

MATERIALS INCLUDED:

- ✓ (1) cp-e™ Instruction booklet
- ✓ (1) cp-e™ ΔCore™ Intercooler core
- ✓ (1) cp-e™ Oil Cooler
- ✓ (1) cp-e™ 2.50" Straight silicone hose coupler – Cold Side (250-004-500)
- ✓ (1) cp-e™ 2.50" 32° silicone hose coupler – Hot Side (250-004-250/32)
- ✓ (1) cp-e™ 2.50" 70° aluminum pipe – Cold Side
- ✓ (1) cp-e™ Oil adapter (Consists of 4 parts.)
- ✓ (1) OEM Oil o-ring
- ✓ (2) Oil supply lines
- ✓ (2) Brass NPT Barb oil fittings
- ✓ (2) ¼-20 x ½" Hex Cap Screws
- ✓ (2) 6mm Flat Washers
- ✓ (4) 1/2" Oil line clamps
- ✓ (4) 2.75" T-bolt clamps

TOOLS & ITEMS NEEDED FOR INSTALLATION:

- (1) 1/4" & 3/8" Drive socket wrench
- (1) 8 mm Socket
- (1) 10 mm Socket
- (1) 11 mm Deep Socket or 11 mm Wrench
- (1) Socket wrench extension
- (1) Flat-head screw driver
- (1) T-25 Torx bit
- (1) Car Jack
- (1) 3/16th Allen Key
- (1) Plastic Garbage Bag
- (1) Roll of Paper Towels
- (2) Jack Stands

WARNING

This document and the images within it are the copyrighted intellectual property of Custom Performance Engineering, Inc. **They may not be reproduced or distributed in anyway, including electronic duplication and publication, without the express written consent of Custom Performance Engineering, Inc.** By installing this product the end user is agreeing to hold Custom Performance Engineering, Inc., its staff, and business associates (hereto referred as cp-e™) harmless from any and all damages that may result, both directly and/or indirectly, from the use and or installation of this product. cp-e™ will not be held responsible for any damages whatsoever. This is a performance enhancing product, and it is understood that the user is aware of, and liable for, any damages that result from the use and or misuse of this product.

NOTE: This product should be installed by, or under the supervision of, a qualified performance automotive specialist. Failure to do so may result in major property damage, serious injury, and or death. Be sure to exercise caution when driving your vehicle. Safety must be your primary concern! Always obey posted traffic laws and limits. Drive within the limits of the law, the limits of safety, and the limits of your ability.

PROCEDURE OVER VIEW:

I. PLEASE READ DIRECTIONS ONE TIME COMPLETELY BEFORE INSTALLING. *(This is an overview of the installation.)*

NOTE: *If something does not look right in the directions, follow what you have in the kit and notify us of a discrepancy in the directions. If you have further questions, please contact us at 301-576-6142.*

II. INSTALL Δ Core™ FRONT MOUNT INTERCOOLER

*****DISCONNECT THE NEGATIVE BATTERY CABLE BEFORE BEGINNING INSTALLATION*****

The car battery stores a tremendous amount of energy and must be treated with respect. Disconnect the NEGATIVE, BLACK, wire from the car's battery. Be extremely careful NOT to short the battery with your tools while removing the negative cable. Shorting the battery by touching the terminal will almost certainly cause severe burns, a fire, or even an explosion. FYI, the reason to remove the negative terminal of the battery is so that if the wrench were to slip while on the nut of the battery terminal, and accidentally contact the frame of the car (ground) the result would not be a short from positive to ground, but a much less harmful short from negative-to-negative. Be careful to not slip and hit anything.

NOTE: *Do not tighten anything until all the components of the front mount intercooler system are in place. This is to allow movement of the parts while installation is taking place.*

- Remove factory belly pan.
- Remove factory front bumper.
- Remove factory front mount intercooler.
- Install cp-e™ inline oil adapters and hoses.
- Install cp-e™ inline oil cooler onto FMIC.
- Install cp-e™ Δ Core™ front mount intercooler.
- Install cp-e™ silicon couplers.
- Reinstall factory bumper and belly pan.

