

**PUMA® 150  
PUMA® 165  
PUMA® 150 CVT  
PUMA® 165 CVT  
PUMA® 175 CVT  
TIER 4B (FINAL)  
Tractor**

**SERVICE MANUAL**

Part number 47936460

English

November 2015

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# Link Product / Engine

Product	Market Product	Engine
PUMA® 150 CVT	Asia Pacific	F4DFE613N*B006
PUMA® 150 CVT	Middle East Africa	F4DFE613N*B006
PUMA® 150 CVT	Australia New Zealand	F4DFE613N*B006
PUMA® 165 CVT	Asia Pacific	F4DFE613M*B003
PUMA® 165 CVT	Middle East Africa	F4DFE613M*B003
PUMA® 165 CVT	Australia New Zealand	F4DFE613M*B003
PUMA® 175 CVT	Middle East Africa	F4DFE613K*B008
PUMA® 175 CVT	Australia New Zealand	F4DFE613K*B008
PUMA® 175 CVT	Asia Pacific	F4DFE613K*B008
PUMA® 150	Middle East Africa	F4DFE613N*B006
PUMA® 150	Australia New Zealand	F4DFE613N*B006
PUMA® 150	Asia Pacific	F4DFE613N*B006
PUMA® 165	Middle East Africa	F4DFE613M*B003
PUMA® 165	Australia New Zealand	F4DFE613M*B003
PUMA® 165	Asia Pacific	F4DFE613M*B003

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# INTRODUCTION

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## **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 CASE IH Sales and Service Networks.

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## Foreword - How to use and navigate through this manual

This manual has been produced by a new technical information system. This new system is designed to deliver technical information electronically through web delivery (eTIM), DVD, and paper manuals. A coding system called SAP has been developed to link the technical information to other Product Support functions, e.g., Warranty.

Technical information is written to support the maintenance and service of the functions or systems on a customer's machine. When a customer has a concern on their machine it is usually because a function or system on their machine is not working at all, is not working efficiently, or is not responding correctly to their commands. When you refer to the technical information in this manual to resolve that customer's concern, you will find all the information classified using the SAP coding, according to the functions or systems on that machine. Once you have located the technical information for that function or system, you will then find all the mechanical, electrical or hydraulic devices, components, assemblies, and sub assemblies for that function or system. You will also find all the types of information that have been written for that function or system: the technical data (specifications), the functional data (how it works), the diagnostic data (fault codes and troubleshooting), and the service data (remove, install adjust, etc.).

By integrating SAP coding into technical information, you will be able to search and retrieve just the right piece of technical information you need to resolve that customer's concern on his machine. This is made possible by attaching 3 categories to each piece of technical information during the authoring process.

The first category is the Location, the second category is the Information Type and the third category is the Product:

- LOCATION - the component or function on the machine, that the piece of technical information is going to describe (e.g., Fuel tank).
- INFORMATION TYPE - the piece of technical information that has been written for a particular component or function on the machine (e.g., Capacity would be a type of Technical Data describing the amount of fuel held by the fuel tank).
- PRODUCT - the model for which the piece of technical information is written.

Every piece of technical information will have those three categories attached to it. You will be able to use any combination of those categories to find the right piece of technical information you need to resolve that customer's concern on their machine.

That information could be:

- the procedure for how to remove the cylinder head
- a table of specifications for a hydraulic pump
- a fault code
- a troubleshooting table
- a special tool



# **SERVICE MANUAL**

## **Engine**

**PUMA® 150 CVT**

**PUMA® 150**

**PUMA® 165 CVT**

**PUMA® 165**

**PUMA® 175 CVT**

## Engine - Disconnect

**Prior operation:**

Discharge the Air conditioning system, for further information refer to **Air conditioning - Discharging (50.200)**

**Prior operation:**

Drain the engine cooling system, for further information refer to **Engine cooling system - Drain fluid (10.400)**

**Prior operation:**

Remove the Selective Catalytic Reduction (SCR) muffler, for further information refer to **Selective Catalytic Reduction (SCR) muffler and catalyst - Remove (10.500)**

**Prior operation:**

Remove the left-hand fuel tank, for further information refer to **Fuel tank - Remove (10.216)**

**Prior operation:**

Disconnect the battery, for further information refer to **Battery - Disconnect (55.302)**

### **⚠ WARNING**

**Heavy objects!**

Lift and handle all heavy components using lifting equipment with adequate capacity. Always support units or parts with suitable slings or hooks. Make sure the work area is clear of all bystanders.

Failure to comply could result in death or serious injury.

W0398A

### **⚠ WARNING**

**Avoid injury!**

Handle all parts carefully. Do not place your hands or fingers between parts. Use Personal Protective Equipment (PPE) as indicated in this manual, including protective goggles, gloves, and safety footwear.

Failure to comply could result in death or serious injury.

W0208A

### 1. **⚠ WARNING**

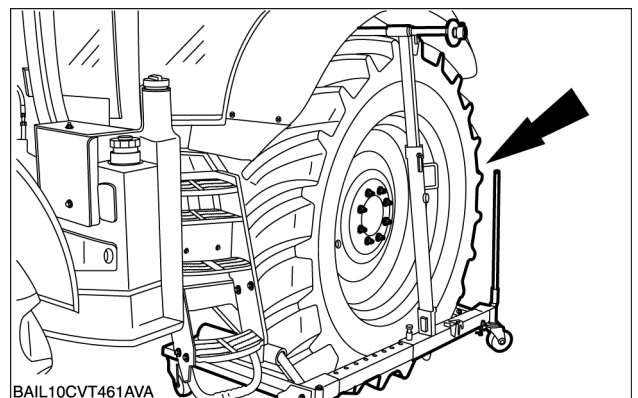
**Crushing hazard!**

The wheels on this vehicle are very heavy. Always use a wheel remover or chain hoists to remove and install the wheels. Use an assistant as required.

Failure to comply could result in death or serious injury.

