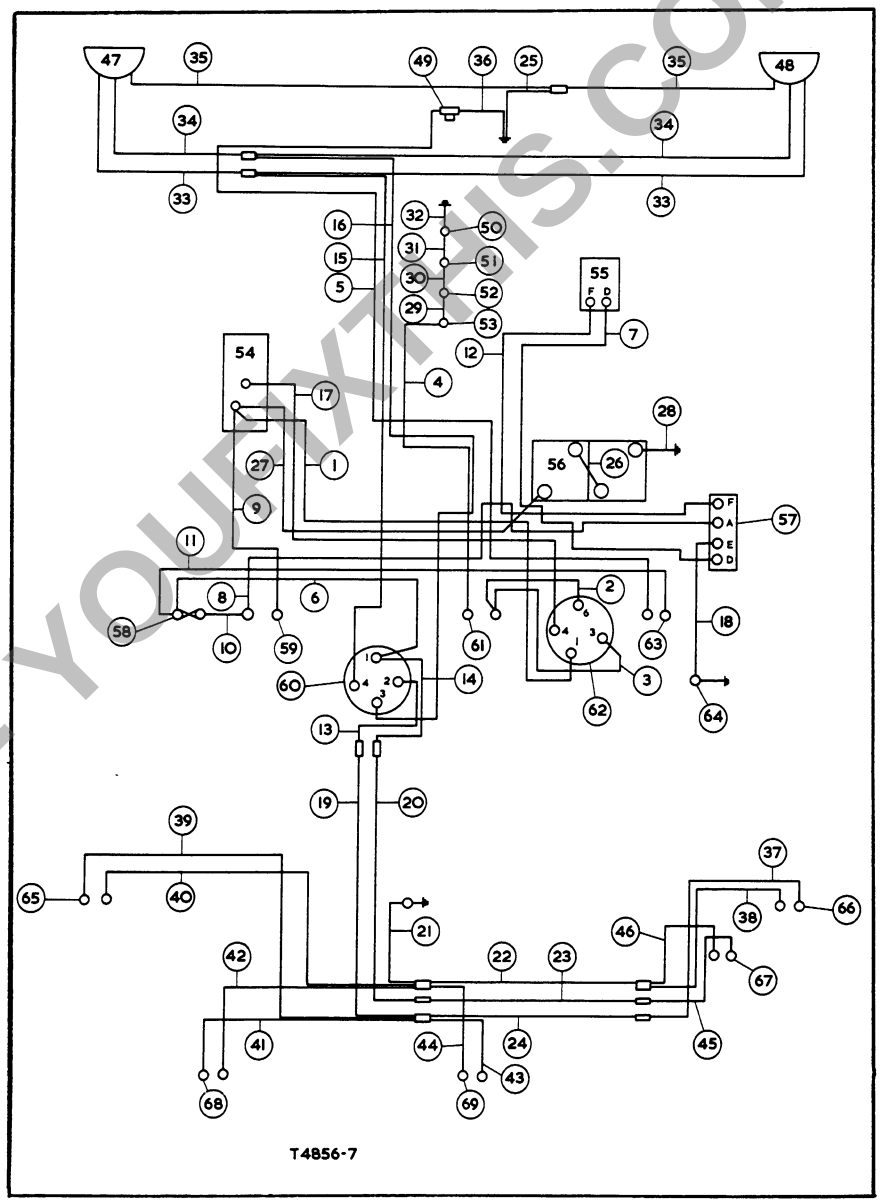
DIESEL WIRING DIAGRAM



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S P E C I F I C A T I O N S

ENGINE

Diesel

Make	I.H.
Model	BD-144
No. of cylinders	4
Bore in. (mm)	3-3/8 (85.75)
Stroke in. (mm)	4 (101.6)
Displacement cu in. (cc)	144 (2249.7)
Valve clearance (HOT) in. (mm)	.020 (.508)
Firing order	1-3-4-2
Low idle rev/min	520-580
High idle (No Load) rev/min	1925

