

MAINTENANCE SCHEDULE

Carry out operation below when Tachometer reads—	10	100	200	250	300	400	500	600	700	750	800	900	See Page
GREASING	0	0	0	0	0	0	0	0	0	0	0	0	74
ENGINE													
Check the engine oil level and replenish if necessary	0	0	0	0	0	0	0	0	0	0	0	0	77
Change the engine oil—See note 2				0					0			0	77
Change the engine oil filter—See note 2				0					0			0	77
Check the tappets and adjust if necessary							X					X	
Clean the engine breather pipe							X					X	
FUEL SYSTEM AND AIR CLEANER													
Inspect the fuel filter glass bowl and drain off any water	0	0	0	0	0	0	0	0	0	0	0	0	78
Change the fuel filter element							0					0	78
Service the injectors							X					X	
Wash, clean and refill the fuel tank												X	
Check the dry air cleaner hoses and unloader valve	0	0	0	0	0	0	0	0	0	0	0	0	81
Change the dry air cleaner elements—See note 3												0	82
WATER SYSTEM													
Check the radiator coolant level and replenish if necessary	0	0	0	0	0	0	0	0	0	0	0	0	83
Clean the radiator fins			0				0				0		83
Check and refill the cooling system							0					0	83
BATTERY SYSTEM													
Check electrolyte level and replenish if necessary	0	0	0	0	0	0	0	0	0	0	0	0	84
Wash top and cover the terminals with petroleum jelly			0								0		84
Check the fan belt tension and adjust if necessary	0	0	0	0	0	0	0	0	0	0	0	0	87
Check the alternator												X	
STEERING													
Check steering oil level and replenish if necessary	0	0	0	0	0	0	0	0	0	0	0	0	87
Check steering pump filter element							0					0	87
Check the hub adjustment and adjust if necessary		0			0		0			0			88
Check the wheel alignment and adjust if necessary							X					X	
TRANSMISSION AND HYDRAULICS													
Check transmission oil level and replenish if necessary	0	0	0	0	0	0	0	0	0	0	0	0	91
Change transmission oil							0					0	91
Check hydraulic oil strainer							0					0	91
Check transmission oil filter element			0				0			0			91
Check the oil level in the epicyclic hubs and replenish if necessary		0				0	0			0		0	92
Change the oil in the epicyclic hubs—See note 4						0						0	92
STEERING AND BRAKES													
Check the clutch pedal free travel and adjust if necessary	0	0	0	0	0	0	0	0	0	0	0	0	92
Check the live P.L.O. clutch setting and adjust if necessary	X	X	X	X	X	X	X	X	X	X	X	X	
Check the brakes and adjust if necessary		0			0		0			0		0	95
See note 5													
SAFETY CAB													
Check the screenwasher bottle level and replenish if necessary	0	0	0	0	0	0	0	0	0	0	0	0	96
Clean the cab air filter	0	0	0	0	0	0	0	0	0	0	0	0	96
Replace the cab air filter												0	98
Check the torque of the cab securing bolts and tighten if necessary							X					X	
MISCELLANEOUS													
Check the differential lock and adjust if necessary							0					0	96
Check the torque of the wheel nuts and tighten if necessary	0	0	0	0	0	0	0	0	0	0	0	0	98
Check the tyre pressures and adjust if necessary	0	0	0	0	0	0	0	0	0	0	0	0	99

NOTES

- All operations marked X are to be carried out by your Massey-Ferguson Distributor or Dealer.
- The oil change period at 250 hours assumes proper maintenance of the engine and auxiliaries (i.e. air cleaner and lubrication filter) and that the fuel and oil have been of the approved type and specification. If inadequate maintenance, or inferior oils have been used, engine oil changes must be more frequent.
- Air cleaner elements must be renewed every 1 000 hours, or yearly, or after a maximum of ten washings of the main element.
- Where the weather is very hot, or exceptionally humid, change the oil in the epicyclic hubs every 200 hours.
- Where the weather is very hot, or exceptionally humid, the clutch and brake adjustments must be made more frequently.

MF 565 TRACTOR OPERATOR INSTRUCTION BOOK

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General Note: Throughout this book, references to 'left' or 'right' are as viewed from the rear of the tractor looking forwards.



This symbol is used throughout the book to indicate areas of possible personal danger.

JUNE 94 OIL + FILTER
FUEL FILTER 7517 HRS

JULY 95 NEW AIR FILTER
OIL + FILTER 7809 HRS
FUEL FILTER
TIGHTEN WHEEL BEARINGS

NOV 95 FLUSH OUT + A F
TOTAL AF + SUMMER COOLANT
NEW WATER PUMP + FAN BELT

JULY 96 ENGINE OIL + FILTER 8133 HRS
FUEL FILTER
TRANSMISSION OIL + CLEAN FILTER
NEW PTO SEAL + HOUSING + CLIP
NEW BRAKE LIGHT SWITCH

OCT 96 NEW RADIATOR RECON \$75
FLUSH OUT + AF CASTROL + SUMMER COOLANT

INTRODUCTION

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INTRODUCTION

The purpose of this publication is to enable the owner/operator to handle and maintain the tractor efficiently. If these instructions are followed carefully they will contribute towards years of prosperous farming in the true Massey-Ferguson tradition.

The installation procedure ensures that these instructions are understood; observe our recommendations carefully, make daily maintenance a routine, and keep a record of the hours of service. Wide variations in operating conditions make it impossible for the Company to make comprehensive or definite statements in its publications regarding performance and methods of use of its machines or to accept liability for any loss or damage which may result from these statements or from any errors or omissions. Users are strongly advised to make use of the widespread network of Massey-Ferguson Distributors and Dealers in connection with any service problems and adjustments which may arise. Massey-Ferguson Distributors and Dealers are specially trained and equipped for the purpose of advising users on any special problems arising as a result of local conditions and are able to call on Technical Staff of Massey-Ferguson Service Department for advice. If the tractor is to be used in abnormal conditions which could prove injurious to it (e.g. deep water or wet paddy fields) consult your Distributor or Dealer for special instructions, or warranty may be invalidated.

When replacements are required, insist on genuine Massey-Ferguson Service Parts. All Distributors and Dealers have agreed not to sell Service Parts other than those which are manufactured or recommended by the Company and, as extensive damage is liable to result from parts of inferior quality being used, users are advised to buy Service Parts only from an authorised Massey-Ferguson Distributor or Dealer.

In the event of your requiring information as to the name and address of the Massey-Ferguson Distributor or Dealer in any particular district apply to: Massey-Ferguson, Service Department, Coventry, England.

NOTE: This book is published for world-wide distribution, and the availability of equipment shown either as basic or accessory, varies according to the territory in which the tractor is to be used, details of equipment available in your area can be obtained from your Massey-Ferguson Distributor or Dealer.

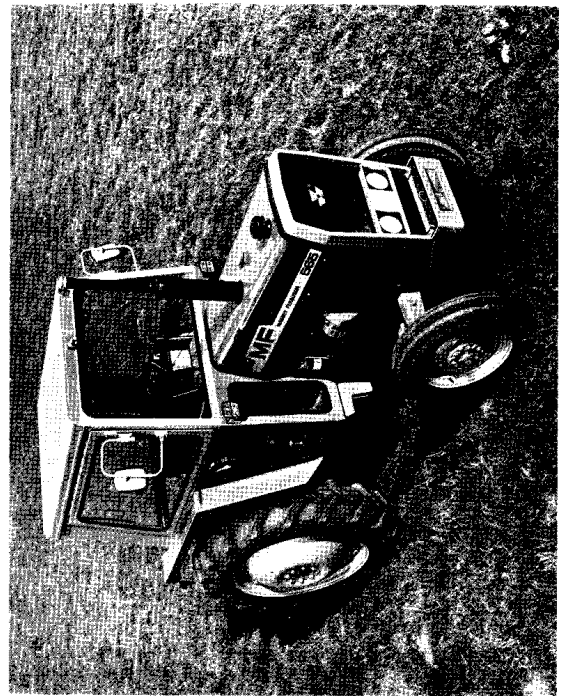


FIG. 1

INTRODUCTION



SAFETY NOTES

Before operating the tractor or its attachments, familiarise yourself with the function and means of operation of all controls, particularly transmission, p.t.o. diff. lock and fuel cut off control.

WATCH OUT FOR CHILDREN! Always look behind the tractor to be sure it is safe to reverse. This is particularly important with 'Quiet' cabs as you may not hear people shouting outside.

Inspect and tighten all external nuts, bolts and plugs, particularly the rear wheel nuts, which should be tightened to the recommended torque after the first 10 hours and 50 hours, then as stated on the maintenance chart.

Never start the engine or operate the controls unless you are in the driving seat.

When stopping to make in-work adjustments, bring the tractor to a secure halt. Before leaving the seat, apply parking brake, disengage p.t.o. and lower implement to the ground. Stop the engine and if parking the tractor, remove the key.

Do not pull anything from the top link connection alone, or from any point above the centre line of the rear axle.

Before attaching or adjusting p.t.o. driven implements, disengage the p.t.o. and stop the engine.

When assisting an operator in making attachments to the tractor linkage—keep clear when the hydraulic lift is operated.

Check and adjust brakes regularly, especially when working with heavy trailers.

Keep brake pedals latched together, except when independent braking is required. Do not use independent brakes to turn sharply. They are only for assisting steerability under difficult field conditions.

Ensure that your speed is low enough for an emergency stop to be safe and effective.

If the tractor overturns, hold the steering wheel firmly and do not attempt to leave the cab until the tractor has come to rest. If the cab door is obstructed get out through the rear window, or the side window after first removing the hairpin and pivot pin and disconnecting the over-centre catch.

Shield the p.t.o. at all times and replace the cap when the p.t.o. is not being used.

Keep the cab floor, pedals, foot steps and grab handles free from grease. Clean the cab windows regularly to ensure good all-round visibility.

INTRODUCTION



SAFETY NOTES (continued)

Tyre tread and ply must match. Never fit radial on one side and cross-ply on the other.

Do not mount or dismount from a moving tractor. Always use the correct stepping points.

When refuelling or servicing the fuel system, do not smoke, switch off the engine. Avoid the use of cans. Always clean up any spilt fuel.

Close the cab door securely before moving off.

Check the Power Steering fluid level regularly, and top-up if necessary. Rectify immediately any leakage from the system.

Operators should familiarise themselves with the provisions of the Road Traffic Acts and of the regulations made thereunder in order to ensure that when taking the tractor and attachments upon the highway, they comply with the relevant statutory requirements. Always remember to observe the restrictions on the use of vehicles carrying projecting loads or appliances.

HILLSIDE WORKING



Avoid across-slope working whenever possible. Preferably, work up and down sloping fields. If it is necessary to work across slopes then proceed as follows:—

1. Use widest wheel track setting compatible with implement being used.
2. Always turn uphill at the end of each run.
3. Only raise the implement sufficient to turn without dragging it on the ground, either by selecting a low clearance implement tractor hitch point or by raising the implement on position control.
4. Check that rear tyre pressures are equal.
5. Reduce turning speed to a minimum.
6. When using a Reversible Plough always start at the top of the slope, thus minimising tractor angle by always having the top wheel in the furrow.

INTRODUCTION

SERIAL NUMBERS

IMPORTANT—NOTE THE SERIAL NUMBER OF YOUR TRACTOR. ALWAYS QUOTE THE SERIAL NUMBERS IN ANY COMMUNICATION TO YOUR DISTRIBUTOR OR DEALER.

Tractor Serial Number 658864 SFG (Fig. 2)

Engine Serial Number LD 22781U734702G (Fig. 3)

Safety Cab Serial Number 500 28964 (Fig. 4)

Model S65 MULTI POWER

Owner/Operator

Nearest MF Distributor or Dealer

Date of Installation

Expiration of Warranty

KEEP THIS BOOK SAFELY FOR REGULAR REFERENCE.

WARRANTY, PRE-DELIVERY AND INSTALLATION

The Company, when selling new goods to its Distributors, gives a warranty which, subject to certain conditions, guarantees that the goods are free from defects in material and workmanship. The Company's Distributors and Dealers are required to give the benefit of a similar warranty to the first retail purchaser of all new goods supplied by the Company, and purchasers should enquire of the Distributor or Dealer from whom they purchase as to the terms of the warranty made available to them. Before delivering a new tractor to the Customer's premises, it is the responsibility of the Distributor to conduct a pre-delivery check on the machine. This consists of a series of detailed inspections, adjustments and functional checks, which should ensure that when received by the Customer the tractor is ready to commence work immediately. Upon delivery the Distributor is required to instruct the Customer in the basic principles and operating procedure of the tractor. This is termed Tractor Installation, which should include instruction on controls and instruments, maintenance requirements, safety precautions and should preferably be undertaken in the presence of all who will be concerned with the operation and maintenance of the machine.

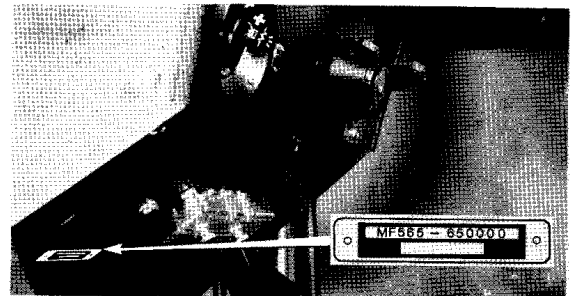


FIG. 2

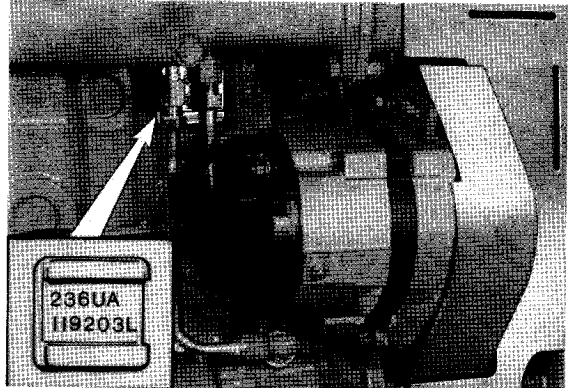


FIG. 3

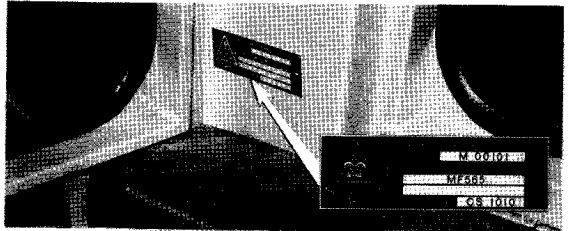
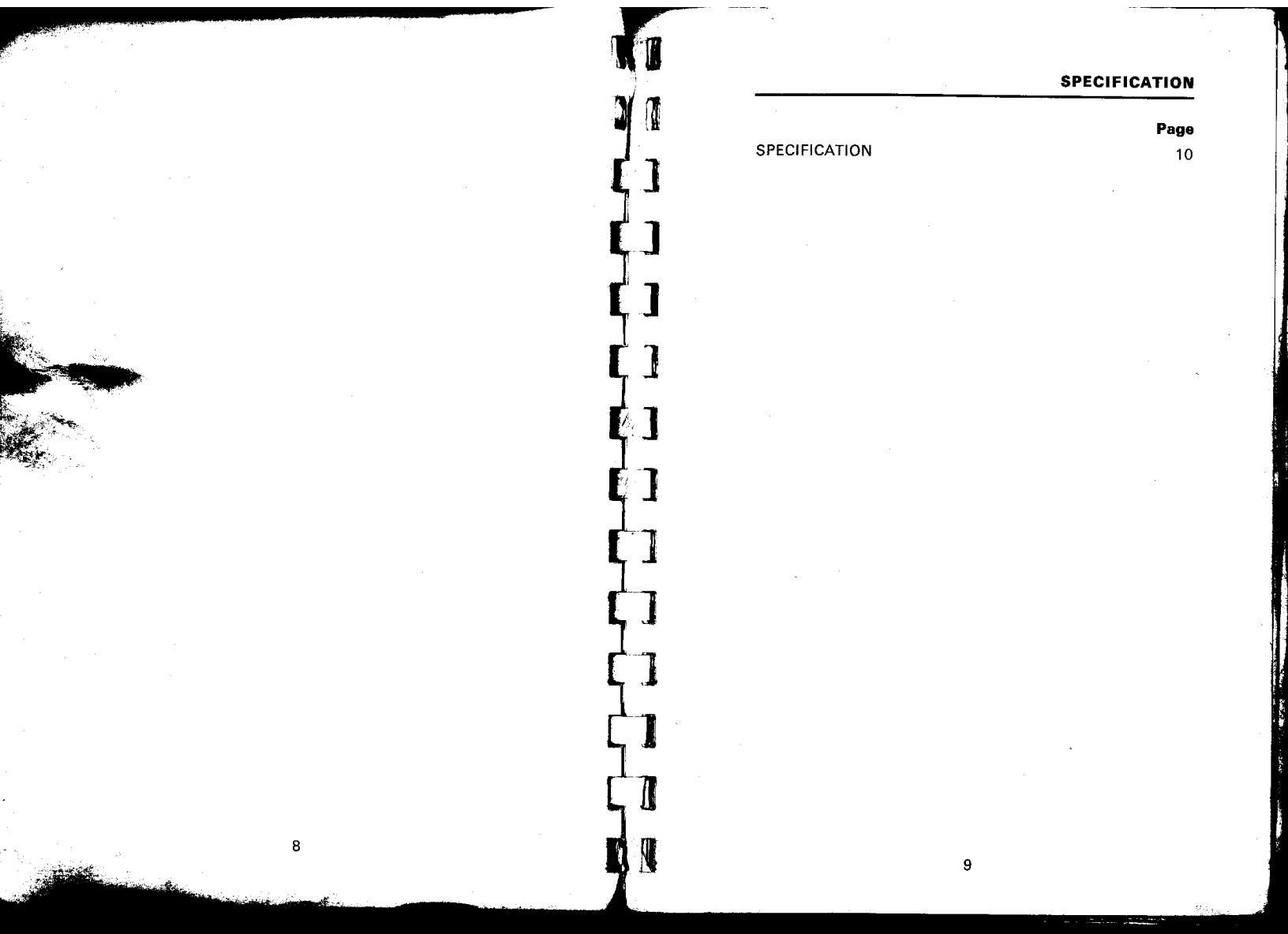


FIG. 4



SPECIFICATION

Engine

Make	Perkins, to MF specification
Type and Model	Four-stroke, direct injection diesel A4.236
Number of Cylinders	Four
Bore	98.4 mm (3.875 in)
Stroke	127 mm (5 in)
Capacity	3.86 litre (236 in ³)
Compression Ratio	16:1
Firing Order	1, 3, 4, 2
Horsepower	60 PS (44 kW) at 2000 rev/min (DIN 70020) 63 hp at 2000 rev/min (B.S. AU 141: 1967 Ambient Conditions)
Maximum Torque (at 1200 rev/min)	230 Nm (170 lbf ft) (DIN 70020)

Lubrication	Throwaway, cannister type full flow external filter
Valves	Overhead, pushrod operated
Valve Tip Clearance (Inlet and Exhaust)	0.30 mm (0.012 in) cold 0.25 mm (0.010 in) hot

Fuel System and Air Cleaner

Fuel Lift Pump	A.C. Delco, with hand primer
Fuel Filter	C.A.V. filter, with transparent sediment bowl
Injection Pump	C.A.V. Distributor type, with mechanical governor
Engine Speeds	Idling: 700 to 750 rev/min } No Maximum: 2160 rev/min } Load
Injection Timing	23° B.T.D.C.
Injectors	C.A.V. type nozzles and nozzle holders. Initial setting pressure: 17.73 N/mm ² (175 Atmosphere) Working pressure: 17.23 N/mm ² (170 Atmosphere) C.A.V. Thermostart Mark III C Two stage, dry element, remov- able for cleaning with warning light
Easy Starting Aid Air Cleaner	

SPECIFICATION

Electrical System

Voltage	12 volt. NEGATIVE EARTH
Battery	17 plate, 96 or 125 Ah Lucas Mono Lid Exide Mono Lid Lucas Aqualok Exide Auto-Fil
Starter Motor	Lucas M45G or M50G with a solenoid engaged pinion. Safety device operated by the dual range selector.
Alternator	Lucas 23ACR or Motorola 9AR 2501K
Light Bulb Sizes	UK 36/36W, others 45/40W
Headlights	5W
Side Lights	5W
Rear Lights	21W
Indicator Lights	21W
Brake Lights	5W
Number Plate Lights	36W
Plough Light	2.2W
Panel Lights	5W
Interior Light	
Fuses	
Dipped Headlights	15A
Side Lights	10A
Brake Lights	10A
Warning Lights	15A
Main Beam Headlights	15A
Flashing Indicators	10A
Plough Light	10A
Blower Motor	17A
Wiper Motor	10A
Interior Light	2A
Horn	35A
Cigar Lighter	35A
Fresh Air Blower	Two speed blower with a maximum output of 12 m ³ /min (425 ft ³ /min)

SPECIFICATION

Cooling System Type

Thermostat controlled with centrifugal pump to assist circulation. Four bladed fan driven by a belt from the crankshaft.

Fan Belt Deflection (Total)

13 mm (0.5 in) midway between the fan pulley and the crankshaft pulley.

Transmission Clutch

Live p.t.o. Tractors

Dual clutch, Auburn ventilated type, with a 305 mm (12 in) main drive disc, coil spring operated, and a 254 mm (10 in) p.t.o. disc, Belleville spring operated.

I.p.t.o. Tractors

Single clutch, Auburn ventilated type, with a 305 mm (12 in) main drive disc, coil spring operated. There is a continuous drive to the i.p.t.o. shaft via a plate bolted to the clutch cover. A dual clutch is fitted for certain cold climate territories.

Eight Speed Gearbox

The eight speed gearbox has eight forward and two reverse speeds. This is achieved by using a four forward and one reverse speed gearbox, compounded by an epicyclic unit.

Eight Speed Synchromesh Gearbox (Certain Territories)

The eight speed synchromesh gearbox has eight forward and two reverse speeds. This is achieved by using a four forward and one reverse speed gearbox, with synchromesh on third and fourth gears, compounded by an epicyclic unit.

SPECIFICATION

Multi-Power Gearbox

The Multi-Power gearbox has twelve forward and four reverse speeds. This is achieved by using a three forward and one reverse speed gearbox, compounded by an epicyclic unit and an additional set of high ratio constant mesh gears actuated by a hydraulic clutch.

Gearbox Epicyclic Reduction Final Drive

4:1
Bevel drive with epicyclic final hub reduction giving an overall ratio of 10.83:1

Power Take-off

Live Power Take-off

Engine, or engine and ground speed drives are engaged by a lever to the left of the operator's seat.

Independent Power Take-off

Engine speed i.p.t.o. is engaged by a lever to the left of the operator's seat. The i.p.t.o. clutch is a multi-plate, wet clutch.

Reduction Ratio

Standard Pump High Flow Pump

3:12:1
3:12:1 (540 rev/min)
1:69:1 (1000 rev/min)

Speeds

Standard Pump High Flow Pump

540 rev/min at 1685 engine rev/min
540 rev/min at 1686 engine rev/min
1000 rev/min at 1690 engine rev/min

SPECIFICATION

Ground Speeds	Forward travel for each revolution of the p.t.o. shaft. 442 mm (17.41 in) – 11-32 tyres; 477 mm (18.80 in) – 11-36 tyres; 494 mm (19.45 in) – 12-36 tyres; 469 mm (18.49 in) – 14-30 tyres; 493 mm (19.42 in) – 15-30 tyres; 509 mm (20.05 in) – 12-38 tyres; 452 mm (17.77 in) – 13-28 tyres. P.t.o. shaft rotates clockwise for forward travel and anti-clockwise for reverse travel.
Power Take-off Shaft	Six spline (540 rev/min), 21 spline (1000 rev/min), 35 mm (1.38 in) diameter, with an annular groove for securing p.t.o. couplings.
Hydraulic System Ferguson Pump	Four cylinder, scotch yoke type pump driven from the forward end of the p.t.o. shaft, supplies oil, under pressure to the ram cylinder and four external take-off points.
Tapping Point Thread Sizes	Top: $\frac{3}{8}$ N.P.S.M. Side: $\frac{3}{8}$ N.P.T.F.
Pressure Control System	The Pressure Control system operates from 0.69 to 20.7 N/mm ² (100 to 3000 lbf/in ²)
Pump Maximum Output Standard Pump	15 litre/min (3.4 Imp. gal/min) at 2000 engine rev/min
High Flow Pump	26.2 litre/min (5.8 Imp. gal/min) at 2000 engine rev/min
Pump Maximum Pressure	20.7 N/mm ² (3000 lbf/in ²)
Linkage	Three point linkage, with Category 1 or 2 interchangeable ball ends. A barrel turnbuckle type, adjustable top link is fitted, plus check chains adjustable for Category 1 and 2.
Maximum Lift Capacity	1542 kg (3400 lb).

