

# SERVICE MANUAL

**T9.435 / T9.480 / T9.530 / T9.565**

**T9.600 / T9.645 / T9.700**

**Tier 4B (final)**

**Tractor**

*PIN JEEZ00000FF405001 and above*

**Part number 48193205**

1<sup>st</sup> edition English  
October 2017





## SERVICE MANUAL

**T9.435 CVT, TIER 4B [JEEZ00000FF405001 - ], T9.435 Powershift, TIER 4B [JEEZ00000FF405001 - ], T9.480 CVT, TIER 4B [JEEZ00000FF405001 - ], T9.480 Powershift, TIER 4B [JEEZ00000FF405001 - ], T9.530 CVT, TIER 4B [JEEZ00000FF405001 - ], T9.530 CVT, scraper, TIER 4B [JEEZ00000FF405001 - ], T9.530 Powershift, TIER 4B [JEEZ00000FF405001 - ], T9.530 Powershift, scraper, TIER 4B [JEEZ00000FF405001 - ], T9.565 CVT, TIER 4B [JEEZ00000FF405001 - ], T9.565 Powershift, TIER 4B [JEEZ00000FF405001 - ], T9.600 CVT, TIER 4B [JEEZ00000FF405001 - ], T9.600 CVT, factory SmartTrax™, TIER 4B [JEEZ00000FF405001 - ], T9.600 CVT, scraper, TIER 4B [JEEZ00000FF405001 - ], T9.600 Powershift, TIER 4B [JEEZ00000FF405001 - ], T9.600 Powershift, factory SmartTrax™, TIER 4B [JEEZ00000FF405001 - ], T9.600 Powershift, scraper, TIER 4B [JEEZ00000FF405001 - ], T9.645 Powershift, TIER 4B [JEEZ00000FF405001 - ], T9.645 Powershift, factory SmartTrax™, TIER 4B [JEEZ00000FF405001 - ], T9.645 Powershift, scraper, TIER 4B [JEEZ00000FF405001 - ], T9.700 Powershift, TIER 4B [JEEZ00000FF405001 - ], T9.700 Powershift, factory SmartTrax™, Tier 4B [JEEZ00000FF405001 - ], T9.700 Powershift, scraper, TIER 4B [JEEZ00000FF405001 - ]**

## Link Product / Engine

| Product                                                                  | Market Product | Engine         |
|--------------------------------------------------------------------------|----------------|----------------|
| T9.435 Powershift, TIER 4B<br>[JEEZ00000FF405001 - ]                     | North America  | F2CFE614A*B    |
| T9.435 CVT, TIER 4B<br>[JEEZ00000FF405001 - ]                            | North America  | F2CFE614A*B    |
| T9.480 Powershift, TIER 4B<br>[JEEZ00000FF405001 - ]                     | North America  | F3HFE613G*B001 |
| T9.480 CVT, TIER 4B<br>[JEEZ00000FF405001 - ]                            | North America  | F3HFE613G*B001 |
| T9.530 Powershift, TIER 4B<br>[JEEZ00000FF405001 - ]                     | North America  | F3HFE613B*B001 |
| T9.530 Powershift, scraper, TIER 4B<br>[JEEZ00000FF405001 - ]            | North America  | F3HFE613B*B001 |
| T9.530 CVT, TIER 4B<br>[JEEZ00000FF405001 - ]                            | North America  | F3HFE613B*B001 |
| T9.530 CVT, scraper, TIER 4B<br>[JEEZ00000FF405001 - ]                   | North America  | F3HFE613B*B001 |
| T9.565 Powershift, TIER 4B<br>[JEEZ00000FF405001 - ]                     | North America  | F3HFE613B*B001 |
| T9.565 CVT, TIER 4B<br>[JEEZ00000FF405001 - ]                            | North America  | F3HFE613B*B001 |
| T9.600 Powershift, TIER 4B<br>[JEEZ00000FF405001 - ]                     | North America  | F3DFE613J*B001 |
| T9.600 Powershift, scraper, TIER 4B<br>[JEEZ00000FF405001 - ]            | North America  | F3DFE613J*B001 |
| T9.600 Powershift, factory SmartTrax™, TIER 4B<br>[JEEZ00000FF405001 - ] | North America  | F3DFE613J*B001 |
| T9.600 CVT, TIER 4B<br>[JEEZ00000FF405001 - ]                            | North America  | F3DFE613J*B001 |
| T9.600 CVT, scraper, TIER 4B<br>[JEEZ00000FF405001 - ]                   | North America  | F3DFE613J*B001 |
| T9.600 CVT, factory SmartTrax™, TIER 4B<br>[JEEZ00000FF405001 - ]        | North America  | F3DFE613J*B001 |
| T9.645 Powershift, TIER 4B<br>[JEEZ00000FF405001 - ]                     | North America  | F3DFE613G*B001 |
| T9.645 Powershift, scraper, TIER 4B<br>[JEEZ00000FF405001 - ]            | North America  | F3DFE613G*B001 |
| T9.645 Powershift, factory SmartTrax™, TIER 4B<br>[JEEZ00000FF405001 - ] | North America  | F3DFE613G*B001 |
| T9.700 Powershift, TIER 4B<br>[JEEZ00000FF405001 - ]                     | North America  | F3DFE613F*B001 |
| T9.700 Powershift, scraper, TIER 4B<br>[JEEZ00000FF405001 - ]            | North America  | F3DFE613F*B001 |
| T9.700 Powershift, factory SmartTrax™, Tier 4B<br>[JEEZ00000FF405001 - ] | North America  | F3DFE613F*B001 |

