



CHAPTER 3 - LANDING GEAR

Section Number	Section Title	Page
	Contents	3- 1
3.1	Tail Wheel assembly.....	3- 2
3.4.....	Nose Wheel assembly and fitting	3- 3
3.4.....	Nose Wheel assembly and fitting	3- 4
3.4.....	Nose wheel assembly and fitting	3- 5
3.4.....	Nose wheel assembly and fitting.....	3-6
3.5.....	Tail skid	3-7
3.6.....	Main gear axle and hydraulic disc brake assembly	3- 7
3.7.....	Main gear shock absorbers (bungee)	3-8
3.7.....	Main gear shock absorbers (bungee)	3-9
3.8.....	Hydraulic Toe Brake System.....	3-10

3 LANDING GEAR

3.1 TAILWHEEL ASSEMBLY

STEP 1

Drill and ream 3/16" holes in the rudder horns for steering springs. See *Figure 3.1.1*. The rudder horn F-0765 is inserted, as far as possible, into the bottom of the rudder; ream as necessary to get a good fit. The horns should be at right angles to the rudder center line. Drill and ream for 3/16" bolt AN3-11-A approximately 1/2" from bottom of rudder, see *Figure 3.1.1*

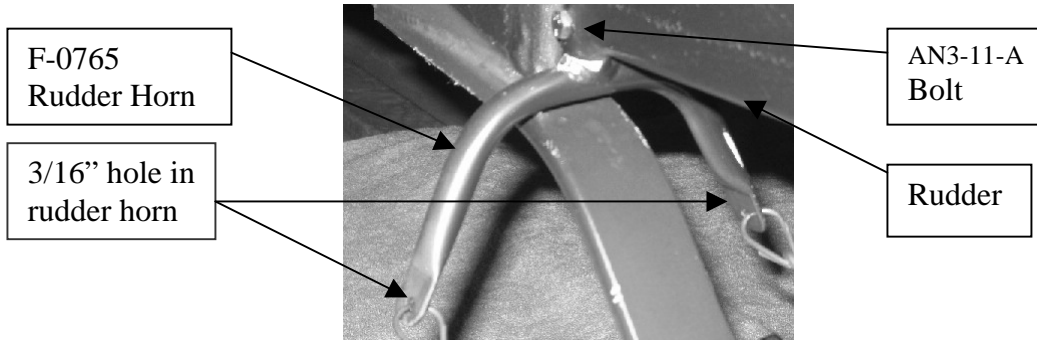


Figure 3.1.1

STEP 2

Trial fit rudder F-0760 to sternpost of fuselage using clevis pins AN393-79.

STEP 3

Install the F-0020 tailwheel assembly on the slightly curved side of the F-0030 steel leaf spring using the AN5-13 bolt and nut with washer.

Install the flat side of the F-0030 spring onto the fuselage using the AN6-15A bolt, AN365-624A Nut and AN960-616 Washer.

Trial fit the F-0060 steering springs (which won't actually be fitted until final assembly of the rudder). The springs may need one or two links of chain to achieve the correct tension.

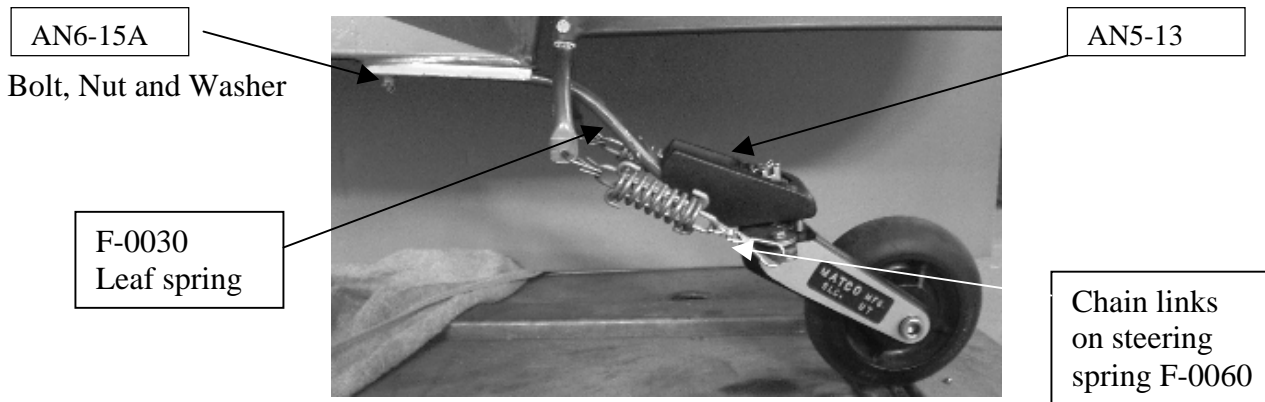


Figure 3.1.3

Revised 10-3-08

3.4 NOSE WHEEL ASSEMBLY AND FITTING.

STEP 1

Ream nose gear locating bushes on the firewall, the lower of the two bushings at top right and left of firewall. Attach the nose wheel mounting frame F-3400 with the AN4-25A bolt

