

Massey Ferguson®

1523 Compact Tractor

WORKSHOP SERVICE MANUAL 4283068M1

CONTENTS

GENERAL INFORMATION	01
ENGINE	02A
ENGINE	02B
MAJOR COMPONENTS	03
CLUTCH	04
TRANSMISSION	05
HYDROSTATIC TRANSMISSION	06
REAR BRAKES AND AXLE	07
FRONT AXLE	08
HYDRAULIC SYSTEM	09
ELECTRICAL	10
HYDROSTATIC STEERING	11
LUBRICATION	12

Massey Ferguson®**1523
Compact Tractor****WORKSHOP SERVICE MANUAL
4283068M1****01 - General Information****Contents**

GENERAL	
Introduction	01-1
To the Dealers	01-1
Replacement Parts	01-1
Units of Measurement	01-1
Table of Contents	01-1
Page Numbers	01-1
Tractor Identification	01-2
Model/Serial Numbers	01-2
SPECIFICATIONS	
General Specifications	01-5
1523 / ST24a / MT225B Hydrostatic (HST) - 4WD	01-7
1523 / ST24a / MT225B Mechanical (Standard) 4WD	01-8
PRECAUTIONS FOR DISASSEMBLY	
General Precautions For Disassembly And Installation	01-11
Before Operation	01-11
Precautions To Be Followed When Installing Standardized Parts	01-11
STANDARD TORQUE CHART	
Standard Torque Chart	01-15
SEALANT AND ADHESIVES	
Sealant & Adhesives	01-17
CONVERSION TABLE	
Conversion Tables	01-19
INDEX	01-21

GENERAL

INTRODUCTION

This service manual has been prepared with the latest service information available at the time of publication. Read the service manual carefully before doing any service on the compact tractor. This manual is one of the most important tools available to the service technician.

Right-hand and left-hand, as used in this manual, is determined by facing the direction the machine will travel when in use.

The photos, illustrations, and data used in this manual were current at the time of printing, but due to possible production changes, your machine can vary slightly. The Manufacturer reserves the right to redesign and change the machine as necessary without notification.



WARNING: Some pictures in this manual show the machine with shields or guards removed to allow for a better view of the subject of the picture. All shields and guards must be in position before operating the machine.

TO THE DEALERS

This manual was developed to provide the best possible information, technical support and service to the customer. Review the Table of Contents and basic layout to become familiar with locations of pertinent information such as maintenance table, specifications and etc.

REPLACEMENT PARTS

To receive efficient service, always remember to give the dealer the following information:

- Correct part description or part number.
- Model number of your machine.
- Serial number of your machine.

UNITS OF MEASUREMENT

Measurements are given in metric units followed by the equivalent in US units. Hardware sizes are given in millimeters for metric hardware and inches for U.S. hardware.

TABLE OF CONTENTS

A Table of Contents is in the front of this manual. The Table of Contents shows the divisions. The individual divisions also have a Table of Contents.

PAGE NUMBERS

All page numbers are made of two numbers separated by a dash, such as 01-25. The number before the dash is the division number. The number following the dash is the page number in that division. Page numbers will be at the lower right or left of each page.

General

TRACTOR IDENTIFICATION

Model/Serial Numbers

Each Tractor is identified by means of Tractor model and serial numbers. As a further identification, engine and chassis are provided with identification numbers.

FIG. 1: The tractor identification plate (1) is located below operator's seat.

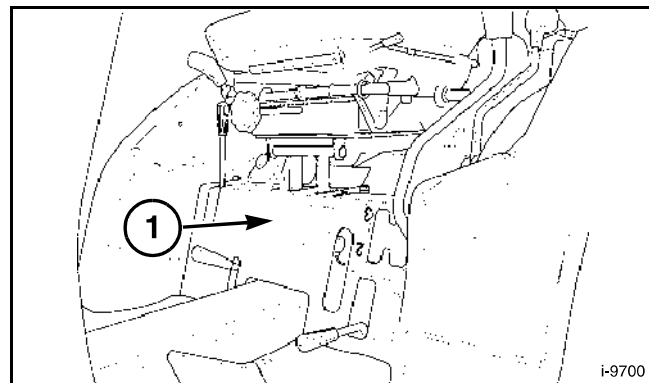


FIG. 1

FIGS. 2–4: Identification plate, for each model, contains model numbers, machine series numbers and weight in addition to Tractor serial numbers.

