

Frequently Asked Questions

Gilbarco® Encore® S Diesel Exhaust Fluid (DEF) Dispenser

What is DEF?

DEF is an acronym for Diesel Exhaust Fluid. On diesel vehicles outfitted with Selective Catalytic Reduction (SCR) technology, DEF will be an integral fluid required for vehicle operation. It will be installed on 85% of all large trucks manufactured, beginning in January 2010.

Is DEF the same thing as urea? Does it freeze and at what temperature?

DEF contains 32.5% Urea and 67.5% water. The freeze point of DEF is 12 degrees F.

What are the benefits of DEF or SCR technology on diesels engines?

SCR technology has been the only proven technology that meets the stringent Environmental Protection Agency (EPA) guidelines for reduced emissions of Nitrogen Oxides (NOx). Other technologies such as Cooled Engine Gas Recirculation (EGR) have not proven to meet the guidelines. The secondary benefit is improved mileage efficiency by 3-5% over standard engines.

How does SCR use DEF to reduce emissions?

To reduce NOx, a small amount of DEF is injected directly into the exhaust upstream of a catalyst. The DEF vaporizes and decomposes to form ammonia, which in conjunction with the SCR catalyst, reacts with NOx to convert the pollutant into nitrogen and water. This means that trucks will have to carry a sufficient quantity of DEF on board. Depending on the capacity of the DEF tank, the SCR system is expected to add 300 – 400 pounds to the weight of a Class 8 truck.

What installation materials (piping / hoses / containment information) are compatible with DEF?

For a full explanation of DEF and how it works to protect you and the environment, see our accompanying whitepaper, SP-3335.

When is DEF going to be required? Who will be affected?

SCR systems will be installed on 85% of new diesel vehicles beginning January 1, 2010. All new engines purchased after January 1, 2010 will need to meet the EPA standard for NOx emissions. Those engines manufactured before December 31, 2009 are not subject to the regulation.

Why not 100% of large trucks?

There are two different ways to meet the 2010 environmental regulation. SCR, which utilizes DEF, and EGR are the two approaches. 85% of the truck manufacturer's have chosen (SCR) as their way of complying with the new regulation. A more detailed explanation of the two systems can found in the whitepaper SP-3335A.



What is the size of the DEF tank and what is the burn rate to diesel fuel?

The DEF tank on diesel engines will be sized between 10 and 25 gallons. The burn rate or consumption of DEF in a diesel engine will be between 3% - 5% of the diesel fuel.

Encore[®] S DEF dispenser

When will the Encore DEF dispenser be available? Models, availability?

Field trials began in July 2009 with many sites located around the country. Launch is scheduled for November 1, 2009 with shipment in January 2010. NA4 is a single DEF only model.

Why should I choose a Gilbarco Veeder-Root DEF dispenser?

Gilbarco's Encore DEF dispenser operates the same as all Gilbarco Encore S dispensers. The reliability, serviceability and image will be carried forward in the DEF models. Also, system integration with Passport[®] and other Gilbarco payment options is another major reason why you will want to stay with the Encore S platform.

What is the warranty on the DEF dispenser?

The warranty for the DEF dispenser is the same as the standard Encore S dispenser warranty.

Is hanging hardware available for these dispensers?

Yes. Hanging hardware can be factory installed or purchased separately. The compatible model for hose, nozzle and breakaway are listed below.

	Description	Gilbarco Part #	OPW Part #
Outlet Hose	17.4 foot DEF Hose	M10226B001	21GU-H17G
Break away and Swivel	Stainless steel swivel breakaway	M10258B001	21GU-SSB
DEF Nozzle	Nozzle for DEF dispenser	M10257B001	21GU-050G

Is there any special training required for technicians to become certified to work on DEF dispensers?

The ASC training will be launched in October 2009 and will be rolled into the overall ASC training requirement in 2010.

Can I upgrade my existing fuel dispenser with the Encore[®] DEF dispenser?

No. Due to the special design considerations, a new Encore S DEF dispenser is required.

How do I order an Encore DEF dispenser?

Customers should contact their nearest Gilbarco Veeder-Root distributor. Distributors can contact their Inside Sales or District Sales Manager for more details.

What is the operating temperature range of the DEF dispenser?

-35°C to 60°C or - 35°F to 140°F.

Is there a heater on the DEF system?

Yes. There is a 750 Watt / 120V heater mounted in the DEF cabinet. Please see FE363F for detailed electrical load and installation instructions.

When does the heater turn on in the hydraulic cabinet?

When the ambient temperature in the cabinet reaches 5°C or 41°F.

When does the heater turn off?

When the ambient temperature in the cabinet reaches 10°C or 50°F.

Is the hydraulic cabinet insulated?

Yes.

What happens if there is a power outage and the outside temperature is below 12° F?

- DEF will crystallize
- DEF will freeze if subject to temperature for long periods of ambient time
- DEF will expand

What temperature in hydraulic temperature will the dispenser no longer operate?

If the hydraulic cabinet reaches -11°C or 12°F while the power is energized, dispenser operation is suspended and error code 31 displayed. An ASC is required for properly restart the dispenser.

If a power outage occurs and the cabinet ambient temperature falls below 5°C what will happen to the dispenser?

Consult an ASC technician to inspect the system for damage and a warm start will be required for future operation.

How does the meter in Encore DEF dispenser differ from the meter that is used by the other manufacturers?

Gilbarco uses a mass flow metering technology in the DEF dispenser. It is the same technology that has been used in most bulk flow operations for many years. It is extremely accurate and reliable. The mass flow meter is designed to have no moving parts and is made of stainless steel to help maximize uptime and minimize cost of ownership.

Is the Encore S DEF dispenser UL rated?

No. Currently there is no UL specification for DEF dispensing equipment.

Any special maintenance instructions for the Encore S DEF?

No. Standard maintenance instruction will apply on this dispenser.