Operator's Manual

MF 7700 S - Maintenance

MF 7714 S
MF 7715 S
MF 7716 S
MF 7718 S

Dyna-4 - Dyna-6

Beauvais
AGCO S.A.S. - 41 avenue Blaise Pascal - 60000
Beauvais - France - RC B562 104 539

Original Operator's Manual

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ACT0036090
EAME
English

1. Safety instructions and safety points - Warranty

	• **4354351M1**(X) • **WARNING:** Risk of fire Read the safety instructions in the Operator's Manual.
	• **4296944M1**(Y) • **WARNING:** Entanglement hazard in belt drives Keep hands clear of rotating parts and belts while engine is running. Switch off the ignition and remove the key before working on the tractor.
	• **4296971M1**(Z) • **WARNING:** Shearing hazard – engine fan. Keep your hands away from the fan and the belts when the engine is running. Shut off engine and remove key before performing maintenance or repair work.

1.6.3 Safety devices and items

Ensure that all safety devices and items are fitted as required and are in good condition.

WARNING:
The location of all these safety devices and items must be known and their use mastered. Never take off, remove or disconnect any of them.

Standard safety devices and items according to country regulations

- ROPS (Roll Over Protective Structure)
- Seat belt
- Power take-off guard
- SMV warning triangle
- Signaling lights
- Safety signs
- Fire extinguisher
- First aid kit

WARNING:
Also make sure you know the emergency numbers.

Fig. 6

Additional devices and items

Depending on the work to be carried out, other safety devices and items may be required; for example, guards or additional lights and signs.

1.6.4 Checking the tractor

Check the tractor and ensure that all systems are in good operational condition before beginning the working day. Pay particular attention to the points mentioned below.

- Check for loose, broken, missing or damaged parts. Ensure that everything has been properly repaired.
- Check that the seat belt is in good condition. If it is not, replace it.
- Check that implements are correctly installed.
- Check that the PTO output speed is in keeping with the implement PTO input speed.
- Ensure that all PTO shaft locking devices are engaged.
- Ensure that the tractor PTO guard and the shaft guards are in place and operating correctly.
- Check to ensure that the tractor is correctly balanced.

WARNING:
An unbalanced tractor could overturn and cause serious injury or death.
Ensure that front frame counterweights, wheel weights and wheel ballasts are used as recommended by the manufacturer. Do not add extra counterweights to compensate for an overloaded tractor; the load must be reduced instead.

- Check the condition and pressure of tires (absence of cuts and bulges). Replace worn or damaged tires.
- Check the correct operation of the brake pedals and the parking brake. Adjust if necessary.
- Check the hydraulic system for the tractor and the implement as well as the tractor fuel system: Correct tightening of all the unions; no damage to the lines, pipes and hoses; hydraulic systems do not cross one another.

