Workshop Service Manual

MASSEY FERGUSON

MF 300 series tractors

Beauvais
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INTRODUCTION

The purpose of this manual is to assist Dealers and Distributors in the efficient repair and maintenance of Massey Ferguson farm machinery. Carrying out the procedures as detailed, together with the use of special tools where appropriate, will enable the operations to be completed within the time stated in the Repair Time Schedule.

To assist with locating information, each section of the manual is preceded by a contents page listing the operations. Each instruction within an operation has a sequence number, and to complete the operation in the minimum time it is essential that these instructions are performed in numerical sequence commencing at 1, unless otherwise stated.
When applicable, these sequence numbers identify the components in the appropriate illustration. Where an operation requires the use of a special tool, the tool number is quoted under the operation heading and is repeated in, or following, the instruction involving its use.

Indexing

For convenience the manual is divided into sections and parts, each page bearing a section and part number. The sections are subdivided into numbered operations. Example: 1-7A would be Operation 1 in Section 7, Part A. This simplifies cross referencing and enables the subject to be found easily.

Definition of Terms

The operation descriptions generally used throughout the schedules may be defined as follows:

Removal and Refitment – Remove and refit an original part or assembly, or a new part or assembly which does not involve additional operations or time.

Install – Install a part or component not previously fitted e.g., accessories.

Overhaul – Remove a part or assembly, dismantle, inspect and recondition, re-assemble, and re-install making all necessary adjustments.

Dis-assembly and Re-assembly – The terms 'Dis-assembly' and 'Re-assembly' indicate the orderly taking apart of an assembly into individual parts and rebuilding it into the original assembly.

Adjust – Make the necessary adjustments to restore specified setting or performance.

Check – Ascertain if a setting or condition is within the limits of acceptability, either as defined in the manufacturer's specifications or, where a dimension is not specified, in the judgement of the mechanic. The checking of fixings, e.g. nuts and bolts, includes tightening to the specified torque figures listed in this Manual.

Servicing – All technical work undertaken to maintain the machine in working order.

Special Tools

Where the use of a special tool is specified in an operation the tool number will be shown under the operation heading and also following the instruction requiring its use.

The use of the special tools mentioned in the text contributes to a safe, efficient and profitable repair. Some operations are impracticable without their use, for example, the refitment of the differential unit. Distributors and Dealers are therefore urged to check their tools against the list provided. Where necessary, tools may be ordered from: AGCO Limited. Product Reliability, Banner Lane, Coventry. CV4 9FG (Phone 44 (0) 1203 694400) (Fax 44 (0) 1203 852318).

For further details, refer to the special tool catalogue for this range of tractors, Publication No. 1856 550 M5, or Section 14 of this manual.

Repairs and Replacements

When service parts are required it is essential that only genuine Massey Ferguson replacements are used.

Attention is particularly drawn to the following points concerning repairs and the fitting of replacement parts and accessories:

Safety features embodied in the tractor may be impaired if other than genuine parts are fitted.

In certain territories, legislation prohibits the fitting of parts not to the tractor manufacturer's specification. Torque wrench setting figures given in the Workshop Manual must be strictly adhered to. Locking devices where specified must be fitted. If the efficiency of a locking device is impaired during removal it must be renewed.

The tractor warranty may be invalidated by the fitting of other than genuine Massey Ferguson parts. All Massey Ferguson replacements have the full backing of the manufacturer's warranty. Massey Ferguson Distributors and Dealers are obliged to supply only genuine service parts.

Repair of the Tractor

Follow these important points:

CLEAN THE TRACTOR AND DIAGNOSE THE FAULT BEFORE DIS-ASSEMBLY.

If possible, make a complete diagnosis to determine the extent of the repair required. Take precautions, as necessary, to prevent dirt or other foreign material entering the hydraulic, fuel or air systems.

DO NOT MIX PARTS.

Make particular note of special parts which should not be interchanged.

DURING DIS-ASSEMBLY, CLEAN PARTS THOROUGHLY AND INSPECT THEM FOR WEAR, DAMAGE, ETC.

LABEL PARTS. PROTECT PRECISION OR MACHINED SURFACES.

Amendments

Under normal conditions revised pages are issued carrying the same number as the existing pages requiring amendment. The new pages are inserted in place of the existing ones. The old pages should then be destroyed.

The issue number is printed on the bottom of each page, e.g. Issue 4, 2 or 3 etc.

In some cases additional pages or completely new sections may be issued. These pages are to be inserted immediately following the page carrying the next lowest page number, or section number as appropriate.

Where new pages are required to be positioned between existing pages, the new page numbers will contain a suffix letter - example: New page number 7A-16a. This page is inserted after existing page number 7A-16 and before page number 7A-17. Correspondingly a further new page numbered 7A-16b would be positioned after 7A-16a but before 7A-17.

To ensure that a record of amendments to this manual is readily available, the list of amendments will be re-issued with each set of revised pages, quoting the amendment number, date of issue and appropriate instructions.

NOTE: *Service Bulletins and Amendment Sheets are issued to the Massey Ferguson Distributors and Dealers only and are not for general circulation.*

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, in 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 ★

SAFETY in the WORKSHOP

This safety section of your Workshop Service manual is intended to point out some of the basic safety situations which may be encountered during the normal repair operations of the tractor, and to suggest possible ways of dealing with these situations.

