MASSEY FERGUSON

MF 6700

MF 6711/6712/6713

OPERATOR'S MANUAL

FROM MASSEY FERGUSON

	10 hours or daily	50 hours or weekly	400 hours or annually	800 hours or annually	1200 hours or every two years
Clean the crankcase vent hose				°	
Empty, clean and refill the fuel tank				°	
Check the slack of the engine valves (replace the grease seal from the cover whenever checking valve slack)			°°		°
Drain, rinse and refill the radiator with coolant +and demineralized water					°
Inspect the turbocharger and intercooler at an authorized workshop	Every 4000 hours				
Clean and inspect the secondary air filter elements	Whenever the indicator light comes on (located on the panel)				
Replace the primary air filter element	Replace after every fifth cleaning, every 1000 hours or once a year, whichever occurs first				
Replace the secondary air filter element	Replace after the second primary filter replacement or every two years				

4.1.3 Clutch

	10 hours or daily	50 hours or weekly	400 hours or annually	800 hours or annually	1200 hours or every two years
Check the general operation of the clutch and the responsiveness of the gears	°				
Check that the clutch pedal is working correctly and check the gearbox ratio coupling		°°	°		

4. At the check point (B), check the torque specified for the screws (W). The torque specified for the screws (W) is set out in the cab torque chart

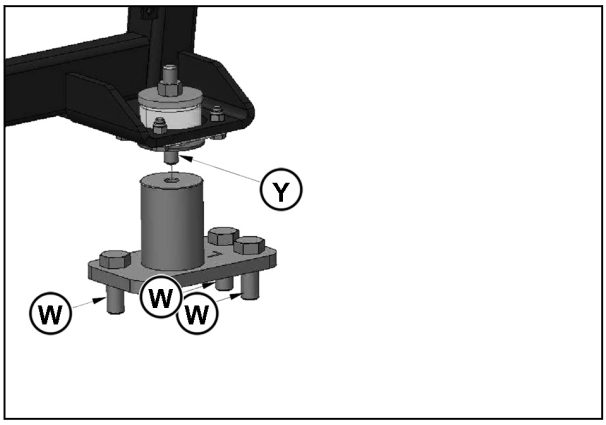


Fig. 7

NOTE: *If you need repair the cab or change any screw, contact your dealer.*

4.2.7.2 Location of the cab mounting points and torque specification

Check the tightness:

Procedure

1. Check the torque of the cab's mounting points (A) and (B)

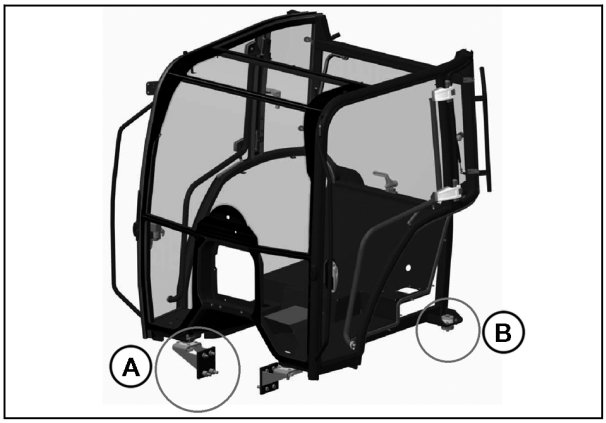


Fig. 8

2. At the check point (A), check the torque specified for the screws (X). The torque specified for the screws (X) is set out in the cab torque chart

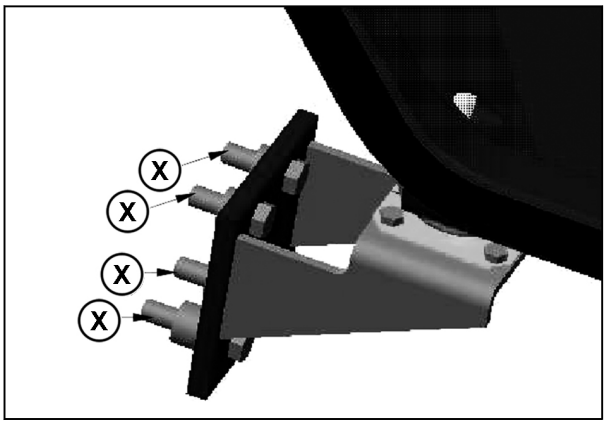


Fig. 9

4.4.12 Cooling system, engine with expansion tank

Coolant quality

- The coolant quality can have a great effect on the efficiency and life of the cooling system (see chapter Recommended Products).
- **IMPORTANT:**
  Never use pure water as a coolant.
  If an incorrect mixture is used, AGCO cannot be held responsible for damage caused.
  Precautions against freezing: Check the protection level of the mix before the cold season.

  The antifreeze/water ratio must always be 40-50% antifreeze to 60-50% water.

  The minimum 40% antifreeze/60% coolant mixture must be used even in "non-cold" regions to raise the boiling point and protect the system against corrosion.

  The water used should be clean, soft and non acidic.

  Avoid the addition of pure water to the system, as this will dilute the mixture.

4.4.12.1 Checking the level and quality of the coolant

Procedure

1. **Cold engine**, visually check the coolant level daily.
2. **CAUTION:**
   The quality of the coolant must be checked when the engine is cold.

   Check the quality of the mixture regularly, especially before the cold season.

4.4.12.2 Filling to top up the coolant level

CAUTION:
If the engine is very hot, loosen the plug to the first notch before removing it to lower the expansion tank pressure.

IMPORTANT: *If the correct procedures are not used, AGCO cannot be held responsible for damage caused.*

Procedure

1. Lift the bonnet to access the expansion tank.
2. Open the expansion tank plug (1).
3. Fill the expansion tank with coolant up to the witness mark line (2).
4. After filling, open the heater tap 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.
6. Refit the plug.