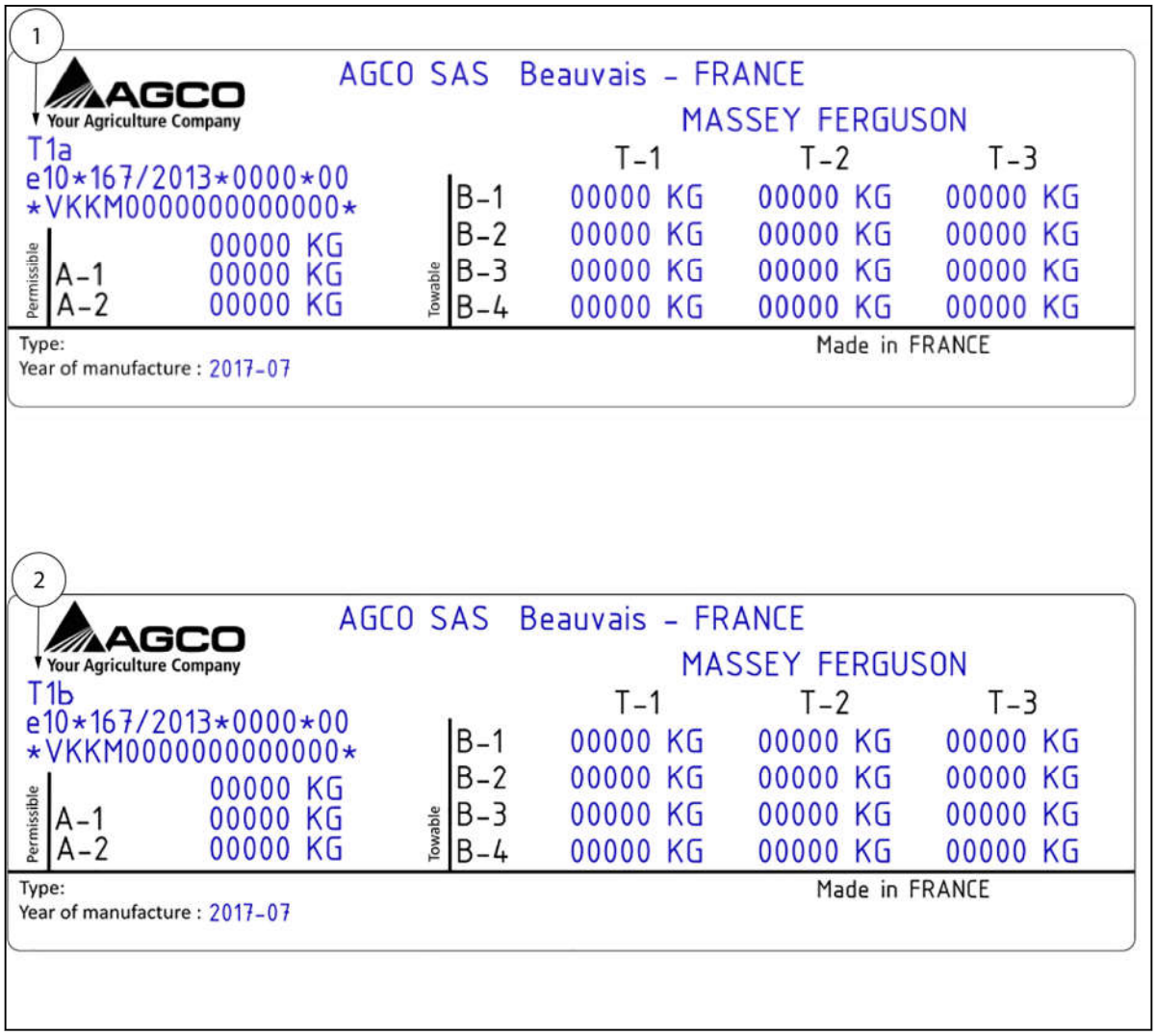

Fig. 14

There are two different types of plate:

- Type T1a manufacturer plates (1), these are for tractors which can travel at a speed of less than or equal to 40 km/h
- Type T1b manufacturer plates (2), these are for tractors which can travel at speeds greater than 40 km/h

The plates are divided into two main categories:

- On the left, maximum technically permissible weights per axle:
  - A-1 relates to the front axle
  - A-2 relates to the rear axle

DANGER:
Not following these safety instructions may result in burns in the following types of situations:

- **When lifting-lowering to access the workstation from the right-hand side of the tractor. Risk of contact with hot surfaces, exhaust etc.**
- **When lifting-lowering to complete maintenance work from the right-hand side of the tractor. Risk of contact with hot surfaces, exhaust etc.**
- **When installing or uninstalling an implement (front loader, etc.), ensure that the parts directly surrounding the implement (exhaust, etc.) have cooled down enough.**
- **When adjusting the rear-view mirror or the direction of the working headlights, ensure that the parts directly surrounding the equipment (exhaust, etc.) have cooled down enough.**

1.11 Warranty

1.11.1 General

When selling new products to its dealers, the manufacturer provides a warranty which, subject to certain conditions, guarantees that the goods are free from defects in material and workmanship. Since this book is published worldwide, it is impossible to detail the exact terms and conditions of warranty that apply to all retail customers in all countries. Purchasers of new Massey Ferguson equipment should therefore request full details from their supplying dealer.

In accordance with the manufacturer's policy of continuous improvement of its products, the manufacturer reserves the right to make alterations to the specifications of machines at any time without notice. The manufacturer disclaims all liability for discrepancies which may occur between the specifications of its products and the descriptions thereof contained in its publications.

1.11.2 Pre-delivery inspection and commissioning on the user's premises

The dealer is required to carry out certain activities when supplying a new tractor. These consist of carrying out a full pre-delivery inspection to ensure that the tractor supplied is ready for immediate use, and providing full instructions to the user on the basic principles of operation and servicing of the tractor. These instructions will cover instruments and controls, and routine servicing and safety precautions. All persons who will be involved in the operation and servicing of the tractor should be present when these instructions are given.

IMPORTANT:
Massey Ferguson disclaims all liability in the event of any claim resulting from the fitting of non-approved parts, accessories, implements or attachments or unauthorized modifications or alterations.