Additional precautions may be necessary, depending on the type of repair and the conditions at the work site or in the workshop. Massey Ferguson has no direct control over the repair procedures, operation, inspection, lubrication or general maintenance. Therefore it is YOUR responsibility to use good safety practices in these areas.

SAFETY – A WORD to the MECHANIC

It is your responsibility to read and understand this safety section before carrying out repairs on Massey Ferguson equipment.

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 section and the rest of the manual and make them a working part of your safety programme. Practice all other usual and customary safe working precautions, and above all – REMEMBER – SAFETY IS YOUR RESPONSIBILITY. YOU CAN PREVENT SERIOUS INJURY OR DEATH.

SAFETY – DANGER, WARNING and CAUTION

Whenever you see these signal words and symbol  used in this manual and on decals, you MUST take note of their instructions.

DANGER: The symbol and the word DANGER indicates an imminently hazardous situation which, if not avoided, will result in DEATH OR VERY SERIOUS INJURY.

WARNING: The symbol and the word WARNING indicates a potentially hazardous situation. If the instructions or procedures are not correctly followed it could result in PERSONAL INJURY, OR LOSS OF LIFE.

CAUTION: *The symbol and the word CAUTION is used to indicate a potentially hazardous situation that, if not avoided, may result in MINOR OR MODERATE INJURY.*

IMPORTANT: *The word IMPORTANT is used to identify special instructions which, if not 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.*

SAFETY DECALS

WARNING: DO NOT remove or obscure Danger, Warning or Instruction Decals.

Replace any Danger, Warning, Caution or Instruction Decals that are not readable, damaged or are missing.

GENERAL

Practically all service work involves the need to drive a tractor. The Operator Instruction Book, supplied with each tractor or implement, contains detailed safety precautions relating to driving, operating and servicing. These precautions are as applicable to the service mechanic as they are to the operator, and should be read, understood and practised by all personnel.

Prior to undertaking any maintenance, repair, overhaul, dismantling or re-assembly operations, whether within a workshop facility or out 'in the field', consideration should be given to factors that may have an effect upon Safety, not only upon the mechanic carrying out the work, but also upon bystanders.

- DO NOT allow children or bystanders around or on the machine while it is being adjusted, serviced, repaired or operated.

PERSONAL CONSIDERATIONS

Clothing

- The wrong clothes or carelessness in dress can cause accidents. Check to see that you are suitably clothed. DO NOT wear loose clothing or long hair around equipment.

  Some jobs require special protective equipment

Eye Protection

- The smallest eye injury may cause loss of vision. Injury can be avoided by wearing the proper eye protection when engaged in chiselling, grinding, discing, sanding, welding, painting etc.
- Wear safety goggles or safety glasses appropriate to the job in hand.

Breathing Protection

- Fumes, dust and paint spray are unpleasant and harmful. These can be avoided by wearing respiratory protection.

Hearing Protection

- Loud noise may damage your hearing and the greater the exposure the worse the damage. If you think the noise is excessive, wear ear protection.

Hand Protection

- It is advisable to use a protective barrier cream before work to prevent irritation and skin contamination. After work clean your hands in soap and water. Solvents such as white spirit, paraffin, etc., may harm the skin.
- Wear gloves when ever possible to protect your hands. DO NOT wear rings or wrist watches when working on machinery, as they could catch on moving parts and cause serious injury.

Foot Protection

- Substantial or protective footwear with reinforced toe-caps (safety shoes) will protect your feet from falling objects. Additionally, oil-resistant soles will help to avoid slipping.

Special Clothing

- For certain work it may be necessary to wear flame or acid-resistant clothing.

EQUIPMENT CONSIDERATIONS

Machine Guards

- Before using any machine, check to ensure that the machine guards are in position and serviceable. These guards not only prevent parts of the body or clothing coming in contact with the moving parts of the machine, but also ward off objects that might fly off the machine and cause injury. Ensure that missing guards are replaced.

Lifting Appliances

- Always ensure that lifting equipment, such as chains, slings, lifting brackets, hooks and eyes are thoroughly checked before use. If in doubt, select stronger equipment than is necessary.
- Never stand under a suspended load or raised implement.
- Avoid injury through incorrect handling of components. Make sure you are capable of lifting the object. If in doubt get help.

Jacking

- Select a jack strong enough to carry the load.
- Stabilise the tractor and chock the wheels.
- Put support stands under the tractor. Lower the jack and let the tractor rest on the stands.
- DO NOT go under a tractor supported by a chain hoist or jack.

Compressed Air

- The pressure from a compressed air line is often as high as 7 bar (100 lbf/in^2). It is perfectly safe if used correctly. Any misuse may cause injury.
- Never use compressed air to blow dust, filings, dirt etc., away from your work area unless the correct type of nozzle is fitted and eye protection is used.
- Compressed air is not a cleaning agent, it will only move dust, etc., from one place to another. Look around before using an air hose as bystanders may get grit into their eyes, ears or skin.
- Used approved air guns, wear safety goggles, and use proper shielding to protect others in the work area.
- Never point an air nozzle at a persons body.