SPECIFICATION

Auxiliary Hydraulics

Auxiliary Pump	Gear type pump with separate gear train and output for Multi-Power and i.p.t.o. supply.
Pump Output	To auxiliaries: 36 litre/min (7.9 Imp. gal/min) To Multi-Power/i.p.t.o.: 19 litre/min (4.2 Imp. gal/min)
Relief Valve Pressure	Auxiliaries: 17.3 to 19.3 N/mm ² (2500 to 2800 lbf/in ²) Multi-Power/i.p.t.o.: 4.8 to 6.9 N/mm ² (700 to 1000 lbf/in ²)
Multi-Power/l.p.t.o. Pump Pump Output	Gear type pump 19 litre/min (4.2 Imp. gal/min)
Relief Valve Pressure	4.8 to 6.9 N/mm ² (700 to 1000 lbf/in ²)
Multi-Power/l.p.t.o./ Auxiliary Filtration	Externally mounted 25 micron filter with replaceable cartridge type element

Standard Flow Ferguson Pump				
Application	Output at 2000 engine rev/min (640 p.t.o. rev/min)			
	litre/min	Imp. gal/min	Hydraulic PS	Hydraulic hp
Ferguson Pump Only	15.0	3.4	6.5	6.4
Auxiliary Pump Only	36.0	7.9	11.3	11.1
Combined Flow	51.0	11.3	16.0	15.8

SPECIFICATION

High Flow Ferguson Pump				
Application	Output at 2000 engine rev/min (1185 p.t.o. rev/min)			
	litre/min	Imp. gal/min	Hydraulic PS	Hydraulic hp
Ferguson Pump Only	26,2	5.8	11,2	11.0
Auxiliary Pump Only	36,0	7.9	11,3	11.1
Combined Flow	62,2	13.7	19,6	19.2

Brakes

Type
Girling, oil immersed 222,4 mm (8.75 in) mechanical five plate disc brakes, operated together or independently to assist steering. Operates on both rear wheels simultaneously.

Parking Brake

Steering

Type
Hydrostatic, with a gear pump and integral reservoir

Toe-in
Turns Lock to Lock

Front Axle

Type
Three section, adjustable for track width

Wheel Camber

Wheel Castor

Track Adjustments

All adjustments are in 102 mm (4 in) increments.

Front Track

Normal Duty Axle
6.00-16 and 6.00-19 tyres 1 219 to 1 829 mm (48 to 72 in)
7.50-16 and 7.50-18 tyres 1 245 to 1 854 mm (49 to 73 in)

SPECIFICATION

Heavy Duty Axle—Std. Cl.
6.00-16 and 6.00-19 tyres 1 295 to 1 702 mm (51 to 67 in)
7.50-18 tyres 1 321 to 1 727 mm (52 to 68 in)
7.50-16 tyres 1 346 to 1 753 mm (53 to 69 in)

Heavy Duty Axle—Hi. Cl.
6.00-16 and 6.00-19 tyres 1 321 to 1 727 mm (52 to 68 in)
7.50-18 tyres 1 346 to 1 753 mm (53 to 69 in)
7.50-16 tyres 1 372 to 1 778 mm (54 to 70 in)

Rear Track

Pressed Steel Wheels 1 422 to 2 134 mm (56 to 84 in)
Double Disc Wheels 1 422 to 2 235 mm (56 to 88 in)

Wheels and Tyres

Front
4.50 x 16 wheels fitted with 6.00-16, 4 or 6 ply tyres
4.50 x 19 wheels fitted with 6.00-19, 4 or 6 ply tyres
5.50 x 16 wheels fitted with 7.50-16, 6 ply tyres
5.50 x 18 wheels fitted with 7.50-18, 8 ply tyres

Rear—Pressed Steel Wheels
W10 x 32 wheels fitted with 11-32, 6 ply tyres
W10 x 36 wheels fitted with 11-36 or 12-36, 6 ply tyres
DW14 x 30 wheels fitted with 14-30 or 15-30, 6 ply tyres
DW12 x 38 wheels fitted with 12-38, 6 ply tyres
W12 x 28 wheels fitted with 13-28, 6 ply tyres

—Double Disc Wheels

Water Ballasting

W15L wheels fitted with 14-30, 6 ply tyres
W12 wheels fitted with 12-36, 6 ply tyres
Additional weight for each rear tyre:-
11-32 tyres: 143 kg (316 lb)
11-36 tyres: 159 kg (349 lb)
12-36 tyres: 143 kg (316 lb)
14-30 tyres: 266 kg (627 lb)
15-30 tyres: 352 kg (787 lb)
12-38 tyres: 222 kg (457 lb)
13-28 tyres: 200 kg (440 lb)

SPECIFICATION

Capacities

Fuel Tank	80 litre (17.4 Imp. gal)
Engine Sump (including filter)	7.1 litre (12.5 Imp. pt)
Cooling System	14.2 litre (25 Imp. pt)
Transmission—	
Eight Speed	40 litre (70 Imp. pt)
Multi-Power	39 litre (69 Imp. pt)
Epicyclic Hubs	1.71 litre (3 Imp. pt)
Power Steering Reservoir	0.9 litre (2 Imp. pt)

General Dimensions (Fig. 1)

A. Overall Height (over raised exhaust cap)	2540 mm (100 in)
B. Overall Width	1854 mm (73 in)
C. Overall Length	3774 mm (148.5 in)
D. Wheelbase	2248 mm (88.5 in)
Ground Clearance	
Under Drawbar Frame	328 mm (12.9 in)
Under Engine Sump	431 mm (17 in)
Turning Circle	
7.2 m (23.8 ft) Without Brakes	
6.6 m (21.8 ft) With Brakes	
Weight (with fuel, oil and water)	2824 kg (6225 lb)

Note: The above dimensions are for a tractor fitted with 7.50-16 front tyres and 14-30 rear tyres at 1524 mm (60 in) track setting.

Mounting Points (Fig. 2)

1. 102 mm (4 in)
2. 102 mm (4 in)
3. 10 holes (5 each side) tap $\frac{3}{8}$ in 10 UNC 2B x 32 mm ($1\frac{1}{4}$ in)
4. 57 mm (2.25 in)
5. 73 mm (2.87 in)
6. 60 mm (2.38 in)
7. 1989 mm (80.8 in)
8. 254 mm (10 in)
9. 184 mm (7.25 in)
10. 92 mm (3.62 in)
11. 4 holes tap $\frac{5}{8}$ in 11 UNC 3B x 32 mm ($1\frac{1}{4}$ in)
12. 102 mm (4 in)
13. 1243 mm (49 in)
14. 4 holes tap $\frac{3}{4}$ in 10 UNC 3B x 27 mm ($1\frac{1}{8}$ in)
15. 76 mm (3 in)
16. 152 mm (6 in)
17. 43 mm (1.69 in)
18. 86 mm (3.38 in)

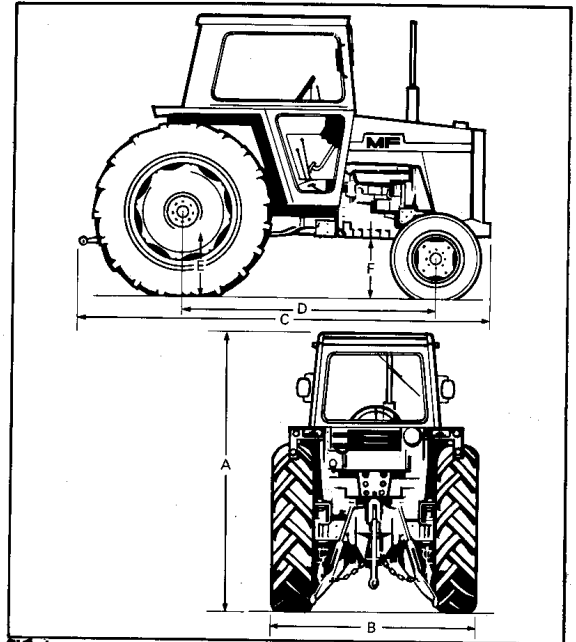


FIG. 1

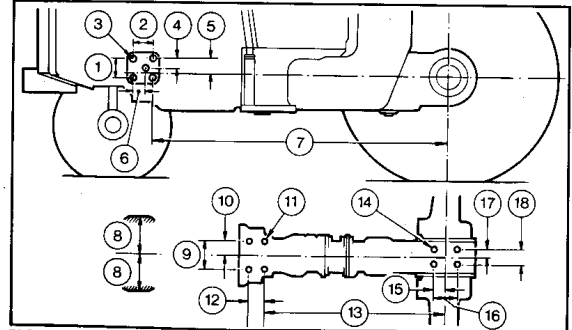
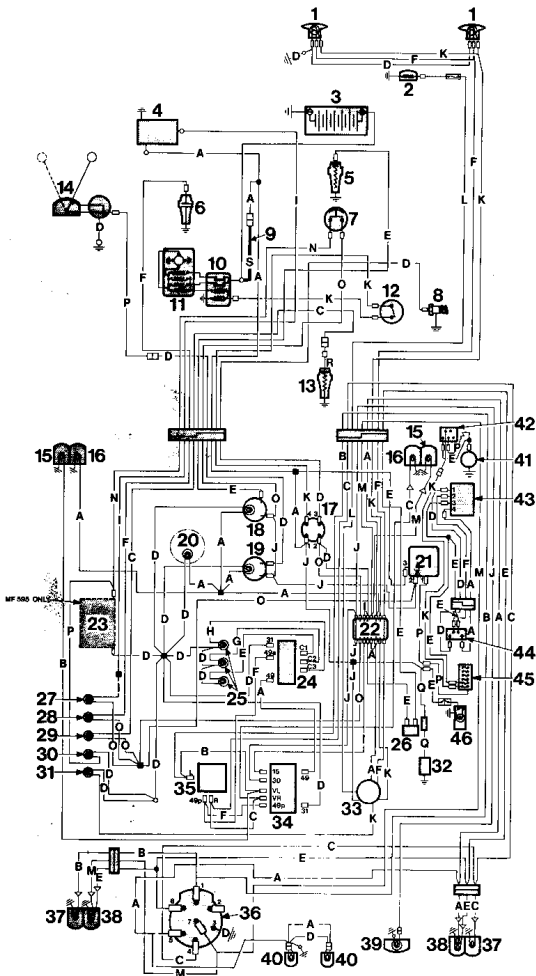


FIG. 2

SPECIFICATION

WIRING DIAGRAM FROM SERIAL NO. 654196 ONWARDS

1. Headlight
2. Horn
3. Battery
4. Alternator
5. Temperature Gauge Switch
6. Engine Oil Pressure Switch
7. Air Cleaner Indicator Switch
8. Thermostat
9. Fusible Link
10. Starter Motor Solenoid
11. Starter Motor
12. Safety Start Switch
13. Multi-Power Oil Pressure Switch
14. Fuel Gauge Sender Unit
15. Flashing Indicator Light (Front)
16. Side Light (Front)
17. Starter Switch
18. Temperature Gauge and Bulb
19. Fuel Gauge and Bulb
20. Tachometer Bulb
21. Relay
22. Fuse Box
23. Air Cleaner Buzzer (MF 595 only)
24. Flashing Indicator Relay
25. Flashing Indicator Warning Lights
26. Brake Light Switch
27. Alternator Charge Warning Light
28. Engine Oil Pressure Warning Light
29. Multi-Power Oil Pressure Warning Light
30. Air Cleaner Warning Light
31. Headlight Main Beam Warning Light
32. Cigar Lighter
33. Light Switch
34. Hazard Warning Lights Switch
35. Flashing Indicator Switch
36. Trailer Socket—wiring detail on page 22
37. Flashing Indicator Light (Rear)
38. Tail/Brake Light
39. Plough Light
40. Number Plate Lights
41. Blower Motor
42. Blower Switch
43. Wiper Motor
44. Wiper Switch
45. Fuse Block
46. Interior Light



SPECIFICATION

Wiring Colour Code

- A — Red
- B — Pink
- C — Brown
- D — Black
- E — White
- F — Green
- G — White/Blue
- H — White/Red
- I — Purple
- J — Blue
- K — Yellow
- L — Grey
- M — Red/Black
- N — Light Blue
- O — Light Green
- P — Orange
- Q — White/Green
- R — Black
- S — Dark Brown

TRAILER SOCKET WIRING

1. Left-Hand Direction Indicator
2. Spare Terminal
3. Earth
4. Right-Hand Direction Indicator
5. Right-Hand Tail Light and Number Plate Lights
6. Brake Lights
7. Left-Hand Tail Light

SPECIFICATION

NOTES:

SPECIFICATION

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SPECIFICATION

Use of the Road Speed Chart

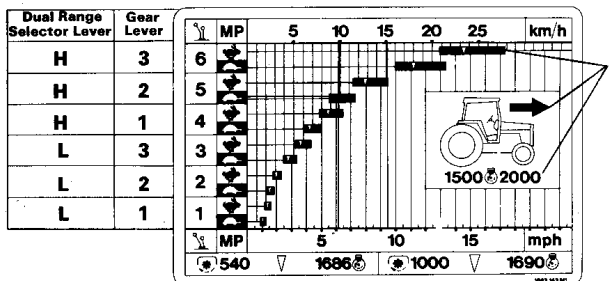
A typical Road Speed Chart is illustrated below. The following instructions should be applied to the chart fixed to the instrument panel of your tractor.

In conjunction with the tachometer, the road speed chart can be used to perform two basic functions;

1. Checking tractor ground speed when travelling in a speed limited area.
2. Establishing the correct gear and engine speed at which to operate to comply with the requirements of certain p.t.o. driven implements, e.g. spinner broadcaster or sprayer.

Example 1 shows a tractor being operated in second gear with the dual range selector lever and the Multi-Power lever in high. The engine is running at 2000 rev/min, giving a ground speed of 9.5 mile/h (15.2 km/h).

Example 2 A spinner broadcaster is to be operated with a p.t.o. speed of 540 rev/min at a ground speed of 6 mile/h (10 km/h). Place the gear lever in second and the dual range selector lever in high. Move the Multi-Power lever to low and set the engine speed at 1686 rev/min.



*The black bands show the ground speed range in each gear, between the two engine speeds given.

∇ indicates the point within each ground speed range at which the p.t.o. shaft will be operating at either 540 rev/min (engine set at 1686 rev/min) or 1000 rev/min (engine set at 1690 rev/min), depending upon the p.t.o. shaft fitted.

INSTRUMENTS AND CONTROLS

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LOWER CONSOLE	33
LEFT HAND SIDE CONTROLS	34
RIGHT HAND SIDE CONTROLS	37
UPPER CONSOLE	38
MISCELLANEOUS	38
SERVICE ACCESS	42

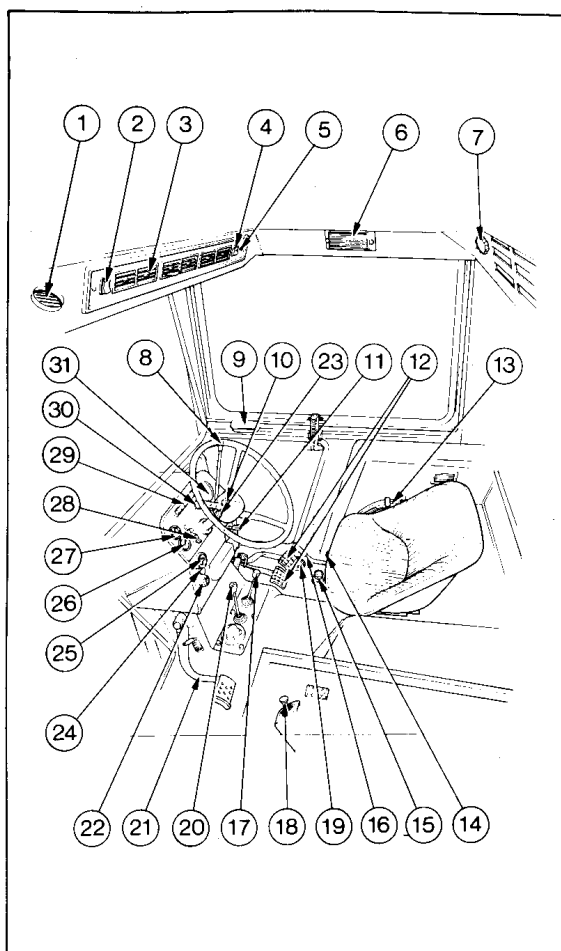


FIG. 1

INSTRUMENTS AND CONTROLS

Key to Fig. 1

1. Demister Vent
2. Blower Switch
3. Air Flow Vents
4. Wiper Switch
5. Heater Switch
6. Interior Light
7. Fresh Air Vent Switch
8. Hand Throttle Lever
9. Ashtray
10. Hazard Warning Lights Switch
11. Multi-Power Switch
12. Brake Pedals
13. Hydraulic Quadrant
14. Response Control Switch
15. Differential Lock Pedal
16. Parking Brake Lever
17. Dual Range Selector Lever
18. Power Take-off Lever
19. Foot Throttle
20. Gear Lever
21. Clutch Pedal
22. Light Switch and Horn Push
23. Screenwasher Button
24. Fuel Cut-off Control
25. Starter Switch
26. Fuel Gauge
27. Temperature Gauge
28. Flashing Indicator Switch
29. Warning Light Panel
30. Cigar Lighter
31. Tachometer

INSTRUMENTS AND CONTROLS

INSTRUMENT PANEL

Fuel Gauge (1, Fig. 2)

The fuel gauge indicates the quantity of fuel in the tank.

Temperature Gauge (2, Fig. 2)

The temperature gauge indicates the temperature of the coolant in the engine. GREEN indicates normal operating temperatures.

Flashing Indicator Switch (3, Fig. 2)

The flashing indicator switch has three positions:

1. Central—Off
2. Left—Left hand indicator operates
3. Right—Right hand indicator operates

When the switch is operated, the left hand warning light flashes irrespective of whether left hand or right hand is selected. When using the tractor flashers only, all three lights will flash once, then only the left hand light will flash. With one trailer fitted, the left hand and centre lights will flash. When two trailers are used, all three lights flash. The warning lights show that the trailer flashers are working correctly.

Alternator Charge Warning Light (4, Fig. 2)

The alternator charge light illuminates when the starter switch key is moved to the 'auxiliary' position.

The light should extinguish when the engine starts and the starter switch key returns to the 'auxiliary' position. The light will come on if the starter switch key is moved to the 'off' position when the engine is running, and will also glow briefly as the engine stops.

If the light comes on with the engine running, stop the engine and investigate the fault immediately.

Engine Oil Pressure Warning Light (5, Fig. 2)

The engine oil pressure warning light illuminates when the starter switch key is moved to the 'auxiliary' position. The light should extinguish when the engine starts and should remain extinguished at all engine speeds.

If the light comes on with the engine running, stop the engine and investigate the fault immediately.

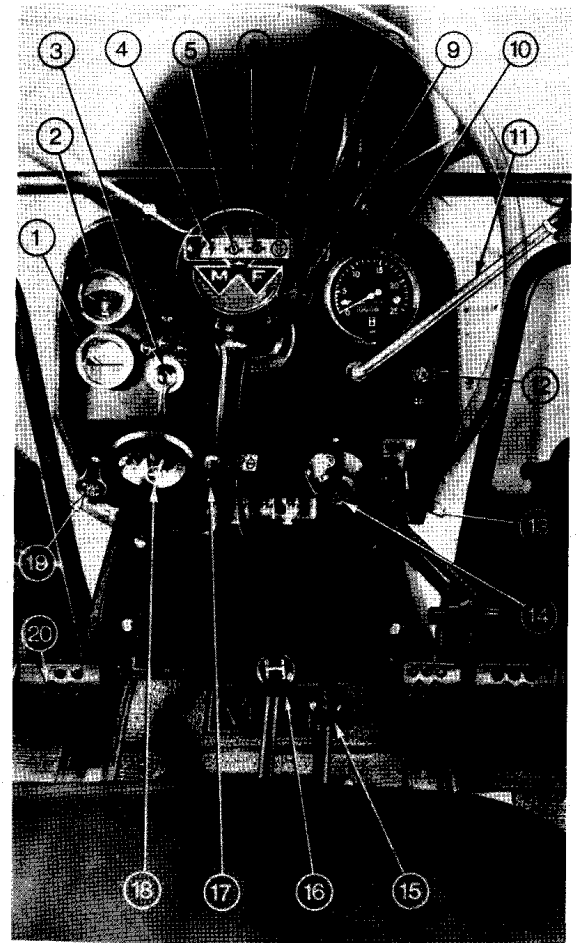


FIG. 2

INSTRUMENTS AND CONTROLS

Multi-Power Oil Pressure Warning Light (6, Fig. 2)

This light illuminates when the starter switch key is moved to the 'auxiliary' position. The light should extinguish when the engine starts and should remain extinguished at all engine speeds, except when changing from Multi-Power low to Multi-Power high, the light may flash on momentarily.

If the light comes on with the engine running, stop the engine and investigate the fault immediately.

Air Cleaner Warning Light (7, Fig. 2)

The air cleaner warning light illuminates when the air cleaner requires attention. See also page 81.

Main Beam Warning Light (8, Fig. 2)

This light illuminates when the headlights are switched to main beam.

Cigar Lighter (9, Fig. 2)

To operate the lighter, push the lighter head in. When the element has heated, the head will partially eject, ready for withdrawal and use. Refit the head to its original position afterwards.

Tachometer (10, Fig. 2)

The tachometer indicates the engine speed in rev/min. The rectangular aperture in the lower centre of the dial shows the reading of an odometer, which registers one unit for every hour of work that the tractor engine performs at approximately 1500 rev/min.

Road speeds are shown on pages 22 to 25.

Hand Throttle Lever (11, Fig. 2)

Move the lever down to increase the engine speed.

Hazard Warning Lights Switch (12, Fig. 2)

To operate all four flashing indicators simultaneously, pull this switch.

INSTRUMENTS AND CONTROLS

LOWER CONSOLE

Multi-Power Switch (13, Fig. 2)

The Multi-Power switch is used to change to or from high or low ratio, whilst on the move. Move the switch up to select high ratio or down for low ratio. See also pages 54 to 56 for further details.

Light Switch (14, Fig. 2 and Fig. 3)

The light switch has four positions and is operated by turning it in a clockwise direction. The positions are:

1. Off
2. Side, rear, and instrument lights
3. Side, rear, instrument lights and dipped headlights
4. Side, rear, instrument lights and main beam headlights

When the main beam headlights are switched on, a warning light (8, Fig. 2) illuminates.

The plough light is operated by a separate switch on the light.

Horn Push (14, Fig. 2)

To sound the horn, push the button.

Dual Range Selector Lever (15, Fig. 2)

The dual range selector lever is used to select high or low transmission range. The top of the gear lever knob is engraved L-S-H to indicate LOW, START (Neutral) and HIGH respectively. The lever must be placed in the S position before the engine can be started.

Gear Lever (16, Fig. 2)

The gear lever knob has a diagram engraved on its top face to indicate the respective gear positions (three forward and one reverse—Multi-Power, or four forward and one reverse—eight speed). The gear lever is used in conjunction with the dual range selector lever to select the required speed—see also the road speed charts on pages 22 to 25.

Screenwasher Button (17, Fig. 2)

Push the button in to operate the screenwashers.

INSTRUMENTS AND CONTROLS

Starter Switch (18, Fig. 2 and Fig. 4)

The starter switch has four positions:

1. Off
2. Auxiliary This position permits electrical services to be switched on without the engine running.
3. Heat Moving the key to the heat position energises the thermostart heater coil for cold weather starting.
4. Start Moving the key to the start position supplies power to the starter motor.

For detailed starting instructions, see pages 48 and 49.

Fuel Cut-Off Control (19, Fig. 2)

TO STOP THE ENGINE, PULL THE KNOB FULLY OUTWARDS. Push the knob fully in before starting the engine.

LEFT HAND SIDE CONTROLS

Clutch Pedal (20, Fig. 2)

On live p.t.o. tractors (and i.p.t.o. tractors, certain cold climate territories) the clutch pedal travels through two stages. The initial movement—the extent of which is made apparent by a distinct increase in pedal pressure—disengages the transmission drive; additional downward movement disconnects the drive to the hydraulic pump(s) and the p.t.o. shaft.

On i.p.t.o. tractors (except those fitted with a dual clutch) the clutch pedal is used to engage and disengage the drive from the engine to the transmission. The drive to the hydraulic pump(s) and the p.t.o. shaft is not affected.

P.t.o. Lever (Fig. 5)

To engage live p.t.o. (single speed), depress the clutch pedal fully, lift the handle and select either engine speed (lever back) or ground speed (lever forward). To disengage the drive, depress the clutch pedal fully and move the lever to the central, neutral position and release the handle.

To engage live p.t.o. (two speed), depress the clutch pedal fully, lift the handle and push the lever forward. To disengage the drive, depress the clutch pedal fully, pull the lever back and release the handle.

To engage i.p.t.o., lift the handle and push the lever forward. To disengage the drive, pull the lever back and release the handle.

