Operator's Manual

Rubber Track Tractor

MT845E
AGCC0845xGxxx1001-

MT855E
AGCC0855xGxxx1001-

MT865E
AGCC0865xGxxx1001-

MT875E
AGCC0875xGxxx1001-

North America
4205 River Green Parkway, Duluth GA 30096 USA

Original Operator's Manual

June 2018
582752D1D
NA
English

1.1.17 Operator station

Do not drill holes or weld on the cab rollover protective structure. (ROPS)

Any modifications to the inner operator station must not extend into the operator space.

Any item brought into the cab must not extend into defined operator space. Secure loose items. Objects must not pose an impact hazard in rough terrain or if there is a rollover.

1.1.18 Cut and crush prevention

Support the equipment correctly when performing work below the equipment. Do not rely on the hydraulic cylinders to hold up the equipment. An implement can fall if a control lever is moved or if a hydraulic line breaks.

Never start the machine engine by shorting across the starter solenoid terminals. Machine movement can occur causing runovers .

Never make adjustments while the machine is moving or while the engine is operating.

Whenever there are attachment control linkages, the clearance in the linkage area will change with movement of the attachment.

Stay clear of all rotating parts and all moving parts.

Keep objects away from moving fan blades. The fan blades will throw objects and the fan blades can cut.

Do not use a wire tow cable that is kinked or frayed. Wear gloves when touching wire cable.

When hitting a retainer pin, the retainer pin can fly out causing personal injury. Make sure that there are no people in the area when hitting a retainer pin. To prevent eye injury, wear protective glasses when hitting a retainer pin.

Chips or other debris can fly off objects when hitting the objects. Make sure that others are clear of the area before hitting any object.

1.1.19 Rollover protective structure

Do not make any modifications to the rollover protective structure (ROPS) as this will change protection provided. Do not change structure by welding, cutting, adding weight, or drilling holes into structure.

Any change not specifically authorized by AGCO invalidates AGCO certification for ROPS. The protection offered by ROPS will be impaired if ROPS has structural damage or alteration. Damage to structure can be caused by a turn over or by falling objects.

Do not mount items (fire extinguishers, first aid kits, work lights, etc.) by welding brackets or drilling holes in ROPS. See dealer for mounting guide lines.

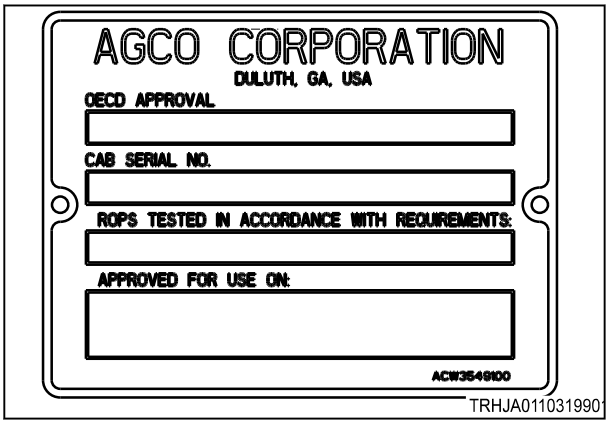


Fig. 6

1.3.8 Entanglement

Entanglement	
	Stay out of the engine compartment while the engine is on. Keep all body-parts clear of the fan. Injury or death can occur. Stop the engine and remove the key before maintenance or repair work.

1.3.9 Entanglement

Entanglement	
	Stay out of the engine compartment while the engine is on. Keep all body-parts clear of the belts. Injury or death can occur. Stop the engine and remove the key before maintenance or repair work.

1.3.10 Run over hazard

Run over	
	Never bypass start the engine by making a connection across the starter terminals. The engine can start and the machine can move if the normal circuits are bypassed. Never start the engine while standing on the ground. Start the engine only from the operator's seat with the seat belt on. The drive lever must be in neutral and the park brake engaged.

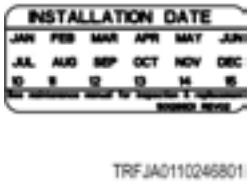
1.3.11 Fuel filter

Fuel filter	
	The decal is located on the fuel filter housing.

1.5.5 Park brake

Park brake	
	Use the secondary park brake for an emergency stop, if there is a failure of the service brakes while operating the machine.

1.5.6 Installation date

Installation date	
	The installation date sign is located to the left of the operator on the seat belt.

1.5.7 Alternate exit

Alternate exit	
	In an emergency, use the rear window as an exit. Open the window. Disconnect the connector at the end of the rod that is in the struts. Remove the struts from the window.

2.1 Machine identification information

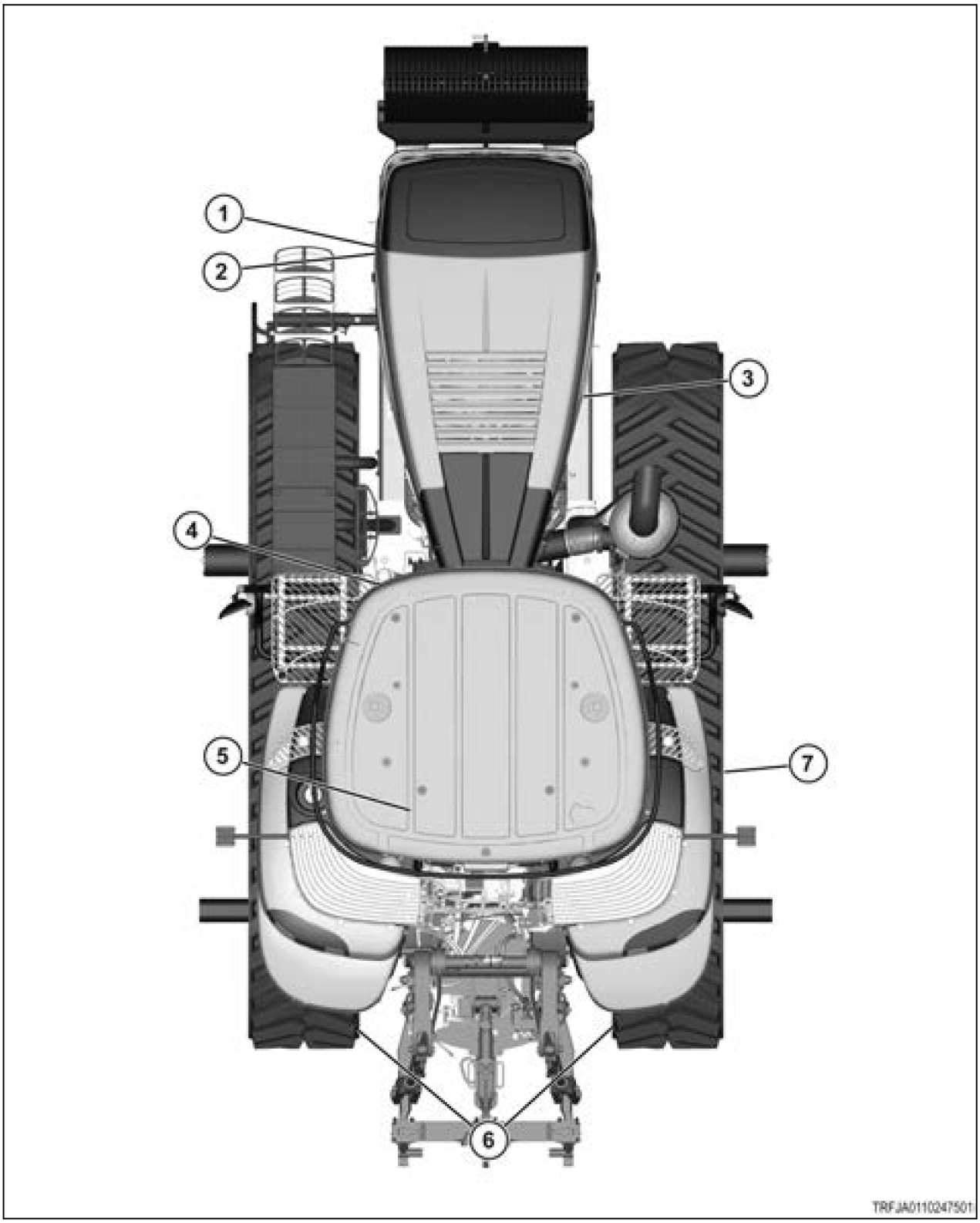


Fig. 1

* Unless mandated by State or Provincial laws.

OBTAINING WARRANTY SERVICE

All repairs qualifying under this limited warranty must be performed by a Dealer or service center authorized by AGCO or the manufacturer of this equipment.

To obtain warranty service, owner should take the engine to the nearest Dealer or service center authorized by AGCO or the equipment manufacturer. If available, the original purchase receipt (showing the initial date of purchase) and all available maintenance records should be presented.

The authorized AGCO dealer will contact AGCO Warranty Department for confirmation of coverage.

The authorized Dealer or service center may perform the necessary repairs or adjustments within a reasonable time and furnish owner with a copy of the repair order. AGCO wants to assist in providing the services applicable under this warranty. If you need assistance in locating the nearest authorized Dealer or service center, or have any questions about your warranty rights and responsibilities, you should contact AGCO Answers at **1-877-525-4384** or email agcoanswers@agcocorp.com

2.6.2 California emission control warranty statement

YOUR WARRANTY RIGHTS AND OBLIGATIONS

The **California Air Resources Board (CARB)** and AGCO Corporation ("AGCO") are pleased to explain the **emission control system** warranty on Model Year 2016 and later off-road diesel engines. In California, new heavy-duty off-road engines must be designed, built, and equipped to meet the State's stringent anti-smog standards. AGCO must warrant the emission control system on your engine for the periods of time listed below provided there has been no abuse, neglect or improper maintenance of your engine.

Your emission control system may include parts such as the fuel-injection system and the air induction system. Also included may be hoses, belts, connectors and other emission-related assemblies.

Where a warrantable condition exists, AGCO will repair your heavy-duty off-road engine at no cost to you including diagnosis, parts, and labor.

