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454, 474, 475, 574 & 674 Tractors & 2400 - 2500 Industrial Tractors

Operators Manual

1092877R7

Reprinted

CASE IH

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This symbol means ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED. The message that follows the symbol contains important information about your safety. Carefully read the message. Make sure you fully understand the causes of possible injury or death. SB001

IF THIS MACHINE IS USED BY AN EMPLOYEE, IS LOANED, OR IS RENTED, MAKE SURE THAT THE OPERATOR UNDERSTANDS THE TWO INSTRUCTIONS BELOW.

BEFORE THE OPERATOR STARTS THE ENGINE:

1. GIVE INSTRUCTIONS TO THE OPERATOR ON SAFE AND CORRECT USE OF THE MACHINE.
2. MAKE SURE THE OPERATOR READS AND UNDERSTANDS THE OPERATOR'S MANUAL FOR THIS MACHINE.

WARNING

IMPROPER OPERATION OF THIS MACHINE CAN CAUSE INJURY OR DEATH.

BEFORE STARTING THE ENGINE, DO THE FOLLOWING:

1. READ THE OPERATOR'S MANUAL.
2. READ ALL SAFETY DECALS ON THE MACHINE.
3. CLEAR THE AREA OF OTHER PERSONS.

LEARN AND PRACTICE SAFE USE OF MACHINE CONTROLS IN A SAFE, CLEAR AREA BEFORE YOU OPERATE THIS MACHINE ON A JOB SITE.

It is your responsibility to observe pertinent laws and regulations and to follow manufacturer's instructions on machine operation and maintenance.

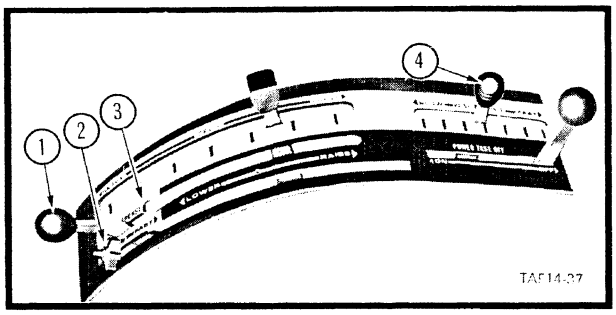
See your Authorized Case dealer for additional operator's manuals, parts catalogs, and service manuals.

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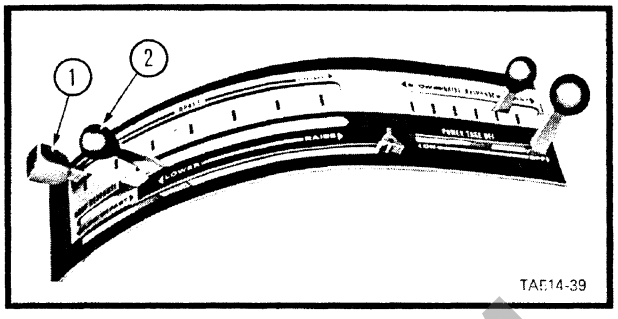
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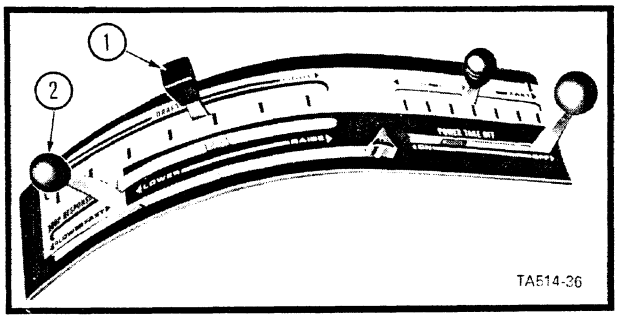
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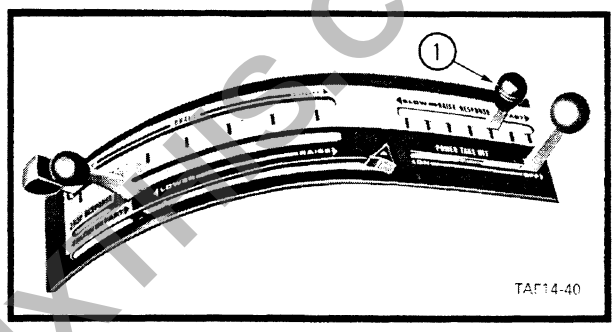
Illust.19