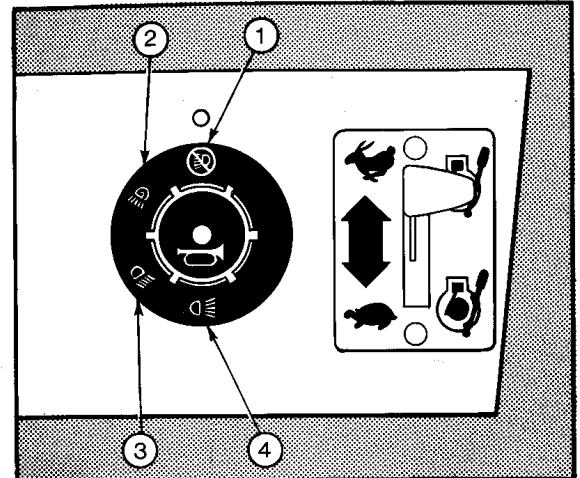


FIG. 3

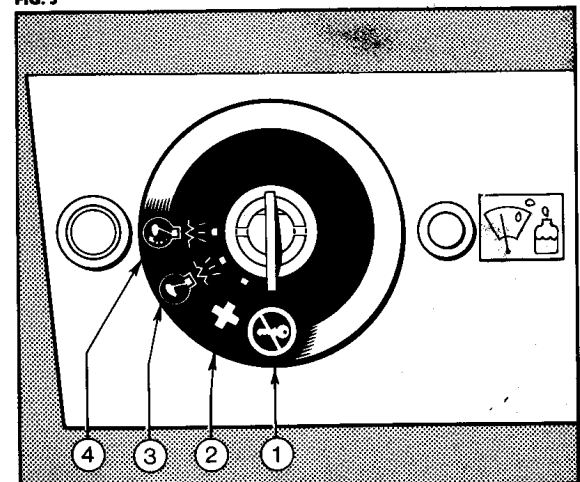


FIG. 4

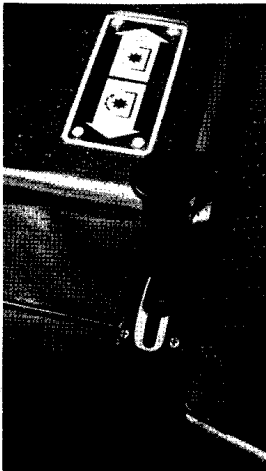


FIG. 5

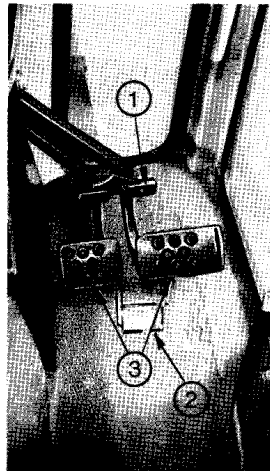


FIG. 6

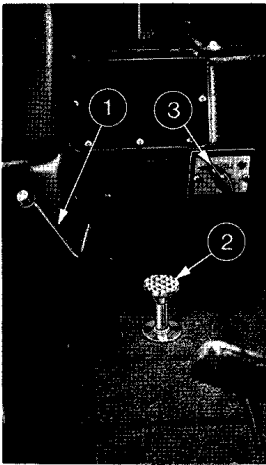


FIG. 7

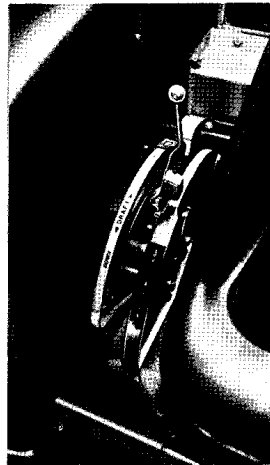


FIG. 8

INSTRUMENTS AND CONTROLS

RIGHT HAND SIDE CONTROLS

Brake Pedals (3, Fig. 6)

The two brake pedals can be used independently, or can be latched together to provide a master pedal for normal braking.

For independent brakes, disengage the latch (1, Fig. 6). The inner pedal acts on the left hand rear wheel and the outer pedal acts on the right hand rear wheel.

Foot Throttle (2, Fig. 6)

Operation of the foot throttle over-rides the hand throttle setting when increasing engine speed. When the foot throttle is released, the engine will return to the speed set by the hand throttle.

When operating the foot throttle, the hand throttle must be fully closed.

Parking Brake Lever (1, Fig. 7)

The parking brake acts on the tractor rear wheels. To engage the brake, press the footbrake pedals down and pull the hand lever up. To release the parking brake, press the footbrake pedals down then press the button on the end of the lever and push the lever down.

Response Control Switch (3, Fig. 7)

The response control switch can be set in various positions to govern the speed of drop of the three point linkage. For full details of operation see pages 61 to 65.

Differential Lock Pedal (2, Fig. 7)

For details of the differential lock pedal see page 57.

Hydraulic Quadrant Controls (Fig. 8)

For details of the quadrant controls see pages 61 to 65.

INSTRUMENTS AND CONTROLS

UPPER CONSOLE

Air Flow Vents (2, Fig. 9)

To guide the flow of air in the required direction, move the central knob to pivot either the duct flaps, or the duct body. To shut off the air flow, move the duct flaps fully one way.

Demister Vents (6, Fig. 9)

For maximum air flow to the screen for demisting purposes, close the air flow vents, switch on the blower, and direct the demister vents as required.

Blower Switch (1, Fig. 9)

The switch actuates the two speed blower. Switch operation is: Top depressed—off; Central—slow; Bottom depressed—fast.

Wiper Switch (3, Fig. 9)

A two speed windscreen wiper is fitted to this tractor, controlled by a three position switch. Switch operation is: Top depressed—off; Central—slow; Bottom depressed—fast.

Heater Switch (4, Fig. 9)

Turn the switch anticlockwise to increase the temperature in the cab. (For full details of the heating and ventilation system, see page 52.)

MISCELLANEOUS

Interior Light (5, Fig. 9)

The interior light has a switch which is depressed at the bottom for on and the top for off.

Fresh Air Vent (Fig. 10)

To permit fresh air to enter the cab, turn the switch anticlockwise. To close off the flow, turn the switch clockwise. (For full details of the heating and ventilation system, see page 52.)

Rear Windows (Fig. 11)

To open the upper window, lift the over-centre catch and gently push the window. The upper window will then open automatically, and will remain open, under the influence of the gas filled struts. To open the lower window, lift the over centre catch

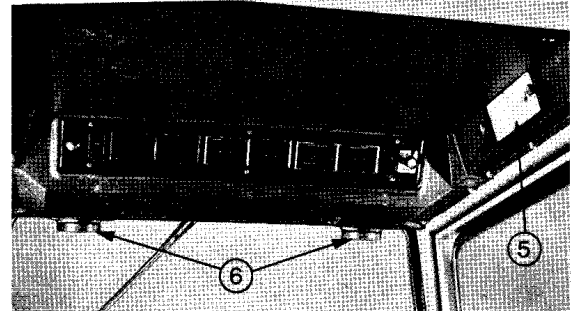


FIG. 9

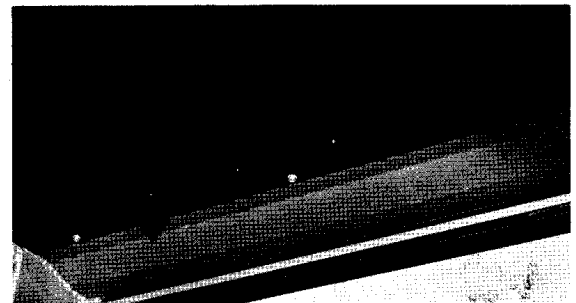


FIG. 10

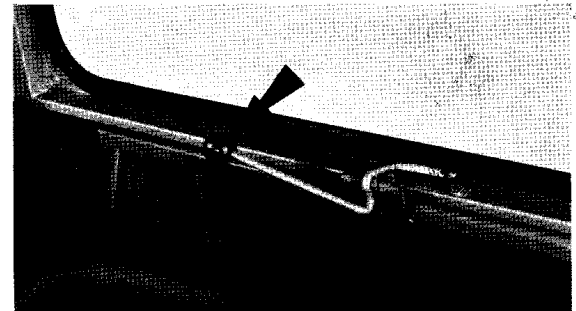


FIG. 11

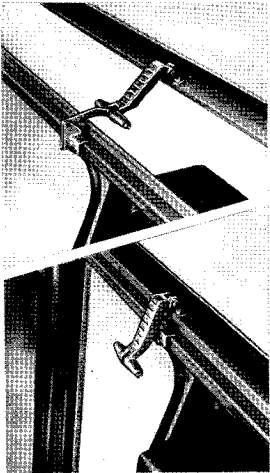


FIG. 12

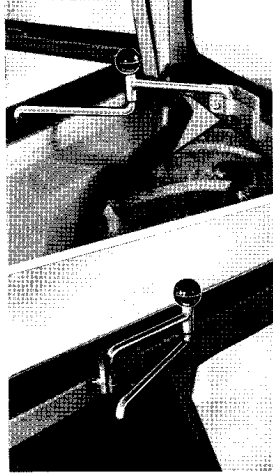


FIG. 13

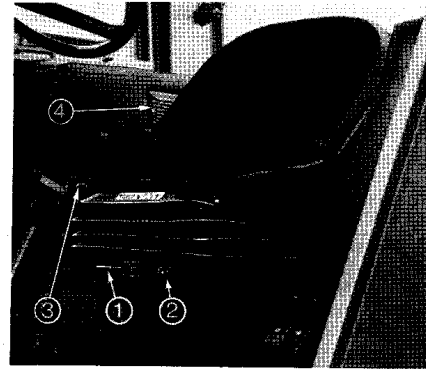


FIG. 14a

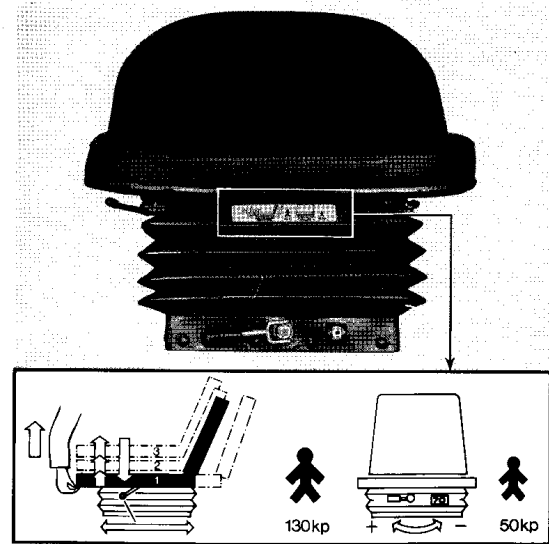


FIG. 14b

INSTRUMENTS AND CONTROLS

SPRING SUSPENSION SEAT (Fig. 14A and 14B)

Fig. 14B illustrates the seat adjustments. This is a reproduction of the instruction panel on the seat bellows.

To adjust the suspension, turn the hinged lever (1) until the operator's weight in kilogrammes shows on the indicator (2) to the left of the lever. This ensures that the suspension is set at an ideal position to suit the operator's weight.

To move the seat fore or aft, pull the lever (3) outwards from the side of the seat to disengage the runner lock, then slide the seat forwards or rearwards, as required.

To adjust the seat for height, slowly lift the seat until the internal ratchet locks into the desired position. There are three height positions, each 30 mm apart. (Fig. 14B).

To lower, lift the seat to its highest point, this releases the ratchet and allows the seat to return to the lowest position.



WARNING: When adjusting seat weight range, tractor must be stationary. Adjusting lever must be returned to horizontal position after completion of adjustment.

INSTRUMENTS AND CONTROLS

Side Window (Fig. 12) Top Hinged

To open the window, lift the over-centre catch upwards, then push the window outwards and move the catch to the extended over-centre position.

Sliding Window—Certain Territories

To open the window, release the catch at the window's forward edge and slide the window to the desired position.

NOTE: Driving with the windows open exposes the operator to greater noise, dust or insects, therefore, greater operator comfort is obtained by driving the tractor with the windows closed and using the heating and ventilation system to control the temperature.

Door Stay (Fig. 13)

To enable the door to be kept open, allow the stay to go over-centre and lock. To close the door, release the over-centre catch and pull the door shut.

Extractor Vents (4, Fig. 14)

These vents maintain a slight pressure in the cab so that dust and noise are excluded.

Ashtray (9, Fig. 1)

Trailer Socket (2, Fig. 20)

Before using the trailer socket ensure that the trailer plug is correctly wired up—see the wiring diagram, page 20.

SERVICE ACCESS

Front Grille (Fig. 15)

The front grille provides access to the battery, dry air cleaner, screenwasher bottle and the transmission filter. To remove the grille, pull the lever and lift out the grille.



Radiator Cap (Fig. 16)

To remove the radiator cap, press the cap downwards and turn it anticlockwise. If the engine is hot, slowly loosen the radiator cap before removal, to allow pressure to escape.

INSTRUMENTS AND CONTROLS

Engine Oil Filler (1, Fig. 17)

To remove the oil filler cap, press the cap downwards and turn it anticlockwise.

Engine Oil Dipstick (2, Fig. 17)

Transmission Oil Filler (Fig. 18)

To remove the oil filler plug, turn the cap (1) until the retainer plate is aligned with the slots in the cab floor and lift off the cap, then remove the sound-proofing material (2) and unscrew the filler plug (3).

Transmission Oil Dipstick (Fig. 19)

Fuel Filler (1, Fig. 20)

To remove the fuel filler cap, press the cap downwards and turn it anticlockwise.

Cab Air Filter Access Cowl (Fig. 21)

To remove the access cowl, remove the two knurled screws and lift off the cowl. When refitting the cowl, ensure that it locates in the roof channels, then refit the knurled screws.

Tool Box

The tool box is situated on the left hand side of the engine.



FIG. 15



FIG. 16

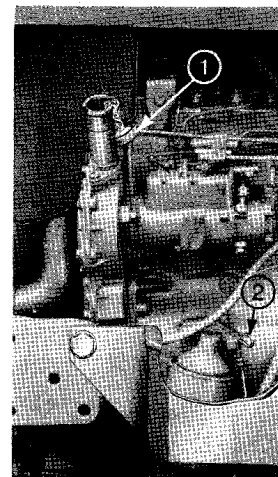


FIG. 17

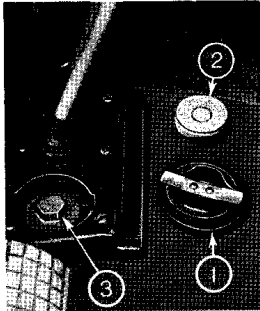


FIG. 18

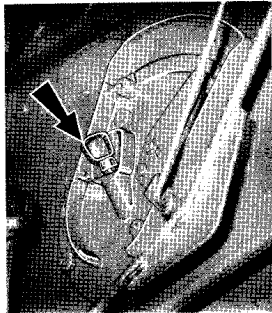


FIG. 19

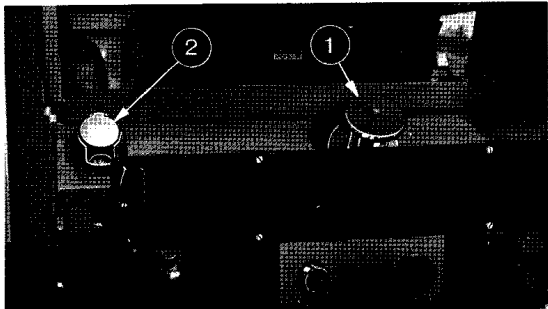


FIG. 20

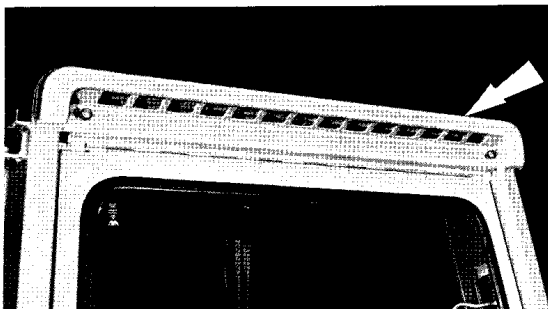


FIG. 21

RUNNING-IN

Page
46

RUNNING IN PROCEDURE

RUNNING-IN

RUNNING IN

The following precautions should be taken during the running in period:

1. Experience has shown, that the first 50 hours of tractor operation have a significant effect on the performance and life of the engine.
From new, the tractor should be engaged in work which will load the engine as near to full conditions as possible.
2. Use a low gear when pulling heavy loads.
3. During the running in period, check frequently the tightness of all screws, bolts, nuts, etc.
4. To ensure proper clutch life, care must be taken to bed-in the friction plates properly.
During the first 15 hours of the tractor's life, frequently, but carefully engage and disengage the clutch(es). During the first 50 hours a careful watch must be kept on the clutch pedal free travel, which should be adjusted as soon as the pedal travel decreases.
5. Do not forget your service entitlement under the terms of which essential servicing and adjustments are carried out at 50 and 250 hours free of charge except for the cost of the consumable material (e.g. oils and filter elements). Please refer to your installation and service voucher booklet.

STARTING

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NORMAL STARTING	48
COLD WEATHER STARTING	49

STARTING

BEFORE STARTING

1. Carry out the Daily Maintenance as described on pages 113 and 114.
2. Ensure that there is sufficient fuel in the tank.
3. Operate the fuel pump hand priming lever several times; this is particularly important if the tractor has been standing for some time.

NORMAL STARTING

1. Do not attempt to start the engine, other than from the driving position.
2. Ensure that the parking brake is engaged.
3. Move the dual range selector lever to the 'S' position and the gear lever and the p.t.o. lever to their neutral positions. Move the hydraulic quadrant levers to the DOWN position.
4. Set the hand throttle to the fully open position.
5. Fully depress the clutch pedal.
6. Push the fuel cut-off knob fully in.
7. Turn the starter switch key clockwise to operate the starter. When the engine starts, allow the key to return to the 'auxiliary' position.
8. Set the hand throttle to a fast idle position (approximately 1200 rev/min).

NOTE: If the engine does not start and run after using the normal starting procedure, de-aerate (bleed) the fuel system, using the procedure detailed on page 78. If the engine still fails to start, consult your Distributor or Dealer.

TO STOP THE ENGINE PULL THE CUT-OFF KNOB FULLY OUTWARDS.

After the engine has stopped, move the key from the 'auxiliary' position to the 'off' position.

STARTING

COLD WEATHER STARTING

Use the thermostart, particularly in temperatures below 0°C (32°F). Starting procedure is as follows:

1. Do not attempt to start the engine, other than from the driving position.
2. Ensure that the parking brake is engaged.
3. Move the dual range selector lever to the 'S' position and the gear lever and the p.t.o. lever to their neutral positions. Move the hydraulic quadrant levers to the DOWN position.
4. Set the hand throttle to the fully open position.
5. Fully depress the clutch pedal.
6. Push the fuel cut-off knob fully in.
7. Turn the starter switch key to the second position clockwise (heat) and hold it there for 15 to 20 seconds.
8. Turn the key to the third position clockwise (start) to engage the starter.
9. If the engine fails to start within 15 seconds, return the key to the 'heat' position for a further 10 seconds.
10. Re-engage the starter by moving the key to the 'start' position.
11. When the engine starts, turn the key to the 'heat' position for up to 15 seconds maximum, until the engine runs steadily, then allow the key to return to the 'auxiliary' position.
12. If the engine does not start, repeat the re-heat and cranking cycle, as described in operations 9 and 10. After three attempts, if the engine fires but fails to pick up, turn the key to the 'heat' position for several seconds, then to the 'start' position.

CAUTION: If the engine fails to start, ensure that the starter motor pinion is at rest before re-engaging the starter motor.

NOTE: If the fuel system has been disturbed, or the thermostart not used for some time, ensure that fuel is available at the thermostart before use. Hand prime the engine and bleed the fuel from the thermostart union. Failure to observe this precaution may result in damage.

TO STOP THE ENGINE, PULL THE CUT-OFF KNOB FULLY OUTWARDS.

After the engine has stopped, move the key from the 'auxiliary' position to the 'off' position.

OPERATION

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DIFFERENTIAL LOCK	57
POWER TAKE-OFF	57
HYDRAULIC LIFT SYSTEM	61
AUXILIARY HYDRAULICS	66
ATTACHING AN IMPLEMENT	66

OPERATION

HEATING AND VENTILATION SYSTEM

The heating and ventilation system provides fresh air or recirculated air, either heated by the engine coolant or at outside air temperature.

Fresh Air (outside air temperature)

1. Fig. 1. Turn the fresh air vent switch fully anticlockwise.
2. Fig. 2. Turn the heater switch (1) fully clockwise.
3. Switch the blower (4) to the 'slow' position.
4. Direct the flow of air, as required, using the air flow vents (2).
5. To increase the flow of air, switch the blower (4) to the 'fast' position.

Maximum Heat (recirculated air)

1. Fig. 1. Turn the fresh air vent switch fully clockwise.
2. Fig. 2. Turn the heater switch (1) fully anticlockwise.
3. Switch the blower (4) to the 'slow' position.
4. Direct the flow of air, as required, using the air flow vents (2) or the demister vents (3) for defrosting or demisting the windscreen.
5. To increase the air flow, switch the blower (4) to the 'fast' position.

NOTE: Full heat output will only be available when the engine has reached full operating temperature.

When the desired temperature has been reached, the heater switch and the air vent switch can be set in an intermediate position to give a mixture of warm air and fresh air, so that the temperature may be maintained.

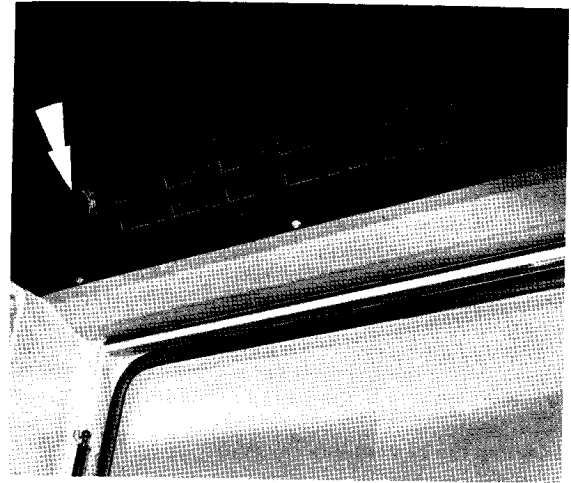


FIG. 1

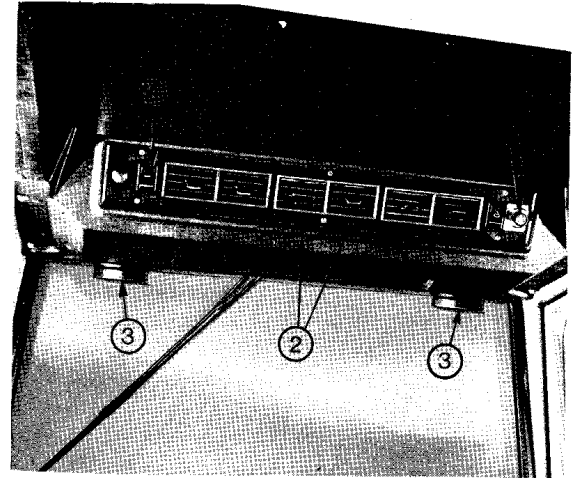


FIG. 2

OPERATION

DRIVING THE TRACTOR



WARNING: Before operating the tractor, familiarise yourself with the function of the transmission, p.t.o., differential lock and fuel cut-off controls.

Having started the engine:

1. Fully depress the clutch pedal, then select the required gear and move the dual range selector lever to the HIGH or LOW range.
2. Release the parking brake.
3. Increase the engine speed slowly and release the clutch pedal slowly.
4. Remove your foot from the clutch pedal and slowly increase the throttle opening until the required engine speed is reached.

Selecting the Correct Gear

Select the gear which will give the best fuel consumption without overloading the engine or transmission. Also remember that ground conditions in the same field may vary almost every few yards, therefore, select the gear in which the engine will operate satisfactorily at just three-quarters maximum power.

With Multi-Power tractors, a low ratio may be obtained by moving the Multi-Power switch from high to low without stopping or declutching. Try to operate in Multi-Power high, switching to low, on the move, to overcome difficult, or heavy patches.

Never work the tractor by slipping and re-engaging the clutch and at all times avoid riding the clutch pedal, which can cause overheating and may lead to total clutch failure.

The use of traction aids such as cage wheels or strakes, particularly in low gear, should be avoided.

OPERATION

IMPORTANT



1. Do not rest your foot on or ride the clutch pedal.
2. Do not move either the gear lever or the dual range selector lever when the tractor is moving.
3. Never coast down slopes with the tractor in gear and the clutch disengaged.
4. If necessary, switch to Multi-Power high for engine braking.
5. Always switch to Multi-Power high when descending hills, slopes, etc.

