



**MASSEY FERGUSON**

# MF 4600

Series Tractors

Models: 4608 / 4609 / 4610



# SERVICE MANUAL

**FROM MASSEY FERGUSON**

# 4608 / 4609 / 4610 Service Manual

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# 1. Introduction

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## 1.1 Introduction

### 1.1.1 The service manual

Read the table of contents and basic layout. Become familiar with all parts of this service manual. This service manual gives the technician very important information.

Machine movement when in normal use determines right-hand and left-hand.

This manual covers general safety practices for this machine.

The photos, illustrations, and data used in this manual were current at the time of printing. Inline production changes can make machines vary from the information in the service manual. The manufacturer reserves the right to redesign and change the machine as necessary without notification.



**WARNING:**

**In some of the illustrations and photos used in this manual, shields or guards may have been removed for clarity. Never operate the machine with any shields or guards removed. If the removal of shields or guards is necessary to make a repair, they must be replaced before operation.**

### 1.1.2 Replacement parts

To receive prompt efficient service, remember to have the following information:

- Correct part description and part number
- Model number of the machine
- Serial number of the machine

### 1.1.3 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 US hardware.

### 1.1.4 Machine identification

Each machine is identified by a model and a serial number.

Record these numbers in the spaces given.

Give the model number and serial number to your dealer when parts or service are required.

|                        |  |
|------------------------|--|
| Machine model number:  |  |
| Machine serial number: |  |

|                   |  |
|-------------------|--|
| Date of delivery: |  |
|-------------------|--|

|                          |  |
|--------------------------|--|
| Dealer name:             |  |
| Dealer address:          |  |
| Dealer telephone number: |  |
| Dealer e-mail address:   |  |
| Dealer fax number        |  |

### 1.1.5 Serial number plate

The serial number plate (1) is located below the operator seat.

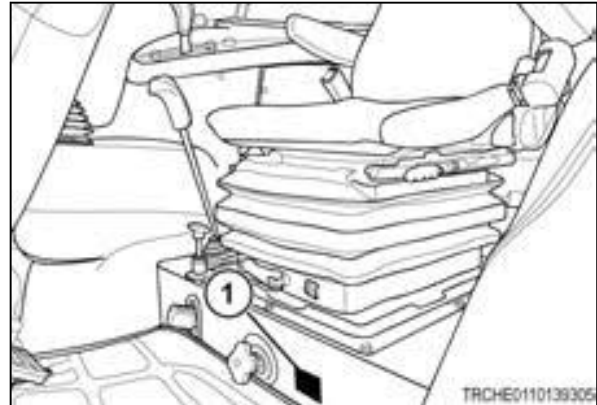


Fig. 1

The serial number plate contains the model number and serial number.

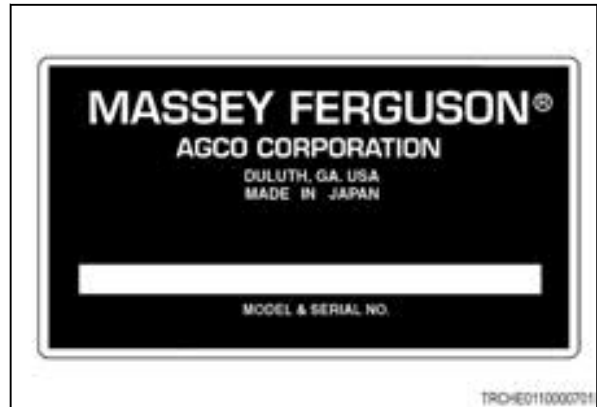


Fig. 2

### 1.1.6 Engine identification

The engine model number (1) is cast on the right-hand side of the engine block, below the injection pump.

