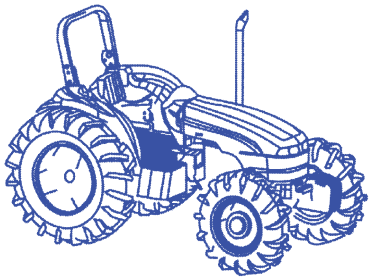
NEW HOLLAND

TB100
TB110
TB120

OPERATOR'S MANUAL



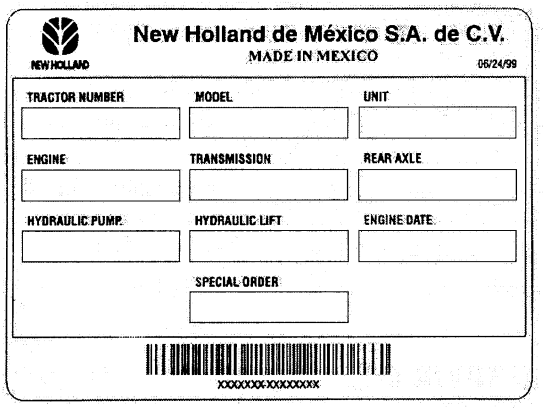
NEW HOLLAND

87039953 10/03
82987580

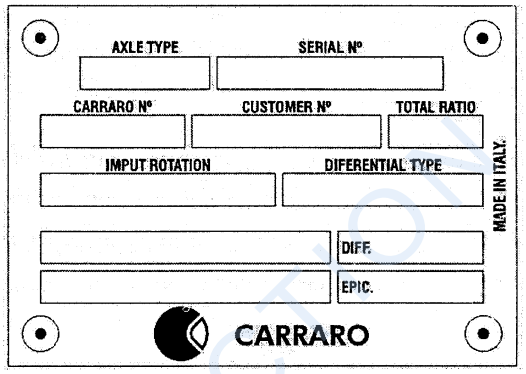
IDENTIFICATION DECALS

A vehicle identification plate is located under the tractor hood. In addition, if your tractor is equipped with optional four wheel drive, a similar plate is affixed to the rear surface of the front axle housing.

For convenience, the numbers shown on the plates should be recorded and given to your authorized New Holland dealer in the event the tractor requires service.



