

HINO SCR TECHNOLOGY



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New emission regulations (EPA10) became effective January, 2010. These standards greatly reduced the allowable nitrogen oxide (NO_x) levels emitted from diesel trucks.

Hino has chosen Selective Catalytic Reduction (SCR) technology to reduce NO_x levels. SCR uses Diesel Exhaust Fluid (DEF) and a catalytic converter to meet the new emission regulations.

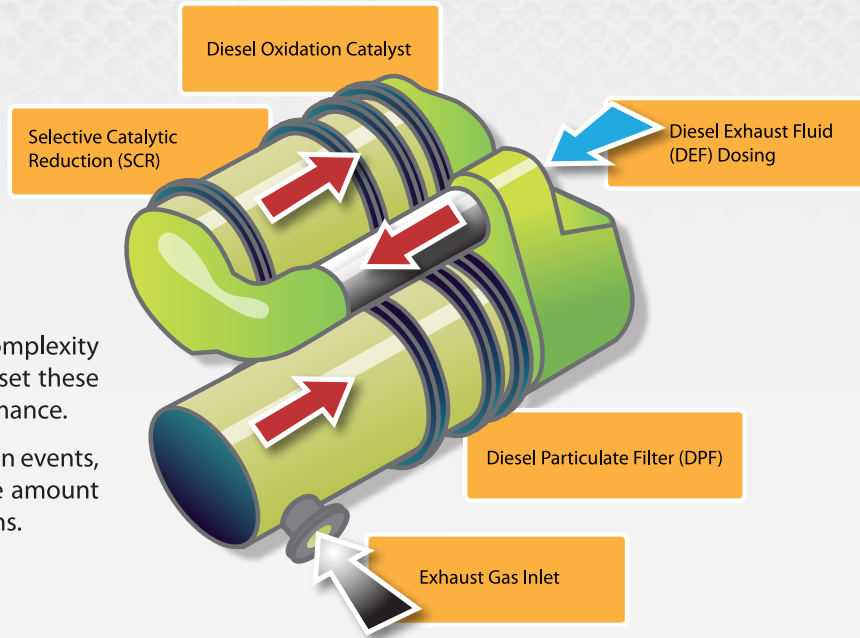
SCR is a proven technology that is used in Japan, Europe and North America for truck, bus and industrial applications. Hino's SCR system offers the following benefits:

- **Full compliance with EPA10 regulations;**
- **Reduced fuel consumption (compared to EPA07 models);**
- **Improved engine performance and drivability.**

Is SCR expensive?

Emission control systems tend to add cost, weight and complexity but Hino's SCR system provides important benefits that offset these costs, including improved fuel economy and engine performance.

There is also a reduction in the frequency of DPR regeneration events, which further improves fuel economy and also reduces the amount of time spent waiting to complete manual DPR regenerations.



Does SCR affect engine maintenance intervals?

Engine maintenance intervals will remain unchanged. SCR system maintenance will include one additional service point: the DEF filter. The DEF filter is built into the DEF pump and needs replacement every 36 months or 240,000 km.

Will drivers need to be “re-trained” to operate the SCR system?

No. It's as simple as reading and understanding a DEF level gauge and periodically re-filling the DEF reservoir.

Will the SCR components be covered under warranty?

SCR is part of the emission control system; so, the warranty coverage is 60 months or 160,000 km, whichever occurs first.

IMPORTANT:

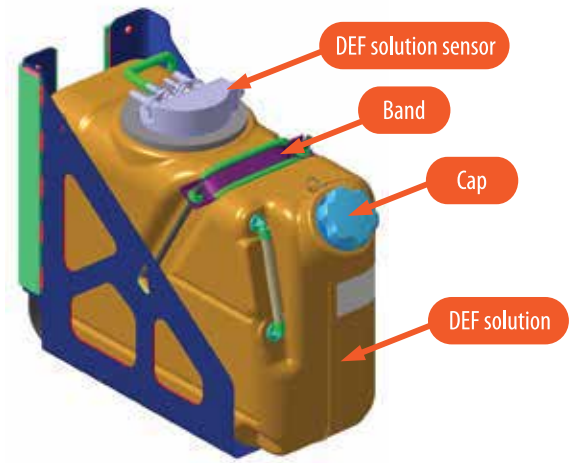
In order to ensure proper functioning of the SCR system, follow these instructions:

- **Use only Hino Genuine Parts when servicing the SCR system. Contact your HINO dealer for any SCR system service.**
- **Never attempt to re-position or make any modification to any of the SCR system components, including the DEF supply pump, DEF injector, DEF reservoir and DEF pipes.**

