

## **AS350/AS355 BEAR PAW, KIT INSTRUCTIONS FOR CONTINUING AIRWORTHINESS**

**MODELS: AIRBUS AS350 SERIES (H125) & AS355**

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 AS350/AS355 Bear Paw, Kit installed on Airbus AS350 and AS355 rotorcraft. The information and data contained in this document are supplemental to the information contained in the existing ICA for the AS350 and AS355.

**SECTION 2**      **Description**

The following information provides a functional description of the AS350/AS355 Bear Paw, Kit as defined in Alpine Aerotech LP authority dataset AAL-390-030-001.

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.

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## **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 revision of the Airbus AS350 (H125) or AS355 Master Servicing Manual for the chapter(s) and section(s) referenced within this document.
3. Refer to the Section 5: Installation & Removal 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.

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## **Inspection Procedures**

### **Supplement to applicable Airbus AS350 (H125) or AS355 Master Servicing Manual, Chapter 05**

#### **Notes**

1. Refer to the applicable Airbus AS350 (H125) or AS355 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 is detected, perform the 300 Hour/12 Month Inspections.
5. Perform 300 Hour/12 Month Inspections every 300 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 300 Hour/12 Month Inspection is a maximum of 10%.

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## **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 AS350/AS355 Bear Paw, Kit for general condition.
- ii. Perform a General Inspection on all items in the AS350/AS355 Bear Paw, Kit 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 300 hour/12-month inspection.

### 2. 300 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 AS350/AS355 Bear Paw, Kit for evidence of corrosion, cracks and damage.
- ii. Perform a Detailed Inspection on all items in the AS350/AS355 Bear Paw, Kit for evidence of excessive wear.
- iii. Perform a Detailed Inspection on all items, materials and finishes in the AS350/AS355 Bear Paw, Kit for proper integrity and condition.
- iv. Perform a Detailed Inspection on all hardware and fasteners in the AS350/AS355 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.

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**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 AS350 (H125) or AS355 Master Servicing Manual,  
Chapter 04, Airworthiness Limitations****Notes**

1. Refer to the applicable Airbus AS350 (H125) or AS355 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 AS350/AS355 Bear Paw, Kit (AAL-390-030-001) is applicable to all AS350 (H125) & AS355 serial numbers.

### **Weight & Balance**

<u>Part Number</u>	<u>Description</u>	<u>Weight</u>	<u>Long. Arm</u>	<u>Lat. Arm</u>
AAL-390-030-001	Bear Paw, Kit †	17.20*	158.82	.00
		7.80 (Kg)	4034 (mm)	.00 (mm)
AAL-390-030-001	Bear Paw, Kit ‡	15.52*	158.58	.00
		7.04 (Kg)	4028 (mm)	.00 (mm)

† Applicable to installations with Grippers (Item 2) and associated hardware

‡ Applicable to installations without Grippers (Item 2) 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 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) 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.



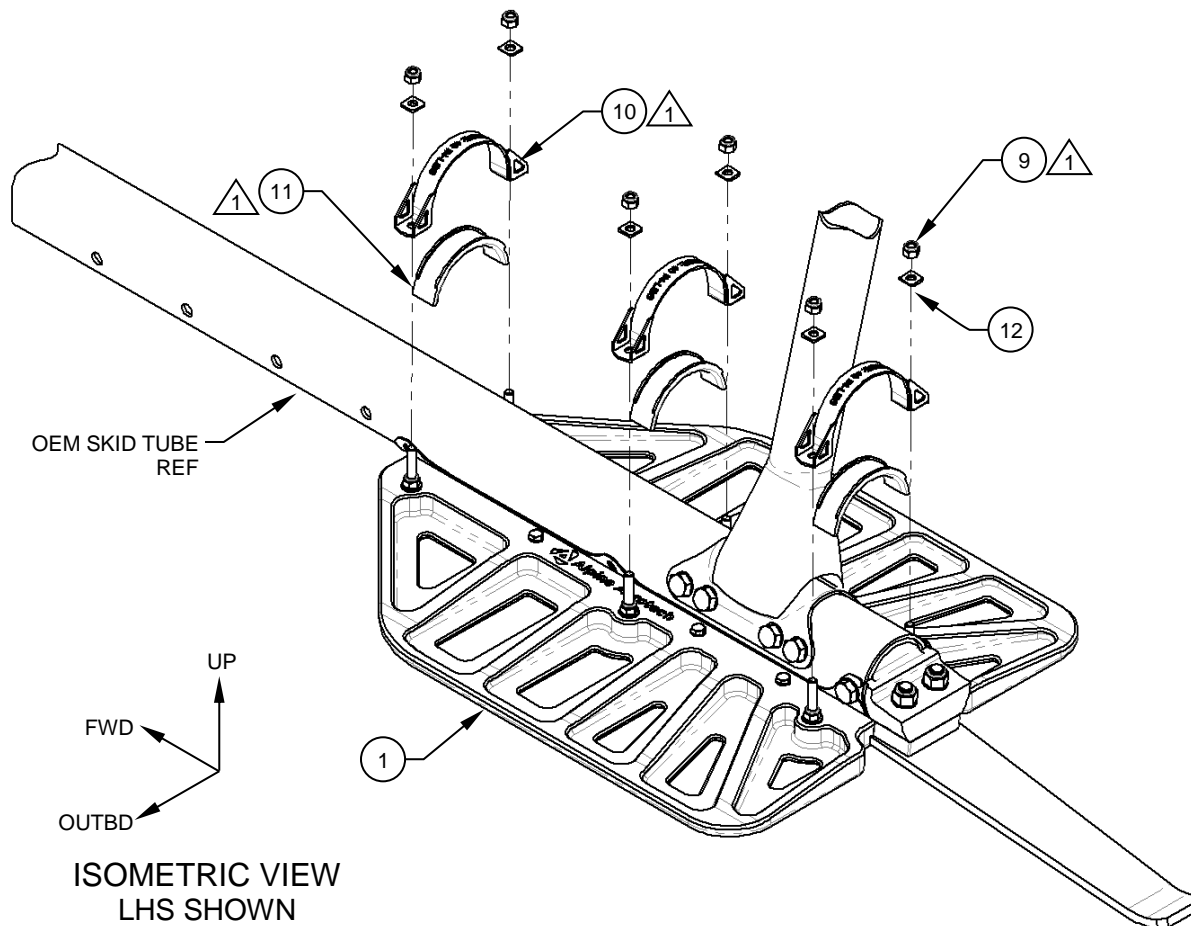
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## **Installation Notes**

