NOTE: *It is recommended to check the levels every morning, before you start your work day, so as to prevent the fluids dilation, and thus avoid misreading. If confirmation is required during the work day, let the unit cool off before checking.*

At the end of the work day, with the access provided by having the hood up, you can wash your unit and clean the radiator grill in order to keep your unit in top condition.

⚠ CAUTION ⚠

When maintaining the unit, prevent water from entering any of the systems.

When lowering the hood, make sure it locks into place, to prevent the unit from damage.

LUBRICATION AND MAINTENANCE CHART

The following chart relates all the routine lubrication and maintenance procedures. This is a quick-reference chart for servicing your tractor.

The symbol on the second column of the chart relates to the type of operation mentioned later in this section.

Hours Operated		Service Requirements	Check	Clean	Lube	Change	Adjust	Drain	Wash
Every 10 hours or daily		Engine oil level	X				X		
		Radiator and oil cooler (where fitted)	X	X					
		Radiator coolant level	X				X		
		Air –Filter		X					
When warning light glows		Pressures dual power	X				X		
		Pressure engine oil	X				X		
		Fuel filter/sediment separator						X	
		Dry air cleaner (where fitted)		X					
Every 50 hours		Clutch pedal free play	X				X		
		Fuel filter/sediment separator						X	
		Wheels and tires	X				X		
		Transmission/hydraulics rear axle oil level	X				X		
		Front axle differential oil level	X				X		
		Front axle hub oil level	X				X		
		All grease fittings			X				
Every 300 hours		Engine oil and filter				X			
	♦	Hydraulic oil and filter				X			
		Brakes	X				X		
		Safety frame bolts	X				X		
		Fan/alternator belt	X				X		
		Dry air cleaner outer element							X
Every 600 hours		Dry air cleaner outer element				X			
	#	Starter motor pinion	X	X	X				
		Front wheel bearing (two wheel drive)	X	X	X		X		
		Engine valve clearance	X				X		
		Fuel filter/sediment separator		X		X			
Every 1200 hours or annually		Fuel injectors	X	X			X		
	♣	Transmission/rear axle oil				X			
		Front axle differential oil				X			
		Front axle hub oil				X			
		Dry air cleaner inner element				X			
		Engine coolant				X			
As required		General Maintenance				X			

♦ Oil change intervals will be more frequent if the diesel fuel has a high sulphur content, if rape seed fuel is used or if the tractor is operated in extremely cold temperatures.

\# Frequency depends upon clutch usage.

♣ The first oil change is made after the first 300 hours, which is considered a honing period for your tractor. Should you not do it, wear can occur in the hydraulic pump.

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RECOMMENDED LUBRICANTS AND COOLANTS

Lubricant	Location Used	Type and Description	Part Number	Quart or Liter	Gallon or Tube
Oil	Engine and Pivot Points without Grease Fittings, Chains	SAE 30 API CF-2SJ	9613286	1Qt.	
		SAE 30 API CF-2SJ	9613289		2.5 Gal.
		SAE 30 API CF-2SJ	9613366*	4 L	
		5W-30 API SG/CD	9673589DS	1 Qt.	
		5W-30 API SG/CD	9624590*	4 L	
		10W-30 API SG/CD	9613313	1 Qt.	
		10W-30 API SG/CD	9613314		2.5 Gal.
		10W-30 API SG/CD	9673508DS		5 Gal.
		10W-30 API SG/CD	9613358*	1 L	
		10W-30 API SG/CD	9613359*	4 L	
		15W-40 API CF-4	9613290	1 Qt.	
		15W-40 API CF-4	9673730DS		1 Gal.
		15W-40 API CF-4	9613303		2.5 Gal.
		15W-40 API CF-4	9613292		5 Gal.
		15W-40 API CF-4	9613350*	1 L	
		15W-40 API CF-4	9613351*	4 L	
Coolant	Engine	ESE-M97B18-D, Ethylene Glycol New Holland Spec. Coolant Concentrate	FGCC2701DS		1 Gal.
		Propylene Glycol Concentrate	FGCC2711DS		1 Gal.
Hydraulic Oil	Hydraulic System, Hydrostatic System Front Axle Oil	134D – ESN-M2C134-D New Holland Spec. Hydraulic oil	9624450		2.5 Gal.
		134D – ESN-M2C134-D	9624451		5 Gal.
		134D – ESN-M2C134-D	9613367*	4 L	
		134D – ESN-M2C134-D	9624785*	10 L	
Hydraulic Oil	Optional, Multi-Seasonal Use, Recommended for Low Temperatures	F200	86523625DS	1 Qt.	
		F200	86523626DS		5 Gal.
		F200	86509446*	20 L	
Gear Oil	Gearboxes	80W90 EP Gear Oil API GL5	9613295	1 Qt.	
		80W90 EP Gear Oil API GL5	9613294		2.5 Gal.
		80W90 EP Gear Oil API GL5	9613375*	5 L	
		85W140 EP Gear Oil API GL5	9613297	1 Qt.	
		85W140 EP Gear Oil API GL5	9613296		2.5 Gal.
		85W140 EP Gear Oil API GL5	9613376*	4 L	
Grease	All Grease Fittings	Lithium base EP high temperature	9861804DS		Tube
		Lithium base EP high temperature	9861804CDS*		Tube
Brake Fluid		Mineral Based Oil	1QM6C34A or 86541699DS	1 Qt.	

