

Hoses, Instrument Panels, Custom Products and Accessories

FOR EXPERIMENTAL AIRCRAFT



Thank you for purchasing your Rotax 912 Thermostasis Install Kit. Please note that these directions are updated periodically as required and the current version will always be located on our website.

These instructions are meant to serve as a guide for the installation of the aftermarket thermostasis kit with directions specific to an RV-12 installation. However, we currently have installation kits for multiple aircraft, and pictures are included at the end of this document showing the routing and installation of the kit on other aircraft. However, if you have any questions, please contact us so that we can assist you with your installation. If your aircraft is not listed, this kit is adaptable, and we will be happy to work with you to create a custom kit that fits for you.

Let's take a look at the components that make up this kit.

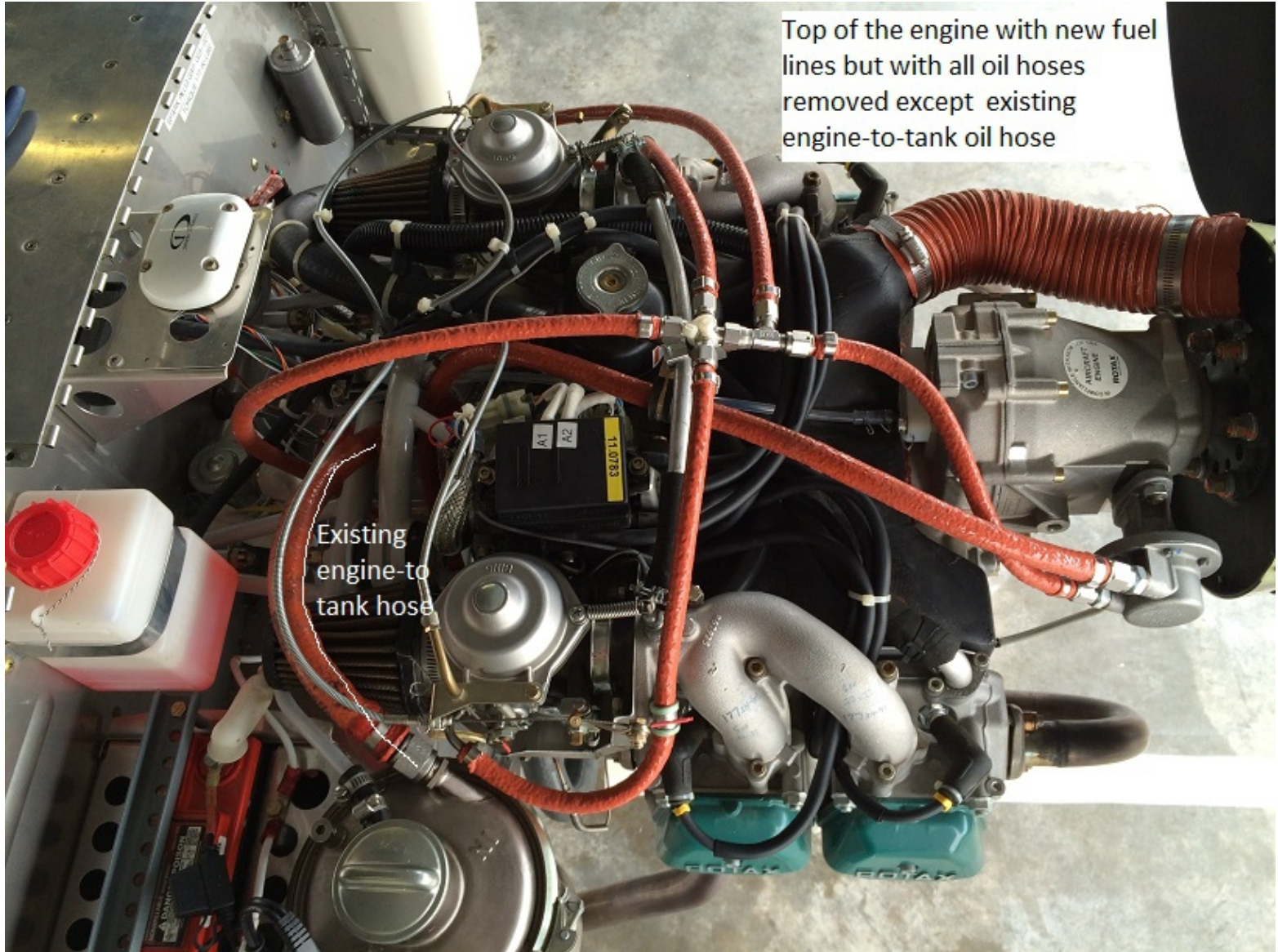
- 1. Thermostasis Unit (190 degree Thermostasis Unit as recommended for the Rotax 912 engine)**
- 2. AN fittings for the thermostasis unit. There are three -8 Straight Fittings, and 1 -8 90 degree fitting. (FOR THE RV-12...other aircraft may use other fittings)**
- 3. 4 oil lines for Thermostasis installation (Description of hoses for the RV-12)**
 1. Hose 1: Thermostasis to oil tank – Shortest of the hoses with a 90/str fitting
 2. Hose 2: Thermostasis to oil pump- Only hose with two straight fittings
 3. Hose 3: Thermostasis to pilot side of oil cooler – Medium length hose with 90/str fittings
 4. Hose 4: Thermostasis to copilot side of oil cooler – Longest hose with 90/str fittings

PLEASE NOTE: A COPY OF THE THERMOSTASIS SPECIFIC DIRECTIONS ARE ATTACHED TO THE LAST PAGE OF THIS DOCUMENT.