STEP 2

Ream the firewall brackets on the bottom of the firewall, where they attach.

STEP 3

Insert the bronze bearings F-3420.1 into the F-3420 blocks (they may be a little tight, a squeeze fit is expected).

STEP 4

Place the blocks, with the lip of the bronze bushing on the inside, onto the top of the gear leg F-3490. Assemble to the fuselage bracket and attach with AN4-15A bolts. *See figure 3.4.1*



FIGURE 3.4.1

STEP 5

The suspension pin F-3450 is attached to the top of the gear leg using an AN4-14 bolt. The pin is stacked with a shock absorber (F-3440.0), a washer (1133225), another absorber, another washer and then the final absorber, *see figure 3.4.5*. The pin is attached to the firewall frame using an AN365-428A nut (this when finally assembled should have at least 2 threads showing through the nut when tightened and without weight on leg should be just pinching the suspension parts).



FIGURE 3.4.5

STEP 6

Assemble the nose wheel tire and tube as provided and inflate to 28 psi.

STEP 7

The assembled wheel fits between the forks of the nose assembly F-3570. Spacers F-3530 are required to ensure that the wheel runs in the centre of the forks. The axle bolt feeds through the fork leg, a spacer, the wheel bearing, another spacer then the other fork leg. It is secured with the axle nut and cotter pin (you may need additional washers). The spacers should be of sufficient length that there is no wobble when tightened i.e. that the bolt holds the fork legs tightly (and parallel) against the spacers, which are held tightly against the bearing. *See figure 3.4.7*



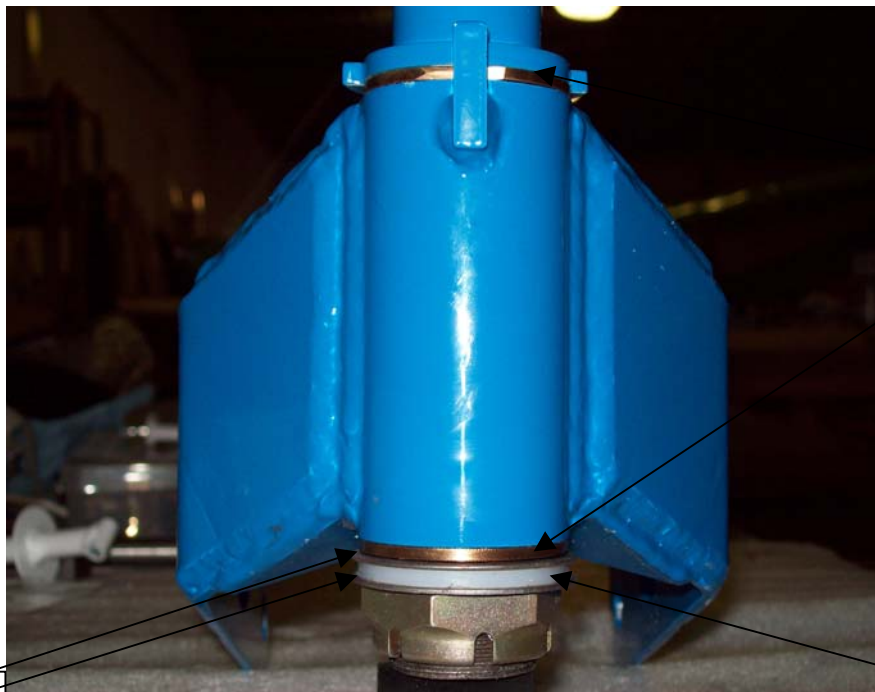
Figure 3.4.7

STEP 8

The fork assembly F-3570 has bronze bearings EF202424 inserted into both ends of the pivot tube (again a tight press fit is expected). *See figure 3.4.8.*

STEP 9

The complete assembly is put onto the shaft of the nose gear leg as follows: Slide the wheel yoke onto the axle shaft, then place a 33464 washer onto the shaft, then the F-3590.3 friction bushing another 33464 washer and its all held in place with a 06-11800 nut. Tighten the nut until the wheel moves relatively tight it should take 20lbs of force to move the wheel. You can measure this force with a fish scale. Place the aircraft in an attitude where the nose wheel is off the ground, hook the fish scale on the nose wheel fork at or around the nose wheel axle pull on the fish scale and record how many lbs. of pressure it takes to move the wheel. Tighten the friction nut until it takes 20 lbs to move the wheel. Secure nut with cotter pin.



