



## Company Profile

Elixir Enterprises is providing top quality services, international quality standards and timely delivery of products at best economical prices for Massey Ferguson and New Holland Tractors, Agricultural Implements and Spare Parts to build long term business relations. We are one of the top authorized suppliers, distributors, manufacturer and exporters of famous brands of Tractors, Agricultural Implements and Spare Parts which are assembled in Pakistan and are made as per the international specifications and quality of the parent manufacturers. We are committed to avail every opportunity by preserving our business values. Elixir Enterprises is also a regular tax payer and active member of Lahore Chamber of Commerce & Industry.



**Waqar Ashraf: CEO**

Elixir Enterprises was established with the core purpose to supply farming machinery to international markets after serving in the local market for the last 30 years. Our family is running local authorized dealership companies and manufacturing implements to cover whole Pakistani market and Elixir Enterprises is dealing in export. We take pride in being part of an era in which farming mechanism evolved in Pakistan to export high quality agricultural farming equipments and constantly striving to improve our products and services.



**Bilal Ashraf: Director (Pakistan)**

We believe that effective individuals make a difference and effective teams make a business. Of all the things that we have built the most admired is our teamwork. We work to ensure that all supply chain associates, dealers, suppliers and employees share in the company's growth and prosperity.



# Massey Ferguson 240

## MASSEY FERGUSON

- > Most Economical in 50HP Range.
- > Rugged, Maneuverable and Compact.
- > Easy Accessibility to Service Points.
- > Ideal, Versatile, All-round Tractor.
- > Spring Suspension Deluxe Seat.
- > Availability of Parts & Service Facilities at your Doorstep.



## MF-240 50HP

### PERFORMANCE

Maximum Engine Power at 2,250 rpm	50 (B.S) hp*
Maximum Torque at 1,400 rpm	172Nm
Maximum PTO Power at Rated Engine Speed	44hp**

\* Certified at BS AU 141a 1971  
\*\* Manufacturer's estimate

### ENGINE

Type	Diesel AD 3.1524
No. of Cylinders	3
Injection	Direct
Bore	91.4mm
Stroke	127.0mm
Capacity (litres)	2.5l
Compression Ratio	16.5 : 1
Aspiration	Natural
Starting Aid	Thermostat
Throttle Control	Hand and Foot
Cooling	Water
Air Cleaner Type	Oil bath
Air Pre-Cleaner	Over Bonnet, Air Swirl
Fuel Filter	Dual, High Capacity
Exhaust	Vertical Muffler Under Bonnet

### ELECTRICS

Voltage	12V, Negative Earth
Battery	110 Ah
Starter	2.2 kW
Alternator	32 Amp

### CLUTCH

Type	Dual Clutch
Diameter	305 x 254 mm

### TRANSMISSION

Type	Sliding Spur
Number of Gears	8 forward, 2 reverse
Road Speed at 2,250 Engine RPM with 12.4/11-28 Tyres	
Gear	Speed (km/hr)
Forward 1 (First Low)	2.7
Forward 2	3.9
Forward 3	5.3
Forward 4	7.2
Forward 5 (First High)	10.6
Forward 6	15.4
Forward 7	21.3
Forward 8	28.6
Reverse 1 (Low)	3.6
Reverse 2 (High)	14.5

### POWER TAKE OFF

Type	Live
Engine speed at 540 PTO RPM	1,789 rpm
Shaft Diameter	35 mm
No. of Splines	6

### HYDRAULICS

Functions	Draft Control, Position Control, Response Control, Constant Pumping
Pump Type	Reciprocating Ferguson Pump
Maximum Oil Flow	16 l/min
Maximum Pressure	19.2 MPa
Max. Lift Capacity with Lower Links	1,415 kg
Horizontal Lower Links	With Cat, I & II interchangeable balls

### FRONT AXLE

Type	Box Section, Adjustable
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### STEERING

Steering	Manual
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### REAR AXLE & BRAKES

Brake Type	Out board drum brakes
Actuation	Mechanical, Independant or locked together
Parking Brake	together
Differential Lock	Hand Lever Operated Mechanical

### INSTRUMENTATION

Gauges	Technometer, Hour meter, Fuel Level, Battery Condition & Water Temperature
Warning Lights	Direction Indicators, Battery Charge, Headlight Main Beam, Low Engine Oil Pressure & Brake Lights

### TYRES

Front	6.00 - 16 (6PR)
Rear	12.4 / 11 - 28 (6PR)

### TRACK ADJUSTMENT

Front	1,245 - 1,854 mm
Rear	1,321 - 1,930 mm

### WEIGHT & DIMENSIONS

<b>Weight</b>	
Max. weight front axle	633 kg
Max. weight rear axle	1,017 kg
Gross Weight	1,650 kg

### Dimensions

Wheel Base	1,892 mm
Overall Length	3,260 mm
Overall Width (Min)	1,651 mm

### Height

Over Exhaust	2,145 mm
Over Steering Wheel	1,410 mm

### Turning Circle

With Brakes	5,560 mm
Without Brakes	6,200 mm

### Ground Clearance

Under Gear Box	338 mm
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### CAPACITIES

Fuel Tank	47.5l
Engine Pump	6.8l
Cooling System	10.2l
Hydraulic System	33.0l
Steering Box	0.9l
Oil Bath Air-Cleaner	0.65l

### STANDARD EQUIPMENT

Weight frame without weights, standard tool box with set of tools, Top Link, Top Link End Cat-I, Cat I & II balls, Check Chains, Spring Suspension Seat, Flat Top Fender & Operator's

### OPTIONAL EQUIPMENT

Front End Weights, Sun Canopy, Swinging Draw Bar



# Massey Ferguson 260

## MASSEY FERGUSON

## MF-260 60HP

- High Performance, Fuel Efficient, Diesel Turbo charged Engine.
- Less Smoke Emission due to Better Fuel Burning.
- Oil Cooler added for Effective Cooling of Tube Wells, Rotavators, Threshers etc.
- Robust Straddle Rear Axle.
- Efficient Oil Immersed Disc Brakes.
- Spring Suspension Deluxe Seat.



### PERFORMANCE

Maximum Engine Power at 2,250 rpm	60 (B.S.) hp*
Maximum Torque at 1,600 rpm	212 Nm
Maximum PTO Power at Rated	48 hp**
Engine Speed	127.0mm
* Certified at BS AU 141a 1971	
** Manufacturer's estimate	

### ENGINE

Type	Diesel T 3.1524
No. of Cylinders	3
Injection	Direct
Bore	91.4mm
Stroke	127.0mm
Capacity	2.5l
Compression Ratio	15.5 : 1
Aspiration	Turbo
Starting Aid	Thermostat
Throttle Control	Hand and Foot
Cooling	Water
Air Cleaner Type	Oil bath
Air Pre-Cleaner	Over Bonnet, Air Swirl
Fuel Filter	Dual, High Capacity
Exhaust	Vertical
Oil Cooler	Air Cooled, Fin Type

### ELECTRICS

Voltage	12V, Negative Earth
Battery	110 Ah
Starter	2.2 kW
Alternator	32 Amp

### CLUTCH

Type	Dual Clutch
Diameter	305 x 254 mm

### TRANSMISSION

Type	Sliding Spur
Number of Gears	8 forward, 2 reverse
Road Speed at 2250 Engine rpm with 14.9/13-28 rear Tyres	
<b>Gear</b>	<b>Speed (kph)</b>
Forward 1 (First Low)	2.7
Forward 2	3.9
Forward 3	5.3
Forward 4	7.2
Forward 5 (First High)	10.7
Forward 6	15.6
Forward 7	21.3
Forward 8	28.7
Reverse 1 (Low)	3.6
Reverse 2 (High)	14.5

### POWER TAKE OFF

Type	Live
Engine speed at 240 PTO rpm	1,789 rpm
Shaft Diameter	35 mm
No. of Splines	6

### HYDRAULICS

Functions	Draft Control, Position Control, Response Control, Constant Pumping
Pump Type	Reciprocating Ferguson Pump
Maximum Oil Flow	16 l/min
Maximum Pressure	21 MPa at normal operating temperature
Max. Lift Capacity with Lower Links	2,145 kg
Horizontal Lower Links	With Cat, I & II interchangeable balls

### FRONT AXLE

Type	Box Section, Adjustable
Steering	Manual

### REAR AXLE AND BRAKES

Axle Type	Straddle with epicyclic reduction
Brake Type	Oil immersed, multi-disc
Brake Actuation	Mechanical
Parking Brake	Hand Lever Operated

### INSTRUMENTATION

Gauges	Technometer, Hour meter, Fuel Level, Battery Condition & Water Temperature
Warning Lights	Direction Indicators, Electric Charge, Head Light Main Beam, Low Engine Oil Pressure & Brake Lights

### TYRES

Front	7.50 - 16 (6PR)
Rear	14.9 / 13 - 28 (6PR)

### TRACK ADJUSTMENT

Front	1,245 - 1,854 mm
Rear	1,423 - 2,134 mm

### WEIGHT & DIMENSIONS

<b>Weight</b>	
Maximum weight front axle	729 kg
Maximum weight rear axle	1,171 kg
Gross Weight (Approx) with full fuel, oil & water	1,900 kg

### Dimensions

Wheel Base	1,892 mm
Overall Length	3,260 mm
Overall Width (Min)	1,890 mm

### Height

Over Exhaust	2,220 mm
Over Steering Wheel	1,490 mm

### Turning Circle

With Brakes	5,840 mm
Without Brakes	6,580 mm

### Ground Clearance

Under Gear Box	400 mm
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### CAPACITIES

Fuel Tank	47.5l
Engine Pump	6.8l
Cooling System	10.2l
Hydraulic System	36.0l
Steering Box	0.9l
Oil Bath Air-Cleaner	0.5l

### STANDARD EQUIPMENT

Weight frame without weights, standard tool box with set of tools, Top Link, Top Link End Cat-I, Cat I & II balls, Check Chains, Operator's Manual

### OPTIONAL EQUIPMENT

Front End Weights, Sun Canopy, Swinging Draw bar



# Massey Ferguson 375

## MASSEY FERGUSON

- › Hydrostatic Power Steering for Comfortable Driving.
- › Hydraulically Actuated, Oil-Immersed Multi-Disc brake System with Pendant Paddle.
- › Robust Straddle Rear Axle with Epicyclic Reduction Unit.
- › Heavy Duty Front Axle & Support.
- › Fuel Efficient, High Performance Engine 4.248
- › Greater Pulling Power.
- › Greater PTO Power.
- › Spring Suspension Deluxe Seat.
- › Easy Accessibility to Service Points.
- › Spacious Operator's Area.



**MF-375**  
75HP

### PERFORMANCE

Engine Power at 2,000 rpm	75 (B.S.) HP*
Torque at 1,400 rpm	290 Nm
PTO Power at Rated engine speed	69.5 hp*
PTO Power at 540 rpm	63.0 hp
* Certified at BS AU 141a 1971	
** Manufacturer's estimate	

### ENGINE

Type	Diesel / 4.248
No. of Cylinders	4
Injection	Direct
Bore	101 mm
Stroke	127 mm
Capacity (litres)	4.07 l
Aspiration	Natural
Compression Ratio	16 : 1
Starting Aid	Thermostat
Throttle Control	Hand and Foot
Cooling	Water
Air Cleaner Type	Oil bath
Air Pre-Cleaner	Over Bonnet air swirl
Fuel Filter	Dual, High Capacity
Exhaust	Vertical Muffler Under Bonnet

Note: This is a premium heavy duty engine with tufted crankshaft for longer life in adverse conditions.

### ELECTRICS

Voltage	12V, Negative Earth
Battery	110 Ah
Starter Motor	2.8 kW
Alternator	45 Amp

### CLUTCH

Type	Dual Clutch
Diameter	305 x 254 mm
Lining Material	Cerametallic

### TRANSMISSION

Type	Sliding Spur
Number of Gears	8 forward, 2 reverse

Road Speed at 2,000 Engine rpm with 16.9/14x30 Rear Tyres

Gear	Speed (km/hr)
Forward 1 (First Low)	2.3
Forward 2	3.4
Forward 3	4.7
Forward 4	6.3
Forward 5 (First High)	9.3
Forward 6	13.6
Forward 7	18.6
Forward 8	25.0
Reverse 1 (Low)	3.1
Reverse 2 (High)	12.6

### POWER TAKE OFF

Type	Live
Engine speed at 240 PTO rpm	1,789 rpm
Shaft Diameter	35 mm
No. of Splines	6

### HYDRAULICS

Functions	Draft Control, Position Control, Response Control, Constant Pumping
Pump Type	Reciprocating Ferguson Pump
Maximum Oil Flow	16.7 l/min
Maximum Pressure	21.2 MPa at normal operating temperature
Max. Lift Capacity with Lower Links Horizontal	2,145 kg With Cat. I & II interchangeable balls

### FRONT AXLE

Type	Heavy Duty Box Section, Adjustable
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### STEERING

Type	Hydrostatic
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### REAR AXLE AND BRAKES

Axle Type	Straddle with epicyclic reduction unit
Brake Type	Oil immersed, multi-disc
Brake Pedal	Pendant
Braking Area	1,774 sq.cm
Brake Actuation	Hydraulic
Parking Brake	Hand lever operated

### INSTRUMENTATION

Gauges	Technometer, Hour meter, Fuel Level, Battery Condition & Water Temperature
Warning Lights	Direction Indicators, Electric Charge, Headlight Main Beam, Low Engine Oil Pressure, Brake Lights & Auxiliary Socket

### TYRES

Front	7.50 - 16 (6PR)
Rear	16.9 / 14 - 30 (6PR)

### TRACK ADJUSTMENT

Front Axle	1,271 - 1,881 mm
Rear Axle	1,423 - 2,134 mm

### WEIGHT & DIMENSIONS

<b>Weight</b>	
Maximum weight front axle	942 kg
Maximum weight rear axle	1,413 kg
Gross Weight	2,355 kg
<b>Dimensions</b>	
Wheel Base	2,170 mm
Overall Length	3,670 mm
Overall Width (Min)	1,970 mm

### Height

Over Exhaust	2,485 mm
Over Steering Wheel	1,730 mm

### Turning Circle

With Brakes	7,260 mm
Without Brakes	8,095 mm

### Ground Clearance

Under Gear Box	465 mm
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### CAPACITIES

Fuel Tank	108.0l
Engine Pump	7.5l
Cooling System	15.2l
Hydraulic System	36.0l
Hydrostatic Steering Reservoir	2.0l
Oil Bath Air-Cleaner	0.7l
Brake Oil	0.25l

### STANDARD EQUIPMENT

Weight frame without weights, standard tool box with set of tools, Top Link, Top Link End Cat-I, Cat I & II balls, Check Chains, Spring Suspension Seat & Operator's Manual.

### OPTIONAL EQUIPMENT

Front End Weight, Swinging Draw bar, Sun Canopy, Pintle Hook.



# Massey Ferguson 385

## MASSEY FERGUSON

## MF-385 85HP - 2WD

- High Performance 4.41 Diesel Low Noise Engine.
- Reduces Gaseous Emission Under ECE R49.
- Reduced Smoke Level.
- Oil Cooler added for Effective Cooling.
- Hydrostatic Power Steering.
- Efficient Oil Immersed Disc Brake System.
- Spring Suspension Deluxe Seat.
- Easy Accessibility to Service Points.



### PERFORMANCE

Engine Power at 2,200 rpm	85(B.S.) hp*
Torque at 1,400 RPM	291 Nm
PTO Power at Rated	70 hp**
Engine Speed	

\* Certified at BS AU 141a : (1971)

\*\* Manufacturer's estimate

### ENGINE

Type / Make	Diesel / 4.41
No. of Cylinders	4
Injection	Direct
Bore	101 mm
Stroke	127 mm
Capacity (litres)	4.1 l
Compression Ratio	15.3 : 1
Aspiration	Natural
Starting Aid	Thermostat
Throttle Control	Hand and Foot
Cooling	Water
Air Cleaner Type	Oil bath
Air Pre-Cleaner	Over Bonnet, air swirl
Fuel Filter	Dual, High Capacity
Exhaust	Vertical Muffler
Oil Cooler	Water Cooled

### ELECTRICS

Voltage	12V, Negative Earth
Battery	110 Ah
Starter	2.8 kW
Alternator	45 Amp

### CLUTCH

Type	Dual Clutch
Diameter	305 x 254 mm
Lining Material	Cerametallic

### TRANSMISSION

Type	Sliding Spur
Number of Gears	8 forward, 2 reverse

Road Speed at 2,200 Engine rpm with 18.4/15-30 Rear Tyres

Gear	Speed (kph)
Forward 1 (First Low)	2.7
Forward 2	3.7
Forward 3	5.1
Forward 4	6.8
Forward 5 (First High)	10.4
Forward 6	15.2
Forward 7	20.8
Forward 8	27.9
Reverse 1 (Low)	3.5
Reverse 2 (High)	14.1

### POWER TAKE OFF

Type	Live
Engine speed at 540 PTO rpm	1,789 rpm
Shaft Diameter	35 mm
No. of Splines	6

### HYDRAULICS

Functions	Draft Control, Position Control, Response Control, Constant Pumping
Pump Type	4 Piston Ferguson Pump
Maximum Oil Flow	16.7 l/min
Maximum Pressure	21.2 MPa at normal operating temperature
Max. Lift Capacity with Lower Links	2,145 kg
Horizontal Lower Links	With Cat, I & II interchangeable balls

### FRONT AXLE

Type	Heavy Duty Box Section, Adjustable
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### STEERING

Type	Hydrostatic
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### REAR AXLE AND BRAKES

Axle Type	Straddle with epicyclic reduction unit
Brake Type	Oil immersed, multi-disc
Brake Pedal	Pendant
Breaking Area	1,774 Sq.Cm
Brake Actuation	Hydraulic
Parking Brake	Hand Lever Operated

### INSTRUMENTATION

Gauges	Technometer, Hourmeter, Fuel Level, Battery Condition & Water Temperature
Warning Lights	Direction Indicators, Electric Charge, Headlight Main Beam, Low Engine Oil Pressure & Brake Lights & Auxiliary Socket

### TYRES

Front	7.50 - 16 (6PR)
Rear	18.4 / 15 - 30 (6PR)

### TRACK ADJUSTMENT

Front Axle	1,271 - 1,881 mm
Rear Axle	1,423 - 2,134 mm

### WEIGHT & DIMENSIONS

<b>Weight</b>	
Maximum weight front axle	1,069 kg
Maximum weight rear axle	1,366 kg
Gross Weight	2,435 kg

### Dimensions

Wheel Base	2,286 mm
Overall Length	3,760 mm
Overall Width (Min)	1,871 mm

### Height

Over Exhaust	2,485 mm
Over Steering Wheel	1,781 mm

### Turning Circle

Without Brakes	7,502 mm
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### Ground Clearance

Under Gear Box	501 mm
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### CAPACITIES

Fuel Tank	108.0l
Engine Pump	7.5l
Cooling System	15.2l
Hydraulic System	36.0l
Hydrostatic Steering Reservoir	2.0l
Oil Bath Air-Cleaner	0.7l
Brake Oil	0.25l

### STANDARD EQUIPMENT

Weight frame without weights, standard tool box with set of tools, Top Link, Top Link End Cat-I, Cat I & II balls, Check Chains, Spring Suspension Seat, Flat Top Fender & Operator's Manual.

### OPTIONAL EQUIPMENT

Front End Weight, Swinging Drawbar, Sun Canopy, Pintle Hook.



# Massey Ferguson 385 (4WD)

## MASSEY FERGUSON

## MF-385 85HP - 4WD

- > Traction 30% more than 2WD
- > Drawbar Power 16% more
- > Drawbar Pull 34% more
- > Tyre Wear 15% less
- > Fuel Efficiency 15% more
- > Field Work Speed 13-20% more



### PERFORMANCE

Maximum Engine Power at 2,200 rpm	85(B.S.)hp*
Maximum Torque at 1,600 rpm	291 Nm
Maximum PTO Power at 2,200 engine <sup>70</sup> hp**	speed
* Certified at BS AU 141a : (1971)	
** Manufacturer's estimate	

### ENGINE

Type / Make	Diesel / 4.41
No. of Cylinders	4
Injection	Direct
Bore	101 mm
Stroke	127 mm
Capacity	4.1 l
Compression Ratio	15.3 : 1
Aspiration	Natural
Starting Aid	Thermostat
Throttle Control	Hand and Foot
Cooling	Water
Air Cleaner Type	Oil bath
Air Pre-Cleaner	Over Bonnet
Fuel Filter	Dual, High Capacity with Sedimentor
Exhaust	Vertical Muffler
Oil Cooler	Water Cooled

### ELECTRICS

Voltage	12V, Negative Earth
Battery	110 Ah
Starter / Alternator	45 Amp / 2.8 kW

### CLUTCH

Type	Dual
Diameter	305 x 254 mm
Lining Material	Cerametallic

### TRANSMISSION

Type	Sliding Spur
Number of Gears	8 forward, 2 reverse
Road Speed at 2,250 Engine rpm with 12.4 / 11 - 28 Rear Tyres	
<b>Gear</b>	<b>Speed (kph)</b>
Forward 1 (First Low)	2.7
Forward 2	3.7
Forward 3	5.1
Forward 4	6.8
Forward 5 (First High)	10.4
Forward 6	15.2
Forward 7	20.8
Forward 8	27.9
Reverse 1 (Low)	3.5
Reverse 2 (High)	14.1

### POWER TAKE OFF

Type	Live
Engine speed at 240 PTO rpm	1,789 rpm
Shaft Diameter	35 mm
No. of Splines	6

### HYDRAULICS

Functions	Draft Control, Position Control, Response Control, Constant Pumping
Pump Type	4 Piston Ferguson Pump
Maximum Oil Flow	16.7 l /min
Maximum Pressure	21 MPa (205 bars) at normal operating temperature
Max. Lift Capacity with Lower Links Horizontal	2,145 kg
Lower Links	With Cat. I & II interchangeable balls

### 4WD FRONT AXLE

Type	Parallel drive
Engagement	Mechanical

### STEERING

Type	Hydrostatic
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### REAR AXLE AND BRAKES

Axle Type	Straddle with epicyclic reduction
Brake Type	Oil immersed, multi-disc
Brake Pedal	Pendant
Breaking Area	1,774 Sq.Cm
Brake Actuation	Hydraulic
Parking Brake	Hand Lever Operated

### INSTRUMENTATION

Gauges	Technometer, Hourmeter, Fuel Level, Battery Condition & Water Temperature
Warning Lights	Direction Indicators, Electric Charge, Headlight Main Beam, Low Engine Oil Pressure, 4WD Indication Light & Auxiliary Socket

### TYRES

Front	12.4 / 11 - 24 (6PR)
Rear	18.4 / 15 - 30 (6PR)

### TRACK ADJUSTMENT

Front Axle	1,376 - 1,944 mm
Rear Axle	1,423 - 2,134 mm

### WEIGHT & DIMENSIONS

<b>Weight</b>	
Maximum weight front axle	1,211 kg
Maximum weight rear axle	1,549 kg
Gross Weight	2,760 kg

### Dimensions

Wheel Base	2,350 mm
Overall Length	3,810 mm
Overall Width (Min)	1,817 mm

### Height

Over Exhaust	2,485 mm
Over Steering Wheel	1,781 mm

### Turning Circle

Without Brakes	8,518 mm
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### Ground Clearance

Under Gear Box	501 mm
Under 4WD Front Axle	395 mm

### CAPACITIES

Fuel Tank	108.0l
Engine Pump	7.5l
Cooling System	15.2l
Power Steering Reservoir	2.0l
Hydraulic System	42l
Oil Bath Air-Cleaner	0.7l
Brake Oil	0.25l
4WD Front Axle Differential	5.6l
Hub Each Side	1.0l

### STANDARD EQUIPMENT

Weight frame without weights, standard tool box with set of tools, Top Link, Top Link End Cat-I, Cat I & II balls, Check Chains, Spring Suspension Seat, Flat Top Fender & Operator's Manual.

### OPTIONAL EQUIPMENT

Front End Weight, Swinging Drawbar, Sun Canopy, Pintel Hook.

### OPERATOR AREA

Seat	Cushioned
Fenders	Flat Top
Tool Box	Standard



# NH 55-56 in 55 HP (2 WD)



Engine Power	55HP
Operating Weight	2070 Kg.
No. of Cylinders	3
Bore Stroke	100 X 115 mm
Piston Displacement	2710 cc
Maximum Power	@ 2500rpm
Maximum Torque	@ 1500rpm
Pump	Distribution Injection type.
Battery	12 Volts 105 Ah.
Air Filter	Oil bath
Fuel Filter	02 replaceable cartridges
Fuel Tank Capacity	61 Liters
Transmission	Gear box with constant mesh gears:8 forward and 2 reverse speeds: Synchronmesh on 3rd,4th,7th,& 8th speeds.
Brakes	Service Disc type, oil bath, mechanical control, simultaneous or independent
Brakes (Parking)	Dependent, operating on service brakes, with hand control lever and flashing light.
Steering	Hydrostatic power steering with independent circuit
	Deluxe, with parallelogram suspension and hydraulic shock absorber,adjustable to driver's weight, reach and height.
Driver's seat	
Power Take Off	540rpm (1 3/8" -6 spline Shaft)@ 1970 engine rpm
Hyd. Pump	Gear type pump driven from engine.
Pump Capacity	34.5 L/min.
Maximum lifting capacity	2200 Kg.
Tyre (Front)	6.00-16
Tyre (Rear)	14.9/13-28
D.T.O.	Speed same as engine -Anti clockwise optional.



# NH 60-56 in 65 HP (2 WD)



Engine Power	60HP
Operating Weight	2070 Kg.
No. of Cylinders	3
Bore Stroke	104 X 115 mm
Piston Displacement	2931 cc
Maximum Power	@ 2500rpm
Maximum Torque	@ 1500rpm
Pump	Distribution Injection type.
Battery	12 Volts 105 Ah.
Air Filter	Oil bath
Fuel Filter	02 replaceable cartridges
Fuel Tank Capacity	61 Liters
Transmission	Gear box with constant mesh gears:8 forward and 2 reverse speeds: Synchronesh on 3rd,4th,7th,& 8th speeds.
Brakes	Service Disc type, oil bath, mechanical control, simultaneous or independent
Brakes (Parking)	Dependent, operating on service brakes, with hand control lever and flashing light.
Steering	Hydrostatic power steering with independent circuit
Driver's seat	Deluxe, with parallelogram suspension and hydraulic shock absorber,adjustable to driver's weight, reach and height.
Power Take Off	Fully independent 13/8" - 6 spline Shaft:540 rpm @ 1970 engine rpm
Hyd. Pump	Gear type pump driven from engine.
Pump Capacity	34.5 L/min.
Maximum lifting capacity	2200 Kg.
Tyre (Front)	6.00-16
Tyre (Rear)	14.9/13-28
D.T.O.	Speed same as engine -Anti clockwise optional





# NH 70-56 in 85 HP (4 WD)



## NH 70-56 4WD Specifications

### ENGINE POWER

At flywheel **85 HP**

### OPERATING WEIGHT

**2600 KG**

### ENGINE

Model New Holland Fiat 8045.05.  
 Type Vertical, Water Cooled, 4 cycle  
 Diesel Direct injection,  
 Naturally aspirated  
 Cylinder Arrangement 4 Cylinder in line  
 Bore & Stroke 104 x 115 mm  
 Piston Displacement 3906 cc  
 Compression Ratio 17:1  
 Max. torque at 1500 RPM 27 Kgm  
 Dry type Cylinder Liners  
 Cooling System Water Cooled Radiator  
 Lubrication System Force feed  
 Fuel Injection Distributor type injection pump  
 with mechanical speed governor

### FILTERS

**Air:** Oil-bath air cleaner with semi automatic type dust unloader pre cleaner  
**Fuel:** Two replaceable cartridges;  
**Oil Filter:** Easy to change, flow cartridge.  
**Exhaust Muffler:** Vertical

### CLUTCH

Type Dual  
 Diameter 305 mm x 254 mm  
 Lining Material Cerametallic

### TRANSMISSION

Gear box with constant-mesh gears Synchromesh on 3rd, 4th, 7th, and 8th speeds  
 Double control lever, Differential with mechanically operated lock, spur gear final drives

### TYRES

Front: 12.4/11-24  
 Rear 18.4/15-30

### 4 WD FRONT AXLE

Axle Type Parallel Drive  
 Engagement Mechanical

### DRIVER'S SEAT

Deluxe, with parallelogram suspension and hydraulic shock absorber, adjustable to driver's weight, reach and height

### POWER TAKE OFF

Type Live  
 Engine Speed at 540 PTO rpm 1750 rpm  
 Shaft Diameter 35 mm  
 No of Splines 6

### HYDRAULIC LIFT

Lift-o-matic, automatic, with draft, position and mixed control. Draft control through the top link. pump capacity 34.5 L/min. (Max.). Relief valve opening pressure 190 Kg/cm<sup>2</sup>. Automatic lifting and lowering device. Lowering speed adjustment & transport lock. Lifting capacity 2200 Kg

### ELECTRICAL SYSTEM

Electrical System  
 Voltage 12 V  
 Starting Motor 4 Hp (3KW)  
 Alternator 400 W  
 Battery 110/120Ah  
 Starter safety switch  
 High-low beam head lights  
 Parking, direction, stop lights  
 multiple gauge instrument panel, Rear flood light

### OPERATION

Parking Dependent, operating on service brakes, with hand control lever and flashing warning light

### STEERING

Hydrostatic power steering with independent circuit

### GENERAL FEATURES

Efficient and automatic hydraulic system with latest technology of lift-o-matic  
 Excellent fuel consumption  
 Heavy duty oil cooled disc brakes  
 Adjustable & comfortable driver seat  
 Hydrostatic power steering  
 Ease of engine hood for maximum access to engine service points  
 Advance & more visible instrument panel

### BRAKES

Brake Type Oil immersed,  
 Multi-disc  
 Brake Pedal Pendant  
 Brakes Actuation Hydraulic  
 Parking Brake Hand Lever Operated

### STANDARD EQUIPMENT

Weight frame without weights, standard tool box with set of tools, top link, top link end, Cat-I,II, Check Chains, Stabiliser Chains and operator manual.

### OPTIONAL EQUIPMENT

Front end weights, Swinging drawbar, Sun Canopy, Rear Counter weights, Pintle Hook and 9 Hole Drawbar.

### OPERATOR AREA

Seat Cushioned  
 Fenders Flat Top  
 Tool Standard

Al-Ghazi Tractors Ltd reserve the rights to change specifications without prior notice.



# Agri Implements

## Agricultural Implements

### Disc Plough 2, 3, 4, Discs

Disc Plough used for deep ploughing in root-infested, sticky, stony, and hard soils. Mixes remains of crops and weeds throughout the depth of ploughing, hence it is ideal for rain-fed areas for checking soil erosion by water and wind. Spring loaded floating rear furrow wheel control the side draft to ensure straight work and ease of handling by smaller tractor. Re-greasable Taper Roller Bearing in disc hubs. Disc angle adjustable to vary the penetration with varying soil conditions. Cat I and II linkage. Disc Scrapers are also adjustable to ensure that the Discs remain clean in all conditions.



**Specifications:**

1. Frame Type	Tubular Seamless Steel Pipe
2. Number of Furrow	2, 3, 4
3. Furrow Width	254 mm
4. Max. Working Depth	300 mm
5. Longitudinal Clearance	522 mm
6. Furrow Wheel Dia	508 mm
7. Plain Discs	660 mm-inside or outside bevel
8. Bearings	Tapper Roller
9. Weight	360 kg (3 Furrow)
10. Tractor	Above to 50 HP



### Offset Disc Harrow

**Mounted Cum Trailed** - The offset Disc Harrow has a heavier weight per Disc and thus have the penetration ability to break down large clods normally left after disc ploughing or Chisel Ploughing in hard grounds. It is of robust construction, used as mounted or trailed and ideal for chopping and mixing of stubbles and crop residues in the soils.

The Disc Harrow prepares the seed-bed leaving the soil in granular form which is the most suitable structure for plant growth. It aerates the soil, helps to conserve moisture for longer periods and eradicates weeds.

In sandy loam soils, this implement can also be used as primary tillage implement. The depth of ploughing is regulated simply by manipulating the offset angles of the gauges. By removing simply a pin, the mounted position can be converted into trailed position and vice versa.



**Specifications:**

1. Model	OTI-03	OTI-03	OTI-03
2. No. of Discs	14 Discs	16 Discs	18, 20, 22, 24
3. Disc Size	61cm (24")	61cm (24")	
4. Weight	590 kgs	685 kgs	
5. Working Width	145cm (57")	167.5 cm (66")	
6. Tractor Compatibility	50 hp	60-85 hp	



### Bed Shape Planter MULTI-PURPOSE

- It performs four functions at a time i-e marking beds, furrow, applying seeds and spreading fertilizer.
- It forms two beds and three furrows in single operation.
- It provides better weed control.
- It forms flat bed to address salt stress.
- It provides better water management and fertilizer use efficiency.
- It is provided with placer wheel for the placement of seed of proper depth.

**Machine**

Frame	50 x 50 x 6mm Ms Box and 6mm M.S plate
Mast	50 x 12 mm and 38 x 12 mm M.S Plate
Hitch	75 x 36 x 6 mm M.S box
Tine	50 x 20 mm M.S plate 760 mm long & shank ok 50 x 20 M.S flat.
Wings	330 x 330 mm of 4 mm M.S sheet, adjustable
Driven	
Length	1520 mm
Height	2240 mm
Width	2240 mm
Tyre Size	
Approx.Weight	470 kg

**ADVANTAGES**

- 50% save water
- 25% save fertilizer
- 25% increase in Yield
- 25% save Time





# Agri Implements

## Agricultural Implements

### Farm Trailer

Farm Trailer provides cost effective means of farm transportation. All steel body robust construction trailers provide a selection of sizes 3.5-12 tons.