Tools required for installation:

1. Wrench Set

Step 1: Please remove all oil hoses except for the existing engine to oil tank hose shown in this picture.

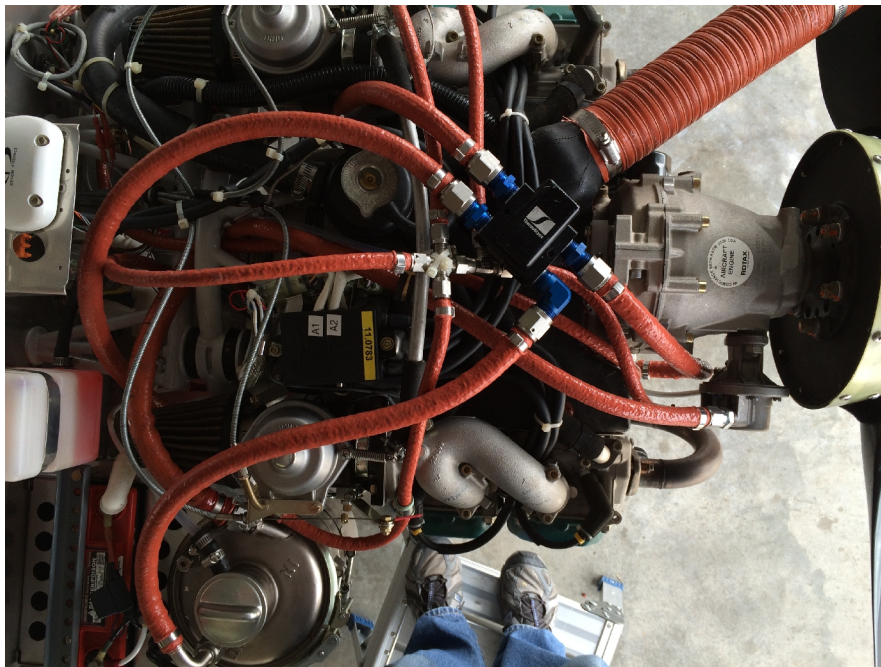


Step 2:

Please install included blue AN fittings into your thermostasis unit. Please note that the thermostasis unit will take straight fittings in 3 of the 4 ports. The port that utilizes the 90 degree fitting is the port on the copilot side toward the firewall of the aircraft. Please also note that although the thermostasis unit is “bi-directional”, thermostasis does recommend that the “top” fitting when viewed from the front is the one that goes to the oil pump. They did tell us verbally that if it is installed incorrectly, it won't affect performance but will make the temperatures off by a few degrees, which is no big deal.



Please utilize an oil proof thread sealant such as permatex with these Fittings.

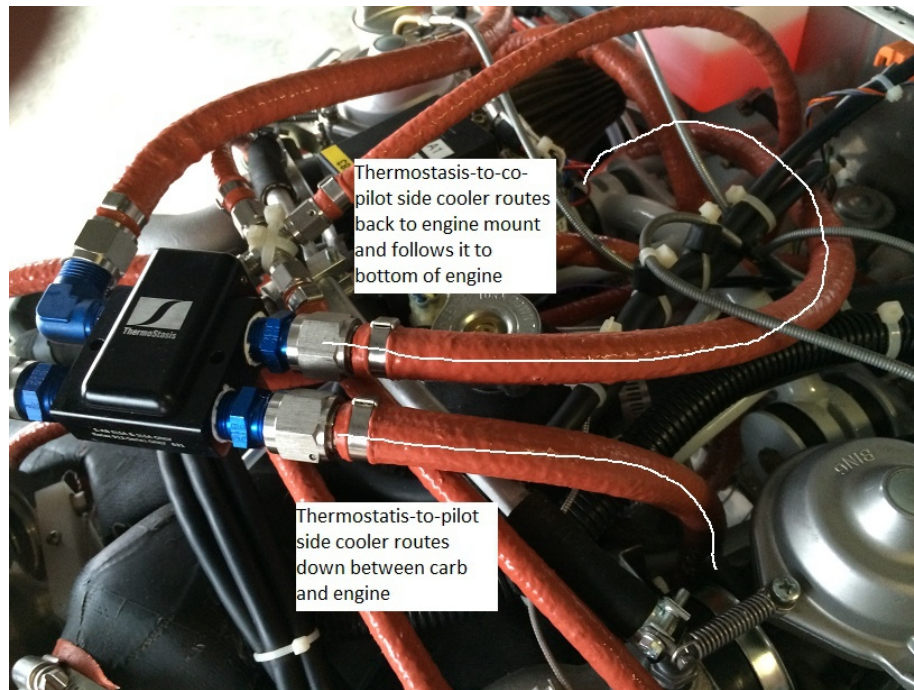
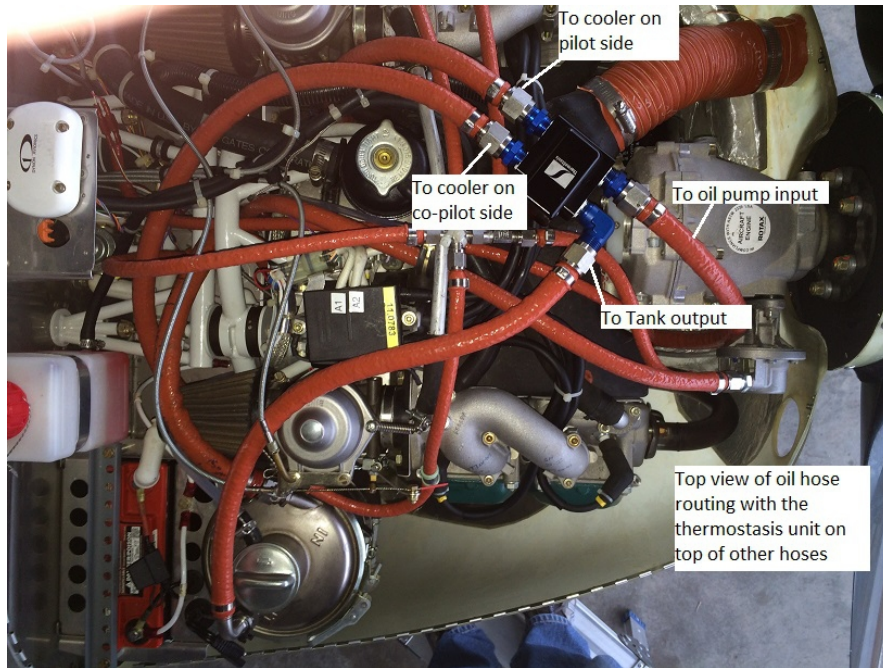