**** NOTE:** Canada Part Numbers ONLY.*

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STARTING THE ENGINE

⚠ WARNING ⚠

Your tractor is equipped with the Thermostart cold weather starting aid. Do not use ether with Thermostart installed. If in an emergency, it is necessary to use ether. Disconnect the lead from the Thermostart heating element at the front of the intake manifold and insulate the free end of the wire.

The Thermostart, which is effective in ambient temperatures down to 18° C (0° F), consists of a heating element installed in the inlet manifold. When operated by the key-start switch, the Thermostart will ignite fuel in the manifold, heating intake air prior to it being drawn into the combustion chamber.

If temperatures below 18° C (0° F) are encountered, a coolant immersion heater is available as an accessory. The coolant immersion heater is effective in ambient temperatures down to 29° C (-20° F) when used in conjunction with Thermostart.

A five-position key-start switch is installed, as shown in Figure 9. The key-start switch is used to turn on accessories, to activate the warning lights and instruments and actuate the Thermostart and starting motor.

IMPORTANT: *Never push or tow the tractor to jump-start the engine. Doing so may overstress or damage the drive train.*

NOTE: *A neutral start switch will prevent operation of the starting motor unless the transmission range lever is in the neutral position (N).*

Before starting the engine, always carry out the following procedure:

- Sit in the driver's seat.
- Ensure that the parking brake is firmly applied.
- Ensure that both gearshift levers are in neutral and that the PTO lever is in the disengaged position.
- Place the remote control valve levers (where fitted) in the neutral position.
- Move the hydraulic lift control lever fully forward.

⚠ WARNING ⚠

Check the area beneath the equipment to ensure that no injury or damage will be caused when equipment is lowered.