Hand Tools

- Many cuts, abrasions and injuries are caused by defective tools. Never use the wrong tool for the job, as this generally leads either to some injury, or to a poor job.
- Never use:
  - A hammer with a loose head or split handle.
  - Spanners or wrenches with splayed or worn jaws.
  - Spanners or files as hammers; or drills, clevis pins or bolts as punches.
- Grind off mushroom heads from chisels. The sharp edges can tear your skin if the tool slips. And, when the tool is struck, chips could break off and fly into your eyes.
- Keep a handle on every file to prevent the tang from piercing your palm or wrist if the file should slip or catch.
- For removing or replacing hardened pins use a copper or brass drift rather than a hammer.
- For dismantling, overhauling and assembly of major components, always use Special Service Tools recommended.

  These will reduce the work effort, labour time and repair cost.
- Always keep tools clean and in good working order.

Electricity

- Electricity has become so familiar in day to day usage, that its potentially dangerous properties are often overlooked. Misuse of electrical equipment can endanger life.
- Before using any electrical equipment - particularly portable appliances - make a visual check to make sure that the cable is not worn or frayed and that the plugs, sockets, etc., are intact; make sure you know where the nearest isolating switch is located. Always use an earthed (grounded) 3 pin electrical cord.

GENERAL CONSIDERATIONS

Solvents

- Use only cleaning fluids and solvents that are known to be safe. Certain types of fluids can cause damage to components such as seals, etc., and can cause skin irritation. Solvent labels should be checked that they are suitable not only for the cleaning of components and individual parts, but also that they DO NOT affect the personal safety of the user.

Housekeeping

- Many injuries result from tripping or slipping over or on, objects or material left lying around by a careless worker. Prevent these accidents from occurring. If you notice a hazard, don't ignore it - remove it.
- A clean, hazard-free place of work improves the surroundings and daily environment for everybody.
- Keep work organised and clean. Wipe up spills of any kind to minimise the possibility of a fall. Keep tools and parts off the floor to further reduce the possibility of tripping and causing serious injury.

Fire

- Fire has no respect for persons or property. The destruction that fire can cause is not always fully realised. Everyone must be constantly on guard.
  - Extinguish matches, cigars, cigarettes, etc., before throwing them away.
  - Work cleanly, disposing of waste material into proper containers.
  - Locate the fire extinguishers and find out how to operate them.
  - DO NOT allow or use open flame near the fuel tank, fuel lines, battery, hydraulic hoses or component parts
- When using a gas torch, always keep a fully charged fire extinguisher within reach.
- In the event of fire:
  - DO NOT panic - warn those near and raise the alarm.

First Aid

- In the type of work that mechanics are engaged in, dirt, grease, fine dust, etc. all settle upon the skin and clothing. If a cut, abrasion or burn is disregarded it may be found that an infection has formed within a short time. What appears at first to be trivial could become painful and injurious. It only takes a few minutes to have a fresh cut dressed, but it will take longer if you neglect it. Make sure you know where the First Aid box is located and that it is kept fully stocked at all times.

OPERATIONAL CONSIDERATIONS

- Stop the engine, if at all possible, before performing any service.
- Place a warning sign on self propelled equipment which, due for service or overhaul, would be dangerous to start. Disconnect the battery leads if leaving such a unit unattended and remove the key.
- DO NOT attempt to start the engine while standing beside the tractor or attempt to by-pass the safety start switch. Make a practise of checking that neutral start switches are functioning correctly.
- Avoid prolonged running of the engine in a closed building or in an area with inadequate ventilation as exhaust fumes are highly toxic.
- Always turn the radiator cap to the first stop to allow pressure in the system to dissipate when the coolant is hot.
- Never work beneath a tractor which is on soft ground. Always take the unit to an area which has a hard level working surface - concrete is preferred.
- If it is found necessary to raise the equipment for ease of servicing or repair, make sure that safe and stable supports are installed, beneath axle housings, casings, etc., before commencing work.
- Certain repair or overhaul procedures may necessitate 'Separating the tractor', either at the engine gearbox or gearbox/rear axle locations. These operations are simplified by the use of the Tractor Splitting Kit/Stands (Use the Massey Ferguson MF.3012 Tractor Splitting Track, also available, MF.3013 Cab Stands). Should this equipment not be available, then every consideration must be given to stability, balance and weight of the components, especially if a cab is installed.
- Use footsteps or working platforms when servicing those areas that are not within easy reach.
- Cleanliness of the tractor hydraulic system is essential for optimum performance. When carrying out service and repairs plug all hose ends and component connections to prevent dirt entry.
- Clean the exterior of all components before carrying out any form of repair. Dirt and abrasive dust can reduce the efficiency and working life of a component and lead to costly replacement. Use of high pressure washer or steam cleaner is recommended.
- Before loosening any hoses or tubes connecting implements to remote control valves, etc., switch off the engine, remove all pressure in the lines by operating levers several times. This will remove the danger of personal injury by oil pressure.
- Prior to pressure testing, make sure all hoses and connectors not only of the equipment, but also those of the test equipment, are in good condition and tightly sealed. Pressure readings must be taken with the gauges specified. The correct procedure should be rigidly observed to prevent damage to the system or equipment, and to eliminate the possibility of personal injury.
- Hydraulic fluid escaping under pressure can have enough force to penetrate the human skin. To locate a leak under pressure, use a small piece of cardboard, never use your hands. If you are injected with hydraulic fluid seek medical help immediately.
- When equipment or implements are required to be attached to the hydraulic linkage, either for testing purposes or for transportation, the 'Position Control' should be used.
- Always lower equipment to the ground when leaving the tractor.
- If high lift attachments are installed on a tractor beware of overhead power, electric or telephone cables when travelling. Drop the attachment near to ground level to increase stability and minimise risks.
- DO NOT park or attempt to service the equipment on an incline. If unavoidable, take extra care and chock all wheels.
- Observe recommended precautions as indicated in this Service Manual when dismantling the air conditioning system as escaping refrigerant can cause frostbite.
- Prior to removing wheels and tyres from a tractor, check to determine whether additional ballast (liquid or weights) has been added. Seek assistance and use suitable equipment to support the weight of the wheel assembly. Store the wheel so that they cannot fall over and cause injury.
- When inflating tyres beware of over inflation - constantly check the pressure. Over inflation can cause tyres to burst and result in personal injury.