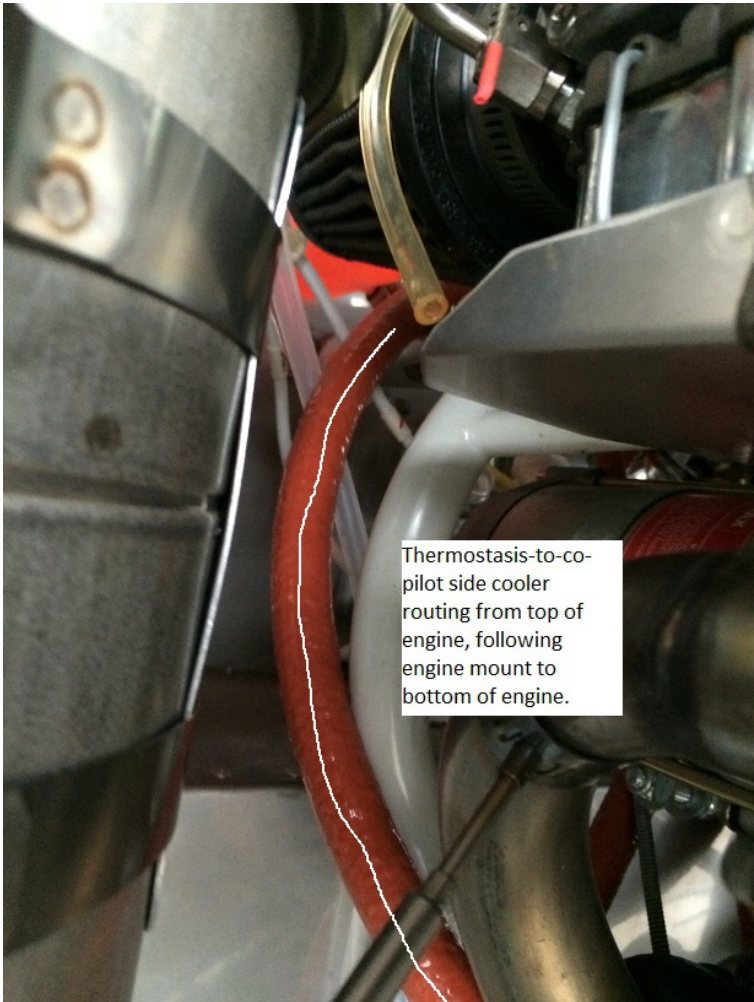
Step 3:

Please utilize the following pictures which show the routings of the oil thermostasis lines. Please note that if you have the stock Vans fuel lines, this unit fits best on top of the fuel lines. If you also have the 912 Teflon Fuel Line retrofit kit, this unit will fit either on top of or underneath the fuel lines, although underneath the fuel lines seems to be the preferred routing.

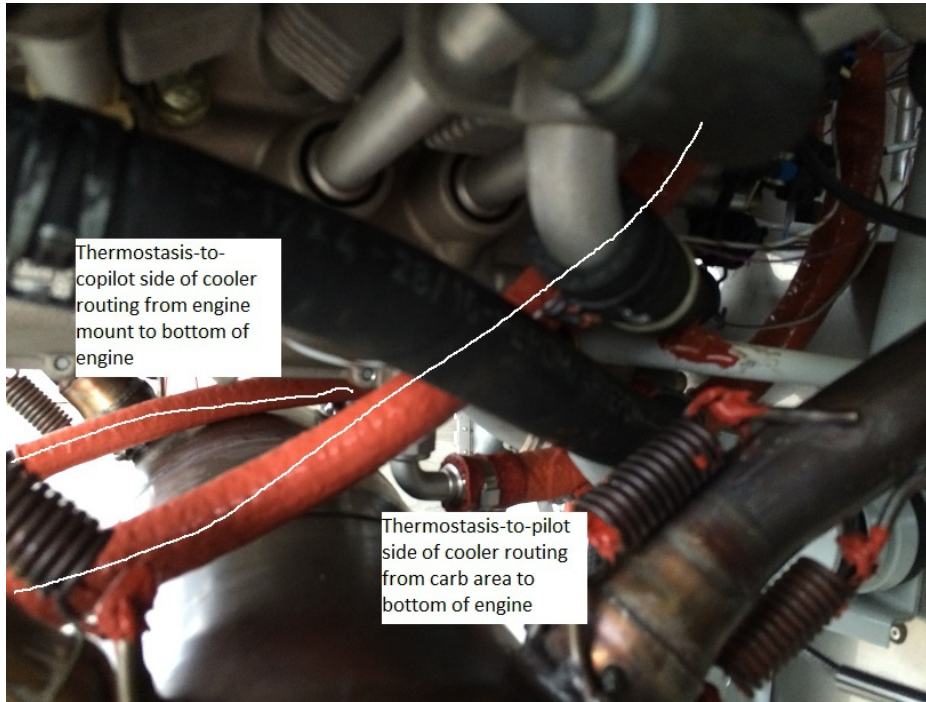
Also, please note that the line from the thermostasis to the oil pump has shipped in two different configurations. One configuration has a straight fitting on the thermostasis and a 90 elbow at the pump and drops down next to the gearbox. The other configuration has two straight fittings and makes a large loop. That is the current and final configuration that is shipping. If you have the other configuration it will also work well, but we decided on the loop in order to have a slightly longer hose with more play and to make the install a bit easier.

