DAVID BROWN
990, 995 & 996
Tractors with Quiet Cab

Operator's Manual

9-5106

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⚠ SAFETY POINTS ⚠

Always use only an approved fluid in the brake and clutch systems.

Always lock the two foot brake pedals together when driving on the road, when towing a trailer, or when travelling fast.

Always ensure that PTO driven implements are not run faster than their designed speed, because a mechanical failure could occur, resulting in personal injury.

Always ensure the PTO (and Belt Pulley when fitted) is adequately guarded.

Always remove loose clothing when working near moving parts of the tractor, engine or implements, or ensure that it is adequately fastened or tied up.

Always remove the ignition starter key from the tractor when leaving it unattended, especially where children have access.

Always operate the steering and driving controls with care, for example: —

Don't swerve or turn sharply at speed.

Don't engage the clutch suddenly going up hill because the tractor could rear up.

Don't brake fiercely, especially going backwards down hill.

Always take extra care on steeply sloping ground. Move cautiously, as the sudden swing of a heavy implement, or pull of a trailer, may cause trouble.

Always make sure before turning that there is room for any mounted implement which will swing *outwards* at the rear.

Always hitch trailers to the approved drawbar or pick-up hitch which is below the centre line of the rear axle. Do not hitch above the centre line.

Always tow the tractor carefully. When towing by rope with a dead engine, power steering will be inoperative and the steering will be very difficult to turn.

Always check the clearance between any new implement and cab structure before operation.

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When topping up or filling up the reservoir always clean the cover before removing the filler cap and ensure that all containers, funnels etc., are clean.

DANGER — Do not use the tractor if there is any sign of oil leakage, the steering will not operate if the oil level falls so low that the pump draws air.

DANGER — Pipe movement caused by engine vibration can rapidly damage a pipe if it is close to a sharp object.

Every 60 hours or weekly

Clean the outside of the reservoir round the filler and check the oil level as described below. Top up if necessary. Inspect all pipes and connections for signs of oil leakage, paying particular attention to the flexible pipes and ram cylinder. If there is any leakage rectify this immediately.

The oil level should be to the neck of the filler plug hole as shown in Fig. 5/24, with the steering on full right-hand lock.

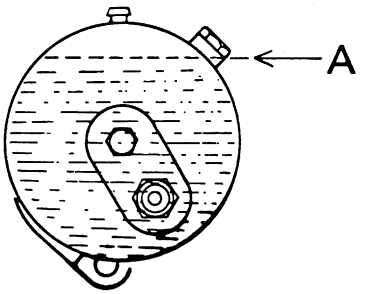


FIGURE 5/24.
OIL LEVEL

A. Fill to this level on full right-hand lock

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3. Apply a small quantity of ether to the air cleaner inlet while the engine starter is being operated.

Do not apply ether to the intake unless the starter motor is rotating the engine.

Do not use ether with the Thermostart connected.

Do not use ether if the battery is discharged.

Severe damage will occur if ether is used carelessly.

Stopping the engine

Close the throttle to reduce engine speed and pull the engine stop lever fully rearwards. Switch off and remove starter key.

STOPPING THE TRACTOR

Reduce speed by closing the throttle and applying the brakes. Change down from third to second to help reduce speed. Just before the tractor comes to rest, disengage the clutch.

Stop the engine, switch off and remove the key. Apply the parking brake and leave the tractor in low gear if on sloping ground.

SEAT

The armchair seat with hydraulic damper can be adjusted to suit the operator's weight by turning lever A, Fig. 1/10. The number, visible in the aperture at the front of the seat, may be used to re-set the adjustment when the tractor is used by different drivers. The seat can be moved forwards or backwards when the locking lever B is released.

The seat also has 3 height positions. Pull upwards until it latches into the next position. To lower, first pull fully upwards to the top then lower to bottom position.

