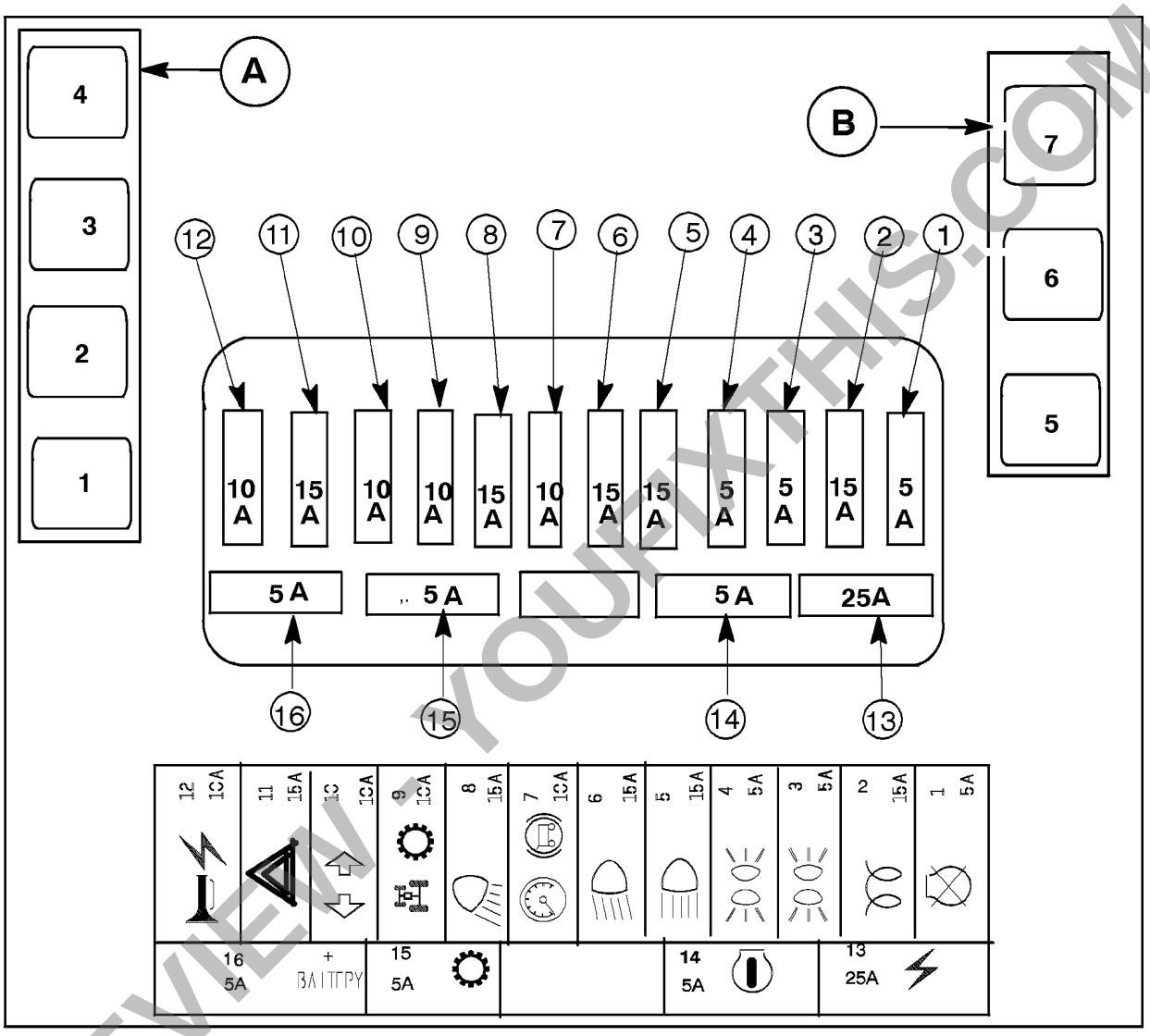
FUSE AND RELAY LAYOUT

DANGER: *If electrical system relays need to be changed, check that correct spare parts are used and that they are fitted in the correct positions. The use of structurally or functionally different relays – even if interchangeable – could seriously jeopardise tractor control.*



FUSES 58

FUSE COLOURS
BEIGE; **5A**, BLUE; **15A**, RED; **10A**

A LEFT-HAND SIDE RELAYS

1. 4WD and brake light circuit.
2. 4WD and brake light circuit.
3. ITALIA trailer brake circuit.
4. ITALIA trailer brake circuit.