Towing

Before towing the tractor, move the p.t.o. lever, the dual range selector lever and the gear lever into neutral. The towing speed must not exceed 32 km/h (20 mile/h).

Towing to Start the Engine

Adopt the following procedure:

1. Move the p.t.o. lever to neutral.
2. Place the dual range selector lever in the HIGH range.
3. Select fourth gear.
4. Do not exceed 32 km/h (20 mile/h).

NOTE: Multi-Power tractors cannot be tow-started.

Driving in Deep Water

If the tractor is driven in water at a depth greater than 600 mm (24 in) corrosion damage can occur to major components. Consult your Distributor or Dealer for special water-proofing instructions, otherwise the Warranty may be invalidated.

OPERATION

General Driving Hints—Multi-Power Tractors

Parking in gear on a hill is only possible by observing the following:

To park facing up a hill, engage 1st gear.

To park facing downhill, engage reverse gear.

The parking brake should be applied.

When engine braking is required, select high, with the Multi-Power lever.

When travelling downhill towing a heavy implement or a laden trailer, the Multi-Power lever **MUST** be in high.

If there is difficulty in changing gear in Multi-Power high, change to Multi-Power low.

WARNING: When operating for long periods in Multi-Power low, change into Multi-Power high periodically to ensure adequate lubrication of the bearings.

For Hillside working—see page 5 Safety Notes.

Multi-Power Reminder

Engine Braking	Engine	MP Switch	Gearbox	Notes
	Running	High	Any Gear	Reduce Engine Speed
P a r k i n g F a c i n g L o w h i l l D o w n h i l l	Stopped	Low or High	Low/First	Apply Parking Brake Fully
	Stopped	Low or High	Low/Reverse	

OPERATION



BRAKES

The independent brake may be used to assist turning when travelling slowly. Never apply one brake when travelling at speed.

DIFFERENTIAL LOCK

If a rear wheel spins:—

1. Fully depress the clutch pedal.
2. Engage the differential lock by pressing the pedal down.
3. Release the clutch pedal slowly, whilst maintaining foot pressure on the differential lock pedal.

To disengage the differential lock release the pedal. If the lock fails to disengage, steer **SLIGHTLY** to either left or right.

WARNING: Always declutch before engaging the differential lock. Do not attempt to engage the differential lock with one wheel spinning. Do not attempt to turn with the lock engaged.

POWER TAKE-OFF

A single speed or two speed p.t.o. is available on this tractor.

The 540 rev/min shaft has six splines and the 1 000 rev/min shaft has 21 splines. Both shafts have a diameter of 35 mm (1 3/8 in) with an annular groove for positive fixing of implement couplings. A removable cap protects the splines when the shaft fitted is not in use.

To change the p.t.o. shaft:—

1. Remove the cap.
2. Fig. 3. Remove the circlip securing the p.t.o. shaft.
3. Withdraw the shaft.
4. Slide in the other shaft, carefully aligning the internal splines.
5. Refit the circlip, ensuring that it locates correctly in its groove.
6. Refit the cap.

NOTE: Do not operate the tractor without a p.t.o. shaft fitted.



NOTE: Before attaching, adjusting, or working on p.t.o. driven implements, disengage the p.t.o. and stop the engine.

OPERATION

Proportional Engine Speed (live p.t.o.)

The live p.t.o. is engaged and disengaged by the use of the dual clutch. Depression of the clutch pedal through the first stage disconnects the drive from the engine to the transmission without interrupting the operation of the p.t.o. shaft and the hydraulic pump(s). Rotation of the p.t.o. shaft is clockwise when viewed from the rear.

NOTE: When engaging or disengaging the p.t.o. drive from the engine, depress the clutch pedal fully.

Proportional Ground Speed (live p.t.o.)

Proportional ground speed is used for light work and is not intended to drive heavy implements. The tractor must be stationary when the proportional ground speed p.t.o. is shifted in or out of engagement.

WARNING: When reversing the tractor, the p.t.o. lever must be in NEUTRAL, as serious damage may be caused as the implement mechanism will be rotated in the reverse direction.

Proportional Engine Speed (i.p.t.o.)



WARNING. The single stage clutch disengages the transmission drive only. The drive to the hydraulic pumps and i.p.t.o. clutch is constant running.

The engine speed p.t.o. is engaged and disengaged by the p.t.o. lever whether the tractor is stationary, or on the move.

NOTE: Engage i.p.t.o. at low engine speeds to protect light implement drive lines.

Ensure that the i.p.t.o. is either fully engaged, or disengaged. Partial engagement, or slow engagement can cause damage to internal components.

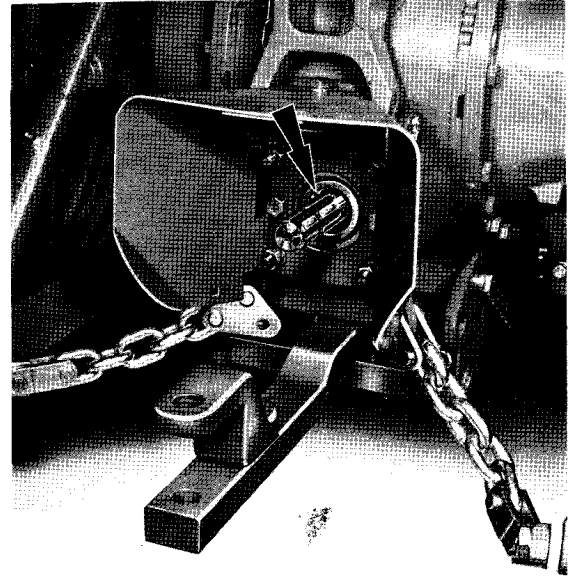


FIG. 3

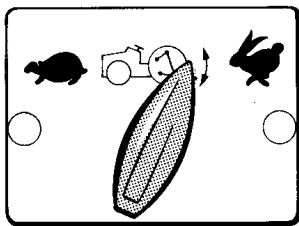
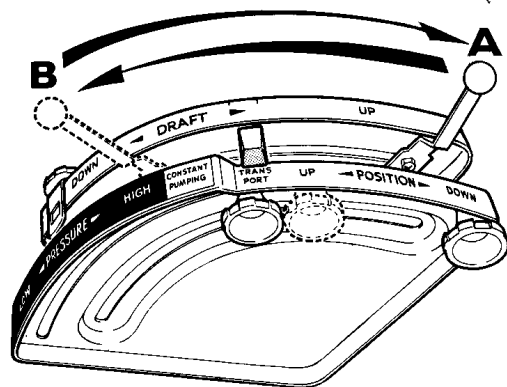


FIG. 4

OPERATION

HYDRAULIC LIFT SYSTEM

The Ferguson hydraulic system combines the tractor and implement into one unit with the implement hydraulically controlled. The system fulfils the following functions:—

1. Depth control of soil engaging implements (Draft Control).
2. Control and positioning of implements above the ground (Position Control).

NOTE: The speed of implement drop is further controlled by the Response Control.

3. Controls traction increase when using trailed implements (Pressure Control)—a weight transference system.

NOTE: An additional coupler is required for this operation.

4. Control of external equipment having hydraulic operation (Auxiliary Hydraulics)—trailer tipping, loader operation, hydraulic motor drive.

DRAFT CONTROL (Fig. 4) outer lever—yellow quadrant

Type of Work:	Ploughing; subsoiling; heavy cultivation.
Transport Position:	Lever fully back (A).
Entering Work:	Push the lever forward until the implement reaches the required depth (B). Set the adjustable stop in line with the lever. Set the Response Control as shown.
Working:	The Draft Control lever can be moved slightly to suit varying soil conditions. Set the Response as SLOW as possible, whilst still maintaining an even depth. If the implement 'bobs' move the Response Control towards SLOW.
Leaving Work:	Pull the Draft Control lever back to (A).

OPERATION

POSITION CONTROL (Fig. 5) inner lever—red sector

Type of Work:	Operation which requires the implement to be kept at a constant height above the ground.
Transport:	Push the lever to line up with the TRANSPORT mark (A).
Entering Work:	Move the lever rearwards until the required implement position is obtained (B). Set the adjustable stop in line with the lever.
Working:	Set the Response Control as shown. No further adjustment is necessary.
Leaving Work:	Move the lever forwards to the TRANSPORT position.

PRESSURE CONTROL (Fig. 6) inner lever—black sector

Type of Work:	Towing four-wheel trailers, disc harrows, seed drills, balers or manure spreaders. Pressure Control can only be used with an additional coupler described on page 129.
Operating:	If wheelspin occurs, pull the lever rearwards from (A) until traction is obtained (B). Set the adjustable stop in line with the lever.

NOTE: The use of extreme pressure (in excess of normal requirements) can cause front end instability.

When operating, the pressure may need to be increased slightly to improve traction, but the lever should be returned to position (B) as soon as possible.

If an auxiliary ram is to be controlled at the same time as the Pressure Control Coupler, the ram must be operated from a separate source, i.e. the auxiliary hydraulic system.

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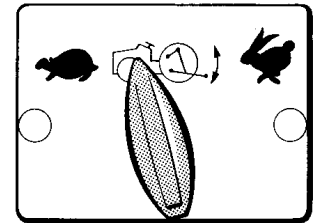
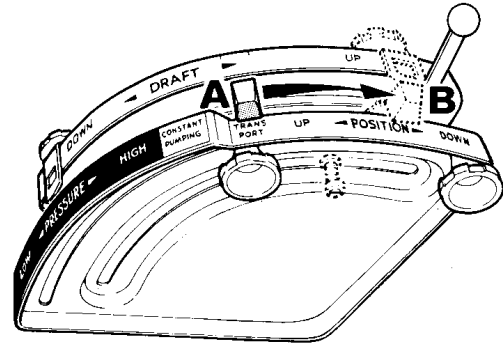


FIG. 5

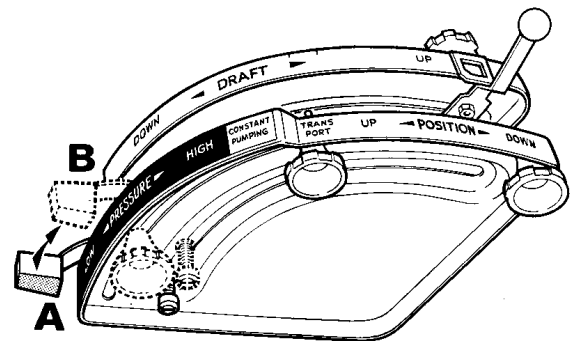


FIG. 6

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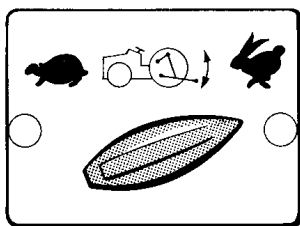
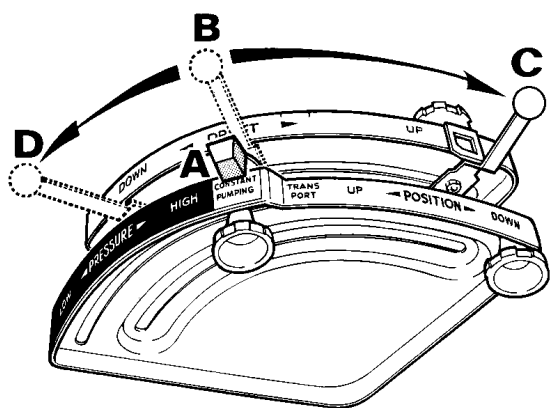


FIG. 7

OPERATION

CONTROL OF HYDRAULIC EQUIPMENT (Fig. 7)

Type of Work:

Single-acting hydraulic ram and low input hydraulic motors.

Move the inner lever to CONSTANT PUMPING (A, blue sector), then move the outer lever to approximately position (B) to establish the point at which the ram neither extends, nor retracts.

Set the adjustable stop in line with the outer lever.

Set the Response Control to FAST.

Operation:

To extend the ram, move the lever to (C).

To retract the ram, move the lever to (D).

IMPORTANT: When the ram is fully extended return the lever to (B) to prevent the internal pressure relief valve from discharging continuously.

Hydraulic Motors:

Move the inner lever to CONSTANT PUMPING (A).

Move the outer lever to (D).

Operation:

Move the outer lever to (C) to engage the hydraulic drive and to (D) to disengage the drive.

Response Control is not used.

CAUTION: If a quantity of oil in excess of 11 litre (20 Imp. pt) is required for external use, the transmission can be filled to the 'MAX' mark on the dipstick, giving 20 litre (36 Imp. pt).

OPERATION

AUXILIARY HYDRAULICS

This tractor can be fitted with one of two pumps:

(a) Multi-Power/l.p.t.o. Pump

The Multi-Power/l.p.t.o. pump supplies oil to the i.p.t.o. clutch and the Multi-Power clutch (if fitted). This pump cannot be used to operate external services.

(b) Auxiliary Pump

The auxiliary pump supplies oil to the i.p.t.o. clutch, Multi-Power clutch (if fitted) and external services (if required). Tractors incorporating this pump are also fitted with an oil cooler. For full details of suitable valves, see page 122.

The auxiliary pump circuit operates independently of the main tractor lift pump.

Combined Flow

The output of the Ferguson lift pump and the auxiliary hydraulic pump can be combined, by use of the Selector Valve and hydraulic control valves. For details, see pages 121 and 125.

ATTACHING AN IMPLEMENT

The Ferguson hydraulic system with three point linkage provides complete implement control at your fingertips.

Attaching and detaching implements with three point linkage is easy and fast if the procedure outlined below is adopted.

Attachment procedure is as follows:

1. Back the tractor up to the implement, aligning the lower link ball ends with the implement hitch pins.
2. Using Position Control (see page 62) raise, or lower the lower links until the left hand ball end aligns with the implement hitch pin. Push the hitch pin through the ball and secure it with the linch pin.
3. Attach the right hand lower link to the implement, using the levelling lever to adjust the height of the link if necessary.
4. Attach the top link to the implement 'A' frame and to one of the three top link attachment points on the tractor.

OPERATION

Top Link Attachment Point	Suitable for 'A' Frames with a Height of
Top Hole	560 mm (22 in) and above
Middle Hole	460 to 560 mm (18 to 22 in)
Lower Hole	Less than 460 mm (18 in)

Using a higher than normal hitch point increases the sensitivity of the hydraulic system and provides more weight for penetration. It also reduces the ground clearance during transport and reduces the degree of control, which can cause uneven depth control.

Using a lower than normal hitch point causes opposite effects to the above.

5. If the levelling lever was used to facilitate the attachment of the right hand lower link, adjust the right hand lift rod to its normal operating length by screwing the lift rod in or out until the implement is level.

Detachment of Mounted Implements

1. Select a level area as this will make detaching much easier.
2. Lower the implement. Where necessary, fix parking stands in position.
3. Disconnect the tractor end of the top link, then secure the parking brake.
4. Dismount from the tractor and detach the lower links, replacing the linch pins to avoid losing them.

LIFTING LINKAGE



Linkage (Fig. 8)

Do not, in any circumstances, attempt to pull or tow directly from the top link connection.

The tractor has the facility to enable the ball ends on the top and lower links to be interchanged.

Interchange procedure is explained over page.

OPERATION

Top Link (1, Fig. 8)

The top link is an adjustable barrel turnbuckle type.

Lift Rods (3, Fig. 8)

The standard lift rod length (Dimension A, Fig. 8) is 620 mm (24.4 in) — High Clearance and 560 mm (22 in) — Standard Clearance.

NOTE: The lift rod bolts must always be adjusted so that they can rotate.

Lower Links (4, Fig. 8)

When fitting implements to the lower links, always fit the left hand side first and use the levelling lever, as necessary, to assist in fitting the right hand side.

The maximum recommended lift load for normal working is 1 542 kg (3 400 lb).

Interchanging Ball Ends (Figs. 9a and 9b)

To change ball ends from Category 1 to Category 2 or vice versa, proceed as follows:

1. Pull the spring clip (Fig. 9a) upwards, as shown.
2. Rotate the ball until the narrow portion aligns with the slot in the lower link, then remove the ball.
3. Fit the new ball by locating it with the narrow section in line with the slot, then refit the spring clip as shown in Fig. 9b.

Check Chains (2, Fig. 8 and Figs. 10a and 10b)

The check chains prevent the implement from swinging into the rear wheels. Ensure that the chains are not twisted and are correctly fitted as shown.

For Category 1 implements, the check chains length must be set as shown in Fig. 10a and for Category 2 implements, as shown in Fig. 10b.

NOTE: For stabilisers, see page 133.

Fitting of Implements

Careful attention must be paid when fitting implements not specifically designed for this tractor, to ensure that there is adequate clearance and no possibility of any of the linkage or implement fouling while lifting and lowering.

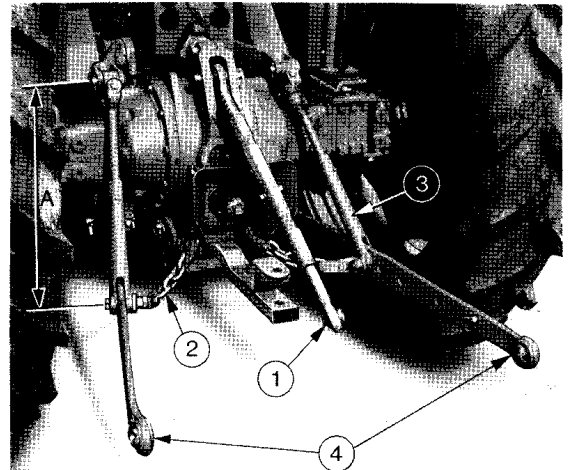


FIG. 8

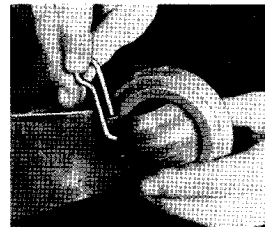


FIG. 9a

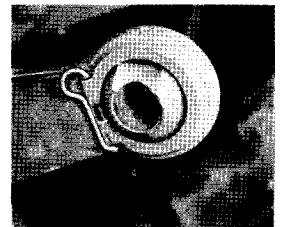


FIG. 9b

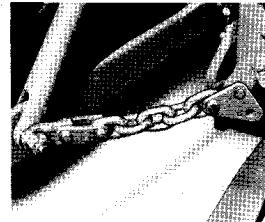


FIG. 10a



FIG. 10b

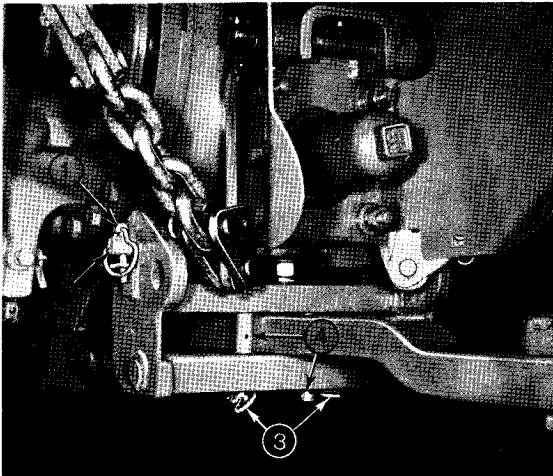


FIG. 11

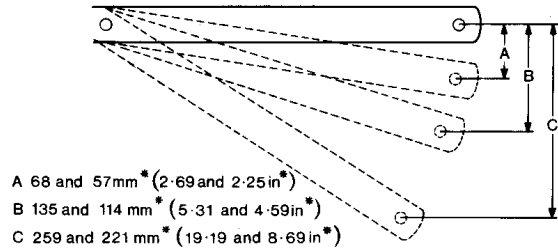


FIG. 12A

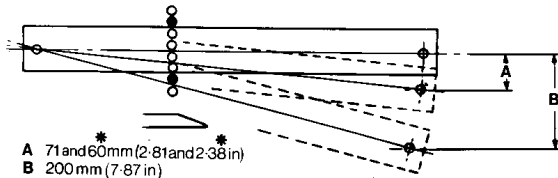


FIG. 12B

OPERATION

Pressure Relief Valve

Avoid, where possible, using the tractor hydraulic system in any way which may cause the pressure relief valve (which is internal), to discharge continually. This can be caused by attempting to raise a load at the lower links, greater than that which the system is capable of lifting. Although the relief valve will prevent damage to other parts of the hydraulic system, unnecessary discharge should be avoided as damage to the relief valve may result in a reduction in the maximum hydraulic pressure.

SWINGING DRAWBAR

A normal duty or heavy duty swinging drawbar can be fitted to this tractor. Both types of drawbar conform with British Standards, having a clevis hitch point at 356 mm (14 in) from the p.t.o. shaft.

The maximum static load for the drawbar is, 771 kg (1 700 lb)—normal duty, 1 179 kg (2 600 lb)—heavy duty with the drawbar in the outer position, or 998 kg (2 200 lb)—normal duty, 1 633 kg (3 600 lb)—heavy duty in the inner position, 254 mm (10 in) from the p.t.o. shaft.

Adjustment

Offset: Fig. 11. Remove the pin (1) and withdraw the rear support pin (2), then remove the hairpins (3) and withdraw the locating pins (4). Move the drawbar to the required position (see Fig. 12a for normal duty drawbars or Fig. 12b for heavy duty drawbars—the inner positions are indicated by *), then refit the locating pins and secure them with the hairpins to lock the drawbar at the required setting. Raise the drawbar frame and secure it with the support pin and the securing pin.

Length: Fig. 14. Remove the pin (1) and withdraw the front support pin (3). Push the drawbar anchor pin (2) up from the underside of the drawbar frame. Adjust the drawbar for length, refit the anchor pin, then raise the drawbar frame and secure it with the front support pin and the securing pin.

Height: The drawbar can be adjusted for height in relation to the p.t.o. centre line (see Fig. 13). When inverting the bar, the procedure is similar to that when adjusting for length. The drawbar clevis can be set either above, or below the drawbar, as shown.

NOTE: The bolts must be kept tightened to a torque of 135 Nm (100 lbf ft).

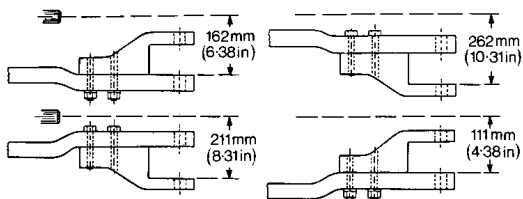


FIG. 13

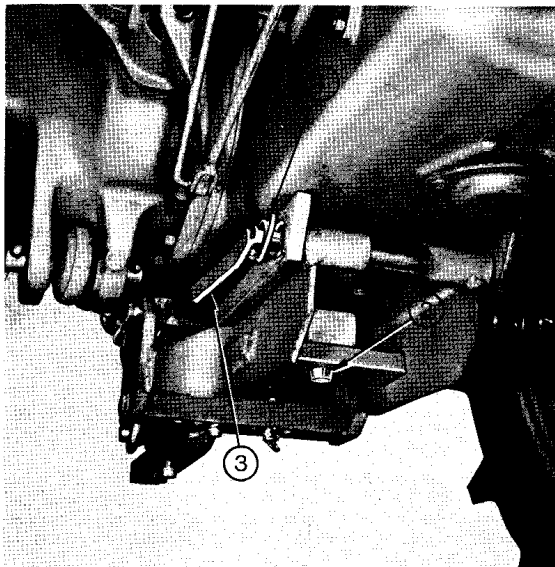


FIG. 14

MAINTENANCE AND ADJUSTMENTS

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MAINTENANCE AND ADJUSTMENTS

LUBRICATION

Grease Points

Every 10 hours, or daily

- Fig. 1. Front Hubs
- Fig. 2. Front Axle Kingpins
- Fig. 3. Main Steering Shaft
- Fig. 4. Front Axle Pivot Pin
- Fig. 5. Power Steering Ram Pivot
- Fig. 6. Lift Rods and Levelling Box

Every 100 hours

Apply a smear of light oil to the cab door hinges, the door lock, the window hinges and the window catches.

