



OIL COOLING SYSTEMS



MODEL RF-1

FITS FLH 1999-2008

MODEL RF-2

FITS FLH 2009-2012



Installation Guide

FAN ASSISTED



TECHNOLOGY

Welcome to UltraCool

We would like to thank you for making UltraCool your system of choice. We hope these instructions are helpful in assisting you with your installation. If you have any further questions regarding the installation process, please feel free to call us.

Important please read first

Please read through this entire installation process before you decide if you are capable of the installation. If you feel you are **not**, please call (831)630-1322 for a dealer in your area that can assist you.

Lets Get Started

Below you will find a list of parts required for installation. Please inventory all parts are in this kit before you start the installation process. If you find any part is missing call us as soon as possible. Also listed is a tool requirement for installation. Please make sure these are available to you.

Tools Required

5/32" Allen wrench
7/16" Open end wrench
11/16" Open end wrench
27 # Torx
3/8" Ratchet
3/8" Extention
1" Deep socket
Power Drill
5/16" Drill bit
Wire strippers
Oil filter wrench
Torque wrench (optional)
Bike Lift (optional)

Installation Parts

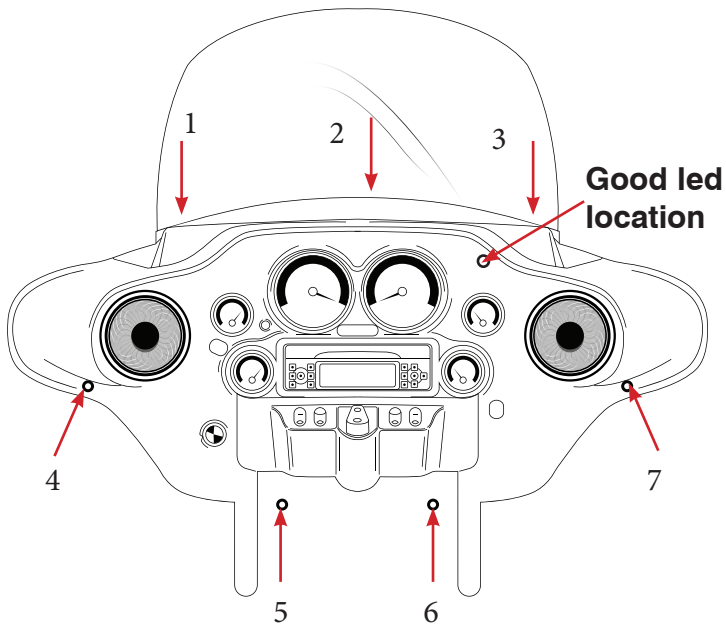
Complete Fan assembly
2-15" Braided oil lines
Steel mounting bracket
Aluminum oil adapter unit
Small Parts bag

Small Parts Bag

L.E.D. Light
Fuse Holder
Fitting Wrench
Spade Connector
Butt Connectors
Tie Straps

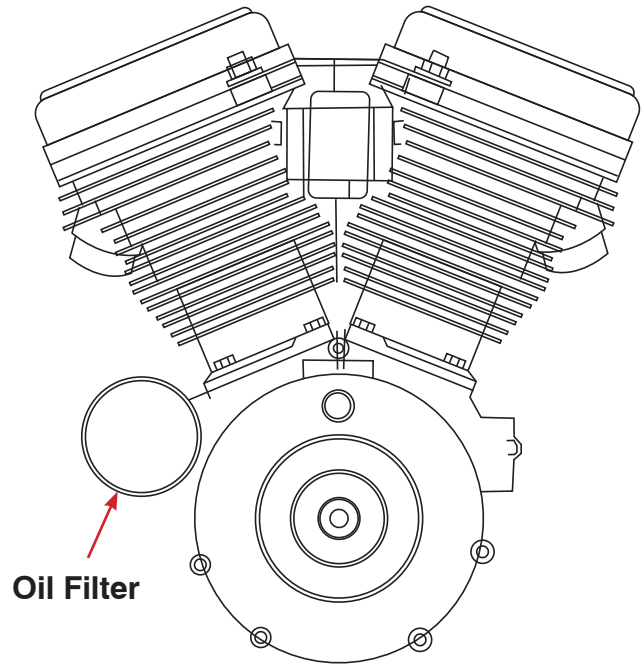
Step 1: Mounting the L.E.D.

