1429 / 1433 / 1440
TRACTORS SERVICE MANUAL
FORM NUMBER 1449564M1
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INTRODUCTION

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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, AGCO, and Challenger 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.

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 performed 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, AGCO, and Challenger 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, AGCO and Challenger replacements have the full backing of the manufacturer's warranty. Massey Ferguson, AGCO, and Challenger. 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, AGCO, and Challenger 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 Amendments Sheets are issued to the Massey Ferguson, AGCO, and Challenger 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 stands 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 serviceman 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.

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.

To ensure prompt, efficient service when ordering parts or requesting repairs from authorized MF, Challenger or AGCO dealer, these numbers must be provided.

TRACTOR MODEL	MACHINE SERIES (M.S.N.)

TRACTOR SERIAL NUMBER

FIGS. 0-01, 0-02 & 0-03: Tractor identification plate, 1, located below operator's seat on right-hand side of vertical floor panel. Contains model number, machine series number and weight in addition to Tractor serial number.

ENGINE MODEL NUMBER

ENGINE SERIAL NUMBER

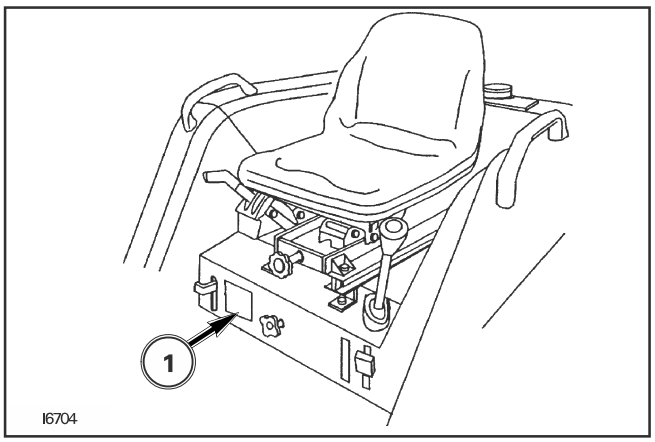

FIG. 0-01

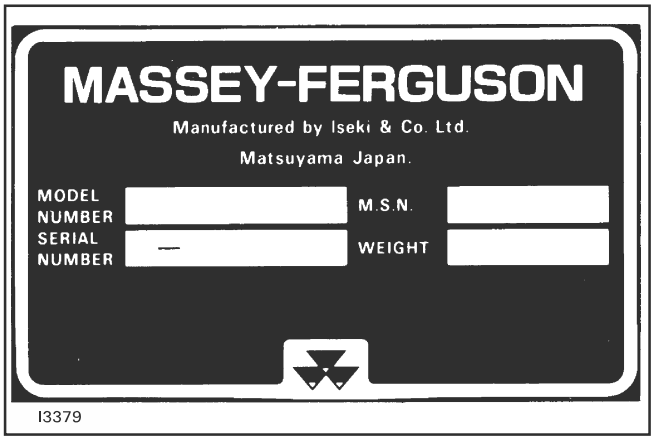

FIG. 0-02

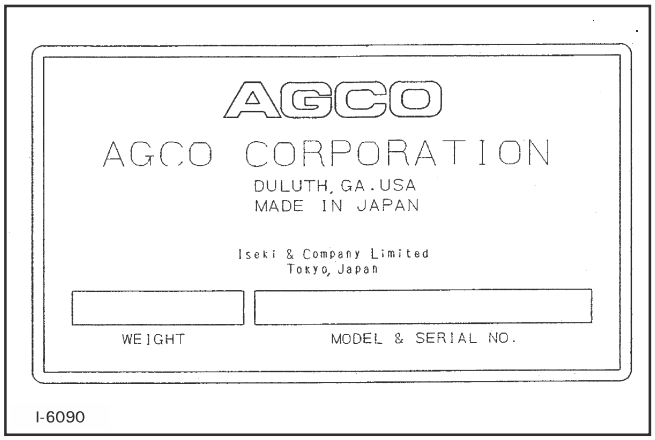

FIG. 0-03

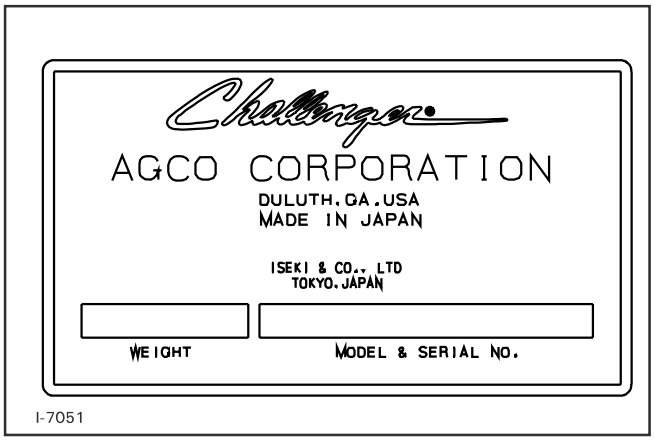

FIG. 0-03a

FIG. 0-04: 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, above engine model number.

CHASSIS NUMBER

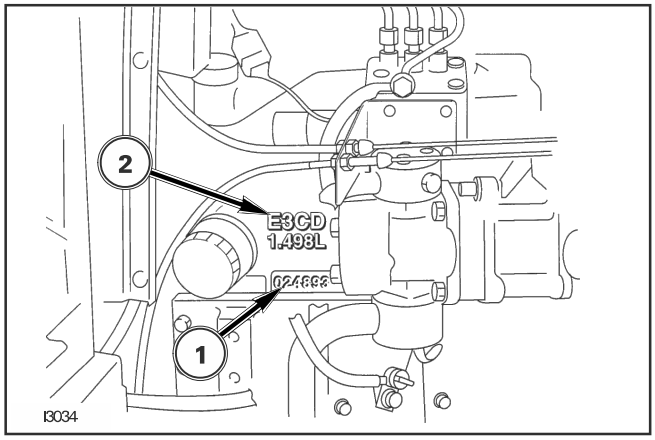

FIG. 0-04

FIG. 0-05: Chassis number, 1, is stamped in right side of front frame.