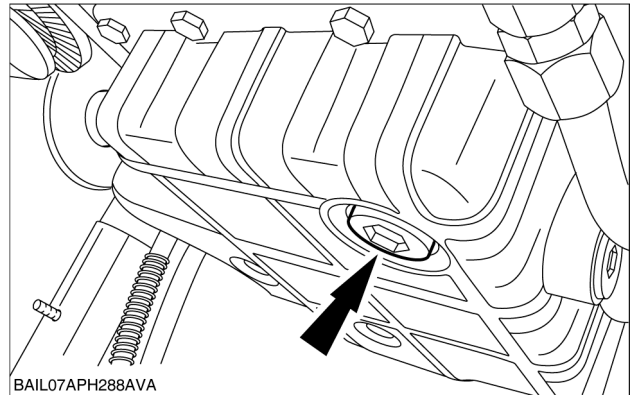
W0149A

Install the left-hand rear wheel.



BAIL10CVT461AVA 1

2. A. Remove the transmission housing drain plug and drain the transmission oil into a suitable container.
- B. Install the drain plug and torque to **68 - 82 N·m (50 - 60 lb ft)**

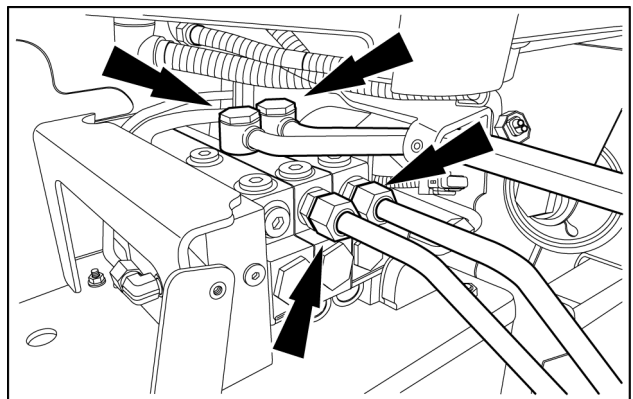


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BAIL07APH288AVA 2

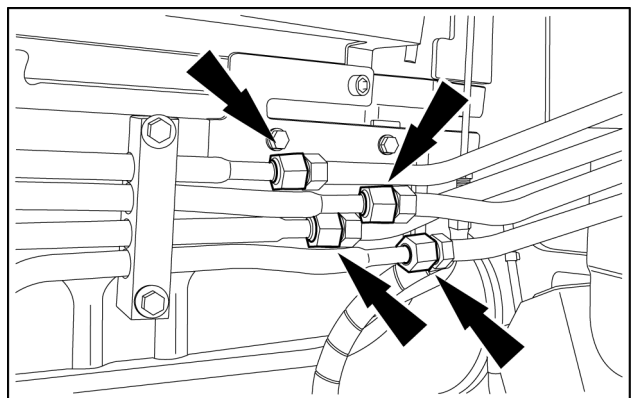
### Vehicles with front hitch

3. Remove the front weights.
4. Disconnect the front hitch hydraulic pipes from the mid-mount valve.



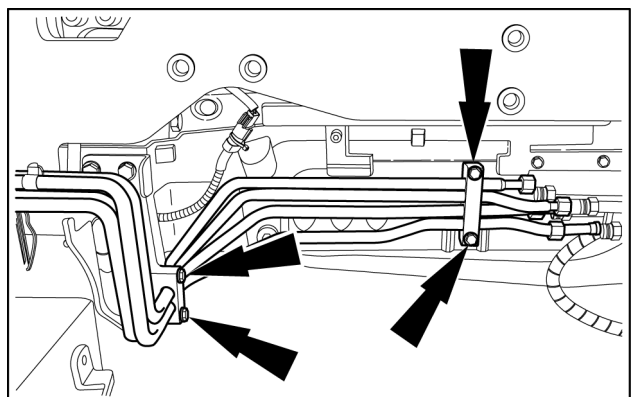
BAIL13TR01645AB 3

5. Disconnect the front hitch hydraulic pipes.



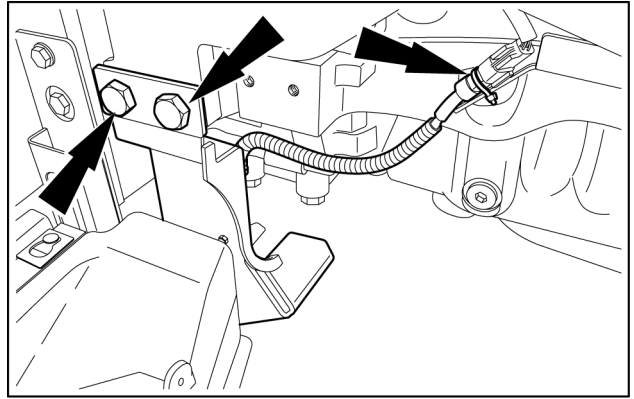
BAIL13TR01646AB 4

6. Remove the front hitch hydraulic pipes.



BAIL13TR01647AB 5

7. Disconnect the radar electrical connector and remove the radar (if fitted).



BAIL13TR01648AB 6

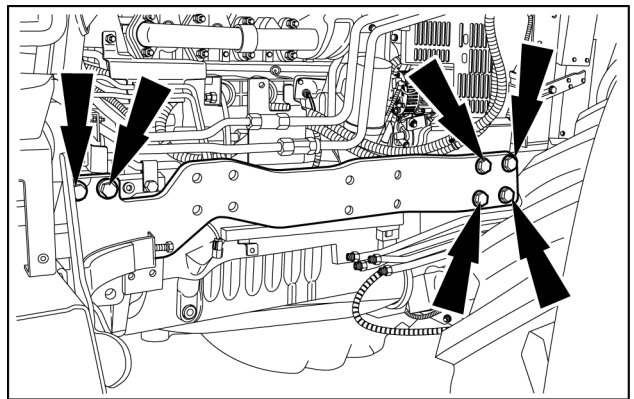
8. **⚠ WARNING**

**Heavy object!**  
**ALWAYS use a hoist or get assistance to lift the component.**  
**Failure to comply could result in death or serious injury.**

W0086A

Remove the right-hand side rail.