Remove the (7) torx bolts holding on the fairing. Disconnect the headlight and set the front fairing to the side. Sit on your bike and find a good location for the L.E.D. light. Drill a 5/16" hole and remove the nut from the back of the L.E.D., and run the wires through the fairing from the dash. Secure it with the nut.



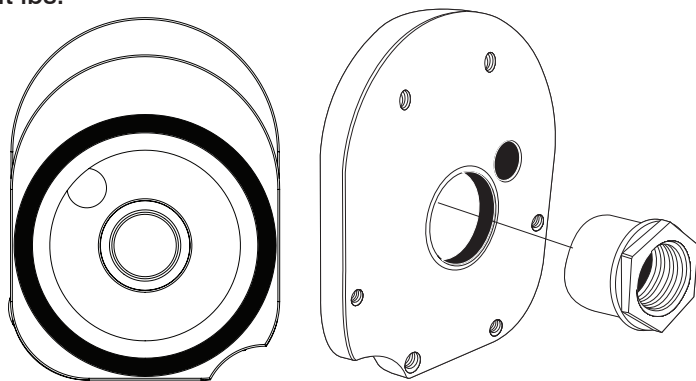
Step 2: Remove oil filter

Remove the oil filter. The mating surface needs to be clean and oil free before you move on to step 3.



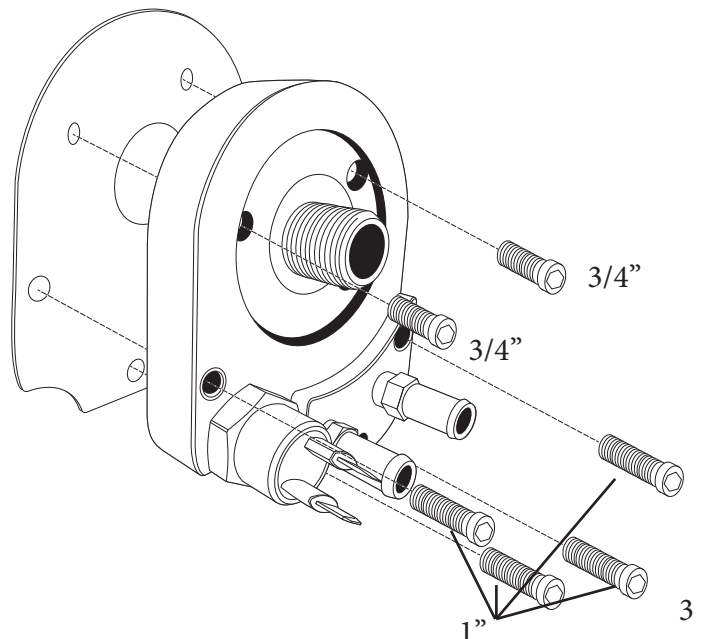
Step 3: The oil adapter

Take the oil adapter to a flat surface and remove the 6 hex head bolts. Notice that (2) are 3/4" and (4) are 1" bolts. Take the half with the rubber gasket facing the oil filter mount and secure it with the 1" nut. Torque the nut to 10 ft lbs.



