LUBRICATION AND MAINTENANCE TABLE

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

Hours of work	Operation number	Maintenance operation	Functional check	Top up	Clean	Grease	Adjust	Replace	Page
Flexible maintenance	1	Engine clutch					●		4–7
	2	Brake pedal					●		4–7
	3	Fan belt					●		4–8
	4	Air conditioner compressor belt					●		4–8
	5	Outlet valve, dry air filter			●				4–9
With warning light ON	6	Main cartridge, dry air filter			●				4–9
	7	Brake fluid reservoir	●	●					4–10
	8	Fuel sedimenter (condensation drain)			●				4–10
Every 10 hours	9	Engine oil	●	●					4–10
	10	Battery	●	●					4–11
	11	Hydrostatic steering reservoir	●	●					4–12
	12	Radiator expansion tank	●	●					4–12
	13	Windscreen washer bottle	●	●					4–12
	14	Cab air filter			●				4–13
	15	Air conditioner condenser			●				4–13
	16	Cab air–conditioning system	●						4–14
Every 50 hours	17	Hydraulic lift and linkage				●			4–15
	18	Steering cylinders 4WD				●			4–15
	19	Front axle rear pivot 4WD				●			4–15
	20	Front axle front pivot 4WD				●			4–16
	21	Steering cylinder 2WD				●			4–16
	22	Right hand stub axle 2WD				●			4–16
	23	Left–hand stub axle 2WD				●			4–17
	24	Front axle pivot 2WD				●			4–17
	25	Fuel filter (condensation drain)			●				4–17

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ENGINE SPECIFICATION

Model	TD 60D	TD 70D	TD 80D	TD 90D	TD 95D
Engine type	IVECO				
	8035.05D.939	8035.25C.939	8045.05R.939	8045.25.939	8045.25L.939
BOSCH Injection pump	NA L976	TC L977	NA L985	LTC L982	TC L952
	4–stroke diesel, direct injection				
Naturally aspirated	YES	NO	YES	NO	
Turbocharged	NO	MITSUBISHI –GARRET	NO	MITSUBISHI–GARRET	
Number of cylinders	3		4		
Bore and stroke mm (in)	104 x 115 (4.1 x 4.5)	104 x 115 (4.1 x 4.5)	104 x 115 (4.1 x 4.5)	104 x 115 (4.1 x 4.5)	104 x 115 (4.1 x 4.5)
Total displacement cm^3 (cubic in)	2931 178.85	2931 178.85	3908 238.47	3908 238.47	3908 238.47
Compression ratio	18±0.5:1				
Engine max.2000/25 EC Power kW/rev/min HP/rev/min	43.5/2500 59.0/2500	50.5/2500 69.0/2500	58.5/2500 80.0/2500	65.5/2500 89.0/2500	69.0/2500 94.0/2500
Engine max. ECE R 24 Power kW/rev/min HP/rev/min	41.0/2500 56.0/2500	48.0/2500 65.0/2500	56.0/2500 76.0/2500	63.0/2500 86.0/2500	66.5/2500 91.0/2500
Maximum torque Nm / rev/min	207 / 1500	250 / 1500	279 / 1500	320 / 1500	337 / 1500
Dynamic equalizer with counter–rotating weights	N/A		YES		

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ENGINE

PROBLEM	POSSIBLE CAUSE	SOLUTION
The engine will not start or is difficult to start.	Incorrect starting procedure.	See starting procedure.
	Fuel level low or empty.	Check fuel level.
	Air in fuel system.	Bleed fuel system.
	Engine oil viscosity not right.	Use oil of right viscosity.
	Fuel not suitable for ambient temperature.	Use correct type of fuel for temperature conditions.
	Fuel system contaminated.	Clean system.
	Fuel filter clogged.	Replace filter element.
	Fuel injector fault.	Contact your dealer.
The engine does not run properly and/or cuts out.	Fuel system contaminated.	Clean system.
	Fuel injector fault.	Contact your dealer.
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 the right fuel.
	Low engine operating temperature.	Check thermostat.
	Fuel injector fault.	Have your dealer check the injectors.
	Implement incorrectly set.	See equipment manual.

