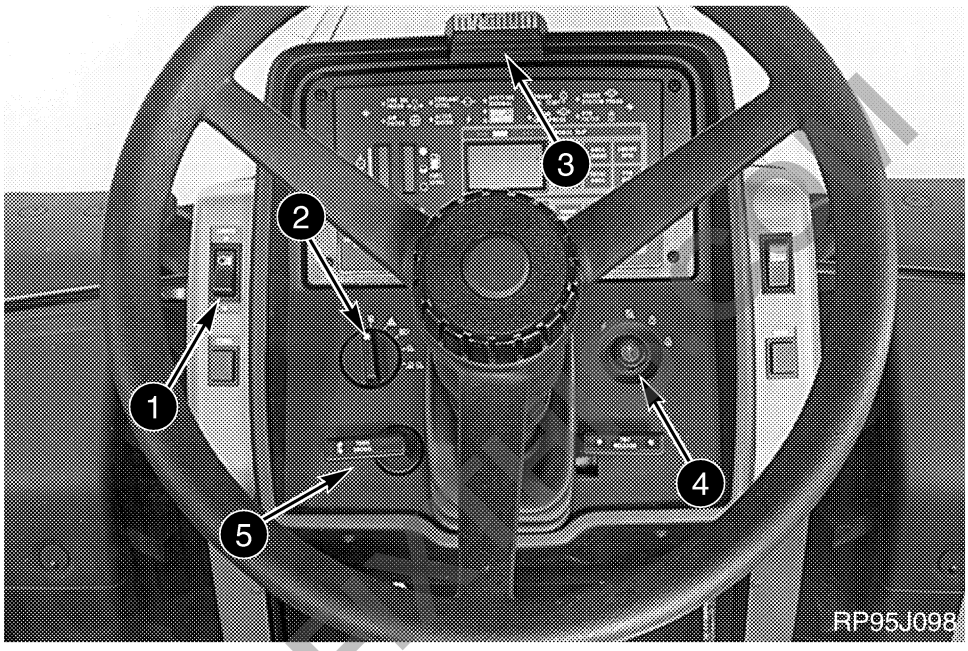
OPERATING CONTROLS

Instrument Panel



1. HI/LO LAMP SWITCH - Two position rocker switch. This switch will operate when the main lamp switch is in the second, third or fourth position.

   HI POSITION - High beam head lamps. Indicator lamp in switch will be illuminated.

   LO POSITION - Low beam head lamps.

2. LAMP SWITCH - Rotary switch described as follows:

   OFF POSITION - Switch knob is in vertical position. All lamps are OFF.

   ON POSITION - Switch knob is clockwise from OFF position. The various lamps will be illuminated as follows:

   First Position - Front and rear amber caution lamps (Road - Daytime).

   Second Position - Front and rear amber caution lamps, tail lamps, side console lamp and head lamps. The Hi/Lo switch can be used to select high or low beam head lamps (Road - Night).

   Third Position - Head lamps, front side work lamps, front lower work lamps, rear lower work lamps and side console lamp (Field).

   Fourth Position - Head lamps, front side work lamps, front lower work lamps, rear lower work lamps, side console lamp and front upper work lamps (Field).

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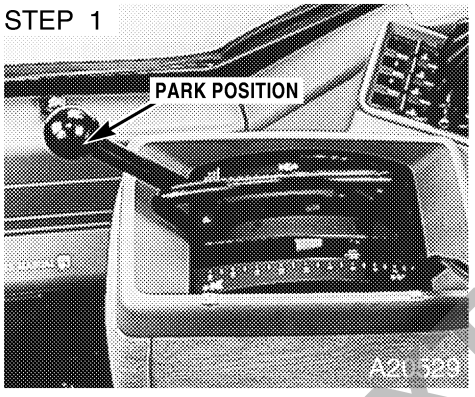
NORMAL STARTING PROCEDURE

IMPORTANT: *It is very important that enough lubricant reaches the turbocharger bearings and engine parts before operating the engine at rated speed*