Vehicle Identification Plate



Front Axle Identification Plate

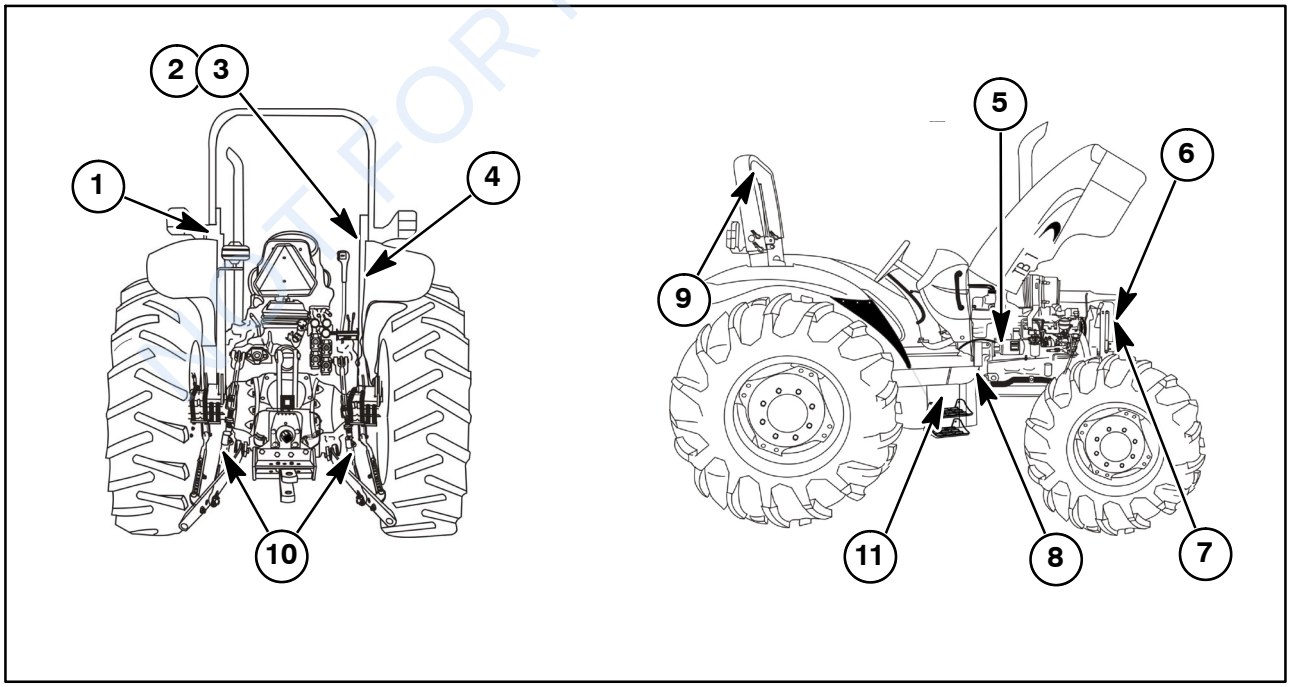
20024998

SAFETY DECALS

(North America Only)

The following safety decals have been placed on your machine in the areas indicated. They are intended for your personal safety and for those working with you. Please take this manual and walk around your machine to note the content and location of these warning signs. Review these warning signs and the operating instructions detailed in this manual with your machine operators.

Keep the decals legible. If they are not, obtain replacements from your authorized dealer. The decal replacement part numbers are listed with each decal.



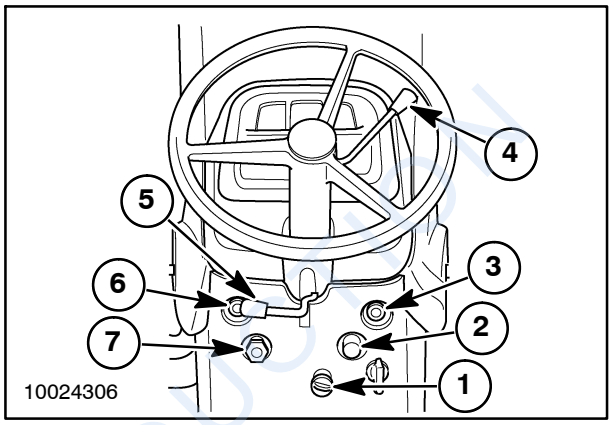
HAND CONTROLS AND SWITCHES

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

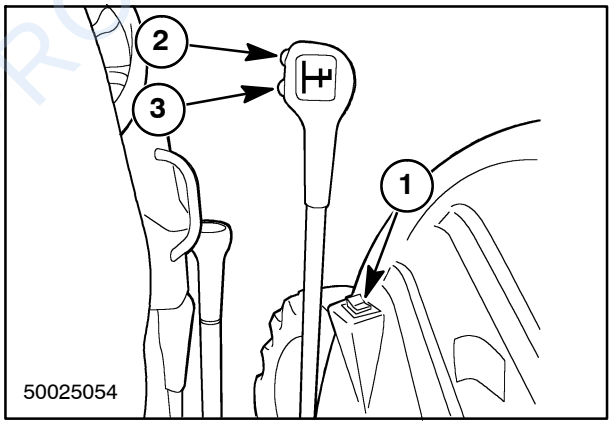
4 WD Switch (where installed)

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.

RUNNING-IN (BREAK-IN) PROCEDURE

Your new New Holland tractor will provide long and dependable service if given proper care during the 50 hour running-in period and if serviced at the recommended intervals.

Avoid overloading the engine. Operating in too high a gear under heavy load may cause excessive engine overloading. Overloading occurs when the engine will not respond to throttle increase.