MANUFACTURER'S WARRANTY COVERAGE:

The emission related devices on your Model Year 2016 and later heavy-duty off-road engines are warranted for five (5) years or 3000 hours of operation for all engines 19KW or greater, whichever occurs first from the date of delivery of the engine to the initial purchaser.

If any emission-related part on your engine is defective, the part will be repaired or replaced by AGCO within the warranty period.

A) General Emissions Warranty Coverage

AGCO warrants to the ultimate purchaser and each subsequent purchaser of each off-road compression-ignition engine that the engine is:

(1) Designed, built, and equipped so as to conform with all applicable regulations adopted by the Air Resources Board pursuant to its authority in Chapters 1 and 2, Part 5, Division 26 of the Health and Safety Code; and

(2) Free from defects in materials and workmanship which cause the failure of a warranted part to be identical in all material respects to the part as described in the engine manufacturer's application for certification for a period of five years or 3,000 hours of operation, whichever occurs first, for all engines rated at 19KW and greater, except as noted below. In the absence of a device to measure hours of use, the engine shall be warranted for a period of five years.

B) Warranty on emissions-related parts shall be interpreted as follows:

(1) Any warranted part which is not scheduled for replacement as required maintenance shall be warranted for the warranty period defined in Subsection (A)(2). If any such part fails during the period of warranty coverage, it shall be repaired or replaced by the engine manufacturer according to

3.1 General inspection

3.1.1 Walk-around inspection

For maximum service life of the machine, do a walk around inspection before you enter the machine.

Look around the machine and below the machine. Look for loose bolts, oil leaks, coolant leaks, broken parts, or worn parts.

Examine the condition of the implement and the hydraulic components.

Do a check of the oil and the coolant levels.

Make sure the covers and the guards are correctly installed.

Examine the machine for damage and make all necessary repairs before you operate the machine.

Examine these:

- Waste buildup and unwanted material
- Ladder
- Cab platform
- Engine compartment
- Radiator
- 3-point linkage
- Mobil Trac System

Examine for oil leaks and correct all oil leaks. Examine these:

- Mobil Trac System
- Rear axle
- Engine compartment
- Transmission case and solenoids
- 3-point linkage lift cylinders
- Hydraulic control valve bank
- Hydraulic oil filters
- Hydraulic pumps

Examine the fuel tank and the fuel lines for leaks. Repair all the fuel leaks before you start the engine.

Drain all water from the fuel tank and fuel filter.

Examine the engine cooling system for leaks and for bad hoses. Repair or replace components as necessary.

Examine the belts. Replace as necessary.

Examine these components for damage or too much wear:

- 3-point linkage
- Drawbar
- Drawbar support
- Drawbar wearplate
- Drawbar pin

Repair or replace components as necessary.

Examine the operation of the instrument panel lamps. Examine the operation of all external lamps. Repair or replace all nonfunctional lamps.

Examine all hose clamps. Tighten as necessary.

Examine the horn for correct operation.

Keep the fuel level at the bottom of the filler neck to prevent moisture condensation in the fuel tank.

The partial work lamps can be set to a delay to turn off after the machine is shut off. Delay the shutdown of lamps to supply light while leaving the machine.

The following lamps are controlled by the lighting shutdown delay :

- Exterior courtesy lamps
- Side work lamps in the engine cover
- Rear work lamps in the fenders
- Front work lamps near the belt

Use the following procedure for actuating the shutdown delay:

- Enter the desired amount of time for the shutdown delay into the appropriate setup screen (MMC).
- Twist the multifunction lamp switch to the headlamp position (1).
- Turn the engine start switch key to the off position.
- Twist the multifunction lamp switch to the off position.
- The correct lamps will illuminate.

The shutdown can be timed from zero minutes to 15 minutes.

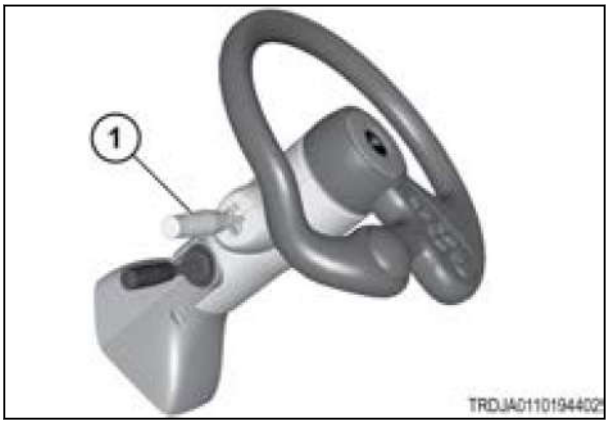


Fig. 11

3.5.8 Rotating beacon

The rotating beacons (1) alert others when roading. Rotating beacons must not be used while roading if local laws or regulations prevent use.

Fig. 12

3.5.9 Backlighting for switches in the cab

Backlighting switches in the following locations illuminates when the multifunction light switch is turned on:

- Headliner
- Right-hand console
- Right rear corner of the cab

3.12 Operator seat

3.12.1 Armrest adjustment

Reposition the armrest to suit the operator's preference and then tighten levers to lock in place. Turn the levers (1) forward to loosen.

NOTE: *Handles can be repositioned by pulling outward, rotating to the new position and releasing.*

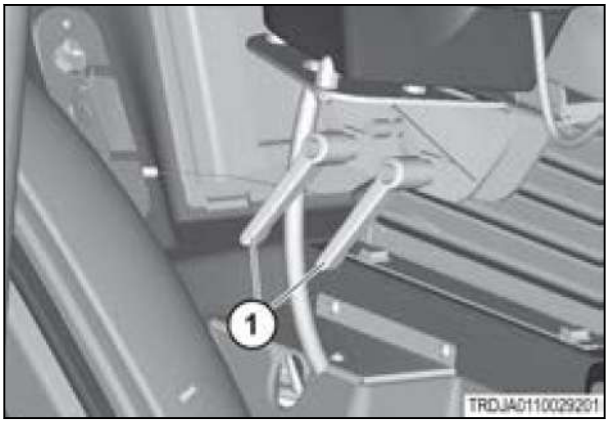


Fig. 30

3.12.2 Standard operator seat

Fig. 31

3.16 Machine management center

3.16.1 Terminal

The terminal shows the machine operation information.

To navigate to different screens and screen selections, use the scroll wheel(1), and the scroll wheel select button (2).

The hard keys (3) are used to select the icons within the screens.

The home selection button (4) will take you back to the main menu. The selection button (5) will let you move back and forth between work sets. The escape selection button (6) will take you back one screen.

Fig. 43

The terminal display provides operator with:

- Operating characteristics of machine
- Diagnostics
- Warning events
- Modes of operation
- Instantaneous information
- Information on machines condition and performance are being collected

NOTE: *The operator can adjust many of the settings necessary for machines application.*

Use of the machine management center is necessary to adjust:

- Three point hitch
- PTO
- Hydraulic control valve
- AUTO-GUIDE satellite navigation

NOTE: *If a warning event occurs, a detailed message shows on the terminal. Check monitor indicator on the dash and an alarm alerts the operator to check the machine management center.*

2. The following information will show after selecting the engine icon:

- (1) Engine percentage load
- (2) Intake manifold temperature
- (3) Engine oil pressure
- (4) Battery voltage
- (5) Intake manifold pressure
- (6) Coolant temperature

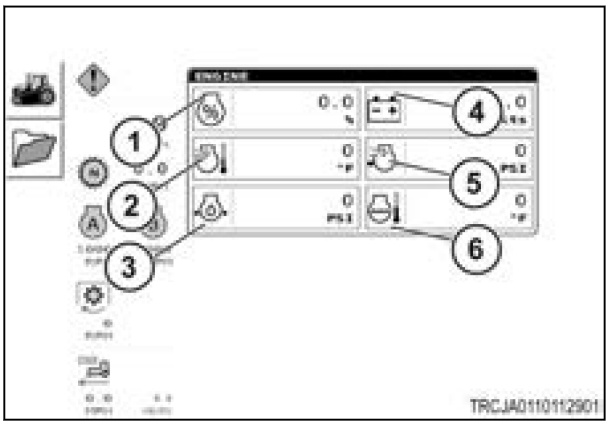


Fig. 66

3. From the main menu, select a specific viewing screen by scrolling forward or rearward with the scroll wheel. To select the highlighted icon (1), push the scroll wheel button.

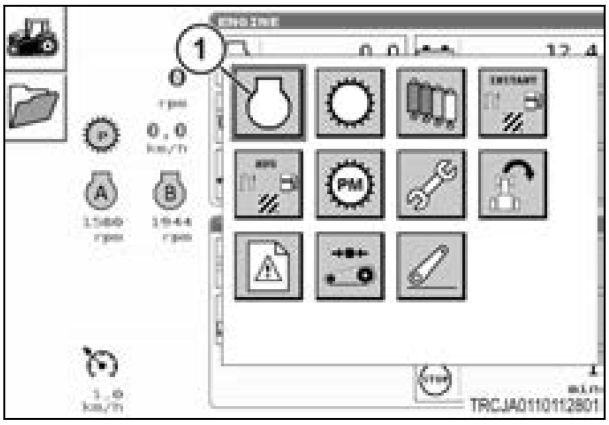


Fig. 67

4. After selecting the engine icon, push the hard key adjacent to the DEF icon (1) to move to the next screen.

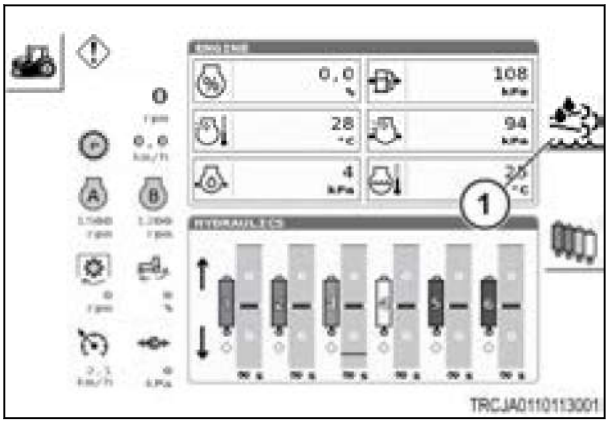


Fig. 68

5. The following information will show when viewing the DEF screen:

- (1) Exhaust temperature
- (2) DEF level
- (3) DEF heater status
- (4) Engine hours
- (5) DEF temperature
- (6) Fan speed

