

H145 D-3 BEAR PAW, KIT INSTRUCTIONS FOR CONTINUING AIRWORTHINESS

MODELS: AIRBUS H145 D-3 (BK117 D-3)

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.

SECTION 1 **Introduction**

This document comprises Instructions for Continuing Airworthiness that apply to the AAL H145 D-3 Bear Paw, Kit installed on Airbus H145 D-3 (BK117 D-3) rotorcraft. The information and data contained in this document are supplemental to the information contained in the existing ICA for the H145 D-3 (BK117 D-3).

SECTION 2 **Description**

The following information provides a functional description of the H145 D-3 Bear Paw, Kit as defined in Alpine Aerotech LP authority dataset AAL-290-090-001.

In soft terrain landing situations (i.e. tundra, snow and sand) where the skid tubes can sink into the landing area, balancing issues can occur and in rare cases the tail rotor can come in contact the ground. When installed, the Bear Paw, Kit provides additional flotation to the skid gear AFT of the aircraft's C of G, therefore increasing stability and decreasing the potential of a tail rotor strike.

SECTION 3 **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 revisions of the Airbus H145 D-3 Aircraft Maintenance Manual and Master Servicing Manual for the chapter(s) and section(s) referenced within this document.
3. Refer to the Section 5: Removal & Replacement Instructions and Section 6: 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 in Section 4: Airworthiness Limitations.

Inspection Procedures

Supplement to applicable Airbus H145 D-3 (BK117 D-3) Master Servicing Manual, Chapter 05

Notes

1. Refer to the applicable Airbus H145 D-3 (BK117 D-3) Master Servicing Manual, Chapter 05 as applicable, 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 or unsafe condition is detected, perform the 400 Hour/12 Month Inspections.
5. Perform 200 Hour/6 Month torque check every 200 hours or 6 months, whichever occurs first prior to flight operations. The approved inspection interval tolerance for the 200 Hour/6 Month torque check is a maximum of 10%
6. 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. The approved inspection interval tolerance for the 400 Hour/12 Month Inspection is a maximum of 10%.

Scheduled Inspections

1. Daily Inspections/Pilot Pre-flight Check

Data Reference: Section 5: Removal & Replacement Instructions
Section 6: Illustrated Parts Breakdown

- i. Perform a General Inspection on all items in the H145 D-3 Bear Paw, Kit for general condition.
- ii. Perform a General Inspection on all items in the H145 D-3 Bear Paw, Kit for proper security.
- iii. Visually confirm the condition of the Torque Lacquer on the fasteners securing the Bearpaw to the skid-tube. If Torque Lacquer is broken, perform the 200 Hour/6 Month torque check.

2. 200 Hour/6 Month torque check

Data Reference: Section 5: Removal & Replacement Instructions
Section 6: Illustrated Parts Breakdown

- i. Confirm that all Self-Locking Nuts (Item 11) common to the Strap Assys (Items 4 & 5) are torqued to 40 in/lbs. Add tare (drag) torque per standard aircraft practices as specified in AC43.13.
- ii. Apply fresh Torque Lacquer (Item 15), or equivalent, to fasteners common to the Strap, Assys (Items 4 & 5) IAW the manufacturer's recommendations.

3. 400 Hour/12 Month Inspections

Data Reference: Section 5: Removal & Replacement Instructions
Section 6: Illustrated Parts Breakdown

- i. Perform a Detailed Inspection on all items, materials and finishes in the H145 D-3 Bear Paw, Kit for evidence of corrosion, cracks and damage.
- ii. Perform a Detailed Inspection on all items in the H145 D-3 Bear Paw, Kit for evidence of excessive wear.
- iii. Perform a Detailed Inspection on all items, materials and finishes in the H145 D-3 Bear Paw, Kit for proper integrity and condition.
- iv. Perform a Detailed Inspection on all hardware and fasteners in the H145 D-3 Bear Paw, Kit for proper condition, security and torque.

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 4 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 maintenance required under Sections 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.

**Supplement to applicable Airbus H145 D-3 (BK117 D-3) Master Servicing Manual,
Chapter 04, Airworthiness Limitations****Notes**

1. Refer to the applicable Airbus H145 D-3 (BK117 D-3) Master Servicing Manual, Airworthiness Limitations Section, 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.

