

**CUB CRAFTERS, INC.
CC18-180 MAINTENANCE MANUAL**

32-20 TAIL LANDING GEAR

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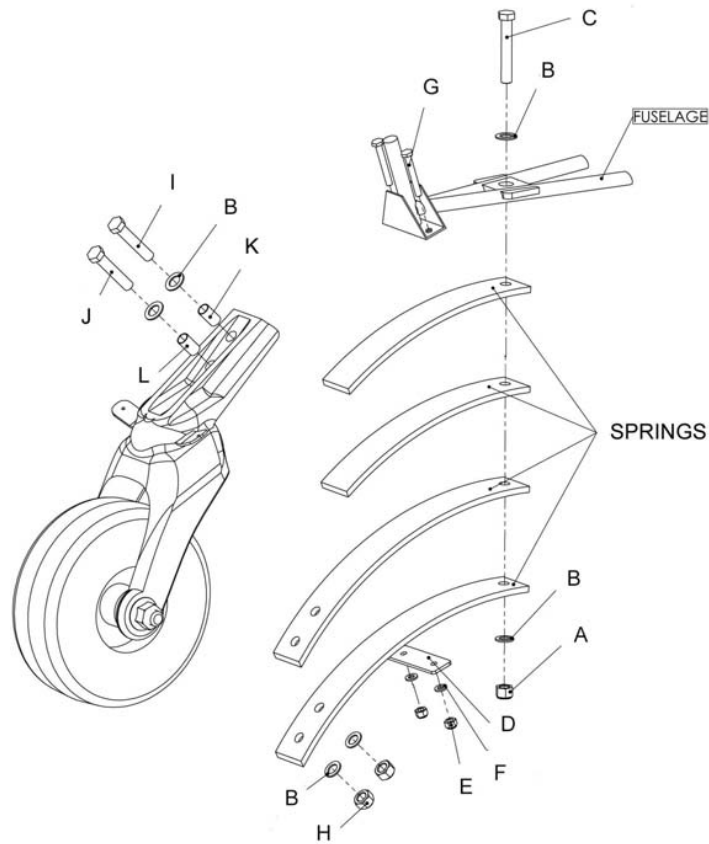
1. GENERAL

The tail landing gear has a tail wheel assembly that swivels through 360 degrees and is steerable via the rudder pedals. It is mounted to the fuselage with steel leaf springs.

2. MAINTENANCE PRACTICES

A. TAIL LANDING GEAR

(1) REMOVAL OF TAIL WHEEL AND LEAF SPRINGS



- | | | | |
|----------------|----------------------|------------------------|-------------------|
| A - Nut | D - Clamp | G - Small Bolt (2) | J - Bolt |
| B - Washer (5) | E - Small Nut (2) | H - Large Area Nut (2) | K - Short Bushing |
| C - Long Bolt | F - Small Washer (2) | I - Short Bolt | L - Long Bushing |