- △<sub>1</sub> Typical item number for all like items in this view unless otherwise specified.
- △<sub>2</sub> Apply Thread-locker (Item 18) to threads IAW manufacturer's recommendations (prior to torqueing fastener). Torque to 30-35 INCH LBS.
- △<sub>3</sub> Apply Torque Lacquer (Item 19) or equivalent, to Nut, Hex, Self-locking (Item 9) and Bolt, Round Head, Square Neck (Item 7) common to Strap, Assys only (Item 10) per manufacturer's recommendations.

## **Removal Instructions** - OEM Skid Tube

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

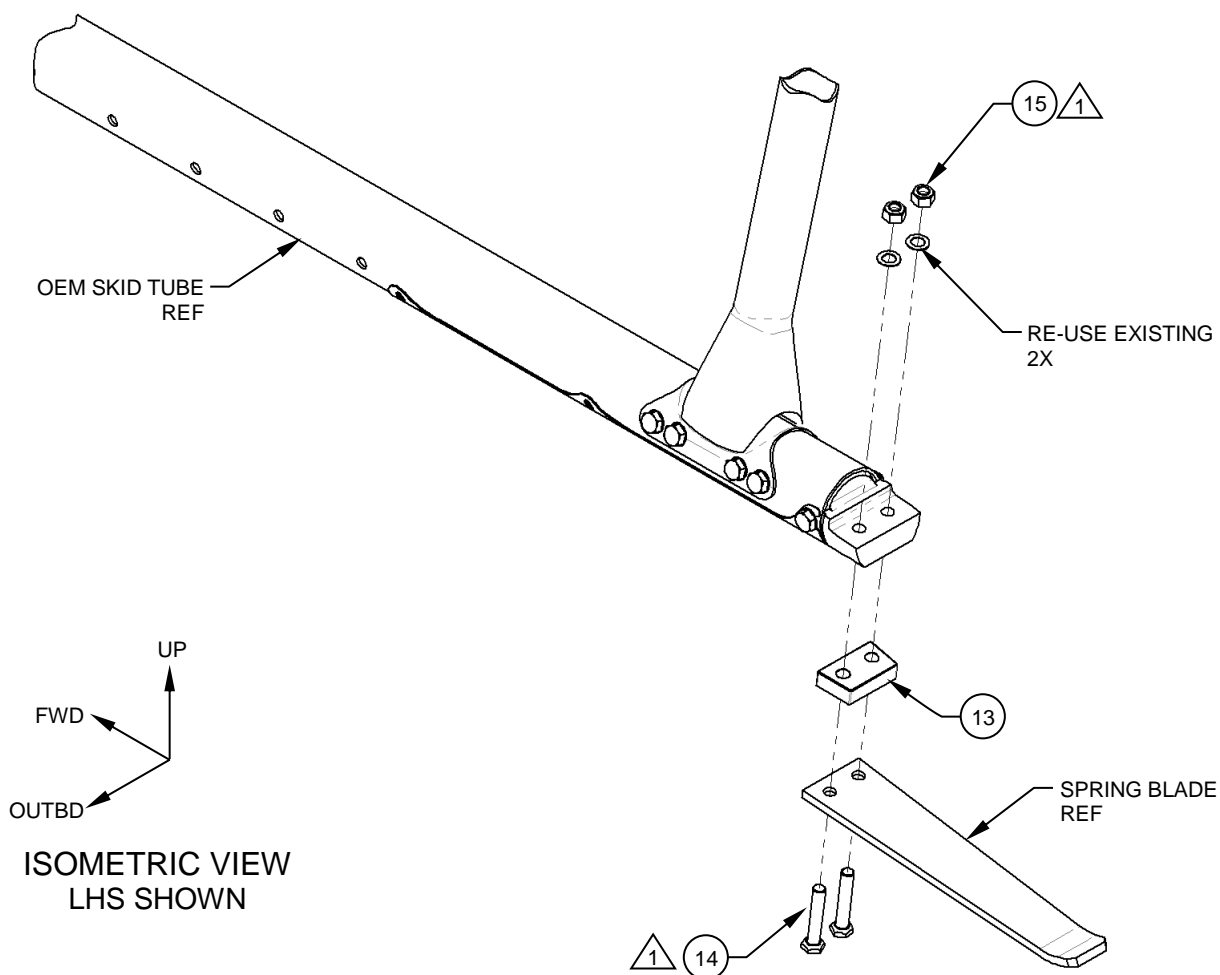


**Figure 1**  
LHS Shown, RHS Opposite

2. Remove the Strap, Assys (Item 10), Cap, Details (Item 11) and the associated Nuts (Item 9) and Radius Washers (Item 12). Raise the aircraft and remove the Bear Paw, Detail (Item 1) from under the skid tube. Reference Figure 1.

**Removal Instructions** - OEM Skid Tube (cont.)

3. Remove the spring blade, Spacer, Detail (Item 13), the Nuts (Item 15) and the Bolt, Details (Item 14). Reference Figure 2.

