All Fluids and Lubricants Caution

Any fluids or lubricants added to the chassis during the final manufacturing process must meet Isuzu's fluids and lubricants specifications. These fluids and lubricant specifications vary based on model year and chassis model code. A recommended fluids list based on model and model year can be found in the Vehicle Owner's Manual or on line at www.isuzutruckservice.com

Low Speed Applications for N-Series Chassis

Any low speed vehicle applications using the Aisin Transmission such as sweeper, highway striping and road side mowing airport service must adhere to the following guidelines in order to prevent the over heating of the automatic transmission fluid.

Factory Recommendation:
Select Range 1 for low speed operations under 11 mph, (18km/h).
Select Range 2 for low speed operation under 22 mph, (36km/h).

Auxiliary Transmission Cooler Warning

Installation of Auxiliary automatic transmission fluid cooler will void warranty on transmission/engine.

Transmission Temperature Warning Lamp

Automatic transmission fluid temperature warning lamp illuminates over 140 Centigrade/284°Fahrenheit.

Fuel Tank Caution

Fuel fill kit must be installed on cab chassis if it will be driven for an extended distance. (Note: fuel tank kit provides venting for the fuel tank)

Tapping into Engine Cooling System

Do not connect any auxiliary heating devices to the chassis cooling system. The chassis cooling system is part of the vehicle emission system and is used to thaw DEF fluid and meet mandatory emission thaw times.

Understanding DPF (Diesel Particulate Filter) Regeneration

2007-2013 Model Years

2007 Bulletins
Information IB07-L-002A Understanding DPF (Diesel Particulate Filter) Regeneration; Modes of Regeneration Quick Reference Guide

Issue Date: December 2007

Affected Vehicle:

- 2007 and newer Isuzu N-Series
- 2007 and newer GMC and Chevrolet W-Series
- 2007 and newer Isuzu F-Series
- 2007 and newer GMC and Chevrolet T-Series
- 2007 and newer GMC and Chevrolet C-Series

Equipped with DPF (Diesel Particulate Filter)

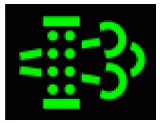
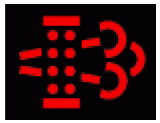
(DPF, SCR, Storage, and Cautions – continued on next page)

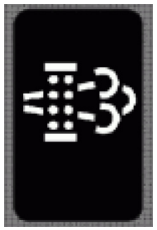
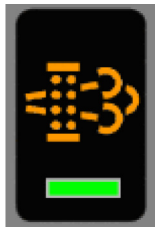
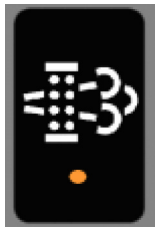
2014 Isuzu Truck

(DPF, SCR, Storage, and Cautions – continued from previous page)

Service Information:

The quick reference information below is provided to assist dealer personnel in better understanding the DPF Emission System Operation. Additional information regarding DPF Regeneration can be found in the Owner's Manual, Service manual, the driver side sunvisor label or on the Emission System Operation video (available in vehicles delivered from Port after 09/01/20x07). For your convenience, this video may be downloaded from the following websites; WWW.ISUZUTRUCKSERVICE.COM, WWW.ISUZUCV.COM, WWW.ISUZUCV.ORG and WWW.ISUZUDIESELENGINE.COM

	**Green DPF Lamp:** When illuminated this lamp indicates the DPF is actively regenerating. No action is required.
 **or** 	Amber/Orange or Red DPF Lamp: (One indicator with two possible colors) When this lamp is **Amber/Orange** the DPF filter is dirty. Filter regeneration is necessary at this time. When driving continues without regeneration, this DFP lamp will change from Amber/Orange to **RED**. Continuing to drive the vehicle with the red lamp illuminated can cause filter damage.
	**Malfunction Indicator Lamp (MIL):** This lamp indicates a possible concern with engine and/ or emissions performance.
	**Reduced Engine Power Lamp:** (F/T/C-Series Only) This lamp indicates when a noticeable change in vehicle performance may occur.