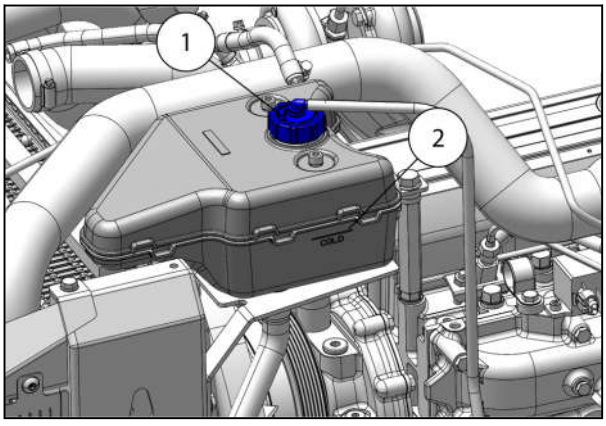


Fig. 26

Procedure

1. Drain the hydraulic system.
2. Remove the cover (1).
3. Remove the 150-micron strainer (2) from the transmission and discard.
4. Refit a new strainer (2). Oil the "O" rings.
5. Oil and fit a new seal.
6. Refit and tighten the screws of the cover plate (1).

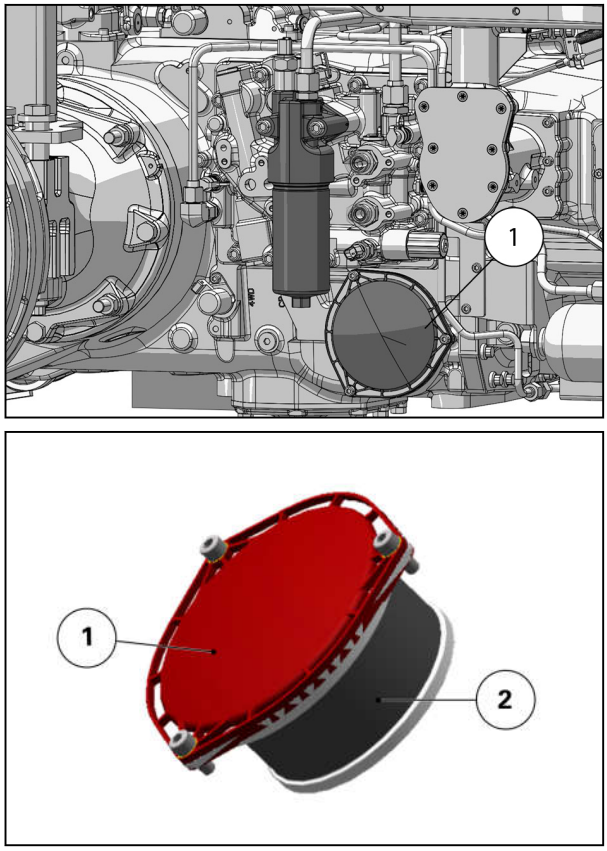


Fig. 34

4.5.3.2 Replacing the high-pressure filter

Frequency

See the Service Guide Chart.

Procedure

1. Place a container underneath the hydraulic filter (1).
2. Loosen the bowl using the nut (2).
3. Remove and discard the filter element.
4. **NOTE:** *To prevent contamination of the filter element due to foreign material, do not completely remove the protective plastic until it is fitted in place.*

   Oil the "O" ring of the new filter element and slide it into the filter head.
5. Lubricate the "O" ring of the bowl and refit it.

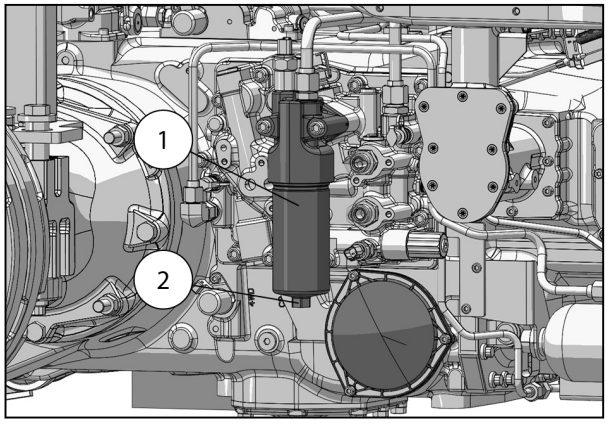


Fig. 35

6. Fully tighten the bowl and then loosen by 1/4 of a turn.

4.9 Electrical equipment

4.9.1 Batteries

The tractor's electrical circuit operates on 12 V. The negative terminal is the earth.

Clean the top of the batteries and coat the terminals with petroleum jelly at the frequency indicated in the Service Guide Chart.

DANGER:
Batteries produce explosive gasses.
Sparks, flames, lit cigarettes or any flammable source must be kept at a distance.
Wear suitable safety goggles when working near batteries.

WARNING:
Repair: If connecting to another battery or a remote start aid, respect the battery voltage.

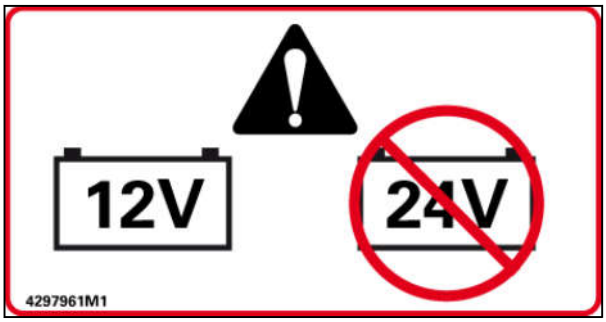


Fig. 49

4.9.2 Alternator

IMPORTANT:
The alternator wiring must be disconnected before any arc welding is carried out on the tractor or on an implement which is attached to it.
Do not disconnect or reconnect the battery cables when the engine is running.
Never operate the engine when the cable linking the alternator and battery is disconnected.
Do not attempt to connect any additional electrical equipment, as this may damage components of the existing electrical circuit.

Differential lock indicator light

Activating condition(s)

- Indicator light permanently on = differential lock engaged
- Indicator light flashing quickly = differential lock error

Cause(s)	Solution(s)
Error in one of the components	Contact the dealer.

Rear PTO engaged indicator light

Activating condition(s)

- Indicator light flashing slowly = rear PTO pre-engaged
- Indicator light permanently on = rear PTO engaged
- Indicator light flashing quickly = rear PTO error

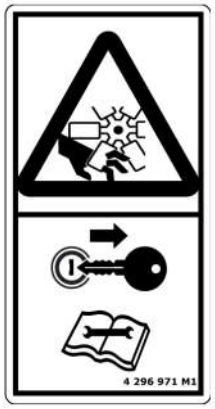
Cause(s)	Solution(s)
Error in one of the components	Contact the dealer.

