Diesel Tractors
1255, 1455

Operator's Manual

1091540R2

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MAJOR SECTION CONTENTS

This Operator's Manual consists of the following major sections:

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Maintenance operations as described in this manual can, as a rule, be made by the operator himself.

Caution: It is, however, strongly recommended to let your dealer's serviceman take care of such operations as repair and adjustments on fuel injection system, brake system, steering gear, drive shafts, electrical system and mounting tires.

Safety rules are given for your protection, it pays to observe them.

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		1255	1455
Engine 6-cylinder turbo-charged 4 cycle Diesel with direct injection and pressure feed lubrication		DT 358	DT 402
Low idle speed	1/min	700–800	700–800
Rated speed	1/min	2200	2200
High idle speed	1/min	2370–2430	2370–2430
Piston displacement	cm^3	5867	6587
Bore	mm	98.4	100
Stroke	mm	128.5	139.7
Firing order		1–5–3–6–2–4	1–5–3–6–2–4
Valve clearance (engine hot)	mm	0.30	0.30
Compression ratio		16:1	15:1
Most favourable operating temperature	°C	85–95	85–95
Injection pump "Bosch"	VE6/	12F/1100 R52	12F/1100 R47
Injection nozzles "Bosch"		DLL 150 S 815	DLLA 150 S 843
Nozzle holder "Bosch"	KBEL	84 S 4/13	84 S 4/13
Nozzle opening pressure	bar	240–248	240–248
Injection pump timing (static)	BTDC	8°	14°
Battery		12V 110Ah	12V 110Ah
Alternator "Bosch"	G1	14V 33 A 27	14V 33 A 27
Starting motor "Bosch"	JF	12V	12V

Capacities	Liters	Liters
Fuel tank	140	140
With additional fuel tank	200	200
Cooling system, with cab	32	33
w/o cab	30	31
Engine crankcase	12.5	12.5
Transmission and hydraulic lift housing (*		
with 4–WD	40	40
w/o 4–WD	34	34
Hydrostatic steering	3.0	3.0
Turbo clutch	8.7–8.8	9.1–9.2
Rear axle		
with 4–WD	8.0	8.5
w/o 4–WD	8.5	–
Front drive axle		
Differential	7.0	7.0
Planetary wheel hubs each	1.0	1.0
Oil reservoir (brake)	0.5	0.5

PTO – Shaft speed range		
540/min at engine speed	2100	2100
1000/min at engine speed	2150	2150

(* Max. permissible displacement of oil to additional equipment refer to section: "Auxiliary Control Valve".

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Special Torques	daNm
Front wheel bolts, 2–WD	30
Front wheel nuts, 4–WD	30 – 35
Rim nuts, front wheel, 4–WD	30
Rear wheel nuts	45 – 50
Rim nuts, rear wheel	35 – 40
Clamping bolts, front axle extension	20 – 22
Set screw and lock nut, front axle pivot pin (23) Illust. 45	15
Clamping bolts, steering lever (2) Illust. 52b	30
Lock nut, steering cylinder (4–WD) (41) Illust. 45	28
Lock nut, steering cylinder (2–WD) (41a) Illust. 45	20
Mounting bolts, pivot pin bearing (3) Illust. 52a	36
Cylinder head bolts	14 – 15
Hydraulic pump bolts	4 – 4.5
Transmission drain plug	7
Rear axle drain plugs	7
Turbo clutch oil level and drain plug	3
Platform and cab see Illust. 46 or 46a	
Fuel filter see corresponding section	

SI Measurements

A standard of measurement known as International system of Units (SI) has been adopted for world-wide use. These units are used throughout this manual.