**<https://www.ebooklibonline.com>**

Hello dear friend!

Thank you very much for reading.

Enter the link into your browser.

The full manual is available for immediate download.

**<https://www.ebooklibonline.com>**

# Contents

---

## INTRODUCTION

|                                                                              |           |
|------------------------------------------------------------------------------|-----------|
| <b>Engine.....</b>                                                           | <b>10</b> |
| [10.001] Engine and crankcase .....                                          | 10.1      |
| [10.216] Fuel tanks .....                                                    | 10.2      |
| [10.202] Air cleaners and lines .....                                        | 10.3      |
| [10.500] Selective Catalytic Reduction (SCR) exhaust treatment.....          | 10.4      |
| [10.400] Engine cooling system .....                                         | 10.5      |
| [10.414] Fan and drive .....                                                 | 10.6      |
| [10.310] Aftercooler.....                                                    | 10.7      |
| <b>Power coupling.....</b>                                                   | <b>19</b> |
| [19.100] Drive shaft.....                                                    | 19.1      |
| [19.110] Flywheel damper .....                                               | 19.2      |
| <b>Transmission.....</b>                                                     | <b>21</b> |
| [21.113] Powershift transmission .....                                       | 21.1      |
| [21.135] Powershift transmission external controls.....                      | 21.2      |
| [21.155] Powershift transmission internal components.....                    | 21.3      |
| [21.504] Continuously Variable Transmission (CVT) .....                      | 21.4      |
| [21.505] Continuously Variable Transmission (CVT) external controls.....     | 21.5      |
| [21.506] Continuously Variable Transmission (CVT) hydraulic components ..... | 21.6      |
| [21.507] Continuously Variable Transmission (CVT) internal components.....   | 21.7      |
| <b>Front axle system .....</b>                                               | <b>25</b> |
| [25.100] Powered front axle .....                                            | 25.1      |
| [25.102] Front bevel gear set and differential .....                         | 25.2      |
| [25.310] Final drives .....                                                  | 25.3      |
| <b>Rear axle system.....</b>                                                 | <b>27</b> |
| [27.100] Powered rear axle.....                                              | 27.1      |