Engine oil pressure warning light

Activating condition(s)

- Indicator light flashing slowly = engine oil pressure low - warning
- Indicator light permanently on = low engine oil pressure (< 1 bar) - STOP alert
- Indicator light flashing with general failure warning light = engine error

Cause(s)	Solution(s)
Oil level too low	Stop the engine and check the oil level.
Problem in the lubrication system	Contact the dealer.
Engine error code	Contact the dealer.

	• **4296971M1** ((O)) • **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. Refer to the instructions in the technical manual when removing and reconditioning.
	• **4296967M1** ((P)) • **WARNING:** Burn hazard – hot surfaces. Keep away from hot engine components when engine has been running. Wait for system to cool before performing maintenance or repair work.

WARNING: Leaks of pressurized fluid may not be visible.

Fuel or hydraulic fluid under pressure can penetrate the skin or eyes and cause serious physical injury, blindness or death.

Use a piece of cardboard or wood to detect leaks. DO NOT USE YOUR BARE HANDS. Wear safety goggles for eye protection. If any fluid penetrates the skin, seek medical advice within a few hours from a doctor familiar with this type of injury.

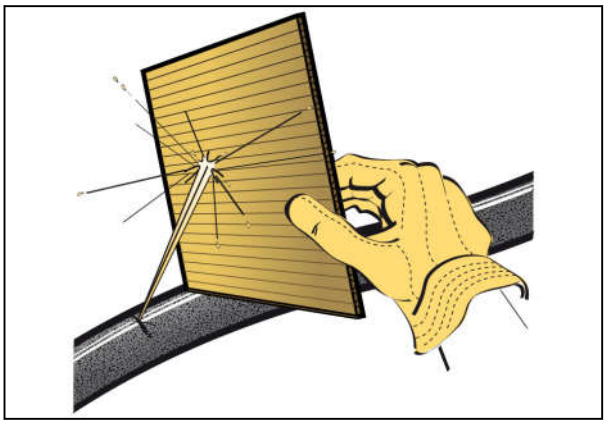


Fig. 7

WARNING:
Release the pressure of the hydraulic or fuel systems before disconnecting them.

- Have any leakages or damaged parts repaired or replaced. Do this before each working day
- Check the engine cooling system and add coolant if required.

WARNING:
The liquid cooling system builds up pressure as the temperature increases.
Stop the engine and let the system cool before removing the radiator filler plug.

- All maintenance procedures must have been complied with.
- Check that the weight of the tractor/implement assembly is less than the tractor total permissible load.

2.8.7 Park brake

If the brakes fail and in an emergency situation, use the parking brake located to the left of the operator.

IMPORTANT:
If the brakes fail, contact your dealer to resolve the problem.

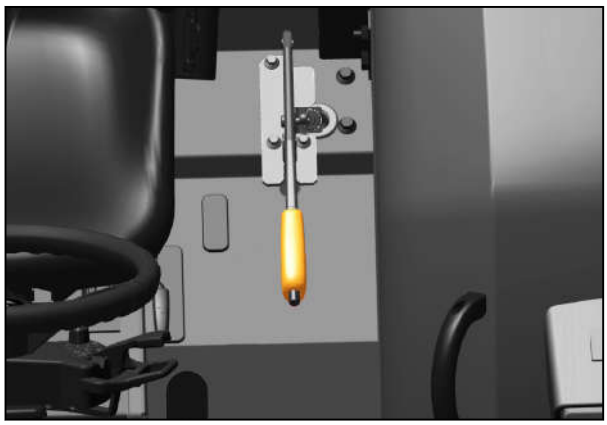


Fig. 16 Non-cab tractor.

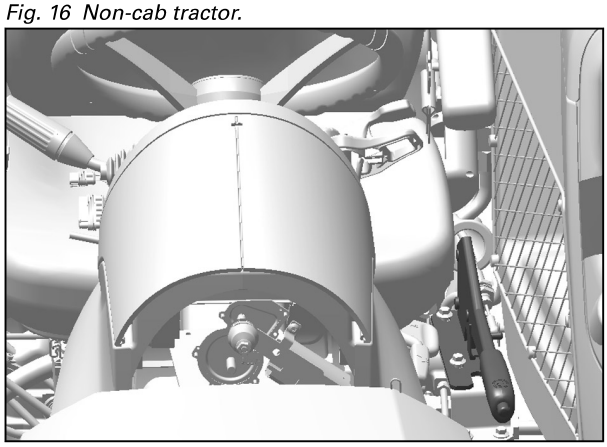


Fig. 17 Cab tractor.

2.8.8 Power take-off

DANGER: Do not attempt to unplug the hydraulic connections or adjust an implement with the engine running or the PTO in operation.

To do so may result in serious injury or death.

To avoid any accidents, do not stand on the implement or between the implement and the tractor when external linkage or PTO controls are being used.

- Ensure that all the PTO shaft guards are in place and check the presence of all safety decals .

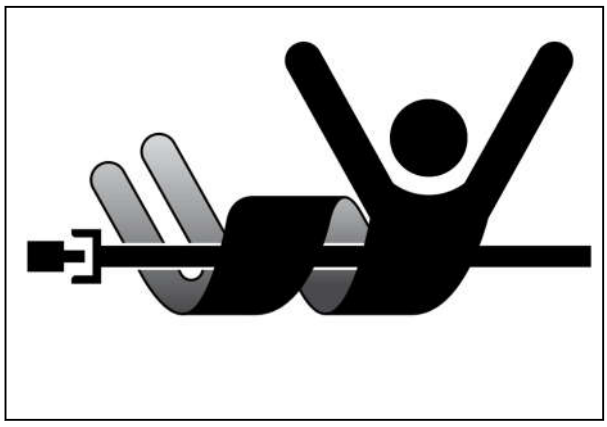


Fig. 18

If the owner moves to another region or if the tractor is to be used temporarily at a location far away from the dealer from whom it was purchased, ask this dealer for the name and address of the dealer closest to the new address and arrange to have the obligations to be fulfilled under the warranty transferred to this dealer.