Illust.21



Illust.20



Illust.22

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475 SPECIFICATIONS

ENGINE		
Model	D - 212	
Number of cylinders	4	
Bore	98.43 mm	(3.88 in)
Stroke	114.3 mm	(4.5 in)
Displacement	3475 cm^3	(212 in^3)
Firing order	1 - 3 - 4 - 2	
Valve clearance	(COLD)	
	0.30 mm	(0.012 in)
Injection pump	CAV	
Static timing (degrees B.T.D.C.)	24	
Injector nozzle type	BDLL 150S 6555	
Nozzle holder type	BKBL 67S 5151	
Engine speeds		
Rated governed	2200 rev/min	
Low idle (±25 rev/min)	725 rev/min	
Crankcase capacity (incl. filter)	8 litres	(14 pints)
Cooling system capacity	11.4 litres	(20 pints)

WHEELS AND TREAD*		
Tyre size		
Front	6.00 x 16	
Rear	12.4/11 x 36	
Available tread settings		
Front	133 to 203 cm	(52 to 80 in)
Rear	133 to 193 cm	(52 to 76 in)

*Further information on available tyre sizes, pressures and tread settings will be found in PREPARING THE TRACTOR FOR WORK.

HYDRAULIC SYSTEM		
Nominal lifting force at link ends	1790 kg	(3950 lb)

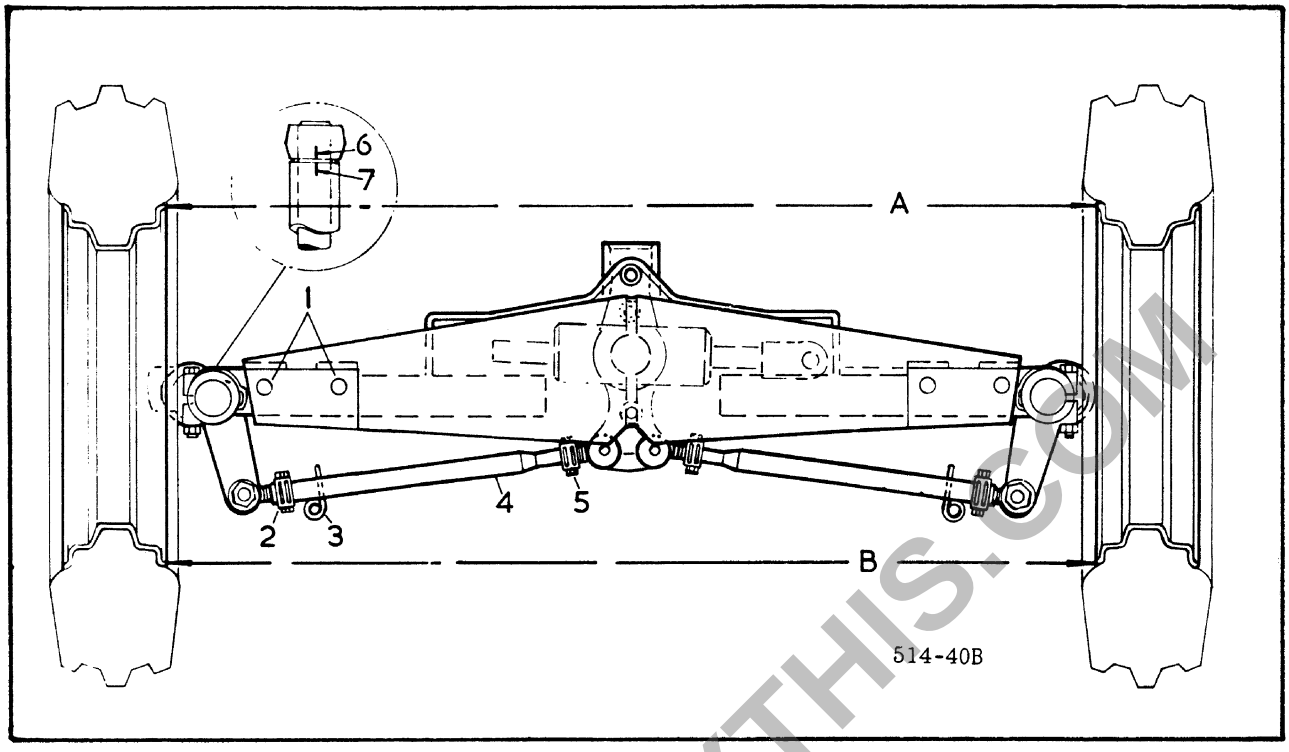
GENERAL DIMENSIONS		
Length overall	343 cm	(135 in)
Width overall (min)	163 cm	(64 in)
Height to top of steering wheel	151 cm	(59.5 in)
Height to top of cab	231 cm	(91 in)
Ground clearance		
Under sump	44.5 cm	(17½ in)
Under swinging drawbar	33.7 cm	(13.3 in)
Under three position drawbar	33 cm	(13 in)
Drawbar heights		
Swinging drawbar	31 cm	(12.2 in)
	40 cm	(15.9 in)
Three position drawbar	25 cm	(10 in)
	34.5 cm	(13.6 in)
	39 cm	(15.5 in)
	49 cm	(19.3 in)
Automatic hitch hook height	39 cm	(15.5 in)

