

UL Power UL350 Series Engine Installation

Section 3 Baffling, Ignition, & Voltage Regulator



UL Power aircraft engines are manufactured and supported by UL Power Aero Engines of Belgium. Read and understand the UL Power manuals completely before starting with the engine installation, as they contain important engine installation, operation and maintenance information. Follow all of the important safety information provided in the UL Power manuals regarding the installation, operation and maintenance of the UL Power engine. Read and understand the UL Power Operating Manual before starting the engine.

Make sure that your engine is registered with UL Power or an authorized distributor so that the factory warranty is in effect. In the United States, the UL Power distributor is UL Power North America: <http://www.ulpower.net>. Contact a UL Power distribution or service partner if you do not understand the instructions or if you have any additional questions. Maintain copies of the manuals with the aircraft in case of sale. Obtain current versions of the manuals from the official UL Power website, as well as current service and maintenance information: www.ulpower.com

If a discrepancy arises between the information provided by UL Power and the following pages, the UL Power manuals and/or service information and instructions take precedence. Zenith Aircraft Company does not manufacture or directly support engines.

Note: Different engines will affect performance, specifications, and flight characteristics of the aircraft. Also, the weight and balance of the aircraft will be affected by different engines and the fuel system per the drawings may not be adequate or suitable for some engines.



P/N: E012508A
Aluminum Ram Air Box
Right

Position the Right Aluminum Ram Air Box on the Engine. On the outboard side of the Right Air Box mark a line square to the bottom 23mm forward of the step at the front of the Air Box. Mark a point 120mm up from the step. Mark a point at 210mm up from the bottom of the Air Box at the back. Use a straight edge to connect the 210mm point to the 120mm point.



Mark a line square to the bend edge on the back at the 210mm mark. In the center of the back, mark a point 25mm up from the line. Sketch an arc from the edge to edge through the 25mm mark.

Note: The Ignition Wires will be routed later in this guide.

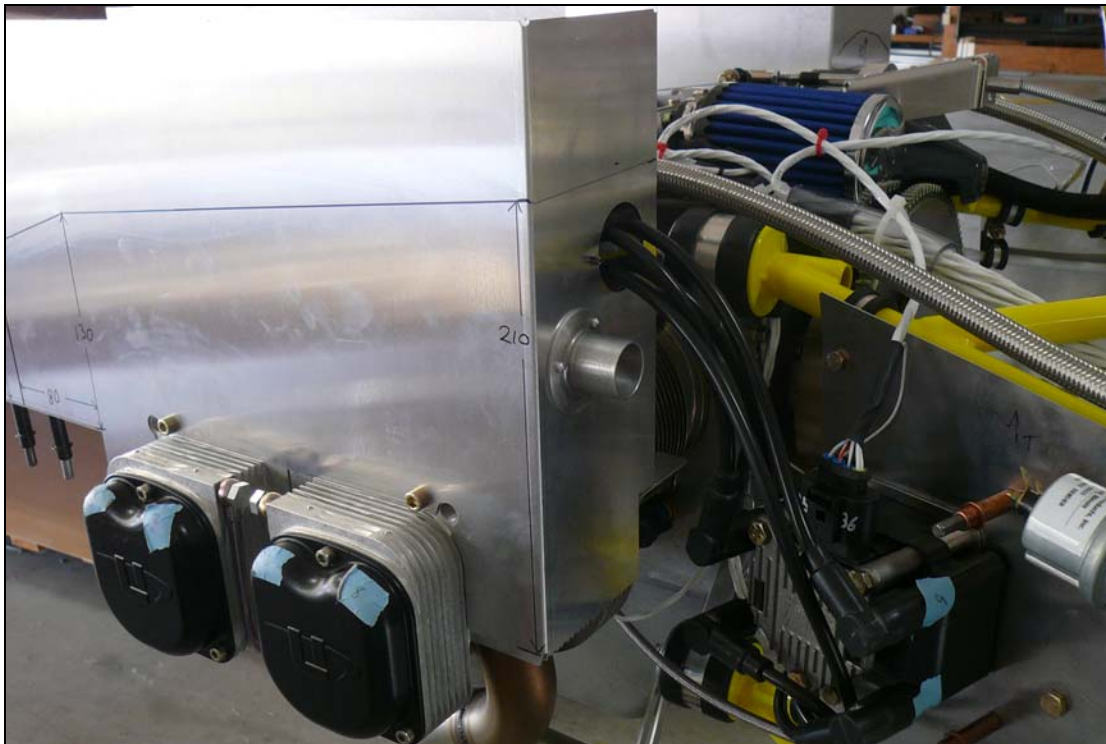


On the inboard side, mark a line square to the bottom 45mm from the Cylinder. Mark a point 120mm up from the bottom along the line. Connect the point and the line of the back of the Air Box.