Petrol

Make	I.H.
Model	BC-144
No. of cylinders	4
Bore in. (mm)	3-3/8 (85.75)
Stroke in. (mm)	4 (101.6)
Displacement cu in. (cc)	144 (2249.7)
Valve clearance (HOT) in. (mm)	.020 (.508)
Firing order	1-3-4-2
Low idle rev/min	500
High idle (No Load) rev/min	2075
Spark plug gap in. (mm)	.024 (.610)
Distributor point gap in. (mm)	.014 (.356)

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ROUTINE SERVICING SCHEDULE

● Check at periods shown or more frequently if conditions make this necessary		(DAILY) 10 Hrs	(WEEKLY) 50 Hrs	120 Hrs	250 Hrs	500 Hrs	1000 Hrs	PERIODICALLY
ENGINE	- Check oil level	●						
	Change oil			●				
	Change oil filter element			●				
	Clean the crankcase breather			●				
	Torque cylinder head nuts							●
	Check valve clearance							●
AIR CLEANER	- Clean the pre-cleaner (if fitted)		●					
	Check oil cup and element	●						
	Check air cleaner connections		●					
	Remove and clean air cleaner		●					
FUEL SYSTEM	- Fill the fuel tank	●						
	Check water level in water trap (Diesel)					●		
	Change fuel filter element (Diesel)					●		
	Clean lift pump gauze filter					●		
P.T.O.TRANS MISSION & DIFFERENTIAL	- Check oil level				●			
	Change oil						●	
COOLING SYSTEM	- Check coolant level	●						
	Flush coolant system						●	
	Clean radiator core							●
	Check fan belt tension		●					
HYDRAULIC SYSTEM	- Check oil level				●			
	Change oil and clean filters						●	
ELECTRICAL SYSTEM	- BATTERY							
	Clean terminals							●
	Check electrolyte level		●					
	GENERATOR							
	Lubricate				●			
	Check brushes							●
	Check generator drive belt tension		●					
	Oil distributor				●			
	Check points for wear, set gap					●		
	Check spark plug gap							●
TYRES	- Check pressure		●					
BRAKES	- Check pedal free movement							●
ENGINE CLUTCH	- Check pedal free movement							●
LUBRICATION FITTINGS	- See LUBRICATION CHART							

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OPERATING THE ENGINE

DO NOT ATTEMPT TO START THE ENGINE BY TOWING OR COASTING. TO DO SO MAY CAUSE SERIOUS DAMAGE TO THE ENGINE AND TRANSMISSION.

STARTING THE ENGINE

1. Ensure that the brake pedal locking lever is applied and all controls are in the NEUTRAL position.

2. Check the coolant level in the radiator.

3. Check the engine oil level.

4. Check that sufficient fuel is available and that the fuel shut-off tap is open.

5. Depress the engine clutch pedal to disengage the drive from the engine to the transmission. On tractors equipped with constant running P.T.O. a two pressure clutch is used. First pressure travel need only be used to disengage the transmission.

6. STARTING THE DIESEL ENGINE

(a) Ensure that the engine stop control is pushed fully home.

(b) Advance the governor control lever to the fully open position (lever down).

(c) Turn the starting key clockwise to the first position and depress to energise the glow plugs. When the glow plug indicator glows brightly turn the key fully clockwise against the spring pressure to engage the starter motor. Release the key IMMEDIATELY the engine starts.

NOTE: It will assist the engine to fire evenly, especially when cold, if the glow plug circuit is energised for a further short period after starting the engine.

(d) To re-start a warm engine simply turn and hold the key fully clockwise. Release IMMEDIATELY the engine starts.

(e) When the engine is firing evenly, reduce the governor setting to just above low idle.

7. STARTING THE PETROL ENGINE

(a) Pull out the choke control knob.

