

## **Radiator Temperature Control Kit Installation Instructions**

1. Place the Radiator cover over the radiator. Center the cover evenly from side to side. The hinges on the flaps will be towards the front of the plane.
2. Drill the 1/8" holes on the side, 8 each side. As you drill a hole place a rivet into the hole just to hold the cover in place, you can use Cleco's here if you have some. Don't rivet at this time. Continue drilling the holes on each side until all 16 are drilled.

**WARNING, PLACE A SMALL PIECE OF SCRAP ALUMINUM OR WOOD UNDER THE COVER ON TOP OF THE RADIATOR BEFORE DRILLING THE SIDE HOLES. MOVE THE SMALL SCRAP UNDER EACH HOLE AS YOU DRILL. IF YOU NICK THE RADIATOR WITH THE DRILL IT WILL RUIN YOUR DAY.**

3. Remove the cover and clean all the drill shavings off the radiator. Rivet the cover on using the small Aluminum steel rivets. 8 per side.
4. Install the cable end bracket on the left front hole of the radiator. The vertical part to the rear. Tighten the screw with lock washer until snug but do not over tighten. Use red locktite on the screw.
5. The control handle is designed to be mounted under the root tube near the front seat-back uprights. This would put the handle just behind the pilot's head out of the way. It can be mounted anywhere under the root tube but sit in the plane before riveting to make sure it doesn't hang down in your face or head. Rivet in place using the long SS44 steel rivets.
6. Drill a 17/64" hole 11 inches forward of the front radiator H-bracket and 2 1/2 inches to the left in the fiberglass center cover. Be sure there is nothing under the cover (fuel lines, wires, BRS bridles, etc.) before drilling. After the drill goes through the fiberglass, lean the drill towards the back of the plane. This will allow the cable housing to go through at an angle instead of straight down.
7. Run the cable housing from the front cable retainer on the handle, along the root tube clear of the Flaperon tube, out the hole in the top, and into the cable retainer on the radiator. You will have to cut to length; extra is given in case you mount the handle in another location.
8. Insert the steel inner wire through the cable housing. The brass barrel on the handle uses 1 washer between the handle and the wire. The barrel on the radiator bracket has a washer on the barrel before you put it through the anchor bracket and then 1 washer between the bracket and the inner wire.

9. Before tightening the two Allen set screws in each barrel, adjust the handle to the flaps on the cover. The handle should be nearly all the way back, 1/2" from the seat tubes, and the flaps closed. Tighten up the 2 set screws in each brass barrel. Cut off the excess wire leaving about 1" of extra wire at each end.

10. We use safety wire twisted around the cable housing and then run and twisted around the retainer to keep the housing from pulling out of the retainer. Do this on each end.

11. Test the movement of the handle and the movement of the three flaps. The AN4 nut on the handle pivot should be tight enough the flaps will stay open even in flight with air pushing against them.

12. Reinspect all your work for proper installation. Make sure everything is tight. As you know, if it comes loose it will go through the prop.