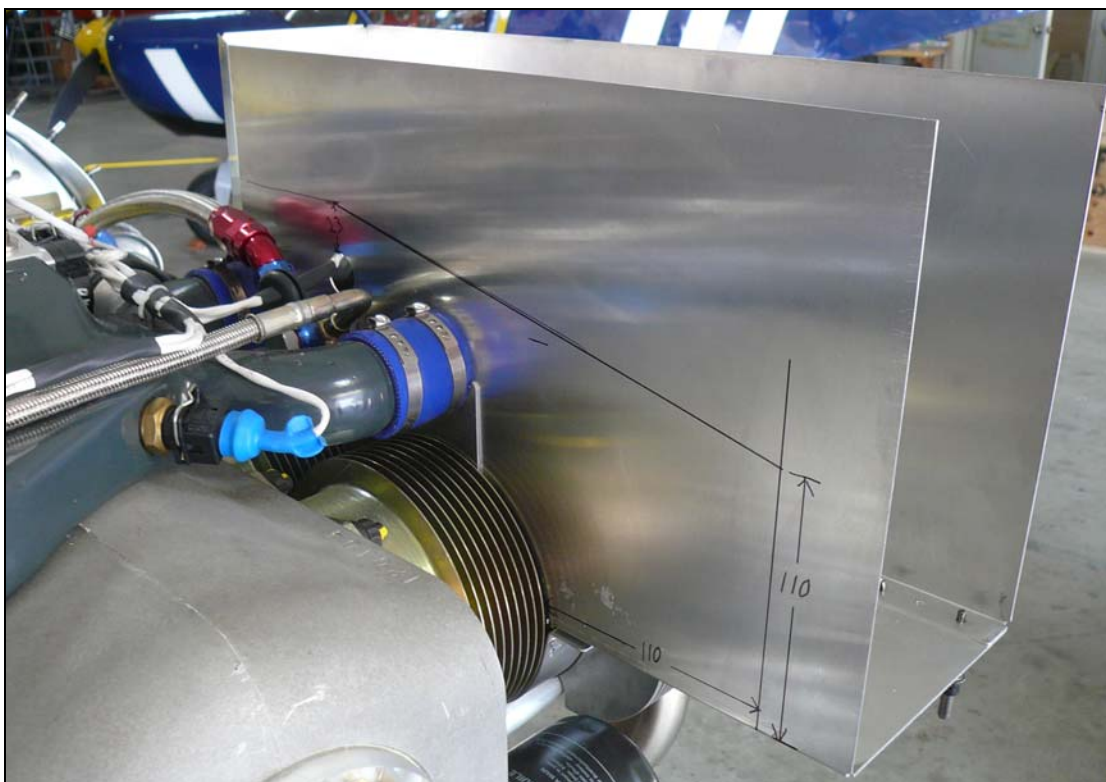


P/N: E012507A
**Aluminum Ram Air Box
 Left**

Position the Left Aluminum Ram Air Box on the Engine. Mark a line square to the bottom 80mm forward of the step on the Air Box. Mark a point 105mm up from the bottom along the line. Mark a point 130mm up at the aft corner of the step. Connect the points. Mark a point 210mm up from the bottom at the aft end. Use a straight edge to connect the 210mm point and the 130mm point.



Mark a line square to the end edge on the aft side at 210mm from the bottom.



Mark a line 110mm forward of the Cylinder on the inboard side. Mark a point on the line 110mm up from the bottom. Mark a point 23mm from the top edge of the cutout for the Grommet on the Electrical Wire for the Injector. Use a straight edge to connect the 110mm point and the 23mm point. Use a flexible straight edge to connect the 23mm point and the line on the back.