N/W-Series	F/T-Series	C-Series	
			**DPF Switch**

(DPF, SCR, Storage, and Cautions – continued on next page)

(DPF, SCR, Storage, and Cautions – continued from previous page)

N-Series and W-Series Regeneration Modes

Mode	Name	Description
Automatic Regeneration		• ECM monitors sensor inputs and determines DPF regeneration is necessary • The ECM commands the green DPF lamp "ON" • Vehicle should be driven normally *Note: If idling at a stop or in "Park" during this regeneration mode, the engine RPM will increase and the exhaust brake will activate.* • This process occurs at 180 mile intervals or sooner • Amber or red light comes "ON' • Driver MUST choose one of the following options to perform this regeneration. If one of the following options is not completed, Limp Home Mode may be activated.
Emergency Regeneration	**Running Option 1**	• Drive vehicle above 30mph • ECM monitors sensor input and determines if regeneration is possible • The ECM commands the green DPF lamp "ON" •Vehicle should be driven normally *Note: If idling at a stop or in "Park" during this regeneration mode, the engine RPM will increase and the exhaust brake will activate.*
Emergency Regeneration	**Switched Option 2**	• Set the parking brake, engine running and transmission in Park or Neutral Position • Press DPF switch • Green DPF lamp comes "ON" • Engine RPM increases and exhaust brake activation for about 20 minutes • If this is interrupted must press DPF switch to restart process
Important: Once Emergency Switched or Selectable Regeneration Modes have been selected the Automatic and Emergency Running Modes are no longer available. Automatic and Emergency running modes will become available after Switched or Selectable DPF regeneration is completed.		
Selectable Regeneration		*Note: For quickest possible regeneration, be sure the vehicle is at operating temperature before performing selectable regeneration.* • Engine running and in "Park" Position • Parking brake is applied • Press and hold the DPF switch until the amber DPF lamp turns "ON" • If amber DPF lamp goes "Off", regeneration is not necessary. • If the amber DPF lamp stays on "ON", it means that regeneration is possible • Press the DPF switch again to start regeneration • The green DPF lamp and then the amber DPF lamp will turn "ON" indicating that regeneration is taking place. This will take about 20 minutes. • Engine RPM will increase and the exhaust brake will activate
Caution: The following actions will interrupt the stationary type regeneration. Failure to restart and complete the regeneration cycle will result in filter clogging. • Applying the accelerator pedal. • Shifting into gear (with Automatic Transmission) • Pressing the clutch pedal (Manual Transmission) • Engine speed increases.		
Limp Home Mode		*Note:This condition should only be diagnosed and repaired by an Isuzu trained technician.* • MIL lamp is on, vehicle speed is reduced • Technician diagnosis required • IDSS induced regeneration (fast or slow) based on diagnosis • Slow process takes 2 hours

(DPF, SCR, Storage, and Cautions – continued on next page)

(DPF, SCR, Storage, and Cautions – continued from previous page)