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OPERATION

⚠ CAUTION ⚠

Before starting the engine and moving the tractor, follow the instructions written 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 be actuated only from the driver's seat.
- 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 moving on the roads, signal your intention to stop, turn or slow down.
- Use the appropriate warning devices to indicate a slow–moving vehicle.

STARTING THE ENGINE

a. If the tractor has not been used for some time, or if started up for the first time at a low surrounding temperature, actuate the fuel pump starting lever around twenty times.

b. Ensure that both gear levers are in neutral position.

c. Move the throttle lever to around the half way position.

d. Turn the ignition key to position **C**, fig. 1. Release the key as soon as the engine starts.

HOW TO START AND STOP

STARTING IN A LOW EXTERNAL TEMPERATURE

⚠ WARNING ⚠

When the external temperature is low and the engine is cold, cover the radiator before starting so that the engine coolant can quickly reach operating temperature.
Then remove the cover. Note the following warnings:

— Any single engine starting attempt should not last longer than 15 seconds. If, however, the engine fires but does not start, repeat up to a maximum time of 30 seconds.

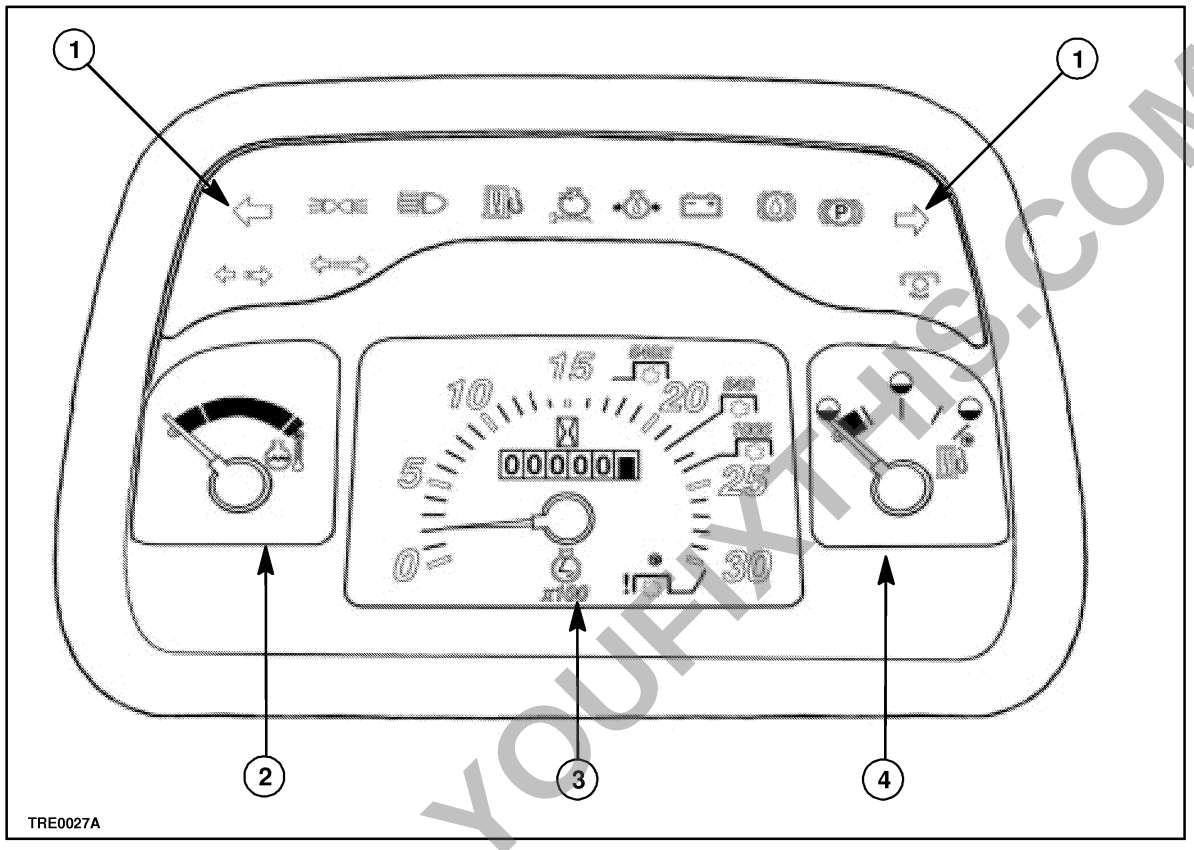
— Wait at least one minute between attempts to start the engine.