Remove the Air Boxes and trim them on the lines. Reinstall the Air Boxes on the Engine. Apply a threadlocker to the threads of the M6 Allen Bolts and install the Bolts on the Engine to retain the Air Boxes.



P/N: ULICP
Ignition Coil Mounting
Plate

P/N: MS21919-DG12
Adel Clamp

Slip two Adel Clamps on the Engine Mount top side tubes and two on the diagonal tubes. Install the Ignition Coil Mounting Plate on the Adel Clamps. Install both Mounting Plates, one on each side of the Engine Mount.



P/N: E071002
Ignition Coil Bracket

Position the Ignition Coil Bracket over the holes in the Mounting Plate.



P/N: E071001A
Ignition Coil

Set the Ignition Coil on the Bracket and bolt both Coil and Bracket to the Mounting Plate. Install a Bracket and Coil on each Mounting Plate.

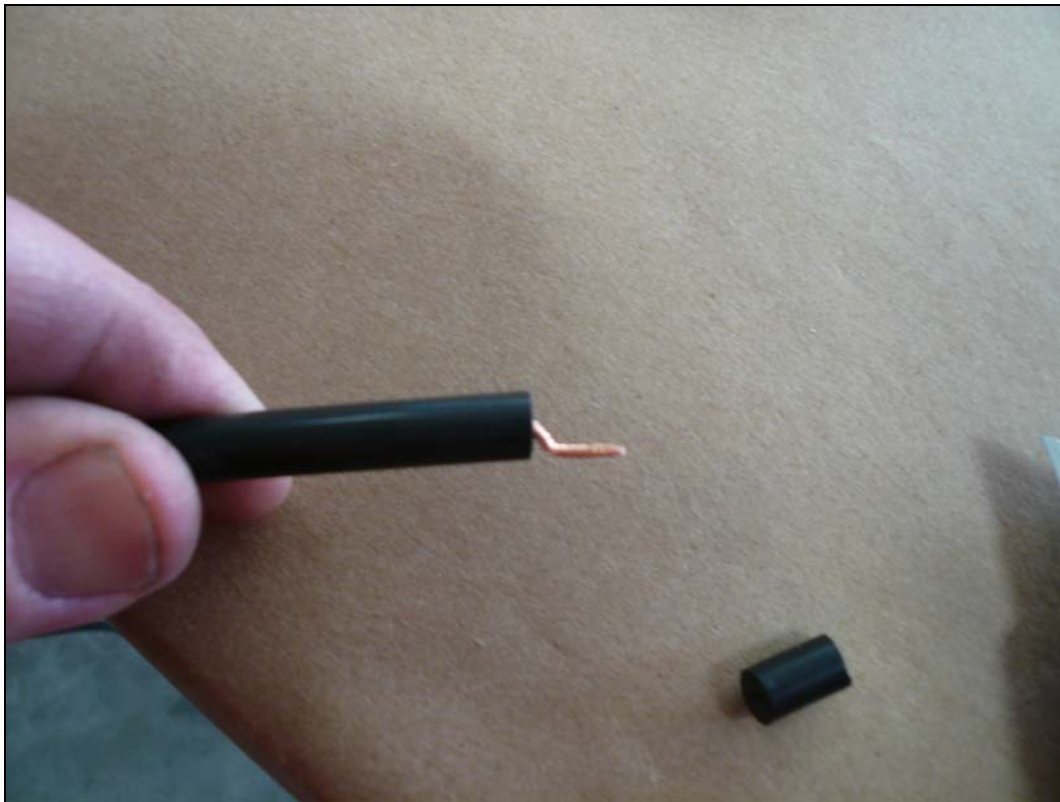


Label the Coil for each Cylinder; see the UL Power Installation Manual for specific information.



P/N: E011503A
Nylon Ignition Cable
Grommet

Cleco the Nylon Ignition Cable Grommet on the inside of the Air Box.



P/N: E071503A
Ignition Cable

Strip the end of the Ignition Cable. Put a slight bend in the wire to make it easier to attach the Copper Clamps. See the UL Power Installation Manual for specific information about making the Ignition Wires.



P/N: E071505A
Copper Clamp

Insert the Cable into the Copper Clamp. Solder the Wire to the Clamp. Clamp the large end on the Insulation of the Cable.