1	Lift Capacity	5 ton	8 Ton
2	Tractor Compatibility	40-50 HP	Above 50 HP
3	Size	11'x6.5'x2.25'	11'x7'x2.25'
4	Bed Sheet Gauge	SWG 12	SWG 12
5	Side Sheet Gauge	SWG 12	SWG 12
6	Axle Size	4-1/2"x3/8"	4-1/2"x3/8"
7	Frame Channel Size	7"x3"	7"x3"
8	Tyre Size	9.00-16 or 8.25-20	8.25 x 20
9	No. of Tyres	2	4
10	Weight (without load)	1000 kg	1400 kg



### Hydraulic Tipping Trailer

Specifications:

Description	Spec. A	Spec. B	Spec. C
Type	Hyd. Tipping	Hyd. Tipping	Hyd. Tipping
Capacity	4-Ton	5-Ton	8-10 Ton
Vessel Size	10' x 6.5' x 2'	11' x 6.5' x 2'	12' x 7' x 2.5'
Floor	MS Sheet SWG 10		
Side Wall	MS Sheet SWG 12		
<b>Chassis Frame</b>			
Lower Channel	8' x 3'	8' x 3'	10' x 3'
Upper Channel	6' x 3'	6' x 3'	6' x 3'
<b>Axle Size</b>			
Length	52"	52"	56"
Outer Dia	5"	5.5"	6"
Wall Thickness	3/8"	3/8"	3/8"
<b>Rims</b>			
Quantity	2	2	4
Size	8.25-20	8.25-20	8.25-20



Tipping Device	Double acting heavy duty locally made Ram with mechanical linkage
Tipping Angle	55 Degree
Maximum Lift Time	10 Seconds at 1,500-1,789 rpm of Tractor Engine to its full height in empty condition

#### Hydraulic Kit for Trolley

Spool Valve	Imported from USA, Italy or UK, minimum Rod Dia, 20mm
Selector Valve	Imported from USA, Italy or UK, minimum Rod Dia, 20mm
Hud. Hoses	Imported from above Countries, the Crimping and Hoses should bear a pressure of 4000psi. There should be no joint between two connections.

Quick Attachment Coupler Set Imported

### Wheat / Rice Planter

The Rice planter works with forward movement of tractor. The rice planter is consisting on seed box, metering mechanism and seed tubes. Seed adjusting lever and Used for sowing rice etc., in rows and at uniform depth.

This series rice planter is suitable for drilling rice, wheat, sorghum, rice, etc.





# Agri Implements

## Agricultural Implements

### Chisel Plough

The Chisel Plough is primary tillage deep plough, working upto 20" to ensure development of crop root system at proper depth and environment. It is an ideal implement where top soil is fertile but subsoil is not productive. This Chisel Plough increases natural fertility of soil as deep tillage provides enough circulation of air, moisture and sunlight into soil. For full penetration in the first pass, a 50 to 85 hp tractor would be required. A medium (50hp) tractor will plough 12" in the first pass and full 20" depth will be attained in the second pass.

With only one central tine fitted it can work as subsoiler and upto maximum depth for breaking of hard pan even with 50hp tractor. Yield per acre can be increased considerable by deep ploughing for wheat, cotton and sugar cane crops. Best fruit orchards growth is ensured by deep tillage before tree plantation. In rain-fed areas, the Chisel Plough is an ideal implement because without disturbing top soil it shatters the subsoil of land, maintaining moisture contents for longer periods and safeguarding against water and wind erosion of top soils.

**Specifications:**

1. Heavy Steel box V-Type frame without any nut and bolt
2. Three easily replaceable tines designed to penetrate upto 20" without much efforts
3. Shovels easily replaceable
4. Working width 1.20 Meters
5. Tractor compatibility Above 50 hp



### Ridger

Used for making ridges for planting tobacco, potato and other vegetables. The ridger fully adjustable for giving different accurate row width.

To obtain the correct ridge profile and retain soil flow, the high grade mould boards are adjustable.

The ridger can also be used for earthing up the crops sown in rows.

**Specifications:**

- |                            |   |
|----------------------------|---|
| 1. Max. Row Spacing        | 711 m (Decreasing in increments of 25 mm) |
| 2. Overall width           | 1,778 mm                                  |
| 3. Depth                   | 1,050 mm                                  |
| 4. Clearance (under frame) | 550 mm                                    |
| 5. Weight                  | 145 kg                                    |
| 6. Tractor Compatibility   | Above 50 HP                               |



### Seed Drill

Used for sowing cereal crops like wheat, barley, rice etc., in rows and at uniform depth. Tractor mounted versions for easy transport are available in 11, 13 and 15 row versions with or without fertilizer attachments. Kits for sowing acid-delinted cotton seed, wheat, maize, pruces, corn, sun-flower, grams, rape seed are also available for use with drills. Seed/Fertilizer metering system is driven by of the machine ground wheels fitted with the machine or as an option inside/rearside.



Number of Rows	9	11	13	15
Row Spacing (adjustable)	4" - 6"	→	→	→
Depth of Sowing (adjustable)	0" - 6"	→	→	→
Seed Metering	Fluted	→	→	→
Mechanism	Wheel (Plastic)	→	→	→
Seed Rate	Adjustable	→	→	→
Seed Hopper Capacity	80 Litre	→	100 Litre	
Furrow Openers	Single Shoe	→	→	→
Field Capacity (Acres/Hrs)	4	5	6	7
Tractor Compatibility (H.P.)		45-55	50-60	60-85





# Agri Implements

## Agricultural Implements

### Agriculture Loader

A multipurpose rugged and powerful machine which can be quickly attached/detached to the front of Massey Ferguson Tractors for handling /loading stone/brick crush, garbage, sand, grains, wood logs etc. into a truck or trailer.

#### Specifications:

1	Tractor Compatibility	For MF-375/385	For MF 240/260
2	Bucket Type	Closed earth Bucket with digging teeth	
3	Bucket Volume	1 Cubic meter	0.5 Cubic meter
4	Lifting Time	3 - 6 seconds	
5	Max. Lift Capacity	1,000 kg	750 kg
6	Operation	Hydraulic	
7	Lift Height at Pivot Point	(10' - 6") 3 meter	(9' - 6") 2.9 meter
8	Lift Ram	2, Double Acting	
9	Bucket Ram	Single, Double Acting	



### Tine Tillers

- Ideal for general cultivating, weeding, pasture renovating and preparing seedbeds.
- The tiller is available in 4 widths: 9, 11, 13 & 15 tines. The tiller is fully mounted on the tractor by means of Category I or II three point hitch pins.
- The Spring-loaded tines swing back under break-away pressure of 163kg: pass over the obstruction and return to the working position without affecting the working depth of the implement.
- The continual flexing action of the tines shatters the soil breaking up the clods.
- The tiller is fitted with 51 mm reversible shovels which are designed for deep penetration.
- A working depth upto 229 mm in most soils is simply controlled while sitting on the tractor seat.



#### Specifications:

1. Number of Tines	9	11	13
2. Linkage Category	1	I&II	I&II
3. Frame	Round Steel torsion tubes	Round Steel torsion tubes	Round Steel torsion tubes
4. Overall Width	2,180mm	2,900mm	2,900mm
5. Overall Length	813mm	813mm	813mm
6. Tine Spacing	178mm	229mm	229mm

7. Overall Height	1.02m	1.02m	1.02m
8. Cultivating Width	1,880mm	2,590mm	2,790mm
9. Max. Working Depth	229mm	229mm	229mm
10. Weight	209 kg	236 kg	266 kg
11. Settings Type of Tines Shovels	Spring loaded 15mm reversible		
12. Tractor Compatibility	25-36 HP	35-55 HP	Above 50 HP

### Mould Board Plough

The most important Plough for primary tillage in canal irrigated or heavy rain areas where too much weeds grow. The objective for ploughing with a Mould Board is to completely invert and pulverize the soil, up-root all weeds, trash and crop residues and bury them under the soil.

The shape of mould Board is designed to cut down the soil and invert it to right side, completely burying the undesired growth which is subsequently turned into manure after decomposition.

#### Specifications:

1	Models	MT-02 (M)	MT-02 (H)
2	Max. Depth	22 cms	25 cms
3	Working Width	85 cms	90 cms
4	Weight	225 kg	355 kg
5	Tractor Compatibility	35 to 55 hp	60 plus hp
6	Linkage Category	I	II





# Agri Implements

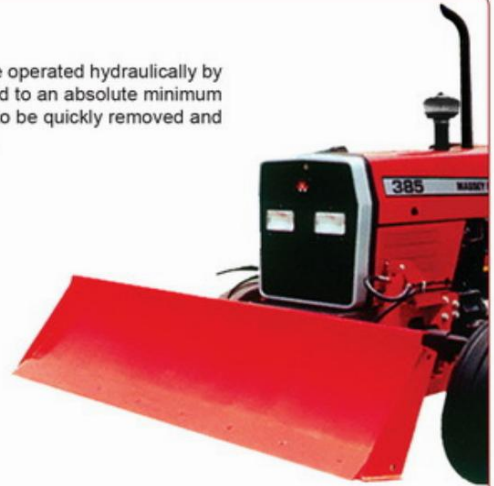
## Agricultural Implements

### Front Blade

The Power dozers are designed and build to match the performance of the MF Tractors. They are operated hydraulically by single or twin double acting time. The points of attachment of the dozer to the tractor are reduced to an absolute minimum and the mounting buckets, once fitted, can be left in position enabling the sub-frame and blade to be quickly removed and attached. The blade is fitted with a reversible and replaceable cutting edge of high carbon steel.

#### Specifications:

1	Power Dozer to fit	MF 240, 260, 375, 385 tractors
2	Blade	Model MT-08/1 = 6'x22" (Single Ram) Model MT-08/2 = 6.5'x30" (Twin Ram)
3	Cutting Edge	152mm (6")x12.7mm (1/2") Second high carbon/alloy steel reversible and replaceable
4	Hydraulic Ram	Heavy duty, double acting
5	Control Valve	Open centre double acting spool valve
6	Blade movement	Maximum lift 533mm (21"). Maximum depth below ground 102mm (4")



### Rear Blade

Land Leveling, yard cleaning, farm road grading, snow clearing, ditching and terracing, backlifting, earth moving: these are some of the many jobs that you can do with this versatile tool. - With the grader wheel installed, hydraulic position control holds the blade at the chosen depth for the fine leveling.

- Angle and pitch of blade are also adjustable from tractor seat.
- Blade pitch is adjustable from 0 to 40 degree by the screw lever in reach of the tractor seat.
- The blade can be completely reversed for back filling.
- For Access to awkward place it can be offset to either side.
- An alternative hitch pin for the right and lower link allows the blade to be tilted for digging ditches or irrigation channels.

#### Specifications:

Mounting:	Category 1, three-point linkage
Construction:	Entirely steel frame, Reversible high carbon steel cutting edge.
Blade Angle:	Adjustable 0° to 70° in two increments to either side and similarly with blade facing rearward.
Blade pitch:	Adjustable from 0° to 40°
Blade Width:	7 ft., 8ft., 10ft.
Overall length:	5 ft. (with grader wheel)
Weight:	7ft. 170 kg.
Accessories:	Grader wheel kit
Tractor Compatibility:	Above 50 HP



### Boom Sprayer

#### Specifications:

Horse Power	50 hp & above
Boom Width	33, 43, 48, 53, feet
Spray Width	35, 45, 50, 55 feet
Spray Tank	Fiber Glass
Tank Capacity	500/600 liters with Agitator

Pressure control system diaphragm pressure control chest with glycerin filled gauge

Main frame	Made of MS pipe
Boom frame	Made of MS pipe
Spray pipes	S.S pipes
Nozzle tips filter	Tips With Anti Drip
Pump	3 plungers
Plunger Size	42 mm
Discharge rate	90 liter per minute
Strainers	1 Tank Mouth Filter 1 Tank bottom Filter 3 Extra Filters on supply lines
Pipes	High Pressure Rubber Pipes
Pipe	High Pressure Nylon Synthetic
Drive	P.T.O Driven





# Rotavator

- ⚙ Monoblock Design – Lateral Transmission
- ⚙ Power Driven Shaft
- ⚙ Single Speed Gear Box
- ⚙ Oil Bath Input + Side Gear Box
- ⚙ Adjustable Rear Shield
- ⚙ Adjustable Skid Shoes



- Carries out shallow tillage operations
- Curved blades slice through the soil
- Chop surface residue
- Mix all material in the disturbed layer.
- Pulverize the soil and buries weeds and crop residue.
- 6 Blades on one flang.
- 8-9in flang distance.
- Heat treated blades
- Durable against torque and stress.
- Smooth, efficient power transmission and superior durability.
- Grease fittings on driveline and rotary shaft.

## SPECIFICATION

Working Width (mm)	1550	1800	2050	2400	2680
Working Depth (mm)	220	220	220	220	220
No. of Blades	36	42	48	54	60
Power Req.	>50HP	55-60HP	60-75HP	75-90HP	>90HP
Type of Blades	Curved Tip Steel Blades - 'L' type				
Speed @ 540 RPM	214	214	214	214	214



# *Pneumatic Planter*

Adjustable seed depth control system to ensure seed is placed in suitable moisture environment that can later be covered with adequate soil. Preserves the seed from internal and external obstacles that prevent it from maturing. Easy to operate and maintain. Greater Output & Less weed.



## SPECIFICATION

Seed to Seed Distance:	10-25cm Adjustable
Row to Row Distance:	45-75cm Adjustable
Number of markers:	2 Nos.
Crops:	Sunflower, Maize, Cotton, Sorghum, Tomatoes and other vegetables.
Attachment:	Cat II
Seeding:	48 Liter Capacity - Pneumatic System
Fertilizer:	152 Liter Capacity - Adjustable distance and depth from seed.
Rows:	4
Length:	2000 mm
Width:	2570 mm
Height:	1200 mm
Weight:	570 kg
Seeding Rate:	2ha/hr @ 5km/hr
Power Req:	> 45HP





# Potato Planter

- ✦ Used for making ridges and planting seeds simultaneously with the help of labour.
- ✦ Capacity: 0.3ha/hr
- ✦ Power Requirement: 50HP/37KW
- ✦ Working width: 1500mm



## SPECIFICATION

	TWO ROWS	FOUR ROWS
Horse Power Required	50 hp & above	85 hp & above
Seed Capacity	240 kg	600 kg
Fertilizer Box	150 kg	300 kg
Distribution Through Silver Aluminum Fluted Wheel	4 Nos.	8 Nos.
Speed 1	1440 kg	2800 kg
Speed 2	1680 kg	3360 kg
Speed 3	1920 kg	3840 kg
Seed Rate Gear Box		
Double Conveyer System Seed Holder	96 Nos. Cups	192 Nos. Cups
Line to Line Distance	28, 29, 30, inches	28, 29, 30, inches
Seed to Seed Spacing	6 inches	6 inches



# Potato Harvester

- ✦ Rear Mounted. PTO Operated.
- ✦ Harvested crop is collected manually.
- ✦ 98% Efficiency.
- ✦ Tractor requirement: 50HP+
- ✦ Output: 0.1ha/hr
- ✦ Uproots the crops and separates the potatoes from the soil.



## SPECIFICATION

Power Req.	>50HP
Digging System	Conveyer
Diggin Width	1350 mm
Row-to-row Distance	28, 29, 30 Inches
Digging Roller	Adjustable
Drive	PTO
Length	2745 mm
Width	1675 mm
Height	915 mm



## SAFETY ALERT SYMBOL and TERMS

This safety alert symbol means ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



The safety alert symbol identifies important safety messages on machines, safety signs, manuals, or elsewhere, when you see this symbol, be alert to the possibility of personal injury or death, Follow the instructions in the safety message.

### Why is SAFETY Important to you?

- \* ACCIDENTS DISABLE and KILL \*
- \* ACCIDENTS are COSTLY \*
- \* ACCIDENTS can be AVOIDED \*

---

### Tractor and Implement Safety

The tractor is a source of power — Mechanical and Hydraulic.

On its own, the tractor is of little practical value. Only when used in conjunction with an implement or other attachment does it become a working unit.

The Operator's Instruction Book is compiled to cover those safe working practices that are associated with the base tractor operation.

It does not cover all operation and safety instructions relevant to all known implements and attachments that may be fitted at the time of tractor delivery or at some future date.

It is essential that operators use and understand the relevant instruction book of such implements and attachments.

---

### Introduction to Safety

This safety section of your Operator's Instruction Book is intended to point out some of the basic safety situations which may be encountered during the normal operation and maintenance of your tractor, and to suggest possible ways of dealing with these situations. This section is NOT a replacement for other safety practices featured in other sections of this Operator's Instruction Book.

Additional precautions may be necessary, depending on attachments used and conditions at the work site or in the service area. Massey Ferguson has no direct control over tractor application, operation, inspection, lubrication, or maintenance. Therefore it is YOUR responsibility to use good safety practices in these areas.

Use only Massey Ferguson approved attachments and equipment.

### A Word to the Operator

It is YOUR responsibility to read and understand the safety section in this Operator's Instruction Book before operating your tractor. You must follow these safety instructions that take your step by step through your working day.

In reading this section, you will note that illustrations have been used to highlight certain situations. Each illustration is numbered and the same number appears in the text in parenthesis. This number is placed at the end of the written text that refers to the illustration.

Remember that YOU are the key to safety. Good safety practices not only protect you, but also the people around you. Study the features in this Operator's Instruction Book and make them a working part of your safety programme. Keep in mind that this safety section is written only for this type of machine. Practice all other usual and customary safe working precautions, and above all — REMEMBER — SAFETY IS YOUR RESPONSIBILITY. YOU CAN PREVENT SERIOUS INJURY OR DEATH.



### Danger, Warning and Caution

Whenever you see the words and symbols shown below, used in this Operator's Instruction Book and on decals, you MUST take notice of their instructions as they relate to personal safety.



**DANGER:** This symbol together with the word **DANGER** indicates an immediately hazardous situation that, if not avoided, will result in **DEATH OR VERY SERIOUS INJURY**.



**WARNING:** This symbol together with the word **WARNING** indicates a potentially hazardous situation that if not avoided could result in **DEATH OR SERIOUS INJURY**.



**CAUTION:** This symbol together with the word **CAUTION** is used to indicate a potentially hazardous situation that, if not avoided, may result in **MINOR INJURY**.

**IMPORTANT:** The word **IMPORTANT** is used to identify special instructions or procedures which, if not strictly observed, could result in damage to, or destruction of the machine, process or its surroundings.

**NOTE:** The word **NOTE** is used to indicate points of particular interest for more efficient and convenient repair or operation.

### Decals



**WARNING: DO NOT remove or obscure Danger, Warning, Caution or Instruction Decals. Replace any Danger, Warning, Caution or Instruction Decals that are not readable or are missing. Replacement decals are available from your Dealer in the event of loss or damage. The actual location of these Safety Decals is illustrated at the end of this section.**

If a used tractor has been purchased, refer to the illustrations at the end of this section to ensure that all the safety warning decals are in the correct position and are readable.

### Follow a Safety Programme

#### For Safe Operation

For safe operation of an agricultural tractor, you must be a qualified and authorized operator. To be qualified you must understand the written instructions supplied in this Operator's Instruction Book, have training, and know the safety rules and regulations for the job.

Some regulations specify that no one under the age of 16 years, for example, may operate power machinery. This includes tractors. It is your responsibility to know what these regulations are, and obey them, in the operating area or situation.

These will include, but are not limited to, the following instructions for safe tractor operation.



**WARNING: An operator should not use alcohol or drugs which can affect his alertness or co-ordination. An operator on prescription or 'over the counter' drugs needs medical advice on whether or not he or she can safely operate machines.**

### Observe the Following

- DO NOT allow children or unqualified persons to operate your tractor. Keep others away from your area of work.
- Where possible, avoid operating the tractor near ditches, embankments and holes. Reduce speed when turning, crossing slopes, and on rough, slippery, or muddy surfaces.
- Stay off slopes too steep for safe operation.
- Watch where you are going, especially at row ends, on roads, and around trees.
- DO NOT permit others to ride on the tractor or the implement.
- Hitch only to the drawbar and hitch points recommended, and never above the centre line of the rear axle.
- Operate the tractor smoothly - no jerky turns, starts or stops. When the tractor is stopped, apply the parking brake securely. Lower the implement and remove the key.
- DO NOT modify or remove any part of the equipment and DO NOT use attachments unless they are properly matched to your tractor.



### Protect Yourself

Wear all the protective clothing and personal safety devices issued to you or called for by job conditions. Don't take chances (Fig. 3).

#### You may need:

- A hard hat.
- Safety glasses, goggles, or face shield.
- Hearing protection.
- Respirator or filter mask.
- Inclement weather clothing.
- Reflective clothing.
- Heavy gloves (neoprene for chemicals, leather for rough work).
- Safety boots.

DO NOT wear loose clothing, jewelry or other items and tie up long hair which could entangle in controls or other parts of the tractor.

**Note:** Where fire extinguishers and first-aid or emergency equipment is kept and get to know where to get help in a hurry. Make sure you know how to use this equipment (Fig. 4).

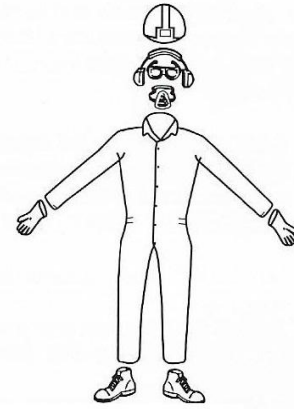


Fig. 3



Fig. 4



## Prepare for Safe Operation

### Know your Equipment

Know your tractor. Know how to operate all equipment on your machine and the implements and attachments used with it. Know the rated load capacity, speed range, braking and steering characteristics, turning radius, and operating clearances.

Keep in mind that rain, snow, ice, loose gravel, soft ground, etc. can change the way your tractor operates. **Under poor conditions, slow down and be extra careful, engage the four-wheel drive, if fitted.**

Study the **DANGER, WARNING, or CAUTION** safety signs on your tractor and the information signs also. **READ THIS OPERATOR'S INSTRUCTION BOOK BEFORE STARTING THE ENGINE. STUDY IT BEFORE YOU START WORK (Fig.5). IF THERE IS SOMETHING IN THE OPERATOR'S INSTRUCTION BOOK YOU DON'T UNDERSTAND, ASK SOMEONE (such as your equipment Dealer) TO EXPLAIN IT TO YOU.**

**IMPORTANT:** *This Operator's Instruction Book covers general safe practices for agricultural tractors. It must always be kept with the tractor. For further copies contact your Massey Ferguson Dealer.*

**Use all Available Protective and Safety Devices.** Keep all protective devices in place and securely fastened. Make certain all guards, shields and safety signs are properly installed, as specified, and are in good condition.

*To help keep you and others around you safe, your tractor must be equipped with:*

#### **Your tractor may also need:**

- Rear view mirror.
- Fire extinguisher.
- SMV (slow moving vehicle) emblem, additional safety guards, lights or decals and a back up alarm.

Know which devices are required for safe operation of your tractor. Use them. Make sure they are in place and in good condition. **DO NOT** remove or disconnect any safety device.

### Check the Equipment

Before you begin your working day, take time to check your tractor and ensure that all systems are in good operational condition.

- **DO NOT** smoke while refuelling the tractor. Keep any type of open flame away (Fig. 6).
- Stop the engine and wait for it to cool before refuelling.
- Check for loose, broken, missing, or damaged parts. Have everything put into good repair. Make certain all

safety devices are in place.



Fig. 5



Fig. 6

- Ensure that implements and attachments are properly installed and that the tractor and implement PTO rpm ratings match.
- Check the tyres for cuts, bulges and correct pressure. Replace worn or damaged tyres. Check foot and parking brakes for proper operation. Adjust if necessary.



- Check the engine oil level and add oil if required.
- Perform all maintenance procedures outlined in the maintenance and adjustment section of this Operator's Instruction Book.
- Check foot and parking brakes for proper operation, adjust if necessary.
- Check that the PTO driveline locking devices are latched.
- Check the tractor and implement hydraulic system. Have any leaks or damaged parts repaired or replaced.



**WARNING:** Diesel fuel or hydraulic fluid under pressure can penetrate the skin or eyes and cause serious personal injury, blindness or death. Fluid leaks, under pressure, may not be visible. Use a piece of cardboard or wood to find leaks. DO NOT use your bare hand. Wear safety goggles for eye protection. If any fluid is injected into the skin, it MUST be surgically removed within a few hours by a doctor familiar with this type of injury (Fig. 7).

Before applying pressure to the fuel or hydraulic system, be sure all connections are tight and that lines, pipes, and hoses are not damaged. Before disconnecting fuel or hydraulic lines, be sure to relieve all pressure.

Make sure that all hydraulic lines are correctly installed and not crossed.



**WARNING:** Liquid cooling systems build up pressure as the engine gets hot. Before removing the radiator cap, stop the engine and let the system cool.

- Check the engine cooling system and add coolant as required.

### Clean the tractor

- Keep work surfaces and engine compartments clean.
- Before cleaning the machine, always lower implements to the ground, place transmission in neutral, engage the parking brake, shut off the engine and remove the key.
- Clean steps, pedals and floor, Remove grease or oil. Brush away dust or mud. In winter, scrape away snow and ice. Remember - slippery surface are dangerous.
- Remove or put away tools, buckets, chains and hooks.



Fig. 7

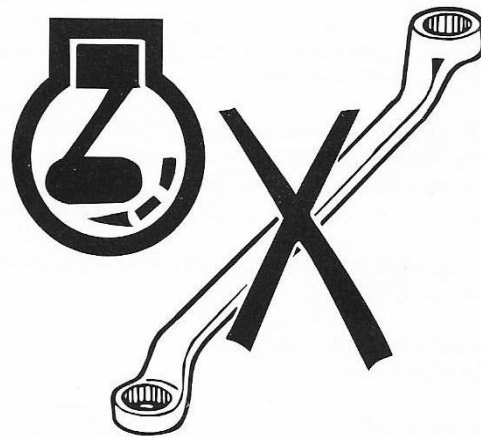


Fig. 8

### Protect the Environment

- It is illegal to pollute drains, water courses or soil. Use authorized waste disposal facilities, including civic amenity sites and garages providing facilities for disposal of used oil. If in doubt, contact your local authority for advice.

### Servicing the Tractor

- DO NOT service the tractor while the engine is running or hot, or if the tractor is in motion (Fig. 8).
- Before making adjustments to, or servicing the electrical system, disconnect the battery, negative (-) cable first.



- To prevent fires or explosions keep open flame away from the battery or cold weather starting aids. To prevent sparks which could cause explosions use jumper cables according to instruction.
- When making repairs or adjustments it is recommended that you consult your Massey Ferguson Dealer, and have the work carried out by trained personnel.
- The implement and/or tractor must be supported on suitable wooden blocks or stands. NOT a hydraulic jack.
- Check all nuts and bolts periodically for tightness, especially wheel hub and rim nuts. Tighten to the prescribed torque values.
- Check the brakes regularly, top up the reservoir and/or adjust where necessary. Make sure that the brakes are evenly adjusted, especially when using a trailer.

## Starting

### Warn Personnel Before Starting

Before starting, walk completely around the tractor and any attached equipment. Make sure that no one is under it, on it, or close to it. Let other workers and bystanders know you are starting up and don't start until everyone is clear of the tractor, implements and towed equipment.

Ensure that all bystanders, particularly children, are a suitable distance away before starting the engine.

### Mount and Dismount Safely

Always use 'three point contact' with the machine, and face the machine when you mount it. (Three point contact means both hands and one foot or one hand and both feet are in contact with the machine at all times during mounting and dismounting).

Clean your shoes and wipe your hands before climbing on. Use handrails, grab handles, ladders or steps (as provided) when mounting or dismounting.

DO NOT use control levers as a hand hold and never step on foot controls when mounting or dismounting.

DO NOT attempt to mount or dismount from a moving tractor. DO NOT jump off a tractor other than in an emergency.

### Start Safely



**WARNING:** Before starting the engine make sure there is plenty of ventilation. DO NOT operate the engine in a closed building. The exhaust fumes may cause asphyxiation.

Always start the engine from the operator's seat with all the transmission levers and the PTO lever in neutral.

Make sure that the tractor dual brake pedals are locked



Fig. 9

together at all times unless you are making turns in the field which require independent use of the brakes. Make sure the brakes are properly adjusted so that both brakes engage at the same time. Apply the parking brake and put all controls in neutral before starting up.



**DANGER:** Start the engine, with the starter key, from the operator's seat only. DO NOT attempt to start the engine by shorting across the starter terminals. The machine will start in gear if the neutral start circuit is bypassed. This could cause serious injury or death to anyone in the vicinity of the tractor (Fig. 9). Ensure that the engine starter solenoid cover is always in position.

### Follow Recommended Starting Procedures

Follow the starting procedures recommended in the Operation section of this Operator's Instruction Book. This includes normal starting, cold starting, and the use of starting fluids.

### Test the Controls

After starting, re-check all gauges and lights. Make sure everything is functioning correctly. If the tractor does not respond correctly when each control is operated, DO NOT use the machine until the fault is rectified.





## Work Safely



**WARNING:** An unbalanced tractor could overturn and cause injury or death. Make sure front frame counterweights, wheel weights and wheel ballast are used as recommended by the manufacturer. **DO NOT** add extra counterweights to compensate for an overloaded tractor, it is to reduce the load. Keep all parts of your body inside the operator's compartment while operating the tractor.

### Make the Right Moves

Make sure your tractor is ready for the job it must do. Know the rated load capacities of your tractor and never exceed them. Be certain that any equipment or implements you intend to use **DO NOT** exceed the load rating of your tractor. Be sure the tractor and implement PTO speed match.

Keep in mind that tractors normally operate on uneven, unpaved, and often bumpy or sloping surfaces. Operating conditions can reduce the amount of weight you should carry or pull.

### Follow Safe Operating Practices

- Operate the controls smoothly - don't jerk the steering wheel or other controls.
- **DO NOT** get on or off a moving tractor. Keep a firm grip on the steering wheel at all times, with the thumbs clear of the spokes when driving the tractor.
- Make sure you have adequate clearance in all directions for tractor, and implement.
- **DO NOT** play games with a tractor or equipment. Use only for intended purpose.
- **DO NOT** attempt to work the controls except from the operator's seat.
- Before dismounting, always disengage the PTO, lower all attachments and implements to the ground, place the tractor in neutral, engage parking brake, shut off the engine and remove the key.

**DO NOT** touch, lean on, or reach through any implement mechanism or permit others to do so.

Stay alert. Should something break, come loose, or fail to operate on your equipment, stop work, lower equipment to the ground, shut off the engine, inspect the machine and have repairs or adjustments made before resuming operation.

### Watch Out for Others

- Be aware of what is going on. **DO NOT** allow an untrained or unqualified person to operate your tractor. They could injure themselves or someone else.



Fig. 10



**WARNING: Your tractor is a one-person machine. DO NOT permit others to ride on the tractor or the implement (see Fig. 10). DO NOT allow anyone to ride on the implements or other equipment including trailers, except on certain harvesting equipment, specifically designed for riders during the actual harvest operation only (not during transport). Such equipment must have provision for a safe riding area. DO NOT allow children on the tractor.**

- Be certain you can control both speed and direction before moving. Move slowly until you are sure that everything is operating properly. After starting, recheck the steering, right and left. Be certain you have full steering and brake control. If differential is locked, DO NOT operate at high speed or turn the tractor until the differential lock is disengaged.
- DO NOT lift a load over anyone.
- Keep others away from your operation. DO NOT allow anyone to stand or pass under a raised implement (Fig. 11).
- DO NOT lift objects that can not be contained in the bucket, get the appropriate attachment.
- When using a loader, avoid sudden stops, starts, turns, or change of direction. Keep loads close to the ground when transporting.
- DO NOT stand (or allow anyone else to stand) in front of, under, or behind loaded or loading equipment. DO NOT drive a tractor up to someone standing in front of a fixed object.
- Keep others away from universal joints, hitches, drawbar, lift arms, PTO drives, cylinders, belts, pulleys, and other moving parts. Keep all shields and guards in place.



**WARNING: DO NOT stand, or allow anyone else to stand, between the tractor and implement unless the engine is turned off and the parking brake is engaged, the transmission is in neutral, the key is removed, and all attachments or implements are lowered to the ground.**

**Risk of Overturning**

In the event of an overturn with a tractor fitted with ROPS, hold the steering wheel firmly and DO NOT attempt to leave the seat until the tractor has come to rest (Fig. 12).

**To Avoid Side Overturns**

- Set the wheel track at the widest setting suitable for the job being done.
- Lock the brake pedals together before driving at transport speeds.



Fig. 11

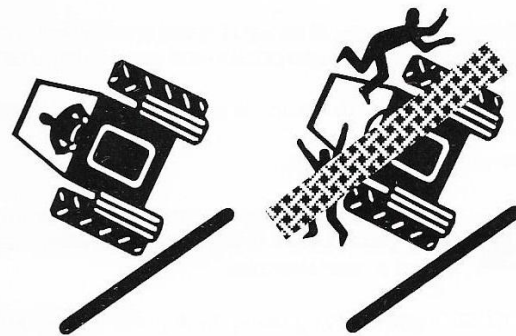


Fig. 12

- Reduce speed to match operating conditions. If the tractor is equipped with a front-end loader, carry the bucket and load as low as possible.
- Make wide slow turns at reduced speed. Don't let your tractor bounce. You may lose steering control.
- Don't pull a load too heavy for your tractor. It could run away on the down slope or the tractor could jack-knife around a towed load.
- Don't brake suddenly. Apply brakes smoothly and gradually.
- When going down a slope, use the throttle to slow the tractor engine and use the same gear range you would use to go up the slope. Shift into gear before you start downhill.



**WARNING: DO NOT disengage the clutch or attempt to shift gear after you have started downhill.**

- It is less likely that the tractor will overturn if you travel straight up or down a steep slope rather than across it.
- Avoid crossing steep slopes if possible. If you must do so, avoid any holes or depressions on the downhill side. Avoid any stumps, rocks, bumps or raised areas on the uphill side. When operating near ditches and banks, always keep your tractor behind the shear line (A, Fig. 13). Avoid ditches, embankments and river-banks which might cave in.
- If it is necessary to cross a steep slope, avoid turning uphill, slow down and make a wide turn. Travel directly up or down the slope, never across it. When travelling up or down a slope, keep the heavy end of the tractor on the uphill side.
- If when travelling across a slope with side mounted implements, keep the implement on the uphill side. Don't raise the implements. Keep them as low to the ground as possible when crossing a slope.
- When towing a load at transport speed or in the field, lock the drawbar in the centre position and use a safety chain.
- DO NOT use your tractor to round up farm animals.

