Section 2
Airframe and Landing Gear

Procedures covered in this section:
Drill airframe bushings; mount front and rear landing gear; install skid tubes; tap body support adjustment pad bushings; fabricate retention straps for battery box.

Cards used in this section:

E09 CARD 2T (tail boom)	E10 CARD 1T (airframe)
E11 CARD 1T (landing gear)	E45 CARD 3T (skid shorts)

Prints used in this section:

E10-2000	E16-2000

Templates used in this section:
None

Tools required for this section:

Air or electric drill	Drift punch	Mallet	Screwdriver	Transfer punch
“C” clamps	Files	Nut driver	Tap: 5/16-18	
Center punch	Grinder	Pop rivet gun	Tap handle	
Countersink	Level	Protractor level	Tape measure	

Drill bits of the following sizes: 1/8", 1/4", 3/8", Letter “H”
Ratchet with sockets of the following sizes: 7/16", 9/16"
Wrenches of the following sizes: 7/16", 9/16"

Notes:

1. TAIL BOOM SUPPORT BRACE TUBES: These are the diagonal tubes on each side of the airframe. Throughout the construction of the helicopter, these tubes may have to be removed or unbolted more than once for installing or accessing other components. BEFORE REMOVING THESE TUBES, BE SURE THAT THE TAIL BOOM IS REMOVED OR PROPERLY SUPPORTED, OR DAMAGE TO THE AIRFRAME WILL RESULT.

   When these tubes are re-installed, the bolt holes might appear to be misaligned. This is normal and does not indicate any problem or damage to the airframe. Hole alignment can be achieved using an alignment punch or by simply applying pressure to the airframe in the necessary direction.

   On completion of the helicopter, the upper rear bolts must be safety wired. If the nuts on the lower forward bolts have been removed several times, extra 3/8” fiberlock nuts are supplied on E10 CARD 1.

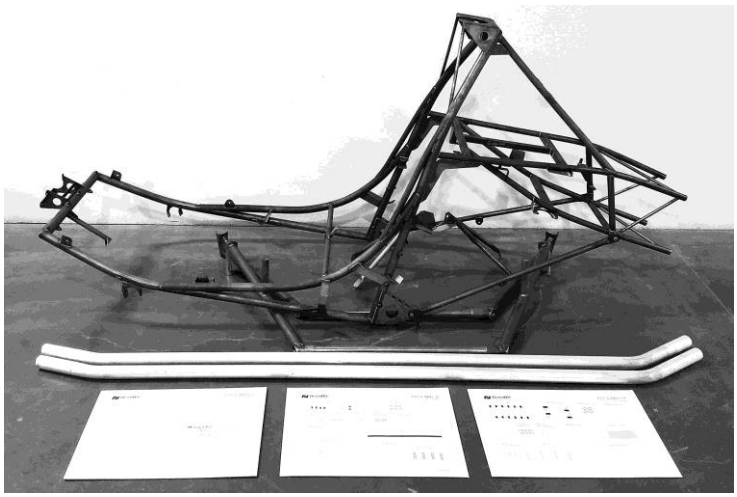


Photo #1

Use prints E10-2000 and E16-2000 when assembling the airframe and landing gear.
Parts as received from RotorWay.

Hardware is found on E10 Card 1T and E11 Card 1T.

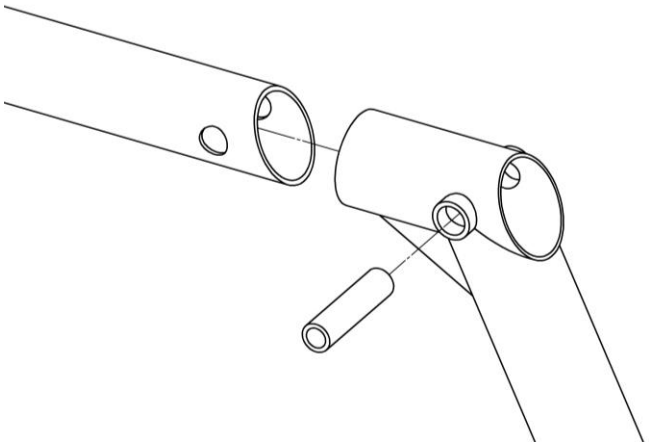


Photo #2

Assemble the rear landing gear by inserting the spring tube into the legs as shown. Then insert the pivot bushings to hold them together.