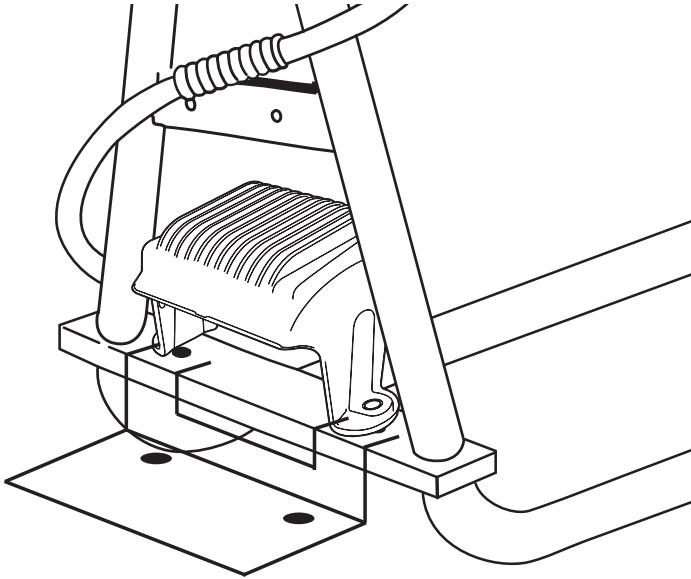
Step 4: Oil adapter installation

Take the other half of the adapter and assemble it with the gasket and the top (2) 3/4" hex bolts. This will hold the gasket in place. Hand start the (2) 3/4" bolts to the adapter on the bike, just hand tight. Start the (4) 1" bolts along the bottom of the adapter. You **MUST** tighten all (6) hex bolts in an even star pattern, this is important. You can also use thread locker on these. Check these bolts after first ride to make sure that they are snug.



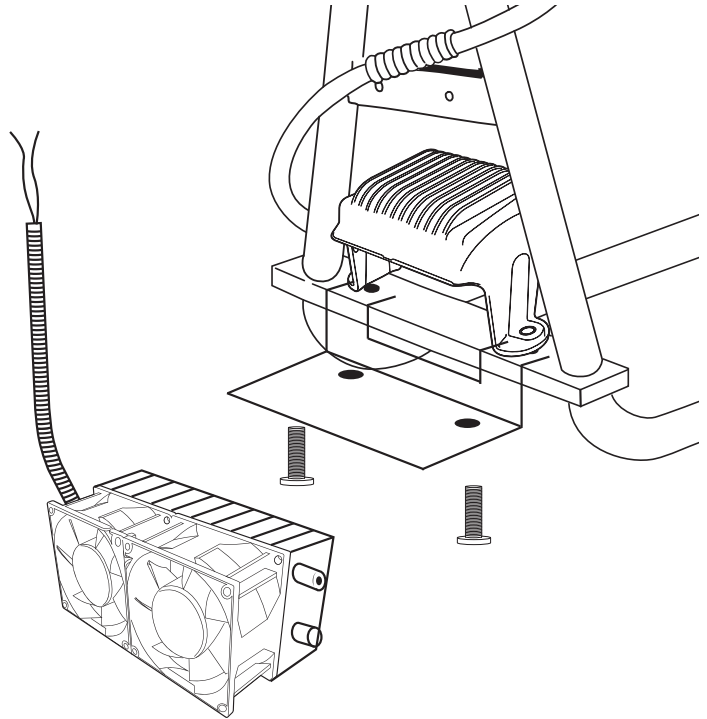
Step 5 Mounting Bracket Installation

Remove the (2) 7/16" nuts holding on the voltage regulator to the frame. Lift the regulator off the studs. Slide the mounting bracket over studs and place the voltage regulator over bracket. Secure it with nuts



Step 6 Mounting the Fan assembly

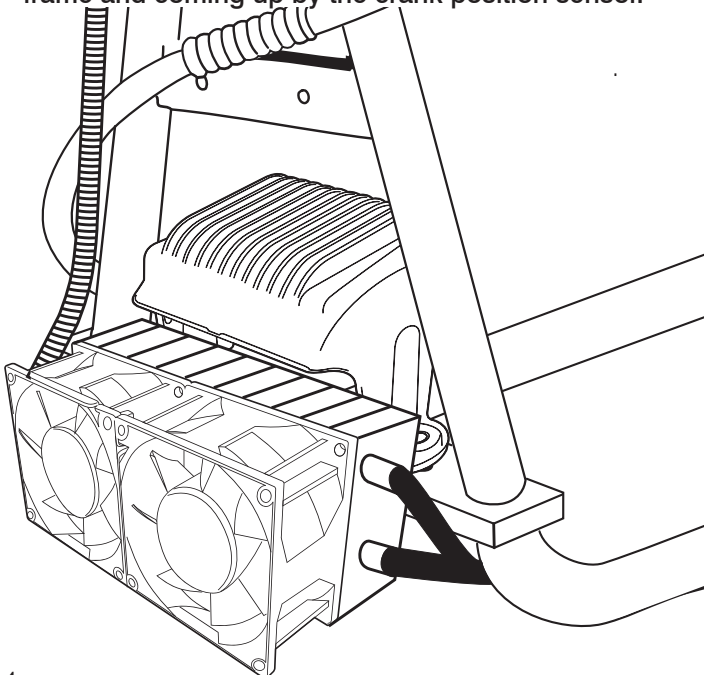
Place the fan assembly on the mounting bracket and install (2) 1/4"-20 bolts from the bottom. Hand tight. We will come back and make final adjustments later.