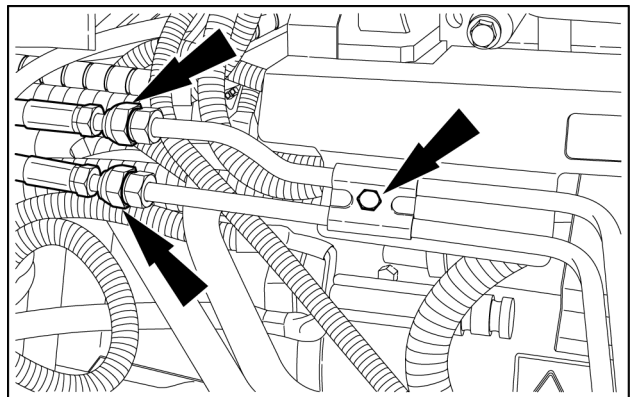
**NOTE:** Repeat this step for the left-hand side.



BAIL13TR01649AB 7

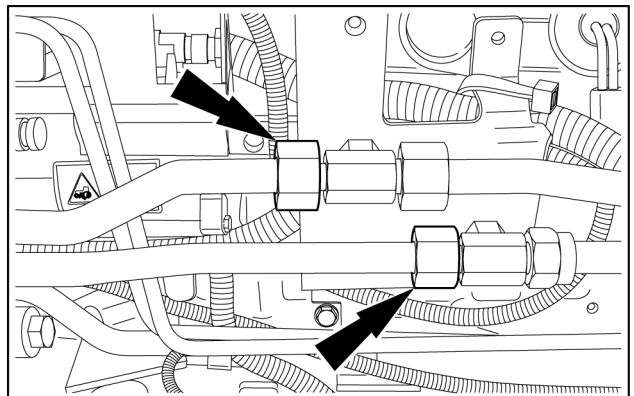
**All vehicles**

9. 1. Disconnect the front Power Take-Off (PTO) pipes.  
2. Detach the PTO pipe bracket.