F/T/C-Series Regeneration Modes

Mode	Name Description	
Automatic Regeneration	• ECM monitors sensor inputs and determines DPF regeneration is necessary • The ECM commands the green DPF lamp "ON" • Vehicle should be driven normally *Important: If the parking brake is set or the "Park "position is selected, the automatic regeneration will be cancelled.* • This process occurs at 180 mile intervals or sooner	
Emergency Regeneration	• Orange or red light comes "ON" • Driver MUST choose one of the following options to perform this regeneration. If one of the following options is not completed, Limp Home Mode may be activated.	
	Running Option 1	• Drive vehicle above 30mph • ECM monitors sensor input and determines if regeneration is possible • The ECM commands the green DPF lamp "ON" • Vehicle should be driven normally • When idling at a stop the exhaust brake may activate and the idle speed may increase. *Important: If the parking brake is set or the "Park "position is selected, the automatic regeneration will be cancelled.*
	Switched Option 2	• Set the parking brake, engine running and transmission in Park or Neutral Position • Press DPF switch • Green DPF lamp comes "ON" • Engine RPM increases and exhaust brake activation for about 20 minutes • If this is interrupted must press DPF switch to restart process
Important: Once Emergency Switched or Selectable Regeneration Modes have been selected the Automatic and Emergency Running Modes are no longer available. Automatic and Emergency running modes will become available after Switched or Selectable DPF regeneration is completed.		
Selectable Regeneration	Note: For quickest possible regeneration be sure the vehicle is at operating temperature before performing selectable regeneration. • Engine running and in "Park" Position • Parking brake is applied • Press and hold the DPF switch until the DPF switch jewel lamp comes "ON" • If the jewel lamp goes "Off", regeneration is not necessary. • If the jewel lamp blinks, it means that regeneration is possible • Press the DPF switch again to start regeneration • The orange DPF lamp, green DPF lamp and then the jewel lamp will turn "ON" indicating that regeneration is taking place. This will take about 20 minutes. • Engine RPM will increase and the exhaust brake will activate	
Caution: The following actions will interrupt the stationary type regeneration. Failure to restart and complete the regeneration cycle will result in filter clogging. • Applying the accelerator pedal. • Shifting into gear (with Automatic Transmission) • Pressing the clutch pedal (Manual Transmission) • Engine speed increases • Releasing the parking brake		
Limp Home Mode	*Note:This condition should only be diagnosed and repaired by an Isuzu trained technician.* • MIL and/ or Reduced Engine Power Lamp is "ON", vehicle speed is reduced • Technician diagnosis required • IDSS induced regeneration (fast or slow) based on diagnosis • Slow process takes 2 hours	

(DPF, SCR, Storage, and Cautions – continued on next page)

Understanding SCR (Selective Catalyst Reduction)

Introduction to Selective Catalyst Reduction (SCR) and Diesel Exhaust Fluid (DEF)

- 2013 MY Isuzu N-Series Equipped with Selective Catalyst Reduction (SCR)

INFORMATION

The Selective Catalyst Reduction (SCR) system reduces nitrogen oxide (NOx) emissions emitted from a diesel engine. The SCR system reduces NOx by adding (injecting) Diesel Exhaust Fluid (DEF) into the exhaust system and inducing a reaction converting NOx into water vapor and nitrogen. This reaction takes place without any driver involvement. In addition, as long as the DEF tank is regularly filled with good quality DEF and at a satisfactory level above empty, the driver may never notice the SCR system.

It is the driver's responsibility to keep a good supply of quality DEF in the DEF tank for the proper operation of the SCR system. The SCR system will continuously monitor itself and the NOx reduction performance for any condition that will reduce or stop this emission reduction. The information provided in the remainder of this bulletin will outline the SCR system functions, common characteristics of the SCR system, DEF quality requirements and indicator and warning lights should the SCR system detect an incorrect fluid or if the DEF level in the DEF tank becomes too low.

- SCR System Operation
- Adding DEF
- DEF Low Level Warning System
- DEF Quality and Storage
- DEF Safety
- Locating DEF

(DPF, SCR, Storage, and Cautions – continued on next page)

(DPF, SCR, Storage, and Cautions – continued from previous page)

SCR SYSTEM OPERATION AND THE DRIVER

The SCR system requires good quality DEF for proper operation. The system is equipped with various sensors to detect the proper fluid is added to the DEF tank. The driver's only responsibility is to add good quality DEF to the DEF tank as necessary. The DEF level gauge on the instrument cluster shows the amount of DEF remaining. In addition the Mutli Information Display (MID) will provide additional notice to encourage the driver to add DEF. In order to keep the SCR system operational and emissions compliant a warning system will activate when the DEF level becomes too low (see DEF Low Level Warning System).
After starting the engine the SCR control module will pressurize the system and based on various sensor inputs begin to reduce NOx emissions. No driver action is necessary for the SCR system to function. After the engine is turned "OFF" the SCR control module will reduce system pressure and recover all DEF in the system piping back to the DEF tank. This action is taken as cold weather protection.

Note: Drivers may notice a buzzing noise from the driver side of the vehicle near the DEF tank a few moments after turning "OFF" the engine. This is a function of the SCR system and should be considered normal.

During cold weather seasons DEF may freeze in the DEF tank. Once the engine is started, engine coolant circulates through the DEF tank to thaw it when frozen and prevent it from freezing while the engine is running. The vehicle can be driven normally when DEF is frozen in the DEF tank.

