

What You Should Know About Your SCR

With all the emission control systems that have been added to modern diesel engines, it can be difficult to know exactly why they have been put in place and how exactly they all work. One of those systems that you may want to know a little more about is the Selective Catalytic Reduction system or SCR.

The SCR is an active control technology system which injects a cleaning agent into the exhaust stream of a diesel engine through a catalyst. The cleaning product which is used in the SCR system is a reductant agent which typically consists of automotive grade urea and is most commonly referred to as Diesel Exhaust Fluid or DEF. DEF sets off a chemical reaction with nitrous oxides (one of the more harmful types of greenhouse gasses) and breaks them down to less harmful components including Nitrogen, Water and Carbon Dioxide. Once the exhaust has been placed through the SCR it is finally spat out the exhaust pipe and into the atmosphere. This process makes it possible to reduce the amount of nitrous oxides in diesel exhaust by up to 90%.

Where is SCR used?



Selective catalyst reduction has been used for decades now to keep diesel emissions in check. Aside from being used in semi trucks and diesel passenger vehicles, SCR systems can be found on marine vessels which include things like ferries, tugboats, cargo vessels etc. These systems can also be seen on off road equipment including tractors, combines and sprayers. Pretty well any diesel engine modeled after the EPA 2010 emission laws can be found with an SCR these days.

What is DEF?

Diesel Exhaust Fluid (DEF) is a non-toxic liquid which is made up of purified water and automotive grade aqueous urea. It is made available in a number of different storage

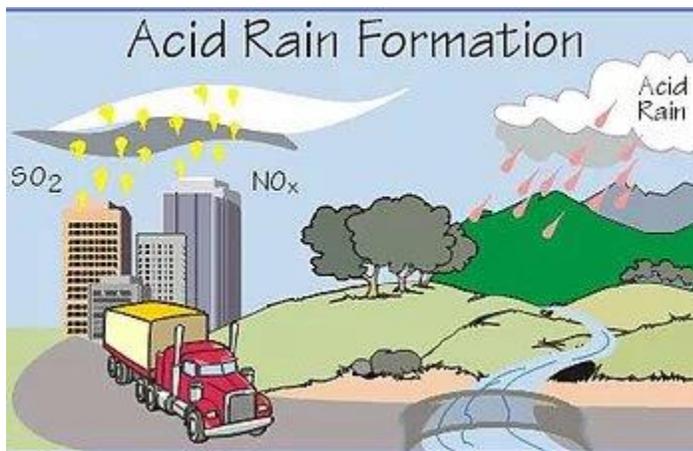
options including totes, bottles and jugs and is used on diesel vehicles of all shapes and sizes.

DEF is typically stored in a small tank, similar to your gas tank, which range from between 6 to 23 gallons in size. On-board tanks are typically located in the same general area as the spare tire in smaller vehicles while big-rigs typically have a DEF tank located alongside the diesel fuel saddle tank. Because DEF fluid has a freezing point of approximately -11 degrees C or 12 degrees F. For this reason, many DEF tanks have a built in heater to keep the diesel exhaust fluid in liquid form.

Removing your SCR System

As with any emission system delete there are definite benefits and drawbacks. The reason most individuals seek out a way to remove their SCR is quite obvious. Rather than having to fork out thousands of dollars every year to keep their equipment running with reduced emissions, they can simply find someone to delete their SCR and as a result, they will never have to purchase another jug or tote of the stuff again.

While it is quite obvious why someone would want to have an SCR delete performed on their heavy truck or agricultural equipment, what you must understand is that the SCR was installed on most modern diesel engines for a reason. Although it costs the operator a premium to operate a machine which uses DEF fluid, they are also cutting down somewhere between half and 90% of the nitrous oxides which would normally be pumped into the atmosphere. With such a substantial amount of greenhouse gasses being eliminated, vehicles with SCR systems are preventing one of the key contributors to smog and acid rain from escaping.



Another thing worth mentioning is that even if you are wanting to keep your SCR system in tact to prevent the leak of nitrous oxides into the atmosphere, all DPF deletes performed on an engine which has an SCR canister must have their DEF and SCR systems removed. This is largely because without a diesel particulate filter, all of your exhaust particulate is sent straight to the SCR canister which will accumulate all of your soot and eventually plug its self off.