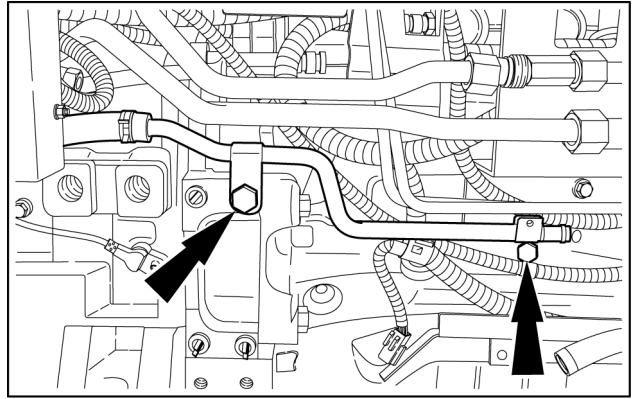
BAIL13TR01655AB 8

10. Disconnect the oil cooler supply and return pipes.



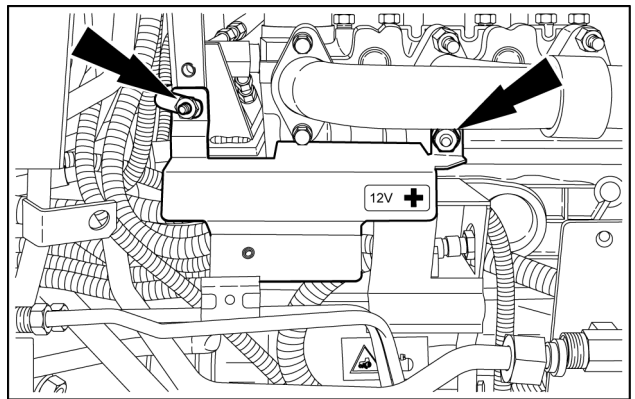
BAIL13TR01656AB 9

11. Detach the cab heater supply pipe.



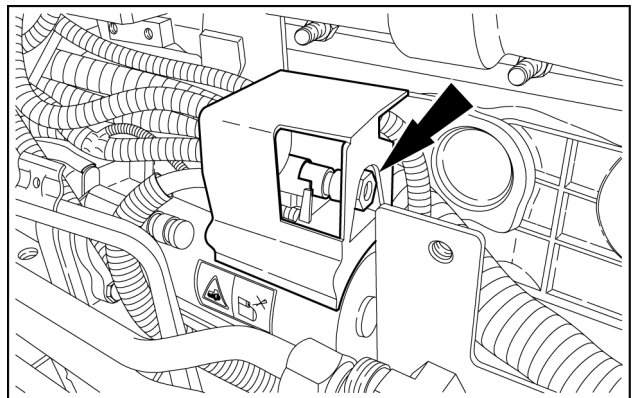
BAIL13TR01657AB 10

12. Remove the starter motor shield.



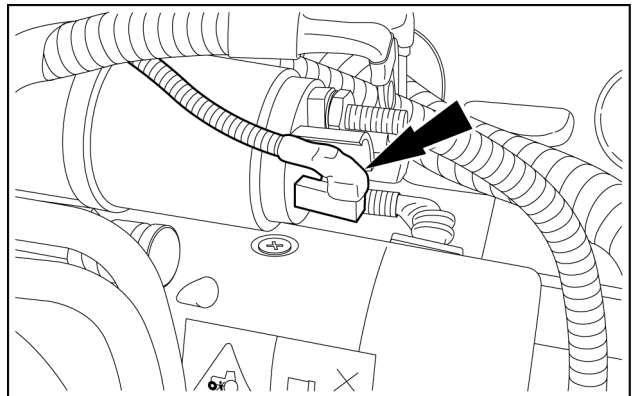
BAIL13TR01658AB 11

13. Disconnect the starter motor positive cables.



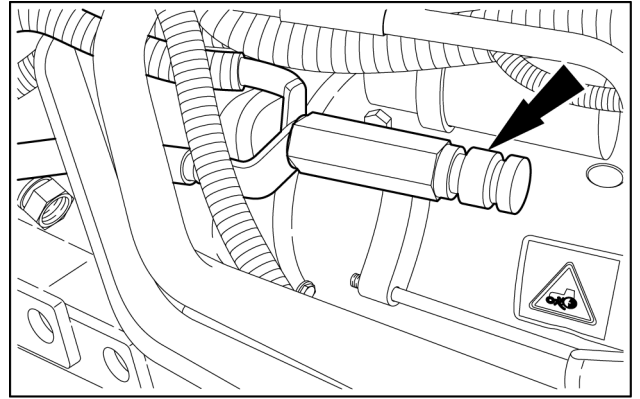
BAIL13TR01659AB 12

14. Disconnect the starter motor electrical connector.



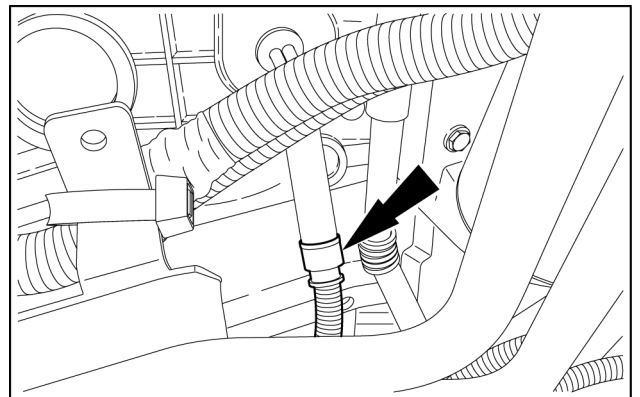
BAIL13TR01660AB 13

15. Disconnect the starter motor negative terminal.



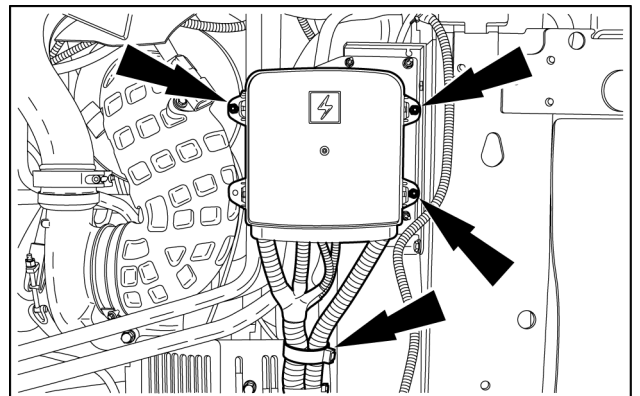
BAIL13TR01661AB 14

16. Disconnect the block heater electrical connector (if fitted).



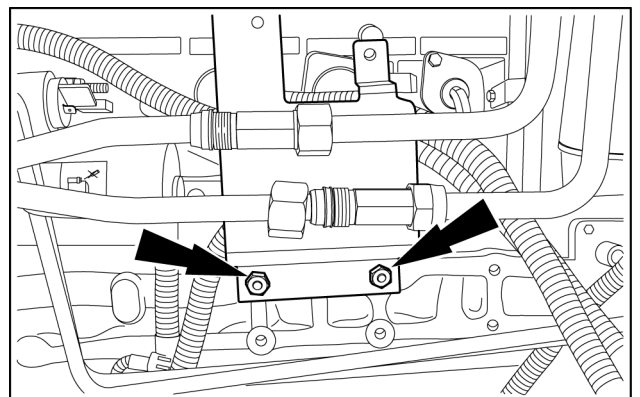
BAIL13TR01662AB 15

17. Detach the fuse box and position to one side.



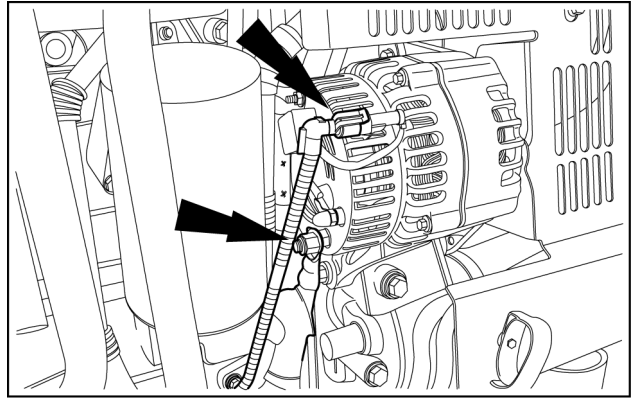
BAIL13TR01663AB 16

18. Detach the oil cooler pipe bracket.



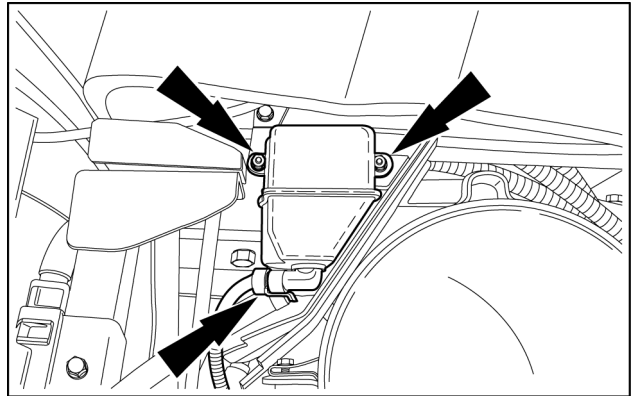
BAIL13TR01664AB 17

19. Disconnect the alternator electrical connectors.



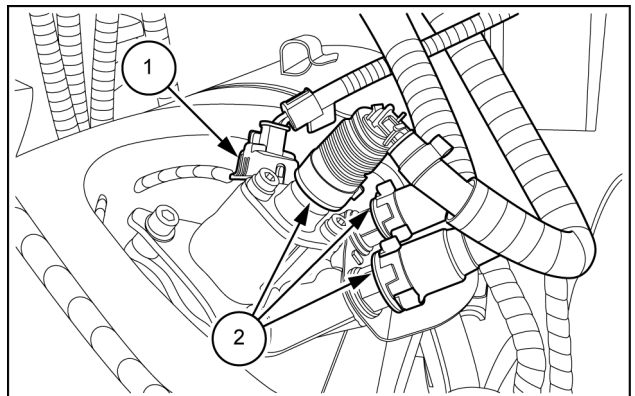
BAIL13TR01665AB 18