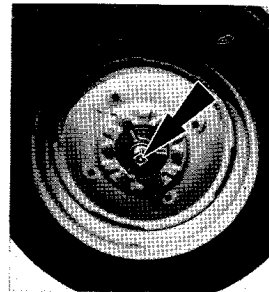


FIG. 1



FIG. 2

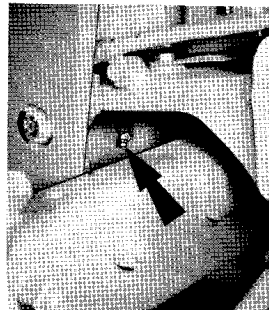


FIG. 3

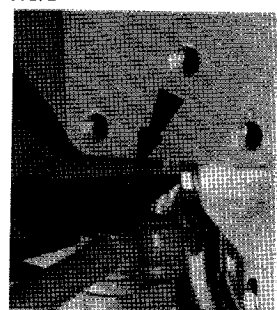


FIG. 4



FIG. 5

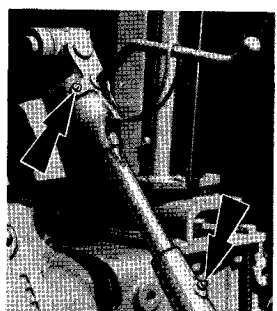


FIG. 6

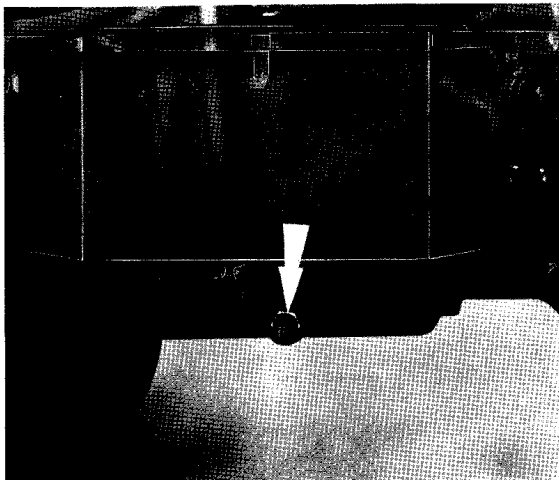


FIG. 7

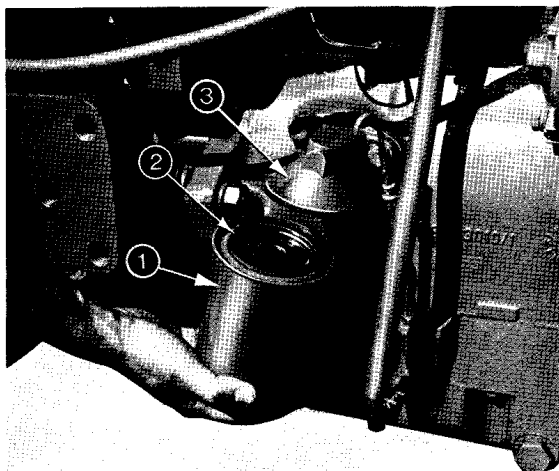


FIG. 8

MAINTENANCE AND ADJUSTMENTS

ENGINE

Check the Engine Oil Level every 10 hours, or daily

The oil level should be maintained between the 'MIN' and 'MAX' marks on the dipstick with the tractor standing on level ground.

Change the Engine Oil every 250 hours

Drain the oil when the engine is warm, by removing the plug (Fig. 7) from the engine sump, with the tractor standing on level ground.

Refit the drain plug securely.

Refill the sump with an approved oil, so that the level is between the 'MIN' and 'MAX' marks on the dipstick.

NOTE: Time should be allowed for the oil to settle in the sump before rechecking the level.

Change the Engine Oil Filter every 250 hours

To change the filter:

1. Fig. 8. Unscrew and discard the canister (1).
2. Slowly fill the canister with clean engine oil.
3. Smear a few drops of clean engine oil on the new sealing ring (2) then locate the sealing ring in the recess on the top of the new canister.
4. Screw the canister (1) into the filter head (3) until the sealing ring just contacts the filter head, then tighten a further half-turn by hand only. Do not overtighten.

NOTE: After changing the oil and filter, run the engine and check for leaks, then recheck the oil level and top up, if necessary.

Have your Distributor or Dealer Check the Tappets every 500 hours

Have your Distributor or Dealer Clean the Engine Breather Pipe every 500 hours

FUEL SYSTEM

The utmost care must be taken to keep fuel clean and to service the fuel system components at the recommended intervals.

For Fuel Handling and Storage see page 110.

MAINTENANCE AND ADJUSTMENTS

Fuel Filter (Fig. 9)

Drain the water from the Fuel Filter every 10 hours, or daily

Open the tap (5) to allow water and other impurities to escape. Actuate the fuel lift pump.

Renew the Fuel Filter Element every 500 hours

1. Clean the outside of the filter assembly.
2. Drain the filter by removing the tap (5).
3. Remove the centre bolt (2).
4. Remove the element (3) and the bowl (6) from the head (7) and discard the element.
5. Check the condition of the seals and carefully clean the bowl.
6. Reassemble with a new filter element.
7. Bleed the fuel system.

Bleeding the Fuel System

If at any time air enters the fuel system, either due to fuel system servicing, or running out of fuel, the following procedure should be used:—

1. Fig. 9. Slacken the outlet union (1) on the fuel filter.
2. Operate the hand priming lever (4) on the fuel lift pump until fuel, free of air bubbles, issues from the union, then retighten the union.
3. Fig. 10. Slacken the lower vent plug (1) on the fuel injection pump and operate the fuel lift pump until fuel, free of air bubbles issues from the vent, then retighten the vent plug.
4. Slacken the upper vent plug (2) on the fuel injection pump and operate the fuel lift pump until fuel, free of air bubbles issues from the vent, then retighten the vent plug.
5. Slacken the unions (3) at numbers one and four injectors.
6. Slacken the thermostart fuel feed pipe at the thermostart and operate the fuel lift pump until fuel, free of air bubbles issues from the pipe, then retighten the pipe.
7. Set the throttle fully open and ensure that the fuel cut-off knob is pushed fully in, then turn the engine over with the starter, until the engine begins to start. Retighten the unions.

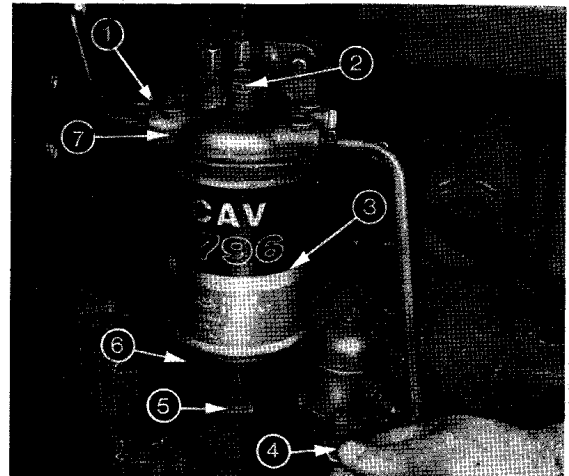


FIG. 9

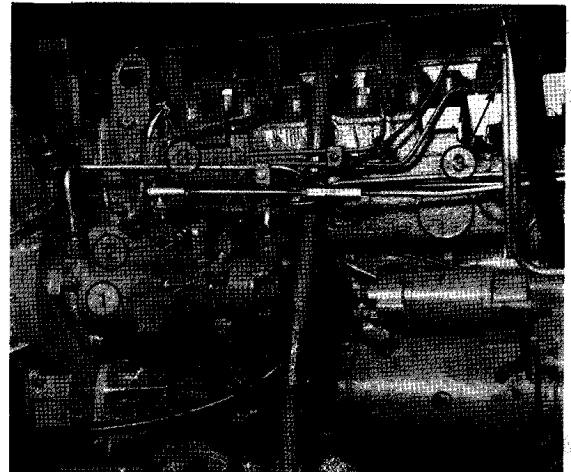


FIG. 10

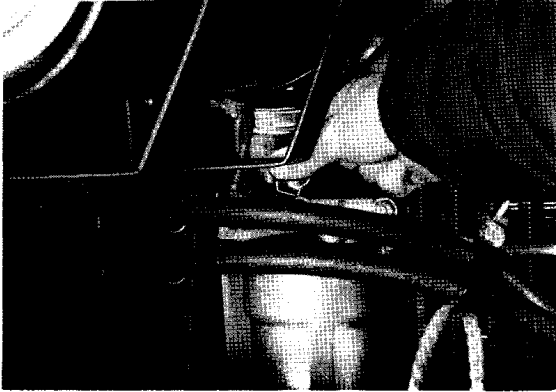


FIG. 11

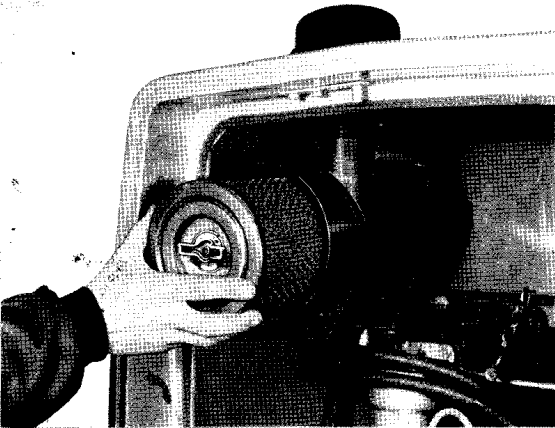


FIG. 12

MAINTENANCE AND ADJUSTMENTS

Injector Pump, Governor and Injectors

Adjustment and inspection of the fuel injection pump, mechanical governor and injectors should be carried out by your Distributor or Dealer.

Have your Distributor or Dealer Service the Injectors every 500 hours

Have your Distributor or Dealer Clean the Fuel Tank every 1000 hours, or yearly

AIR CLEANER

Check the Air Cleaner every 10 hours, or daily

Check the housing for damage and ensure that all hose connections are tight. Also check the unloader valve (Fig. 11), squeezing the valve, as shown, to release caked dirt.

The air cleaner warning light (Fig. 2, page 31) illuminates, when the air cleaner requires attention.

Servicing

Clean the MAIN element only when the warning light illuminates. DO NOT attempt to clean the inner SAFETY element.

1. Close the throttle and stop the engine.
2. Remove the front grille.
3. Fig. 12. Unscrew the wing nut, then carefully slide out the main element.
4. Either—(a) Carefully tap the element on a CLEAN, DRY tyre. Rotate the element and continue tapping until all loose dust is removed.

Alternatively—Blow the element clean, FROM THE INSIDE, with compressed air at not more than 690 kN/m^2 (100 lbf/in²), and keeping the air line at a reasonable distance from the element at all times.

THESE PRACTISES WILL ONLY WORK SATISFACTORILY IN DRY CONDITIONS.

(b) If the element is oily, soot laden or contains damp foreign matter, the element should be washed as follows: Seal the open end of the element with either a suitable plug, or waterproof adhesive tape, then immerse the element in a vessel containing a solution of warm water (not more than 30°C (100°F —BLOOD HEAT) and a non-

MAINTENANCE AND ADJUSTMENTS

foaming automatic washing machine detergent (e.g. 'Pat Low Lather' or 'Persil Automatic'). Leave the element to stand approximately ten minutes, then roll the element around in the liquid to clean off the dirt. Thoroughly rinse the element in CLEAN water, then remove the bung and flush out the element from the inside until the water comes through clear. Shake off the excess water and leave the element to dry naturally, (this will take at least 12 hours in humid conditions). After drying out the element, check its condition for damage, or deterioration—particularly the sealing washer. A small light shone inside the element will reveal any holes or 'thin' areas. If the element is in any way damaged, it must be discarded.

5. Before refitting the element, wipe out the cleaner body with a damp cloth to remove any loose dust.
6. Squeeze the unloader to remove any loose dust.
7. Slide the cleaned element back into place and secure it with the wing nut.
8. Refit the front grille.
9. If the warning light illuminates after a very short interval of working, the main element is unfit for service and must be replaced.

However, if after replacement of the main element, the warning light stays on, the inner SAFETY element must also be replaced—DO NOT ATTEMPT TO CLEAN IT.

Advice

Always keep at least one spare main element and inner element available ready for use to prevent excessive out of service time. Store the spare elements in a cool, dry place and protect them from dust and damage. Mark the element end plate after each washing—do not wash an element more than ten times.

Change the Elements every 1000 hours, or yearly

WARNING: Do not attempt to blow the main element clean using the tractor exhaust gases.

Never add oil to a dry air cleaner.

Never use petrol (gasoline), paraffin or cleaning solvents to clean the element.

If servicing is not carried out when the warning light comes on, the engine will lose power and produce excessive black smoke.

MAINTENANCE AND ADJUSTMENTS

COOLING SYSTEM

Check the Radiator Coolant Level every 10 hours, or daily

The coolant level should be maintained at 25 mm (1 in) below the filler neck.

Clean the Radiator Fins every 200 hours

The radiator fins can be cleaned by blowing with a high pressure hose from the rear of the radiator.

Access to the radiator is by removing the front grille.

Drain the Cooling System every 500 hours



To drain the cooling system, remove the radiator cap and open the two drain taps (Figs. 13 and 14). If the engine is hot, slowly loosen the radiator cap before removal to allow pressure to escape. When refilling use clean rainwater if available.

Frost Precautions (Cold Climate)

Antifreeze solutions must be added to the cooling water in the proportions recommended by the makers.

For a list of suitable antifreeze solutions, consult your Distributor or Dealer.

WARNING: If an antifreeze solution is not used during the frosty weather, the cooling water should be drained after work to prevent damage from freezing.

The use of inferior grades of antifreeze can cause serious engine damage.

MAINTENANCE AND ADJUSTMENTS

ELECTRICAL EQUIPMENT

The electrical circuit is a 12 volt NEGATIVE EARTH system (see the wiring diagram).

Battery (Fig. 15)

Check the Battery Electrolyte Level every 100 hours

The procedure differs for each type of battery:

(a) Lucas and Exide Mono Lid

1. Remove the vent cover from the battery and check the electrolyte level. The electrolyte should just cover the battery plates.
2. If the level is incorrect, replenish each cell with distilled water to the correct level.
3. Refit the vent cover.

(b) Lucas Aqualok and Exide Auto-Fil:

1. Remove the two cover plates and check the electrolyte level.
2. If the electrolyte is below the bottom of the filling tube, pour distilled water into the trough until all of the cell filling tubes and the trough are full. Refit the cover plates immediately. The correct amount of distilled water will be automatically distributed to each cell.

NOTE: The two cover plates must be fitted at all times, except when checking the electrolyte level.

Wipe the Battery Top and Smear the Terminals with petroleum jelly every 200 hours

IMPORTANT: Always disconnect the alternator wiring before removing the battery leads.

NOTE: When reconnecting the battery leads:—

Connect the positive lead (+) to the terminal marked + (red);
connect the negative lead (–) to the terminal marked – (black).

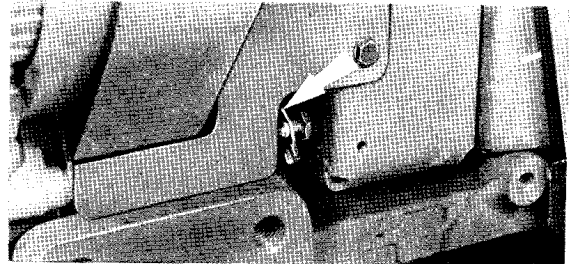


FIG. 13

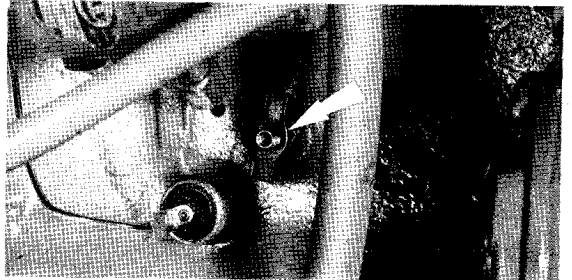


FIG. 14

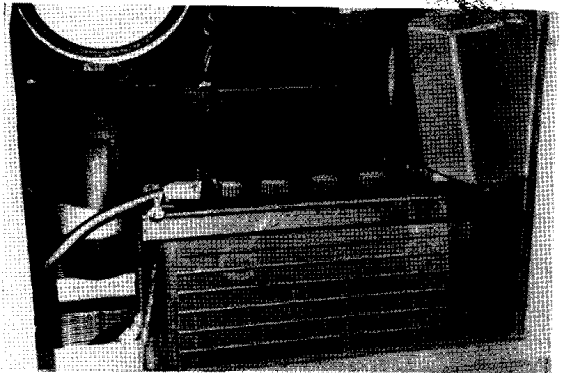


FIG. 15

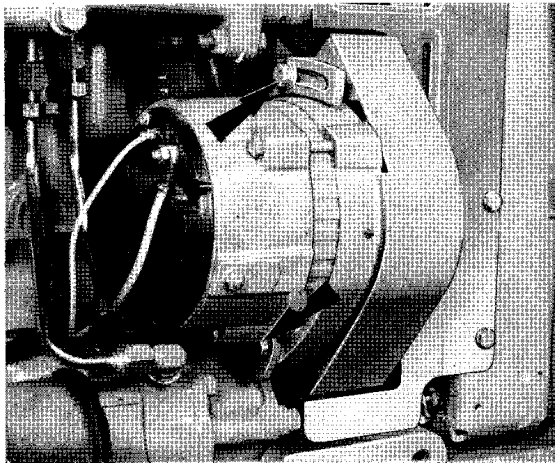


FIG. 16

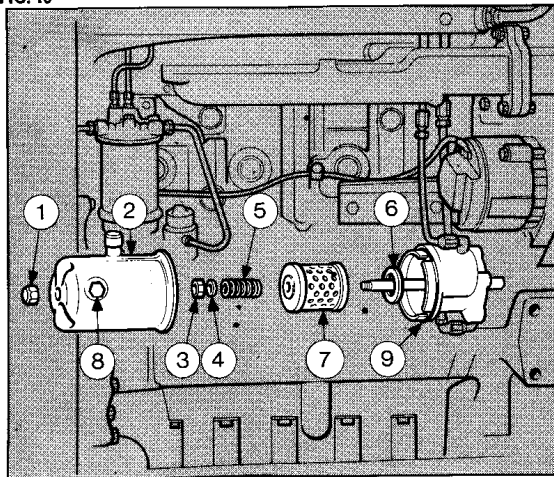


FIG. 17

MAINTENANCE AND ADJUSTMENTS

Alternator (Fig. 16)

Check the Fan and Alternator Belt Tension every 100 hours

The correct total belt deflection is 13 mm (0.5 in) with the belt depressed by hand midway between the fan pulley and the crankshaft pulley.

A new belt will 'bed-in' and require adjustment after a half to an hour of service. To adjust the belt, slacken the alternator securing bolts (Fig. 16), and re-position the alternator as required. Retighten the bolts securely.

Have your Distributor or Dealer Check the Alternator every 1000 hours or yearly

IMPORTANT: The alternator wiring must be disconnected if arc welding is to be carried out on the tractor or an implement attached to the tractor. Do not disconnect or reconnect the battery leads with the engine running.

STEERING

Check the Power Steering Oil Level every 50 hours

The fluid level must be maintained at the level of the filler plug (8, Fig. 17), with the tractor steered one turn of the steering wheel to the left and with the engine running at 1200 rev/min.

NOTES: Check the oil level only when the oil is cool.

Never run the engine unless there is sufficient fluid in the pump reservoir.

Change the Power Steering Pump Filter Element every 500 hours

Two types of power steering pump can be fitted to this tractor: consequently, servicing procedure differs for each:

Plessey Pump (Fig. 17)

1. Place a suitable receptacle beneath the pump reservoir (2).
2. Remove the dome nut (1) and washer, then slide off the reservoir.
3. Remove the nut (3), washer (4) and spring (5), then withdraw and discard the element (7).
4. Ensure that the spacer (6) is seated correctly in the pump body.
5. Fit the new element, with the arrow pointing towards the pump body.
6. Refit the spring (5) and washer (4), then fit the nut (3), screwing it up to the end of the thread.

MAINTENANCE AND ADJUSTMENTS

7. Ensuring that the reservoir sealing ring (9) is undamaged, refit the reservoir (2), securing it with the washer and dome nut (1).
8. Rotate the steering wheel one turn towards left-hand lock.
9. Fill the reservoir with an approved oil to the plug level.
10. Start the tractor engine and run it at 1 200 rev/min.
11. Check the oil level and add oil as required, to the plug (8) level.

Air-Equipment Pump (Fig. 18)

1. Place a suitable receptacle beneath the pump reservoir (3).
2. Remove the dome nut (1) and seal (2), then slide off the reservoir.
3. Remove the nut (4), spring (10), washer (5) and the seal (9).
4. Withdraw and discard the element (6).
5. Ensure that the spacer (7) is correctly seated in the pump body.
6. Fit the new element, with the arrow pointing towards the pump body.
7. Refit the seal (9), washer (5), spring (10) and the nut (4).
8. Ensuring that the reservoir sealing ring (8) is undamaged, refit the reservoir (3), securing it with the seal (2) and dome nut (1).
9. Rotate the steering wheel one turn towards left-hand lock.
10. Fill the reservoir with an approved oil to the plug level.
11. Start the tractor engine and run it at 1 200 rev/min.
12. Check the oil level and add oil as required, to the plug level.

Check the Front Hub Adjustment every 200 hours

If the front hub requires adjustment, proceed as follows:—

1. Raise the wheel off the ground and remove the hub cap.
2. Fig. 19. **Normal Duty Axle.** Remove the split pin (1) and tighten the castellated nut (2) to 80 Nm (60 lbf ft), then slacken off the nut two to three flats to give the correct end float. Fit a new split pin.
- Heavy Duty Axle.** Remove the split pin (1) and tighten the castellated nut (2) to 80 Nm (60 lbf ft), then slacken off the nut to the nearest pin hole and then slacken it off one flat to give the correct end float. Fit a new split pin.
3. Refit the hub cap, and grease the hub until clean grease exudes past the seals.

Have your Distributor or Dealer Check the Front Wheel Alignment every 500 hours

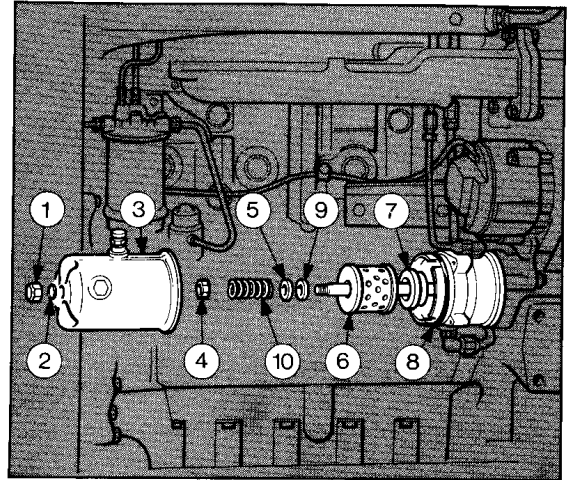


FIG. 18

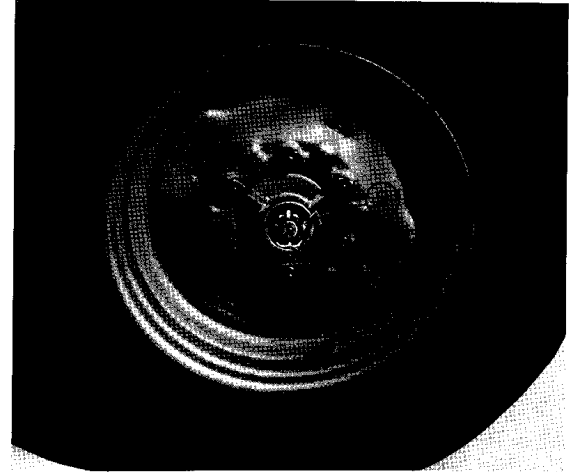


FIG. 19

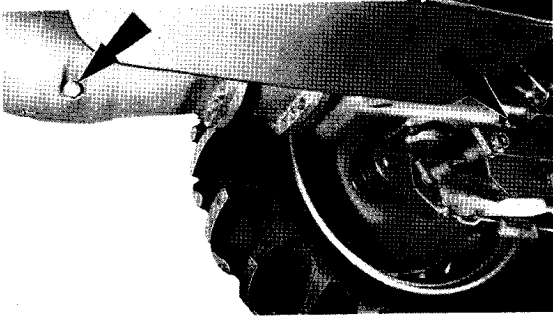


FIG. 20

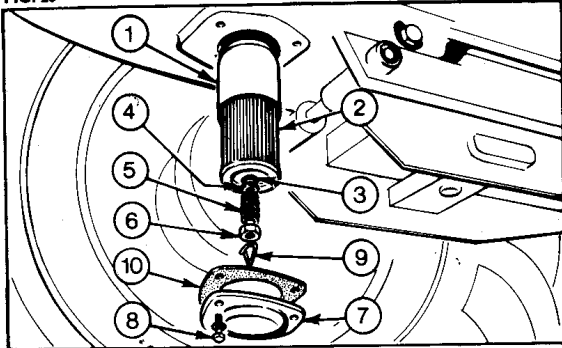


FIG. 21

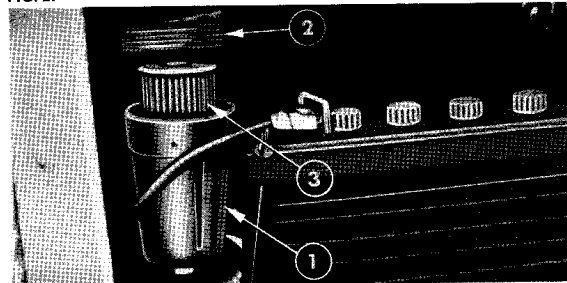


FIG. 22

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MAINTENANCE AND ADJUSTMENTS

TRANSMISSION AND HYDRAULICS

Check the Transmission Oil Level every 100 hours

The oil level should be maintained at the 'XX' mark on the dipstick for normal use, or the 'MAX' mark when using auxiliary hydraulics or implements which require a large quantity of oil.

