Challenger

Operator Manual

MT835C / MT845C / MT855C / MT865C / MT875C
Rubber Track Tractor - CE

S/N: EFF...Uxx1001

Crushing Prevention and Cutting Prevention

Support equipment properly when performing work under equipment. Do not depend on hydraulic cylinders to hold equipment. An implement can fall if a control lever is moved or if a hydraulic line breaks.

Never jump across starter solenoid terminals to start machine. Unexpected machine movement could result.

Never attempt adjustments while machine is moving or engine is running.

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

Stay clear of all rotating parts and moving parts.

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

Do not use a wire cable kinked or frayed. Wear gloves when handling wire cable.

Loose retainer pins can injure personnel. Make sure there are no people in area when striking a retainer pin. To avoid injury to your eyes, wear protective glasses when striking a retainer pin.

Chips or other debris may fly off objects when striking objects. Make sure no one will be injured by flying debris before striking any object.

Front View

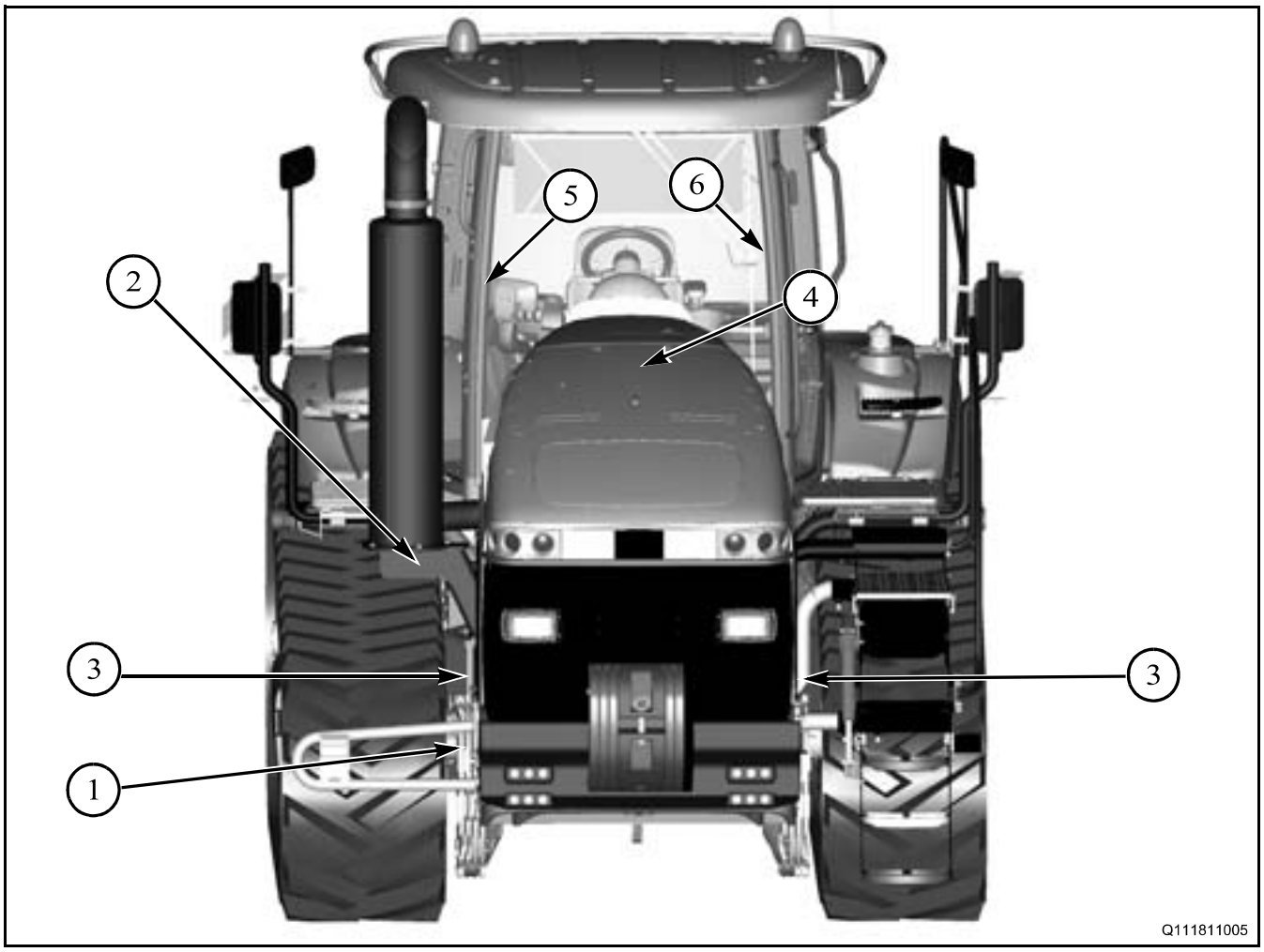


FIG. 17

FIG. 17: Front View

FIG. 18: Warning - Battery Explosion Hazard (1)
The safety sign is located on frame rail on right side of machine and on hold down bracket for batteries.
Improper jumper cable connections can cause explosion resulting in personal injury.When using jumper cables, always connect positive (+) cable, from external source, to positive (+) jump start post and negative (-) cable, from external source, to engine block or frame.

Remove negative cable (s) from battery(s) before removing starter solenoid cover and before servicing electrical system.

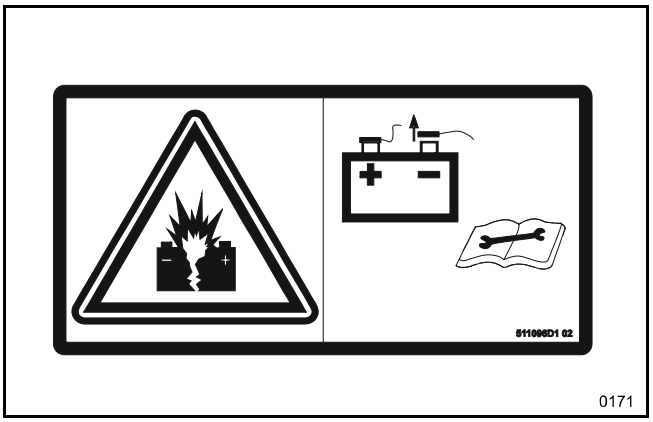


FIG. 18

SERIAL NUMBER DEFINITION

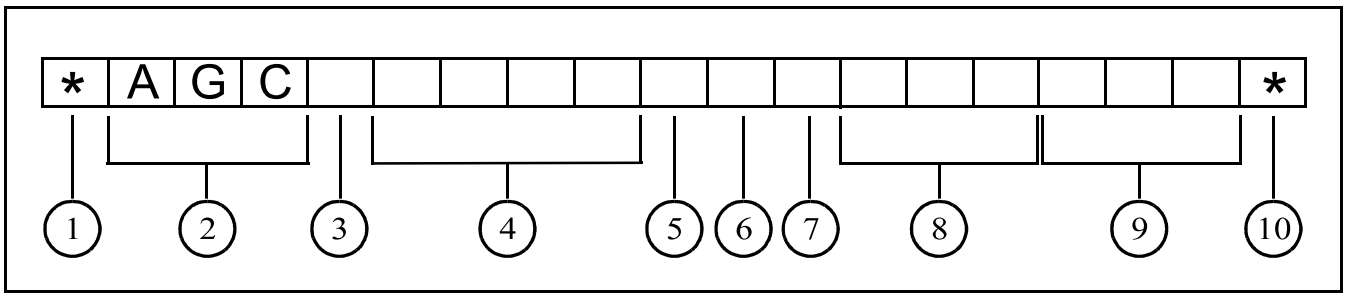


FIG. 8

FIG. 8: Definition of the serial number.

(1) Beginning symbol

(2) World Manufacturer Code

(3) Brand Code

(4) Model Identifier (Model number)

(5) Check Letter (0 or used if model identifier is five digits)

(6) Model Year Code (A=2010, B=2011, C=2012, and on)

(7) Plant Code

(8) Family Code

(9) Unit Number for the Year

(10) Ending symbol

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

Engine Starting Below 0 degrees C (32 degrees F)

WARNING: Steering and braking systems of improperly warmed-up machine may respond slower than expected, possibly causing an accident and personal injury. After starting engine during cold weather, allow engine to run at approximately 1200 rpm for ten minutes before moving machine. Drive machine slowly at first to assure steering and braking systems are operating correctly.

NOTE: If you are starting engine in temperatures below -10 degrees C (14 degrees F) consult your dealer.

FIG. 2: Machine is equipped with an ether starting aid system (1). Ether starting aid system is electronically controlled. System does not require any operator input.

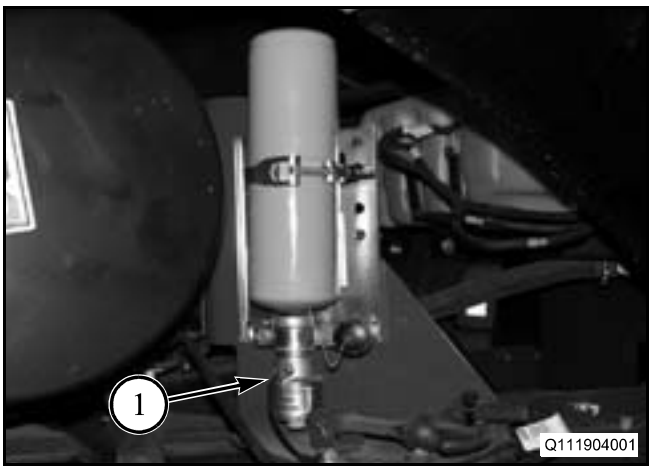


FIG. 2

While cranking engine, ECM uses air and fuel temperature sensors to determine whether ether is required to start engine. Ether is automatically injected into engine at a proportion to temperature of air and fuel. Check canister of ether if starting engine is a problem in cold weather. Canister of ether may be empty. Machine electronics will not indicate if canister is empty.