### **Test Flying and Adjusting in Flight**

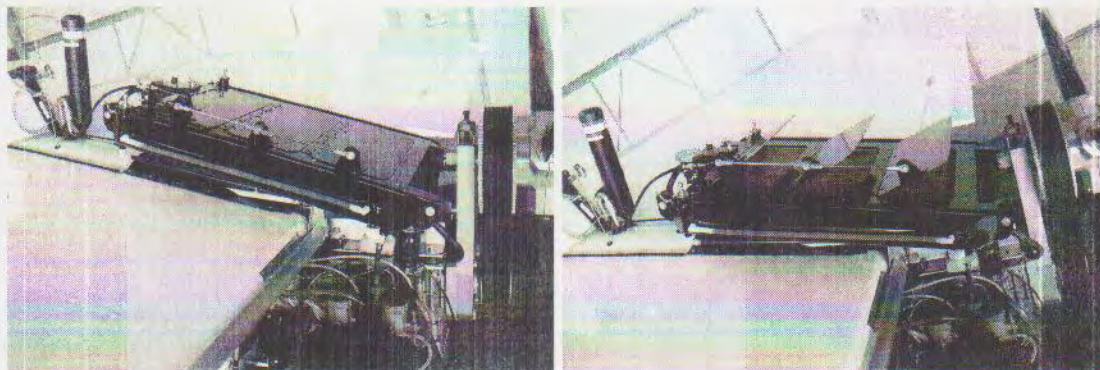
1. On a cold day, close the flaps, warm up engine to 140F min. Take off with flaps closed.
2. Watch your water temp. If it reaches around 165 to 170F open the flaps just a little and watch the temp. It should stabilize or even go down just a little. A little movement of the handle moves the flaps quite a bit.
3. Open and close the flaps a little at a time and watch the water temp. You will find the perfect temp you want to run your engine at.
4. If at a high altitude and idled back for a long decent, you can close the flaps to keep the temps up.
5. If for any reason you start to overheat, push the handle forward all the way. This will allow max cooling and bring the temps down. If not you have a water or engine problem and should land as soon as possible.

If you should have any questions, feel free to call anytime and I'll be glad to answer them for you.

Happy Flying

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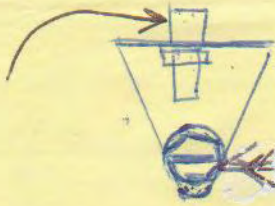
## LOUVRE INSTALLATION GUIDE



1. Deburr all edges & round any corners that you wish too.
2. Center the 3 panels over the 3 cut outs making sure to also center evenly from side to side and top to bottom.
3. Tape the bottom edge and sides to the cut out plate.
4. Slip the hinges (knuckle up) under the top edge of the 3 plates and butt the knuckles up to the top edge of the plates.
5. Center the hinges from side to side.
6. Drill the 1/8" holes through the top leaf of the hinges; through the cut out plate. Temporarily, use a couple of aluminum rivets or clecos to hold the hinge on the cutout plate.
7. Turn the whole assembly over and drill through the other leaf of the hinges through the 3 plates. Temporarily, use a couple of aluminum rivets or clecos to hold into place.
8. On the top and bottom flap pieces, place the 2 formed angles to the far left of the plates and center them top to bottom. These 2 angles have a 3/16" hole on one end.
9. On the center flap place the angle with 2 - 3/16" holes to the left side and center top to bottom. Drill your 1/8" or #30 holes and temporarily mount the brackets.
10. Locate the angle with the single 1/4" hole to the top edge of the top flap and hold in 3 inches from the left edge of the cut out plate. see picture.
11. You can now remove all the pieces and paint the Louvres or deburr the holes and rivet it together permanently.