1.11.3 Warranty procedure

Correct commissioning on the user's premises and routine servicing help to prevent breakdowns. However, if operating problems do occur during the warranty period, follow this procedure:

- Immediately inform the dealer you purchased the tractor from, stating the model and serial number. It is very important not to delay, as even if the defect is covered by the original warranty, the coverage may no longer apply if the repair is not carried out immediately.
- Provide the dealer with as much information as possible. The dealer will need to know how many hours the tractor has been in service, what type of work it is used for and the symptoms of the problem.

Routine service operations not covered by the warranty

It should be noted that routine service operations such as tuning, brake and clutch adjustment, and the supplies used for the tractor service (oil, filters, seals, fuel, antifreeze etc.), are not covered by the warranty.

Warning concerning spare parts

Parts other than Massey Ferguson parts are likely to be of lower quality. Massey Ferguson disclaims all liability in the event of loss or damage arising as a result of such parts being fitted. The manufacturer's warranty may also become void if such parts are fitted during the normal warranty period.

1.11.4 Procedure to follow if changing region

Only the dealer from whom the tractor was purchased is liable for the protection provided by the warranty. Any repairs should, wherever possible, always be carried out by this dealer. If, however, the owner moves to another region or if the tractor is to be used temporarily at a location a long way from the dealer from whom it was bought, it is advisable to ask this dealer for the name and address of the dealer closest to the new address and arrange to have the obligations remaining to be fulfilled under the warranty transferred to this dealer.

2.2 Operator environment

2.2.1 Air conditioning system: condenser

Frequency

Check the condenser regularly and, if necessary, clean using compressed air.

Procedure

Clean the condenser grilles carefully.

NOTE:
Take care not to damage the various radiator grilles.

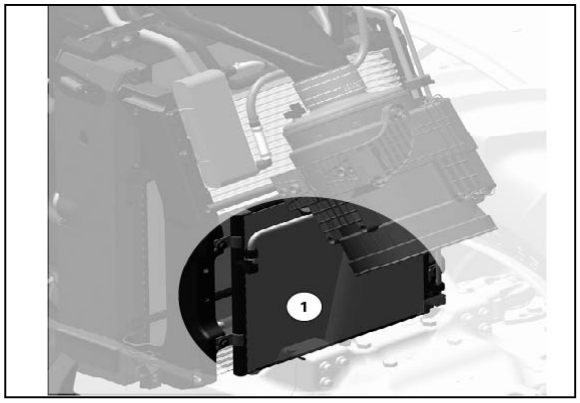

Fig. 1

2.2.2 Air-conditioning system: Checking the air conditioning system

DANGER: In the event of a leak, wear safety goggles. Escaping refrigerant gas or liquid can cause severe injuries to the eyes.

The R134a refrigerant used in the installation gives off a toxic gas if it comes into contact with a flame.

WARNING: Do not disconnect any part of the air conditioning system.

Consult your dealer or agent if a fault occurs.

Procedure

1. Operate the air conditioning system for a few minutes every week to keep the whole system in good condition and to lubricate the seals.
2. Add charge to the air conditioning system every year at the start of summer (consult your dealer).

2.2.3 Cab air filter

Frequency

Clean the cab air filter every week, or more frequently, if necessary.

In dusty conditions, clean the cab air filter every day.

Replace the cab air filter(s) every 1200 hours, or once a year, whichever occurs first.

2.2.3.1 Standard-roof air filter: Procedure

WARNING:
The air filter element does not provide protection from chemical products. Please ask your dealer for information concerning the availability of the specific particle filter.

2.3.8 Replacing the engine oil filter

Frequency

Change the engine oil filter every 600 hours.

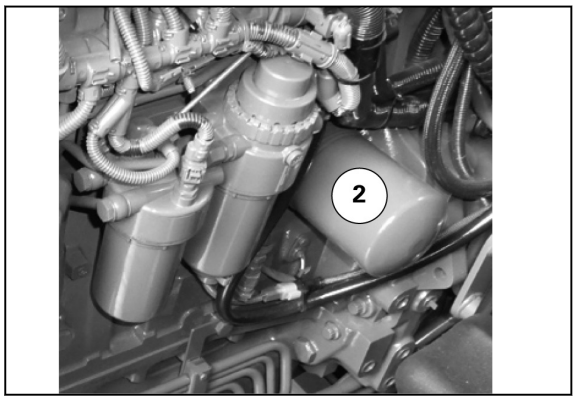

Fig. 12

Procedure

1. With the engine switched off, drain the engine oil before replacing the oil filter.
2. Unscrew and discard the complete filter and worn seal.
3. Fill the new filter slowly with clean oil.
4. Smear a few drops of clean engine oil on the new seal ring, then place the ring in the housing on top of the new filter.
5. Screw on the filter until the seal ring touches the filter head. Then tighten the filter a further half-turn by hand only (do not overtighten).
6. **IMPORTANT:**
   When starting the engine after changing the oil and filter, avoid depressing the throttle pedal and let the engine run at idle speed for several minutes with no load until oil pressure is obtained. Wait for the indicator light to go out.