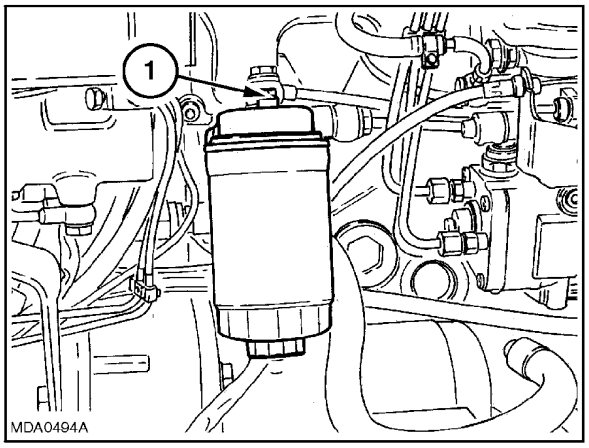
B RIGHT-HAND SIDE RELAYS

5. Engine starting circuit.
6. PTO safety circuit.
7. Flasher circuit.

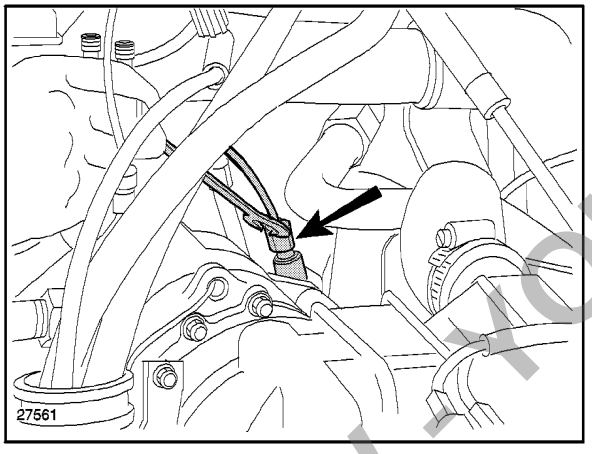
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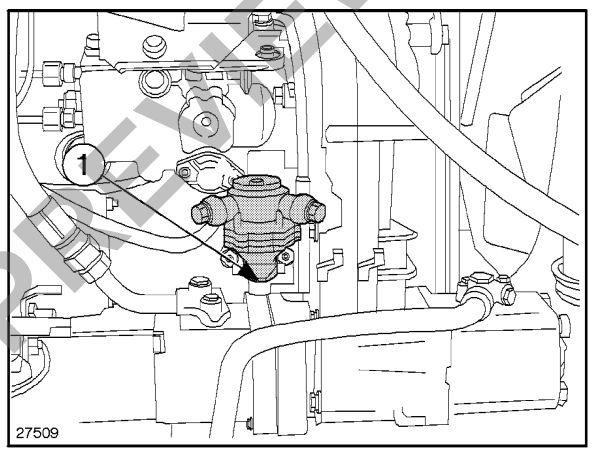
GENERAL MAINTENANCE



46



47



48

BLEEDING THE FUEL SYSTEM

Bleeding procedure - Figs. 46 and 48

During long periods when the tractor is not used, when the filter and fuel lines are removed or when the fuel tank is empty, air may enter the fuel system.

The presence of air makes it difficult to start the engine, which will require bleeding as follows:

1. unscrew the bleed plug (**1**) fig. 46 by two turns;
2. move the lever (**1**) fig. 48 until fuel without air bubbles spurts out of the bleed hole;
3. tighten the plug (**1**) fig. 46;
4. Loosen fuel lines at all 3 injectors fig. 47;
5. move the lever again (**1**) fig. 48 until fuel without air bubbles spurts out of the indicators indicated in fig. 47 then tighten the fuel lines at injectors;
6. turn the starter key to position **C** (fig. 1 page 2-3) and, as soon as the engine starts, release the key.