III. START VEHICLE

Instructions for:
BMW N54 ΔCore™ Front Mount Intercooler Kit
'07-

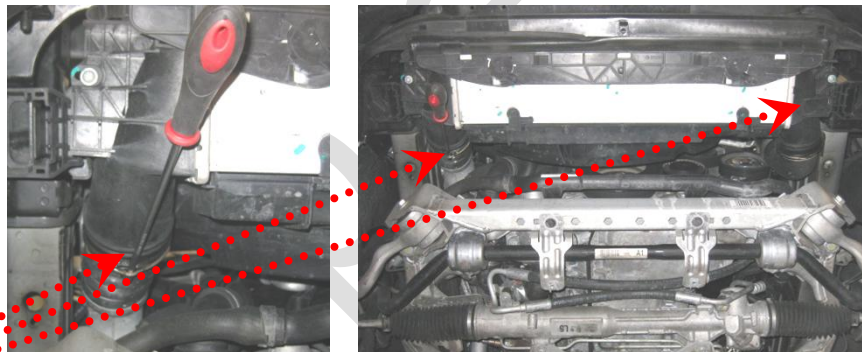
COMMON INSTALLATION PROBLEMS

- Boost leaks are very common when changing an intercooler set up. All cp-e™ ΔCore™ Front Mount Intercoolers are pressure tested for zero leaks. If you have a boost leak your car will not run properly.

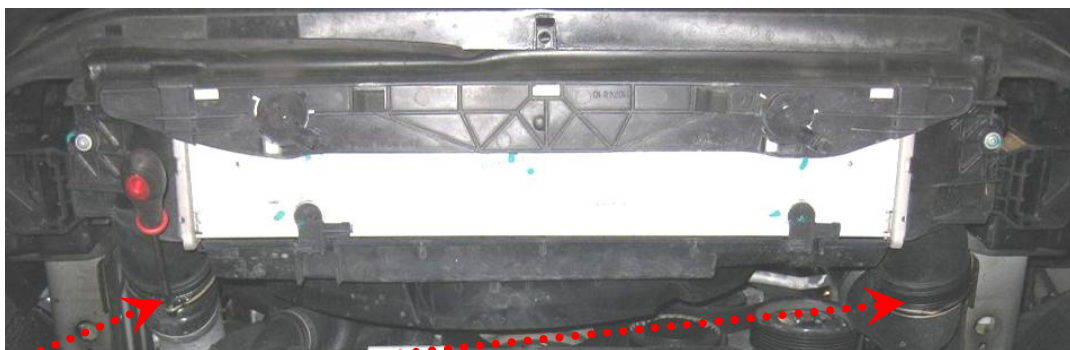
NOTE: Be very careful when installing the hose clamps. If the hose clamps are not installed correctly you will have **BOOST LEAKS**. The hose clamps must be tightened with a socket wrench to insure tightness.