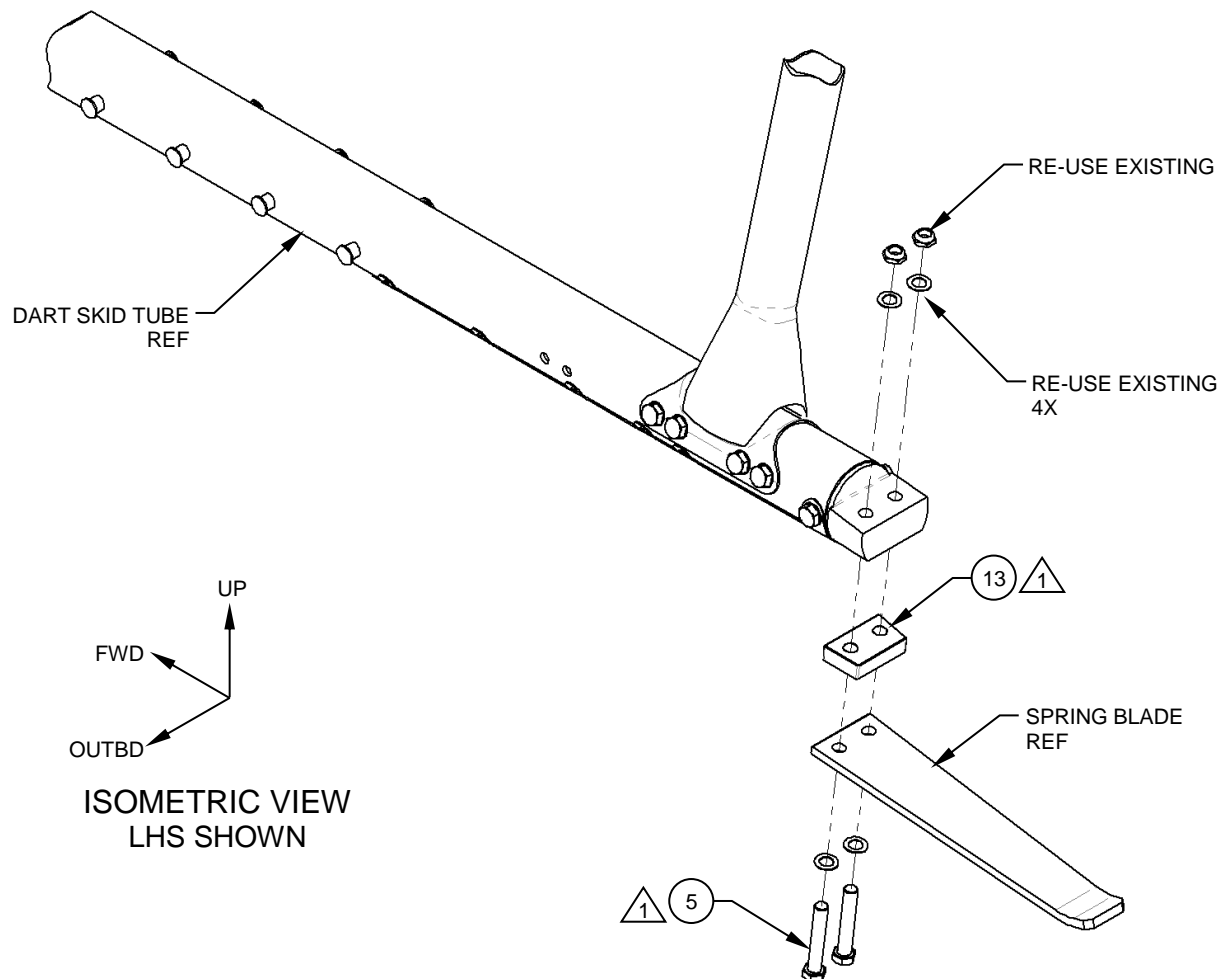


**Figure 2**  
Spacer (Item 13) Removal/ Replacement Shown

4. Repeat removal steps on the RHS. Reference Figures 1 & 2. Removal complete.

## **Removal Instructions** - Dart Skid Tube

1. All removal procedures associated to Dart skid tubes are the same as OEM skid tubes except for the following. Reference OEM Skid Tube Removal Steps 1 through 4.

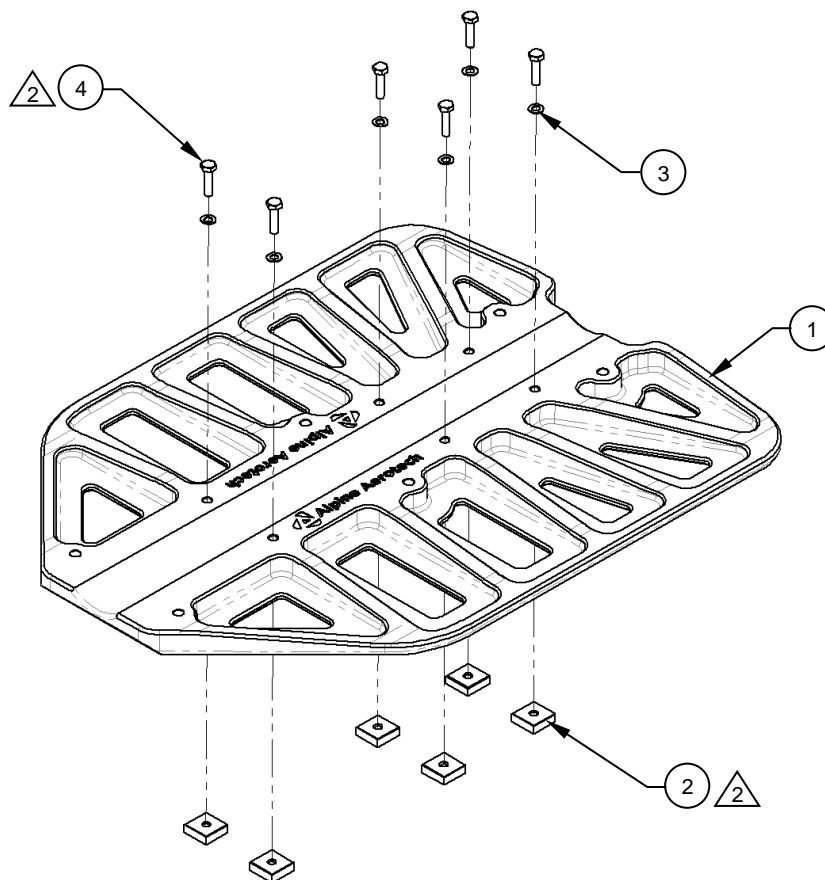


**Figure 3**  
Spacer, Detail (Item 13)  
Dart Removal/Replacement shown