If these conditions are not met, the new dealer will intervene if necessary. However, they may charge these interventions at the normal rate, unless they have previously:

- Stated that the warranty period has not expired
- The repair dealer has been given the possibility of taking the necessary steps with the selling dealer.

2.11.5 Servicing during and after the warranty period

During the warranty period, all servicing and repair work must be carried out by the dealer.

After the warranty period, the Massey Ferguson tractor must continue to be serviced on a regular basis and checked periodically.

All major service work on the tractor must be carried out by a local dealer. Technicians working there have regular training courses to update their knowledge of the product and service and repair techniques as well as the use of special tools and modern diagnostic equipment. They will detect any problems which may arise between one service and the next. They receive regular Service Bulletins and have access to all the Workshop Service Manuals and technical publications in order to carry out repairs or services in accordance with the quality standards required by Massey Ferguson.

Screen (1) lower section

Configuring the triggers for storing the area worked

When choosing the trigger and entering the width of the implement, the engine can be running or stopped.

- Press position  of the switch (6) for at least 5 seconds. The flashing trigger is selected.
- To change the trigger, press position  of the switch (6) again.
- To confirm the trigger and change the width of the implement, press position  of the switch (6) for at least 5 seconds.
- To change the width of the implement, press position  of the switch (6) or position  of the switch (6).
- Press position  of the switch (6) for at least 5 seconds to confirm the width of the implement.

Recording of the area worked begins.

Fig. 8

Recording the area worked, engaging/stopping

If the selected trigger is the PTO or the linkage, recording of the area worked starts and stops automatically upon activation of the trigger. The floppy disk icon is displayed when recording is in progress.

When the area worked reaches 999.9, the counter resets to zero.

Fig. 9

Resetting the area worked to zero

With the engine running, press position  of the switch (7) and position  of the switch (6) at the same time for 5 seconds.

3.1.10 Exclusive items: Cab tractors

3.1.10.1 Seats

Seat MSG85/731

(1) Safety belt
(2) Winder
(3) Legroom adjustment
(4) Seat swivel adjustment
(5) Operator-weight adjustment
(5st) Weight indicator
(6) Backrest tilt adjustment
(7) Armrest tilt angle adjustment

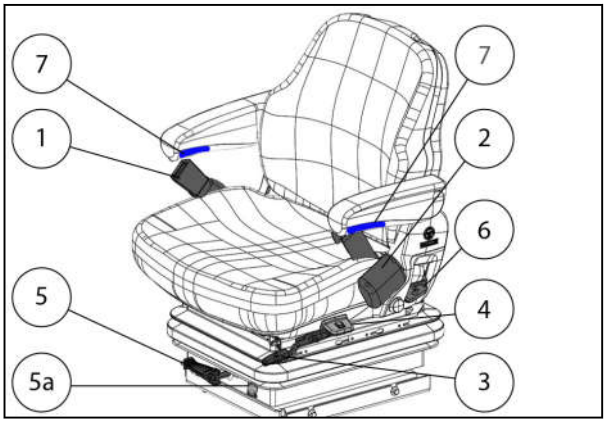


Fig. 29

Seat MSG95/731

(1) Safety belt
(2) Winder
(3) Seat legroom adjustment
(4) Seat swivel adjustment
(5) Seat-height and operator-weight adjustment
(5st) Seat-height and operator-weight indicator
(6) Backrest tilt adjustment
(7) Armrest tilt angle adjustment
(7st) Armrest height adjustment

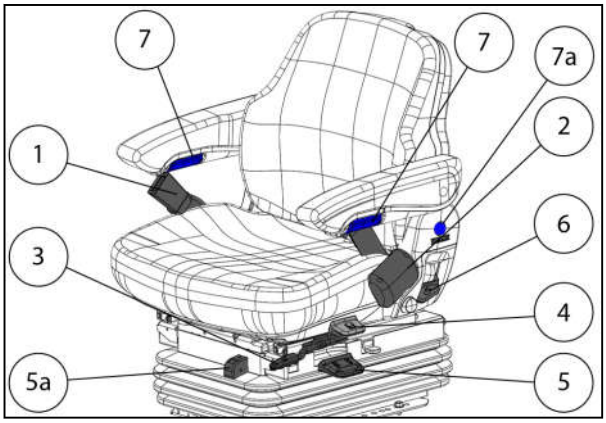


Fig. 30

Seat belt (1) and (2)

- The seat belt is an essential safety device.
- Always wear the seat belt adjusted correctly.

WARNING:
A damaged seat belt must be replaced before using the tractor.

Legroom adjustment (3)

Raise the lever, adjust the legroom position then release the lever.

IMPORTANT: *Do not operate the lever with your leg or calf.*

DANGER:
Do not operate the lever while driving: Risk of accident.

3.2.3 Tool box (cab tractors)

The tool box is located:

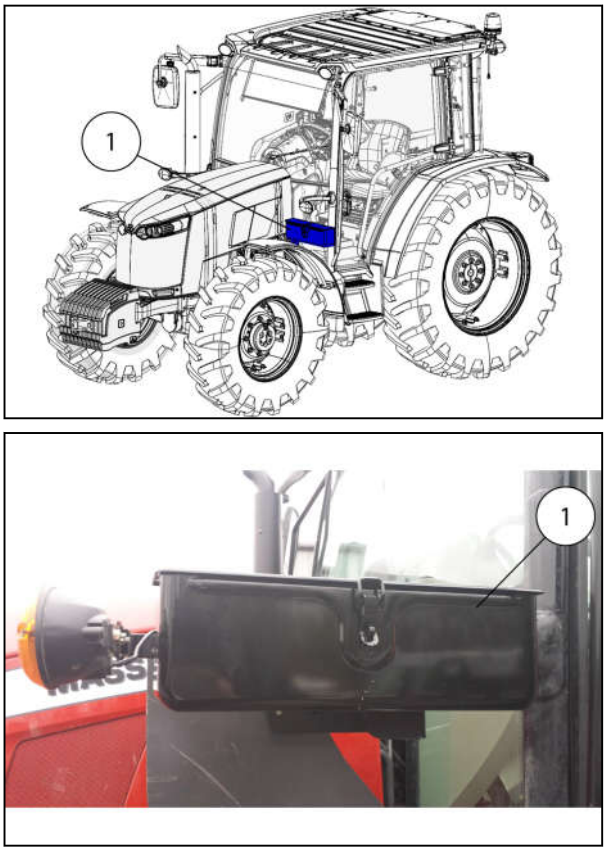


Fig. 45

- At the front of the tractor, on the left-hand side in front of the cab (1)
- On the loader frame, on the left-hand side of the engine (if the tractor is equipped with a loader)

This tool box can be used to store hitch ball joints and other tools, if necessary.