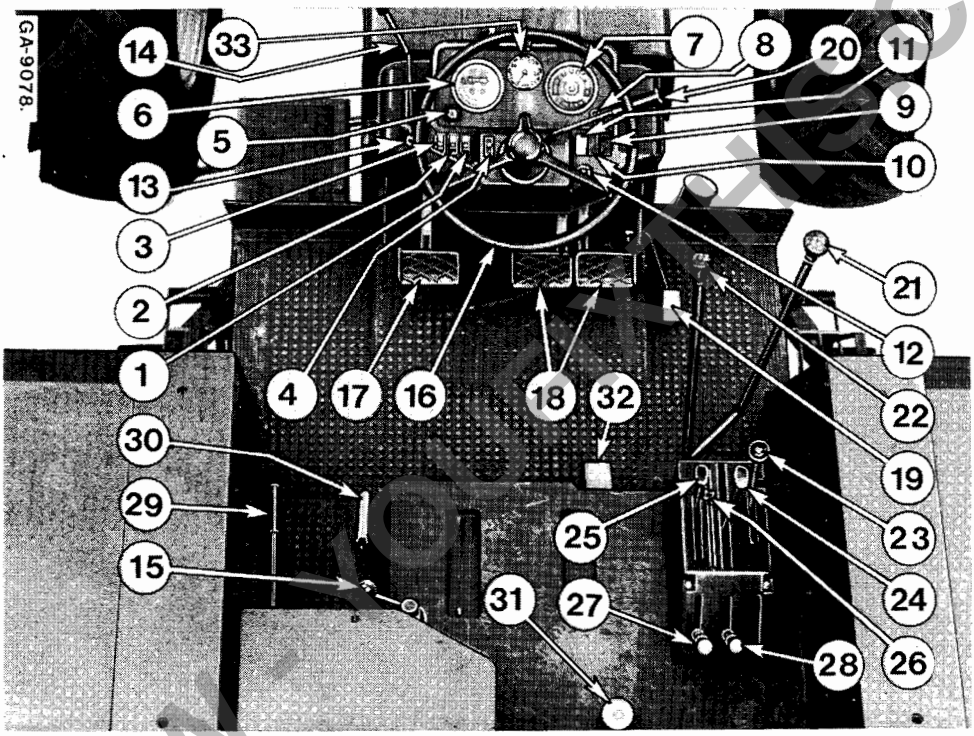
SI Unit		English Equivalent
mm	– millimeter	0.039 inches
cm	– centimeter	0.39 inches
cm^3	– cubic centimeter	0.06 cubic inches
m^3	– cubic meter	35.31 cubic feet
l	– liter	1.057 quarts
kg	– kilogram	2.205 pounds weight
kPa	– kilopascal	0.145 psi
MPa	– Megapascal	145 psi
N	– Newton	0.225 pounds force
daN	– dekanewton	2.25 pounds force
Nm	– Newton meter	0.738 foot pounds force
daNm	– dekanewton meter	7.38 foot pounds force
°C	– degrees-Celsius	°Fahrenheit = 1.8 x °C + 32
kW	– kilowatt	1.34 horsepower
l/min	– liter/minute	0.219 gallons per minute
km/h	– kilometer/hour	0.621 miles per hour
1/min		rpm

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General

Regardless of previous experience as a tractor operator, you must be thoroughly familiar with the location and use of all instruments and controls before operating this tractor. Check all instruments, immediately after starting, again upon reaching operating temperatures and at frequent intervals during operation to assure proper care through prompt detection of irregularities. If any of the instuments do not register properly, stop the engine; locate and correct the cause immediately.

Be careful! Any attempt to operate the machine without sufficient knowledge may be a hazardous venture.



Illust. 6

1 – Hazard warning light switch
2 – Light switch
3 – Windshield wiper and washer switch
4 – Parking brake warning light
5 – Engine shut-off control
6 – Tractormeter
7 – Instrument cluster
8 – Plug socket
9 – Additional light switch *
10 – Warning light, turbo clutch *
11 – Differential lock indicator lamp *
12 – Ignition light switch
13 – Directional signal light and dimmer switch with horn button
14 – Pto clutch hand lever
15 – Pto shifter lever
16 – Steering wheel
17 – Clutch pedal
18 – Brake pedals
19 – Accelerator pedal
20 – Hand throttle
21 – Speed range lever
22 – Gearshift lever
23 – Creep speed lever*
24 – Draft or position control lever
25 – Pre-selector lever for draft or position control
26 – Marker knob
27 – Auxiliary valve control lever (double action)*
28 – Auxiliary valve control lever (single action)*
29 – Front wheel drive lever*
30 – Parking brake handle
31 – Lowering speed control
32 – Differential lock pedal
33 – Air pressure gauge*

