

M155E4

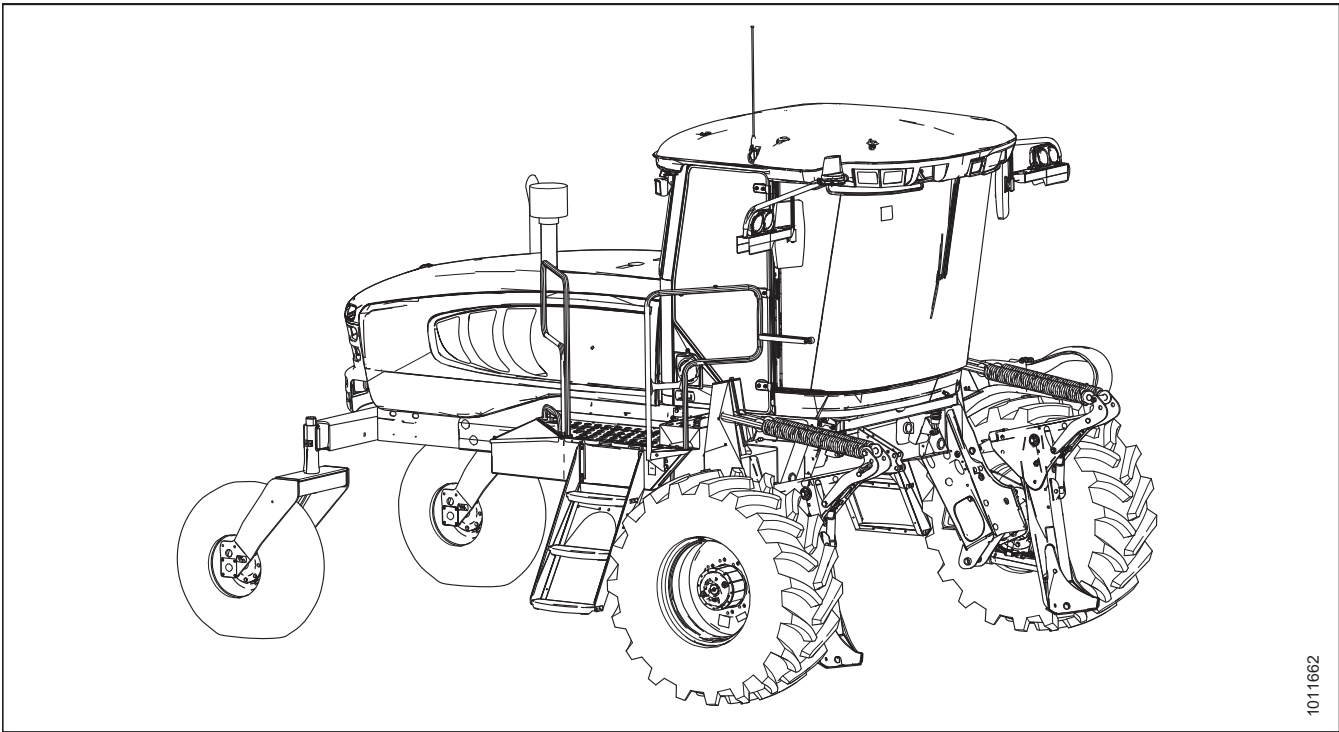
Self-Propelled Windrower

DEF Head Service Kit (MD #183997) Installation Instructions

215233 Revision B

Original Instruction

M155E4 Self-Propelled Windrower, featuring Dual Direction® and Ultra Glide® suspension.



1011662

Published May 2020

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Introduction

The DEF Head Service kit (MD #183997) is for 2018 and prior M155E4 Self-Propelled Windrowers that require DEF head replacement.

This document explains how to install the kit. A list of parts included in the kit is provided in Chapter *2 Parts List, page 5*.

NOTE:

A complete list of serviceable parts is included in *2.1 Serviceable Parts, page 6*. Please provide these pages to the end user to ensure they have the correct list of serviceable parts for this DEF head and tank.

Installation time

The approximate installation time for this kit is 2 hours.

Conventions

The following conventions are used in this document:

- Right and left are determined from the operator's position, facing forward with the windrower in cab-forward position.
- Unless otherwise noted, use the standard torque values provided in the windrower operator's manual and technical manual.

NOTE:

Keep your MacDon publications up-to-date. The most current version of this instruction can be downloaded from our Dealer-only site (<https://portal.macdon.com>) (login required).

NOTE:

This document is currently available in English only.

Summary of Changes

At MacDon, we're continuously making improvements, and occasionally these improvements affect product documentation. The following list provides an account of major changes from the previous version of this document.

Section	Summary of Change	Internal Use Only
<i>3.1 Removing DEF Head and Tank Assembly, page 9</i>	Revised instructions for releasing clips on DEF hoses.	Product Support
<i>3.2 Installing DEF Head and Tank Assembly, page 14</i>	Updated illustration of DEF hose (MD #207770) and deleted the associated note.	Tech Pubs
<i>3.2 Installing DEF Head and Tank Assembly, page 14</i>	Corrected electrical connector numbers (P172 and P173 were reversed).	Product Support

TABLE OF CONTENTS

Introduction i

Summary of Changes..... ii

Chapter 1: Safety 1

 1.1 Signal Words 1

 1.2 General Safety 2

Chapter 2: Parts List..... 5

 2.1 Serviceable Parts 6

Chapter 3: Installation Instructions 9

 3.1 Removing DEF Head and Tank Assembly..... 9

 3.2 Installing DEF Head and Tank Assembly 14

Chapter 1: Safety

1.1 Signal Words

Three signal words, **DANGER**, **WARNING**, and **CAUTION**, are used to alert you to hazardous situations. Two signal words, **IMPORTANT** and **NOTE**, identify non-safety related information. Signal words are selected using the following guidelines:

DANGER

Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury.

WARNING

Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury. It may also be used to alert against unsafe practices.

CAUTION

Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may be used to alert against unsafe practices.

IMPORTANT:

Indicates a situation that, if not avoided, could result in a malfunction or damage to the machine.

NOTE:

Provides additional information or advice.

1.2 General Safety

CAUTION

The following general farm safety precautions should be part of your operating procedure for all types of machinery.