NOTE: *It can be secured by fitting a padlock.*

3.2.4 Tool box (non-cab tractors)

The tool box is located underneath the operator's seat.

It can be used to store tow hitch ball joints and other tools as necessary.

Fig. 46

Gear shift lever (1)

This lever is located to the right of the seat. There are 6 synchronized gear ratios.

To change the gear ratio, release the throttle, disengage the clutch and, without forcing it, push or pull the lever to the desired speed: 1, 2, 3, 4, 5 or 6.

Easy shift control clutch switch (1a)

The clutch switch is located on the gear shift lever (1).

To change the gear ratio using the switch, press the switch while, without forcing it, pushing or pulling the lever (1) to the desired speed: 1, 2, 3, 4, 5 or 6.

Power Shuttle Control shuttle lever (2)

This lever is located to the left of the steering wheel and allows you to reverse the tractor direction of travel.

- Lift and push the lever forward to engage forward travel.
- Lift and push the lever backward to engage reverse travel.
- When the lever is in the centre, the transmission is in neutral.
- When the lever is raised, the transmission is disengaged.

To reverse the direction of travel, it is not necessary to use the clutch pedal.

NOTE: *It is advisable to use the clutch pedal when the tractor is loaded and for all precise maneuvering (coupling of implements etc.).*

IMPORTANT: *The reverse shuttle must not be used as an engine brake.*

Comfort control reverse shuttle progressivity adjusting knob (2a)

Located under the shuttle lever (2), the adjusting knob enables you:

- In forward travel, to vary the reaction speed for re-engaging reverse travel
- In reverse travel, to vary the reaction speed for re-engaging forward travel

Toward **-**: The reaction is slow. Toward **+**: The reaction is fast.

Range lever (3)

This lever is located to the left of the seat.

There are 2 ranges:

- H: High speed, synchronized
- L: Low speed, non-synchronized

Shifting from the high speed range to the low speed range (H to L) is performed when the tractor is at a standstill. Disengage the clutch and pull the lever, without forcing it, to the desired range. If it is difficult to engage the low speed range, slowly release the clutch pedal while pulling the lever until the range is engaged.

Shifting from the low speed range to the high speed range (L to H) can be done while moving. Release the throttle, disengage the clutch and engage the high speed range.

DANGER:
Place the gear lever (1) in neutral and the reverse shuttle control (2) in NEUTRAL before leaving the operator's seat.

(4) PTO switch

Fig. 66 Cab tractors.

3.7.3.2 Operation

General

The PTO can be engaged and disengaged independently of the transmission.

The 540 rpm, ECO or 1000 rpm speeds can be obtained by selecting the appropriate ratio.

Engage the PTO at low engine speed to protect the clutch and transmission.

WARNING:
Always disengage the PTO before attaching, detaching or adjusting an implement.
Take all necessary safety precautions for operating implements that are driven by the PTO.

DANGER:
Never go beyond the universal joint shaft.
Do not use the tractor or trailer drawbars as a step.
Never use the universal joint shaft as a step.
Never wear loose-fitting clothes.
Remain at a safe distance from the universal joint shaft.

Engaging the power take-off

CAUTION:
Before changing the PTO speeds, you must always wait until the PTO is completely stopped.

3.7.5 Electronic hydraulic lift - Non-Cab Tractors

3.7.5.1 Control locations

(1) Rear linkage lifting/lowering switch
(2) Rear linkage lifting/lowering adjustment lever

(3) Stop position indicator
(4) Thumb wheel for tightening the stop
(5) Setting potentiometer for rear linkage upper stop
(6) Potentiometer for manual or automatic adjustment of the lowering speed.
(7) Intermix potentiometer (draft control and position control).
(8) Rear linkage additional range. To be used only for unlocking the auto-hitch, if fitted.

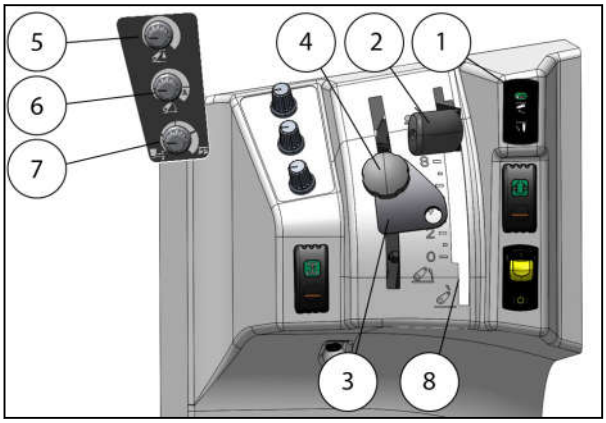


Fig. 84

3.7.5.2 Operation

Before using the linkage

DANGER:
Before you operate the controls, ensure that all persons are away from the tractor and its implements and accessories.
When using the external controls (if available), make sure that you are on the outside of the tires and outside the linkage movement area to avoid any risk of crushing between the implement and the tractor tire.

The linkage turns the tractor and the implement into a single unit. The implement is controlled hydraulically.

Unlocking the linkage

The rear linkage is locked:

- When starting the tractor engine
- After using an external control on the fenders, if available
- When an error code appears

The rear linkage is controlled by the lever (2) and the lifting/lowering switch (1), which are located on the right-hand console.

To unlock the linkage using the switch (1):

If switch 1 is in the neutral position:
Move the switch to the lifting position.

If switch 1 is in the lifting position:
Move the switch to the neutral position then the lifting position.

If switch 1 is in the lowering position:
Move the switch to the neutral position then the lifting position.