P/N: E071501A
Ignition Coil Covers

Insert the Wire and Copper Clamp into the Ignition Coil Cover.



P/N: E071501A
Spark Plug Covers

Determine the length of the cable from the Coil to the corresponding Cylinder and cut the Wire to length. Insert the wire through the Grommet on the Air Box. Slide the Boot on the wire. Screw the Wire in the Spark Plug Cover and then slide the Boot on the Cover. **Note:** Do not strip the wire.

Note: Check for continuity and to be certain the cable is not grounding out.

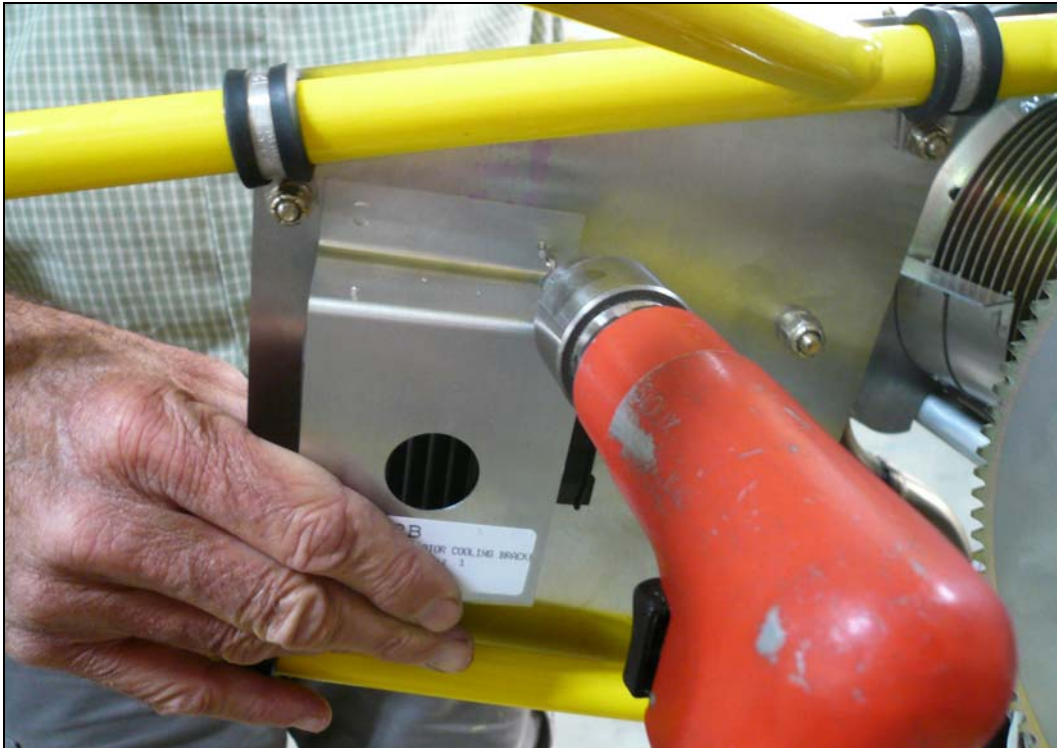


Push the Spark Plug Cover on the Spark Plug for the proper Cylinder. Make the remaining Ignition Cables for the other Cylinders.



P/N: E053001A
Regulator/Rectifier

Bolt the Regulator/Rectifier to the inboard side of the Pilot side Mounting Plate with the connector facing the Engine.