***\*\*REFER TO THE PICTURES FOR FURTHER  
ASSEMBLY\*\****

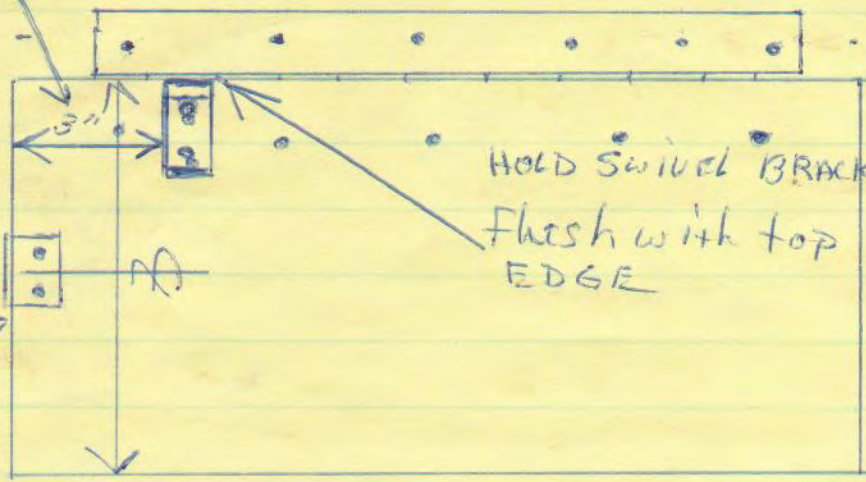
CONDUIT  
RETAINER



CL = CENTER LINE

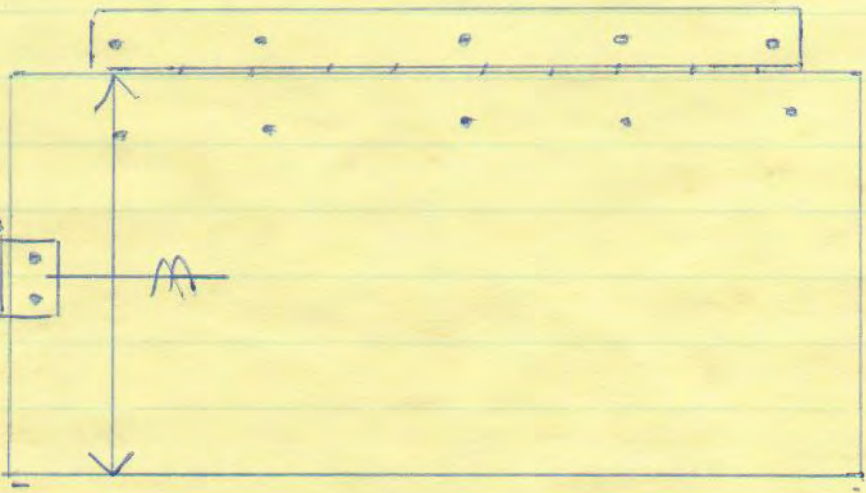
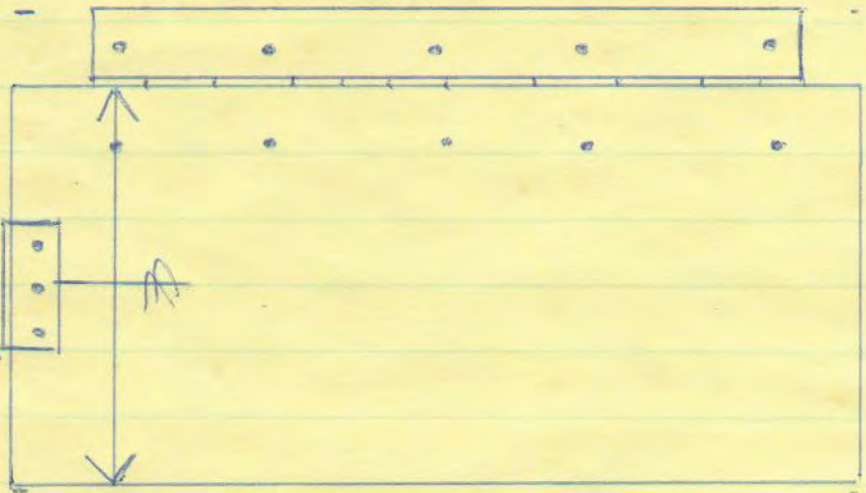
ATTACH TO BUNG ON RADIATOR  
USING WASHER HEAD SCREW