Protect yourself when assembling, operating, and servicing machinery, wear all protective clothing and personal safety devices that could be necessary for the job at hand. Do **NOT** take chances. You may need the following:

- Hard hat
- Protective footwear with slip-resistant soles
- Protective glasses or goggles
- Heavy gloves
- Wet weather gear
- Respirator or filter mask

In addition, take the following precautions:

- Be aware that exposure to loud noises can cause hearing impairment or loss. Wear suitable hearing protection devices such as earmuffs or earplugs to help protect against loud noises.



Figure 1.1: Safety Equipment



Figure 1.2: Safety Equipment

- Provide a first aid kit in case of emergencies.
- Keep a properly maintained fire extinguisher on the machine. Be familiar with its proper use.
- Keep young children away from machinery at all times.
- Be aware that accidents often happen when the Operator is tired or in a hurry. Take time to consider safest way. **NEVER** ignore warning signs of fatigue.

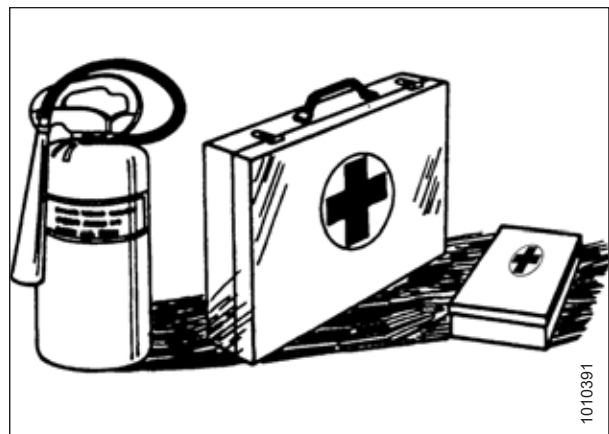


Figure 1.3: Safety Equipment

SAFETY

- Wear close-fitting clothing and cover long hair. **NEVER** wear dangling items such as scarves or bracelets.
- Keep all shields in place. **NEVER** alter or remove safety equipment. Make sure driveline guards can rotate independently of shaft and can telescope freely.
- Use only service and repair parts made or approved by equipment manufacturer. Substituted parts may not meet strength, design, or safety requirements.



Figure 1.4: Safety around Equipment

- Keep hands, feet, clothing, and hair away from moving parts. **NEVER** attempt to clear obstructions or objects from a machine while the engine is running.
- Do **NOT** modify the machine. Unauthorized modifications may impair machine function and/or safety. It may also shorten the machine's life.
- To avoid injury or death from unexpected startup of the machine, **ALWAYS** stop the engine and remove the key from the ignition before leaving the operator's seat for any reason.

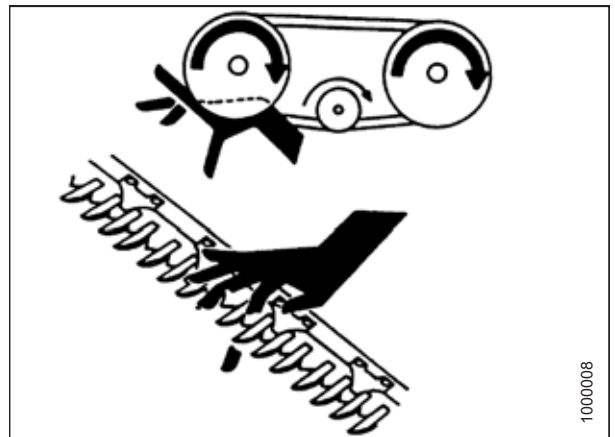


Figure 1.5: Safety around Equipment

- Keep service area clean and dry. Wet and/or oily floors are slippery. Wet spots can be dangerous when working with electrical equipment. Be sure all electrical outlets and tools are properly grounded.
- Keep work area well lit.
- Keep machinery clean. Straw and chaff on a hot engine are fire hazards. Do **NOT** allow oil or grease to accumulate on service platforms, ladders, or controls. Clean machines before storage.
- **NEVER** use gasoline, naphtha, or any volatile material for cleaning purposes. These materials may be toxic and/or flammable.
- When storing machinery, cover sharp or extending components to prevent injury from accidental contact.



Figure 1.6: Safety around Equipment

Chapter 2: Parts List

The following parts are included in this kit:

NOTE:

For a complete list of serviceable parts, refer to [2.1 Serviceable Parts, page 6](#).