(b) Turn the keyswitch fully clockwise against the spring pressure to energise the starter motor. Release the key IMMEDIATELY the engine fires.

(c) The choke control knob should be pushed home as soon as possible after the engine starts.

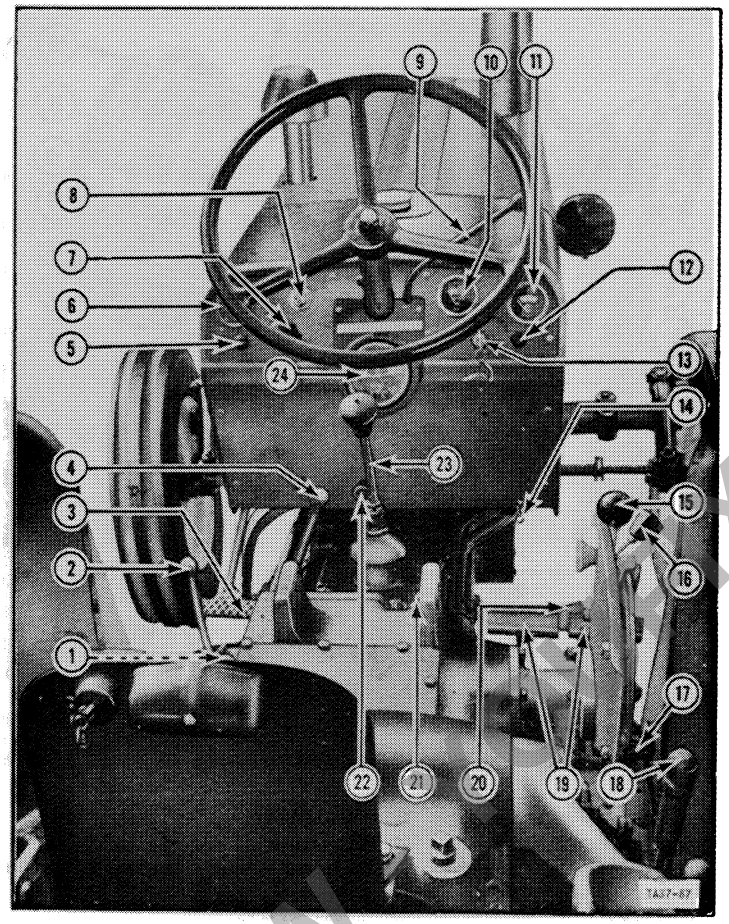
(d) To re-start a warm engine it may not be necessary to use the choke control.

8. If the engine does not start after engaging the starter motor for 15 seconds allow 20 seconds for the battery to recuperate before repeating the procedure. For protection of the battery it is preferable to increase the preglowing of the glow plugs (diesel engine) rather than apply the starter motor too often.

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INSTRUMENTS & CONTROLS



1. Response control
2. Rear P.T.O. Lever (Attachment)
3. Clutch pedal
4. High-low shifter lever
5. Fuse
6. Ammeter
7. Light switch
8. Glow plug indicator
9. Governor control
10. Heat indicator (Attachment)
11. Engine oil pressure gauge
12. Horn button
13. Keyswitch
14. Radiator curtain control (Attachment)
15. Position control lever
16. Draft control lever
17. Differential lock pedal
18. Brake pedal locking lever
19. Brake pedals
20. Brake latch
21. Isolating valve
22. Engine stop control
23. Gear shift lever
24. Tractormeter (Attachment)

Illust. 5 Instruments & Controls (DIESEL)

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STARTING THE ENGINE AFTER STORAGE

1. Remove the valve housing cover and flush the valves and valve mechanism with a mixture of one half kerosene and one half grade 10W oil. Replace the valve housing cover making sure that the gasket is in good condition and in the correct position.