Hold wire  
swivel bracket  
3" From Left  
EDGE

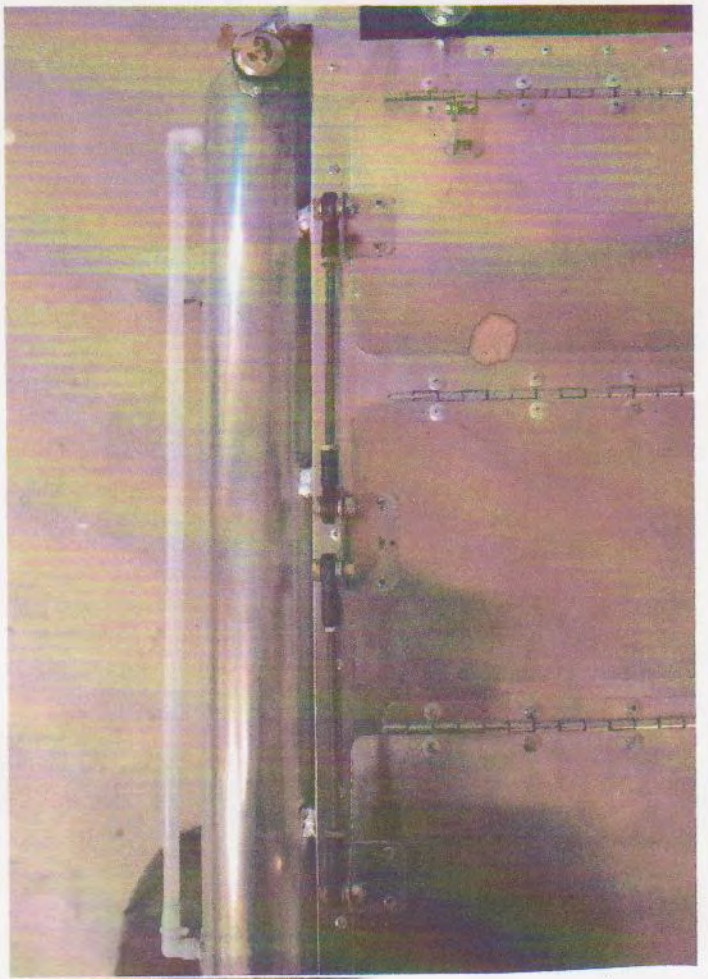


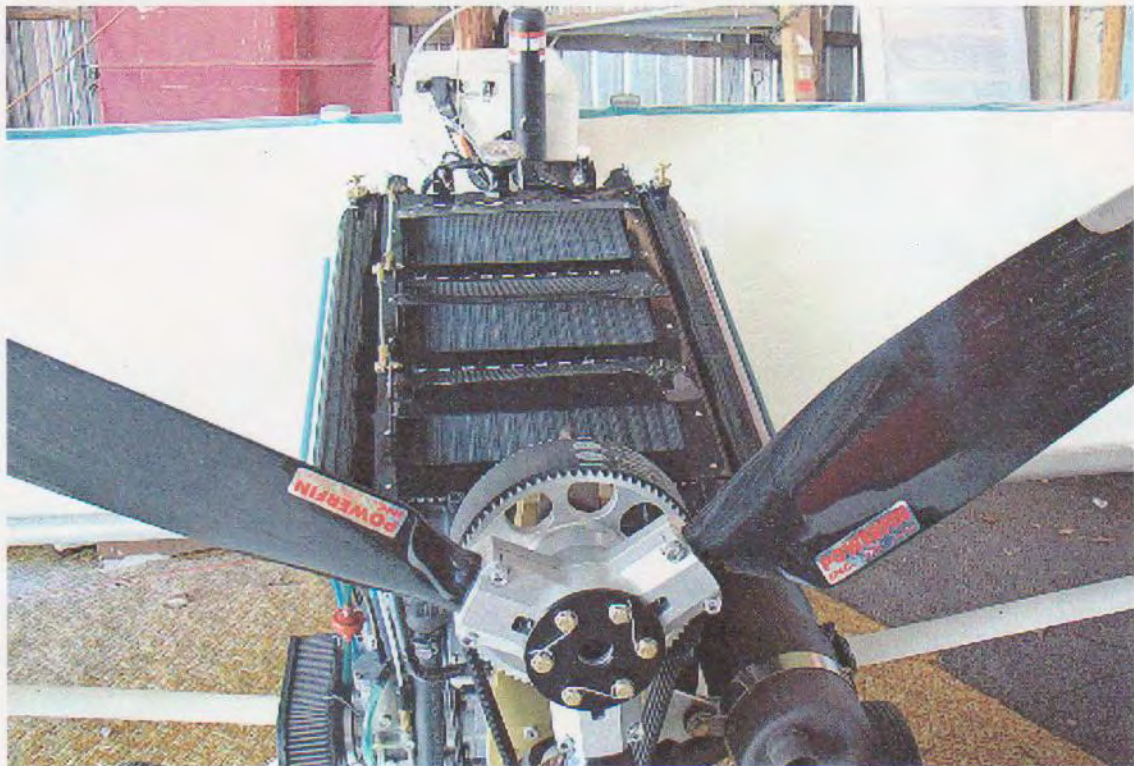
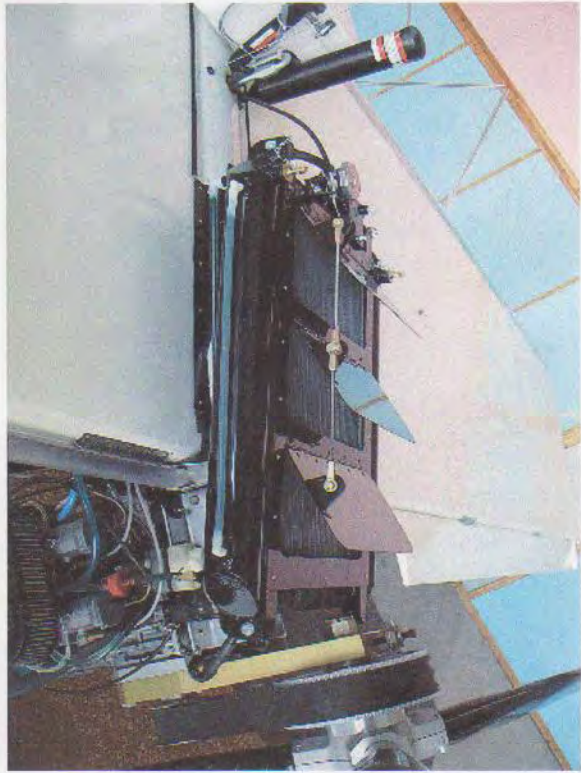
EDGE OF LOUVER FLAPS  
CHECK TO BE SURE CONNECTING  
RODS TO NOT  
CATCH ON FLAPS WHEN OPENING  
OR CLOSING FLAPS  
BE SURE RIVETS ALLOW FLAPS  
TO CLOSE FULLY