APPROXIMATE WEIGHTS		
Front	838 kg	(1848 lb)
Rear	1727 kg	(3808 lb)
Total	2565 kg	(5656 lb)

POWER TAKE OFF SHAFT SPEEDS
Refer to table in 574 Specifications

GROUND SPEEDS
Refer to gear drive table in 574 Specifications

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Illust.23

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574 - 2500 SPECIFICATIONS

The following gear drive speed chart is based on 12.4 11 x 36 tyres with the engine speed at 2200 rev/min.

GEAR	SLOW SPEED DRIVE TRAIN CODE A				FAST SPEED DRIVE TRAIN CODE B			
	BEVEL GEAR CODE R		BEVEL GEAR CODE S		BEVEL GEAR CODE R		BEVEL GEAR CODE S	
	km/h	miles/h	km/h	miles/h	km/h	miles/h	km/h	miles/h
L1 TA	2.25	(1 40)	2.73	(1 70)	2.41	(1.50)	2.93	(1.82)
DD	2.72	(1.69)	3.30	(2.05)	2 91	(1.81)	3 54	(2.20)
L2 TA	3.11	(1.93)	3 77	(2.34)	3.94	(2.45)	4 76	(2.96)
DD	3.75	(2.33)	4.54	(2.82)	4.75	(2 95)	5 74	(3 57)
L3 TA	4.46	(2.77)	5.41	(3.36)	5 31	(3 30)	6 44	(4.00)
DD	5.37	(3.34)	6 52	(4.05)	6.40	(3.98)	7 77	(4 83)
L4 TA	6.03	(3.75)	7 31	(4.54)	6.82	(4.24)	8.29	(5 15)
DD	7.27	(4 52)	8 80	(5.47)	8 24	(5 12)	9.99	(6.21)
H1 TA	7.34	(4.56)	8 90	(5 53)	8 90	(5.53)	10 79	(6 71)
DD	8.85	(5.50)	10 73	(6.67)	10 73	(6.67)	13 02	(8 09)
H2 TA	10.07	(6.26)	12.21	(7 59)	14.46	(8.99)	17.52	(10 89)
DD	12 12	(7 55)	14.74	(9.16)	17 44	(10 84)	21 14	(13 14)
H3 TA	14 46	(8 99)	17 53	(10 69)	19.55	(12.15)	23 70	(14 73)
DD	17.44	(10 84)	21.15	(13 14)	23.57	(14 65)	28 59	(17 17)
H4 TA	19.55	(12.15)	23 71	(14 75)	25 15	(15.63)	30 47	(18 94)
DD	23.57	(14 65)	28 70	(17.77)	30.33	(18.85)	36 77	(22.85)
R1 TA	3 39	(2.11)	4 10	(2 55)	3 02	(1.88)	3 67	(2 28)
DD	4.09	(2 54)	4 96	(3 08)	3 65	(2 27)	4 42	(2 75)
F/R	3 43	(2 13)	4 16	(2.58)	3 67	(2.28)	4 46	(2 77)
R2 TA	4.65	(2 89)	5 65	(3 51)	4 91	(3.05)	5 95	(3 70)
DD	5 62	(3 49)	6 35	(4 23)	5 92	(3 68)	7 18	(4 46)
F/R	4 71	(2 93)	5 71	(3 55)	5 97	(3 71)	7 22	(4 49)
R3 TA	6 68	(4 15)	8 11	(5 04)	6 64	(4 18)	8 05	(5 00)
DD	8.06	(5 01)	9 78	(6 08)	8 01	(4 98)	9 70	(6 03)
F/R	6 76	(4 20)	8 18	(5 09)	8 06	(5 01)	9 78	(6 08)
R4 TA	9 03	(5 61)	10 96	(6 81)	8 54	(5 31)	10 35	(6.43)
DD	10 89	(6 77)	13 21	(8 21)	10 30	(6 40)	12 48	(7 76)
F/R	9 16	(5 69)	11 08	(6 88)	10 36	(6 44)	12 57	(7 81)
R5 F/R	11 13	(6 92)	13 50	(8 39)	13.50	(8.39)	16 38	(10 18)
R6 F/R	15 28	(9 50)	18 61	(11 54)	21.95	(13.64)	26 60	(16 53)
R7 F/R	21 95	(13 64)	26 60	(16.53)	29.65	(18 43)	35 98	(22 36)
R8 F/R	29 65	(18 43)	35 98	(22 36)	38.15	(23 71)	46 26	(28 75)