— It is advisable not to make more than six attempts to start the engine to avoid excessive battery run–down.

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INSTRUMENT PANEL



7

1. **Warning and indicator lights**

These lights illuminate to indicate a particular operation or to attract your attention.

2. **Engine coolant temperature gauge**

3. **Proofmeter / tachometer**

Hourmeter, engine speed counter, tachometer.

4. **Fuel gauge**

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SWINGING DRAWBAR – Figs. 3 and 4

Use the swinging drawbar for implements, agricultural machinery and trailers with two axles.

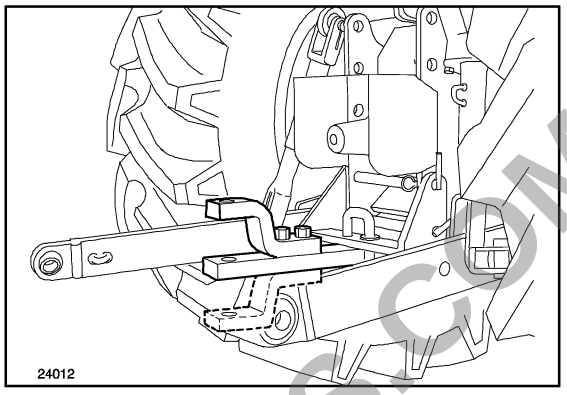
Do not, on the other hand, use it for single–axle trailers as they apply excessive weight to the bar, which will risk tipping the tractor.

The wide horizontal trajectory of the bar is extremely useful for implements and machines requiring lateral freedom of movement, such as balers.

This equipment can be supplied:

– with suitable brackets to fit either a rigid towing hook or a Rockinger hitch;

– with a bracket designed to fit only to a towbar.



3

The following adjustments can be made to the bar:

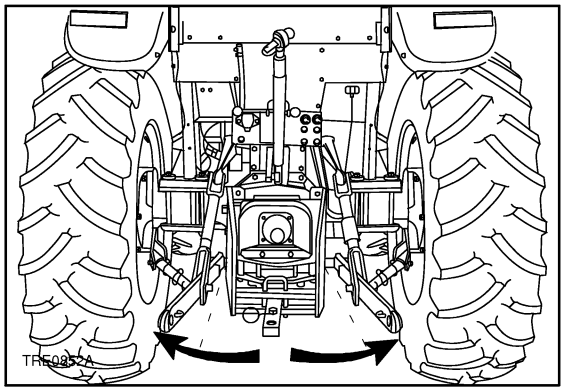
– height adjustment, by turning the fork to face upward or downward fig. 3;

– prevention of lateral swing by inserting limiter fork (**1**) fig. 4.

⚠ CAUTION ⚠

The towing equipment should be selected on the basis of the type of trailer or implement to be towed and should comply with current legislation.

– *The ease of handling and driving safety of the tractor depends on correct towing adjustment.*
– *A towing device fitted high up increases towing capacity but also means that the tractor has a tendency to tip back. Therefore ensure that the trailer shaft is not at too great an upward angle.*
– *When using four–wheel drive, the towing bracket should be in its lower position with the shaft almost horizontal.*
– *Avoid towing excessively heavy trailers or loads.*
– *Do not start suddenly as this considerably increases the risk of tipping backwards.*
– *Always brake the trailer first and then the tractor.*