If one of the pictures is unclear and you have questions on the routing, please feel free to contact us and we will be happy to help you.





PLEASE NOTE THAT ON THE PICTURE BELOW THE HOSES HAVE NOT YET BEEN SECURED. PLEASE ENSURE THAT THE HOSES ARE SECURED SO THAT THEY DO NOT COME IN CONTACT WITH THE MUFFLER/EXHAUST SHROUD, OR ANY OTHER ENGINE COMPONENTS THAT THEY SHOULDN'T



PLEASE PAY PARTICULAR ATTENTION TO MAKE SURE THAT YOU HAVE HOSE CLEARANCE ON THE ENGINE PUSHRODS WHEN THE COWLING IS SECURED IN PLACE. You may need to pay close attention to the clocking of the fittings and the general fit in this area depending on how your cooler is installed.



Step 4:

Tighten all fittings and secure all hoses so that they are in safe locations and not touching/rubbing any engine components.

Step 5: Please make sure to purge any air out of the oil lines per Rotax Service Instruction SI-912-018

Step 6: Assemble a group of your closest friends. Have them standby with a fire extinguisher and marshmallows. Make sure you are on good terms with them. Please perform an engine run and a good leak check. Verify that all fittings are secure and torque sealed for verification. (Please note that with an un-cowled engine, your oil thermostat will not help your oil temperatures all that much. Once the cowling is re installed, the unit will be much more effective. (PLEASE SEE INSTALLATION NOTES BELOW FIRST)

Step 7:

Enjoy your hoses. Please know that they have a 10 year warranty on them. Also, if you choose to do a hose replacement at the 10 yr point or any point thereafter, we will give a 20% discount to you on your second set of hoses.

RV-12 SPECIFIC INSTALLATION NOTES AND HELPFUL TIPS:

1. Be very careful when pulling out the old hose that passes by the RPM pickup on the back of the engine, lest the metal band on the hose cut the insulation on the pickup.
2. Loosen the clamp that holds the oil tank in place and lower the tank as far as possible to allow maximum room for the hose that goes from the Tank to the Thermostasis unit.
3. Slightly bend the lip of the carburetor drip pan away from the new hose that goes from the Thermostasis unit to the cooler. This will minimize any chafing that will occur.
4. If doing a cowl off run up to check for leaks, temporarily secure the oil cooler with safety wire.

GENERAL INSTALLATION NOTES

1. Please read the Thermostasis manufacturer install directions in order to verify that your installation is correct.
2. Please make sure none of your hoses are rubbing on anything and make sure that they are fastened securely and safely.
3. Make sure that none of your hoses were kinked during the installation process.
4. You need to purge the system prior to use per Rotax manual.
5. Leak check your entire system prior to going flying.

HIGHLANDER THERMOSTASIS INSTALLATION

1. 4 hoses are included in the standard package, 5 in the optional package if you want to replace every hose in the oil system.

Hose 1 – Straight fitting on each end – Goes from thermostasis to left side of oil cooler