Step 7 Routing the Oil Lines

Locate the (2) braided steel oil lines, remove the plastic caps and add a few drops of household oil to each fitting. Now attach the 90 degree ends to the oil cooler. Just hand tight for now, as seen in picture shown below. This is the correct position for the oil lines. Yours may vary slightly.

Route the oil lines under the bike, staying close to the frame and coming up by the crank position sensor.



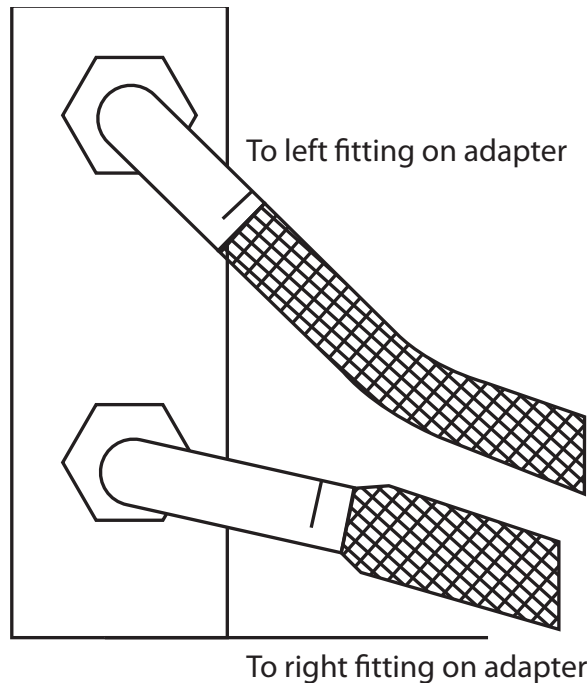
Step 8 Oil Line Positioning

BOTTOM - RIGHT

The oil line on the bottom of the oil cooler goes to the right fitting of the oil adapter. Put this side on first.

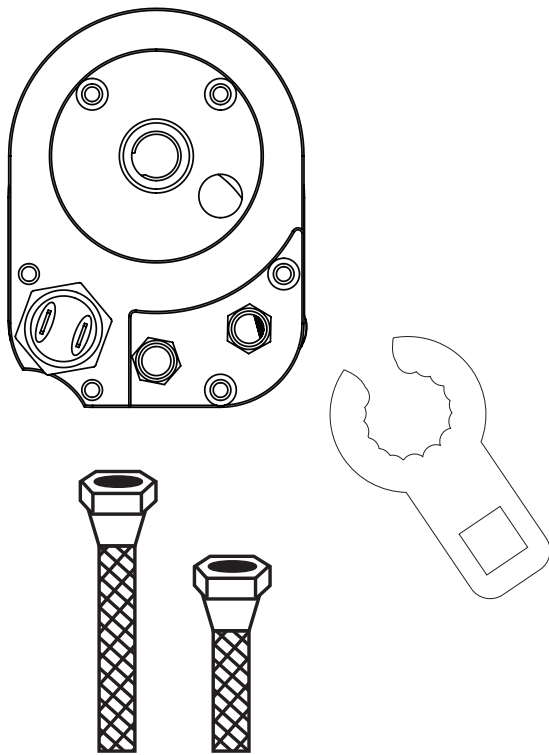
TOP - LEFT

The oil line on the top of the oil cooler goes to the left fitting on the oil adapter. Put this on second.