2. Drain the crankcase and oil filter and fill with the specified lubricant. Refer to the LUBRICATION GUIDE.

3. Be sure that the lubricating filter has a new element before starting the engine.

4. Clean the air cleaner and refill the oil cup.

5. Remove the plugs from the air cleaner and exhaust pipe and replace the pre-cleaner.

6. Refill the cooling system and remove the "RADIATOR DRAINED" tag; check for leaks and loose connections.

7. Fill the fuel tank with clean fuel.

8. Install a fully charged battery and be sure that the proper connections are made.

CAUTION: KEEP DOORS AND WINDOWS OPEN OR MOVE THE TRACTOR OUTSIDE THE STORAGE ROOM TO AVOID DANGER FROM EXHAUST FUMES.

9. Start the engine and run at low speed. If the diesel engine is misfiring or loss of power is evident, vent the fuel system.

ATTACHMENTS

GENERAL

The tractor is used for so many different types of work under such varying conditions, that a considerable variety of special equipment is required to adapt it to the users' requirements. By making this equipment available as attachments, the tractor can be purchased by the user in a form most suited to his requirements.

Below is a list of attachments, however, these MUST NOT be ordered from this manual but through an INTERNATIONAL HARVESTER dealer, quoting the tractor and engine serial numbers.

REGULAR TRANSMISSION P.T.O.
SINGLE SPEED CONSTANT RUNNING P.T.O.
DUAL SPEED CONSTANT RUNNING P.T.O.
P.T.O. SAFETY CAP
BELT PULLEY P.T.O.
FRONT P.T.O. PULLEY
FULL FORWARD AND REVERSE TRANSMISSION
MOWER DRIVE
STANDARD HYDRAULIC LIFT
VARY-TOUCH HYDRAULIC LIFT
SELF SEALING COUPLINGS
SINGLE AND DOUBLE ACTING AUXILIARY VALVES
THREE POINT LINKAGE
THREE POINT LINKAGE DRAWBAR
SWINGING DRAWBAR
ADJUSTABLE HEIGHT SWINGING DRAWBAR
ADJUSTABLE CHECK LINK
CHECK CHAINS
AUTOMATIC HITCH (Regular tractor only)