WARNING: *Operate controls only when seated in the operators seat.*
M137A

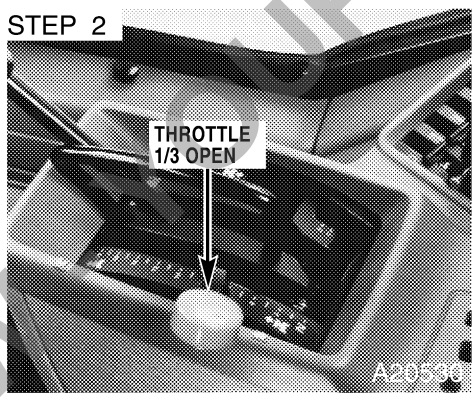
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STEP 1



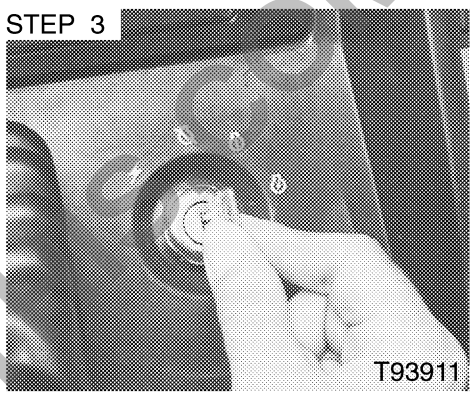
Put the transmission control lever in PARK position.

STEP 2



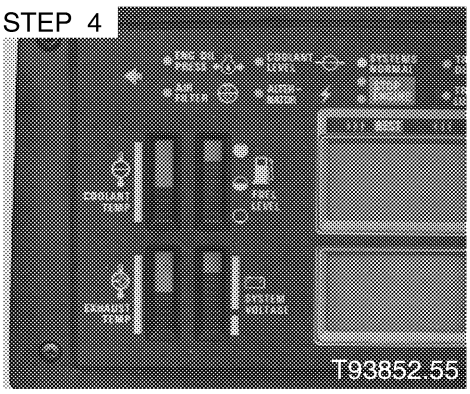
Move the throttle lever to 1/3 open position (1000 RPM maximum).

STEP 3



Turn key switch to START position until engine starts, but no more than 30 seconds, then release the key. Run engine for two minutes at 1000 RPM.

STEP 4



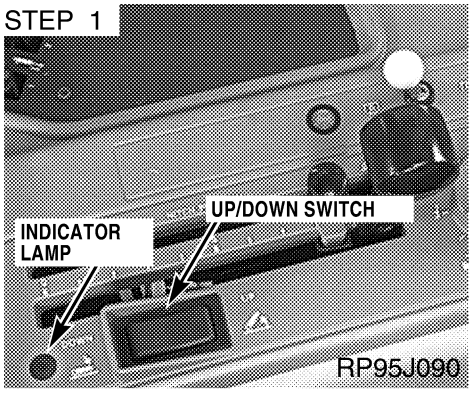
After engine starts and is warm, check that coolant temperature bar indicator is in green area and that all service monitors are giving normal indications.

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Operating in Position Control

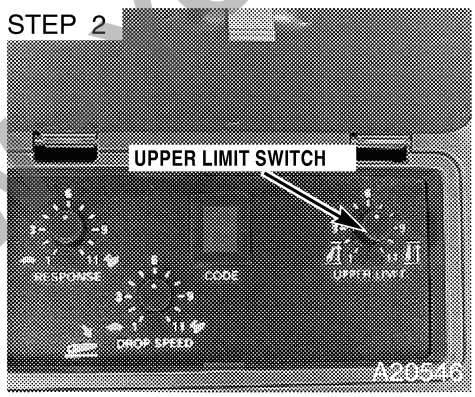
The tractor and implement must be operated in the field to select the correct position of the hitch. Do the following steps.

STEP 1



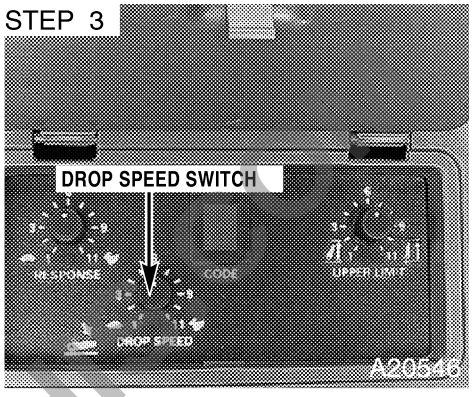
Set the Position Control Lever to the Transport Lockout Position and all control knobs to the maximum setting of “11” except the Drop Speed Control which should be set to “6” and the Upper Limit Control, which should be set to “1”. Set the UP/DOWN SWITCH in the DOWN position. If the enable or reset indicator lamp on the operators console flashes, move the HITCH POSITION CONTROL LEVER to match the actual hitch position.