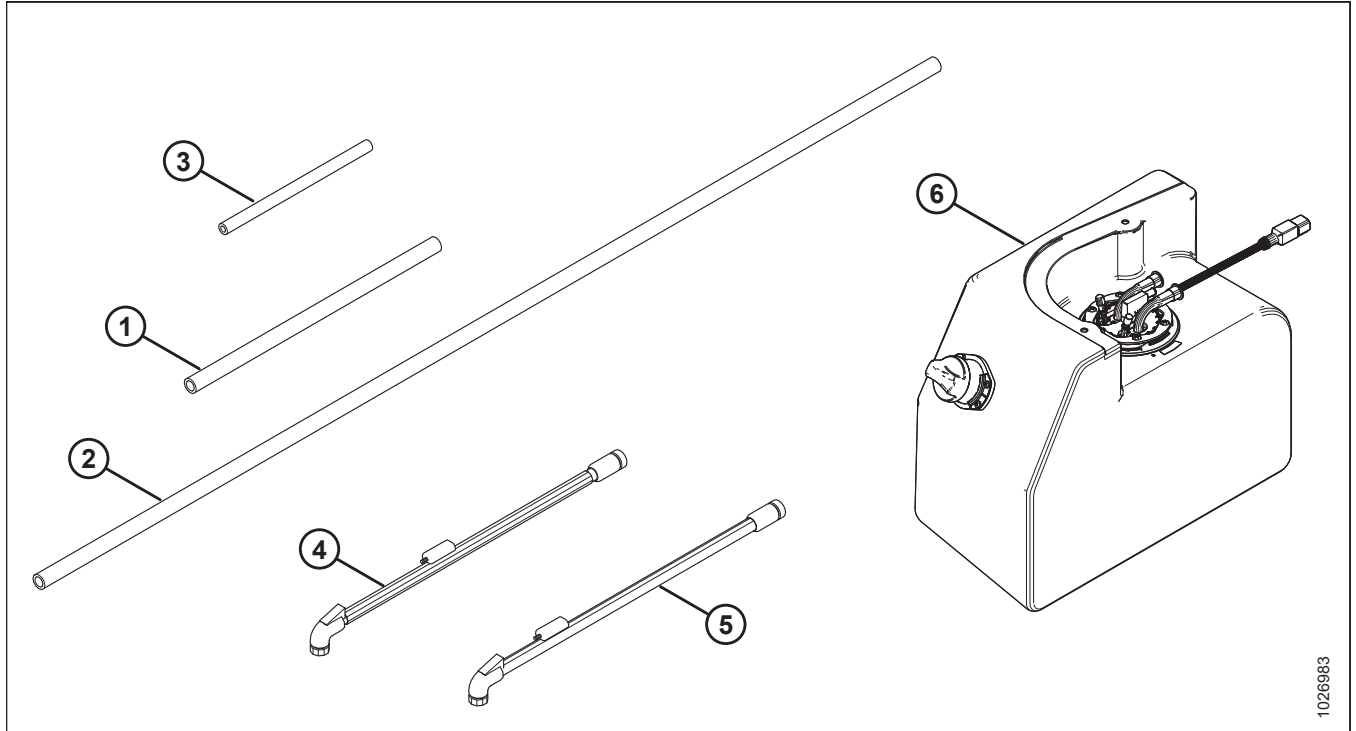


Figure 2.1: Parts Included in Kit

Ref	Part Number	Description	Quantity
1	183993	HOSE – HEATER	1
2	183994	HOSE – HEATER	1
3	183995	HOSE – HEATER, SILICONE	1
4	207769	HOSE – DEF, BACKFLOW	1
5	207770	HOSE – DEF, SUCTION	1
6	NSS ¹	ASSEMBLY – DEF TANK SSI W/ HEAD	1

1. Not sold separately.

PARTS LIST

2.1 Serviceable Parts

NOTE:

Please provide these pages to the end user to ensure they have the correct list of serviceable parts for this DEF head and tank.

Below is the complete list of serviceable parts included in kit MD #183997.