To unlock the linkage using the lever (2), the switch (1) must be in the lowering position (C):

- Move the lever (2) to reference mark (9) then to reference mark (1).
- The linkage starts to move as soon as the position of the lever (2) is the same as the position of the linkage arms.

Position of the top link on the rear linkage

There are holes in the rear linkage to fasten the top link.

The position of the top link depends on the use and the implement installed on the rear linkage.

- The top link in the upper hole (5) gives greater lift power and reduced lift height - wide clearance between the cab and the implement.
- The top link in the lower hole (6) gives reduced lift power and increased lift height.

  Use this position with equipment driven by the rear power take-off or for horizontal operation.
- The top link in the center hole (7) gives a better compromise between lift capacity and soil penetration.

  Use this position for better soil penetration (plowing) or for wide clearance between the soil and implement (transport position).

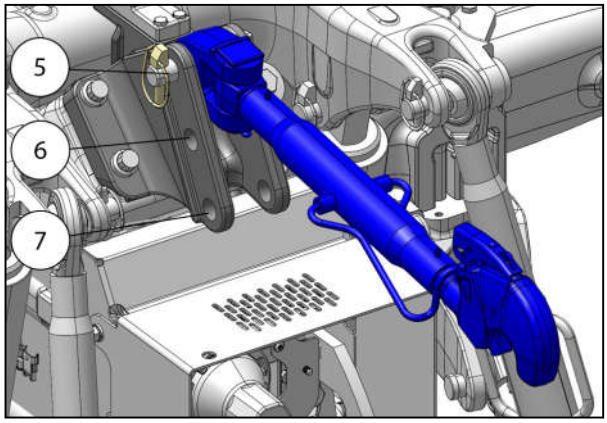


Fig. 103

Adjusting the mechanical top link

The mechanical top link is fitted on ball joints.

Adjustment must be based on the type of implement hitched to the tractor.

To adjust the length of the top link (A), loosen the wing nut (3).

Turn the tube with the handle (4) to increase or decrease its length. When the required length is obtained, retighten the wing nut.

To adjust the length of the top link (B) and (C), unfold the anti-rotation safety device (3). Use this to turn the tube in the corresponding direction to increase or decrease its length. When the required length is obtained, fold in the anti-rotation safety device.

NOTE: *The thread must always be the same length on each side.*

When adjusting the length of the top link, do not exceed the thread extension limit (2).

IMPORTANT: *Failure to observe this limit can result in the loss of the implements hitched to the tractor and cause serious accidents.*

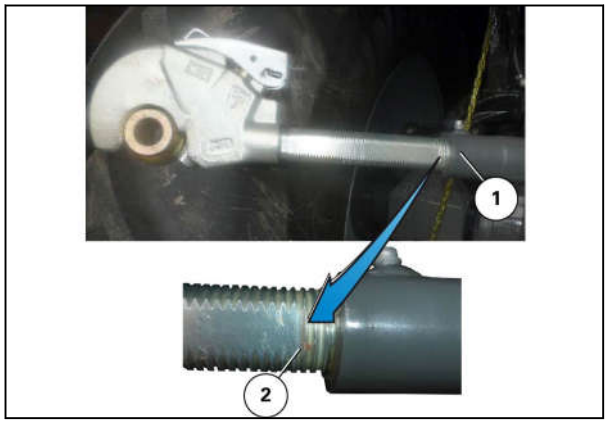


Fig. 104

Spool valve with flow rate adjustment

The hydraulic flow rate is adjusted at the rear of the tractor on the first hydraulic spool valve [1]. To increase the oil flow rate, turn the thumbwheel to "+" (hare). To decrease the flow rate, turn the thumbwheel to "-" (tortoise).

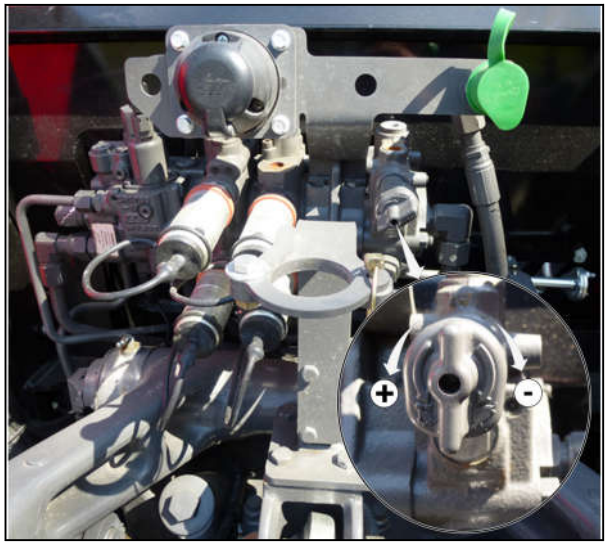


Fig. 122

NOTE:
If 40% of the available oil flow rate is used, the remaining 60% is directly available for the linkage and other spool valves.

Adjustment of the flow rate is not available on tractors with a single spool valve.

This is recommended for implements requiring low quantities of oil, to ensure a precise flow rate, or to adjust the speed of hydraulic motors. It also maintains an adequate oil flow rate so that the linkage and other spool valves can be used simultaneously.

NOTE: *Keep male and female couplers clean at all times.*

NOTE: *When using hydraulic implements taking a large quantity of oil out of the transmission (hydraulic motors, large capacity cylinders), top up the oil to the maximum level.*

3.9.2 Hydraulic spool valve controls (non-cab tractors)

The spool valves are controlled by levers located on the right-hand console.

(1) Lever for spool valve (2)
(2) Lever for spool valve (1)
(3) Space for a 3rd spool valve

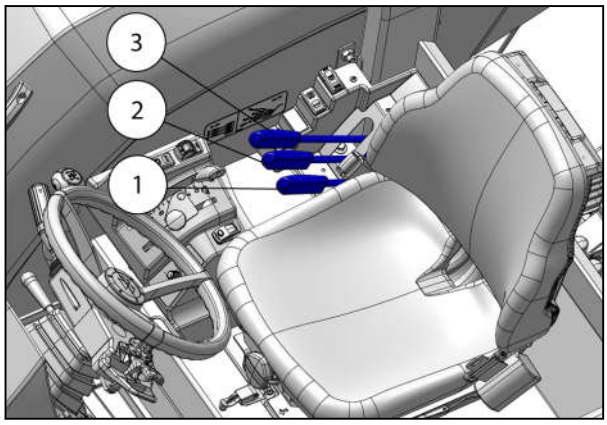


Fig. 123

Spool valve control

- (N) Neutral position
- (+) "+" position

  Pull the lever. Flow is directed to the corresponding "+" coupler.
- (-) "-" position

  Push the lever. Flow is directed to the corresponding "-" coupler.
- (~) floating position

  Depress the lever fully.