HOLD BRACKETS A Bout  
1/16" out From



3/4"  
Both sides total 9 Rivets spaced evenly  
1/2"  
3/4"







## LOUVRE PACKING SLIP

- \_\_\_ (1) Aluminum Plate w/ 3 cut outs – 22 x 13
  - \_\_\_ (3) 11 1/2" x 5 3/4" Aluminum plates
  - \_\_\_ (1) 5' .063 Wire
  - \_\_\_ (1) 5' Wire conduit
  - \_\_\_ (2) Angles w/ single 3/16" hole – and 3 - 1/8" rivet holes
  - \_\_\_ (1) Angle w/ 2 – 3/16" holes and 3 rivet holes
  - \_\_\_ (1) Angle w/ a single 1/4" hole and 3 rivet holes
  - \_\_\_ (1) Angle w/ 2 – 1/4" holes
  - \_\_\_ (3) 10" L. hinges
  - \_\_\_ (1) Conduit Retainer
  - \_\_\_ (2) Conduit stop nuts
  - \_\_\_ (4) Nylon ball rod ends
  - \_\_\_ (4) 10-32 stop nuts
  - \_\_\_ (2) 6" L. 10-32 threaded rod
  - \_\_\_ (8) AN3 Washers
  - \_\_\_ (4) AN3 6A Bolts
  - \_\_\_ (4) AN3 thin Nyloc nuts
  - \_\_\_ (1) #14 x 1/2" Sheet metal screw
  - \_\_\_ 12" Safety Wire
  - \_\_\_ 46 AD 42 Rivets
  - \_\_\_ (1) Wire Swivel w/screw
- 
- \_\_\_ - Root Tube Bracket
  - \_\_\_ - (1) pc. ~~AN-10A~~ 1/4" x 28 x 1"
  - \_\_\_ - (1) Aluminum Washer
  - \_\_\_ - (1) 1/2" O.D. x 1/4" I.D. x 3/8" L. Spacer
  - \_\_\_ - (1) 7/8" O.D. x 1/2" I.D. x 3/8" L. Spacer
  - \_\_\_ - (1) 2 1/2" Sex bolt w/ screw 3/16" dia. (bolts handles together)
  - \_\_\_ - (2) 1 1/8" L. x 3/4" O.D. x 3/16" I.D. Nylon bushing (handles)
  - \_\_\_ - (1) Wire swivel w/ screw
  - \_\_\_ - (4) 1/8" S.S. 44
  - \_\_\_ - (3) 3/16" Aluminum rivets
  - \_\_\_ - (1) S.S. Angle Tang
  - \_\_\_ - (1) Conduit Retainer
  - \_\_\_ - (2) Retainer stop nuts
  - \_\_\_ - (1) 3/4" w. x 3/16" Aluminum flat bar for handle lever
  - \_\_\_ - (1) Grade 2 thin NYLOC nut 1/4" x 28 NOT "AN"