* if so equipped

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Breaking-in Period

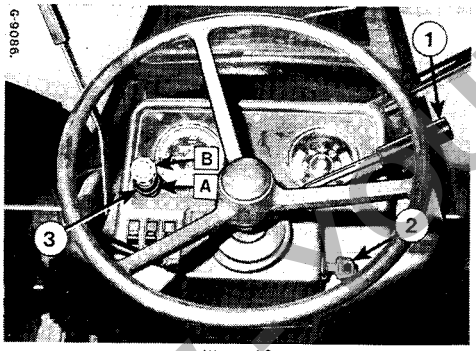
In order to obtain best "breaking-in" results tractor and engine must not be subjected to full load or speed, during the critical first 20 hours of operation. Experience has shown that gradually increasing the load with alternating engine speeds is the best way of introducing a new tractor to a long and satisfactory service life.

Following schedule should be adopted:

1st—4th operating hour 1700/min on a light (1/4) load.
5th—20th operating hour full rated speed and medium load.

Avoid high engine speeds without load during the breaking-in time. After 20 operating hours the engine should be subjected to full load for short periods as part of the breaking-in program.

Starting the Engine



Illust. 16

1 – Hand throttle
2 – Ignition–light–switch
3 – Shut-off control
A = Operating position
B = Shut–down position

Be sure gearshift and pto shifter lever are in neutral.

Note: If the tractor is equipped with safety starting switches, the starting motor will not operate unless the gearshift lever is in neutral.

1. Place hand throttle (1) Illust. 16 in high idle position (full throttle).

2. Depress and turn the ignition light switch to position (5) Illust. 8 to engage the starting motor. As soon as the engine fires release the switch.

Note: If the engine does not fire within 10 seconds, release the starter switch until the starting motor has come to rest, then try again. Never turn the starter switch while the flywheel is turning or damage may occur to the starting motor or flywheel ring gear.

3. Operate the throttle and allow the engine to warm up at medium speed.

Starting in Cold Weather

When starting in cold weather (0°C and below) turn the ignition-light switch (2) Illust. 16 to position (4) Illust. 8 and hold it there for 60 seconds depending on prevalent temperatures. If the engine does not fire within 20 sec., preheat again for 30 sec. and start once more. If engine still does not fire see "Trouble Shooting Chart".

For the protection of the battery it is advisable to hold the starter button in the preheating position a few seconds longer so that the engine will fire the first time.

Stopping the Engine

1. It is very important to operate a hot engine at half throttle (no load) for three to five minutes before shutting down. These few minutes allow the lubricating oil and coolant to carry heat away from the iron masses. If a hot engine is shut down repeatedly without previous idling the temperature in certain engine parts, rising sharply after the cooling system ceases to function, may cause serious damage.