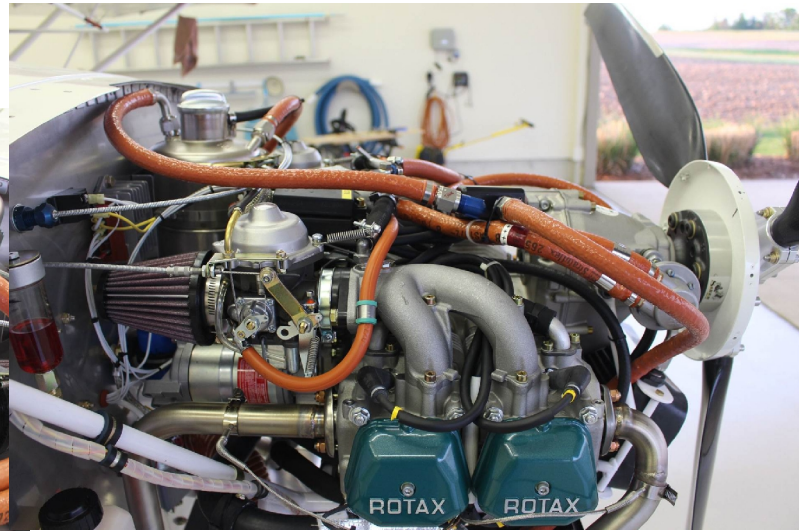
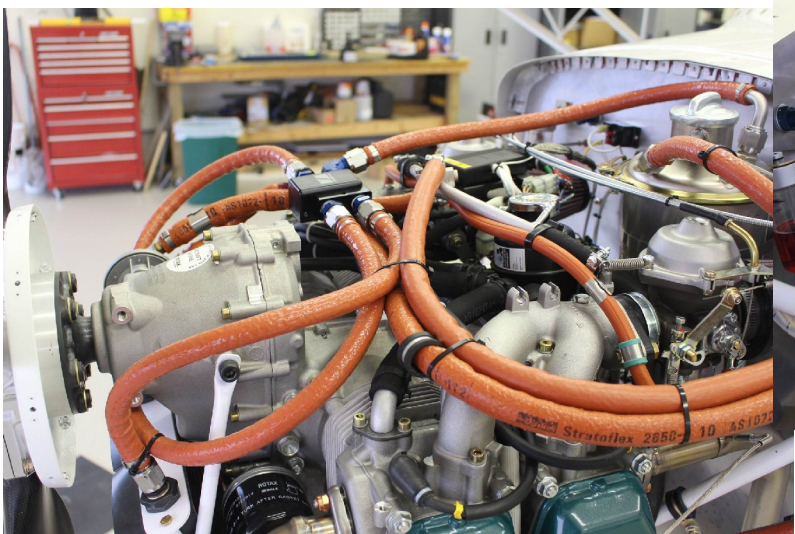
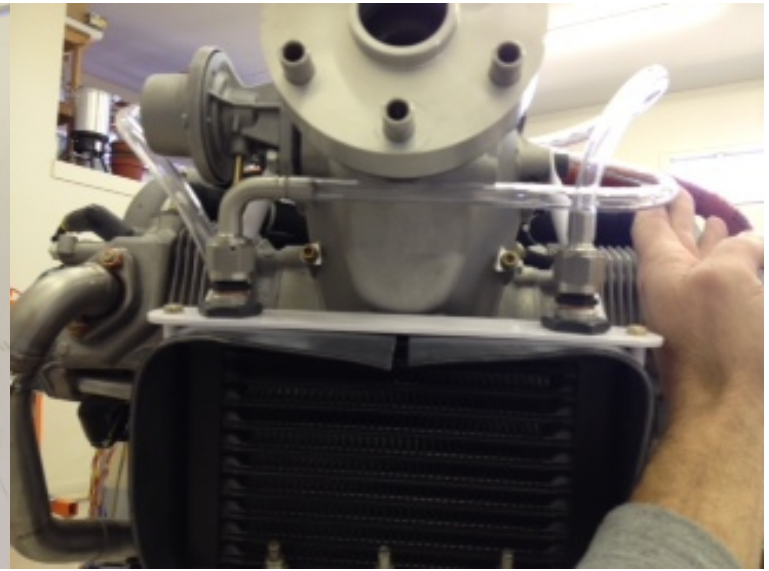
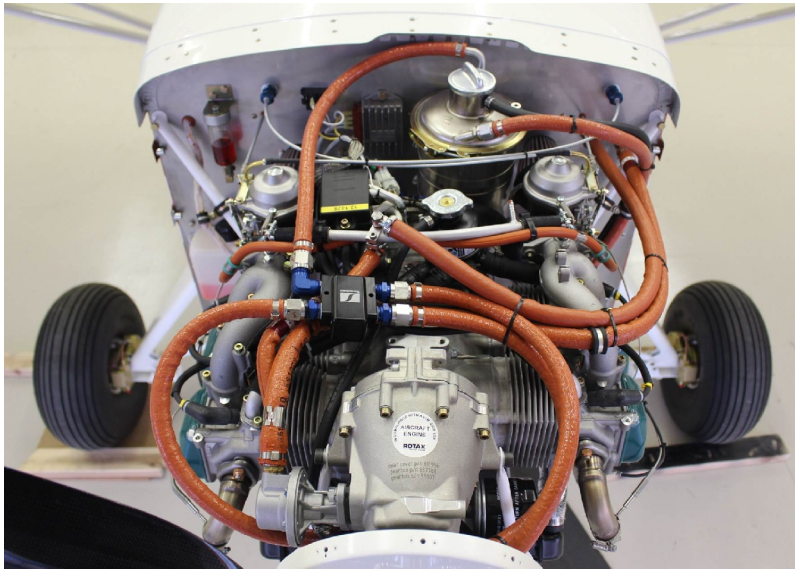
Hose 2- Shortest hose with a 90 on one end – Thermostasis to oil tank out

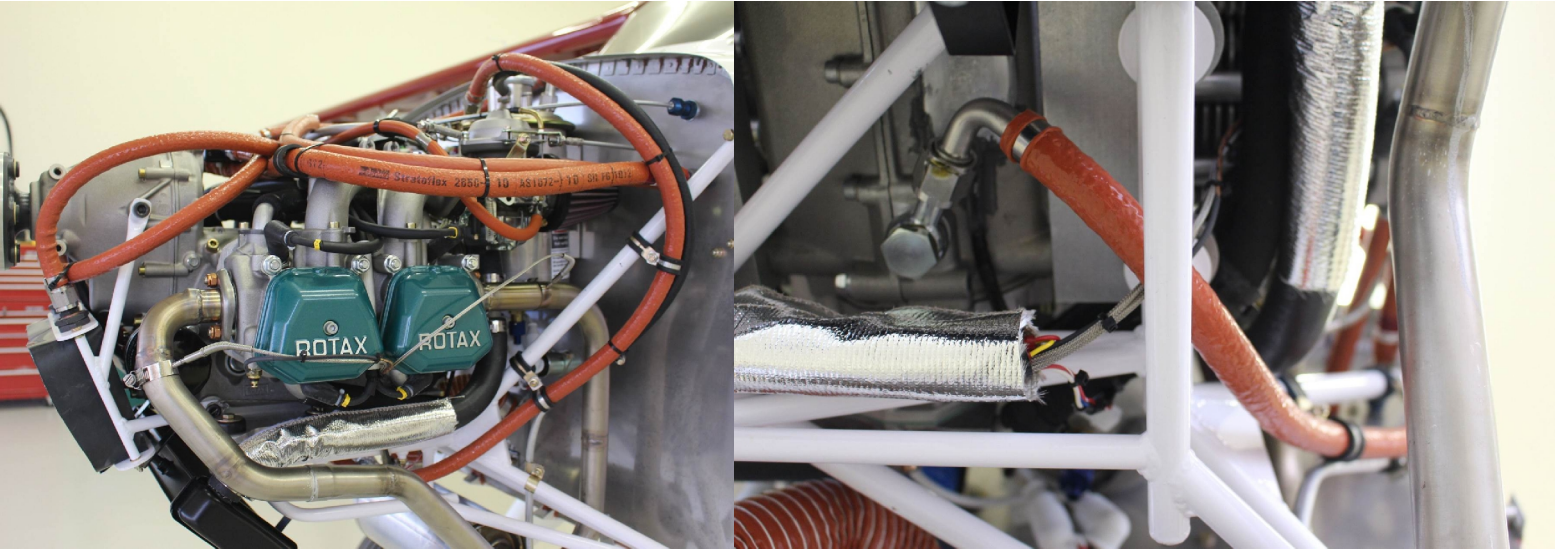
Hose 3- 2nd shortest with a 90 on one end – Thermostasis to oil pump