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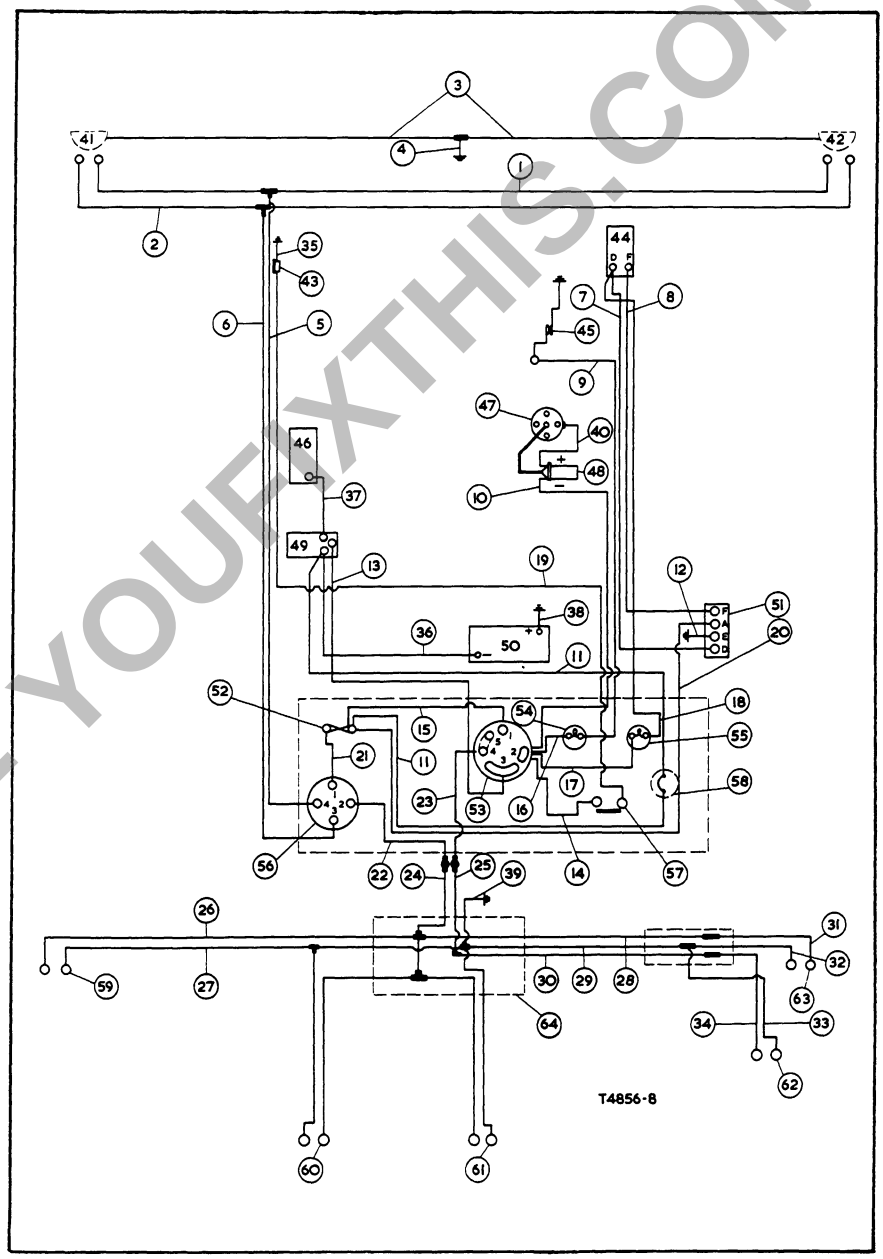
FAULT TRACING

SYMPTOM	PROBABLE CAUSE	REMEDY
1. ENGINE WILL NOT TURN WHEN STARTING MOTOR IS ENGAGED	(a) Discharged battery	Charge or install new battery.
	(b) Loose or dirty terminal connections	Clean and tighten connections.
	(c) Starting motor inoperative	Check connections.
2. ENGINE TURNS BUT WILL NOT START	(a) Water in fuel	Drain system, clean and refill with clean fuel. Vent system (diesel)
	(b) Air in fuel (diesel)	Vent the fuel system.
	(c) Fuel starvation	Check fuel tank. Clean lift pump screen. Blow out fuel lines. Check filters (diesel)
	(d) Carburettor choked (petrol)	Push in choke control and wait a few minutes before attempting another start.
	(e) Glow plug circuit defective (diesel)	Check and service.
	(f) Spark plugs defective (petrol)	Check and service.
	(g) Distributor defective (petrol)	Check and service points. Check point spring. Check condenser. Check distributor cap for cracks and clean contact terminals. Check and clean rotor.
	(h) Air intake or exhaust restricted	Service air cleaner and clean exhaust system.
	(i) Engine oil too heavy for prevailing temperatures	Drain off old oil, flush the system and refill with correct grade oil.
	(j) Partially discharged battery	Recharge battery.
3. ENGINE DOES NOT DEVELOP FULL POWER OPERATES IRREGULARLY	(a) Restriction in engine air supply	Check air cleaning system.
	(b) Restriction in exhaust	Clean exhaust system.
	(c) Restriction in fuel supply	Clean fuel system.
	(d) Carburettor partially choked (petrol)	Check operation of choke control.

