



### **GENERAL CONSIDERATIONS AND INSTRUCTIONS FOR INSTALLATION OF ECO SYSTEMS**

The ECO SYSTEMS does not repair any damaged parts of the engine, such as Spark plugs, Injectors, Injection fuel pump, DPF filter, carburettor, catalyst convertor etc... However, ECO SYSTEMS helps to extend the life of the mentioned parts and components.

**WARRANTY:** The ECO SYSTEM does not affect the quality and warranty of engines. The customer is 100% responsible for the costs associated with maintenance of engine parts and that ECO SYSTEMS do not affect these parts negatively.

**INSTALLATION STEPS:** The ECO SYSTEMS needs to be installed carefully as following:

1. The employee is responsible for installing the ECO SYSTEMS at high-quality level to ensure there is no fuel leak or whilst installing, technicians don't manually damage any other wires or hoses of the vehicle.
2. Prior to installation, there must be an inspection of the vehicle and identification of the right place to fit in the ECO SYSTEMS to ensure there is no mechanical damage prior to installation.
3. The type of ECO SYSTEMS (ECO 2, ECO 4, ECO 5, ECO 6, ECO 7, ECO 8) shall be specified depending on the engine capacity of the vehicle. Note: A car with a CRDi engine and a German car must be installed with ECO 4. For Mercedes car models an ECO 5 is required.

| Type                                                                              | Engine size                                         | Application                                                                 |
|-----------------------------------------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------------------------------|
|  | Any engine under 5 Liters/5,000cc/                  | All types of sedan and SUV's                                                |
|                                                                                   | Any engine under 400 horse power /5,000cc-13,000cc/ | All types of SUV's and haul trucks                                          |
|                                                                                   | Any engine over 400-825 horse power                 | Generator, Crane, Tractor, Agriculture machines, Mercedes, CAT, Volvo etc., |
|                                                                                   | Fuel lines up to 3/4" inches in diameter            | All types of HHP engines, mining machines                                   |
|                                                                                   | Fuel lines of 3/4" in to 1 inches in diameter.      |                                                                             |

4. After identifying the correct ECO SYSTEM for the vehicle, connect the installation kits to the ECO SYSTEMS and check that it is fully tightened. When making the connection, make sure that the gasoline /diesel Teflon tape is sufficiently wrapped around the thread to prevent fuel leakage.



- The figure shows a real case example of Teflon tape being insufficiently wrapped and the thread being killed due to over-tightening.

- M14 connection fittings use for Mercedes Benz cars.

- If you don't use the push lock quick disconnects, Another option is to use NPT (1/4 inch) on one side and JIC (3/8 inch) fittings





- i. **CAUTION:** Do not use a 90-degree connector on either side of the ECO SYSTEMS in a diesel vehicle. If necessary, a 90-degree fitting on one side can be used.



- ii. **CAUTION:** Do not use 90 degree connectors on either side of the ECO SYSTEMS in the race car. 90
- iii. degree connectors are reduce fuel flow pressure.



5. Open the fuel tank lid to release the air first.
6. The engine must be switched off completely before installing the ECO SYSTEMS.. In some cases, during the installation process some gasoline / diesel is lost (leaking), the ECU / Engine Control Unit / may indicate an error and ENGINE CHECK flashes on.  
At this point, disconnect the negative side cable on battery for 15 minutes.
7. Correctly determine the location of ECO SYSTEMS installation. The ECO SYSTEMS goes between your fuel filters and the fuel intake. Do not fit on fuel return hose.
8. The location of the ECO SYSTEMS needs to be fitted securely, ensuring no damage to the other parts of the vehicle. Use a gasket when necessary.