Hose 4- 3rd shortest with a 90 on one end – thermostasis to oil cooler right

Hose 5- Longest with a 90 on one end- Bottom of engine to oil tank (Optional hose)

Below are some pictures of the Highlander Installation





THE PICTURE ABOVE SHOWS THE OPTIONAL 5th HOSE

RANS S6 THERMOSTASIS INSTALLATION

4 hoses are included in the standard package. **VERY IMPORTANT: IF YOU HAVE A 90 DEGREE RIGID TUBE ASSMEMBLY RANS PART# KSPW0082 (Pictured in the s7 section of this manual), please contact us prior to ordering as the hose length will need to made differently.**

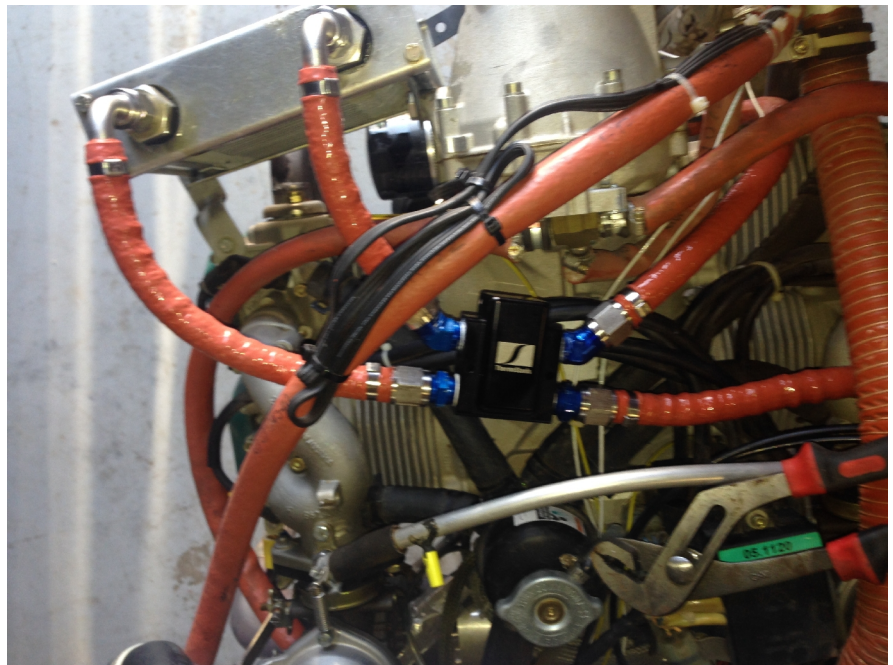
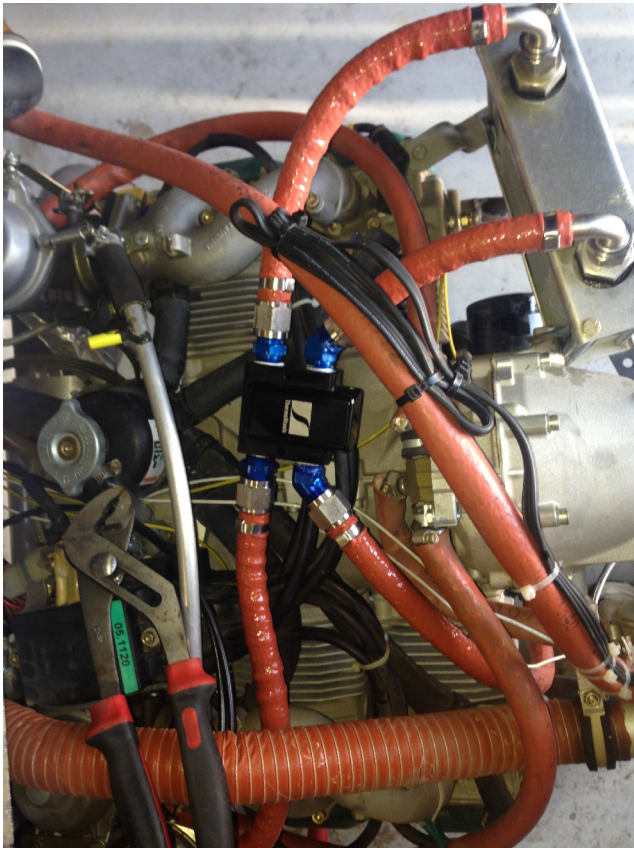
Hose 1 – Straight fitting on each end – Oil Pump to Thermostasis