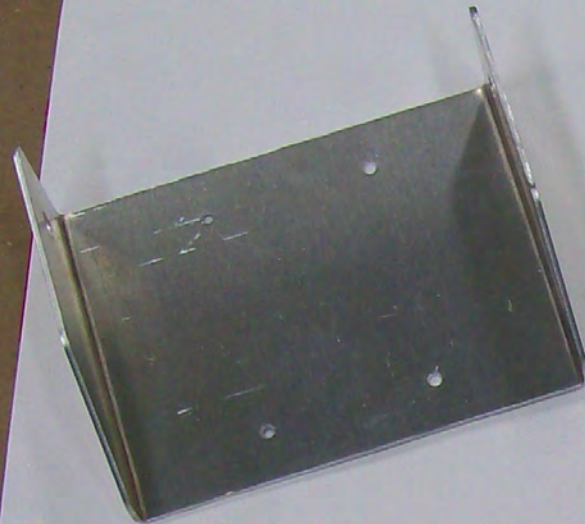
OIL INJECTION  
CHECK OIL RES.  
BEFORE FLIGHT  
2-Cycle oil ONLY

01/01/2014



FUEL INJECTION SYSTEM RES. BEFORE FLIGHT 2-Cycle all ONLY

01/01/2014



DUAL Root Tube  
BRACKET  
USE FOR Both  
TOP & Bottom  
LOUVER'S



Single Root Tube  
BRACKET  
USE FOR ONLY TOP  
LOUVER'S

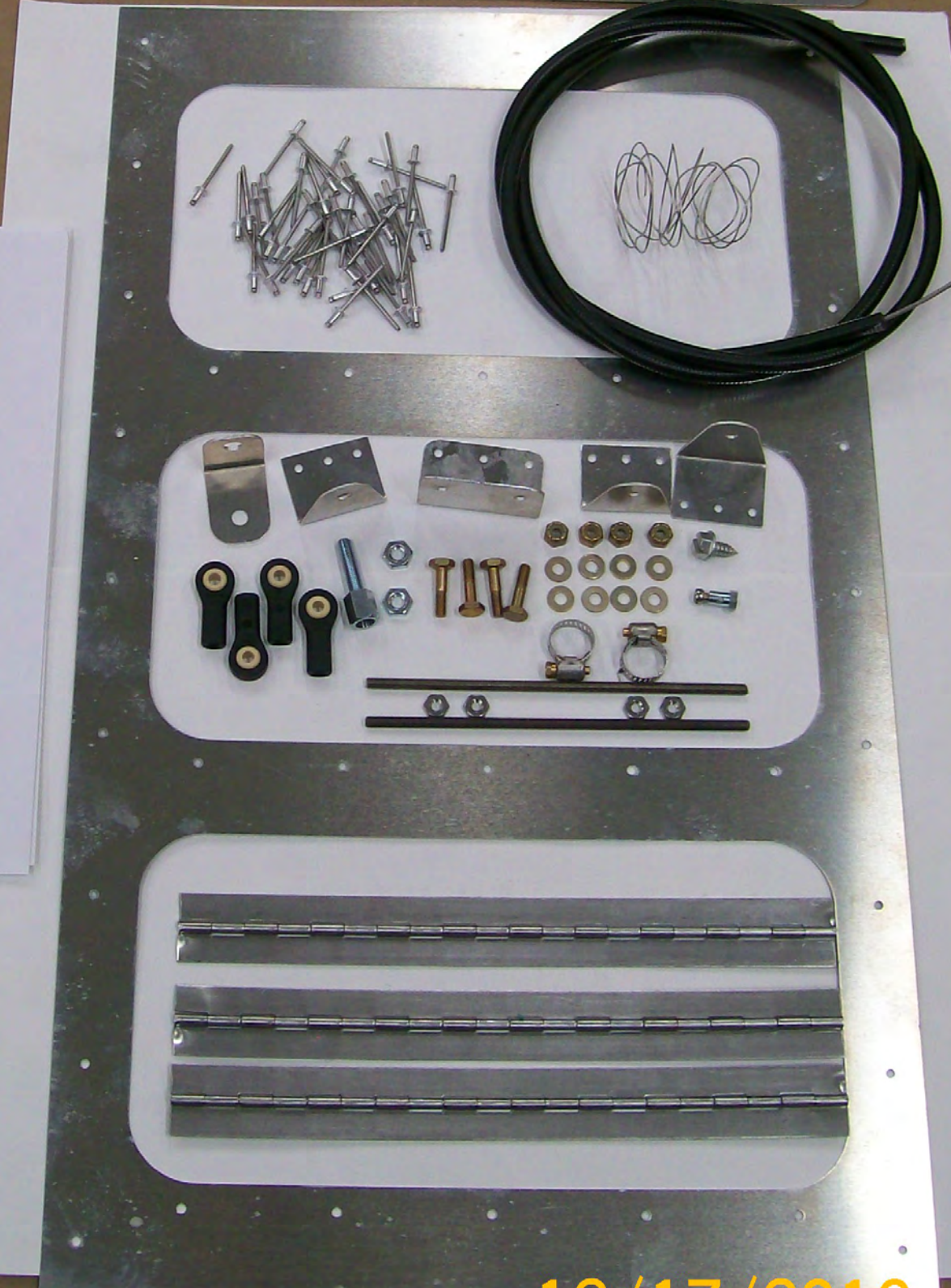
HANDLE BRACKET PACKING SLIP

- ✓ - Root Tube Bracket
- ✓ (1) pc. ~~1/4" x 28 x 1" Bolt~~ 1/4" x 28 x 1" Bolt
- ✓ (1) Aluminum Washer
- ✓ (1) 1/2" O.D. x 1/4" I.D. x 3/8" L. Spacer
- ✓ (1) 7/8" O.D. x 1/2" I.D. x 3/8" L. Spacer
- ✓ (1) ~~1/4" x 28 x 1" Bolt~~ screw 3/16" dia. (bolts handles together)
- ✓ (2) ~~1/4" x 28 x 1" Bolt~~ Nylon bushing (handles)
- ✓ (1) Wire swivel w/ screw
- ✓ (4) 1/8" S.S. 44
- ✓ (3) 3/16" Aluminum rivets
- ✓ (1) S.S. Angle Tang
- ✓ (1) Conduit Retainer
- ✓ (2) Retainer stop nuts
- ✓ (1) 3/4" w. x 3/16" Aluminum flat bar for handle lever
- ✓ (1) Grade 2 thin NYLOC nut 1/4" x 28 NOT "AN"