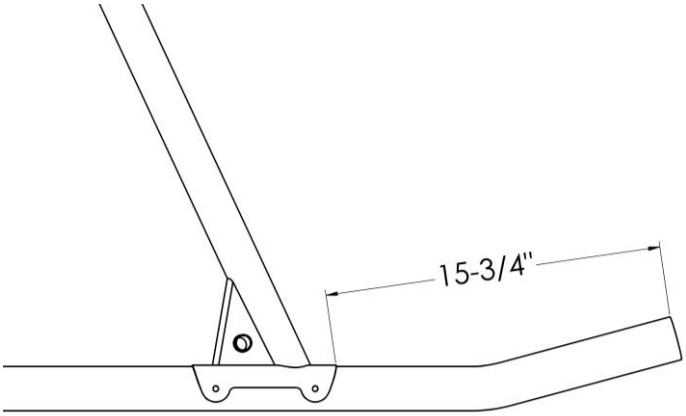


Photo #3

Place the assembled rear landing gear on the skid tubes. (The smaller bend of the skid tubes is towards the rear.) The distance from the rear end of the skid tube to the rear of the landing gear shoe is 15-3/4 inches. Hold in position with hose clamps found on E45 CARD 3T.

Note: Both skid tubes have a steel insert inside them on the forward end. The insert is about 3 inches from the front of the tube and extends inside about 36 inches.

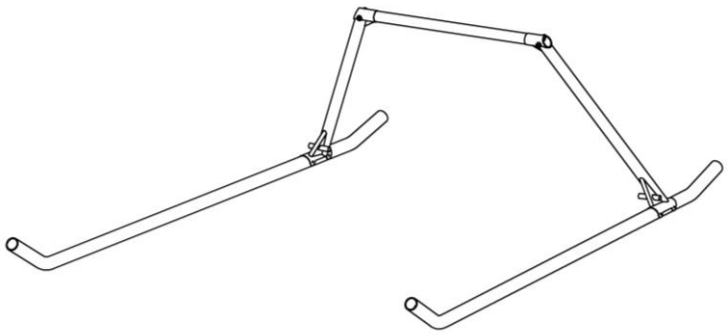


Photo #4

Rear landing gear installed on the skids. The angled ends of the skids should not lean left or right.

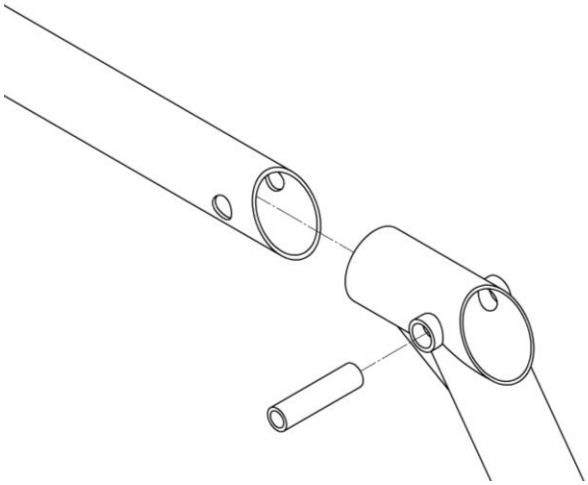


Photo #5

Install the legs of the front landing gear on the front spring tube. Insert the pivot bushings to hold them together.

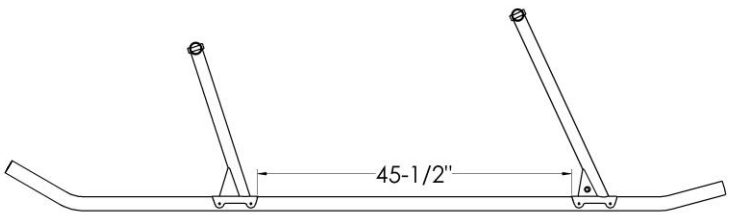


Photo #6

Place the assembled front landing gear on the skid tubes, approximately 45-1/2 inches from the rear landing gear, measured between the shoes. Hold with hose clamps. When the airframe is placed on the landing gear, the front gear can be moved as necessary to fit.

Photo #7

View of landing gear on the skids.

Note: The skids are wider in front than in the rear. This allows for spread when the gear supports the weight of the helicopter.