II. INSTALL ΔCore™ FRONT MOUNT INTERCOOLER

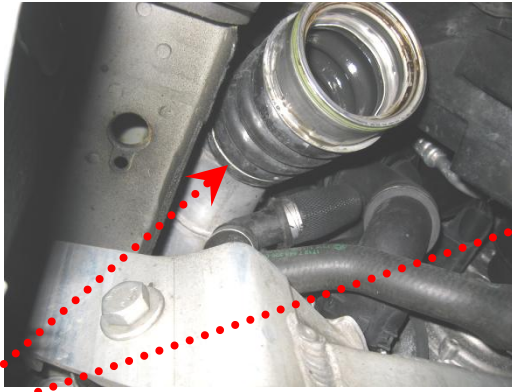
- *****DISCONNECT THE NEGATIVE BATTERY CABLE BEFORE BEGINNING INSTALLATION*****
The car battery stores a tremendous amount of energy and must be treated with respect. Disconnect the **NEGATIVE, BLACK,** wire from the car's battery. Be extremely careful **NOT** to short the battery with your tools while removing the negative cable. Shorting the battery by touching the terminal will cause severe burns, a fire, or even an explosion. Removing the negative terminal of the battery will insure that if a wrench were to slip while on the nut of the battery terminal, and accidentally contact the frame of the car (ground) there will not be a short from positive to ground. Be careful not to slip and hit anything. It is also a good idea to do this in order to rset the factory ECU for optimal performance.
- Using jack stands, position the front of the car up to gain access to the underside of the bumper, and to allow the front wheels to hang down. Remove the factory belly pan and bumper of your N54.



- Remove the two metal C-clips that you will find on the inlet and the outlet of the stock intercooler. This will allow the intercooler inlet and outlet to come out of the tubing when we remove the intercooler.



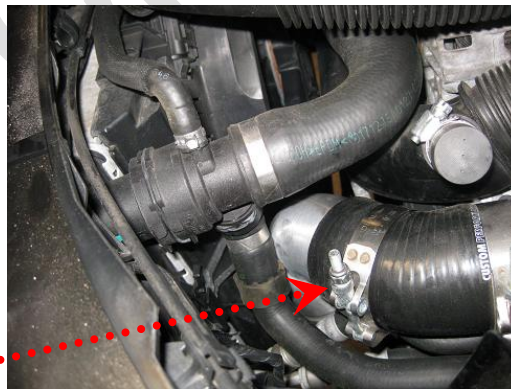
- Now that these two clips are off, remove the two T-25 Torx bolts holding the intercooler onto the radiator support. Now you will be able to lower the factory intercooler out of the car.



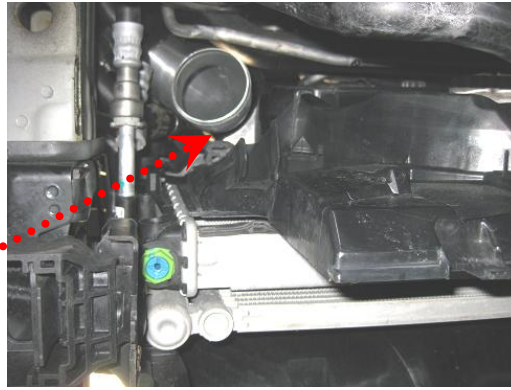
- On the passenger side of the vehicle there is a snap clamp that holds the rubber hot pipe onto the factory compressor outlets on the turbos. Using a flat head screw driver pry out the clamp which connects as seen below in the picture on the right. Now replace this coupler with the supplied cp-e™ 32° silicon coupler. Secure the supplied 2.75" T-Bolt clamps onto the pipe to ensure it will not come off under pressure.



- On the driver side you will now remove the plastic cold pipe that comes off of the intercooler and connects to the charge pipe. This is done by removing the clamp and pulling the pipe out from the bottom or top of the vehicle. You will notice there is a tab on the pipe that fits onto a "nub" on the back of the radiator support like a puzzle piece.