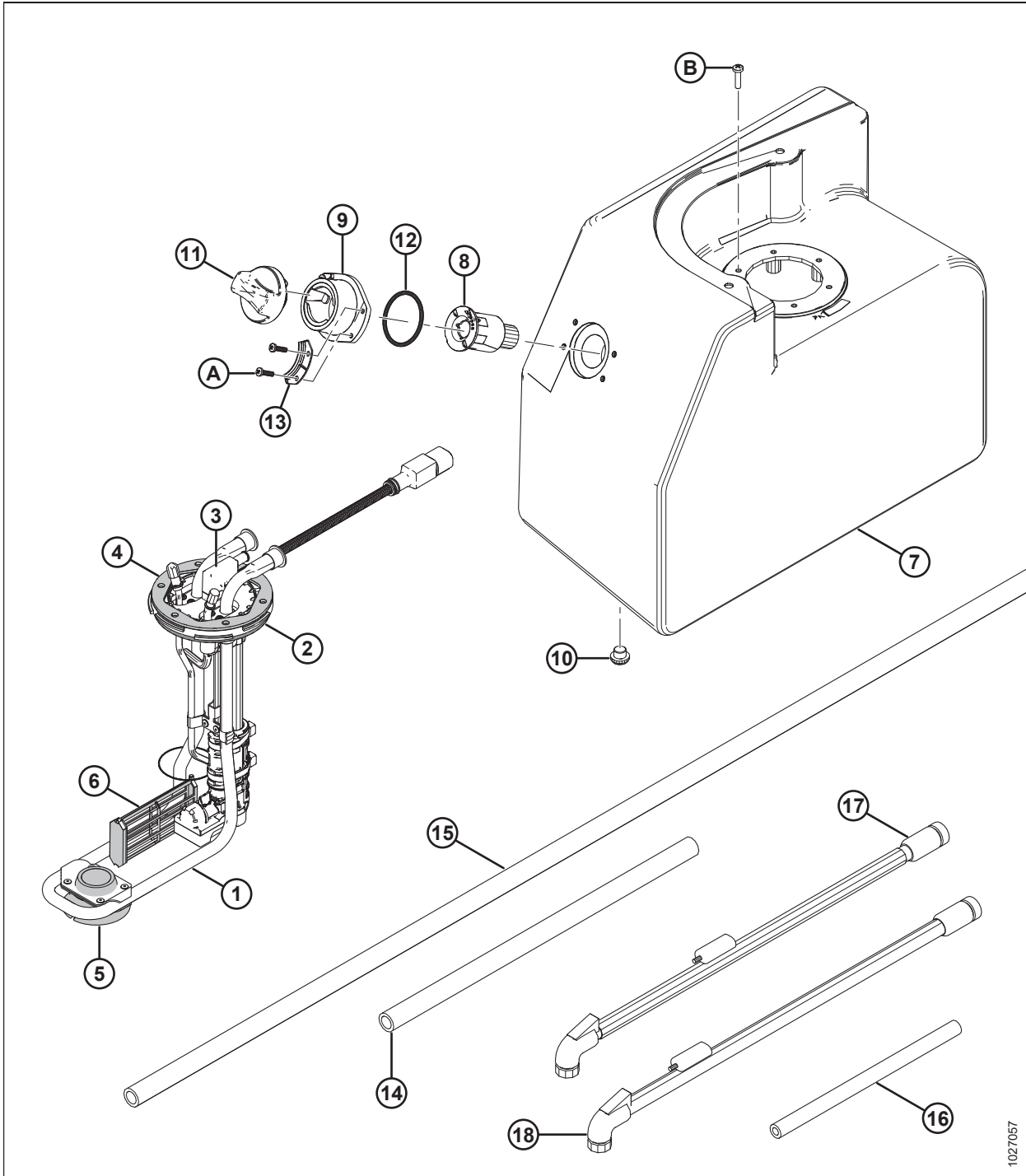


Figure 2.2: Serviceable Parts

PARTS LIST

Ref	Part Number	Description	Quantity
1	207445 ²	ASSEMBLY – DEF HEAD, SSI	1
2	291158	GASKET – DEF HEAD	1
3	291159	VALVE – AIR VENT VALVE S/A	1
4	291160	FLANGE – SAE 6 HOLE TANK FLANGE	1
5	291161	GROMMET – LARGE, DEF HEAD	1
6	291162	HOUSING – LIQUID FILTER, S/A	1
7	208917	TANK – DEF SSI	1
8	204101	ASSEMBLY – SCREEN, FILL NECK	1
9	204094	FILL NECK, LESS CAP	1
10	204098	PLUG – DRAIN CW GASKET	1
11	204097	CAP – DEF TANK	1
12	207536	O-RING – DEF TANK FILL NECK	1
13	207534	RETAINER – DEF CAP TETHER	2
14	183993	HOSE – HEATER	1
15	183994	HOSE – HEATER	1
16	183995	HOSE – HEATER, SILICONE	1
17	207769	HOSE – DEF, BACKFLOW	1
18	207770	HOSE – DEF, SUCTION	1
A	252203	SCREW – PAN HD ISO 7045 M5 X 0.8 X 20-SS-PLN	4
B	136252	SCREW – PAN HD M6 X 1X25-4.8-H-SS	6

2. Includes items #2–6.

Chapter 3: Installation Instructions

WARNING

To avoid bodily injury or death from the unexpected startup of the machine, always stop the engine and remove the key from the ignition before leaving the operator's seat for any reason.

WARNING

Diesel Exhaust Fluid (DEF) contains urea. Do NOT get the substance in your eyes. In case of contact, immediately flush eyes with water for a minimum of 15 minutes. Do NOT swallow. In the event the DEF is ingested, contact doctor immediately.

To install the DEF Head Service kit (MD #183997), follow these steps:

1. Shut down the engine, and remove the key from the ignition.

NOTE:

Wait approximately 1 minute after shutting down the windrower for the DEF supply module to complete the purge cycle before disconnecting hoses from the DEF tank head.

2. Open the right platform to the standard service position. For instructions, refer to the windrower operator's manual or technical manual.
3. Drain the remaining fluid from the DEF tank. For instructions, refer to the windrower operator's manual or technical manual.

IMPORTANT:

Any spilled DEF must be contained and absorbed by non-combustible absorbent material like sand, and then shovelled into a suitable container for disposal. DEF is corrosive. If spilled on tank or any surface of the vehicle, rinse thoroughly with water.

3.1 Removing DEF Head and Tank Assembly

To remove the existing DEF head and tank assembly, follow these steps:

1. Remove two bolts (A) and top cover (B) from the DEF tank. Retain cover and bolts for the new tank.

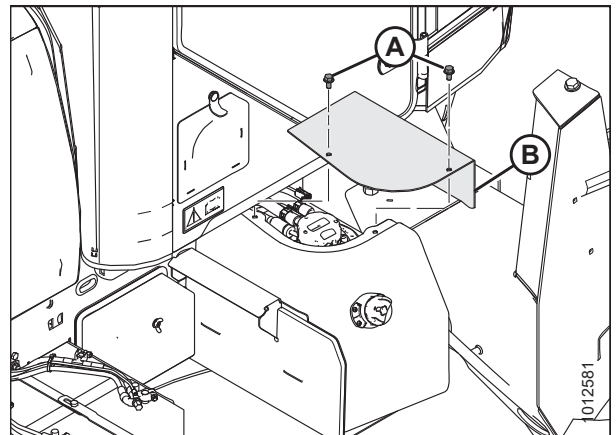


Figure 3.1: DEF Tank

INSTALLATION INSTRUCTIONS

2. Disconnect harness (A) from solenoid valve (B) near the DEF supply module (C).

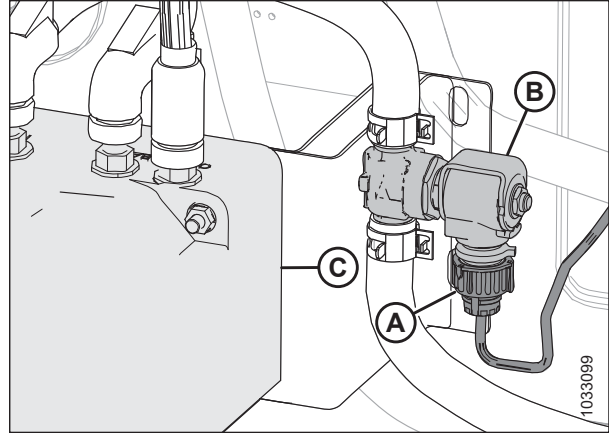


Figure 3.2: Solenoid Valve Harness

3. Clamp hoses (A) and (B) at the solenoid valve to prevent coolant loss when replacing hose (B).

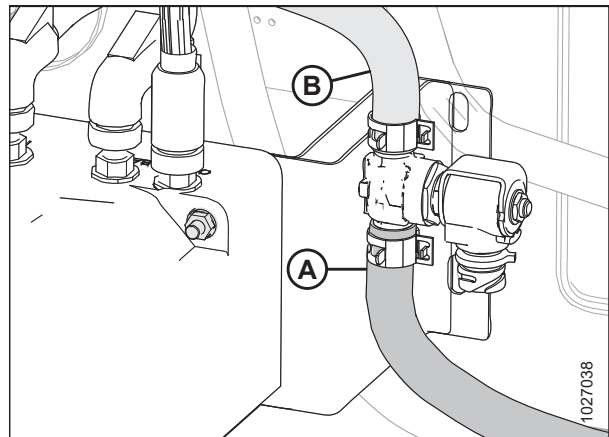


Figure 3.3: Solenoid Valve

4. Clamp hoses (A), (B), and (C) at the fuel injector module tee to prevent coolant loss when replacing hose (C).

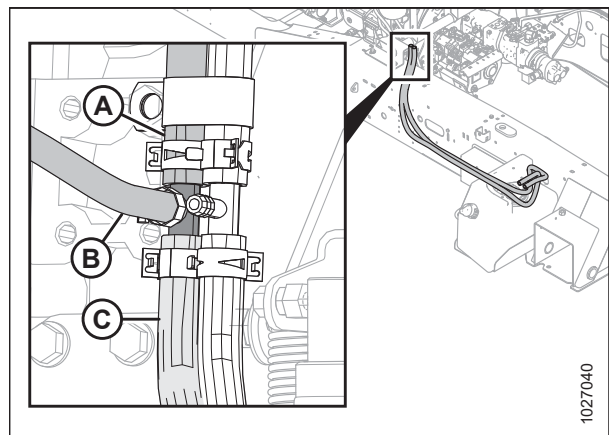


Figure 3.4: Coolant Hoses

INSTALLATION INSTRUCTIONS

5. Disconnect electrical harness (A).
6. Clamp off hoses (B) and (C).



WARNING

The coolant lines are likely full of fluid. Use caution when disconnecting them from the DEF head.