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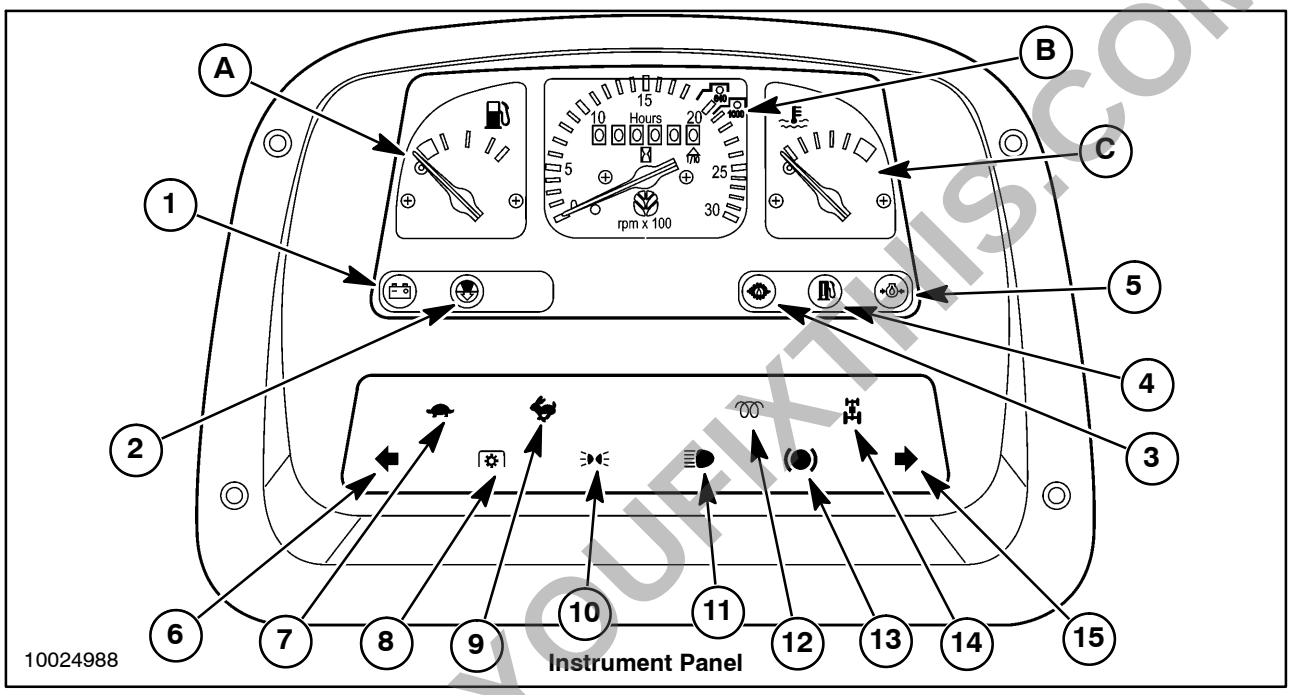
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INSTRUMENT PANEL - GAUGES AND WARNING LIGHTS

General

The instrument panel, Figure 3, comprises of three gauges and fifteen colored lights which provide operating information or give warning of system malfunction.

The instruments are illuminated when the tractor lights are turned on.



Instrument Panel

3

Fuel Gauge (A)

The gauge (A) indicates the level of fuel in the tank and is only operative with the key-start switch turned on.

Proof meter (B)

The proof meter (B) consists of tachometer and hour meter. The tachometer indicates engine revolutions per minute. Each division on the scale represents 100 rev/min., therefore with the needle indicating '20' the engine is running at 2000 rev/min.

A PTO symbol on the tachometer scale indicates the engine speed at which the standard PTO speed of 540 rev/min. is obtained.

The proof meter also records the total number of hours that the tractor has operated. The hours recorded should be used as a guide to determine hourly servicing intervals. (See Section 2 - "Lubrication and Maintenance" of this Manual).

Engine Coolant Temperature Gauge (C)

The gauge (C) indicates the temperature of the engine coolant. If the needle enters the red section of the gauge while the engine is running, stop the engine and investigate the cause.

NOTE: *When the key-start switch is turned off, the gauge needle will assume a random position.*

Alternator Charge Warning Light (1)

Located on the second line of indicators (1), that act as a warning light. The light is red when actuated and it tells you that the alternator charge is malfunctioning; it is necessary to take your unit to the authorized dealer to be repaired.

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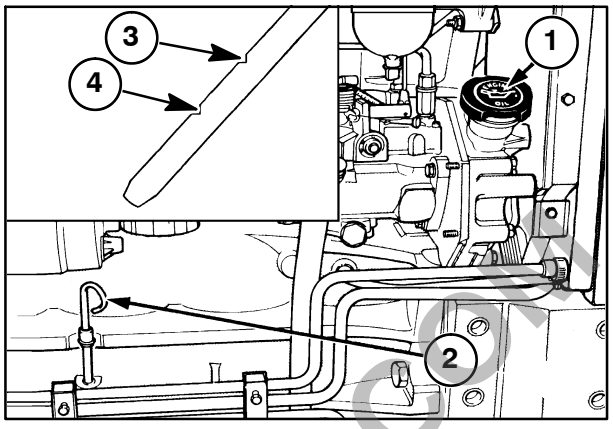
EVERY 10 HOURS OR DAILY (WHICHEVER OCCURS FIRST)

Carry Out the Following Checks

CHECK ENGINE OIL LEVEL

See Figure 2.