2. Return hand throttle lever to idle position.

3. Pull out shutt-off control (3) Illust. 16 all the way to stop the engine.

4. When engine is at rest turn switch key to position "2".

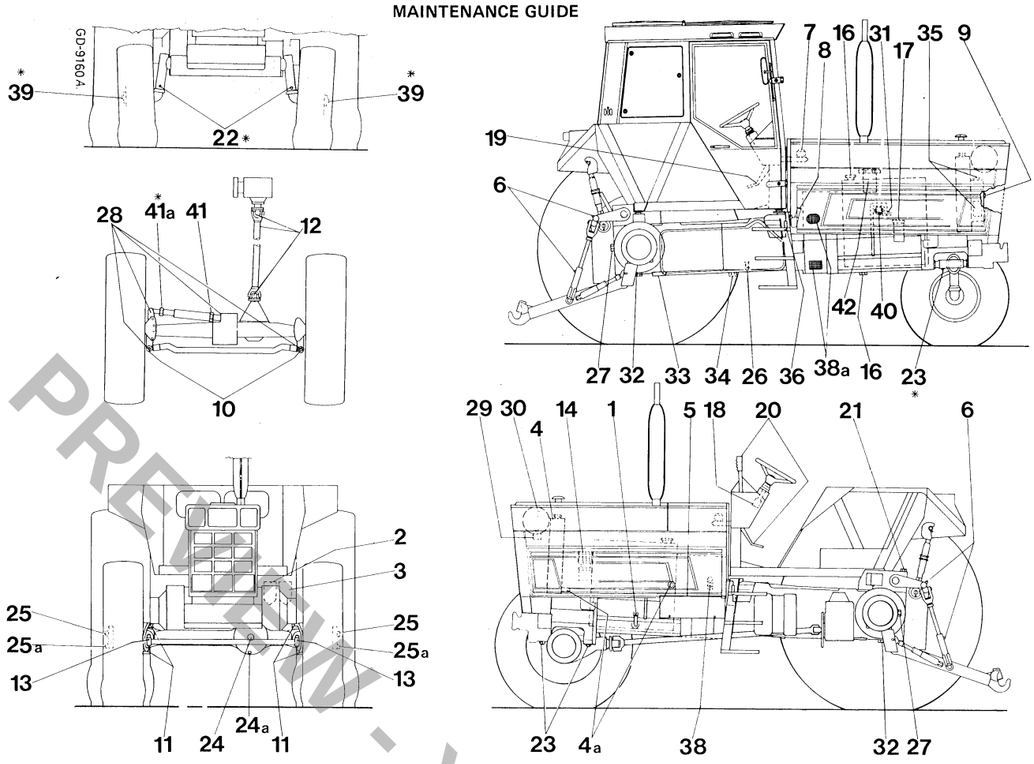
Operating the Tractor

Before operating the tractor check proper function of brakes, lights and instruments.

When operating a tractor equipped with pneumatic trailer brake system make sure, pressure gauge (33) Illust. 6 shows operating pressure.

To shift gears the clutch pedal must be depressed all the way. To start the tractor in motion the clutch pedal is slowly released. Care should be taken to release the clutch pedal neither too slowly nor too suddenly. A sudden release of the clutch pedal will start the tractor with a jerk, while releasing the pedal too slowly causes excessive wear on the clutch linings.

