

**SMSP-232**



OIL COOLING SYSTEMS

**Sportster 2004-2019 • 3.0 Dual Fan Assisted**

**Side Mount on Down Tube**

**For Coolers #SMSP-2C and #SMSP-2G**

# **Oil Cooler Installation Guide**



## Welcome to UltraCool Oil Cooling Systems

Thank you for making UltraCool your oil cooling system of choice. We hope you will find our installation guide helpful in your installation process. If you need more assistance please call our Tech Dept at (951) 698-4962 or email us at [info@pcracingusa.com](mailto:info@pcracingusa.com). If you run into a problem with your particular bike or fitting with other accessories etc, please call us before returning as we likely have a solution or part to make it work for you.

***Thank you, UltraCool***

## Tools Required

The tools you will need to complete this installation:

- ☐ 5/32" Allen wrench
- ☐ 2 - 11/16" Open end wrench
- ☐ 7/16" Open end wrench
- ☐ Ratchet with 3/8" drive
- ☐ Extension with 3/8" drive
- ☐ 1" socket
- ☐ Oil Filter wrench
- ☐ 17mm socket if installing a FLO Oil Filter
- ☐ Torque wrench - check your lbs
- ☐ Bike lift - nice to have
- ☐ Oil can
- ☐ 7/16" Allen driver (this size isn't common so be sure you have it before beginning)
- ☐ Torx #27
- ☐ Power drill
- ☐ 5/16" Drill bit
- ☐ Wire Strippers and Crimper



Note: Instructions are illustrated and explained from a rider's point of view

## Sportster 2004 - 2019 Kit Contents



- A Complete Oil Cooler Assembly**
- B Complete Oil Adapter and threaded Bushing**
- C LED Indicator Light**
- D Wiring Harness**
- E Relay**
- F Test Jumper**

- G Tie Straps**
- H Thread Lock**
- I Fitting Wrench**
- J Hoses**
- K LED Toggle Mount**
- L Frame Clamps**

## Step 1

### Oil Filter Adapter

Remove oil filter and threaded bushing from engine.

## Step 2

### Install Oil Filter Adapter

Install oil filter adapter with threaded bushing supplied. This requires a 7/16" allen hex. Torque to 18-20lb-ft. **Be sure to use blue thread locker.**



It is important to let the bottom of the adapter rest against the engine case. This will prevent the adapter from rotating when you remove your oil filter in the future.



## Step 3

### Clamp Position

On most Sportsters the frame clamps should be equally positioned between the horn.



## Step 4

### Cooler and Clutch Cable Position

On most Sportsters routing the clutch cable between the clamps and oil cooler is best option.

Do not tighten or use thread locker on any bolts until the fitment of the oil lines is checked.



## Step 5

### Hose and Cooler Position Check

Locate longer hose and attach straight fitting to fitting next to the engine on adapter. Attached the 45 degree fitting to outside fitting on the cooler. Locate shorter hose and attach straight fitting to the left fitting on adapter. Now attach 45 degree fitting to inside fitting on cooler.

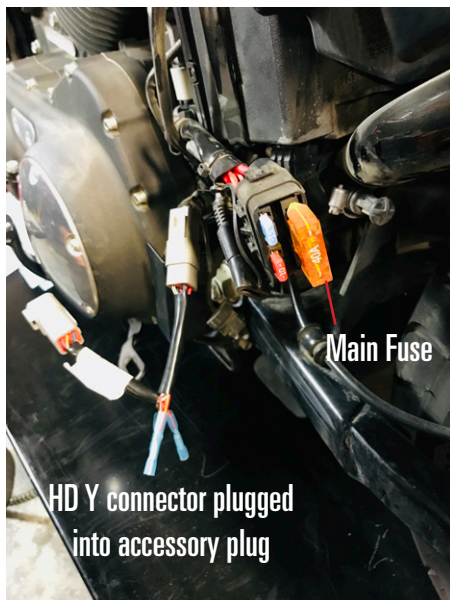
Check fitting of hoses and reposition clamps/cooler if necessary. When good, remove hoses, use blue thread locker on all bolts and tighten frame clamps and cooler bolts with clutch cable positioned as desired. Install hoses and tighten. **Be sure to oil hose fittings.**



## Step 6

### WIRING 2014-Current Sportsters

Remove seat, left side cover and main fuse. (extremely important to remove the main fuse!) Locate accessory connector and remove cover. Insert UltraCool 6 pin trigger wire connector (part #SMB-127) or Harley-Davidson Y connector (part #72673-11). Locate wiring harness with relay and connect red and black to battery. Now connect blue wire from relay to wire on part #SMB-127 or to the Red/Yellow wire on HD Part #72673-11. (Refer to service manual or Part #72673-11 instructions if needed).



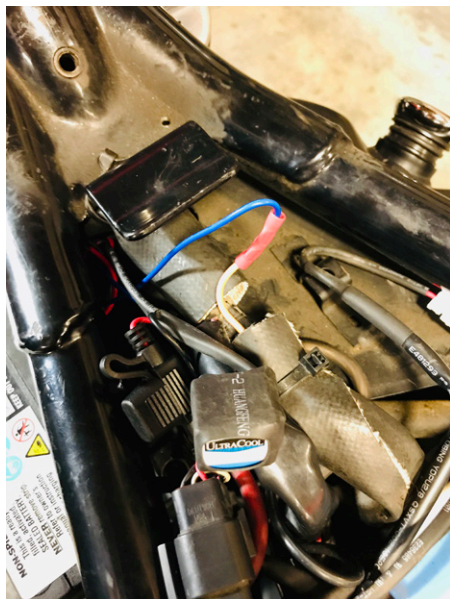
UltraCool 6pin trigger wire connector part #SMB-127

### WIRING 2004-2013 Sportsters

Remove seat, left side cover and main fuse. (extremely important to remove the main fuse!) Locate the accessory wire. (Usually orange with white stripe). Connect the blue wire from the relay to the orange/white wire.

