

DEF System Maintenance and Operation

Proper maintenance and operation of your generators DEF system is critical to the overall performance of your machine. How you operate your machine and how you store your DEF will directly impact the way the system works.

DEF Quality and Storage.

DEF fluid should always be purchased from reputable suppliers. All brands of DEF should test exactly the same unless a brand is doing something incorrectly like cutting corners in their manufacturing or transportation process. For example, any of the following can affect the quality of DEF:

- Not using the right type of deionized water
- Not practicing cleanliness
- Using less expensive agricultural-grade urea instead of automotive-grade

DEF should always be stored out of direct sunlight and in temperature-controlled areas not exceeding 86 degrees F. While extreme cold won't damage DEF, prolonged exposure to heat and sun does present issues. Both can cause DEF to degrade. 50 degrees Fahrenheit is generally considered to be a good temperature at which to store DEF. And even if kept in approved containers in a cool area, direct sunlight is harmful to DEF so ensure it's stored indoors or in well-shaded areas. The DEF header in the DEF tank is a sensitive component that has sensors to monitor temperature, level, and quality.

DEF Operation.

All diesel engines should be allowed to have a proper warm up sequence prior to adding load, as well as a proper cool down sequence before shutdown (Please refer to the Airman Operators Manual for your specific model). This allows oil to flow properly through the system during warm up, but also to cool down major components such as the engine's turbo.

Along with this, the DEF system also needs this cool down procedure so that it can purge the system of unused DEF in the injection line. If the unit is unable to do this, the DEF can deteriorate due to the heat of the exhaust system leading it to crystallize and block the line. If this happens, the unit will experience “**SCR Malfunction**” and “**Broken Device**” codes that will keep the unit from starting or operating properly. Software must be used to clear the codes, but also may require the removal and cleaning of DEF-related components. Some of which may have to be replaced.

Re-filling the DEF tank is also an important procedure. You need to be careful of how often you fill it up as well. Since the DEF header needs to see level change, “topping” off the DEF tank too often will result in codes because the header is not seeing proper usage of DEF. Please note that the DEF tank holds enough DEF fluid for two fuel tank cycles. You should also avoid filling the tank while the unit is running to avoid creating air bubbles in the system and affecting the level sensor.