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Illust. 45
*) 2 — WD only

SERVICING AND INSPECTIONS

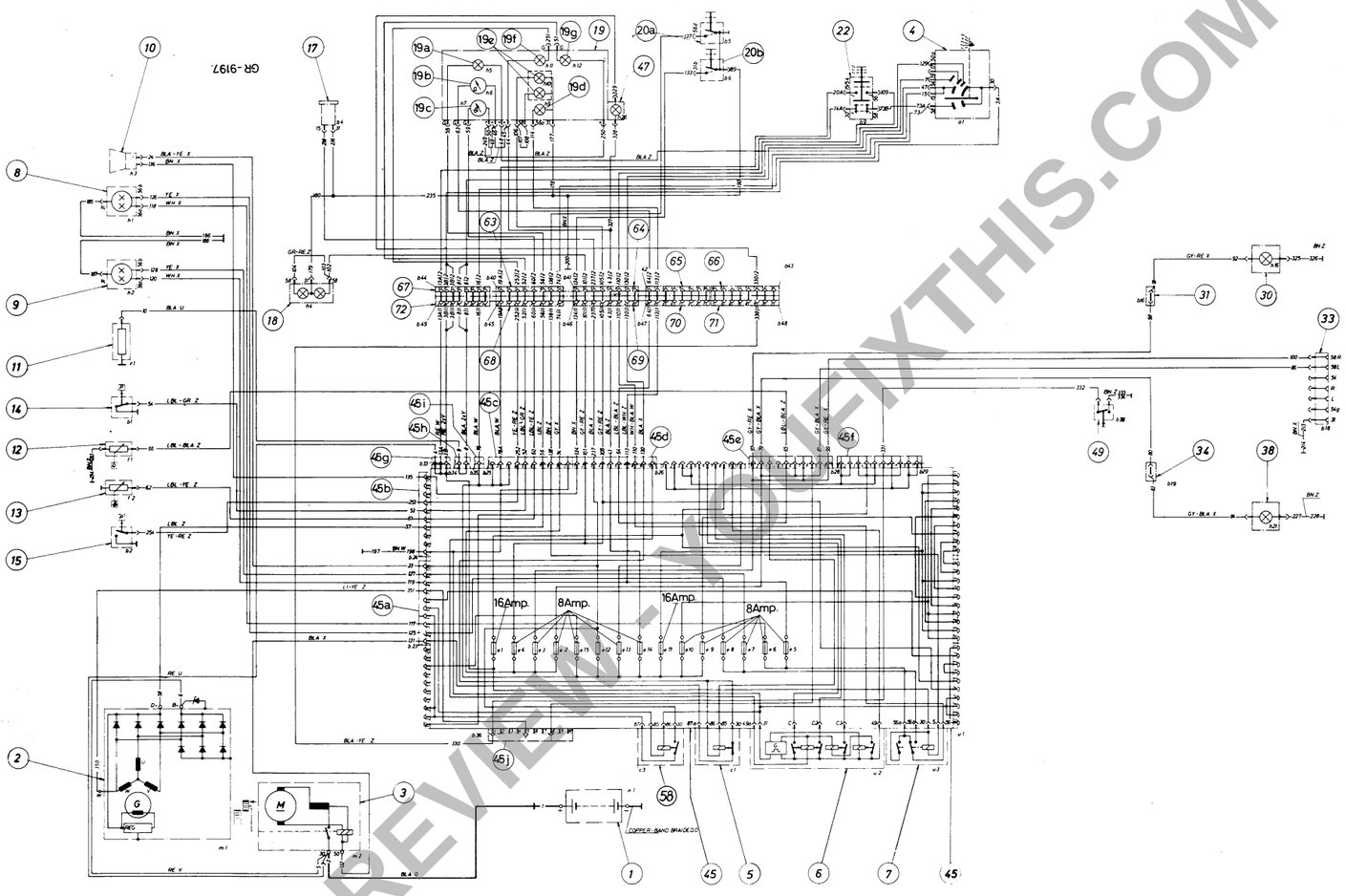
The life and performance of a tractor depend on the care that it is given. Proper lubrication is a very important part of that care.

The type of work being done, load, ground and weather conditions are all factors to consider in frequency of lubrication. The scheduled intervals between lubrication periods shown on the "Periodic Servicing Schedule" are approximate, being based on average conditions. It may be necessary to lubricate after shorter working periods under severe operating conditions such as extremely dusty conditions, low engine temperatures, intermittent operation, excessively heavy loads with high oil temperatures, or when diesel fuel with a high sulphur content is used.

Note: Service Inspections are given as a "starting aid" to introduce the tractor to a long life of trouble free operation. Besides checking on operating safety it is essential to assist the operator in understanding the principle points of preventive maintenance as laid down in this manual.

Periodic Servicing Schedule				**Inspections**		
Service Intervals (in hours of operations)	*No on chart*	*Point of Service*	*Service*	*first 20 h*	*second 200 h*	*third and all further 800 h*
Every 10 h	1	Engine	Check oil level			
Every 50 h	2	Primary fuel filter	Drain water	X	X	
	3	Final fuel filter	Drain water	X	X	X
	4	Radiator	Check coolant Level	X	X	X
	5	Battery	Check electrolyte level	X	X	X
	6	Lifting rods, RH and LH	Grease	X	X	X
	7	Brake oil reservoir	Check oil level	X	X	X
	8	Fuel tank cap ventilation	Check and clean	X	X	X
		Fuel system	Check for leakage	X	X	X
	9	Hydrostatic steering	Check oil level	X	X	X
	10	Tie rod	Grease	X	X	X
	11	Steering knuckle, upper and lower	Grease	X	X	X
	12	Drive shaft	Grease	X	X	X
	13	Universal joints (both sides)	Grease	X	X	X
	14	Compressor (pneum. trailer brake)	Check lubricating system for leakage	X	X	X
	38a	Turbo clutch, intake and exhaust screens	Check and clean	X	X	X

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Illust. 96

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