SECTION 5 **Removal & Replacement Instructions**

Applicability

The H145 D-3 Bear Paw, Kit (AAL-290-090-001) is applicable to all H145 D-3 (BK117 D-3) serial numbers.

Weight & Balance

| <u>Part Number</u> | <u>Description</u> | <u>Weight</u> | <u>Long. Arm</u> | <u>Lat. Arm</u> |
|--------------------|--------------------|---------------|------------------|-----------------|
| AAL-290-090-001 | Bear Paw, Kit † | 21.12* | 203.11 | 0.00 |
| | | 9.58 (Kg) | 5159 (mm) | 0.00 (mm) |
| AAL-290-090-001 | Bear Paw, Kit ‡ | 20.17* | 203.15 | 0.00 |
| | | 9.15 (Kg) | 5160 (mm) | 0.00 (mm) |

† Applicable to installations with Grippers (Item 7) and associated hardware

‡ Applicable to installations without Grippers (Item 7) 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 Advisory Circular AC 43.13-1 and AC 43.13-2 for details on standard aircraft practices.
2. Torque fasteners IAW the tension type torque limits indicated in the current revision of the FAA Advisory Circular AC 43.13-1, Table 7-1 unless otherwise specified.
3. All Dimensions are in imperial measures (inches/pounds) unless otherwise specified.
4. Refer to Section 3: Maintenance Manual Supplement for instructions on maintenance for the item(s) referenced within this section.
5. Refer to Section 6: 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 Apply Thread-locker (Item 14) to threads IAW manufacturer's recommendations (prior to torquing fastener). Torque to 30-35 INCH LBS.
- ③ Apply Torque Lacquer (Item 15), or equivalent to, all fasteners common to the Strap, Assys (Items 4 & 5) IAW manufacturer's recommendations.