ADDING DEF

Under normal conditions DEF can be added simply by removing the DEF tank fill cap and pouring in DEF. A few points to be aware of when transferring DEF from its original container to the DEF tank are:

1. Be sure the outside of the container is clean from any debris
2. If using a funnel or pump to transfer DEF, be sure to use equipment exclusively for DEF made from polyethylene resin or stainless steel.
3. Do not overfill the DEF tank

Take care not to spill DEF. When DEF dries it will leave a crystalline residue. This condition is normal. Wash, with water, or wipe away the residue to prevent it from entering the DEF tank. If DEF is spilled on the body or frame, it may cause the metal to rust, so wipe it off and then rinse it away with water.

Note: For cold weather climates (ambient temperatures below -11°C/12°F)

Isuzu does not recommend parking the vehicle for long periods with the refill diesel exhaust fluid (DEF) warning light on in cold weather.
The DEF low level warning system may not reset when DEF is added. Take the following actions to avoid this condition in cold weather.

(DPF, SCR, Storage, and Cautions – continued on next page)

(DPF, SCR, Storage, and Cautions – continued from previous page)

ADDING DEF - continued

1. Refill the DEF as soon as possible after parked vehicle.
2. Turn the engine control switch to the “ON” position from the “LOCK” position.
3. Wait for the warning buzzers and warning lights to turn off.
4. If the buzzer does not stop, return the engine control switch back to the “LOCK” position and add more DEF, and then start over the step (2) above.
5. Turn the engine control switch to the “LOCK” position.Turn the engine control switch to the “ON” position from the “LOCK” position.
6. Wait for the warning buzzers and warning lights to turn off.
7. If the buzzer does not stop, return the control switch back to the “LOCK” position and add more DEF, and then start over the step (2) above.
8. Turn the engine control switch to the “LOCK” position.

DEF LOW LEVEL WARNING SYSTEM

To avoid running out of DEF the SCR system will turn on warning and indicator lights and reduce engine power in progressive stages to encourage adding DEF. The following is a summary of the diesel exhaust fluid (DEF) low level warning lights, indicator lights and engine power reductions. Continuing to drive for too long after these lights come on will eventually result in a severe vehicle speed limitation. These warning and indicator lights will go out automatically and engine power will be restored to normal after the SCR system detects that the DEF tank is refilled with DEF.

Stage 1: When the remaining level of DEF becomes excessively low the DEF gauge will change color from green to amber. In addition, warning and indicator lights will come on as shown in the table and engine power will be reduced so the vehicle speed will not exceed 55 MPH (89 km/h).

Stage 2: If driving is continued without adding DEF (approximately 200 miles (320 km)) the DEF gauge, warning and indicator lights will begin blinking. Again, engine power will be reduced so the vehicle speed will not exceed 35 MPH (56 km/h).

Stage 3: If driving is continued until the DEF tank is empty, the DEF gauge will change color from amber to red and the warning and indicator lights will begin to blink faster. Engine power will still be reduced so the vehicle speed will not exceed 35 MPH (56 km/h). The vehicle speed will be limited to 5 MPH (8 km/h) either when the vehicle is stopped after driving further on (approximately 35 miles (56 km)) or when the engine is restarted.

Stage 4: The DEF gauge is red, the indicator light is blinking and the buzzer is beeping continuously indicates the vehicle speed is limited to 5 MPH (8 km/h).

(DPF, SCR, Storage, and Cautions – continued on next page)

(DPF, SCR, Storage, and Cautions – continued from previous page)

DEF QUALITY AND STORAGE

Diesel Exhaust Fluid is a urea-based chemical reactant designed specifically for use in SCR systems to reduce NOx emissions. The raw materials used to produce DEF include natural gas, coal or other petroleum products. DEF is prepared by combining high purity urea with deionized water to create a 32.5% solution. DEF and similar urea-based products are widely used today for a variety of agricultural and industrial needs. Isuzu DEF is API certified and meets ISO22241 specifications for purity and composition, while being:

– Non-toxic and non-polluting
– Non-flammable
– Stable and colorless
– Non-hazardous

DEF should be stored in an indoor place with good ventilation avoiding direct sunlight, if possible. Be sure containers are sealed properly to avoid contamination and evaporation. To maximize shelf life, ideal storage temperature is below 30°C/86°F and above -11°C/12°F to prevent freezing. If frozen DEF can be thawed and used without any concerns.