#### To Avoid Rear Overturns



**WARNING: Hitching to the rear axle, or any other point above the swinging drawbar, can cause a rear overturn.**

- DO NOT pull anything using the top link connection, or from any point above the centre line of the rear axle. Always use an approved Massey Ferguson drawbar, and only use a drawbar pin that locks in place.
- High hitching can cause rear overturn, which may cause serious injury or death. Hitch loads to the drawbar only.
- Only use a 3-point linkage drawbar when stays are fitted to keep it in the down position.
- Use front counterweights to increase tractor stability when towing a heavy load or to counter balance a heavy rear mounted implement (Fig. 14).
- Start forward slowly and gradually increase your speed. DO NOT rev the engine or drop the clutch. If the tractor is attached to a heavy load, or immovable object, improper clutching may cause overturn.
- If the front end of the tractor starts to lift, reduce your speed and, if necessary, disengage the clutch.
- If your tractor is bogged down in mud or frozen to the ground, DO NOT attempt to drive forwards. The tractor can rotate around its rear wheels and overturn. Lift any

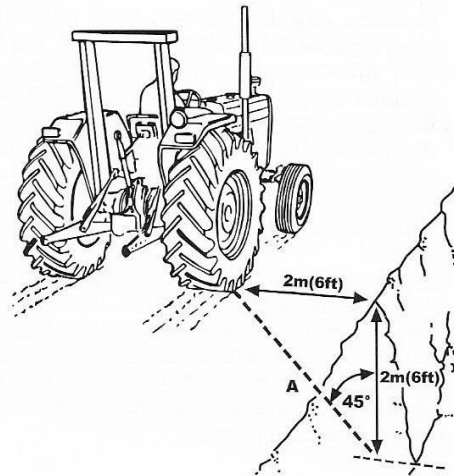


Fig. 13

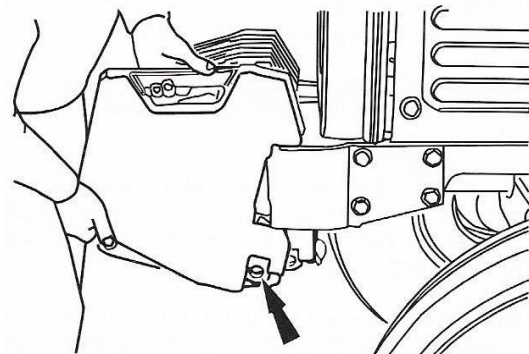


Fig. 14

attached implement and attempt to BACK OUT. If this is not possible, tow it out with another vehicle.

- If you get stuck in a ditch, BACK OUT, if possible. If you must go forward, do it slowly and carefully.
- A bare tractor or tractor with rear mounted attachments should be backed up the slope in reverse and travel forward downhill.
- A tractor with a loaded front-end bucket should be backed down the slope and travel forward uphill. Keep the loaded bucket as low as possible.
- Always keep the tractor in gear when going downhill. DO NOT permit the tractor to coast with clutch disengaged or transmission in neutral.



**General Operating Hazards**

- Before attaching, detaching, cleaning or adjusting PTO driven implements, disengage the PTO, stop the engine, remove the key, and make sure that the PTO driveline has stopped.
- Ensure that all the PTO driveline guards are in place and observe all safety decals (Fig. 16).
- Be sure everyone is clear of your machine before engaging the PTO. For stationary PTO operation, always place transmission in neutral, engage parking brake, and chock both tractor and implement wheels.
- When operating mobile PTO driven equipment, DO NOT leave the tractor seat until the PTO drive is disengaged, the transmission is in neutral, the parking brake is engaged, the engine shut off and the key removed.
- DO NOT use PTO adaptors, reducers or extensions as they extend the PTO coupler and universal joint out beyond the protection offered by the PTO shield.
- The top link and lift rods must not be extended beyond the point where threads begin to show.



**DANGER: DO NOT attempt to unplug the hydraulic connections, or adjust an implement with the engine running or the PTO drive in operation. To do so may result in very serious injury or death.**

- When using chemicals, carefully follow the chemical manufacturer's instructions for use, storage and disposal. Also follow the chemical application equipment manufacturer's instructions.
- When operating under poor visibility conditions, or in the dark, use your tractor field lights and reduce your ground speed (DO NOT use your field lights when travelling on a roadway because rear pointed white lights may be illegal except when reversing and may confuse following drivers).
- Operate your tractor with the wheels set at the widest setting possible, consistent with the particular task you are performing. To adjust wheel settings refer to Maintenance and Adjustment section.
- Reduce your speed when operating over rough or slippery ground and when foliage restricts your view of hazards.
- DO NOT make sharp turns at high speed.

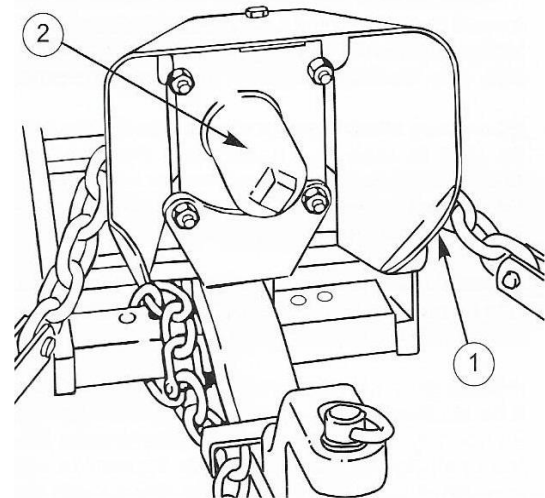


Fig. 15

**! DANGER**



Rotating driveline contact may cause serious injury or death.

Keep all driveline, tractor and equipment shields in place during operation.

Fig. 16

Implements and Attachments



**WARNING: A front-end loader (bucket or forks) must be equipped with a suitable restraining device to prevent the load (bales, fence posts, rolls of fence, wire etc.) from rolling down the lift arms into the operator's compartment and crushing the driver when the loader is raised. Inadequately secured objects could also fall and injure bystanders.**



- Three-point hitch and side mounted implements make a much larger arc when turning than towed equipment. Make certain to maintain sufficient clearance for turning. Use only Massey Ferguson approved equipment.
- When using attachments or implements with the tractor be sure to read and understand the Operator's Instruction Book for that attachment or implement and follow its safety instructions. Use only Massey Ferguson approved attachments and implements.
- DO NOT overload an attachment or towed equipment. Use proper counter weights to maintain tractor stability. Hitch loads to the drawbar only.
- A safety chain will help control drawn equipment should it be accidentally separated from the drawbar while transporting. Using the appropriate adaptor parts, attach the chain to the tractor drawbar support or other specified anchor location. Provide only enough slack in the chain to permit turning. See your Massey Ferguson Dealer for a chain with a strength rating equal to, or greater than the gross weight of the towed machine (Fig. 17).
- Make sure any towed implements are equipped with a safety chain linking tractor and implement (Fig. 17).
- Pull only from the approved drawbar. Towing or attaching to other locations may cause the tractor to overturn (Fig. 18).

**Safety - Towing**

- For towed equipment WITHOUT brakes, DO NOT tow equipment:
  - at speeds over 32 km/h (20 mile/hr):
  - that, when fully loaded, weighs more than 1.5 times the weight of the towing unit.
- For towed equipment WITH brakes, DO NOT tow equipment:
  - at speeds over 40 km/h (25 mile/hr):
  - that, when fully loaded, weighs more than 4.5 times the weight of the towing unit.

NOTE: Tractor requires correct trailer braking equipment be installed and connected to the equipment.

Stopping distance increases with speed and weight of towed loads, and on hills and slopes. Towed loads with or without brakes that are too heavy for the tractor or are towed too fast can cause loss of control. Consider the total weight of the equipment and its load.

**Road Transport**

BEFORE operating your tractor on a public road, a number of precautions must be taken.

- Familiarize yourself with - and obey - all laws appropriate to your tractor.
- Lock your brake pedals together.

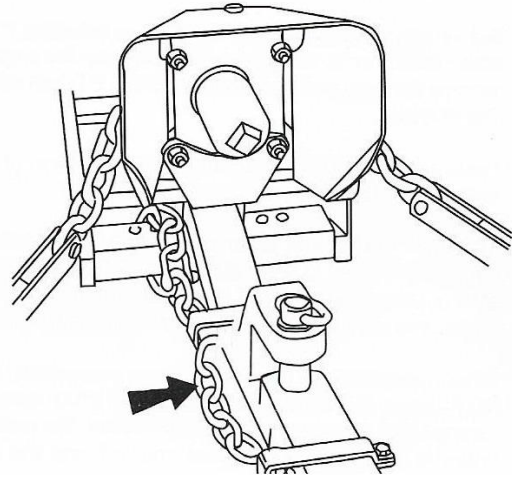


Fig. 17

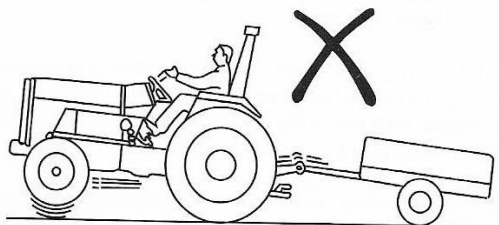
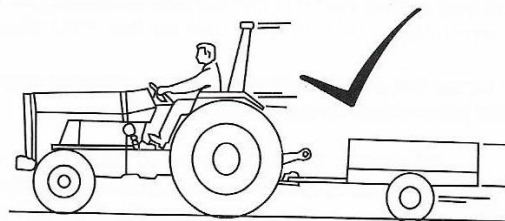


Fig. 18

- Raise all implements to their transport position and lock them in place.
- Place all implements into their narrowest transport configuration.
- Disengage the PTO and differential lock.
- Make sure any required clearance flags or hazard lights are in place and in working order.
- Make sure you use a proper hitch pin with a clip retainer.
- Clean off all reflectors and road lights, front and rear, and be certain they are in working order.
- Make sure tractor and equipment are equipped with Slow Moving Vehicle (SMV) (Fig. 19) signs and other marking materials recommended for improved visibility on the road if the law requires them.

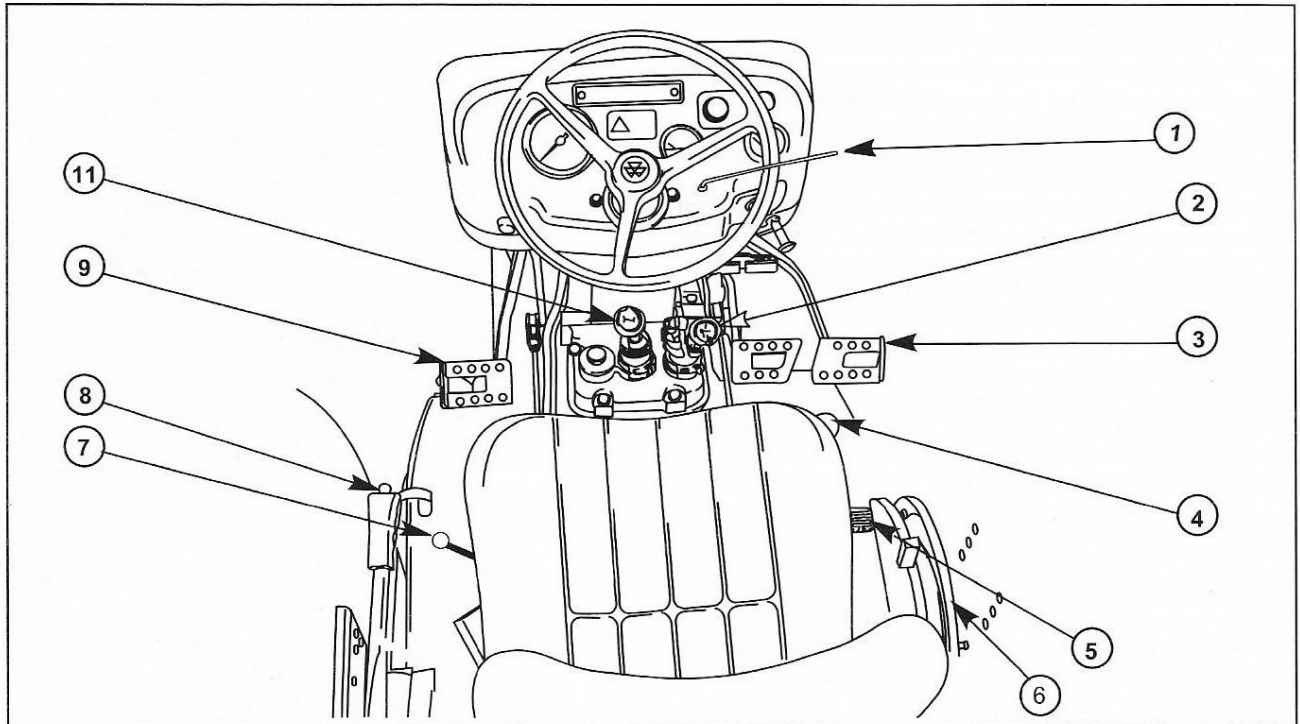


Fig. 25 Controls - operating

### Controls - Operating

A brief explanation of the operating controls (Fig. 25) is given below:

#### 1. Hand Throttle Control Lever

Move the lever down progressively to increase the engine speed.

#### 2. Dual Range Selector Lever

The dual range selector lever is used to select high or low transmission range. The top of the gear lever knob is engraved L — H with a KEY or S symbol in between to indicate:

L - LOW

KEY or S SYMBOL - Safety Start (Neutral) position.

H - HIGH

For details of the dual range selector lever operation - (see page 33).

NOTE: The dual range selector lever must be placed in the central (Neutral) position to engage the safety start switch before the engine can be started.

#### 3. Brake Pedals



**WARNING: ALWAYS latch the pedals together when not being used for turning and close manoeuvring. A rollover could result in personal injury.**

The foot brake system is mechanically operated. The two pedals can be used independently to aid turning in confined

spaces or can be latched together to provide a master pedal for normal braking. For independent brakes, disengage the latch. The inner pedal will then act on the left-hand wheel and the outer pedal will act on the right-hand wheel. For details of operation - (see page 34).

#### 4. Foot Throttle.



**WARNING: When operating by foot throttle only, the hand throttle MUST be fully closed.**

Operation of the foot throttle overrides 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. For details of operation - (see page 34).

#### 5. Differential Lock Pedal

The differential lock mechanically locks the rear axle shafts together so that both wheels pull together. This is an especially important aid when operating in muddy conditions as it provides increased traction and prevents needless tire wear. For details of operation - (see page 35).

#### 6. Hydraulic Control Quadrant

These levers control the action of the tractor linkage. For details of the hydraulic control quadrant. For details of operation - (see page 37).



**7. Power Take-off Control Lever**

To engage the live Power Take-off depress the clutch pedal fully and move the lever backwards (forwards on four-wheel drive tractors). To disengage the drive, depress the clutch pedal fully and move the lever to the central, neutral position. For details (see page 36).

NOTE: Tractors are fitted with a safety start switch that operates in conjunction with the Power Take-off lever. The Power Take-off lever must be placed in the neutral position to engage the safety start switch before the engine can be started.

**8. Parking Brake Lever**

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.

**9. Clutch Pedal**

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 Power Take-off shaft.

**10. Response Control**

This lever (Fig. 27) controls the rate at which the lower links drop. For details of operation - (see page 37).

**11. Main Gear Lever**

The gear lever knob has a diagram engraved on its top face to indicate the respective gear positions. On synchromesh gearboxes changes can be made on the move in the top two gears. The gear lever is used in conjunction with the other levers to select the required speed - also refer to the travel speed chart (see page 31) and Operating the Tractor, (see page 32).

- 1. Eight-speed standard gearbox.

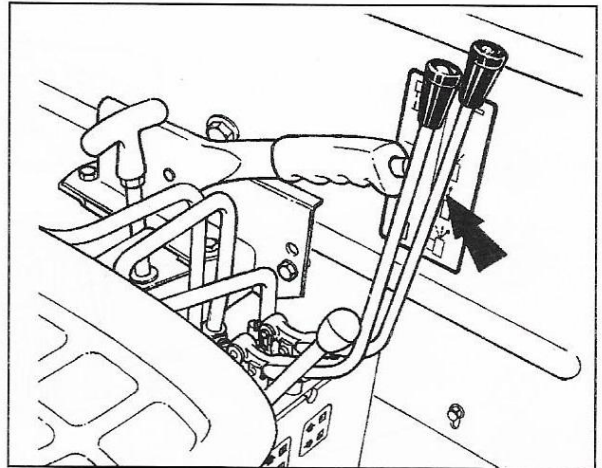


Fig. 26

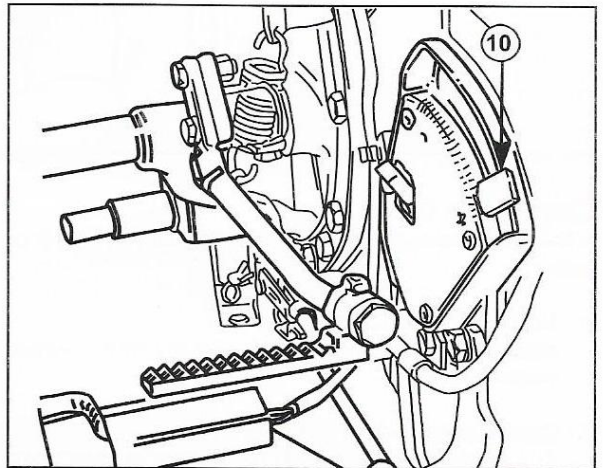


Fig. 27

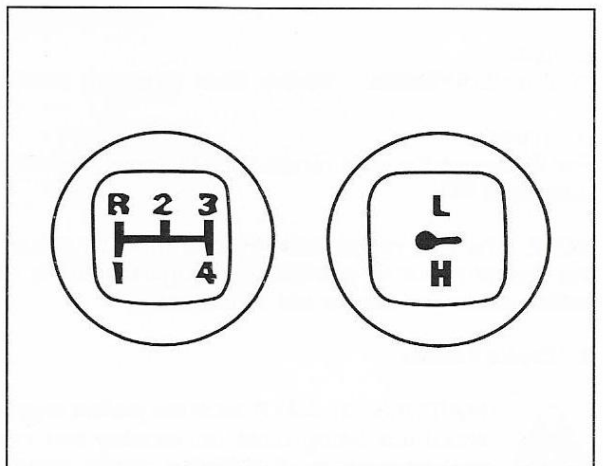


Fig. 28



## Controls - General

A brief explanation of the general controls is given below:

### Rear Work Light

The rear work light (Fig. 29) is operated by a rotary switch on the back of the light.

### Levelling Lever

The right-hand lower link has a levelling device (Fig. 30) which is operated by turning the cranked handle clockwise to lower the lower link or counter-clockwise to raise the lower link (see page 42).

## Spring Suspension Deluxe Seat

### Spring Suspension Seat



**WARNING: DO NOT adjust the seat when the tractor is in motion.**

To adjust the spring suspension seat (Fig. 31) proceed as follows:

### Weight adjustment:

For maximum comfort it is important that you set the suspension to suit your individual weight.

When seated, check the position of the weight indicator (4). If the seat is already correctly set, the two arrows of the indicator should be level with one another. If moving arrow is below the fixed arrow then the seat suspension needs stiffening by turning the adjustment knob (1) clockwise. If the moving arrow is above the fixed arrow then soften the seat suspension by turning the adjustment knob (1) counter-clockwise.

Test the seat suspension by alternately applying and releasing your full weight from the seat. If the arrows return to the same level (Opposite each other) then there is no need for further adjustment.

### Height adjustment:

To adjust the seat for height, release the two knobs (2) and move the seat up or down as required. The height is adjusted through 0 to 60 mm (0 to 2, 1/2 in).

### Forward and backward adjustment:

To adjust the forward and backward movement of the seat, pull the lever (3) up to disengage the runner lock, then slide the seat either forward or backward, as required.

**NOTE:** The seat can only be correctly adjusted with the driver in the normal driving position.

### Tool Box:

A tool box is provided on the left hand side of the fender. It can be used for the storage of drawbar pins, Lynch-pins and tools for the servicing of the tractor.

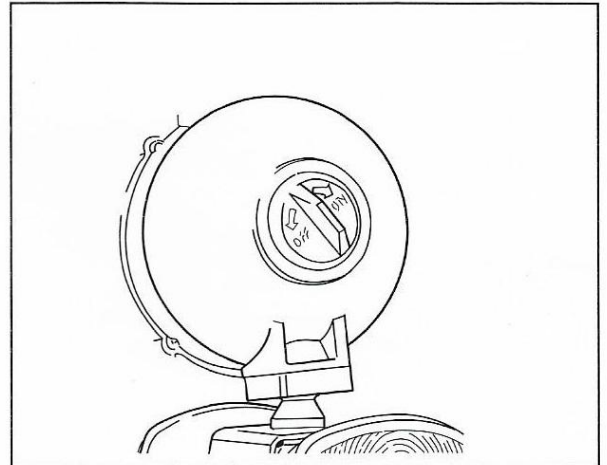


Fig. 29

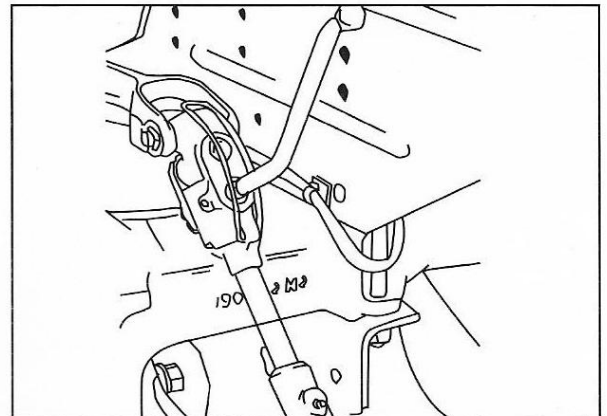


Fig. 30

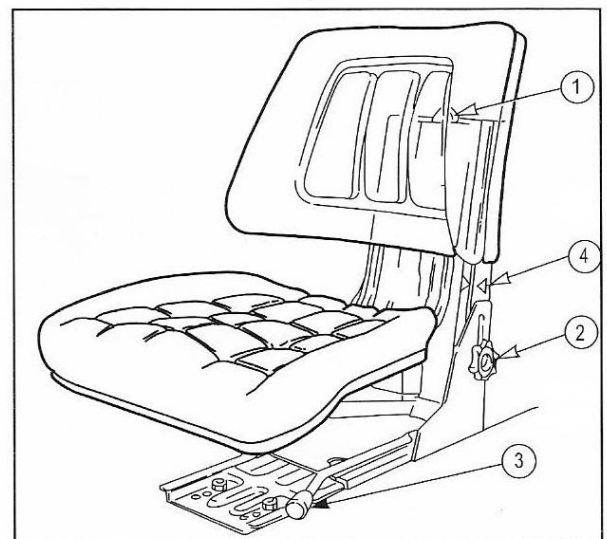


Fig. 31





## Starting and Stopping the Engine

### Before Starting



**WARNING:** Carefully read and understand the **SAFETY-STARTING** section of this manual. Your life, and that of others, can be in danger during the starting of the tractor.

- ▲ Always start and operate the engine in a well ventilated area.
- ▲ If in an enclosed area, vent the exhaust to the outside.
- ▲ DO NOT modify or tamper with the exhaust system.

1. Carry out the Daily Maintenance as described in the Maintenance and Adjustment Section of this book.
2. Ensure that there is sufficient fuel in the tank.
3. Ensure that the fuel tap (if fitted, Fig. 32) is turned on.
4. It may be necessary to operate the fuel pump hand priming lever, (2, Fig. 33) several times to ensure that there is an adequate supply of fuel at the injection pump if the tractor has been standing for a long time.

### Safety Start Switch Check

Periodically check that the safety start switches are functioning correctly. The procedure for this check is as follows:

1. Check that there are no bystanders around the tractor should it inadvertently start.
2. Depress the clutch and brake pedals. Attempt to start the tractor with the gears and PTO in neutral. The tractor should start.
3. Depress the clutch and brake pedals. Attempt to start the tractor with the gears engaged, and the PTO in neutral. The tractor should NOT start.
4. Depress the clutch and brake pedals. Attempt to start the tractor with the gears in neutral and the PTO engaged. The tractor should NOT start.

If either switch is not working correctly it must be replaced immediately by your Massey Ferguson Dealer.

### Normal Starting - Warm Weather



**DANGER:** DO NOT attempt to start the engine, other than from the driving position.

1. Sit in the operator's seat and ensure that the parking brake is engaged.
2. To engage the safety start switches, move all the gear shift levers and the PTO engagement lever to the NEUTRAL position. Then put all the auxiliary hydraulic

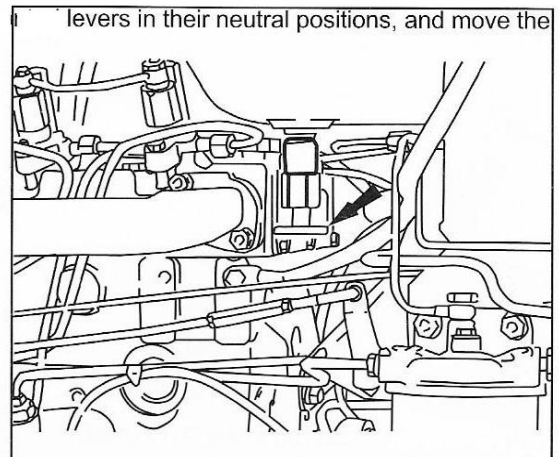


Fig. 32

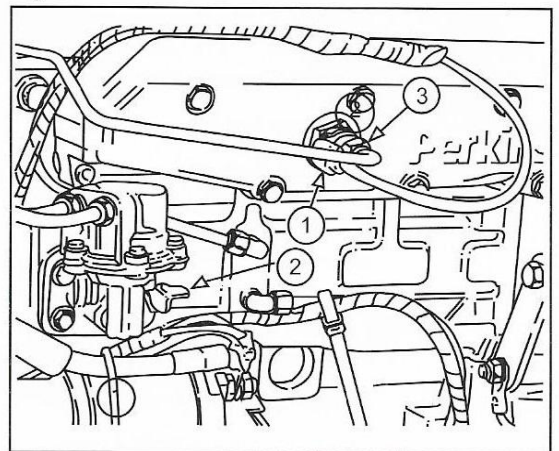


Fig. 33

hydraulic quadrant levers to the DOWN position.

3. Open the hand throttle halfway.
4. Push the fuel cut-off control fully IN.
5. Turn the starter switch key fully clockwise to operate the starter. When the engine starts, allow the key to return to the auxiliary/run position.
6. Set the hand throttle to a fast idle position (approximately 1200 rev/min) for two or three minutes, before putting the engine under heavy load.
7. If the engine does not start and run after using the normal starting procedure:
  - a. Check the fuel level in the fuel tank and check the condition of the battery.
  - b. Use the cold weather starting procedure.
  - c. Remove the air from the fuel system using the procedure detailed in the Maintenance and Adjustment Section, (see page 58).
  - d. If the engine still fails to start, contact your Massey Ferguson Dealer for assistance.



Normal Starting - Cold Weather (Thermostart)



**WARNING:** On tractors with hydrostatic steering full power steering is not immediately available when the tractor is started in very cold conditions, below 0°C (32°F). In these conditions allow the tractor engine to run for three minutes before driving the tractor. **CAUTION:** DO NOT use ether, the engine is equipped with a thermostart cold weather starting aid. Ether combined with thermostart can cause an explosion with damage to engine, personal injury, or both.



Use the thermostart, particularly in temperatures below 0°C (32°F). The thermostart consists of a heating element installed in the inlet manifold. When operated by the key-start switch, the thermostart will ignite fuel in the manifold to heat the air before entering the combustion chamber. Starting procedure is as follows:

1. If the fuel system has been disturbed, the tractor has been standing unused or the thermostart has not been used for some time, ensure that fuel is available at the thermostart before use. Operate the fuel pump hand priming lever (2, Fig. 33) several times and slacken the thermostart union (3, Fig. 33), allowing fuel to seep out. Then tighten the union. Failure to observe this precaution may result in a discharged battery.
2. Ensure that the parking brake is engaged.
3. To engage the safety start switches, move all the gear shift levers and the PTO engagement shift lever to the NEUTRAL position. Then put all the auxiliary hydraulic control levers in their neutral positions. Move the hydraulic quadrant levers to the DOWN position.
4. Set the hand throttle to the fully open position
5. Push the fuel cut-off control fully IN.
6. Turn the starter switch to the third position clockwise (pre-heat) and hold it there for 15 to 20 seconds.
7. Depress the clutch pedal.
8. Turn the key to the fourth position clockwise (start) to engage the starter.
9. If the engine fails to start within 15 seconds, return the key to the (pre-heat) position for a further 10 seconds.

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

10. Re-engage the starter by moving the key to the (start) position.
11. When the engine starts, return the key to the pre-heat position until the engine runs smoothly, then allow the key to return to the auxiliary/run position.

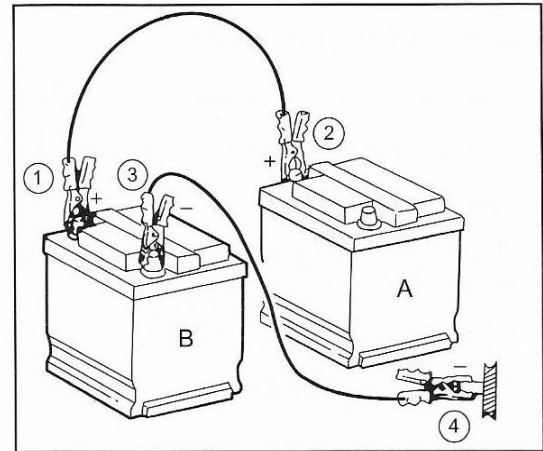


Fig. 34

12. If the engine does not start, repeat the pre-heat and cranking cycle, as described in operations 6, 7 and 8. After three attempts, if the engine fires but fails to pick up, turn the key to the (pre-heat) position for several seconds, then to the (start) position. Failure to start after these attempts will necessitate carrying out the checks given in procedure 7 in 'Normal Starting - Warm Weather' (see page 28).
13. When the engine starts set the hand throttle to a fast idle position (approximately 1200 rev/min) for two or three minutes, before putting the engine under heavy load.

### Starting the Tractor with Jump Leads.



**DANGER:** Operate the starter motor only from the operator's seat. If the key-switch is bypassed the engine may be started inadvertently with the transmission in gear. **WARNING:** Wear eye protection when charging the battery or starting the engine with a slave battery.



If the tractor has a discharged battery (A, Fig. 34), it can be started with either a slave battery (B) or the battery of another vehicle. Follow the procedure described below.

1. DO NOT use a slave battery of more than 12 volts.
2. DO NOT connect across the terminals on the starter motor.
3. Access the battery in front of the instrument panel (see page 73).
4. Connect one end of the jump lead to the slave battery positive (+) terminal (1) and the other to the tractor battery positive (+) terminal (2).
5. Connect one end of the other jump lead to the slave battery negative (-) terminal (3) and the other end to the tractor engine block (4).
6. Follow the starting procedure previously described.



### Towing to Start the Engine

1. Move the PTO lever to neutral.
2. Place the gear lever in high forward gear.
3. Open the throttle halfway.
4. Turn the starter switch key to the auxiliary position and push the fuel cut-off control fully in.
5. DON NOT exceed 3 kph (2 mile/hr).
6. Release the clutch pedal slowly.

### Starting Fluid - Emergency use only



**WARNING: DO NOT breath starting fluid fumes. Starting fluid fumes can be harmful to your health.**

If, in an emergency, it is necessary to use an aerosol can of starting fluid or ether, the thermostart **MUST** be disconnected. Disconnect the terminal wire from the thermostart on the intake manifold, (1, Fig. 35) and insulate the free end of the wire.

Two people will be required; one to spray the starting fluid, while the other person cranks the engine from the operator's seat.

Open the front grille or remove the air pre-cleaner, carry out normal starting procedure, while the engine is cranking spray a small amount of starting fluid into the air cleaner intake.

### Stopping the Engine

1. Close the throttle and apply the parking brake.
2. Put the gearshift levers in NEUTRAL.
3. Ensure that the PTO engagement lever is in the DISENGAGED position.
4. Lower the hydraulic equipment to the ground.
5. To stop the engine pull the fuel cut-off control fully OUT.
6. After the engine has stopped, turn the key from the auxiliary/run position to the OFF position.

### Emergency Stop

In the event of the need to shut the engine down when dismantled from the tractor, rotate the manual shut-off lever on the fuel injection pump in a clockwise direction and hold until the engine stops, (Fig. 36)

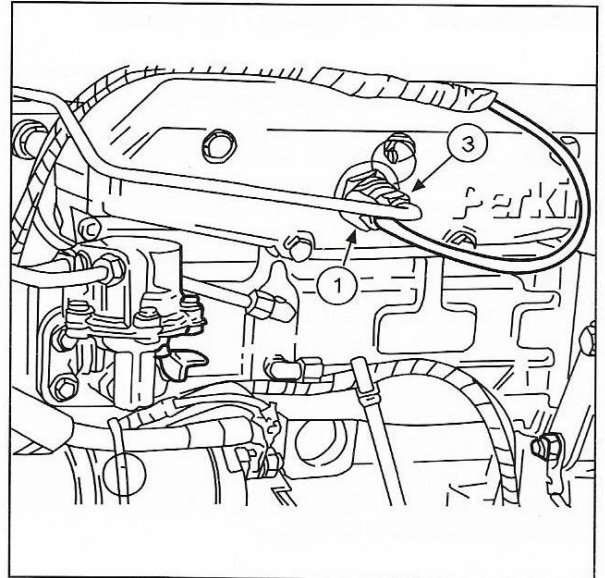


Fig. 35

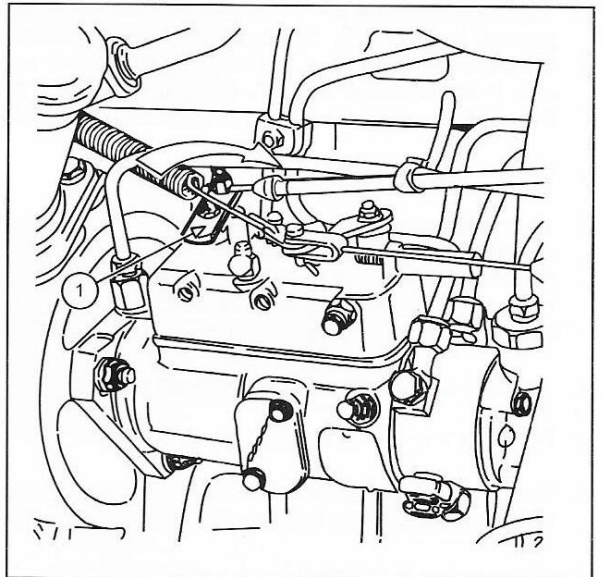


Fig. 36



**Running-in**

A gradual running in of a new engine is not necessary. Prolonged operation with light loads during the early life of the engine is not recommended. DO NOT operate the engine at high speeds without a load.

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 as possible to full working conditions.
2. Use 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 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.

**Use of the Travel Speed Chart**

A typical travel speed chart is illustrated (Fig. 37). The following instructions should be applied to the chart on the instrument panel or fixed to the tractor.