NOTE: *If the engine does not start, repeat operations 1 to 6. If the engine still fails to start, contact your local New Holland dealer.*

NOTE: *The engine is fitted with a rotary injection pump with internal components that must be protected from rusting if not used for over a month. Therefore, before stopping the tractor, mix a protective fuel additive into the fuel in a proportion of 10% and run the engine for approximately half an hour.*

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BALLAST kg (lbs) (* NORTH AMERICA ONLY)

MODELS	FRONT SUPPORT	FRONT WEIGHTS	WHEEL WEIGHTS	TOTAL
TN55 TN65 (TN70*) TN75	60 (132)	4/6 X 40 (4/6 X 88)	4 X 50 (4 X 110)	420/500 (925.9 to 1102)

TRACTOR WEIGHTS WITH ROLL BAR

TN55		TN65		(TN70*)- and TN75	
2WD	4WD	2WD	4WD	2WD	4WD
Without ballast:					
2250 (4960)	2350 (5180)	2350 (5180)	2450 (5401)	2400 (5291)	2600 (5731)
Fully ballasted:					
2750 (6062)	2850 (6283)	2850 (6283)	2950 (6503)	2900 (6393)	3100 (6834)

ENGINE (* NORTH AMERICA ONLY)

Model	TN55	TN65	(TN70*)	TN75
Engine type ..... with clutch: -11"	IVEC0			
	8035.05B.231 8035.05B.229 8035.05B.529 (USA)	8035.05R. 241 8035.05R.239 8035.05R.539 (USA)	8035.25R.520 (USA)	8035.25.231 8035.25.229 8035.25.529 (USA)
Injection pump	BOSCH			
4-stroke diesel direct injection:				
- naturally aspirated ..	YES	YES	NO	NO
- turbo-charged	NO	NO	YES	YES
Number of cylinders	3			
Bore and stroke ... mm	104 X 115 (3.94 X 4.52 in)			
Total displacement . cm^3	2930 (178.79 $in^{3)}$			
Compression ratio	17 : 1		18:1	16.5 : 1
Engine max. power DGM/ DIN:				
..... kW	37	44	48	53
..... CV	50	60	65	72
Torque increase (%) .	29	20	28	36
Corresponding rpm ..... rpm	2300			
Maximum torque rpm ..... rpm	1400			

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ENGINE

PROBLEM	POSSIBLE CAUSE	SOLUTION
The engine will not start, or starts with difficulty	Starting procedure incorrect	See starting procedure
	Fuel level low or empty	Check fuel level
	Air in fuel system	Bleed fuel system
	Incorrect engine oil viscosity	Correct oil viscosity
	Fuel not suited for ambient temperature	Use correct type of fuel for temperature conditions
	Fuel system contaminated	Clean system
	Fuel filter clogged	Replace filter element
	Fuel injector/s fault	Contact your NEW HOLLAND dealer
The engine functions incorrectly and/or cuts out	Fuel system contaminated	Clean system
	Fuel injector/s fault	Contact your NEW HOLLAND dealer
The engine does not reach maximum power	Engine overload	Change to lower gear or reduce load
	Air filter clogged	Carry out maintenance on air filter
	Incorrect fuel type	use correct fuel
	Low engine running temperature	Check thermostat
	Fuel injector/s fault	Have your dealer check the injectors
	Implement incorrectly set	See implement manual

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LUBRICATION AND MAINTENANCE TABLE

The numbers in the second column refer to the operations and illustrations in the following pages of this section.