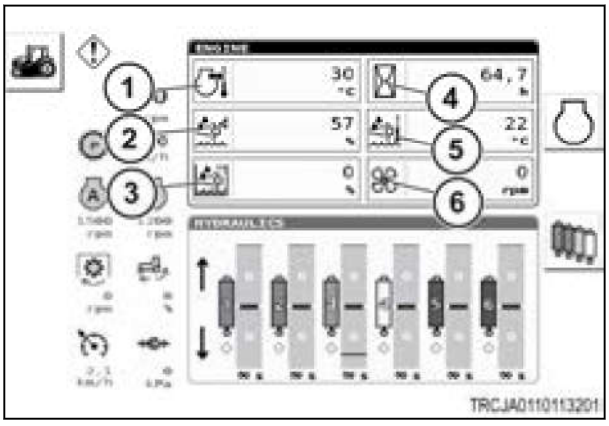


Fig. 69

2. After selecting the tractor setting icon , the current information displays:

- (1) Daytime backlighting
- (2) Implement width
- (3) Slip alarm
- (4) Nighttime backlighting
- (5) Lighting shutdown timer
- (6) Engine idle shutdown timer (not used)

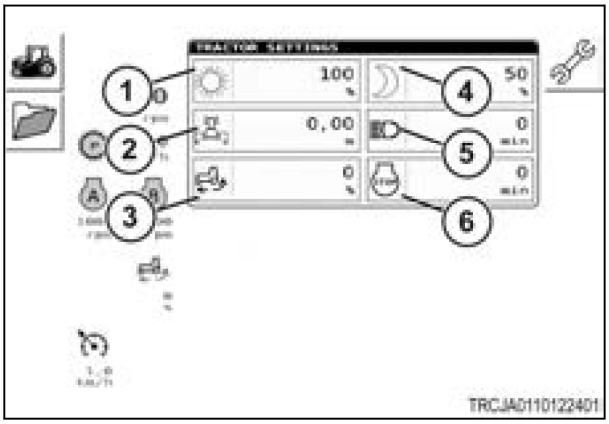


Fig. 95

3.16.21 Slip alarm

1. To change an item selection (1), use the scroll wheel to highlight the selected box, and then press the scroll wheel button. Use the scroll wheel to scroll up/down to select the information, and then press the scroll wheel button.

Continue to the next screen (2) by pressing the hard key adjacent to the icon and then pressing the scroll wheel button.

Press the hard key adjacent to the slip icon (3) to move to the slip calibration screen.

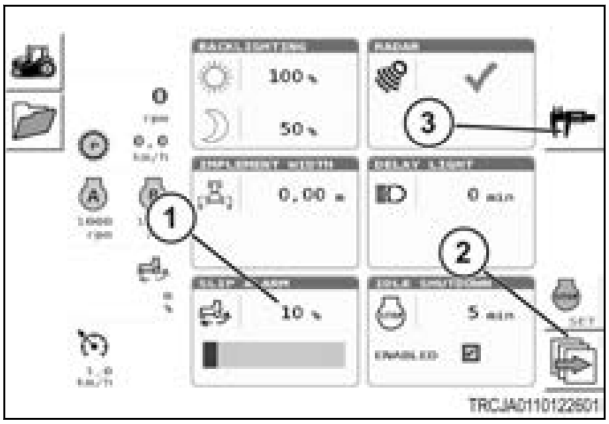


Fig. 96

2. Scroll and highlight the start button (1) for the slip calibration, and then press the scroll wheel button to start the calibration.

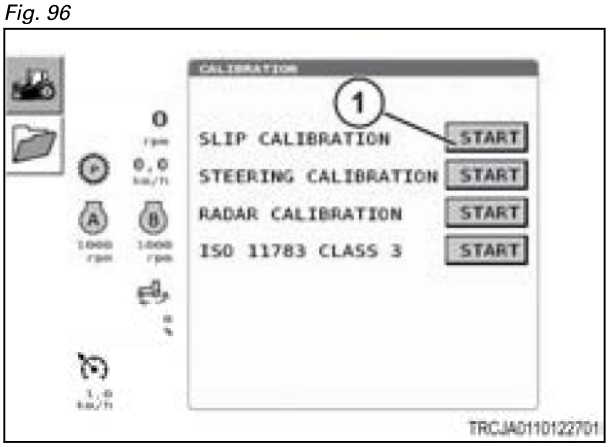
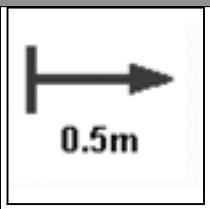
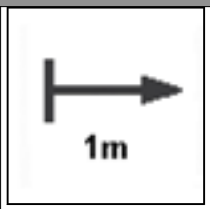
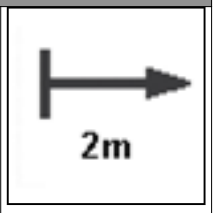
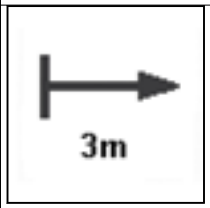
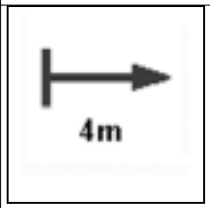
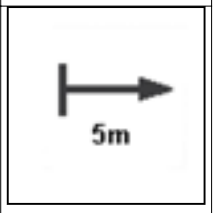
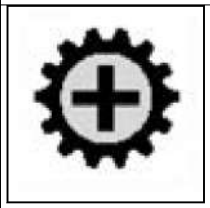
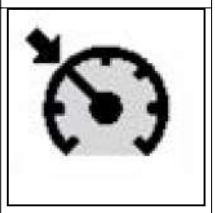
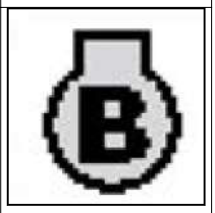
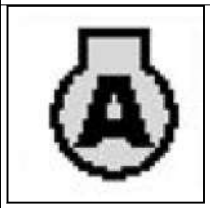
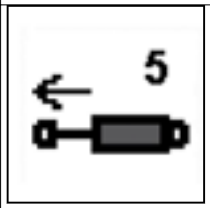
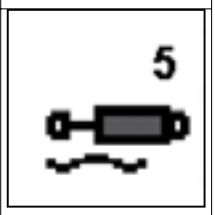
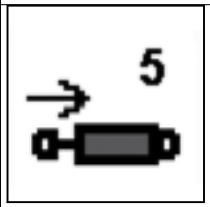
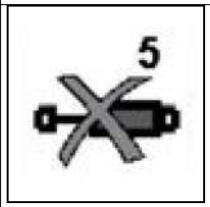
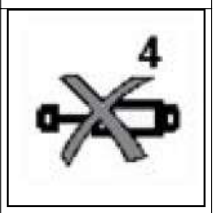
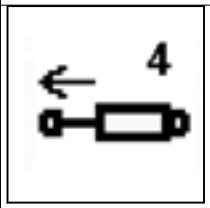
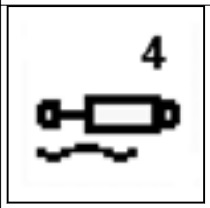
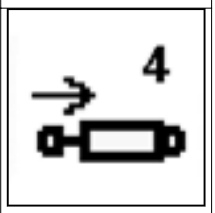


Fig. 97

3.16.25 Headland management icon identification

Headland management icon identification					
Distance pause 0.5 meter		Distance pause 1 meter		Distance pause 2 meters	
	Fig. 123		Fig. 124		Fig. 125
Distance pause 3 meters		Distance pause 4 meters		Distance pause 5 meters	
	Fig. 126		Fig. 127		Fig. 128
Shift up		Power management maximum output		Power management constant ground speed	
	Fig. 129		Fig. 130		Fig. 131
Auto-guide engage		Shut off all power management modes		Power management engine B	
	Fig. 132		Fig. 133		Fig. 134
Power management engine A		Aux valve 5 extend flow detent		Aux valve 5 float	
	Fig. 135		Fig. 136		Fig. 137
Aux valve 5 retract flow detent		Aux valve 5 stop		Aux valve 4 stop	
	Fig. 138		Fig. 139		Fig. 140
Aux valve 4 extend flow detent		Aux valve 4 float		Aux valve 4 retract flow detent	
	Fig. 141		Fig. 142		Fig. 143

4. Use the scroll wheel to highlight the steering calibration start button (1). Press the center button to select the selection.