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

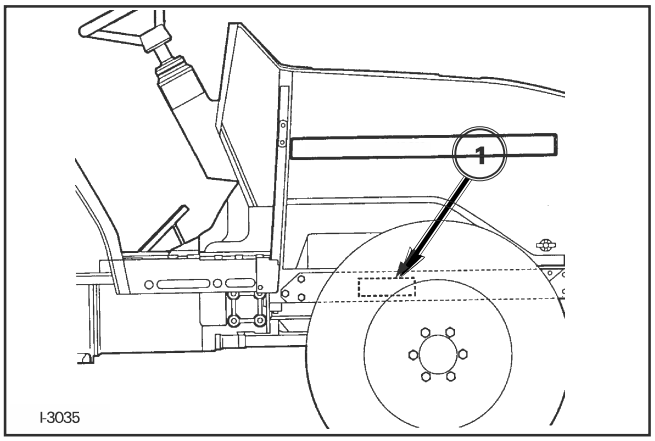

FIG. 0-05

STANDARD TORQUE CHART

TORQUE CHART FOR METRIC FASTENERS (ZINC COATED)						
Nominal Size in mm	Strength Class- ISO 4.6 (4T)		Strength Class- ISO 8.8 (7T)		Strength Class- ISO 10.9 (9T)	
	Torque Nm (lbf ft)		Torque Nm (lbf ft)		Torque Nm (lbf ft)	
	Min.	Max.	Min.	Max.	Min.	Max.
M3	0.5 (0.3)	0.7 (0.5)	1.3 (0.9)	1.7 (1.3)	1.8 (1.3)	2.4 (1.8)
M4	1.2 (0.9)	1.6 (1.2)	3.1 (2.3)	4.1 (3.0)	4.3 (3.2)	5.7 (4.2)
M5	2.2 (1.6)	3.0 (2.2)	6.0 (4.4)	8.0 (5.9)	8.5 (6.3)	1.5 (8.5)
M6	4.0 (2.9)	5.0 (3.7)	10 (7.4)	14 (10.3)	14 (10.3)	20 (14.8)
M8	9.5 (7.0)	12.5 (9.2)	25 (18.4)	35 (26)	36 (26)	46 (34)
M10	19 (14)	25 (18)	50 (37)	70 (52)	72 (53)	96 (71)
M12	33 (24)	43 (32)	90 (66)	120 (89)	120 (89)	160 (118)
M16	84 (62)	110 (81)	200 (148)	260 (192)	300 (221)	40 (295)
M20	160 (118)	210 (155)	420 (310)	560 (413)	600 (443)	800 (590)
M24	280 (207)	360 (266)	720 (531)	860 (634)	1000 (738)	1300 (959)
M30	540 (398)	720 (531)	1400 (1033)	1800 (1328)	2100 (1549)	2800 (2065)
M36	950 (700)	1250 (922)	2500 (1844)	3300 (2434)	3600 (2655)	4800 (3540)

TORQUE CHART FOR INCH FASTENERS (ZINC COATED)						
Nominal Size	Strength Class- SAE 5 (plain head)		Strength Class- SAE 5 		Strength Class- in Inches (SAE 8) 	
	Torque Nm (lbf ft)		Torque Nm (lbf ft)		Torque Nm (lbf ft)	
	Min.	Max.	Min.	Max.	Min.	Max.
1/4	6.8 (5)	8.1 (6)	10.8 (8)	15 (11)	16.2 (12)	21.7 (16)
5/16	13.5 (10)	16.2 (12)	22 (16)	30 (22)	31 (23)	42 (31)
3/8	24 (18)	28 (21)	39 (29)	53 (39)	56 (41)	75 (55)
7/16	41 (30)	46 (34)	64 (47)	85 (63)	91 (67)	121 (89)
1/2	61 (45)	70 (52)	99 (73)	131 (97)	140 (103)	185 (137)
5/8	122 (90)	142 (105)	198 (146)	263 (194)	279 (206)	371 (274)
3/4	217 (160)	250 (185)	350 (258)	464 (342)	495 (365)	658 (485)
7/8	-	-	569 (420)	759 (560)	800 (590)	1071 (790)
1	-	-	847 (625)	1119 (825)	1200 (885)	1580 (1165)
1-1/8	-	-	1051 (775)	1390 (1025)	1681 (1240)	2224 (1640)
1-1/4	-	-	1491 (1100)	1966 (1450)	2386 (1760)	3159 (2330)
1-1/2	-	-	2576 (1900)	3390 (2500)	4121 (3040)	5437 (4010)

NOTE: Above torques are for "rigid" joints, or joints meeting the following conditions:

1. Damage will not occur to joined members of an assembly.

2. It is desirable to use a higher clamping force.

3. Fastener threads are NOT lubricated prior to assembly.

The following conditions will require a torque value different than stated above:

1. Reduced torque required; non-parallel clamping surfaces, thick or highly compressible gaskets are used, or when a higher torque may damage joined assemblies.
2. Clip nuts, weld nuts, self-tapping hardware, or any condition that causes reduced thread engagement will warrant a torque less than stated above.
3. Special torque values, stated in this manual, must be strictly adhered to as stated in the specific operation.

NOTE: A number of special torques are used in assembly of tractors. See list.

LUBRICATION & PERIODIC MAINTENANCE

Specifications & Capacities

Engine Oil

Use Massey Ferguson Multiguard®, AGCO Power Lube or equivalent in the appropriate SAE viscosity. Oil must meet or exceed; MIL-L-46152 requirements, API Service "CC" (1429, 1433, ST35, MT265), or, MIL-L-2104C requirements, API Service CD (1440, ST40, MT285).

