A Division of Thiessen Products, Inc.

Instruction Sheet For No.5400, 5401 & 5402

The JIMS "**FORCEFLOW**" CYLINDER HEAD COOLER is designed for the Twin Cam Models 1999 to present. Also fits all JIMS Twin Cam Race Engines.

NOTE: *These instructions show the installation of this product on a 2012 H-D Road Glide. This is probably the most difficult model to install on. On the other H-D Twin Cam models you need to follow the same steps in installation. There will be some minor differences on each year or model wiring harness. It is highly recommended that you use the correct H-D service manual for reference in this installation. Refer to last page for parts list and for bubble reference callouts.*

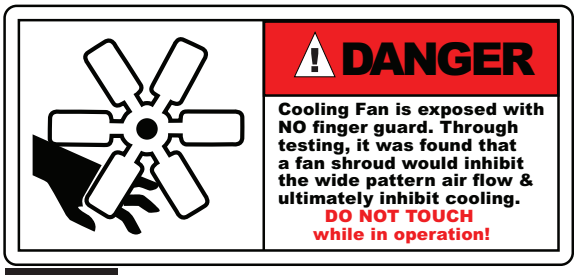

FIG.A

OPERATION AND OPTIONS:

The FORCEFLOW COOLER comes with a thermostat that actuates at 140 degrees along with an on/off cooler switch. It is the installer's option to use the thermostat system we've designed and where we recommend you locate it. If you choose to relocate the thermostat it is your option and responsibility of properly mounting. If you choose not to use the thermostat it is your responsibility to safely disconnect this system. Since JIMS hasn't tested this product in these optional changes or locations, Jims cannot back any warranty issues in this area.

FIG.1

IMPORTANT SAFETY ISSUE'S:

We have designed the cooler to operate only when the ignition system is turned on by the operator as a safety factor. DO NOT MODIFY WIRING TO ALLOW COOLER TO OPERATE WITH THE IGNITION IN THE OFF POSITION.

Warning: **KEEP HANDS AWAY FROM MOVING FAN BLADE!**

JIMS R&D Dept. tested the Forceflow cooler with a protected shroud around the fan blade and found that it cooled better without a shroud. So with that said do not get your hands etc. near the blade when in operation. See Fig.A

Installation of the Forceflow Cooler is not intended to be a fix for a poorly tuned, or improper operating fuel system such as running to lean or rich, causing bluing of pipes or engine damage.

Read the complete instructions before starting the installation of this product.
JIMS cannot be responsible for the safety or quality of your work. If you do not know what you are doing then don't do it. Take it to a professional.

TOOLS AND SUPPLIES RECOMMENDED FOR INSTALLING THE "FORCEFLOW COOLER".

1. Common box end wrenches, ratchet and, socket set.
2. Quality ft-lb torque wrench
3. Box cutter or knife to modify the "wiring trough".
4. The correct H-D Service Manual book per year and model you're working on.
5. Blue Threadlocker, JIMS No.**4501** or equivalent.
6. Assorted wire tie wraps.

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FIG.2

PREPARATION AND INSTALLATION

1. Remove seat, and disconnect negative battery cable per H-D Service Manual.
2. Remove fuel tank, and, saddlebags, and side covers per H-D Service Manual and side covers.
3. Remove horn assembly with attached bracket per H-D Service Manual. Set aside the horn mount chrome acorn nut to use for the cooler installation. Leave the horn mount rubber isolator and upper horn bracket on the heads in place as shown. **See Fig 1**.
4. Remove the top wire harness trough cover to gain access and to place the cooler main harness into. **See Fig 2**
5. Next you will need use a box cutter or knife to cut a notch out of the left side edge of the plastic harness trough on the 2008 and later model Touring Models. The notch should be positioned directly above the normal horn position. **When cutting the notch be very careful not to cut any existing wiring.** Should be about a 1" square cutout and smooth out any rough edges. **See Fig 3**


FIG.3

Note: *Earlier Touring Models have a different wiring trough and need to be notched differently as required. Softail and Dyna don't use a wiring trough at all. They bundle the bikes trough harness across the top frame rail. They come with a tie wrapped bundled harness.*

6. Locate the cooler main wire harness No. **5423** supplied with cooler kit and position it across the top frame rail on top of the existing bike harness. You need to lay the cooler harness on the left side of the bike harness trough so that you have the thermostat with bracket and white connecter at the front end of the bike. **See Fig 4.** On the Softail and Dyna models you need to route the cooler harness next to the bike harness on the top frame rail. To position it correctly you need to have the thermostat drop down to the old horn position. You need to have about a 9" lead hanging out of the harness tough or main bike harness area as shown to connect horn and cooler wiring. Note, that the wire harness needs to be routed over the top of the top horn mount not under. This routing will help keep wiring off cylinders when tie wrapped to horn bracket in final running position. The other end of the cooler harness with the relay and orange wire positive with Deutsch connector & black negative large eyelet should be rout-