|                                                        |           |
|--------------------------------------------------------|-----------|
| [27.106] Rear bevel gear set and differential .....    | 27.2      |
| [27.120] Planetary and final drives .....              | 27.3      |
| <b>Power Take-Off (PTO) .....</b>                      | <b>31</b> |
| [31.104] Rear electro-hydraulic control .....          | 31.1      |
| [31.110] One-speed rear Power Take-Off (PTO) .....     | 31.2      |
| [31.220] Gearbox .....                                 | 31.3      |
| <b>Brakes and controls .....</b>                       | <b>33</b> |
| [33.202] Hydraulic service brakes .....                | 33.1      |
| [33.110] Parking brake or parking lock .....           | 33.2      |
| <b>Hydraulic systems.....</b>                          | <b>35</b> |
| [35.000] Hydraulic systems.....                        | 35.1      |
| [35.300] Reservoir, cooler, and filters.....           | 35.2      |
| [35.106] Variable displacement pump .....              | 35.3      |
| [35.102] Pump control valves.....                      | 35.4      |
| [35.105] Charge pump.....                              | 35.5      |
| [35.304] Combination pump units .....                  | 35.6      |
| [35.204] Remote control valves .....                   | 35.7      |
| [35.600] High flow hydraulics.....                     | 35.8      |
| <b>Hitches, drawbars, and implement couplings.....</b> | <b>37</b> |
| [37.100] Drawbars and towing hitches .....             | 37.1      |
| <b>Frames and ballasting .....</b>                     | <b>39</b> |
| [39.100] Frame .....                                   | 39.1      |
| <b>Steering.....</b>                                   | <b>41</b> |
| [41.101] Steering control .....                        | 41.1      |
| [41.200] Hydraulic control components.....             | 41.2      |
| [41.206] Pump .....                                    | 41.3      |
| <b>Wheels.....</b>                                     | <b>44</b> |
| [44.511] Front wheels.....                             | 44.1      |

|                                                                               |           |
|-------------------------------------------------------------------------------|-----------|
| [44.520] Rear wheels .....                                                    | 44.2      |
| <b>Tracks and track suspension .....</b>                                      | <b>48</b> |
| [48.130] Track frame and driving wheels .....                                 | 48.1      |
| [48.100] Tracks .....                                                         | 48.2      |
| [48.134] Track tension units .....                                            | 48.3      |
| [48.138] Track rollers .....                                                  | 48.4      |
| <b>Cab climate control .....</b>                                              | <b>50</b> |
| [50.104] Ventilation .....                                                    | 50.1      |
| [50.200] Air conditioning .....                                               | 50.2      |
| [50.300] Cab pressurizing system .....                                        | 50.3      |
| <b>Electrical systems .....</b>                                               | <b>55</b> |
| [55.000] Electrical system .....                                              | 55.1      |
| [55.100] Harnesses and connectors .....                                       | 55.2      |
| [55.640] Electronic modules .....                                             | 55.3      |
| [55.201] Engine starting system .....                                         | 55.4      |
| [55.301] Alternator .....                                                     | 55.5      |
| [55.302] Battery .....                                                        | 55.6      |
| [55.010] Fuel injection system .....                                          | 55.7      |
| [55.014] Engine intake and exhaust system .....                               | 55.8      |
| [55.988] Selective Catalytic Reduction (SCR) electrical system .....          | 55.9      |
| [55.640] Electronic modules .....                                             | 55.10     |
| [55.024] Transmission control system .....                                    | 55.11     |
| [55.045] Front axle control system .....                                      | 55.12     |
| [55.046] Rear axle control system .....                                       | 55.13     |
| [55.522] Cab Power Take-Off (PTO) controls .....                              | 55.14     |
| [55.048] Rear Power Take-Off (PTO) control system .....                       | 55.15     |
| [55.035] Remote control valve electric control .....                          | 55.16     |
| [55.051] Cab Heating, Ventilation, and Air-Conditioning (HVAC) controls ..... | 55.17     |

|                                                                                |           |
|--------------------------------------------------------------------------------|-----------|
| [55.050] Heating, Ventilation, and Air-Conditioning (HVAC) control system..... | 55.18     |
| [55.130] Rear three-point hitch electronic control system .....                | 55.19     |
| [55.DTC] FAULT CODES.....                                                      | 55.20     |
| <b>Platform, cab, bodywork, and decals .....</b>                               | <b>90</b> |
| [90.150] Cab.....                                                              | 90.1      |
| [90.151] Cab interior.....                                                     | 90.2      |
| [90.124] Pneumatically-adjusted operator seat.....                             | 90.3      |
| [90.100] Engine hood and panels .....                                          | 90.4      |
| [90.102] Engine shields, hood latches, and trims .....                         | 90.5      |



# INTRODUCTION

---

## **Foreword - Important notice regarding equipment servicing**

All repair and maintenance work listed in this manual must be carried out only by qualified dealership personnel, strictly complying with the instructions given, and using, whenever possible, the special tools.