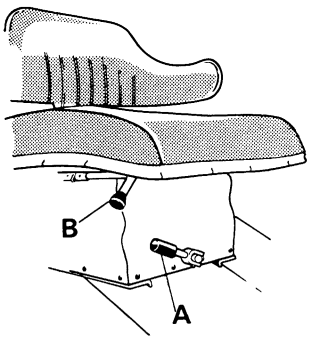


FIGURE 1/10. ARMCHAIR SEAT

A. Lever, weight adjustment
B. Locking lever, forwards/backwards adjustment

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Operation

Push the hand lever forward to the lower position. When the implement has reached its full working depth any required amount of TCU (weight transfer) may safely be applied by pushing the hand lever further forward. Maximum TCU is obtained when the hand lever is fully forward. When the correct amount of TCU has been determined, the second finger guide should be re-positioned into line with the hand lever for future reference.

At the end of the furrow, pull the hand lever fully rearward past the spring-loaded stop. Release it when the implement has fully lifted. The hand lever will spring back to the hold position.

To avoid variation in depth, TCU should be maintained to the end of the furrow. In order to get proper penetration the hand lever should not be pushed forward to the TCU position until the proper working depth has been reached. On the other hand, application of TCU should not be delayed too long or wheel slip will occur before TCU becomes effective. Once wheel spin has occurred it is difficult to stop. The correct timing and anticipation of the required quantity of TCU is a matter of skill which comes very quickly with a little practice.

Linkage adjustment when ploughing with TCU

Because of the different forces acting on the plough when using TCU, a slight re-adjustment to the settings may be required.

1. The top (upper) link should be shortened slightly to counteract the tendency of the plough to ride out of the ground. It should, however, be used as long as possible consistent with obtaining the required depth.
2. To correct a tendency of the front furrow to become shallow, lengthen the right-hand levelling lever slightly.
3. On soft ground raise the depth wheel slightly to maintain the correct depth. (TCU takes the weight off the depth wheel and so it will not sink so deeply into soft earth as it would without TCU.)

TCU with trailers and trailed equipment

In order to be able to apply TCU with implements such as trailed disc harrows, 4-wheel trailers etc. a special hitch may be purchased from your dealer in certain countries. This transfers weight from the drawbar of the implement on to the rear wheels of the tractor.

Large equipment can therefore be used under more adverse conditions.

TCU is recommended for semi-mounted ploughs which must be equipped with suitable depth wheels. A double-acting take-off valve will also be required to operate the rear depth wheel ram.

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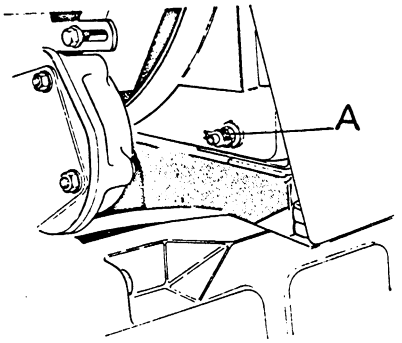


FIGURE 5/4.
RADIATOR DRAIN
A. Drain tap

The use of anti-freeze is strongly recommended in climates where freezing occurs. The strength should be such as to withstand the lowest temperature likely to be encountered. The correct ratio to achieve this will be recommended by the manufacturer.

If anti-freeze solution is used in diesel engines there is the possibility of severe corrosion of the cylinder block taking place, with subsequent blockage of the radiator etc., unless the following precautions are taken. (1) Use only a brand having a manufacturer's guarantee that it has been formulated for use in diesel engines. (2) Ensure that the system is free from corrosion by flushing the system with a reliable flushing compound. (3) Use only pure water for making the mixture, i.e. fresh rain water; some forms of tap water are unsuitable. (4) When topping-up, use a mixture of anti-freeze and water. (5) Drain and refill with a new anti-freeze solution at the beginning of the winter season (never use the same mixture for longer than 2 years). If anti-freeze is not used a corrosion inhibiting coolant is recommended instead of plain water. (6) Ensure that the system is free from leaks at hose joints etc. (7) If cylinder head gasket blowing is suspected, attend to the leakage at once, and refill with a brand new anti-freeze mixture.

