9-9202.

SERVICE PERIODS

The service periods have been changed since this book was printed.

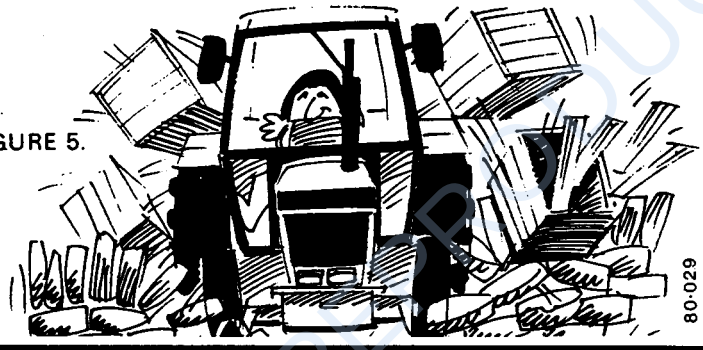
Do the initial service at *20* to *60* hours.
Do the 60 hour service at *50* hours.
Do the 125 hour service at *100* hours.
Do the 250 hour service at *200* hours.
Do the 200/250 hour service at *200* hours.
Do the 500 hour service at *400* hours.
Do the 1000 hour service at *800* hours.

The gears of the tractor hourmeter have been changed. You will not actually service your tractor more frequently.

Note: The service periods are correctly shown in the Tractor Service Book Pub. 9-5306.

DANGER: Two different types of fluid have been used in the hydraulic brake and clutch systems.
Later tractors have AGRICASTROL FBS in both systems. The brake and clutch reservoirs on these tractors have green coloured covers or green tape attached to the covers. AGRICASTROL FBS fluid is a green colour.
Earlier tractors have SHELL TELLUS 37 or CASTROL HYSPIN AWS 32 in both systems.
The covers for the brake and clutch fluid reservoirs are not green and have no green tape attached.
Add fluid of the same type only. NEVER MIX THE FLUIDS. This will cause failure to both systems and can result in serious injury or death.

FIGURE 5.



WARNING: Extra weight increases your braking distance. Remember that liquid in the tyres, weights on the tractor or wheels, tanks filled with fertiliser, herbicides or insecticides — all these add weight and increase the distance you need in which to stop.

WARNING: When the differential lock is engaged, the tractor will not steer correctly. Do not operate the tractor at high speeds or attempt to turn the tractor with the differential lock engaged. Use the differential lock as an aid to traction only. Before you operate on any road, make sure the differential lock is disengaged. Failure to do this can cause an accident.

WARNING: Before you operate the tractor on a road, connect the brake pedals with the lock. If this is not done, the tractor will make a sudden turn when the brakes are applied which can cause an accident.

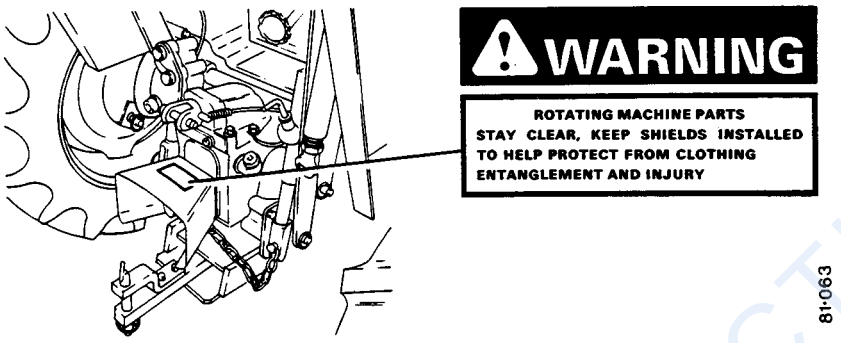


FIGURE 17.

FUEL

United Kingdom and Ireland

Use a high quality diesel engine fuel to Class A2 (BS 2869: 1970) with a minimum Cetain Rating of 45.

NOTE: *Do not use fuel intended for burners or central heating systems.*

All Countries Except United Kingdom and Ireland

For temperatures above 0°C (32°F) use No. 2 Diesel fuel (ASTMD) with a minimum Cetain Rating of 45.

For temperatures below 0°C (32°F) use No. 1 Diesel fuel (ASTMD) with a minimum Cetain Rating of 50.

