Operator's Manual

Articulated Tractor

MT945E
AGCC0945xGxxx1001-

MT955E
AGCC0955xGxxx1001-

MT965E
AGCC0965xGxxx1001-

MT975E
AGCC0975xGxxx1001-

North America
4205 River Green Parkway, Duluth GA 30096 USA

Original Operator's Manual

May 2016
582776D1B
NA
English

1. Safety

1.1.21 Burn prevention

Do not touch any part of an operating engine. Other components such as the transmission, the axles and the oil reservoir can also be hot. Let the engine cool before performing any maintenance on the engine. Release all pressure in air, oil, lubrication, fuel and cooling systems before disconnecting any line fittings or related items.

Fig. 10

1.1.22 Coolant

When the engine is at operating temperature, the engine coolant is hot. The coolant is also under pressure. The radiator and all the lines to the heater or engine contain hot coolant.

Any contact with hot coolant or with the steam can cause severe burns. Allow the cooling system components to cool before the cooling system is drained.

Check the coolant level only after the engine has been stopped.

Make sure the filler cap is cool before removing. The filler cap must be cool enough to touch with a bare hand. Remove the filler cap slowly to relieve the pressure.

The cooling system conditioner contains alkali. Alkali can cause personal injury.

Do not allow alkali to contact skin, eyes or mouth.

Fig. 11

1.1.23 Oils

Pressurized hot oil and hot components can cause personal injury. Do not allow hot oil to contact skin. Do not allow hot components to contact skin.

Remove the hydraulic tank filler cap only after the engine has been stopped.

The filler cap must be cool enough to touch with a bare hand. Follow the standard procedure in this manual to remove the hydraulic tank and transmission filler caps.

1.1.24 High pressure lines

Do not bend or strike the high pressure lines. Do not install any lines that are bent or damaged.

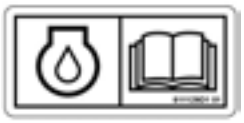
Repair any loose or damaged lines. Leaks can cause fires. Consult your dealer for repair or for replacement parts.

DANGER:
Diesel fuel or hydraulic fluid under pressure can penetrate the skin or eyes. This can cause serious personal injury, blindness, or death.

1.3.16 Warning sign - hot pressurized coolant

Warning sign - hot pressurized coolant		
		Hot coolant can cause serious burns. Do not open the filler cap for the cooling system until the engine has stopped and the engine components have become cool. Then slowly loosen the filler cap to release the pressure.

1.3.17 Engine oil sign

Engine oil sign	
	Check the level of the engine oil daily. See the information for checking the engine oil.

1.3.18 No step

No step	
	Do not use this location as a step.

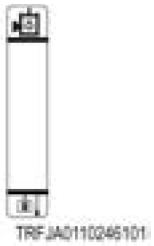
1.6.1 Transmission gauge

Transmission gauge	
 TRFJA0110245701	The transmission gauge sign is located on the left rear of the machine on the sight gauge.

1.6.2 Transmission oil fill level

Transmission oil fill level	
 TRFJA0110245601	Add oil only if the transmission oil level procedure shows it is necessary. Too much oil will make the transmission weak and become too hot during extended transport operation. See the operators manual information for checking the transmission oil level.

1.6.3 Hydraulic fill

Hydraulic fill	
 TRFJA0110246101	The hydraulic fill sign is located on the right side of the chassis, adjacent to the gauge on the hydraulic tank.

1.6.4 Hydraulic couplers

Hydraulic couplers	
 TRFJA0110249301	The hydraulic coupler sign is to the left of the implement valves on the fuel tank. The left side coupler is the extend port. The right side coupler is the retract port.

2.2 Serial number definition

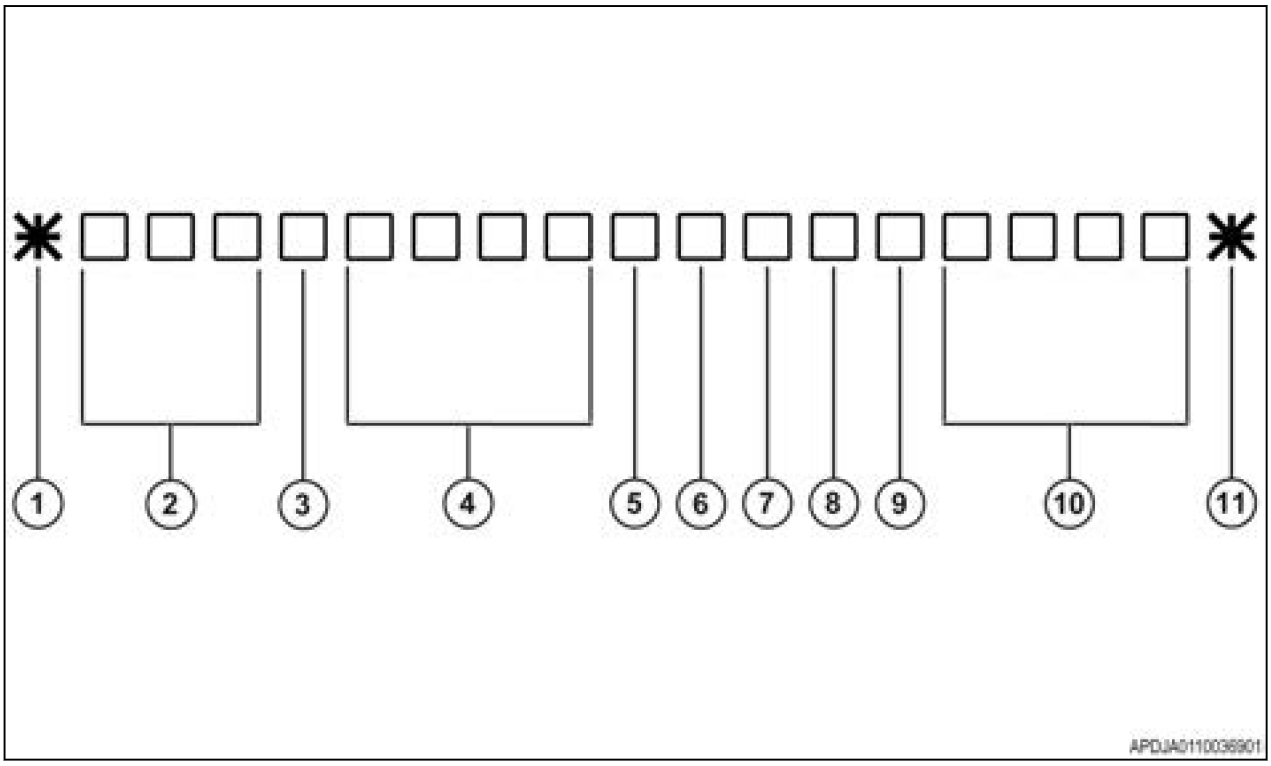


Fig. 2

Definition of the serial number.

1 Beginning Symbol
2 World Manufacturer Code
3 Brand Code
4 Model Identifier (Model Number)
5 Check Letter
6 Model Year Code - W=2011, C=2012, D=2013, E=2014, F=2015, G=2016, H=2017
7 Location Built Code
8 Option Code
9 Option Code
10 Machine Sequence Number - sequence number will start over at the beginning of each model year. The first machine of each model year will start with sequence 1001.
11 Ending Symbol

NOTE: *For serial number breaks in this manual, only the information from the model year code and following will be given.*

A	Ag-Chem
C	Challenger
W	Willmar
M	Massey Ferguson

Brand code definitions

3.2 Starting engine

3.2.1 Pre-start checks

- Check all oil levels, coolant levels, def levels, and fuel levels.
- Adjust the operator seat so the operator can fully push the service brake pedal.
- Inspect the seat belt mounting hardware. Replace any worn or damaged hardware.
- Fasten the seat belt.
- Press the horn twice to alert others before starting the engine.
- Adjust the mirrors.
- Make sure the transmission control lever is in the park position.
- Engage disconnect switch.

3.2.2 Engine starting

NOTE: *Before you start the engine, make sure the area is free of bystanders. When the engine is on and the transmission is in neutral, the machine will articulate if the steering wheel is turned.*

Before you start the engine, sound the horn two times, to alert bystanders and to prevent personal injury caused by unexpected machine movement. To sound the horn, the key must be in the on position.

Prepare to apply the service brakes in case any steering occurs unintentionally when the engine starts.