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SECTION 1. DESCRIPTION AND OPERATION — GENERAL

INSTRUMENT PANEL

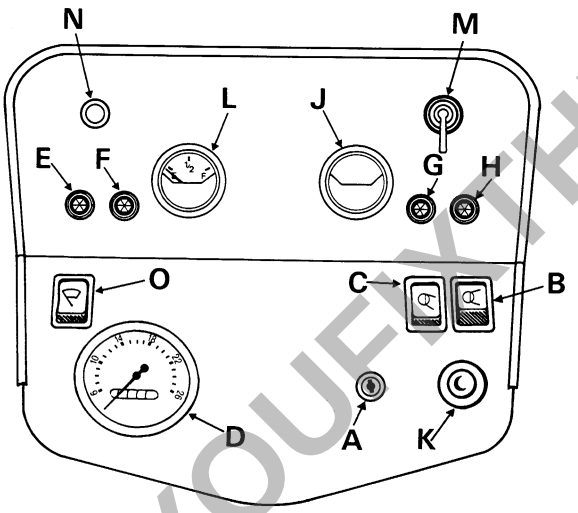


FIGURE 1/1. INSTRUMENT PANEL

A. Starter key
B & C. Lighting switches
D. Engine speed indicator (or speedometer) and hourmeter
E. Charge warning light (red)
F. Engine oil warning light (green)
G. Transmission filter warning light (yellow)
H. Trailer direction signal warning light
J. Water temperature gauge
K. Horn push button
L. Fuel gauge
M. Flashing direction signal switch
N. Hazard warning lights switch
O. Windscreen wiper switch

Engine oil warning light

The green light is illuminated when oil pressure is too low. Ensure that it lights when the starting switch is turned on and goes out when the engine runs.

Charge warning light

The red light is illuminated when the starting switch is turned on but goes out as soon as the alternator commences to charge.

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WIRING

Most connections are made with snap connectors which pull apart for disconnection of the part concerned. All wires are colour coded for easy identification as shown in the wiring diagrams. The first letter is the main colour and the second letter is the stripe colour.

Maintenance consists only of visual checking for loose or dirty terminals and frayed, burnt or broken wires. A frayed or broken wire if touching the frame will run down the battery rapidly.

B.	Black	W/N.	White/Brown
B/S.	Black/Grey	W/R.	White/Red
B/LG.	Black/Light Green	G.	Green
B/R.	Black/Red	G/U.	Green/Blue
B/W.	Black/White	G/B.	Green/Black
R.	Red	G/N.	Green/Brown
R/B.	Red/Black	G/R.	Green/Red
R/W.	Red/White	G/W.	Green/White
U.	Blue	G/P.	Green/Purple
U/R.	Blue/Red	S.	Grey
U/W.	Blue/White	S/B.	Grey/Black
N.	Brown	S/R.	Grey/Red
N/Y.	Brown/Yellow	P/B.	Purple/Black
N/R.	Brown/Red	P/G.	Purple/Green
W.	White	LG/N.	Light Green/Brown
W/B.	White/Black	LG/P.	Light Green/Purple
W/U.	White/Blue	LG/Y.	Light Green/Yellow

WIRING COLOUR CODE FOR HARNESS DIAGRAMS

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MULTI-SPEED POWER TAKE-OFF (PTO)

The PTO has a 34·9 mm (1⅜ in) diameter six spline output shaft to international standards.

Two PTO speed ranges are available, selected by means of the lever, Fig. 3/9. Before moving this lever, depress the clutch pedal fully. This avoids the possibility of damaging the gears.

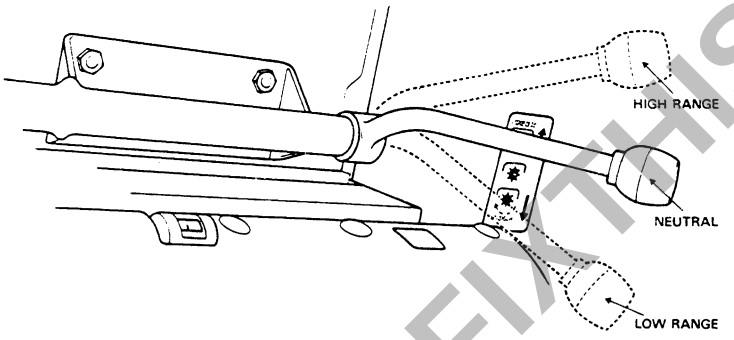


FIGURE 3/9. PTO RANGE LEVER
As viewed by operator

CAUTION — Disengage the PTO before dismounting from the tractor. Always stop the engine before working on a PTO driven machine.