NOTE: *Do not use fuel intended for burners or central heating systems.*

WARNING: Do not put fuel in the machine when you are smoking, near a fire or when the engine is running.

ANTI-FREEZE

Use only a brand formulated for use in Diesel engines to British Standard 3151, 1959 type B. This specifies an ethylene glycol type anti-freeze with corrosion inhibitors. Use a good quality anti-freeze diluted with clean pure water. Topping-up should be carried out with the same type of anti-freeze of the correct strength. It is recommended that any anti-freeze should be changed after two years use.

APPROXIMATE MEASUREMENTS

DIMENSION		TRACTOR WITHOUT CAB			CAB TRACTOR		
		2WD	4WD DAVID BROWN	4WD CARRARO	2WD	4WD DAVID BROWN	4WD CARRARO
Front Tyre		7.50 – 16	9.5/9 – 24	11.2/10 – 24	7.50 – 16	9.5/9 – 24	11.2/10 – 24
Rear Tyre		16.9/14 – 30	16.9/14 – 30	16.9/14 – 30	16.9/14 – 30	16.9/14 – 30	16.9/14 – 30
Drawbar Clearance	A	41 cm (16 in)	38 cm (15 in)	37 cm (14½ in)	41 cm (16 in)	38 cm (15 in)	37 cm (14½ in)
Front Axle Clearance	B	53 cm (21 in)	31 cm (12 in)	37 cm (14½ in)	53 cm (21 in)	31 cm (12 in)	37 cm (14½ in)
Transfer Box Clearance	C	–	41 cm (16 in)	40 cm (15½ in)	–	41 cm (16 in)	40 cm (15½ in)
Height over Cab	D	–	–	–	246 cm (97 in)	250 cm (98½ in)	247 cm (97 in)
Height Over Exhaust	E	226 cm (89 in)	230 cm (90½ in)	229 cm (90 in)	251 cm (99 in)	255 cm (100½ in)	254 cm (100 in)
Wheel Base	F	211 cm (83 in)	214 cm (84 in)	214 cm (84 in)	211 cm (83 in)	214 cm (84 in)	214 cm (84 in)
Overall Length	G	343 cm (135 in)	343 cm (135 in)	343 cm (135 in)	343 cm (135 in)	343 cm (135 in)	343 cm (135 in)
Overall Width at Minimum track width		195 cm (77 in)	197 cm (77½ in)	195 cm (77 in)	195 cm (77 in)	197 cm (77½ in)	195 cm (77 in)

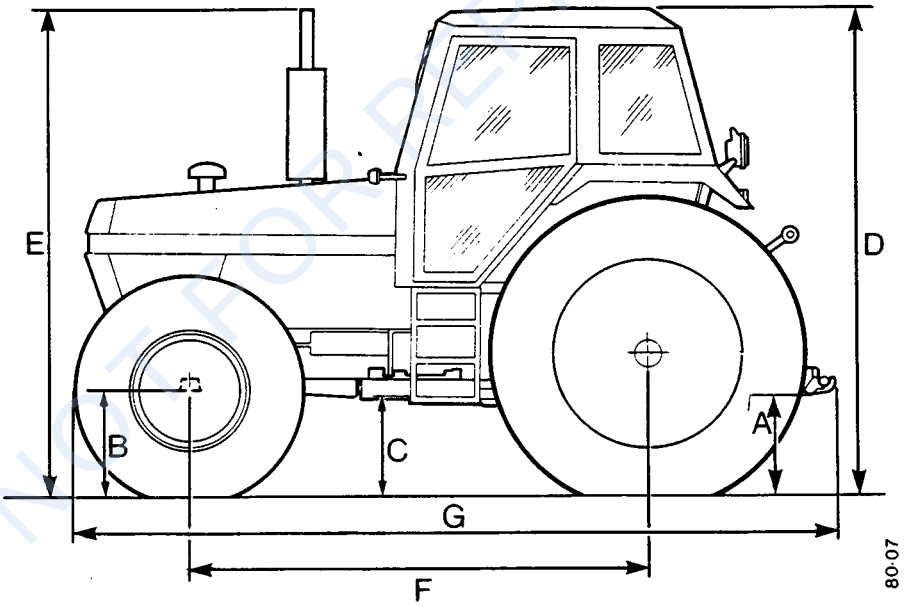


FIGURE 27.

C. Engine Stop Control:
Rod Type
The stop control handle on earlier tractors is connected to the fuel injection pump by a rod.