Used in conjunction with the tachometer, the travel speed chart performs two basic function:

1. Checking the tractor ground speed when travelling in a speed limited area.
2. Establishing the correct gear and engine speed at which to operate in order to comply with the requirements of certain PTO driven implements, e.g. Spinner broadcasters or sprayers, etc.,

**To Read the Travel Speed Chart:**

1. The bold horizontal bars on the chart represent the ground speed range in each gear, between the two engine speeds given in the inset below the tractor.
2. The small inverted arrow in the horizontal bar indicates the point within each ground speed range at which the PTO shaft will be operating at 540 rev/min (engine set at 1789 rev/min). This can be related to the road speed in kph or mile/hr at the top and bottom of the chart.
3. The numbers on the left of the chart are the gear ranges, 1st to 4th in the low range, 5th to 8th in the high range.
4. The information in the box gives the engine operating speed range, in this example, 1500 to 2250 rev/min. The 540 PTO engine speed is 1789 rev/min
5. Example of use:

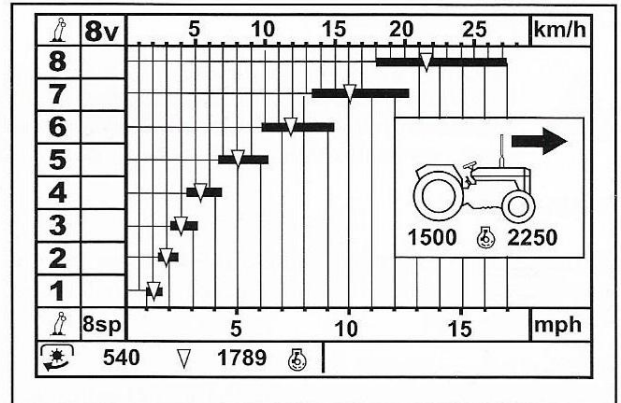


Fig. 37

Require 540 PTO speed at 8 kph (5 mile/he) road speed. Set engine speed to 1789 rev/min, on the chart select the horizontal bar where the small inverted arrow is opposite, or close to the 8 kph (5 mile/hr) road speed, in this case it is the bar for 5th gear.

**NOTE:** Refer to the speed chart on your tractor for the correct gear and speed range.



## Operating the Tractor



**WARNING:** Before operating the tractor, familiarise yourself with the function of the brakes, clutch, transmission, PTO, differential lock, controls and fuel cut-off control.

### Towing

Before towing the tractor, move the PTO lever, and all gear levers into neutral. The towing speed must not exceed 3 kph (2 mile/hr).

### Driving In Deep Water

If the tractor is operating in water 50 mm (2 in) or less below the underside of the gearbox corrosion damage can occur to major components. See your Massey Ferguson Dealer for special water-proofing instructions, otherwise the Warranty may be invalidated.

▲ **Beware of pedestrians in the area especially when reversing.**

## General Operating Advice



**WARNING:** Travel speed should be such that complete control and machine stability is maintained at all times. Where possible, avoid operating near ditches, embankments and holes. Reduce speed when turning, crossing slopes, and on rough, slippery or muddy surfaces.

1. DO NOT rest your foot on the clutch pedal.
2. DON NOT use the clutch as a brake.
3. DO NOT work the tractor by slipping the clutch, this can result in over heating.
4. DO NOT use the clutch to hold the tractor on hills.
5. DO NOT use too high a gear.
6. DO NOT engage the clutch at high engine speed.
7. DO NOT coast down slopes with the tractor in gear and the clutch disengaged, or with the transmission in neutral.
8. The tractor MUST come to a stop before changing direction.

## Hand and Foot Throttle



**WARNING:** For road work, close the hand throttle and only use the foot throttle.

Operation of the foot throttle overrides 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 using the foot throttle, the hand throttle must be fully closed.

1. Use the hand throttle to control the tractor speed when working in the field.
2. 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 lead to total clutch failure.
3. The use of flotation aids such as cage wheels or strakes, particularly in low gear, must be avoided.
4. DO NOT move either the gear lever (except synchromesh) or the dual range selector lever when the tractor is moving.
5. Never coast down slopes with the tractor in gear and the clutch disengaged, or with the transmission in neutral.

### Clutch Pedal Operation

The clutch release systems have a very light actuation to benefit the operator. Operators must NOT rest their foot on the pedal as clutch slip is soon induced.

The clutch pedal is used to temporarily disengage the drive. The operator must use the clutch pedal as follows:

1. When starting the engine in cold weather.
2. To start the tractor moving from stationary.
3. To select DIRECTION.

### IMPORTANT:

DO NOT ride the clutch pedal when the transmission is under load. Release the clutch pedal completely for improved clutch service life. Always push the pedal down to disengage the transmission when making a quick stop.



### 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 metres, therefore, select the gear in which the engine will operate satisfactorily at just three-quarters maximum power.

The main gear lever (1, Fig. 37) provides the operating gears within the range selected.

The dual range selector lever (2) provides the working and transport ranges for the tractor as follows:

H - High - transport range.

Key symbol - SAFETY START (neutral) position.

L - Low - work range.

### 8 x 2 Manual Gearbox

The main gear lever 'A' (1, Fig. 38) provides the operating gears within the range selected. The range lever on the right (2) selects the range, forwards for LOW (L) and backwards for HIGH (H) range.

Try to operate the tractor in 'High' range (Hare), then change to 'Low' range (Tortoise) to overcome difficulty or heavy patches.

Depress the engine clutch and push the lever forward for 'Low' range.

Return to 'High' range as soon as conditions will allow.

The speed selector lever is provided with a central neutral position. This should be selected when the tractor is standing with the engine running or for stationary PTO work

**NOTE:** The clutch pedal must be fully depressed at all times when changing gear. Except when there is synchromesh, the tractor must be stationary when changing gear..

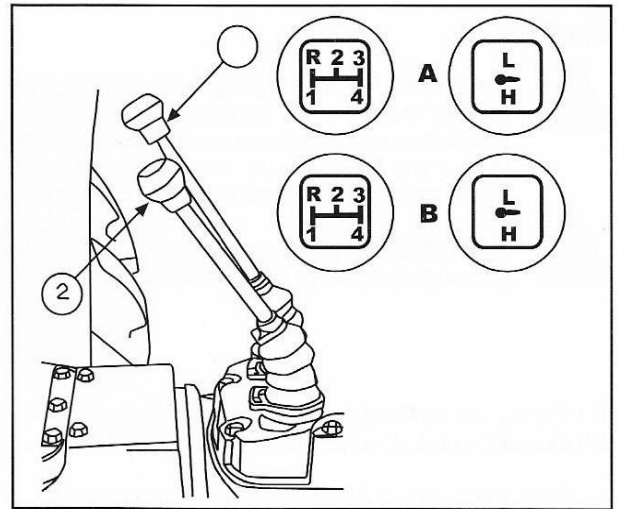


Fig. 38



## Brakes



**WARNING:** The brake pedals must always be locked together to ensure uniform brake application and maximum stopping ability. Only unlock the brakes when making sharp turns. Sharp turns must only be made at slow speeds.



**CAUTION:** ALWAYS apply the parking brake when dismantling from the tractor.

The tractor can be fitted with one of two types pedals (Fig. 39) Operation for both of these types of pedal is identical.

1. When the tractor is being operated for stationary work, even if only for short periods, always engage the parking brake.
2. The independent brakes (1) may be used to assist turning when travelling very slowly. Never apply one brake when travelling at speed.
3. A standard parking brake is fitted. Ensure that it is fully released before driving away.
4. When using the tractor on the road, lock your brake pedals together using latch (2).

## Making Sharp Turns

1. Release the brake pedal latch (1, Fig. 39).
2. Apply the brake (2) on the side to which the turn is to be made and turn the steering wheel.
3. Re-latch the brake pedals before driving on the road.

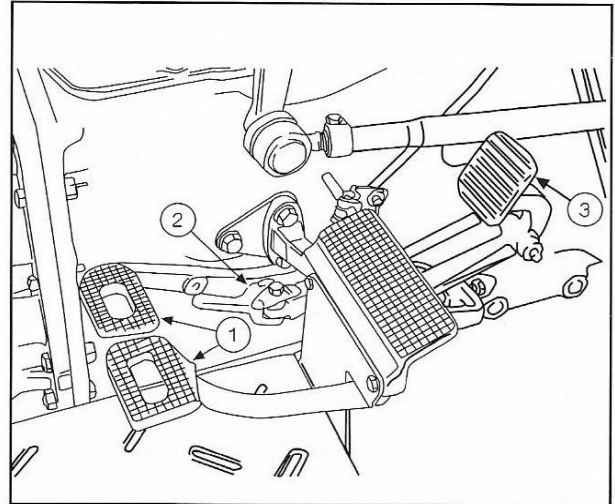


Fig. 39



## Differential Lock



**CAUTION: DO NOT drive on the roads, or at high speeds anywhere with the differential lock engaged. Steering will be difficult and may result in an accident. For field operation, use the differential lock to improve traction, but release it for turning at row ends.**

If a rear wheel starts to slip:  
To engage the differential lock (Fig. 40).

1. Fully depress the clutch pedal.
2. Push down on the clutch pedal with your heel, this engages the differential lock.
3. Release the clutch pedal slowly, while maintaining foot pressure on the differential lock pedal.
4. To disengage the differential lock release the pedal. If the lock fails to disengage automatically, depress the clutch pedal.

### **IMPORTANT:**

DO NOT attempt to engage the differential lock with one wheel stopped and the other wheel spinning fast. DO NOT attempt to turn with the differential lock engaged.

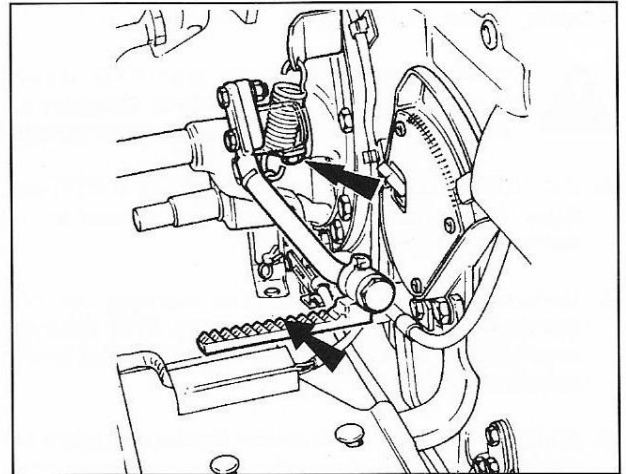


Fig. 40





## Power Take - off (PTO)



**WARNING:** PTO shafts and PTO driven implements can be extremely dangerous, observe the following important points:

- ▲ **DO NOT** operate the tractor without a PTO cap fitted. It protects people from injury as well as the splines from damage.
- ▲ **Before attaching, adjusting or working on PTO driven implements, disengage the PTO, stop the engine and remove the key, DO NOT** work under raised equipment.
- ▲ **Before engaging a PTO driven implement and after fitting, ALWAYS** carefully raise and lower the implement using Position Control, and check clearances, PTO shaft slide range and articulation.
- ▲ **Ensure that the PTO safety shield is in place at all times.**
- ▲ **Ensure that all PTO driven implements have the correct guards, are in good condition and conform to current standards.**
- ▲ **NEVER** step across any driveline.
- ▲ **DO NOT** use the tractor drawbar or the implement drawbar as a step.
- ▲ **NEVER** use the driveline as a step.
- ▲ **NEVER** wear loose fitting clothes.
- ▲ **Keep at least your height away from a rotating drive line.**

There are two types of Power Take-Off (PTO) available, Live Drive from the engine using a dual clutch and mechanical engagement.

The PTO shaft (1, Fig. 41) at the rear of the tractor has six splines and diameter of 35 mm (1 3/8 in) with an annular groove for positive fixing of implement couplings. A removable cap (2) protects the splines and the operator when the shaft is not in use.

### Live Power Take-Off

The live PTO (Fig. 42) is engaged by using the dual clutch. Depressing the clutch pedal through the first stage disconnects the drive from the engine to the transmission without interrupting the operation of the PTO.

#### To engage live PTO:

Depress the clutch pedal fully, move the engagement lever to the rear 'A' Set the engine speed to 1789 rev/min for 540 PTO shaft speed.

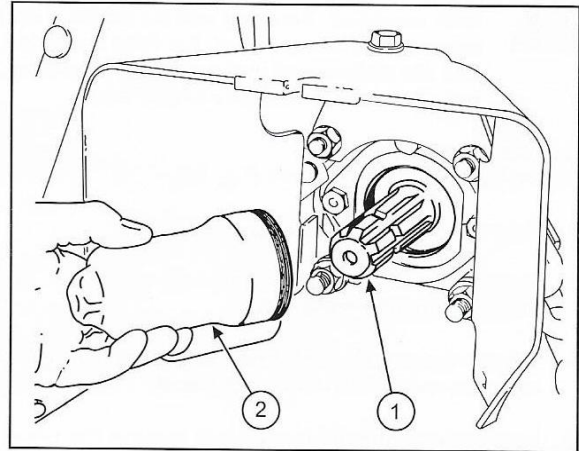


Fig. 41

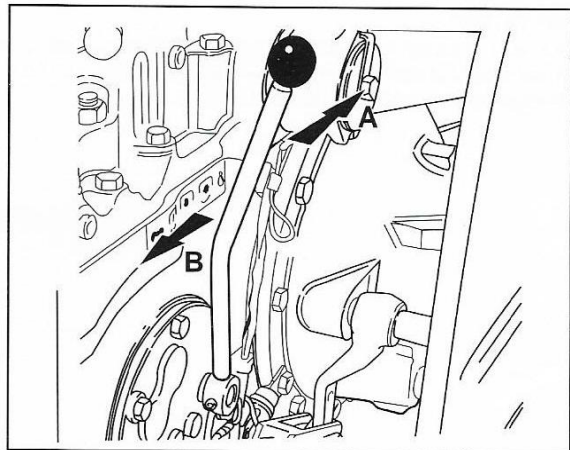


Fig. 42

#### To disengage live PTO:

Depress the clutch pedal fully, move the engagement lever forward to the vertical position 'B'.



### Attaching to the PTO Shaft

1. Unscrew and remove the PTO cap and store it in the tool box for future use.
2. Attach the PTO shaft to the splined shaft on the tractor. Ensure that the locking device has securely retained the shaft.
3. Ensure that all the guards are in place. A slot (1, Fig. 43) is provided in the top of the PTO guard to enable the driveline shield to be bolted to the tractor when pull-type PTO driven equipment is being used. A hole (2) is also provided for the PTO driveline shield chain.
4. If PTO driven equipment is connected to the swinging drawbar, the drawbar must be set so that the horizontal distance 'A' between the drawbar is 356 mm, (14 in) if using the six spline 540 rev/min shaft.

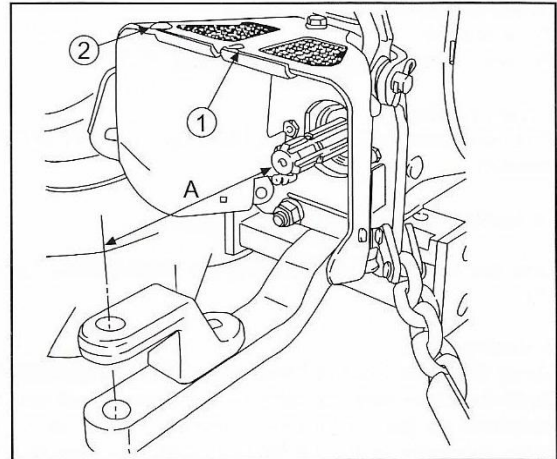


Fig. 43

### Hydraulic Lift System



**WARNING:** Before operating any of the controls ensure that all pedestrians are clear of the tractor and its implements.

The Ferguson hydraulic system combines the tractor and implement into one unit with the implement hydraulically controlled. This system has the following controls:

**Draft control**, (1, Fig. 44) operates in the (Draft) range of the quadrant and is used to control the working depth of soil-engaging implements. The further the lever is moved to the DOWN position, the deeper the implement will tend to penetrate the ground and, conversely, the nearer the lever is to the UP mark, the shallower the implement will tend to work.

**Position control**, (2) operates on the (Position and Transport) and (Constant Pumping) range of the quadrant. The Red sector is used to control the working height of implements above the ground. When the lever is in the sector, the tractor's lift pump hydraulic power supplements the auxiliary system to give additional speed, operate trailer tipping.

**Adjustable stops**, Hand knobs (3) lock the adjustable stop in place when the desired working depth or height is reached.

**Selector control**, (if fitted) this control (4) selects and diverts the flow of hydraulic oil from the linkage pump to either the internal lift system (linkage position) or the auxiliary hydraulic control valves (external position). It also combines the linkage pump and the auxiliary pump to give increased flow for external equipment (when fitted).

Moving the lever into the External Position automatically selects Constant Pumping internally.

#### Response Control

This control (Fig. 45) is used to control the rate of drop of

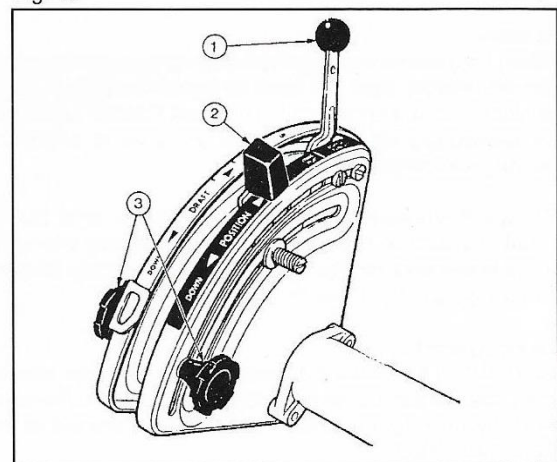


Fig. 44

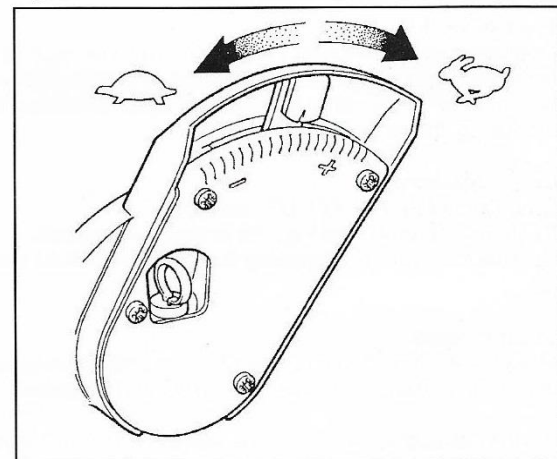


Fig. 45

the lower links and the attached implement. Move the lever UP (-) for slow, and DOWN (+) for fast.

**NOTE:** The control is very sensitive, move slowly and a little at a time.



### Draft Control - Outer Lever

*Type of work:*

Plowing; subsoiling; heavy cultivation.

*Lever positions:*

Position Control (2, Fig. 46), fully up in TRANSPORT position.

Response Control, in the SLOW position.

Operate the lift hydraulics using the Draft Control Lever (1).

**Entering work:**

Move the Draft Control Lever to the DOWN position to lower the implement into work. The implement will start to penetrate as the tractor moves forward. The further the lever is moved to the DOWN position, the deeper the implement will tend to penetrate.

**In work:**

When the desired working depth has been obtained, move the Adjustable Stop (3) back to the lever and lock into position with the hand knob. The Draft Control Lever can be moved slightly either side of the stop to adjust for varying soil conditions.

Set the Response Control (see Fig. 45) towards SLOW (-) but in a position to allow adequately fast entry into work. If the implement moves up and down erratically turn the Response Control towards SLOW.

**Leaving work:**

On reaching the headland, raise the implement by moving the Draft Control Lever back to the Up position. Re-entre work by moving the Draft Control Lever forward to the Adjustable Stop.

### Position Control - Inner Lever

*Type of work:*

Operation which requires the implement to be kept at a constant height above the ground, e.g., mowers, spinner broadcasters, levelling blades and other implements producing little or no draft.

**Lever positions:**

Draft Control (1, Fig. 47), UP position.

Response control, (see Fig. 45) in the slow position.

Operate the hydraulics by using the position Control Lever (2).

**Starting work:**

Move the Position Control Lever (2) down until the required implement height above the ground is obtained.

Set the Adjustable Stop (3) in line with the Position Control Lever.

Set the Response Control towards SLOW but in a position to allow adequately fast entry into work.

**In work:** No further adjustment is necessary.

**Leaving work:**

Move the Position Control Lever (2) up to the TRANSPORT position, if required. Re-enter work by moving the Position Control Lever forward to the Adjustable Stop.

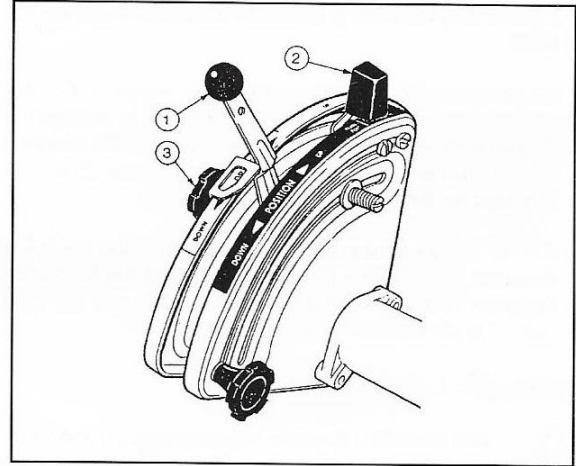


Fig. 46

Draft control

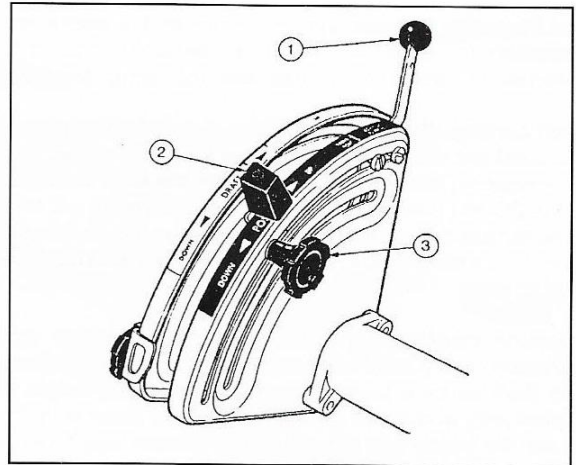


Fig. 47

Position control



### Transport Position

Used for transporting implement on the three-point hitch in the fully raised position.

#### Lever positions:

Draft Control Lever, (1, Fig. 48) in the fully UP position. Position Control Lever (2), placed in the TRANSPORT position against the stop. This will lift the linkage and implement and hold in the raised position.

### Constant Pumping

The constant pumping position provides a flow of hydraulic oil at 16.7 litre/min (3.7 imp gal/min), controlled by the Draft Control lever. It can be used to perform the following functions:

- Trailer tipping connection.
- Simple front end loader with single acting operation.

### Trailer Tipping Connection, Front End Loader (Optional)

The trailer tipping pipe connection is a single acting hydraulic circuit with a connection at the rear of the tractor. This connection may be a screw type as shown (Fig. 50) or the quick release coupling (shown in the inset).

*Coupling part numbers:*

- Screw coupling (Dowty) 646 663 M91
- Quick release coupling 1684 473 M1

#### Type of equipment:

Single acting ram implements, trailer tipping or loader operation.

#### Lever positions:

Put the Position Control Lever (2, Fig. 49) fully up into the **CONSTANT PUMPING** position.

Move the Draft Control lever (1) between the sector marks (4), to find a position where the ram neither extends nor retracts. Set the adjustable stop (3) below the Draft Control lever.

Response Control, not applicable.

#### Before operation:

Connect the hose from the implement single acting ram to the trailer tipping pipe at the rear of the tractor (Fig. 50).

#### Operation:

To extend the ram, move the Draft Control Lever UP.

To retract the ram, move the Draft Control Lever to the fully DOWN position below the adjustable stop.

**IMPORTANT:** When the ram is fully extended, return the lever to the stop to prevent the internal pressure relief valve from discharging continuously.

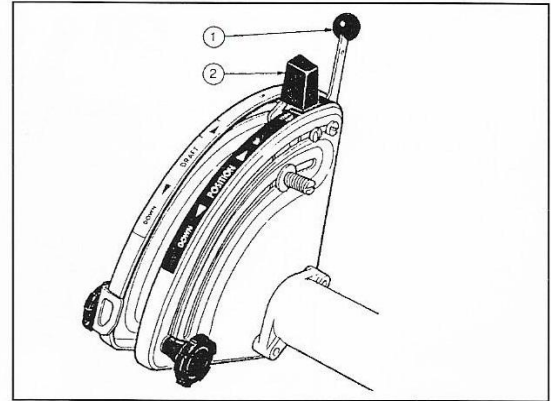


Fig. 48 Transport

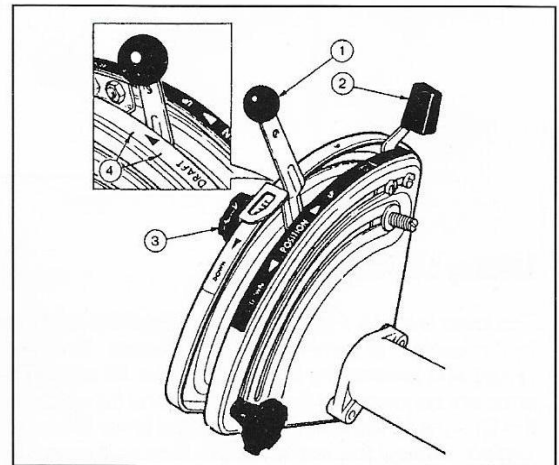


Fig. 49 Trailer tipping, Front end loader

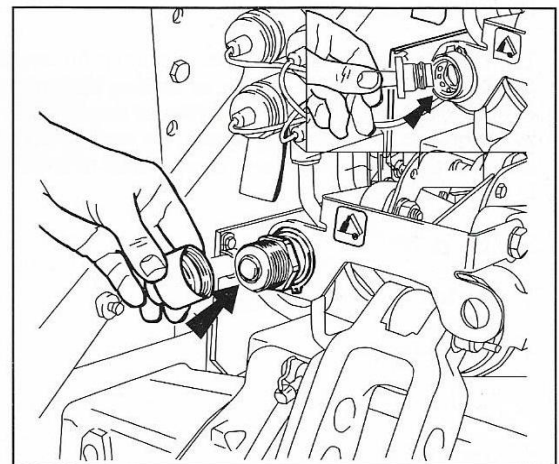


Fig. 50 Quick Coupler

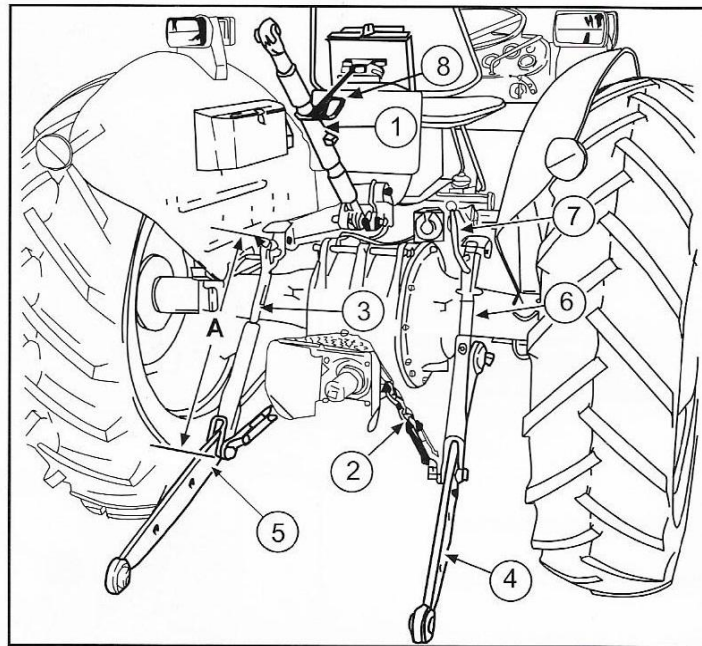


Fig. 51

### Lifting Linkage

The lower links, (4, Fig. 51) absorb most of the load exerted by a mounted, or semi-mounted implement. The links are raised and lowered by the action of the lift arms. The lift arms are connected to the lift rods (3) and (6) which couple the lift arms to the lower links (4). The lower links are ball jointed to allow the implement to float sideways slightly when operating, but excessive side-play which would allow the implement to contact the rear tires is prevented by the lower link check chains (2).

The right-hand lift rod (6) can be adjusted for length to facilitate the fitting of implements, or levelling the implement to allow the tractor to work at a different angle in relation to the ground. The levelling lever (7) is used to screw or unscrew the upper and lower components of the lift rod to adjust the length.

Key to Fig. 50:

1. Top link.
2. Check chains.
3. Left-hand lift rod.
4. Lower links.
5. Alternative lower link position (240 tractor only).
6. Adjustable lift rod.
7. Levelling lever.
8. Top link stowage hook.

### Top Link



**WARNING: DO NOT, in any circumstances, attempt to pull or tow from the top link connection, DO NOT operate the tractor with the threads showing.**

The top link, (1, Fig. 51) length is adjusted by turning the sleeve. The latch must be pulled back before the sleeve can be turned. The top link is adjusted when the implement is fitted to give the correct operating angle.

When transporting the tractor, hook the link into the raised position using the stowage hook.

#### Lift Rod Length

The lift rod, (3, Fig. 51) must be set to the correct length to obtain the optimum implement depth and maximum transport height. The left-hand lift rod length (dimension 'A') is set at the factory to the following lengths.

240 tractor ..... 573 mm (22 9/16 in).

240 tractor for normal lift height, fit the linkage as shown in Fig. 50. If an implement is fitted which requires a higher lift capacity, the lift rods can be relocated in an alternative hole, (5, Fig 51). This latter position reduces the operating angle of the lower link end.

NOTE: The lift rod bolts must always be adjusted so that they can rotate. The bolts must also be through the corresponding holes in both lower link arms.

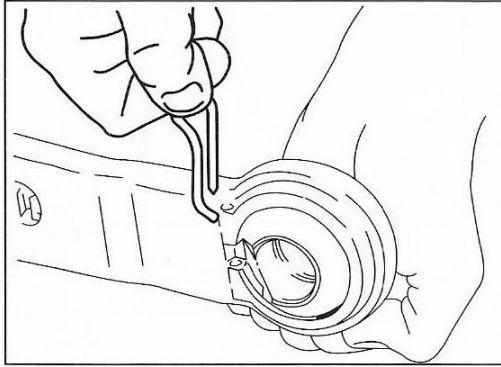


Fig. 52

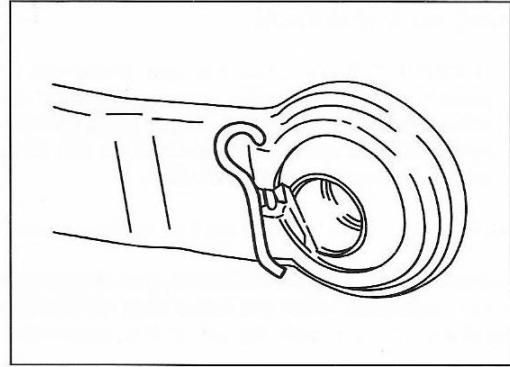


Fig. 53

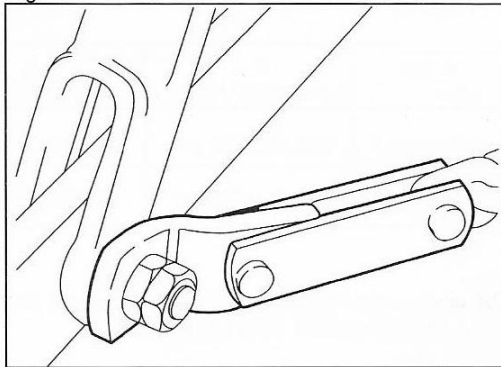


Fig. 54

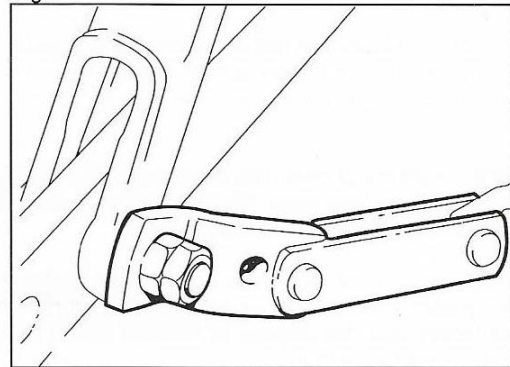


Fig. 55

### Lower Links

When fitting implements to the lower links, (see 4, Fig. 51) always fit the left-hand link first and use the levelling lever, as necessary, to assist in the fitting of the right-hand link. The maximum recommended lift load for normal working is:

1415 kg (3120 lbs) for the 240 tractor.

The check chains (2) ensure that the lower links DO NOT sway into the rear wheels.

### Interchangeable Ball Ends

(If fitted)

To change ball ends (Fig. 52 and Fig. 53) from Category 1 to Category 2 or vice versa, proceed as follows:

1. Pull the spring clip (Fig. 52) upwards, as shown.
2. Rotate the ball until the narrow section aligns with the slot in the lower link, then remove the ball. The ball comes out from one side only.
3. Fit the new ball by locating it with the narrow section in line with the slot, then refit the spring clip (Fig. 53) as shown.
4. Adjust the length of the check chains.

### Check Chains

(240 tractor)

The check chains (Fig. 54 and Fig. 55) prevent the lower links

from swaying into the rear wheels. Ensure that the chains are not twisted and are correctly fitted as shown.

For Category 1 implement set the check chain (Fig. 54) length as shown.

For Category 2 implements set the check chain (Fig. 55) length as shown.

NOTE: Always ensure that with the implement fitted the linkage can travel through its full range without straining the check chains or stabilizers.



**CAUTION:** When servicing or adjusting implements mounted on the 3-point linkage in the raised position, observe the following precautions:

- ▲ The implement must be supported on a stand or other suitable blocking to support the implement at all times.
- ▲ Ensure that the stand and tractor are on firm level ground.
- ▲ Never use concrete blocks, bricks or old rotted timbers for support. They collapse - even under light loads.
- ▲ DO NOT work under any implement supported on a jack.



## Attaching an Implement



**WARNING:** If two people are involved in attaching an implement, great care must be taken. When making any adjustment to the hydraulic lift system, the person in the area of the linkage must stand clear.

1. Place the Draft Control Lever in the fully raised position.
2. Lower the links using Position Control, back the tractor up to the implement, raise the lower links so that the left-hand link is in line with the pin on the implement.
3. Apply the parking brake before dismounting from the tractor.
4. Fit the left-hand lower link first and secure with a lynch-pin, if any small up and down adjustments of the lower links are necessary they must be made from the driver's seat.
5. Attach the right-hand lower link to the implement. Use the levelling lever (see page 26) if necessary to adjust the height of the link, then fit the lynch-pin.

Using a high hitch point increases the sensitivity of the hydraulic system. It also reduces the ground clearance during transport and the degree of control, which can cause uneven depth control.

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

6. The lower hole 'C' should not be used on this range of tractors.
7. Attach the top link to the implement 'A' frame and secure with lynch-pins and adjust for length.

On implements which have variable top and bottom attachment points, the dimensions given in Table 1 opposite, depending on the category of linkage used, (Fig. 56).