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

|                       |  |
|-----------------------|--|
| Engine model number:  |  |
| Engine serial number: |  |

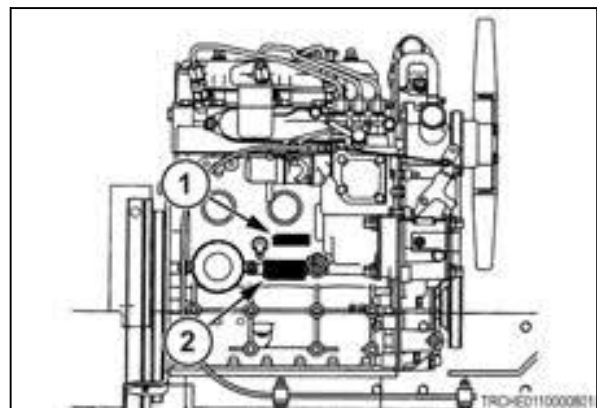


Fig. 3

### 1.1.7 Chassis number

The chassis number (1) is stamped in right-hand side of front frame.

|                 |  |
|-----------------|--|
| Chassis number: |  |
|-----------------|--|

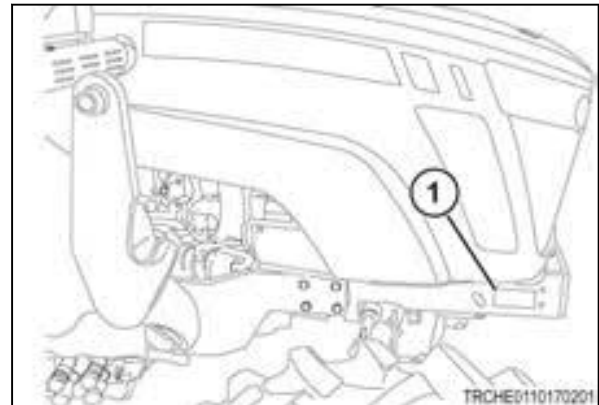


Fig. 4

## 1.2 Specifications

### 1.2.1 Engine specifications

|                                     | 4608                                    | 4609               | 4610               |
|-------------------------------------|---|--------------------|--------------------|
| Type                                | Four stroke diesel engine               |                    |                    |
| Model                               | 33 AWIC                                 |                    |                    |
| Make                                | AGCO power                              |                    |                    |
| Number of cylinders                 | 3                                       |                    |                    |
| Aspiration                          | Turbocharged and air to air intercooled |                    |                    |
| Injection                           | Direct                                  |                    |                    |
| Bore                                | 108 mm                                  |                    |                    |
| Stroke                              | 120 mm                                  |                    |                    |
| Displacement                        | 3.3 L                                   |                    |                    |
| Rated speed                         | 2200 rpm                                |                    |                    |
| Low idle speed                      | 912 to 988 rpm                          |                    |                    |
| High idle speed                     | 2218 to 2402 rpm                        |                    |                    |
| Maximum torque at rpm               | 346 Nm at 1500 rpm                      | 387 Nm at 1500 rpm | 410 Nm at 1500 rpm |
| Engine horse power (Maximum output) | 63 kW at 2000 rpm                       | 71 kW at 2000 rpm  | 75 kW at 2000 rpm  |
| Engine cooling                      | Liquid, forced circulation              |                    |                    |
| Air cleaner                         | Dual stage, dry element                 |                    |                    |
| Air intake                          | Engine cover grille                     |                    |                    |
| Cold starting aid                   | Intake heater                           |                    |                    |
| Firing order                        | 1-2-3                                   |                    |                    |
| Valve clearance (cold)              | 0.35 mm                                 |                    |                    |

### 1.2.2 Electrical specifications

|   | 4608               | 4609 | 4610 |
|---|--------------------|------|------|
| System voltage                                | 12 volt            |      |      |
| Grounding                                     | Negative           |      |      |
| Battery cold cranking amperes (cca) @ - 18 °C | 799 cca            |      |      |
| Battery JIS type                              | 130E41R            |      |      |
| <b>Battery case dimensions</b>                |                    |      |      |
| Length  | 410 mm             |      |      |
| Width   | 175 mm             |      |      |
| Height  | 234 mm             |      |      |
| Alternator                                    | 12 volt, 95 ampere |      |      |
| Starter                                       | 12 volt, 3.0 kW    |      |      |