To stop the engine, pull the stop control handle to the rear. Move the handle to the right and push the handle forward into the safety position.

Before starting the engine, pull the stop control handle out of the safety position. Move the handle to the left and push the handle forward.

C. Engine Stop Control:
Cable Type
The stop control handle on later tractors is connected to the fuel injection pump by a cable. Pull the handle to stop the engine.

Before starting the engine, push the handle fully forward.

D. Starter Key Switch
Four position switch as follows:

Number 1 — OFF Position. The key is in the vertical position. You can only remove the key in this position.

Number 2 — ACC(ESSORY) Position. First position clockwise from OFF. This position energises the accessories and warning lamps.

Number 3 — HEAT Position. Second position clockwise from OFF. This position energises the thermostart.

Number 4 — START Position. Third Position clockwise from OFF. This position energises the starter motor.

NOTE: *To prevent operation by persons not authorised and the possible discharge of batteries, remove the starter key when you leave the tractor.*

IMPORTANT: *While the engine is operating, keep the starter key in the ACC position so that the instruments and warning lamps will function.*

IMPORTANT: *Do not keep the starter key in the ACC position for long periods of time with the engine not operating. Warning lamps will be illuminated which will cause too much heat in the instrument cluster.*

E. Main Lamp Switch
Four position switch as follows:

Number 1 — Off Position — (Full counterclockwise) — All lamps are OFF.

Number 2 — First position clockwise from OFF. Illuminates side lamps, rear lamps and instrument panel lamps.

Number 3 — Second position clockwise from OFF. Illuminates side lamps, head lamps (low beam), rear lamps and instrument panel lamps.

Number 4 — Third position clockwise from OFF. Illuminates side lamps, head lamps (high beam), rear lamps and instrument panel lamps.

G. Gear Shift Lever — Synchromesh Transmission
The gear shift lever has a neutral position and is used to select three forward speeds or reverse. There is a synchromesh hub between second and third gear which permits gear changes to be made while the tractor is moving. The transmission clutch must be disengaged when changing gear. Stop the tractor before selecting first or reverse gear. This lever also operates a safety switch which prevents the starter being activated unless the lever is in the neutral position.

H. Take-Off Valve Levers
These levers operate the take-off valves. If take-off valves are not standard equipment on your tractor, one or two can be installed by your authorised David Brown dealer.

J. PTO Selector Lever
This lever is used to engage or disengage the PTO.

IMPORTANT: *Before engaging the PTO, disengage the PTO clutch. Always disengage the PTO before leaving the tractor.*

K. Differential Lock Pedal
Push the pedal down to engage the differential lock (see page 50).

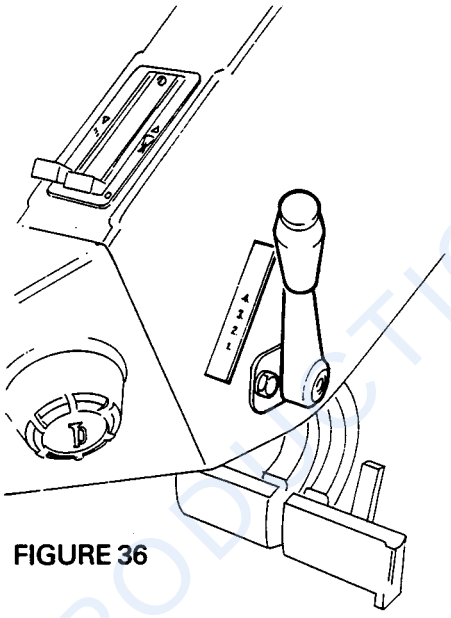


FIGURE 36

HYDRA-SHIFT LEVER

Hydra-Shift Lever — Hydra-Shift Transmission
There are four Hydra-Shift positions in each of three forward and one reverse range. Each position can be selected while the tractor is moving without disengaging the transmission clutch. Always start the tractor moving with the Hydra-Shift lever in the number 1 position. This instruction applies in each range.

NOTE: *When shifting down, make sure that the engine speed does not increase above the safe maximum. Move the Hydra-Shift lever one position at a time. Wait for the speed of the tractor to decrease before moving the lever to the next position.*

WARNING: Before you operate the tractor on a road, connect the brake pedals with the lock. If this is not done, the tractor will make a sudden turn when the brakes are applied which can cause an accident.