Do not operate without a load on the engine. This can be as harmful to the engine as overloading. Vary the type of operation undertaken so that the engine is subjected to heavy as well as light loads during the running-in period.

Use the lower gear ratios when pulling heavy loads and avoid continuous operation at constant engine speeds. Operating the tractor in too low a gear with a light load and high engine speed will waste fuel. You will save fuel and minimize engine wear by selecting the correct gear ratio for each particular operation.

Check the instruments frequently and keep the radiator and various oil reservoirs filled to the recommended levels.

DRIVING THE TRACTOR

WARNING

Observe the following precautions when driving the tractor.

- Watch where you are going - especially at row ends, on roads and around trees.
- Use extreme caution when operating on steep slopes.
- Keep the tractor in gear when going down hill. Use a low gear to maintain control with minimum braking.
- If the tractor is stuck, reverse out to prevent overturning the unit.
- Always use the drawbar or lower links in the lowered position for pull-type work. Do not pull from any other part of the tractor since it may tip backward.
- When driving on public roads, have consideration for other road users. Pull in to the side of the road so that any following traffic may pass.
- Dip the tractor headlights when meeting a vehicle on the highway at night. Keep the lights adjusted so they do not blind the operator of an oncoming vehicle.
- Engage the clutch slowly when driving out of a ditch, gully or up a steep hillside. Disengage the clutch promptly if the front wheels rise off the ground.
- Reduce speed before turning or applying the brakes. Lock the brake pedals together when traveling at high speed or on the highway so that both wheels are braked simultaneously when making an emergency stop.
- Never apply the differential lock during hard application of the tractor brakes when pulling heavy, towed loads at road speeds.
- Towed loads that weigh more than the weight of the tractor should have brakes for safe operation. Ensure compliance with local regulations.
- Always sit in the driver's seat while starting or driving the tractor.

⚠ WARNING ⚠

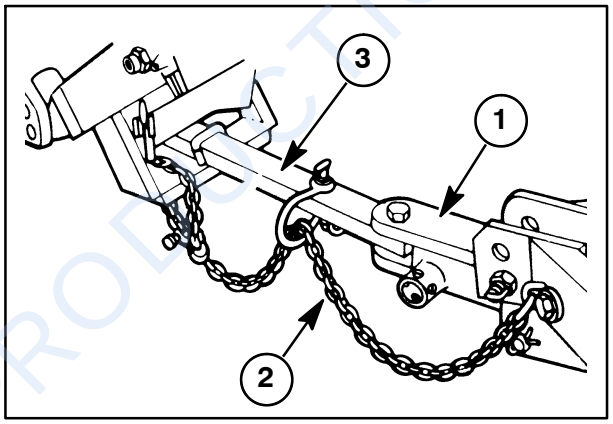
Do not pull from the lower links with the links above the horizontal position. Always use the drawbar or the lower links in the lowered position for pull-type work, otherwise the tractor may overturn rearwards.

NOTE: *When supporting equipment on the drawbar, ensure that the total weight on the rear axle does not exceed the maximum static downward load or the rear tire load capacity, whichever is lower. (See "Rear Tire Pressure and Loads" in Section 3 - Specifications.*

Safety Chain

IMPORTANT: *When transporting equipment on the highway it is recommended that a safety chain having a tensile strength equal to the gross weight of the implement be installed between the tractor and implement hitch. See the following test.*

When towing implements on the highway, use a safety chain, Figure 31, with a tension strength equal to or greater that the gross weight of the implement to be towed by the tractor. This will restrain the implement if the hitch pin is displaced.