Make sure the machine is in the park position when you start the machine. Put the transmission in neutral to disengage the park brake Doing this will permit the transmission to go into the forward and reverse positions.

IMPORTANT: *Never push or tow the machine to start the engine. This can damage the powertrain.*

3.2.3 Engine starting in normal conditions

- Move the throttle control lever to the low idle position.
- Move the hydraulic control levers to the hold position.
- Push the inching clutch control all the way down.
- Briefly honk the horn to alert any people in the area.

NOTE: *Do not engage the starter for more than 30 seconds. If the engine does not start, let the starter to cool for two minutes before starting again. The engine start switch must reset to the off position before trying to start again.*

Turn the engine start switch key to the start position (1) to turn the engine. Release the key as soon as the engine starts. The key will return to the run position (2). When the engine starts, keep the throttle control lever in the low idle position until the engine oil pressure bar graph is in the green zone.

Fig. 1

3.7 Dash panel

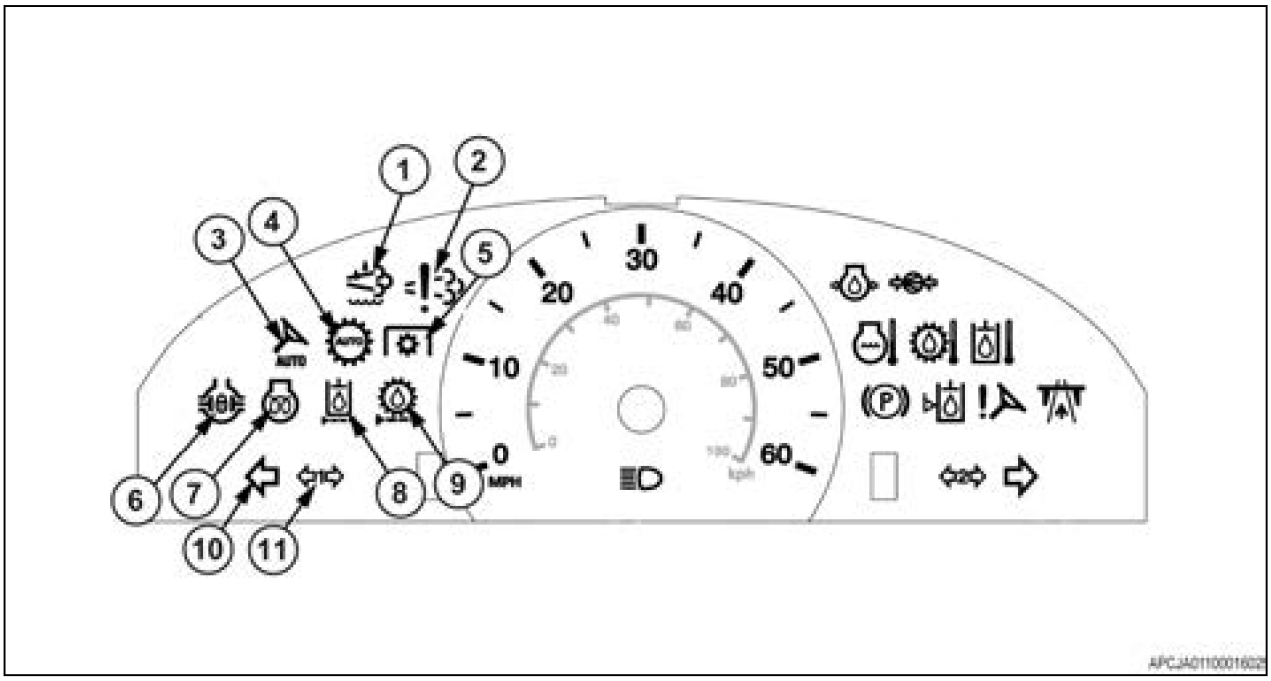


Fig. 13

Location	Status indicator	Color
1	Diesel exhaust fluid status - DEF	Amber - indicates low DEF level
2	SCR system malfunction lamp	Red - malfunctioning SCR system (stop the machine immediately)
3	Automatic steering - system status is ready but not active	White - ready not active
3a	Automatic steering - active	Green - indicator on when active
4	Automatic power management - cruise - if equipped	Green - power management status
5	PTO engagement - if equipped	Green - Rear power take off status
6	Differential lock - if equipped	Amber - differential lock status
7	Engine wait to start	Amber - grid heater status
8	Hydraulic oil filter	Amber - plugged hydraulic oil filter
9	Transmission oil filter - not currently used	Amber - plugged transmission oil filter
10	Left turn signal	Green - left turn signal is active on
11	1st trailer turn signal - not currently used	Green - turn signal active on

Callout	Icon	Title	Description
8		Weight - height adjustment	Push up to raise, down to lower
9		Rear recliner adjustment	Lift to adjust rear recline
10		Fore- aft slide adjustment	Lift to slide seat top fore-aft
11		Fore-aft isolation	Push in for fore/aft isolation, pull up to lock isolator
12		Lateral isolation	Push in for lateral isolation, pull up to lock isolator
13		Seat cushion tilt adjustment	Lift to tilt cushion
14		Swivel lock-out control	The switch lock-out control lets the seat swivel freely or lock in position. There are three swivel positions: center, 8° left, or 24° right.
15		Seat cushion extention	Lift to slide cushion fore/aft

3.12.4 Instructor seat

IMPORTANT: *Do not use the instructor seat as a passenger seat for adults or children. The instructor seat is for machine operation training, instruction, and machine service related diagnostic purposes only.*

The persons using the operator seat and the instructor seat must use the seat belts provided. Seat belts must be worn at all times during the machine operation.

Fasten the seat belt catch (1) into the buckle (2) to fasten the seat belt.

Fig. 27

3.16.5 Setting the decimal display

NOTE:
This procedure is for software version 3.1 and before.

Procedure

1. Select the icons in the following order:

2. Select a decimal display option from the drop-down list (1).
3. Select  (2).
4. Select **Esc** to return to the system configuration main screen.

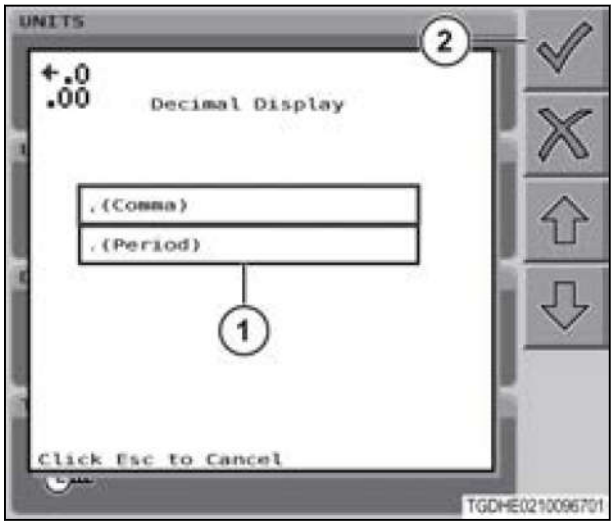


Fig. 43

3.16.6 Setting the time and date

Procedure

1. Select the icons in the following order:

2. Select the box below **Set Date Type** (1).

Date type	Selection
Month/date/year	12/31/2008
Month/year/date	12/2008/31
Date/month/year	31/12/2008
Date/year/month	31/2008/12
Year/month/date	2008/12/31
Year/date/month	2008/31/12

3. Select the desired date format.
4. Select the boxes below **Current Date** (2) and enter the date.
5. Select the box below **Set Time Type** (3).
   - 24 hr
   - 12 hr (am/pm)

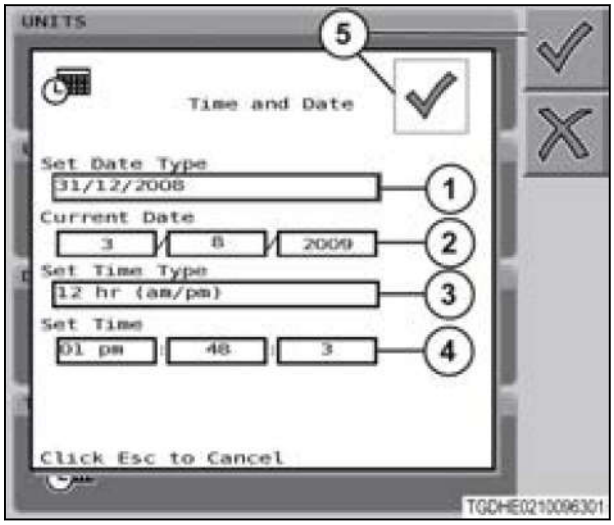


Fig. 44

2. The following information will show after selecting the measures - field icon:

- (1) Distance
- (2) Area
- (3) Engine percentage load
- (4) Field time
- (5) Fuel rate
- (6) Power specific fuel economy

To select the next screen, push the hard key adjacent to the measures - fuel icon (7).