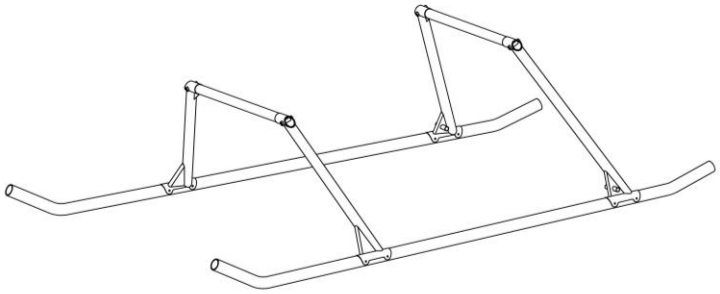


Photo #8

Place the airframe on the landing gear. The front gear can be moved fore/aft on the skid tubes for best alignment. Align the holes in the brackets and landing gear.

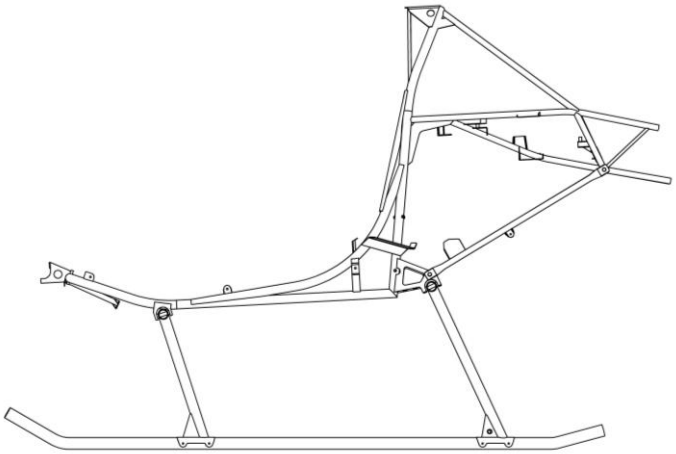
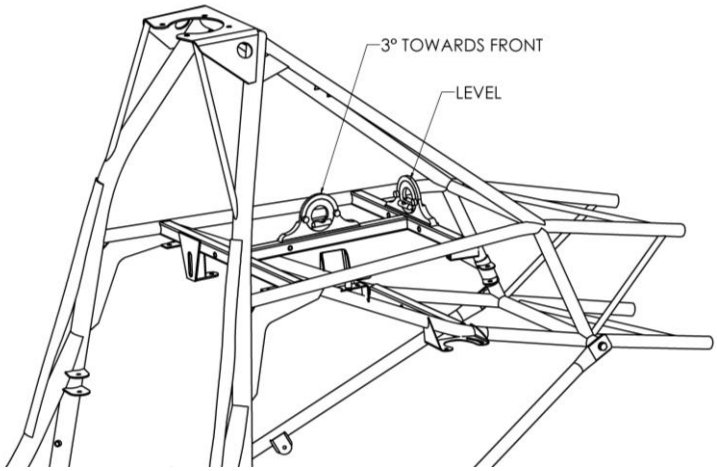


Photo #9

With the airframe on the landing gear and the skid tubes level:

1. The rear square drive tubes should be level laterally.
2. The fore/aft square drive tube should be tilted downward approximately 3 to 3.5 degrees towards the front. (Exact angle is not critical.)

Note: Under the weight of the fully assembled helicopter, the rear landing gear will spread slightly. At that time the square drive tube angle should be about 2.5 to 3 degrees towards the front.



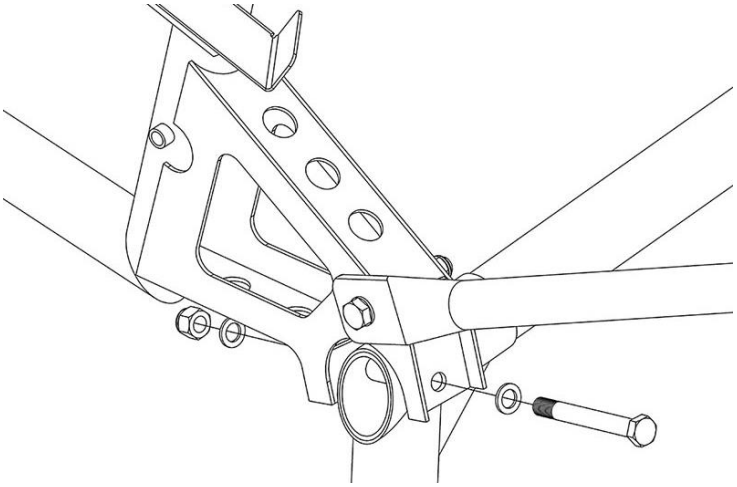


Photo #10

Install the bolts, nuts and washers in the rear landing gear, both sides.

