MASSEY FERGUSON
GC2300
TRACTOR

TRACTOR
Contents

Part Number 4283003M1 (English)

Printed in U.S.A.
MARCH, 2005

INTRODUCTION
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INTRODUCTION

The purpose of this manual is to assist dealers and distribute in the efficient repair and maintenance of Massey Ferguson and AGCO 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.

NOTE: To assist with locating information, each division of the manual is preceded by a contents page listing the operations in numerical order.

Each operation is given in sequential order. To complete the operation in the minimum time it is essential that these instructions are preformed in given order unless otherwise stated. When applicable, the callout numbers in the text reference components in the appropriate illustration. Where performance of an operation requires the use of a special tool, the tool is called out in that operation.

INDEXING

For convenience, the manual is divided into parts sections with each page number bearing the part and section number. Page numbers are located at top outside of each page. Beneath the page number is written title of manual division.

Page Number Example: 7A-15

Part 7 Section A, Page 15

This simplifies cross-referencing and enables the subject to be found easily.

NOTE: Page numbers will be consecutive within each sub-section. A void of page numbers may be used between these sub-sections in order to provide space for future amendments and also to indicate the beginning/end of adjacent sub-sections.

SPECIAL TOOLS

Where the use of a special tool is specified in an operation, the tool number will be shown under the operation.

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.

Make certain proper tools are available when starting the job.

REPAIRS & REPLACEMENTS

When service parts are required, it is essential that only genuine Massey Ferguson and AGCO replacements are used. Attention is particularly drawn to the following points concerning repairs and the fitting of replacement parts 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, AGCO, and Challenger parts. All Massey Ferguson and AGCO replacements have the full backing of the manufacturer's warranty. Massey Ferguson and AGCO Distributors and Dealers are obliged to supply only genuine service parts.

REPAIR TIME SCHEDULE

The operations listed in the Repair Time Schedule refer to those described in this manual. The time set against each operation in the schedule is established by performing the actual operations on standard machines using special tools where applicable. The Repair Time Schedule for use with this manual is issued as a separate publication.

NOTE: Repair Time Schedules are issued to Massey Ferguson and AGCO Distributors and Dealers only and are not for general publication.

AMENDMENTS

Under normal conditions, revised pages issued carry 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 discarded.

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.

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

SAFETY PRECAUTIONS

- Make sure that all personnel are in a safe position before starting the engine, or operating ANY of the controls.
- Always stop the engine before leaving the operator's platform.
- Wait for all moving parts to stop COMPLETELY before starting any work on the tractor.
- Before starting service procedures, attached equipment should be resting on the ground and all hydraulic control levers operated back and forth several times with the engine stopped.
- If it becomes necessary to go under raised attachment (i.e: to perform adjustments, etc.), safety standards must be used to support the attachment.
- Make sure the battery ground cable is disconnected before working on or near the electrical system or electrical system components.
- Keep hands, feet and clothing a safe distance away from moving belts, pulleys and other moving parts. Make sure all safety shields are installed.
- Be extra careful when performing any checks, inspections, adjustments or tests that require operating the engine, the hydraulic controls, OR with the machine in motion.
- Make sure dependable jacks of adequate lifting capacity AND suitable stands (or wooden blocking) are used to securely block up the machine when removing any of the wheels or axles.

CAUTION: PERSONAL INJURY MAY RESULT IF THESE PRECAUTIONS ARE NOT FOLLOWED.

Look for this symbol to point out important safety precautions. It means - ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED.

- Before any attempt is made to disconnect or remove any hydraulic component, make sure the hydraulic pressure within the system is relieved and the engine is stopped.
- Carry out the repair procedures in a "common sense" manner. Safety procedures cannot be over-emphasized when working on, or around machinery, especially when working on engine driven and/or hydraulically actuated equipment.
- Safety also depends upon the skill of the service man in the use of tools and other shop equipment while performing the recommended service procedures.
- Exercise extreme caution when testing hydraulic or fuel system components as fluid ejected under high pressure can easily penetrate skin causing serious infection.
- When it is necessary to remove hoods, shields, ROPS, etc. to conduct repair operation, all items must be reinstalled to unit and secured in original fashion.
- Modification of ROPS is not permissible. Do not weld, drill or modify ROPS in any manner. Damaged or modified ROPS must be replaced.

GENERAL INFORMATION

Model Name and Identification Numbers

FIGS. 1, 2 & 2a: The name plate (1) which gives the model name, type, production serial number, and production year of the machine, is located on the left-hand side of the rear fender (2).