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INSTRUMENTS AND CONTROLS

GENERAL

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

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

PARKING BRAKE LEVER (1 Illusts.6 7 & 8)

This is used to lock the transmission after the tractor has stopped. The brake is engaged when the brake handle is pulled up toward the operator. The brake is released by releasing the latch under the handle grip and moving the brake handle down. THE PARKING BRAKE MUST BE COMPLETELY RELEASED AND THE WARNING LIGHT OFF BEFORE MOVING THE TRACTOR.

RANGE LEVER (2 Illusts.6, 7 & 8)

For standard gear drive and torque amplifier builds this lever has four positions. Rearward from neutral is reverse, forward from neutral is low range and inward and forward from neutral is high range.

For full forward/reverse and hydrostatic builds this lever has only three positions. Rearward from neutral is low range and forward from neutral is high range.

NOTE: The tractor must be stopped to change the range.

FUEL CONTROL (3 Illusts.6, 7 & 8)

C.A.V. FUEL SYSTEM

This is a two position lever, fully upward is the engine RUN position, and fully downward is the engine STOP position.

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INSTRUMENTS AND CONTROLS

FULL FORWARD AND REVERSE LEVER (Not Shown)

The lever for the forward/reverse build of gear drive transmission is mounted on the instrument panel to the left of the steering wheel, and is moved fully forward for forward travel or fully rearward for reverse travel. The lever is locked in the selected position when the clutch is engaged and can only be moved when the clutch pedal is fully depressed.

TORQUE AMPLIFIER LEVER (Not Shown)

The lever for the torque amplifier build of gear drive transmission is mounted on the instrument panel to the left of the steering wheel, and is moved fully forward for direct drive, or fully rearward to bring the torque amplifier into operation.

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674 SPECIFICATIONS

ENGINE

Model	D - 239	
Number of cylinders	4	
Bore	98 mm	(3.88 in)
Stroke	128.5 mm	(5.06 in)
Displacement	3911 cm^3	(239 in^3)
Firing order	1 - 3 - 4 - 2	
Valve clearance	(HOT)	
Inlet	0.25 mm	(0.010 in)
Exhaust	0.30 mm	(0.012 in)
Injection pump	CAV or Bosch	
Static timing (degrees B.T.D.C.)		
CAV	24	
Bosch	14	
Injector nozzle type		
CAV	BDLL 150S 6511	
Bosch	DLLA 150S 417	
Nozzle holder type		
CAV	EKBL 90S 5333	
Bosch	KBL 90S 104/4	
Engine speeds		
Rated governed	2400 rev/min	
Low idle (±50 rev/min)	700 rev/min	
Crankcase capacity (incl. filter)	8.5 litres	(15 pints)
Cooling system capacity	14 litres	(24.5 pints)

WHEELS AND TREAD*

Tyre size		
Front	7.50 x 16	
Rear	13.6/12 x 38	
Available tread		
Front	137 to 203 cm	(54 to 80 in)
Rear	143 to 193 cm	(56 to 76 in)

*Further information on available tyre sizes, pressures and tread settings will be found in PREPARING THE TRACTOR FOR WORK.