STEP 2



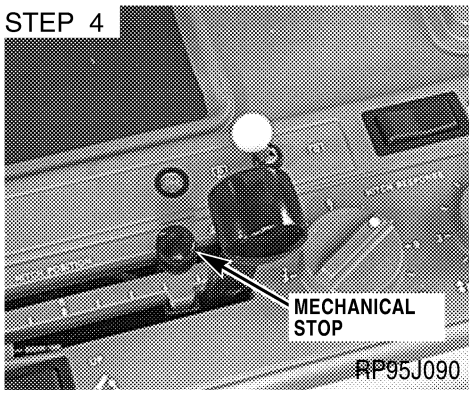
Adjust the UPPER LIMIT to set the desired hitch raised position. A setting of “11” corresponds to the hitch being fully up.

STEP 3



While lowering the hitch with the HITCH POSITION CONTROL LEVER, decrease the DROP SPEED until the implement drops at a desirable rate.

STEP 4



Operate the tractor and the implement in the field. Set the implement depth with the HITCH POSITION CONTROL LEVER. Move the mechanical stop against the front side of the lever, if desired. This will provide a reference point for returning the lever to the original implement depth position each time the lever is moved and to maintain the same depth.

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LUBRICATION/MAINTENANCE CHART

PAGE NO.	SERVICE POINTS	FREQUENCY IN HOURS				
		CLEAN	CHANGE	CHECK	GREASE	DRAIN
216	Engine Oil Level			10		
220	Coolant Reservoir			10		
241	Transmission Oil Level			10		
206	Grease Fittings				10	
226	Grille Screens, Radiator, Condenser, Oil Cooler	50				
154	Tire Pressures			50		
207	Grease Fittings				50	
230	Fuel Tank Water					50
259	Cab Air Filter	100				
	Wheel and Hub Bolt Torques (See Note A)			100		
248	Spark Arrestor Muffler (If Equipped)	250				
219	Engine Oil and Filter		250			
221	Radiator Coolant Level			250		
221	Coolant Hose Clamps			250		
235	Air Intake Hoses			250		
246	MFD Differential and Planetary Oil Level			250		
250	Compressor Belt Adjustment			250		
268	Battery Water Level			250		
230	Primary Fuel Filter Water					250
225	Coolant Filter		500			
231	Fuel Filters		500			
235	Aspirated Precleaner	1000				
244	Hydraulic Suction Screen	1000				
236	Primary and Secondary Air Filters		1000			
243	Transmission Oil and Filters		1000			
244	Hydraulic Breather		1000			
246	MFD Differential and Planetary Oil		1000			
222	Coolant Concentration			1000		
253	Engine Valve Adjustment			1000		
228	Fuel Injection Pump and Nozzles (See Note B)		2000			
	Fuel Injection Pump and Nozzles (See Note B)			2000		
	Crankshaft Torsional Damper (See Note B)			4000		
236	Primary Air Filter	AR		AR		
245	Accumulators (See Note B)			AR		

AR - As Required
NOTE A: See Page 176 and Pages 180 through 189.
NOTE B: See your dealer to have this service performed.

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DIESEL ENGINE

Type ..... Six Cylinder, Four Stroke Cycle, Turbocharged, Valve in Cylinder Head
Model 7240 - 7250 ..... Aftercooled
Firing Order 1-5-3-6-2-4
Bore ..... 114 mm
Stroke ..... 135 mm
Piston Displacement ..... 8.3 Litre
Compression Ratio
7230 - 7240 - 7250 Tractor ..... 16.5 to 1
Cylinder Sleeves ..... Wet Type, Can be Removed
Governor Engine Speed without Load ..... 2450 ± 80 RPM
Rated Engine Speed ..... 2200 RPM
Engine Idle Speed ..... 975 ± 50 RPM

Lubrication System

Oil Pressure ..... 43 to 54 PSI (296 to 372 kPa) with Engine Warm and Operating at Rated Speed
Type System ..... Constant Pressure and Spray with Piston Oil Cooling