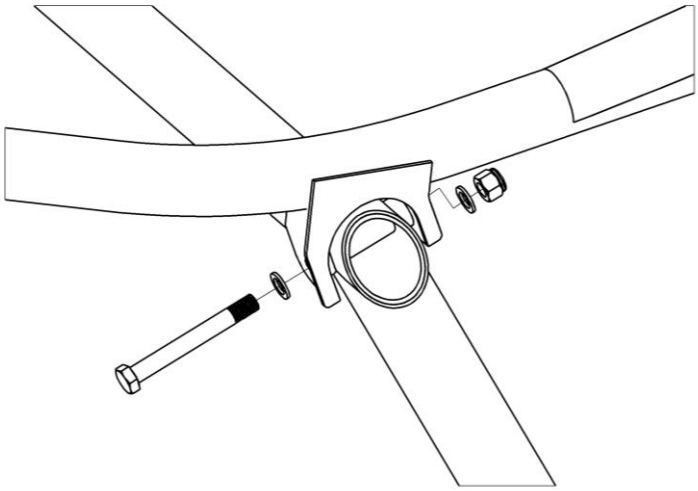


Photo #11

Install the bolts, nuts and washers in the front landing gear, both sides.

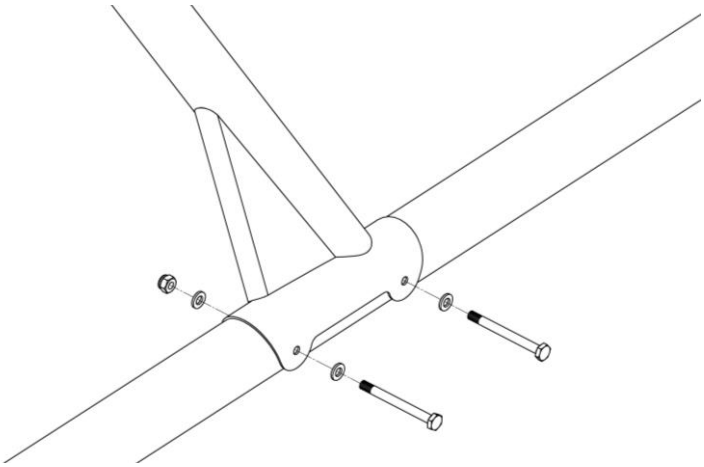


Photo #12

The landing gear shoes have pilot holes to locate the bolts. Using a 1/4 inch bit, drill through each side, then pass the drill all the way through.

Install the 1/4 inch bolts, nuts and washers.

Photo #13

Install the end caps in skid tubes. Glue the end cap with gray two part epoxy, found on E09 CARD 2T.

BODY SUPPORT ADJUSTMENT PADS

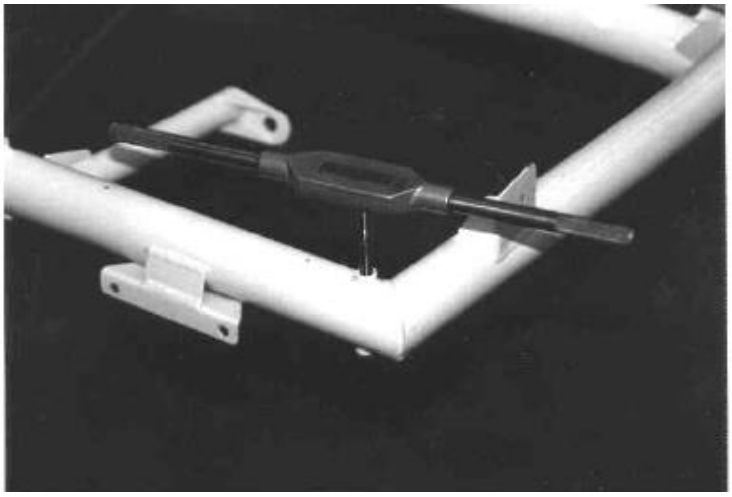


Photo #16

Cut or grind the four bushings in the front airframe cross tube so that they extend about 1/4" above the tube. Drill through each bushing with an “H” drill, then tap them with a 5/16-18 tap. Use plenty of oil when tapping.