(*) NORTH AMERICA ONLY

Hours of work	Operation Number	Maintenance operations	Functional check	Fill-up	Cleaning	Lubrication	Adjustment	Renewal	Page
Flexible maintenance	1	Adjust engine clutch					●		3-91
	2	Adjust fan belt					●		3-92
	3	Outlet valve air filter			●				3-92
With warning light on	4	Primary cartridge air filter			●				3-7
	5	Brake fluid reservoir	●	●					3-8
Every 10 hours	6	Oil sump	●	●					3-9
	7	Radiator expansion tank (**TN70***) TN75 models	●	●					3-9
Every 50 hours	8	Lift and implement linkage				●			3-10
	9	Rear wheel hubs				●			3-10
	10	4WD steering cylinders				●			3-10
	11	4WD front axle pivots				●			3-11
	12	2WD steering cylinder				●			3-11
	13	Stub axle: right and left hand sides, 2WD				●			3-11
	14	2WD front axle joint				●			3-12
	15	Fuel filter (condensation drain)			●				3-12
	16	Tyre pressures	●						3-12

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OPERATING INSTRUCTIONS

CAUTION: *Before starting the engine and moving the tractor, follow the instructions noted below:*

- *do not start or operate the tractor in an enclosed area.*
- *before starting the engine, check that all controls are in neutral.*
- *all controls must only be operated from the driving position.*
- *stop the engine before carrying out any service or maintenance operations on the tractor.*
- *use the steps provided for entering and leaving the tractor.*
- *keep the guards properly fitted.*
- *when driving on roads, indicate all intentions to stop, turn or slow down.*
- *use the appropriate warning devices to signal the presence of a slow-moving vehicle.*

STARTING THE ENGINE

a. If the tractor has not been used for some time, or is started up for the first time in low outside temperature conditions, operate the fuel pump starting lever approximately twenty times.

b. Press down the clutch pedal, place the shuttle control lever in neutral to close the starting safety device switch.

c. Move the throttle lever to approximately the half-way position.

d. Turn the starter key to position **C** (fig. 1, page 2-3). Release the key as soon as the engine starts.

HOW TO START AND STOP

STARTING IN LOW OUTSIDE TEMPERATURE CONDITIONS

WARNING: *When the outside temperature is low and the engine is cold, cover the radiator before starting so that the engine coolant can quickly reach the correct temperature. Then remove the cover. Also note the following warnings:*

- *to avoid running down the battery, any single engine starting attempt should not last longer than 15 seconds; if, however, the engine fires but does not start, continue the attempt up to a maximum of 30 seconds.*
- *wait for at least one minute between each attempt to start the engine;*
- *to avoid excessively running down the battery, do not make more than six attempts to start the engine.*

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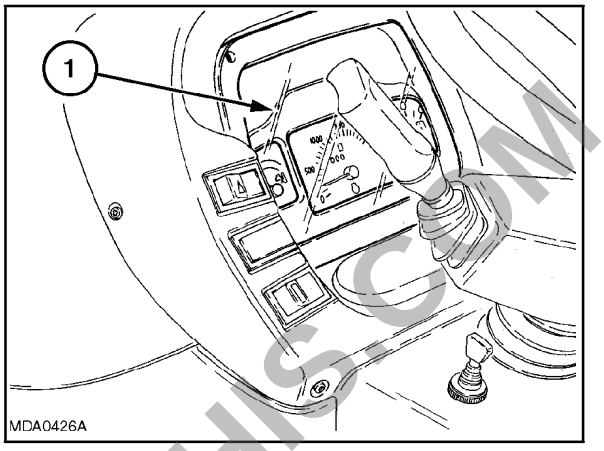
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Dashboard and instrument panel controls

MULTI-SIGNAL INSTRUMENT PANEL - FIG. 6

The instrument (**1**) provides a series of indicators that inform the user of the tractor service status.

NOTE: *For further details, see page 2-5 and 2-9.*



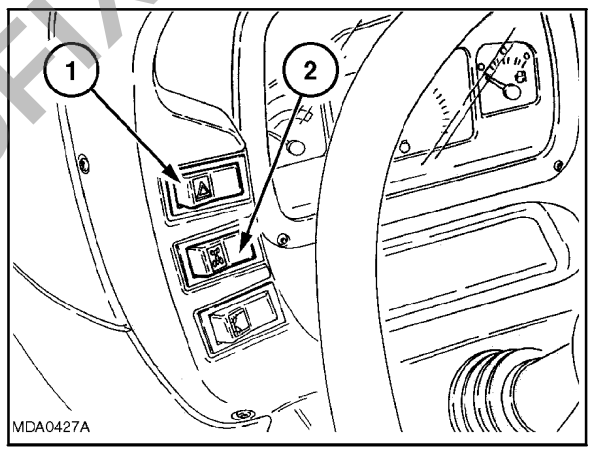
6

FOUR-WHEEL DRIVE MODE SWITCH- Fig. 7 (NOT AVAILABLE ON ALL MARKETS)

Two different four-wheel drive functions can be selected with this switch:

- permanent disengagement;
- permanent four-wheel drive.