20. Detach the brake fluid reservoir and position it to one side.



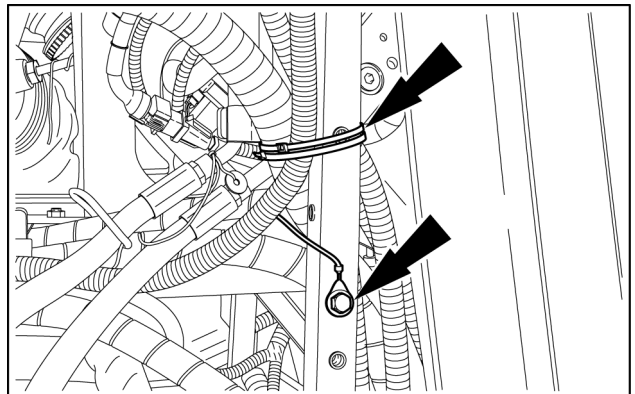
BAIL13TR01666AB 19

21. Disconnect the dosing module.  
A. Disconnect the electrical connector (1).  
B. Disconnect the urea lines (2).



BAIL13TR01667AB 20

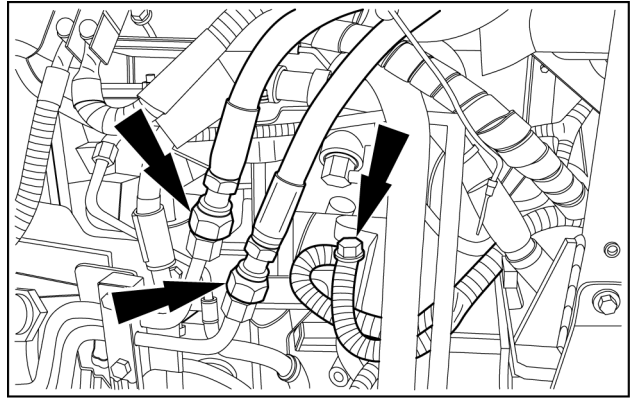
22. 1. Disconnect the earth connector.  
2. Cut the cable tie.



BAIL13TR01668AB 21

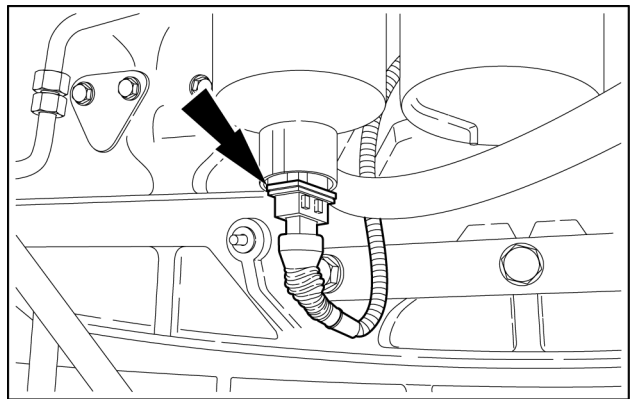
23. 1. Disconnect the steering hoses.  
2. Disconnect the earth connector.

**NOTE:** Mark the hoses to aid installation.



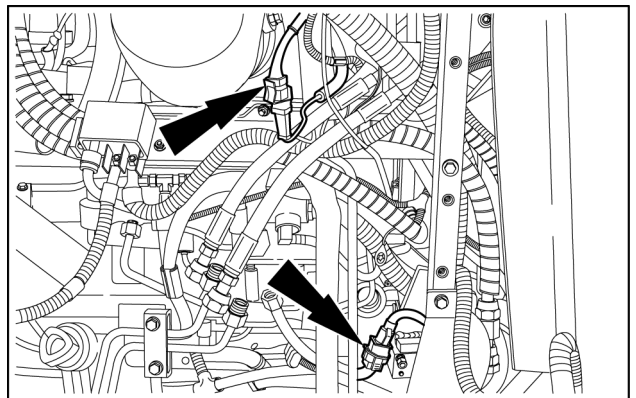
BAIL13TR01669AB 22

24. Disconnect the water-in-fuel electrical connector.



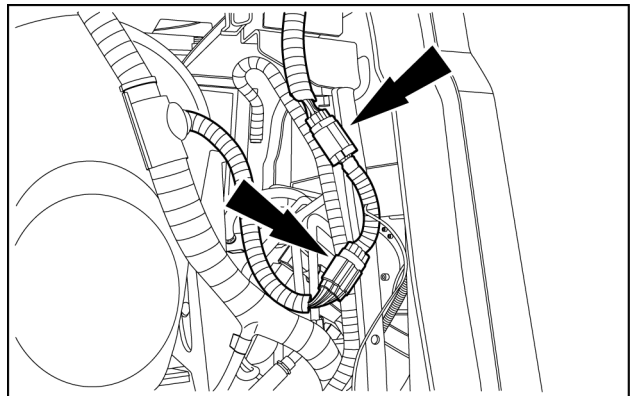
BAIL13TR01670AB 23

25. 1. Disconnect the flywheel speed sensor electrical connector.  
2. Disconnect the Selective Catalytic Reduction (SCR) Diesel Oxidation Catalyst (DOC) electrical connector.



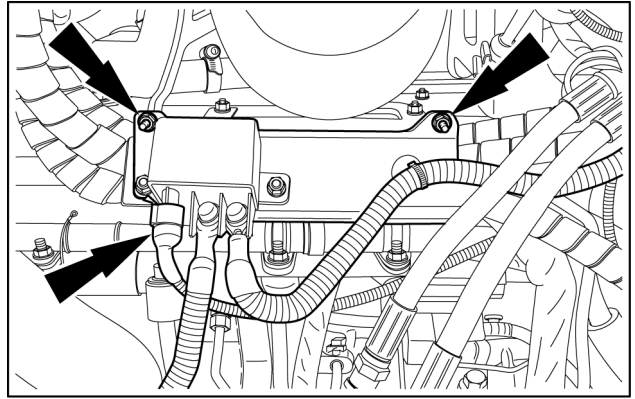
BAIL13TR01671AB 24

26. Disconnect the vehicle lighting wiring harness.



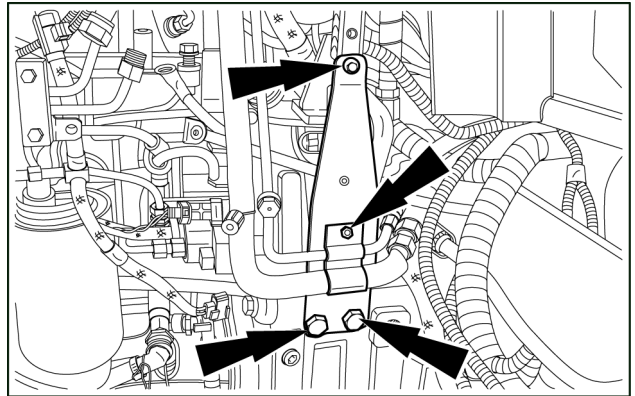
BAIL13TR01672AB 25

27. 1. Disconnect the grid heater relay electrical connector.
2. Detach the grid heater relay.



