1428V
TRACTOR
SERVICE MANUAL

1449562M1

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1428V, MT255, ST30X EFF. “L” S/N SERVICE MANUAL

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INTRODUCTION

This service manual has been prepared to provide the information and suggestions necessary for servicing the Tractor equipped with the mechanical transmission. These include construction, specifications, removal and reinstallation of the components, disassembly and reassembly instructions, inspection and adjustment instructions, troubleshooting, general precautions etc.

Figures mentioned in this manual are standard values established by AGCO, Massey Ferguson and Challenger for the Tractor, consequently when a non-AGCO/Massey Ferguson/Challenger part has been installed on the machine or adjustments and repairs have been made in a manner other than as specified in this manual, the pertinent values mentioned herein are no longer valid. AGCO/Massey Ferguson/Challenger does not assume responsibility for problems or damage caused by a value deviation due to maladjustment or by the use of unauthorized parts.

Servicing procedures outlined in the manual contain sufficient information to return all component parts of a machine to new condition. In discussion of each component part, it is assumed that a complete overhaul is being performed, consequently, complete disassembly and reassembly are outlined. The machine is relied upon to decide how far disassembly must be carried out when complete overhaul is not required.

Study unfamiliar service procedures thoroughly and understand them clearly before attempting disassembly. Specific data essential for proper overhaul, such as running clearances and torque values, have been provided in interline of inspection and reassembling procedures of each group section.

This manual was compiled from latest information available at time of publication. However, AGCO/Massey Ferguson/Challenger reserves the right to make changes at any time without notice.

Whenever the terms “left” and “right” are used, this means as viewed by the operator when seated in the operator’s seat.

Whenever servicing the machines, pay sufficient attention to the operational safety to protect you and other persons around the machines from danger by following carefully the instructions given in the manual. Never take chances!

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GENERAL INFORMATION

TRACTOR TYPE AND OTHER IDENTIFCATION MARKINGS

FIG. 1: Identification Markings

a. Engine model name
b. Piston displacement (liter)
c. Serial number
1. Tractor serial number
2. Chassis serial number
3. Engine information