Turn engine start switch to “ON” position.

Release key as soon as engine starts. Key will return to run position.

Once engine starts, keep throttle control lever in low idle position until needle of engine oil pressure gauge is in green zone.

Gauges

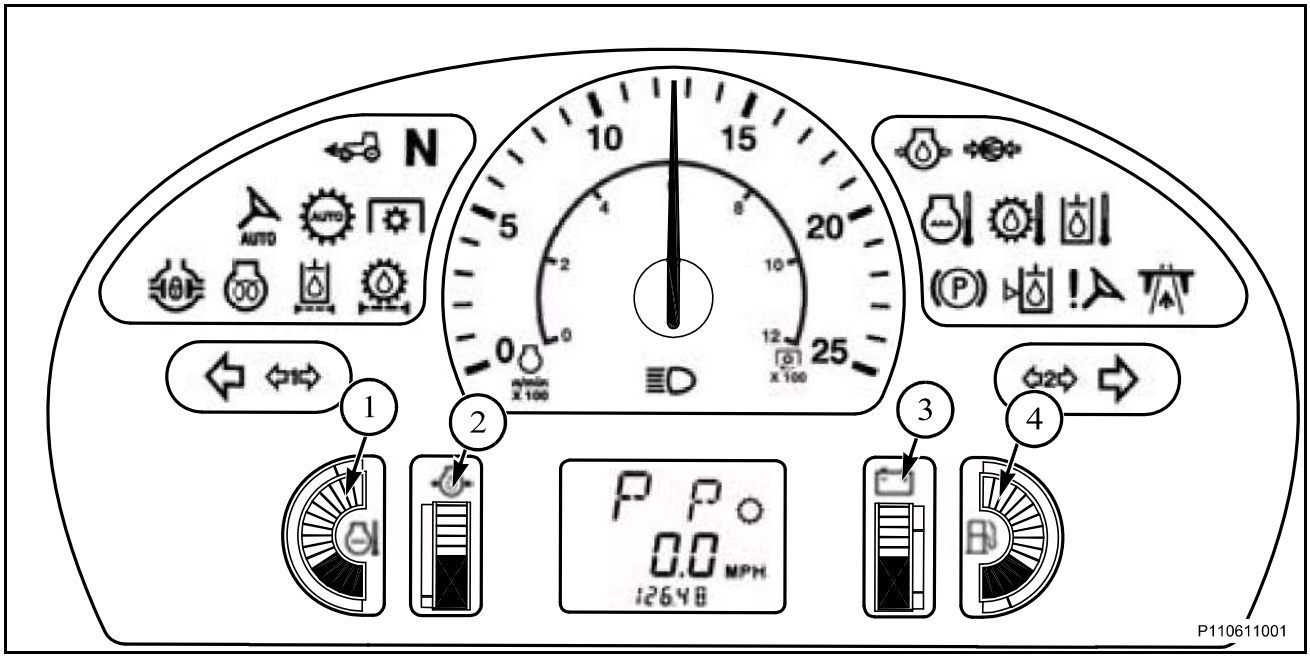


FIG. 18

FIG. 18: Status Indicators:

Engine Coolant Temperature Gauge (1) - Bar graph indicates engine coolant temperature. This display will flash if gauge indicates operation in the upper red region adjacent to bar graph. If engine overheating is indicated, stop engine as soon as practical and investigate the cause.

Engine Oil Pressure (2) - Bar graph indicates engine oil pressure. This display will flash if gauge indicates operation in the lower red region adjacent to bar graph. If low engine oil pressure is indicated, stop engine as soon as practical to minimize the chance of engine damage from lack of lubrication.

Battery Voltage (3) - Bar graph indicates battery voltage level. This display will flash if gauge indicates operation in either the upper or lower red regions adjacent to bar graph. If system voltage is indicated above or below normal operating range, stop machine in a safe place and investigate cause.

Fuel Gauge - (4) - Bar graph indicates machine fuel level. This display will flash if gauge indicates operation in the lower red region adjacent to bar graph.

Steering Wheel

FIG. 29: Pull lever (1) toward operator to tilt steering wheel to desired position.

Push lever (1) away from operator and push or pull center of steering wheel to move steering column in and out.

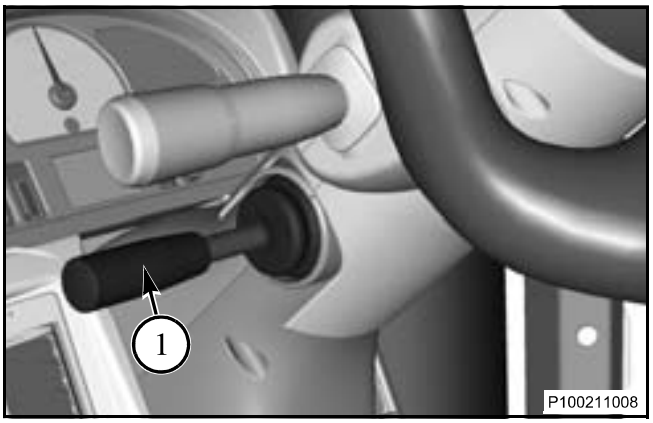


FIG. 29

FIG. 30: A switch for horn is located in center (1) of steering wheel. Push in center of steering wheel in order to activate horn. Use horn to alert personnel.

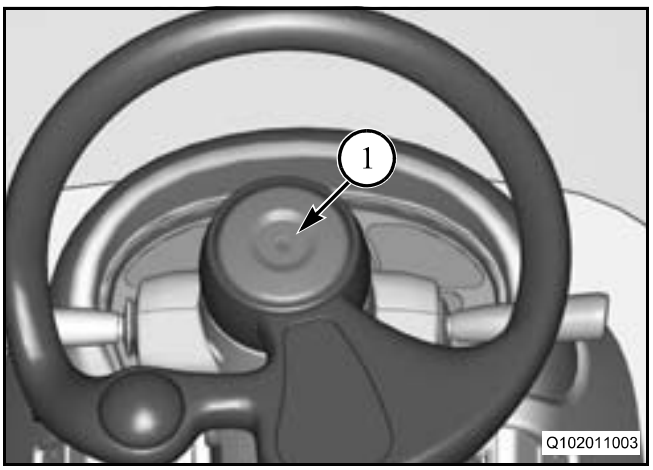


FIG. 30

FIG. 49: Open window by pulling lever (1) and exiting cab through rear window.

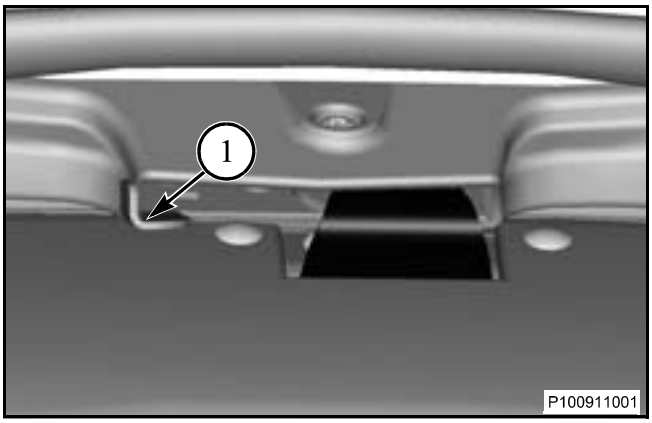


FIG. 49

Storage and Literature Compartments

FIG. 50: A storage compartment is located under lid (1) at left, rear corner of cab. Lid is located behind instructional seat. Storage compartment can be used for cool storage if air conditioning is on.

Additional storage compartment is located under lid (2) at right side of cab on armrest.

Literature holders (3) and (4) are located behind operator's seat.

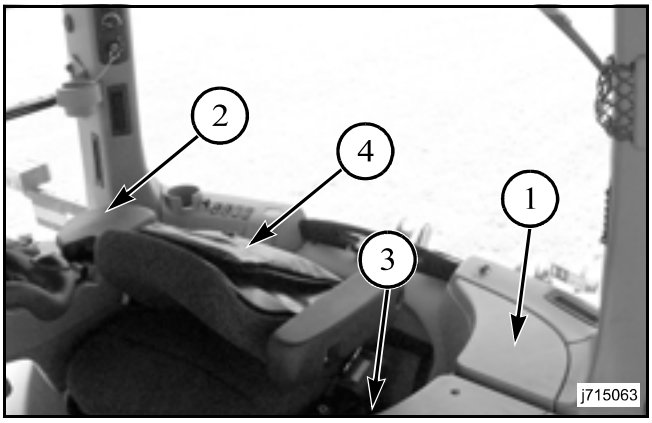


FIG. 50

Exterior Tool Box

FIG. 51: Machine is equipped with a storage area for tools. Storage area is located under top step. When using storage area, insert prop rod (1) into hole (2).

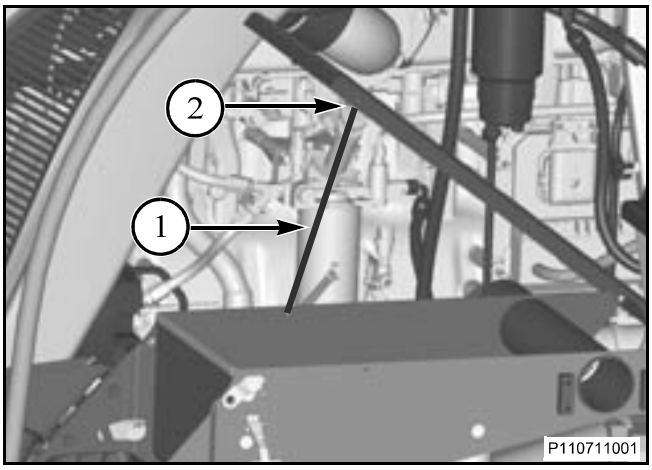


FIG. 51

Setting Time and Date

FIG. 76: Use the scroll wheel to highlight the System Configuration icon (1) and press the scroll wheel button.

