

# **Section 19**

## **Heat Shielding and Muffler**

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**Procedures covered in this section:**

Construct, fit and install heat shielding; fabricate muffler straps and install muffler.

**Cards used in this section:**

E24 CARD 1T                    E30 CARD 1T  
E24 CARD 3T                    E42 CARD 1T

**Prints used in this section:**

E25-2000                    E30-2000

**Templates used in this section:**

E24-1                    E30-1

**Tools required for this section:**

Air or electric drill            Metal cutting snips            Scissors  
Cleco                    Pliers  
Cleco pliers                    Pop rivet gun

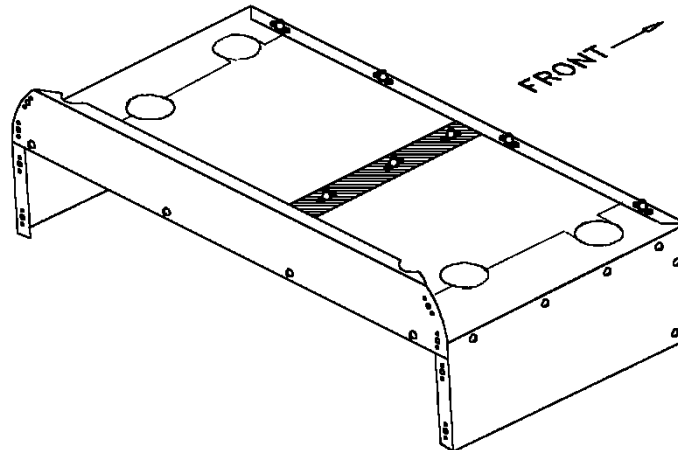
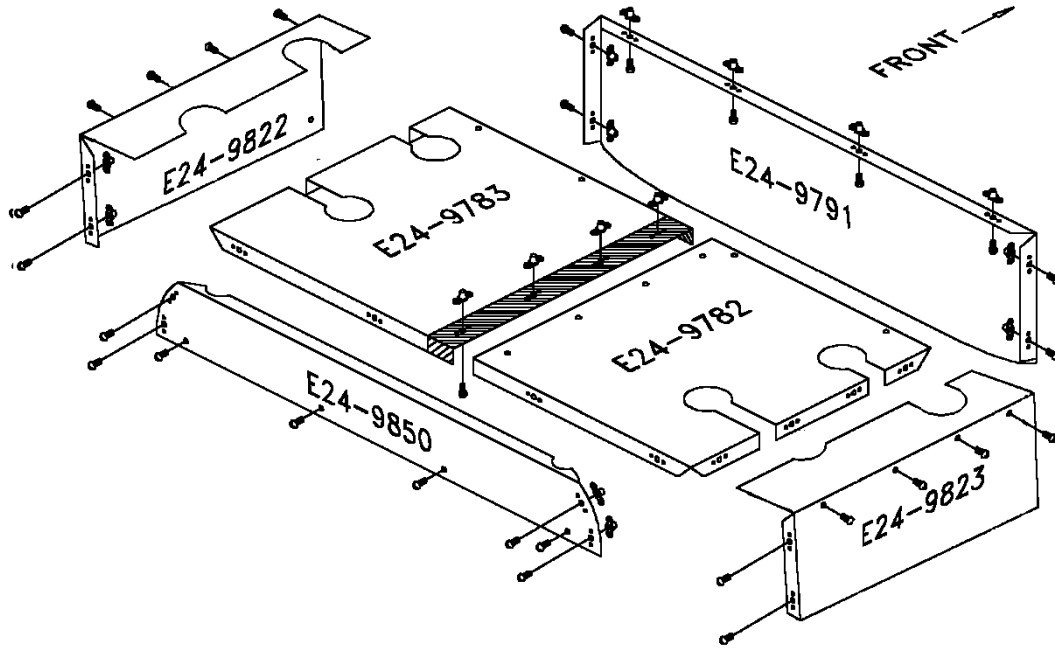
Drill bits of the following sizes: 3/32", 1/8", 3/16", #19, #40

**Notes:**

1. HEAT SHIELDING. All of the shielding should fit tightly and have a minimum of air gaps between the fuselage, radiator and exhaust pipes. However, leave 1/8" to 3/16" around the exhaust pipes to allow for movement during operation.