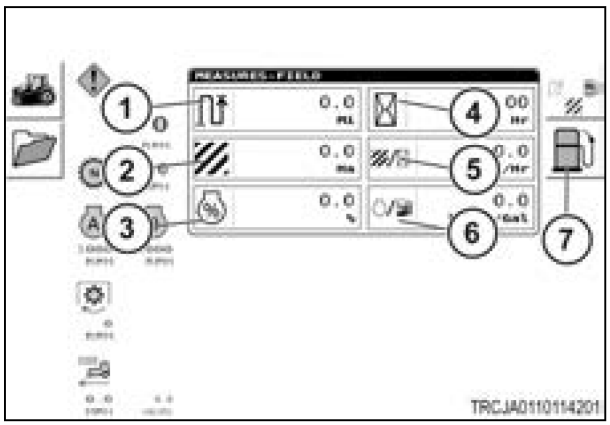


Fig. 72

3.16.17 Measures - fuel

After selecting the measures - fuel screen, the following information will show:

- (1) Fuel used
- (2) Engine idle time
- (3) Fuel burned idling
- (4) Fuel usage per distance
- (5) Fuel rate
- (6) Fuel per area

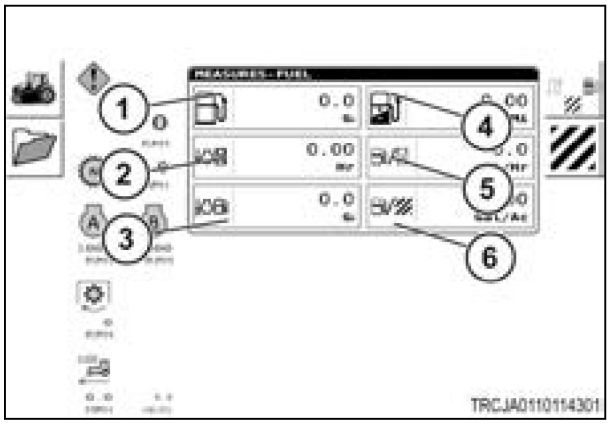


Fig. 73

3.16.18 Memory

Procedure

1. The memory viewing screen options are the INST (instantaneous) viewing screen (1) and the measure fuel screen (2).

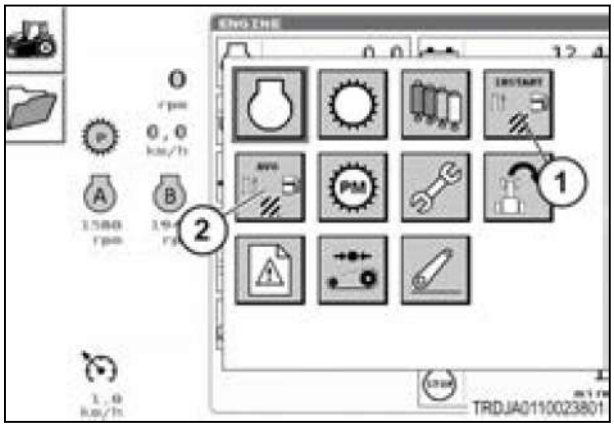


Fig. 74

Service intervals		
Interval hours	**Next due service hours**	**Hours left**
400	400	285
Obtain coolant sample		
Change engine oil and filter		
Check engine valve lash		

7. The screen shows service intervals at 1000 hours. To go to the next service hour interval, press the button adjacent to the icon (1). Use the reset button (2) to reset the memory data hours to zero after servicing scheduled items.

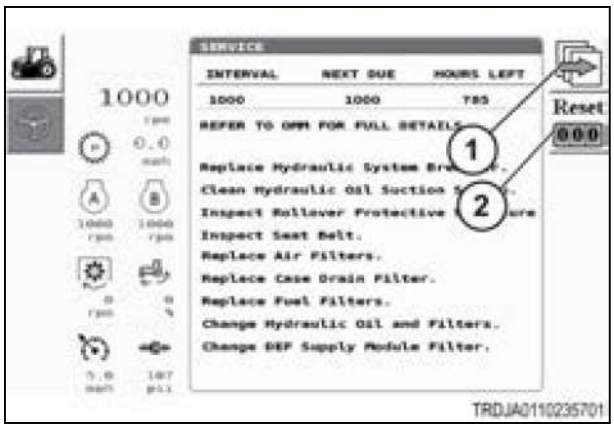


Fig. 101

Service intervals		
Interval hours	**Next due service hours**	**hours left**
1000	1000	785
Replace hydraulic system breather		
Clean hydraulic oil suction screen		
Inspect rollover protective structure		
Inspect seat belt		
Replace air filters		
Replace case drain filter		
Replace fuel filters		
Change hydraulic oil and filters		
Change DEF supply module filter		

8. The screen shows service intervals at 2000 hours. To go to the next service hour interval, press the button adjacent to the icon (1). Use the reset button (2) to reset the memory data hours to zero after servicing scheduled items.

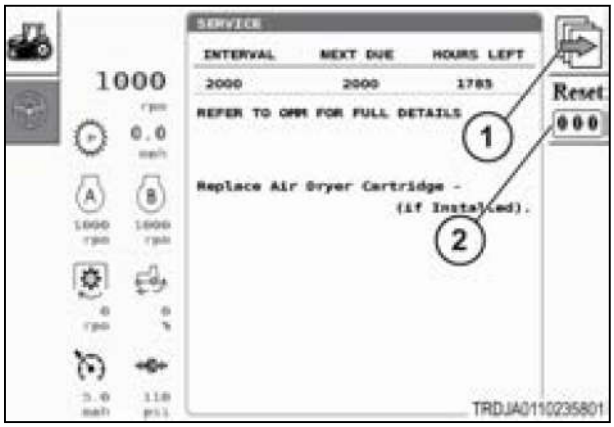


Fig. 102

Service intervals		
Interval hours	**Next due service hours**	**Hours left**
2000	2000	1785
Replace air dryer cartridge (if installed)		

5. The hitch height (1) supplies the operator with the vertical position of the 3-point linkage. The hitch height is the location of the hitch in relation to the setting of the raise limit.

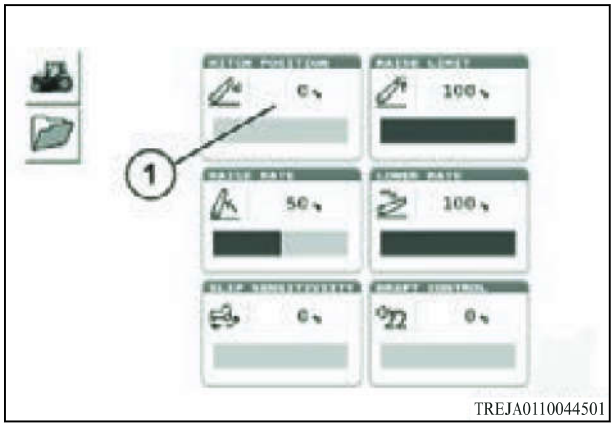


Fig. 165

3.16.28 Slip calibration

1. Use the scroll wheel (1) to highlight the tractor icon (2). Press the scroll wheel button to select the icon.

Fig. 166

2. Press the hard key (1) to select the configuration menu.

Fig. 167

3.18.8 Transmission shifting diagram

The machine has great lugging capacity. The peak engine horsepower output occurs when engine speed is approximately 1800 rpm. Peak torque output of the machine occurs at approximately 1500 rpm. To prevent early transmission clutch wear, it is important to keep engine speed above 1500 rpm when shifting under heavy load.

To better the life of the transmission components, keep the engine speed above 1500 rpm. If the engine speed is lugged below 1500 rpm, the operator must not shift to a lower gear but must decrease the load on the engine/transmission. Let the engine speed increase above 1500 rpm before shifting.