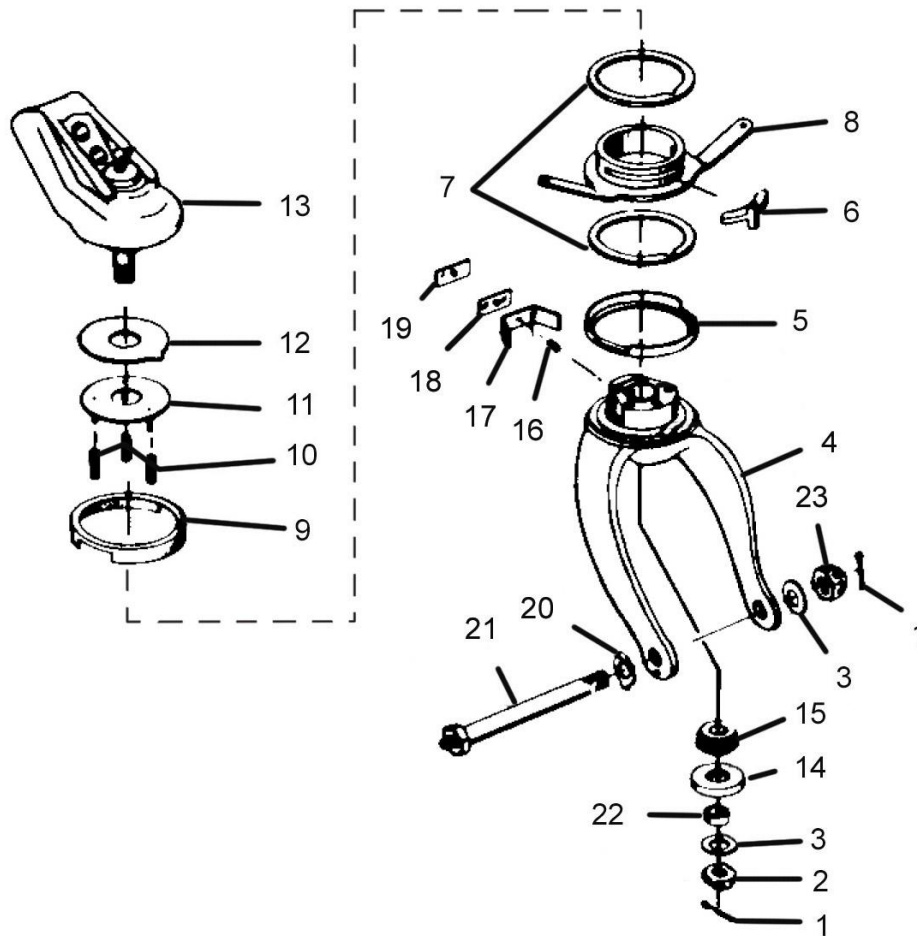
Figure 32-20-1 – Tail Wheel and Leaf Spring Installation
(2-Hole Configuration Shown. Some hardware omitted for 1-Hole configuration)

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- (a) Lift the tail section of the airplane and rest the fuselage on a bench so the tail landing gear clears the ground.
- (b) Disconnect the chain links from the tail wheel arms.
- (c) Remove the front tail spring attach nut (A) and washer (B).
- (d) Disconnect the tail spring clamp (D) by removing the nuts (E), washers (F) and bolts (G).
- (e) To separate the springs from the tail wheel, remove the large area nuts (H), washers (B), and bolts (I & J).

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(2) DISASSEMBLY OF TAIL WHEEL BRACKET AND FORK



- | | | | |
|----------------------|-------------------------|----------------------|------------------|
| 1 - Cotter Pin | 7 - Thrust Washer | 13 - Bracket Assy. | 19 - Shim |
| 2 - Short Castle Nut | 8 - Arm Assy. | 14 - Grease Retainer | 20 - Lock Washer |
| 3 - Washer | 9- Upper Dust Cap | 15 - Bearing | 21 - Axle |
| 4 - Fork Assy. | 10 - Springs | 16 - Pin | 22 - Spacer |
| 5 - Lower Dust Cap | 11 - Thrust Plate | 17 - Flat Spring | 23 - Castle Nut |
| 6 - Pawl | 12 - Fiber Thrust Plate | 18 - Shim | |

Figure 32-20-2 – Tail Wheel Assembly

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- (a) Remove the tire assembly from the fork by removing the cotter pin (1), castle nut (23), and washer (3) then sliding the axle (21) out.
- (b) At the bottom of the fork (4) remove the cotter pin (1), short castle nut (2), and washer (3). Carefully pull the fork (11) off of the bracket (1).
- (c) Separate the spacer (22), grease retainer (14), and the bearing (15) from the fork (4).
- (d) Disengage the lower dust cap (5), thrust washer (7), arm assembly (8), thrust washer (7), pawl (6), upper dust cap (9), springs (10), thrust plate (11), and fiber thrust plate (12) from the fork (4) and bracket (13).