Heed these safety precautions, and the ones found in this manual, and you will protect yourself accordingly. Disregard them and you may become injured for life.

SERVICING TECHNIQUES

Service Safety

Appropriate service methods and proper repair procedures are essential for the safe, reliable operation of all farm machinery as well as the personal safety of the individual doing the work.

This Service Manual provides general directions for accomplishing service and repair work with tested, effective techniques. Following them will help assure that a thorough repair is successfully completed.

There are numerous variations in procedures, techniques, tools, and parts for servicing tractors, as well as in the skill of the individual doing the work. This Manual cannot possibly anticipate all such variations and provide advice or cautions as to each. Anyone who departs from the instructions provided in this Manual must realise that one compromises their personal safety and the tractor's integrity by the choice of repair methods, tools and/or parts.

Service Techniques

Clean the exterior of all components before carrying any form of repair. Dirt and abrasive dust can reduce the efficient working life of a component and lead to costly replacement.

Time spent on the preparation and cleanliness of working surfaces will pay dividends in making the job easier and safer and will result in overhauled components being more reliable and efficient in operation.

Use cleaning fluids which are known to be safe. Certain types of fluid can cause damage to 'O' rings and cause skin irritation. Check the label on Solvents to ensure that they are suitable for the cleaning of components and also that they DO NOT risk the personal safety of the user.

Replace 'O' rings, seals or gaskets whenever they are disturbed. Never mix new and old seals or 'O' rings, regardless of condition. Always lubricate new seals and 'O' rings with hydraulic oil before installation.

When replacing component parts use the correct tool for the job.

Hoses and Tubes

Always replace hoses and tubes if their ends are damaged.

When installing a new hose, loosely connect each end and make sure the hose takes up the designed position before tightening the connection. Clamps should be tightened sufficiently to hold the hose without crushing and to prevent chafing or contact with other parts.

Before removing hoses or tubes make sure they are identified so that they can be correctly re-assembled.

Be sure any hose which has been installed is not kinked or twisted after it is tightened.

Bearings

Bearings which are considered suitable for further service should be cleaned in a suitable solvent and immersed in clean lubricating oil until required.

DO NOT spin bearings with compressed air. The centrifugal force could cause a ball or roller to fly outward with enough force to cause an injury.

Installation of a bearing can be classified in two ways: press fit on rotating parts such as shafts, and gears, and push fit into static locations such as reduction gear housings. Where possible, always install the bearing onto the rotating component first.

Always use pullers or a press to remove and/or install bearings, bushings and cylinder sleeves, etc. Use hammers, punches and chisels only when absolutely necessary and be sure to wear safety goggles.

Shims

When shims are removed, tie them together and identify them as to location. Keep shims clean and flat until they are re-installed.

Gaskets

Be sure the holes in the gasket correspond with the lubricant passages in the mating parts. If gaskets are to be made, select material of the proper type and thickness. Be sure to cut holes in the right places. Blank gaskets can cause serious damage - always renew gaskets prior to re-installation.

Lip Type Seals

Lubricate the lips of the lip-type seals before installation. Use petroleum jelly. DO NOT use grease. Ensure that the oil seal is fitted the right way round, the lip of the seal is placed next to the lubricant that is sealed. Some seals have a second auxiliary lip, which is used to prevent the ingress of dirt to the seal lip.

If, during installation, the seal lip must pass over a shaft that has splines, a keyway, rough surface or a sharp edge, the lip can be easily damaged. Always use a seal protector, when one is provided.

Use of Bolts in Blind Holes

Use bolts of the correct length. A bolt which is too long may 'bottom' before the head is tight against the part it is to hold. The threads can be damaged when a 'long' bolt is removed. If a bolt is too short, there may not be enough threads engaged to hold the part securely.

Locking Devices

Lockwashers, flat metal locks or split pins are used to lock nuts and bolts.

Flat metal locks must be installed properly to be effective. Bend one end of the lock around the edge of the part. Bend the other end against one flat surface of the nut or bolt head. Always install new locks.

Always fit new split pins/cotter pins and bend the ends round so that they will not catch in clothing and help to prevent cuts.

Cables and Wires

When removing or disconnecting a group of cables or wires, tag each one to assure proper re-assembly.

Always clip back wires and cable looms properly to prevent chafing, cable damage and possible damage by fire.

Tractor Specification

Section 1 – Part B

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Tractor Specification

Engine:

All engines listed below are	Perkins diesel to Massey Ferguson specification. Four stroke, water cooled, direct injection.

See Section 3 for the full engine specification

Engine – 3 cylinder:

Tractor Models applicable:

MF345, MF350	AD3.152 - naturally aspirated.
MF355,MF360	AT3.152.4 - Turbocharged.