B. Brake Pedals
The left-hand pedal stops the left-hand rear wheel and the right-hand pedal stops the right-hand rear wheel. For turning assistance use the pedals separately. Lock the brake pedals together for safe operation on the road.

C. Brake Pedal Lock
Use the lock to connect the brake pedals so that both the brakes are applied evenly.

D. Engine Speed Control Pedal
Use this pedal when operating the tractor on the road. Move the engine speed control lever fully down to get complete control of engine speed through the pedal.

E. Clutch Pedal: Tractors with Independent Clutch
Push the pedal down to disengage the clutch. Select the required gear then smoothly engage the clutch. Remove your foot from the pedal until it is necessary to stop the tractor or select a different gear.

IMPORTANT: *The clutch must have the correct amount of clearance at all times. Check the clutch clearance at least every 50 hours and adjust if necessary (see page 132).*

E. Clutch Pedal: Tractors with Continuous Clutch
This pedal is used to disengage both the PTO and the transmission clutches.

To disengage the transmission clutch, push the pedal down until you can feel an increase in pedal pressure.

To disengage the PTO clutch, continue to push the pedal down the maximum amount.

NOTE: *When the PTO clutch is disengaged, the drive to the hydraulic oil pump and the transmission is also disengaged.*

IMPORTANT: *The clutch must have the correct amount of clearance at all times. Check the clutch clearance at the first 50 hours service and adjust if necessary (see page 133).*

4. Lift the rear to pivot the engine cover forward into the third position as shown. Use the rod to hold the engine cover in position.

Lowering The Engine Cover

Lower the engine cover in the reverse sequence. Make sure that the rod fits correctly into its fastener. When the engine cover is lowered, make sure that the catch at the front is engaged. If the catch becomes loose, turn the screw in the male fitting a small amount clockwise.

Removing The Front Panel

1. Loosen the two nuts A at the top of the front panel B.
2. Pull the top of the panel forward as shown in Figure 55. Lift the panel clear of the tractor.

Installing The Front Panel

Fit the two pegs at the bottom of the panel into the grooves in the engine cover frame. Push the top of the panel toward the tractor, so that the studs fit into the slots in the two lugs C. Make sure that the washers are against the nuts and not on the other side of the two lugs. Tighten the nuts.

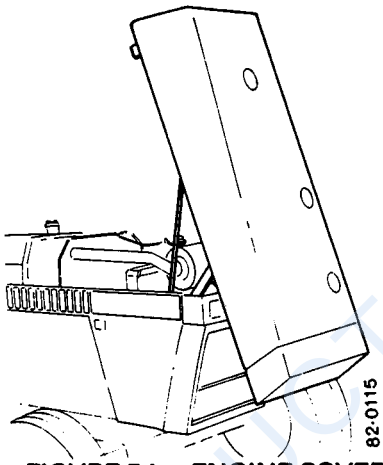


FIGURE 54. ENGINE COVER FULLY RAISED

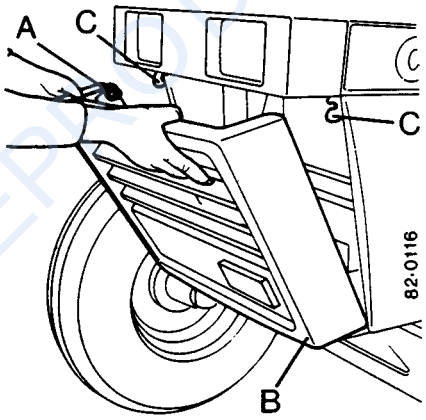


FIGURE 55. REMOVING THE FRONT PANEL

TREAD (TRACK) ADJUSTMENT: REAR WHEELS—POWER ADJUSTED IF FITTED

The tread width can be changed using the power of the tractor. Use the following procedures to make the necessary changes.