Diesel Exhaust Fluid (DEF)

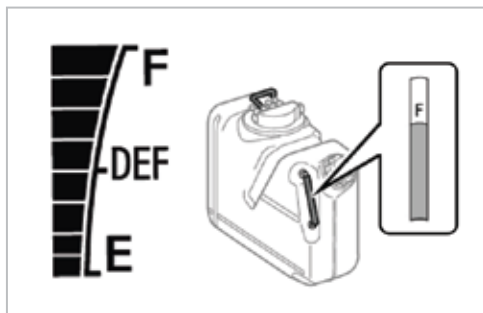
DEF is a solution of 67.5% purified water and 32.5% automotive grade urea that serves as a carrying agent for the ammonia needed to reduce nitrogen oxide (NO_x) emissions.

The DEF is housed in a separate reservoir on the frame and is injected in controlled doses into the exhaust stream at the SCR catalyst, where it creates a chemical reaction that converts NO_x into harmless water vapour and nitrogen.



Can I use any DEF fluid?

All DEF sold in North America must pass ISO 22241 standards and be approved by the API. All containers must display the API label, which certifies product quality.



How long does a tank of DEF last?

DEF consumption is 1% - 2% of the amount of diesel fuel consumed. Consumption will vary with driving patterns and operating conditions.

You can check the DEF fluid level with the sight gauge on the DEF reservoir. Do not pour DEF above the black full line ("F") on the DEF reservoir; otherwise, DEF may overflow from the breather hose.

The DEF gauge on the driver information display indicates the approximate level of DEF in the reservoir and will indicate 8 bars when the reservoir is full.

What happens if I run out of DEF fluid?

The new EPA10 regulations impose mandatory engine de-rating requirements which are intended to prevent operation of a truck that has run out of DEF.

The liquid capacity of the DEF reservoir is 17.1 L.

- When the DEF level drops to 10% or less, a DEF warning icon illuminates and a warning buzzer sounds for 10 seconds every 10 minutes. The DEF tank should be re-filled at this time.
- When the DEF level drops to 5 % or lower, the DEF warning icon flashes, a Low Power icon illuminates, and engine output is de-rated by 50%.
- When the DEF level drops to 2.5 % or lower, Low Power and Check Engine icons illuminate, and vehicle speed will be limited to 8 km/hr. The warnings noted above are canceled following replenishment of the DEF.

If the truck runs out of DEF, the truck will not shut down; however, the engine output will be restricted and vehicle speed will be limited to 8 km/hr, until a minimum of 8L of DEF is added.

NOTE: If degraded DEF is detected, engine output will be de-rated and vehicle speed will be limited to 8 km/hr. If this happens, the truck must be serviced by an authorized Hino dealership immediately.

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assistance providers will carry DEF.



HOW DO I STORE DEF?

DEF should be stored only in clean, approved plastic or stainless steel containers, out of direct sunlight and in temperatures between 0°C and 30°C. Prolonged storage over 30°C will eventually degrade the product. DEF is corrosive to certain metals, so care must be taken to store and dispense it properly to ensure safety and product quality.

DEF is easily contaminated, so care must be taken in handling and storage. Even small amounts of impurities in DEF will prevent proper functioning of the SCR system.

WHAT HAPPENS IF DEF FREEZES?

DEF will freeze at -11C (12 degrees F). Since urea and water freeze at similar temperatures, the DEF solution does not become degraded when it thaws, even after repeated freezing / thawing cycles. If the DEF is frozen, **do not** attempt to warm the DEF reservoir by any means. The Hino SCR system is equipped with an automatic DEF defrosting system, (using engine coolant) and frozen DEF will be defrosted while driving. The engine will still start, run and operate normally if the DEF is frozen. DEF will expand by approximately 7% when frozen and the reservoir is designed to accommodate the expansion.

IS DEF HAZARDOUS?

DEF is a non-hazardous, non-toxic and non-flammable solution. If DEF comes into contact with your skin or your eyes, you should immediately flush affected areas thoroughly with clean water. **Wearing gloves and safety goggles when dispensing DEF is strongly recommended.** Using gloves will also reduce the risk of DEF contamination. **Keep your face away from DEF and do not inhale DEF vapors** when re-filling the DEF reservoir. DEF may produce a slight odor when it is warmed up.

DEF AVAILABILITY

DEF is available in a variety of containers, including 9.46 litre jugs, 208L drums, and 1040L totes at truck stops, fuel retailers and at Hino Dealerships across Canada.



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