Engine – 4 cylinder:

Tractor Models applicable:

MF375, MF385	Diesel 4.41

Engine Cooling System:

Type - All tractors	Thermostat controlled with centrifugal pump to assist circulation. Fan driven by a single belt from the crankshaft pulley.
Radiator pressure cap rating	0,75 bar.
Fan belt (s) deflection	10 mm.

Engine Air System:

Air cleaner	Two-stage dry element with warning light. Removable main and safety element or oil type.
Air intake pre-cleaner	Over-bonnet bowl type.

Engine Fuel System:

Fuel System

Fuel lift pump	Hand primed, mechanically driven from camshaft.
Fuel filter	Lucas filter with transparent sediment bowl.
Injection pump	Lucas distributor type with mechanical governor.

Clutch:

Tractor Models applicable:

MF345, MF350, MF355, MF360, MF375:

Type	Dual
Size - main clutch	305 mm.
PTO clutch (dual clutch)	254 mm.
Pedal clearance	11 mm.
PTO clutch clearance	2 mm.

MF385:

Type	Dual.
Size - main clutch	330 mm.
PTO clutch	254 mm.
Pedal free travel	11 mm.
PTO clutch clearance	2 mm.

Transmissions:

Gearbox type:

8 x 2 gearbox	The 8 x 2 gearbox, standard or synchromesh, has eight forward and two reverse speeds. This is achieved by using a four forward and one reverse speed gearbox, compounded by an epicyclic unit.
Final drive	Bevel drive with epicyclic final reduction.

Crownwheel and pinion ratio:

MF345	6.1667:1 ratio with 6 x 37 teeth.
MF355	3.454:1 ratio with 11 x 38 teeth.
MF350, MF360, MF375	4.375:1 ratio with 8 x 35 teeth.
MF385	3.889:1 ratio with 9 x 35 teeth.

Rear Axle:

Tractor Models applicable:

Rear Axle

Final drives	Bevel drive with epicyclic final reduction
Differential lock	Mechanical,foot operated.

Brakes:

Tractor Models applicable:

Brakes

Foot brakes - MF 345	355 x 50 mm drum brakes, mechanically operated, together or independently to assist steering.
Foot brakes - MF350, MF355, MF360, MF375, MF385	Oil immersed mechanical operation, disc brakes, epicyclic drive operated together or independently to assist steering.
Parking brake - all tractors	Operates on both rear wheels at the same time independent of the foot brakes.

Power Take-off:

Tractor Models applicable:

Power Take-off (PTO):

Live PTO	Engine and ground-speeds are engaged by a lever on the left of the centre housing.
PTO Speeds	540 rev/min.
Shaft Diameter	35 mm.
No. of splines	6.
Engine to PTO shaft ratio	3.3125:1.

Tractor Specification

Steering:

Tractor Models applicable:

Steering – MF350, MF360, MF375, MF385

Type	Orbitrol hydrostatic power steering
Pump	Engine mounted gear pump with reservoir or engine mounted auxiliary tandem pump.
Front wheel toe-in	0-5 mm.
Turns - lock to lock	
MF350, MF360	2.7
MF375, MF385	3.6
MF385 4WD	4.3
Turning circles - less brakes:	
MF350, MF360	6,9 m.
MF375, MF385	7,5 m.

Front Axle – Two-wheel Drive:

Type	Three section with telescopic outer arms.	
Wheel camber/caster angles:	Camber angle	Caster angle
MF345, MF350, MF355	3° 30'	4° 56'
MF360	5°	4° 56'
MF375, MF385	4° 30'	0°
Maximum turning angle:		
MF345, MF350, MF355, MF360	55°	
MF375, MF385	52°	
Maximum static load capacity:		
MF345	2025 kg	
MF355	2385 kg	
MF350, MF360	2605 kg	
MF375	3459 kg	
MF385	4357 kg	

Drag link bolt torques:

Clamp bolt	45 Nm.
Peg bolt	45 Nm.

Front Axle – Four-wheel Drive:

Type	Side drive mechanically or hydraulically engaged with or without Autolock or Hydralock differentials.
Maximum turning angle	50° (Adjustable stops to give 35°, 40° and 50° turning angle)
Turning circle - less brakes	
MF385	9,4 m
Maximum static load capacity:	
MF385	4904 kgf

Electrical System:

Voltage	12 volt negative earth
Battery	1 battery
Alternator	45 amp hour

Light Bulbs

Headlights	45/40 W
Plough and work light	55 W
Side lights	5 W
Stop and rear lights	5/21 W
Direction indicatiors	21 W
N° plate lights	5 W
Range indicator lights	2 W
Instruments lights	2 W
Warning lights	
Alternator	3 W
All others	2 W

Hydraulic System:

Linkage pump	Four-cylinder scotch yoke pump, driven from the forward end of the PTO shaft supplying oil under pressure to the linkage ram cylinder, and four external take off points.
Maximum pump output	16,7 litre/min.
Maximum pump pressure	176 - 204 bar.
Filtration	140 micron washable strainer.

Maximum lift capacity at the lower links with links horizontal:

All models	1415 - 1588 kg
Hydraulic linkage	Category 1 and 2 interchangeable ball ends.

Drawbars and Linkage:

Swinging drawbar capacity:

	Normal-duty:	Heavy-duty:
Inner position	1000 kgf.	1633 kgf.
Centre position	775 kgf.	1180 kgf.
Outer position	775 kgf.	1180 kgf.