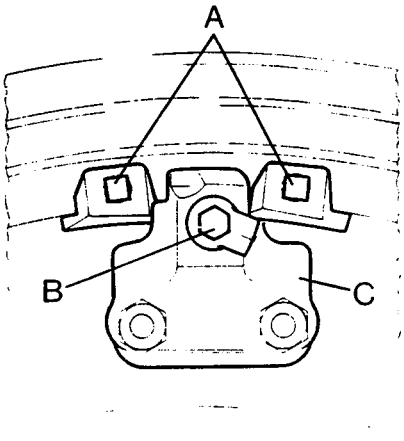


FIGURE 65. RIM CLAMP AND STOPS

To Increase The Tread Width

Right Rear Wheel: Move one of the stops A to the tread position required. Turn the locking pin B counterclockwise on all the rim clamps C. Start and operate the tractor in range 1 and reverse gear until the rim clamp comes in contact with the stop. Move the other stop against the rim clamp. Turn all the locking pins clockwise to a torque of 271-339 Nm (200-250 lb/ft).

Left Rear Wheel: Repeat the sequence of operations as for the right rear wheel except; operate the tractor in range 1 and 1st gear.

To Decrease The Tread Width

Right Rear Wheel: Move one of the stops A to the tread position required. Turn the locking pin B counterclockwise on all the rim clamps C. Start and operate the tractor in range 1 and 1st gear until the rim clamp comes in contact with the stop. Move the other stop against the rim clamp. Turn all the locking pins clockwise to a torque of 271-339 Nm (200-250 lb/ft).

Left Rear Wheel: Repeat the sequence of operations as for the right wheel except; operate the tractor in range 1 and reverse gear.

NOTE: *Always clean the rails before making tread adjustments.*

OPERATING WITH POSITION CONTROL

Before operating with position control do the following:

1. Move the linkage control lever A fully rearward into the SELECT position. Select POSITION on the selector dial B.
2. Turn the lowering speed control knob C fully clockwise, then four turns counterclockwise. This will set the lowering speed to the average position.
3. Move the finger guide D to the centre of the quadrant.
4. If the tractor has a tandem hydraulic pump, pull the knob for the combining valve OUT. This will direct oil to the linkage and the take-off valve(s).
5. If a three-way valve is fitted, move its control lever to position L or L/1 as required.

Operating With Position Control
Move the linkage control lever A to the RAISE position to raise the implement. Push the control lever forward until the implement is at the height you need. Move the finger guide until it is aligned with the control lever, then tighten the knob to keep the finger guide in position. The linkage will return to its original height when the control lever and finger guide are aligned.

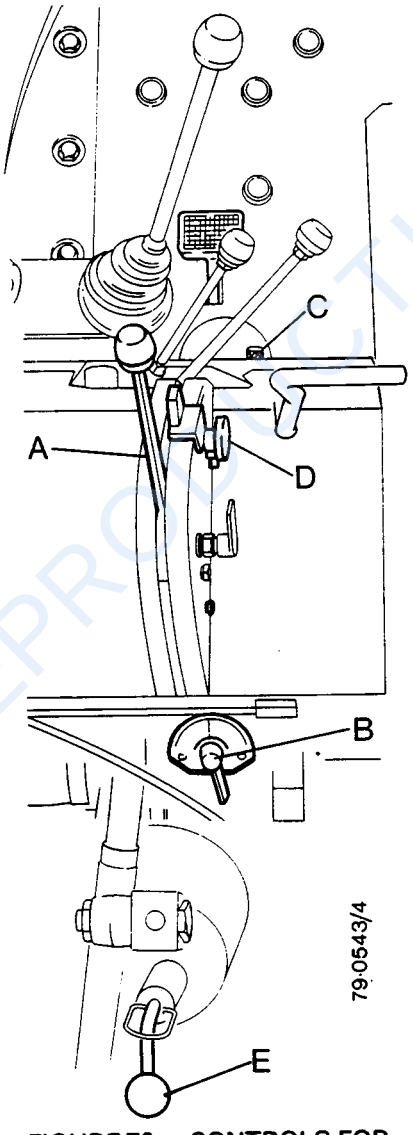


FIGURE 76. CONTROLS FOR STANDARD TRACTORS

CAUTION: The maximum load capacity of the pick-up hitch is 1815 kg (4000 lb). Operating with loads above the given maximum will result in damage to the pick-up hitch and the linkage. This will also decrease front end stability.

A kit of parts to make a pick-up hitch is available from your David Brown Dealer.
The pick-up hitch is fastened with bolts to the drawbar frame A. The bolts which fasten the drawbar frame to the hitch brackets must be removed. Two chains B are used to connect the drawbar frame to the ram lift arms. The hydraulic system of the tractor can then be used to raise or lower the pick-up hitch. The pick-up hitch is held in the raised position by a latch assembly which operates automatically.