Locking the spool valves

Depending on the option, the tractor may be equipped with lockable spool valves.

obtain a clearance of at least 40 mm between the tire and nearest point of the immediate environment (e.g.: body/attachments).

3. Repeat step 2 for the opposite side.

4. Swing to the right and left once more to check that no settings have moved, then tighten the stops to 90 Nm.

3.10.6 Tires

Agricultural tire markings

(1) Tire size in inches or millimetres
(2) Type of manufacture (e.g. radial)
(3) Nominal rim diameter in inches
(4) Side/tire size ratio
(5) Load capacity index per tire 121 = 1450 kg; 153 = 3650 kg
(6) Speed symbol A8 = 40 kph
(7) Reference pressure: 1.6 bar
(8) Tubeless: Without inner tube

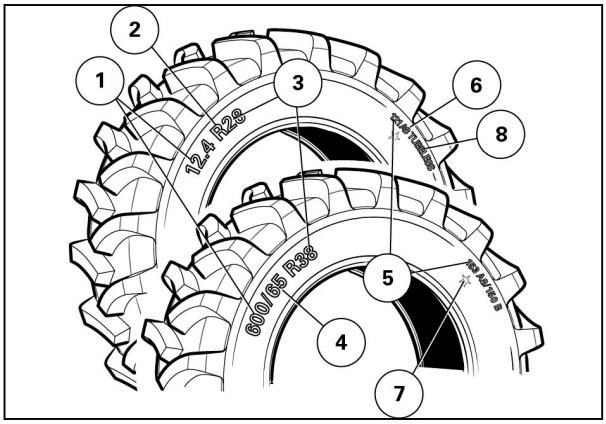


Fig. 141

3.10.7 Ballasting the tractor

General

In order to ballast the tractor to increase the traction power of the drawbar and reduce excessive wheel slip, it is possible to add:

- A calcium chloride solution to the tires
- Cast-iron counterweights to the wheels
- A removable front ballast weight

The weight required depends on the working conditions and the work to be undertaken.

The optimum weight is generally set at 60 kg/PTO hp. The total weight on the tractor can be increased to a maximum of 72.5 kg/PTO hp. Contact your dealer to find out about the specific ballast specifications of the tractor in order to optimize performance. If the ballast is excessive, the tires leave visible tread marks (1). If the ballast is insufficient, the tires leave blurred marks (3) due to wheel slip. To obtain maximum efficiency on tractors with a 4WD front axle, the wheel slip must be between 8% and 12%.

Ensure that the tractor ballast does not exceed the level required for adequate traction. The total load on each wheel must not exceed the load levels advised by tire manufacturers and indicated on the tires.

It is recommended to take off the additional weights for work requiring less tractive effort (tilling, planting etc.). Carrying extra weight increases soil compaction, uses more fuel and decreases the life span of tires, bearings, gears etc. When a weight is added to the rear wheels, the transfer of tractive force increases and reduces the weight on the front wheels.

WARNING:
Ensure that the tractor always has sufficient front-end weight to remain stable and keep control of the steering.

5.2 Engine

5.2.1 Specifications: Tier 3/Stage IIIA engine

	MF 6711	MF 6712	MF 6713
Type	AGCO Power 44CWC3	AGCO Power 44CWC3	AGCO Power 44CWC3
Power at maximum speed @2000 rpm	@ISO TR14396: 112 hp @SAE J1995: 115 hp	@ISO TR14396: 122 hp @SAE J1995: 125 hp	@ISO TR14396: 131 hp @SAE J1995: 135 hp
Maximum torque @1500 rpm	460 Nm	510 Nm	540 Nm
Maximum power in PTO @2000 rpm	98 hp	106 hp	114 hp
Turbocharging	Yes	Yes	Yes
Intercooler	Yes	Yes	Yes
Number of cylinders	4	4	4
Internal diameter	108 mm	108 mm	108 mm
Play	120 mm	120 mm	120 mm
Displacement in litres	4.4 l	4.4 l	4.4 l
Idle speed (± 25 rpm)	850 rpm	850 rpm	850 rpm
Maximum speed with no load (± 30 rpm)	2260 rpm	2260 rpm	2260 rpm
Lubrication	By gear pump – suction strainer and external filter(s) with replaceable cartridge(s).		
Valves	Overhead, operated by valve lifters		
Valve clearance - Cold - Inlet	0.35 mm	0.35 mm	0.35 mm
Valve clearance - Cold - Exhaust	0.35 mm	0.35 mm	0.35 mm

5.2.2 Air filter and fuel system

Engine	AGCO Power
Standard	**Tier 3/Stage IIIA engine**
Fuel filter	5 µ
Fuel pre-filter	10 µ
Water separator filter	50 µ
Injection pump	BOSCH
Fuel injection type	Common Rail
Injector type	BOSCH
Air filter	2-stage, dry element with blockage indicator

5.9 Electrical equipment

5.9.1 Electrical equipment technical specifications

General	
Voltage	12 V, negative earth
Batteries	1 x maintenance-free battery
Alternator	80 A without air conditioning 120 A with air conditioning
Neutral start switch	Controlled by the clutch pedal and a presence detector on the seat

Type of lighting	Specifications
Indicators	12 V / 21 W
Front side light	12 V/10 W
High beams and low beam lamps	H7 12 V/55 W
Brake light/rear side light	12 V/21 W/5 W
Number plate lighting	12 V/10 W
Front/rear work light	H3 12 V/55 W
Instrument panel lighting	3 W - 2 W - 1.2 W
Rotary beacon	H1 12 V/55 W
Roof light	12 V/5 W

5.9.2 Main fuse box

5.9.2.1 Description of the main fuse box for the version without cab and with mechanical reverse shuttle

Description of the main fuse box for the version without cab and with mechanical reverse shuttle

The main fuse box (1) is located in the steering console under the steering wheel.