Anyone who performs repair and maintenance operations without complying with the procedures provided herein shall be responsible for any subsequent damages.

The manufacturer and all the organizations of its distribution chain, including - without limitation - national, regional, or local dealers, reject any responsibility for damages caused by parts and/or components not approved by the manufacturer, including those used for the servicing or repair of the product manufactured or marketed by the manufacturer. In any case, no warranty is given or attributed on the product manufactured or marketed by the manufacturer in case of damages caused by parts and/or components not approved by the manufacturer.

The manufacturer reserves the right to make improvements in design and changes in specifications at any time without notice and without incurring any obligation to install them on units previously sold. Specifications, descriptions, and illustrative material herein are as accurate as known at time of publication but are subject to change without notice.

In case of questions, refer to your NEW HOLLAND Sales and Service Networks.

---

## Safety rules - Personal safety

### General safety rules

Use caution when operating the machine on slopes. Raised equipment, full tanks and other loads will change the center of gravity of the machine. The machine can tip or roll over when near ditches and embankments or uneven surfaces.

Stay off slopes too steep for safe operation. Shift down before you start up or down a hill with a heavy load. Avoid “free wheeling.”

Never permit anyone other than the operator to ride on the machine.

Never operate the machine under the influence of alcohol, drugs, or while otherwise impaired.

While driving on the road, the seat swivel position must always be straight forward and locked in position with no rotation. The seat swivel should only be rotated for in field operation.

Do not drive on roads, or at high speed anywhere, with the differential lock engaged. Difficult steering will occur, and can result in an accident. In field operation, use the differential lock for traction improvement, but release for turning at row ends.

Do not exceed implement transport speed or the speed rating on the implement tires. Review the implements Operator's Manual for specifications. Failure to comply could result in death or serious injury.

For speeds up to **16 km/h (10 mph)**, make sure that the weight of a trailed vehicle that is not equipped with brakes does NOT EXCEED 1.5 times the Tractor weight. For speeds up to **40 km/h (25 mph)**, make sure that the weight of the trailed vehicle that is not equipped with brakes, does NOT EXCEED the weight of the Tractor. Stopping distance increases with increasing speed as the weight of the towed load increases, especially on hills and slopes.

Rear upset can result if pulling from wrong location on tractor. Hitch only to the drawbar. Use three-point hitch only with the implements designed for its use – not as a drawbar.

Modifications made to this machine may increase the likelihood or potential for debris accumulations that would normally not be present. Modifications include frame-mounted attachments, plates, screens, or other aftermarket equipment. Operators of modified machines must be aware of accumulations of organic debris and/or material and overall machine cleanliness.

Modified machines require additional and more frequent inspection and cleaning during usage. The machine may require inspection and cleaning multiple times per day during usage. Operators must be aware of the operating environment and conditions. Operators must take appropriate actions to maintain the machines during use. In particular, pay attention to the following machine areas:

- In and around the engine compartment
- Hot exhaust components
- Moving, turning, or rotating machine components

Operators that operate the machine in atypical applications and/or conditions must be aware of accumulations of organic debris and/or material and overall machine cleanliness. Pay particular attention where material accumulations are possible or may result.

Machines that operate in atypical applications or conditions require additional and more frequent inspection and cleaning during usage. The machine may require inspection and cleaning multiple times per day during usage. Operators must be aware of the operating environment and conditions. Operators must take appropriate actions to maintain the machines during use. In particular, pay attention to the following machine areas:

- In and around the engine compartment
- Hot exhaust components
- Moving, turning, or rotating machine components

Do not look directly into the front or rear work lamps. Eye damage can occur.

## INTRODUCTION

---

Do not tamper with the ballast on the front or rear High Intensity Discharge (HID) lamp since it uses high voltage. Personal injury or death can occur.

To avoid possible eye damage from microwave signals emitted by the radar sensor, do not look directly into the sensor face.

When digging or using ground engaging attachments be aware of buried cables. Contact local utilities to determine the locations of services.

Pay attention to overhead power lines and hanging obstacles. High voltage lines may require significant clearance for safety.