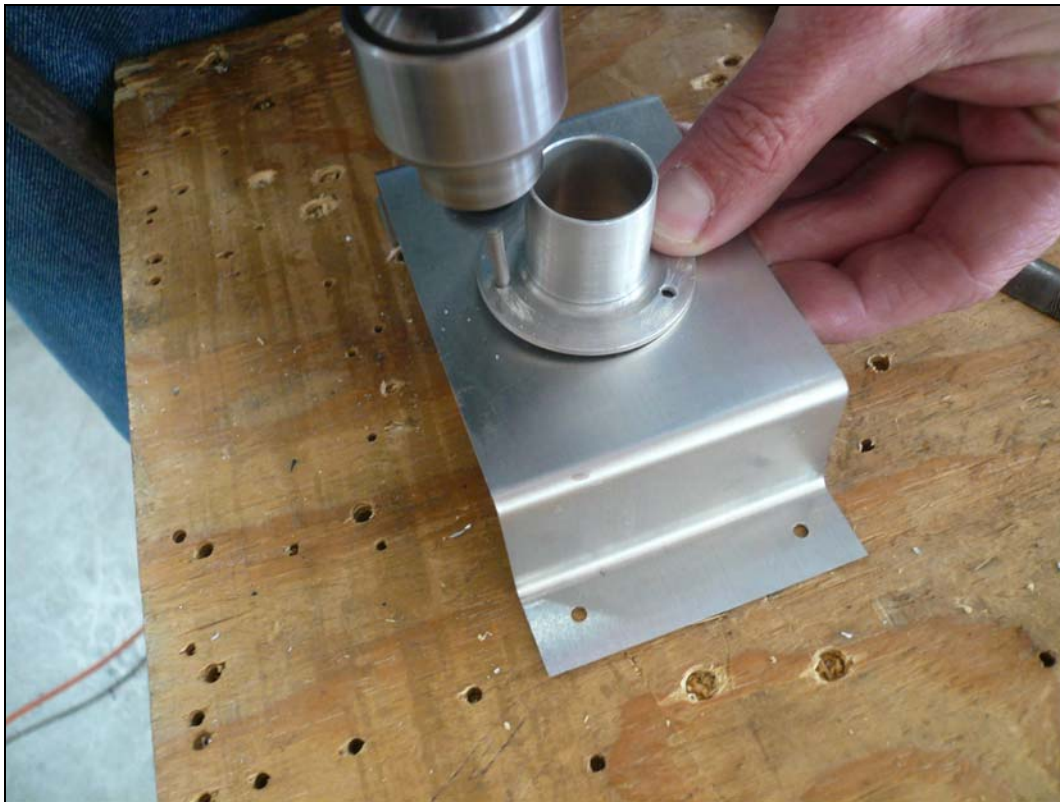
P/N: ULVRB
Voltage Regulator
Cooling Bracket

Center the opening of the Voltage Regulator Cooling Bracket over the Regulator/Rectifier and clamp the Cooling Bracket to the Mounting Plate. Use a #30 drill bit to back drill through the Cooling Bracket into the Mounting Plate and cleco.

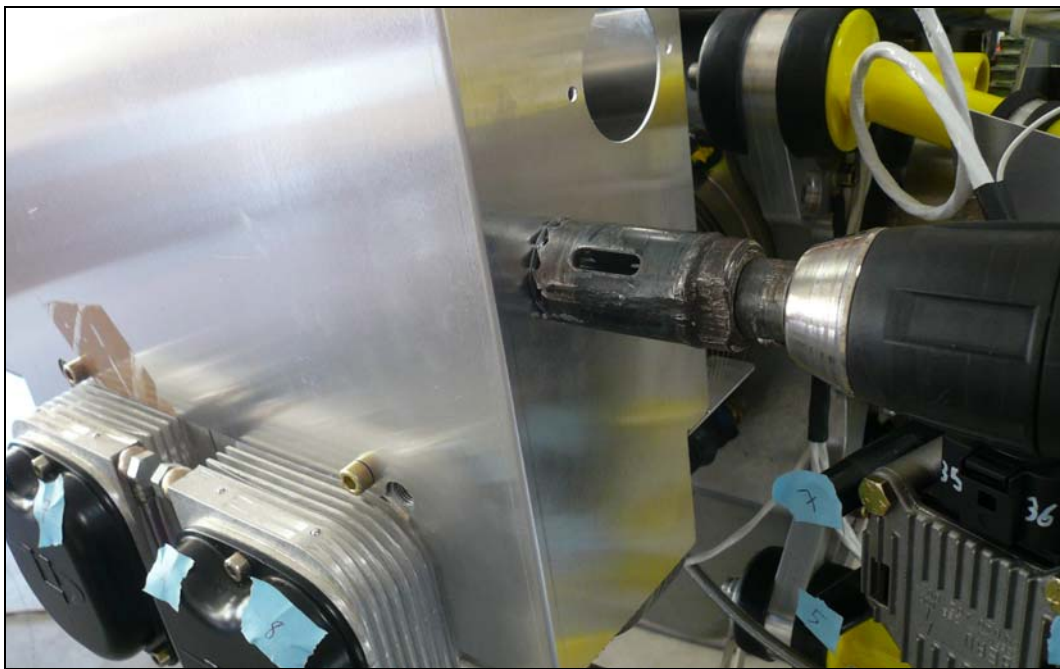


P/N: 10350-4
1" Aluminum Flange

Use a #30 drill bit to drill three evenly spaced holes in the flange of the 1" Aluminum Flange.