Fig. 188

5. The automatic steering calibration is armed.

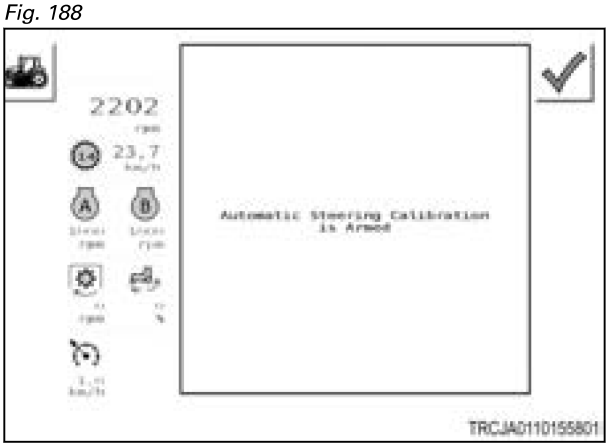


Fig. 189

6. The calibration is complete when the following conditions are met:

- Engine speed is above 1950 RPM
- Ground speed is above 16 km/hr (10 mph)
- Hydraulic transmission oil temperature is above 40 C (104 F)
- Steering wheel is centered

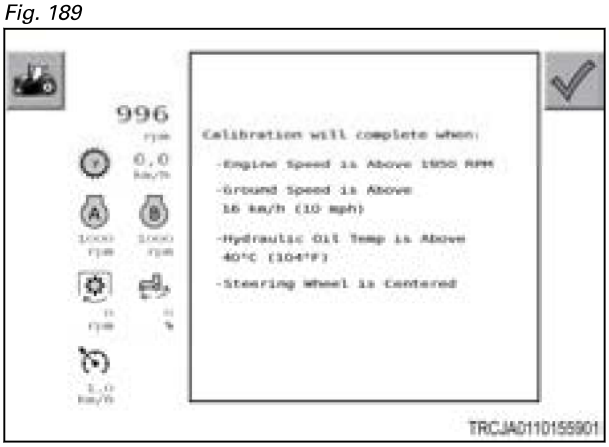


Fig. 190

7. The following screen shows:

- Engine speed (1)
- Ground speed (2)
- Hydraulic oil temperature (3)

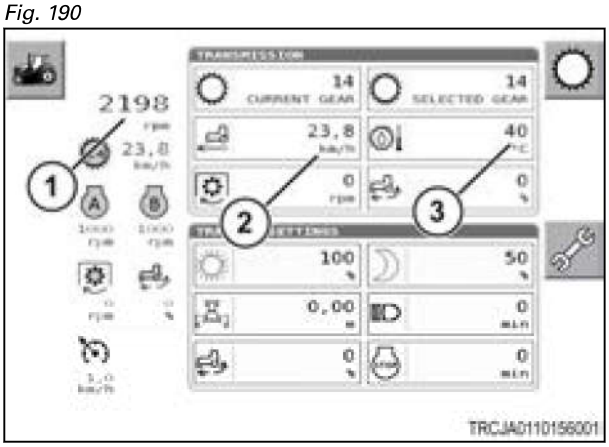


Fig. 191

3.18.7 Manual parking brake handle

WARNING: *Since there is limited handle movement, the correct engagement of the manual parking brake can be difficult to detect. Approximately 15.9 kg (35 lb) of force is required to engage manual parking brake. Personal injury or death can result from unexpected machine movement. Park on a level surface and lower any implements to help prevent machine movement. Use wheel chocks to prevent movement of machine until repaired.*

WARNING: *After engaging manual park brake handle make sure lever returns to neutral position. Failure to put handle in neutral position can cause park brake failure, when unit is restarted and put into gear.*

The manual parking brake handle is on the left side of the operator's seat. Use the handle if no electrical power or a fault on the park brake solenoid, is shown on the machine management center.

To engage parking brake manually (1):

- Shift the transmission control lever to park
- Pull up on the handle
- Hold the handle for approximately five seconds to engage the parking brake

Fig. 212

3.23 General hydraulic connections

3.23.1 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.

3.23.2 Connect 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. 223

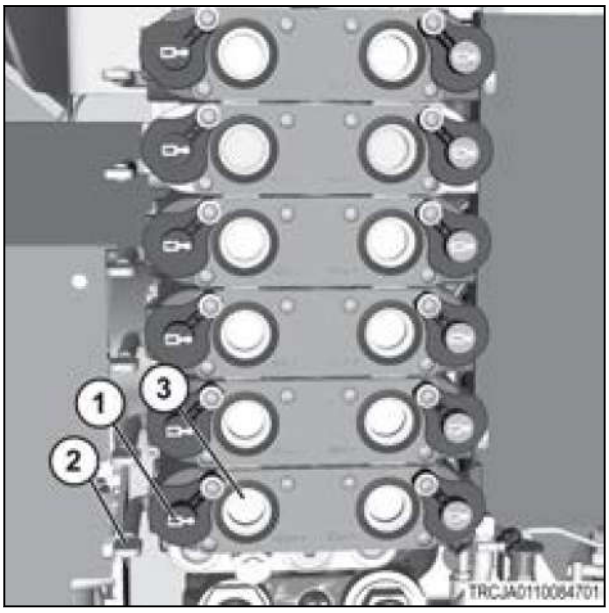


Fig. 224

The valve bank is not equipped with a load sense port. The load sensing signal needs to be sensed at point after valve.

3.23.21 Connect the hydraulic motor with the flow control valve

The load sense signal needs to be sensed in the pressure line between the flow control valve and the motor.

Procedure

1. Connect the pressure hose to the supply coupler (1) on the hydraulic power beyond.
2. Connect the return hose to the return coupler (2) on the hydraulic power beyond.
3. Connect the load sensing signal line to the load sensing coupler (3) on the hydraulic power beyond.
4. Connect the case drain return line to the case drain return port (4).

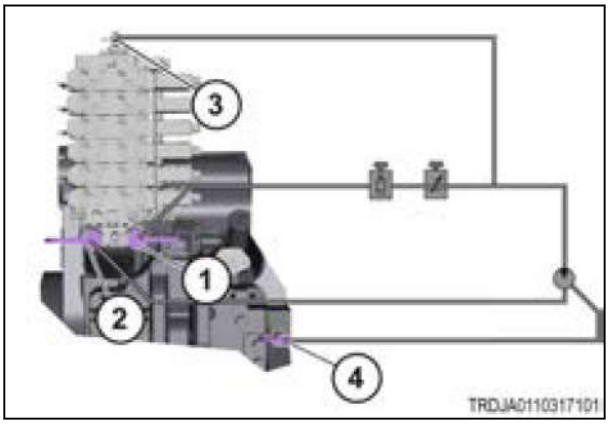


Fig. 239

Procedure

1. Install the pin into the hole (1) to prevent the float.
2. Remove the pin from the hole (2) to permit the draft arms to float.
3. Store the pin in the hole (3).

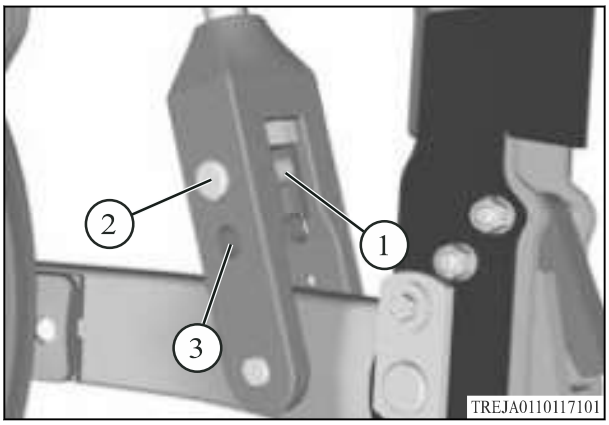


Fig. 258

3.25.11 Lift linkages and quick hitch

NOTE:
Lubricate the linkages by using molybdenum additive grease.

Lubricate the grease fittings at every 10 service hour intervals in the following conditions:

- Very wet conditions
- Very muddy conditions
- Very dusty conditions

Procedure

1. Two grease fittings are located on each lift link (1).

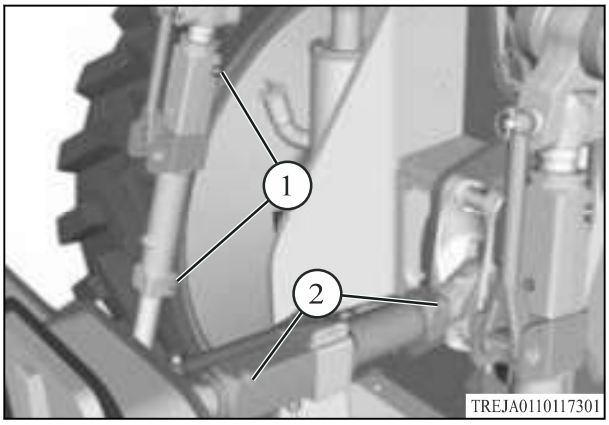


Fig. 259

2. Two grease fittings are located on adjusting sleeve for top link (2).

The drawbar (1) can be connected to an implement by removing the drawbar pin. See connecting category four drawbar implements.

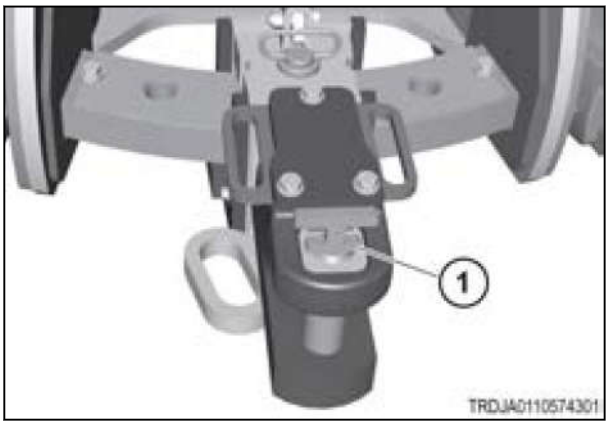


Fig. 271

NOTE:
Rotate the drawbar pin by 180° when connecting an implement, which will let the drawbar pin to wear evenly.

WARNING:
The tractor stopping distance increases when towing heavy equipment. Do not transport faster than (32 km/h)((19.9 mph)) *when towing equipment that is not equipped with brakes. Do not tow equipment that weighs more than one and a half times the weight of the tractor, unless functional trailer brakes are installed on the towed equipment. Failure to comply may lead to accident and personal injury.*

WARNING:
A severely unbalanced machine will become unstable during braking. Reduce speed and use extra caution when roading a machine with mounted equipment. Failure to comply may lead to accident and personal injury.

3.31.4 Connect drawbar implements

NOTE:
Install a safety chain between the machine and the implement.

Adjust the retaining pins on the drawbar support (1) to connect the drawbar in a fixed position for:

- Towing implements
- Using the power take-off

Let the drawbar swing when pulling ground engaging equipment. On standard drawbar, remove retaining pins.

Adjust the implement at the correct height to permit the drawbar to connect correctly.