Before checking the oil level, stop the engine and wait for a short period to allow the oil drain back into the sump.



2

Figure 2 - Engine (Right-Hand Side)

1. Engine filing cap
2. Oil level dipstick
3. Oil MAX. level
4. Oil MIN. level (danger)

Check the oil level by means of the dipstick. If necessary, remove the filler cap and top up with fresh oil so the level is between the “MIN.” and “MAX.” marks on the dipstick. To increase engine oil level from the “MIN.” mark to the “MAX.” mark requires approximately 1.8 litres (3.0 Imp. Pints, 3.6 U.S. pints) in 4-cylinder models.

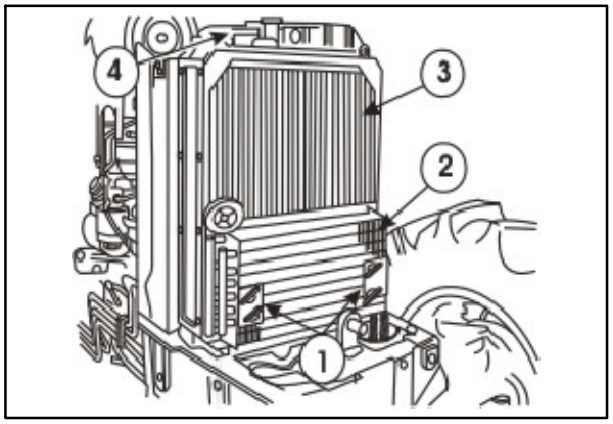
Do not fill above the upper line of the hatched area. Excessive oil will be burned off within a short time and give a false impression of oil consumption

Oil Specification: See Engine Oil and Filter later in this section.

RADIATOR AND OIL COOLER

See Figures 3 and 4.

For improved access, the oil cooler may be removed from the operating position after removal of the four retaining thumbscrews. Remove and support the coolant recovery bottle, if necessary.



3

Figure 3 - Radiator

1. Thumbscrews (oil cooler)
2. Oil cooler
3. Engine coolant radiator
4. Radiator pressure cap

With the engine cool, check to see that the level of coolant is between the MIN. & MAX. marks on the bottle. If necessary, fill to the correct level through the cap (1) Figure 4 on the recovery bottle, with the specified coolant.

NOTE: *The radiator pressure cap should not be used for topping-up purposes.*

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GENERAL DIMENSIONS (2WD)	mm/in.	TB100	TB110	TB120
Height to top of roll bar (2-post ROPS)	mm	2591	2642	2654
	in.	102.0	104	104.5
Height to top of exhaust	mm	2591	2642	2692
	in.	102.0	104	106.0
Height to of hood	mm	1702	1753	1778
	in.	67.0	69.0	70.0
Crop clearance under front axle	mm	457	507	508
	in.	18.0	20.0	20.0
Crop ground clearance front axle	mm	406	457	457
	in.	16.0	18.0	18.0
Minimum ground clearance (under drawbar)	mm	444	457	457
	in.	17.5	18.0	18.0
Minimum width (at minimum track)	mm	1524	1524	1524
	in.	60.0	60.0	60.0
Maximum width (at maximum track)	mm	2032	2032	2032
	in.	80.0	80.0	80.0
Overall length (to end of lower links)	mm	3734	3734	3797
	in.	147.0	147.0	149.5
Wheelbase	mm	2286	2286	2527
	in.	90.0	90.0	99.5
Minimum turning radius	mm	3098	3590	4410
	in.	122	142	174.0

*Without brakes

		TB100	TB110	TB120
The Above Dimensions are Based on Standard Tractors With Tires as Shown:	Front	7.50 x 16	10.0 x 16	10.0 x 16
	Rear	15.5 x 38	18.4 x 34	18.4 x 34