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### 1.2.3 Transmission specifications

|                      | 4608   | 4609 | 4610 |
|----------------------|--|------|------|
| Primary transmission | Six speed synchronized   |      |      |
| Range transmission   | Without creep gear, two speed sliding mesh                                 |      |      |
|                      | With creep gear, three speed sliding mesh                                  |      |      |
| Mechanical shuttle   | Electro-hydraulic control with multi plate wet disc, 95% reverse reduction |      |      |
| <b>Gear speeds</b>   |  |      |      |
| Power shuttle        | Without creep gear, 12 forward, 12 reverse                                 |      |      |
|                      | With creep gear, 18 forward, 18 reverse                                    |      |      |
| Clutch               | Multiple stage wet with 128 mm disc  |      |      |

### 1.2.4 Power takeoff specifications

|                               | 4608  | 4609 | 4610 |
|-------------------------------|---|------|------|
| Type                          | Independent, engine driven                      |      |      |
| Control                       | Electro-hydraulic control                       |      |      |
| Clutch                        | Hydraulically engaged, multi-plate wet disk     |      |      |
| Output                        | Clockwise rotation from the rear of the tractor |      |      |
| <b>Shaft</b>                  |   |      |      |
| 540 rpm (North America only)  | 35 mm diameter, 6 spline, ISO type 1            |      |      |
| 1000 rpm (North America only) | 35 mm diameter, 21 spline, ISO type 2           |      |      |
| 540/750 rpm (Australia)       | 35 mm diameter, 6 spline, ISO type 1            |      |      |
| <b>Engine speed</b>           |   |      |      |
| 540 rpm                       | 1993 rpm  |      |      |
| 1000 rpm (North America only) | 2178 rpm  |      |      |
| 750 rpm (Australia only)      | 2129 rpm  |      |      |

### 1.2.5 Front axle specifications

|                                       | 4608           | 4609   | 4610 |
|---------------------------------------|----------------|--------|------|
| Engagement                            | Mechanical     |        |      |
| Joint on axle                         | Bevel gear     |        |      |
| Oscillation angle                     | 6 to 8 degrees |        |      |
| Steering                              | Hydrostatic    |        |      |
| Rear wheel to front wheel drive ratio | 1:1 .45        | 1:1 .4 |      |

## 1.2.6 Rear axle specifications

|                 | 4608      | 4609 | 4610 |
|-----------------|-----------|------|------|
| Final reduction | Planetary |      |      |

## 1.2.7 Brake specifications

|               | 4608                                  | 4609 | 4610 |
|---------------|---------------------------------------|------|------|
| Type          | Wet multi disc                        |      |      |
| Actuation     | Mechanical                            |      |      |
| Braking area  | 467.36 sq cm (72.68 sq in) x 8 pieces |      |      |
| Parking brake | Hook type                             |      |      |

## 1.2.8 Hydraulic specifications

|  | 4608                 | 4609 | 4610 |
|--|----------------------|------|------|
| <b>Main hydraulic system</b>                 |                      |      |      |
| Pump   | Transmission mounted |      |      |
| Maximum output                               | 66.5 l/min           |      |      |
| Pressure                                     | 19.6 mPa             |      |      |
| <b>Steering system</b>                       |                      |      |      |
| Type   | Hydrostatic          |      |      |
| Pump   | Transmission mounted |      |      |
| Maximum output                               | 25.7 l/min           |      |      |
| Pressure                                     | 15.8 mPa             |      |      |
| <b>Rear linkage</b>                          |                      |      |      |
| Type   | Three-point hitch    |      |      |
| Size   | Category II          |      |      |
| Control                                      | Single control lever |      |      |
| <b>Lift capacity - measured at ball ends</b> |                      |      |      |
| Standard:                                    | 2500 kg              |      |      |
| Optional:                                    | 3300 kg              |      |      |
| <b>Lift capacity - measured at 610 mm</b>    |                      |      |      |
| Standard:                                    | 1500 kg              |      |      |
| Optional:                                    | 2000 kg              |      |      |

## 1.2.9 Fuel specifications

|            | 4608                       | 4609 | 4610 |
|------------|----------------------------|------|------|
| Type       | Ultra low sulfur fuel only |      |      |
| Above 4 °C | No. 2-D                    |      |      |
| Below 4 °C | No. 1-D                    |      |      |

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