Procedure

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

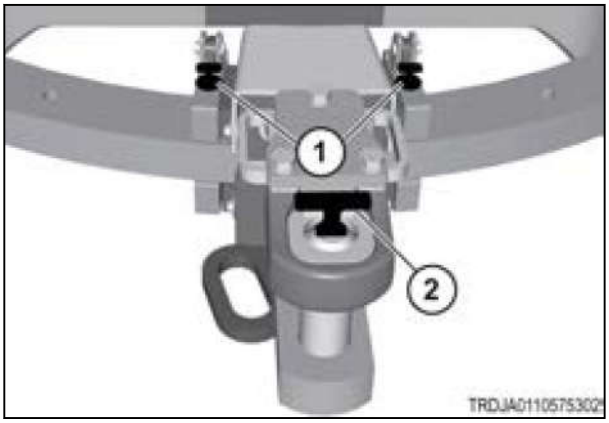


Fig. 272

Procedure

1. Access to the red control lever, through this panel. To remove the panel on left-hand side of machine, remove the four bolts (1).
2. Press the service brake pedal, and hold the service brake pedal for five seconds to release the park brake. Low accumulator pressure warning can come on.
3. Follow basic towing procedures for a stuck machine.
4. Park the machine after towing.

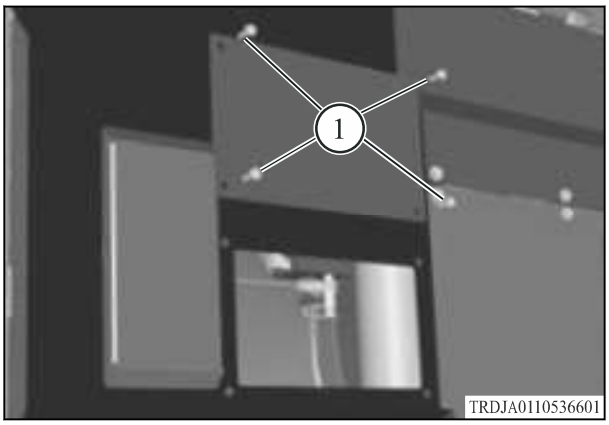


Fig. 287

5. When towing is completed, and the engine is started, the hydraulic pressure will reset the valve (1) to the original position.
6. If the machine has electrical power, turn the ignition key on, and put the transmission control in park position.
7. If the machine does not have electrical power, pull the manual lever to engage the park brake.

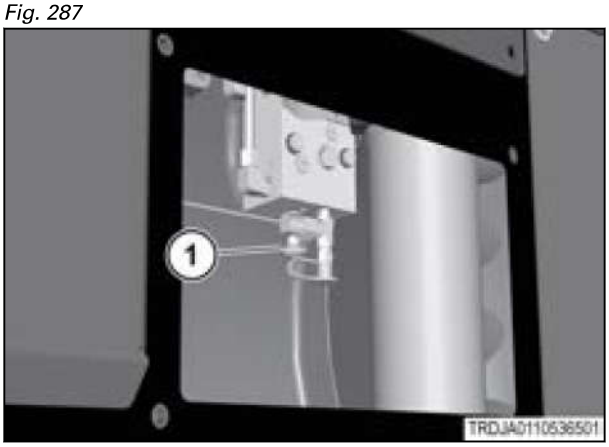


Fig. 288

3.33.7 Accumulator without pressure

If the service brake accumulator has no pressure, use a hand hydraulic pump with a pressure gauge and a quick-disconnect.

Procedure

1. Connect the quick-disconnect to the pressure tap (1) near the service brake accumulator.
2. Pressurize the accumulator to a minimum 22.4 bar (325 psi) and hold while towing the machine.
3. Attach the hand hydraulic pump to the machine. Follow the basic towing procedures for a stuck machine.

   When towing of the machine has been completed, release the pressure on the parking brake by turning the key to the accessory position.

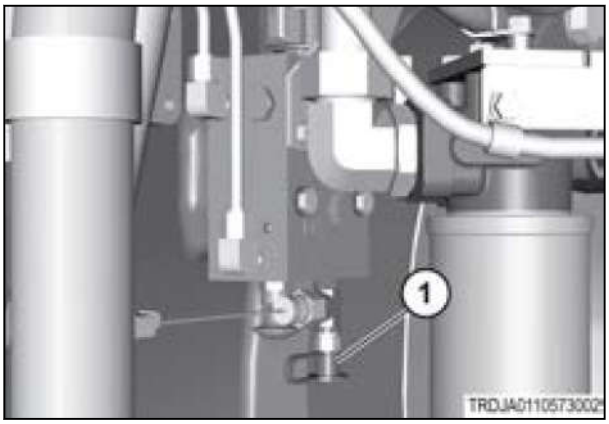


Fig. 289

4. If there is no electrical power, pull the manual lever left of the seat.

IMPORTANT: *The weight must include any added ballast, and additional weight because of optional belts. The weight of the empty chemical tanks and brackets, and added weight of other items attached to the machine. Total ballasted weight cannot exceed 25 401 kg (56 000 lb).*

The maximum ballasted weight of the machine is the weight of the machine and any permanently fastened attachments. Three point hitch mounted attachments, or tongue weight from pulled implements is not in ballasted weight calculation.

The following items are typical examples of permanent attachments:

- Ballast (front weights and idler weights)
- Amount of fuel in the tank
- Chemical tanks and brackets
- Mounting brackets and hardware for aftermarket equipment
- Front mounted blade
- 3-Point linkages
- Mobil-trac system tracks

The maximum laden weight of the machine is the weight of the machine, plus any items easily removed from the machine.

The following items are typical examples of items that are easily removed:

- Chemicals that are consumed from the chemical tanks
- Implements mounted to the 3-point linkage

8. Continue removing the weights (1) until the plate (2) that secured the retaining bolts is reached. Remove the plate.

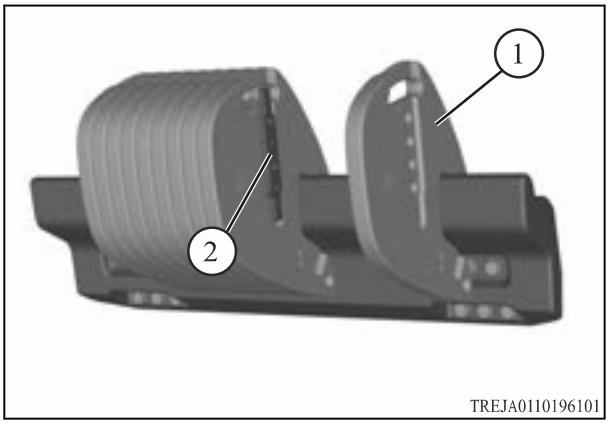


Fig. 319

9. Continue removing the weights (1) until the flagpin (2) is reached. At this point, the weights will have to be removed from the opposite side.

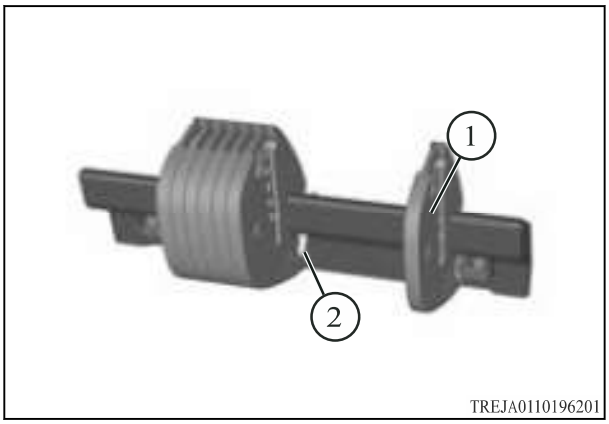


Fig. 320

10. Remove the weights (1) until the plate (2) that holds the retaining bolts is reached. Remove the plate. At this point the remaining weights can be removed.

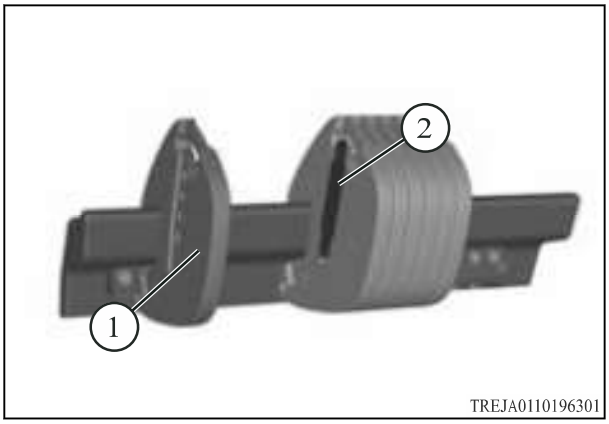


Fig. 321

11. Remove the hardware (1) that secures the flagpin.

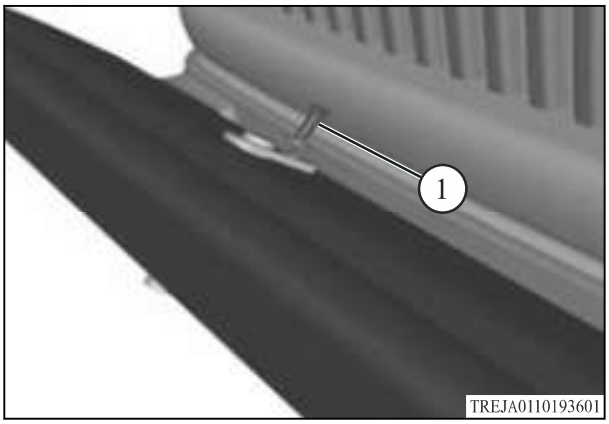


Fig. 322

3.40.2 Rollover ploughs

Rollover ploughs can better the efficiency by permitting a single furrow during moldboard ploughing. Substantial loading to the 3-point linkage can occur as plough is rolled. If the machine is moving, loading can be especially substantial when the rollover of the plough is performed.

There are some procedures to mount ploughs. Semi-mounting with a rear gauge wheel is the preferred procedure for mounting a plough to machine. There are types of rollover ploughs available which let the angle of the tool bar change through a hydraulic cylinder.

When center of gravity is near rollover axis, loads are reduced, and rollover plough will be smoother. When ploughs are fully mounted to the 3-point linkage, a reduction in the life of the components of the 3-point linkage must be expected. A plough with a tool bar has a fixed angle, instead of a preferred adjustable angle, speed of rollover must be reduced by adjusting flow rate. The machine must not be moving while rollover of plough is being executed.