31

Figure 31 - Safety Chain

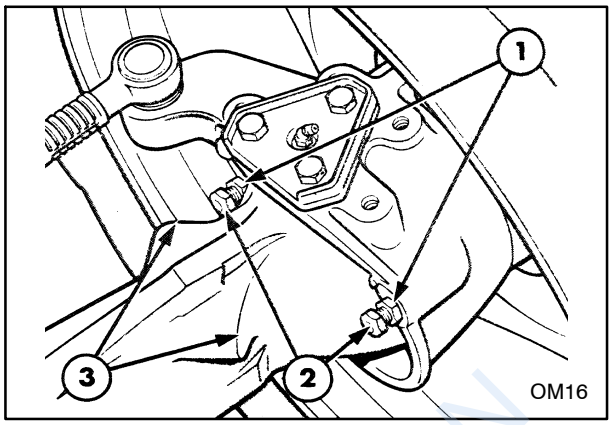
1. Implement
2. Chain
3. Tractor drawbar

After attaching the safety chain, make a trial run by driving the tractor to the right and to the left for a short distance to check the safety chain adjustment. If necessary, re-adjust to eliminate a tight or loose chain. Check the implement Operator's manual for implement weight and attaching hardware specifications.

Safety chains and attaching hardware are available from your New Holland dealer.

Steering Stops

Four steering stops are incorporated in the axle, two at each end (see Figure 39). The stops are adjustable and should be set to provide a minimum clearance of 20 mm (0.75 in.) between the tires and any part of the tractor on full left and right lock with the axle fully articulated.



39

Figure 39 - Steering Stop

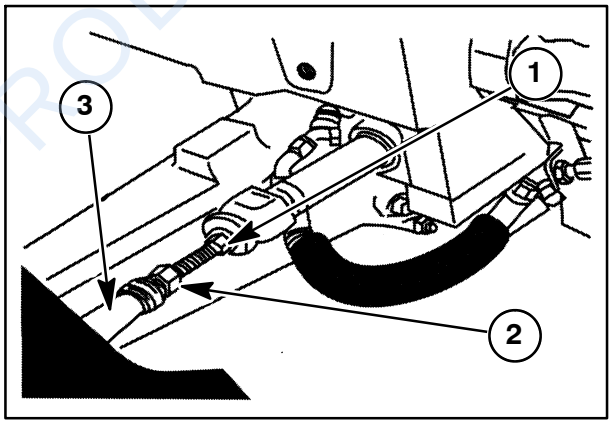
1. Locknut
2. Stop bolt
3. Boss

To adjust, slacken the locknuts (1) Figure 39, and turn the stop bolts (2) counterclockwise to reduce the steering angle of the wheels or clockwise to increase the steering angle. Tighten the locknut to 150 N·m (110 ft.-lbs.).

When on full left lock, the left-hand rear and right–hand front stop bolts should contact the boss on the axle casing simultaneously. Conversely, the left-hand front and right-hand rear stop bolts should both contact the boss when in the full right lock position.

Front Wheel Toe-In

After resetting the tractor width, the front wheel toe–in may require adjustment. For correct operation, the front wheels should be parallel or toe in slightly.



40

Figure 40 - Toe-In Adjustment

1. Hexagon adjuster
2. Jam nut
3. Track control rod

Measure the distance between the wheel rims at hub height at the front of the wheels. Rotate both front wheels 180° and check the measurements again, this time at the rear of the wheels. This will eliminate wheel rim run-out errors. The correct toe-in setting is 0-6 mm (0 - 0.25 in.), i.e. the measurement take at the front of the rims should be the same as the rear or be smaller by up to 6 mm (0.25 in.).

Should it be necessary to adjust the front wheel toe-in, proceed as follows:

Loosen the jam nut, (2) Figure 40, from each track control rod (3). Use a wrench on the hexagon (1) to screw the threaded section into or out of the track control rod, as necessary.

Ensure that this adjustment is carried out equally on both track rods in order to achieve the specified toe-in. Tighten the jam nut to 56 N·m (41 ft.-lbs.).