Change the Transmission Oil every 500 hours

1. Remove the two drain plugs (Fig. 20) and the filler plug.
2. Place the hydraulic control levers in the fully DOWN position.
3. Remove and clean the oil strainer (see below).
4. Refit the drain plugs, then refill the transmission to the required level, with an approved oil.

NOTE: Time should be allowed for the oil to settle in the transmission and rear axle before rechecking the level.

Clean the Hydraulic Pump Oil Strainer every 500 hours

1. Drain the oil.
2. Fig. 21. Remove the three bolts (8) and washers securing the cover plate (7) to the bottom of the centre housing.
3. Remove the clip (9), nut (6), spring (5), washer (4) and 'O' ring (3).
4. Pull out the strainer (2) and the shroud (1).
5. Thoroughly clean the strainer in paraffin.
6. Check that the 'O' ring is seated in the pump, then refit the shroud (1) and the strainer (2).
7. Refit the 'O' ring (3), washer (4), spring (5), nut (6) and the clip (9).
8. Using a new gasket (10), refit the cover plate (7), with the three bolts (8) and washers.
9. Refill the transmission with an approved oil.

Change the Transmission Oil Filter Element every 250 hours

1. Fig. 22. Unscrew the filter bowl (1) from the filter head (2).
2. Withdraw and discard the used element (3).
3. Clean the inside of the filter bowl and insert a new element.
4. Screw the filter bowl into the filter head, ensuring that the 'O' ring on the filter head and the spring at the bottom of the filter bowl are correctly located.

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MAINTENANCE AND ADJUSTMENTS

Check the Oil Level in the Epicyclic Hubs every 200 hours

The oil level must be maintained at the level of the filler plug (1, Fig. 23).

Change the Oil in the Epicyclic Hubs every 500 hours, or 200 hours if conditions are wet, muddy or exceptionally humid

To change the oil:

1. Place a suitable container underneath the epicyclic hub.
2. Fig. 23. Remove the drain plug (2) and the filler plug (1).
3. When the oil has fully drained, refit the drain plug (2).
4. Fill the hub with an approved oil, to the level of the filler plug (1), then refit the plug.

NOTE: Owner maintenance and servicing of the transmission and hydraulics should be limited to the procedures detailed on pages 91 and 92. For any further operations, contact your Distributor or Dealer.

CLUTCH AND BRAKES

Clutch

Check the Clutch Pedal Free Travel every 100 hours, or 25 hours where heavy p.t.o. work is involved

The clutch pedal free travel should be 25 mm (1 in) measured at the pedal pad, if this is incorrect, adjust the bolt (Fig. 24) to give the correct free travel.

NOTE: As the tractor is used, the clutch pedal free travel will reduce. If adjustment is not carried out and the free travel falls below 13 mm (0.5 in), rapid and severe clutch damage will result.

Have your Distributor or Dealer Check the Live P.t.o. Clutch Setting every 100 hours, or more frequently, if heavy work is involved.

This adjustment must be checked regularly, as there is no indication of impending clutch slip.

I.p.t.o. tractors, except those fitted with a dual clutch, do not require this adjustment.

NOTE: When the tractor enters service, or has new clutch linings fitted, the clutch must be carefully bedded-in (see page 46). The pedal free travel must be checked frequently during the first 50 hours and any adjustments made immediately.

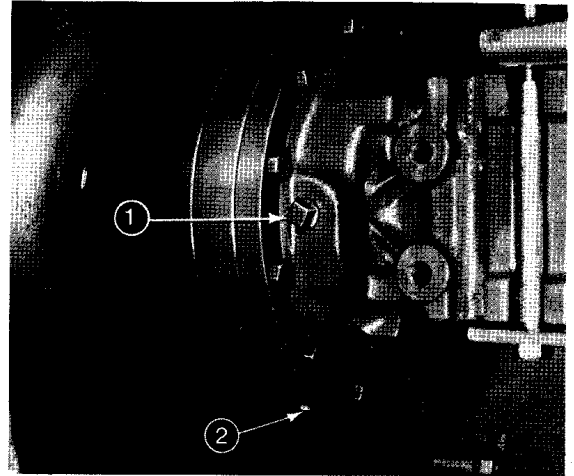


FIG. 23

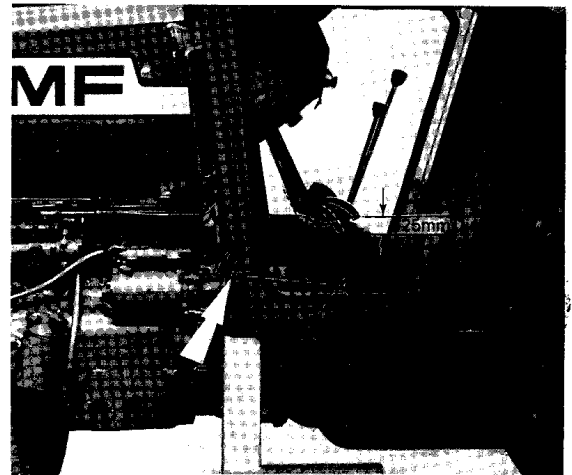


FIG. 24

MAINTENANCE AND ADJUSTMENTS

Brakes

Check the Brakes every 200 hours, or more frequently, if heavy work is involved.

The brake pedal free travel should be 65 mm (2½ in) measured at the pedal pad, if this is incorrect:—

1. Fig. 25. Chock the front wheels and jack the rear wheels clear of the ground, release the parking brake and disconnect the brake return springs (3).
2. Unlatch the brake pedals.
3. Slacken the locknut (2) and turn the nut (1), clockwise to reduce pedal free travel or anticlockwise to increase it, until the correct pedal free travel is achieved. Tighten the locknut.
4. Adjust the other brake until the pedal latch can be engaged freely.
5. Reconnect the brake return springs and check that the brakes are not binding, then remove the jack.
6. Drive the tractor, with the brake pedals latched together, checking for pulling to one side. Any tendency to pull to one side should be counteracted by turning the nut (1) anticlockwise on the side to which the tractor pulls.

DIFFERENTIAL LOCK

Check the Differential Lock every 500 hours

The distance from the underside of the pedal to the plate should be 95 mm (3.75 in). If this is incorrect:—

1. Fig. 26. Slacken the locknut (1) and adjust the turnbuckle (2) until the correct pedal height is achieved.
2. Tighten the locknut and recheck the pedal height.

SAFETY CAB

Check the Screenwasher Bottle Level every 10 hours, or daily

Access to the screenwasher bottle is obtained by removing the front grille.

The screenwasher jets can be adjusted by placing a suitable pin in the jet hole, then moving the jet to spray the screen.

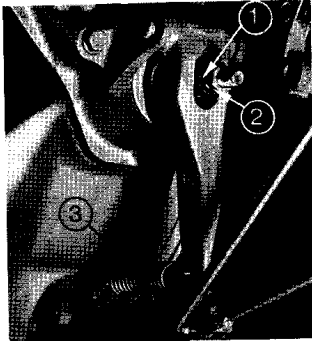


FIG. 25

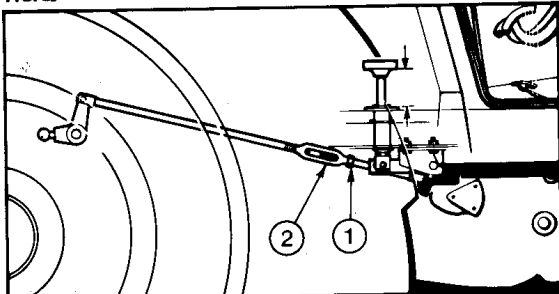


FIG. 26

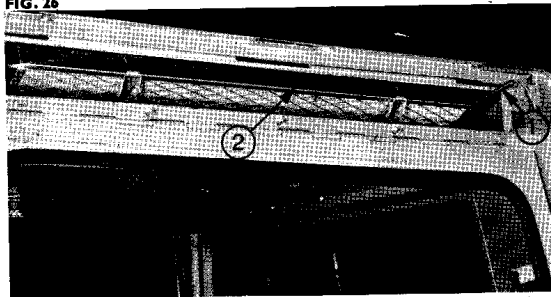


FIG. 27

MAINTENANCE AND ADJUSTMENTS

Clean the Cab Air Filter every 10 hours, or daily

1. Remove the air filter access cowl.
2. Fig. 27. Pull the clamp bar (1) downwards and remove the filter (2).
3. Clean the filter, either by tapping it on a clean, dry, flat surface, or by washing it, as stated on page 81 for the dry air cleaner.
4. Before refitting the filter, wipe out the compartment with a damp cloth, to remove any loose dust.
5. Refit the filter with the arrows, indicating the correct air flow, pointing upwards.
6. Secure the filter with the clamp bar (1), then refit the access cowl.

Replace the Cab Air Filter every 1 000 hours, or yearly

Have your Distributor or Dealer check the Torque of the Cab Securing Bolts every 500 hours.



NOTE: The safety cab conforms to various international safety standards. The cab must never be drilled, or modified to install accessories or implements.

Welding components to the cab or repairing any damaged components is not permitted.

If any of the above occurs, the safety cab may become illegal.

The only components which can be fitted are genuine MF parts, which must be fitted by your Distributor or Dealer.

WHEELS AND TYRES

Wheels

Check the Torque of the Front Wheel Bolts every 100 hours

The front wheel bolts should be tightened to a torque of 80 Nm (60 lbf ft).

Check the torque of the Rear Wheel Nuts after the first 10 and 50 hours and then every 100 hours.

The rear wheel nuts should be tightened to a torque of 270 Nm (200 lbf ft).

NOTE: After removing the Rear Wheels lightly oil the stud threads before reassembly—then replace the nuts and tighten to the prescribed torque.

MAINTENANCE AND ADJUSTMENTS

Tyres

Check the Tyre Pressures every 10 hours, or daily

These simple rules, if followed carefully, will ensure maximum tyre life.

1. The tyre pressures listed below are maxima and can be used in safety, at all times, without danger of sidewall rippling. In certain conditions the pressures may be lowered, particularly where the tyre treads fail to self clean. If the tyre pressures are reduced, have someone observe the tractor whilst working. Rippling of the sidewalls can cause rapid and severe tyre damage.

		Ploughing		Front Loader or Front Weights		Road Work	
		kN/m ²	lbf/in ²	kN/m ²	lbf/in ²	kN/m ²	lbf/in ²
UK tyres	Front	179	26	275	40	207	30
	Rear	83	12	83	12	110	16
French tyres	Front	220	32	302	44	250	36
	Rear	110	16	110	16	180	26

When ploughing with a fixed plough, the landside tyre pressure can be reduced by 14 kN/m² (2 lbf/in²).

When working across a hillside, the pressure of both rear tyres should be raised by 14 kN/m² (2 lbf/in²), as the wheel on the tractor, nearest the bottom of the hill will be supporting most of the load at the time, but when the direction of travel is reversed, the load will be transferred to the other side.

2. Keep oil, grease and strong alkaline or acid fertilisers away from tyres to prevent deterioration of the rubber.
3. Have any small sidewall or tread splits re-vulcanised as soon after they occur as possible. This extends the life of the tyre.
4. If bolt-on weights are fitted, raise the pressures to suit the weight fitted, consult your Distributor or Dealer.
5. Always drive slowly on the road if the tyre pressures have been lowered for ploughing.
6. Try, at all times, to use the correct tyres for the job. An extra set of wheels, fitted with a different type of tyre will soon prove advantageous.

MAINTENANCE AND ADJUSTMENTS

7. For maximum efficiency when ploughing, never use tyres more than a third to half worn.

TRACK ADJUSTMENTS

Front Track

The front wheel track is adjustable in 102 mm (4 in) steps. (See table below.)

Key to Figs. 29 and 31

	NORMAL DUTY		HEAVY DUTY					
	STD. CL.		STD. CL.		7.50-16	HI. CL.		
	6.00-16 6.00-19	7.50-16 7.50-18	6.00-16 6.00-19	7.50-18		6.00-16 6.00-19	7.50-18	7.50-16
1	1219 mm 48 in	1245 mm 49 in	1295 mm 51 in	1321 mm 52 in	1346 mm 53 in	1321 mm 52 in	1346 mm 53 in	1372 mm 54 in
2	1321 mm 52 in	1346 mm 53 in	1397 mm 55 in	1422 mm 56 in	1449 mm 57 in	1422 mm 56 in	1449 mm 57 in	1473 mm 58 in
3	1422 mm 56 in	1449 mm 57 in	1498 mm 59 in	1524 mm 60 in	1549 mm 61 in	1524 mm 60 in	1549 mm 61 in	1575 mm 62 in
4	1524 mm 60 in	1549 mm 61 in	1600 mm 63 in	1625 mm 64 in	1651 mm 65 in	1625 mm 64 in	1651 mm 65 in	1676 mm 66 in
5	1625 mm 64 in	1651 mm 65 in	1702 mm 67 in	1727 mm 68 in	1753 mm 69 in	1727 mm 68 in	1753 mm 69 in	1778 mm 70 in
6	1727 mm 68 in	1753 mm 69 in						
7	1829 mm 72 in	1854 mm 73 in						

Adjustment is as follows:

Normal Duty Axle

1. Raise the front wheels clear of the ground.
2. Fig. 28. Remove the two bolts (1) and nuts (2) each side.
3. Remove the peg bolt (3) and locknut (4) each side.
4. Slide the axle arms and the tie rods to the required track setting (see Fig. 29).
5. Refit the bolts (1) and nuts (2) and tighten them to a torque of 240 Nm (180 lbf ft).
6. Refit the peg bolts (3) and the locknuts (4). Do not overtighten the peg bolts.

Heavy Duty Axle

1. Raise the front wheels clear of the ground.
2. Fig. 30. Remove the three bolts (2) and nuts (1) each side.

NOTE: The nuts have a left hand thread.

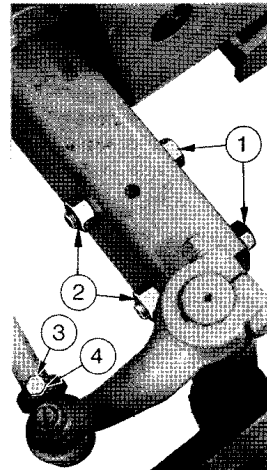


FIG. 28

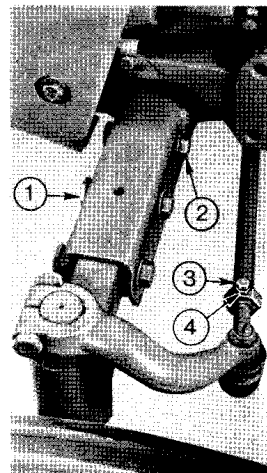


FIG. 30

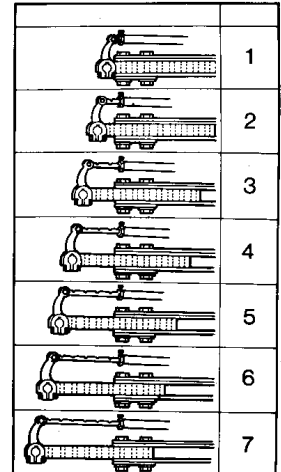


FIG. 29

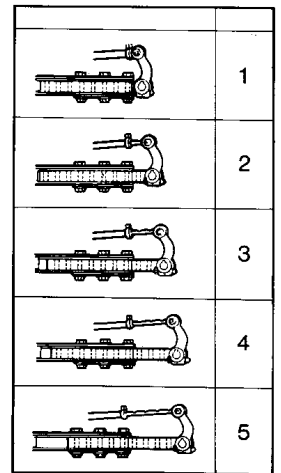


FIG. 31

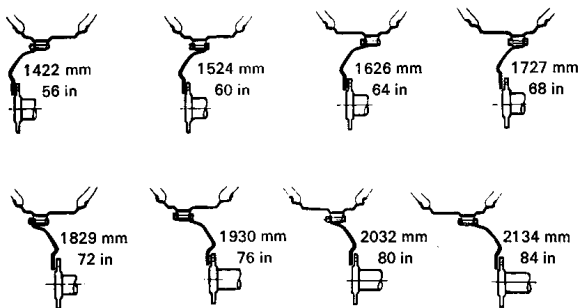


FIG. 32

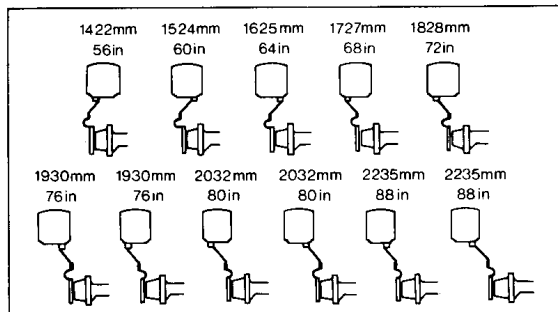


FIG. 33

MAINTENANCE AND ADJUSTMENTS

3. Remove the peg bolt (4) and locknut (3).
4. Slide the axle arms and the tie rods to the required track setting (see Fig. 31).
5. Loosely refit the six bolts and nuts (2 and 1).
6. Tighten the nuts to a torque of 240 Nm (180 lbf ft), then tighten the bolts, also to 240 Nm (180 lbf ft).
7. Refit the peg bolts (4) and the locknuts (3). Do not overtighten the peg bolts.

Rear Track—Pressed Steel Wheels

The rear track is adjustable in 102 mm (4 in) steps, from 1 422 mm to 1 727 mm (56 to 68 in). The adjustment procedure is as follows:-

1. Fig. 32. Select the required track setting.
2. Slightly slacken either the wheel to axle, or the rim to disc nuts, or both according to requirements.
3. Using a jack capable of lifting 5 000 kg (5 ton), raise the rear wheels just clear of the ground.
4. Remove the rim from the disc, or the complete wheel, or both and assemble them with the rim and disc in their new positions.

NOTE: If the wheels are reversed, they must be transferred to the opposite side of the tractor.

5. On refitment, lightly oil stud threads then tighten the nuts progressively to a torque of 270 Nm (200 lbf ft) for the disc to axle nuts, and 135 Nm (100 lbf ft) for the rim to disc nuts.

Double Disc Wheels

The rear track is adjustable in 102 mm (4 in) steps, from 1 423 to 2 235 mm (56 to 88 in). The adjustment procedure is as follows:-

1. Fig. 33. Select the required track setting.
2. Slightly slacken the required set or sets of nuts according to requirements.
3. Using a jack capable of lifting 5 000 kg (5 ton), raise the rear wheels just clear of the ground.

MAINTENANCE AND ADJUSTMENTS

4. Remove the rim, outer disc or inner disc and assemble them in their new positions.

NOTE: If the wheels are reversed, they must be transferred to the opposite side of the tractor.

5. On refitment, lightly oil stud threads then tighten the nuts progressively to a torque of 270 Nm (200 lbf ft) for the disc to axle nuts, and 135 Nm (100 lbf ft) for the rim to disc and disc to disc nuts.



NOTE: Where tyres with liquid ballast are used, a crane may be required to manoeuvre the wheels, due to their considerable weight.

HEADLIGHT ADJUSTMENT

Adjustment of the headlights is accomplished by screwing the three screws (Fig. 34) in or out as required.

Headlight Beam Setting

1. Fig. 35. Position the tractor 2 m (6 ft) away from, and at right angles to a wall or screen.
2. Mark a point on the wall or screen by sighting down the hood centre line.
3. Draw a vertical line (1) through the point.
4. Draw a horizontal line (2) through the vertical line (1) at headlight height (4).
5. Mark two points (3) on the horizontal line representing the distance between the two headlights, spaced equally either side of the vertical line (1).
6. Adjust each headlight individually by obscuring the other, so that the points (3) marked on the wall or screen are in the centre of the beam. The centre of the headlight beam may be found by marking the extremities of the beam both vertically and horizontally, and dividing by two.

BULB REPLACEMENT

Headlights (Internal Connector)

1. Remove the front grille and disconnect the battery cables.
2. Fig. 36. Remove the four nuts (1), washers and the two earth wires, then lift out the headlight housing and disconnect the wiring.
3. Remove the plastic cover (2) from the rubber surround.

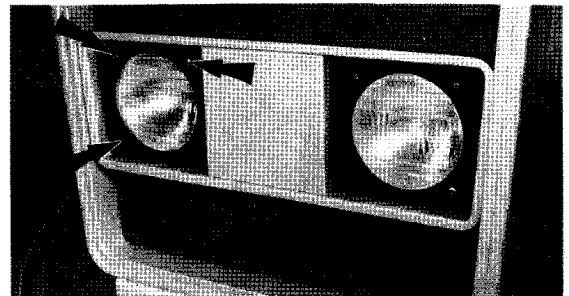


FIG. 34

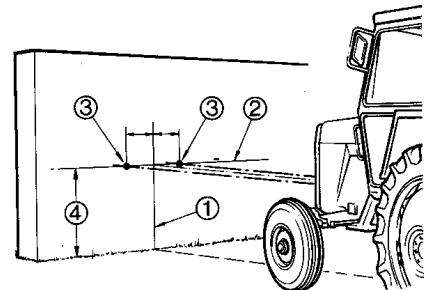


FIG. 35

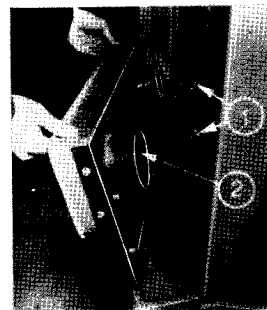


FIG. 36

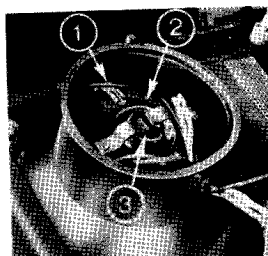


FIG. 37

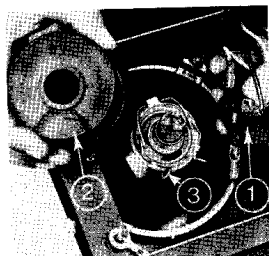


FIG. 38

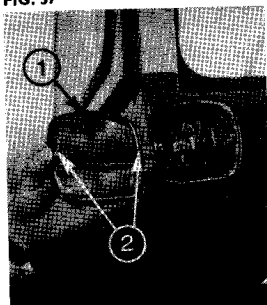


FIG. 39

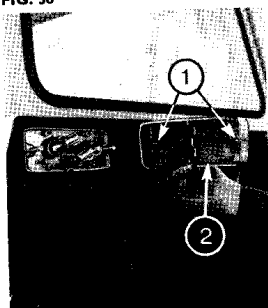


FIG. 40

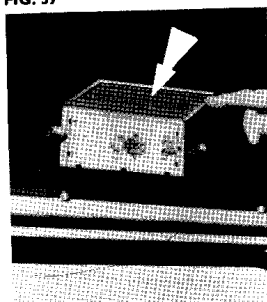


FIG. 41

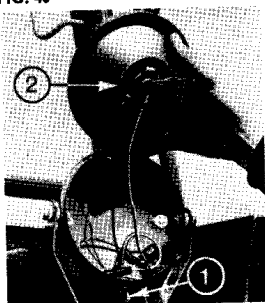


FIG. 42

MAINTENANCE AND ADJUSTMENTS

4. Fig. 37. Remove the earth wire (1) to free the clamping plate (2), then remove the bulb (3).
5. Fit a new bulb and reassemble the light in reverse order to the above.

Headlights (External Connector)

1. Remove the front grille.
2. Fig. 38. Remove the plug (1) then the rubber surround (2).
3. Release the spring clip (3) then remove the bulb.
4. Fit a new bulb and reassemble in reverse order.

Side Lights/Flashing Indicators

1. Fig. 39. Remove the two screws (2) and lift off the cover (1).
2. Remove the failed bulb from its fitting.
3. Fit a new bulb and refit the cover.

Tail/Brake Lights/Flashing Indicators

1. Fig. 40. Remove the two screws (1) and lift off the cover (2).
2. Remove the failed bulb from its bayonet fitting.
3. Fit a new bulb and refit the cover.

Interior Light

1. Fig. 41. Hinge open the cover from the bottom.
2. Remove the bulb from the bayonet fitting.
3. Fit a new bulb and close the cover.

Plough Light

1. Fig. 42. Slacken the screw (1), then hinge the lens and rim upwards until they can be removed from the light body.
2. Turn the bulb retainer (2) anticlockwise and remove the bulb retainer and then the bulb.
3. Fit a new bulb and reassemble the light in reverse order to the above.

MAINTENANCE AND ADJUSTMENTS

Instrument Lights

1. Remove the front grille and disconnect the battery cables.
2. Fig. 43. Remove the eight bolts securing the instrument cowl and remove the cowl.
3. Fig. 44. Pull the failed bulb and its holder from the instrument and remove the capless bulb.
4. Fit a new bulb in its holder, then push the bulb holder into the instrument.
5. Refit the instrument cowl and the eight bolts.
6. Reconnect the battery cables and refit the front grille.