7. Disconnect coolant hoses (B) and (C) from DEF head (D). Retain clamps for installing the new hoses.

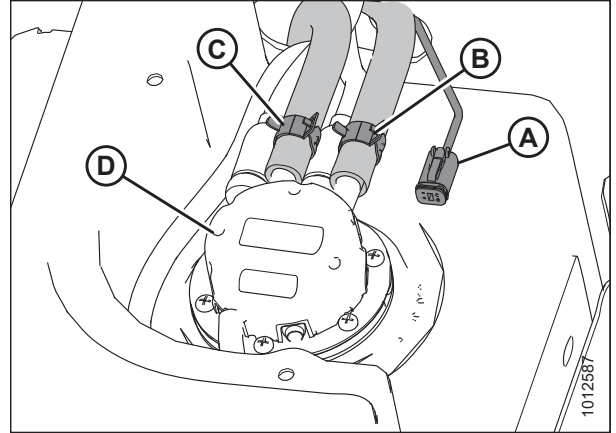


Figure 3.5: DEF Tank Head

8. The DEF hoses are held on with a plastic retaining clip. Press the black portion of each clip to expand it, and then lift DEF backflow hose (A) and DEF suction (inlet) hose (B) off DEF head (C).

NOTE:

Refer to the illustration below for a closer view of the plastic retaining clip.

9. Remove lined clamp (D) securing vent hose (E), and disconnect the vent hose from the DEF head.

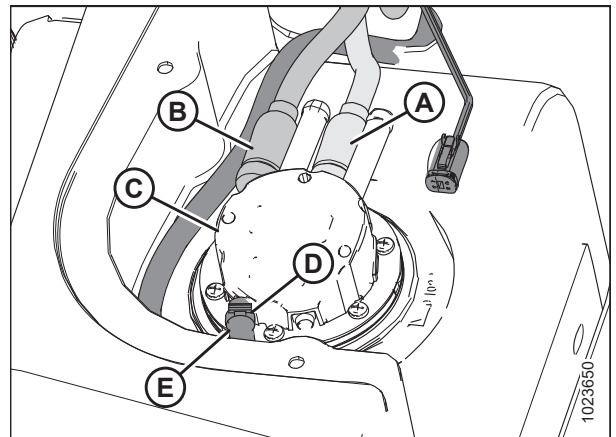


Figure 3.6: DEF Tank Head – Top View

NOTE:

The illustration at right is intended to clearly show the plastic retaining clip (A). The hoses are not exactly as shown.

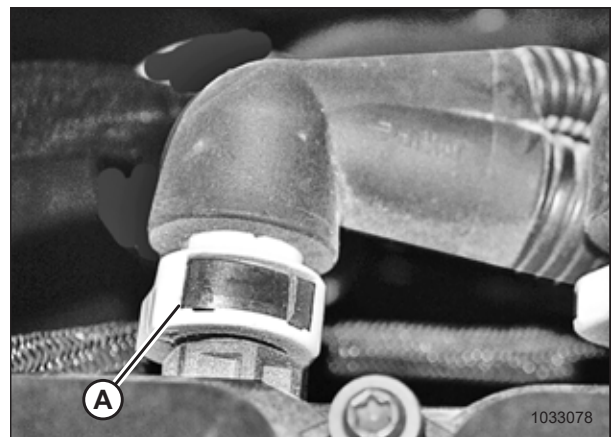


Figure 3.7: DEF Hose Connector

INSTALLATION INSTRUCTIONS

10. Remove and retain four bolts (A) from under the DEF tank.
11. Remove the DEF tank from bracket (B).

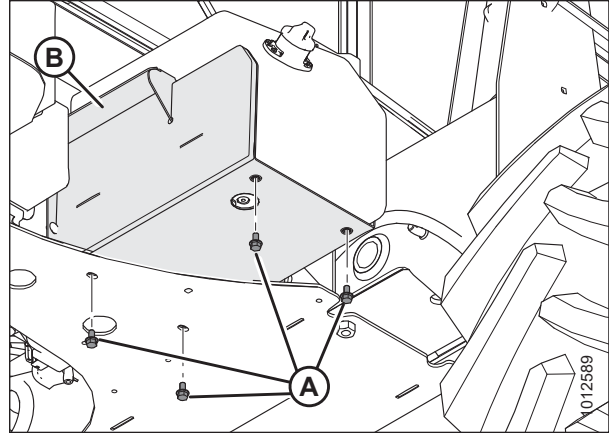


Figure 3.8: DEF Tank – Bottom View

12. Disconnect the electrical harnesses on DEF hoses (A) and (B) from the aftertreatment harness.
13. The DEF hose connectors lock onto the DEF supply module with plastic retaining clips. Press the clips at locations (C) to expand them, then lift suction (inlet) hose (A) and backflow hose (B) from the DEF supply module, and discard the hoses.