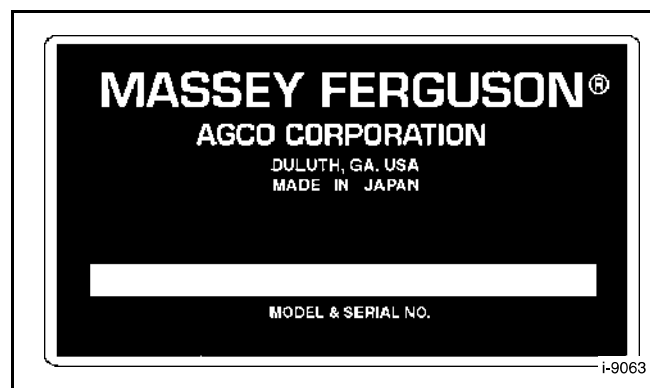


FIG. 2



FIG. 3



FIG. 4

General

FIG. 5: Engine model number (1) is cast on right side of engine block, below the injection pump.

Engine serial number (2) is stamped into cylinder block, below engine model number.

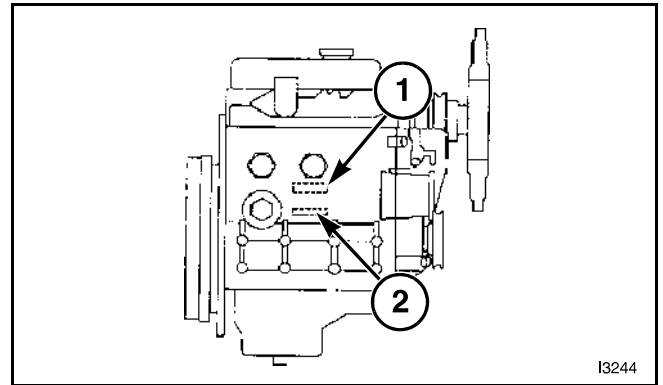


FIG. 5

FIG. 6: Chassis number (1) is stamped in right side of front frame.

NOTE: Reference to left-hand and right-hand, used throughout this book, refers to the position when seated in operator's seat and facing forward.

NOTE: Terms "hydrostatic" and "standard" refer to type of Tractor transmission. Information in this book will apply to all Tractor versions unless indicated otherwise.

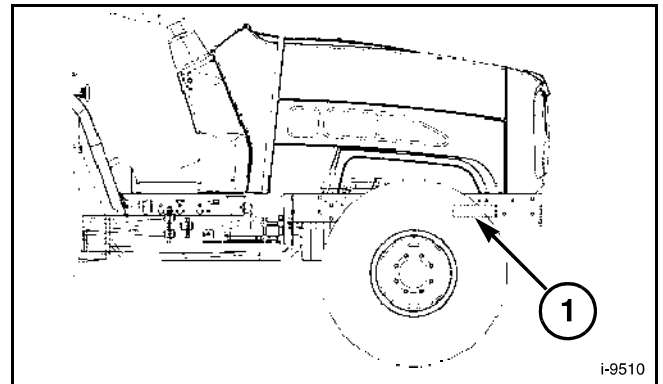


FIG. 6

SPECIFICATIONS

GENERAL SPECIFICATIONS

Models..... 1523 / ST24A / MT225B

Engine

Make..... ISEKI Diesel

Model E3112-B05

Type..... Indirect injection, overhead valve

Displacement 1123 cc (68.5 cu in)

Number of Cylinders..... 3

Bore..... 78.2 mm (3.078 in)

Stroke 78.0 mm (3.070 in)

Engine Horsepower at 2600 rpm 16.5 kW (22.5 hp)

Firing Order 1 - 3 - 2

Compression Ratio 22.5:1

Low Idle Speed 1250 - 1300 rpm

High Idle Speed 2760 - 2860 rpm

Valve Clearance (cold) - intake and exhaust 0.25 mm (0.010 in)

Air Cleaner single - dry element

Engine Cooling liquid, forced circulation

Cold Starting glow plugs (3)