Removal Instructions

1. Gain access to the aircraft and make the aircraft safe and ready for maintenance.

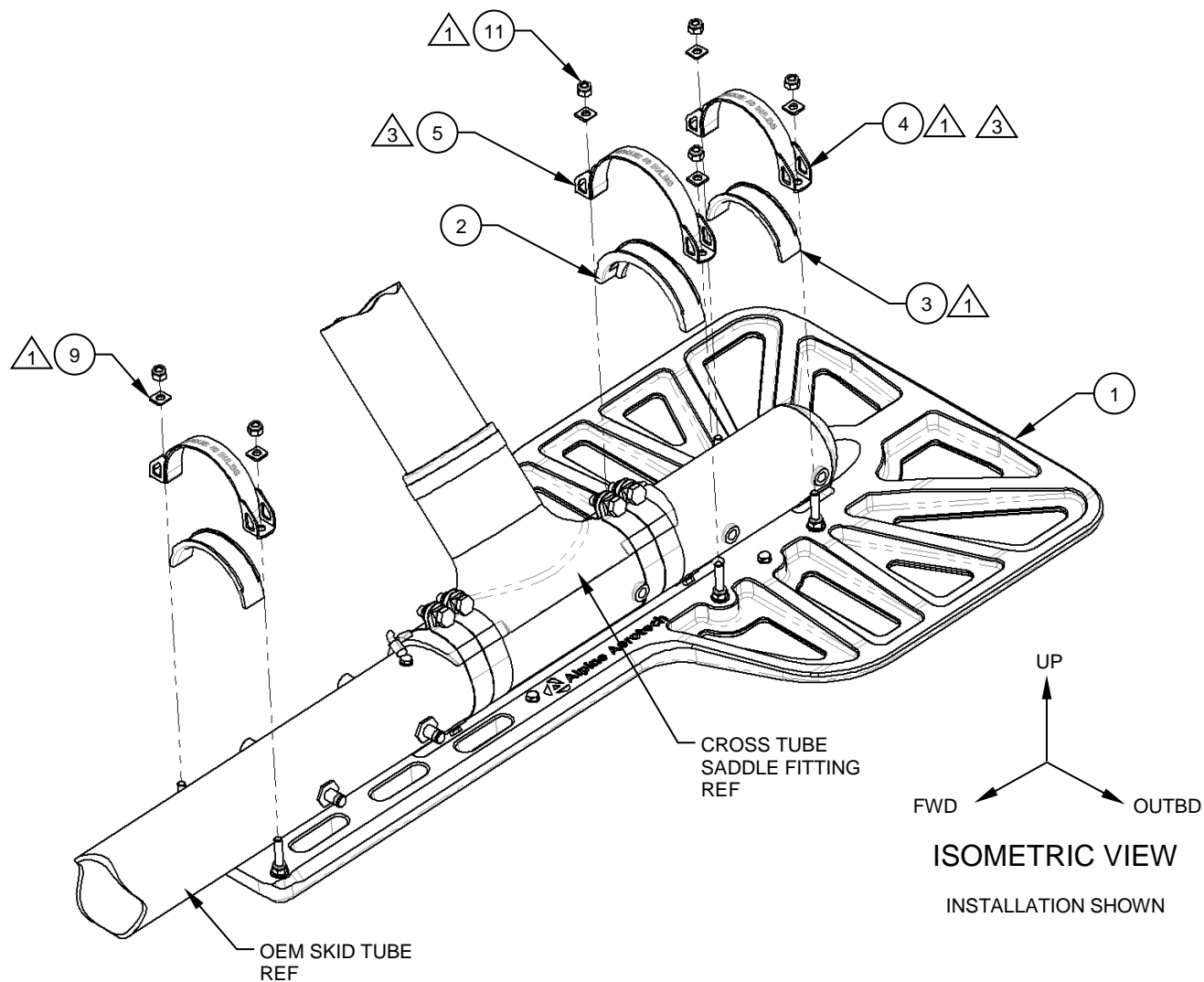


Figure 1
LHS Shown, RHS Opposite

2. Remove the Strap, Assys (Items 4 & 5), Cap, Details (Items 2 & 3) and the associated Nuts (Item 11) and Radius Washers (Item 9). Raise the aircraft and remove the Bear Paw, Detail (Item 1) from under the skid tube. Reference Figure 1.
3. Repeat removal steps on the RHS. Reference Figure 1. Removal complete.
4. Update the aircraft logbook for the removal of the H145 D-3 Bearpaw, Kit.

Removal Instructions - Grippers

1. Removal of the Grippers (Item 7) can be performed with the Bear Paws (Item 1) installed on the aircraft or on the bench. If removing Grippers while installed on the aircraft, raise the aircraft and make it safe and ready for maintenance prior to proceeding. Reference Figure 2.