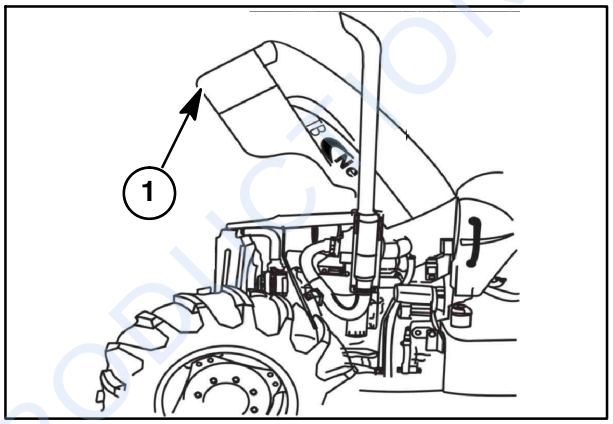
- To facilitate moisture and sediment removal, a drain plug should be provided at the lowest point (at the opposite end to the outlet pipe).
- Fuel purchases should be arranged so that summer grade fuels are not held over and used in winter.
- Refill the fuel tank via the filler tube which is located on the front, left-hand side of the platform. If your tractor has an auxiliary fuel tank it is filled via the filler tube on the front right-hand side of platform.

HOOD

See Figure 1.

As you lift the hood, you will have access to maintenance of the unit, as to: air filter, radiator (coolant) oil cooler, engine oil, fuses, etc.

Inside the hood, you can find the tractor I.D. decal containing the data pertaining to the unit, such as: Serial number, engine serial number, axle serial number, hydraulic pump, and the pertaining manufacture dates.



1

Figure 1 - Hood

1. Hood latch

In the following figures, you can see all the points that you have access to.

On the air filter, remove the hinged clips holding the cap, in order to remove only the outer filter and maintain it at the end of the work day. With the filter in your hands, shake it while holding it in one hand and tapping on the palm of the other hand, while turning, so as to shake the dust out.

When finished, look at the cartridge against the light from the I.D.; when you can see some light through it, you will know that as much dust as possible was eliminated.

⚠ CAUTION ⚠

Do NOT attempt to hit the cartridge against any metal surfaces or the tractor tires, since you might break the paper which would lead to the entrance of dust into the combustion chambers, and in a few hours, result in additional consumption of engine oil.

When the hood is up, you have access to the coolant bottle, so you can check the level.

If necessary, unscrew and remove the filler plug (1), Figure 15, and top it with fresh oil to the upper mark on the dipstick. Do not overfill.

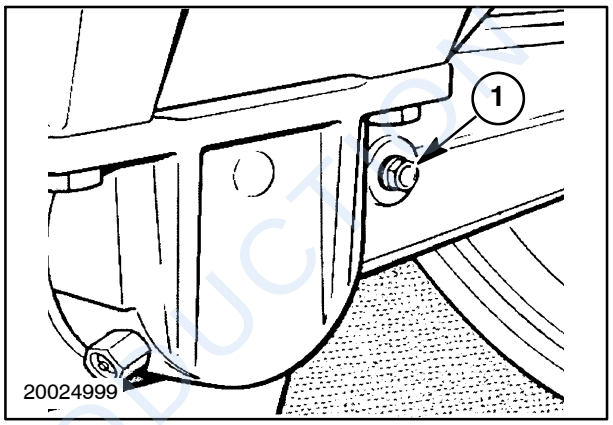
NOTE: *Dependent upon tractor specification, the filler plug may be screwed straight into the rear axle housing. If the filler cap is in the end of an extension tube, as shown in Figure 13, then the G3/4 in. (3/4 in. B.S.P.) tapping provided may be used for the connection of a return hose from remote hydraulic cylinders, etc.*

FOUR WHEEL DRIVE

See Figure 16.

Remove the combined level/filler plug (1) and ensure that the oil reaches the bottom of the opening. If necessary, top up through the opening with clean oil and replace the plug.

Oil Specification: See the Lubrication and Coolant chart in Section 3 - “Specifications”.