Fuel System

Fuel Injection Pump
7230 Tractor..... Robert Bosch, Type MW
7240 Tractor..... Robert Bosch, Type MW
7250 Tractor..... Robert Bosch, P3000
Pump Timing ..... 0 Degrees (TC) Top Center
Fuel Injectors
Model 7230 ..... Stanadyne, 17 mm
Model 7240 - 7250 ..... Robert Bosch, 17 mm

Air Intake System

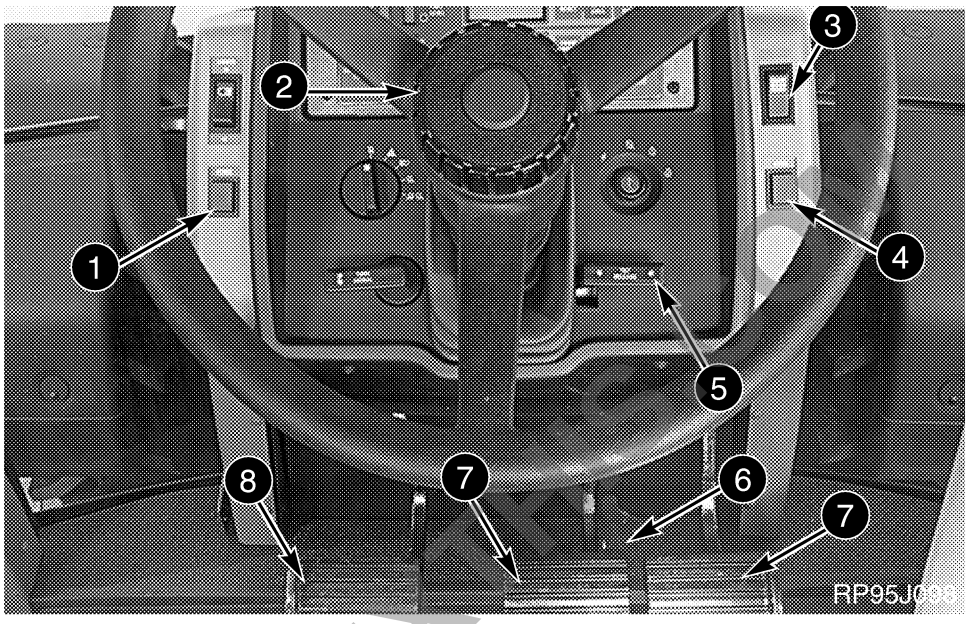
Type ..... Dry Type Air Induction System, Two Stage

Cooling System

Type ..... Pressure System, Thermostat Controlled Bypass, Impeller Type Pump
Radiator ..... Aluminum Furnace Brazed
Thermostats (2) ..... Starts to Open at Approximately 180˚F (83˚C) Fully Open at 203˚F (95˚C)
Pressure Cap ..... 15 PSI (103 kPa)
Fan Drive Type .....Viscous

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Instrument Panel and Foot Pedals



1. ETHER BUTTON - See Engine Starting Using Ether Starting Fluid, Page 60 for instructions.

2. TELESCOPIC STEERING COLUMN - To extend or retract the steering column in any tilt position, turn the lock knob counterclockwise to release the column. Move the column in or out to the needed position and then, turn the lock knob clockwise to keep the position.

3. AUTOMATIC SHUTDOWN OVERRIDE SWITCH - Two position rocker switch operates as follows:

   Push on the top half of the switch to activate the switch and override the automatic shutdown system. The top half of the switch will be illuminated when the switch is activated.

   Push on the bottom half of the switch to return the switch to normal operating position to reactivate the automatic shutdown system. The switch will not be illuminated.

   See AUTOMATIC SHUTDOWN SYSTEM, Page 15 for more information.

   IMPORTANT: *The override switch must manually be returned to the normal operating position to reactivate the Automatic Shutdown System*

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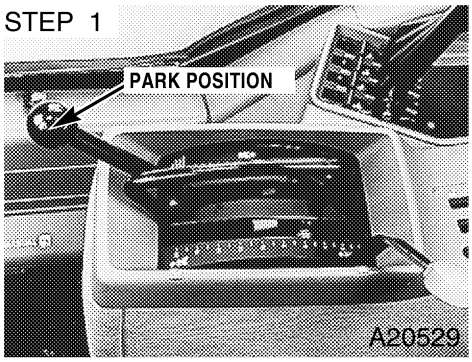
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Engine Starting Using Ether Starting Fluid