Hydraulic oil or diesel fuel leaking under pressure can penetrate the skin, causing serious injury or infection.

- DO NOT use your hand to check for leaks. Use a piece of cardboard or paper.
- Stop engine, remove key and relieve the pressure before connecting or disconnecting fluid lines.
- Make sure all components are in good condition and tighten all connections before starting the engine or pressurizing the system.
- If hydraulic fluid or diesel fuel penetrates the skin, seek medical attention immediately.
- Continuous long term contact with hydraulic fluid may cause skin cancer. Avoid long term contact and wash the skin promptly with soap and water.

Keep clear of moving parts. Loose clothing, jewelry, watches, long hair, and other loose or hanging items can become entangled in moving parts.

Wear protective equipment when appropriate.

DO NOT attempt to remove material from any part of the machine while it is being operated or components are in motion.

Make sure all guards and shields are in good condition and properly installed before operating the machine. Never operate the machine with shields removed. Always close access doors or panels before operating the machine.

Dirty or slippery steps, ladders, walkways, and platforms can cause falls. Make sure these surfaces remain clean and clear of debris.

A person or pet within the operating area of a machine can be struck or crushed by the machine or its equipment. DO NOT allow anyone to enter the work area.

Raised equipment and/or loads can fall unexpectedly and crush persons underneath. Never allow anyone to enter the area underneath raised equipment during operation.

Never operate engine in enclosed spaces as harmful exhaust gases may build up.

Before starting the machine, be sure that all controls are in neutral or park lock position.

Start the engine only from the operator's seat. If the safety start switch is bypassed, the engine can start with the transmission in gear. Do not connect or short across terminals on the starter solenoid. Attach jumper cables as described in the manual. Starting in gear may cause death or serious injury.

Always keep windows, mirrors, all lighting, and Slow Moving Vehicle (SMV) emblem clean to provide the best possible visibility while operating the machine.

Operate controls only when seated in the operator's seat, except for those controls expressly intended for use from other locations.

Before leaving the machine:

1. Park machine on a firm level surface.
2. Put all controls in neutral or park lock position.
3. Engage park brake. Use wheel chocks if required.
4. Lower all hydraulic equipment — Implements, header, etc.

5. Turn off engine and remove key.

When, due to exceptional circumstances, you would decide to keep the engine running after leaving the operator's station, then the following precautions must be followed:

1. Bring the engine to low idle speed.
2. Disengage all drive systems.

3. **⚠ WARNING**

**Some components may continue to run down after you disengage drive systems.  
Make sure all drive systems are fully disengaged.  
Failure to comply could result in death or serious injury.**

W0113A

Shift the transmission into park.