With heavy implements this will reduce unnecessary strain, on the tractor and loss of lift capacity. Some implement have two or more optional positions for the lower links. Providing the implement will penetrate to the required depth, reasonably rapidly, it is usually best to use the lowest pick-up point provided.

This will give the maximum weight transfer, minimise hydraulic system pressure and power losses. Also giving maximum transport height and allowing the use of the correct 'A' frame height setting on the implements.

8. 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.
9. Adjust the top link as necessary to level the implement (see page 40).

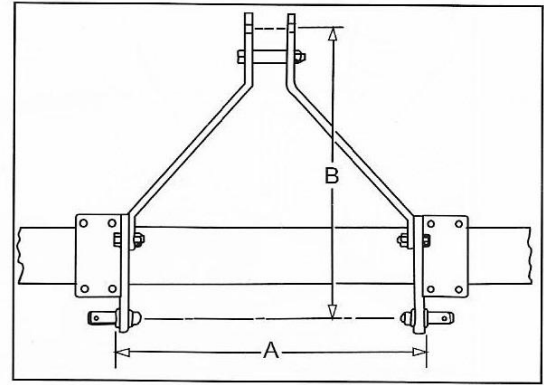


Fig. 56

Linkage type	A Lower link width	B Top link height
Category 1	683 mm (27 in)	460 mm (18 in) min
Category 2	825 mm (33 in)	610 mm (24 in) min

Table 1

10. Connect the implement to the PTO shaft, if required, and attach guards (see page 37).
11. Raise and lower the implement, checking clearances and general operation.

## Detaching an Implement



**WARNING:** If two people are involved in detaching an implement, great care must be taken. When making any adjustment to the hydraulic lift system the person in the area of the linkage must stand clear.

1. Select a level area as this will make detaching most easier.
2. Lower the implement using Position Control, or where necessary, raise the implement to fix parking stands in position then lower the implement to the ground.
3. Stop the engine and apply the parking brake before dismounting from the tractor.
4. Unscrew the top link to remove the weight of the implement and remove the pivot pin. Slow the lynch-pin, and then stow the top link in its clip.
5. Detach the lower links and stow the lynch-pins in the links in the stowage points provided.
6. Disconnect the PTO shield and shaft.
7. Disconnect hydraulic hoses and cap the ends. Replace the dust caps on the control valve couplings.
8. Start the engine and drive the tractor forward before returning the Position Control to the 'Transport' position.



## Detaching an Implement



**WARNING:** *It two people are involved in detaching an implement, great care must be taken. When making any adjustment to the hydraulic lift system the person in the area of the linkage must stand clear.*

1. Select a level area as this will make detaching much easier.
2. Lower the implement using Position Control, or where necessary, raise the implement to fix parking stands in position then lower the implement to the ground.
3. Stop the engine and apply the parking brake before dismounting from the tractor.
4. Unscrew the top link to remove the weight of the implement and remove the pivot pin. Stow the lynch-pin, and then stow the top link in its clip.
5. Dolach the lower links and slow the lynch pins in the links in the stowage points provided.
6. Disconnect the PTO shield and shaft.
7. Disconnect hydraulic hoses and cap the ends. Replace the dust caps on the control valve couplings.
8. Start the engine and drive the tractor forward before returning the Position Control to the "Transport" position.

### Pressure Relief Valve

Avoid 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 must be avoided, as damage to the relief valve may result in over heating the system and a reduction in the maximum hydraulic pressure.

### Multi-hole Drawbar and Stays

A fixed or swing drawbar should be used at all times in preference to the multi-hole drawbar and stays (Fig. 57).

This type of drawbar fits category 2 link ends and is only to be used for light applications. Lateral adjustment is provided by the nine holes, the stays control the vertical adustment.



**WARNING:** *The drawbar height must be correctly set for the implement being towed. The drawbar must not be set above the centre line of the rear axle. Failure to carry out these instructions can result in the tractor overturning.*

▲ DO NOT use the drawbar without stay links.

#### Attaching the drawbar:

1. Place the drawbar on the round and attach the stay links to the drawbar ends (1).
2. Lift the drawbar components and attach the assembly to the lower link ball ends, secure with lynch-pins (2).

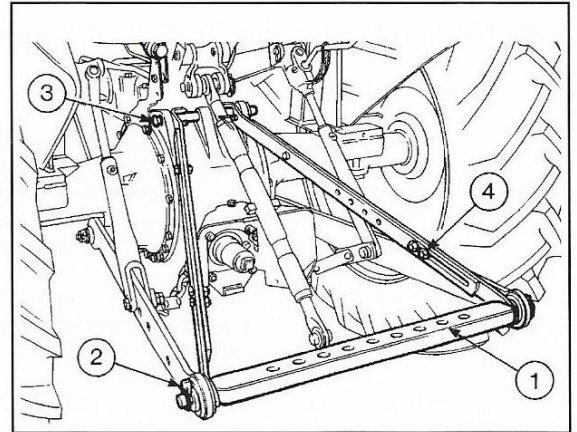


Fig. 57

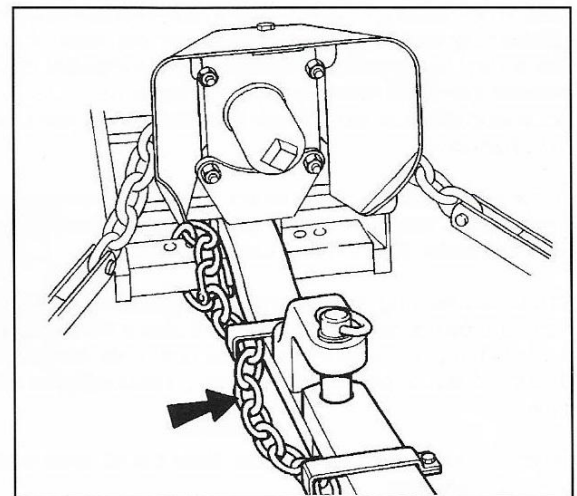


Fig. 58

3. Secure the top ends of the stay links to the centre housing with the long pin and lynch-pin (3).
4. Adjust the drawbar height by lengthening or shortening the stay links as required. For normal working height, set at 470 mm (18 in), line up the notches in the stays. Tighten the bolts securely (4).
5. The Position and Draft Controls must always be in the lower position when the drawbar and stays are in use.

### Safety Chains.

When towing implements on the highway, use a safety chain (Fig 58) with a tensile strength equal to or greater than the gross weight of the implement to be towed by the tractor. This will control and retain the implement in the event that the hitch pin is lost.

After attaching the safety chain, make a trial run by driving the tractor to the right and to the left for a short distance to check the safety chain adjustment. If necessary, readjust to eliminate tight or loose chain.





### Attaching and Detaching Trailed Equipment

#### To and From the Drawbar



**WARNING:** A rear turn-over can result if pulling from the wrong location on the tractor. Hitch only from the drawbar. Use the 3-point linkage only with implements designed for its use, NOT as drawbar.

**IMPORTANT:** Follow the implement manufacturer's recommendations in adjusting and aligning the implement and implement driveline with the tractor.

The swinging drawbar may be fixed in any of a number of positions or allowed to swing the full width of the hanger.

Fasten the drawbar in position using the swing-limiting pins when pulling implements which require accurate positioning and when transporting on the road. If both tractor and implement are equipped with a drawbar clevis, remove the clevis from the tractor or implement. DO NOT put a long drawbar pin through both implement clevis and drawbar clevis.

Allow the drawbar to swing when pulling ground-engaging implements which do not require accurate positioning. This will make steering and turning easier.

When connecting implements that are towed, use the correct drawbar pin and lynch-pin, or, use a hard steel pin and hold in place with a lock pin or cotter pin. Make sure that the drawbar pin does not make contact with the PTO driveline.

When working with the drawbar, raise the lift arms to the transport position.

When working with the PTO, set the drawbar to the centre position, lock in this position using the swing-limiting pins.

#### Swinging Drawbar (Optional accessory)

This type of swinging (Fig. 59 to Fig. 62) drawbar cannot be converted for use with an automatic trailer hitch.



**WARNING:** The drawbar must be correctly set for the implement being towed.

- ▲ DO NOT connect a tractor clevis to an implement clevis as this will strain the drawbar pin. Remove the bolt-on clevis from the tractor drawbar to ensure a satisfactory hitch.
- ▲ Always secure the drawbar to prevent swinging when transporting equipment or when operating anything but ground engaging equipment.
- ▲ Always use the correct drawbar pin with a securing device to prevent the pin coming out during operation.
- ▲ DO NOT exceed the maximum static downward loads as shown in the chart below.

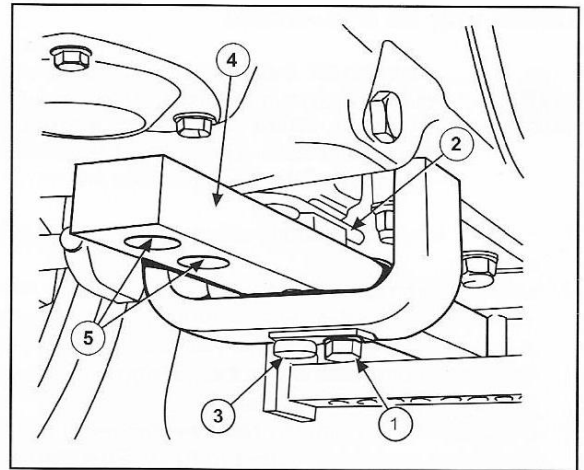


Fig. 59

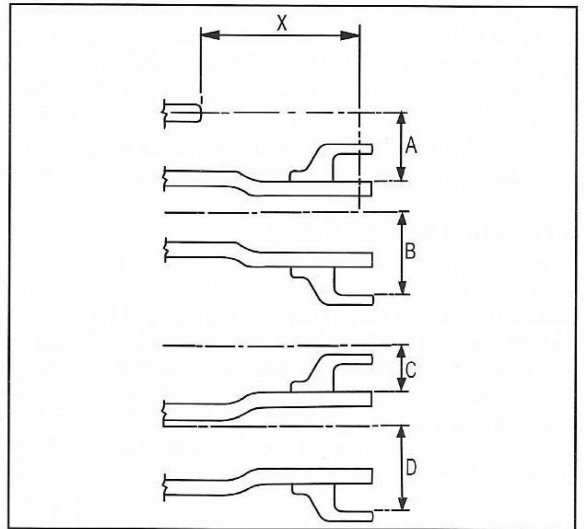


Fig. 60

The drawbar can swing or can be held at fixed positions by relocating the stop pins in the drawbar support frame. The drawbar can be inverted and the clevis attachment bolted of either side to suit pick-up points of various implements (Fig. 60). There are three length positions for the drawbar.



Table 2 below shows the distance from the clevis hitch point 'X' to the PTO shaft and the maximum vertical static loadings

Drawbar position	Distance of clevis from end of PTO shaft 'X'	Maximum static loadings
Inner position	240 mm (9.5 in)	1000 kgf (2205 lbf)
Centre position	345 mm (13.5 in)	775 kgf (1710 lbf)
Outer position	395 mm (15.5 in)	775 kgf (1710 lbf)

Table 2

**Drawbar Length**

To adjust the drawbar for length (see Fig. 59) proceed as follows:

1. Remove the bolt and keep plate (1).
2. Pull the pin retaining spring (2) to the left side to release the pin. Remove the drawbar pin (3).
3. Reposition the drawbar using one of the three holes (5).
4. Refit the pin (3), keep plate and bolt (1).

**Drawbar Height**

To adjust the drawbar height (see Fig. 60) proceed as follows:

1. Remove the drawbar pivot pin as described in 'Drawbar length'.
2. Remove the clevis and reposition in one of the positions shown (Fig. 57) the dimensions from the centre of the PTO shaft are given (see Table 3). Tighten the bolts to a torque of 230 Nm (170 lbf ft).
3. Refit the drawbar.

Position	Height
A	165 mm (6.5 in)
B	270 mm (10.5 in)
C	60 mm (2.25 in)
D	165 mm (6.5 in)

Table 3

**Drawbar Lateral Adjustment**

The drawbar (Fig. 61 and Fig. 62) may be fixed in any one of five positions or allowed to swing the full width of the frame. The maximum lateral swing is 240 mm (9.5 in).

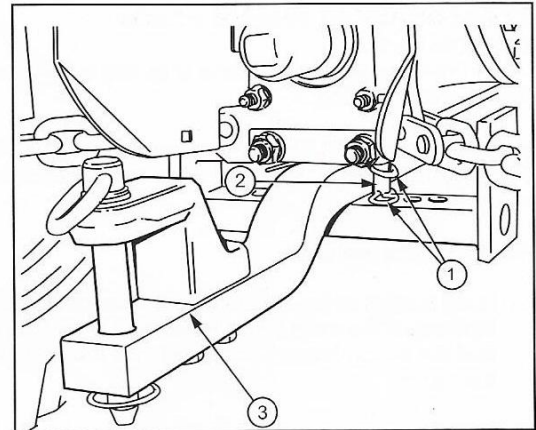


Fig. 61

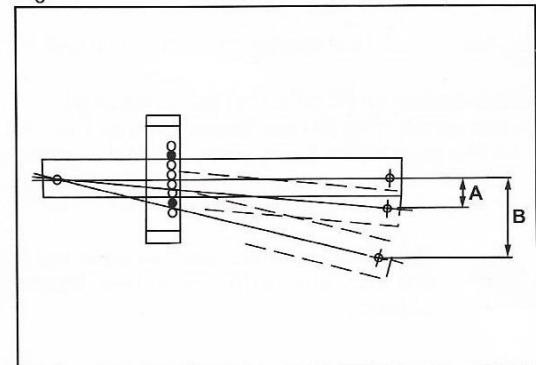


Fig. 62

**To change the position drawbar (Fig. 61)**

1. Remove the four 'R' clips (1)
2. Remove the two limit pins (2)
3. Reposition the drawbar (3), see Table 4, and refit the pins and 'R' clips, or leave it free to swing. Store the pins and 'R' clips in the tool box when not in use.

Position	Drawbar off-set
A	120 mm (4.7 in)
B	240 mm (9.5 in)

Table 4

Drawbar off- set when in the centre hole (Fig. 62): Allow the drawbar to swing when pulling ground engaging equipment which does not require accurate positioning. this will make steering and turning easier.

Fix the position of the drawbar when pulling or transporting equipment which requires accurate positioning.

NOTE: The lock-nuts securing the drawbar frame to the underside of the tractor must be kept tightened to a torque of 420 Nm (310 lbf ft). The lock-nuts securing the drawbar frame must be kept tightened to a torque of 245 Nm (180 lbf ft).



### Front-mounted Weight Frame (Weights Optional)

The front-mounted weight frame (Fig. 63) is bolted to the front support casting.

A maximum of eight 27 kg (60 lb) weights can be fitted. A towing hitch hole and pin are provided in the open centre of the frame.

#### Attaching the weights

1. Hook the top of the weight over the weight frame with the base of the weight tilted outwards. Lower the weight and the spring-loaded clamp will lock the weight onto the frame.
2. To remove the weight, pull downwards on the clamp ring and lift the weight off the frame.
3. Always keep the clamps on each weight well greased.

### Sun canopy (Optional accessory)

A sun canopy (Fig 64) can be provided for both the two and four post ROPS frame as an optional accessory. It is provided for the protection of the operator from the elements, sun and rain.



**WARNING:** The sun canopy does not provide the operator with protection from falling objects.

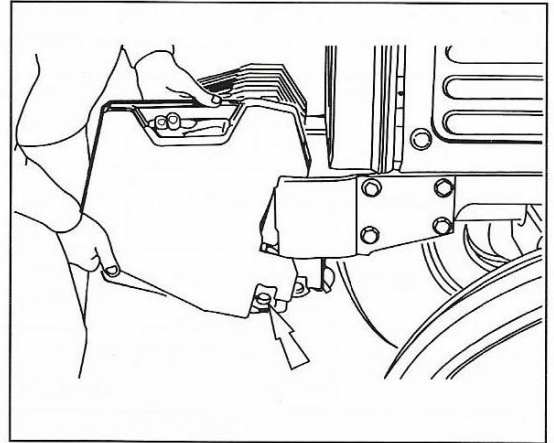


Fig.63

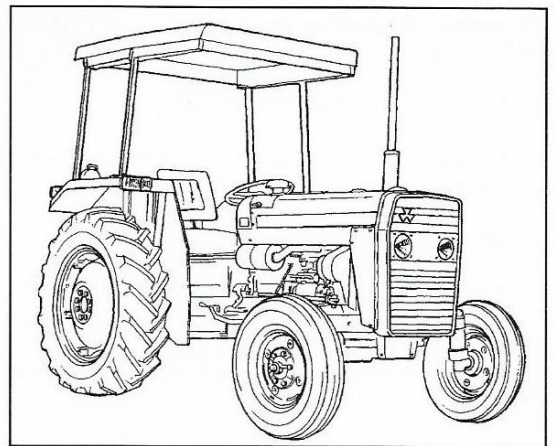
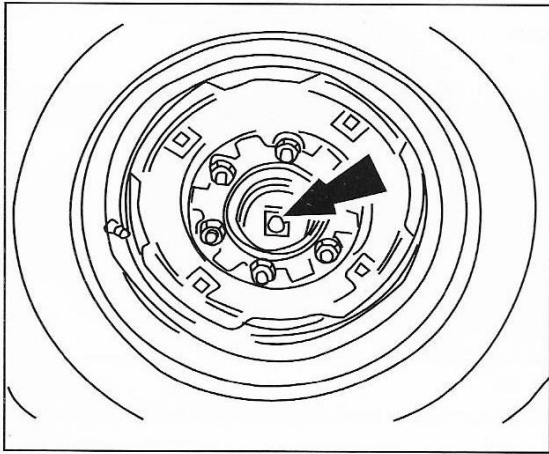


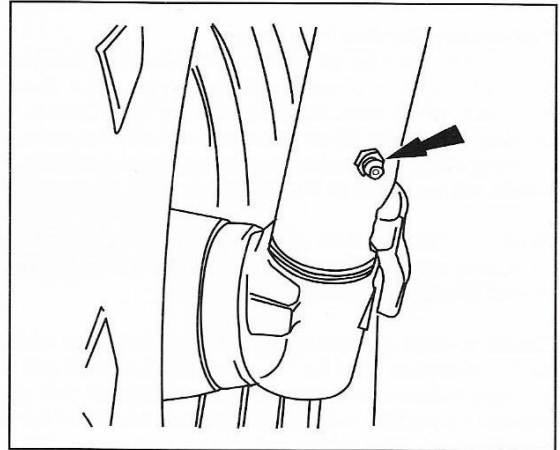
Fig.64



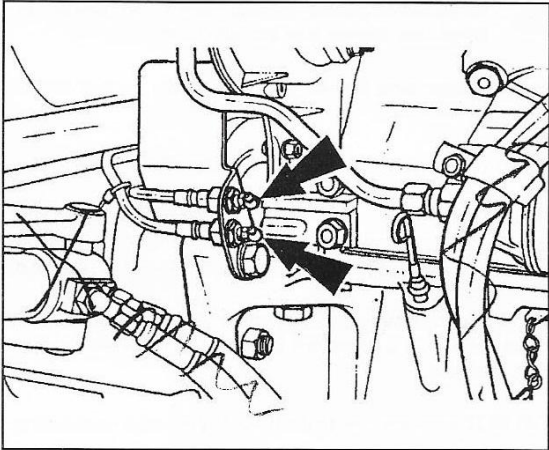
**Grease Lubrication** - Grease below with a good quality lithium-based grease.



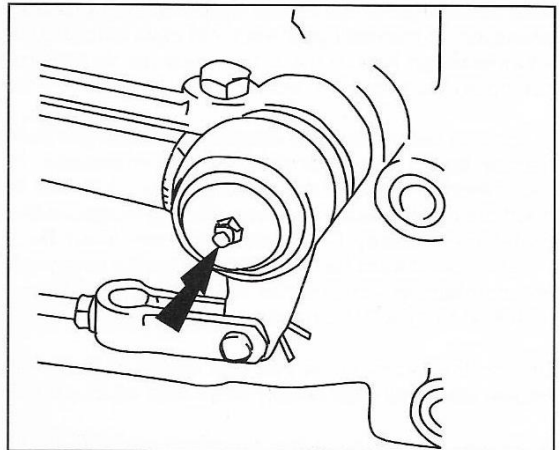
Front wheel bearings-two-wheel drive.  
Grease every 100 hours - 2 points. Grease daily when operating in adverse conditions.



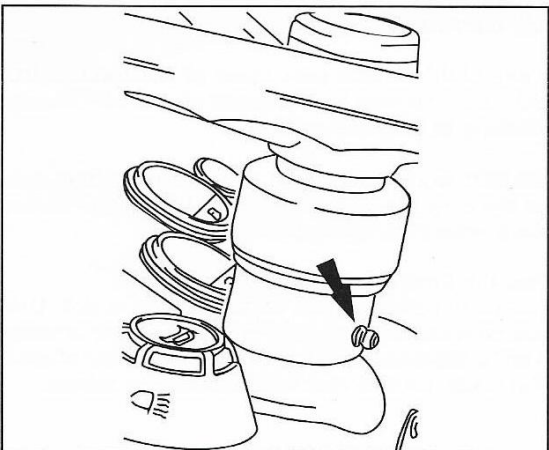
Front axle swivel pins - two-wheel drive.  
Grease every 100 hours - 2 points. One lubrication fitting on each spindle.



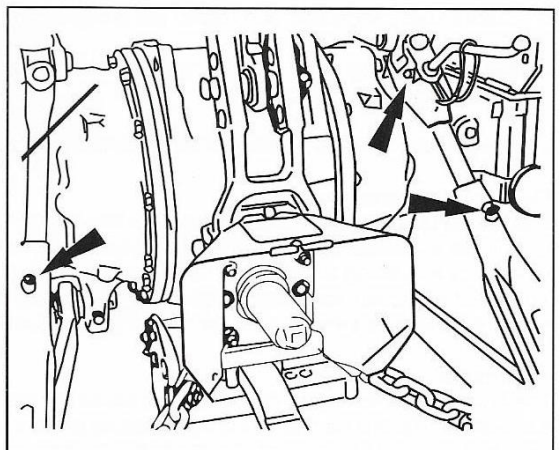
Front axle pivot pins - two-wheel drive.  
Grease every 100 hours - 2 points.



Brake pedal bearing (classic pedals only).  
Grease every 100 hours - 1 point.



Steering column.  
Grease every 100 hours - 1 point.



Lifte linkage  
Grease every 100 hours - 3 points.



## Maintenance and Adjustment

### Preliminary Service Inspection

When your new Massey Ferguson tractor has completed 50 hours work you are entitled to a 50 hour Service Inspection which must be undertaken by your Dealer. This involves a complete check of the tractor routine adjustments, checking oil levels and changing the engine oil and filters. Full details will be found in the Tractor Service Record Book.

**NOTE:** A charge will be made for any filter elements and lubricants used. Labour charges will be at the discretion of your Dealer.

Please contact your Massey Ferguson Dealer to arrange for a convenient time for this work to be carried out. We strongly recommend you take advantage of this post-delivery inspection and also be present when the service is carried out. This will provide an opportunity to discuss any operational problems with the Service Mechanic.

### Routine Service

This section gives full details of the service procedures necessary to maintain your tractor in peak efficiency. Also information on how to make the adjustments required in setting up the tractor for work.

In order to obtain the best results, it is important that the tractor has regular preventive maintenance. It is recommended that all the services (250, 500 and 1000 hour) are conducted by your local Massey Ferguson Dealer under the Massey Ferguson Recommended Service Programme. It must be remembered that the responsibility for maintaining your tractor in a safe and roadworthy condition rests with you, the owner.

Service the tractor at the intervals shown in the following pages. Use only high quality lubricants when servicing.

It is a recommendation that maintenance is done under cover, and at the end of an operating period, so that the oils are warm and drain easily.

- Before using a grease gun, clean the grease fittings.
- Before removing drain and filler plugs, clean the area around the plug and cap.
- Always use a clean container for fresh oil or diesel.

### Flexible Maintenance

The term 'Flexible Maintenance' is used in this publication to indicate a variable service period. Flexible Maintenance times vary according to individual conditions of operation. You must establish your own times for servicing flexible items. An average interval time for checking is at fuel fill.

### Hourmeter

The engine hourmeter (Fig. 65) shows the hours the tractor has worked. The first number to the right displays tenths of an hour and is a yellow number of a black background. The remaining numbers are white on a black background.

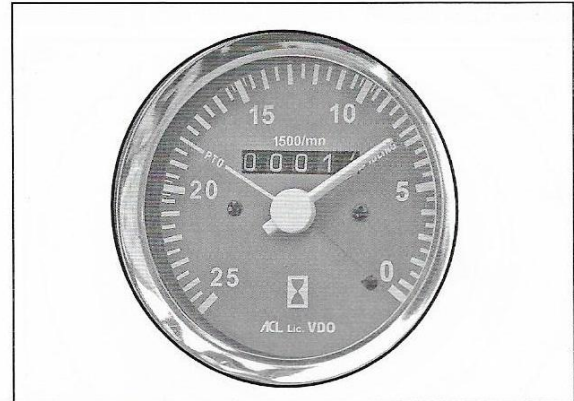


Fig. 65

Use the hourmeter to service the tractor at the correct periods.

## Safety in Servicing



**WARNING:** When changing oil it is important to follow some basic rules on personal hygiene, these are as follows:

- ▲ Before changing the oil use a suitable barrier cream on your hands.
- ▲ Wear protective clothing, overalls, PVC gloves etc.,
- ▲ Wash off dirty oil with soap and water as soon as you have finished changing the oil. Contaminated clothing must be removed and cleaned.
- ▲ Prolonged contact with dirty oil may affect your health, therefore it is important that you follow the above instructions.
- ▲ DO NOT service the tractor with the engine running.
- ▲ Keep hands, tools and items of clothing clear of all moving parts. Avoid skin contact with the exhaust pipe and manifold. They may be hot and will burn you.
- ▲ Keep children and pets clear of the tractor. DO NOT allow anyone on the tractor unless specifically working to your instructions.
- ▲ DO NOT work beneath the tractor with a lifting jack as the only support. Place suitable stands under the tractor as a safety precaution.

### Protect the Environment

It is illegal to pollute drains, water courses or soil. Use authorized waste disposal facilities, including civic amenity sites and companies providing facilities for receipt of used oil. If in doubt, contact your local authority for advice.



### Service Access

#### Front Grille

The front grille (Fig. 66) provides access to the headlight bulbs and wiring only. To remove the grille pull the lever and lift out the grille, the headlamp wiring can be disconnected if necessary.

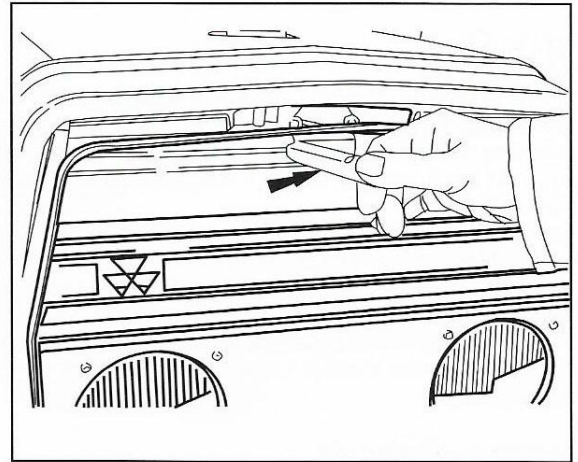


Fig. 66

### Radiator Cap



**WARNING:** High pressure steam and hot water. Remove the radiator cap with extreme care.

To remove the radiator cap (Fig. 67) - open the cover - press the radiator cap down and turn slowly counter-clockwise to allow pressure to escape before removing it. This is particularly important if the engine is hot.

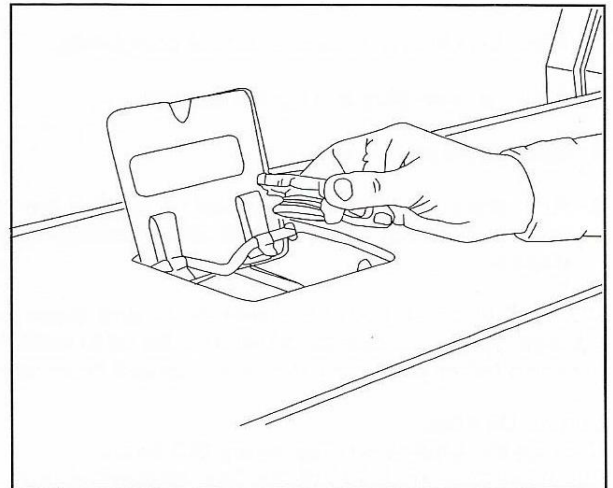


Fig. 67

### Fuel Filler



**WARNING:** Do not fill with fuel when the engine is hot or running.

To remove the fuel filler cap (Fig. 68 - rear of the two caps above the hood) - press the cap downwards and turn counter clockwise. For Further advice on diesel fuel and filling the tank (see page 80)

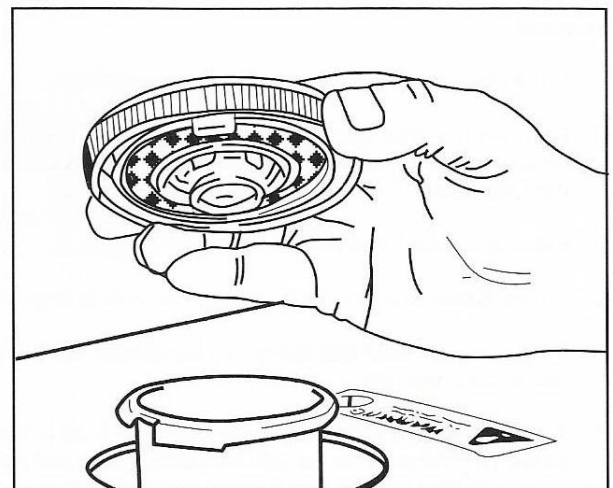


Fig. 68



## Engine Oil

### Engine Oil level

**Check the engine oil level - flexible maintenance** the oil level (Fig. 69) before starting work each day. If the engine has been running, stop the engine and allow the oil to drain back into the sump. Check the oil level with the dipstick (2).

If necessary, remove the oil filler cap (1) and top up with fresh oil of the correct grade.

To raise the oil level from minimum to maximum it requires: 1,5 litre (2 imp pts) (2 US pts).

The oil level must be maintained between the 'MIN' and 'MAX' marks on the dipstick (3) with the tractor standing on level ground.

### Changing the Engine Oil

#### Change the engine oil every 250 hours.

1. With the tractor standing on level ground, place a drain pan beneath the engine sump, then remove the engine sump plug (Fig. 70).
2. Allow the old engine oil to drain out completely.
3. Refit the drain plug and tighten securely.
4. Change the engine oil filter.
5. Refill the sump with an approved oil, so that the oil level is between the MIN and MAX marks on the dipstick.

**NOTE:** Run the engine to circulate the oil and check for leakage. Time must then be allowed for the oil to settle in the sump before rechecking the level. Top up if necessary.

### Engine Oil Filter

#### Change the engine oil filter every 250 hours.

The illustration (Fig. 71) of the filter element shows a typical installation with a vertical filter. In some applications the filter may be horizontal, the change procedure is identical.

1. Put a drain pan under the filter to retain spilt oil.
2. Remove the filter canister (1) with a strap wrench or similar tool. Ensure that the adaptor (4) is secure in the filter head. Then discard the canister.
3. Clean the filter head (3).
4. Smear a few drops of clean engine the sealing ring (2).
5. Fit the new canister and tighten by hand only. DO NOT use a strap wrench.
6. To fill the oil filter with oil, ensure that there is oil in the sump. Turn the engine over with the starter motor and pull the stop control out until the oil pressure warning goes out.

**NOTE:** Run the engine to circulate the oil and check for leakage. Time must then be allowed for the oil to settle in the sump before rechecking the level. Top up if necessary

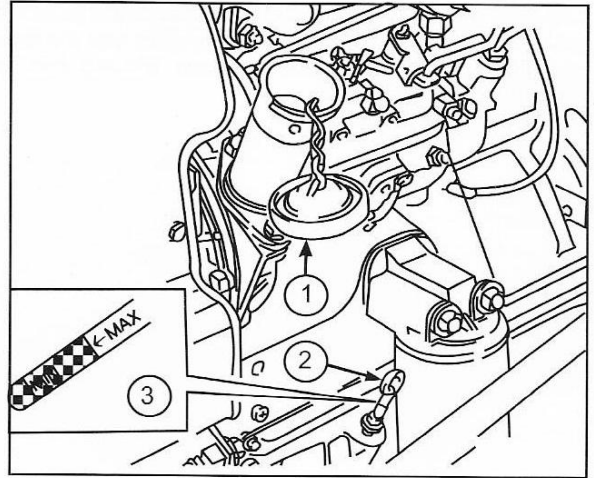


Fig. 69

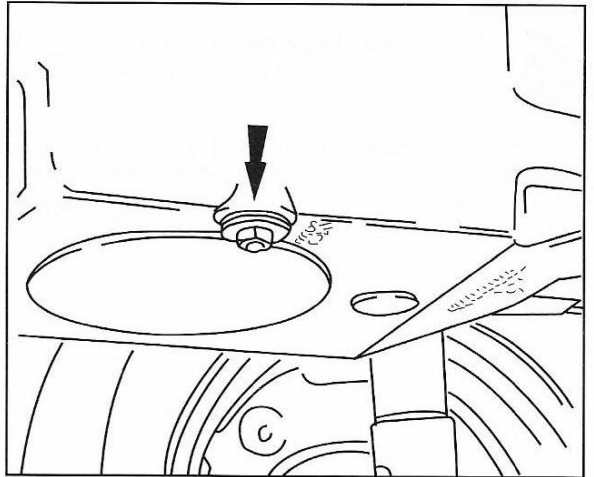


Fig. 70

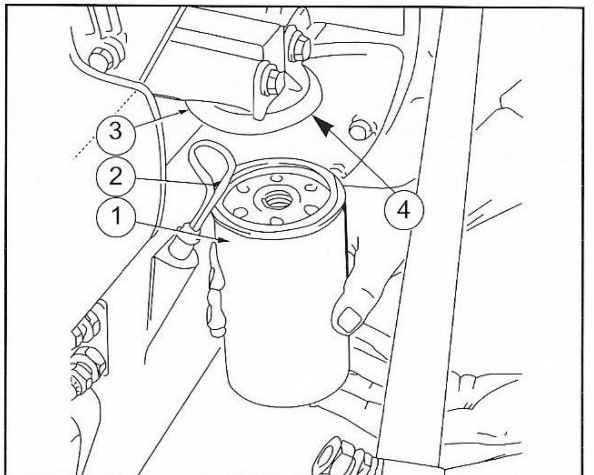


Fig. 71



### Valve Tip Clearances

Check the valve tip clearances every 1000 hours.