12/17/2013



DUAL  
 BRACKET  
 USE FOR  
 10/17/13

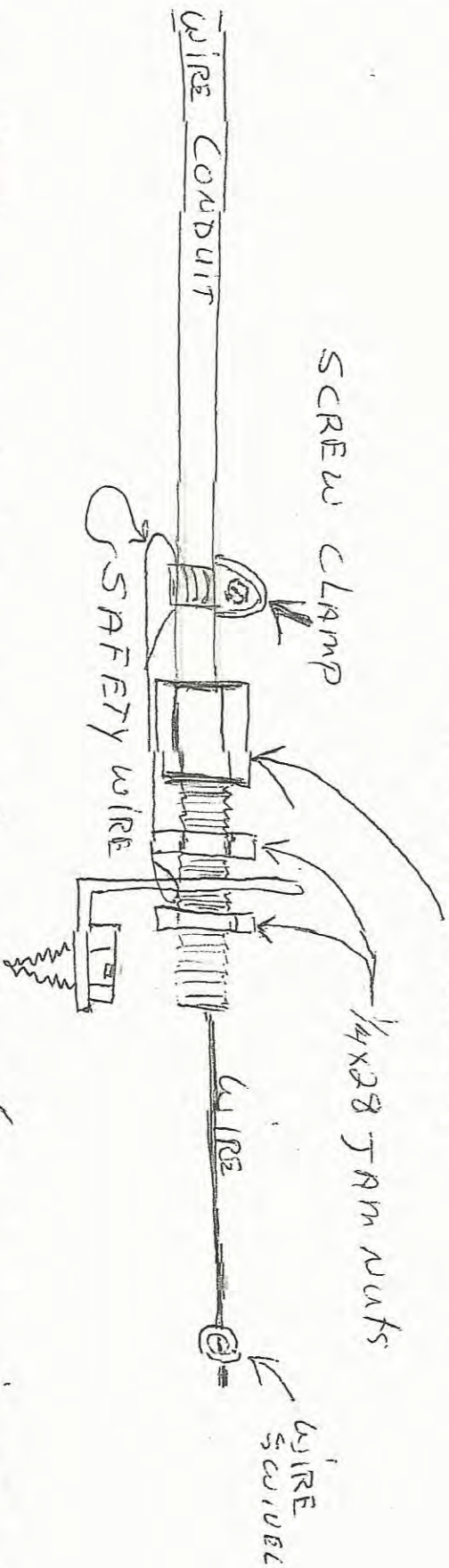


LOUVRE PACKING SLIP

- ✓ (1) Aluminum Plate w/ 3 cut outs - 22 x 13
- ✓ (5) 11-1/2" x 5 1/4" Aluminum plates
- ✓ (1) 32-063 Wire
- ✓ (1) 5' Wire conduit
- ✓ (2) Angles w/ single 3/16" hole - and 3 - 1/8" rivet holes
- ✓ (1) Angle w/ 2 - 3/16" holes and 3 rivet holes
- ✓ (1) Angle w/ a single 1/4" hole and 3 rivet holes
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- ✓ (3) 10" L. hinges
- ✓ (1) Conduit Retainer
- ✓ (2) Conduit stop nuts
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- ✓ (2) 6" L. 10-32 threaded rod
- ✓ (8) AN3 Washers
- ✓ (4) AN3 6A Bolts
- ✓ (4) AN3 thin Nyloc nuts
- ✓ (1) #14 x 1/2" Sheet metal screw
- ✓ 12" Safety Wire
- ✓ 46 AD 42 Rivets
- ✓ (1) Wire Swivel w/screw
- ✓ (2) Radiator SCREEN CLAMPS - USE on Both ENDS OF CABLE WITH SAFETY WIRE

12/17/2013

## CONDUIT RETAINERS



1. Push conduit into conduit retainer (after cutting conduit to desired length)
2. Screw clamp with safety wire threaded into it, onto conduit next to retainer. Tighten on conduit.
3. Wrap safety wire around brackets keep conduit from slipping out of retainer.
4. Repeat this process at handle, end.