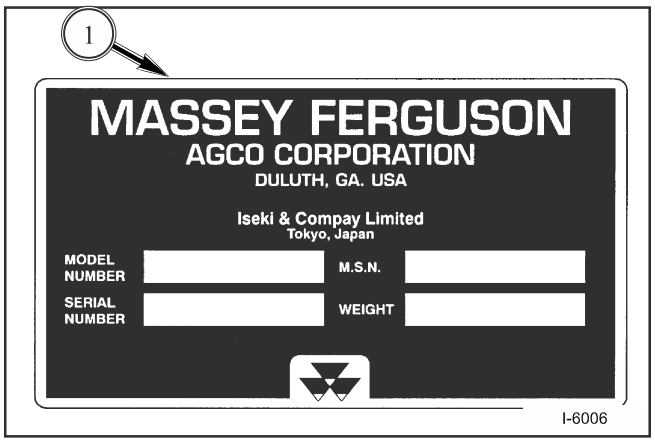

FIG. 1

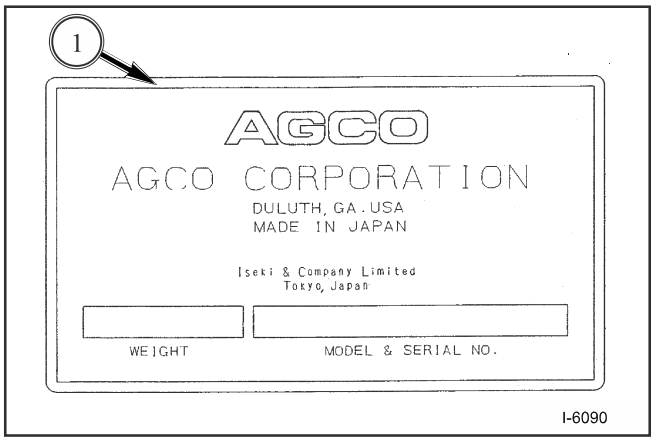

FIG. 2

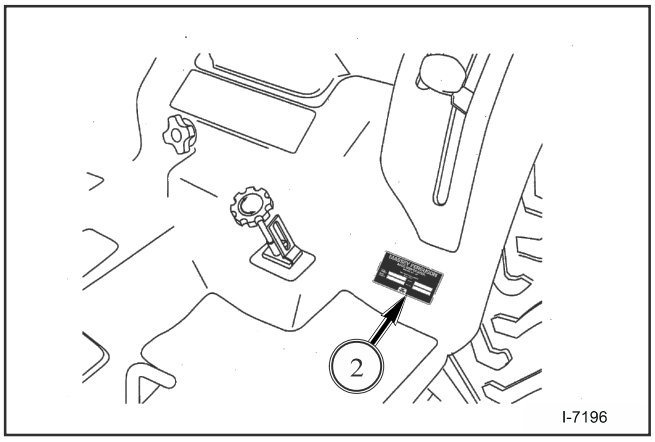

FIG. 2a

Chasis

FIG. 3: The chassis number is punched on the plate provided on the right-hand side of the chassis (1).

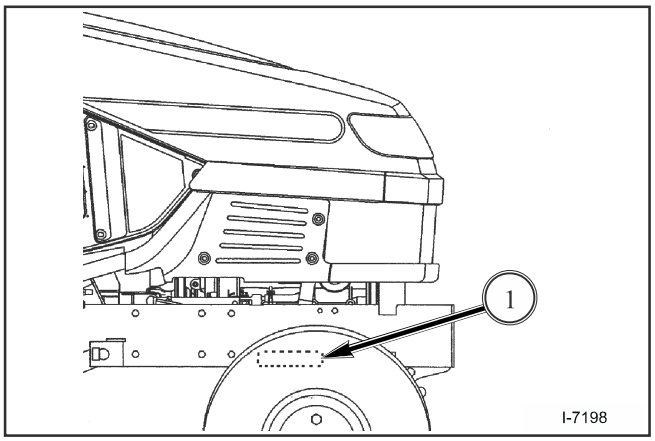

FIG. 3

Engine Model and Serial Number

FIG. 4: The engine model name (1) is cast into the left-hand side wall of the cylinder block.

The serial number (2) is punched into the left-hand side wall of the cylinder block.