4

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Hours of work	Operation number	Maintenance operations	Functional check	Top up	Clean	Grease	Adjust	Replace	Page
Every 300 hours	26	Engine oil						●	4–18
	27	Fuel filter						●	4–18
	28	Fuel pump filter			●				4–18
	29	Oil filter, hydraulic lift						●	4–19
	30	Engine oil filter						●	4–19
	31	Oil filter, hydrostatic steering (separate tank)						●	4–19
	32	Final reduction gears		●					4–20
	33	Dry air filter (external cartridge)			●				4–20
	34	Rear transmission and hydraulic lift	●	●					4–20
	35	Front axle housing 4WD	●	●					4–21
	36	Handbrake	●				●		4–21
	37	Front axle reduction hubs 4WD	●	●					4–22
	38	Front wheels 2WD				●			4–22
	39	Front axle swivel bearings 4WD				●			4–23
Every 600 hours	40	Fuel sedimenter						●	4–23
Every 900 hours	41	Engine valves	●				●		4–23
Every 1200 hours or annually	42	Cab air filter						●	4–24
	43	Dry air filter (cartridges: internal and external)						●	4–24
	44	Fuel tank			●				4–24
	45	Hydrostatic steering oil (independent tank)						●	4–25
	46	Drive shaft sleeve for 4WD front axle connection	●					●	4–25
Every 1200 hours or every 2 years	47	Injectors	●				●		4–26
	48	Front axle housing oil, 4WD						●	4–26
	49	Front axle final drive hubs oil, 4WD						●	4–26
	50	Engine cooling system			●			●	4–27
	51	Transmission and hydraulic oil						●	4–29
	52	Final reduction oil						●	4–29
General maintenance	Bleeding the fuel system								4–30
	Bleeding the hydraulic brake system								4–30
	Electrical system								4–32
	Bodywork maintenance								4–39
	Lubrication capacities and specifications								4–40

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TIMING

With overhead valves	Timing data
Inlet :	
– start before TDC	12°
– end after BDC	31°
Exhaust :	
– start before TDC	50°
– end after BDC	16°
Valve clearance : . . . . mm (in)	0.45 (0.018)
Valve clearance, engine cold :	
– inlet and exhaust . . . . . mm (in)	0.35 ± 0.05 (0.012 ± 0.002)

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 BOSCH VE–type

Fuel filtration :

– mesh filter in the fuel pump;

– replaceable cartridge filter in the injection pump feed line with water separator.

Fuel sediment filter (optional).

Double cartridge dry air filter, with centrifugal pre–filter and automatic dust extractor.
Optional : air filter with self–cleaning device (Donaspin).

MODEL	TD 60D	TD 70D	TD 80D	TD 90D	TD 95D
Engine injection pump, number of orifices :	3		4		
Before TDC of cylinder No. 1 on compression stroke (°) :	4±0.5	0±0.5	4±0.5	1±0.5	0±0.5

Injectors :	3 cyl.	4 cyl.
– firing order :	1–2–3	1–3–4–2
– number of injection nozzles :	5	
– calibration : bar . . . . . . (Psi) . . . . . . kg/cm^2	260–272 (3770 to 3945) 265–277	

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ENGINE

PROBLEM	POSSIBLE CAUSE	SOLUTION
Engine does not reach maximum power (cont.).	Valve clearance wrong.	Check and adjust.
	Idling speed too low.	Contact your dealer.
Abnormal engine knocking.	Oil level low.	Top up oil.
	Oil pressure low.	Contact your dealer.
Low engine operating temperature.	Thermostat malfunction.	Replace thermostat.
Oil pressure low.	Oil level low.	Add oil as required.
	Oil grade or viscosity wrong.	Drain and refill with oil of correct grade and viscosity.
Excessive oil consumption.	Oil level too high.	Reduce oil level.
	Oil viscosity wrong.	Use oil of correct viscosity.
	Oil leaking.	Repair leaks.
	Breather pipe filter clogged.	Replace breather pipe filter.
Engine overheating.	Radiator core clogged.	Clean.
	Engine overload.	Change to lower gear or reduce load.
	Engine oil level low.	Top up oil level.
	Coolant level low.	Top up fluid level in expansion tank; check system for leaks.
	Radiator cap defective.	Replace cap.
	Fan belt slipping or worn.	Check tensioning device; replace belt if worn.

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STARTING WITH THERMOSTART

Start as follows:

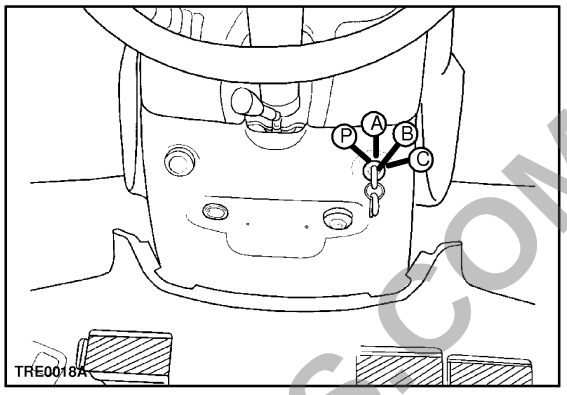
– carry out the operations **a, b, c,** as previously described.