4.2 Service intervals

IMPORTANT: *Always stop the engine before starting service work*
When required:

- *Cab recirculation filter - clean/inspect/replace*
- *Cab air filter - clean/replace*
- *Check the HVAC drain lines and clean as needed*
- *Batteries - replace*
- *Alternator belt - replace*
- *Fan and air conditioner belt - replace*
- *Fan drive - clean*
- *Cooling cores - clean*
- *Drawbar wearplates and swing stops - replace*
- *Drive wheel hub oil level - check*
- *Primary engine air cleaner filter - inspect/replace*
- *Fuel tank water and sediment - drain*
- *Fuses, circuit breakers, and relays - replace/reset*
- *Idler hubs oil level - check*
- *Midwheel hub oil level - check*
- *Undercarriage belt - remove/replace*
- *Undercarriage belt alignment - check/adjust*
- *Fuel system water separator - drain*
- *Window washer reservoir - fill*
- *Window wipers - inspect/replace*
- *Windows - clean*

4.2.1 Maintenance chart

Maintenance work	Service interval / running hours				
	10	100	400	800	4500
Check the engine oil level	x[1]				
Check the coolant level	x[1]				
Check for oil, fuel or coolant leakages	x[1]				
Clean the cooling system (from outside)		x			
Check the condition of the belt		x			
Change the engine oil and the oil filter			x[2]		
Change the fuel filters				x[3]	
Do a check for a possible engine software update[4]			x		
Turbocharger and intercooler inspection in a repair workshop					x
Change the SCR supply module main filter	Once a year. [5,6]				
Change the SCR supply module inlet filter	Once a year. [5] [6]				
Change coolant	Every two years.				

[1] or once a day.
[2] or once a year (at the end of the season).
[3] or once a year (at the end of the season) or earlier if the engine control system notifies by specific service code.

3. Remove the engine oil dipstick (1) while the engine is stopped.

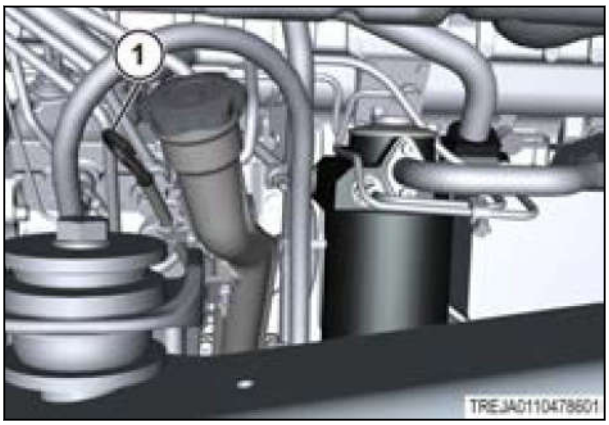


Fig. 11

4. Make sure the oil level is within the operating range (1) between the two notches.

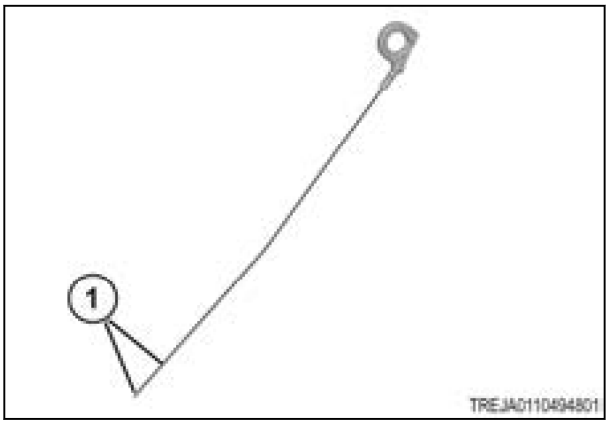


Fig. 12

5. If the engine oil level is low remove the oil fill tube cap (1) and add engine oil.

See the specifications for the type of oil.

6. Add engine oil until the engine oil level is in the operating range.

7. install the engine oil dipstick.

8. Install the oil fill tube cap.

9. Start and run the engine for five minutes, checking for leaks.

10. Turn the engine off after five minutes and check that the engine oil level is within the operating range on the engine oil dipstick. Add engine oil as necessary.

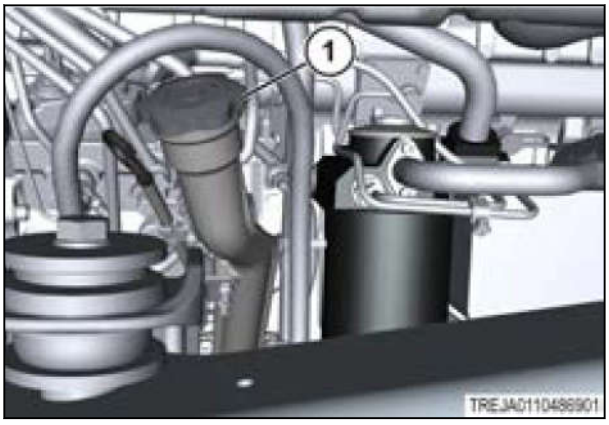


Fig. 13

4.4.3 Change the engine oil and oil filter

WARNING: Hot components can burn.

Severe personal injury can result.

Let the engine and components cool before doing maintenance.

IMPORTANT:

Do not over fill or under fill the engine with oil. Either condition can cause engine damage.

Related Links

Prime the fuel system page 261

4.6.4 Fuel water separator

Check for water in the water separator bowl (1). Move the drain hose (2) on the water separator bowl into a suitable container.

The water separator bowl is located below the fuel filter (3). Open the drain by 1/2 turn (4).

If the filter base contains a vent, use a suitable tool to open the vent. This allows the water to drain into a suitable container.

When the water is drained, close the vent. Close the drain, and move the drain hose back to the original position.

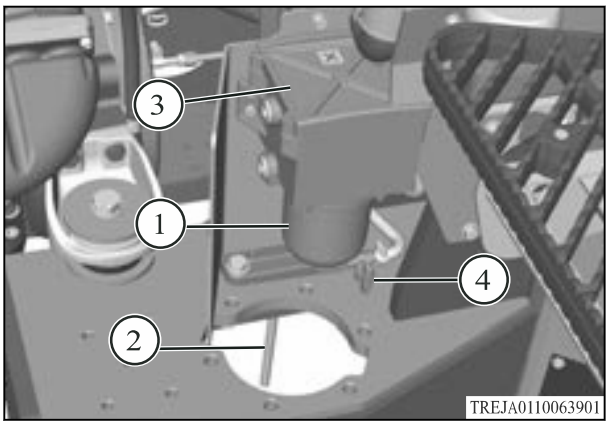


Fig. 37

4.6.5 Prime the fuel system

IMPORTANT: *Do not turn the engine for more than 30 seconds. Let the starter motor cool for two minutes before starting again. Keep the engine rpm low until oil pressure is correct or damage to the turbocharger can result.*

IMPORTANT: *Do not loosen the fuel lines at the fuel manifold. The fittings can be damaged and/or a loss of priming pressure can occur when the fuel lines are loosened.*

Procedure

1. Make sure there is fuel in the tank. Make sure the fuel tank supply valve (1) is open.

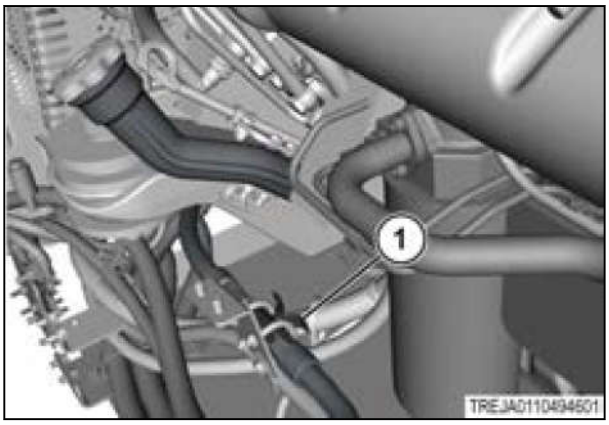


Fig. 38

4.9.3 Refill the cooling system

Procedure

1. Add the coolant solution by removing the filler cap (1).

Consult the dealer for information about diesel engine antifreeze/coolant.

2. Check the coolant level on the sight gauge (2). Keep the coolant level at or above the full cold mark.

3. Start the engine.

4. Operate the engine until the coolant reaches normal operating temperature, and until the coolant level stabilizes.

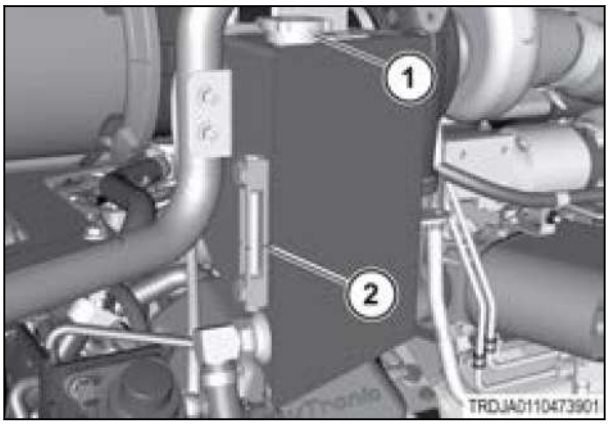


Fig. 53

5. After the engine has cooled, check the coolant level sight gauge. Keep the coolant lever at or above the full cold mark.

4.12 Cab filtration

4.12.1 Primary fresh air filter

The primary fresh air filter (1) is located in the roof overhang on the door side of the cab.

The filter removes dust particles drawn into the air system and is partially cleaned each time the cab door is closed, when back pressure flushes the primary air filter. Before removing the filter, close all windows and door. Back pressure from the cab helps remove loose dirt on bottom of the filter.