When the PTO is not in use, the PTO range lever should be placed in the neutral position.

WARNING — Make appropriate adjustment of the drive gear ratio of the implement to ensure its speed matches that of the tractor PTO. The engine speed of the tractor must be carefully controlled so that the rated PTO speed is not exceeded.

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Engine stop control

This cuts off the fuel supply to the injectors. Never stop the engine by letting the tank run dry. This allows air to enter the system and is very difficult to get rid of.

Before starting the engine push the stop control forward into the retaining slot. To stop the engine; pull the lever fully rearwards.

Heater/Ventilator

Controls within the cab are a fan blower switch, A, Fig. 1/3, and a variable temperature control, B, which regulates the flow of hot water from the engine through the heater unit. These are situated on the panel above the windscreen.

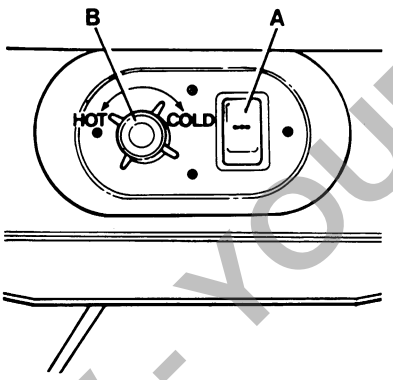


FIGURE 1/3

A. Fan blower switch
B. Temperature control

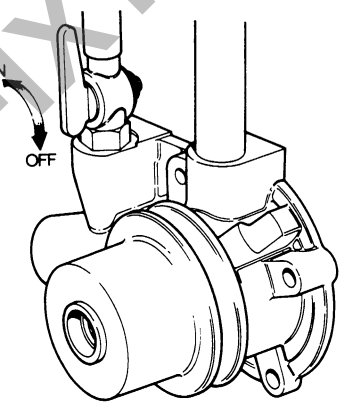


FIGURE 1/4

A tap on the engine water pump isolates the cab heater system. Check that the tap is in the ON position (Fig. 1/4) when heat is required in the cab. When the unit is required to operate as a ventilator, or blower, the tap on the engine water pump can be turned to the OFF position.

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Brakes

Twin foot pedals at the right-hand side give independent control of the brakes to assist steering in confined spaces.

> ⚠ **DANGER** — Always engage the locking bar, C, Fig. 1/5, when driving on the road, when towing a trailer or when travelling fast; a self-balancing valve then equalises the pressures applied to both rear brakes. Use of an independent brake in any of these circumstances could cause a dangerous swerve with the possibility of overturning the tractor.

Parking brake — located at the left-hand side of the operator's seat (Fig. 1/7). To engage, lift hand lever until it locks. To release, depress release lever B and lower.

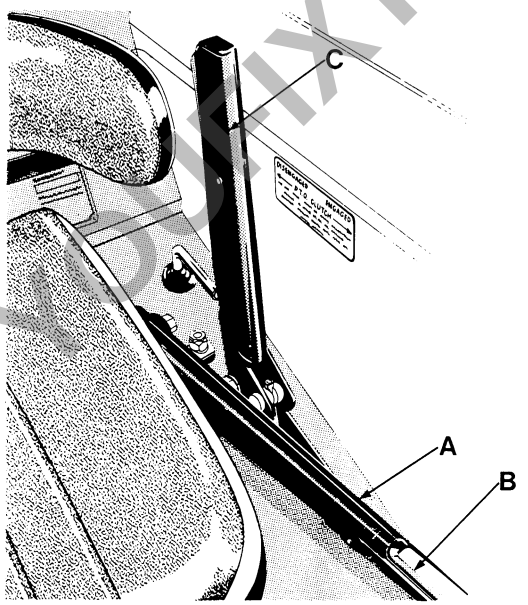


FIGURE 1/7. PARKING BRAKE

A. Parking brake
B. Release lever
C. PTO clutch lever (Independent)

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