5. Remove the spring blade, Spacer, Detail (Item 13), the nuts and the Bolt, Details (Item 5). Reference Figure 3.
6. Repeat removal steps on the RHS. Reference Figures 1 & 3. Removal complete.

## **Removal Instructions** - Grippers

1. Removal of the Grippers (Item 2) 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.



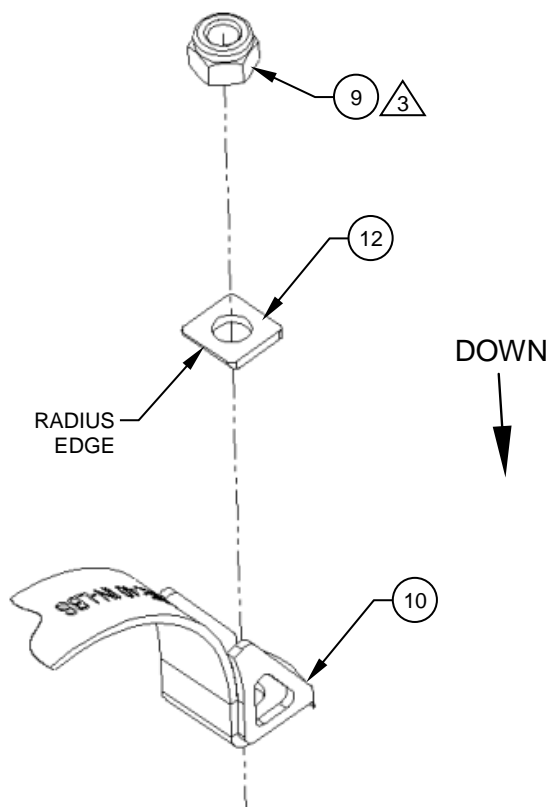
**Figure 4**  
Gripper Removal/Replacement

2. Remove Bolts (Item 4), Washers (Item 3) and Grippers (Item 2) from Bearpaw, Detail (Item 1). Reference Figure 4.
3. Removal Complete.