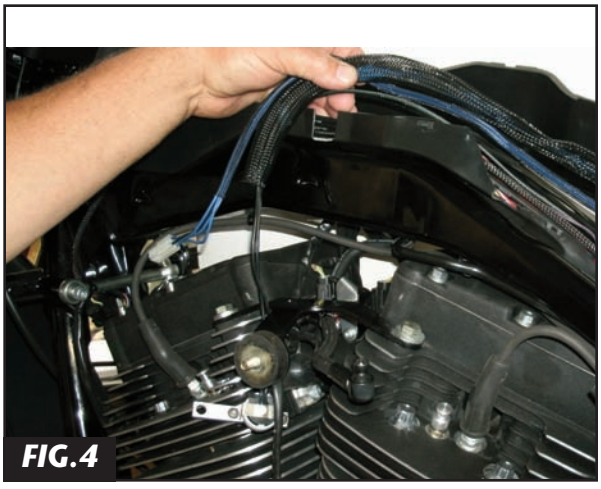
FIG.4

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ed back to the battery area. **See Fig 5**

7. Remove the front cylinder valve cover screw as shown. **See Fig 6**
8. Locate the thermostat with mounting bracket on the harness hanging down between the cylinders. Mount the bracket No. **5434** with thermostat using No. **5439** hex head bolt, No. **2014** washer, and spacer No. **5438** to the valve cover as shown. Torque to 15-18 ft-lbs using Blue Threadlocker JIMS No. **4501**. At this location the thermostat will activate the fan at 140 degrees with a slight air gap. If you prefer to locate the thermostat in a different location then that's your option. **See Fig 5** and **Fig 7.**
9. Remove the top center case bolt from the engine case. On a H-D OEM engine case you will have to remove the shifter rod nut and washers at the front gear shifter lever to get clearance to remove the OEM case bolt. **See Fig 8**

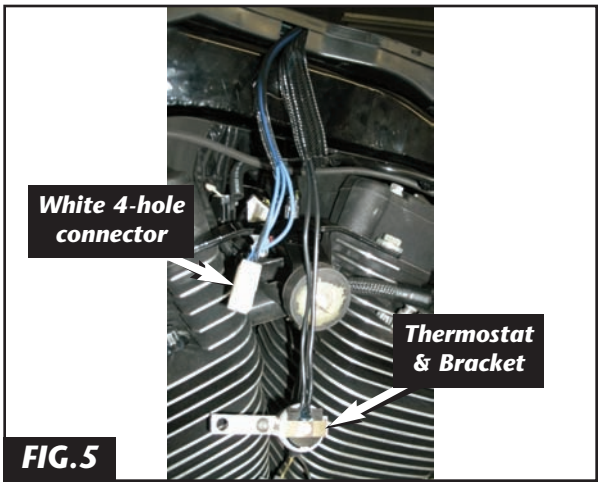

FIG.5


FIG.6

STOCK H-D ENGINE CASES

See Fig 9 Refer to call out bubbles in **Fig 9** and last instruction page parts list for assembly reference.

A. If your engine cases are factory cases you need to locate the 5/16"-18 case stud No. **5414** provided with the cooler parts.
B. Next lightly coat the threads on the end of stud No. **5414** without the slot on it with Blue Threadlocker.
C. Insert the coated end of stud No. **5414** into the top center case bolt hole and tighten stud snug with a good flat blade screwdriver. Slide No.**2014** flat washer onto the stud.
D. Coat I.D. of nut No. **1222** with Blue Threadlocker and thread on and torque to 15-19 ft-lbs using a 1/2" deep socket and torque wrench.
E. Coat I.D of jam nut No. **5436** with Blue Threadlocker and thread onto the same stud but don't tighten yet.
F. Next install AN-washer No. **1216** onto No. **5414** stud against jam nut and then No. **5413** lower mount bracket and another No.**1216** AN-washer.
G. Install Blue Threadlocker to I.D. of acorn nut No. **5427** and thread onto the stud.

