC	SOURCE AS REQUIRED	NA
13	4	AN4-10A	BOLT, MACHINE	SEE SPEC	SEE SPEC	NASM3THRU20	SEE SPEC	SOURCE AS REQUIRED	NA
14	8	AN4-6A	BOLT, MACHINE	SEE SPEC	SEE SPEC	NASM3THRU20	SEE SPEC	SOURCE AS REQUIRED	NA
15	AR	THREADLOCKER, MEDIUM STRENGTH	THREADLOCKER, MEDIUM STRENGTH	LOCTITE 243	SEE MFR	SEE MFR	SEE MFR	HENKEL LOCTITE CORPORATION	79436
16	AR	C83317	TORQUE LACQUER	DYKEM CROSS CHECK	SEE MFR	SEE MFR	YELLOW	ITW PRO BRANDS	1QZC4

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