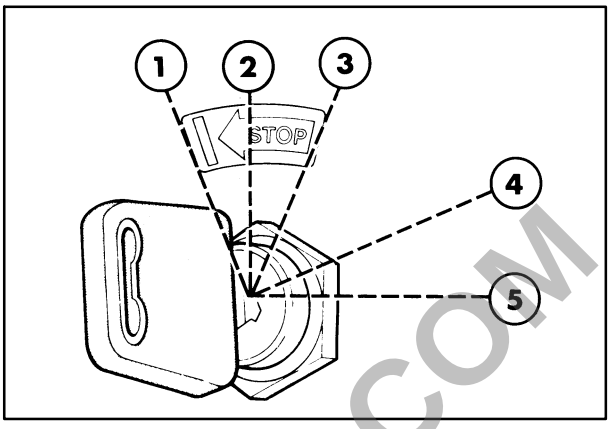
NOTE: *If your tractor has tires of a different size then the above dimensions will vary due to the difference in the rolling radius and section width of the tires fitted.*

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Starting in Warm Weather or When the Engine is Hot

- Open the hand throttle halfway, depress the clutch and turn the key-start switch fully clockwise to position (5) to operate the starting motor. Crank the engine until it starts but do not operate the starting motor for more than 60 seconds. When the engine fires, allow the key to return to position (3).



9

Figure 9 - At Key - Start Switch

1. Electrical equipment off
2. Accessories on
3. Warning lights and instruments on
4. Thermostart heater activated
5. Starting motor operates

NOTE: *Once the starting motor has been operated, it is necessary to return the key-start switch back to the 'OFF' position before the starting motor can be re-activated.*

- Return the throttle to the idle position and check that all warning lights extinguish and gauge reading are normal.

Starting in Cold Weather - Below 4° C (40° F) with a Cold Engine

- Open the hand throttle fully and turn the key start switch clockwise to position (4). (In this position, the warning lights on the instrument panel will go out). Hold for 30 seconds, then turn the key fully clockwise to position (5) to activate the starter motor. Crank the engine until it starts but do not operate the starting motor for more than 60 seconds. When the engine fires, allow the key to return to position (3).
- If the engine fails to start, repeat the foregoing procedure activating the Thermostart and operating the starting motor for up to 60 seconds. If the engine still fails to start, allow the battery to recover for 4 - 5 minutes then repeat the procedure.
- When the engine starts, return the throttle to the idle position and check that all warning lights extinguish and gauge readings are normal.

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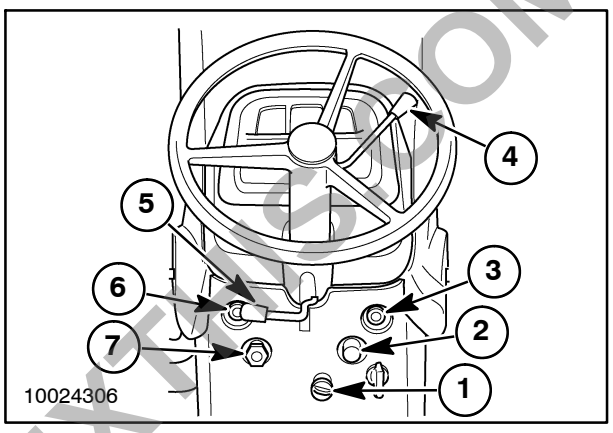
HAND CONTROLS AND SWITCHES

Hand Throttle Lever

The hand throttle lever, located behind the driving wheel, on the right-hand side (4), has a concentric pivot linkage system on the steering column, which can be adjusted to the minimum (750±50) and maximum (2320) RPM of the engine. See Figure 4.

Steering Wheel Positioning Lever

The steering wheel positioning lever is located under the steering wheel, on the left-hand side (5) Figure 4. By means of it, the steering wheel can be adjusted to the position that is most comfortable to the operator. To adjust steering wheel position, press lever with the left-hand and move the steering wheel (up or down).