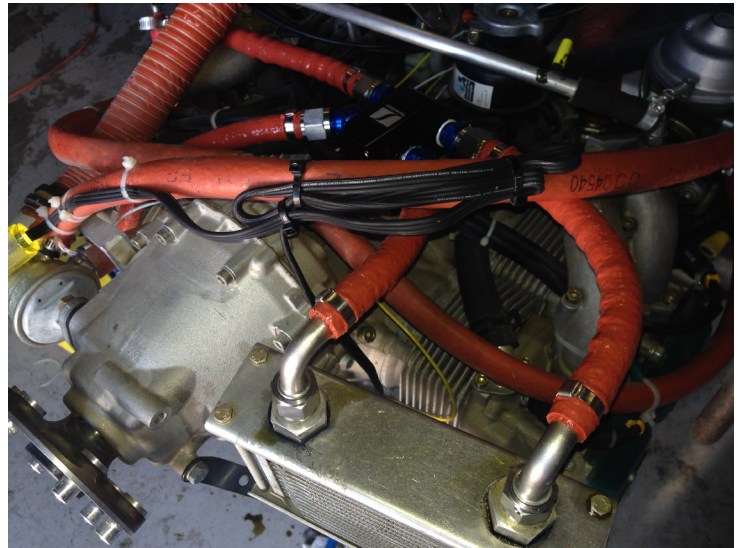
Hose 2- Shortest hose with a 90 on one end – Thermostasis to cooler right

Hose 3- 2nd shortest with a 90 on one end – Thermostasis to cooler left

Hose 4- Longest with a 90 one one end – Thermostasis to oil tank

Below are some pictures of the S6 Installation





RANS S7 THERMOSTASIS INSTALLATION

4 hoses are included in the standard package.

Hose 1 – Straight fitting on each end – Oil Pump to Thermostasis (Note that this attaches to a Rigid tube assembly that is supplied by RANS as part #KSPW0082. (If you don't have this part that is in the pictures below, let us know and we can adjust the kit for you.)

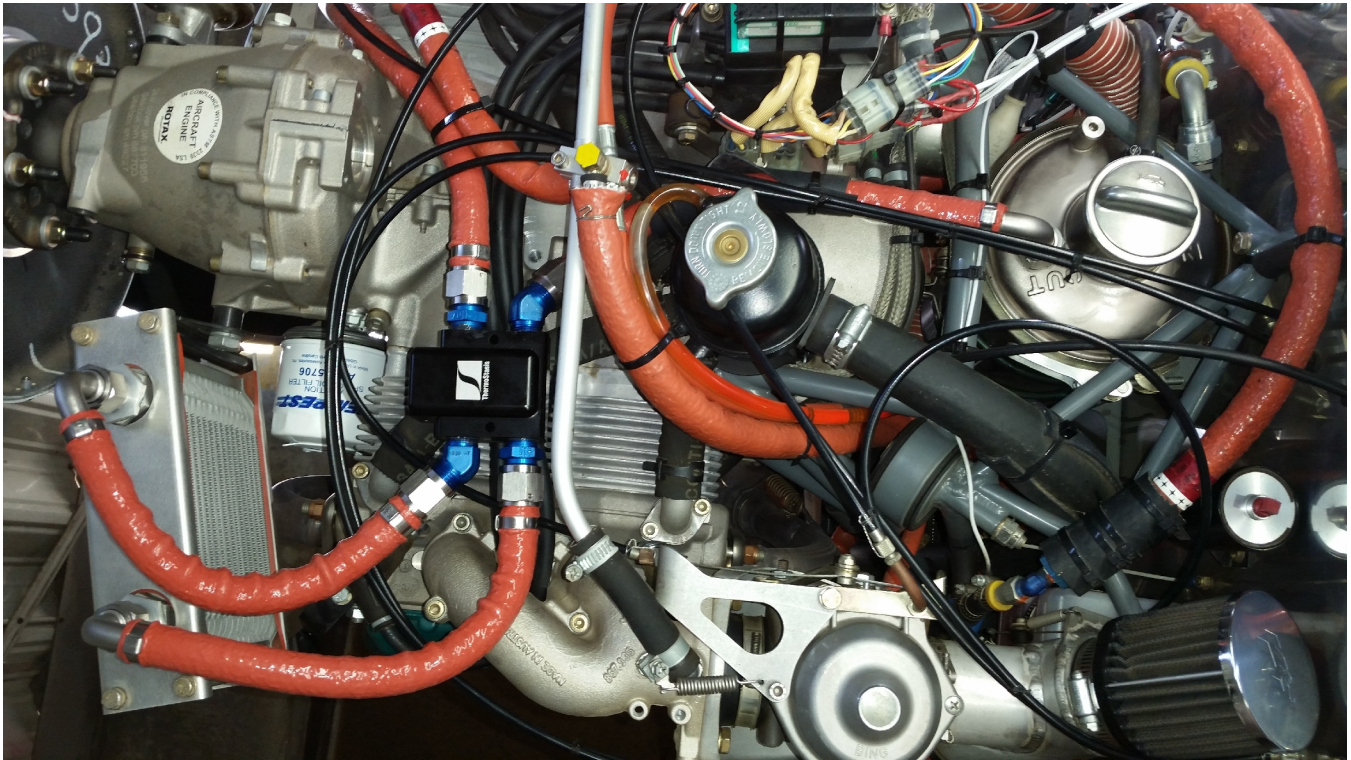
Hose 2- Shortest hose with a 90 on one end – Thermostasis to cooler right (inboard)

Hose 3- 2nd shortest with a 90 on one end – Thermostasis to cooler left (Outboard)