HYDRAULIC SYSTEM

Nominal lifting force at link ends		
Basic	1790 kg	(3950 lb)
With assister ram	2132 kg	(4700 lb)

GENERAL DIMENSIONS

Length overall	343 cm	(135 in)
Width overall (min)	177 cm	(70 in)
Height to top of steering wheel	155 cm	(61.3 in)
Height to top of cab	235 cm	(92.8 in)
Ground clearance		
Under sump	44.5 cm	(17.5 in)
Under swinging drawbar	38 cm	(15 in)
Under three position drawbar	37.5 cm	(14.8 in)
Drawbar heights		
Swinging drawbar	35 cm	(14 in)
	45 cm	(17.7 in)
Three position drawbar	30 cm	(11.8 in)
	39 cm	(15.4 in)
	44 cm	(17.3 in)
	53.3 cm	(21 in)
Automatic hitch hook height	44 cm	(17.3 in)

APPROXIMATE WEIGHTS

Front	822 kg	(1812 lb)
Rear	1711 kg	(3773 lb)
Total	2533 kg	(5585 lb)

POWER TAKE OFF SHAFT SPEED

P.T.O. CODE	[illegible]	[illegible]
	S	S
W. E. S.	[illegible]	[illegible]
E. E. S.	[illegible]	[illegible]
E. S.	[illegible]	[illegible]

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OPERATING THE TRACTOR

ADJUSTABLE STOP

An adjustable stop (2 Illust.18) is provided for the position control lever. This allows the lever to be returned to the same operating position after being moved. The lever may be deflected outward to clear the stop if it is desired to temporarily change the operating position. The stop may be moved to the rearmost position (4 Illust.18) of the quadrant to clear it from the operating range of the position control lever.

DROP RESPONSE

Moving the position control lever forward of the offset in the quadrant provides a control of the speed that the linkage will lower when operating in draft control.

The linkage is lowered by moving the position control lever to the offset (3 Illust.19) then the draft control lever and raise response lever (4 Illust.19) are adjusted as required. If the raise response lever is at its slowest position and the implement or tractor still tends to buck the position control lever should be moved down the drop response slot until the desired operating condition is obtained. The adjustable stop (2 Illust.19) is then located ahead of the position control lever (1 Illust.19) to serve as a stop to which the position control lever can be returned each time.

When lowering the implement at the end of the field the position control lever is first moved to the offset (1 Illust.18) to allow the implement to reach the desired working depth. The lever is then moved to the adjustable stop which will provide the desired lowering rate. If the implement tends to gradually decrease working depth or float out of the ground when crossing varying terrain the lowering rate may be too slow. This can be corrected by moving the position control lever back toward the offset until the desired operation is obtained.

DRAFT CONTROL LEVER

The draft control lever is used when operating ground engaging equipment such as ploughs, cultivators sub-soilers etc. The working depth of

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PREPARING THE TRACTOR FOR WORK

AVAILABLE TYRES	454	2400	474	475 & 574	2500	674
STANDARD	5.50 x 16	5.50 x 16	6.00 x 16	6.00 x 16	6.00 x 16	7.50 x 16
OPTIONALS	6.00 x 16 7.50 x 16	6.00 x 16 7.50 x 16	7.50 x 16	5.50 x 16 7.50 x 16	5.50 x 16 7.50 x 16	6.00 x 16

AVAILABLE TYRES	454/2400	474	475 & 574	2500	674	AVAILABLE TREAD cm (in)	Increments cm (in)
STANDARD	12.4/11 x 32	12.4/11 x 36	12.4/11 x 36	12.4/11 x 36	13.6/12 x 38		
OPTIONALS	12.4/11 x 28					133 to 193 (52 to 76)	10 (4)
	13.6/12 x 28					143 to 193 (56 to 76)	10 (4)
	14.9/13 x 28	14.9/13 x 28				143 to 193 (56 to 76)	10 (4)
	14.9/13 x 30	14.9/13 x 30		14.9/13 x 30		143 to 193 (56 to 76)	10 (4)
		16.9/14 x 30		16.9/14 x 30	16.9/14 x 30	143 to 193 (56 to 76)	10 (4)
			18.4/15 x 30	18.4/15 x 30	18.4/15 x 30	153 to 193 (60 to 76)	10 (4)
	12.4/11 x 32	12.4/11 x 32		12.4/11 x 32		133 to 193 (52 to 76)	10 (4)
			16.9/14 x 34		16.9/14 x 34	153 to 193 (60 to 76)	10 (4)
		12.4/11 x 36	12.4/11 x 36	12.4/11 x 36		133 to 193 (52 to 76)	10 (4)
		13.6/12 x 36	13.6/12 x 36	13.6/12 x 36	13.6/12 x 36	143 to 193 (56 to 76)	10 (4)
			12.4/11 x 38			133 to 193 (52 to 76)	10 (4)
			13.6/12 x 38		13.6/12 x 38	143 to 193 (56 to 76)	10 (4)