4. Apply the parking brake.



## **SERVICE MANUAL**

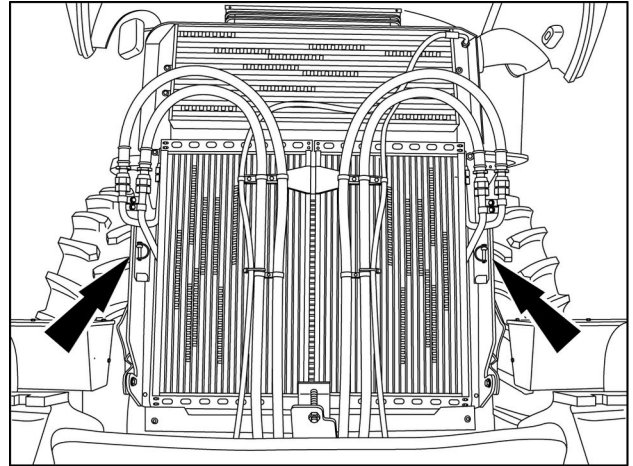
### **Engine**

**T9.435 CVT, TIER 4B [JEEZ00000FF405001 - ], T9.435 Powershift, TIER 4B [JEEZ00000FF405001 - ], T9.480 CVT, TIER 4B [JEEZ00000FF405001 - ], T9.480 Powershift, TIER 4B [JEEZ00000FF405001 - ], T9.530 CVT, TIER 4B [JEEZ00000FF405001 - ], T9.530 CVT, scraper, TIER 4B [JEEZ00000FF405001 - ], T9.530 Powershift, TIER 4B [JEEZ00000FF405001 - ], T9.530 Powershift, scraper, TIER 4B [JEEZ00000FF405001 - ], T9.565 CVT, TIER 4B [JEEZ00000FF405001 - ], T9.565 Powershift, TIER 4B [JEEZ00000FF405001 - ], T9.600 CVT, TIER 4B [JEEZ00000FF405001 - ], T9.600 CVT, factory SmartTrax™, TIER 4B [JEEZ00000FF405001 - ], T9.600 CVT, scraper, TIER 4B [JEEZ00000FF405001 - ], T9.600 Powershift, TIER 4B [JEEZ00000FF405001 - ], T9.600 Powershift, factory SmartTrax™, TIER 4B [JEEZ00000FF405001 - ], T9.600 Powershift, scraper, TIER 4B [JEEZ00000FF405001 - ], T9.645 Powershift, TIER 4B [JEEZ00000FF405001 - ], T9.645 Powershift, factory SmartTrax™, TIER 4B [JEEZ00000FF405001 - ], T9.645 Powershift, scraper, TIER 4B [JEEZ00000FF405001 - ], T9.700 Powershift, TIER 4B [JEEZ00000FF405001 - ], T9.700 Powershift, factory SmartTrax™, Tier 4B [JEEZ00000FF405001 - ], T9.700 Powershift, scraper, TIER 4B [JEEZ00000FF405001 - ]**

## Fuel cooler - Remove - Row crop frame units

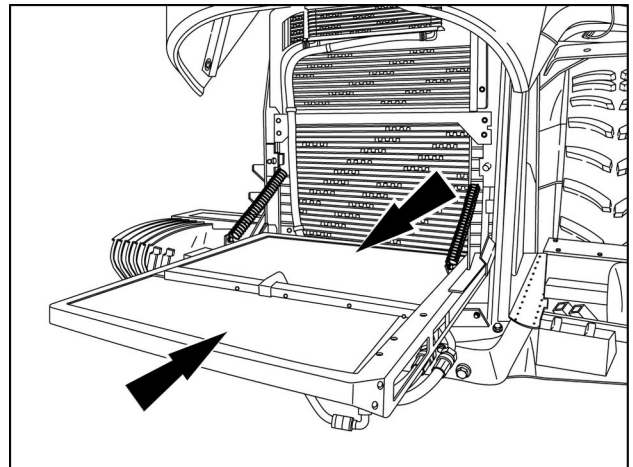
|        |    |
|--------|----|
| T9.435 | NA |
| T9.480 | NA |
| T9.530 | NA |
| T9.565 | NA |