Capacity (Crankcase and Filter) ..... 5.1 U.S. qts. (4.8 liters)

Recommended Viscosity:

78°F (25°C) and Above ..... SAE 30W, 10W-30

32°-78°F (0°-25°C) ..... SAE 20W, 10W-30

Below 32°F (0°C) ..... SAE 10W, 10W-30

Multiguard® 15W-40 may be used in ambient temperatures above 14°F (-10°C).

Recommended Change Interval:

Initial Oil and Filter Change ..... 50 hours

Oil and Filter Change, Thereafter ..... Every 150 hours

Engine Coolant

Freezing Protection (Original Factory Fill) ..... -30°F (-34°C)

Recommended Coolant ..... 50/50 mixture ethylene glycol and water

System Capacity ..... 7.4 U.S. qts. (7.0 liters)

Fuel Tank

Capacity ..... 7.9 U.S. gals. (30.0 liters)

Fuel Recommended, Above 39°F (4°C) ..... No. 2 or No. 2-D

Fuel Recommended, Below 39°F (4°C) ..... No. 1 or No. 1-D

Transmission & Differential Housing (Including Hydraulic System)

Capacity 1429 ..... 6.1 U.S. gals. (23.0 liters)

1433, 1440, ST35, ST40, MT265, MT285 ..... 6.6 U.S. gals. (25.0 liters)

Recommended Lubricant ..... Permatran III®/821XL or SAE 80 GL-4

Recommended Change Interval ..... First 50 hours, every 300 hours thereafter

Power Steering

Capacity (Reservoir) ..... 2.6 U.S. qts. (2.5 liters)

Recommended Lubricant ..... Permatran III®/821XL or SAE 80 GL-4

Recommended Change Interval ..... First 50 hours, every 300 hours thereafter

Front Axle

Capacity (Common Reservoir) ..... 6.4 U.S. qts. (6.1 liters)

Recommended Lubricant ..... Permatran III®/821 XL, or SAE 80 GL-4

Recommended Change Interval ..... Every 300 hours

Grease Fittings

Grease Interval (All Fittings) ..... Every 50 hours

Recommended Grease ..... Lithium Grease base grease No. 2

NOTE: Change intervals stated above are for normal usage. Due to adverse operating conditions that may be experienced (extremely dusty or muddy), change intervals may need to be more frequent.

PERIODIC MAINTENANCE SCHEDULE

Recommended Interval, Each:					Item To Check	Action Required
Day	50 hr	150 hr	300 hr	Year		
●					All controls, switches	Inspect and repair
●					All fasteners, hardware	Check and tighten
●					Hoses, fan belt, wiring	Inspect and repair
	●				Grease fittings	Lubricate
●					Engine oil level	Check and replenish
	(*)	●			Engine oil & filter	Replace
●					Transmission oil level	Check and replenish
	(*)		●		Transmission oil & filter	Replace and clean
	●				Front axle oil level (4-WD)	Check and replenish
			●		Front axle oil (4-WD)	Replace
●					Air screens & radiator	Clean off debris
●					Radiator coolant level	Check and replenish
				●	Radiator coolant	Drain, flush & replace
●					Fan belt tension	Check and adjust
●					Air cleaner dust ejector	Clean
	●				Air cleaner elements	Inspect, clean or replace
●					Fuel tank level	Refill to full level
●					Fuel filter sediment bowl	Inspect and clean
			●		Fuel filter element	Replace and bleed
	●				Battery & cables	Check, clean & tighten
	●				Battery electrolyte level	Check and replenish
●					Lights, flashers & horn	Check and repair
●					Clutch pedal free-play	Check and adjust
●					Brake adjustment & balance	Check and adjust
●					Tire pressure & condition	Check and adjust
●					Wheel bolt torque	Check and tighten
			●		Front wheel alignment	Check and adjust
●					Steering free-play	Check and repair
			●		Front axle end-float (4-WD)	Check and adjust
				●	Clutch housing leaks	Remove plug & check

Items marked (*) indicate initial service interval only. Subsequent (later) intervals marked "●".