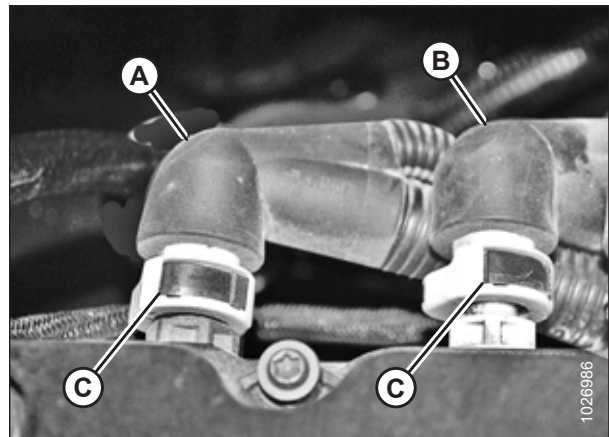


Figure 3.9: DEF Supply Module Connections

14. Remove coolant hose (A) from solenoid valve. Retain clamp (B) and discard hose.

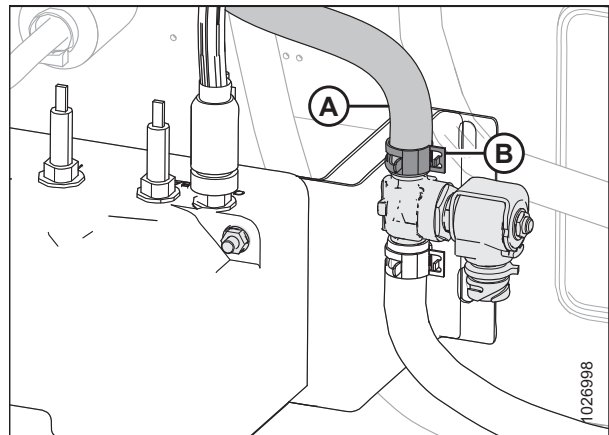


Figure 3.10: Solenoid Valve Coolant Hose

INSTALLATION INSTRUCTIONS

15. Remove vent hose (A) from filter (B). Retain clamp (C) and discard hose.

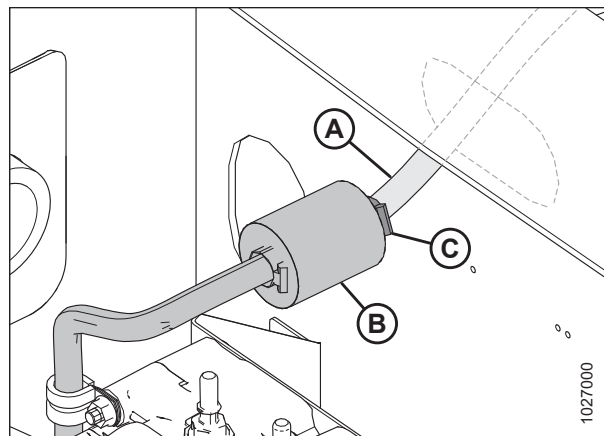


Figure 3.11: Fuel Filter

16. Cut the cable ties that secure coolant hoses (A) and (B) together along the inside of the frame and to the battery cable sleeve.
17. Remove coolant hose (A) (previously disconnected from the DEF head) from DEF injector module tee (C). Retain clamp (D) and discard hose.

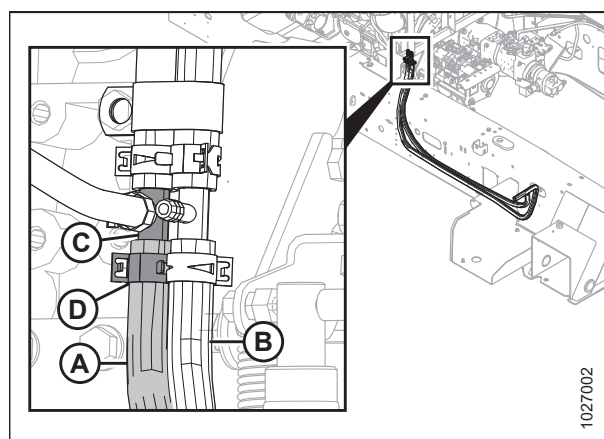


Figure 3.12: Coolant Hoses

3.2 Installing DEF Head and Tank Assembly

To install the new DEF head and tank assembly provided in the kit, follow these steps:

1. Position new DEF tank assembly on bracket (B) and install the four retained bolts (A) from below the tank.

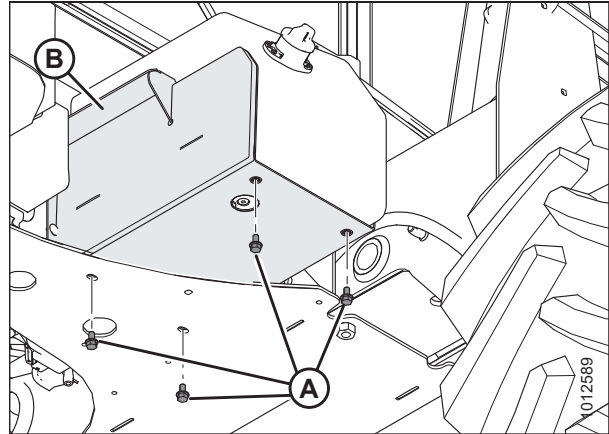


Figure 3.13: DEF Tank – Bottom View

2. Install vent hose (A) (MD #183995) from air vent valve (B) to fuel filter (C), and secure with retained clamps (D).

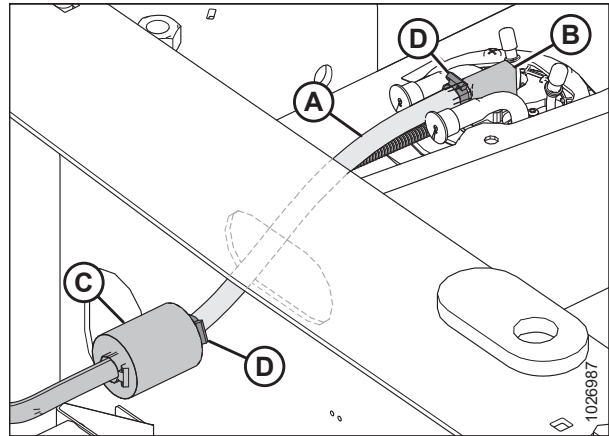


Figure 3.14: Vent Hose Installed

3. Install coolant IN hose (A) (MD #183993) onto DEF head and solenoid valve, and secure with retained clamps (B).

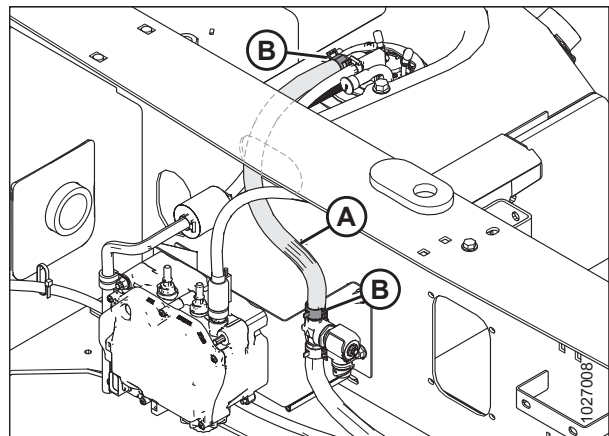


Figure 3.15: Coolant Hose (MD #183993) Installed

INSTALLATION INSTRUCTIONS

4. Install coolant OUT hose (B) (MD #183994) onto DEF head, and secure with retained clamp (A).
5. Route hose (B) (MD #183994) with existing hose (C) along the frame.