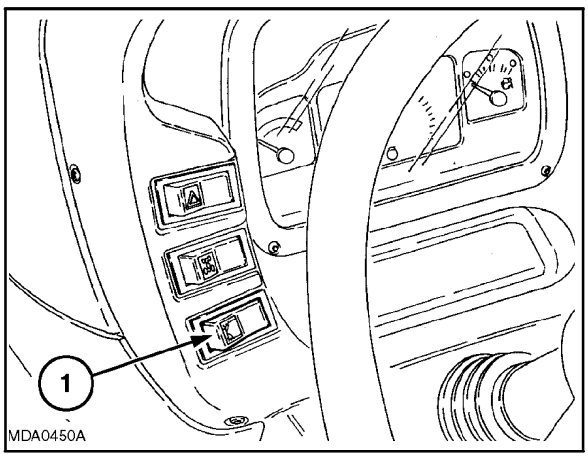
NOTE: *For further details, see page 2-41.*



7

HAZARD WARNING LIGHT SWITCH - Fig. 7

Press the switch (**1**) on the red part to turn on the flashing lights; when pressed, the switch also flashes. The panel light flashes at the same time as the direction indicators.



8

FRONT CORNERING LIGHT SWITCH - Fig. 8

Press the switch (**1**) on the yellov part to turn on the side lighting.

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Main fuse box protection		
Fuses	***PROTECTED CIRCUITS***	***Amp.***
1	Engine cut-out electromagnet.	5
2	Thermostarter.	15
3	Front right-hand and rear left-hand side lights, side lights panel indicator.	5
4	Front left-hand and rear right-hand side lights, control instrument panel light.	5
5	Full beam.	15
6	Dipped lights.	15
7	Trailer brake circuit, PTO safety and NASO version.	10
8	+ Instrument common, + control centre troubleshooting.	15
9	Brake light circuit, four wheel drive.	10
10	Four-wheel drive circuit	10
11	Emergency light circuit, NASO safety circuit.	15
12	Horn, 8 A power socket.	10
13	25A power socket.	25
14	Starter safety circuit .	5
15	Permanent, front power take-off. (+key)	5
16	Electronic control centre power supply (+key).	5

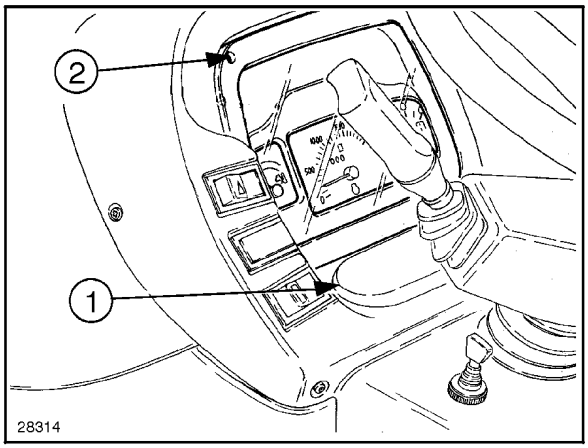
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FUSES ACCES

To acces fuse blok, remove cover (**1**) fig. 59 by lifting upguard..

RELAY ACCES

To acces relay, remove screws (**2**) fig. 59 and instrument panel. Relays are located on both sides of the rear couling frame.