– turn the ignition key to position **B** (**1**) fig. 1.

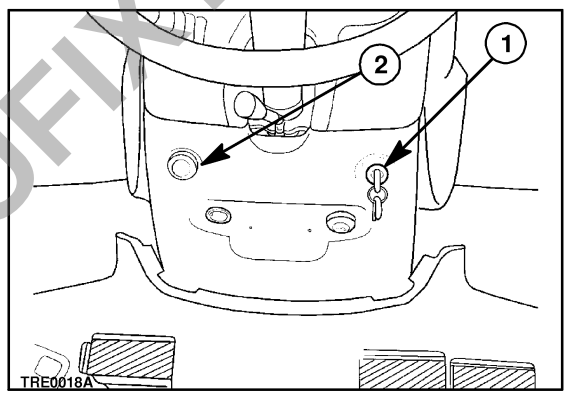
– activate the thermostart by pressing switch (2) fig. 2 and keep it pressed for 25 seconds.

– move the ignition key to position (**C**) while continuing to hold down switch (**2**) fig. 2 until the engine starts.

– when the engine starts, release both the key and the thermostart switch. If, after two or three attempts, the engine has not started and you notice black smoke coming from the exhaust, start the engine without using the thermostart.



1



2

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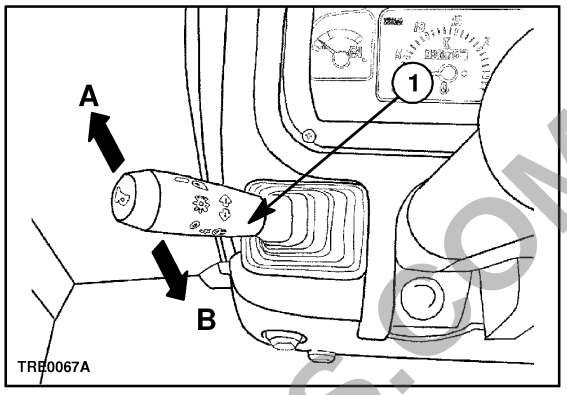
MULTI–FUNCTION CONTROL

The multi–function stalk controls the lights, horn, turn indicators and headlight flasher and is also used to switch from dipped to main beam front headlights.

Direction indicators

To indicate a right turn, push the stalk (1) fig. 13 forward to position **A**.

To indicate a left turn, pull the stalk back to position **B**.



13

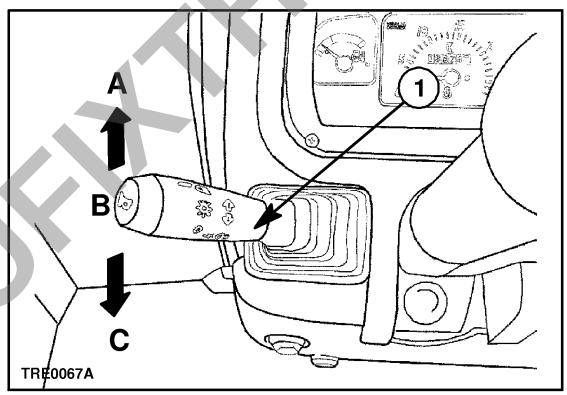
Flashing front headlights

With the lights off or on, move the stalk up to position **A** fig. 14 to flash the main beam headlights. When the stalk is released, it automatically returns to its original position.

NOTE: The stalk switch (1) fig. 14 will only operate with ignition key in position **B** fig. 1, page 3–3.

Side lights

With the stalk (1) fig. 14 in position **B**, rotate the outer end of the stalk so that the indicator (1) fig. 15 aligns with symbol (2), the side lights ‘on’ symbol.