Distance drawbar clevis to PTO shaft:	
Inner position	240 mm.
Centre position	345 mm.
Outer position	395 mm.
Drawbar off-set:	
Normal-duty	120 and 240 mm.
Heavy-duty	194 mm.
Nut torques:	
Drawbar frame to transmission case	420 Nm.
Drawbar frame to PTO bracket	245 Nm.
Lift linkage capacity:	
Interchangeable Cat. 1 & 2 ends	2145 kgf.
Cat. 2 Fixed ends	2290 kgf.

Tractor Specification

Capacities:

	MF 345	MF 350	MF 355	MF 360	MF 375	MF 385
Fuel tank	47,5 l	45 l	47,5 l	47,5 l	108 l	108 l
Cooling system	10,2 l	11,7 l	10,2 l	11,7 l	15,2 l	15,2 l
Engine oil	6,8 l	6,8 l	6,8 l	6,8 l	7,5 l	7,5 l
Transmission/hydraulics	33 l	36 l	36 l	36 l	36 l	47,4 l
Power steering reservoir	0,9 l	2,0 l	0,9 l	2,0 l	2,0 l	2,0 l
Oil bath air cleaner	0,65 l	0,7 l	0,5 l	0,5 l	0,7 l	0,7 l

Wheels:

Wheel, Rim Nut and Bolt Torques – 275, 290

Front axle - two-wheel drive

Wheel nuts	95 Nm.
Wheel bolts	108 Nm.

Front axle - four-wheel drive

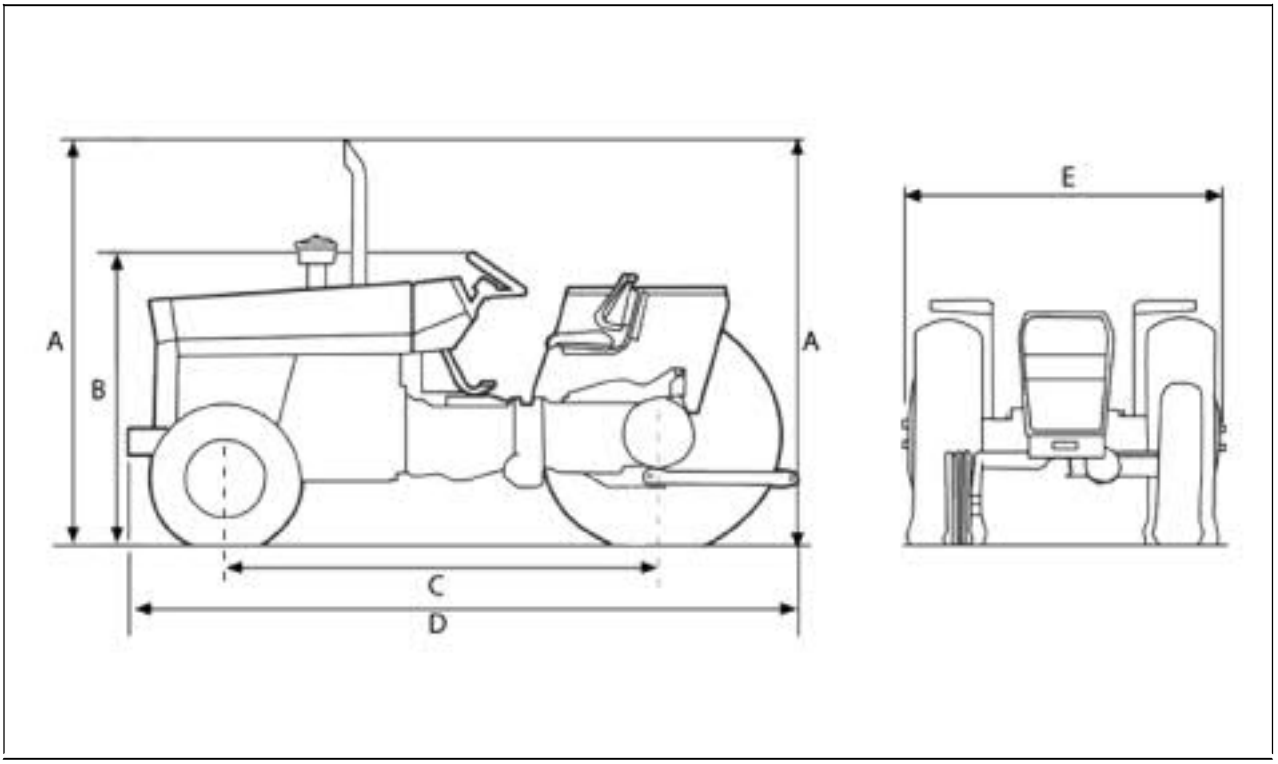
Wheel nuts	270 Nm.
Rim to disc	190 Nm.

Rear wheels - pressed steel:

Wheel nuts	325 Nm.
Rim to disc	240 Nm.