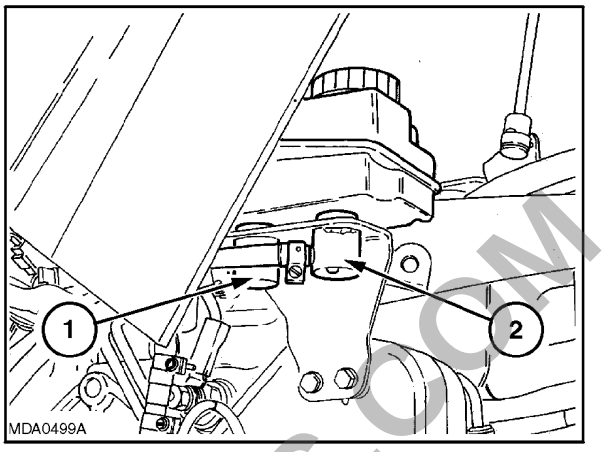
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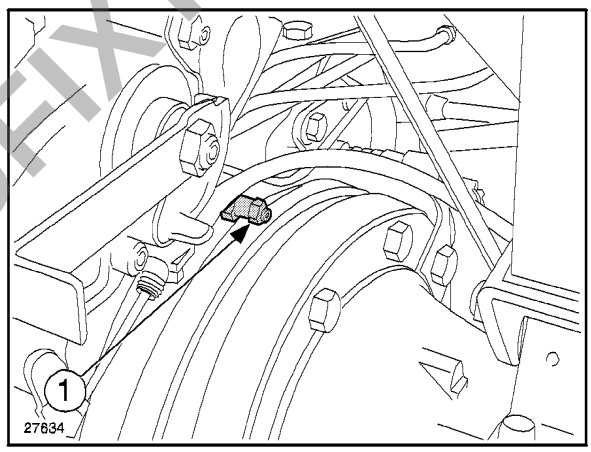
BLEEDING THE BRAKE FLUID CIRCUIT ON 2WD MODELS

Air must be bled out whenever carrying out work on the brake hydraulic system.
If braking problems are detected, refer to specialised personnel or carry out the circuit bleeding operation, closely observing the following instructions:

- remove the plug, thoroughly clean the external parts of the unit around the bleed screws and the cover of the hydraulic fluid reservoir;
- check that the right (**2**) and the left (**1**) fig. 49 brake reservoirs are full both before and during the bleed operations;
- fully press down the left brake pedal, **slowly** , so that the oil is under pressure;
- keeping the pedal pressed down, loosen the bleed screw (**1**) fig. 50, by half a turn and allow the oil/air bubbles to come out;
- tighten the screw (**1**) fig. 50 and repeat the aforementioned operations until only oil (without air bubbles) comes out;
- press the brake pedal again to put the circuit under pressure, i.e.: when the pedal travel returns to normal;
- repeat the aforementioned operations for the right-hand part of the braking circuit;
- on completion of this procedure, fill up the reservoir with oil.



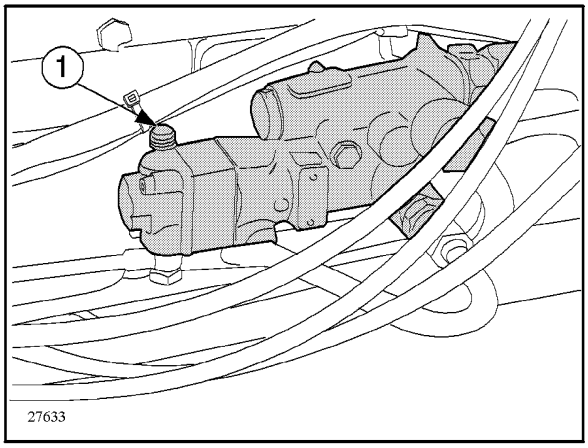
49



50

TRAILER BRAKE VALVE - Fig. 51

CAUTION: *On tractors with a hydraulic trailer brake valve, first bleed the air from screw* (**1**) fig. 50 *and then from screw* (**1**) fig. 51.



51

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TIMING

With overhead valves	Timing data
Inlet:	
– start before TDC	12°
– end after BDC	31°
Exhaust:	
– start before BDC	50°
– end after TDC	16°
Valve clearance, timing inspection : mm	0.45 (0.017 in)
valve clearance, engine cold:	
– inlet and exhaust mm	0.30 ± 0.05 (0.012 ± 0.0019 in)

FUEL SYSTEM

Double-diaphragm fuel pump on injection pump supply line.

