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## Bullet Proof Cold Weather Kit

Neal Technologies, Inc.

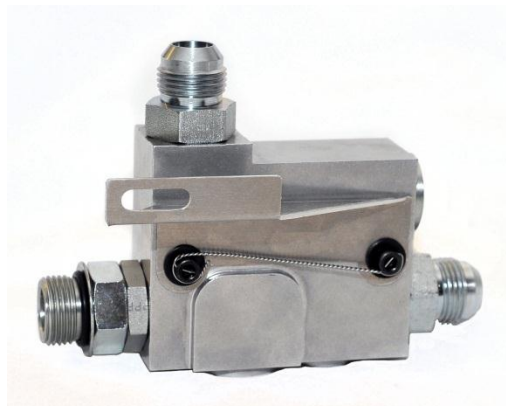
(Patent pending)

Updated 12/22/2010

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The purpose of the cold weather kit is allow operation of 6.0L Powerstroke diesel engines in cold climates where ambient air temperatures are low enough to cause concern when using an air to liquid cooler.

The kit consists of an oil thermostat and the necessary hardware and hoses to install the thermostat.

The thermostat kit is fully reverse compatible with all Bullet Proof Condenser mounted oil system kits.

### **THE COLD WEATHER KIT FUNCTIONS AS FOLLOWS:**

Oil from the engine is pumped into the Bullet Proof oil cooler system by the OEM low pressure oil pump. After being filtered the oil then heads to the cooler. If the oil has not reached the desired operating temperature, it is allowed to bypass the engine oil cooler and return to the engine. Once the desired engine oil temperature has been reached, the thermostat closes and eliminates the path by which oil can circumvent the oil cooler. Oil will follow the path of least resistance. When cold, the oil cooler offers greater resistance to flow than the oil cooler bypass circuit. At no time is the oil cooler blocked or made to be static. A path of less resistance is opened or blocked depending oil temperature.

A pressure bypass valve is also incorporated into the thermostat assembly. This will allow a portion of the oil to bypass the oil cooler in the event a pressure differential greater than 18PSI exists between the inlet and outlet of the engine oil cooler. This ensures a constant flow of oil to the engine under extreme operating conditions such as racing or subfreezing climates.