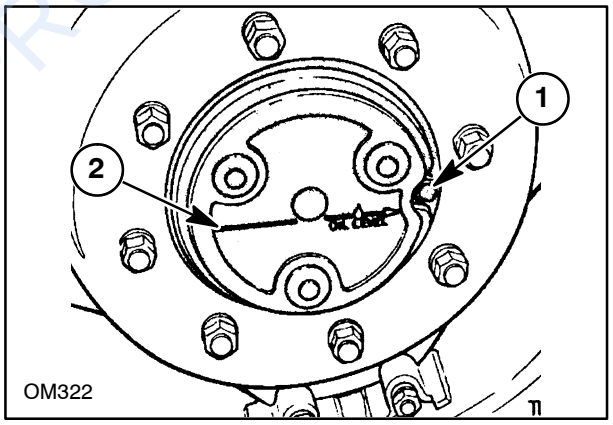


16

Figure 16 - Front Axle Differential Oil (4WD)

1. Level/filler plug

Position the front wheels as shown in Figure 17, with the oil level line horizontal.



17

Figure 17 - Front Axle Hub Oil (4WD)

1. Level/filler plug

2. Oil level line

Remove the combined level/filler plug (1) and ensure that the oil reaches the bottom of the opening. If necessary, top up through the opening with clean oil and replace the plug.

Repeat on the other front wheel.

Oil Specification: See the Lubrication and Coolant chart in Section 3 - “Specifications”.

WASHING THE FILTER SCREEN

Drain the fuel tanks. Unscrew and remove the drain cock/tap supply and filter screen.

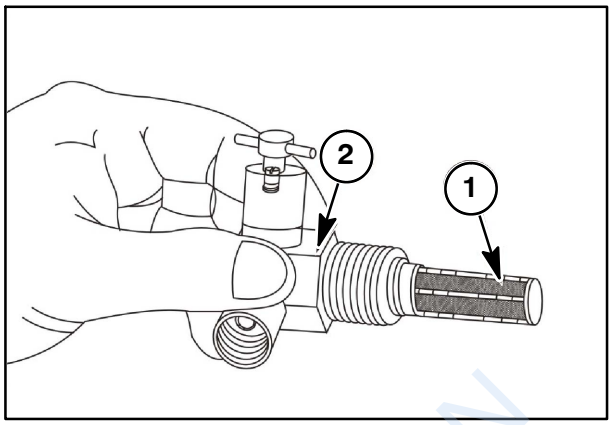
Clean the inside of the filter screen using a damp, lint-free cloth.

After washing, rinse the element with low pressure diesel fuel from the inside out, continue rinsing until the diesel fuel runs free of dirt and is clear.

Allow the (element) filter screen to dry naturally before reusing.

IMPORTANT: *Never use fuel oil, gasoline, or solvent to clean the filter screen, otherwise the filter screen may become damaged.*

IMPORTANT: *After washing the filter, dry completely before installing. It is recommended that a new filter be installed, and leave the one just washed for the next service.*



35

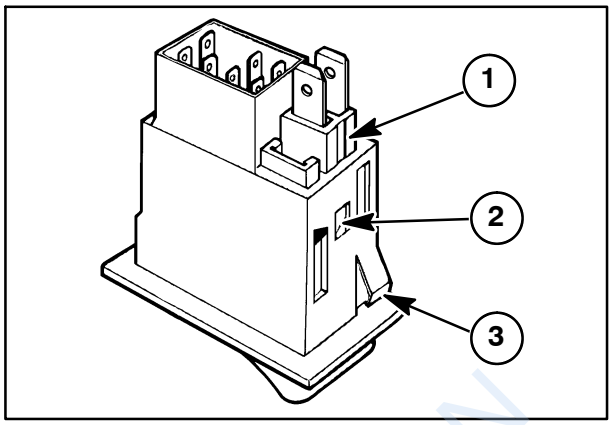
Figure 35 - Drain cock/ tap supply and filter screen.

1. Filter screen.
2. Drain cock/ tap supply.

FWD ROCKER SWITCH BULB

See Figure 52.

Certain rocker switches are internally illuminated, the bulb being removable from the rear of the switch assembly.