Step 9 Connecting the Hoses to the Oil Adapter

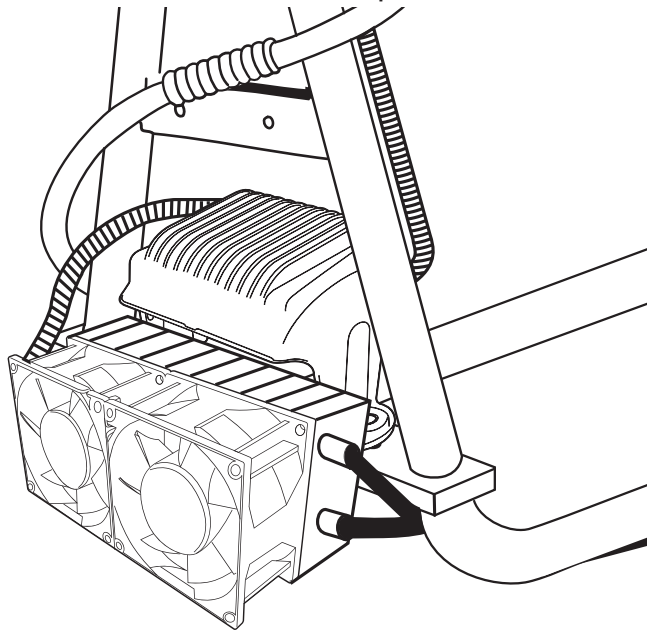
Tighten the hose fitting until it is snug and then turn it 1 more flat . Do this first on the adapter, and then on the oil cooling unit. Use an extension and the fitting wrench.



Step 10 Conduit Routing

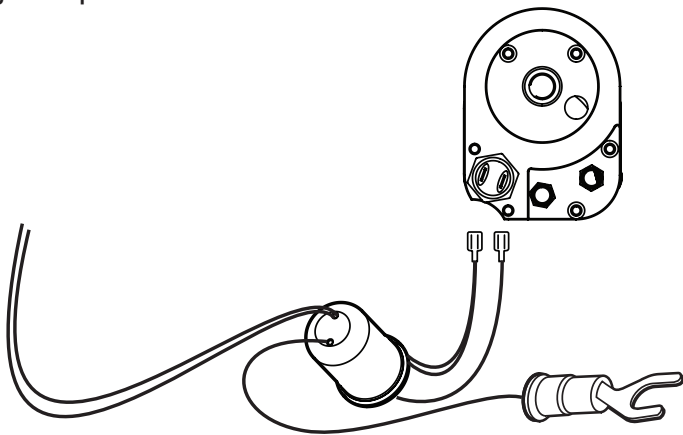
Route the supplied conduit behind the voltage regulator.

Attach (1) female connector to either side of the thermal switch. Run the conduit up the left side frame tube and secure it with 2 tie straps.



Step 11 Wiring the Thermal Switch

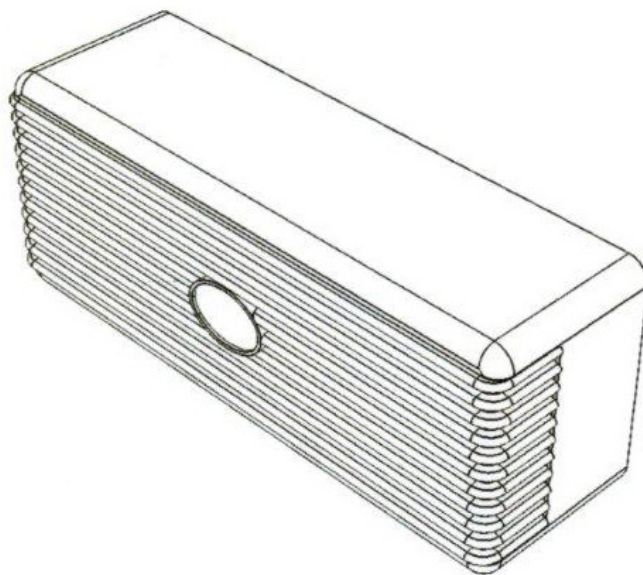
Connect the frame ground to the remaining side of the thermal switch. The crank position sensor provides a good ground point.



Step 12 Fan Cover Installation

Remove the (2) 1/4"-20 bolts from the bottom of the cooler fan assembly.