Power Take-Off (PTO)

Control Hydro / Standard..... electric switch / foot clutch control

Clutch Hydro / Standard wet, multi-disc / hydraulic transmission driven

Rear PTO Shaft - Six Spline

Diameter..... 35 mm (1.378 in)

Output..... clockwise rotation (facing shaft)

Speeds at Engine rpm

HST 540 at 2391 rpm

Standard..... 540 at 2476 rpm

Mid PTO Shaft - 15 Spline

Diameter..... 25 mm (1 in)

Output..... clockwise rotation (facing shaft)

Speeds at Engine rpm

HST 2000 at 2583 rpm

Standard..... 2000 at 2445 rpm

Specifications

Hydraulics

Main Hydraulic System

Pump.....	gear pump (open center)
Output - maximum.....	20.6 l/min (5.40 gal/min)
Pressure - relief valve setting	137 bar (1991 psi)
Rear Linkage Type.....	three-point hitch
Control.....	operated by single 'position' control lever
Lift Capacity - measured at ball ends.....	540 kg (1190 lbs)

Steering System

Type.....	Hydrostatic
Pump.....	Gear Pump
Output - maximum.....	10.0 l/min (2.60 gal/min)
Pressure - relief valve setting	103 bar (1493 psi)

Electrical System

System Voltage.....	12 volt - negative (-) ground
Battery CCA at -18 degrees C (0 degrees F)	435 CCA
Charging.....	40 Amp alternator with internal regulator

Capacities

Engine Crankcase with Filter.....	2.70 liters (2.90 qts)
HST Transmission and Differential Housing (includes hydraulics).....	14.0 liters (14.8 qts)
Standard Transmission and Differential Housing (includes hydraulics)	13.5 liters (14.3 qts)
Fuel Tank.....	25 liters (6.6 gal)
Cooling System.....	7.10 liters (7.5 qts)
Front Axle - four wheel drive.....	2.70 liters (2.90 qts)

Maximum Axle Loading

Front Axle (4WD)	650 kg (1432 lbs)
Rear Axle	750 kg (1653 lbs)

Tire Size Front

Agricultural Tire.....	6.00 - 12 4PR
Turf Tire	23 x 1.50 - 12
R4 Tire	23 x 8.50 - 12

Tire Size Rear

Agricultural Tire.....	9.50 - 16 4PR
Turf Tire	33 x 12.50 - 16.5
R4 Tire	12 x 16.5

1523 / ST24a / MT225B Hydrostatic (HST) - 4WD

Tire Size

Turf Tires

Front 23.0 x 10.50 - 12

Rear 33 x 12.5 - 16.5

Ag Tires

Front 6.00 - 12

Rear 9.5 - 16

Overall Length 2590 mm (102 in)

Overall Width of Wheels 1075 mm (42 in)

Overall Height at ROPS 1955 mm (77 in)

Wheel Base 1520 mm (59.8 in)

Wheel Tread

Turf Tires

Front 935 mm (36.8 in)

Rear 905 mm (35.6 in)

Ag Tires

Front 780 mm (30.7 in)

Rear 815 mm (32.1 in)

Minimum Ground Clearance

Turf Tires 245 mm (9.6 in)

Ag Tires 264 mm (10.4 in)

Minimum Turning Radius (without brake) 2400 mm (94.5 in)

Weight

Turf Tires 715 kg (1576 lbs)

Ag Tires 695 kg (1532 lbs)

Traveling Speed		Turf Tires	Ag Tires
Range	Main Shift		
Low	2	0 - 9.4 km/hr (0 - 5.83 mph)	0 - 9.3 km/hr (0 - 5.8 mph)
	R	0 - 7.0 km/hr (0 - 4.35 mph)	0 - 7.0 km/hr (0 - 4.3 mph)
High	2	0 - 21.8 km/hr (0 - 13.54 mph)	0 - 21.8 km/hr (0 - 13.54 mph)
	R	0 - 16.4 km/hr (0 - 10.20 mph)	0 - 16.4 km/hr (0 - 10.20 mph)

Transmission

Primary infinite

Range 2

Gear Selections F2/R2

Brakes mechanically actuated wet disk