NOTE: The main C1000 home screen may differ depending on what software is loaded.

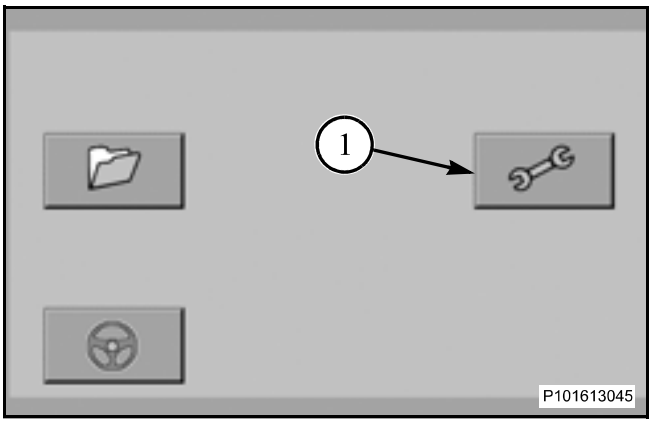


FIG. 76

FIG. 77: Select Date, Time and Language by scrolling to the Date, Time and Language box (1) to highlight it. Press the scroll wheel button to select it, or press the hard key next to the Date, Time and Language icon (2).

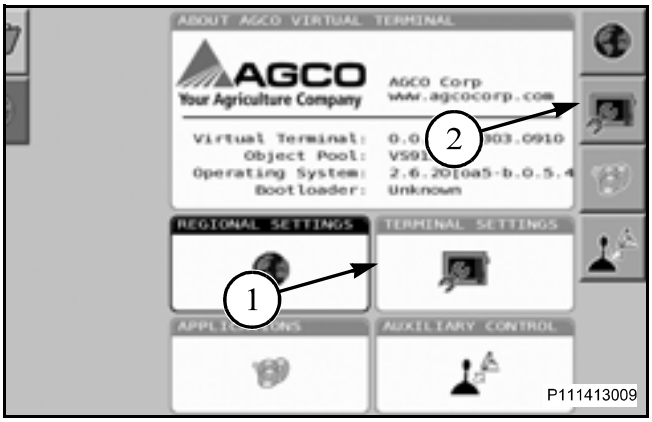


FIG. 77

FIG. 78: Select Time and Date by scrolling to the Time and Date box (1) to highlight it, then press the scroll wheel button to select it.

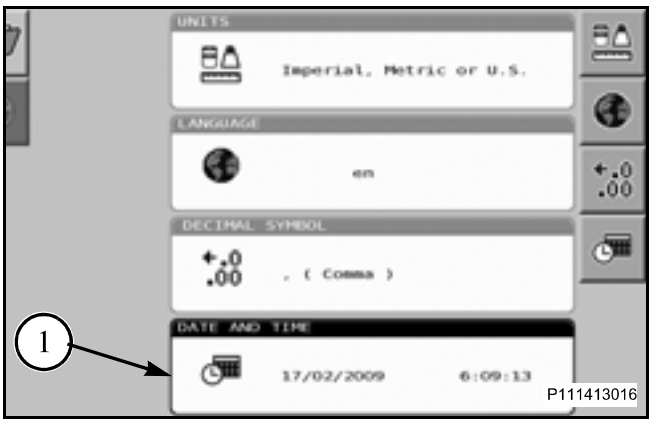


FIG. 78

FIG. 107: Measure - Fuel Viewing Screen

1	Fuel Used
2	Load Rate (Engine)
3	Power Specific Fuel Economy
4	Fuel Usage per Distance
5	Fuel Rate
6	Fuel per Acre

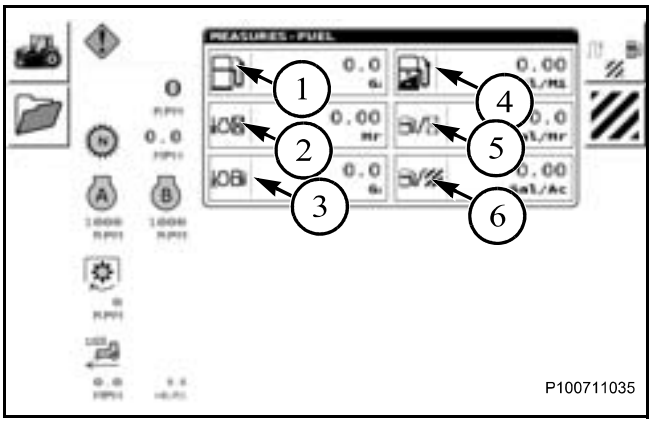


FIG. 107

FIG. 108: Memory Viewing Screens- Select INST Viewing Screen (1) or Measure Fuel (2)

From main menu, select a viewing screen by scrolling forward or backward using the scroll wheel on the side of terminal. To select the highlighted icon, push the scroll wheel center button.

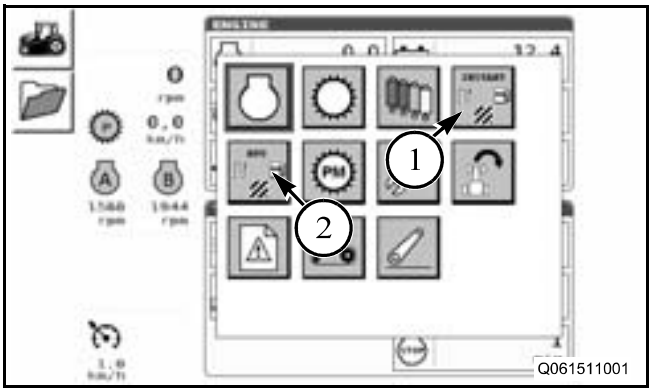


FIG. 108

FIG. 109: Memory Name Viewing Screen -

Press hard key to select memory name application (1).

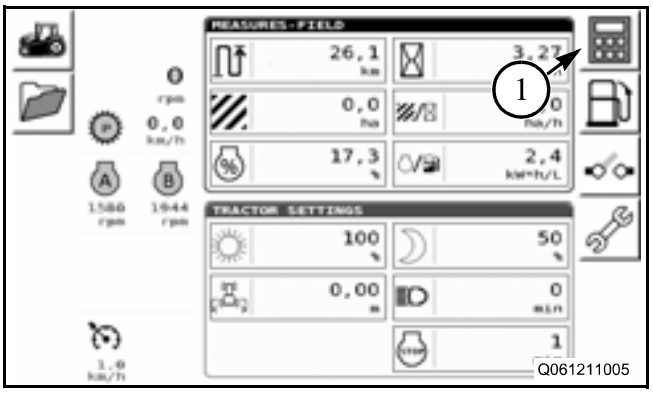


FIG. 109

FIG. 110: Memory Name Application

When the memory name application is selected, this screen is displayed.

This application is used to store the parameters of 8 different implements.

It is possible to :

- assign a specific name to each of the 8 implements
- check, measure and record parameters when an implement is in use

This screen displays the 8 memories and any names that have been assigned to them.

Select highlighted field requested number (1), and press center of scroll wheel.

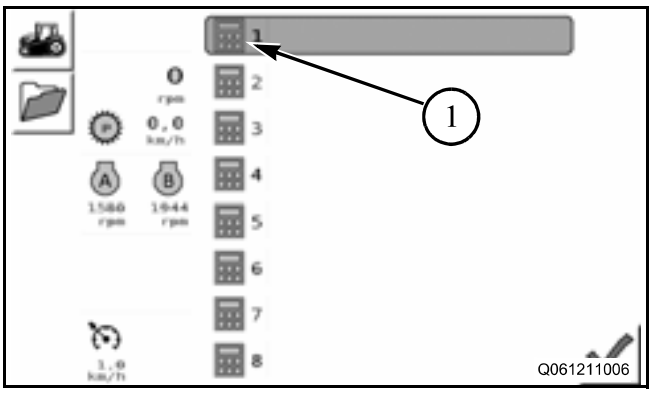
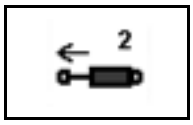
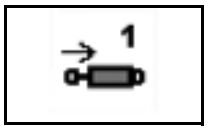
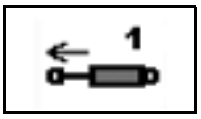
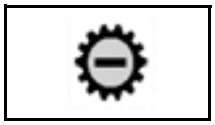
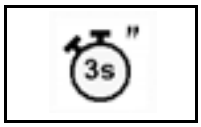
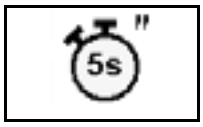
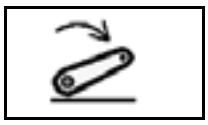
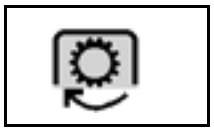


FIG. 110

Icon Identification for Headland Management					
Aux Valve 2 extend flow detent		Aux Valve 2 Stop		Aux Valve 1 retract flow detent	
Aux Valve 1 valve port		Aux Valve 1 extend flow detent		Aux Valve 1 Stop	
Shift Down		Differential Unlock		Differential Lock	
Pause Beep		Timed Pause 1 second timer		Timed Pause 2 second timer	
Timed Pause 3 second timer		Timed Pause 4 second timer		Timed Pause 5 second timer	
Lower Hitch Rate		Raise Hitch Rate		PTO Stop	
PTO Start					

Inching Pedal Calibration

FIG. 162: Procedure can be started at this screen by having power to cab on.