To prevent lugging the engine speed below 1500 rpm, use the power management - Max Output Mode. Power management will automatically shift the tractor to keep maximum power output, approximately 1800 rpm.

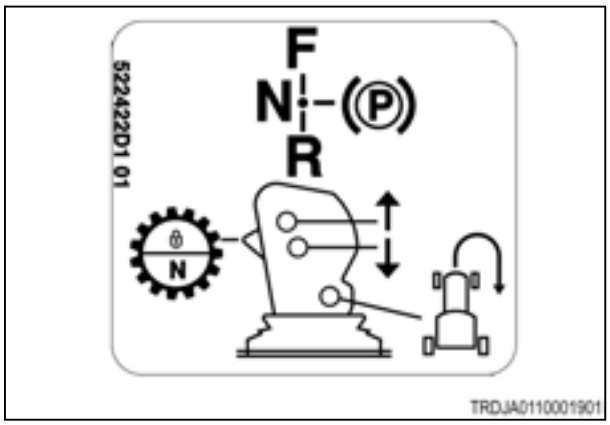


Fig. 192

3.18.9 Preselecting a gear before moving

NOTE: *The transmission automatically defaults to F7 and 1R when the engine start switch key is in the run position. The transmission control lever when placed in the reverse position, will display the reverse gear. Tenth gear is the highest gear for starting the forward movement from a stop position.*

Use the following procedure to preselect a gear different from the default gears.

1. Start the engine with the transmission control lever in the park position.
2. Move the transmission control lever to the neutral position.
3. Use the upshift (1) and the downshift (2) buttons to select the desired gear.
4. **NOTE:** *When changing the default forward gear, the default reverse gear is changing the same amount.*

   Select the gear desired, and lift the neutral lock button while moving the control lever fully forward to engage forward travel.

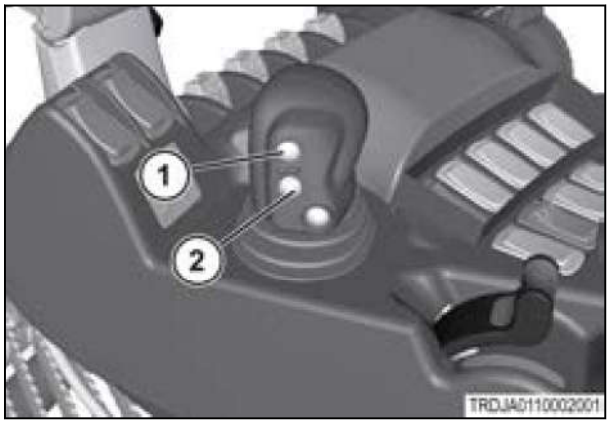


Fig. 193

3.18.10 Using of the inching clutch control

To modulate the clutch use the Inching clutch control. Fully push the inching clutch control before moving the transmission control lever in the forward or the reverse direction.

Slowly release the pedal to start the movement of the tractor.

3.21 General hydraulic connections

3.21.1 General hydraulic connections

Couplers for machine accept ISO 5675 standard connectors.

The couplers on the left side of the valve bank are pressurized when the control lever is in the extend position.

The couplers on the right side of the valve bank are pressurized when the control valve is in the retract position.

3.21.2 Connecting the hoses to the quick couplers

NOTE: *Both the male and the female portions of the quick couplers are wear items. Before connecting the hoses, inspect the couplers for signs of wear. Replace if necessary.*

NOTE: *To improve the life of the quick couplers, correctly support the hoses, alleviating stresses on the couplers.*

IMPORTANT: *Always wipe inside of the coupler and outside of the connector tip. Clean with a clean, lint free cloth, prior to connection. Failure to do so, reduces life of the quick coupler, and contaminates oil in the implement circuit.*

Move the hydraulic control lever to the hold or the float position.

1. Rotate the dust caps (1) up, to access the quick coupler.
2. Push the lever (2) down to release any hydraulic pressure. This step is especially important if the hydraulic control valve is left in the hold position. After the lever (2) has been actuated, the lever may be released.
3. Firmly push the hoses into the coupler (3).

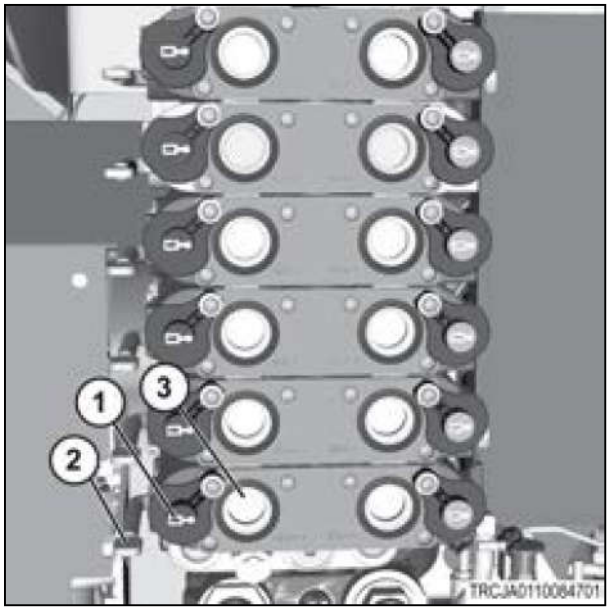


Fig. 206

3.21.18 Connecting the auxiliary implement control valve with load sensing

Procedure

1. **NOTE:** *This example shows an auxiliary implement control valve bank* (1) *equipped with a load sense port* (2).

   Connect the pressure hose to the pressure coupler (4) on the hydraulic power beyond.

2. Connect the return hose to the return coupler (3) on the hydraulic power beyond.

3. Connect the load sensing signal line to the load sensing coupler (5) on the hydraulic power beyond.

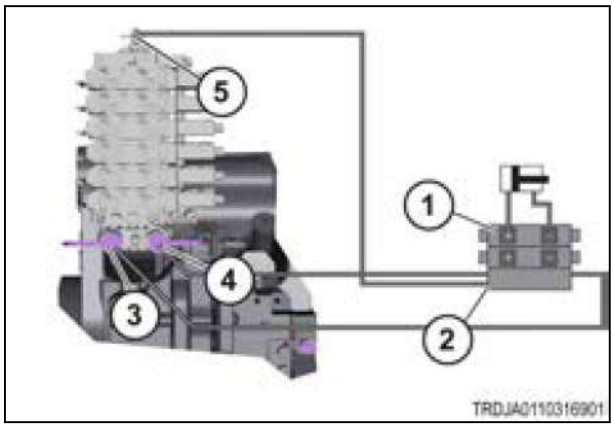


Fig. 219

3.21.19 Connecting the auxiliary implement control valve without load sensing

Procedure

1. This example shows an auxiliary implement control valve bank having the following characteristics.

   - no load sense port
   - one circuit (6) demanding oil greater than 2070 kPa (300 psi)
   - one circuit (7) demanding oil greater than 2070 kPa (300 psi)

   The valve bank (1) is not equipped with a load sense port. The load sensing signal, needs to be sensed in the pressure line (5) supplying the valve bank.

   NOTE: *This configuration provides the maximum system pressure of 19995 ± 345 kPa (2900 ± 50 psi) whenever the engine is running. This configuration, generates an additional heating of the hydraulic oil.*

2. Connect the pressure hose (5) to the supply port (2) on the hydraulic power beyond.

3. Connect the return hose to the return coupler (3) on the hydraulic power beyond.

4. Connect the load sensing signal line to the load sensing coupler (4) on the hydraulic power beyond.

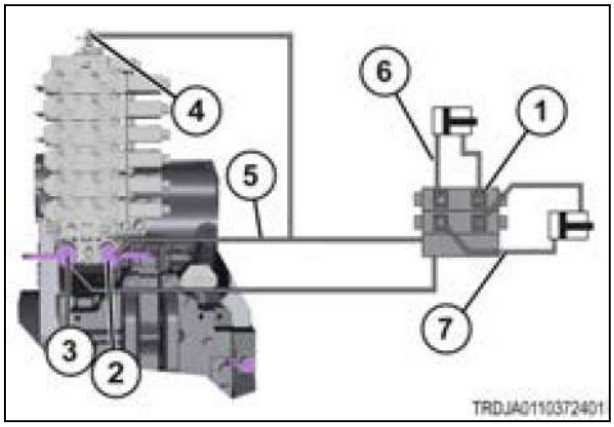


Fig. 220

3.21.20 Auxiliary implement control valve bank

NOTE: *The hydraulic pump always provides at least 2070 kPa (300 psi) when the pump is at low pressure standby. If the circuit demands more than 2070 kPa (300 psi) the hydraulic motor on the circuit will need to be running. The circuit sends a load sensing signal causing the hydraulic pump to upstroke.*

Characteristics of an auxiliary implement control valve bank:

3.24.7 Transporting the machine

Procedure

1. Rotate down and secure radio antenna.
2. Cover the exhaust opening to prevent damage to the turbocharger.
3. Find the tie downs in the front and rear of machine, to fasten the machine to the truck or trailer.