Adjusting The Chains

1. Raise the linkage to the maximum height.
2. Loosen the nuts C, then adjust the length of the chains by moving the slotted link D.

IMPORTANT: *The chains must be the same length to support equal loads.*

To Lower The Pick-Up Hitch

1. Move the linkage control lever into the SELECT position and the selector dial to POSITION.
2. When the pick-up hitch is at the maximum height push the release lever E down. This will release the latch.
3. Move the linkage control lever forward to lower the pick-up hitch. Release the lever E.

NOTE: *The speed of lowering can be changed with the lowering speed control valve. If there is no load on the pick-up hitch, the dump valve can be used for fast lowering. DO NOT use the dump valve if there is any load on the pick-up hitch.*

To Raise the Pick-Up Hitch

1. Move the linkage control lever into the RAISE position. When the pick-up hitch is at the maximum height, the latch will engage automatically.
2. Lower the pick-up hitch a little to make sure that the latch is engaged.

SERVICE CHART: TRACTORS WITHOUT CAB

Ref Number	Service Points	No. of Points	Apply Grease	Apply Oil	Remove Fluid	Check	Clean	Change	Frequency
1.	Engine Oil Level	1				X			
2.	Fuel Tank Level	1				X			
3.	Air Cleaner: Severe Dust Conditions	1				X	X		○ 10 hours or Daily
4.	Axle Pivot (Severe)	2		X					
5.	King Pins (Wet)	2		X					
6.	Front Wheel Hubs (Conditions)	2	X						
7.	Axle Pivot	2		X					
8.	King Pins	2		X					
9.	Front Wheel Hubs	2	X						
10.	Brake Cross Shaft	1	X						
11.	Park Brake Cables	2		X					
12.	Final Drive Output Shaft	2	X						
13.	Ramshaft	3	X						
14.	Sensing Unit and Cable	1	X						
15.	Lift Rods	2	X						
16.	Levelling Lever Gearbox	1	X						
17.	Top Link	1	X						● 50 hours
18.	Power Steering Reservoir	1				X			
19.	Control Levers Pivot Points			X					
20.	Brakes	2				X			
21.	Coolant Level	1				X			
22.	Transmission Clutch	1				X			
23.	PTO Clutch	1				X			
24.	Battery	1				X			
25.	Tyres	4				X			
26.	Fuel Water Trap	1			X				
27.	Wheel Nuts					X			
28.	Transmission Oil Level	1				X			
29.	Transmission Oil Filter (First 50 hours Only)							X	

5. Brake Adjustment Tractors Without Cab

Check for correct operation and adjust if necessary as follows:

Connect both pedals with the lock.

Raise both rear wheels clear of the ground.

Push the pedals down 40 mm (1½ in) and pull the handbrake lever up to hold the pedals in this position.

Loosen the locknuts A at the front of the brake rods.

Turn the adjusting nut B of one brake rod until it is just possible to rotate the wheel by hand.

Do the same operation to the other wheel.

Tighten the locknuts.

Release the handbrake and check that the wheels turn easily.