## **Replacement Instructions** – OEM Skid Tube

1. Gain access to the aircraft and make the aircraft safe and ready for maintenance.
2. Raise the aircraft and install the Spacer, Detail (Item 13) between the spring blade and its associated fitting using the provided Bolt, Details (Item 14) and the associated nuts (Item 15). Re-use the existing washers. Reference Figure 2.
3. While the aircraft is raised, position the Bear Paw, Detail (Item 1) under the skid tube. Reference Figure 1.
4. Once the Bear Paw, Detail (Item 1) is under the skid tube in its approximate location, place the Strap, Assys (Item 10) and their respective Cap, Details (Item 11) on their corresponding bolts. Reference Figure 1.

**NOTE:** Ensure the Aft-most Strap, Assy (Item 10) and associated Cap, Detail (Item 11) are positioned between the cross-tube saddle fitting and the existing bolt at the aft end of the skid tube. Reference Figure 1.



**Figure 5**  
Hardware Orientation Shown

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**Replacement Instructions** – OEM Skid Tube (cont.)

5. Install the supplied Radius Washer (Item 12) and Nut (Item 9) on each bolt. Reference Figure 5. Ensure the radius edge on the Washer (Item 12) is oriented down and towards the skid tube. Reference Figure 5. A thin-wall socket may be required to adequately fasten the Nut (Item 9).

**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 slide the Bear Paw forward and aft by hand.

6. Lower the aircraft onto the Bear Paw, Details (Item 1). After ensuring sufficient clearance between the Bear Paw, Details and the spring blade, torque the fasteners equally to 40 in/lbs. (plus tare torque). Reference Figure 1.
7. Replacement complete. Perform a General Inspection of all items to ensure proper installation.

**Replacement Instructions** – Dart Skid Tube

1. All replacement procedures associated to Dart skid tubes are the same as OEM skid tubes except for the following. Reference OEM Skid Tube Replacement Steps 1 through 7 and Figure 3.
2. With the aircraft raised Install the Spacer, Detail (Item 13) between the spring blade and its associated fitting using the provided Bolts (Item 5). Re-use the existing washers and nuts. Reference Figure 3.
3. Replacement complete. Perform a General Inspection of all items to ensure proper installation.
4. Update the aircraft logbook for the replacement of the AS350/AS355 Bear Paw, Kit.

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**Replacement Instructions** - Grippers

1. Replacement of the Grippers (Item 2) 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 2) 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 18) is applied (mandatory). Torque all Gripper fasteners IAW General Note 2. Reference Figure 4.

**NOTE:** Installation of Grippers (Item 2) 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.



<b>CAUTION</b>
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**Ensure Thread-locker (Item 18) is sufficiently applied to all Gripper fasteners. Omitting Thread-locker is not acceptable and will create a non-airworthy installation.**