The valve tip clearance (Fig. 72) is set between the top of the tappet and the rocker lever.

The correct clearances (engine cold) are:

Three cylinder naturally aspirated engines:

0.30 mm (0.012 in) inlet and exhaust.

#### **To check the clearances proceed as follows:**

1. Turn the crankshaft in the normal direction of rotation until the inlet valve of number 1 cylinder has just opened and the exhaust valve of the same cylinder has not closed completely.
2. Check the clearances of valve numbers 4 and 6 and adjust them, if it is necessary.
3. Make a mark on the crankshaft pulley and the timing case and turn the crankshaft one complete revolution (360°) until the marks align again.
4. Check and adjust the clearances of numbers 1,2,3, and 5 valves.
5. Replace the rocker cover, using a new gasket.

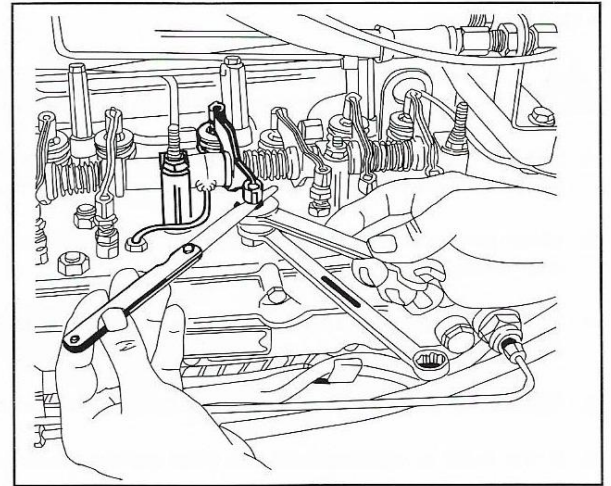


Fig. 72





## Fuel System



**WARNING:** Diesel fuel under pressure can penetrate the skin causing serious injury.

- ▲ **DO NOT** use your hand to check for leaks. Use a piece of cardboard or paper to search for leaks.
- ▲ **Wear protective gloves** to minimise skin contact with diesel fuel.
- ▲ **Stop the engine and relieve pressure** before disconnecting pipes.
- ▲ **Tighten all connections** before starting the engine.
- ▲ **If any fluid is injected into the skin** obtain medical attention immediately.

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

The fuel supply tap (if fitted) is situated under the fuel tank or adjacent to the filter (Fig. 73). For fuel handling and storage (see page 80).

**NOTE:** When working on the fuel system always use a catch tray, of adequate size, to catch any fuel which may be spilt. On models where a fuel cut-off tap is not fitted, fuel filter servicing should be done quickly to minimise fuel loss. Plastic fuel pipes may be clamped to prevent fuel loss where prolonged working is planned.

This range of tractors is fitted with a single fuel filter with glass bowl and water drain tap (Fig. 74). For tractors working in arduous conditions a dual filter system can be fitted, this comprises of a primary and secondary filter (Fig. 75), the primary filter having the glass bowl and drain tap.

### Removing Water or Impurities

**Check the glass fuel filter bowl and drain off any water or impurities - flexible maintenance.**

The glass bowl fitted to the bottom of the fuel filter is designed to trap water and heavy particulars of dirt to protect the filter element. Proceed as follows:

1. Check for water or impurities in the glass sediment bowl.
2. If necessary, open the drain tap (1, Fig. 74 and Fig. 75) to allow the water to escape.
3. Close the tap and then actuate the lift pump (2, Fig. 80) to refill the filter with fuel.

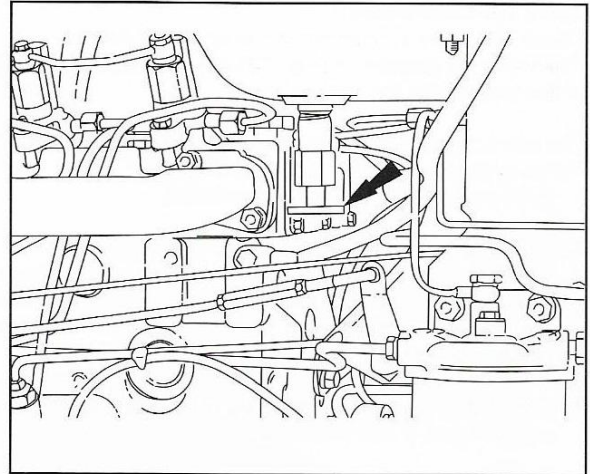


Fig. 73

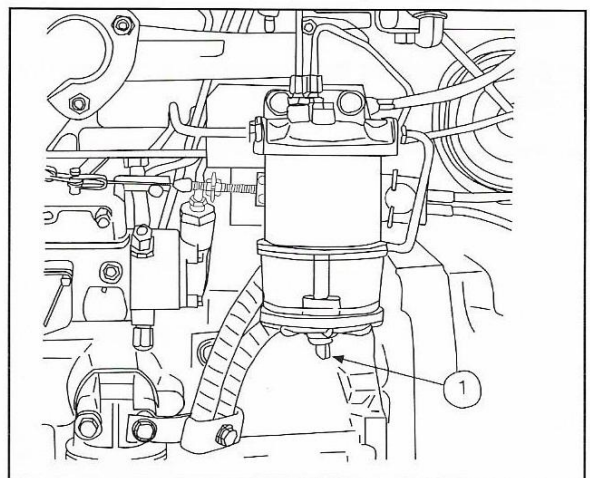


Fig. 74

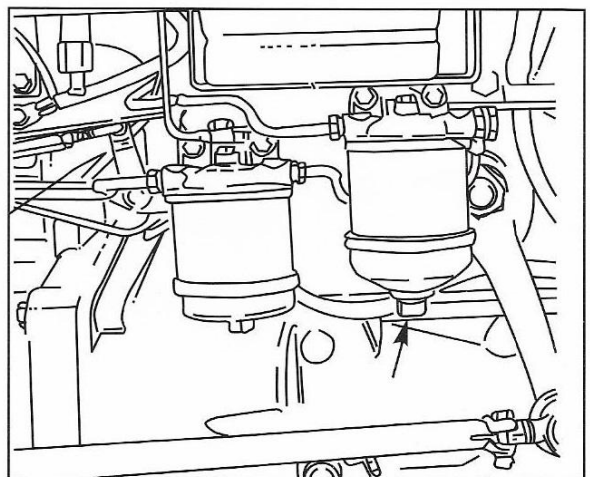


Fig. 75



### Fuel Filter

**Change the fuel filter element every 500 hours.**  
Referring to (Fig. 76).

1. Clean the outside of the filter assembly.
2. Drain the filter of fuel.
3. Remove the centre bolt (1).
4. Remove the element (3) and the bowl (4) from the head and discard the element.
5. Reassemble with new filter element (3) and new gaskets. Remove air from the fuel system and check for leaks.

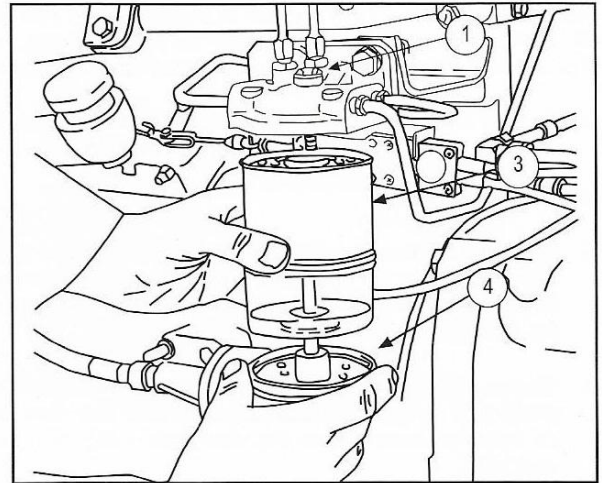


Fig. 76

### Secondary Fuel Filter (If fitted)

**Change the secondary fuel filter element every 1000 hours.**

The procedure is the same as the fuel filter above.

1. Clean the outside of the filter assembly.
2. Drain the filter of fuel.
3. Remove the centre bolt (1, Fig. 77).
4. Remove the element (3) and the bowl (4) from the head and discard the element.
5. Reassemble with new filter element (3) and new gaskets. Remove air from the fuel system and check for leaks.

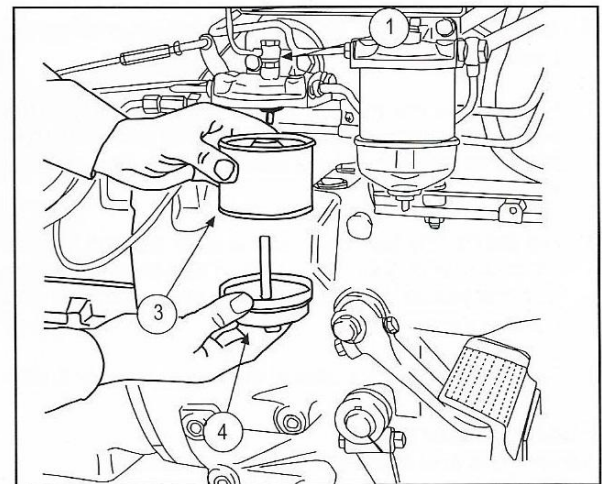


Fig. 77

### Removing Air from the Fuel System

If at any time air enters the fuel system, either due to fuel system servicing, running out of fuel, tractor standing idle for a considerable time or difficulty with starting, the following procedure must be used to remove air from the system:

**NOTE:** *If air removal temporarily eliminates the problem, but it occurs again, you must fully check and test all fuel lines and connections. Loose fuel connections and gasket surfaces, or damaged fuel lines, can allow air to enter the system without showing any apparent leakage.*

### Fuel Filter

1. Slacken the outlet union (1, Fig. 78) on the fuel filter, primary if two are fitted.
2. Operate the hand priming lever (see 2, Fig. 80) on the fuel lift pump until fuel, free of air bubbles, issues from the union, then retighten the union.

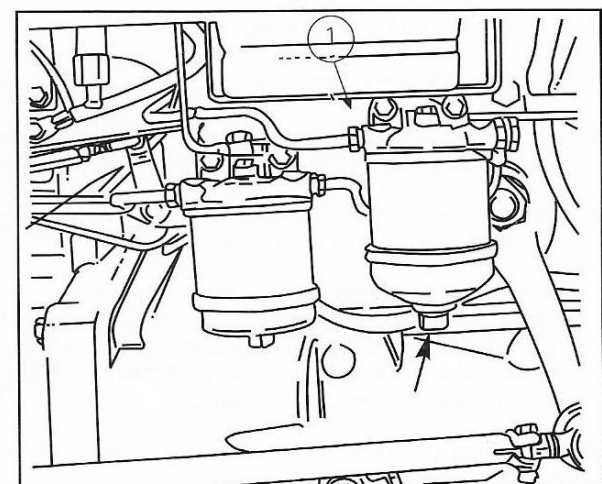


Fig. 78



**NOTE:** If the drive cam of the fuel lift pump is at maximum lift, it will not be possible to operate the priming lever. In this situation, the crankshaft must be turned one revolution.

3. Repeat the operation, slackening the outlet union (2) on the secondary filter (if fitted) and remove the air.

### Fuel Injection Pump

4. Slacken the lower vent plug (1, Fig. 79) 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 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.

### Fuel Injectors and Thermostart

6. Slacken the union at numbers one and three fuel injector.
7. Slacken the thermostart fuel feed pipe (3, Fig. 80) at the thermostart and operate the fuel lift pump until fuel, free of air bubbles, issues from the pipe, then retighten the pipe.
8. Set the throttle fully open and ensure that the fuel cut-off control is pushed fully in, then turn the engine over with the starter, until fuel, free of air, comes from the pipe connections.
9. Retighten the injector unions, the tractor is ready to start.

### Fuel Injectors

**Service the fuel injectors every 2000 hours.**

1. Clean the area around the injectors.
2. Remove the fuel leak-off pipe.
3. Disconnect the high pressure pipes from the injectors.
4. Remove the injector flange setscrews or nuts, remove the clamp (5, Fig. 81) if fitted, and withdraw the injector (2).
5. Remove the seat washer (3), dust seal (4) and the spacer (1) and fit onto a replacement injector.
6. Install the replacement injector. Where the injector has a high pressure connection on top, ensure that the fuel leak-off connection (6) is not towards the engine. Tighten the setscrews or nuts to 16 Nm (12 lbf ft) ensuring that the injector is straight.
7. Reconnect the leak-off pipe using new washers either side of the banjo fittings.
8. Reconnect the high pressure pipes, operate the engine and check for leakage of fuel.

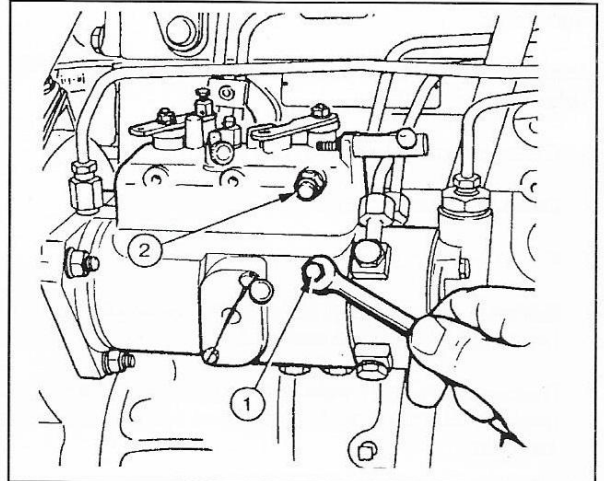


Fig. 79

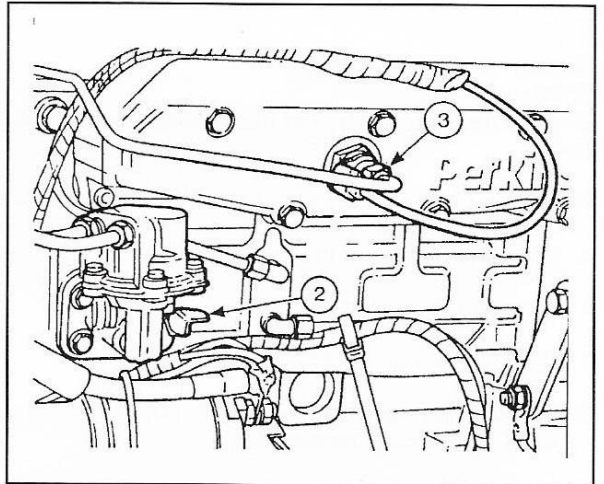


Fig. 80

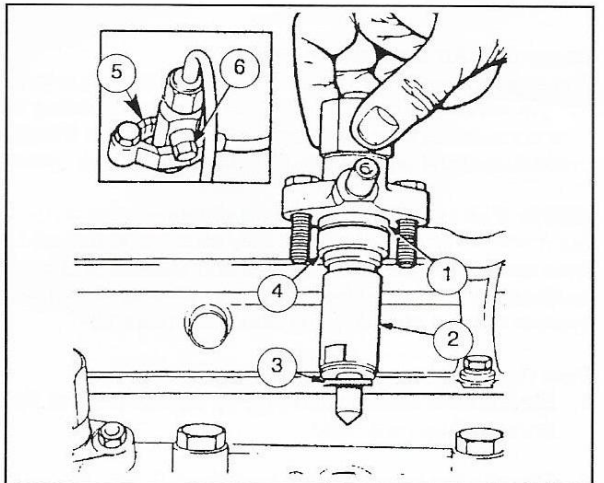


Fig. 81



## Air Cleaner Air Pre-cleaner

### Check the pre-cleaner - Flexible maintenance

Check the pre-cleaner bowl and empty out the dust if the level is near the 'MAX' mark.

1. Loosen the knurled nut (1, Fig. 82) and remove the cover (2) and bowl assembly (3).

2. Clean out and dry the complete pre-cleaner assembly and reassemble.

### Oil Bath Air-cleaner

**Check the level of oil and its condition - Flexible maintenance.**

**Change the oil every 250 hours.**

DO NOT allow the oil level to rise above the level mark.

### To clean the filter proceed as follows:

1. Unscrew the clamp fastener (1, Fig. 83).

2. Remove the bowl (2).

3. Remove the filter element (3).

4. Drain the bowl and clean it.

5. Wash the element in paraffin (Kerosene) or diesel fuel (NOT gasoline), and dry it.

6. Refill the bowl with clean engine oil to the level indicated (4) BUT NO HIGHER.

7. Refit the element in the oil bath.

8. Refit the oil bath to the air cleaner, ensuring that the seal (5) around the body of the cleaner is in good condition and correctly seated. Ensure that the clamp is properly engaged and secure.

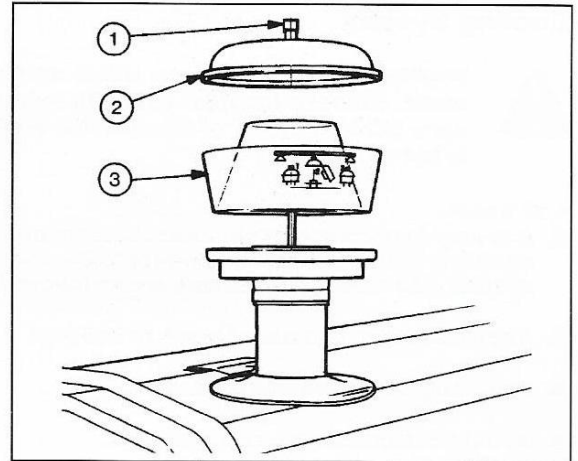


Fig. 82

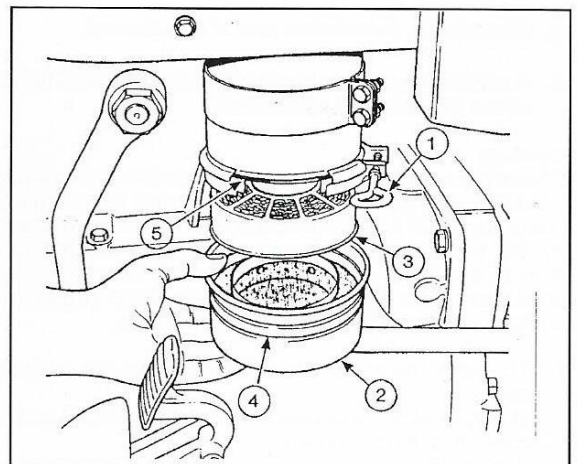


Fig. 83



## Cooling System



**WARNING:** High-pressure steam and hot water. Remove the filler cap with extreme care. DO NOT check or fill while the engine is hot or running.

### Anti-freeze:

▲ It is very important that you read the label on the container before you add anti-freeze to the cooling system. The safety precautions are as follows:

- ▲ Keep locked up and out of reach of children.
- ▲ Keep only in the original container.
- ▲ Avoid contact with the skin and eyes.
- ▲ Wear suitable protective clothing and gloves.
- ▲ Harmful by inhalation and if swallowed.
- ▲ If swallowed, seek medical advice immediately and show the label or container.

### Coolant

**Check the radiator coolant level - Flexible maintenance.** DO NOT use an anti-freeze solution for more than two years (or 2000 hours) of operation. The heat generated by the diesel engine causes a natural change in the inhibitors in the coolant which results in loss of corrosion protection. The loss of the inhibitors may cause water pump cavitation and cylinder block erosion.

1. To check the coolant level first remove the radiator cap slowly to allow pressure to escape. DO NOT add cold coolant to a hot system.
2. The coolant level must be maintained at 25 mm (1 in) below the filler neck. Top up with anti-freeze solution of the correct strength.

### Drain the cooling system every 1000 hours or two years whichever is the sooner.

1. To drain the cooling system remove the radiator cap slowly to allow any pressure to escape.
2. Remove the drain plug at the bottom of the radiator (Fig. 84).
3. Remove the drain plug from the cylinder block (Fig. 85). Make sure that the drain points DO NOT become blocked during draining.
4. If the old coolant is very dirty, flush out the system with clean water.
5. Replace the plugs and reconnect the hose if removed. Refer to Specifications for cooling system capacities. The pre-mixing of water and antifreeze is preferred. Use clean water and a 50% antifreeze solution.
6. Run the engine for approximately five minutes to remove all air from the system.

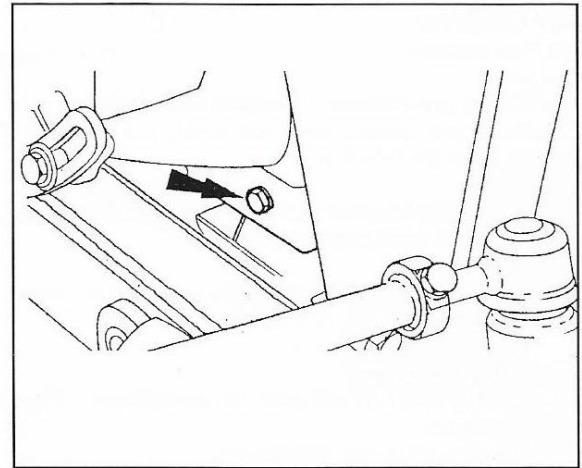


Fig. 84

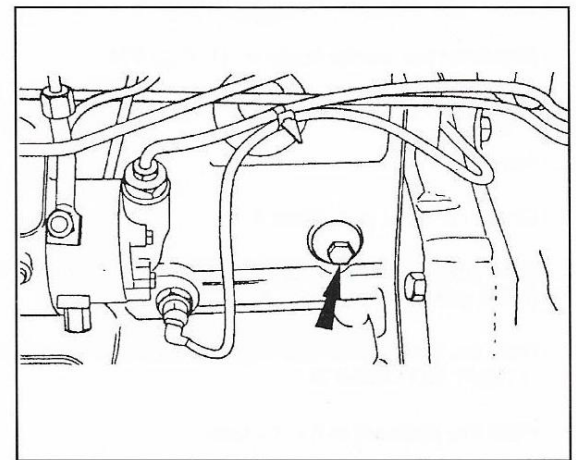


Fig. 85

Check the coolant level and add coolant if needed. Check the hoses, radiator, and pump for leaks.

**NOTE:** It is advisable to use Massey Ferguson anti-freeze, it contains inhibitors to protect your engine.

### Frost Precautions (Cold Climate)

Anti-freeze solutions must be added to the cooling system water. Use Massey Ferguson Universal Anti-freeze, available from your local Massey Ferguson Dealer. The correct proportion of coolant mixture is 50% water and 50% anti-freeze.

DO NOT use more than 50% anti-freeze solution in the cooling system unless the ambient air temperature will be less than  $-36^{\circ}\text{C}$  ( $-31^{\circ}\text{F}$ ). More than 50% decreases heat transfer and will cause the engine surface temperature to be more than normal. It should be remembered that an anti-freeze solution not only prevents freezing.

it also contains an anti-corrosion additive that protects the cooling system. The mixing of different makes of anti-freeze can lead to the loss of corrosion protection and is therefore not recommended.



**IMPORTANT:** If an anti-freeze solution is not used during frosty weather, the coolant must be drained after work to prevent damage from freezing. Use the procedure under draining the cooling system.

### Radiator

**Check the radiator fins for blockage - Flexible maintenance.**

The radiator (Fig. 86) must be checked for blockage, they can be cleaned by blowing with compressed air or a high-pressure washer not exceeding 7 bar (100 lbf/in<sup>2</sup>). Clean from the rear of the radiator and remove the side panels to allow debris to escape.

Fins blocked with oily substances may be cleaned with a detergent solution, preferably applied with a high-pressure washer.

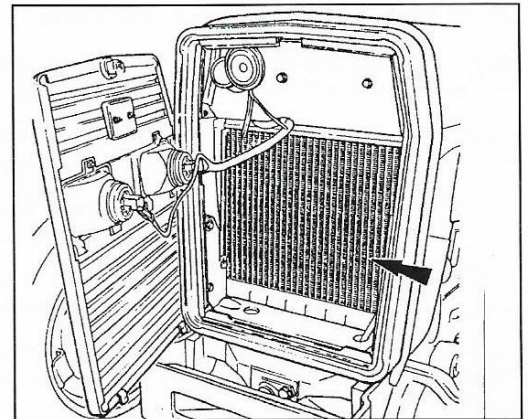


Fig. 86

### Clutch

#### Main Clutch Adjustment

**Check the clutch adjustment every 100 hours.**

When the tractor enters service, or has new clutch linings fitted, the clutch must be carefully bedded in (See *Running-in Operation* page 31). The clutch pedal linkage must be checked frequently during the first 50 hours and necessary adjustments made immediately. Subsequent checks must be made at 100 hour intervals.

#### Procedure-240 with classic type pedals

1. Insert a tommy bar in the hole at the end of the clutch operating shaft (1, Fig. 87) and rotate it clockwise until resistance is felt.
2. Slacken the clamp bolt (2) securing the arm to the shaft and set the distance between the top of the pedal arm and the bottom of the footstep bracket (A) to 11 mm (7/16 in).
3. Retighten the clamp bolt. Press the clutch pedal down through its full travel five times, recheck the free travel and readjust if necessary.

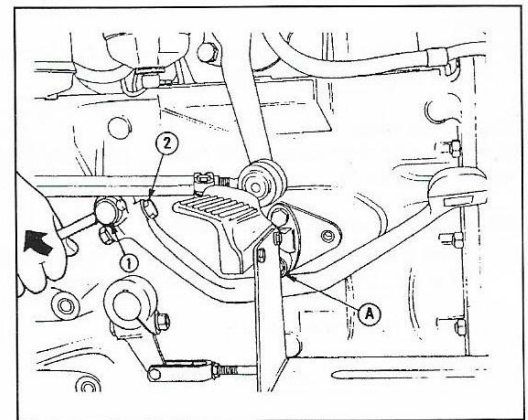


Fig. 87

#### Procedure-240 with pendant type pedals

1. Insert a tommy bar in the hole at the end of the clutch operating shaft (1, Fig. 88) and rotate it clockwise until resistance is felt.
2. Slacken the clamp bolt (2) securing the arm to the shaft and set the distance between the lever (3) and the stop plate (4) to 4 mm (5/32 in). This will give a free pedal movement of 25 mm (1 in) at the pad.
3. Retighten the clamp bolt (2). Press the clutch pedal down through its full travel five times, recheck the free travel and readjust if necessary.

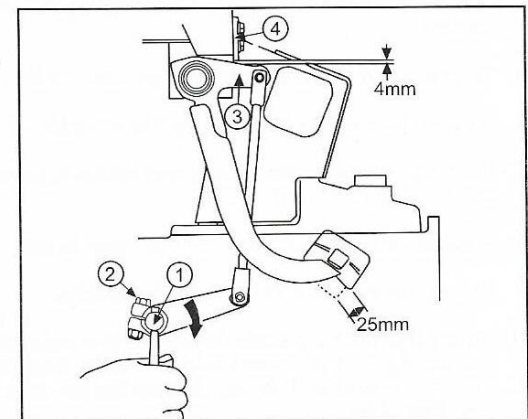


Fig. 88



### Live PTO Clutch

**Check the clutch setting every 1000 hours.**

**NOTE:** Tractors with IPTO and single plate clutches DO NOT require this adjustment.

Check the clutch adjustment more frequently if heavy PTO work has been involved.

1. Remove the four bolts and the inspection cover from the underside of the clutch housing (Fig. 89).
2. With the stop control out, rotate the engine until one of the three adjusters is visible in the inspection aperture.
3. With the aid of a feeler gauge, check the clearance 'A' between the bolt head and the clutch plate. It should be 1,8 mm (0.070 in).
4. If adjustment is required, slacken the nut and adjust the bolt to the correct clearance and retighten the nut.
5. Carry out the same procedure for the other two adjusters and replace the inspection cover.

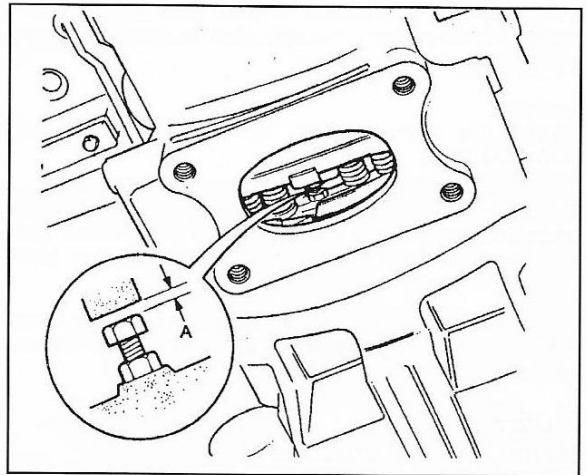


Fig. 89

### Drum Brake

**Check the brakes every 250 hours, or more frequently heavy work is involved.**

**Procedure to adjust the brakes:**

1. Chock the front wheels and raise the rear wheels clear of the ground, release the parking brake.
2. Unlatch the brake pedals.
3. Open the cover plate.
4. Insert a screwdriver through the slot in the back plate (4 Fig. 90) and turn the adjuster star-wheel (5 Fig. 91) to expand the shoes in the drum until the wheel is locked.
5. Depress the brake pedals sharply several times.
6. Repeat procedure 4 to ensure the wheel is locked.
7. Turn the adjuster star-wheel five clicks to slacken off the shoes from the drum.
8. Repeat procedures 3 to 7 for the other brake.
9. Lower the tractor and remove the chocks.
10. Latch the brake pedals together and road test the tractor. Apply the brakes and see if the tractor tends to pull to one side. If does, slacken the adjuster on the side that pulls.
11. Close the cover plate.

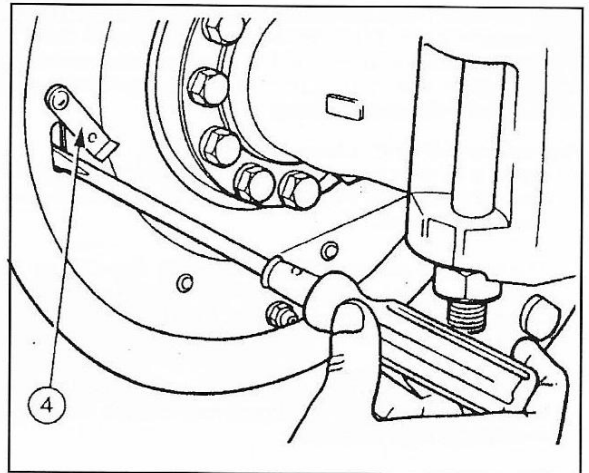


Fig. 90

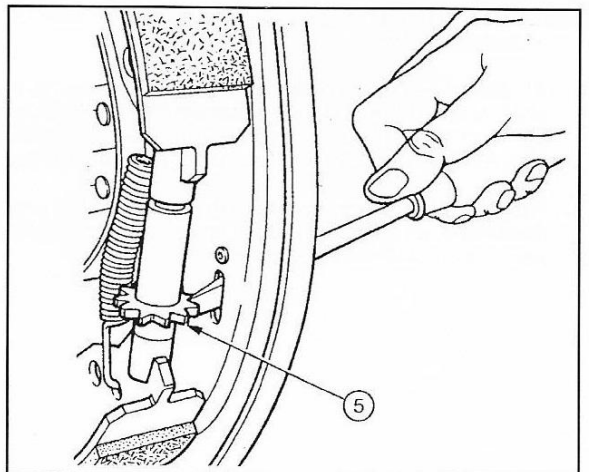


Fig. 91



### Parking Brake

The parking brake should be fully applied when the parking brake lever is raised to the third or fourth notch (click) on the quadrant. If adjustment is required, ensure that the rear brakes are correctly adjusted first. Then adjust the length of the brake cable by turning the adjuster nuts (Fig. 92)



**CAUTION:** If, after the full adjustment procedure, brake operation is unsatisfactory, notify your Massey Ferguson Dealer immediately.

### Differential Lock

#### Differential Lock - Drum Brakes

**Check the differential lock every 500 hours**

1. Ensure that the pedal operates freely throughout its complete travel (Fig. 93).
2. Engage the differential lock.
3. Slacken the clamp bolt.
4. Move the pedal to the desired position to give a clearance of 25 mm (1 in) between the pedal and the footstep.
5. Tighten the clamp bolt to a torque of 115 Nm (85 lbf ft) and check the clearance.

### Transmission and Hydraulics

#### Oil Level

Check the transmission and hydraulic oil level every 100 hours.

The oil level: (Fig. 94) must be maintained between the 'MAX' and 'MIN' marks on the dipstick for normal use. When using auxiliary hydraulics with implements which require a large quantity of oil or when working on hillsides or sloping land, ensure that the transmission oil level is maintained at the 'MAX' mark on the dipstick

**To check the oil level:**

1. Move the tractor onto level ground.
2. Stop the engine.
3. Unscrew the dipstick and check the oil level.
4. If necessary, remove the filler plug and add oil to the correct level (see Fig. 96).

#### Transmission/Hydraulic Oil

**Change the transmission/hydraulic oil every 600 hours.**

1. Move the tractor to level ground.
2. Place a suitable container beneath each drain plug.
3. Remove the two drain plugs (Fig. 95).
4. Place the hydraulic control levers in the fully 'DOWN' position.
5. Remove, clean and refill the oil filter.

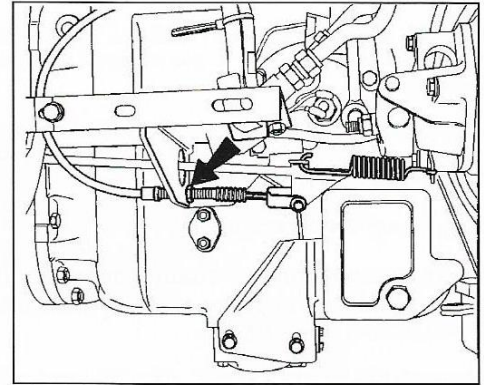


Fig. 92

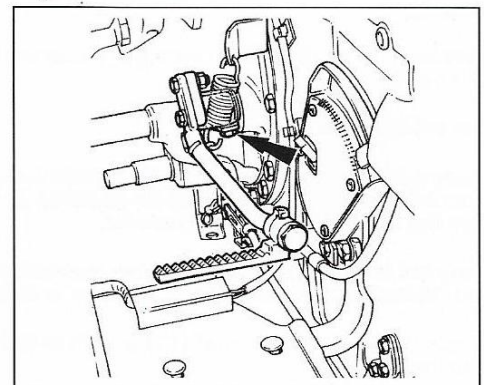


Fig. 93

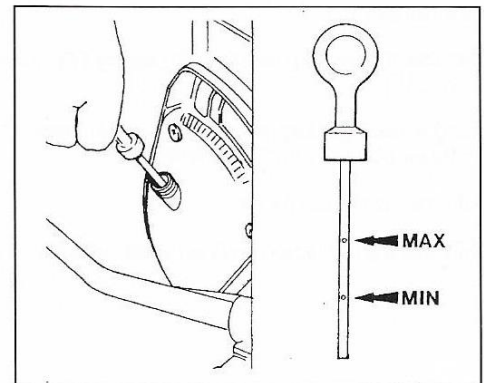


Fig. 94

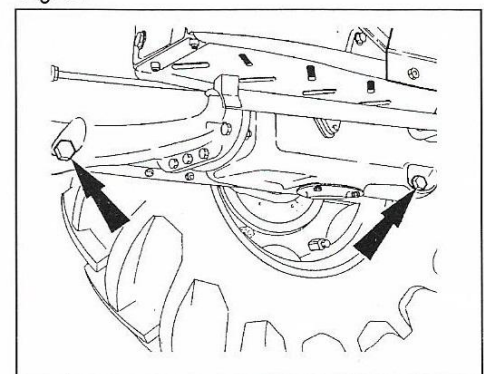


Fig. 95





6. Refit the drain plugs. Then refill the system through the transmission oil filler to the required level, with an approved oil.
7. After allowing time for the oil to settle, check the level of the oil, then, if necessary, add further oil and refit the filter plug.