FIG. 162

FIG. 163: To calibrate the inching pedal, press inching pedal down and hold for approximately 3 to 5 seconds, releasing slowly. Wait for 3 seconds to repeat procedure, for a total of three times. When calibration is complete a message will show that it has been completed.

NOTE: Correct timing with this procedure is very important. If calibration is not successful, change inching pedal holding time.

FIG. 163

Control Lever

FIG. 187: Height of implement and depth of implement is controlled by three-point hitch control lever (1). Pull lever rearward to raise hitch. Push lever forward to lower hitch.

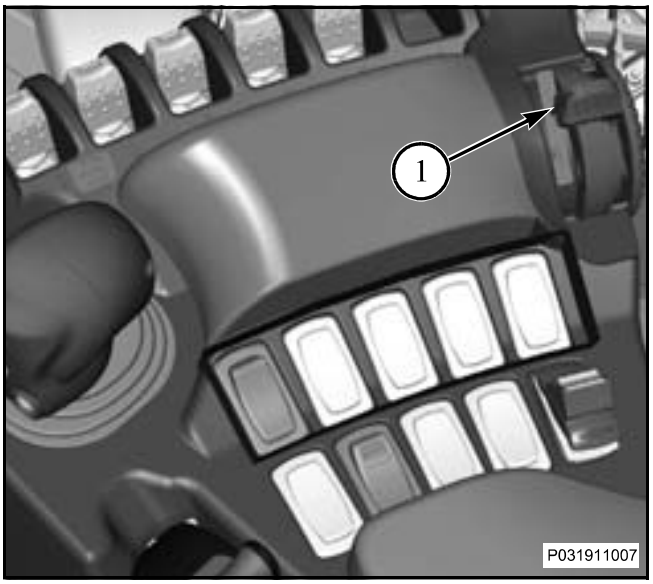


FIG. 187

FIG. 188: An adjustable depth stop is located on three-point hitch control.

Depth stop limits lever travel. To adjust depth stop, lift lever (1) and rotate outer dial to desired setting. Release lever to lock dial in position. Depth stop can be temporarily bypassed by pushing lever (3) with additional force to overcome resistance of stop.

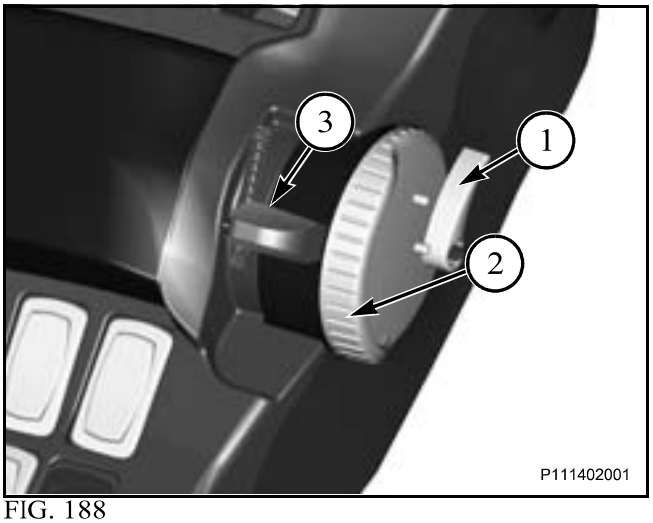


FIG. 188

Attaching Implements to Quick Hitch

FIG. 197: Before attaching implements to quick hitch the following items need to be checked.

Adjust sway blocks to a position suitable for implement and for application.

Shorten drawbar (1) or remove drawbar if equipment is mounted close to machine could cause interference.

Adjust draft sensitivity to position control detent.

Put latch handles (2) in down position.

Back up machine to implement. Make sure lower hooks are below pins on implement and that three-point hitch frame is parallel to implement.

Place lower hooks (3) directly below pins on implement. Place upper hook (4) below center pin of implement. Raise three-point hitch slowly to capture implement. Verify that both lower latches and center hook of quick hitch fully engage pins of implement.

Attach any auxiliary equipment. Auxiliary equipment includes implement hoses or PTO drive shaft.

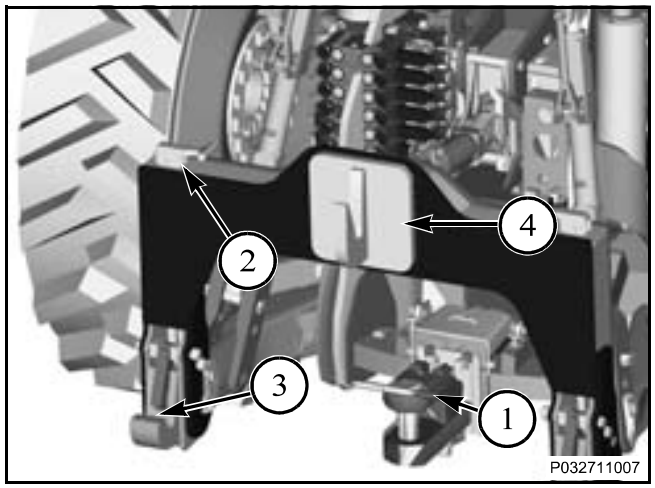


FIG. 197

Detaching Implements

Three Point Hitch Implements

Set implement on a site that is level. Make sure implement is properly supported and will not fall when you uncouple the implement from machine.

Place transmission control lever in park position and stop engine.

Disconnect implement hydraulics or remove PTO drive shaft.

If necessary, adjust length of top link to remove any excess load on implement hitch pin. Remove implement hitch pin and store center link in upper position.

Remove implement hitch pins from draft arms.

Quick Hitch Implements

FIG. 198: Set implement on a site that is level. Make sure implement is properly supported and will not fall when you uncouple implement from machine.

Remove any auxiliary equipment. Auxiliary equipment includes implement hoses or PTO drive shaft.

Latch handles (1) in the up position should only be for detaching implement.

Lower three-point hitch until hitch clears pins on implement, then slowly drive away.

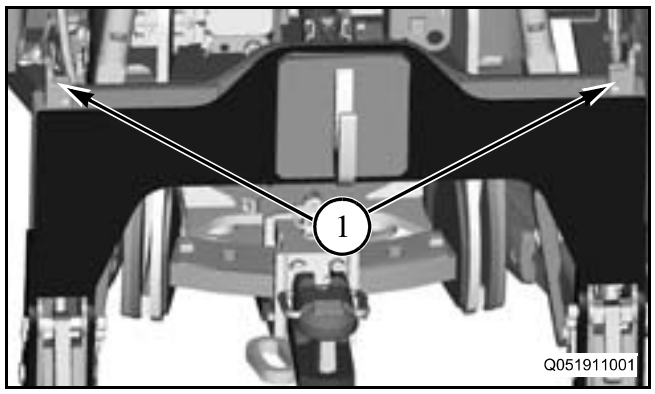


FIG. 198

HYDRAULIC SYSTEM

General Hydraulic Connections

Couplers for machine accept ISO 5675 standard connectors.

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

Couplers on right side of valve bank are pressurized when control valve is in retract position.

Connecting Hoses to Quick Couplers

NOTE: Both male and female portions of quick couplers are wear items. Prior to connecting hoses inspect couplers for signs of wear. Replace if necessary.

NOTE: To improve life of quick couplers be sure hoses are supported properly alleviating stresses on couplers.

FIG. 215: Move hydraulic control lever to hold or float position.

Rotate dust caps (1) up to access quick coupler.

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

Push lever (2) down to release any hydraulic pressure. This step is especially important if hydraulic control valve is left in hold position. After lever (2) has been actuated, lever may be released.

Firmly push hoses into coupler (3).

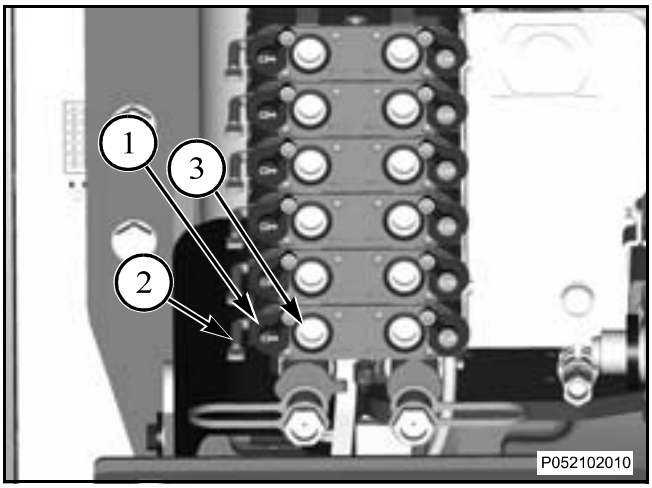


FIG. 215

Disconnecting Hoses from Quick Couplers

Lower implement to ground. While engine is running, move hydraulic control lever to hold or float position. Stop engine. Push down lever (2), remove hose and close dust caps (1).