   Recheck the oil level and top up if necessary.
7. Restart the engine and check that there are no leaks.

2.3.9 Draining the Diesel Exhaust Fluid (DEF) tank

2.3.9.1 Procedure

If the Diesel Exhaust Fluid (DEF) tank is contaminated, it is necessary to drain the tank.

Procedure

1. Lift the bonnet to access the expansion tank.
2. Open the expansion tank plug.
3. Fill the expansion tank with coolant up to mid-way between the max/min witness marks .
4. After filling, open the heater valve fully and run the engine at 1000 rpm for several minutes.
5. Switch off the engine, check the level and top up if necessary, without exceeding the mid-way point on the tank. Refit the plug.

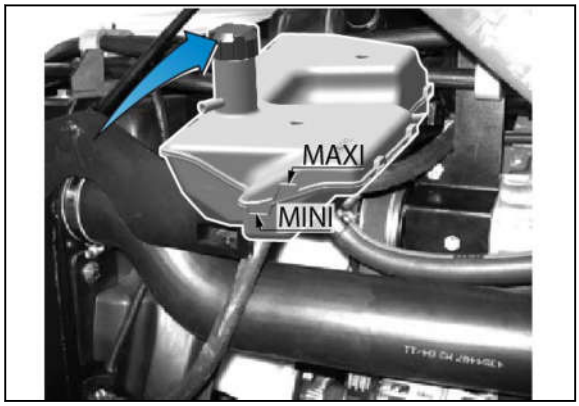

Fig. 31

2.3.19.3 Draining the cooling system

Drain the system every 1200 hours according to the following procedure.

CAUTION:
Wait until the system has completely cooled before draining.

Procedure

1. Lift the bonnet to access the expansion tank.
2. Open the expansion tank plug.
3. Place a drip pan underneath the pipe (1) of the radiator.
4. Open the drain valve (2) of the radiator and allow the fluid to drain out completely.
5. Close the drain valve (2) of the radiator and fill the system.
6. Fill the system via the expansion tank and then after filling, open the heater tap fully and run the engine at 1000 rpm for several minutes.

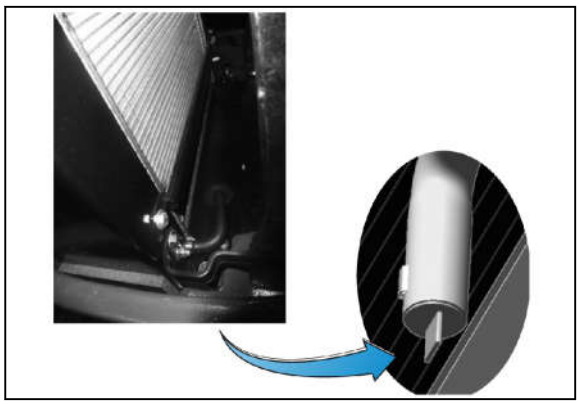

Fig. 32

7. Switch off the engine, check the level and top up if necessary, without exceeding the mid-way point on the expansion tank. Refit the plug.

2.3.19.4 Cleaning the radiator: Frequency

Clean the radiator fins using compressed air every 100 hours. Clean the radiator fins using compressed air every day in dusty conditions.

2.3.19.5 Procedure for cleaning the radiator

IMPORTANT:
Take care not to damage the various radiator grilles.

2.4.9 25-micron filtration for the high-pressure braking

Frequency

Every 600 hours, replace the filter located on the right-hand side of the rear axle housing/gearbox assembly.

