

Heater for Europa XS

Some years ago I installed a flapper door that would allow me to bleed the hot air from the radiators, directly back into the cockpit using standard off the shelf items. Since the heat is from a fresh air source, it is nearly impossible to have a carbon monoxide intrusion problem so it passed my safety concerns.

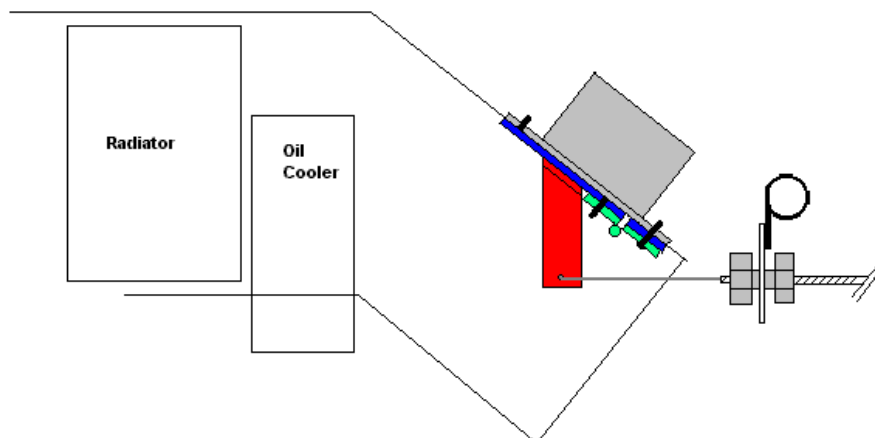
The radiators at cruise in a 914 on a summer day at 10,000 feet run about 180 to 220F depending upon OAT. This heater is designed to take the chill off the feet and legs and normally on a cloudy day it will keep the cockpit toasty enough to cruise in your Florida T shirt and shorts at a balmy 75F cockpit temp with an OAT of 55F. However, some cockpit ventilation may still be necessary as it may tend to overheat the pilot and be pressed to keep a thin beautiful lady next to you in sandals and shorts, comfortable.

In the far north, this heater will barely keep the cockpit above freezing. In the far north to fly on a zero degree day, an engine/cowl heater will be necessary to crank the engine, and the pilot and passengers should be in suitable dress for the elements so cockpit heat will not need to be that great. The radiator cores are normally running at barely 160 degrees and tape or an inlet shutter may be needed. But a shutter on the front side of the radiators will reduce air flow so a fan may be necessary to force the heated air into the cockpit.

Typically I put a 2 inch hole in the back of the duct, a door and opening mechanism, and a T shaped tube in each footwell connected by SCAT or SCEET tubing for plumbing as indicated in the drawings.

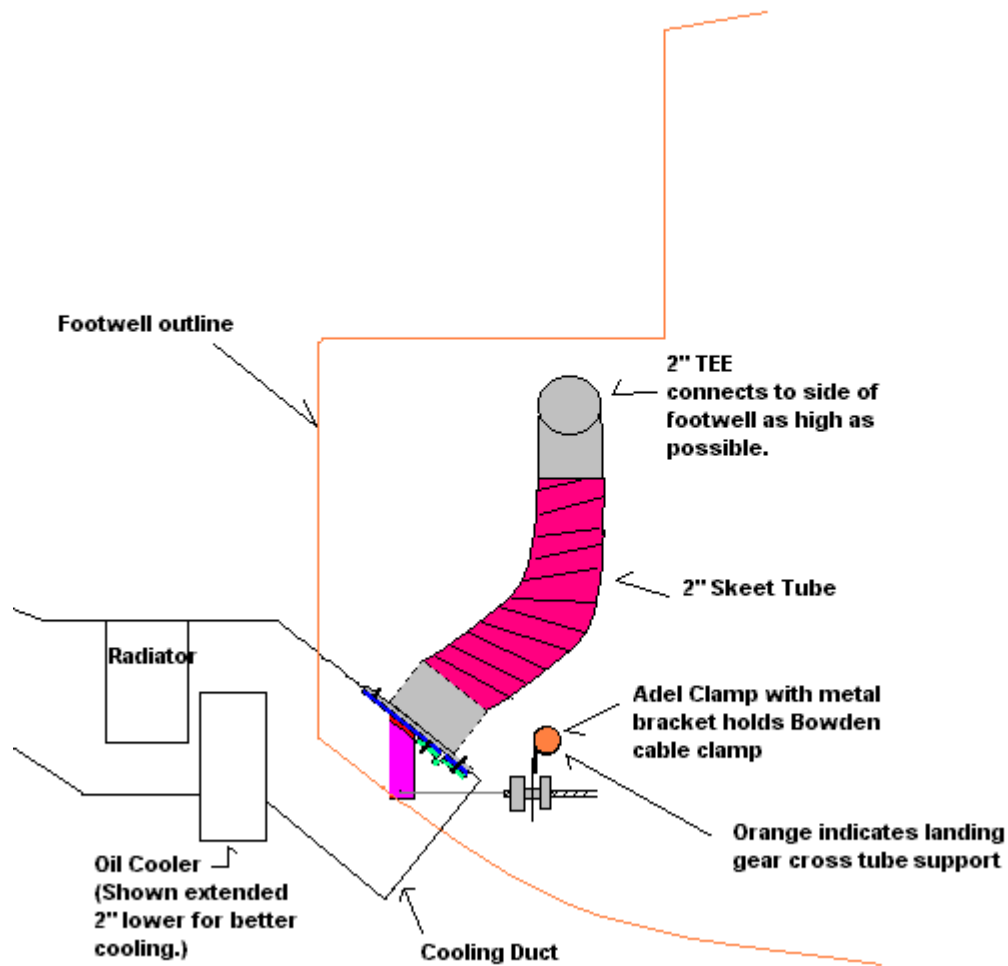


Here are some drawings and parts lists:



Materials List

1 2" Aluminum Flang	PH 08 04135
2 2" Aluminum Flang Duct	PH 08 04140
4' 2" Skeet Tube	PH 05 30608
2 #16 Adel Clamps	DG 16
1 A-700 Button Lock Dash Control	PH 05-13272
1 Bowden Cable Clamp	PH 05 15500
1 1 Square foot .063 Aluminum sheet	2024T-3 preferred
3" 1" wide aluminum hinge	MS20001P3 or P4 typical
3/32" and 1/8" countersunk rivets	Cherry MSP 32 and 44



I prefer to make my flapper door as far forward as possible to clear mono firewalls and get the flap/door lip as close to the oil cooler as possible. I also prefer to put a couple of side curtains of sheet metal to direct as much heated air as possible into the 2 inch duct.

This mod is retrofittable to either the XS Mono or Trigear with only a few holes needed in the aircraft. Do not skimp on the control cable. Use a locking cable to hold the door exactly where you want it. Drill your two inch holes into the footwell sides between the two V shaped engine mount tubes.

Pay attention to your manufacture of the flap as it must seal tightly, or you will cook in the summer.

Bud Yerly
 Custom Flight Creations, Inc.