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removed and cleaned every 200 hours of operation. Remove the breather pipe (1 Illust.48) and withdraw the element. Wash the element in clean diesel fuel then install and secure with the breather pipe.

CYLINDER HEAD BOLTS

Check the tightness of the cylinder head bolts after the first 20 hours, the first 200 hours and thereafter every 800 hours of operation of a new engine or the installation of a new cylinder head gasket.

To avoid distortion of the cylinder head and ensure even pressure on the cylinder head gasket it is essential that the bolts are tightened evenly, progressively and in the sequence shown in Illust.49.

Tighten the bolts in three stages:

Stage 1 - 4 kgm (29 lbft)

Stage 2 - 8 kgm (58 lbft)

Stage 3 - 13.1 kgm (95 lbft) on 475 Tractors.

Stage 3 - 14 to 15 kgm (101 to 109 lbft) for all other Tractors.

ADJUSTING VALVE CLEARANCE

Check the valve clearance after the first 20 hours, the first 200 hours and thereafter every 800 hours of operation whenever the cylinder head bolts are checked.

D179, D206 AND D239 ENGINES

The valve arrangement on these engines is exhaust, inlet, exhaust, inlet etc. and clearances must be checked with the engine warm.

Remove the valve cover, then turn No. 1 piston to the top of its compression stroke. The timing pointer (Illust. 50) will be aligned with the D.C. mark on the crankshaft pulley, and the push rods No. 1 & 2 will be free to spin.

Adjust valves 1, 2, 4 and 5 (Refer to A Illust. 51) then turn the engine one complete revolution and adjust the remaining valves (Refer to B.Illust.51).

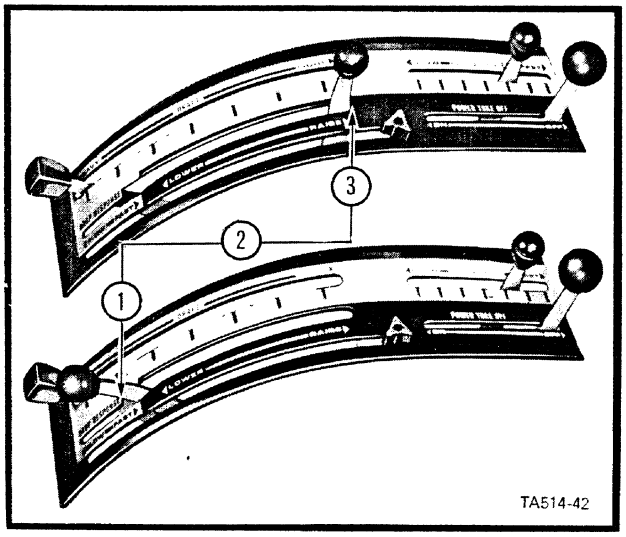
Clearances are exhaust 0.30 mm (0.012 in) and inlet 0.25 mm (0.010 in).

D212 ENGINES

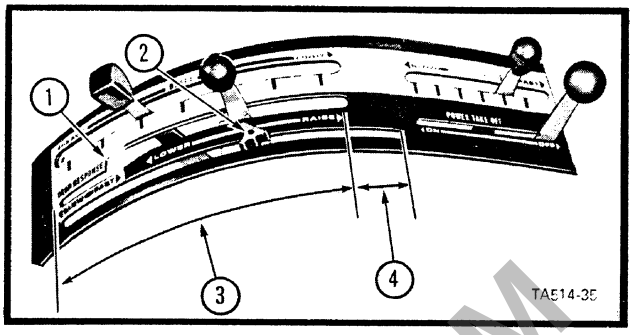
Check these valve clearances while the engine is cold.