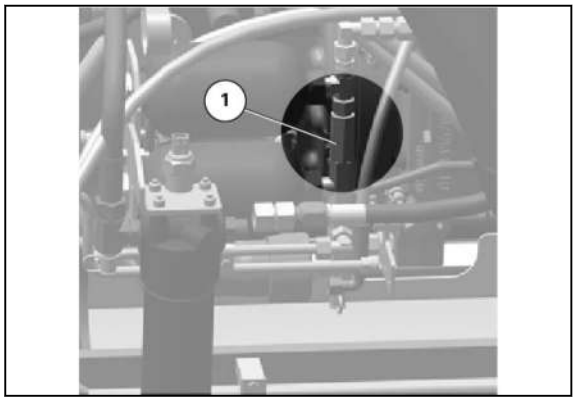

Fig. 50

2.4.10 Lubricating the rear axle shaft bearings

Procedure

1. Remove the plugs (1). Replace them with grease nipples.
2. Operate the grease gun 2 or 3 times.
3. Refit the plugs.

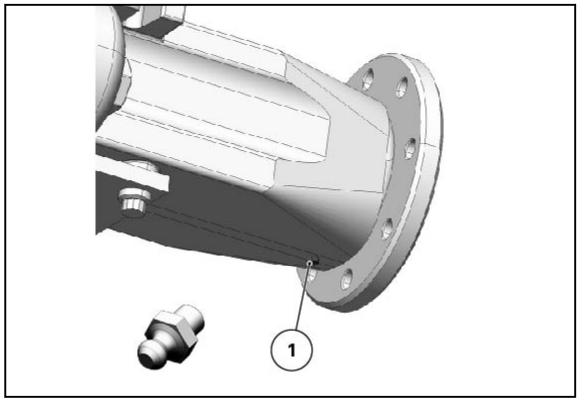

Fig. 51

2.4.11 Checking and cleaning the transmission oil cooler

Frequency

Check the cooler every day and, if necessary, clean using compressed air.

Procedure

IMPORTANT:
Take care not to damage the various radiator grilles.