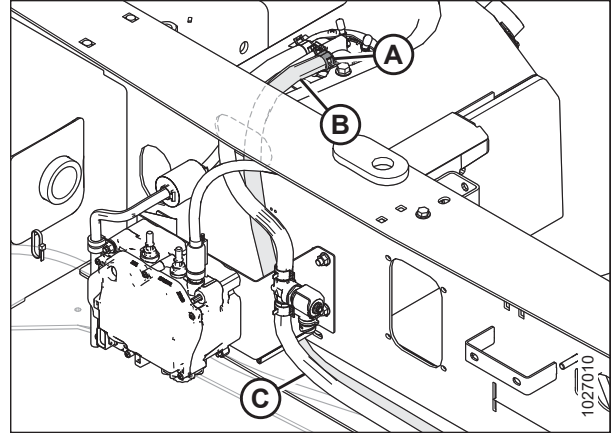


Figure 3.16: Coolant Hose (MD #183994) Installed

6. Connect hose (A) (MD #183994) to DEF injector module tee (B). Secure with retained clamp (C).

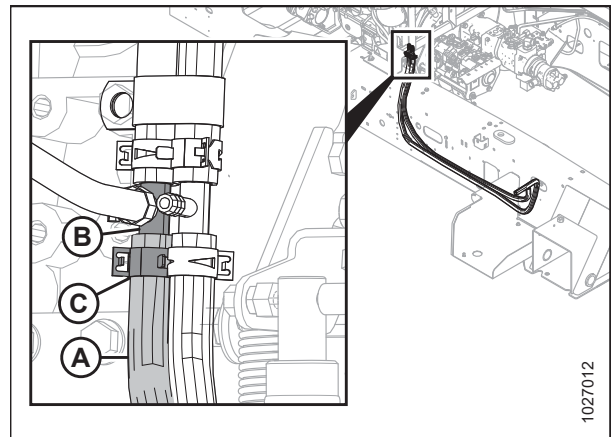


Figure 3.17: Coolant Hoses

7. Secure coolant hoses (A) to hose (B) along the inside of the frame using two cable ties (C).

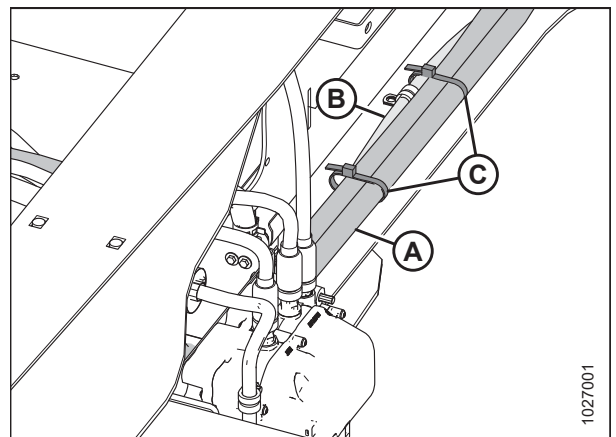


Figure 3.18: Coolant Hoses

INSTALLATION INSTRUCTIONS

8. Secure coolant hoses to the battery cable sleeve using two cable ties (A).
9. Remove the clamps that were installed to prevent coolant loss in Steps 3, [page 10](#) and 4, [page 10](#).

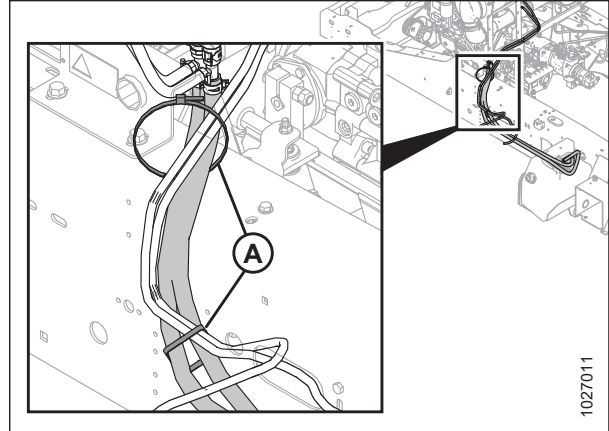


Figure 3.19: Coolant Hoses

10. Install straight end of hose (A) (MD #207770) at inlet port (B) on the DEF supply module, and install elbow end at port (C) on the DEF head. Secure hose with retaining clips.

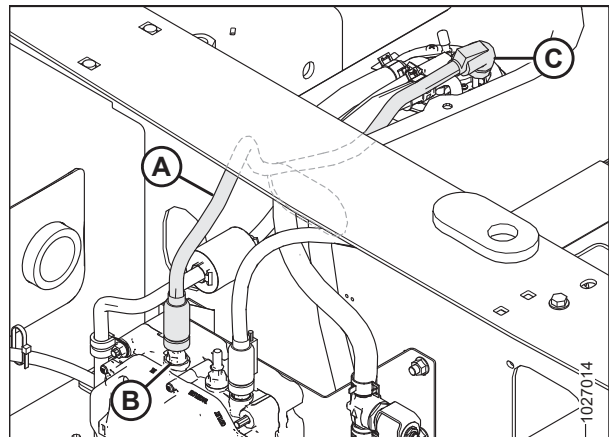


Figure 3.20: DEF Hose (MD #207770)

11. Connect harness (A) on hose (MD #207770) to connector P173 on the aftertreatment harness (disconnected in Step 12, [page 12](#)).