9. When selecting the location of the ECO SYSTEMS for a diesel vehicle, install it below, in parallel or lower with the fuel filter. If the ECO SYSTEMS is installed higher than fuel line system (fuel injection pump), an air lock can form restricting the fuel flow (Put ECO SYSTEMS lower and air goes to highest point allowing the air to escape.) if the ECO SYSTEMSS is higher they have air bubble and will lose engine power due to an air lock in the fuel line. An example is shown in the figure. ***Always look for is make sure there is no kink in fuel lines to restrict fuel. Make sure unit is always at same level as fuel filter or lower. If it is higher than fuel filter it will get air bubble and restrict fuel that restricts power.***

**Some of the Installation Examples below:**

Diesel Land Cruiser 200

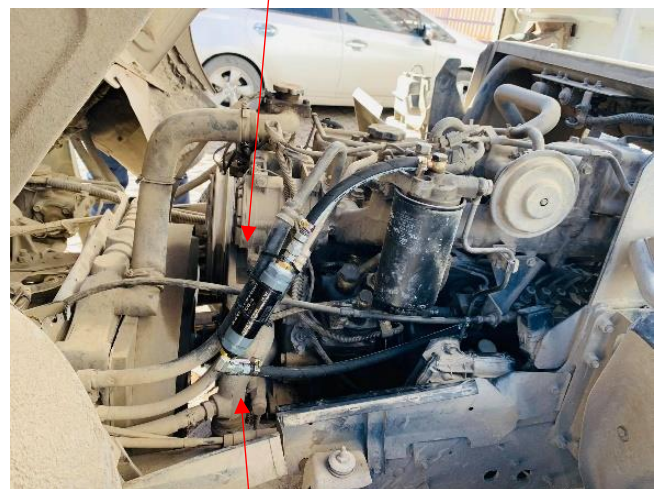


ECO#2 Location

Diesel HGV



Diesel Hyundai Engine/Fuel filter/



ECO#4 Location

Fuel Filter



ECO#5 Location

Mercedes GLK350/Gasoline/



Engine



ECO#5 Location

Mercedes S550/Gasoline/



Engine



ECO#5 Location

Mercedes G500/Gasoline/



Engine



ECO#5 Location

Lexus 570



Engine



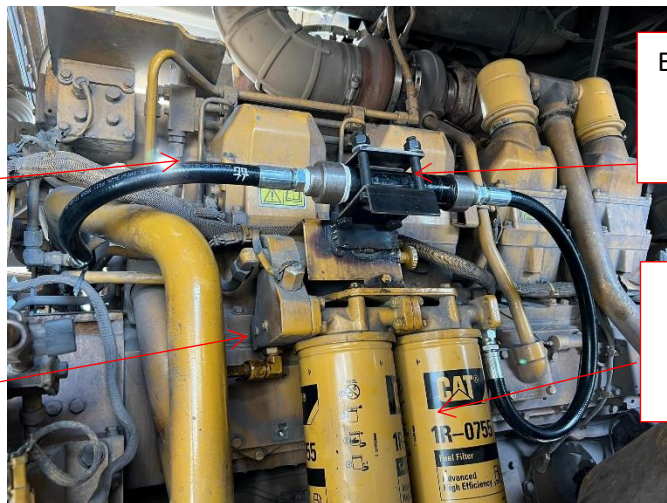
ECO#4 location

CAT 793D, CAT 785C, CAT777D



The ECO# 6,7 is illustrated and installed in the middle of the fuel line from the secondary fuel filter to the fuel pump injection

From the Primary fuel filter fuel line



ECO Systems Location

Secondary fuel filter

BELAZ 75135, 75131, 75306

Secondary Fuel Filter



ECO Systems Location

10. Tighten the fuel hose with crimps on diesel vehicles. Switch on the ignition after the fuel pump is fully engaged. Therefore there is a risk in air absorption.
11. There is a risk of damage to the ECO SYSTEMS, kits and other vehicle parts, when installation is forced. Therefore, the installation must be done with care and accuracy.
12. When installing ECO SYSTEMS on some gasoline/diesel vehicles, the fuel (hose/pipe) line of the vehicle may need to be cut. Also, depending on the location point of the ECO SYSTEMS, a meter hose will be used. The fuel hose may need to be cut to the correct length.
13. In case of using metric hose, use gasoline/diesel 2-wire hose **(28BAR or 400PSI pressure resistant hose)**
14. The ECO SYSTEMS installation point will vary depending on the vehicle type. Check that the lifting mechanism is locked, the machine is completely switched off and the jack is used. it must be dismantled under the jack if the ECO SYSTEMS is installed under the vehicle.
15. Observe for 3-5 minutes after starting the engine to ensure that no gasoline/diesel leaks from each connection points.
16. After installing the ECO SYSTEMS and starting the engine, hold the engine speed at 2,000 rpm for 30 seconds.

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