(2) Front axle drive shaft

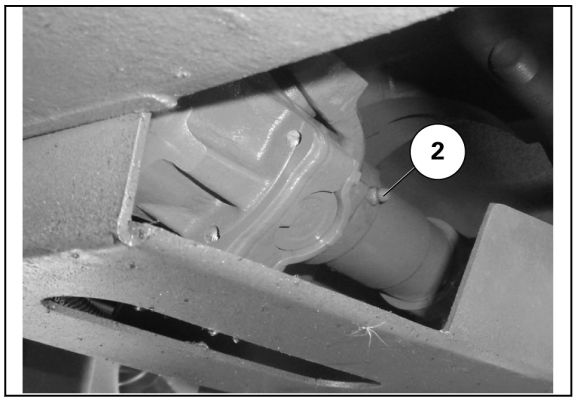

Fig. 68

ASAE/ISO front power socket

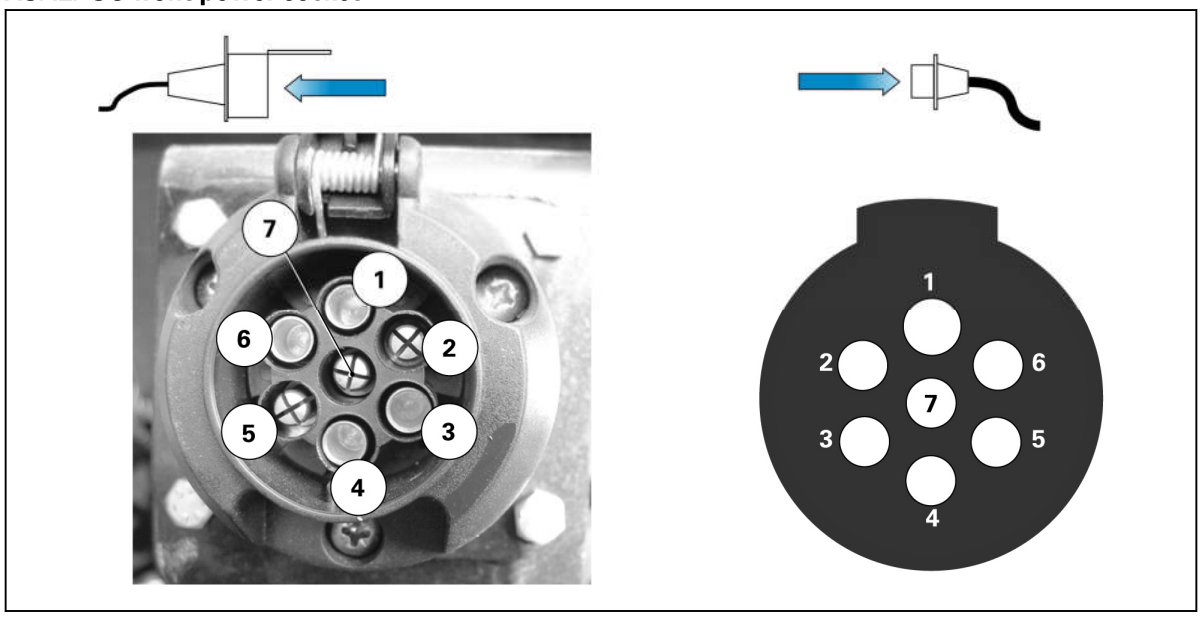

Fig. 86

Reference	Circuit	Maximum electrical charge	Fuses
(1)	+ Battery[1]	25 A	F50
(2)	Work lights	25 A	F16
(3)	Earth	-	-
(4)	+12 V APC[2]	10 A	F64
(5)	Side lights	7.5 A	F36
(6)	Rotary beacon	20 A	F18
(7)	Side lights	7.5 A	F36

[1] + BAT = + 12 V battery
[2] + APC = + 12 V accessories

2.12.4 Adjusting the headlights

Adjustment diagram

(A) Distance between the headlights and a wall or a screen
(B) Height from the center of the headlights to the ground
(C) Center-to-center distance between headlights
(D) Vertical offset

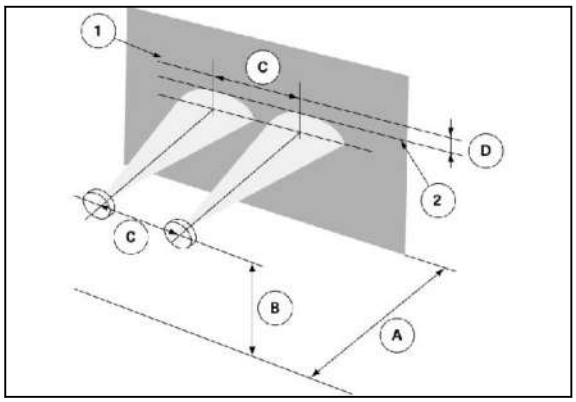

Fig. 87

Number	Amperage	Size	Protected function
K16			Power supply relay in +BAT of the right-hand console power socket
K17			Not used
K18			Power supply relay in +APC of the right-hand console power socket and the front right-hand fender arch power socket
K19			Low beam lamps relay
K20			Not used
K21			Relay for the hand rail work lights and the front implement accessories connector work light
K22			Relay for roof rotary beacon, front implement accessories connector rotary beacon
K23			Front roof work lights relay
K24			Brake lights relay
K25			Supply relay for fuse F3, fuse F4, fuse F5 and K27 relay control circuit
K26			Air conditioning compressor supply relay
K27			Supply relay for roof ventilation
K28			Isobus connectors +BAT relay
K29			Not used
K30			Supply relay for fuse F36 and fuse F37
K31			Supply relay for fuse F26, fuse F27, fuse F28 and fuse F29
K32			Supply relay for fuse F30, fuse F31 and fuse F32
K33			Tractor relay +APC

1. + ACC = + 12 V accessory
2. + APC = + 12 V ignition on
3. + BAT = + 12 V batteries

2.13 Pressure washing

2.13.1 Pressure washing

When pressure washing, protect and do not direct the jet on the following components:

- Alternator
- Starter
- Radiator
- Front axle pivot pins
- Inspection cover
- Radar
- Harnesses and electrical connections
- Decals
- Cab door and window seals.
- **IMPORTANT:** *Exhaust outlet: When washing, it is strictly prohibited to allow water into the exhaust outlet.*

 **Engine air filter blockage indicator light**	
Activating condition(s) • Indicator light permanently on = engine air filter blocked	
Cause(s)	**Solution(s)**
Air filter blocked	Clean the air filter.
Air filter blockage switch faulty	Contact the dealer.

 **Tractor forward travel indicator light**
Activating condition(s) • Indicator light permanently on = tractor in forward gear

 **Tractor reverse travel indicator light**
Activating condition(s) • Indicator light permanently on = tractor in reverse gear

 **system malfunction indicator light SCR Technology**	
Activating condition(s) • Indicator light permanently on = system malfunction	
Cause(s)	**Solution(s)**
Failure of the system	Contact the dealer.
Faulty sensor	