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PETROL WIRING DIAGRAM



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SPECIFICATIONS

TRACTOR SPEEDS At rated speed on:	REGULAR				HI-CLEAR	
	10.00-28 tyres		11.00-28 tyres		11.00-38 tyres	
	MPH	KPH	MPH	KPH	MPH	KPH
L1	1.49	2.4	1.6	2.5	1.89	3.02
L2	2.37	3.8	2.5	4.0	3.01	4.82
L3	3.37	5.4	3.5	5.7	4.28	6.85
H1	4.01	6.5	4.2	6.7	5.09	8.14
L4	5.05	8.1	5.3	8.5	6.41	10.26
H2	6.36	10.2	6.6	10.7	8.07	12.91
H3	9.06	14.6	9.4	15.2	11.50	18.40
H4 *	14.4	23.0	15.0	24.0	17.18	27.49
LOW REVERSE	2.25	3.6	2.3	3.8	2.86	4.58
HIGH REVERSE	6.05	9.7	6.3	10.1	7.68	12.29

* Speed at 2000 rpm being speed obtainable on No Load road work

TYRE SIZE (Standard)	REGULAR	HI-CLEAR
FRONT	4.00-19 4 ply	4.00-19 4 ply
REAR	10.00-28 4 ply	11.00-38 4 ply

TYRE PRESSURES

On the highway		
FRONT lb/in^2 (kg/cm^2)	28	(1.97)
REAR lb/in^2 (kg/cm^2)	16	(1.125)
In the field		
FRONT lb/in^2 (kg/cm^2)	20	(1.405)
REAR lb/in^2 (kg/cm^2)	12	(0.843)

COOLANT SYSTEM

Operating pressure lb/in^2 (kg/cm^2)	7	(0.492)

CAPACITIES

Cooling system pints (litres)	18	(10.23)
Fuel tank pints (litres)	68	(38.6)
Crankcase oil pan PETROL pints (litres)...	9	(5.13)
Crankcase oil pan DIESEL pints (litres)...	13	(7.9)
Air cleaner cup pints (litres)	1	(0.37)
Transmission case pints (litres)	32	(18.18)
Transmission case with P.T.O. pints (litres)	38	(21.58)
Hydraulic reservoir pints (litres)	20	(11.4)