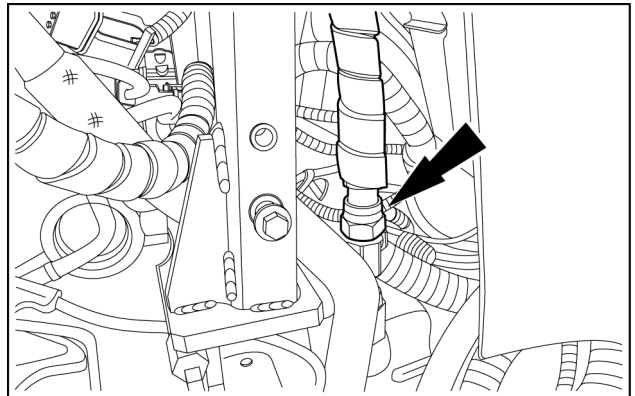
BAIL13TR01673AB 26

28. 1. Detach the Air Conditioning (A/C) pipe retaining bracket.
2. Remove the engine frame bracket.



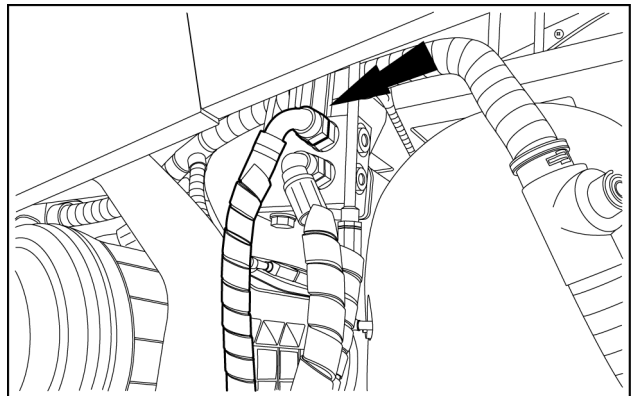
BAIL13TR01674AB 27

29. Disconnect the front brake pipe.



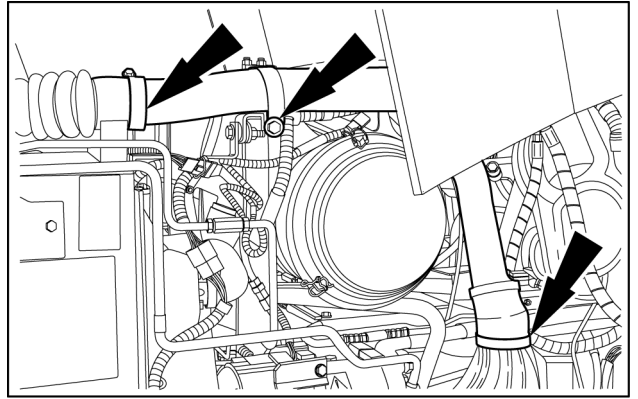
BAIL13TR01675AB 28

30. Disconnect the front brake pipe.



BAIL13TR01676AB 29

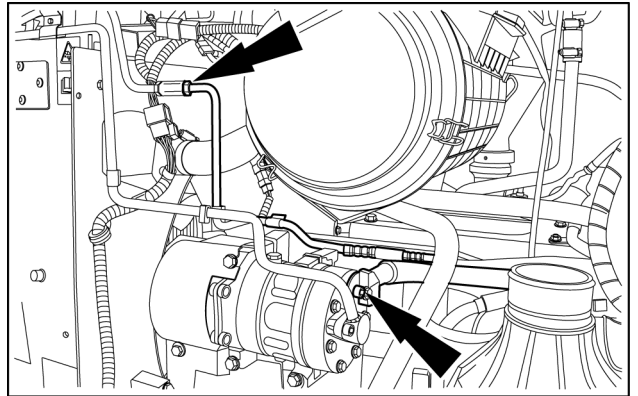
31. Remove the left-hand air intake pipe.



BAIL13TR01677AB 30

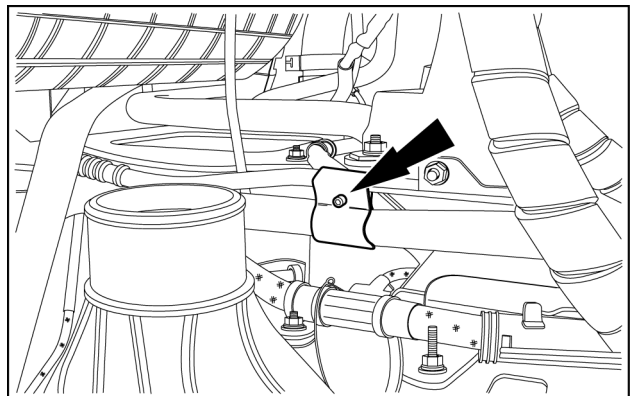
32. Disconnect the A/C pipes.