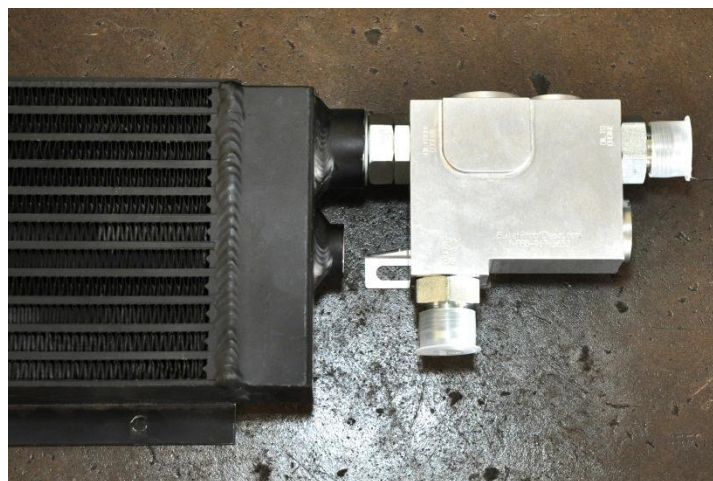


## TO INSTALL THE COLD WEATHER KIT:

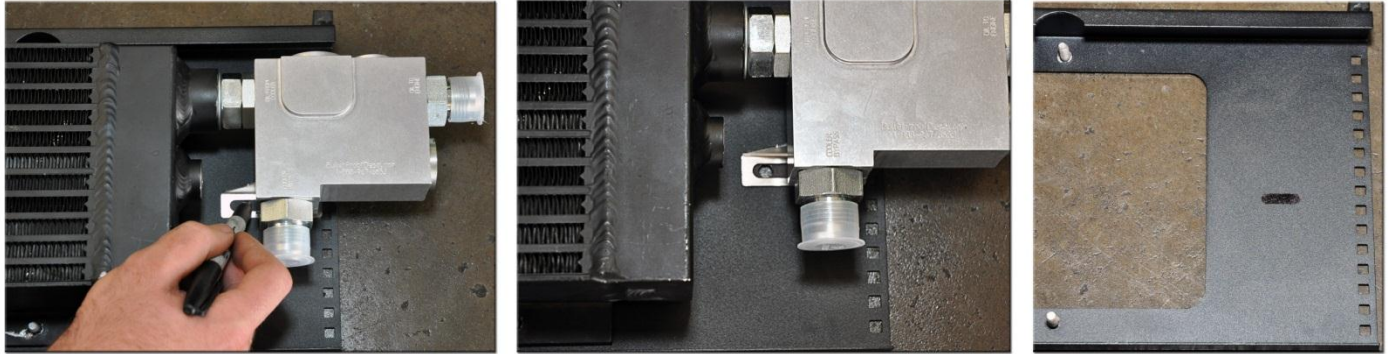
- 1) Make sure all components are CLEAN.
- 2) Remove the A/C condenser. Be sure to follow the Factory guidelines for this procedure.
- 3) *If you are retro fitting the cold weather kit to an existing installation of the Bullet Proof oil cooler kit, you will need to remove the oil cooler from the condenser mount and remove the oil cooler mount from the condenser.*
- 4) Attach the thermostat assembly to the “oil out” side of the oil cooler. Make sure to seat the O-ring all the way into the oil cooler. Be careful not to seat the O-ring on the threads of the fitting. This could cause an oil leak.



- 5) Position the oil cooler and thermostat as shown



- 6) *If you are retro fitting the thermostat to an existing installation, mark where the thermostat support bracket touches the oil cooler mount. Remove the oil cooler assembly from the oil cooler mounting bracket and drill a ¼" hole where the bracket was marked. Remember to remove the oil cooler bracket from the condenser prior to drilling the hole. Condensers are expensive.*



- 7) *Attach the oil cooler bracket to the condenser per the instructions in the Bullet Proof oil cooler installation manual. On retro installs, make sure to install the ¼"- 20x1" bolt through the drilled ¼" hole so that the hex head is between the oil cooler mount and the A/C condenser. Ensure you have a wrench that will fit between the oil cooler mount and the A/C condenser.*
- 8) *Install the oil cooler assembly as shown. Tighten the oil cooler to the condenser bracket with oil cooler mounting hardware.*



9) Tighten the thermostat to cooler coupler as shown below.



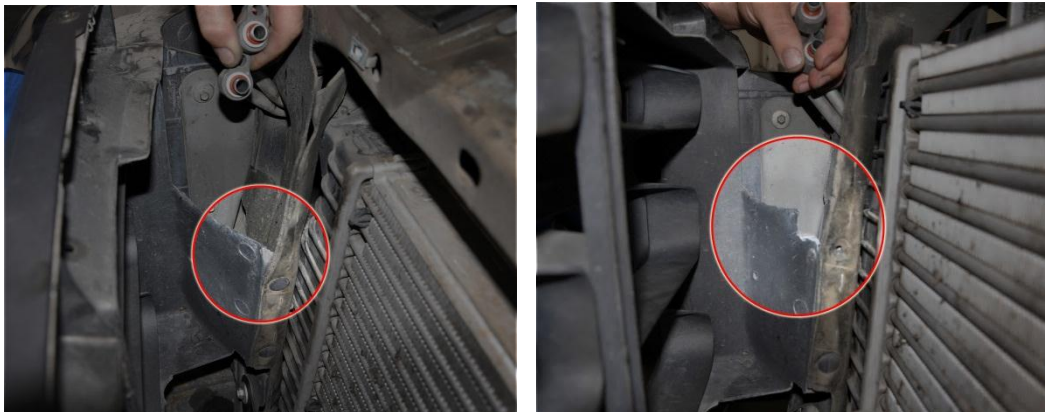
10) Install the bypass hose and "T" fitting.



11) Install the oil filter to oil cooler hose on the "T" fitting as shown.

12) Lower the condenser back into place and mark the areas on the headlight support bracket where the thermostat will interfere.

13) Remove the condenser and cut out the marked area with a hack saw or other suitable tool.



- 14) Re-install the condenser and ensure adequate clearance of both the transmission cooler and the headlamp support bracket.
- 15) Refer back the Bullet Proof Diesel Engine Oil Cooler installation manual for additional instructions if you need to continue installing the Oil Cooler Kit.

**NOTE: REMEMBER TO PRIME TO OIL SYSTEM BEFORE STARTING THE ENGINE. FAILURE TO DO SO CAN RESULT IN SEVERE ENGINE DAMAGE.**