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Illust.17



Illust.18

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474 SPECIFICATIONS

ENGINE		
Model	D - 206	
Number of cylinders	4	
Bore	98 mm	(3.875 in)
Stroke	111 mm	(4.38 in)
Displacement	3376 cm^3	(206 in^3)
Firing order	1 - 3 - 4 - 2	
Valve clearance (HOT)		
Inlet	0.25 mm	(0.010 in)
Exhaust	0.30 mm	(0.012 in)
Injection pump	Bosch	
Static timing (degrees B.T.D.C.)	14	
Injection nozzle type	Bosch DLL 150S 2641	
Nozzle holder type	KBL 90S 104/4	
Rated governed engine speed		
Gear drive	2300 rev/min	
Hydrostatic	2400 rev/min	
Low idle engine speed (+50 rev/min)		
Gear drive	750 rev/min	
Hydrostatic	750 rev/min	
Crankcase capacity (incl. filter	8.5 litres	(15 pints)
Cooling system capacity	14 litres	(24.5 pints)

WHEELS AND TREAD*		
Tyre size		
Front	6.00 x 16	
Rear	12.4/11 x 36	
Available tread settings		
Front	133 to 203 cm	(52 to 80 in)
Rear	133 to 193 cm	(52 to 76 in)

*Further information on available tyre sizes, pressures and tread settings will be found in PREPARING THE TRACTOR FOR WORK.

HYDRAULIC SYSTEM		
Nominal lifting force at link ends	1790 kg	(3950 lb)

GENERAL DIMENSIONS		
Length overall	343 cm	(135 in)
Width overall (min)	163 cm	(64 in)
Height to top of steering wheel	151 cm	(59.5 in)
Height to top of cab	231 cm	(91 in)
Ground clearance		
Under sump	40.6 cm	(16 in)
Under swinging drawbar	33.7 cm	(13.3 in)
Under three position drawbar	33 cm	(13 in)
Drawbar heights		
Swinging drawbar	31 cm	(12.2 in)
	40 cm	(15.9 in)
Three position drawbar	25 cm	(10 in)
	34.5 cm	(13.6 in)
	39 cm	(15.5 in)
	49 cm	(19.3 in)
Automatic hitch hook height	39 cm	(15.5 in)

APPROXIMATE WEIGHTS		
Front	822 kg	(1812 lb)
Rear	1711 kg	(3773 lb)
Total	2533 kg	(5585 lb)