52

Figure 52 - Rocker Switch Bulb Replacement

1. Bulb retainer
2. Sprung tag
3. Bulb retainer tag

The switch assembly is retained by a spring tab at either end. Use a small screwdriver to pry one end of the rocker switch from the sheet metal and withdraw the switch assembly.

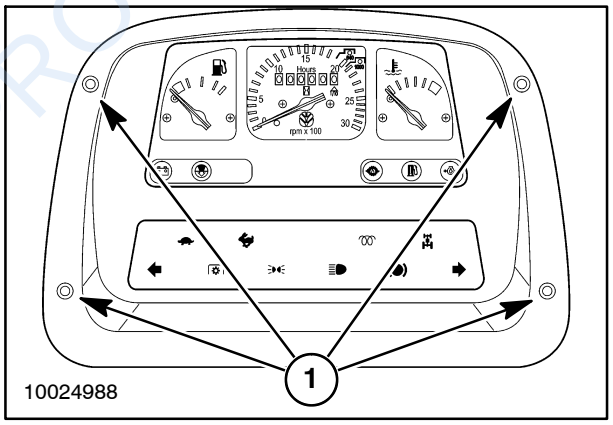
To change a bulb, press in the tab using a small screwdriver and pull the bulb retainer from the back of the assembly. The bulbs are of the cap-less type, rated at 1.2 W and are a push fit in the retainer.

After changing the bulb, push the retainer into the back of the switch assembly until the tab locks in the aperture. Re-install the switch assembly.

Instrument Panel Bulbs

See Figure 53.

The warning and panel light bulbs are removable from the rear of the instrument panel. To gain access, remove the four securing screws from the instrument panel and withdraw the instrument panel assembly.



53

Figure 53 - Instrument Panel

1. Retaining screw

If any of the 12 V/3-6 W type bulbs are damaged, replace them.

The panel will have all the bulbs if the tractor has Dual Power and 4WD. Otherwise, the corresponding bulbs will not be included and the indicator will not work.

ENGINE		TB100	TB110	TB120
POWER TAKE OFF (PTO)				
Type		Independent		
Engine speed for 540 rpm PTO speed		1900		
Engine speed for 1000 rpm PTO speed (two-speed PTO only)		2060		
THREE-POINT LINKAGE				
Maximum lift capacity at maximum hydraulic pressure-link horizontal:				
At link ends	kg	2880		
	lbs.	6350		
24 in. to rear of link ends	kg	2227		
	lbs.	4910		
HYDRAULIC SYSTEM				
System Type		Mechanical 3-point lift, with position and draft control		
Hydraulic pump type		2 in tandem CCA		
Standard		Gears-on-transmission type		
Optional		Gears-on-engine type		
Pressure relief valve	bar	172		
	PSI	2500		
	Mpa	1.8		
Pump flow at high pressure	Flow	35.2 lpm (9.3 gpm)		
	Pressure	172 bar (2500 PSI)		
REMOTE CONTROL VALVES				
Auxiliary Control Valves		CSA, DCC		
Optional		Up to 2		
Output at minimum flow at rated speed (single pump) A.S.C. valve	lpm	35.2		
	gpm	9.2		
Output at minimum flow at rated speed, Deluxe remote control valve	lpm	4.0 - 13.0		
	gpm	1 - 3.4		
Total output at maximum flow at rated speed (two pumps), Deluxe remote control valve	lpm	67		
	gpm	17.6		
Telescopic stabilizer arms		2		
ELECTRICAL EQUIPMENT				
Alternator		12V 90 amp.		
Regulator		Integral with alternator		
Battery		Minimum maintenance type, 12V 90 a/h at 20 hours		

The left-hand edge of each speed rectangle represents an engine speed of 1500 rev/min., the right-hand edge 2100 rev/min. Each rectangle has a black dot representing 1900 engine rev/min (the engine speed at witch the standard PTO speed of 540 rev/min. is obtained).