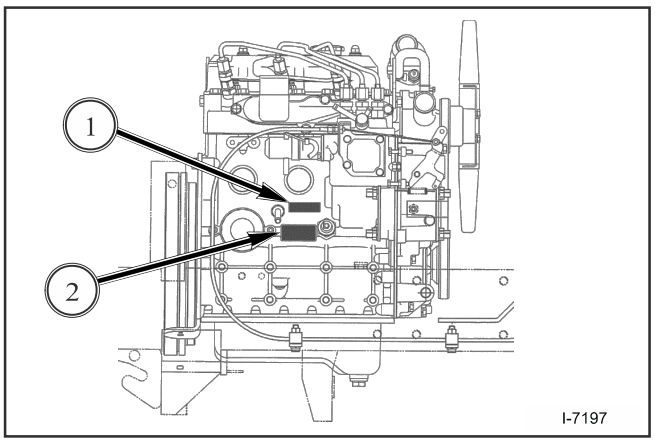

FIG. 4

Specifications

ENGINE		
Make		Iseki Diesel
Model		E3112-B12
Type		Indirect injection, overhead valve
Aspiration		Natural
Displacement		68.5 cu. in. (1123 cc)
Number of Cylinders		3
	Bore	3.08” (78.2 mm)
	Stroke	3.07” (78.2 mm)
Engine Horsepower (Gross)		22.5 HP (16.5kW) @ 2600 rpm
	Net	21.6 PS (15.9 kW) @ 2600 rpm
PTO Horsepower (Estimate)		17.5 @ PTO rpm
Firing Order		1-3-2
Compression Ratio		22.5 to 1
Low Idle Speed		1250 to 1300 rpm
High Idle Speed		2760 to 2860 rpm
Valve Clearance (Cold): Intake		0.010” (0.25 mm)
Exhaust		0.010” (0.25 mm)
Air Cleaner		Single stage, dry element
Engine cooling		Liquid, forced circulation
Cold Starting Aid		Glow plugs (3)

TRANSMISSION	
Primary	Hydrostatic
Range	2 speed constant mesh (2 forward, 2 reverse)
Clutch	None
Brakes	Mechanically actuated sealed wet disk

POWER TAKE-OFF (PTO)	
Type	Independent, engine driven
Control	Hydraulic control
Clutch	Mechanically engaged, multi-plate wet disk
Rear PTO; Shaft	1.375” (35mm) diameter, six spline
Output	Clockwise rotation
Engine Speed @ 540 PTO rpm	2532 rpm
Mid PTO; Shaft	1.000” (25.4) diameter, fifteen spline
Output	Clockwise rotation
Engine Speed @ 2100 PTO rpm	2476 rpm

HYDRAULICS		
Steering System		Hydrostatic (power)
	Pump	Transmission-mounted gear pump with flow divider
	Maximum Output	2.0 U.S. gals./min. (7.5 l/min.)
	Pressure	Relief valve setting 1209 psi (8335 kPa)
Main Hydraulic System		Transmission-mounted gear pump
Maximum Output		6.1 U.S. gals./min. (23.1 l/min.)
Pressure		Relief valve setting 1920 psi (13244 kPa)
Rear Linkage; Type		Three-point hitch
	Size	Category 1
Control		Position control
	Lift Capacity	1191 lbs. (540 kg) measured at ball ends

ELECTRICAL SYSTEM	
System Voltage	12 volt, negative (-) ground
Battery cca @ 0F (-18)	390 cca
Charging	40 amp alternator with internal regulator/rectifier

TREAD WIDTH SETTINGS		
Front 4WD		
	Ag. Tires (“Dished In” Only)	36.6” (930 mm)
	Turf Tires (“Dished In” Only)	36.6” (930 mm)
Rear 4WD		
	Ag. Tires (“Dished In “ Only)	33.1” (840 mm)
	Turf Tires (“Dished In” Only)	33.1” (840 mm)

MAXIMUM AXLE LOADING	
Front 4WD	1940 lbs (880 kg)
Rear Axle	2094 lbs. (950 kg)

TRANSMISSION & RELATED PARTS
AGRI TIRE (REVOLUTION OF SHAFTS)