4

Figure 4 - Hand Controls and Switches

1. Cigarette lighter
2. Hazard Flasher
3. Starter switch
4. Hand throttle lever
5. Driving wheel positioning lever
6. Turn signal switch
7. Tractor light switch and horn

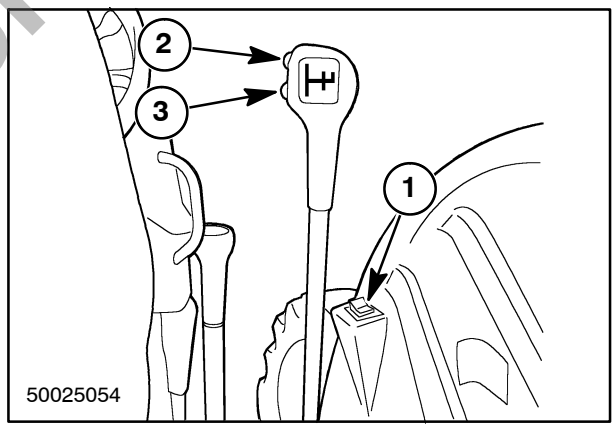
4 WD Switch (where installed)

It is located on the right-hand fender (1) Figure 17. The 4WD is activated by rotating the rocker switch to the forward position. When 4WD is engaged, the indicator light in the 4WD switch and in the instrument panel is illuminated.

When 4WD rocker switch is rotated backwards, 4WD is disengaged and the indicator lights are turned off.

⚠ CAUTION ⚠

When you drive your unit on a road, always disengage the 4 wheel drive to prevent tire wear and drive line wrap-up.



5

Dual Power Switch (where installed)

The dual power switches are located on the gear shift lever. By pressing the top switch (2) (rabbit), Dual Power is turned off and the rabbit symbol indicator light on the instrument panel is illuminated.

Pressing the bottom switch (3) (turtle), Dual Power is activated and the turtle symbol indicator light on the instrument panel is illuminated.

⚠ CAUTION ⚠

For no reason should you attempt to start the engine by pushing or towing the tractor. The reason for this is that the pump will not be lubricating the Dual Power and severe damage can be caused.

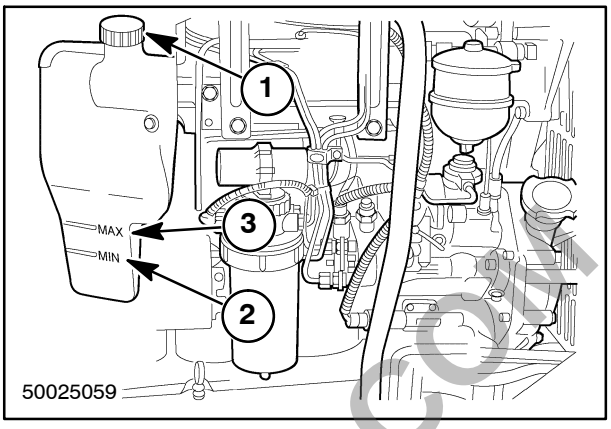
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⚠ WARNING ⚠

The cooling system operates under pressure which is controlled by the radiator pressure cap. It is dangerous to remove the cap while the system is hot. Allow the system to cool, then use a thick cloth and turn the radiator cap slowly to the first stop and allow the pressure to escape before fully removing the cap. Coolant should be kept off the skin. Adhere to the precautions outlined.

Peak power operation, followed by a rapid reduction in power requirement and engine speed, may cause the coolant to boil and be expelled from the radiator overflow tube. Normally, this loss of coolant is small and of little consequence, but repeated occurrence can significantly lower the coolant level and necessitate topping up.



4

Figure 4 - Coolant Recovery System

1. Coolant recovery bottle filler cap
2. MIN. level mark
3. MAX. level mark

NOTE: *Always use the specified anti-freeze as it is designed to prevent cavitation and extend the life of the engine.*

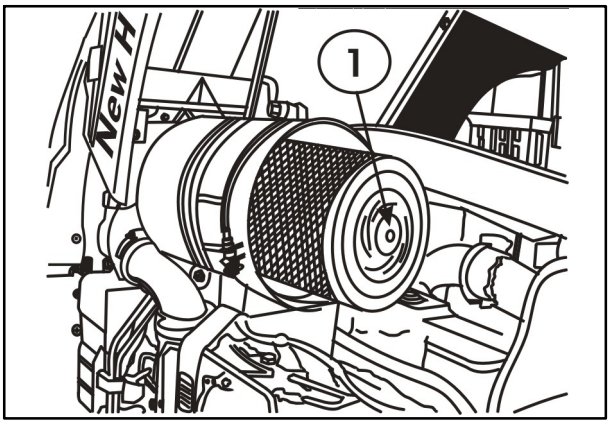
Clean the radiator and oil cooler fins with compressed air not exceeding 7 bar (100 PSI). Fins blocked with oily substances may be cleaned with a detergent solution, preferably applied with a high pressure washer.