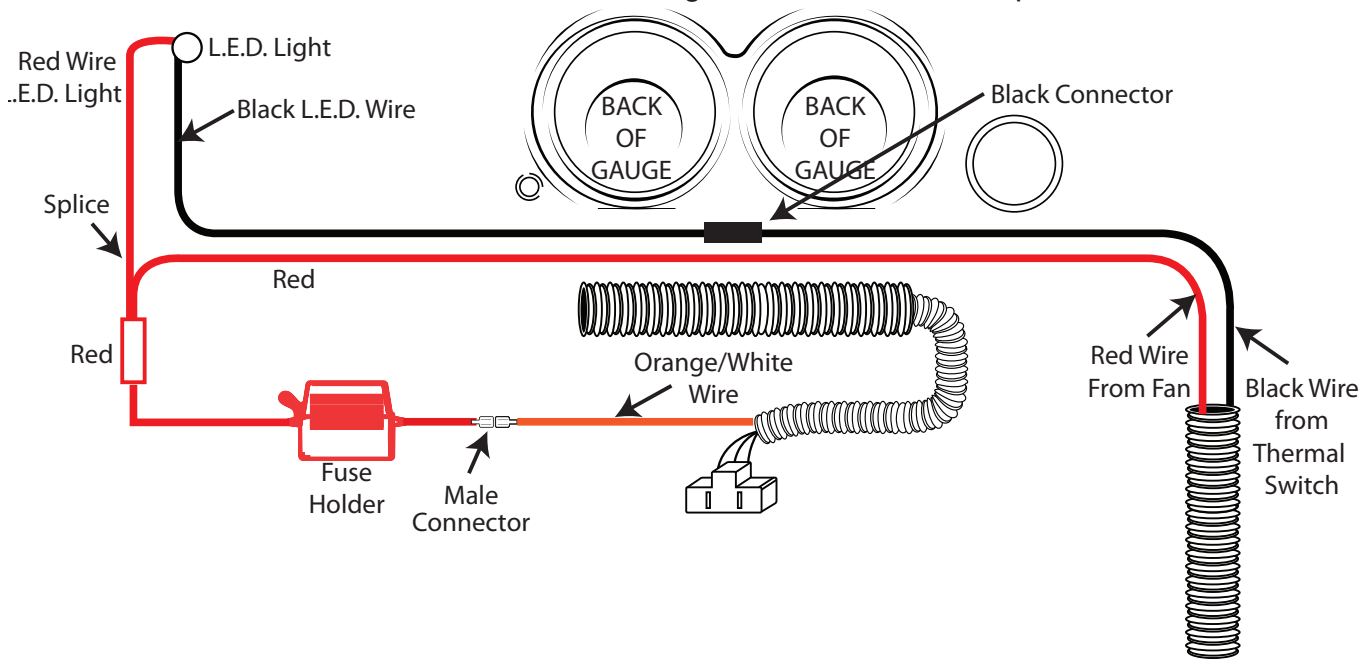
Slide chrome cover over fan unit and make final adjustments