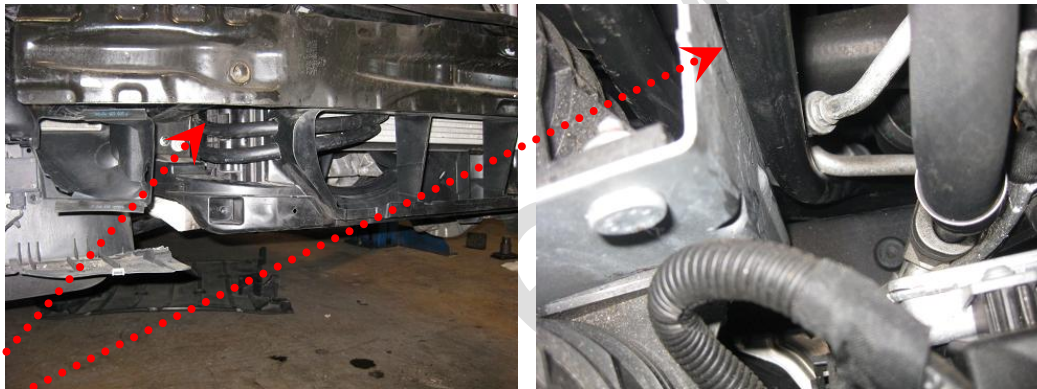


- Now replace the cold pipe you just removed with the cp-e™ 2.50" 70° aluminum pipe placing the shorter end of the pipe into the stock 2.50" rubber hose coupler that attaches to the charge pipe leading to the throttle body. This picture shows a cp-e™ silicone hose that comes with the cp-e™ BOV Hard Pipe Kit only. Secure the pipe into the coupler using the stock clamp. If you have purchased the cp-e™ 3.00" Full BOV Charge Pipe Kit then you will be using the supplied cp-e™ 2.50" to 3.00" 45° Silicone Hose included in that kit to connect the FMIC piping.



- Now attach the cp-e™ 2.50" straight silicon coupler to the cp-e™ aluminum tube, which was just mounted on the driver's side of the vehicle. Make sure that the long side of the aluminum tube point down.

NOTE: Optional step. Now we will drill two 3/4" holes into the shroud on the passenger side in order to pass the oil lines through. This is the "cleanest" way to run the oil lines and will look very clean if done carefully.



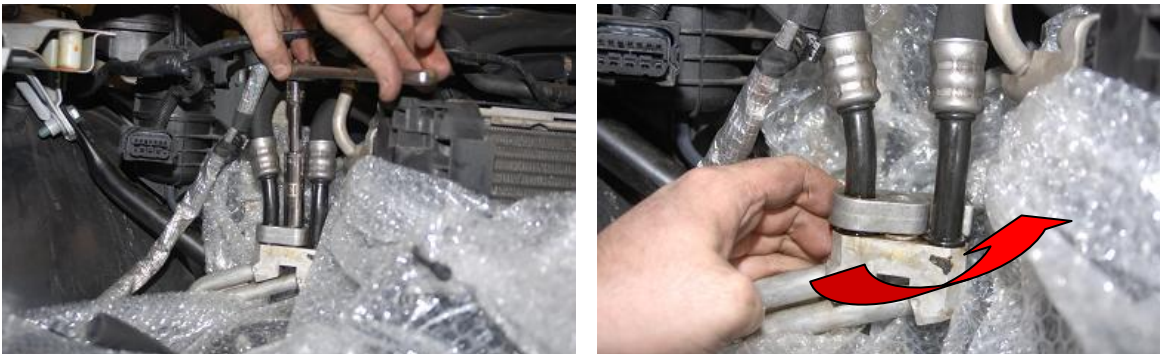
- Once the holes have been drilled route the two supplied oil hoses through the holes and up to the OEM oil cooler lines on behind the passenger side headlight. Not removing the vertical slats makes it difficult to raise the oil cooler and FMIC into place without bending fins on the oil cooler.
- Prepare the oil cooler for install by wrapping the threads with teflon tape or putting locktite on the brass NPT barb fittings and screwing them tightly into the oil cooler.
- At this point we are ready to raise the core into the car and secure the oil cooler onto it. Carefully slide the core into the car between the radiator and the plastic shroud. Once the top has cleared the core you will affix the oil cooler using the supplied screws and washers. Now attach the oil lines to the brass fittings putting the feed line on top and the return on the bottom. Tighten the supplied small clamps onto the oil lines. As you raise the core the rest of the way up into the car, make sure the inlet and outlet slip into the cp-e™ supplied silicon couplers and have the supplied 2.50" T-Bolt clamps around them. Tighten these later once you have everything in place.