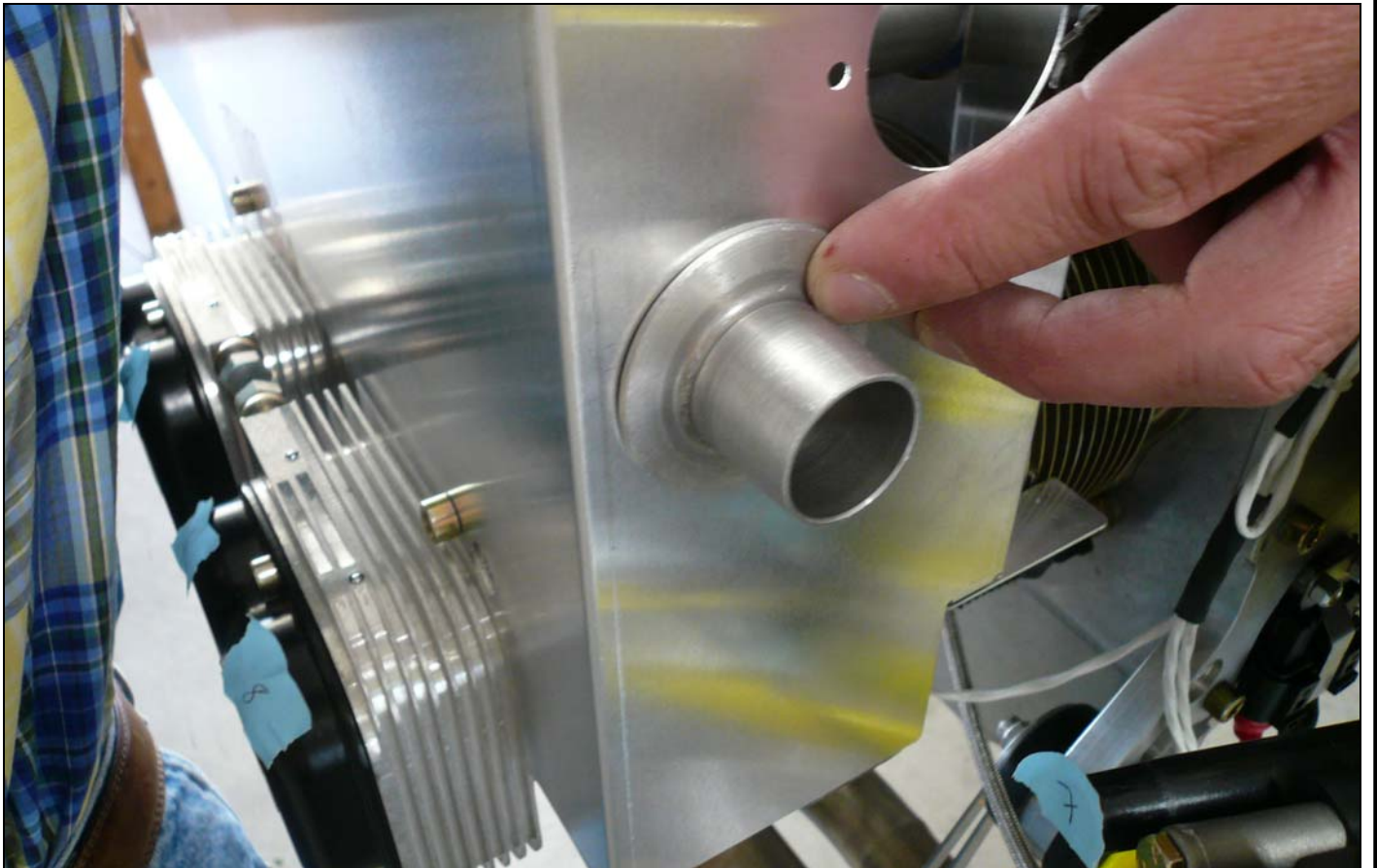
Remove the Voltage Regulator Cooling Bracket from the Mounting Plate. Center the 1" Aluminum Flange on the hole. Use a #30 drill bit to back drill through the Flange into the Cooling Bracket and Cleco. Deburr the holes on the Flange, Cooling Bracket, and the Mounting Plate. Rivet the Flange to the Cooling Bracket using three rivets A4.