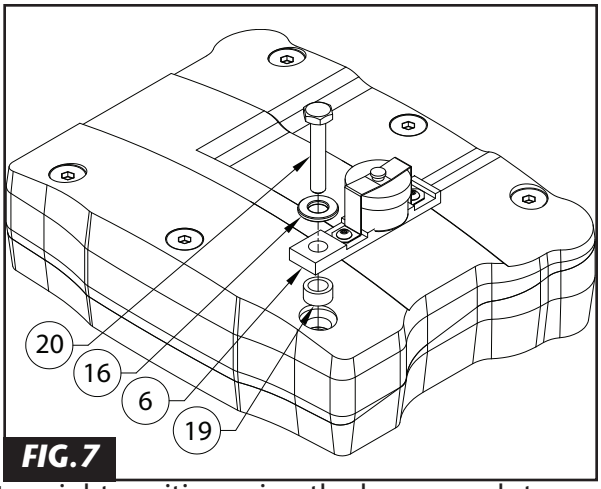

FIG.7

Before tightening position the lower bracket in the correct upright position using the box wrench to hold the previous loose jam nut No. **5436** to tighten against bracket. Now tighten acorn nut No. **5327** to 8-9 ft-lbs with a 1/2" socket and torque wrench. **See Fig 11**

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H. Now fit up the shifter rod linkage and see if you have adequate clearance when shifting. If your shift rod is hitting on the acorn nut then swap it out for a normal No. **1222** nut we've provided in kit to gain more clearance. Check clearance again. If that doesn't clear then move the jam nut on shaft inward. Retighten the outside nut and check shift rod clearance. Then bolt up shift rod washer and nut. Move on to Step 10.

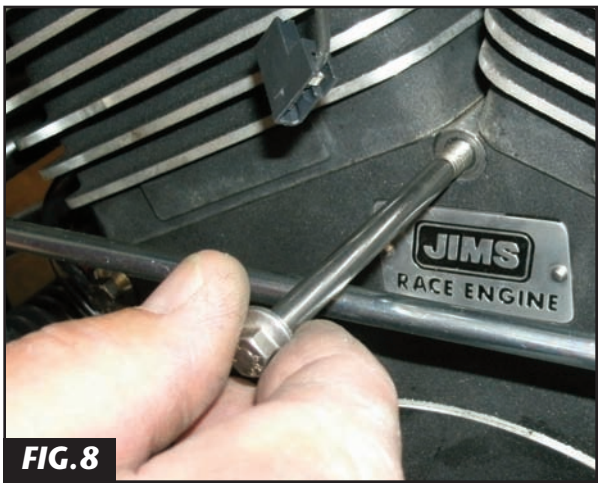

FIG.8

JIMS ENGINE RACE CASES

For information on installing this Forceflow cooler kit you should have ordered a **No. 5447** JIMS Engine hardware mounting kit. Follow the instructions in that hardware kit to install the special top center case bolt hardware. Then proceed back to this **5400-IS** cooler instruction sheet and continue on at step **No.10**.

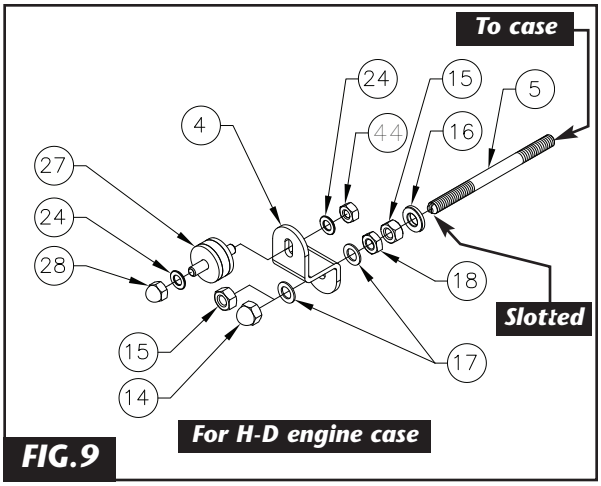

FIG.9

10. Install finger tight for now No. **5419** rubber isolator to the lower support bracket with No. **5437** AN- washer and No. **2017** nut as shown. **See Fig 12**

11. We are now ready to connect the wiring from the cooler housing to the harness before hanging housing on the motorcycle. We suggest you have another person hold the cooler housing while you connect to the two original H-D horns flag connectors hanging down between the cylinders. These are two identical wires coming out of the housing backing plate rubber grommet. **Fig 13**

12. Connect the bikes two existing original horn flag type terminal connectors to the light blue plastic blade type connector from the cooler housing. It doesn't matter what blade goes to the two wires. **See Fig 13**

Note: For added insulation from weather, position existing shrink wrap and heat as required before doing the final positioning and tie wrapping also may add more shrink wrap if desired.

13. Next locate the cooler assembly backing plate upper and lower mounting tab holes on both the 1/4" and 5/16" rubber isolator studs. If the assembly looks like its centered then you should do the final tightening of the previously finger tightened lower No. **2017** nut to the rubber isolator and lower bracket. If you cannot align the upper and lower rubber isolator studs to the backing plate tab holes with out forcing them, causing distortion to the isolators, then you need to space up the horn or motor mount bracket. You will need to add one thick washer No 5453 to each side horn mount. Place these washers under the horn or motor mount bracket. Try just one pair of washers or if needed stack two an each side of mount as shown. **See Fig 1**