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644, 744, 844 & 844S Diesel Tractors

Operators Manual

1091240R2

Reprinted

CASE IH

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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 dealers serviceman take care of such operations as repair and adjustment on fuel injection system, brake system, hydraulic system, steering gear, drive shafts, electrical system.



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

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Dimensions mm		644		744	
		Standard	All-wheel drive	Standard	All-wheel drive
Lenght overall (with three-point suspension hitch)		3568	3576	3568	3603
Width overall (to outside edge of rear wheel fenders)		2048	2048	2048	2048
Height overall (to top of exhaust muffler)		2310	2310	2340	2340
Height overall (to top of cabin)		2579	2579	2579	2579
Height overall (to top of safety frame)		2492	2492	2545	2545
Wheel base		2226	2186	2226	2186
Ground clearance (under front axle)		473	372	511	382
Ground clearance (under rear axle)		402	402	472	472
Tread, see section adjusting tread width					
Turning radius, without steering brake	mechanical steering	8050	–	8050	–
	hydrostatic steering	8850	9500	8850	9500
Turning radius, with steering brake applied	mechanical steering	7150	–	7150	–
	hydrostatic steering	7850	8300	7850	8380

Dimensions with tire sizes: 644 13–30 AS or 14–30 AS
744 Standard 14–34 AS and 7.50–18 ASF
All-wheel drive 14–34 AS and 10–24 ASF
(Specifications subject to change without notice)

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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		644	744
Engine 4-cylinder 4 cycle Diesel with direct injection and pressure feed lubrication		D–206	D–239
Rated speed	1/min	2180	2300
Max. idle speed (no load)	1/min	2410	2540
Low idle speed	1/min	650 – 750	650 – 750
Piston displacement	cm^3	3382	3911
Bore	mm	98.4	98.4
Stroke	mm	111.1	128.5
Firing order		1 – 3 – 4 – 2	1 – 3 – 4 – 2
Compression ratio		16	16
Injection timing-static	BTDC	12°	16°
Valve clearance (engine warm):			
Intake	mm	0.25	0.25
Exhaust	mm	0.30	0.30
Battery	12V	88 Ah or 110 Ah	88Ah or 110Ah
Injection pump "Bosch"	EP/VA4	100H1090 CR84	100H1150 CR69-3
Injection nozzles "Bosch"	DLLA	150 S 716	150 S 690
Nozzle holder "Bosch"	KBEL	84 S 4/13	84 S 4/13
Injection pressure	MPa	22.5 – 23.3	22.5 – 23.3
Starting motor "Bosch"	JD	12 V 3 kW	12 V 3 kW
Alternator "Bosch"	G1	14 V 28 A 22	14 V 28 A 22

Capacities in liters	644		744	
	Standard	All-wheel drive	Standard	All-wheel drive
Engine crancase	9.0	9.0	9.0	9.0
Transmission case – standard	42.0	45.5	42.0	45.5
Powershift	35.0	38.5	35.0	38.5
Hydraulic lift housing	18.0	18.0	18.0	18.0
Planetary final drive	3.5	3.5	3.5	3.5
Fuel tank	70.0	70.0	70.0	70.0
Cooling system	17.5	17.5	19.5	19.5
Front drive axle Differential – APL–1551	–	5.9	–	5.9
APL–3052	–	7.0	–	7.0
Planetary wheel hubs	–	1.0	–	1.0
Brake system	–	–	0.4	0.4