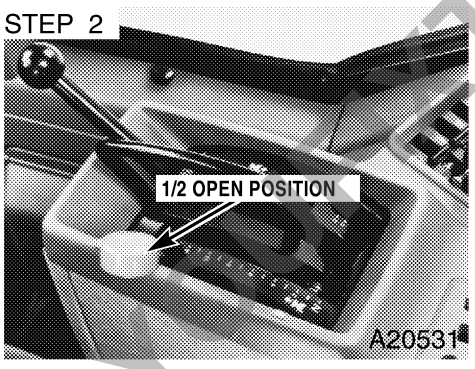
To start the diesel engine at temperatures of 20˚F (-6.7˚C) or lower, use ether starting fluid according to the following procedure.

STEP 1



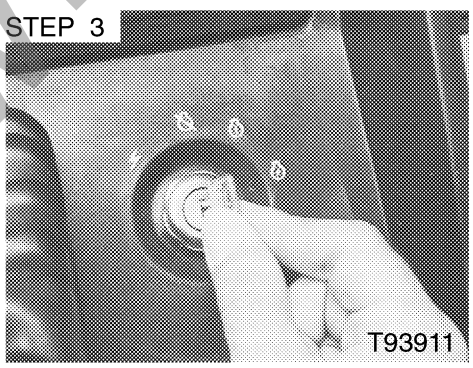
Put the transmission control lever in PARK position.

STEP 2



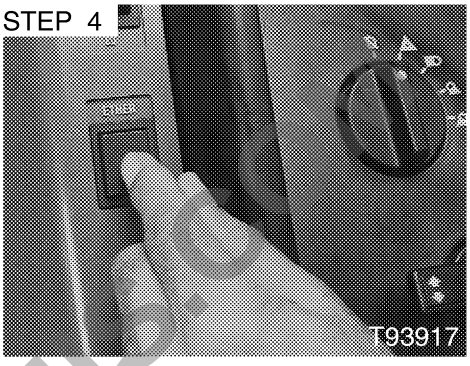
Set throttle lever 1/2 open position (1500 RPM maximum).

STEP 3



Turn key switch to START position.

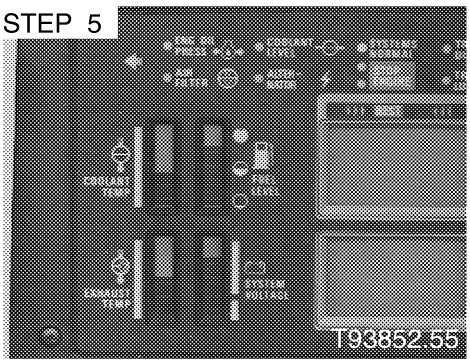
STEP 4



Push ether button for one to three seconds while cranking the engine for a maximum of 15 seconds.

NOTE: *If the engine fires, but does not start in the first 15 seconds, repeat Steps 3 and 4. If necessary, push the ether button a maximum of 5 seconds to keep the engine running. If the engine does not fire, check for an empty ether container*

STEP 5



After the engine starts and is warm, check that coolant bar indicator is in the green area and that all service monitors are giving normal indications.

IMPORTANT: *If bar indicators or service monitors do not give normal indications, stop the engine and check for cause.*

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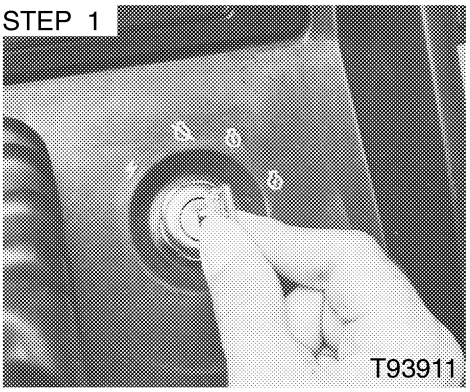
Programming Wheel Slip Bar Graph

Tractors must be equipped with True Ground Speed Sensor in order to calculate and display wheel slip.

The calibrate slip push button is used to calibrate the wheel speed signals from the tractor differential with the signals from the True Ground Speed Sensor. The calibration will set the Wheel Slip Bar Graph to zero wheel slip (all segments are OFF).