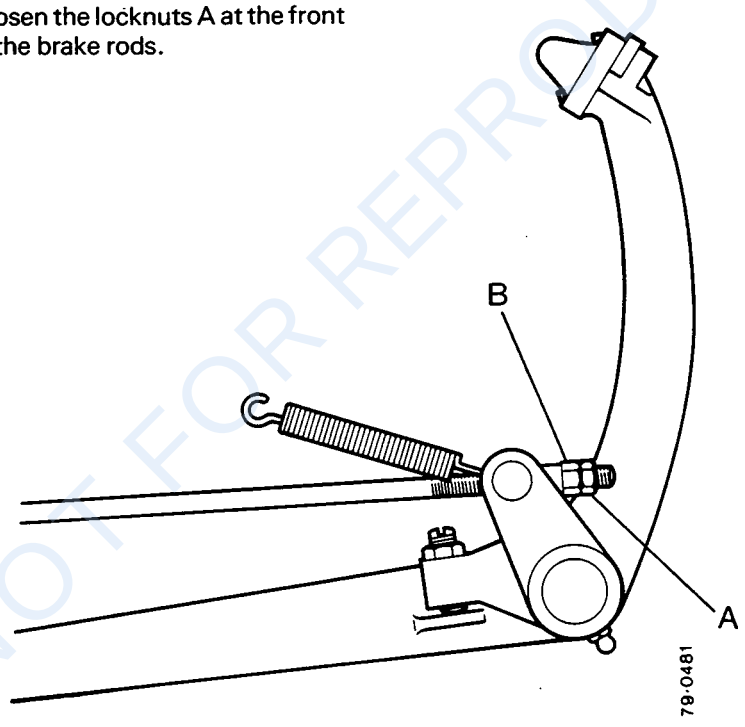


FIGURE 115. BRAKE ADJUSTMENT
A. *Locknut* B. *Adjusting Nut*

100 HOUR SERVICE

The following instructions give details of the main service tasks. Check the Service Charts for the complete list of service tasks required for this service.

Do the daily/10 hour service, the 50 hour service and then the following jobs:

1. **Lubrication Fittings**
   See the Service Charts.

2. **Engine Oil Change**
   Remove the oil when the engine is hot. Fill with new oil to the safe level mark on the dipstick.

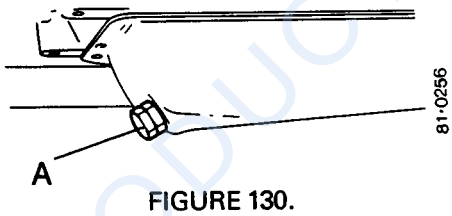


FIGURE 130.
REMOVING ENGINE OIL
A. *Drain Plug*

3. **Final Drives**
   Check the oil levels and add new oil if necessary. Clean the breather.