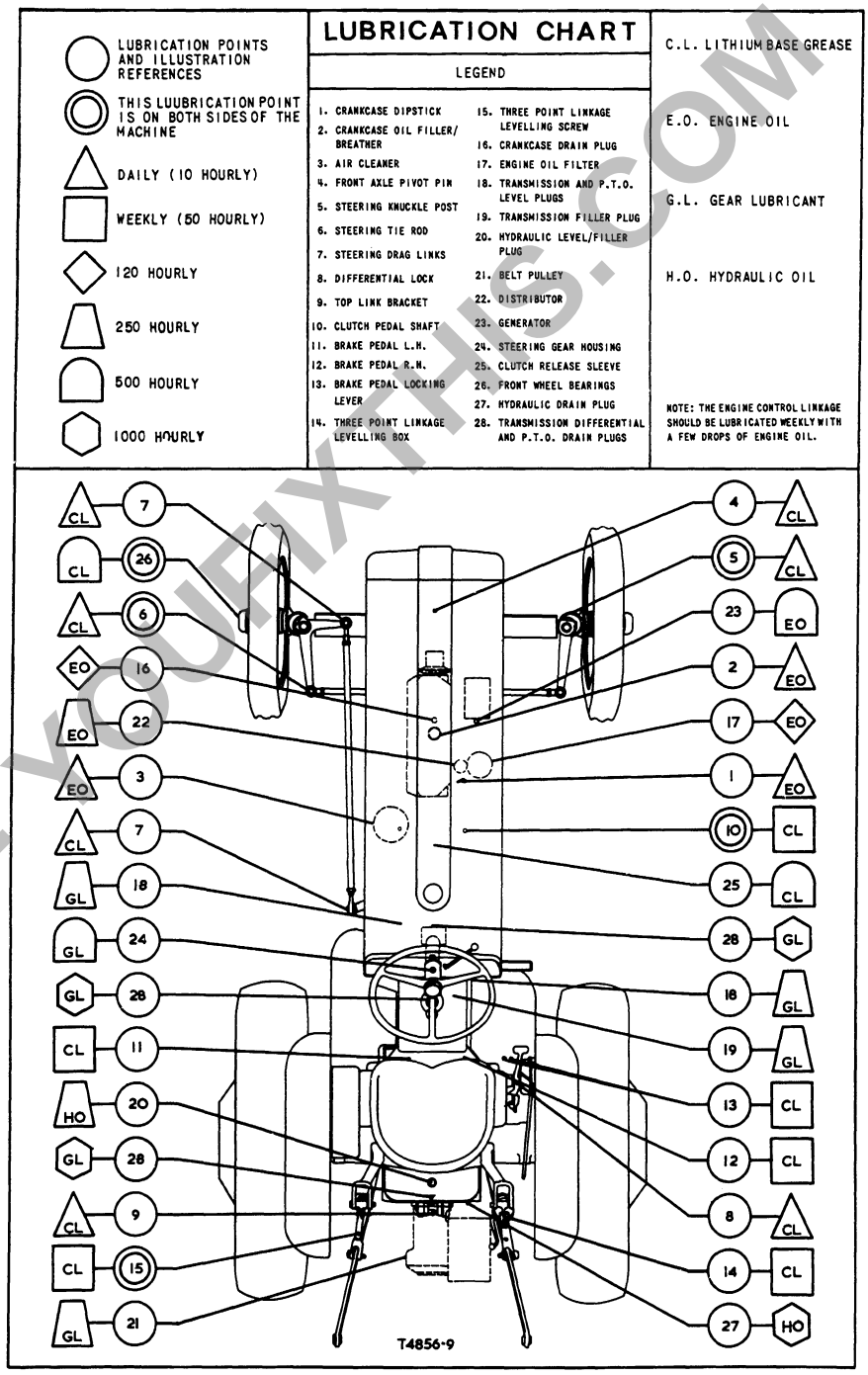
SPECIAL BOLT TORQUES

Cylinder head nuts lb ft (kgm)...	75-80	(10.04-11.06)
Rear wheel hub nuts lb ft (kgm)...	200	(27.6)
Rear wheel rim nuts lb ft (kgm)...	110-115	(15.2-15.9)
Hi-clear rear wheel rim nuts lb ft (kgm) ...	40-50	(5.53-6.91)
Front wheel hub nuts lb ft (kgm)	50	(6.91)
Front axle clamp bolts lb ft (kgm)	250-280	(34.6-38.7)
Clutch pedal pinch bolts lb ft (kgm)	35-40	(4.83-5.53)

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LUBRICATION CHART



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OPERATING THE ENGINE

If the engine will not start after four such applications, do not waste the battery further, but refer to FAULT TRACING.

STOPPING THE ENGINE

1. Prior to stopping, the engine should be allowed to idle for a short period thus cooling it gradually while oil and coolant are still circulating.

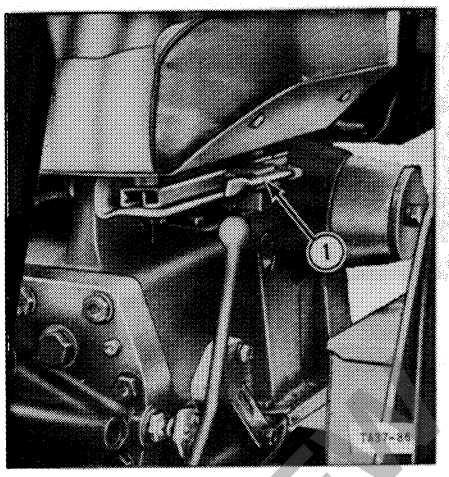
2. STOPPING THE DIESEL ENGINE

(a) Pull out the engine stop control.

3. STOPPING THE PETROL ENGINE

(a) Simply turn the key to the "OFF" position.