### Linkage Pump Oil Strainer

**Clean the linkage pump oil strainer every 600 hours.**

1. Drain the oil by removing the two drain plugs as described on previous page.
2. Remove the three bolts (2, Fig. 97) and washers securing the cover plate (3) to the bottom of the centre housing.
3. Remove the clip (5), nut (6) spring (7), washer (8) and 'O' ring (9).
4. Pull out the strainer (10).
5. Thoroughly clean the strainer with a paint brush and a container of solvent. Remove all particles of debris from the folds of the strainer material.
6. Carry out an inspection of the strainer material, discard and replace the strainer if any damage is detected.
7. Check that the strainer stud (11) is tight in the pump housing.
8. Check that the 'O' ring is seated in the pump, then refit the strainer (10).
9. Refit the 'O' ring (9), washer (8), spring (7), nut (6) and the clip (5).
10. Using a new gasket (4), refit the cover plate (3), with the three bolts (2) and washers.
11. Refit the two drain plugs.
12. Refill the transmission with an approved oil.

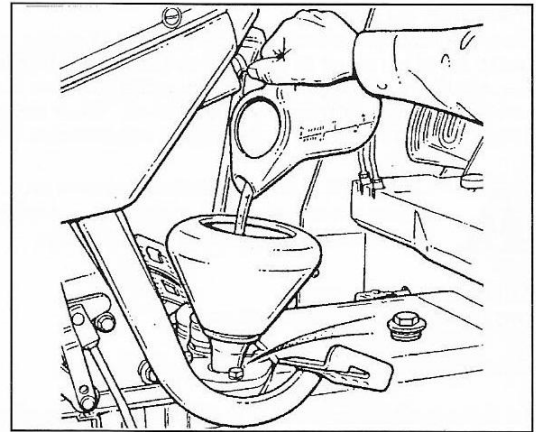


Fig. 96

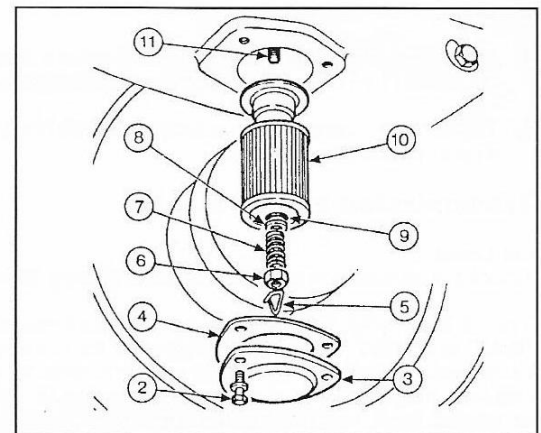


Fig. 97



## Steering

### Steering Box

**Check the steering box oil level every 500 hours.**

The oil level should be at the bottom of the filler hole (Fig. 98). Care should be taken to prevent the entry of foreign matter into the steering box when checking the oil level or topping up.

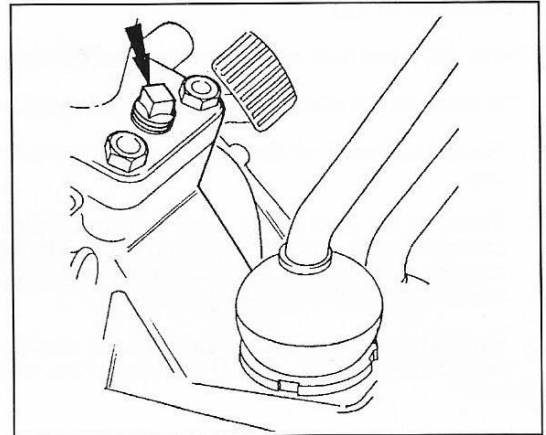


Fig. 98

### Power Steering Pump and Reservoir (Optional Accessory)

**Check the power steering pump and reservoir oil level every 100 hours, and top up if necessary.**



**WARNING:** Notify your Massey Ferguson Dealer if any leakage from the system occurs, for investigation and rectification.



**CAUTION:** Check the fluid level only when it is cool. Never run the engine unless there is sufficient fluid in the pump reservoir.

To top up the reservoir:

1. Clean the outside of the steering pump reservoir removing all dirt.
2. Remove the filler/level plug located on the pump housing (1, Fig. 96 or 1, Fig. 100).
3. The oil level must be level with the bottom edge of the hole. If not, add oil of the correct grade. DO NOT over lighten the plug.

**NOTE:** At the first Dealer Service (50 hours) the power steering pump filter and oil must be changed by your Massey Ferguson Dealer. No further changing of oil or filter is necessary unless servicing work has been done on the power steering system.

**NOTE:** Later models have an expansion chamber fitted to the power steering pump (2, Fig. 100). This part requires no maintenance and no attempt must be made to remove it.

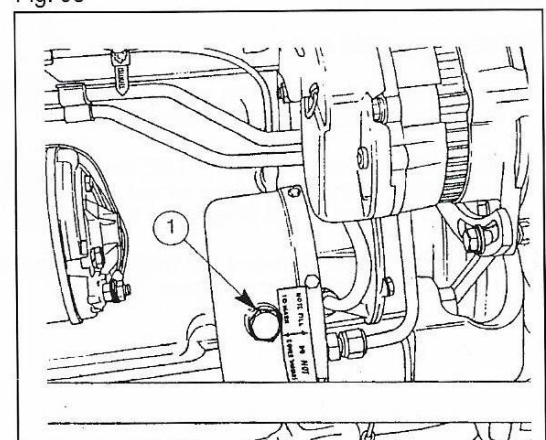


Fig. 99

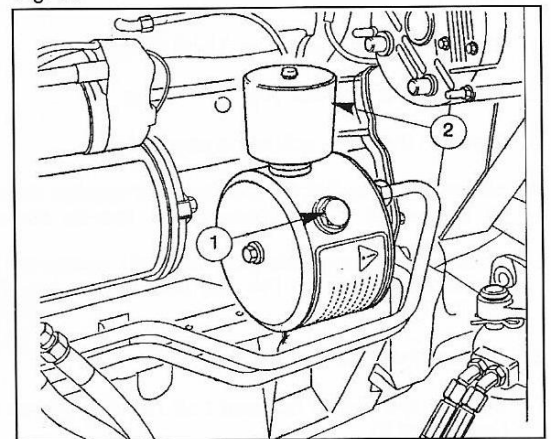


Fig. 100



### Front Wheel Hubs (Two-wheel Drive)

**Check the front hub adjustment every 500 hours.**

If the requires adjustment, for the proceed as follow:

1. Raise the wheel off the ground and remove the hub cap.
2. Remove the spilt pin (1, Fig. 101) and tighten the castellated nut (2) to torque of 80 Nm (60 lbf ft), then slacken off the nut to the nearest pin hole to give the correct end float: Fit a new split pin.
3. Refit the hub cap. Grease the hub until clean grease comes out past the seals at the back of the wheel.

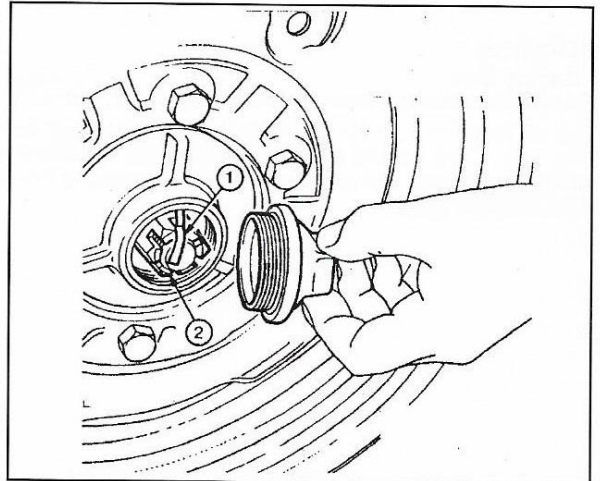


Fig. 101

### Front Wheel Alignment (Two-wheel Drive)

**Check every 1000 hours.**

1. Drive the tractor onto firm level ground and put the front wheels in the straight ahead position.
2. Check the wheel toe-in (Fig. 102) measured on the centre line of the axle at the wheel rim. Distance 'A' must be 0-4 mm (8-1/8 in) greater distance 'B'.
3. Drive the tractor forward for half of a front wheel revolution. Check distance again.

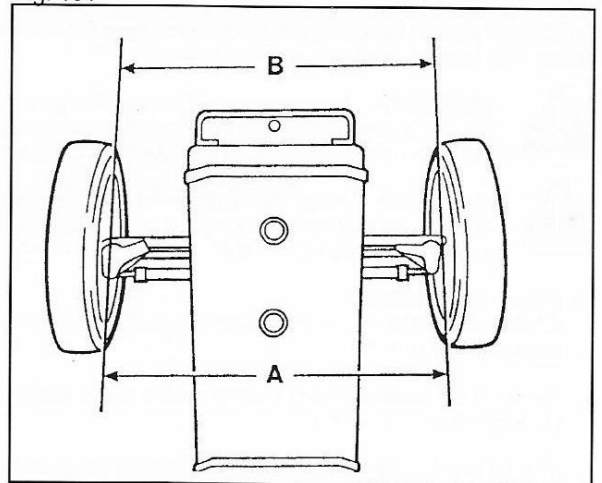


Fig.102

### Adjustment - Manual Steering

1. Slacken the clamp nut and bolt (3, Fig. 103).
2. Slacken the lock-nut (4).
3. Slacken the track adjusting peg-bolt (5).
4. Rotate the drag link (6) clockwise or counter clockwise to increase or decrease the toe-in required.
5. Locate the drag link peg bolt (5) correctly in its indentation. Tighten the peg bolt to a torque 45 Nm (35 lbf ft).
6. Tighten the lock-nut (4).
7. Tighten the clamp nut and bolt (3) to a torque of 45 Nm (35 lbf ft).

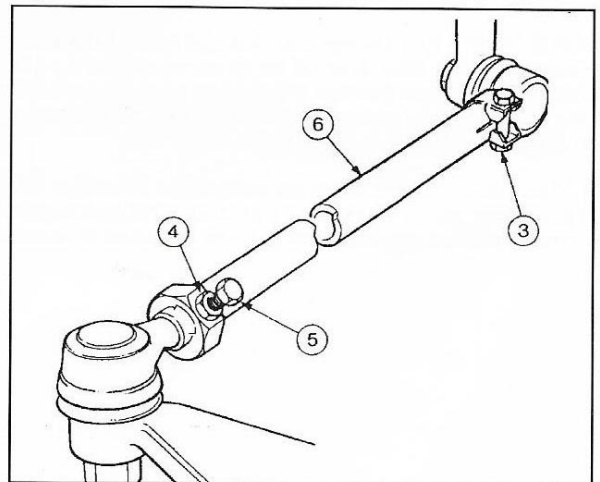


Fig. 103

**NOTE:** Adjust both drag links equally to achieve the correct toe-in.



### Front Track Adjustments (Two-wheel Drive - Manual Steering)

**NOTE:** The dimensions quoted are for a standard tractor with 6.00 - 16 tyres. These dimensions will vary slightly due to wheel and tyre configuration in other sizes of wheel.

**IMPORTANT:** When the axle is supported by only a two bolt fixing. NO LOAD should be applied to the front of the tractor as this will result in severe damage to the front axle.

#### Adjust

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

To adjust the track proceed as follows:

1. Raise the front wheels clear of the ground.
2. Remove the bolts (1, Fig. 104) and nuts each side.
3. Remove the drag link peg bolts (2) each side.
4. Slide the axle arms and the tie rods to the required track setting (Fig. 105)
5. Refit the bolts and nuts (1) through the appropriate axle beam holes, ensuring that the bolt heads are correctly tighten to a torque of 220 Nm (160 lbf ft).
6. Refit the drag link peg bolts (2), and tighten to a torque of 45 Nm (35 lbf ft).
7. Check the front wheel alignment - (see page 68)

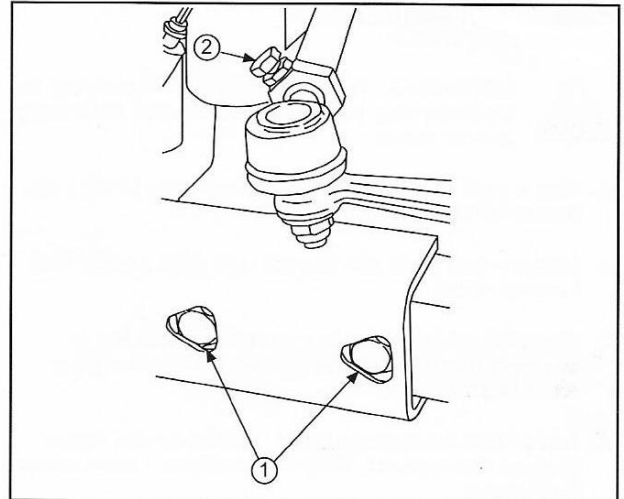


Fig. 104

	1227 mm (48 in)
	1328 mm (52 in)
	1430 mm (56 in)
	1532 mm (60 in)
	1633 mm (64 in)
	1735 mm (68 in)
	1836 mm (72 in)

Fig. 105



### Rear Track Adjustment

*Pressed steel wheels*



**WARNING:** When changing, repairing or transferring wheels observe the following precautions:

- ▲ Use a jack that has adequate capacity to lift your tractor and is in good repair.
- ▲ Ensure that both the tractor and jack are on firm level ground.
- ▲ Use axle stands or other suitable blocking to support the tractor at all times when changing wheels and tyres.
- ▲ Never use concrete blocks, bricks or old rotted timbers for support. They can collapse - even under light loads.
- ▲ DO NOT put any part of your body under the tractor or start the engine while the tractor is on the jack.
- ▲ Tractor wheels are heavy, handle with care and ensure, when stored, that they cannot topple and cause injury.
- ▲ Where tyres with liquid ballast are used, a crane may be required to manoeuvre the wheels, due to their considerable weight.

The different track widths are obtained by altering the position of the rim in relation to the disc, or by reversing the wheels and transferring them from one side of the tractor to the other.

Adjustment is as follows:

1. Select the required track settings (Fig.106) MF 240 tractor.
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 1500 kg (3300 lb) 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 so as to maintain the correct tyre tread direction.

5. Oil the bolts or stud threads before fitting the nuts, then tighten to a torque of:
 

Disc to axle hub	-270 Nm (200 lbf ft).
Rim to disc	-190 Nm (140 lbf ft).

**NOTE:** Recheck the wheel nut and rim bolt torques after ten hours (or two hours if on loader work) and then recheck, and if necessary, retighten twice more at ten hour intervals. This protects against the loosening that occurs from assemblies setting.

Track settings below 1328 mm (52 in) may not be obtainable due to insufficient clearance between wheel and inside of fender.

Track settings - disc/rim positions	
	1227 mm (48 in)
	1328 mm (52 in)
	1430 mm (56 in)
	1530 mm (60 in)
	1630 mm (64 in)
	1730 mm (68 in)
	1830 mm (72 in)
	1930 mm (76 in)

Fig. 106



## Wheel Weights

Wheel weights are available for the front and rear wheels, consult with your local Massey Ferguson Dealer for the correct weights for your tractor.

**IMPORTANT:** Only sufficient weight should be added to provide traction and stability. Adding more weight than necessary results in excessive loads being imposed on the tractor and a higher fuel consumption.

- Ensure that an equal amount of weights are fitted to each side of the tractor.
- When adding weight, adhere to the maximum tyre capacity loading. The tyre pressures will have to be increased to accommodate the additional weight. Consult with your Massey Ferguson Dealer or tyre supplier to ensure that the loadings are not exceeded.

### Font Wheel Weights

Front wheel weights can be bolted to either or both sides of the wheel and are known as inner (Fig. 107) and outer (Fig. 108) weights, both of approximately 80 kg (176 lb) each. Tighten the retaining bolts to a torque of 80 Nm (60 lbf ft).

### Rear Wheel Weights

Rear wheel weights (Fig. 109) are bolted to the outside of the wheel. Additional weights can be bolted to the first adaptor weight. Each weight weighs approximately 45 kg (100 lb)

When fitting the first adaptor weight, ensure that the cut-out in the weight aligns with the tyre valve for accessibility.

Tighten the weight bolts to a torque of 80 Nm (60 lbf ft).

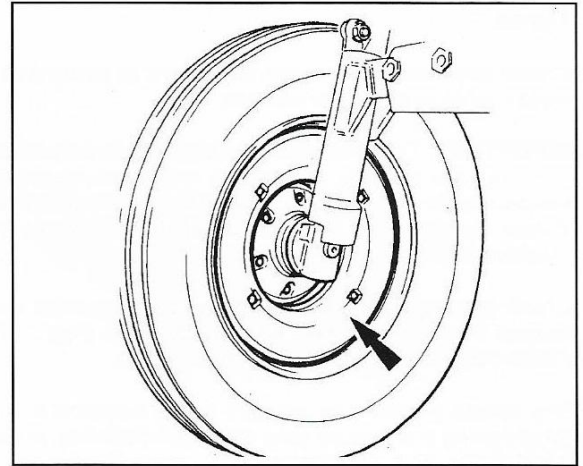


Fig. 107

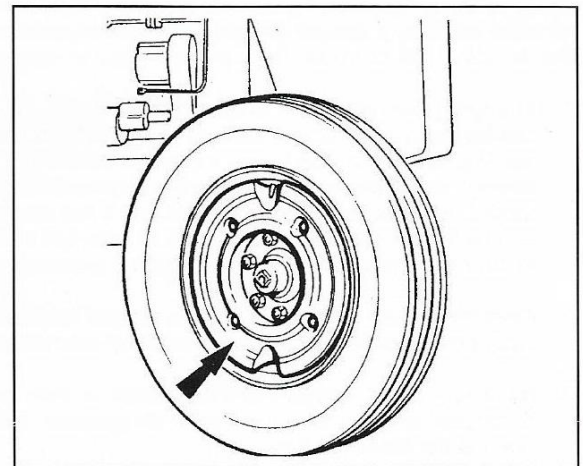


Fig. 108

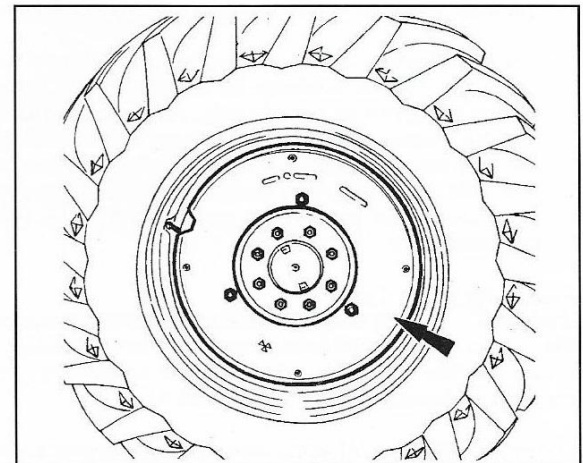


Fig. 109



## Tyres

**Check tyre pressures every 100 hours or every two weeks whichever is the sooner.**

**IMPORTANT:** Tyer tread and ply rating or load index must match across the axle. Do not fit a radial one pressures are correct for the particular operation to be performed. These simple rules, if followed carefully, will ensure maximum tyre life.

Check and adjust the front and rear tyre pressure and inspect the tread and side walls for damage (Fig. 110). Check the pressure when the tyres are cold.

The correct pressure for any tyre on the tractor is found by weighing the loaded axle and then referring to the load/inflation tables for that tyre (see page 89).

**NOTE:** If the tyres are ballasted with calcium chloride and or water solution, a special tyre gauge should be used as the solution will corrode the standard type of gauge.

1. The tyre pressures listed in the Specification section can be used at all times, without danger of sidewall rippling. In certain conditions the pressures may be lowered, where the loads are light. Higher tyre pressures should be used for hillside ploughing or if the tractor is to be used on the road for a length of time. DO NOT exceed the maximum recommended pressures.
2. Keep oil, grease and strong alkaline or acid fertilizers away from tyres to prevent deterioration of the rubber.
3. Have any small sidewall or tread splits or cuts re-vulcanized 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 Massey Ferguson Dealer.
5. Water ballasting details are quoted on for few of the many tyre options available for these tractors. These figures are given as a guide only. For specifiic details for your tractor, if not shown, or if you wish to change the tyre sizes, (see your Massey Ferguson Dealer) who will have full tyre range specifications and recommended pressures supplied by the tyre manufacturers.

### Radial Ply Drive Tyres

If you are unable to weigh the tractor axles to determine the correct tyre inflation pressures the following guideline pressures can be used in firm surface conditions with correctly ballasted tractors, (see Table 9).

For Front IMPLEMENT applications, front tyre pressures should be increased to 1,6 bar (23 lbf/in<sup>2</sup>).

For LOADER application only, in cyclic operation, front tyre pressures should be increased to 2,0 bar (30 lbf/in<sup>2</sup>).

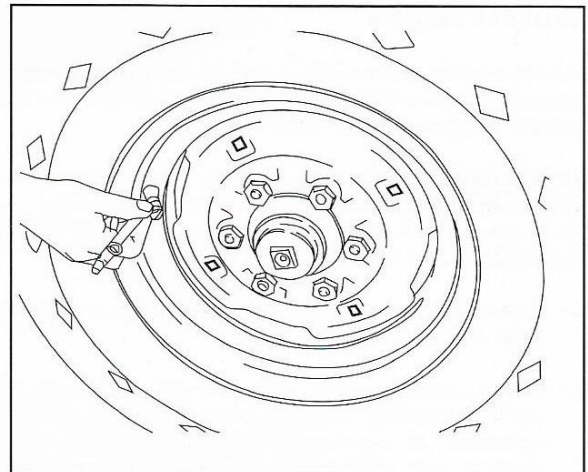


Fig. 110

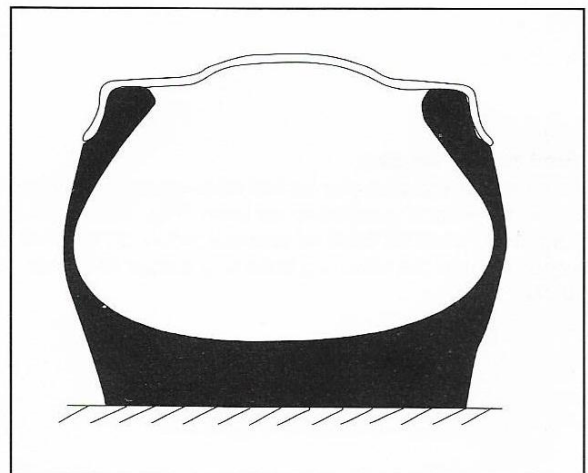


Fig. 111

### Radial tyre

	Rear-mounted equipment	Trailed equipment	Road work
Front	1,0 bar (15 lbf/in <sup>2</sup> )	1,0 bar (15 lbf/in <sup>2</sup> )	1,0 bar (15 lbf/in <sup>2</sup> )
Rear	1,6 bar (23 lbf/in <sup>2</sup> )	1,0 bar (15 lbf/in <sup>2</sup> )	1,6 bar (23 lbf/in <sup>2</sup> )

Table 9

**NOTE:** For exact inflation pressure requirement, axle loads need to be measured and the load/inflatier charts on page 89 onwards need to be applied.

- For hillside operation, DO NOT use inflation pressures lower than 1 bar (15 lbf/in<sup>2</sup>).
- A correctly inflated radial tyre under full load should have a profile as shown in Fig. 111.



### Cross-ply Tyres

The term 'cross ply tyres' applies to tyres with Bias or Diagonal ply fitted to the front two-wheel drive axle or rear driven wheels.

If you are unable to weigh the tractor axles to determine the correct tyre inflation pressures, the following method can be adopted in firm surface conditions with correctly balasted tractors.

In the case of cross-ply tyres the procedure is to check the size and ply rating and refer to load/inflation charts, (see page 89 onwards). For the relevant size read across the chart to the figure in brackets for the relevant ply rating - the inflation pressure indicated in the column heading is the maximum permissible and should be applied in cases where it is not possible to weigh the axle.

For LOADER application only, in cyclic operation, front tyre pressures should be increased by 25%. A correctly inflated cross-ply tyre under full load should have the profile shown in Fig. 112.

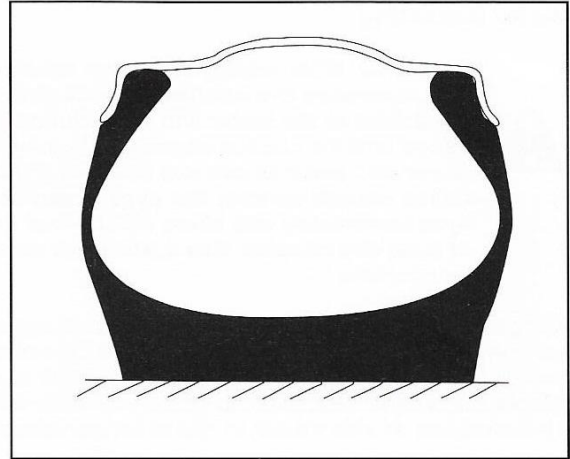


Fig. 112

### Service Tyres Safely



**DANGER:** Failure to follow the correct procedure when fitting a tyre on a wheel or rim can produce an explosion which may result in serious injury or death.

DO NOT attempt to fit a tyre unless you have the proper equipment and experience to perform the job. Have the work carried out by your Massey Ferguson Dealer or a qualified repair service.

When sealing tyre beads onto rims, never exceed 2,4 bar (35 lbf/in<sup>2</sup>) or the maximum inflation pressure specified by the tyre manufacture for fitting tyres. Inflation beyond this maximum pressure may break the bead, or even the rim, with a dangerous explosive force. If both beads are not seated when the maximum pressure is reached, deflate, reposition the tyre, re-lubricate the bead, and re-inflate. Observe the following safety points:

- ▲ Always use a safety cage if available (Fig. 113)
- ▲ DO NOT re-inflate a tyre that has been run flat or badly under-inflated without first removing it from the wheel and checking for damage. Any damage should be professionally repaired.
- ▲ DO NOT stand over or in front of the tyre.
- ▲ Use a clip-on chuck and extension hose with valve when inflating a tyre and stand to one side.
- ▲ DO NOT hit a rim or tyre with a hammer when the assembly is inflated.
- ▲ NEVER use a tube in a tyre larger - or smaller - than the one for which it was designed.
- ▲ NEVER install tubes that have buckled or creased.
- ▲ NEVER rework, weld, heat or braze damaged rims.

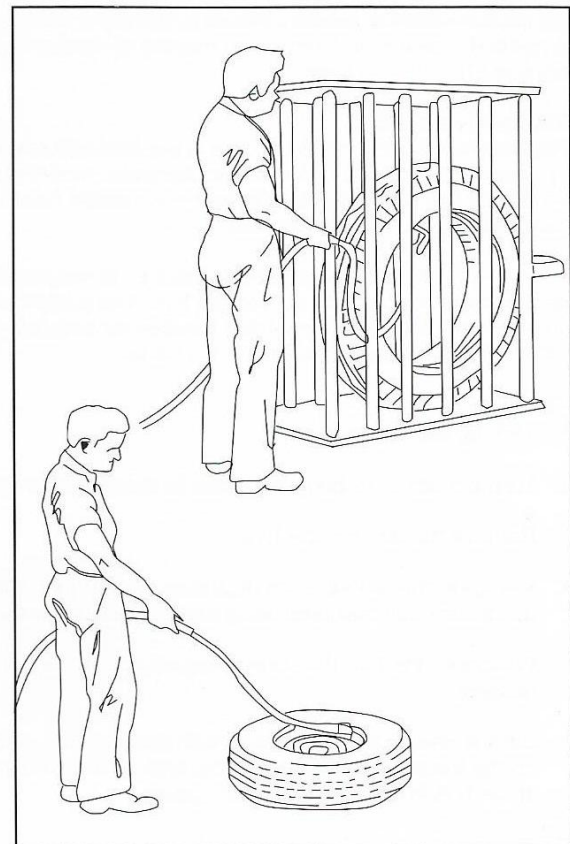


Fig. 113





### Water Ballasting



**WARNING:** When mixing the ballast solution it is imperative the calcium chloride flakes are added to the water and the solution is stirred until the calcium chloride is dissolved. Never add water to calcium chloride. If the flakes should contact the eyes, wash the eyes immediately with clean, COLD water for at least five minutes. See a doctor as soon as possible.

Filling the front and rear tyres (Fig. 114) with liquid ballast is a convenient method of adding weight to secure more traction and reduce slippage and tread wear. Either cast wheel weights can be added or the tyres can be filled with a water/calcium chloride solution to 75% of the tyre volume.

Where freezing temperatures never occur, plain water can be used, but the weight added will be about 20% less than the calcium chloride solution. Where antifreeze protection is needed, use the recommended mixture of commercial calcium chloride and water.

#### Mixing the solution

Prepare the calcium chloride mixture in a suitable container by pouring the calcium chloride into the water (never the water into the calcium chloride, as considerable heat is generated in this mixing process).

The mixture should be allowed to cool to atmospheric temperature before pumping into the tyre. The pump can also be used to mix and cool this solution by circulating it through the pump and back into the barrel.

#### Filling

1. Jack up the tractor.
2. Turn the wheel to bring the valve to the top position.
3. Remove the air from the tyre.
4. Remove the valve core housing and make the connection with the pump using a special filling adaptor.
5. Pump into the tyre the correct quantity of solution as detailed.
6. Set the final working pressure with the tyre mounted on the tractor, with weight on the tyre, and the valve at the bottom using an air/water gauge.

#### Removing

1. Jack up the tractor.
2. Turn the wheel to bring the valve to the bottom position.
3. Remove the valve core housing and make the connection with the pump using a special filling adaptor.
4. Completely evacuate the tyre.
5. Re-inflate the tyre to the recommended pressure.

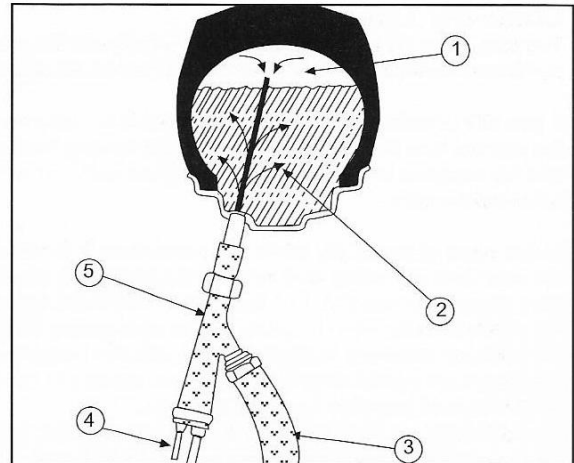


Fig. 114

**NOTE:** The valve should be at the lowest point when checking or adjusting air pressure if the tyre is liquid ballasted.

1. Air
2. Water coming in.
3. Water supply hose.
4. Vent tube.
5. Filling adaptor.

### Wheel Nut Tightness

**Check the wheel nut tightness every 250 hours.**

If any of the wheels have been removed, or you are checking the tightness, the wheel nut tightening torques are as follows:

#### Front - two - wheel drive:

Wheel screws (1/2 in)	108 Nm (80 lbf ft)
Wheel nuts (1/2 in)	95 Nm (70 lbf ft)

#### Rear - pressed wheel (240):

Disc to Axle Hub (9/16 in)	270 Nm (200 lbf ft)
Rim to Disc	240 Nm (177 lbf ft)

**IMPORTANT:** Recheck the torques after 10 hours (or 2 hours if on loader work) and then recheck and if necessary, re-tighten twice more at ten-hourly intervals. This protects against the loosening that occurs from the wheel settling down.



## Electrical Equipment

To avoid damage to the components of the alternator charging system, the following service precautions must be observed:

- NEVER make or break any of the charging circuit connections, including the battery when the engine is running.
- NEVER short any of the charging components to earth.
- ALWAYS disconnect the battery earth cable before carrying out arc welding on the tractor.
- ALWAYS disconnect the battery earth cable when charging the battery in the tractor.
- DO NOT use a slave battery of higher than 12 volt nominal voltage.
- ALWAYS observe correct polarity when installing the battery or using a slave battery to start the engine.
- ALWAYS connect the negative earth cable first.  
**Positive** terminal and cable marked + (red).  
**Negative** terminal and cable marked - (black).

The electrical circuit is a 12 volt NEGATIVE EARTH system and requires little attention. Check and ensure that all cables are secured, in place and that terminals are tight.

## Battery

**Check the battery every 250 hours**



**WARNING: The battery contains a sulphuric acid electrolyte which is a corrosive substance and must be treated with great care:**

- ▲ **Corrosive substance.**
- ▲ **Keep out of the reach of children.**
- ▲ **Avoid contact with skin and eyes. Battery acid can cause intense irritation.**
- ▲ **Wear suitable protective clothing, gloves and eye protection.**
- ▲ **In case of contact with eyes rinse immediately with plenty of water and seek medical attention.**
- ▲ **When charging the battery, charge in a well-ventilated place and ALWAYS switch off at the mains before disconnecting the terminals.**
- ▲ **If swallowed, seek medical advice immediately and show the label.**
- ▲ **DO NOT use a naked flame to check the electrolyte level, always use a voltmeter or hydrometer to check the state of charge and a flashlight to check the battery electrolyte level if necessary (Fig. 108).**
- ▲ **Ensure vent plugs are correctly and tightly installed.**
- ▲ **Always remove the negative (—) black, cable first.**



Fig. 115

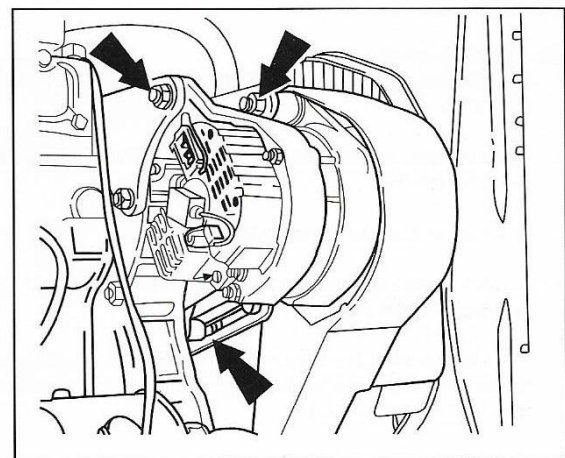


Fig. 116

## Alternator and Fan Belt

**Check the fan and alternator belt tension every 250 hours.**



**WARNING: If the lower side panel (safety guard) is removed or loosened whilst checking the belt tension, it must be refitted and secured before restarting the tractor.**

Fig. 116 gives a typical illustration of the alternator/fan belt arrangement: your tractor may differ slightly in the positioning of the adjustment link.