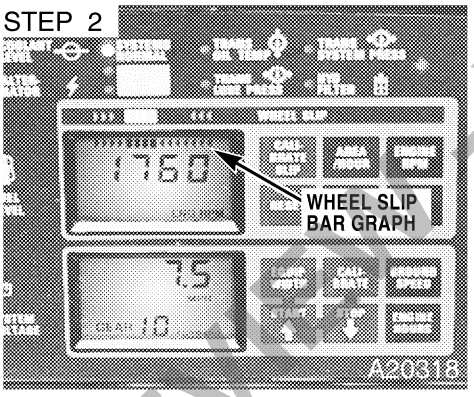
IMPORTANT: *This procedure establishes a zero wheel slip reference point from which actual wheel slip is calculated. DO NOT attempt to reduce wheel slip to zero during normal tractor operation.*

STEP 1



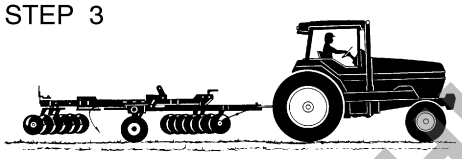
Turn the key switch to the START position and start the tractor.

STEP 2



If wheel slip has never been calibrated on your tractor, all wheel slip segments will be ON when the true ground speed sensor is operating and the tractor is operating at speeds greater than one (1) MPH.

STEP 3



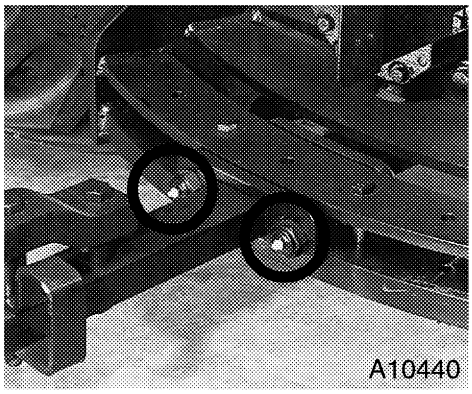
To calibrate the wheel slip bar graph for zero slip, start driving the tractor across the field with the implement raised in a NO LOAD condition. Drive the tractor at normal working speeds for a minimum of four (4) seconds.

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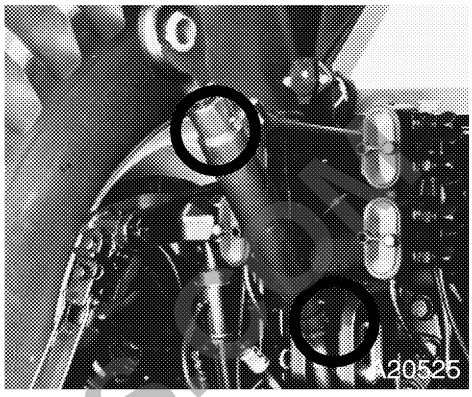
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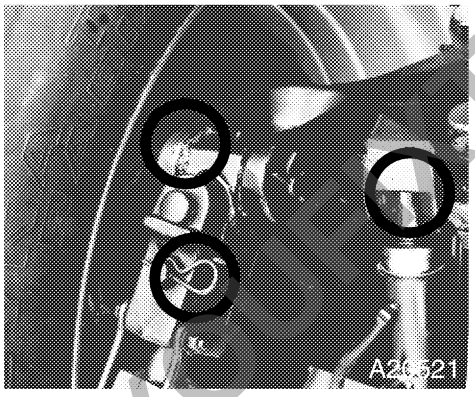
GREASE FITTINGS - 10 HOURS



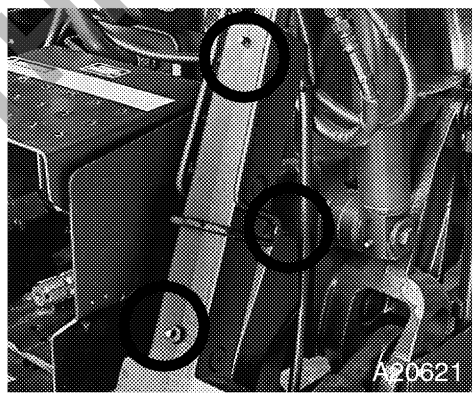
Drawbar Roller (If Equipped)