Warning Lights (Panel Assembly)

1. Remove the front grille and disconnect the battery cables.
2. Fig. 45. Remove the two screws and carefully withdraw the light panel assembly.
3. Turn the failed bulb and its holder anticlockwise and withdraw them from the light panel assembly.
4. Pull out the capless bulb.
5. Push in a new bulb, and reassemble the light panel assembly in reverse order to the above.

Indicator Warning Lights

1. Remove the front grille and disconnect the battery cables.
2. Fig. 43. Remove the eight bolts securing the instrument cowl and remove the cowl.
3. Fig. 46. Holding the bulb holder from behind the instrument panel, unscrew the lens then remove the bulb.
4. Fit a new bulb, then refit the lens, ensuring that it is fully tightened.
5. Refit the instrument cowl and the eight bolts.
6. Reconnect the battery cables and refit the front grille.

Number Plate Lights

1. Fig. 47. Slacken the screw and remove the cover and the lens.
2. Remove the bulb from the bayonet fitting.
3. Fit a new bulb, then refit the cover and lens and tighten the screw.



FIG. 43

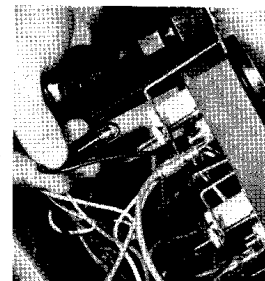


FIG. 44



FIG. 45

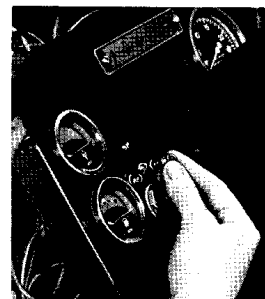


FIG. 46

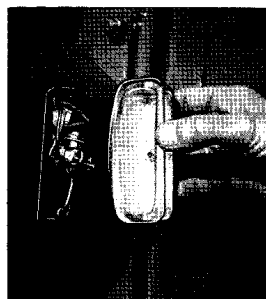


FIG. 47

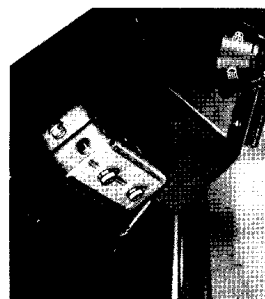


FIG. 48

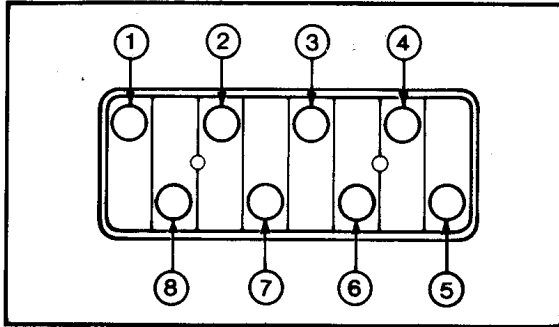


FIG. 49

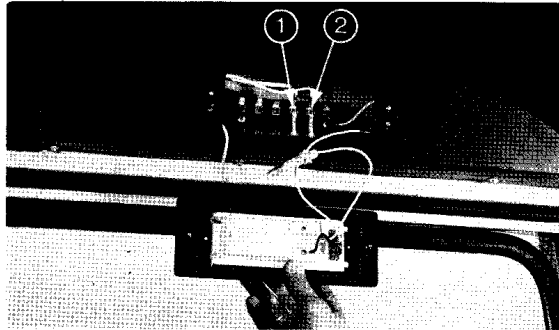


FIG. 50

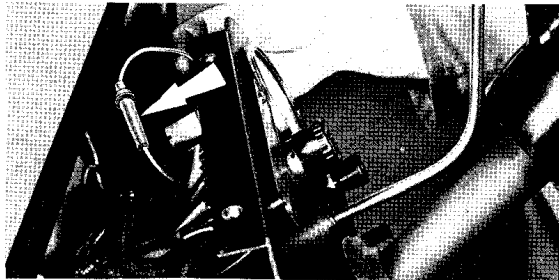


FIG. 51

MAINTENANCE AND ADJUSTMENTS

FUSE REPLACEMENT

Always fit a new fuse of the correct capacity (see the Specification section).

Lights

The fuses in the fuse box (Fig. 48) protect the light circuits. Each fuse protects a different circuit as detailed below:

Fig. 49

- | | |
|----------------------|-------------------------|
| 1. Dipped headlights | 5. Plough light |
| 2. Side lights | 6. Flashing indicators |
| 3. Brake lights | 7. Side lights |
| 4. Warning lights | 8. Main beam headlights |

To renew a fuse, remove the fuse box cover and unscrew the failed fuse.

Blower, Wiper and Interior Light (Fig. 50)

Situated behind the interior light are three fuses. The line fuse protects the interior light circuit and the other two fuses protect the wiper circuit (1) and the blower circuit (2). To gain access to the fuses, remove the two screws and withdraw the light assembly.

To renew the line fuse, hold one end of the casing, push in, twist and pull off the other end, then tip out the fuse.

Horn

The horn circuit is protected by a line fuse located adjacent to the horn in the nose assembly. To renew the line fuse, hold one end of the casing, push in, twist and pull off the other end, then tip out the fuse.

Cigar Lighter (Figs. 43 and 51)

The cigar lighter circuit is protected by a line fuse located adjacent to the cigar lighter behind the instrument panel.

To renew the fuse:

1. Remove the front grille and disconnect the battery cables.
2. Fig. 43. Remove the eight bolts securing the instrument cowl and remove the cowl.
3. Hold one end of the fuse casing, push in, twist and pull off the other end, then tip out the fuse.
4. Fit a new fuse and reassemble in reverse order to the above.

MAINTENANCE AND ADJUSTMENTS

Fusible Link

The dark brown lead from the starter motor solenoid is a fusible link. To replace the link:

1. Remove the front grille and disconnect the battery cables.
2. Disconnect the link at the snap connector
3. Pull back the rubber shroud from the solenoid terminal and remove the nut and lockwasher.
4. Remove the fusible link.
5. Fit a new fusible link and reassemble in reverse order.

FUEL HANDLING AND STORAGE

Recommended Fuels—British Isles and Overseas

Diesel Fuels, meeting British Standard Specification 2869: for 'A' class fuel. For example:

Esso Diesel Medium, Shell Gas Oil, Mobil Gas Oil, B.P. Dieselite.

These may be referred to as 'regular grade' diesel fuels.

Also:

Diesel Fuels, meeting American Specification A.S.T.M.: Grade No. 1D or Grade No. 2D.

No. 1D may be called a 'premium grade' high speed diesel fuel, and No. 2D a 'regular grade' diesel fuel.

Cleanliness

The utmost care must be taken to keep fuel clean. The following advice is offered to promote satisfactory fuel handling and storage.

1. Never use galvanised containers.
2. Never clean the inside of containers, or any components of the fuel system with a fluffy cloth.
3. The size of the bulk storage tank should be such that intervals between drainage and refilling are not too long. 3000 litre (600 gallon) capacity is sufficient for the average size farm.
4. Fig. 52. The storage tank should be under cover and supported on cradles of sufficient height to enable the tractor fuel tank to be filled by gravity, and should have a suitable manhole cover to provide access for cleaning. The final outlet cock should be located to allow 76 mm (3 in) settling depth for water and sludge; it should feed through a detachable filter with 120 mesh screen. There should be a fall of about 40 mm per metre ($\frac{1}{2}$ in per ft) towards the sludge drain plug.
5. Fig. 53. Drums should be stored under cover, so affording adequate protection against entry of water. Drums should be stored at a slight angle, thus allowing any water to run off the top lip. Drums of fuel should not be stacked for long periods before use.

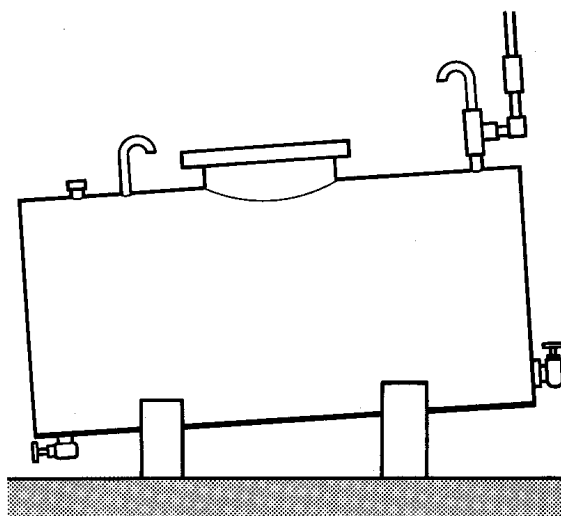


FIG. 52

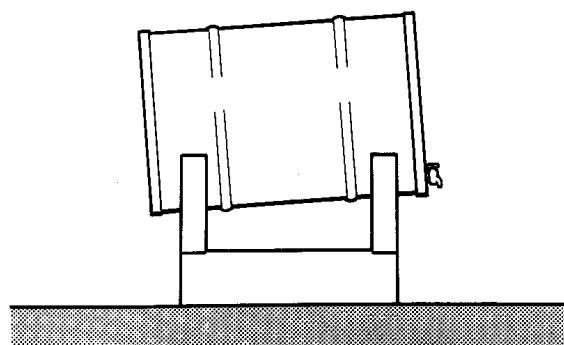


FIG. 53

MAINTENANCE AND ADJUSTMENTS

6. Drums in use outside must have the bung securely screwed down to prevent entry of water.
7. Bulk or drum storage tanks should be allowed 24 hours to settle before use, after delivery or servicing.

STORAGE

If a tractor is to be stored for some considerable time, certain precautionary measures should be undertaken to safeguard the tractor. Consult your Distributor or Dealer for details of these measures.

HYDRAULIC CONTROL—DECALS

A new international symbol decal system is introduced to provide clear indication of hydraulic control function. The system is designed to ensure correct connection of implements.

Fig. 54. Spool Valve function—This decal shows the single and double acting operation of the spool valve and is found on the right-hand side lower window.

Fig. 55. Trailer Tipping Pipe and Trailer Brake Connection—These decals are placed at the side of the appropriate connector on the trim plate and clearly indicate the function.

Fig. 56. Spool Valve Outlet Port Identification—These decals indicate the port which is selected by moving the lever forward or rearward. Numbered 1–6, they are fitted behind each spool valve lever.

Fig. 57. Implement Connector Identification—Numbered 1–6 installed on trim plates near each spool valve implement connector.

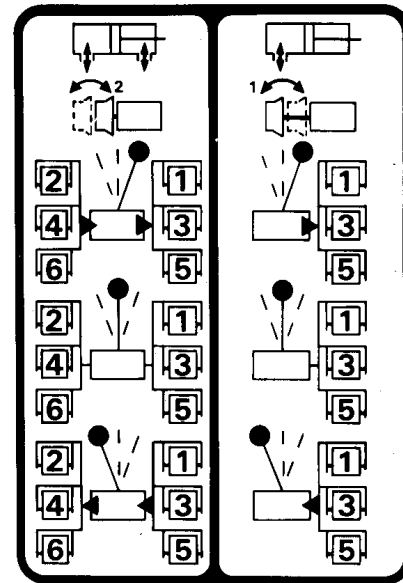


FIG. 54

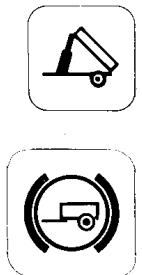


FIG. 55

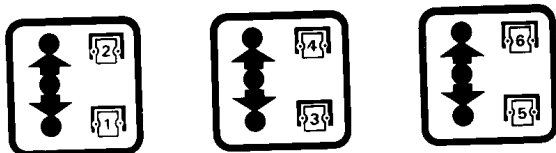


FIG. 56

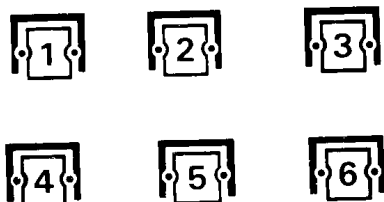


FIG. 57

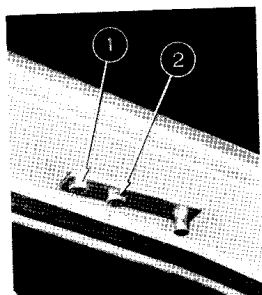


FIG. 58

MAINTENANCE AND ADJUSTMENTS

FRONT GRILLE

Retaining latch adjustment, Fig. 58.

Inspect the front grille periodically to ensure that it fits tightly. If it needs adjustment, proceed as follows:

1. Remove the grille.
2. Slacken the two bolts (1 and 2).
3. Replace the grille and close the latch
4. Push the grille in as far as possible, then using a thin spanner tighten, first bolt (1) then bolt (2).

ACCESSORIES

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DRAWBAR AND STAYS	125
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ACCESSORIES

FRONT MOUNTED WEIGHT FRAME (Fig. 1)

The front mounted weight frame is attached to the nose of the tractor with the bolts provided in the kit. The bolts should be tightened to a torque of 135 Nm (100 lbf ft).

A maximum of eight 30 kg (66 lb) weights can be fitted to the weight frame. A tow hitch facility is available with and without the front weights fitted.

Attaching the Weights

1. Hook two weights onto the centre of the weight frame.
2. Secure the rear of the weights to the bracket on the underframe with the two nuts and bolts provided.
3. Fig. 2. Using the short bolts and the tapped plates, secure the required number of weights to the weight frame.

An alternative size of bolt is available which permits the fitment of two, six or eight 30 kg (66 lb) weights.

SEAT BELT (Fig. 3)

A lap type of seat belt can be fitted to this tractor.

To secure the belt, grip the buckle (1) firmly and push it into position on the fixed bracket (2). To release the belt, press the button (3) on the buckle.

Adjusting the Belt

To slacken the seat belt, turn the buckle over and pull firmly on the lower belt (Fig. 4), and to tighten the seat belt, turn the buckle over and pull firmly on the upper belt (Fig. 5). Having adjusted the seat belt, take up any slack on the upper part of the belt using the belt tidy (4, Fig. 3).

NOTE: If, for any reason, the seat belt is severely strained, it should be replaced.

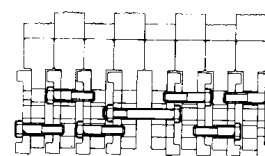


FIG. 1

FIG. 2

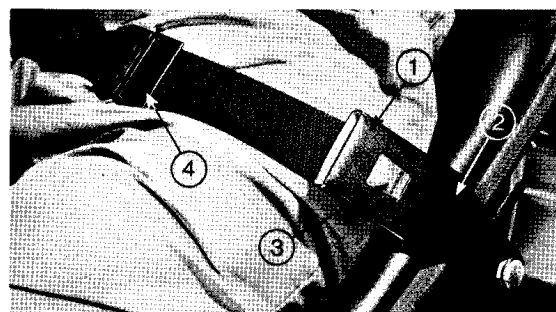


FIG. 3

ACCESSORIES

HYDRAULIC SELECTOR VALVE (Fig. 6)

The MF Hydraulic Selector Valve increases the versatility of the tractor hydraulics by providing a facility whereby any one of three services may be selected; the remaining two services being isolated. To select the required service, pull the knob upwards, move the lever to the desired position and release the knob.

By selecting one of three positions, i.e. LINKAGE, EXT 1 or EXT 2, the respective service will be operated as follows:

Linkage Position

With the lever in the LINKAGE position (i.e. lever vertical), the tractor lower links are operated by the quadrant controls in the normal manner. EXT 1 and EXT 2 are isolated.

External 1 Position

With the lever in the EXT 1 position (i.e. lever right), the oil flow from the tractor hydraulic pump is diverted to a twin outlet port and LINKAGE and EXT 2 are isolated. This allows the operation of any single acting service by the tractor quadrant controls, whilst the lower links are maintained in the fully raised position hydraulically.

The two outlet ports enable two single acting rams to be operated simultaneously as, for example, with a front end loader.

External 2 Position

With the lever in the EXT 2 position (i.e. lever left), the oil flow from the hydraulic pump is diverted to a single port and LINKAGE and EXT 1 are isolated. This provides a further port which may be used to operate a single acting service, whilst the lower links are hydraulically locked in any pre-set position.

Operation

IMPORTANT: Before operating the Selector Valve lever, ensure that the Position Control lever is in the TRANSPORT position and the Draft Control lever is in the fully UP position.

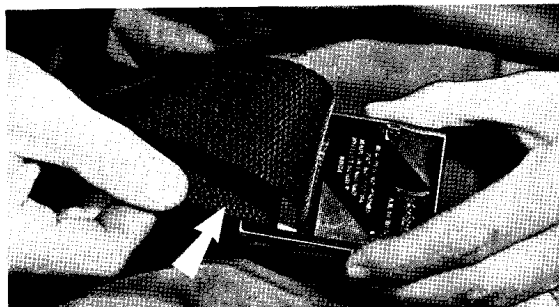


FIG. 4



FIG. 5



FIG. 6

ACCESSORIES

Example

A tractor is fitted with a front end loader (operated by two single acting rams), with a counterweight mounted on the lower links.

Use of the Selector Valve

Connect the loader rams to the twin ports at EXT 1. Select the LINKAGE position; this gives control of the lower links by operating the quadrant controls in the normal manner. The counterweight can then be attached and the lower links raised. Move the Selector Valve lever into the EXT 1 position. This gives control of the loader rams by operating the quadrant controls in the normal manner. The LINKAGE and EXT 2 positions are isolated.

The selector valve can also be used in conjunction with auxiliary hydraulic control valves:

- To increase control over auxiliary equipment.
- To increase the flow of oil to auxiliary equipment by combining the flow of oil from the linkage pump and the auxiliary pump.

AUXILIARY HYDRAULIC CONTROL VALVE (Fig. 7)

One, two or three spool versions of the Kontak control valve can be fitted to this tractor. Each control valve is operated by an adjustable lever (1) with a neutral safety lock (2) and a control knob (3), for the selection of single or double acting operation. The neutral safety lock eliminates the possibility of accidental operation of the control lever.

WARNING: The lock must ONLY be used when the control lever is in the NEUTRAL position.

The auxiliary hydraulic take-off points (Fig. 8) are of a self sealing, quick release design.

Operation

The Kontak control valve is capable of controlling the following services:

Single Acting Rams

To operate single acting rams, screw the knob (3, Fig. 7) fully out, and use only the coupler marked '1', '3' or '5'. To extend the ram, pull the lever back; to retract the ram, push the lever forwards.

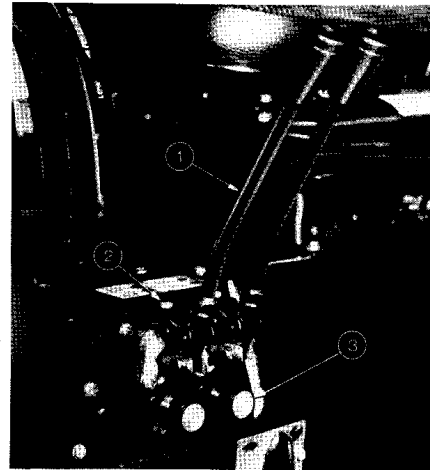


FIG. 7

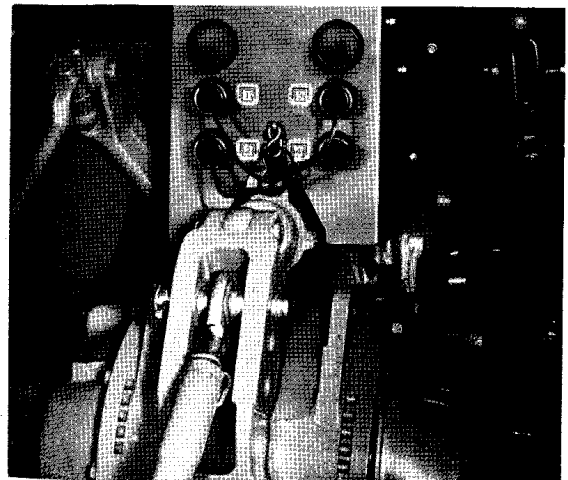


FIG. 8

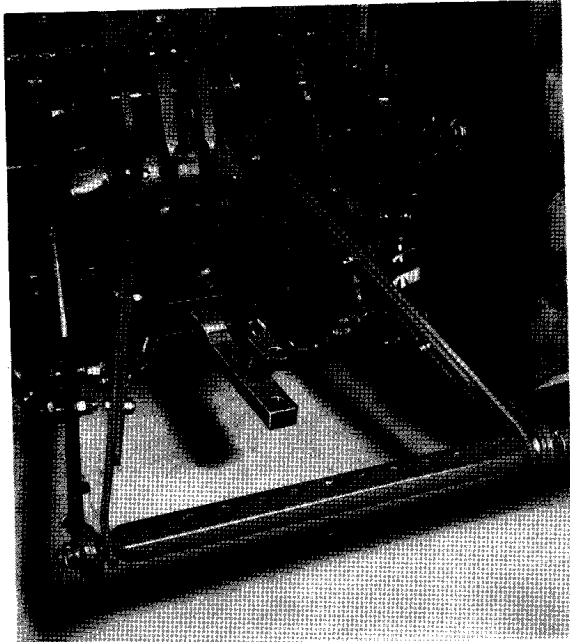


FIG. 9

ACCESSORIES

Double Acting Rams

To operate double acting rams, screw the knob (3, Fig. 7) fully in, and attach the hose from the side of the ram which causes it to extend to the coupler marked '1', '3' or '5'. To extend the ram, pull the lever back; and to retract the ram, push the lever forwards.

Hydraulic Motors

Although not specifically designed for use with hydraulic motors, these valves can be used satisfactorily, if the following points are observed:

1. Always connect the motor feed to the coupler marked '1', '3' or '5'.
2. NEVER connect the motor return to the quick release couplers. Always connect the return hose directly to either the 'R' port on the selector valve (tractor working from linkage pump only) or to the FRONT port on the p.t.o. side cover (auxiliary pump or combined flow).
3. Always contact your Distributor or Dealer when fitting a hydraulic motor to ensure that the hydraulic circuit is completely satisfactory.

NOTE: A special spool unit is available for use with reversible hydraulic motors. For details of this and other specialised spool valves (e.g. detent spools and detent conversion kits) consult your Distributor or Dealer.

The auxiliary hydraulic control valves can also be used in conjunction with the MF Hydraulic Selector Valve. See page 121.

When the couplers are not in use, the blanking plugs should be fitted to prevent the entry of dirt.

Before connecting any hoses, ensure that all hydraulic connections are wiped clean.

DRAWBAR AND STAYS (Fig. 9)

A drawbar to fit Category 2 links is available. Lateral adjustment of 433 mm (17 in) is provided by nine holes in the drawbar. Adjustable stays give a height range of between 280 and 635 mm (11 and 25 in) above the ground.

Raising the drawbar increases traction with trailed machinery; lowering the drawbar will tend to keep the front end down, with some loss of traction.



NOTE: Always keep the drawbar low enough to give front end stability.

ACCESSORIES

Attachment

1. Place the drawbar on the floor and attach the stay links to the drawbar ends.
2. Remove the p.t.o. guard.
3. Rest the drawbar assembly on the lower links and secure the stay links to the centre housing with the long pin and a linch pin.
4. Locate the drawbar ends in the lower link ball ends and secure with linch pins.
5. Adjust the drawbar height by lengthening or shortening the stay links:
For normal working, set the drawbar at 470 mm (18.5 in).
6. Align the holes in the stay links and fit and tighten the bolts.

NOTE: When the drawbar is fitted always operate the tractor with the Position and Draft Control levers in the DOWN position.



WARNING: Never use the drawbar without stay links.

BELT PULLEY (Figs. 10 and 11)

The belt pulley is a self contained unit which is driven by the p.t.o. shaft and controlled by the p.t.o. lever.

Attachment

1. Remove the p.t.o. shield and cap.
2. Remove the swinging drawbar.
3. Remove the four nuts and spring washers securing the check chain anchor bracket.
4. Fit the four adaptor studs.

NOTE: The four spacers supplied in the kit are only required if the check chain anchor bracket is removed.

5. Fig. 10. Fit the p.t.o. guard (1) and tighten the securing bolt (2).
6. Mount the pulley drive unit in the required position (Fig. 11 Inset), and secure it with the four spring washers and nuts. The two horizontal positions provide alternative directions of rotation. The pulley must never be fitted in the position opposite to 'b' Fig. 11 as, in this position, the drive unit bearings would not receive adequate lubrication.



NOTE: The p.t.o. guard and the pulley guard must be fitted at all times.