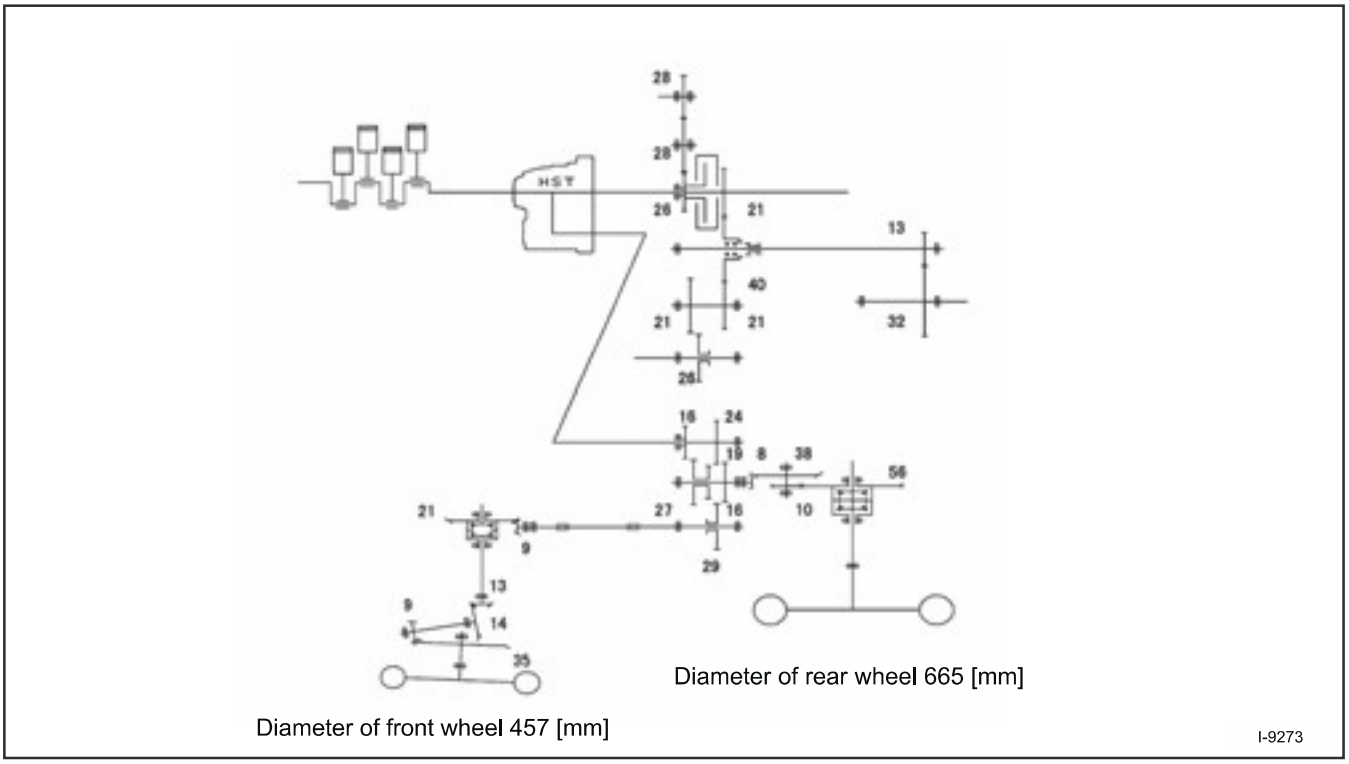

FIG. 5

FIG. 5: Drive Train Diagram shown.

Engine Speed [RPM]	2600
HST Pump Capacity (cc)	21.0
HST Motor Capacity (cc)	21.0
HST Volumetric Efficiency	95%

Drive System

		L	H
Input Shaft	RPM	2600	2600
HST Output Shaft	RPM	2470	2470
Drive Pinion	RPM	1463.70	3120
Wheel Pinion	RPM	308.15	656.84
Rear Wheel Shaft	RPM	55.03	117.29
Rear Wheel Speed	Km/h	6.90	14.70
Front Drive Shaft	RPM	807.56	1721.38
Front Ring Gear	RPM	346.10	737.73
Front Kingpin	RPM	321.38	685.04
Front Wheel Shaft	RPM	82.64	176.15
Front Wheel Speed	Km/h	7.12	15.17

PTO System

		Rear	Mid
Input Shaft	RPM	2600	2600
PTO Counter Shaft	RPM	1365	1365
Rear PTO Shaft	RPM	554.53	
Mid PTO Idle Gear	RPM		2600
Mid PTO Shaft	RPM		2100

Gear Pump System

Input Shaft	RPM	2600
Counter Gear	RPM	2414.29
Input SHaft	RPM	2414.29

NOTE: Front axle lead ratio is 3.12%.