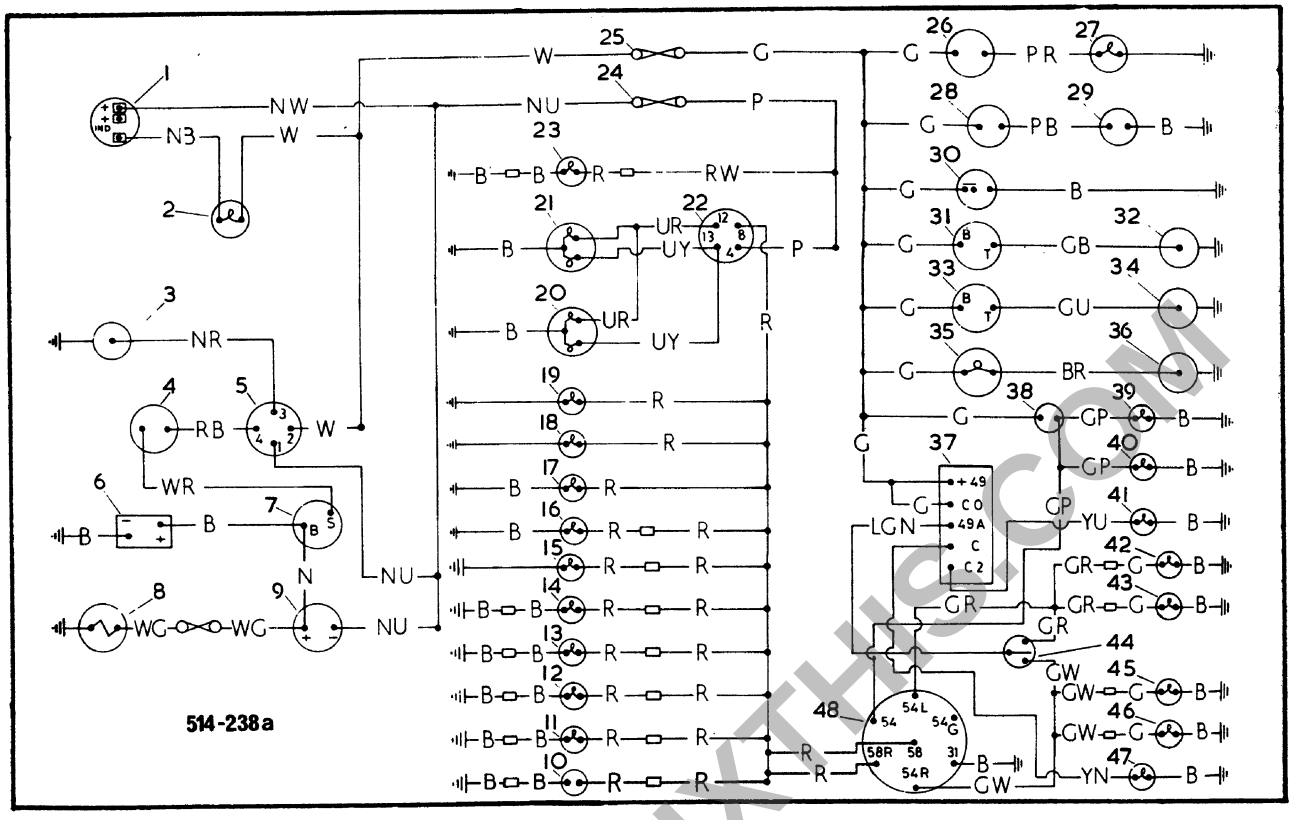
POWER TAKE-OFF SHAFT SPEEDS

PTO CODE	PTO rev/min at rated engine speed SM	HS	Engine speed at 540 or 1000 PTO rev/min SM	HS
W L S	1050	1000	2190	2400
X U S	642	611	1920	2200
L S	1050	1000	2190	2400

HYDROSTATIC DRIVE GROUND SPEEDS (On 12.4/11 x 36 tyres at 2400 rev/min engine speed).

RANGE	HAND SPEED CONTROL	FOOT SPEED CONTROL
LOW	km/h miles/h	km/h miles/h
F	0 to 12.7 (0 to 7.9)	0 to 12.7 (0 to 7.9)
R	0 to 5.5 (0 to 3.42)	0 to 11.2 (0 to 7.0)
HIGH		
F	0 to 34.8 (0 to 21.7)	0 to 34.8 (0 to 21.7)
R	0 to 14.8 (0 to 9.28)	0 to 30.6 (0 to 19.2)

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Illust. 84A

BRAKES

The tractor is equipped with self-adjusting, hydraulically actuated, oil cooled disc brakes. The brakes are controlled by foot pedals which can be operated individually or simultaneously when latched together.

The only adjustment required will be to ensure that the pedals are at the correct working height and that the latch will easily engage.

ADJUSTMENT

Disengage the latch then loosen the nut (2 Illust.78) and turn the eccentric pivot bolt to bring the left pedal pad to 152 mm (6 in) from the footplate. Tighten the nut. Loosen the inner nut (1 Illust.78) and turn the head of that eccentric pivot bolt until the right pedal pad is the same height as the left pedal pad then check that the brake latch will easily engage, if necessary adjusting further on the right pedal pivot bolt.

Tighten the nut when the adjustment is satisfactory.

If the hose connection from the oil cooler return to the brake feed is ever removed take care that the orifice and screen inside the hose is not discarded as this orifice screens the fluid to the brakes. When installed, the screen end is to the right.

BLEEDING THE BRAKES

This is not a routine operation and should only be necessary after some part of the system has been disturbed allowing air to enter the system.

Remove the right rear side panel and clamp the return hose (3 Illust.78) to prevent oil return to the transmission. Attach one end of a transparent hose to one of the bleedscrews (Illust.79) with the other end in the transmission filler plug hole or submerged in a little fluid in a clean glass jar. Open the bleedscrew then run the engine at low idle and wait until fluid is issuing from the hose. Steadily press the brake pedal for that side allowing it to return slowly and unassisted. Repeat until no further air bubbles issue from the hose then as the pedal is being depressed, tighten the bleedscrew to 0.46 to 0.57 kgm (40 to 50 lbin). Repeat the procedure at the other bleedscrew and brake pedal.

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