(3) CLEANING

- (a) Clean all metal parts (including the bearings) in a cleaning solution. Dry all parts with compressed air.

(4) INSPECTION OF TAIL WHEEL COMPONENTS

(See Figure 32-20-1 and Figure 32-20-2)

- (a) Check the leaf springs for damage or twisting (Figure 32-20-1)
- (b) Replace if condition dictates.
- (c) Inspect the arm assembly (8, Figure 32-20-2), flat spring (17, Figure 32-20-2), fork (4, Figure 32-20-2), and bracket (13, Figure 32-20-2) for excessive wear, cracks or other damage. Replace damaged parts.
- (d) Examine the thrust washers (7, Figure 32-20-2) for wear, scoring, or other damage. Replace if necessary.
- (e) Inspect the bearing (15, Figure 32-20-2) and races for wear or damage. Replace if necessary.

(5) MINOR REPAIRS OF TAIL WHEEL COMPONENTS

(See Figure 32-20-2)

- (a) The components that make up the tailwheel assembly may not be repaired except that minor realignments are permitted, such as minor dents and bends.

(6) REPLACEMENT OF PARTS.

- (a) Replace all cotter pins that have been removed with new cotter pins.

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(7) REASSEMBLY OF TAIL WHEEL BRACKET AND FORK

(See Figure 32-20-2)

- (a) Hand apply grease to all internal parts and pack the bearing (15) with grease (MIL-G-81322E).
- (b) Place the lower dust cap (5) on the fork (4) and the thrust washer (7) on the fork (4) being sure to align the notch with the locking pin in the fork (4).
- (c) Position the pawl (6) on the arm (8) with the longest lobe down and place the arm assembly (8) on the fork (4).
- (d) Position the other thrust washer (7) and the upper dust cap (9) on the arm assembly (8).
- (e) Insert 3 springs (10) in the proper holes on the top of the fork (4) so the thrust plate (11) can be placed on top.
- (f) Position the fiber thrust plate (12) in the bracket (13) so the nub is aligned with the groove and insert the bracket assembly (13) into the fork (4) maintaining the alignment of all the interlocking parts.
- (g) Place the bearing (15), grease retainer (14), spacer (22), and washer (3) in the fork (4). Exert pressure on the bracket (13) to engage the short castle nut (2) with the bracket assembly post.
- (h) Tighten the nut (2) securely, back off to the first cotter pin hole in the bracket post, and secure with a cotter pin (1). These last steps may be accomplished once the tail wheel assembly is installed back on the fuselage.
- (i) Check to verify proper tailwheel pivoting and tension.
- (j) Install the tire assembly on the fork by sliding the axle (21) with the lock washer (20) through the fork and tire assembly.
- (k) Secure with a washer (3) and castle nut (23). Tighten the nut until there is no free play in the bearings and there is a slight amount of friction. Safety with a cotter pin (1).
- (l) Pump the tail wheel bracket assembly (13) and axle (21) full of grease (MIL-G-81322E) then wipe off the excess.

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(8) INSTALLATION OF TAIL WHEEL AND LEAF SPRINGS

(See Figure 32-20-1)

- (a) Position the tail wheel springs on the fuselage with long bolt (C) and hold in place with a washer (B) and a nut (A).
- (b) Install the small bolts (G), clamp (D), and small washers (F) with the small nuts (E) only finger tight.
- (c) Insert the bushings (K, L) into the tail wheel assembly, if they were removed.
- (d) Insert the bolts (I, J) through the bushings and tail wheel assembly.
- (e) Hold in place with two washers (B) and two large area nuts (H).
- (f) Tighten the large area nuts (H) to 270-300 in/lbs.
- (g) Tighten the nut (A) to 270-300 in/lbs.
- (h) Tighten the small nuts (E) to 70-100 in/lbs.
- (i) Reconnect the chain links to the tail wheel arms. The springs and chains should neither be slack nor have tension when the wheel is centered. It may be necessary to adjust the number of chain links to achieve this.
- (j) Lower the tail section to the ground.