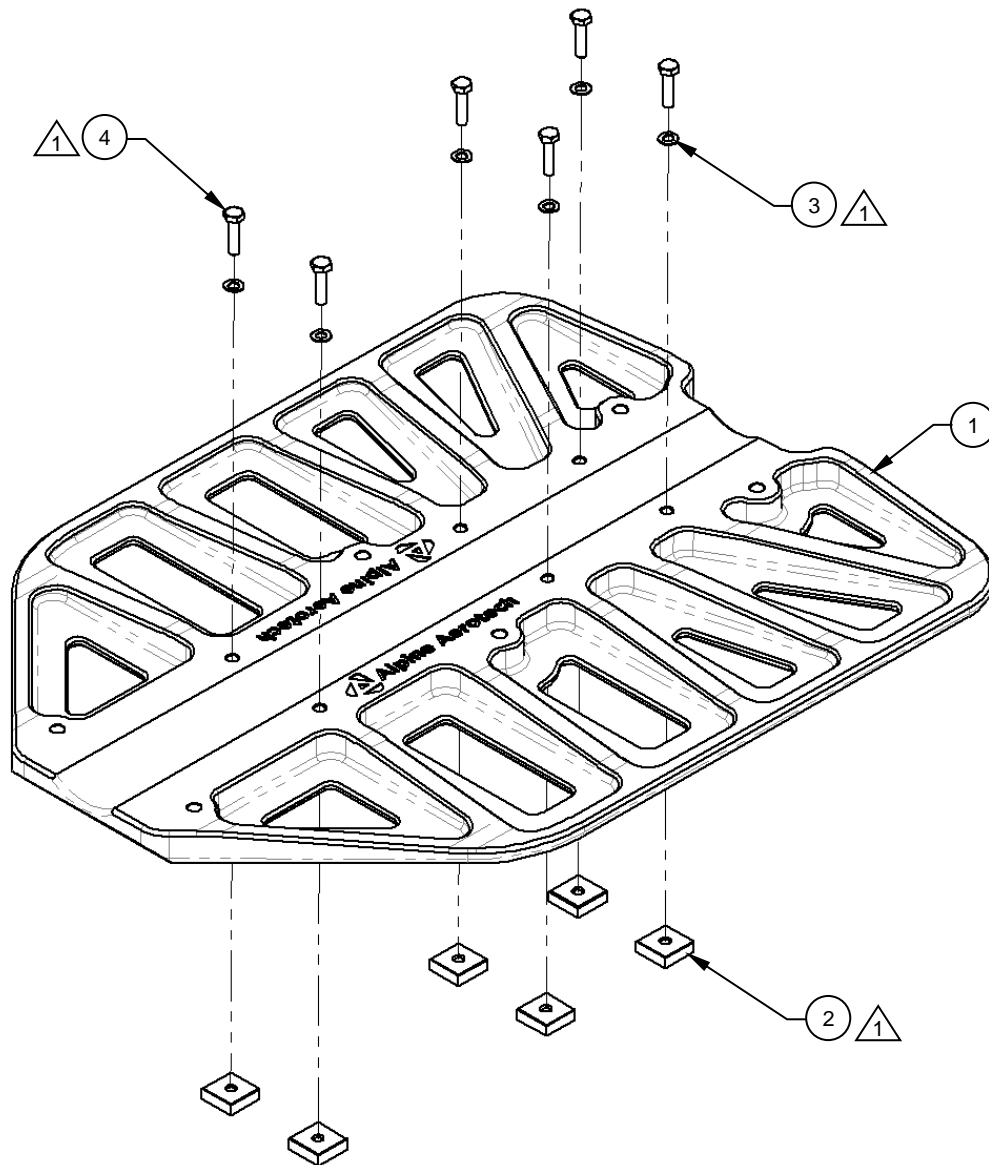
5. Replacement complete. Perform a General Inspection of all items to ensure proper installation.
6. Update the aircraft logbook for the replacement of the Gripper, Details (Item 2).

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

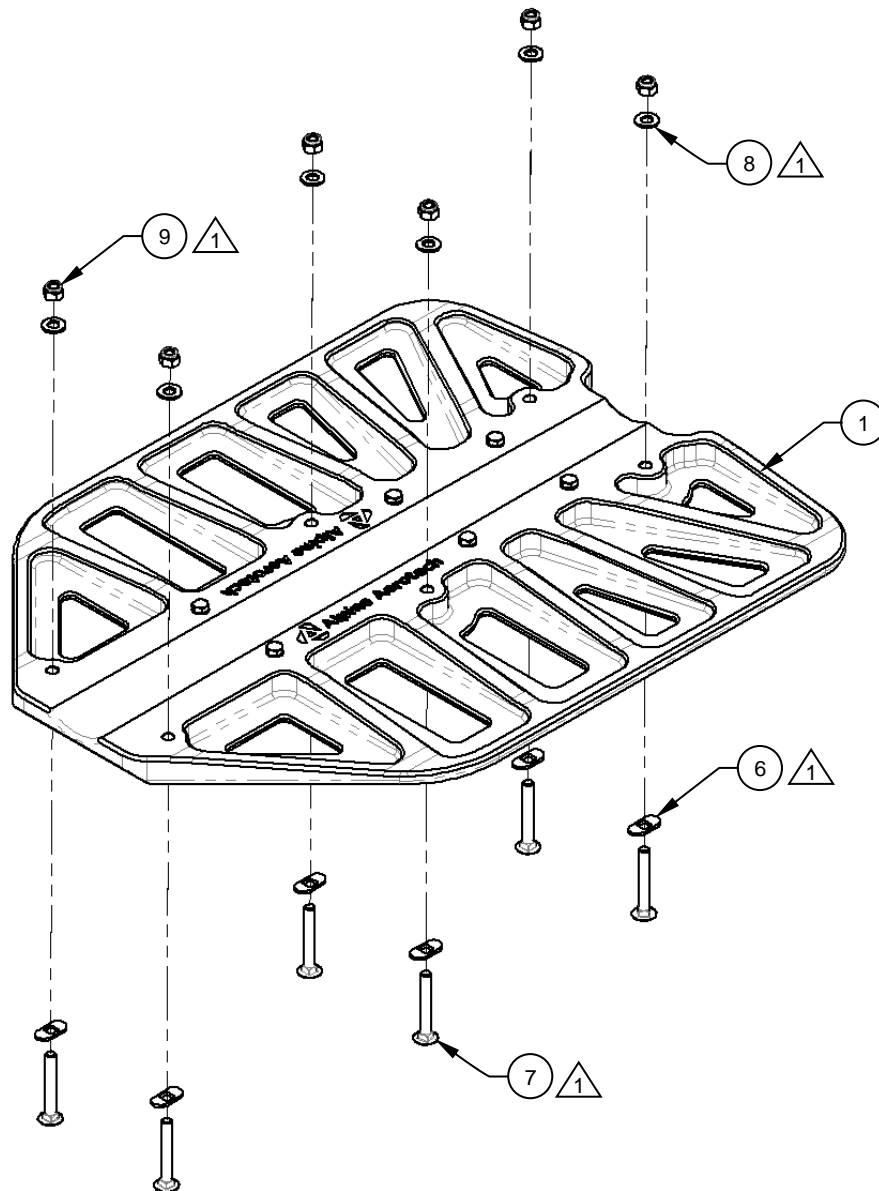
1. Alternate items listed where applicable.
-  Typical item number for all like items in this view unless otherwise specified.
-  Not shown and not provided. Procure locally.