Fig. 74

4.12.2 Remove the primary air filter

1. Loosen the thumb screw (1) on the front of the panel.

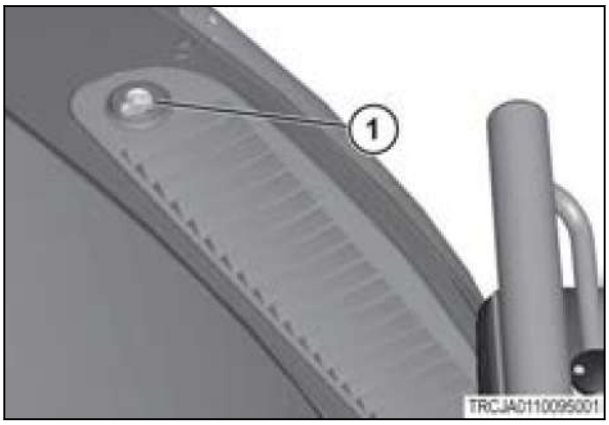


Fig. 75

2. Lower the panel (1) to remove the primary air filter (2).

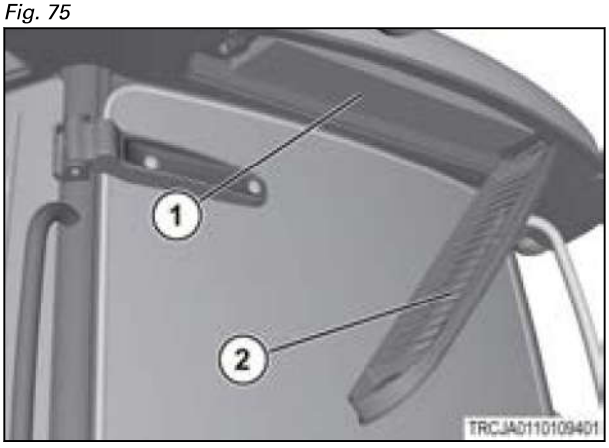


Fig. 76

4.12.3 Filter maintenance

Examine the filter each 250 hours of operation. Replace the cab filters each 1000 hours or one time a year, whichever comes first.

10. Install the threaded rod (1) onto the cap (2) by using the bolt (3). Make sure there are washers(4) on each side of the bracket (5).

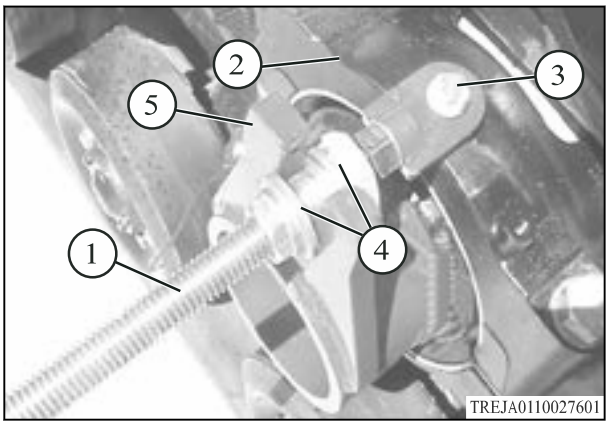


Fig. 101

11. Install the pin (6) into the bracket.

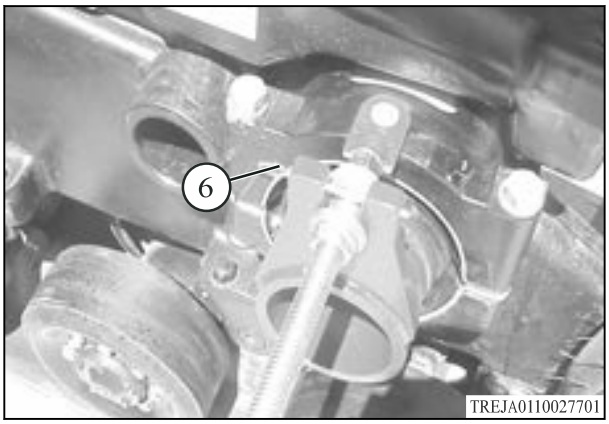


Fig. 102

12. Remove the bolts and the washers from the collets, except for the bolts (6) located on the joints between the two collets.

13. Back out the bolts (6) by 19.0 mm (0.75 in). These bolts will hold the collets if there is any sudden movement.

14. Temporarily hold the adjustment bracket onto the end of the axle. This indicates available positions for the pusher bolts (7).

NOTE: *Do not remove the plate* (8). *This secures the drive wheel if there is any sudden movement.*

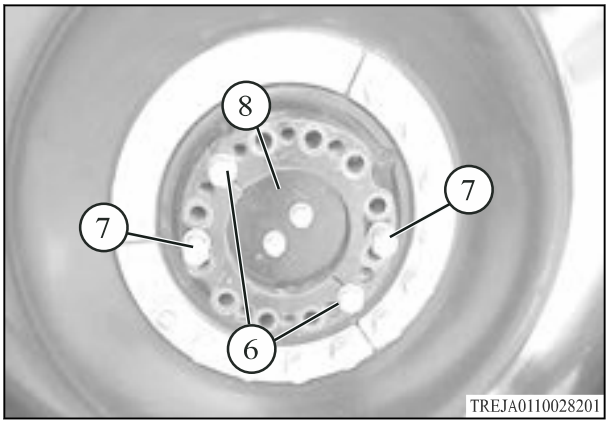


Fig. 103

15. Alternate turning bolts (7) clockwise so the collet slowly retracts from the drive wheel.

NOTE: *If necessary, additional pusher bolts may be needed.*

16. Remove the plate (8) by removing the bolts and the washers.

4.17 Tension the tracks

4.17.1 Add tension to the tracks

WARNING:
High Pressure Cylinder. Do not remove any parts until all hydraulic pressure has been relieved to avoid possible personal injury.

NOTE:
See your dealer for track tensioning hose assembly, and servicing of the track tensioner.

NOTE:
This procedure includes instruction for bleeding air from the tensioning system.

IMPORTANT:
A rupture disc valve (1) *is included in the track tensioner assembly. If tensioner hydraulic over pressure occurs, the rupture disc valve will rapidly vent oil from the tensioner, relieving all track tension. If this occurs, the rupture disc valve must be replaced, and the cause for over pressurization must be corrected, before trying to re-tension the tracks again.*

Procedure

1. Park the machine on a solid level surface. Stop the engine, apply the park brake, and take the key with you.

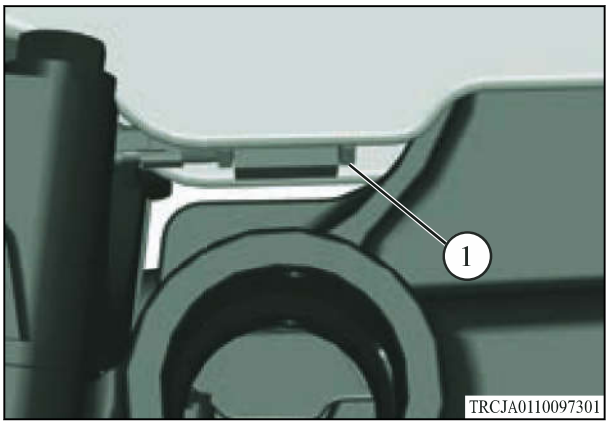


Fig. 120

2. Put the chocks at the front and the rear of the tracks.

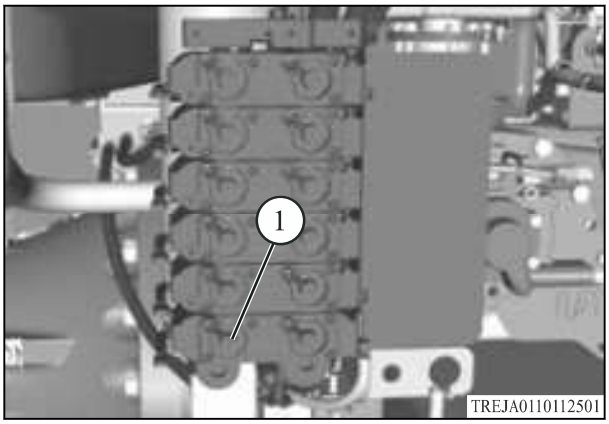


Fig. 121

3. Connect one end of track tensioner hose assembly to circuit #1 EXTEND port (1) of implement hydraulic valve stack.

   NOTE:
   If you cannot connect coupler of track tensioning hose assembly to tensioner nipple, there can be too much hydraulic pressure between filler valve and nipple. Release the pressure between the nipple and the filler valve.

   NOTE:
   The track tensioner cover is removed for clarity.

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

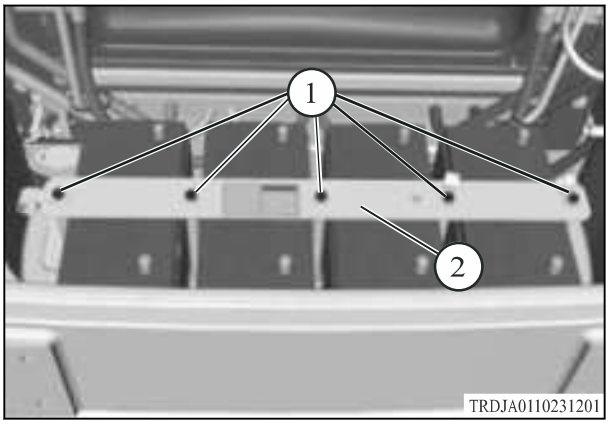


Fig. 137

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.

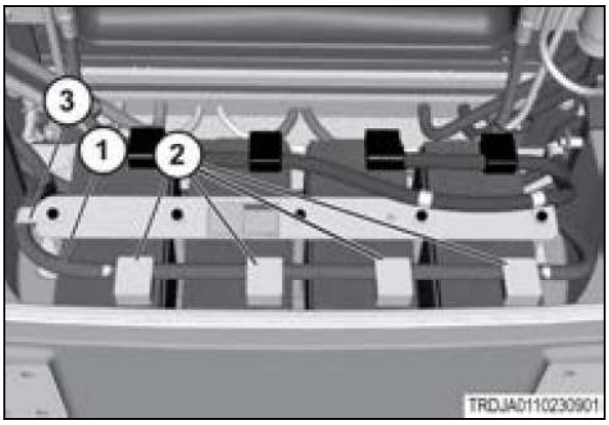


Fig. 138

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.