Top Lift Link

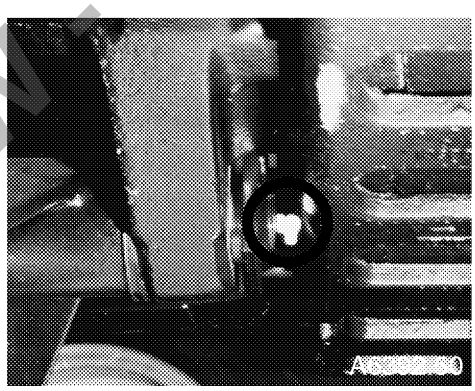


Lift Link Pin and Top Upper Lift Link and Upper Lift Cylinder Pin (3 each side)



Lift Link Center (2 each side)

NOTE: *Use Case 251EP Grease of Equivalent NLGI No. 2 Multi-Purpose Lithium EP Grease.*



Front Axle Pivot Pin (2 Fittings)

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POWER TRAIN

Transmission

Type ..... 18 Speed Full Power Shift with Hydraulically Actuated Clutches
Speed Selection ..... 18 Forward and 4 Reverse
Creeper Speed Selection (If Equipped) ..... 6 Forward and 2 Reverse
Shift Control ..... Actuated by Lever
Oil Cooler ..... Transmission, Hydraulic, Steering and Brake Fluid

Brakes

Type ..... Hydraulic, Power Assistance, Self-Adjusting, Multiple Wet Plate Type Differential Brakes

Axle Differential and Planetaries Mechanical Front Drive (MFD) (If Equipped)

Axle Type ..... Hypoid with Planetary Reduction in Hub, Electrically Controlled, Engaged with Spring Pressure Clutch, Disengaged Hydraulically
Interaxle Ratio -Front/Rear 1.3228

Park Lock System

Park Lock ..... Actuated by Transmission Control Lever

Differential Lock

Type ..... Electrically Controlled

Hydrostatic Power Steering

Type ..... Priority on Demand from Axial Piston Pump
Steering Pump ..... Hydrostatic Type
Steering Cylinder ..... Double Action Cylinder

Hitch System

Type of Sensing ..... Electronic Lower Link Sensor
Type Valve ..... Three Position - Lift, Hold and Lower
Type Draft Arms ..... Telescoping
Type Hitch ..... Three Point, Category III (Convertible to II or IIIN)
Lift Capacity at 24 Inch (610 mm) Behind Lift Point
- Model 7230 ..... 10,875 lb (4 930 kg)
- Model 7240 ..... 12,760 lb (5 788 kg)
- Model 7250 ..... 14,950 lb ((6 781 kg)

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⚠ Safety Rules ⚠

- Before starting the engine, be sure all operating controls are in neutral or park lock position. This will eliminate accidental movement of the machine or start up of power driven equipment. R106E

- Operate controls only when seated in the operators seat. R137A

- Securely fasten your seat belt. Your tractor is equipped with a ROPS cab or frame for your protection. The seat belt can help insure your safety if it is used and maintained. Never wear a seat belt loosely or with slack in the belt system. Never wear the belt in a twisted condition or pinched between the seat structural members. R271A

- A frequent cause of personal injury or death is persons falling off and being run over. Do not permit others to ride. Only one person - the operator - should be on the machine when it is in operation. R115B

- Before leaving the tractor, stop the engine, put all controls in NEUTRAL and put the transmission control lever in PARK position. R268A

- Stay off slopes too steep for safe operation. Shift down before you start up or down a hill with a heavy load. Avoid “free wheeling”. R123A

- Do not drive on roads, or at high speed anywhere, with the differential lock engaged. Difficult steering will occur, and can result in an accident. In field operation, use the differential lock for traction improvement, but release for turning at row ends. R116A

- Travel speed should be such that complete control and machine stability is maintained at all times. Where possible, avoid operating near ditches, embankments and holes. Reduce speed when turning, crossing slopes, and on rough, slick, or muddy surfaces. R109B

- Collision of high speed road traffic and slow moving machines can cause personal injury or death. On roads, use flasher/lights according to local laws. Keep SMV emblem visible. Pull over to let faster traffic pass. Slow down and signal before turning off. R110E

- Brake pedals must be locked together for road travel. This will insure uniform brake application and maximum stopping ability. R112A

- Make sure that the weight of a trailed vehicle that is not equipped with brakes, NEVER EXCEEDS the weight of the machine that is towing the vehicle. Stopping distance increases with increasing speed as the weight of the towed load increases, especially on hills and slopes. R114B

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