Spray System Pump

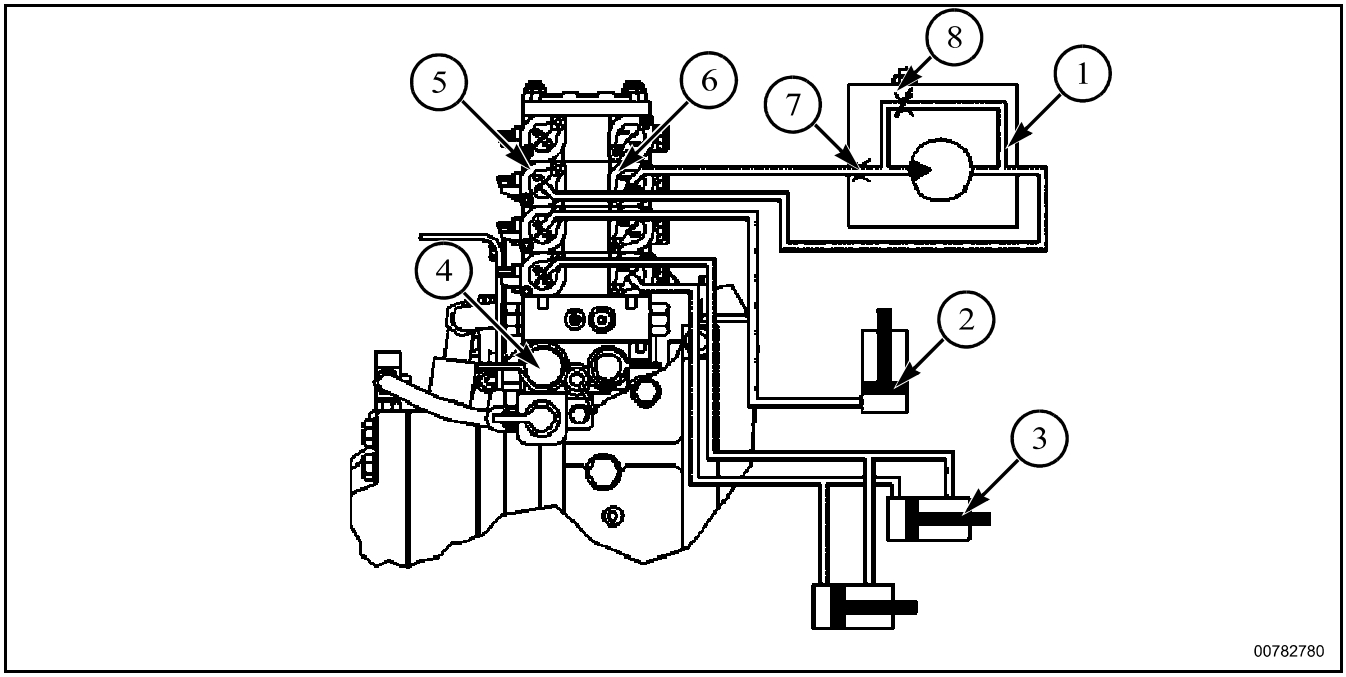


FIG. 225

FIG. 225: Example shows a spray system equipped with the following items:

1	Spray system pump
2	Cylinders for raising booms
3	Cylinders for folding booms
4	Return coupler
5	Coupler (+)
6	Coupler (-)
7	Inlet orifice
8	Needle valve

Connect spray system pump (1) pressure hose to coupler (6) on desired hydraulic control valve. Connect return hose to coupler (5) on same hydraulic control valve.

NOTE: If machine is equipped with a hydraulic power beyond, connect return hose to coupler (4) on hydraulic power beyond.

Close needle valve (8). Flow Rate to pump should be controlled by C1000.

Remove inlet orifice (7).

Connect cylinder (2) for raising boom. Connect pressure hose to coupler (5) on desired hydraulic control valve.

Connect cylinder (3) pressure hose to coupler (5) on desired hydraulic control valve. Connect return hose to coupler (6) of same hydraulic control valve.

Seat Belts and Instructors Seat

FIG. 242: Seat belts are equipped with an automatic retractor lock. Retractor locks if belt is pulled or jerked.

Fasten seat belt catch (1) into buckle (2).

Seat belts should be worn at all times during machine operation.

WARNING: When using retractable seat belts, do not use seat belt extensions, or personal injury or death can result. Retractor system may or may not lock up depending on length of extension and size of person. If retractor does not lock up, seat belt will not retain person.

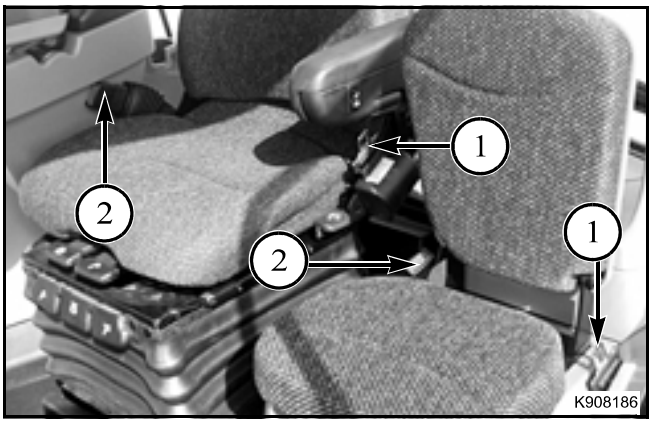


FIG. 242

FIG. 243: Make sure seat belt (3) is placed low across lap of operator.

Instructors seat (4) is provided for training and technician diagnostic purposes. No adjustment is required for instructors seat.

CAUTION: Instructional seat has been provided only for training operators or diagnosing machine problems. Keep all riders off machine and equipment.

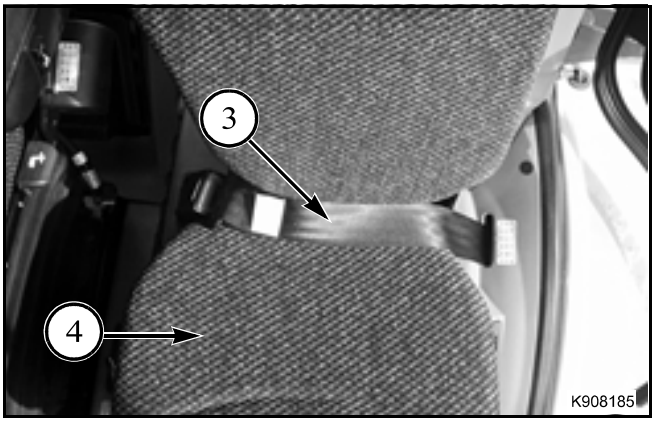


FIG. 243

Recommendations for Weight Installation				
Model	Level of Ballast	Front Weights	Idler Weights	Undercarriage Weights
MT835	Light	0	0	0
	Medium	0	0	0
	Heavy	32	0	0
MT845	Light	14	0	0
	Medium	20	0	0
	Heavy	32	36	0
MT855	Light	14	0	0
	Medium	20	16	0
	Heavy	32	36	64[1]
MT865	Light	14	0	0
	Medium	32	16	0
	Heavy	32	36	64[1]
MT875	Light	14	0	0
	Medium	32	16	0
	Heavy	32	36	64[1]
[1] Do not use undercarriage weights in scraper applications				

Weights

Weights are added to machine for following two reasons:

- Drawbar pull of machine
- Balance of machine

Three types of weights are available for these machines.

Front Weights - Front weights are available. Front weights require a mounting bracket.

Mounting bracket weighs 467 kg (1030 lb). Front weights are segmented. This permits installation and removal by hand. Each weight weighs 46 kg (101.4 lb).

Idler Weights - Idler weights are available. Idler weights can be installed on inside and outside of front idlers. A maximum of 18 idler weights can be installed on each undercarriage. Idler weights are segmented. This permits installation and removal by hand. Each weight weighs 57 kg (126 lb).

Undercarriage Weights - Undercarriage weights can be installed on inside and outside of each undercarriage. Weights are segmented. This allows removal and installation by hand. Each weight weighs 34.0 kg (75 lb).

Package of 32 front weights is roughly equivalent to 3400 kg (7496 lb) of idler weights.Relation between idler weights and front weights is around 1 to 66. Front weight 45 kg (99 lb) is equivalent to 75 kg (165 lb) of idler weight.

Steering Performance

Turning radius and large amount of contact area under belts may cause machine to need more power to turn. Pulling a heavy load during a turn is most common cause of reduced performance for a track-type machine.

Machine is capable of performing a spot left turn and a spot right turn.

Operators take advantage of this capability to significantly reduce turning time at ends of field. Turning time can be reduced particularly with implements mounted on three-point hitch.

Amount of soil displaced increases as turning radius decreases.

Trade for increased productivity can be more soil disturbed.

Increasing turning radius can help minimize objectionable amount of soil disturbed. Operator may also keep turning radius tight for increased productivity. To remove ridges, complete ends of field last.

If performance during a turn is not acceptable, refer to following guidelines.

Setup of the Machine

Increase gauge spacing - Machines equipped with a wide gauge spacing turn more easily than machines equipped with a narrow track gauge.

Install wider belts- Wide belts reduce ground pressure. Wide belts reduce required power for turns. Wider belts will skim ground while turning machine. Low profile belts can be used to minimize amount of soil disturbed when turning.

Balance machine for even distribution of weight - An out-of-balance machine may turn poorly. A machine excessively unbalanced may disturb soil while turning machine. Soil disturbed is a result of higher ground pressure at heavier end of machine.

Increase amount of ballast - Performance during turns may be reduced by slippage between ground and belts. Increasing weight of machine can improve performance during turns.

When you use implements mounted to three-point hitch, adjust sway blocks to allow hitch to pivot during turns - Set draft arms for maximum float. This allows draft arms to float with contour of ground to improve ability of implement to follow uneven terrain.

When you use implements mounted to drawbar, allow drawbar to swing during turns - Remove stop plates. Removing stop plates allows load to swing from center line of machine when turning machine.
This decreases amount of effort required to turn machine. If machine is equipped with a wide swinging drawbar, allow drawbar to use full range of swing.

Connections for Hydraulic Power Beyond

Scrapers having auxiliary control valves use power beyond ports to supply hydraulic power to these valves. Using power beyond ports to supply hydraulic oil to scraper valve is more efficient than using a machine control valve and reduces risk system overheating.

Circuits for hydraulic power beyond consist of the following components:

- Supply oil from pump
- Return oil to tank
- Load sense port

Load sense port is needed when you use power beyond ports. Connect scraper load sensing line to machine load sensing port.

Your scraper may be equipped with hoses too small in diameter for flow requirements. If hoses are too small, performance and reliability will be affected. Install new, larger hoses if hoses are not large enough for flows provided by machine.