Rotary injection pump with centrifugal speed governor, operating at all speeds and incorporating automatic advance ..... type BOSCH-VE4

Fuel filtration:

- mesh filter in the fuel pump;
- replaceable cartridge filter on the injection pump feed line with water separator. Fuel sedimeter filter (optional).

Double cartridge dry air filter, with centrifugal pre-filter and automatic dust extractor.

Air filter with self-cleaning device:	**TN55**	**TN65**	**(TN70*) TN75**
Before TDC of cylinder No. 1 during compression stroke ...	9° ± 0.5°		6° ± 0.5°

(* NORTH AMERICA ONLY)

Injectors:	**TN55**	**TN65**	**(TN70*) TN75**
– order of injection	1 – 2 – 3		
– number of injection nozzles:	5		
– setting: . bar	260 to 272 3771 to 3858		

LUBRICATION

Pressurised, by gear pump.

Oil filtration: pressurised through pump intake mesh and replaceable cartridge filter on engine intake.

Engine lubrication pressure:

- engine speed 2300 rpm ..... bar ..... 2.9 to 3.9
  psi ..... 41.24 to 55.47

Engine oil cooled by a heat exchanger using engine coolant.

COOLING

Water, pressurised circulation by centrifugal pump.

Radiator with 3 lines of vertical copper pipes for TN55, TN65 and 4 lines of vertical copper pipes for models **(TN70*)** and TN75.

Cooling fan fitted on same shaft as water pump.

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ENGINE

PROBLEM	POSSIBLE CAUSE	SOLUTION
The engine does not reach maximum power (cont.)	Implement incorrectly set	See implement manual
	Incorrect valve clearance	Check and adjust
	Idling speed too low	Contact your NEW HOLLAND dealer
Abnormal engine knocking	Oil level low	Fill up with oil
	Oil pressure low	Contact your NEW HOLLAND dealer
Low engine operating temperature	Thermostat fault	Replace thermostat
Oil pressure low	Oil level low	Add oil as required
	Incorrect oil grade or viscosity	Drain and refill with correct oil grade and viscosity
Excessive oil consumption	Oil level too high	Reduce oil level
	Unsuitable oil viscosity	Use specified oil viscosity
	External oil leaks	Repair leaks
	Breather pipe filter clogged	Replace breather pipe filter
Engine overheating	Radiator core clogged	Clean
	Excessive engine load	Change to lower gear or reduce load
	Engine oil level low	Fill up with oil
	Coolant level low	Fill to fluid level in expansion tank. Check system for leaks
	Radiator cap defective	Replace cap
	Fan belt slipping or worn	Check tensioner. Replace belt if worn

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Hours of work	Operation Number	Maintenance operations	Functional check	Fill-up	Cleaning	Lubrication	Adjustment	Renewal	Page
Every 300 hours	17	Oil change, engine sump						●	3-13
	18	Battery	●	●					3-13
	19	Fuel filter						●	3-13
	20	Fuel pump filter			●				3-14
	21	Transmission oil filter and services						●	3-14
	22	HI-LO/POWER-SHUTTLE oil filter						●	3-14
	23	Engine oil filter						●	3-15
	24	Air filter (primary cartridge)			●				3-15
	25	Transmission and lift oil	●	●					3-15
	26	4WD front axle housing oil	●	●					3-16
	27	Transmission handbrake	●				●		3-16
	28	4WD front axle final drives oil	●	●					3-16
	29	2WD front wheels				●			3-17
	30	4WD front axle joints				●			3-17
Every 900 hours	31	Engine valves	●				●		3-17
Every 1200 hours or every year	32	Air filter (safety ad primary cartridges)						●	3-18
	33	Fuel tank			●				3-18
Every 1200 hours or every 2 years	34	4WD front axle housing oil						●	3-19
	35	Injectors	●				●		3-19
	36	4WD front axle final drives oil						●	3-19
	37	Engine coolant						●	3-20
	38	Transmission and lift oil						●	3-21
General maintenance	Bleed fuel system								3-22
	Bleed brake system 2WD models								3-23
	Bleed brake system 4WD models with front brakes								3-24
	Electrical system								3-26
	Notes on bodywork maintenance								3-33
	Tractor storage								3-34

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