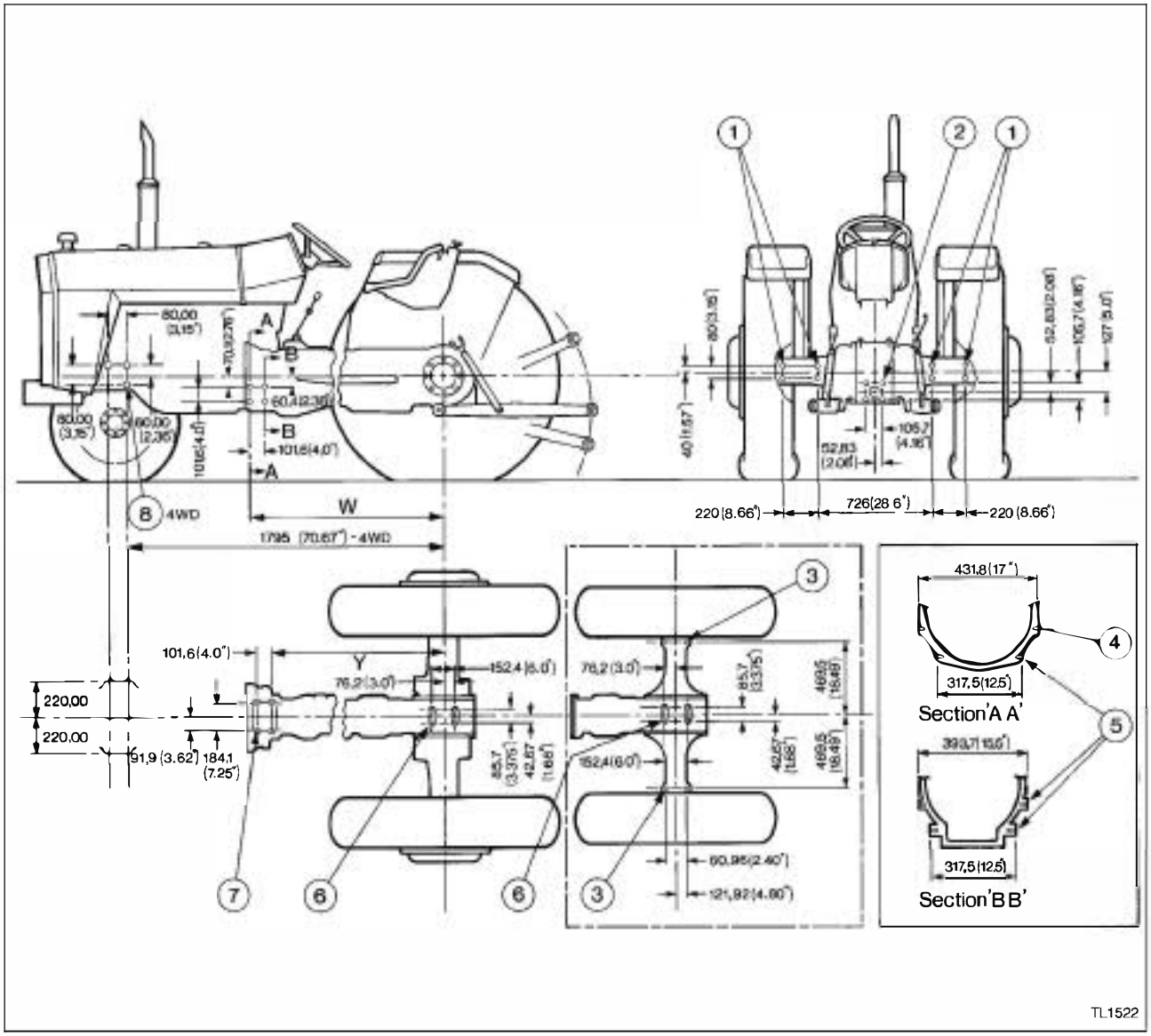
Track Adjustments

Front track - two-wheel drive	1227-1880 mm.
Front track - four-wheel drive	1407-1908 mm.
Rear track (Pressed steel wheels)	1320-2134 mm.



	MF 345	MF 350	MF 355	MF 360	MF 375	MF 385
A - Overall height - Over exhaust	2145 mm	2200 mm	2200 mm	2236 mm	2485 mm	2485 mm
B - Overall height - Over steering wheel	1410 mm	1520 mm	1490 mm	1499 mm	1730 mm	1781 mm
C - Wheelbase	1892 mm	2022 mm	1892 mm	2032 mm	2170 mm	2350 mm
D - Overall length	3260 mm	3390 mm	3260 mm	3353 mm	3670 mm	3810 mm
E - Overall width	1651 mm	1820 mm	1890 mm	1890 mm	1970 mm	1871 mm
Weight	1650 kg	1940 kg	1900 kg	2010 kg	2295 kg	2760 kg
Front tires	6.00-16		6.00-16	7.50-16	7.50-16	12.4-11-24
Rear tires	12.4/11-28		14.9/13-28	14.9/13-28	16.9/14-30	18.4/15-30