**NOTE:** Seal all openings using clean blanking caps.



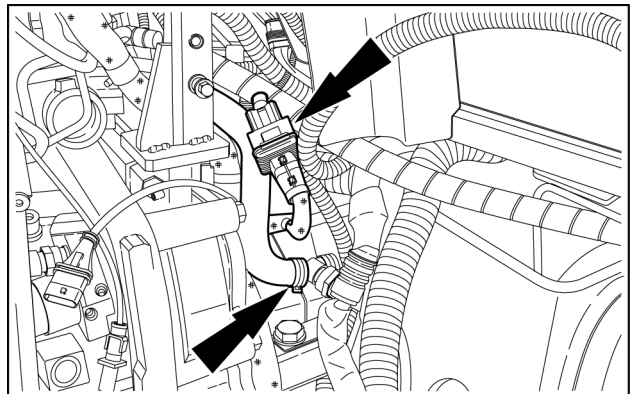
BAIL13TR01678AB 31

33. Remove the A/C pipe retaining clamp.



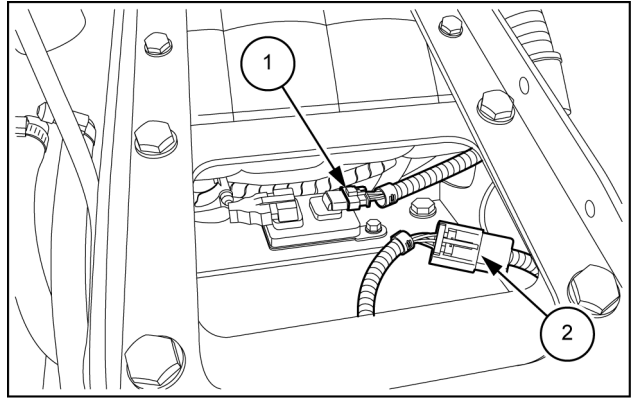
BAIL13TR01679AB 32

34. 1. Disconnect the cab heater hose.  
2. Disconnect the main harness electrical connector.



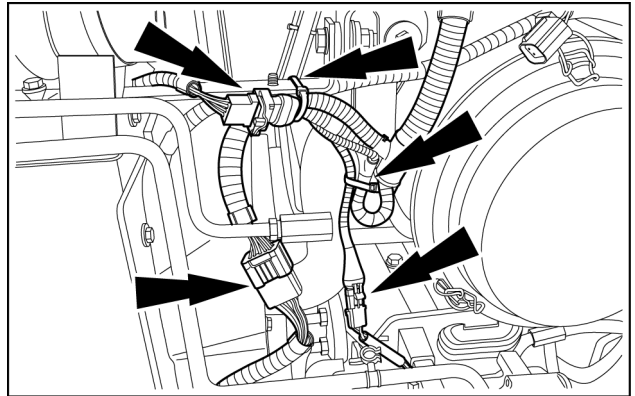
BAIL13TR01680AB 33

35. A. Disconnect the NOx amplifier electrical connector **(1)**.  
B. Disconnect the fan electrical connector **(2)**.



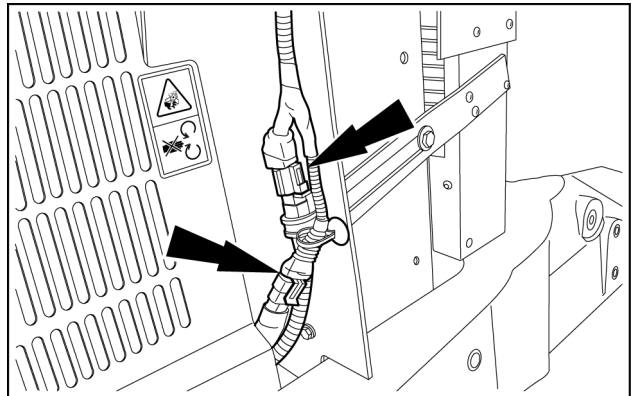
BAIL13TR01681AB 34

36. 1. Disconnect the A/C compressor electrical connector.  
2. Disconnect the A/C pressure switch electrical connector.  
3. Disconnect the front hitch electrical connector.  
4. Cut the cable ties.



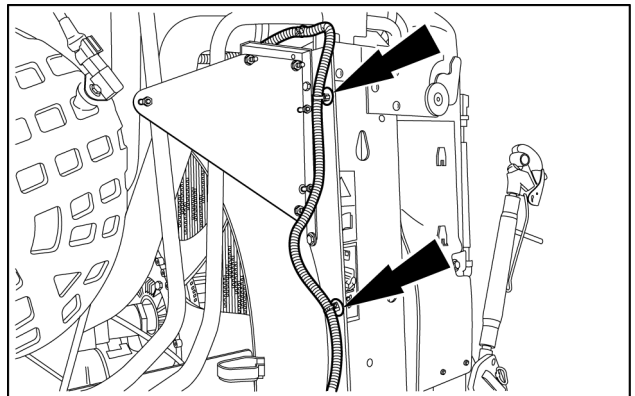
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37. Disconnect the front axle electrical connectors.



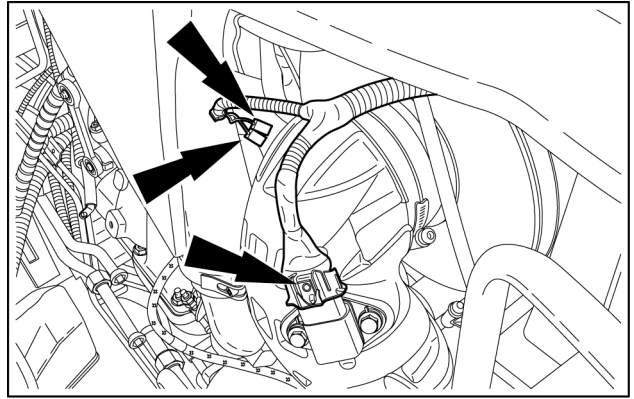
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38. Detach the wiring harness from the radiator fan shroud.



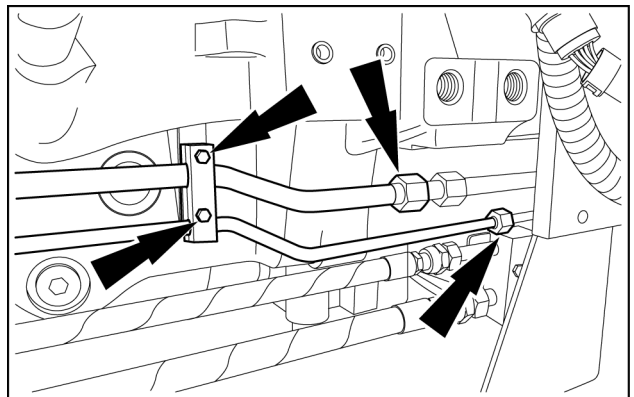
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39. Disconnect the air intake electrical connectors.