Coolant Specification: See the Lubrication and Coolant chart in Section 3 –"Specifications".

SERVICING THE DRY AIR CLEANER

See Figures 5, 6, 7, 8 and 9.

The function of the air cleaner is to remove impurities from the air but at the same time allow sufficient volume of air to enter the engine and ensure complete combustion of the fuel.



5

Figure 5 - Air Filter

1. Outer element

The air cleaner will only fulfill this function if it is correctly and regularly maintained. A poorly maintained air cleaner will mean loss of power, excessive fuel consumption and a reduction in engine life.

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TRACTOR WEIGHT (2WD)	kg/lbs.	TB100	TB110	TB120
On front axle	kg	1342	1342	1442
	lbs.	2959	2959	3179
On rear axle	kg	1880	1880	1980
	lbs.	4145	4145	4365
Total (with fuel, oil and coolant)	kg	3222	3222	4034
	lbs.	7103	7103	8893
TRACTOR WEIGHT (4WD)				
On front axle	kg	1462	1462	1588
	lbs.	3223	3223	3501
On rear axle	kg	2110	2110	2155
	lbs.	4652	4652	4751
Total (with fuel, oil and coolant)	kg	3572	3572	4355
	lbs.	7875	7875	9601

The above weight are based on standards production tractors with full fuel tank, but without driver, ballast or additional equipment.

Add the following weights if your tractor has any of the following features:

		TB100	TB110	TB120
Number of front end weights		8	10	12
	kg	248	310	248
	lbs.	547	684	547
Number of rear end weights				
	kg			
	lbs.			

ENGINE		TB100	TB110	TB120
Number of cylinders		4	4	6
Bore	mm	111.8		
	in.	4.4		
Stroke	mm	127.0		
	in.	5.0		
Displacement	cm^3	4987		7480
	$in.^3$	304		456
Compression ratio		17.5:1		
Firing order		1-3-4-2		1-5-3-6-2-4
Idle speed	rpm	750 ± 50		
Maximum no-load speed	rpm	2320 ± 50		
Rated speed	rpm	2170	2070	

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TURNING THE ENGINE OFF

In order to turn the engine off, proceed as follows:

- Sit on the tractor seat.
- Put the accelerator pedal to minimum.
- Check to see that the parking brake latch is engaged and the brakes applied.
- Check to see that both gear shift levers are in neutral and the PTO is disengaged.
- Turn the key to the OFF position.
- Put remote control valve levers (where mounted) in the neutral position.
- Put the lift control lever in the arms-down position in order to lower the implement to the ground.

⚠ CAUTION ⚠

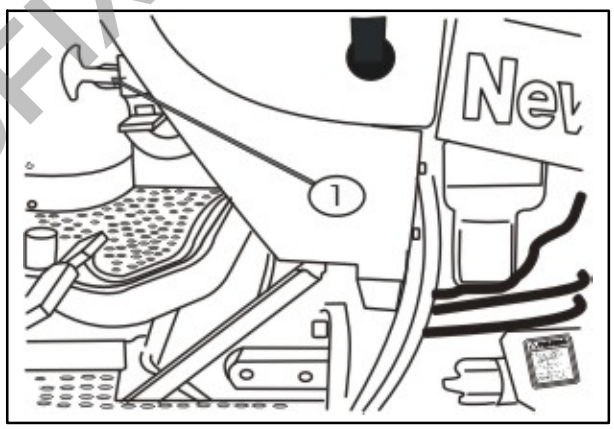
Watch around the implement as you lower it, to see that nobody gets hurt.

PARKING BRAKE AND FOOT CONTROLS

Parking Brake

The standard parking brake is a latch in the form of a T-handle (1), Figure 11, which is used to secure the foot brakes in the applied position.

To operate the latch, lock the foot brakes together, pull up the latch and rotate one quarter turn. Apply the foot brakes, which will lock in the applied position.