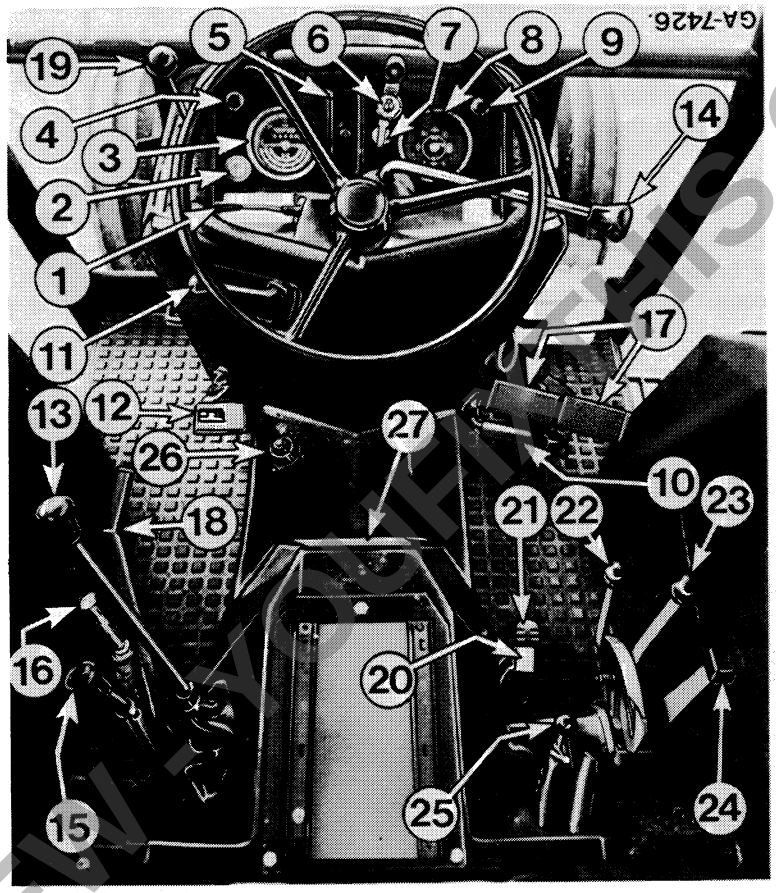
PTO–Shaft speed range		644	744
540/min at engine speed		1982	1917
1000/min at engine speed		2000	2000
Clutch			
Single plate, dry disk, spring loaded,	dia mm	280	280
Dual plate, dry disk, spring loaded,			
Engine disk	dia mm	280	280
PTO, disk	dia mm	280	280
Tire Pressure			
Front wheels	on road MPa	0.2	0.2
	on field MPa	0.15 – 0.2	0.15 – 0.2
Rear wheels		refer to "Pneumatic Tires"	

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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 instruments 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. 4

1 — Directional signal light and dimmer switch with horn button
2 — Hazard warning light switch (if so equipped)
3 — Tractormeter
4 — Starting and shut-off control
5 — Fuse box
6 — Ignition and light switch
7 — Plug socket
8 — Instrument cluster
9 — Glow starter switch
10 — Accelerator pedal
11 — Hand throttle
12 — Clutch pedal
13 — Speed range lever
14 — Gearshift lever
15 — Speed reducer lever
16 — Front wheel drive lever
17 — Brake pedals
18 — Parking brake lever
19 — PTO-clutch lever
20 — PTO-shifter lever
21 — Differential lock pedal
22 — Position control lever
23 — Draft control lever
24 — Mark lever
25 — Auxiliary valve control lever
26 — Pump, windshield washer
27 — Cover

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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 20hours 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.

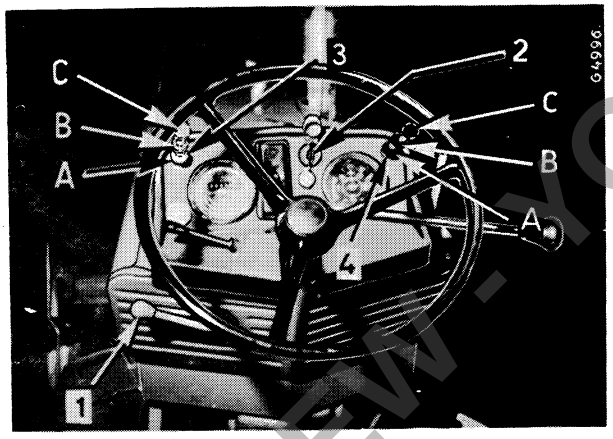
Following schedule should be adopted:

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

Be sure gearshift and pto shifter lever are in neutral.



Illust. 17

1 – Hand throttle
2 – Switch key
3 – Starting and shut-off control
A = Operating position
B = Starting position
C = Shut-down position
4 – Glowstarter switch
A = Neutral position
B = Pre-heating
C = Starting

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

Open fuel shut-off valve.

1. Place hand throttle in high idle position (full throttle).
2. Turn switch key in position "1", see Illust. 5.
3. Pull out control (3) Illust. 17 to its first stop position (B) and hold it there.
4. Pull out glow starter switch (4) all the way (C) to engage the starting motor.