DRIVING THE TRACTOR



Illust.9 Seat Adjustment

ADJUSTING THE SEAT

To adjust the seat, push the lever (1 Illust.9) away from the operator and move the seat to the desired position.

Check that the seat is locked safely after adjustment.

NOTE: The seat pins must be in the front holes in the rear frame cover at all times.

SETTING THE TRACTOR IN MOTION

1. When the engine has been started and thoroughly warmed up, set the governor control to just above half engine speed.

2. Depress the engine clutch pedal to disengage the drive from the engine to the transmission.

NOTE: With the two pressure clutch the first stage operates the transmission only.

3. Move the gear shift lever and Hi-low shift lever into the desired speed position (Illust.10).

4. Apply the footbrakes and release the brake pedal locking lever.

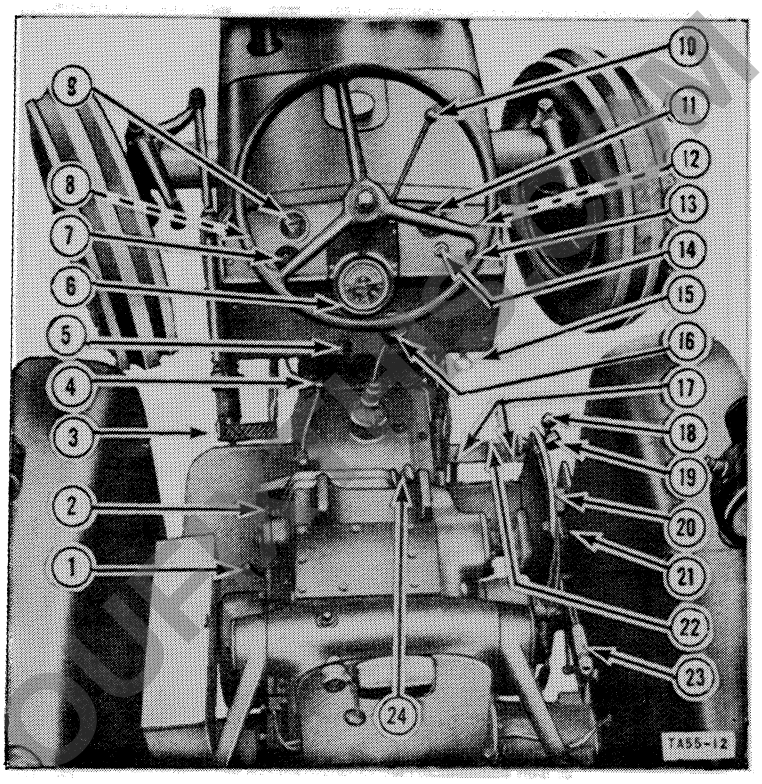
5. Engage the transmission by slowly releasing the clutch pedal.

NOTE: DO NOT suddenly release the clutch pedal as this,will impose shock loads on the transmission and may stall the engine.

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INSTRUMENTS & CONTROLS



1. P.T.O. lever (Attachment)
2. Response control
3. Clutch pedal
4. High-low shifter lever
5. Choke control
6. Tractormeter (Attachment)
7. Light switch
8. Oil pressure warning light
9. Heat indicator (Attachment)
10. Governor control lever
11. Ammeter (Attachment)
12. Ignition warning light
13. Horn button
14. Keyswitch
15. Radiator curtain control (Attachment)
16. Gear shift lever
17. Brake pedals
18. Position control lever
19. Draft control lever
20. Foot accelerator (Attachment)
21. Differential lock pedal
22. Brake latch
23. Brake pedal locking lever
24. Isolating valve

Illust.6 Instruments & Controls (PETROL)

GENERAL

This section explains briefly the operation of the instruments and controls. Fuller details, where necessary, will be found in the relevant operating section.

The operator must be thoroughly acquainted with the location and use of all instruments and controls and regardless of experience must read this section carefully before attempting to operate the tractor.

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