Mark a hole location on the Pilot side Air Box 30mm from the outboard side and 135mm up from the bottom of the Air Box. Use a #30 drill bit to drill a hole on the mark. Use a 1" hole saw to cut a hole in the back of the Air Box. Use a half round file to clean up the edges of the hole.



Use a #40 drill bit to drill three evenly spaced holes around the flange of a 1" Aluminum Flange.

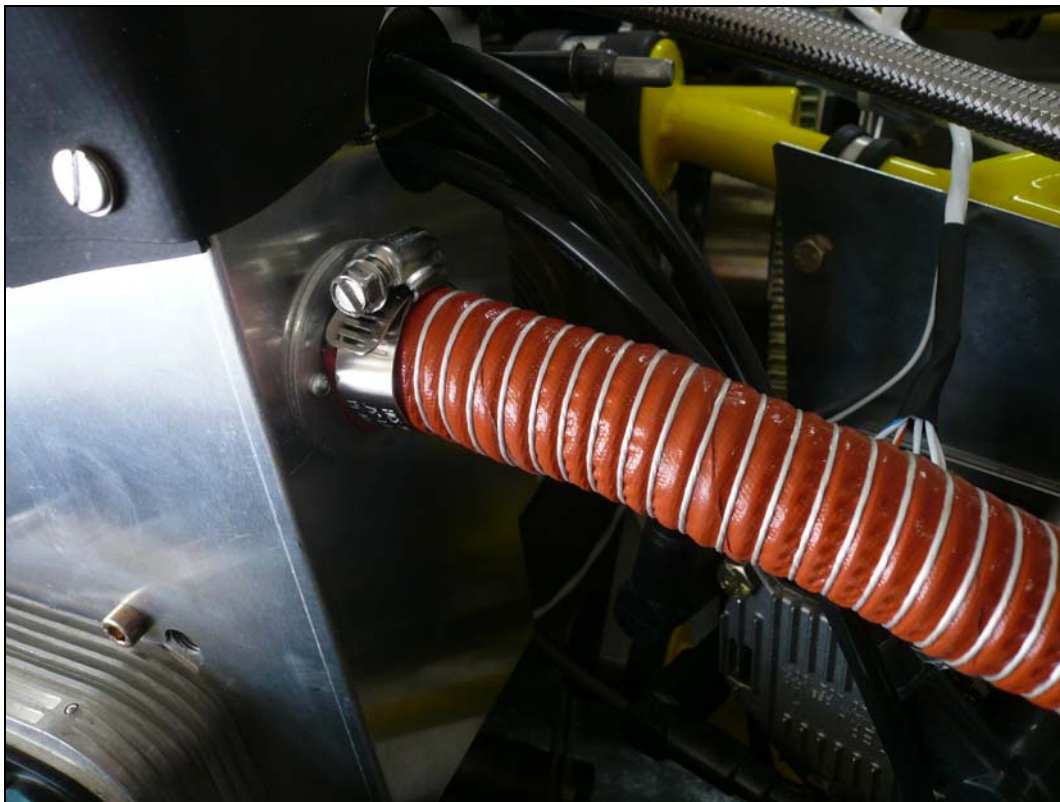


Center the 1" Flange over the hole in the Air Box. Use a #40 drill to back drill through the Flange into the Air Box and cleco. Expand the holes with a #30 drill bit. Deburr the holes and rivet the Flange to the Air Box.