Procedure

1. To remove the drawbar pin (2), pull the handles (3) rearward on the spring loaded plate to unlock the drawbar pin. Lift up and remove the drawbar pin.

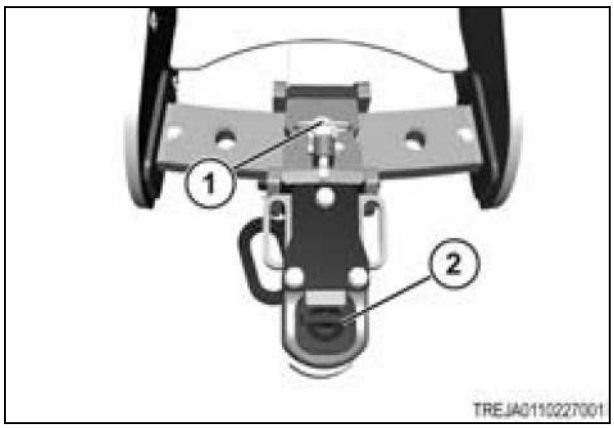


Fig. 255

2. Slowly inch the machine in the rearward direction until the tongue of implement contacts the drawbar.

3. Engage the park brake.

4. Insert the drawbar pin.

A hole is located on the bottom of the drawbar pin. A lynch pin can be inserted in this hole to lock the drawbar in position.

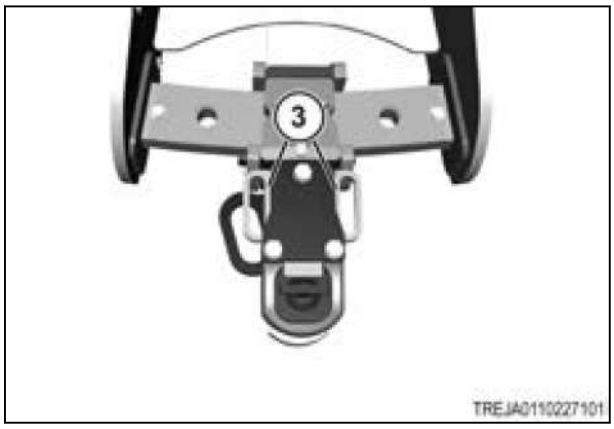


Fig. 256

3.26.3 Safety chain

When towing implements on the highway, use a safety chain. Minimum tensile strength for the safety chain must be at least equal to the gross weight of the implement.

The safety chain will control the implement if the drawbar becomes disconnected from the implement.

Route the safety chain by going under the intermediate support (1), and over. Secure around the lower plate of the drawbar support (2).

Check the adjustment of the safety chain by driving the machine. Turn the machine in both directions to make sure the chain does not bind.

NOTE: *If necessary, adjust to remove a chain that is too tight or too loose.*

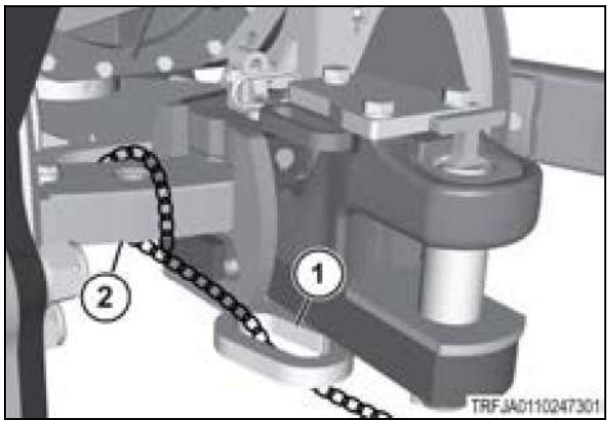


Fig. 257

Table 1

Machine weight guidelines			
	MT955E	MT965E	MT975E
	(500 hp)	(550 hp)	(600 hp)
100 lb/hp	46000	51000	57000
105 lb/hp	48300	53550	59850
110 lb/hp	50600	56100	60000
115 lb/hp	52900	58650	60000
120 lb/hp	54000	60000	60000

Table 2

Percent weight on front axle		
Drawbar only	three-point linkage	Towed scraper
55-60 percent	60-70 percent	65-70 percent

Table 3

MT900E Base machine axle weights		
Tire and wheel arrangements	Front	Rear
620/70R42 Duals	35282	17456
620/70R46 Duals	35517	17493
650/85R38 Duals	35489	17553
710/70R38 Duals	35452	17541
710/70R42 Duals	35829	17887
800/70R38 Duals	36171	18698
IF800/70R38 Duals	36378	18491
480/80R46 Triples	36226	18331
480/80R50 Triples	36929	19024
520/85R42 Triples	36287	18362
520/85R46 Triples	36916	19004
35.5-32LS Singles	33721	15796
1100/45R46 Singles	34649	16683

Table 4

Machine options	Front	Rear
PTO - add	+228	+722
Three-point linkage - add/subtract	-405	+2904

7. Install the plates (1) to fasten the bolts.

Fig. 281

8. Install the bolts (1) to secure the weights.

Fig. 282

9. For 20 weights, use two bolts (1) to attach the weights using two plates (2). Torque to 240 Nm.

10. Install the plates in opposite orientations.

11. Install six weights between the two plates

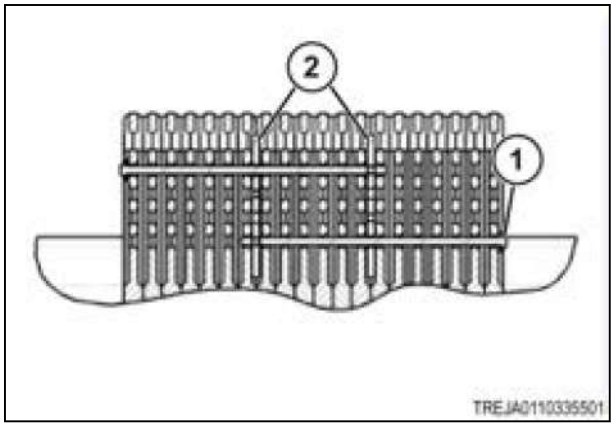


Fig. 283

12. For 32 weights, use six bolts (1) to attach the weights using three plates (2). Torque to 240 Nm.

13. Install the first two plates in the same orientation after installing six weights.

14. Install the third plate in the opposite orientation as the first two plates.

15. Install the third plate after another three weights are installed on same side.

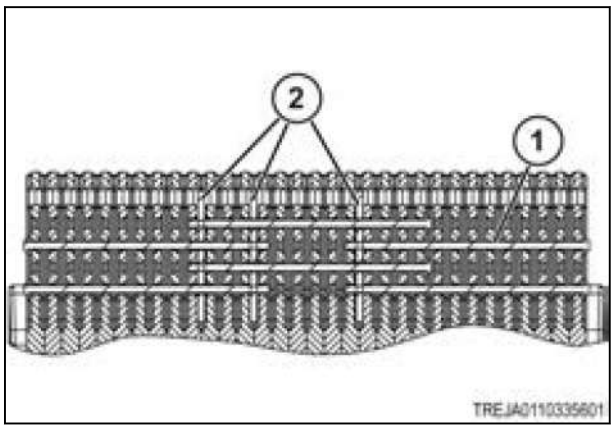


Fig. 284

3.30 Aftermarket equipment applications

3.30.1 Chemical tank attachment

Aftermarket chemical tanks can be mounted to the front of the machine. The preferred configuration is to use two equal-dimensioned tanks. Each tank must be located at the sides of the machine as near the front of the front tires as practical. The maximum recommended total capacity is 2270 L. The total weight, including liquid, must not be more than 2727 kg. The tank support structure must mount to both the front surface of the frame casting and the sides of each frame rail.