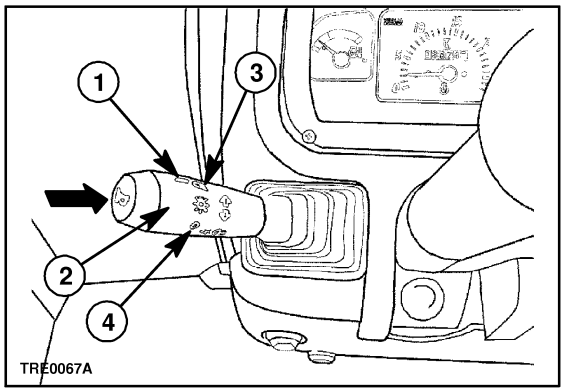
14

Dipped headlights

With the stalk (1) fig. 14 in position **B**, rotate the outer end of the stalk so that the indicator (1) fig. 15 aligns with symbol (3), the headlights ‘on’ symbol.

Main beam headlights

With the indicator (1) fig. 15 aligned with symbol (3), the headlights ‘on’ symbol, move the stalk down to position **C**, as shown in fig. 14. The main beam warning light on the instrument panel will illuminate with the main beam headlights.



15

Horn

Press the end of control (2) on the stem as shown by the arrow in fig. 15.

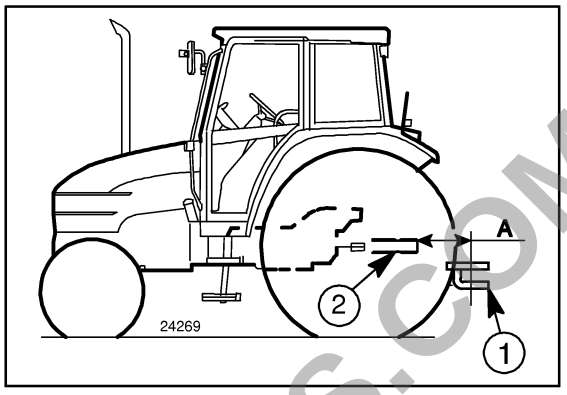
NOTE: When the indicator (1) fig. 15 is aligned with symbol (4) all the lights are off. Only the direction indicators and the horn are still functional.

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By carrying out the adjustments previously described, the distance **A** of fork (**1**) on the swinging draw–bar will be between 297 mm (11.69 in) minimum and 455 mm (17.9 in) maximum from the power take–off shaft (**2**).

To connect implements to the power take–off correctly, fit the towing bracket facing downwards fig. 3.



5

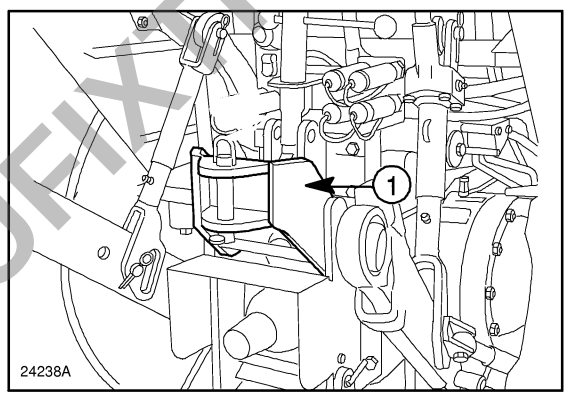
HEIGHT ADJUSTABLE RIGID HITCH – Figs. 6 and 7

With rigid hitch (**1**) fig. 6 all types of trailer can be towed, even those with only one axle.

The hitch can be set both above and below the power take–off, with a total of six positions.

It can also be fitted with the towbar.

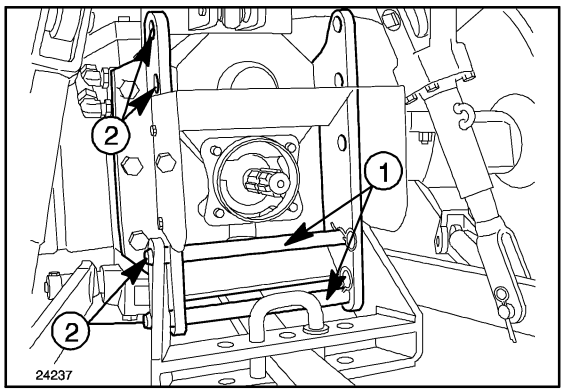
Fix the hitch to holes (**2**) fig. 7 using pins (**1**) fig. 7



6

⚠ WARNING ⚠

Use the front towing fork for possible emergency trailer manoeuvres or for towing the tractor.



7

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