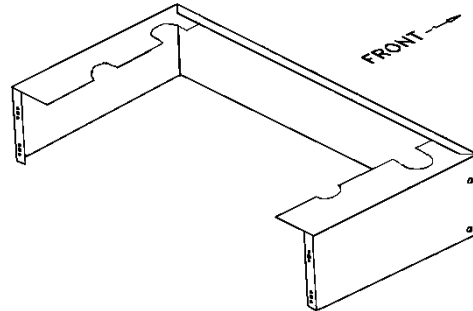
The aluminum heat shielding and the fiberglass shroud are long on the bottom and must be trimmed to match the contour of the lower body panels. To achieve the proper fit, hang each panel by installing a cleco through the upper front hole and through the matching hole in the tub. Then hang the rear of the panel from the tail boom. Mark the points of contact along the shielding and shroud. After the initial rough cut, trim a little at a time, gradually adjusting the rear of the panel closer to the tail boom.

Overview of the exhaust heat shielding, after cutting and bending (top) and fully assembled (bottom). See templates E24-1 and E30-2. Locate the fasteners as shown. Screws should be installed in the direction shown for easier access after the assembly is complete. Do not cut any exhaust holes from templates. These holes are not exact, they are only an example. Exhaust holes will be cut when installing heat shield on radiator shroud.



**Photo #1**

Assemble the front and two sides together. Install panels on radiator shroud, side panels will have to be trimmed for exhaust pipes. Once side panel exhaust holes are located and trimmed, remove assembly from shroud and install both top pieces. Trim exhaust holes in top pieces.



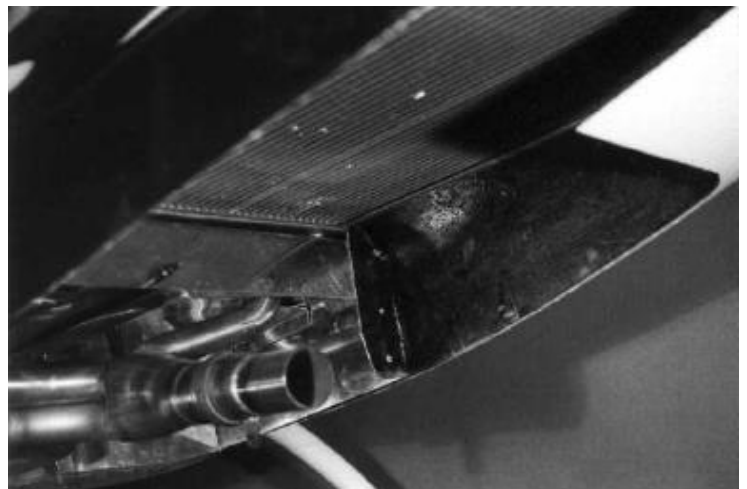
**Photo #2**

The front panel of the exhaust heat shield should be flush with an imaginary line extended from the fiberglass tub.



**Photo #3**

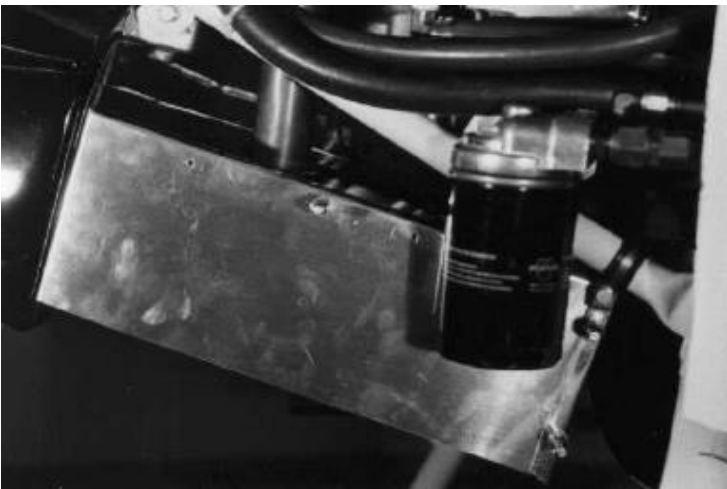
The bottom edge of the heat shielding and the fan shroud should fit within 1/8" of the body panels when trimmed properly.





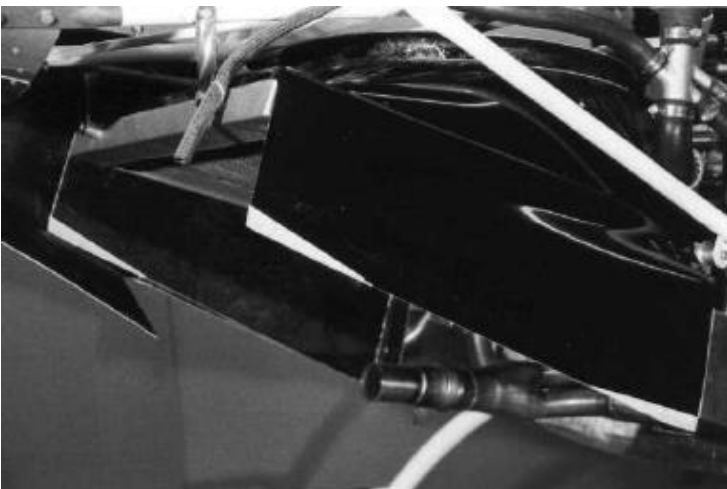
**Photo #4**

Attach the rear of the heat shielding to the front of the shroud with screws. Attach the front of the heat shield to the tail boom support tubes with the aluminum straps and 1" cushioned loop clamps. E24 CARD 1T and E30 CARD 1T.