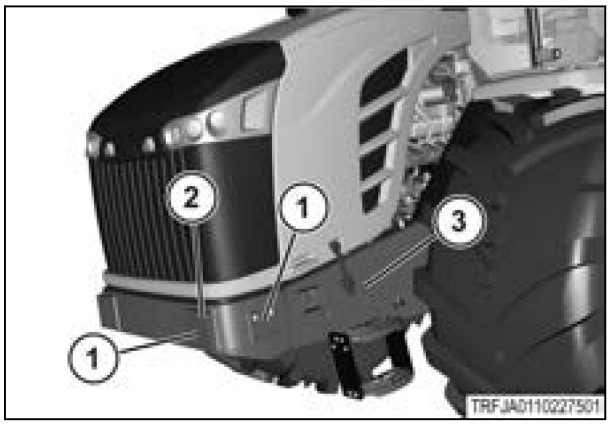


Fig. 297

The other option is to install a single front tank. The maximum recommended capacity is 1515 L . The center of gravity should be no more than 610 mm in front of the counterweight bracket mounting surface. The total weight, including liquid, must not be more than 1818 kg. The tank support structure must mount to either:

- The front mounting surfaces (2) and side mounting surfaces (1) of the front frame casting
- The front surface (2) of the frame casting
- The sides of each frame rail(3)

IMPORTANT: *When chemical tanks are installed, adjust the machine ballast to limit the maximum weight of the machine to 27216 kg when the tanks are full.*

NOTE: *Contact the dealer for all other approved aftermarket equipment applications.*

Fuse block one		
18	30 Amp	Roof light module
19	30 Amp	Roof light module
20	30 Amp	Power port

4.3.3 Fuse block two

Fuse block two		
Item	**Rating**	**Description**
	Switch battery	
1	20 Amp	Implement valve / hitch valve
2	10 Amp	Inch sensor / steer sensor / rock shaft sensor
3	15 Amp	Trailer auxiliary
4	30 Amp	Bottom module
5	10 Amp	Decel sensor / air sensor / belt tension
6	15 Amp	Front washer / intermittent wiper
7	20 Amp	Rear wiper
8	15 Amp	Front wiper
9	30 Amp	Bottom module
10	10 Amp	Turn signal
Item	**Rating**	**Description**
11	15 Amp	Radio
12	20 Amp	Seat
13	15 Amp	Terminal strip
14	30 Amp	Power ports switched
15	10 Amp	Tractor management center (TMC)

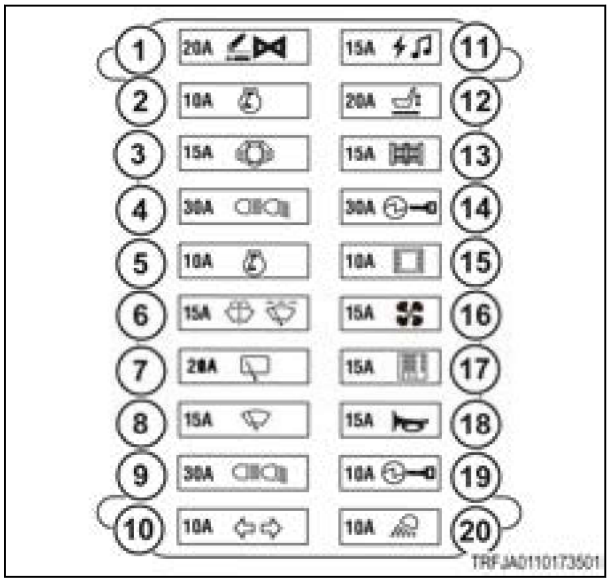


Fig. 4

4.5 Fuel system

4.5.1 Filling the fuel system

Before starting the procedure

WARNING:

Explosion hazard. Ultra Low Sulfur Diesel (ULSD) poses a greater static ignition hazard than earlier diesel formulations with higher sulfur content. Consult with your fuel or fuel system supplier to ensure the delivery system is in compliance with fueling standards for proper grounding and bonding practices.

IMPORTANT: *The removal of sulfur and other compounds in ULSD fuel decreases its conductivity and increases its ability to store static charge. Refineries may have treated the fuel with a static dissipating additive. However, there are many factors that can reduce the effectiveness of the additive over time. Static charges can build up in ULSD fuel while it is flowing through fuel delivery systems. Static electricity discharge when combustible vapors are present could result in a fire or explosion. Therefore, it is important to ensure that the entire system used to refuel your machine (fuel supply tank, transfer pump, transfer hose, nozzle, and others) is properly grounded and bonded. Consult with your fuel or fuel system supplier to ensure the delivery system is in compliance with fueling standards for proper grounding and bonding practices.*

1. Clean the filler cap (1) and the adjacent area.
2. Lift the lever.
3. Rotate the lever counterclockwise.
4. Remove the filler cap.

   Do not try to rotate the entire cap to remove. The cap disengages from the fuel tank only by lifting and rotating the lever.

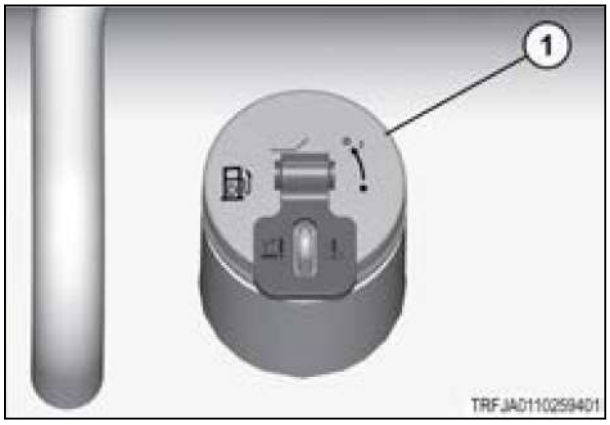


Fig. 23

4.6.10 Replacing the water temperature thermostat

Procedure

1. **IMPORTANT:**
   Clean the mating surface of the cylinder head, and the water temperature thermostat housing.
   Parts removed for clarity.

   Remove the bolts to remove the bracket (1). Loosen the hose clamps (2) around the hoses (3). Remove the bolts to remove the cover for the thermostat housing (4).

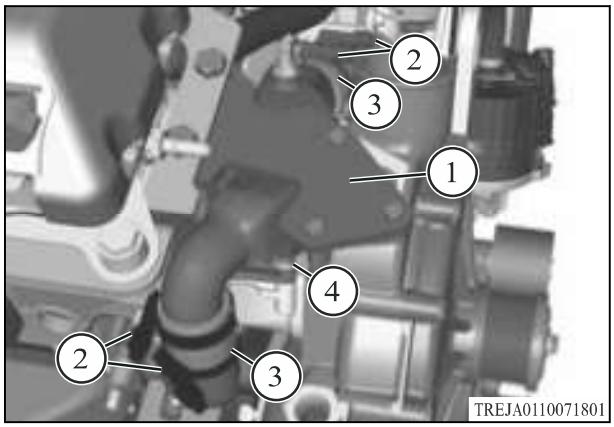


Fig. 42

2. Remove the water temperature regulator and gasket.
3. **NOTE:**
   Keep all the parts clean from contaminants. The contaminants can cause rapid wear and shortened component life.

   Replace the gaskets (3). Replace with a new gasket if worn or damaged.
4. Install the bolts to replace the cover to the housing.
5. Connect the hoses and tighten the hose clamps.
6. Replace the bracket.
7. The top thermostat (1) opens at 82° C (180° F), and regulates the cooling system. The bottom thermostat (2) opens at 79° C (174° F), and regulates the cooling system.