Example:

To find the approximate ground speed at 1900 engine rev/min. in 4th gear, follow the dot on the 4th gear rectangle, down to the MPH line or up to the KPH line. In the example shown, the ground speed indicated is approximately 7.5 KPH or 4.7 MPH.

Ground speed is affected by the size of the rear tires fitted to the tractor. Ground speed tables for each available rear tire size are provided below and on the following pages.

Each table shows the ground speed at five different engine speeds in each gear ratio (forward and reverse) and are accurate to two decimal places.

The tables are for tractors fitted with the optional Dual Power. If your tractor does not have this feature then you should ignore the line in the table preceded by the word 'Power'.

Reduction gearboxes (creeper gears) with ratios of 5.7:1 and 10:1 are available as dealer installed accessories in certain world markets.

If your tractor has a reduction gearbox then it will be necessary to divide the ground speeds in the table appropriate to your tractor by the reduction ratio of the creeper gearbox.

GROUND SPEEDS - WITH 16.9-30 REAR TIRES

Gear	Dual Power	Engine speed (rev/min.)				
		1500	1700	1900	2100	2200
		Ground Speed in km/h (MPH)				
1-L	Power	1.42 (0.8 7)	1.61 (1.00)	1.79 (1.12)	1.98 (1.23)	2.08 (1.29)
2-L	Power	1.77 (1.10)	2.00 (1.25)	2.24 (1.39)	2.47 (1.54)	2.59 (1.62)
1-L	Direct	1.82 (1.14)	2.07 (1.29)	2.31 (1.44)	2.56 (1.59)	2.68 (1.66)
2-L	Direct	2.27 (1.42)	2.57 (1.61)	2.87 (1.79)	3.18 (1.98)	3.33 (2.08)
3-L	Power	3.10 (1.94)	3.52 (2.19)	3.93 (2.44)	4.34 (2.70)	4.55 (2.84)
3-L	Direct	3.99 (2.48)	4.52 (2.81)	5.05 (3.15)	5.59 (3.48)	5.85 (3.64)
4-L	Power	4.24 (2.63)	4.80 (2.99)	5.36 (3.33)	5.93 (3.68)	6.21 (3.86)
1-H	Power	5.10 (3.17)	5.79 (3.60)	6.46 (4.02)	7.14 (4.44)	7.48 (4.66)
4-L	Direct	5.44 (3.38)	6.16 (3.83)	6.88 (4.28)	7.61 (4.73)	7.97 (4.96)
2-H	Power	6.33 (3.94)	7.17 (4.46)	8.01 (4.98)	8.86 (5.50)	9.28 (5.77)
1-H	Direct	6.55 (4.08)	7.42 (4.61)	8.29 (5.16)	9.17 (5.70)	9.60 (5.97)
2-H	Direct	8.12 (5.04)	9.20 (5.72)	10.28 (6.40)	11.36 (7.06)	11.90 (7.40)
3-H	Power	11.09 (6.89)	12.57 (7.81)	14.04 (8.73)	15.33 (9.66)	16.27 (10.12)
3-H	Direct	14.22 (8.84)	16.11 (10.02)	18.00 (11.20)	19.90 (12.38)	20.85 (12.97)
4-H	Power	15.12 (9.41)	17.14 (10.66)	19.15 (11.92)	21.17 (13.10)	22.17 (13.79)
4-H	Direct	19.34 (12.03)	21.91 (13.63)	24.49 (15.23)	27.07 (16.10)	28.35 (17.67)
R-L	Power	2.03 (1.26)	2.30 (1.44)	2.57 (1.61)	2.85 (1.77)	2.98 (1.85)
R-L	Direct	2.62 (1.62)	2.97 (1.34)	3.32 (2.06)	3.66 (2.27)	3.84 (2.39)
R-H	Power	7.27 (4.52)	8.23 (5.11)	9.20 (5.72)	10.17 (6.32)	10.66 (6.62)
R-H	Direct	9.35 (6.91)	10.59 (6.58)	11.83 (7.36)	13.08 (8.13)	13.70 (8.52)

L= Low H= High R= Reverse