No.	FMI	Components concerned	Causes	Standard modes	modes
653	5	Injector no. 3	Current below normal: open circuit	3	
653	13	Injector no. 3	Injector not calibrated	3	
653	14	Injector no. 3	Short circuit	3	
654	5	Injector no. 4	Current below normal: open circuit	3	
654	13	Injector no. 4	Injector not calibrated	3	
654	14	Injector no. 4	Short circuit	3	
655	5	Injector no. 5	Current below normal: open circuit	3	
655	13	Injector no. 5	Injector not calibrated	3	
655	14	Injector no. 5	Short circuit	3	
656	5	Injector no. 6	Current below normal: open circuit	3	
656	13	Injector no. 6	Injector not calibrated	3	
656	14	Injector no. 6	Short circuit	3	
677	3	Starter relay	Low voltage side above normal or short-circuited to +12 V		
677	5	Starter relay	Voltage below normal or open circuit		
677	6	Starter relay	Low voltage side above normal		
723	2	Camshaft speed sensor	Number and/or position of pulses unlikely	2	
723	8	Camshaft speed sensor	Deviation of the signal between the camshaft sensor and crankshaft sensor	2	
723	31	Camshaft speed sensor	No signal	2	
729	3	Grid Heater	Voltage above normal		
729	4	Grid Heater	Voltage below normal		
898	8	CAN bus	Fan control time is exceeded		
974	3	Throttle sensor	Sensor above normal or in open circuit		
974	4	Throttle sensor	Sensor below normal		
977	3	Fan control	Output in short circuit		
977	5	Fan control	Output in open circuit		
977	6	Fan control	Current above normal		
1043	3	EEM4 controller	12 V internal voltage above normal		
1043	4	EEM4 controller	12 V internal voltage below normal		

No.	FMI	Components concerned	Causes	Standard modes	modes
520297	31	CAN bus	Diagnostic error		
520298	31	CAN bus	Diagnostic error		
520307	31	Rail pressure sensor	Pressure above the pressure measurable by the sensor		
520309	31	Rail pressure sensor	The maximum number of overpressure events in the common rail is reached		
520312	31	Rail pressure sensor	Maximum time in over-pressure is exceeded		
520317	31	Rail pressure sensor	Reduction of pressure in the common rail without the injectors opening		
520318	31	Rail pressure sensor	Deviation of measured pressure in relation to engine speed		
520319	31	Rail pressure sensor	Pressure outside of the measurement range		
520320	31	Rail pressure sensor	Pressure above normal		
520327	31	Rail pressure sensor	Pressure above normal		
520336	31	Rail pressure sensor	Forced shutdown		
520337	31	Rail pressure sensor	Torque limited due to an overpressure		
520354	3	Pressure control valve	Short circuit of the command to +12 V		
520354	4	Pressure control valve	Short circuit of the command to earth		
520356	3	Pressure control valve	Short circuit of the power to +12 V		
520356	4	Pressure control valve	Short circuit of the power to earth		
520358	31	Pressure control valve	Excessive temperature		
520359	31	Pressure control valve	Opening of the relief valve		
520382	2	Air flow sensor	Voltage inconsistent		X
520382	14	Air flow sensor	Absolute pressure faulty		X
520383	14	Air flow sensor	Pressure difference is faulty		X
520384	14	Air flow sensor	Temperature measurement faulty		X
520384	16	Air flow sensor	Temperature exceeded		X
520388	31	Rail pressure sensor	Overpressure detected: Protection mode activated		
520389	31	Air flow sensor	Inconsistent value		X
520390	31	Air flow sensor	Initialisation time exceeded		X
520391	31	Air flow sensor	Value inconsistent top high		X
521000	2	module temperature	Invalid pump temperature signal		

2.15.15 Air conditioning error codes

No.	Component(s) concerned	Cause(s)
10.X. 01	**X441** - Ventilation temperature sensor (TT1)	Sensor in open circuit
10.X. 02	**X441** - Ventilation temperature sensor (TT1)	Sensor short-circuited
10.X. 03	**X442** - Ventilation temperature sensor (TT2)	Sensor in open circuit
10.X. 04	**X442** - Ventilation temperature sensor (TT2)	Sensor short-circuited
10.X. 05	**X69** - Cab interior temperature sensor	Sensor in open circuit
10.X. 06	**X69** - Cab interior temperature sensor	Sensor short-circuited
10.X. 07	**X358** - Outside temperature sensor	Sensor in open circuit
10.X. 08	**X358** - Outside temperature sensor	Sensor short-circuited
10.X. 09	**X443** - Evaporator temperature sensor	Sensor in open circuit
10.X. 10	**X443** - Evaporator temperature sensor	Sensor short-circuited
10.X. 11	**X70** - Solar radiation sensor	The signal from the solar sensor is outside its limits or is giving an impossible value
10.X. 14	**X449** - Motor for left-hand heating shutter	The signal from the potentiometer of the left-hand recirculation actuator is outside its operating range
10.X. 15	**X449** - Motor for left-hand heating shutter **X450** - Motor for right-hand heating shutter	The potentiometer reference is short-circuited to earth
10.X. 16	**X439** - Air conditioning control module (blue connector) **X440** - Air conditioning control module (yellow connector)	Error in temperature selected, the signal is out of range
10.X. 17	**X439** - Air conditioning control module (blue connector)	Error from the fan potentiometer
10.X. 18	**X69** - Cab interior temperature sensor	Ambient temperature sensor fan fault
10.X. 19	**X451** - Motor for heating mixer shutter	Stepper motor output error (water valve)
10.X. 20	**X449** - Motor for left-hand heating shutter **X450** - Motor for right-hand heating shutter	Left-hand and right-hand recirculation actuator motor output error
10.X. 21	**X318** - Air conditioning compressor	Air conditioning compressor relay output error