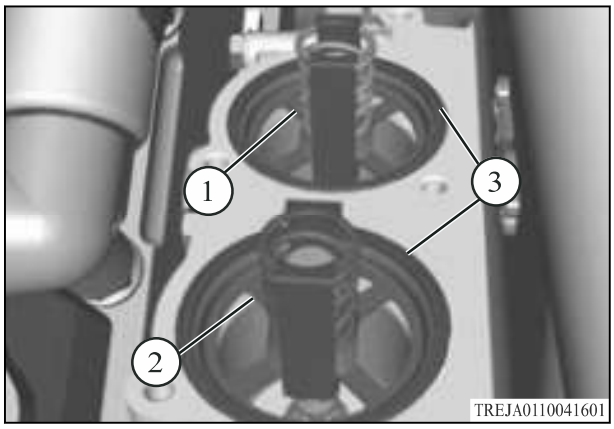


Fig. 43

7. Remove the access plate (1).

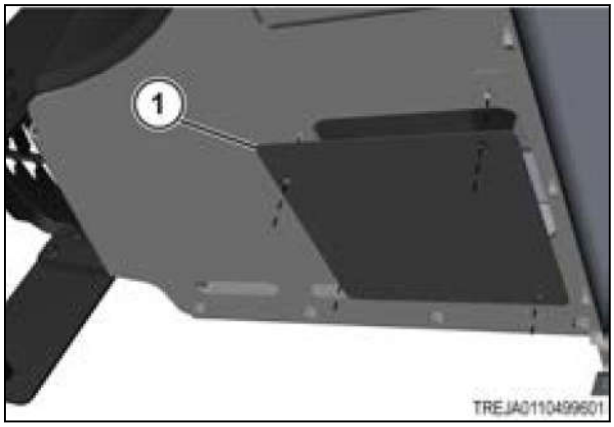


Fig. 67

8. Remove the reservoir plugs (1).

9. Let the oil drain into the correct container.

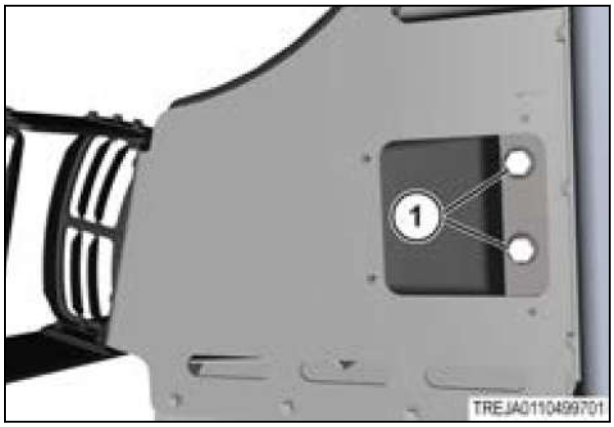


Fig. 68

10. Set an oil pan below the filters. When replacing the filters, there will be a small amount of oil lost.

11. Remove the implement and steering system filters (1).

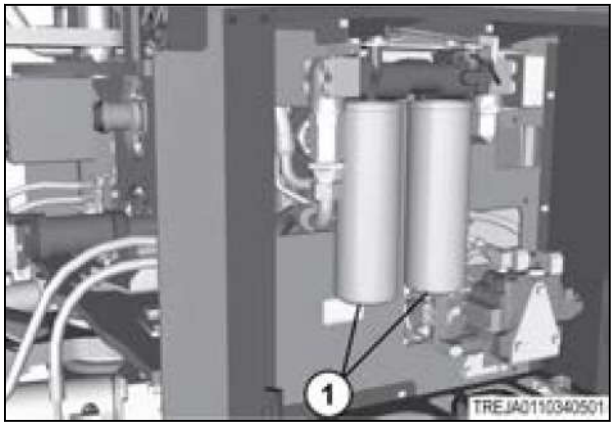


Fig. 69

12. Apply a thin layer of oil to the seal on the filters (1).

13. Install the filters by hand.

14. When the filter seal contacts the filter base, tighten the filter elements by an additional 270 degrees.

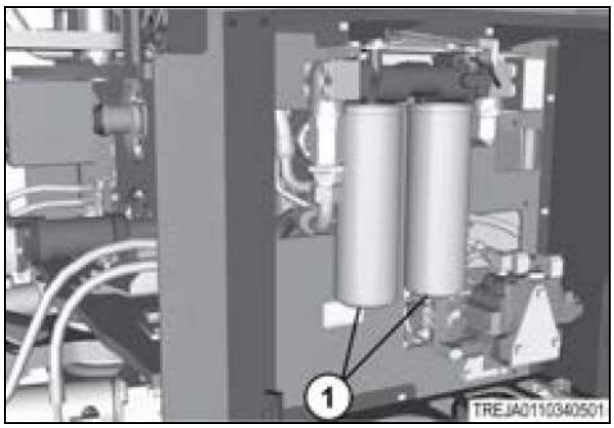


Fig. 70

4.12 Wheels

4.12.1 Wheel removal

There are many tire and rim options that can be installed on the machine. The removal procedure will be the same for triples, duals, and singles.

4.12.2 Removing the outside wheel

WARNING:
Tire and rim assemblies are extremely heavy and require proper handling equipment to safely remove them. Fully support and constrain the tire and rim assemblies before removal. Failure to use correct procedures and equipment can result in personal injury or death due to crushing.

Procedure

1. Exploded view of the triple wheel option.

2. Inflate the inside wheel to 241 kPa (35 psi) for the increased weight load.

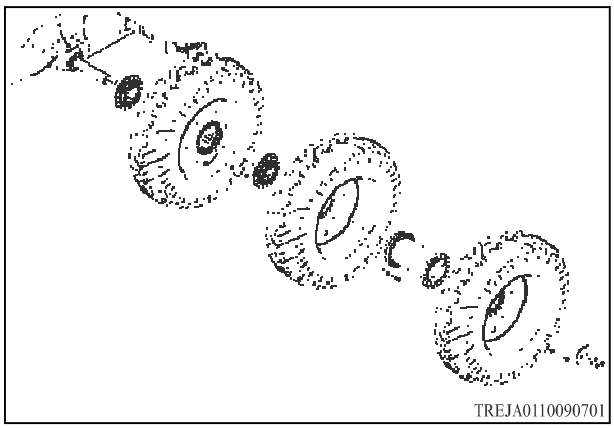


Fig. 92

3. Drive the inside wheel (1) up on to the blocking material so the weight of the machine is off of the outer wheels.

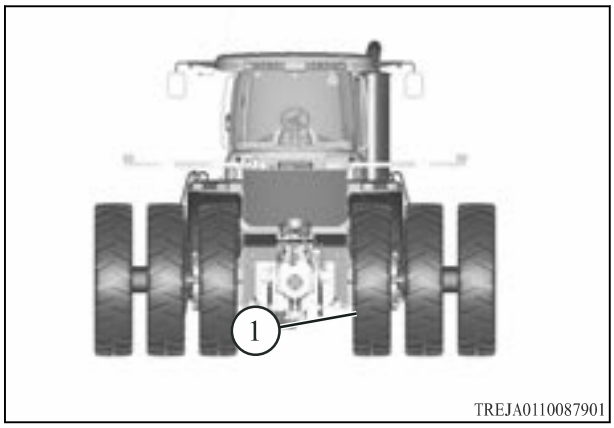


Fig. 93

13. Tighten the wheel bolts.

4.12.8 Installing the outside wheel

NOTE: *The procedure for installation of the single and dual wheels is the same as the triples. The hub spacers may be different for wheel options.*
See the information for the hub spacing section.

Special tools

Description	Part number	Vendor	Where used	Mandatory
Wheel guide stud 	332311	K-Line Industries, Inc.	Wheels	Mandatory

Torque specifications

Description	Torque
Wheel mounting hardware	900 Nm (664 lbf ft)

Procedure

1. If the machine is not already supported by jack stands, drive the primary wheels (1) up on to the blocking material so the weight of the machine is off of the outer wheels. Install wheel guide studs into the mounting holes (2) in the spacer to aid in the wheel installation.

NOTE:
The wheel weights must be installed before the wheel.
See the information for installing the wheel weights.

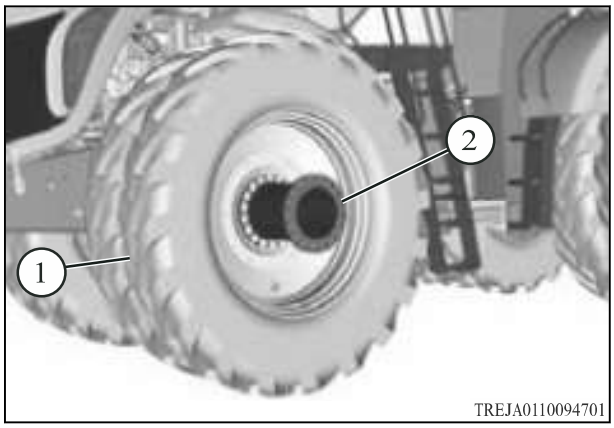


Fig. 117

2. Use the correct lifting equipment and move the wheel assembly into position.

NOTE:
The weight of the wheel assembly is between 528.95 kg to 1586.85 kg (1166.14 lb to 3498.42 lb). The weight of each wheel weight is 227 kg to 454 kg (500 lb to 1000 lb) .