These are problems you can expect if the hoses are too small:

- Excessive restriction in system causing slow response and overheating
- High resolved pressures
- Low flow and pressure to hydraulic cylinders and motors

To minimize restriction in hydraulic lines, do not adapt existing hoses that are too small. Instead, install new hoses that meet needs of implement and match size of fittings that are on power beyond coupler.

If you need power beyond couplings for machine, a kit is available from dealer.

ADJUSTMENTS

Contents

LUBRICATION AND MAINTENANCE

Contents

FIG. 4: Remove the following guards in the order listed to gain access to the left side of transmission housing.

Remove five bolts and washers in order to remove guard (1).

Remove four bolts and washers in order to remove guard (2).

Remove four bolts and washers in order to remove guard (3).

Remove four bolts and washers in order to remove guard (4).

Remove four bolts and washers in order to remove guard (5).

Remove four bolts and washers in order to remove guard (6).

Install guards in the reverse order they were removed.

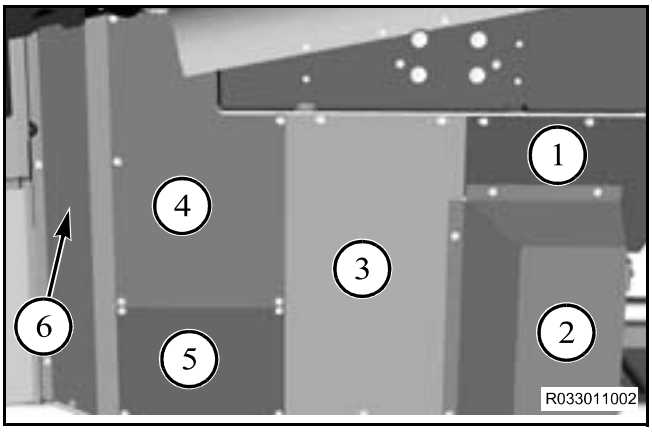


FIG. 4

Bottom Guards

FIG. 5: Support guard (1) with proper lifting device before removing. Remove seven bolts and washers from shield (1) in order to lower shield (1).

Remove two bolts from guard (2).

Install guards in the reverse order they were removed.

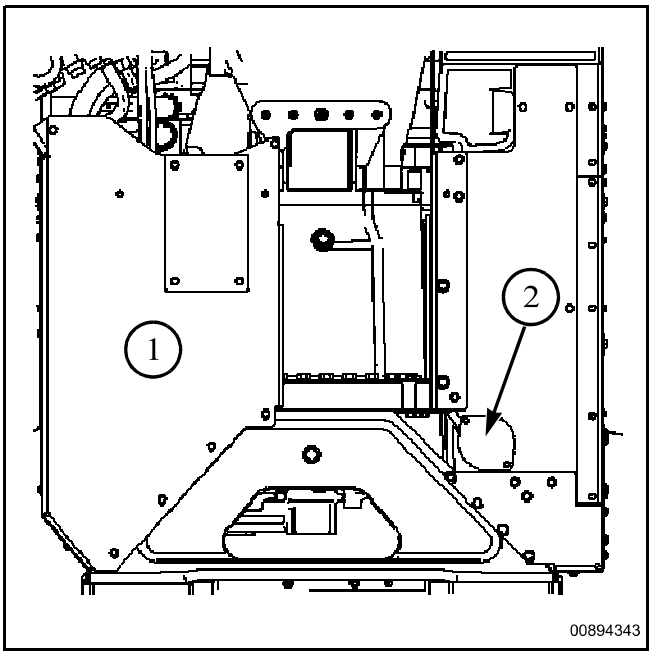


FIG. 5

Air Cleaner Filter Installation

FIG. 25: Clean air intake.

IMPORTANT: Ensure that the inside of the air cleaner is free of all debris.

Clean the inside of the air cleaner (1) with a non-residue cleaning solvent.

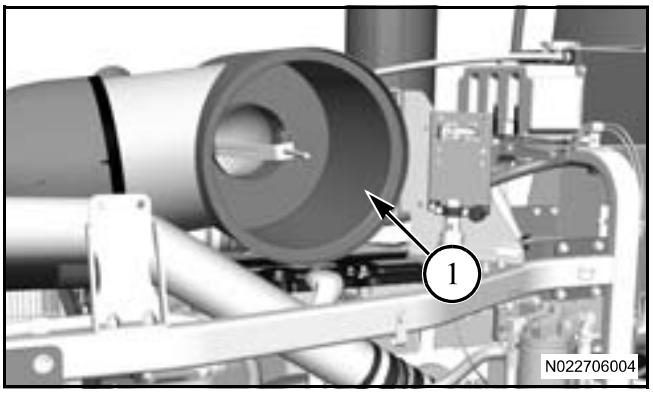


FIG. 25

FIG. 26: Install secondary air filter.

Install secondary air filter/cover plate (2). Tighten wing nut and washer (1). Ensure secondary air filter (3) fully seated.

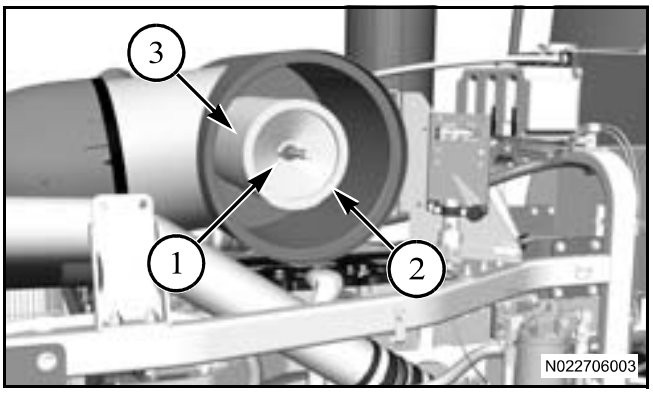


FIG. 26

FIG. 27: Install primary air filter.

Install primary air filter/cover plate (2). Tighten wing nut and washer (1). Ensure primary air filter (3) is fully seated.

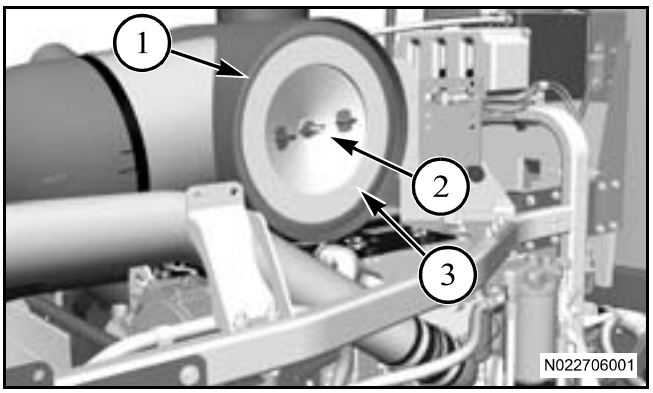


FIG. 27

FIG. 43: Fan drive serpentine belt removal.

Use a ratchet wrench in the square hole (1) on the belt tensioner (2) and turn counter clockwise to relieve belt tension. Remove serpentine belt (3). Slowly release the belt tensioner to relax into a neutral position.

WARNING: Equipment or parts under spring tension can cause bodily injury. Use caution in releasing belt tension.

NOTE: Be sure to allow enough room for the swing of the ratchet to allow belt tensioner to relax into a neutral position.

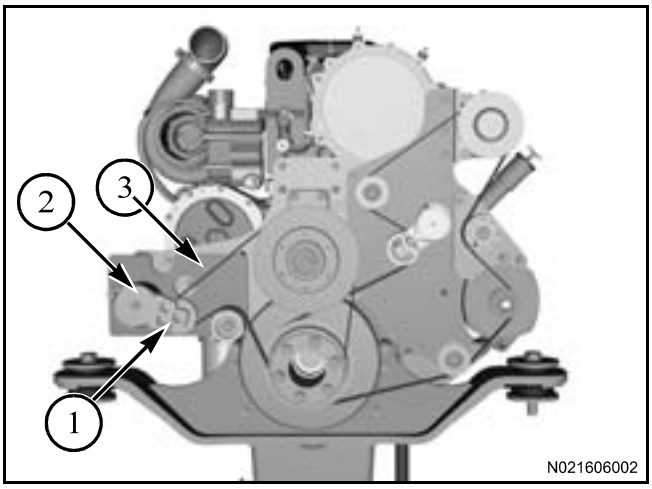


FIG. 43

FIG. 44: Accessories serpentine belt removal.

NOTE: Fan drive serpentine belt must be removed to replace accessories serpentine belt.

Use a ratchet wrench in the square hole (1) on the belt tensioner (2) and turn clockwise to relieve belt tension. Remove serpentine belt (3). Slowly release the belt tensioner to relax into a neutral position.

WARNING: Equipment or parts under spring tension can cause bodily injury. Use caution in releasing belt tension.

NOTE: Be sure to allow enough room for the swing of the ratchet to allow belt tensioner to relax into a neutral position.