DEF SAFETY

Though it should be harmless for physical contact, there may be a rare case to induce inflammation depending on the body constitution, so make sure to take following actions.

– In the event that the fluid does come into contact with your skin, wash it off with water. Although it is rare, a person with sensitive skin may suffer from irritation. If you come into contact with DEF, flush the affected area with soap and/or water. If irritation or redness develops or persists, seek medical attention.
– If it is accidentally swallowed, drink 1- 2 glasses of water or milk and seek immediate medical attention.
– If it does come into contact with the eyes, immediately rinse it off with a large amount of water for at least 15 minutes, and then seek medical attention.

Customer Assistance in locating DEF DEF is available from all authorized Isuzu dealers. In addition, the U.S. Department of Energy has created an on-line DEF locator that can be accessed at http://www.afdc.energy.gov/afdc/locator/def/ . The American Petroleum Institute (API) also maintains a list of API-certified distributors of DEF on their web page at http://www.apidef.org/searchresults.asp .

(DPF, SCR, Storage, and Cautions – continued on next page)

(DPF, SCR, Storage, and Cautions – continued from previous page)

PREPARATION OF VEHICLES FOR STORAGE BEYOND 30 DAYS

In the event vehicles are to be stored for extended periods beyond 30 days, the following additional maintenance items are suggested:

NOTE: When vehicles are stored outside, particularly along coastal areas, paint and bright metal deterioration will be more rapid due to prevailing salt water atmosphere and high humidity. For this reason, it may be necessary to wash the vehicle and wax the chrome and stainless steel metal parts at least once a month.

NOTE: To prevent the possibility of a build-up of mildew, open the doors to air the vehicle out at least once a month depending upon climatic condition. If there is condensation, wipe the condensation dry with a clean cloth and air out the vehicle.

A. "Block out" mechanical clutches by holding the clutch pedal partially depressed (approximately 1/2 way) with wooden blocks or bracing. This will prevent clutch plates from rusting to the flywheel and clutch pressure plate.

B. Remove the windshield wiper arms and blades and store in the vehicle. In addition, the following procedures are to be carried out at 30-day intervals and instituted after the first 30 days of vehicle storage.

1) Check the battery water levels and specific gravity. If voltage is under 12.20 volts, recharge the battery.

2) Connect the battery ground cable, and start the engine. Operate the engine at fast idle until normal operating temperature is reached (be sure there is sufficient fuel in tank - each vehicle is supplied with approximately 1.5 gallons of fuel. Do not let the tank run dry. While engine is warming up, perform Steps 3-7 below.

3) Shift the transmission lever to all positions while the engine is running.

4) Move the vehicle for a distance of at least 30 feet to lubricate the wheel bearings.

NOTE: The vehicle should be re-parked so that a different area of the tires is in contact with the ground to reduce the possibility of tire damage.

5) Turn the steering wheel lock-to-lock, while the vehicle is moving slowly.

6) Apply and release the service and parking brakes several times. (Do not apply the parking brake when the vehicle is moving)

7) Stop the engine.

8) Disconnect the battery ground cable.

9) Drain the brake air reservoirs (if appropriate) and close the drain cocks.

VEHICLES STORED BEYOND ONE YEAR

In the event vehicles are to be stored for extended periods beyond one year, the following additional maintenance is required:

1) Drain and refill Diesel Exhaust Fluid (DEF)

(DPF, SCR, Storage, and Cautions – continued on next page)

(DPF, SCR, Storage, and Cautions – continued from previous page)

Limited Slip Differential Fluid

Should it become necessary to add fluid to the rear axle of a chassis equipped with a limited slip differential please consult the Isuzu Owners Manual for the appropriate selection of lubricants to be used.

Axle Ratio	Housing Stamp Stand Axle	Stamp LSD Axle
4.300	SO	HO
4.555	C9	D9
4.777	S9	H9
5.125	C8	D8
5.375	S8	H8
5.571	A7	B7
5.857	C7	D7