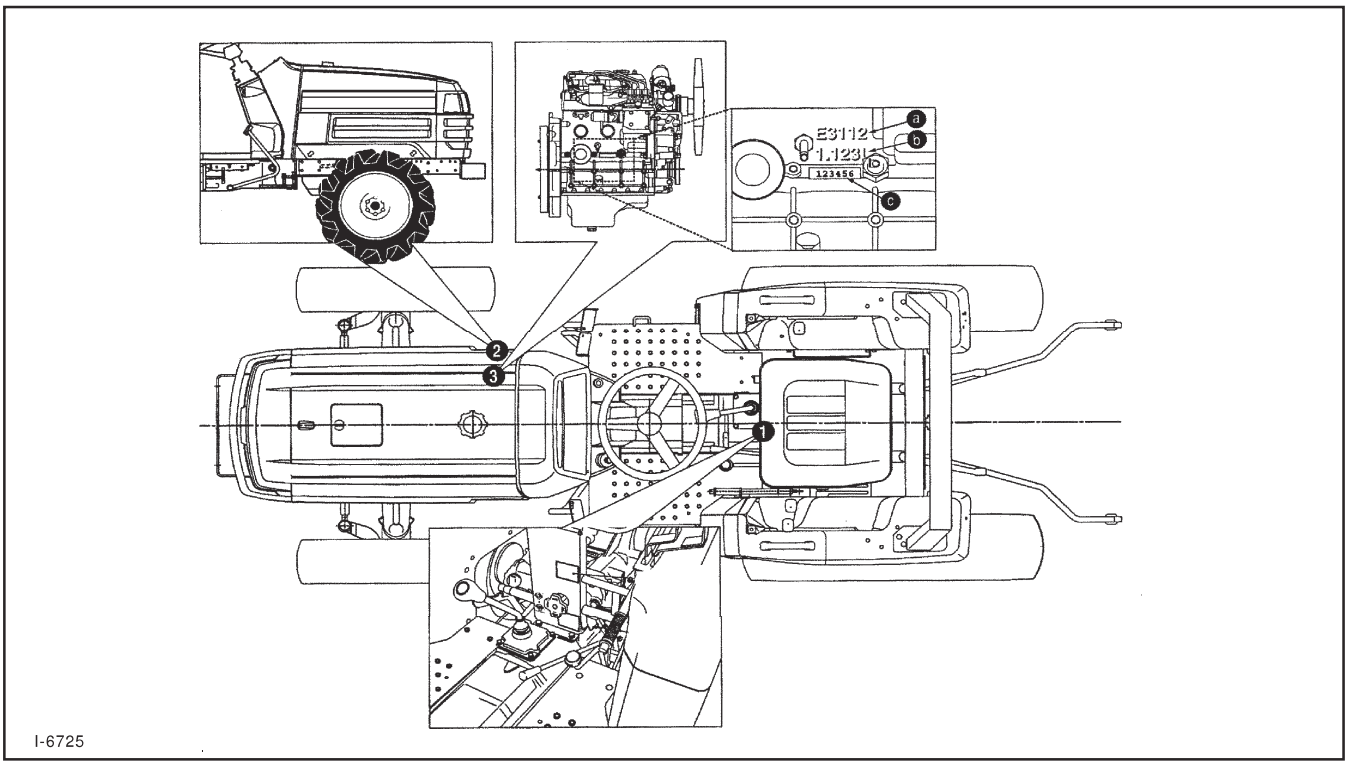


FIG. 1

TRACTOR, ENGINE MODEL, AND RESPECTIVE SERIAL NUMBERS

FIG. 2: Each tractor is identified by means of the tractor model and serial numbers. As a further identification, the engine and chassis are also provided with identification numbers. They are provided as shown.

FIG. 2

SPECIFICATIONS

These specifications are subject to change without notice.

Engine

Make	ISEKI Diesel
Model	E3CF
Type	Indirect injection, overhead valve
Displacement	1.463 lit. (89.3 cu in)
Number of cylinders	3
Bore	86 mm (3.385")
Stroke	84 mm (3.307")
Engine horsepower (net) @ engine revolution min (rpm)	27.6 / 2500
PTO horsepower (estimate)	24.2 @ 585 PTO rpm
Firing order	1-3-2
Compression ratio	21.7:1
Low idle speed	930 - 970 rpm
High idle speed	2650 - 2750 rpm
Valve clearance (cold) - intake and exhaust	0.35 mm (.014")
Air cleaner	Single stage - dry element
Engine cooling	Liquid, forced circulation
Cold starting	Glow plugs (3)

Transmission

Primary			F3/R1
Range			3
Gear selections			F9/R3
Clutch			Dry dual disc (Dia: 215 mm) 8.46"
Brakes			Mechanically actuated, sealed wet disc
Speed range (Ag tires)	Forward	1	1.91km/h (1.18 mph)
		2	2.82 km/h (1.75 mph)
		3	3.91 km/h (2.43 mph)
		4	4.80 km/h (2.98 mph)
		5	7.06 km/h (4.39 mph)
		6	9.79 km/h (6.08 mph)
		7	10.57 km/h (6.57 mph)
		8	15.57 km/h (6.57 mph)
		9	21.56 km/h (13.40 mph)
	Reverse	1	1.97 km/h (1.22 mph)
		2	4.95 km/h (3.08 mph)
		3	10.90 km/h (6.77 mph)

Power Take-Off (PTO)

Control ..... Lever and pedal
Rear PTO shaft ..... 35 mm (1.375 in) diameter - six spline
Output ..... Clockwise rotation
Speeds @ engine rpm ..... 540 @ 2327
Mid PTO (accessory) shaft ..... 25 mm (1") diameter
  Output ..... Clockwise rotation
  Speeds @ engine revolution min^{-1} (rpm) ..... 2000 @ 2500

Hydraulics

Main hydraulic system
  Pump ..... Gear pump (Open center)
  Output – maximum ..... 28 liters/min (7.4 gal/min)
  Pressure - relief valve setting ..... 150 kgf/cm^2 (2130 psi)
Rear linkage type ..... Three-point hitch
  Control ..... Operated by single "position" control lever
  Draft control (optional) ..... Top link sensing
  Lift capacity ..... 900 kg (1984 lb) measured at link ends
Steering system type ..... Hydrostatic
  Pump ..... Gear/ Flow divider
  Output - maximum ..... 9.61 liters/min (2.5 gal/min)
  Pressure - relief valve setting ..... 120 kfg/cm^3 (1707 psi)

Electrical System

System voltage ..... 12 volt - negative (-) ground
Battery cca @ - 18°C (0°F) ..... 582 cca
Charging ..... 40 amp alternator with internal regulator

Capacities

Engine crankcase with filter ..... 3.6 liters (3.8 qts.)
Transmission and differential housing (including hydraulics) ..... 14.0 liters (14.8 qts.)
Fuel tank ..... 23 liters (6.1 gals.)
Cooling system ..... 7.1 liters (7.5 qts.)
Front axle - four-wheel drive ..... 4.5 liters (4.7 qts.)