**Illustrated Parts Breakdown** (cont.)



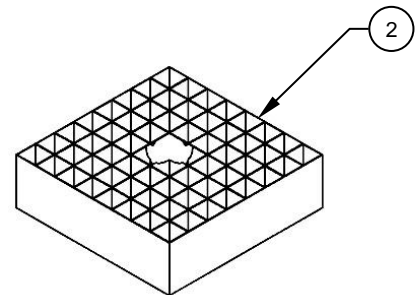
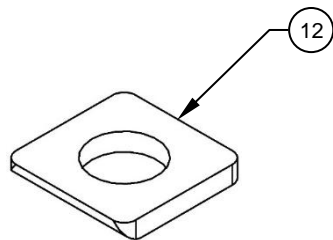
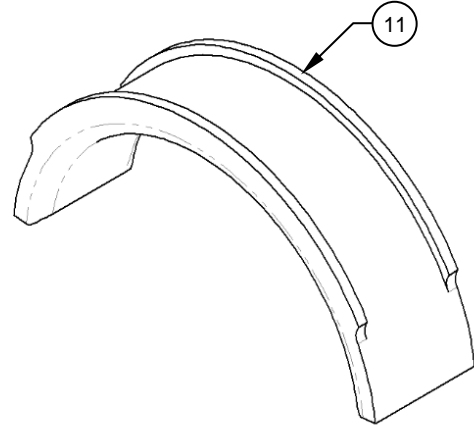
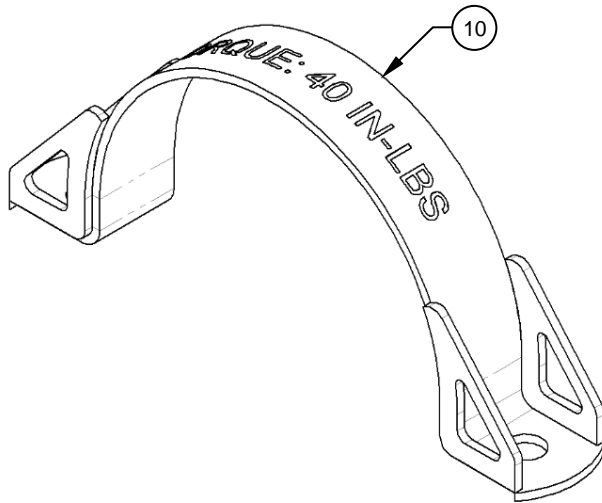
Bear Paw, Kit  
Shown  
(LHS only)