   As soon as the engine fires, release the starter button which will automatically return to neutral position (A). Push starting control (3) to position (A).

   Note: If the engine does not fire within 10 seconds, release the starter button until the starting motor has come to rest, then try again. Never pull the starter button while the flywheel is turning or damage may occur to the starting motor or flywheel ring gear.
5. Operate hand throttle and allow the engine to warm up at medium speed.

Starting in Cold Weather

When starting in cold weather pull out the glow starter switch (4) to position (B) and hold it there for 30–60 seconds depending on prevalent temperatures.

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

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Adjusting Front Wheel Tread Width

Standard Tractors

On tractors equipped with adjustable front axle, front wheels can be set in tread positions varying as shown in the table below by moving the axle extensions in or out, as required. The axle extensions are provided with three locating notches and are held in place by clamping bolts (1) Illust. 23.

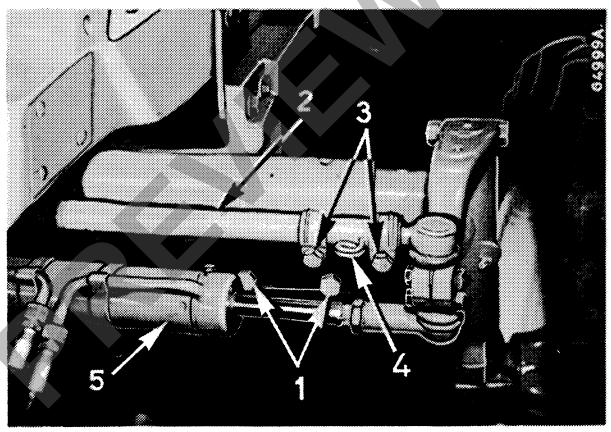
Front axle height	Tires	Tread width				
		Adjustable front axle				Rigid front axle
		1*	2	3	4	
mm		mm	mm	mm	mm	mm
457	6.00 – 16	1416	1516	1616	1716	1522
	7.50 – 16	1450	1550	1650	1750	1550
	7.50 – 18	1443	1543	1643	1743	1547
508	6.00 – 16	1428	1528	1628	1728	1534
	7.50 – 16	1457	1557	1657	1757	1562
	7.50 – 18	1452	1552	1652	1752	1560
610	6.00 – 16	1446	1546	1646	1746	–
	7.50 – 16	1480	1580	1680	1780	–
	7.50 – 18	1476	1576	1676	1776	–

* Factory adjustment

Reversing the wheels, i.e. turning concave disk sides outwards will extend the front wheel tread width by an additional 140 mm.

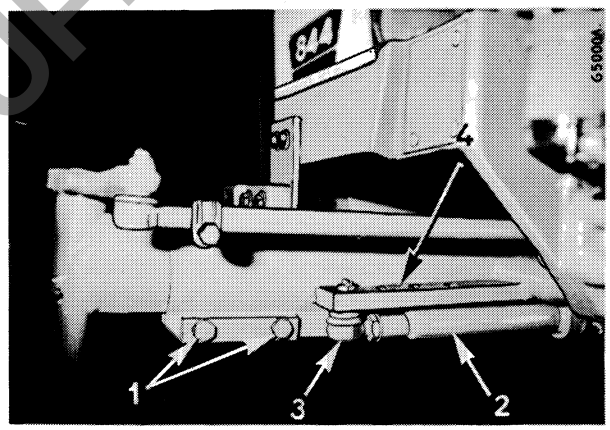
Tighten front wheel bolts to 15 daNm torque.

To adjust wheel tread proceed as follows:



Illust. 23

1 – Clamping bolts
2 – Tie rod
3 – Tie rod clamps
4 – Spring clip
5 – Steering cylinder



Illust. 24

1 – Clamping bolts
2 – Steering cylinder
3 – Ball joint
4 – Adjusting ledge

Jack up tractor under front axle. Remove clamping bolts (1) Illust. 23 and pull out spring clip (4). Loosen clamps (3) on tie rod.

Now pull out front axle extensions an equal distance on both sides to the desired tread position. Line up locating notches. Insert bolts (1) and tighten to 28 daNm torque.

Adjust the tie rod to conform with the tread width.