Track Setting

Front four-wheel drive

Agricultural tires (dished in only) ..... 960 mm (37.8”)

24 x 8.5-12 Turf tires (dished in only) ..... 1067 mm (42”)

27 x 8.5-15 Turf tires (dished in only) ..... 1020mm (40.2”)

R-4 ..... 1080 mm (42.5”)

Front two-wheel drive

Agricultural tires ..... 912mm, 1013mm (35.9”, 39.9”)

Turf tires ..... 1010mm (39.9”)

Rear four-wheel drive

Agricultural tires (adjustable wheels) ..... 1096 mm (43.1”)

Turf tires 315/80D-16 ..... 946 mm, 966 mm (37.2”, 38.0”)

Turf tires 13.6-16 ..... 931mm, 980mm (36.7”, 38.6”)

R-4 ..... 959 mm (37.8”)

Maximum Axle Loading

Front four-wheel drive - both models ..... 815 kg

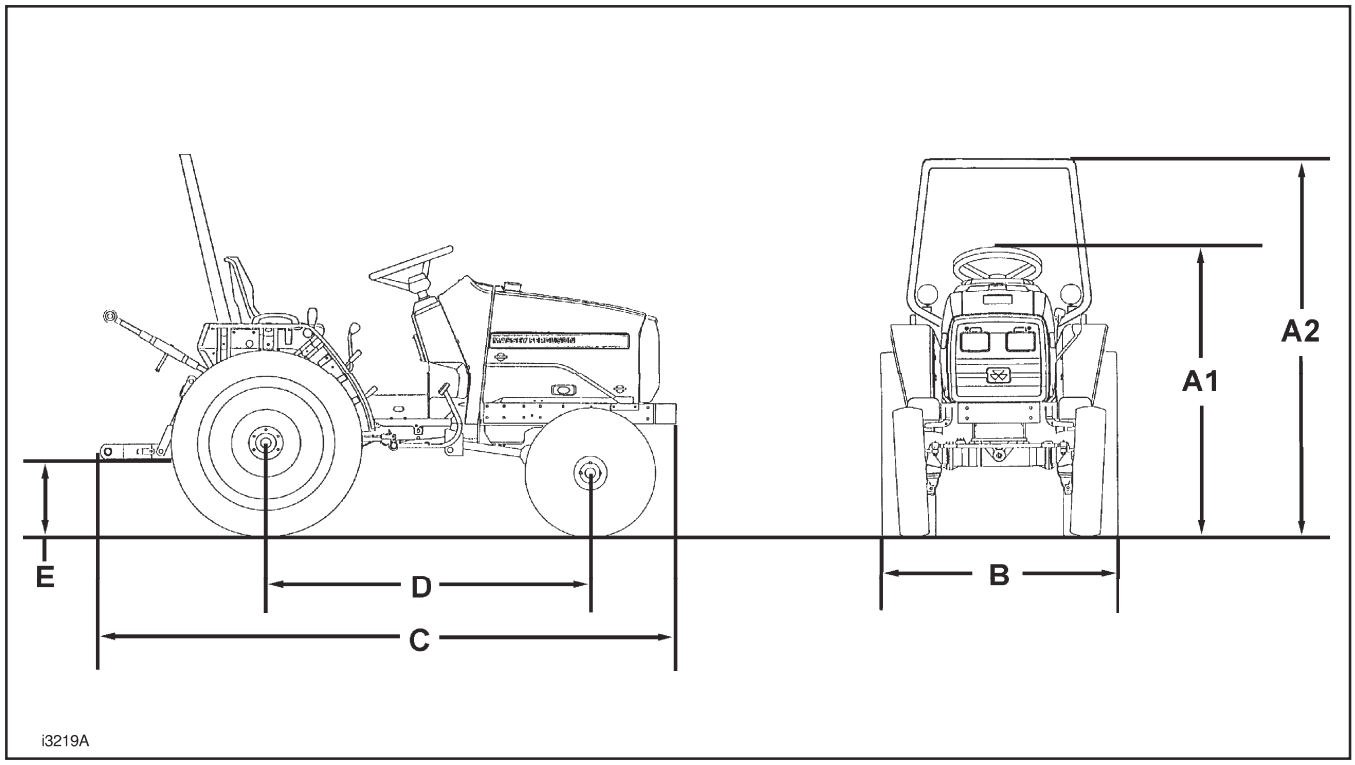
Rear axle - both models ..... 1000 kg

GENERAL DIMENSIONS

	Reference	AG 2-WD	TURF 2-WD	AG 4-WD	TURF 4-WD (a)	TURF 4-WD (b)	R-4 4-WD
A1	Height over steering wheel	43.3" (1100 mm)	42.5 " (1080 mm)	43.3" (1100 mm)	42.5 " (1080 mm)	43.7 " (1110 mm)	44.2" (1123 mm)
A2	Height over ROPS	78.3" (1990 mm)	77.6" (1970 mm)	78.3" (1990 mm)	77.6" (1970 mm)	78.7" (2000 mm)	79.2" (2012 mm)
B	Minimum width	48.7" (1237 mm)	50.5" (1282 mm)	55.6" (1411 mm)	49.6" (1262 mm)	52.1" (1323 mm)	50.5" (1283 mm)
C	Overall length	116.5" (2960 mm)	116.5" (2960 mm)	116.5" (2960 mm)	116.5" (2960 mm)	116.5" (2960 mm)	116.5" (2960)
D	Wheelbase	64.6" (1640 mm)	64.6" (1640 mm)	64.6" (1640 mm)	64.6" (1640 mm)	64.6" (1640 mm)	64.6" (1640 mm)
E	Minimum ground clearance	12" (305 mm)	11.2" (285 mm)	12" (305 mm)	11.2" (285 mm)	11.2" (285 mm)	12.5" (318 mm)
—	Turning radius w/out brake			(3100 mm)	(3200 mm)		(3100 mm)
—	Weight (Std.) (w/fuel, oil & coolant)	1863 lbs. (845 kg)	1852 lbs. (840 kg)	1995 lbs (905 kg)	1951 lbs. (885 kg)	2006 lbs. (910 kg)	2092 lbs. (949 kg)

(a) 315 x 800 - 16

(b) 13.6 x 16 rear tires



GENERAL PRECAUTIONS FOR SEPARATION AND REINSTALLATION

Before Operation

- Always be safety-conscious in selecting clothes to wear and suitable tools to use.