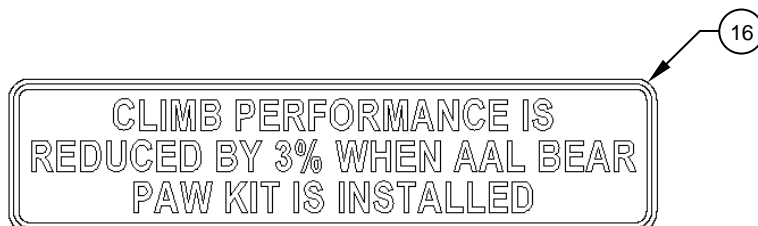
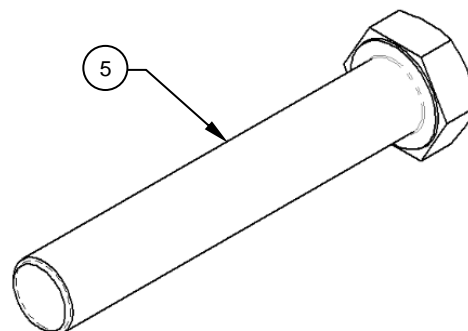
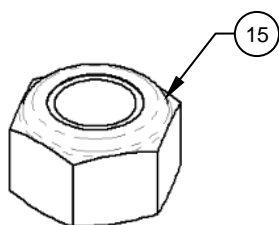
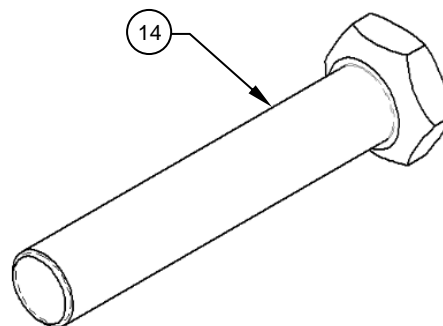
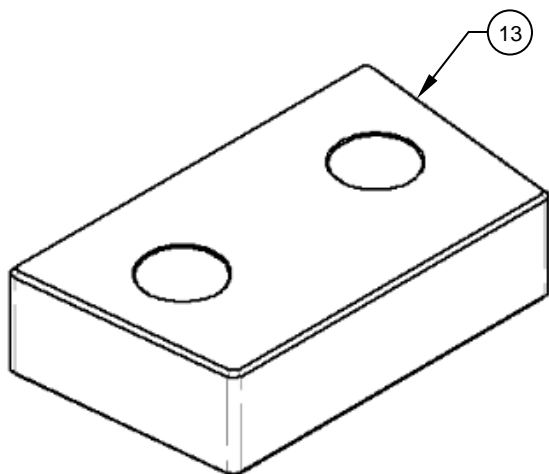
**Illustrated Parts Breakdown** (cont.)



Bear Paw, Kit  
Shown  
(LHS only)

**Illustrated Parts Breakdown** (cont.)





(AS355 only)

## Illustrated Parts Breakdown (cont.)

ITEM	QTY	NUMBER	DESCRIPTION	MATERIAL	REF STOCK SIZE	SPEC	FINISH	MANUFACTURER	NCAGEC
-		AAL-390-030-001	AS350/AS355 BEAR PAW, KIT					ALPINE AEROTECH LP	L0171
1	2	AAL-390-032-001	BEAR PAW, DETAIL	SEE MFR	SEE MFR	SEE MFR	SEE MFR	ALPINE AEROTECH LP	L0171
2	12	CL-16-SG	SQUARE GRIPPER	SEE MFR	SEE MFR	SEE MFR	SEE MFR	CARR LANE MFG CO.	99862
3	12	NAS1149F0432P	WASHER, FLAT	SEE SPEC	SEE SPEC	NAS1149	SEE SPEC	SOURCE AS REQUIRED	NA
4	12	AN4-10A	BOLT, MACHINE	SEE SPEC	SEE SPEC	NASM3THRU20	SEE SPEC	SOURCE AS REQUIRED	NA
5	4	AN8-27A	BOLT, MACHINE	SEE SPEC	SEE SPEC	NASM3THRU20	SEE SPEC	SOURCE AS REQUIRED	NA
6	12	AAL-290-042-006	TAB, DETAIL	SEE MFR	SEE MFR	SEE MFR	SEE MFR	ALPINE AEROTECH LP	L0171
7	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
8	12	MS15795-812	WASHER, FLAT	SEE SPEC	SEE SPEC	NASM15795	SEE SPEC	SOURCE AS REQUIRED	NA
9	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
10	6	AAL-390-031-001	STRAP, ASSY	NA	SEE MFR	SEE MFR	SEE MFR	ALPINE AEROTECH LP	L0171
11	6	AAL-390-032-002	CAP, DETAIL	NA	SEE MFR	SEE MFR	SEE MFR	ALPINE AEROTECH LP	L0171
12	12	NAS1401-5C3	WASHER, RADIUS	SEE SPEC	SEE SPEC	NAS1401	SEE SPEC	SOURCE AS REQUIRED	NA
13	2	AAL-390-032-005	SPACER, DETAIL	NA	SEE MFR	SEE MFR	SEE MFR	ALPINE AEROTECH LP	L0171
14	4	AAL-390-032-006	BOLT, DETAIL	NA	SEE MFR	SEE MFR	SEE MFR	ALPINE AEROTECH LP	L0171
15	4	M12 X 1.75	NUT, NYLON SELF-LOCKING	STEEL	M12 X 1.75	ISO 10511/DIN 985	ZINC PLATED	SOURCE AS REQUIRED	NA
16	1	AAL-390-032-007	DECAL, DETAIL	SEE MFR	SEE MFR	NA	SEE MFR	ALPINE AEROTECH LP	L0171
17	1	AAL-390-032-008	DECAL, DETAIL	SEE MFR	SEE MFR	NA	SEE MFR	ALPINE AEROTECH LP	L0171
18	AR	NA	THREADLOCKER, MEDIUM STRENGTH	LOCTITE 243	SEE MFR	SEE MFR	SEE MFR	HENKEL LOCTITE CORPORATION	79436
19	AR	C83317	TORQUE LACQUER	DYKEM CROSS CHECK	SEE MFR	SEE MFR	YELLOW	ITW PRO BRANDS	1QZC4

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