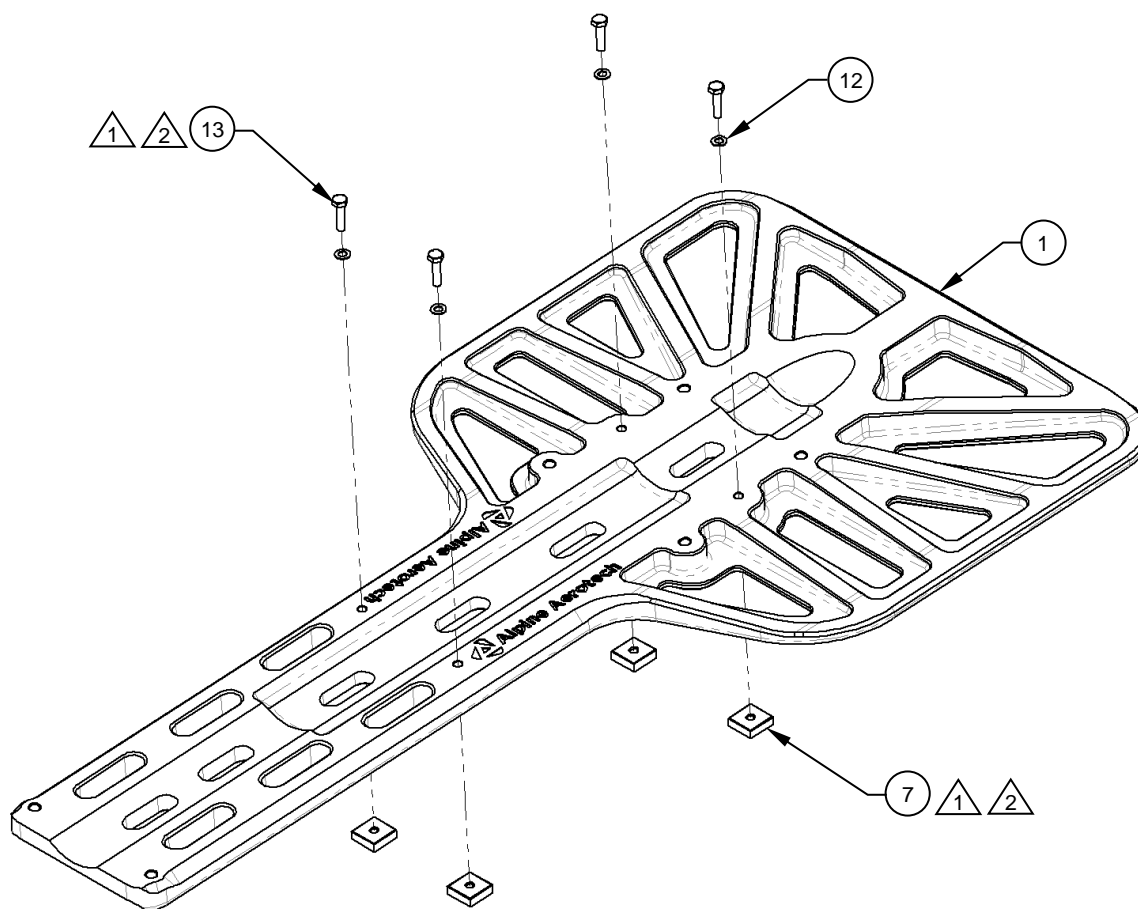


Figure 2
Gripper Removal/Replacement

2. Remove Bolts (Item 13), Washers (Item 12) and Grippers (Item 7) from Bearpaw, Detail (Item 1). Reference Figure 2.
3. Removal Complete. Update the aircraft logbook and Weight & Balance for the removal of the Grippers (Item 7).

Replacement Instructions

1. Gain access to the aircraft and make the aircraft safe and ready for maintenance.
2. Raise the aircraft and position the Bear Paw, Detail (Item 1) under the skid tube. Reference Figure 1.
3. Once the Bear Paw, Detail (Item 1) is under the skid tube in its approximate location, position the Strap, Assys (Items 4 & 5) and their respective Cap, Details (Items 2 & 3) on their corresponding bolts. Reference Figure 1.

NOTE: Ensure the Aft-most Strap, Assy (Item 4) and associated Cap, Detail (Item 3) are positioned between the cross-tube saddle fitting and the existing bolt at the aft end of the skid tube. Reference Figure 1.

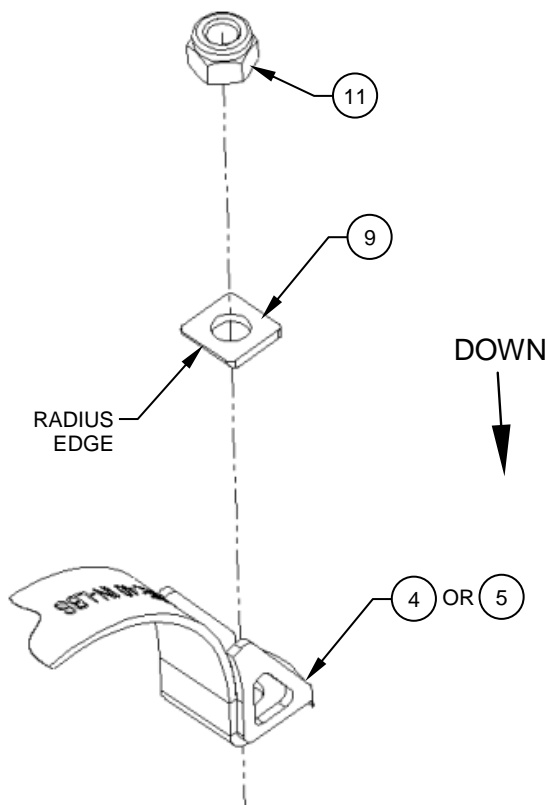


Figure 3
Hardware Orientation Shown

Replacement Instructions

4. Install the supplied Radius Washer (Item 9) and Nut (Item 11) on each bolt. Reference Figures 1 & 3. Ensure the radius edge on the Washer (Item 9) is oriented down and towards the skid tube. Reference Figure 3. A thin-wall socket may be required to adequately fasten the Nut (Item 11).