- Before disassembly, be sure that you familiarize yourself with the assembled condition for subsequent reference in reassembly.
- Keep parts and tools in proper order during operations.
- When servicing electrically live parts, be sure to disconnect the negative battery terminal.
- To prevent oil or water leaks, use the liquid gasket as required.
- When reassembling disassembled parts, discard used gaskets, O-rings, or oil seals and install new ones.
- When lifting up only the front or rear part of the tractor, be sure to wedge the grounded wheels.
- When the tractor is jacked up, be sure to support the entire tractor with something like a stand. Lifting it up with a jack only is a dangerously unstable procedure.
- When replacing parts, use authorized, genuine AGCO/Massey Ferguson/Challenger parts only. AGCO/Massey Ferguson/Challenger assumes no responsibility for accidents, operating problems or damage caused by the use of imitation parts. Also, the use of unauthorized parts will result in relatively poor machine performance.

Precautions To Be Followed When Installing Common Parts

Roller or ball bearings:

- When a bearing is fitted in by the outer race, use an installer which is specially designed to push only the outer race and vice versa.
- The installer must be designed to install the bearing on the shaft in a parallel position.
- When installing a bearing which appears the same on both sides, install it so that the face which has the identification number faces in a direction for easy visual identification. All the bearings which are to be installed in the transmission case should be placed so that their identification number faces outward.
- If a shaft or a hole where a bearing is to be installed has a stopper, the bearing should be pushed in completely until it is seated against the stopper.
- Installed bearings should turn smoothly.