1. Open the hood.
2. Remove the two clip pins and open the front cooler frame.



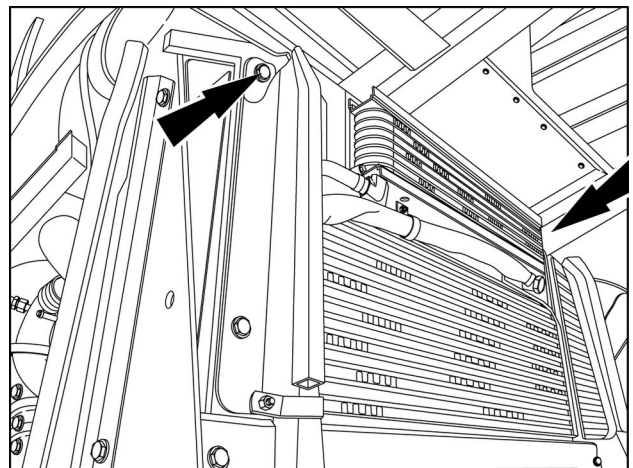
RAIL13TR03049AA 1

3. Protect the oil coolers and air conditioning condenser.



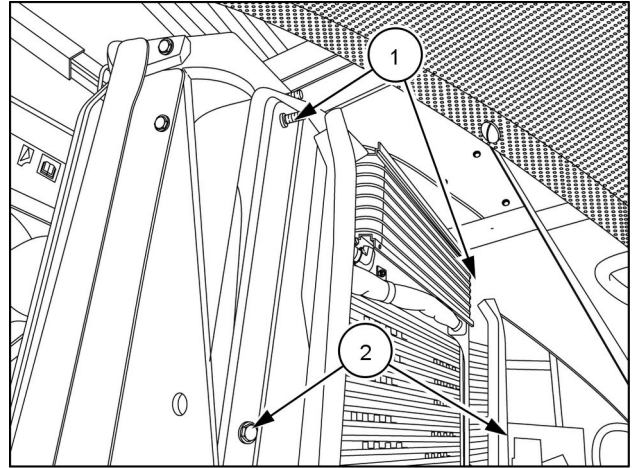
RAIL13TR03057AA 2

4. Remove the top two bolts securing the fuel cooler to the cooling package.



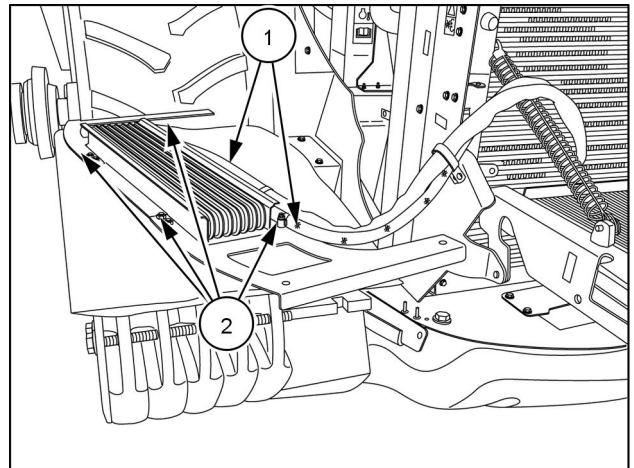
RAIL13TR03050AA 3

5. Install two guide studs (1).
6. Remove the two bottom bolts (2).



RAIL13TR03058AA 4

7. Set the cooler aside.
  8. Disconnect the fuel hoses (1) from the cooler.
- NOTE:** Plug and cap all disconnected hoses and fittings.
9. Remove the four nuts and bolts (2) that secure the cooler to the support brackets.



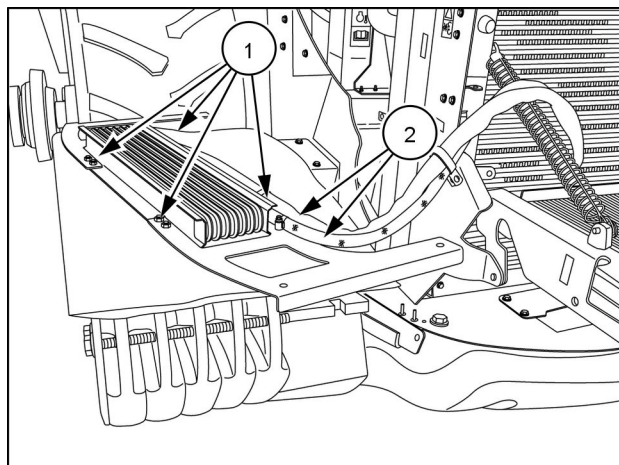
RAIL13TR03053AA 5

## Fuel cooler - Install - Row crop frame units

|        |    |
|--------|----|
| T9.435 | NA |
| T9.480 | NA |
| T9.530 | NA |
| T9.565 | NA |

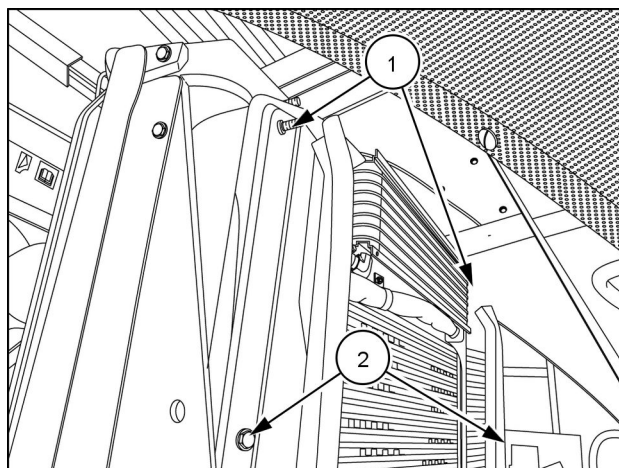
1. Assemble the four nuts and bolts **(1)** that secure the cooler to the support brackets.
2. Connect the fuel hoses **(2)** to the cooler.