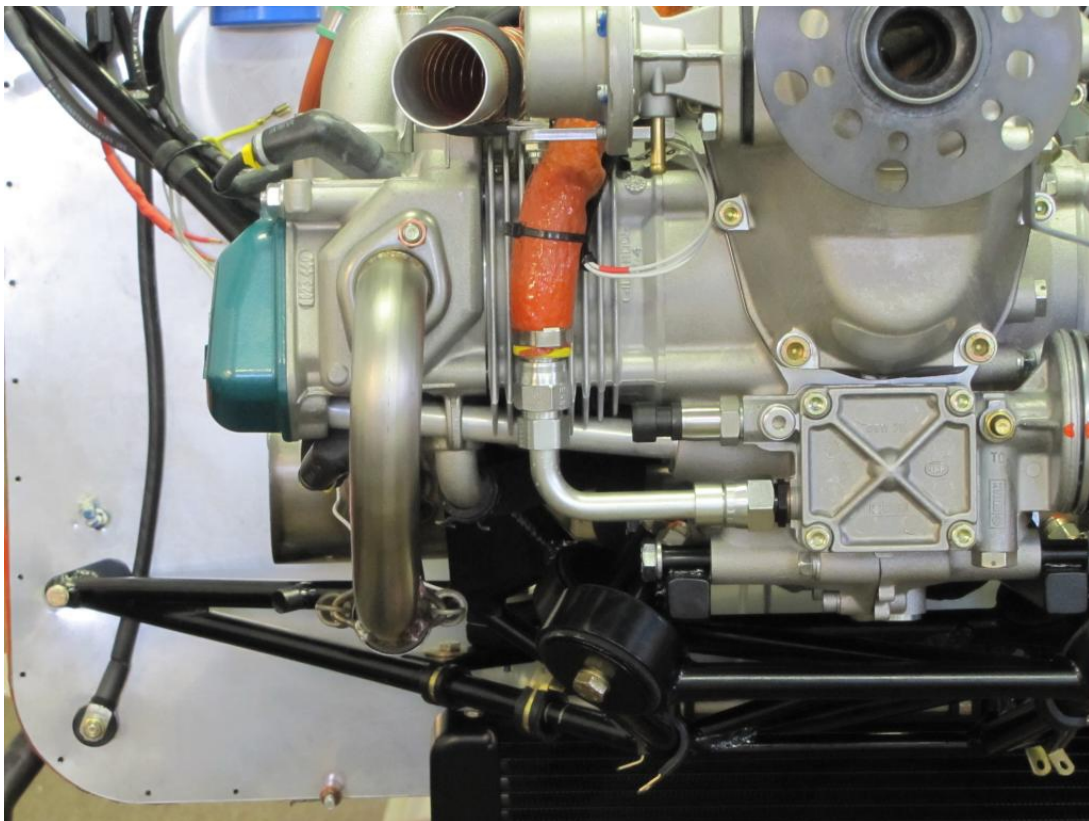
Hose 4- Longest with a 90 one one end – Thermostasis to oil tank

Below are some pictures of the S7 Installation





BELOW IS THE RANS ELBOW MENTIONED ABOVE....IF YOU DO NOT HAVE ONE, PLEASE CONTACT US SO WE CAN MAKE MODIFICATIONS TO YOUR KIT TO FIT YOUR AIRCRAFT.



ROTAX* OIL THERMOSTAT Installation Instructions

P6-H-190
190°F / 88°C



PLAN YOUR INSTALLATION

Before starting your installation, find a location for your oil thermostat away from moving parts and heat sources and where hoses can be installed with the minimum complexity of fittings and hose routing and without sharp bends. Determine whether you will attach the oil thermostat to a fixed mounting point or whether the oil thermostat can be supported by the oil hoses alone. (Do NOT attach your oil thermostat directly to the engine or gearbox). Obtain all required hose fittings, hose, hose clamps, Adel clamps (if used) and fasteners.

HOSE FITTINGS

Rotax SL-912-011 requires that hose fittings have a minimum I.D. of 9.0 mm (.354") and also that 90 degree fittings NOT be used UNLESS they are large radius fittings similar to Rotax part number 956 580. We recommend AN840 and AN844 fittings. These are aircraft-quality fittings that are not restrictive to oil flow:

- AN840-8D - straight aluminum fitting, 3/8"-NPT with 1/2" single hose barb
- AN844-8D - 45 degree aluminum fitting, 3/8"-NPT with 1/2" single hose barb



AN844-8D FITTING

THREAD SEALANT

The hose fittings must be installed with a thread sealant. We recommend Permatex 56521, Loctite 565 and Loctite 567, which are all high quality sealants with excellent solvent resistance.

OIL HOSE CONNECTIONS

The oil thermostat can be installed in any position or orientation, but do NOT bolt the oil thermostat directly to the engine or gearbox. The oil thermostat is bi-directional. i.e. the oil thermostat has no "left side" or "right side" and no "front" or "back". The oil hose connections and oil flow can be either left to right or right to left.

Connect the oil cooler to one side of the oil thermostat with oil flow TO the cooler connected to the BOTTOM port on one side of the oil thermostat and the return oil flow FROM the oil cooler connected to the TOP port on the SAME side of the oil thermostat.

On the other side of the oil thermostat, connect the incoming oil flow FROM the oil tank to the BOTTOM port and the return oil flow TO the oil pump to the TOP port



PURGING THE OIL CIRCUIT

After installing the oil thermostat it's essential to purge any air from the oil circuit before starting your engine. Please read and follow the procedure described in Rotax Service Instruction SI-912-018 – Purging Of Lubrication System For Rotax Engine Type 912 And 914 (Series).

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