NOTE: Do not apply final torque to the fasteners at this stage while the aircraft is raised off the ground. Only apply minimal torque to snug-up the Bear Paw, Detail (Item 1). You should be able to move the Bear Paw by hand.

5. Lower the aircraft onto the Bear Paw, Details (Item 1). After ensuring full aircraft weight on gear, torque the fasteners equally to 40 in/lbs. while ensuring the Strap, Assys (Items 4 & 5) sit roughly level. Add tare (drag) torque per standard aircraft practices as specified in AC43.13. Reference Figure 1. Apply Torque Lacquer (Item 15) or equivalent, to all fasteners common to the Strap, Assys (Items 4 & 5).
5. Replacement complete. Perform a General Inspection of all items to ensure proper installation.
6. Update the aircraft logbook for the installation/replacement of the H145 D-3 Bearpaw, Kit.

Replacement Instructions - Grippers

1. Replacement of the Grippers (Item 7) can be performed with the Bear Paws (Item 1) installed on the aircraft or on the bench. If removing Grippers while installed on the aircraft, raise the aircraft and make it safe and ready for maintenance prior to proceeding. Reference Figure 4.
2. Replace the Grippers (Item 7) 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 Thread-locker (Item 14) is applied (mandatory). Torque all Gripper fasteners IAW Flag-note 2. Reference Figure 4.



NOTE: Installation of Grippers (Item 7) and associated hardware is optional. If Grippers are desired, all Grippers (8X) and associated hardware must be installed. Use applicable Weight & Balance information provided. If Grippers are not desired, all Grippers (8X) and associated hardware must be removed. Use applicable Weight & Balance information provided.

| |
|----------------|
| CAUTION |
|----------------|

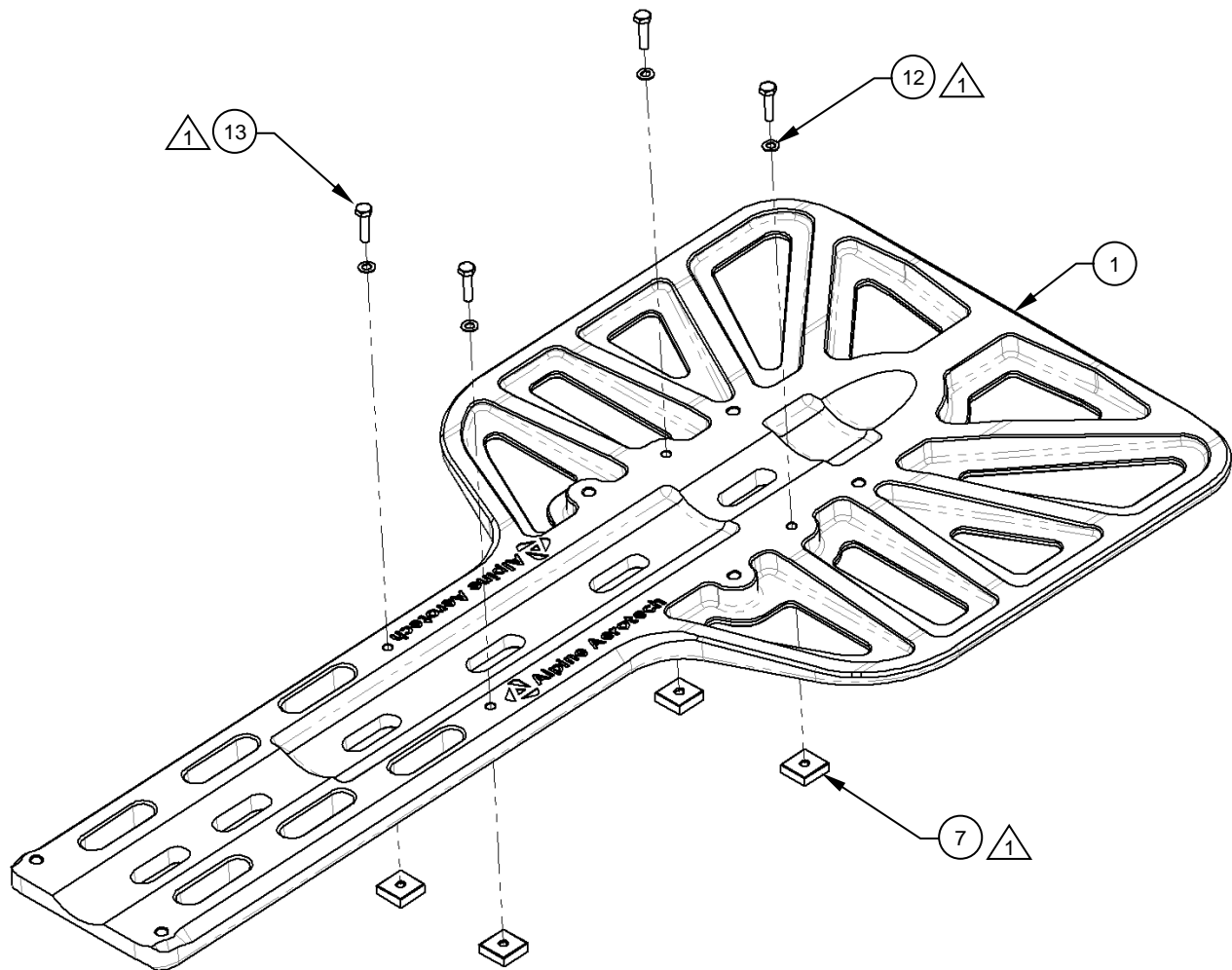
Ensure Thread-locker (Item 14) is sufficiently applied to all Gripper fasteners. Omitting Thread-locker is not acceptable and will create a non-airworthy installation.