#### Relay Harness

- 1) Black Ring Connector-Battery Negative.
- 2) Red Ring Connector-Battery Positive
- 3) White Power Connector to Harness
- 4) Blue Trigger Wire
- 5) Black with Logo is Relay





# Step 7

## Installing Wiring Harness

Locate wiring harness with black connector and two grey connectors. Connect black connector together with the red/yellow connector on the thermal switch. Connect grey fan connector to one of the grey plugs (doesn't matter which one). The other grey connector is for the LED light. Route the wiring harness down the left side of the frame rail up to the side box and connect two white connectors together. Tie up wiring and test with test jumper provided by unplugging the thermal switch and inserting the the test jumper.

### Wiring Harness

- 1) White Power Connector
- 2) Grey Connectors to Fan and LED Light (Interchangeable)
- 3) Black Connector to Thermal Switch



Partially tucking stock wiring between cooler and frame works well on most Sportsters.



## Step 8

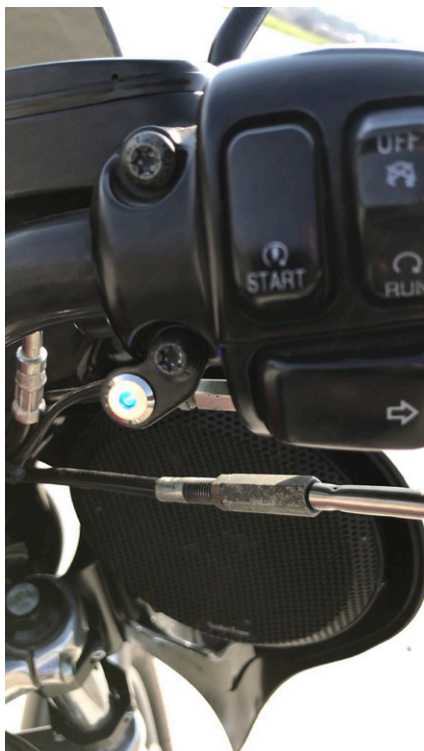
### Installing LED (Optional)

#### 3 Options:

1) In your kit is a small toggle mount that fits under a screw on your handlebar controls. This is usually the best option for most Sportsters.

2) We have a handlebar LED light clamp for 1" handlebars only. Available in Chrome part #AC-20C, Black part #AC-20B, and Black Chrome part #AC-20BC. These are available at [UltraCoolfl.com](http://UltraCoolfl.com) or any UltraCool Dealer.

3) You can also mount the LED light in a fairing by drilling a 5/16" hole.



Mounting LED light with provided Toggle mount to the throttle/Front brake perch is usually a good option.

## Step 9

### Test Electrical Connections

Locate the test jumper in your parts bag. Unplug harness from the thermal switch and plug jumper into the harness instead. Turn on bike ignition. Fans and LED light should run.



## Step 10

### Check List

- ☐ Check Hoses are tight
- ☐ Install Oil Filter and Clean up any oil
- ☐ Install optional Cooler Cover if needed
- ☐ Start Engine and Check oil

## Congratulations! You are good to go!

Note: On your next warm day ride after a minimum of 10 miles the fans will turn on when the oil reaches 210 degrees. Do not test by letting your engine idle in your driveway as this will not get your oil hot.

## Available Accessories

### FLO Oil Filter



Provides additional 10 degrees of cooling power and consistent filtering across the entire surface. Flows 7 times more than paper or synthetic filters while filtering to 35 microns (absolute, 1 pass test). Unaffected by water, heat or pressure and the bypass valve will not open on cold startups and high RPM. Built in 17mm hex nut for easy removal. It is easily cleaned and reused, paying for itself. Available in Polished Aluminum with clear anodize part #PCS4C or Black anodize part #PCS4B. (We do not chrome or paint our filters as that holds in heat)

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### UltraCool Cold Weather Cover

Made of marine grade vinyl and is used when riding in cold weather. (usually less than 50 degrees farenhiet). Disconnect the fans when using cover. Side Mount cover part #SM-156K.



### LED Light Handlebar Clamp

A very stylish way to mount your LED light to 1" handlebars.



Chrome #AC-20C



Black #AC-20B



Black Chrome #AC-20BC

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### LED Toggle Mount

Mounts LED to handlebar controls and is included in your kit.





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(951) 698-4962 • [info@pcracingusa.com](mailto:info@pcracingusa.com)  
[UltraCoolfl.com](http://UltraCoolfl.com)

#### WARRANTY

One year parts only from date of purchase.

Warranty registration must be completed in full and received  
within 45 days of purchase to validate warranty.

Warranties are non-transferrable

Register for warranty at [www.UltraCoolfl.com/warranty-registration/](http://www.UltraCoolfl.com/warranty-registration/)

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Patent #6955150

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