EF202424

F-3590.3

33464

Figure 3.4.8

3.5 TAIL SKID

When fitted with nose gear and the wings are folded the rear end becomes very light with the possibility that the balance can be disturbed and the tail goes for the ground, in order to ensure that the rudder does not get damaged the aircraft is fitted with a small tail skid.

STEP 1

Tail skid F- 3591 is fitted to the same position as the tail spring would be using the same bolt and some additional washers. The skid also has a ring for the rear tie down point.

3.6 MAIN GEAR AXLE AND HYDRAULIC DISC BRAKE ASSEMBLY

STEP 1

If your aircraft is an Escapade your hydraulic disc brakes comes as a complete unit with a keyed axle that determines the orientation of the caliper units.

The axle should be positioned in the leg tube so that the bleed nipple on the caliper unit is as near to the top as possible. Trial fit so that you can access both the tube attachment nut and the bleed nipple.

See figure 3.6.1

STEP 2

Ream all holes in the main landing gear legs and fuselage mounting points using a 1/4" reamer. Rear points for nose gear version – forward points for taildragger.

Step 3

Using a 5/8" reamer, ream the inside of the axle mounting tube at the end of the landing gear leg to receive the axle.

Step 4

Mark out the position of the bolt (AN4-12A) that secures the axle into the axle mounting tube on the landing gear leg (see Figure 3.6.2.) as follows: measure 1" from the inboard face of the axle mounting tube along the horizontal center line and center punch the mark on both sides of the tube. Drill to 1/4" diameter.



figure 3.6.1



figure 3.6.2

3.7 MAIN GEAR SHOCK ABSORBERS (BUNGEE)

STEP 1

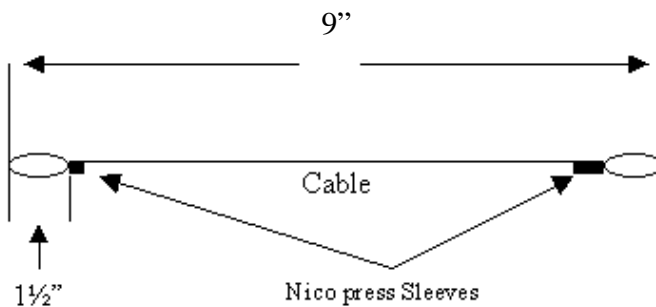
Mount the landing gear legs on the fuselage with F-0500 bolts.

The tail dragger configuration has the legs on the forward attachment points with the thicker tube of the leg forward.

The nose gear configuration has the legs on the rearmost attachment points with the thicker tube of the leg towards the back.

STEP 2

Make a limiting cable for the main gear bungee strut F-0510 from F-0520 safety cable kit as shown in *Drawing 3.7*. One end of the cable will have its loop around the upper bungee arm; the other will have its loop around the lower bungee arm. Construct the cable so as to limit the strut travel to 2 1/2".



Drawing 3.7: Bungee safety cable

Step 3

Install the safety cable then install the bungee cord F-0530. See *Figure 3.7.3* The gear now uses 2 bungee with 3 wraps on each side. This allows bungees to lie flat on spreaders.



Figure 3.7.3

STEP 4

Install V brace (F-0540) to fuselage. Use F-0550 bolts, *see Figure 3.7.5*

STEP 5

Install bungee struts F-0510 to connect landing gear legs F-0155 and V brace with short end to V brace and longer end to leg assembly. Use F-0570 (strut to leg) and F-0560 (strut to V) bolts, *see Figure 3.7.5*

**V Brace,
Gear leg,
Bungee Struts**

Figure 3.7.5 Assembly



3.8 HYDRAULIC TOE BRAKE SYSTEM

STEP 1

The installation of the toe brake pedals (F-0390) master cylinders and hydraulic tubing and routing is covered in Chapter 4. This chapter also deals with rudder pedal installation.

Hydraulically operated differential toe brakes are standard with the kit unless otherwise ordered.