Oil seals

- Oil seal installer should be designed so as not to deform the oil seals.
- During installation, be careful not to damage the lips, and assure that it is pushed in parallel to the shaft or hole.
- When oil seals are installed, there should be no turnover of the lips nor dislocation of the springs.
- When a multi-lip seal is installed, the grooves between lips should be filled with grease, not adhesive.
- Use a lithium-based grease.
- There should be no oil or water leaks through the installed soil seals.

0-rings

- O-rings should be coated with grease before installing.
- Installed O-rings should have no slack or twist.
- Installed O-rings should maintain proper air tightness.

FIG. 3: Snap-rings

- Snap-ring installers should be designed so as not to permanently deform the snap-rings.
- Installed snap-rings should be seated securely in the groove.
- Be careful not to overload the snap-ring to the extent that it is permanently deformed.
- How to install the snap-ring:

  When installing a snap-ring, install it as shown in the figure with its round edge side turned toward the part to be retained. This round edge is formed when the snap-ring is pressed out.

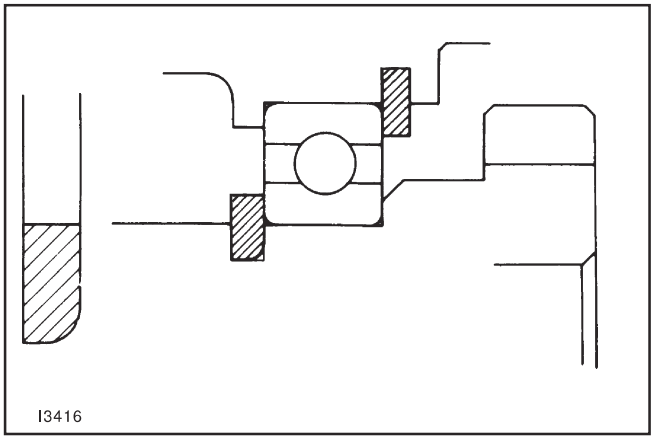


FIG. 3

FIG. 4: Spring (roll) pins

- Spring pins should be driven in properly and tightly.
- Spring pins should be installed so that their seams face the direction from which the load is applied.
- The roll pins installed in the transmission or other parts where much force is applied should be retained with wire.

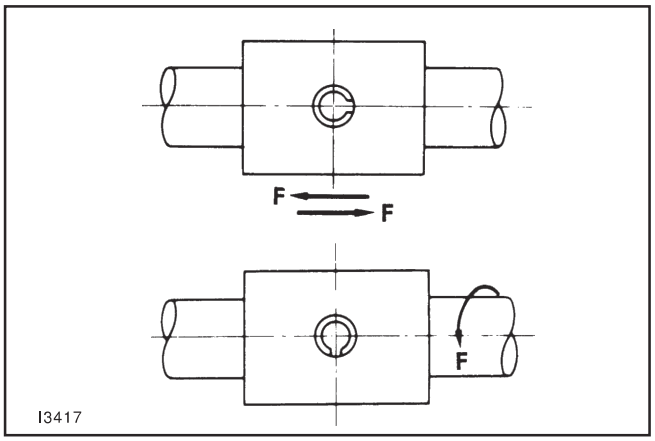


FIG. 4

FIG. 5: Cotter pins

- When installed, cotter pins should be bent securely at the ends as shown.

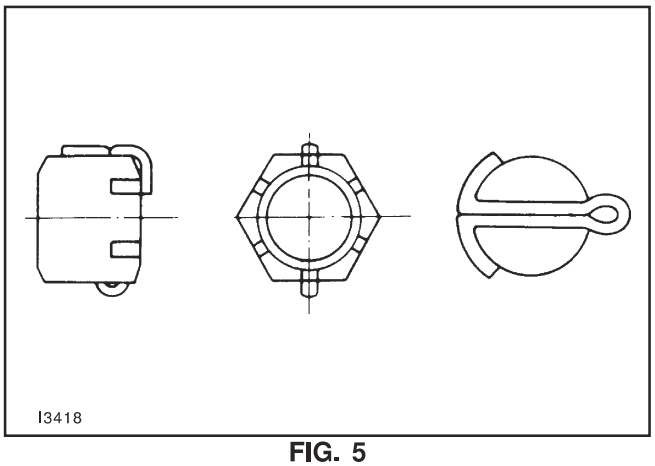


FIG. 5