**Photo #5**

View from passenger side.



**Photo #6**

Tape indicates the areas that require the most trim work to match the lower panels.

**Photo #7**

View of trimmed and fitted heat shield and shroud. (The radiator rear shield is shown held by clecos).



**Photo #8**

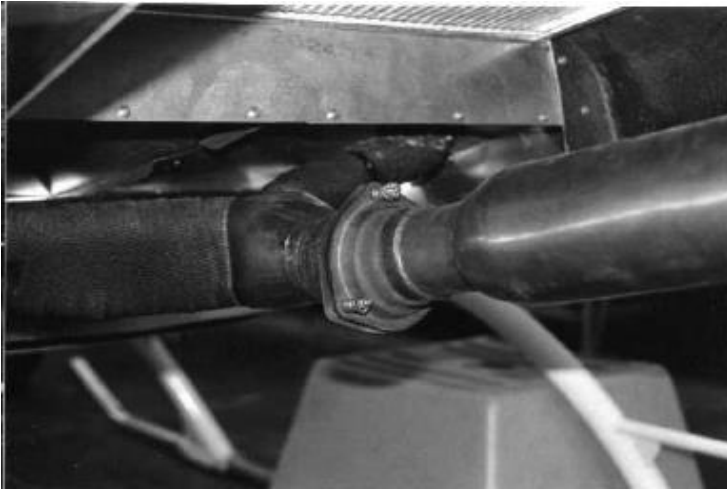
Make and install the heat shields that fit between the top of the exhaust pipes and the fuel tanks. (See template E24-1.)



**Photo #9**

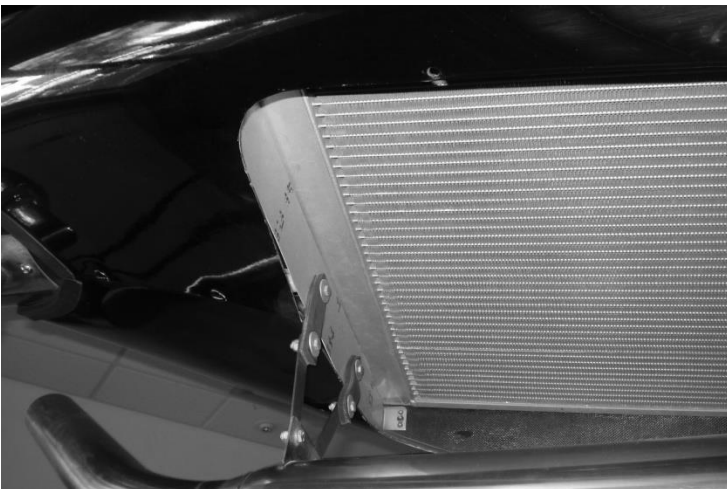
Fabricate the muffler straps as shown on print E25-2000. Use rubber straps between the upper and lower steel straps. Bolt the upper straps to the back of the radiator. E24 CARD 1T and E24 CARD 3T.





**Photo #10**

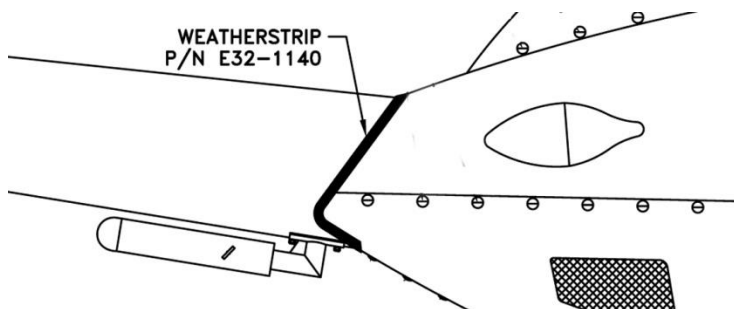
Install the bolts, springs and nuts on the exhaust swivel. Secure the nuts with cotter pins.



**Photo #11**

Trim fiberglass around aft end to meet sheet metal.

Note: This will have to be done at the same time that you trim the fiberglass around the boom. Add E-channel and install dzus buttons between lower panels. **All these steps should wait until fuel tanks are installed (See Section 20).**



**Photo #12**

Photo shows the E-channel weather strip around the boom. E32-1140 found on E32 CARD 2T.