2. Fasten the battery mount (2), and the hardware with spacers (1) to the frame. Tighten the bolts to 8 Nm (71 lbf in)

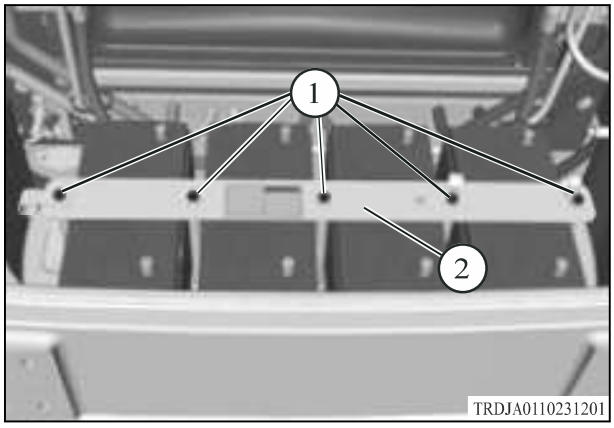


Fig. 132

3. Install the positive cable (1) on the terminals and tighten the nuts on the terminal clamps to 7.2 Nm (5.3 lbf ft). Install the terminal covers (2) on the terminal clamps. Use the hose clamp (3) to hold the hose.

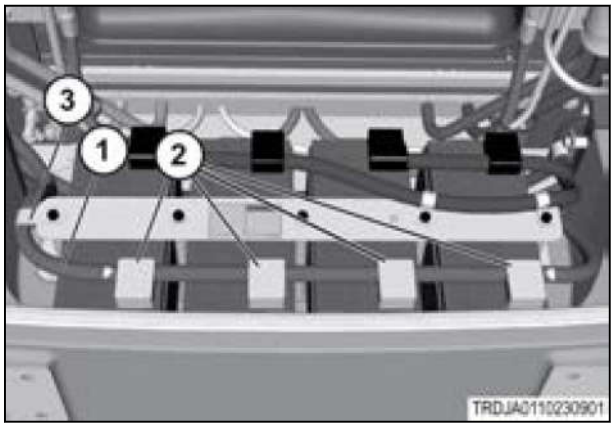


Fig. 133

4. Install the negative cables (2) on the terminals and tighten the nuts on the terminal clamps to 7.2 Nm (5.3 lbf ft). Install the terminal covers (1) on the terminal clamps.

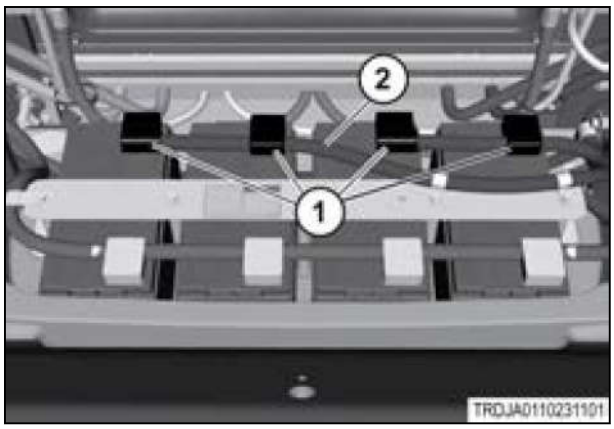


Fig. 134

Engine has low power	
Cause(s)	**Solution(s)**
There is a restriction in air cleaner.	Check air cleaner for a restriction.
Diesel engine operating temperature is too low.	Check the thermostats.
Fuel Filter (s) dirty	Replace the filter(s)
Overload of the engine	Shift to a lower gear or reduce load
Fuel pressure is low.	Replace the fuel filters. Check fuel pressure. Check for leaks in low pressure fuel system. Check for air in fuel system. Check for wear or for damage in fuel transfer pump. Check for too much fuel return to tank caused by a malfunctioning return fuel pressure regulating valve.
Quality of the fuel is unsatisfactory	Remove the bad fuel from the fuel tank. Fill the fuel tank with quality diesel fuel. Replace the fuel filters.
The timing is incorrect for the fuel injection	See your dealer

Engine stalls at low rpm	
Cause(s)	**Solution(s)**
Overload of the engine.	Shift to a lower gear or reduce the load.
Fuel pressure is low.	Replace the fuel filters. Check the fuel pressure. Check for leaks in low pressure fuel system. Check for air in fuel system. Check for wear or for damage in fuel transfer pump. Check for too much fuel return to tank. The cause of a malfunctioning return fuel pressure regulating valve can be from too much fuel return.

Engine uses too much oil	
Cause(s)	**Solution(s)**
Oil is leaking from the engine.	Replace the gaskets or the seals. Tighten all the connections.
The engine oil level is too high.	Do not over fill the engine. Determine the cause. Drain the excess oil.
Oil operating temperature is too high.	Check the oil level and viscosity.
Over load of the engine.	Shift down
	Reduce load

5.8 Auto-Guide troubleshooting

5.8.1 Auto-Guide ready indicator is not on

Auto-Guide ready indicator is not on	
Cause(s)	**Solution(s)**
Steering wheel is not centered	Center the steering wheel.

Roading lockout switch is engaged	
Cause(s)	**Solution(s)**
The roading lockout switch is in the forward position.	Disengage the roading lockout switch.
Hydraulics, PTO, and hitch cannot be moved with their correct controls.	
Condition of the hydraulic valves on the display screens. Hydraulic one to three shows all locked.	

Loss of power to the receiver, relay or fuse failure	
Cause(s)	**Solution(s)**
Diagnostic indicated.	Replace the failed component.

Harness failure	
Cause(s)	**Solution(s)**
Diagnostic indicated.	Identify the failed harness and replace.

Inching pedal is pressed	
Cause(s)	**Solution(s)**
Inching pedal is pressed	Release the inching pedal.

Inching pedal has diagnostic or is physically not returning to the released position	
Cause(s)	**Solution(s)**
Diagnostic indicated.	Correct the problem with inching pedal sensor.
EDT shows in correct duty cycle for the pedal sensor when pedal is fully released.	

Diagnostic codes for transmission			
		08	Steering wheel position sensor 3 abnormal sensor frequency
		12	Steering wheel position sensor 3 malfunction
		13	Steering wheel position sensor 3 out of calibration
03	521475	02	Rear fender hitch switch erratic, intermittent, or incorrect
03	521476	00	Rear hitch steer position sensor above normal operating range - most severe
		01	Rear hitch steer position sensor below normal operating range - most severe
		08	Rear hitch steer position sensor abnormal sensor frequency
		13	Rear hitch steer position sensor out of calibration
03	521760	03	Secondary steering solenoid shorted to high source
		05	Secondary steering solenoid open circuit
		06	Secondary steering solenoid shorted to ground

5.9.3 PVED error codes

SA (Source Address), SPN (Suspect Parameter Number), FMI (Fault Mode Identifier)

Diagnostic codes for PVED			
SA	SPN	FMI	Description
19	84	12	Wheel-based vehicle speed malfunction
19	611	00	Steering wheel position sensor above normal operating range - most severe
19	612	00	Steering wheel position redundant sensor above normal operating range - most severe
19	613	14	Steering wheel speed plausibility check failure
19	614	00	Steering spool valve above normal operating range - most severe
19	615	14	Steering controller critical failure
19	627	00	Power supply above normal operating range - most severe
19	627	04	Power supply shorted to ground
19	1079	00	DC supply: - 5 volt DC supply above normal operating range - most severe
19	1083	00	Articulation angle sensor above normal operating range - most severe
19	1083	04	Articulation angle sensor shorted to ground
19	1084	00	Steering ECM sensor 2 above normal operating range - most severe
19	1807	08	Steering wheel angle abnormal sensor frequency
19	1807	09	Steering wheel angle abnormal update rate

6. Specifications

Weight chart				
With front counter weight GP 32 weights	20 400	44 890	71	29
With full front and four factory installed weights on rear axle	21 300	46 890	68	32
Standard with four factory installed rear weights	19 300	42 530	58	42
Shipping weight includes at least 300 L (79.2 gal) fuel - No hubs for duals. No spacer or dual/triple. Weight is based on 710/70 R42 tires averaged weight of all tire manufacturers.				