Lubrication/Fill Points

FIG. 0-06: General layout of lubrication, fill and drain locations on Tractor:

Ref.	Description:	Type:
1	Crankcase	Engine Oil
2	Radiator Engine	Coolant
3	Fuel Tank	Diesel Fuel
4	Rear Housing	Hydraulic Oil
5	4-WD Axle	Hydraulic Oil
6	Axle Pivots (4WD)	Grease
7	Front Spindles (4WD)	Grease
8	Clutch Shaft	Grease
9	Brake Pivots	Grease
10	Draft Pivots (Accessory)	Grease
11	Leveling Turn Buckle	Grease
12	Tie Rod Ends	Grease

NOTE: Accessory Mid-PTO has drain plug in housing (not shown in figure).

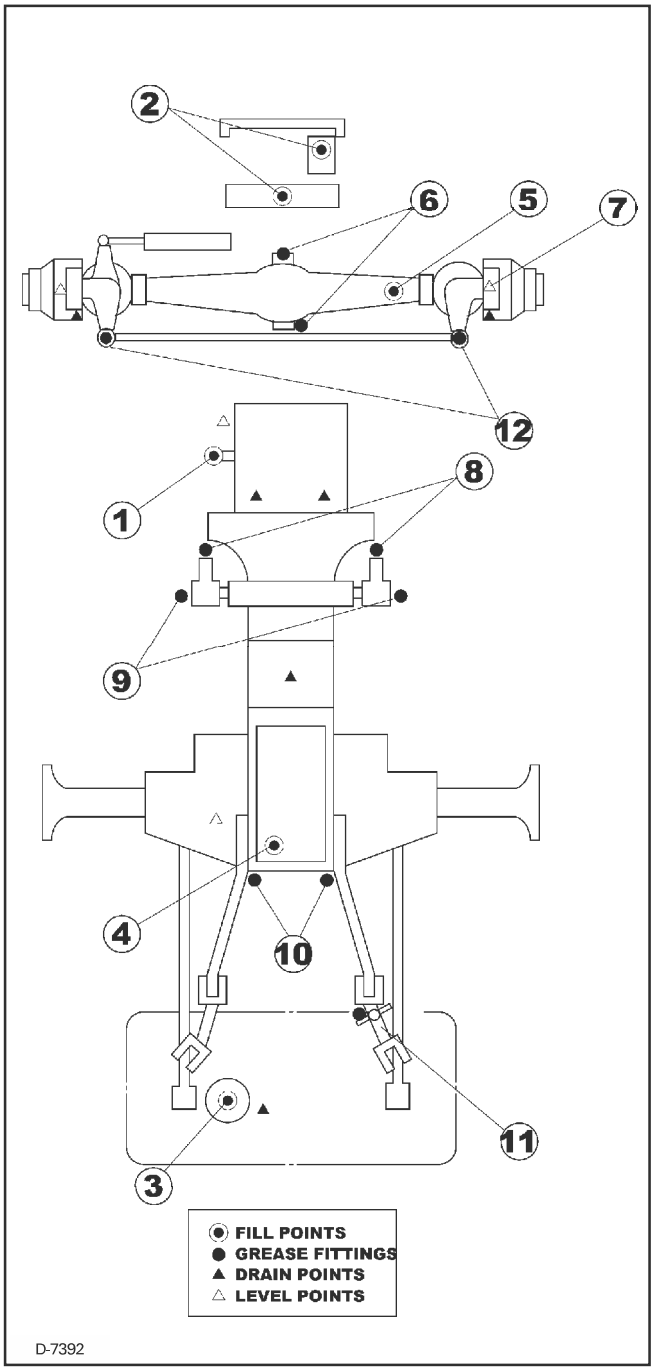

FIG. 0-06