Replace spring clip (4) and tighten tie rod clamps (3).

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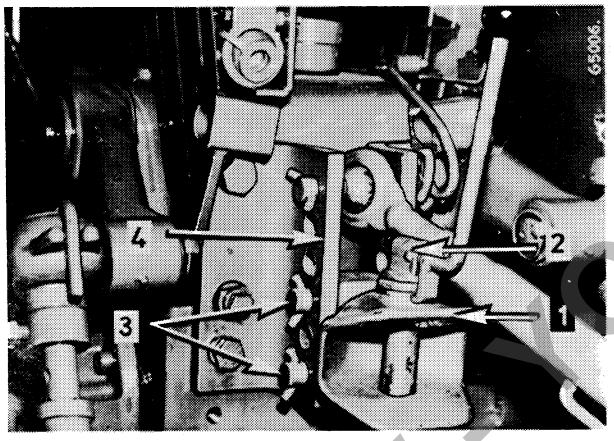
Hitching Draw Clevis, Front

The front draw clevis is very useful especially when manoeuvering trailers.

Always use the special pin provided for this purpose and secure it with the spring clip.

Trailer Hitch, Rear

A heavy-duty trailer hitch is provided on the rear of the main frame, see Illust. 32. Two holes are provided for vertical adjustment. The trailer hitch pin (2) is secured in place by a spring loaded latch. To remove the pin, push the lever knob toward the pin. When the pin is replaced the latch engages automatically.



Illust. 32

1 – Trailer hitch, rear
2 – Trailer hitch pin
3 – Cross pins
4 – Bracket

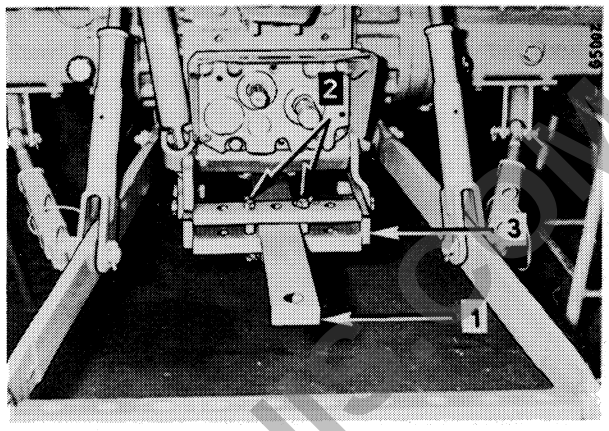
Swinging Drawbar

The swinging drawbar facilitates side adjustment of the hitch point and is of distinct advantage where short turns are desired as in disking.

Raise the three-point linkage out of the way and secure the upper link with the clamp provided for this purpose.

Standard distance between pto shaft end and drawbar hitch point is automatically taken care of by the drawbar length.

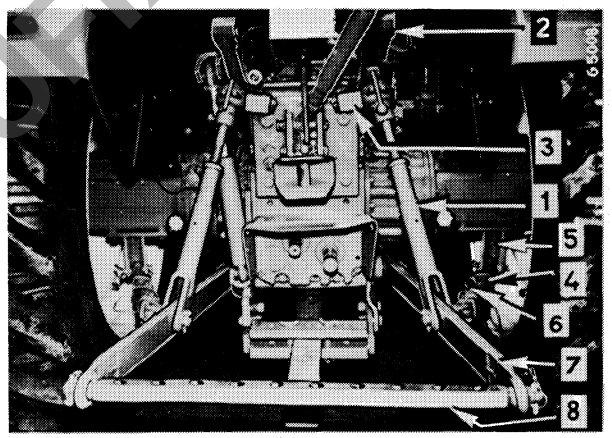
The swinging drawbar can also be locked in any given position.



Illust. 33

1 – Swinging drawbar
2 – Locating pins
3 – Drawbar

Drawbar



Illust. 34

1 – Lifting rods
2 – Rocker arms
3 – Lifting rod brackets for rigid suspension
4 – Stabilizers
5 – Side brackets
6 – Locking pins
7 – Lower links
8 – Drawbar

When hitching machines or trailers to the three point suspension hitch drawbar observe the following precautions:

Fit both lifting rods (1) Illust. 34 in the brackets (3) for vertical rigid setting of the hitch.

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