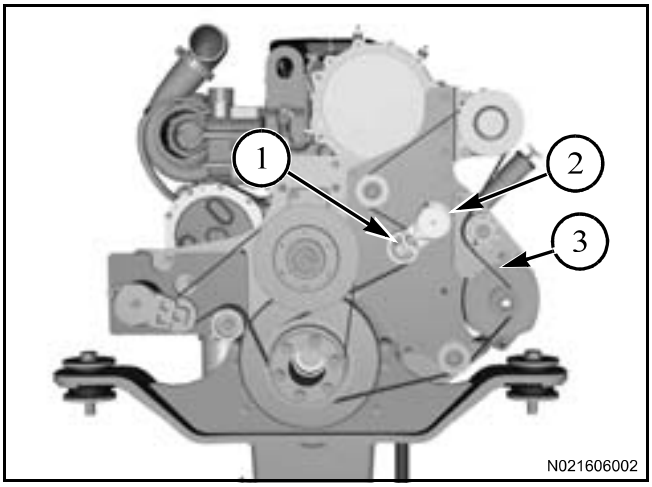


FIG. 44

FIG. 57: Fuse/Relay Block 2

Fuse/Relay Block 2		
Item	Relay	Description
1	35 Amp	Neutral Start Relay
2	35 Amp	Horn Relay
3	35 Amp	ISO Power Relay
4	35 Amp	ISO ECU Relay
5	35 Amp	ECU Relay

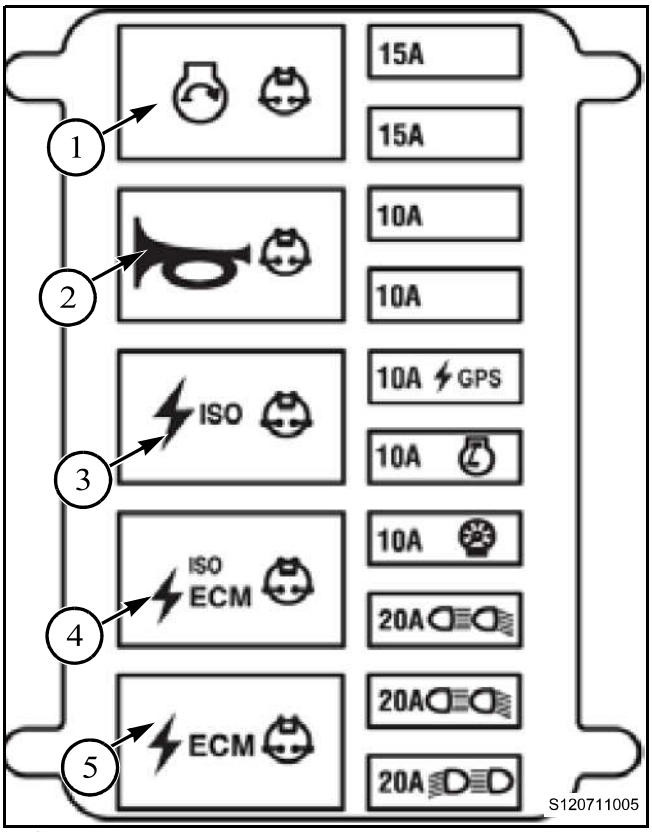


FIG. 57

FIG. 58: Fuse/Relay Block 2

Fuse/Relay Block 2 - ECU Relay Power		
Item	Fuse	Description
1	15 Amp	Not used
2	15 Amp	Not used
3	10 Amp	Not used
4	10 Amp	Not used
5	10 Amp	GPS
6	10 Amp	Armrest
7	10 Amp	Dash
8	20 Amp	Rear Light Module
9	20 Amp	Rear Light Module
10	20 Amp	Front Light Module

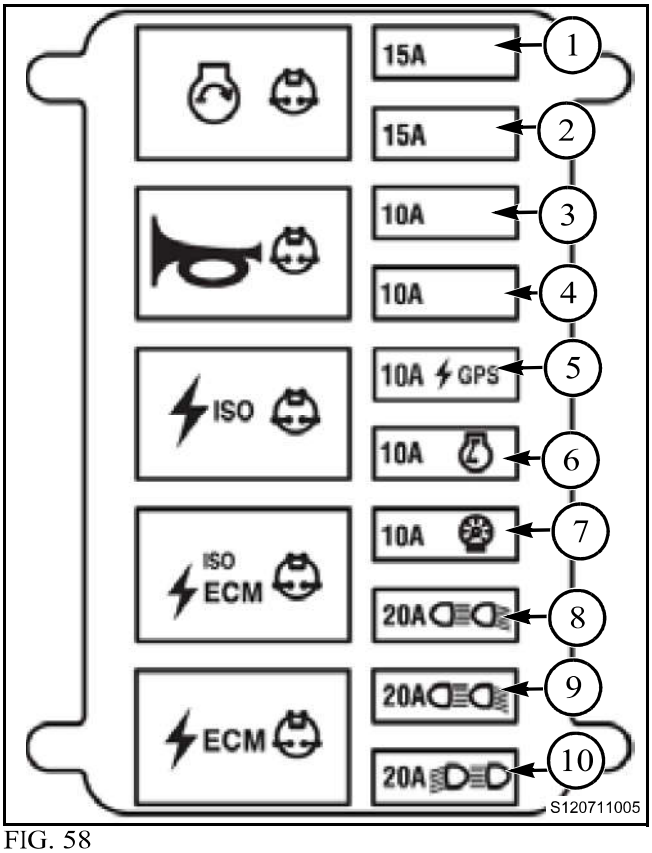


FIG. 58

FIG. 74: Remove bolts (1) and (2) to remove guard (3).

Attach a hose to the drain valve.

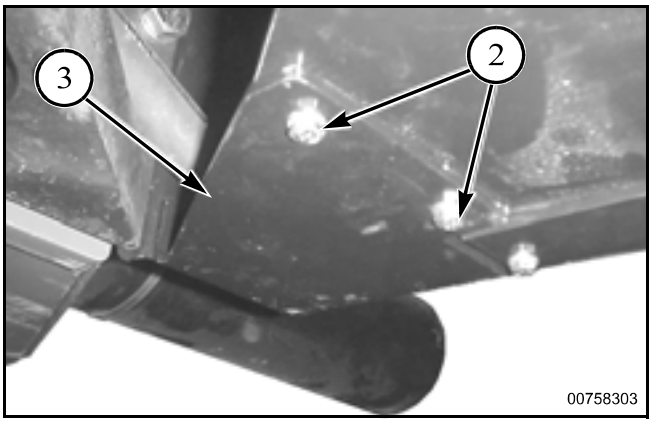


FIG. 74

FIG. 75: Open handle (4) on drain valve to allow water and sediment to drain into a suitable container.

Close drain valve when clean fuel appears.

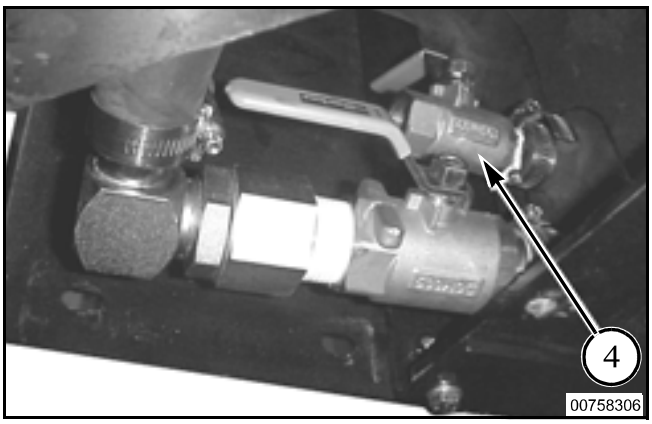


FIG. 75

Water Separator

FIG. 76: Check for water in water separator bowl (1).

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

Water separator bowl is located below primary fuel filter (3).

Open drain by 1/2 turn.

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

When all of the water is drained, close vent, if necessary. Then close drain.

Move drain hose back to original position.

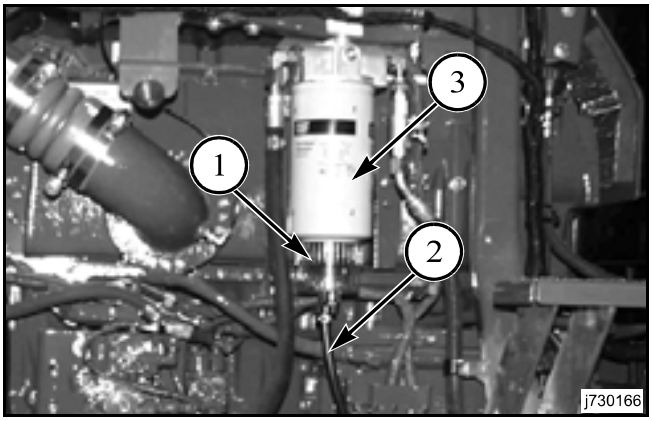


FIG. 76

FIG. 96: Continued.

7. Note: Perform the following steps to test for correct nitrogen pressure in accumulator. Complete the following steps whenever de tensioning the belt tensioner or servicing the belt tensioner.

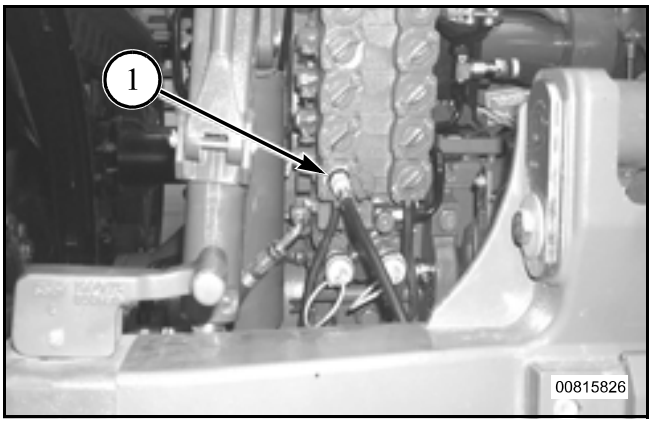


FIG. 96

FIG. 97: Continued.

8. Place hydraulic control lever in float position.
9. Open hand valve on belt tensioning hose group by a small amount to relieve hydraulic pressure from belt tensioner.
10. Watch pressure gauge closely. Observe when sudden decrease in hydraulic pressure occurs. The last pressure value that was observed before the sudden decrease indicated nitrogen pressure in accumulator. Nitrogen pressure should be between 15169 kPa (2200 psi) and 16547 kPa (2400 psi) at 20 degrees C 20 degrees Celsius (68 degrees F).