3. Replacement complete. Perform a General Inspection of all items to ensure proper installation.
4. Update the aircraft logbook for the replacement of the Gripper, Details (Item 7).

SECTION 6 **Illustrated Parts Breakdown****General Notes**

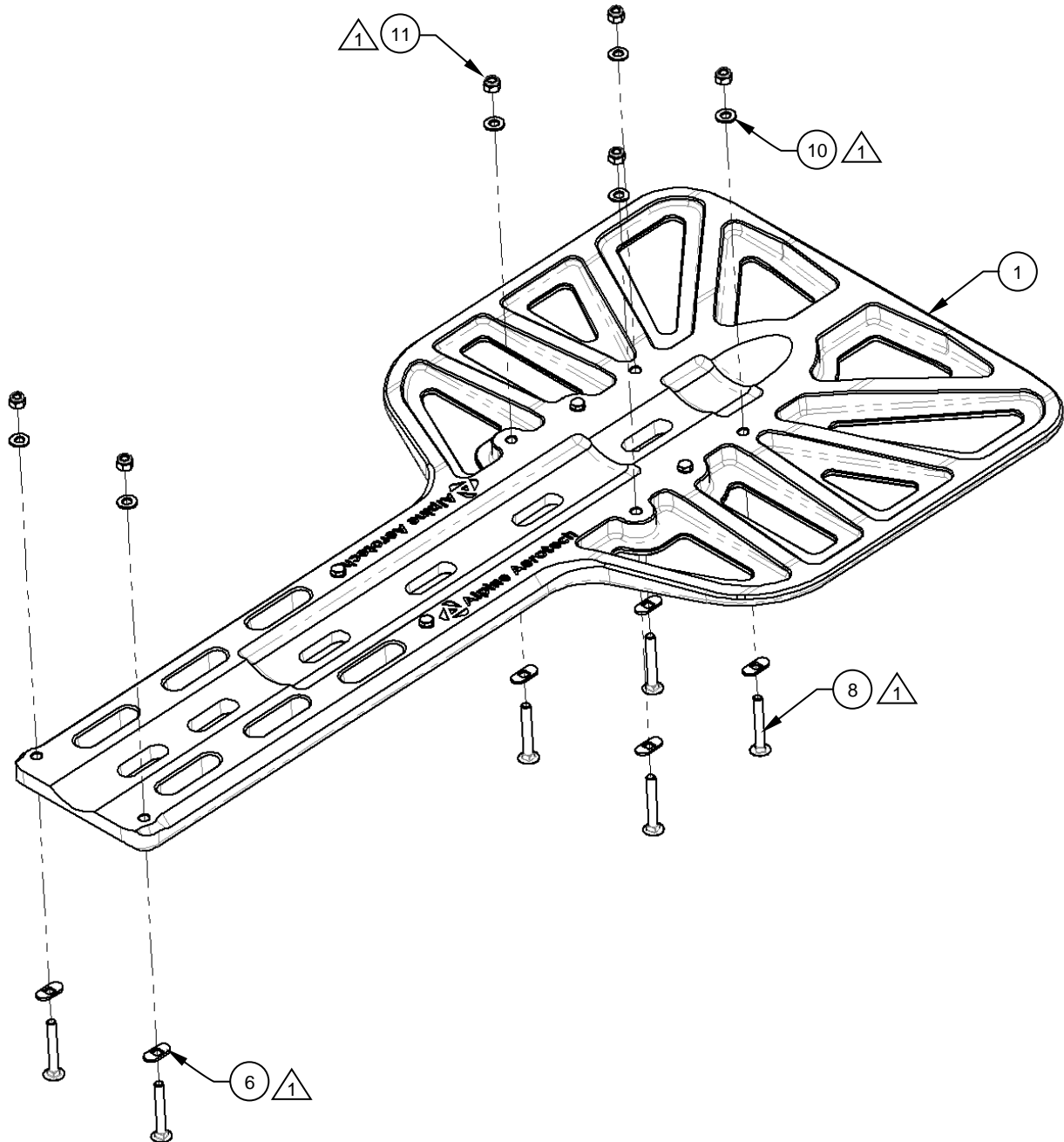
1. Alternate items listed where applicable.
-  Typical item number for all like items in this view unless otherwise specified.
-  Not shown and not provided. Procure locally.