Note: The standard drill size for a 5/16-18 tap is an “F” drill, but due to the hardness of the material we recommend an “H” drill for easier tapping.

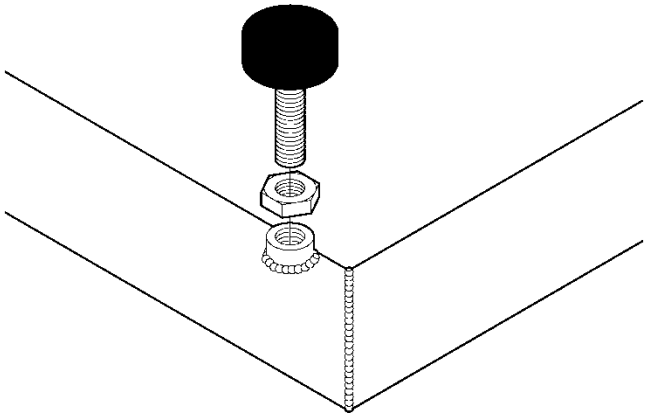
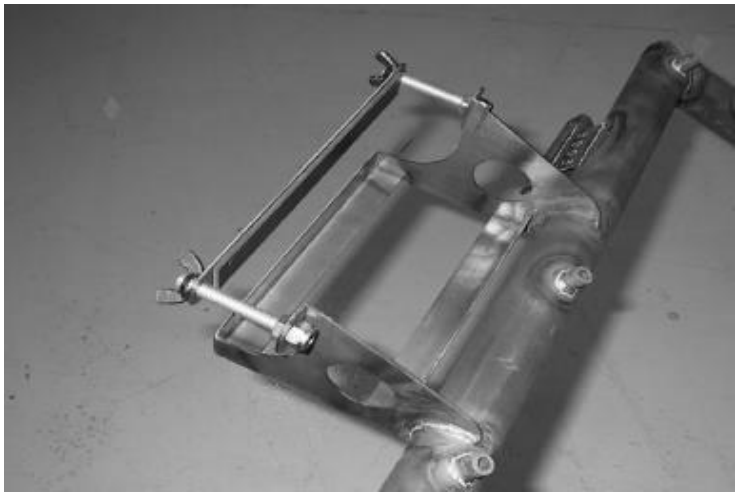


Photo #15

Install the body support adjustment pads into the tapped bushings using a 5/16-18 jam nut on each.

Note: The adjustment pads and jam nuts are found on E10 CARD 1T, part number E32-3150 and E00-3503.



BATTERY BOX RETENTION STRAPS

Photo #18

Make the battery retention strap, shown here installed on the battery box. Use 3M weather stripping adhesive to glue the rubber to the steel strap. Hardware found on E10 CARD 1T.

Photo #17

This picture shows the battery in the battery box.

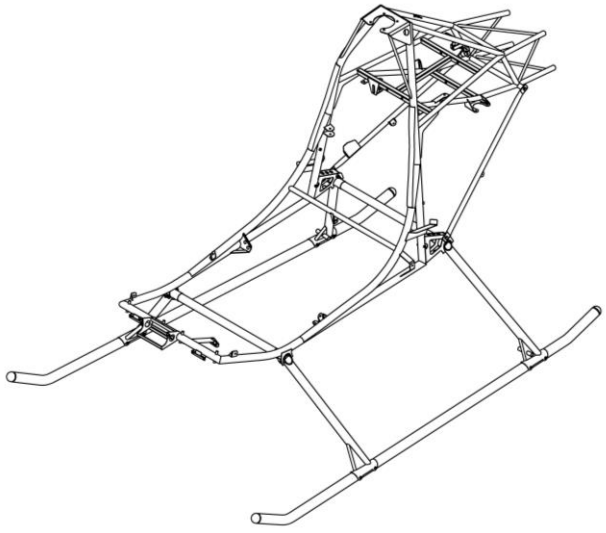


Photo #20

Overall view of the airframe, landing gear and skid tubes.