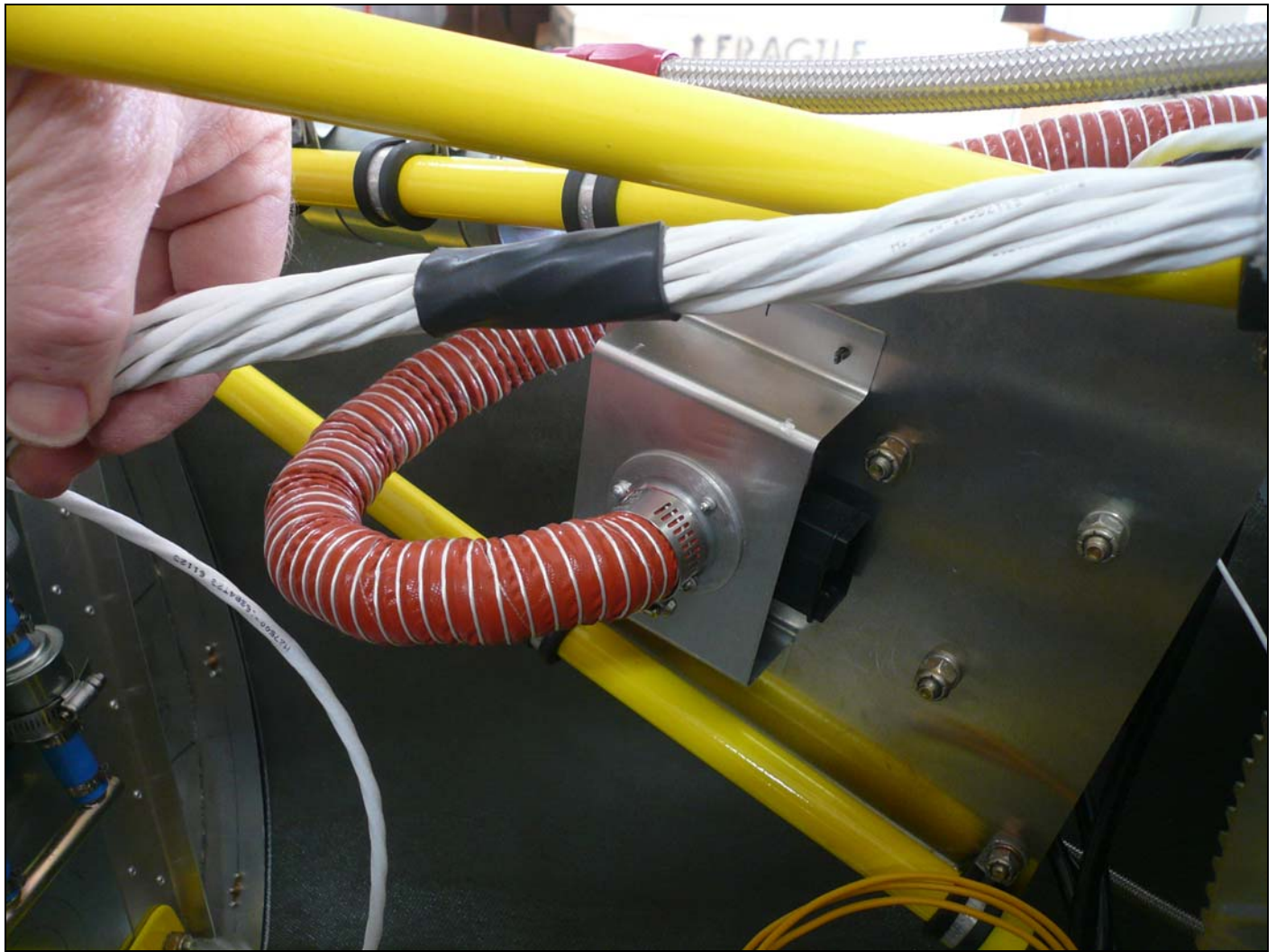


P/N: FHC5-16
1" Hose Clamps

P/N: SCAT 1
1" SCAT Hose



Attach the SCAT Hose to the Flange on the Air Box and tighten the Hose Clamp. Mark a line on the excess of the Hose Clamp. Remove and trim the Clamp on the line. Use a file to clean up the edges. Reinstall the Clamp on the SCAT Hose.



Route the SCAT Hose around to the Flange on the Voltage Regulator Cooling Bracket. Tighten the clamp on the Flange and mark a line to trim off the excess from the Clamp. Remove the Clamp and trim along the line. Use a file to clean up the trimmed edges. Reinstall the SCAT Hose and Clamp and tighten the Clamp.