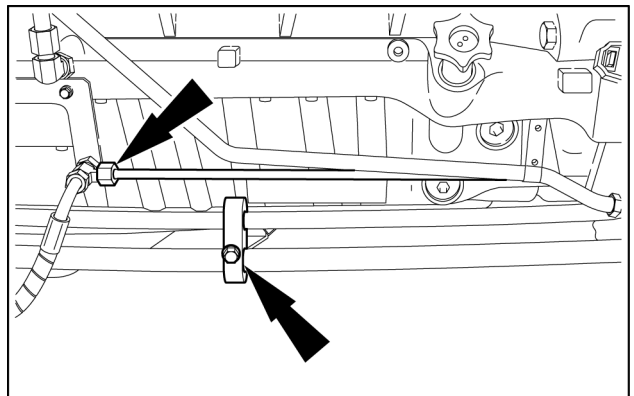
BAIL13TR01685AB 38

40. 1. Disconnect the differential lock supply pipe.  
2. Disconnect trailer brake air supply pipe.  
3. Remove the differential lock supply pipe retaining bracket.



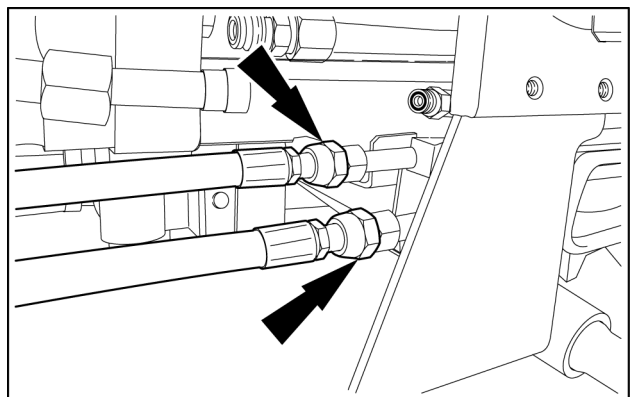
BAIL13TR01686AB 39

41. 1. Remove the differential lock supply pipe.  
2. Remove the front suspension supply hose clamp.



BAIL13TR01687AB 40

42. Disconnect the front suspension hoses.



BAIL13TR01688AB 41



**Suggest:**

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

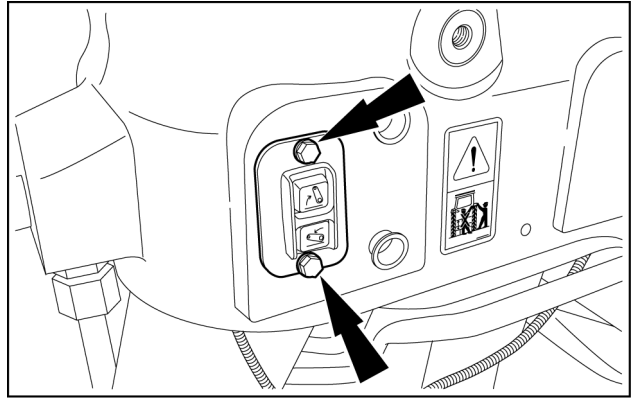
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**to download the complete manual.**

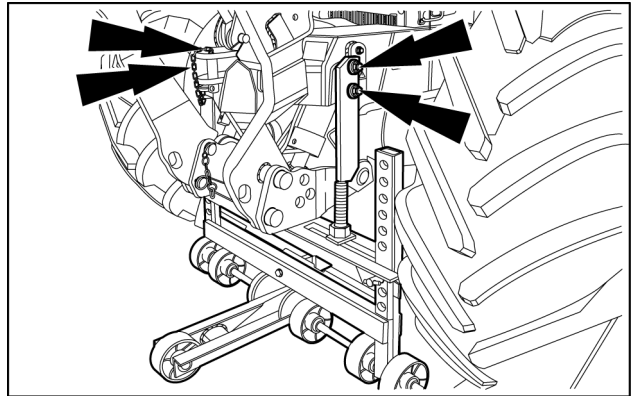
**Thank you so much for reading**

43. Detach the front hitch external control switch.



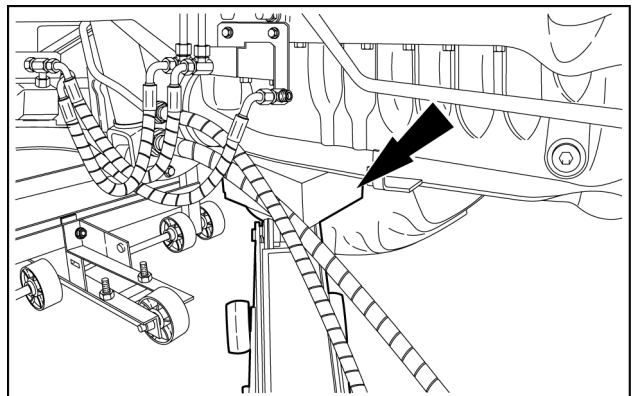
BAIL13TR01689AB 42

44. Using the tractor splitting stand **380003352**, install the larger wheeled part of the tractor splitting stand **380003352** under the front weight carrier and support the weight of the tractor with splitting stand.



BAIL13TR01690AB 43

45. Using a suitable trolley jack, raise the front of the tractor.



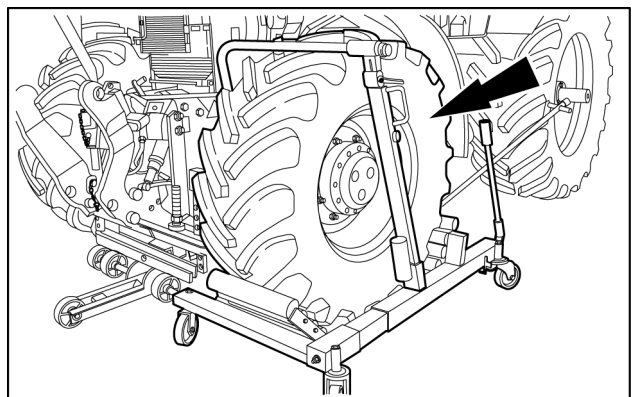
BAIL13TR01691AB 44

46. **⚠ WARNING**

**Crushing hazard!**  
The wheels on this vehicle are very heavy. Always use a wheel remover or chain hoists to remove and install the wheels. Use an assistant as required.  
Failure to comply could result in death or serious injury.

W0149A

Remove the front wheels.



BAIL13TR01692AB 45

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