**NOTE:** Remove the plugs and caps from the disconnected hoses and fittings.



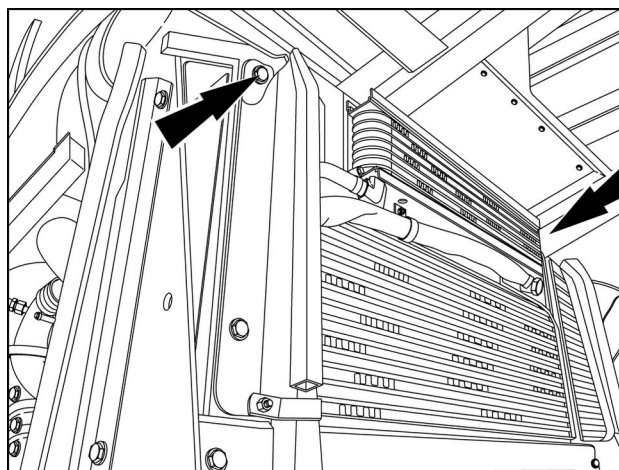
RAIL13TR03053AA 1

3. Install two guide studs **(1)** and set the fuel cooler in place on the cooling package.
4. Assemble the two bottom bolts **(2)** securing the fuel cooler to the cooling package.



RAIL13TR03058AA 2

5. Remove the guide pins and assemble the top two bolts.



RAIL13TR03050AA 3



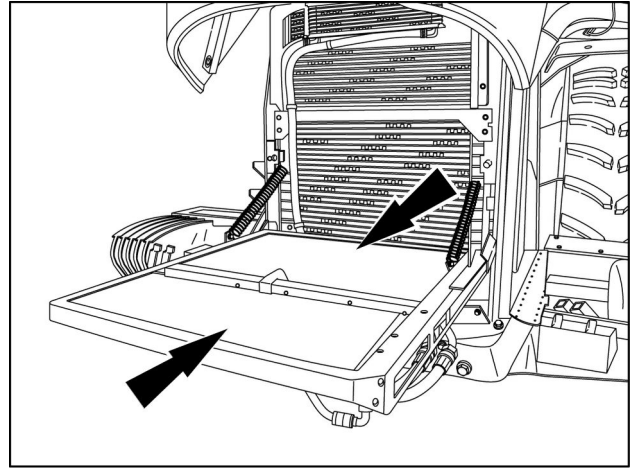
**Suggest:**

**If the above button click is invalid.**

**Please download this document  
first, and then click the above link  
to download the complete manual.**

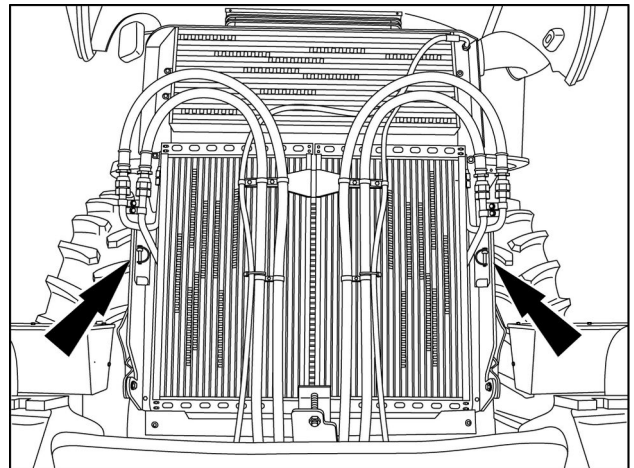
**Thank you so much for reading**

6. Remove the material that was put in place to protect the oil coolers and air conditioning condenser.



RAIL13TR03057AA 4

7. Close the front cooler frame and install the two clip pins.



RAIL13TR03049AA 5

8. Start the engine and check for leaks.
9. Close the hood.

**<https://www.ebooklibonline.com>**

Hello dear friend!

Thank you very much for reading.

Enter the link into your browser.

The full manual is available for immediate download.

**<https://www.ebooklibonline.com>**