    Refer to pressure change tables in this section.

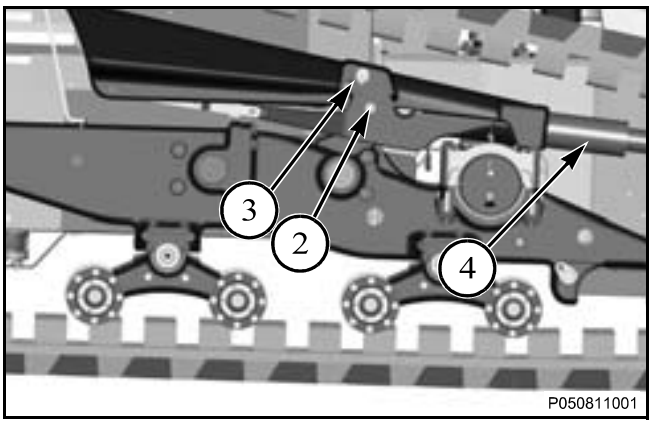


FIG. 97

FIG. 98: Continued.

11. A low nitrogen pressure may indicate that accumulator pre-charge is low, an accumulator is damaged, or that an accumulator is faulty. Consult dealer to service accumulator and also if needing to replace accumulator. Problem should be corrected before operating machine.
12. Run engine at low idle. Hold hydraulic control lever in extend position.

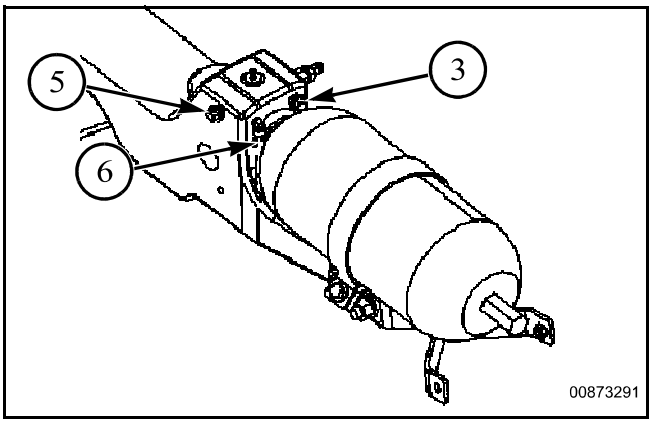


FIG. 98

HYDRAULIC SYSTEM

WARNING: Hot oil and components can cause personal injury. Don not allow hot oil or components to contact skin.

Filling and Checking Hydraulic System fluid

Cold Oil 50 degrees C (122 degrees F) or less)

FIG. 111: Make sure machine is parked on a flat level surface.

Before starting machine ensure that sight gauge is completely full of oil.

Start machine and run for five to ten minutes at low idle.

Raise three point hitch.

With engine still running oil level should fill bottom window (1) of sight glass.

If necessary, add hydraulic oil.

NOTE: 3.8 liter (1 gal) of hydraulic fluid added will raise level in sight glass 10 mm (.39 in).

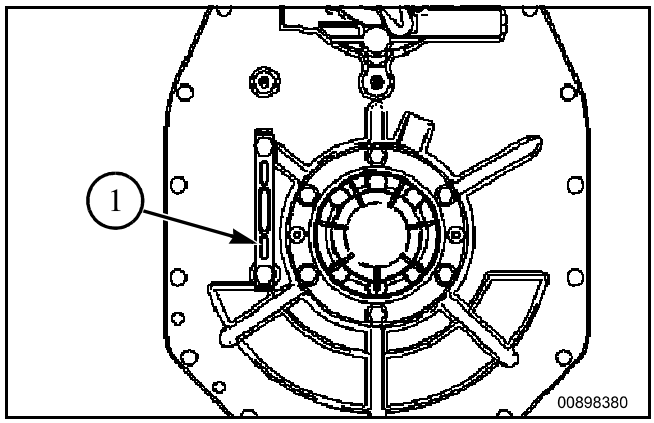


FIG. 111

Hot Oil 50 degrees C (122 degrees F) or more)

FIG. 112: Make sure machine is parked on a flat level surface.

Raise three point hitch.

With engine still running oil level should fill middle window (1) of sight glass.

If necessary, add hydraulic oil.

NOTE: 3.8 liter (1 gal) of hydraulic fluid added will raise level in sight glass 10 mm (.39 in).

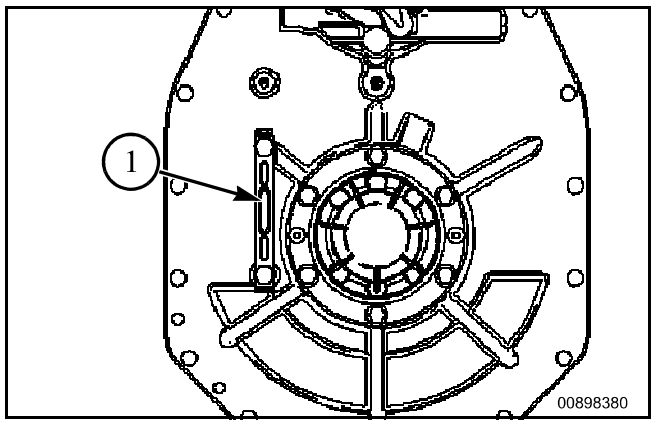


FIG. 112

HEATING AND AIR CONDITIONING

Problem	Cause	Solution
Dust enters cab	Poor seal on cab air filter element.	Check condition of seal.
	Cab air filter is plugged.	Clean cab air filter or replace cab air filter.
	Cab air filter is damaged.	Replace cab air filter.
	Air is leaking into cab.	Seal air leaks.
Airflow from fan is low	Cab air filter is plugged or recirculation filter is plugged.	Clean filters or replace filters.
	Heater core is plugged or evaporator core is plugged.	Clean cores.
Air conditioner does not cool	Temperature setpoint is adjusted too high.	Press temperature down button until achieving desired temperature setpoint
	Flow of air through air conditioner condenser is restricted.	Clean radiator screen, radiator, oil cooler, and air conditioner condenser.
	Belt for air conditioner compressor is slipping.	Check belt tension. If belt tension is low, check condition of belt and pulley.
	Heater control is turned on.	Turn temperature control counterclockwise for maximum cooling.
	Refrigerant is low.	Consult dealer.

ENGINE (CONT'D)

Problem	Cause	Solution
Engine emits too much blue smoke	Excess oil	Avoid overfilling engine. Determine cause. Drain excess oil.
	There is too much wear on valve guides.	Recondition cylinder head assembly.
	Piston rings are stuck or broken. Also, piston rings may be worn.	Consult dealer.
Engine emits too much gray smoke or engine emits too much black smoke	There is not enough air for combustion.	Consult dealer.
	A fuel injector is plugged or a fuel injector is leaking.	Replace fuel injector.
	Fuel setting is incorrect or injection timing is incorrect.	Consult dealer.
	Turbocharger has failed.	Consult dealer.

STEERING SYSTEM (CONT'D)

Problem	Cause	Solution
Turns are jerky or unstable	Crossover relief valve and pressure override relief valve in steering pump are malfunctioning.	Consult dealer.
	Electro-proportional control in steering pump is out of calibration.	Consult dealer.
Engine lugs more than normal when steering machine	Load on steering system exceeds capability of steering system.	Reduce load on steering system. Set drawbar and three-point hitch for side-to-side movement. Raise implement when turning machine. Use a series of small, quick turns to turn machine.
	Crossover relief valve and pressure override relief valve in steering pump are malfunctioning.	Consult dealer.
	Electro-proportional control in steering pump is malfunctioning.	Consult dealer.
	Steering pump is not stroking correctly.	Consult dealer.

SA	SPN	FMI	SPN Description	FMI Description
166	702	5	Auxiliary Valve Directional Solenoid	Open Circuit
170	702	5	Auxiliary Valve Directional Solenoid	Open Circuit
161	702	6	Auxiliary Valve Directional Solenoid	Shorted to Ground
162	702	6	Auxiliary Valve Directional Solenoid	Shorted to Ground
163	702	6	Auxiliary Valve Directional Solenoid	Shorted to Ground
164	702	6	Auxiliary Valve Directional Solenoid	Shorted to Ground
165	702	6	Auxiliary Valve Directional Solenoid	Shorted to Ground
166	702	6	Auxiliary Valve Directional Solenoid	Shorted to Ground
170	702	6	Auxiliary Valve Directional Solenoid	Shorted to Ground
0	723	8	Engine Speed Sensor #2	Abnormal Sensor Frequency
0	729	5	Engine Inlet Air Heater #1	Open Circuit
0	729	6	Engine Inlet Air Heater #1	Shorted to Ground
3	734	3	Transmission Clutch Solenoid #1	Shorted to High Source
3	734	5	Transmission Clutch Solenoid #1	Open Circuit
3	734	6	Transmission Clutch Solenoid #1	Shorted to Ground
3	735	3	Transmission Clutch Solenoid #2	Shorted to High Source
3	735	5	Transmission Clutch Solenoid #2	Open Circuit
3	735	6	Transmission Clutch Solenoid #2	Shorted to Ground
3	736	3	Transmission Clutch Solenoid #3	Shorted to High Source
3	736	5	Transmission Clutch Solenoid #3	Open Circuit
3	736	6	Transmission Clutch Solenoid #3	Shorted to Ground
3	737	3	Transmission Clutch Solenoid #4	Shorted to High Source
3	737	5	Transmission Clutch Solenoid #4	Open Circuit
3	737	6	Transmission Clutch Solenoid #4	Shorted to Ground
3	738	3	Transmission Clutch Solenoid #5	Shorted to High Source

SPECIFICATIONS

Contents

ACCESSORIES AND OPTIONS

Contents