Illustrated Parts Breakdown (cont.)



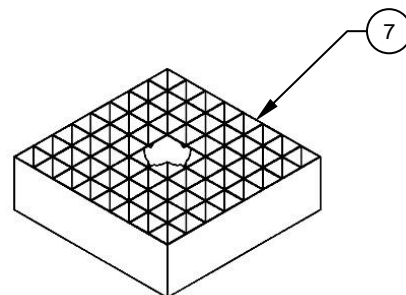
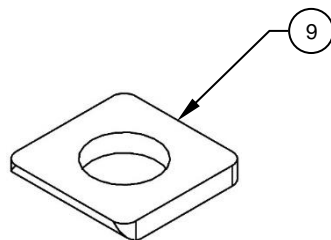
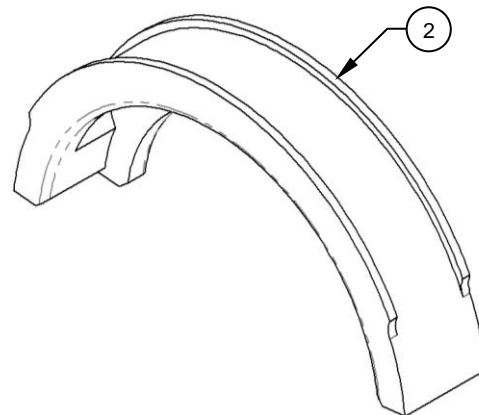
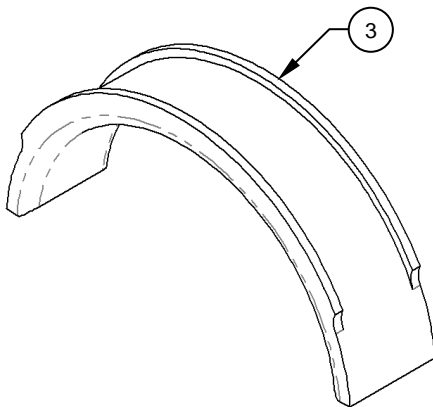
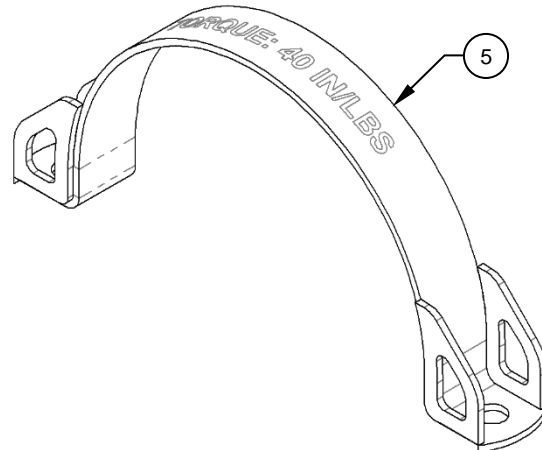
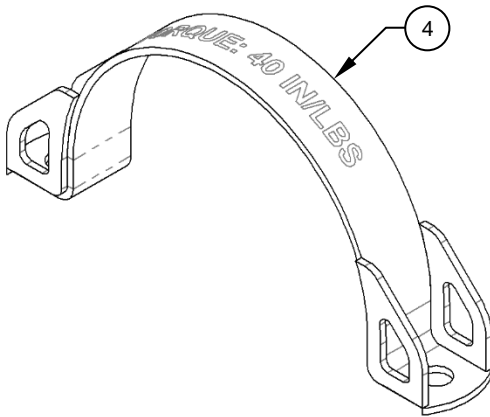
Bear Paw, Kit
Shown
(LHS only)