Renew the belt if it is worn or damaged.

To check the deflection, press down the belt with the thumb at the centre of the longest free length. With moderate thumb pressure the correct deflection of the belt is 10 mm (3/8 in)

If a belt tension gauge is available, the correct tension is 355 N (80 lbf), DO NOT allow the tension to fall below 220 N (50 lbf).



**To adjust the belt tension:**

1. Loosen the alternator pivot belts (1) and the adjustment link belt (2).
2. Change the position of the alternator to give the correct tension. Tighten the three bolts.
3. Recheck the belt tension to ensure that it is still correct.

**NOTE:** If a new belt is fitted, check/adjust the tension again after 25 hours of operation.

## Headlights

### Headlight Adjustment

To adjust the headlights, screw the three screws (Fig. 117) in or out as required, this will deflect the beam up, down or sideways. The screws on tractors with round headlights operate in a similar manner.

### To adjust the beam:

1. Position the tractor facing a wall or screen 2m (6ft) away (Fig. 118).
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

### Headlight Bulb Replacement

Replacement is the same for round or square headlights.

1. Switch off all light switches.
2. Remove the front grille.
3. Remove the headlight wiring plug (2, Fig. 119).
4. Remove the rubber surround (3).
5. Release the spring clip and remove the failed bulb (4).
6. Fit a new 40/45 watt bulb, reassemble the light unit and test.

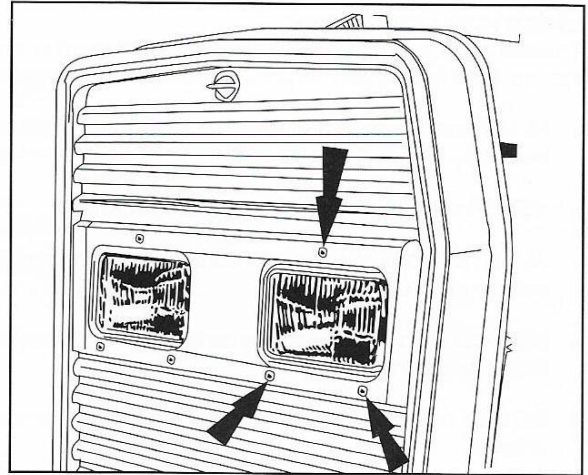


Fig. 117

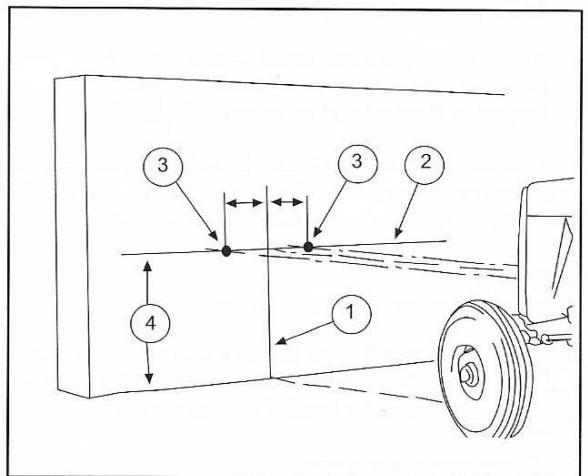


Fig. 118

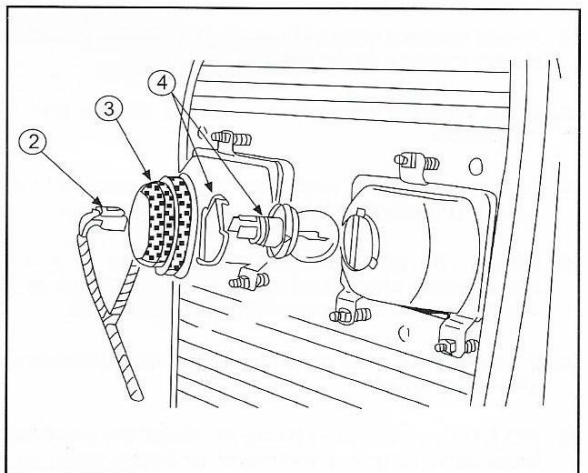


Fig. 119



### Instrument Light Bulbs Switch off the main lights.

*To replace the tachometer and instrument panel lights proceed as follows:*

1. Pull the failed bulb (Fig. 120) and its holder from the instrument, then remove the bulb.
2. Fit a new 3 watt capless bulb in its holder, then push the bulb holder into the instrument.
3. Reconnect the battery cables and refit the battery access panel.

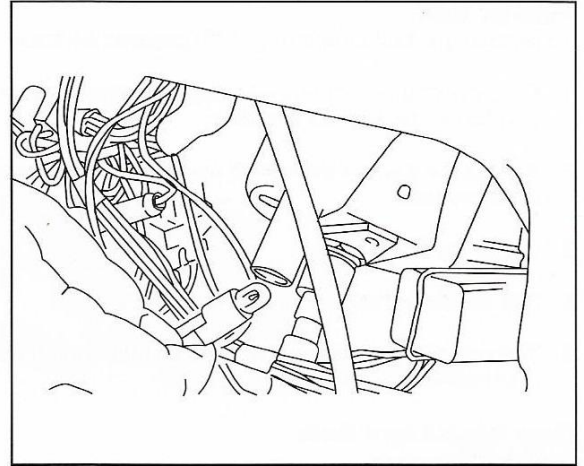


Fig. 120

### Indicator and Hazard Warning Light Bulbs Switch off the light.

#### *Direction indicator lights:*

1. Unscrew the green lens (1, Fig. 121).
2. Pull the bulb (2) from its holder.
3. Fit a new bulb and replace the lens.

#### *Hazard warning light:*

1. Pull off the direction indicator switch lever (3).
2. Unscrew the red lens (4)
3. Pull the bulb (5) from its holder
4. Fit a new 2 watt mini bulb and replace the lens and switch lever.

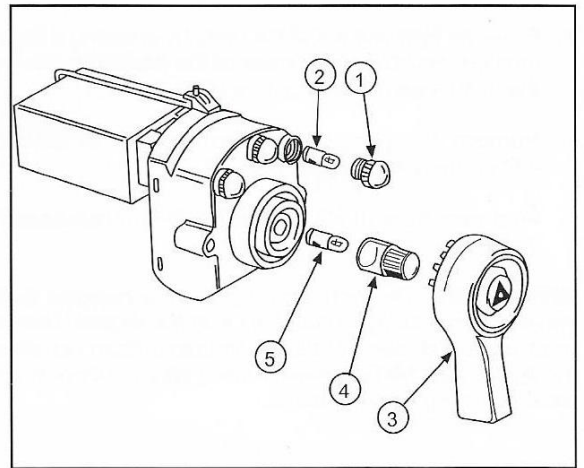


Fig. 121

### Warning Light Bulbs

**NOTE:** *The warning light panel can be removed from the front of the instrument panel by removing two screws. the two line fuses can also be replaced by this method.*

Ensure that the starter switch is off.

1. With the warning panel removed (Fig. 122), turn the failed bulb and its holder counter-clockwise and withdraw it from the panel assembly.
2. Pull out the bulb.
3. Fit a new 3 watt capless bulb in its holder, then push the bulb holder into the panel assembly.

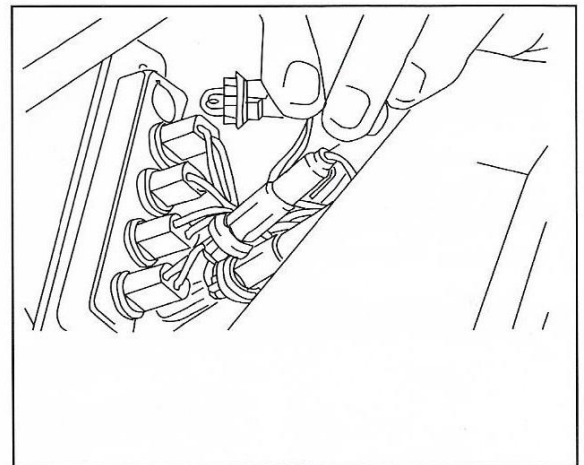


Fig. 122



### Flasher Unit

To replace the flasher unit (Fig. 123) proceed as follows:

1. Disconnect the battery, removing the negative cable (—) first in the interest of safety.
2. Access the back of the switch from inside the battery compartment.
3. Unclip the flasher unit.
4. Pull the flasher unit from the switch body.
5. The new flasher unit can be fitted and the switch unit returned to the tractor.

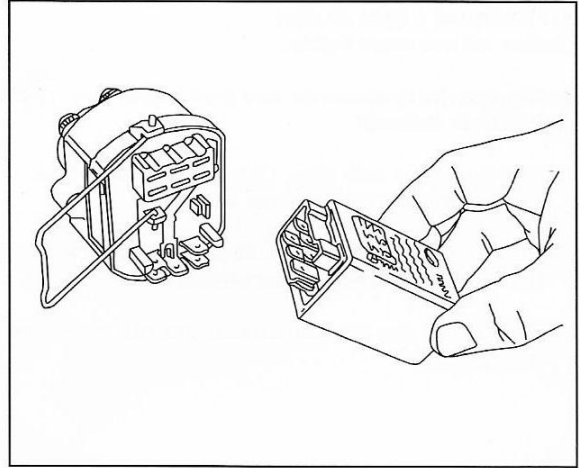


Fig. 123

### Rear Work Light Bulb

Switch off the light.

1. Remove the four screws (1, Fig. 124) and the rim (2).
2. Ease the light unit out of the body by inserting a finger through the hole at the base of the body and moving the unit forward until it can be lifted out.
3. Remove the spring clip (3) from the back of the bulb holder, then remove the bulb (4).
4. Fit a new 55 watt H3 halogen bulb and reassemble the light.

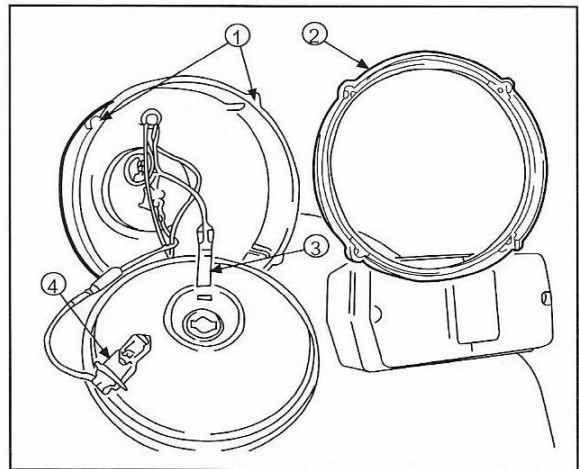


Fig. 124

**IMPORTANT:** The rear work light has a halogen bulb. Never touch a halogen bulb lens with the fingers. Natural moisture in the skin will cause the bulb to burn out when the light is switched on. Always use a clean cloth or tissue when handling halogen bulbs.



## Flat Top Fender Lights

### Rear and Side Light Bulbs

The figures illustrate the replacement of the rear, side and number plate bulbs fitted to tractors with flat top type fenders. Before changing a bulb, turn off the respective switch.

Fig. 125 ..... Front side and direction indicator light:  
Side light 5 watt.  
Direction indicator light 21 watt.

Fig. 126 .... Rear light, stop light and direction indicator light:  
Rear/stop light 5/21 watt.  
Direction indicator light 21 watt.

Fig. 127 .... Number plate light:  
Festoon 5 watt.

### To change a bulb:

1. Switch off the light.
2. Loosen the screws (1) and remove the cover or lens (2).
3. Remove the failed bulb (3) from its fitting.
4. Fit a new bulb as detailed above, refit the cover or lens and tighten the screws.

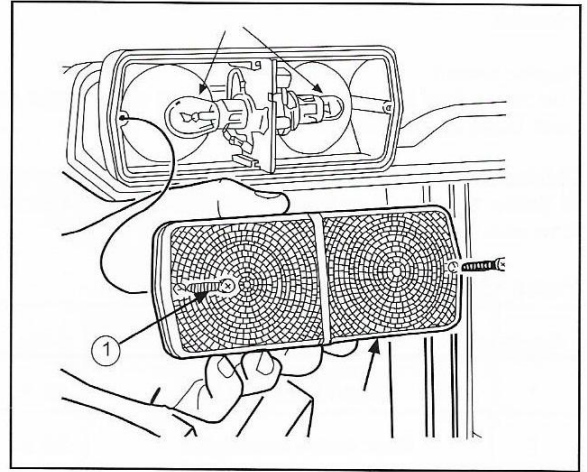


Fig. 125

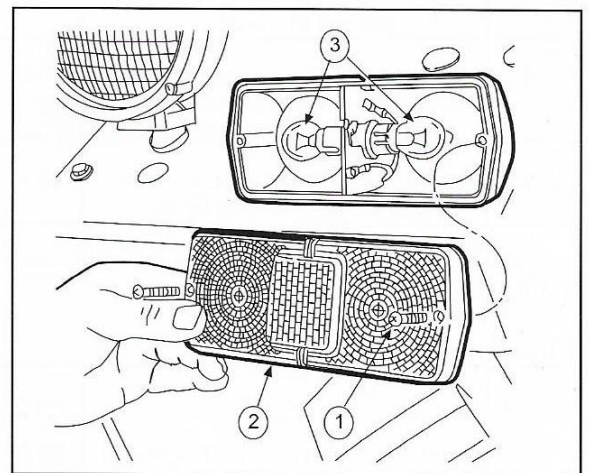


Fig. 126

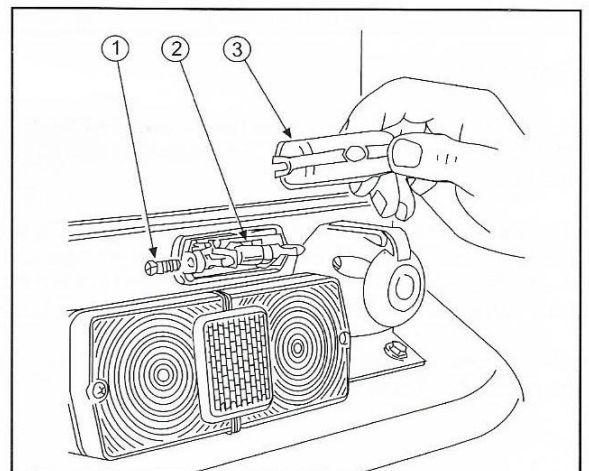


Fig. 127



### Fuses

#### Replacement

The single fuse box ( Fig. 127) is situated either under the dash board access panel.

The fuses in the box protect five different circuits as detailed in Table 10 and 11 below. DO NOT replace the blown fuse with another of a different rating.

#### Fuse Box

Fuse	Circuit	Amp
1	Dipped headlights	20 A
2	Main beam headlights	20 A
3	Left-hand side/tail lights and tachometer, temperature and fuel gauges illumination	10 A
4	Right-hand side/tail lights, battery condition gauge illumination and number plate light	10 A
5	Brake lights, flashers, instrument gauges and warning lights	20 A
6	Spare fuses (1 x 10 A and 1 x 20 A)	

Table 10

#### Line fuses

Fuse	Circuit	Amp
7	Hazard warninglights, work light and cigar lighter (blue wire)	20 A
8	Horn (grey wire)	10 A

Table 11

To renew a tubular in-line fuse hold one end of the white plastic casing, push in, twist, put apart and then tip out the fuse.

To renew a blade type line fuse (7 and 8, Fig. 127), hold the black plastic holder and pull out the blown fuse using the plastic orange withdrawal tool (9) supplied in the rubber pad adjacent to fuse box along with spare fuses.

Always ensure that the new fuse is of the correct capacity as detailed in Table 10 and Table 11.

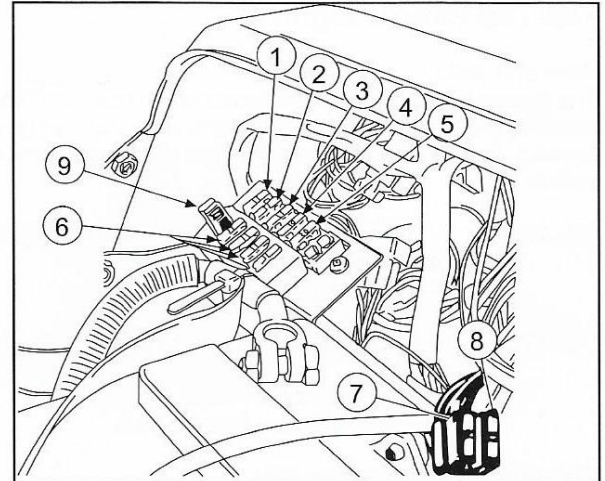


Fig. 127



## Safety Decals

### Check safety decals every 250 hours

Replace any Danger, Warning, Caution or Instruction decals that are not readable or are missing. Replacement decals are available from your local Massey Ferguson Dealer in the event of loss or or damage. The actual location and part numbers of these safety decals are illustrated in the safety section of this Operator instruction Book, (see page 19).

## Cleaning the Tractor

Careful attention to the following will help to retain the value of your tractor and make the task of maintenance and adjustment quick and simple.

- Use plenty of water to soften dirt adhering to the surface. If you use a jet of water, try and keep it away from electrical components such as the alternator and starter motor.
- If it is found necessary to use detergents or high pressure hot water or steam cleaners, use care not to damage the paint work. Set the machine to the lower pressures and lower rates of detergent application.
- Car polisher can be used on the metal work to improve the appearance of the tractor.
- Aerosol tins of touch-up paint are available from your Massey Ferguson Dealer to repair chipped or damaged paint.
- Check that all the safety decals are in place. The actual location and part numbers of these safety decals are illustrated in the safety section of this Operator instruction Book, (see page 19). Replace any that have been lost or removed during cleaning.

## Tractor Storage

If a tractor is to be stored for a considerable time, certain precautions should be taken to safeguard the tractor:

1. Clean the tractor.
2. Lubricate all the grease fittings.
3. Drain the engine, transmission and front axle (if fitted) and refill with fresh oil.
4. Clean the fuel system replacing the filter elements. Drain the fuel tank and pour approximately two gallons of special fuel injection pump calibrating fluid into the tank.
5. Run the engine for about 10 minutes to ensure complete distribution of the calibrating or fuel additive fluid throughout the system.
6. Raise the lift linkage hydraulically and support the lift arms in the fully raised position.

7. Remove the battery and store in a warm, dry atmosphere. Recharge periodically.
8. Place supports under the axles to take the weight off the tyres.
9. Drain the radiator and cylinder block and refill with a 50 percent solution of Massey Ferguson antifreeze and clean water or use a suitable corrosion inhibitor.
10. Cover the exhaust pipe opening.
11. Cover exposed hydraulic cylinder rods with a thin coat of grease.

## Preparing the Tractor for use After Storage

1. Inflate the tyres to the correct pressure.
2. Remove the supports under the axles and lift linkage.
3. Refill the fuel tank.
4. Check the radiator coolant level.
5. Check all oil levels.
6. Fit a fully charged battery.
7. Remove the exhaust pipe covering.
8. Start the engine and check all controls are functioning correctly.
9. Drive the tractor without a load to ensure that it is operating satisfactorily.

## Fuel Handling, Storage and Specification

### Diesel Fuel

Before handling fuel, filling tanks etc., observe the following:

Under no circumstance should gasoline; alcohol, gasohol or dieselhol (a mixture of diesel fuel and alcohol) be added to diesel fuel because of increased fire or explosion risks. In a closed container such as a fuel tank they are more explosive than pure gasoline. DO NOT use these blends. Additionally, dieselhol is not approved due to possible inadequate lubrication of the fuel injection system.

- Clean the filler cap area. Fill the tank at the end of each day to reduce overnight condensation.
- Never take the cap off or refuel with the engine running or hot.
- When filling the tank, keep control of the nozzle. DO NOT smoke.
- Don't fill the tank to capacity. Allow room for expansion and wipe up spilt fuel immediately.





- If the original cap is lost, replace it with a Massey Ferguson cap and tighten securely. A non Massey Ferguson cap may not be suitable.
- Keep equipment properly maintained.

**Recommended Fuel Specification**

To get the correct power and performance from your engine, use good quality fuel. The recommended fuel specification for Perkins engines is Indicated below:

Cetane No.....	45 minimum.
Viscosity .....	2/4.5 centistokes at 40°C.
Density .....	0.820/860 kg/litre at 15°C.
Sulphur .....	0.20% of mass, maximum.
Distillation....	85% at 350°C.

**Cetane Number**

Cetane number indicates ignition performance. A fuel with a low cetane number can cause cold start problems and affect combustion.

**Viscosity**

Viscosity is the resistance to flow and engine performance can be affected if it is outside the limits.

**Density**

A lower density reduces engine power, a higher density increases engine power and exhaust smoke.

**Sulphur**

A high amount of sulphur can cause engine wear.

**Distillation**

Distillation is an indication of the mixture of different hydrocarbons in the fuel. A high ratio of light-weight hydrocarbons can affect the combustion characteristics.

**Low Temperature Fuels**

Special winter fuels may be available for engine operation at temperatures below 0.°C. These fuels have a lower viscosity and also limit the wax formation in the fuel at low temperatures. If wax formation occurs, this could stop the fuel flow through the filter.

If you need advice on adjustments to an engine setting or to the lubricating oil change periods which may be necessary because of the standard of the available fuel, consult your nearest Massey Ferguson Dealer.

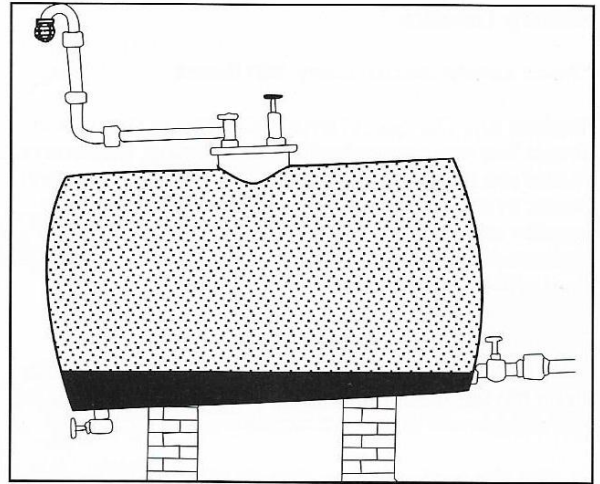
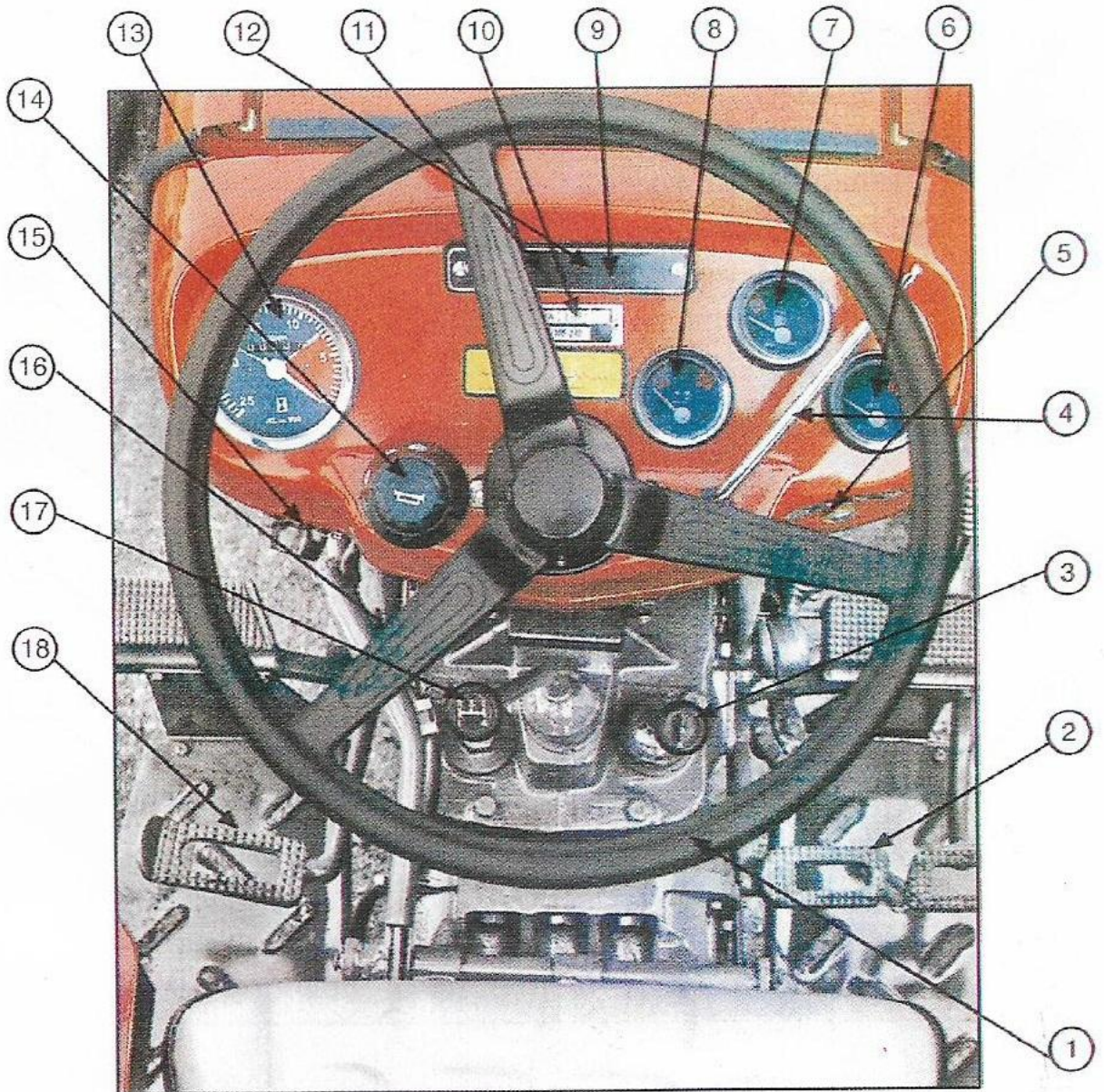


Fig. 128



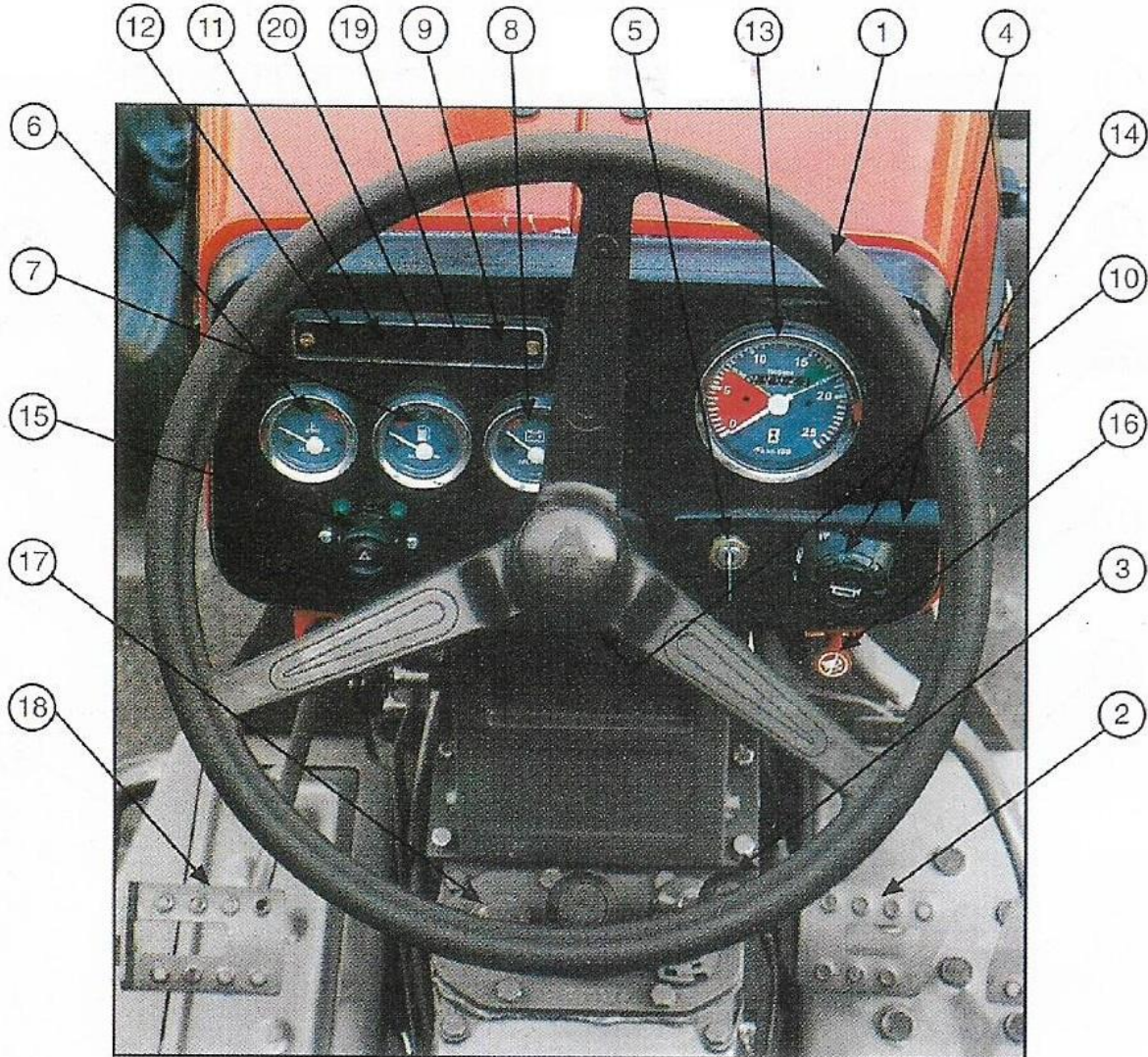
## Instruments and Control Levers: MF240/260/375



- |                          |  |
|--------------------------|--|
| 1. Steering Wheel.       | 10. Tractor Serial number plate.       |
| 2. Brake Pedal.          | 11. Alternate Charging Warning Light.  |
| 3. Low/ High Gear lever. | 12. Engine Oil pressure Warning light. |
| 4. Hand Throttle Lever.  | 13. Tractor Meter.                     |
| 5. Starting Switch.      | 14. Horn/ Light switch.                |
| 6. Temperature Gauge.    | 15. Indicator Switch.                  |
| 7. Fuel Gauge.           | 16. Fuel cut off control (Choke)       |
| 8. Battery Gauge.        | 17. Gear shifting lever.               |
| 9. Main Beam light.      | 18. Clutch Pedal.                      |



### Instruments and Control Levers: MF385/385 4WD



- |                                  |   |
|----------------------------------|---|
| 1. Steering Wheel                | 11. Alternating charging warning light. |
| 2. Brake Pedal.                  | 12. Engine oil pressure warning light.  |
| 3. Low/ High Gear lever.         | 13. Tractor meter.                      |
| 4. Hand Throttle Lever.          | 14. Horn / light switch.                |
| 5. Starting Switch.              | 15. Indicator switch.                   |
| 6. Temperature Gauge.            | 16. Fuel cut off control (choke)        |
| 7. Fuel Gauge.                   | 17. Gear shifting lever                 |
| 8. Battery Gauge.                | 18. Clutch pedal                        |
| 9. Main Beam light.              | 19. Differential                        |
| 10. Tractor Serial number plate. | 20. Fuel.                               |



# PRECAUTIONARY/PREVENTIVE AND PROTECTIVE SINGS PLACES ON TRACTORS

**426 Caution:** Do not put the diesel while in operating condition.

**Caution:** To set off any battery, separate the negative cable from before positive cable.

**426 Caution/Warning:** This electric tool is sensitive, so the professional persons can its look-after properly.

**426 Caution:** To use only mineral oils in the Breaks. To check the break oil, please set off the penal i.e. Covers.

**Warning:** During the warrantee period, use the genuine oil and filter of Millat Tractor, in case of violation the warrantee will be treated as null and void.

**Danger:** To start the Engine on Driver Seat with key. Also to check that the Translation and PTC is in neutral condition. Start the Tractor in gear condition, this may have the cause of death of any body.

**Criteria and method to open the battery.**

**Caution:** Always to put and off the PT and Shaft or before to carry the work in any other

**Precaution:** Do not stand between the Tractor while operating the controller of Agriculture Apparatus. Always pulling Baraich (HITCH) of approved Tractors of Massy Ferguson.

**Danger:** To start the Engine on Driver Seat with key. Also to check that the Translation and PTC is in neutral condition. Start the Tractor in gear condition, this may have the cause of death of any body.

**Precaution:** Before carrying the Tractor or while looking after the Tractors, please peruse the instructions carefully. Do not start the Tractor until and unless the every person(s) will keep way at the protective distance of Tractor(s) and agriculture apparatus. The passengers are strictly forbidden on sitting the Tractors and other apparatus, except to sit on the allowable places. Always keep away the hands, clothes from the parts which carrying with electric things.

Agriculture apparatus, so to separate the PTO and close the engine properly. It may be ensured that joints upon PTO Shafts of Agriculture Apparatus will be maximum of 50 Liters in traveling condition (Transport). When the PTO is not in use condition, so kept the PTO always in covered condition

As and when to put the agriculture apparatus "according to the Tractor instructions" to properly check the balance of front and rear axle and to ensure that the nuts of the wheels and rims are close tightly. Abide by the laws in thoroughfare lights.



**Elixir Enterprises**

***Expert in Tractors & Agricultural Implements in Pakistan***

CEO: Waqar Ashraf

Contact: +92 331 4122 833

Director Pakistan: Bilal Ashraf

Contact: +92 300 8029 596

Director Finance: Ammar Ashraf

Contact: +92 300 8000 504

Office: 515-C, Nizam Block, Allama Iqbal Town, Lahore, Pakistan

Showroom: 8-km, Sheikhpura Road, Lahore, Pakistan

Skype: waqqar15

E-Mail: waqqar15@hotmail.com / info@elixirexport.com

[www.elixirexport.com](http://www.elixirexport.com)