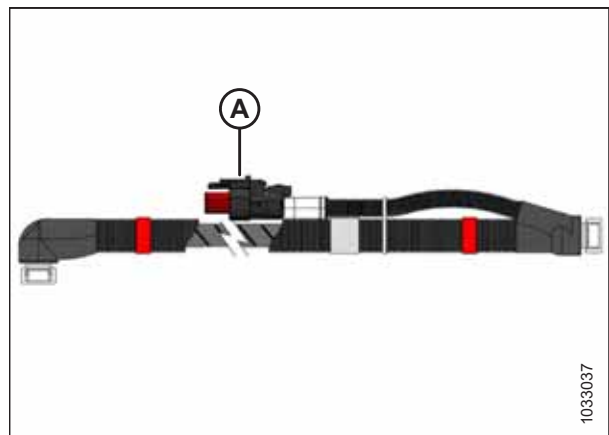


Figure 3.21: DEF Hose (MD #207770)

INSTALLATION INSTRUCTIONS

12. Install straight end of hose (A) (MD #207769) at backflow port (B) on the DEF supply module, and install elbow end at port (C) on the DEF head. Secure hose with retaining clips.
13. Connect the harness on hose (MD #207769) to connector P172 on aftertreatment harness (disconnected in Step 12, [page 12](#)).

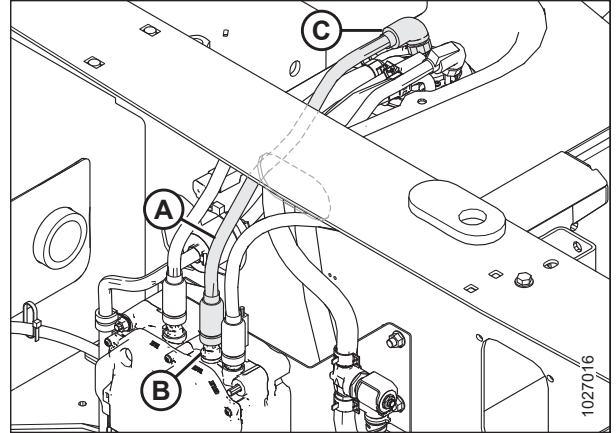


Figure 3.22: DEF Hose (MD #207769)

14. Connect DEF head harness (A) to engine harness plug (P164) (disconnected earlier from the replaced DEF head).

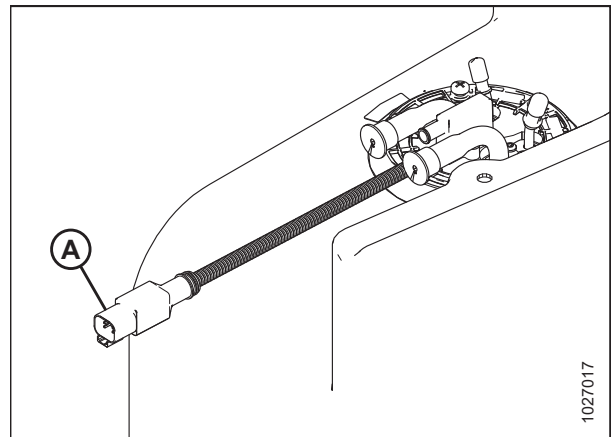


Figure 3.23: DEF Head Harness

15. Reconnect harness (A) to solenoid valve (B).

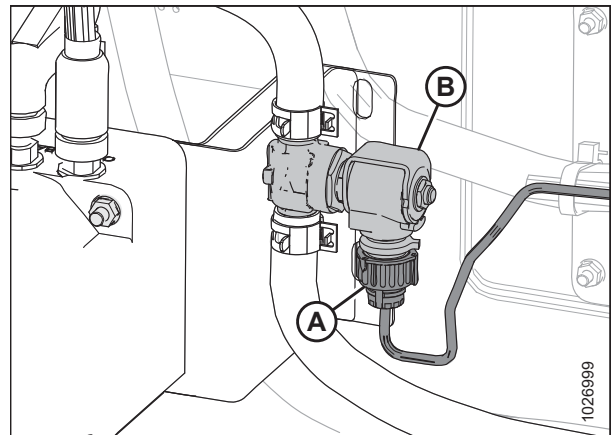


Figure 3.24: Solenoid Valve Harness

INSTALLATION INSTRUCTIONS

- Place the top cover (B) on the DEF tank and secure it with two bolts (A).

NOTE:

The DEF head is not as shown in the illustration at right.

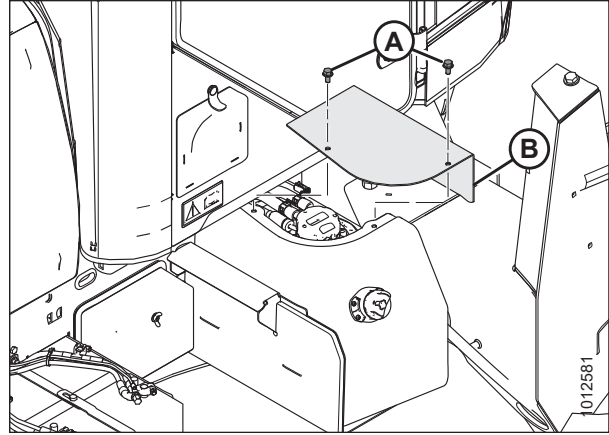


Figure 3.25: DEF Tank

- If the DEF was drained from tank (B), ensure drain plug (A) is installed before adding DEF.
- Refill the DEF tank. For instructions, refer to the windrower operator's manual or technical manual.

IMPORTANT:

Any spilled DEF must be contained and absorbed by non-combustible absorbent material like sand, and then shovelled into a suitable container for disposal. DEF is corrosive. If spilled on tank or any surface of the vehicle, rinse thoroughly with water.

- Check coolant level, and top up coolant if required. For instructions, refer to the windrower operator's manual or technical manual.

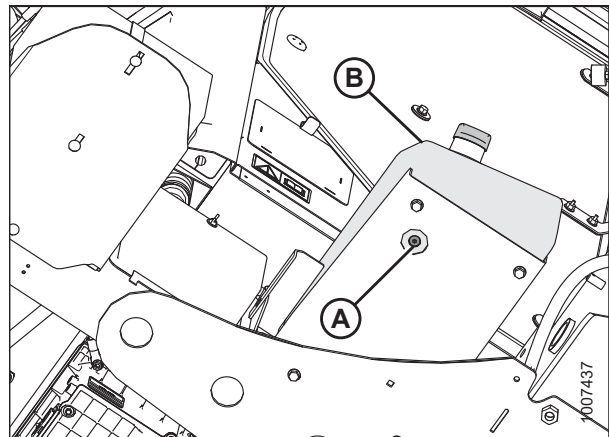


Figure 3.26: DEF Tank

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