Illustrated Parts Breakdown (cont.)



Bear Paw, Kit
Shown
(LHS only)

Illustrated Parts Breakdown (cont.)



Illustrated Parts Breakdown (cont.)

| ITEM | QTY | NUMBER | DESCRIPTION | MATERIAL | REF STOCK SIZE | SPEC | FINISH | MANUFACTURER | NCAGEC |
|------|-----|---------------------------|-------------------------------|------------------------|----------------------|---------------|-------------|----------------------------|--------|
| - | | AAL-290-090-001 | H145/D3 BEAR PAW, KIT | | | | | ALPINE AEROTECH LP | L0171 |
| 1 | 2 | AAL-290-092-001 | BEAR PAW, DETAIL | UHMWPE | NA | NA | NA | ALPINE AEROTECH LP | L0171 |
| 2 | 2 | AAL-290-092-002 | CAP, DETAIL | UHMWPE | NA | NA | NA | ALPINE AEROTECH LP | L0171 |
| 3 | 4 | AAL-290-092-005 | CAP, DETAIL | UHMWPE | NA | NA | NA | ALPINE AEROTECH LP | L0171 |
| 4 | 4 | AAL-290-091-002 | STRAP, ASSY | NA | NA | NA | NA | ALPINE AEROTECH LP | L0171 |
| 5 | 2 | AAL-290-091-001 | STRAP, ASSY | NA | NA | NA | NA | ALPINE AEROTECH LP | L0171 |
| 6 | 12 | AAL-290-042-006 | TAB, DETAIL | NA | NA | NA | NA | ALPINE AEROTECH LP | L0171 |
| 7 | 8 | CL-16-SG | SQUARE, GRIPPER | M2 TOOL STEEL | .375 x 1.000 x 1.000 | SEE MFR | SEE MFR | CARR LANE MFG CO. | 99862 |
| 8 | 12 | Ø.3125-18 x 2.250 x 2.250 | BOLT, ROUND HEAD, SQUARE NECK | ASTM A307 GRADE A | SEE SPEC | ASME B18.5 | ZINC PLATED | SOURCE AS REQUIRED | NA |
| 9 | 12 | NAS1401-5C3 | WASHER, RADIUS | SEE SPEC | SEE SPEC | NAS1401 | SEE SPEC | SOURCE AS REQUIRED | NA |
| 10 | 12 | MS15795-812 | WASHER, FLAT | SEE SPEC | SEE SPEC | NASM15795 | SEE SPEC | SOURCE AS REQUIRED | NA |
| 11 | 24 | 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 |
| 12 | 8 | NAS1149F0432P | WASHER, FLAT | SEE SPEC | SEE SPEC | NAS1149 | SEE SPEC | SOURCE AS REQUIRED | NA |
| 13 | 8 | AN4-10A | BOLT, MACHINE | SEE SPEC | SEE SPEC | NASM3THRU20 | SEE SPEC | SOURCE AS REQUIRED | NA |
| 14 | 1 | LOCTITE 243 | THREADLOCKER, MEDIUM STRENGTH | LOCTITE 243 | SEE MFR | SEE MFR | SEE MFR | HENKEL LOCTITE CORPORATION | 79436 |
| 15 | AR | C83317 | TORQUE LACQUER | DYKEM CROSS CHECK | SEE MFR | SEE MFR | YELLOW | ITW PRO BRANDS | 1QZC4 |

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