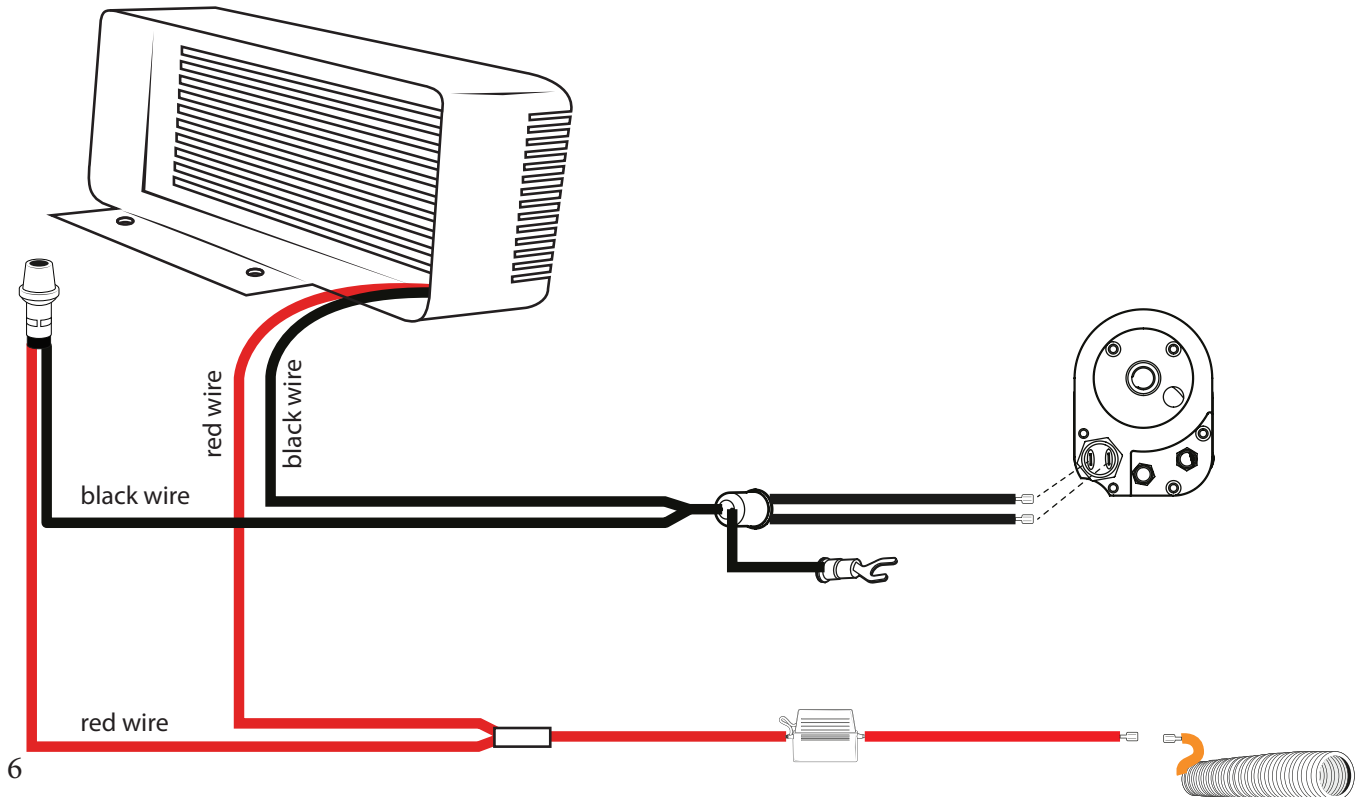
Tech Tip

Pull the conduit up into the fairing. Use the remaining conduit and run the red and black L.E.D. wires through it. Locate the black wire coming up from the fan and the black L.E.D. wire. Measure and strip both ends and connect them using a butt connector.

Now attach a butt connector to the other end of the fuse holder. Locate the red wire coming from the fan and the red wire from the L.E.D. Measure to the fuse holder, splice them together and crimp to the butt connector on the fuse holder. Now make sure all of the connections are good and use a few tie straps to secure them.



Below is an overall view of the electrical layout.



Checklist

Congratulations! You have finished! Now let's go back and double check our work before we finish things up.

1. L.E.D is mounted, hooked up and tied down.
 2. Fuse block is hooked up and tied down.
 3. Oil adapter is installed and tightened properly.
 4. Cooler is mounted and bottom bolts are thread locked and tight.
 5. Hose lines are installed and tightened properly.
 6. Chrome cover is installed and tightened.
 7. Replace front fairing and replace (7) torx bolts.
 8. Replace the oil filter.
 9. No signs of leftover oil anywhere.
 10. Ready to start this up.
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1. Start up the bike and let it idle for 2-3 minutes and then turn it off.
 2. Check the oil level and add as needed. You will probably need 2-4 ozs.
 3. Go for a 2-3 mile ride and check for any oil leaks.
 4. You are good to go!!
 5. After the first cooling cycle check all 4 bolts along the bottom of the oil adapter, see page (3) step (4) and make sure they are tight.

Warranty

UltraCool warrants that this product be free from manufacturing and material defects for a period of 1 year from the date of purchase to the original purchaser. In the event you experience a problem within this period, please e-mail or call us at your first convenience.

Disclaimer

UltraCool or any of its agents shall not be held liable for injury that results from the misuse or improper installation from there products.



OIL COOLING SYSTEMS

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