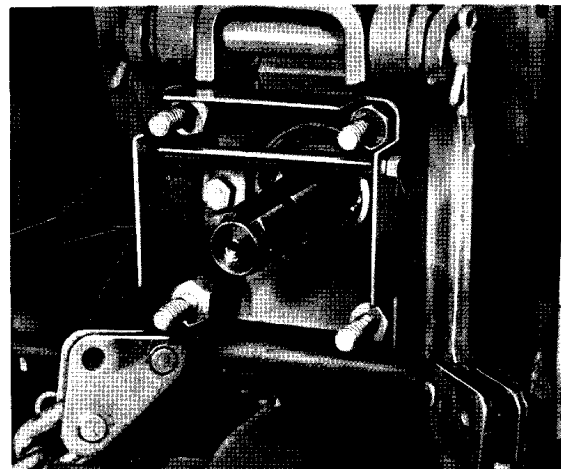


FIG. 10

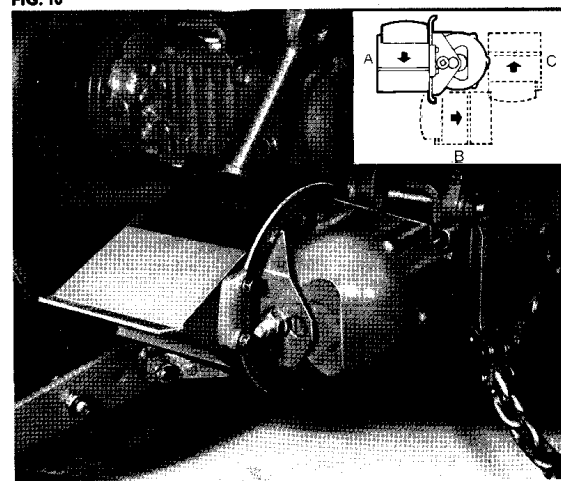


FIG. 11

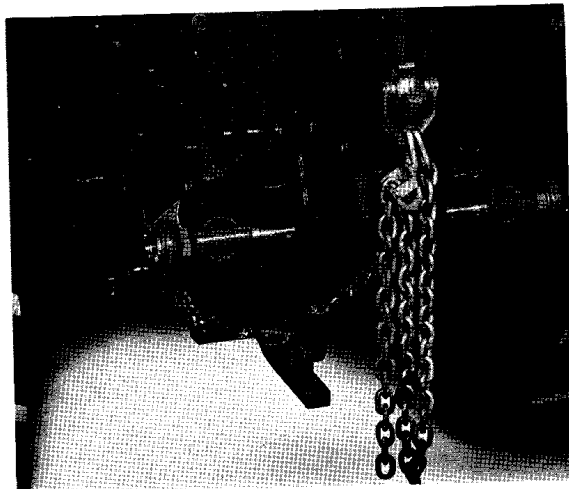


FIG. 12

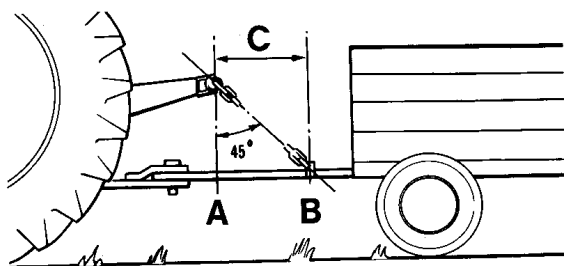


FIG. 13

ACCESSORIES

Detachment

This is a reversal of the attachment procedure.

Belt Pulley Specification

Pulley Speeds (540 rev/min shaft only)

Engine Speed rev/min	Power Take Off rev/min	Pulley Speed rev/min	Belt Speed	
			m/min	ft/min
1685	540	1 003	820	2 691
2000	640	1 190	974	3 194

Pulley Diameter 260 mm (10.25 in)

Pulley Width 165 mm (6.5 in)

Gear Ratio to P.t.o. Shaft 1.857:1

Oil Capacity 1.1 litre (2 Imp. pt)

PRESSURE CONTROL COUPLER (Fig. 12)

The Pressure Control Coupler is used to transfer weight from trailed, drawbar pulled equipment to the tractor rear wheels. Full use can be made of the Pressure Control Coupler when using four wheel trailers, heavy discs, wheeled ploughs and p.t.o. driven equipment.

For correct chain angle, one or two chain anchor brackets should be welded between points A and B (Fig. 13) on the implement drawbar at a maximum distance of 650 mm (24.75 in)—dimension C.

NOTE: Some implement drawbars may need strengthening, particularly if the tractor being used is fitted with a lift assist ram. Your Distributor or Dealer will advise you on any modifications which may be necessary.

Attachment

1. Place the coupler on the ground behind the tractor with the correct size link pins facing outwards, and the securing bolts in the lower link attachment brackets slackened. The boom should be retained in the stowage position.
2. Fully lower the tractor lower links.
3. Raise the coupler and simultaneously locate the left hand link pin and the link bracket cut-out on the lower link. Secure the link pin with a linch pin.

ACCESSORIES

4. Locate the right hand link pin and link bracket as above.
5. Screw in the link bracket bolts to give a clearance of about 2 mm (0.06 in) between the bolt heads and the lower links: tighten the locknuts.
6. Using the Position Control lever, fully raise the lower links.
7. Attach the implement to the tractor swinging drawbar.
8. Using the Position Control lever lower the links until the coupler frame is slightly below horizontal.
9. Release the boom from the stowage position and attach the chain to the implement drawbar. Ensuring that there is a minimum of slack in the chain, secure the nearest link into the chain claw.

Operation

For general operating instructions see page 62.

The safety release gives full protection in the event of the implement becoming detached from the tractor at the drawbar, when the chain would act as a towing link. In this instance, the roller attached to the chain is pulled out of the slot in the boom, thus freeing the implement from the tractor. The device is re-set by snapping the roller back into position.

NOTE: If an external ram is to be controlled at the same time as the Pressure Control Coupler (e.g. when operating a potato harvester), the tractor must be fitted with full auxiliary hydraulics and a selector valve.

Maintenance

The two grease nipples on the boom should be charged periodically with fresh grease.

STABILISERS (Fig. 14)

Once fitted, link stabilisers need not be removed from the tractor; but to ensure easy and efficient operation the following points should be observed:

Check chains must not be removed when link stabilisers are fitted. To facilitate adjustment, the threaded portions of the stabilisers should be liberally coated with grease.

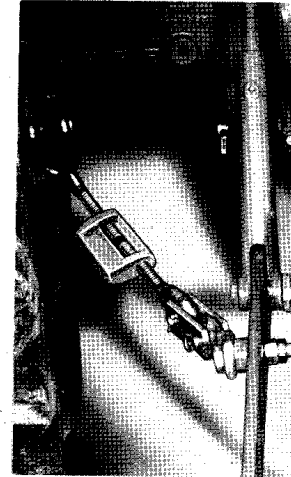


FIG. 14

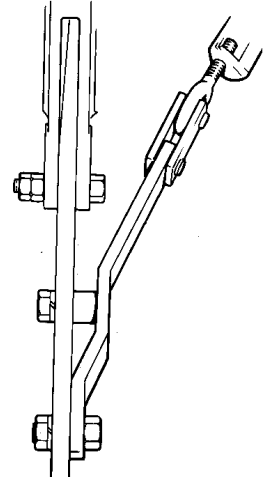


FIG. 15

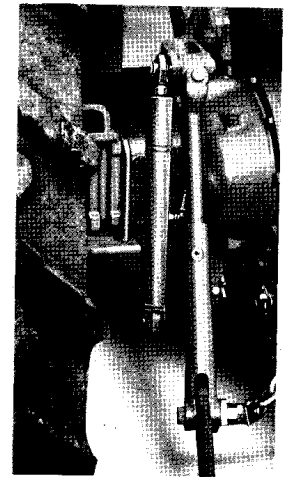


FIG. 16

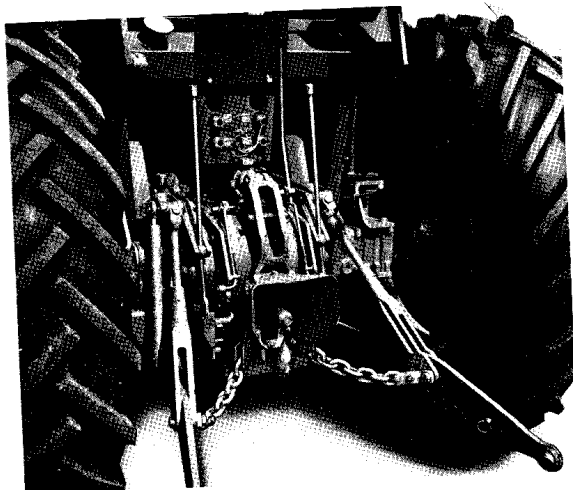


FIG. 17

ACCESSORIES

Adjustment

Before working with soil engaging implements, link stabilisers must be adjusted to allow 50 mm (2 in) of sideways movement at the end of each lower link.

NOTE: Always ensure that, with the implement fitted, the linkage can travel through its full range without straining the stabilisers.

Extended Stabilisers (Fig. 15)

A stabiliser extension kit is available for use when a lift assistor ram is fitted, to withstand the additional sideloads created when heavier implements are used.

LIFT ASSISTOR (Fig. 16)

The lift assistor is a single acting hydraulic ram which, in conjunction with the standard tractor hydraulics, increases the lower link lift capacity from 1 542 to 1 850 kg (3 400 to 4 080 lb).

A stabiliser extension kit is available for use when the lift assistor ram is fitted, to withstand the additional sideloads created when heavier implements are used.

AUTO HITCH (Fig. 17)

The Auto Hitch is a supplementary lifting mechanism which enables rapid and easy hitching of implements with a ring type drawbar adaptor. It is designed for use with either the hitch hook or the swinging drawbar.

The maximum static capacity of the hitch hook is 2 268 kg (5 000 lb).

The control lever can be attached either to the left or right hand pivot bracket, and is adjusted by slackening the trunnion locking nut, turning the handle to the desired position, then retightening the nut.

ACCESSORIES

Operation

WARNING: Always operate the Auto Hitch from the tractor seat.

To Lower the Hitch

1. Place the Draft Control lever in the fully UP position.
2. Select CONSTANT PUMPING with the Position Control lever.
3. Push the release lever rearwards.
4. Whilst holding the release lever in the rearward position, move the Position Control lever to DOWN. The hitch will then lower.

To Raise the Hitch

Move the Position Control lever to TRANSPORT; the hitch will raise and latch automatically.

WARNING: Do not attempt to use the Auto Hitch lifting mechanism to lift a load with the drawbar offset.

Maintenance

The grease nipples on the latch pivot pins should be charged periodically with Mobilplex Special or Mobilgrease Super.

RADIO (Fig. 18)

To switch the radio on, turn the outer portion of the left hand control knob clockwise. Turning this knob further will increase the volume. Tone is controlled by turning the inner portion of the left hand knob.

Tuning the Radio

There are two ways of tuning the radio:

Manual tuning of the radio is achieved by turning the right hand control knob until the desired station is reached.

Push button tuning is achieved as follows:

1. Tune in to the required station using the manual control.
2. Pull one of the buttons to its outermost position, then press it firmly to lock the pre-select mechanism.

Subsequent operation of the button will select the station automatically.

NOTE: Only the button on the extreme right of the radio can be used to select a station on the Long Waveband.



FIG. 18

565 NORTHFIELD 4 APRIL 1984

DONE 2568 HOURS

NEW BATTERY 2570

FLUSH OUT + A FREEZE OCT 1984

OIL + FILTER 3007 15 NOV 85

TOP UP A FREEZE OCT 1985

OIL + FILTER 3546 HRS 1 APR 86

TOP UP A FREEZE NOV 86

OIL + FILTER 4170 HRS 10, 8, 87

NEW WHEEL SEAL LEFT HAND CLAYTONS
TOP UP A FREEZE NOV 87

NEW FUEL FILTER FEB 88

NEW FRONT TYRES 4473 HRS

WHEEL BEARING

NEW FUEL SENDER

WASHER BOTTLE MAR 88

E, OIL + FILTER 44670 HRS JULY 88

NEW FUEL FILTER 5066 HRS FEB 89
CLEANED LIFT PUMP OUT

NEW BATTERY
RIGHT HAND WHEEL SEAL 136 JULY 89 5235 HRS
E OIL + FILTER
NEW AIR FILTER

ALPHABETICAL INDEX

ALPHABETICAL INDEX

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NEW FUEL FILTER SEPT 89

FLUSH + AF NOV 89 5539 HRS

E OIL + FILTER

5672

P STEERING OIL + FILTER

NEW FRONT WHEEL BEARINGS
CLEANED LIFT PUMP

FEB 90

NEW WHEEL SEAL
TOP UP AF

OCT 90

NEW BATTERY

ENGINE OIL + FILTER

6130 HRS

NEW HYDRAULIC OIL + CLEAN FILTER FEB 91

NEW FUEL FILTER + CLEAN PUMP

(NEW) FAN BELT
(CAPTOR) BATTERY

ENGINE OIL + FILTER 5240 92 6533 HRS

FUEL LIFT PUMP 0.5 THRAM FEB 92

CLAYTONS INJECTION PUMP 3000
ENGINE OIL

MAR 92
6500 HRS

ENGINE OIL + FILTER

FUEL FILTER + CLEAN PUMP

6724
SEPT 92

ENGINE OIL + FILTER

APR 93

FUEL FILTER + CLEAN PUMP 137

2089

NEW FUEL BATTERY JULY 92 PUT ON

NEW LUCAS BATTERY APR 94 7526 HRS

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SPANNER SIZES REQUIRED FOR MAINTENANCE AND ADJUSTMENT MF565 TRACTOR

Description	Page Ref.	Fig. No. Illus. Ref.	Spanner Size	Spanner Type	Recommended Torque
Transmission Oil Filler Plug	42	18 item 3	1 1/2" AF	Ring or Socket	
Lift Rod Bolts	68	10a and 10b	1 1/2" AF	Ring or Open End	
Lift Rod Nuts/Lock Nuts	68	10a and 10b	1 1/2" AF	Open End Torque Wrench	135 Nm (100 lbf ft)
Drawbar Clevis Bolts	71		1 1/2" AF	Socket	
Engine Oil Drain Plug	77	7	1 1/2" AF	Ring or Socket	
Fuel Filter Centre Bolt	78	9 item 2	1 1/2" AF	Open End	
Bleeding the Fuel System					
Outlet Union	78	9 item 1	3/4" AF	Open End	
Lower Vent Plug	78	10 item 1	1 1/2" AF	Open End	
Upper Vent Plug	78	10 item 2	1 1/2" AF	Open End	
Injector Unions	78	10 item 3	1 1/2" AF	Open End	
Thermostat Feed Pipe	78		1 1/2" AF	Open End	
Alternator Fan Bolt					
Upper Nut and Bolt	87	16	3/4" AF	Ring and Open End	
Lower Nut and Bolt	87	16	1 1/2" AF	Ring and Open End	
Power Steering Oil Level Plug	87	17 item 8	3/8" AF	Ring	
Plessey Pump					
Dome Nut	87	17 item 1	7/8" AF	Open End	
Element Retaining Nut	87	17 item 3	7/8" AF	Open End	
Air-Equipment Pump					
Dome Nut	88	18 item 1	1 1/2" AF	Open End	
Element Retaining Nut	88	18 item 4	1 1/2" AF	Open End	
Front Hub Adjustment					
Normal Duty Axle					
Hub Cap	88	19 item 2	1" AF	Open End Torque Wrench	80 Nm (60 lbf ft)
Castellated Nut	88		1 1/2" AF	Socket	
Heavy Duty Axle					
Hub Cap	88	19 item 2	1 1/2" AF	Open End Torque Wrench	80 Nm (60 lbf ft)
Castellated Nut	88		1 1/2" AF	Socket	
Transmission and Hydraulics					
Drain Plugs	91	20	1 1/2" AF	Ring	
Pump Oil Strainer Bolts	91	21 item 8	3/4" AF	Ring	
Oil Filter Element Nut	91	21 item 6	3/4" AF	Open End	
Oil Filter Bowl	91	22 item 1	1 1/2" AF	Open End	
Epicyclic Hubs					
Oil Level Plug	92	23 item 1	3/4" AF	Open End	
Oil Drain Plug	92	23 item 2	3/4" AF	Open End	
Clutch Adjustment Locknut	92	24	1 1/2" AF	Open End	
Brake Adjustment Lock Nut	95	25 item 2	1 1/2" AF	Ring or Open End	
Adjusting Nut	95	25 item 1	1 1/2" AF	Open End	
Differential Lock Adjustment Locknut	95	26 item 1	7/8" AF	Open End	
Wheels					
Front Wheel Bolts (Normal Duty Axle)	96		3/4" AF	Torque Wrench Socket	80 Nm (60 lbf ft)

This page is issued to assist you when carrying out periodic maintenance and adjustments to your tractor and should be combed into the Maintenance and Adjustment section of your Operator Instruction Book.

SPANNER SIZES REQUIRED FOR MAINTENANCE AND ADJUSTMENT **MF 565 TRACTOR—continued**

Description	Page Ref.	Fig. No. Illus. Ref.	Spanner Size	Spanner Type	Recommended Torque
Wheels (continued)					
Front Wheel Nuts (Heavy Duty Axle)	96		1 1/8" AF	Torque Wrench Socket	80 Nm (60 lbf ft)
Rear Wheel Nuts Pressed Steel	96		1 1/8" AF	Torque Wrench Socket	270 Nm (200 lbf ft)
Double Disc	96		1 1/8" AF	Torque Wrench Socket	270 Nm (200 lbf ft)
Front Track Adjustment Normal Duty Axle					
Securing Bolts	98	28 item 1	1 1/8" AF	Torque Wrench Socket	240 Nm (180 lbf ft)
Securing Nuts	98	28 item 2	1 1/8" AF	Torque Wrench Socket	240 Nm (180 lbf ft)
Peg Bolt	98	28 item 3	3/8" AF	Ring or Open End	
Lock Nut Heavy Duty Axle	98	28 item 4	3/8" AF	Ring or Open End	
Securing Nuts	98	30 item 1	1 1/8" AF	Torque Wrench Socket	240 Nm (180 lbf ft)
Securing Bolts	98	30 item 2	1 1/8" AF	Torque Wrench Socket	240 Nm (180 lbf ft)
Lock Nut	101	30 item 3	3/8" AF	Open End	
Peg Bolt	101	30 item 4	3/8" AF	Open End	
Front Track Adjustment Pressed Steel Wheels Rim to Disc Nuts	101		1 1/8" AF	Torque Wrench Socket	135 Nm (100 lbf ft)
Double Disc Wheels Rim to Disc Nuts	102		1 1/8" AF	Torque Wrench Socket	135 Nm (100 lbf ft)
Disc to Disc Nuts	102		1 1/8" AF	Torque Wrench Socket	135 Nm (100 lbf ft)
Battery Terminal Nuts	102		3/8" BS, 1/2" Whitworth	Open End	
Headlight Panel Nuts	102	36 item 1	7/8" AF	Open End	
Instrument Cowl Bolts	106	43	3/8" AF	Open End	
Starter Motor Solenoid Nut	110		1/2" AF	Open End	
Front Mounted Weight Frame Bolts	118		1 1/8" AF	Torque Wrench Socket	135 Nm (100 lbf ft)
Attaching the Weights Securing Nuts and Bolts Drawbar and Stay Bolts	118		1 1/8" AF	Ring or Socket	
	126		3/8" AF	Ring or Socket	
Belt Pulley					
* Check Chain Bracket Nuts	126		3/8" AF	Socket	
Adaptor Studs	126		1/2" AF	Open End	
P.T.O. Guard Securing Bolt	126	10 item 2	1/2" AF	Open End	
Pressure Control					
* Coupler Bolts	129		1 1/8" AF	Open End	
Auto Mith Control Lever Nut	134		1 1/8" AF	Open End	
Front Grille Retaining Latch Adjustment Bolts	115	1 items 1 and 2	7/8" AF	Open End	

APPROVED LUBRICANTS—ALL TERRITORIES

UNIT	Capacity		Temperature		BP	CASTROL	ESSO	GULF
	litre	imp. pt.	°C.	°F.				
ENGINE	7-1	12.5	Below -1	Below 30	BP Vanellus M 10W; BP Vanellus C3 10W	Deasel CRB 10W; Deasel CRH 10W	Esso/Elube HDX 10W; Esso/Elube HDX/Plus 10W	Gulflube Motor Oil XHD 10W
			-1 to 27	30 to 80	BP Super Tractor Oil Universal; BP Vanellus M20W; BP Tractor Oil Universal	Agricastrol MP; Agricastrol Multigrade; Castrol Deasel CRB 20W	Tractor/Elube Universal; Esso/Elube HDX 20W; Esso/Elube HDX Plus 20W; Esso Uniform	Multi-Purpose Tractor Fluid 20W 30; Gulflube Motor Oil XHD 20W/28; Gulflube Motor Oil XHD 20W 30
			Above 27	Above 80	BP Super Tractor Oil Universal; BP Vanellus M30; BP Vanellus C3 30	Agricastrol MP; Agricastrol Multigrade; Castrol Deasel CRB 30	Esso/Elube HDX/Plus 20W 50; Esso/Elube HDX 30; Esso Uniform	Multi-Purpose Tractor Fluid 20W 30; Gulflube Motor Oil XHD 30
TRANSMISSION Eight Speed	40	70	Below -1	Below 30	BP Super Tractor Oil Universal; BP Tractran 8*	Agricastrol MP; Agricastrol MD*	Torque Fluid 62; Torque Fluid 56; Esso Uniform	Multi-Purpose Tractor Fluid 20W 30; Universal Tractor Fluid*
Multi-Power	39	69	Above -1	Above 30	BP Super Tractor Oil Universal	Agricastrol MP; Agricastrol AS Special	Torque Fluid 62; Esso Uniform	Multi-Purpose Tractor Fluid 20W 30
EPICYCLIC HUBS	1-7	3	All Temperatures		BP Farm Gear Oil Universal	Agricastrol Gear EP 90/140	Gear Oil GP 85W 140	90/140 Gear Oil
POWER STEERING	1-1	2	All Temperatures		BP Autran DX; BP Tractor Transmission Fluid	Agricastrol T.F.A.; Deasel T.F.A.; Deasel T.F.A. Deaton	Automatic Transmission Fluid	Automatic Transmission Fluid T.A.S.A.; Automatic Transmission Fluid Deaton
BRAKE FLUID			All Temperatures			Castrol Girding Brake & Clutch Fluid	Esso Brake Fluid	Gulf Super Heavy Duty Brake & Clutch Fluid H.S.P.
GREASE			All Temperatures		BP Enegrease Universal	Agricastrol Multigrade Grease	Multipurpose Grease H	Crown Grease No. 2
					MOBIL	SHELL	TEXACO	TOTAL
ENGINE	7-1	12.5	Below -1	Below 30	Mobiland Universal 10W 30; Delvac 1210	Rotella SX 10W; Rotella TX 10W	Ursa Oil Extra Duty SAE 10W; Urtatex SAE 10W	HD1-B 10W; Multigr 10W 30; Rubia H 10W
			-1 to 27	30 to 80	Mobiland Universal 20W 30; Delvac 1220; Mobiland Super Universal	Universal Farm Oil; Shell Agrona Tractor Oil Universal; Rotella SX 20W 20; Rotella TX 20W 20	Universal Tractor Oil; Ursa Oil Extra Duty 20W 40; Urtatex SAE 20-20W	Super Universal Tractor Oil; Multigr 20W 40; HD1-B 20W 20
			Above 27	Above 80	Mobiland Universal 20W 40; Delvac 1230; Mobiland Super Universal	Universal Farm Oil; Shell Agrona Tractor Oil Universal; Rotella SX 30; Rotella TX 30	Universal Tractor Oil; Ursa Oil Extra Duty 30; Urtatex SAE 20W 40	Super Universal Tractor Oil; Multigr 30; HD1-B 30
TRANSMISSION			Below -1	Below 30	Mobiland Super Universal; Mobilfluid 423*	Universal Farm Oil; Shell Agrona; Donax TT; Donax 10*	AS Transmission Oil; Universal Tractor Oil	Super Universal Tractor Fluid; Multigr 10W 30; Equivis MF*
Eight Speed	40	70						
Multi-Power	39	69	Above -1	Above 30	Mobil Super Universal	Universal Farm Oil; Shell Agrona; Donax TT	AS Transmission Oil; Universal Tractor Oil	Super Universal Tractor Fluid; Multigr 10W 30; Equivis MF*
EPICYCLIC HUBS	1-7	3	All Temperatures		Mobilube CX 90; Mobilube HD 90	Farm Gear Oil Universal	Multigrade Lubricant EP 90	EP 90/140
POWER STEERING	1-1	2	All Temperatures		ATF 200; ATF 220	Donax TM; Dexron II	Texanatic Fluid 9226	Dexron
BRAKE FLUID			All Temperatures		Hydraulic Brake Fluid 550	Donax B	Texaco Brake Fluid	Total Brake Fluid
GREASE			All Temperatures		Mobilplex 48	Farm Grease Universal; Alvania Grease R2	Marlex All Purpose Grease	Grease Multigrade

*For unusually cold climates.