5. Close the engine cover.

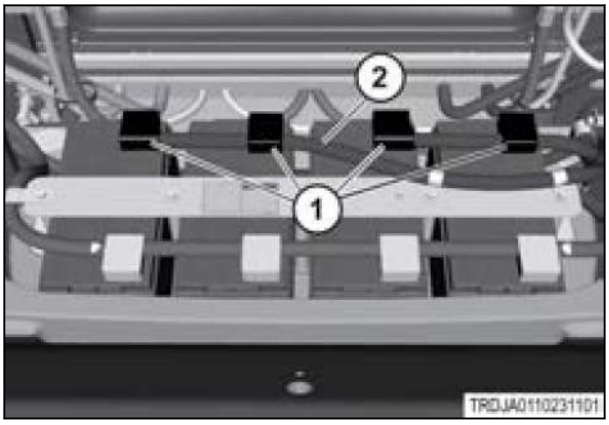


Fig. 139

6. Install the battery disconnect switch key to the on position(1).

NOTE:
Battery disconnect switch is shown in the on position.

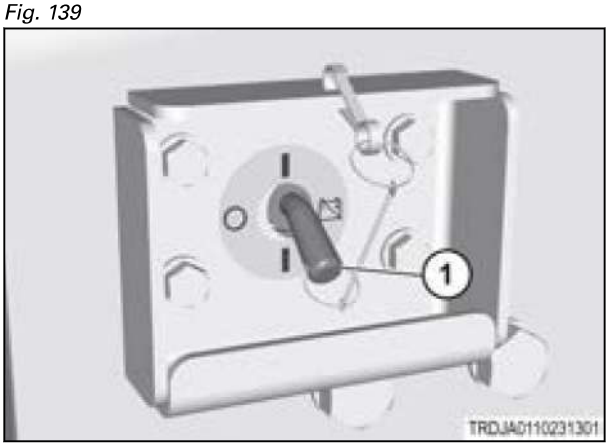


Fig. 140

5.4 Engine troubleshooting

Engine starts hard or does not start	
Cause(s)	**Solution(s)**
Fuel level is low or fuel tank is empty. The shutoff valve is in closed position	Check fuel level, fuel lines, and fuel filters. Make sure the fuel shutoff valve is open
Fuel system has a loss of prime	There is air in fuel system. Prime fuel system
Fuel temperature is below cold filter plug point (CFPP)	Use the correct type of fuel
Incorrect viscosity oil in the engine	Check the engine for correct oil viscosity for ambient temperature
Fuel system is dirty	Clean fuel system

Fuel system is dirty	
Cause(s)	**Solution(s)**
Fuel pressure is low.	Check fuel pressure. If low fuel pressure, replace the fuel filters. Make sure fuel does not contain water, air, or dust. If fuel pressure is still low, replace the fuel transfer pump. Clean fuel system - check screen at tank outlet
Clogged fuel filter.	Replace fuel filter elements.
Fuel injectors are malfunctioning.	See your dealer
Engine tuned incorrectly.	See your dealer

Engine misfires or runs rough	
Cause(s)	**Solution(s)**
Fuel pressure is low.	Replace the fuel filters. Check the fuel pressure. Check for leaks in the low pressure fuel system. Check for air in the fuel system. Check for wear or for damage in the fuel transfer pump. Check the fuel system for too much fuel return caused by a malfunctioning return fuel pressure regulating valve. Replace the fuel filters.
Air in fuel system.	Find air leak. Correct problem. Purge air from fuel system.
Clogged fuel filter.	Replace fuel filter element.
Damaged fuel injectors.	See your dealer
The timing for the fuel injection is not correct.	See your dealer

5.7 Transmission troubleshooting

Machine will not move after starting engine	
Cause(s)	**Solution(s)**
The correct sequence was not performed for the operation procedure.	Move the transmission control lever to the neutral position or the park position. Next, move the transmission control lever to the forward or reverse position.

Inching operations unsatisfactory when using inching clutch control	
Cause(s)	**Solution(s)**
The transmission clutches are out of calibration.	See your dealer.
The inching pedal is out of calibration	Perform pedal calibration

Shifts are rough.	
Cause(s)	**Solution(s)**
The transmission clutches are out of calibration.	See your dealer.

Transmission will not operate	
Cause(s)	**Solution(s)**
There is a displayed fault code. The fault code indicates that the transmission is malfunctioning.	See your dealer.

Transmission oil pressures low	
Cause(s)	**Solution(s)**
Not enough oil in the system.	Fill the system with oil.
The oil supply to the charge pump is restricted or blocked.	Clean suction screen.

Transmission lube pressure is low.	
Cause(s)	**Solution(s)**
The relief valve for the transmission lube is malfunctioning.	See your dealer.

5.10 Machine Error Codes

5.10.1 Engine error codes

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

Diagnostic codes for engine			
SA	SPN	FMI	Description
00	91	08	Decelerator pedal position abnormal sensor frequency
		13	Decelerator pedal position out of calibration
00	94	03	Engine fuel delivery pressure shorted to high source
		04	Engine fuel delivery pressure shorted to ground
		15	Engine fuel delivery pressure above normal operating range - least severe
		17	Engine fuel delivery pressure below normal operating range - least severe
00	100	01	Engine oil pressure below normal operating range - most severe
		03	Engine oil pressure shorted to high source
		04	Engine oil pressure shorted to ground
		10	Engine oil pressure abnormal rate of change
		17	Engine oil pressure below normal operating range - least severe
		18	Engine oil pressure below normal operating range - moderately severe
00	102	03	Engine intake manifold pressure shorted to high source
		04	Engine intake manifold pressure shorted to ground
		10	Engine intake manifold pressure abnormal rate of change
00	105	00	Engine intake manifold temperature above normal operating range - most severe
		03	Engine intake manifold temperature shorted to high source
		04	Engine intake manifold temperature shorted to ground
		15	Engine intake manifold temperature above normal operating range - least severe
		16	Engine intake manifold temperature above normal operating range - moderately severe
00	108	03	Barometric pressure shorted to high source
		04	Barometric pressure shorted to ground
00	110	00	Engine coolant temperature above normal operating range -most severe
		03	Engine coolant temperature shorted to high source
		04	Engine coolant temperature shorted to ground

Diagnostic codes for armrest ECM			
05	2970	02	Constant engine speed A switch erratic, intermittent, or incorrect
		03	Constant engine speed A switch shorted to high source
		04	Constant engine speed A switch shorted to ground
		05	Constant engine speed A switch open circuit
05	2971	03	Constant Engine speed B switch shorted to high source
		04	Constant Engine speed B switch shorted to ground
		05	Constant Engine speed B switch open circuit
05	3507	06	ECM power relay, shorted to ground
05	3510	03	DC supply: - 1.7 Volt DC supply, shorted to high Source
		04	DC supply: - 1.7 Volt DC supply, shorted to ground
05	3511	03	DC supply: - 3.3 Volt DC supply, shorted to high source
		04	DC supply: - 3.3 Volt DC supply, shorted to ground
05	3646	02	Park lever switch erratic, intermittent, or incorrect
		03	Park lever switch shorted to high source
		04	Park lever switch shorted to ground
		05	Park lever switch open circuit
05	3652	02	Shift up switch erratic, intermittent, or incorrect
		03	Shift up switch shorted to high source
		04	Shift up switch shorted to ground
		05	Shift up switch open circuit
05	3653	02	Shift down switch erratic, intermittent, or incorrect
		03	Shift down switch shorted to high source
		04	Shift down switch shorted to ground
		05	Shift down switch open circuit
05	520193	02	One touch switch erratic, intermittent, or incorrect
		03	One touch switch shorted to high source
		04	One touch switch shorted to ground
		05	One touch switch open circuit
05	5243	02	Roading lockout switch erratic, intermittent, or incorrect
		03	Roading lockout switch shorted to high source
		04	Roading lockout switch shorted to ground
		05	Roading lockout switch open circuit
05	520196	31	High slip

6.1 Engine specifications

MT845E	MT855E	MT865E	MT875E
AP168-4, aftertreatment system, wastegate turbo, air to air intercooled, 12 cylinders, twin series turbo chargers			
336 kW (450 hp)	365 kW (490 hp)	403 kW (540 hp)	440 kW (590 hp)
standard maximum power			
362kW (486 hp)	394 kW (529hp)	435 kW (583 hp)	475 kW (637 hp)
torque at rated power			
1530 Nm (1125 lbf ft)	1660 Nm (1226 lbf ft)	1830 Nm (1351 lbf ft)	2000 Nm (1476 lbf ft)
maximum torque			
2170 Nm (1598 lbf ft)	2360 Nm (1741 lbf ft)	2600 Nm (1918 lbf ft)	2840 Nm (2096 lbf ft)
high idle			
2200 rpm in gears 1-15 forward, neutral, reverse, park 2300 rpm in 16th gear forward	2200 rpm in gears 1-15 forward, neutral, reverse, park 2300 rpm in 16th gear forward	2200 rpm in gears 1-15 forward, neutral, reverse, park 2300 rpm in 16th gear forward	2200 rpm in gears 1-15 forward, neutral, reverse, park 2300 rpm in 16th gear forward
governed speed at rated power			
2100 rpm	2100 rpm	2100 rpm	2100 rpm
low idle			
1000 rpm	1000 rpm	1000 rpm	1000 rpm
electrical system			
12 V	12 V	12 V	12 V
maximum altitude at full power			
2000 m (6560 ft)	2000 m (6560 ft)	2000 m (6560 ft)	2000 m (6560 ft)
bore and stroke			
111 mm x 145 mm (4.37 in x 5.71 in)	111 mm x 145 mm (4.37 in x 5.71 in)	111 mm x 145 mm (4.37 in x 5.71 in)	111 mm x 145 mm (4.37 in x 5.71 in)
displacement			
1025 cu in (16.8 L)	1025 cu in (16.8 L)	1025 cu in (16.8 L)	1025 cu in (16.8 L)