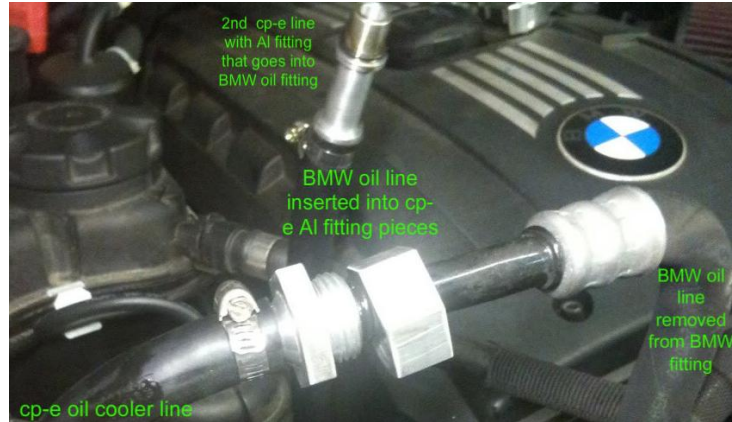
- It is an optional step to cut off the two vertical plastic pieces that are in the opening in which you can see the FMIC through. It is however recommended as it will be easier to raise the FMIC with oil cooler and not bend any fins. Secure the FMIC in place using the OEM torx screws we removed to lower the factory FMIC.
- Now that the core is secured tighten down all of the couplers to ensure none will come off during spirited driving.



- Now that the FMIC is completely installed we are going to finish the installation of the oil cooler. The lines should be located behind the headlight. This part can get messy, so we recommend putting a garbage bag under the oil fittings before performing the following steps. Also have a roll of paper towels handy.
- Using a 13mm socket remove the bolt that holds down the two oil fittings into the OEM oil manifold seen below. Once the bolt is out oil may begin to seep out. Have the barb fitting already inserted and tightened down with the clamp on the oil return line (hose that comes out of the bottom of the oil cooler) ready to insert into the OEM oil manifold. Place the supplied rubber gasket on the end of the barb fitting that will get pushed down into the OEM oil manifold. Now that it is ready rotate the small block of metal that holds the OEM fitting in place out of the way.



- Pull the driver side oil line out and replace it with the oil return we prepared in the previous step. Insert the cp-e oil fitting with the supplied o-ring into the hole and rotate the bar back and tighten the 13mm bolt back in.



- Now we will focus on the oil supply line to the cp-e integrated oil cooler. On the factory hard oil line we just removed place the female side of the two part oil adapter fitting onto the hard line with the threaded side towards the end of the line. Then place the other portion that has the barb fitting and male threads on the end of the hard line. Place the locking c-clip on the hard line and screw the oil adapter fitting together. Once tight place the end of the oil supply line that is routed to the oil cooler on the barb fitting and tighten down the clamp.
- Reinstall any additional factory hardware / parts removed.
- Reinstall all bumpers and under trays. You should not HAVE to modify or cut anything on your car in order to fit our ΔCore™ Front Mount Intercooler. Like mentioned earlier it is recommended to cut the two vertical plastic pieces in the opening of the shroud – but it is completely optional.
- Reinstall negative battery terminal.

NOTE: Remember to be very careful when installing the hose clamps. If the hose clamps are not installed correctly you will have **BOOST LEAKS**. The hose clamps must be tightened with a socket wrench to insure tightness.

III. START THE VEHICLE & TAKE OFF!

*****WARNING*****

Please be careful when first driving with the addition of the cp-e™ ΔCore™ front mount intercooler. The vehicle's driving characteristics will be different. The change in vehicle power and performance may take the inexperienced driver by surprise. The user must be careful, and above all obey all posted speed limits and regulations.