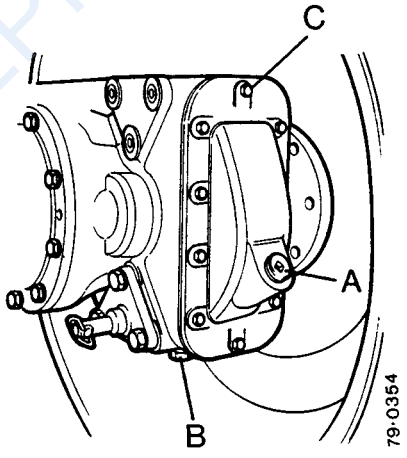


FIGURE 131. FINAL DRIVE
A. *Filler/Level Plug*
B. *Drain Plug*
C. *Breather*

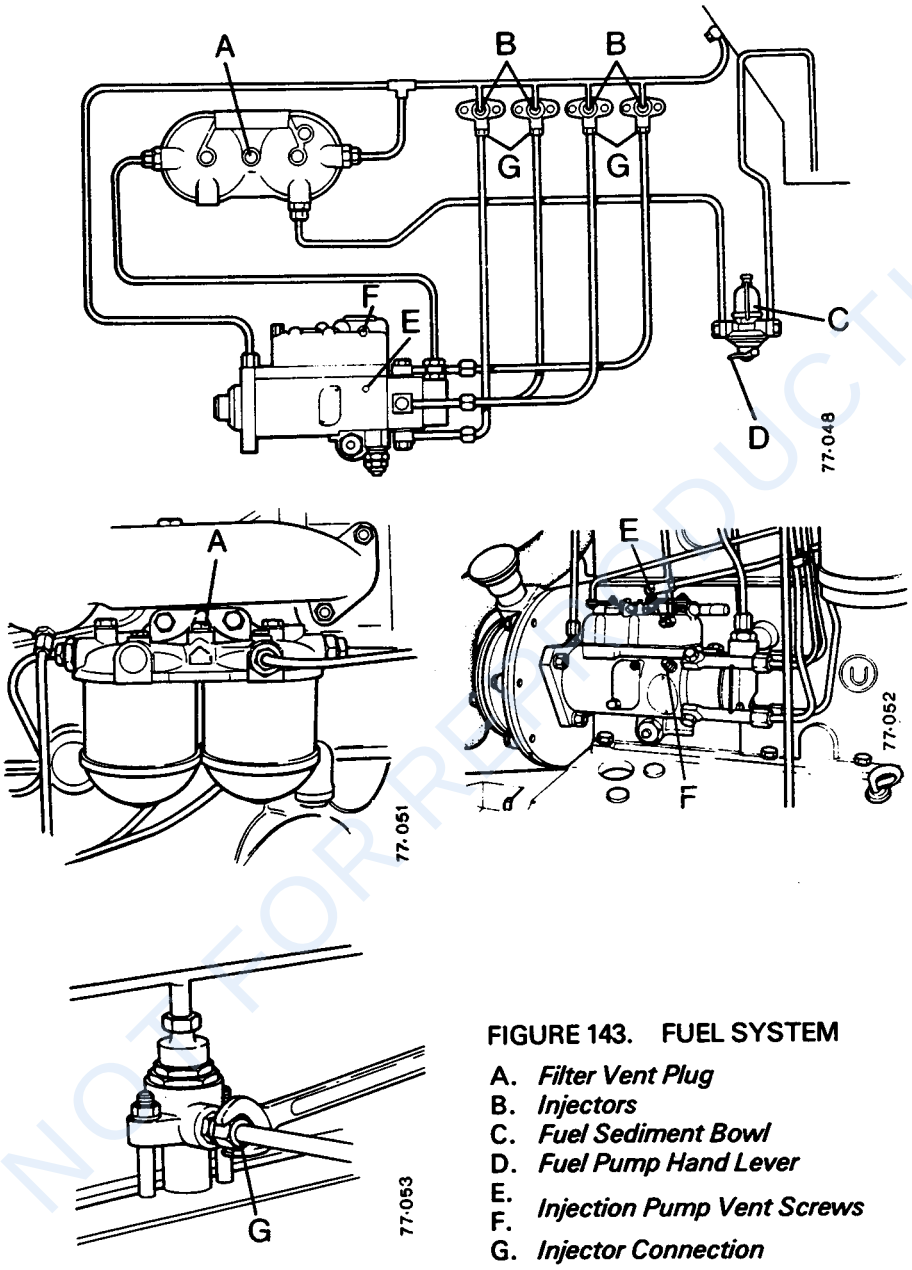


FIGURE 143. FUEL SYSTEM

A. *Filter Vent Plug*
B. *Injectors*
C. *Fuel Sediment Bowl*
D. *Fuel Pump Hand Lever*
E. *Injection Pump Vent Screws*
F. *Injection Pump Vent Screws*
G. *Injector Connection*

7. Clutch: Cab Tractors

Check the condition of the clutch pipes. Install new pipes if there is any damage.

Remove all the fluid from the clutch system. Flush, then fill the system with AGRICASTROL FBS. Fit a green cover to the clutch fluid reservoir or attach green tape.

After the new fluid is installed you must remove air from the system.

Fill a clean pressure oil can A with AGRICASTROL FBS. Use a piece of flexible tube B to connect the pressure can to the air removal screw on the slave cylinder C.

Loosen the air removal screw and operate the pressure can to push fluid into the reservoir. Do this until the fluid in the reservoir is free of air then tighten the air removal screw.

Check the level of fluid in the reservoir.

Put an identification mark on the pressure can to prevent it being used for other fluids. Use this can for AGRICASTROL FBS ONLY.

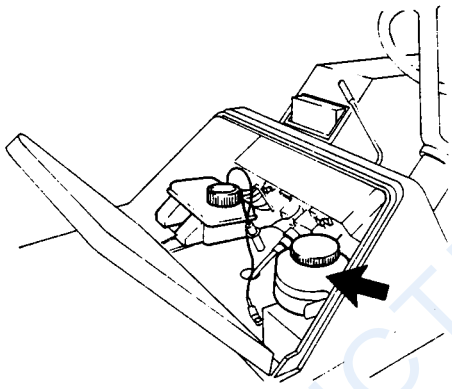


FIGURE 163. CLUTCH FLUID RESERVOIR

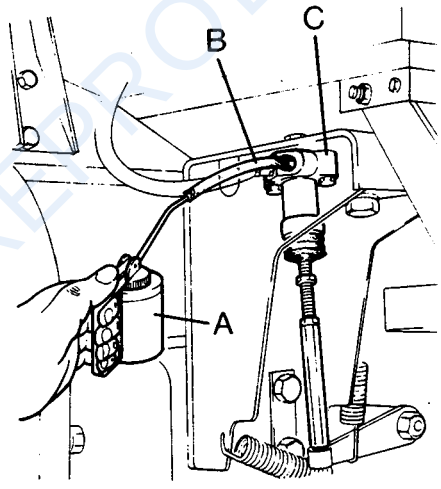


FIGURE 164. REMOVING AIR FROM THE CLUTCH SYSTEM