11

Figure 11 - Parking Brake

1. Parking brake latch

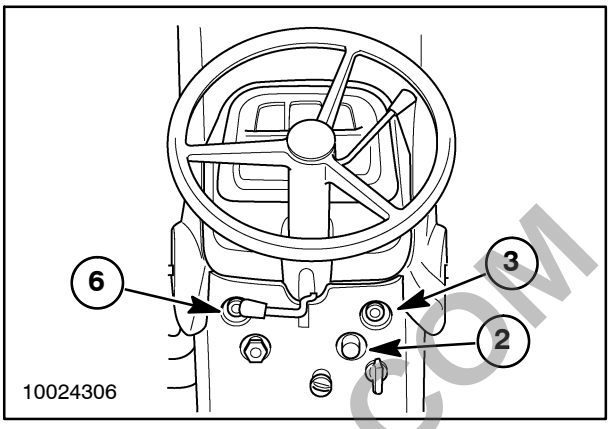
To free the parking brake, rotate the latch one quarter turn and release. Momentarily depress the foot brakes to disengage the ratchet.

IMPORTANT: *Ensure that the parking brake is fully released before driving off.*

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Turn Signal Lights
The switch (6) is located on the lower part of the console, on the left-hand side. It is a three position rocker switch. Left for a left turn, right for a right turn. Center position is off. It also has indicator lights on the instrument panel.



6

Key Start
The starter switch (3) actuates the cold start and the starter motor; it has five positions. See “STARTING THE ENGINE” later in this section.

Lights Switch
The lights knob (7) has five positions, actuated clockwise as follows:

First - Parking lights on

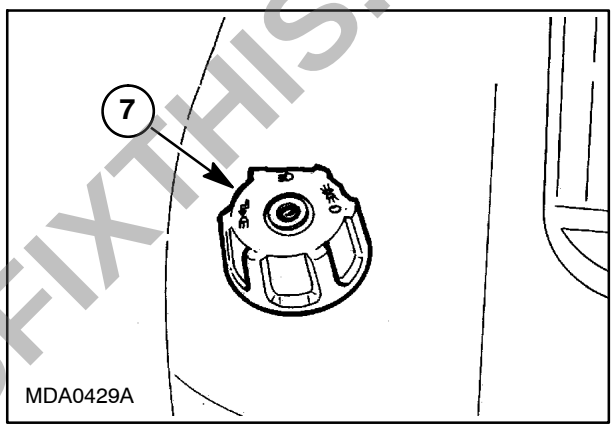
Second - System off

Third - Parking lights on

Fourth - Low Beam

Fifth - High Beam

Sixth (pressed) - Press the knob in to activate the horn. The knob can be pressed and the horn activated in any position.



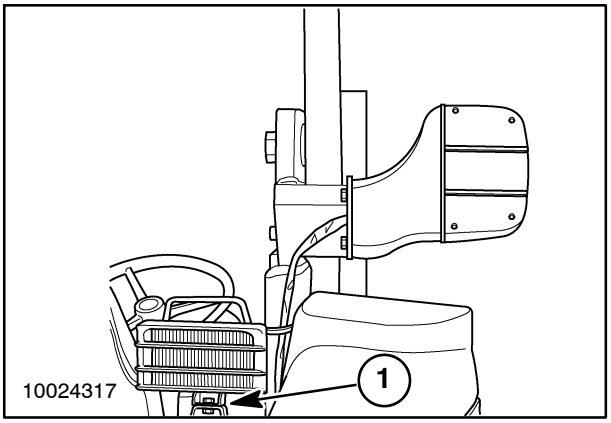
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Hazard Flasher
The hazard flasher switch (2), Figure 6, is a red button located under the console, which has the international symbol for hazard. When pushed once, the flasher is turned on, and when pushed a second time the flasher is turned off. It also has an indicator light which flashes when in the “ON” position.

Work Lamp
The switch for the work lamp is located on the lower part of the lamp assembly (1).

NOTE: *The work lamp only operates when the tractor lights are on.*

NOTE: *Work lamps projecting towards the rear of the tractor must not be illuminated during highway travel.*



8

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