3.2 Operator environment

3.2.1 Noise levels (dB(A)) at operator's ears

Noise levels (dB(A)) at operator's ears, in accordance with Directive 2009/76/EC Appendix II			Pass-by noise (dB(A)), in accordance with Appendix VI of Directive 2009/63/EC	
Model	Windows closed	Windows open	40 kph	50 kph
Dyna-4	69	77	NA	NA
Dyna-6	69	77	75.	81

3.2.2 Level of vibration felt through the seat

Seat model	Homologation no.	Class II (m/s²)				Class III (m/s²)			
		Light operator		Heavy operator		Light operator		Heavy operator	
		kg	(m/s²)	kg	(m/s²)	kg	(m/s²)	kg	(m/s²)
MSG95AL/731	e1*1322/2014 W2*00081*00 e1*1322/2014 W3*00083*00	59±1	-	98±5	-	59±1	0.85	98±5	0.70
MSG95AL/741	e1*1322/2014 W2*00081*00 e1*1322/2014 W3*00082*00	59±1	0.75	98±5	0.65	59±1	0.73	98±5	0.62
MSG95G/731	e1*1322/2014 W2*00103*00 e1*1322/2014 W3*00104*00	59±1	-	98±5	-	59±1	1.24	98±5	1.10
SEARS 5085	e11-1296	59±1	1.16	98±5	0.94	59±1	1.18	98±5	0.95

Vibration measurement in accordance with Directive 78/764/EEC

Unless otherwise specified by the equipment manufacturer or the legislation, observe the following rules when towing.

For towed equipment:

Do not tow equipment:

- Without brakes and weighing over 3000 kg when fully loaded
- With an independent brake and weighing over 6000 kg when fully loaded
- With an overrun brake and weighing over 16,000 kg when fully loaded
- With assisted braking (hydraulic or air brake) and weighing over 32,000 kg when fully loaded

Total permitted weight of tractor-implement combination

	Weight technically permissible for the tractor/trailer assembly		
	MF 7714 S Dyna-4/MF 7715 S Dyna-4 Dyna-6/MF 7716 S MF 7718 S Dyna-6 40 kph Standard braking	MF 7715 S MF 7716 S MF 7718 S Dyna-6 40 kph High-pressure braking	MF 7715 S MF 7716 S MF 7718 S Dyna-6 50 kph
With trailer without brakes	12,250 kg	14,000 kg	12,250 kg
With trailer equipped with independent brake	15,250 kg	17,000 kg	15,250 kg
With trailer equipped with overrun brake	25,250 kg	27,000 kg	25,250 kg
With trailer with hydraulic braking	41,250 kg	43,000 kg	41,250 kg

Load and ballast distribution per axle

Axle load distribution

		4-wheel drive	
		MF 7714 S/MF 7715 S/MF 7716 S/MF 7718 S	
Weights of unladen vehicle based on optional equipment		min.	max.
		5900 kg	8000 kg
Total weight distribution	Front axle	2400 kg	3600 kg
	Rear axle	3600 kg	5200 kg

Ballast distribution per axle

	Disk on hub	Rim on disk with lugs	Rim on disk with slots	Rim on disk, fixed cast iron
Flanged shaft	• M18: 400 Nm to 450 Nm • M22: 640 Nm to 680 Nm	-	-	250 Nm to 350 Nm
Straight shaft	M22: 640 Nm to 680 Nm	-	-	250 Nm to 350 Nm
Cone/hub assembly, M20: 350 Nm to 460 Nm				

Rear axle