TRACTOR MOUNTING POINTS – 2 WHEEL DRIVE TRACTORS

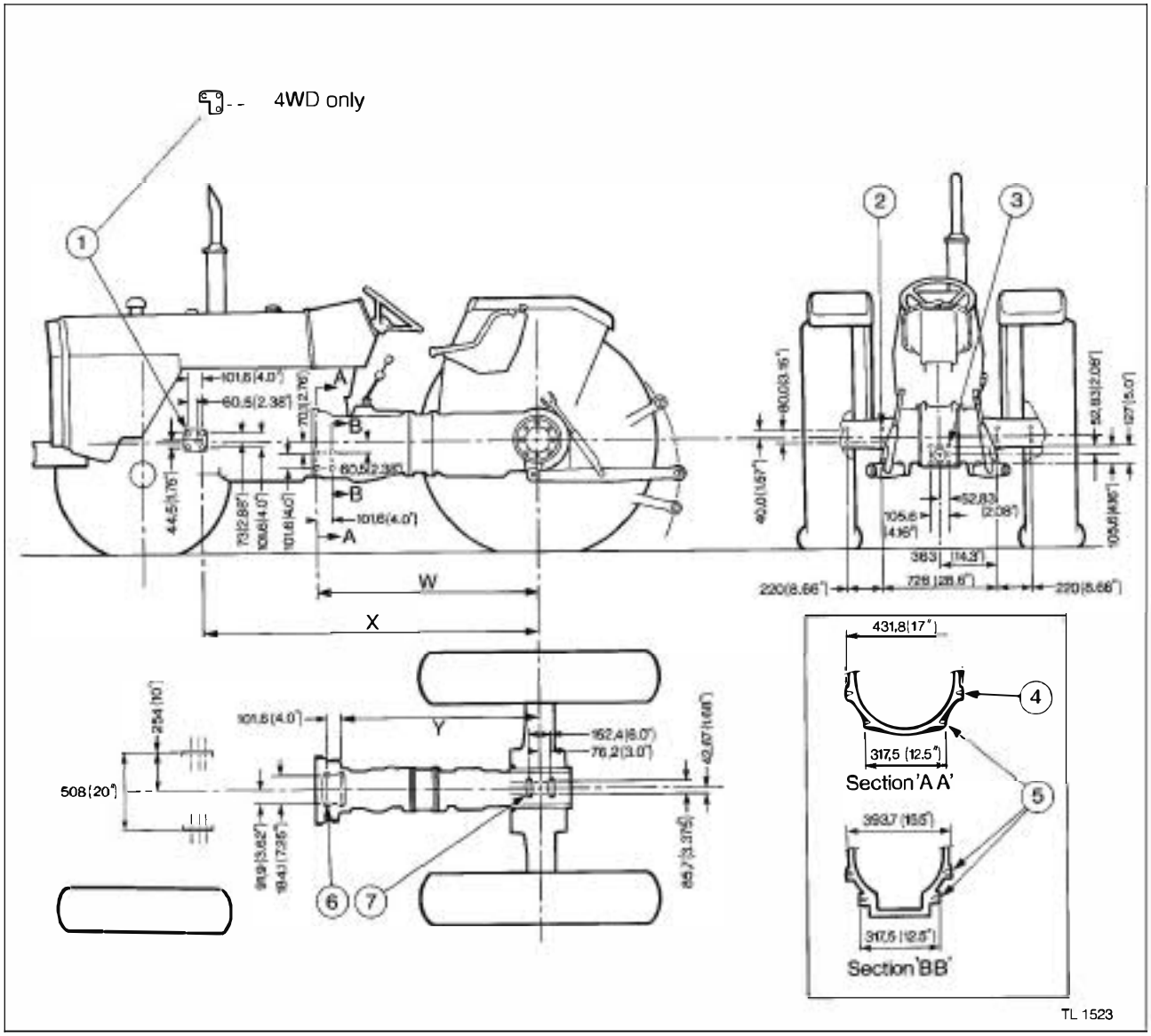


W . . . 1379,00 mm with spacer
W . . . 1229,00 mm without spacer

Y . . . . 1242,56 mm with spacer
Y . . . . 1092,56 mm without spacer

1. . . . 8 holes 5/8 inch - 11UNC - 2B x 28 mm deep.
2 . . . . 4 holes 1/2 inch - 13UNC - 2B x 22 mm deep.
3 . . . . 4 holes 16,20/16,46 mm diameter through.
4 . . . . 2 holes 5/8 inch - 11UNC - 2B x 24 mm deep.
5 . . . . 6 holes 5/8 inch - 11UNC - 2B x 32 mm deep.
6 . . . . 4 holes 3/4 inch - 10UNC - 3B x 29 mm deep.
7 . . . . 4 holes 5/8 inch - 11UNC - 3B x 32 mm deep.
8. . . . 6 holes 5/8 inch - 11UNC - 2B x 35 mm deep.
(these 6 holes (8) are on 240 - 4WD tractors only).

TRACTOR MOUNTING POINTS – 4 WHEEL DRIVE TRACTORS



W ... 1379,00 mm with spacer
W ... 1229,00 mm without spacer

X .... 2052,00 mm with spacer
X .... 1902,00 mm without spacer

Y .... 1242,56 mm with spacer
Y .... 1092,56 mm without spacer

1 .... 10 holes 3/4 inch - 10UNC - 2B x 38 mm deep (2WD)
1 .... 6 holes 3/4 inch - 10UNC - 2B x 38 mm deep (4WD)
2 .... 8 holes 5/8 inch - 11UNC - 2B x 28 mm deep.
3 .... 4 holes 1/2 inch - 13UNC - 2B x 22 mm deep.
4 .... 2 holes 5/8 inch - 11UNC - 2B x 24 mm deep.
5 .... 6 holes 5/8 inch - 11UNC - 2B x 32 mm deep.
6 .... 4 holes 5/8 inch - 11UNC - 3B x 32 mm deep.
7 .... 4 holes 3/4 inch - 10UNC - 3B x 29 mm deep.