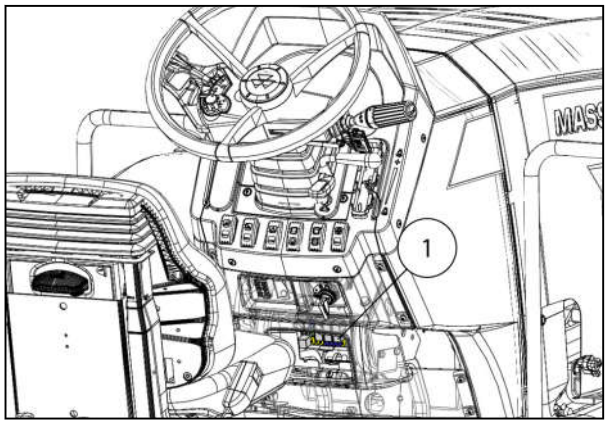


Fig. 1

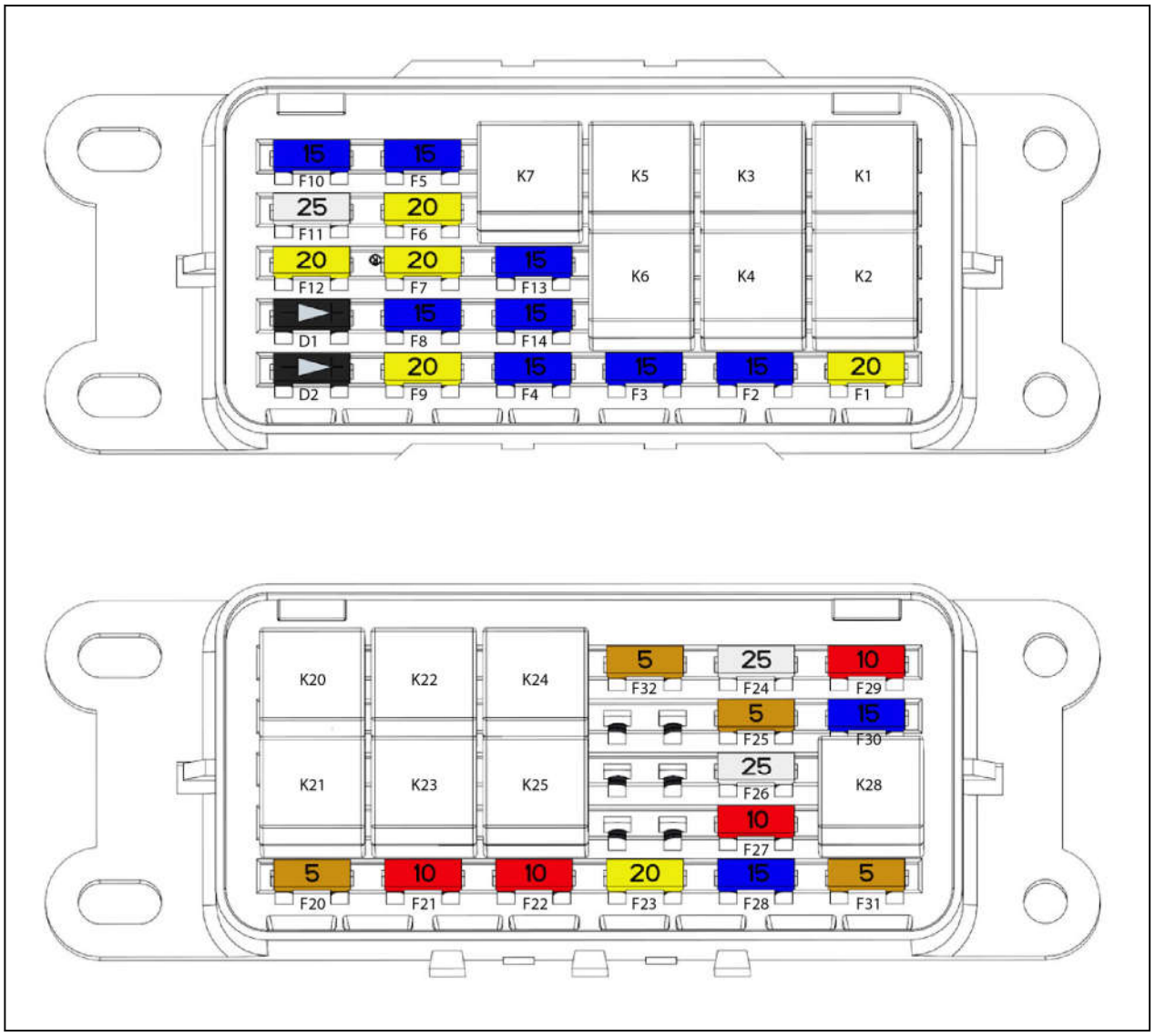


Fig. 6

F	Fuses
K	Relay
D	Diodes
+BAT	+ 12 V battery
+APC	+ 12 V ignition on
+ACC	+ 12 V accessory

First fuse box

When facing the tractor, the fuse box (1) is located to the right of the battery.

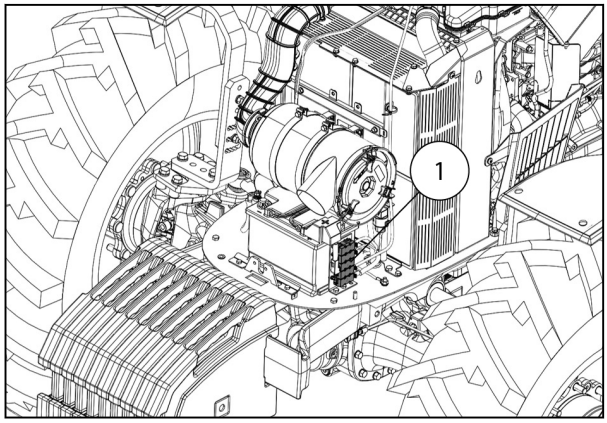


Fig. 13

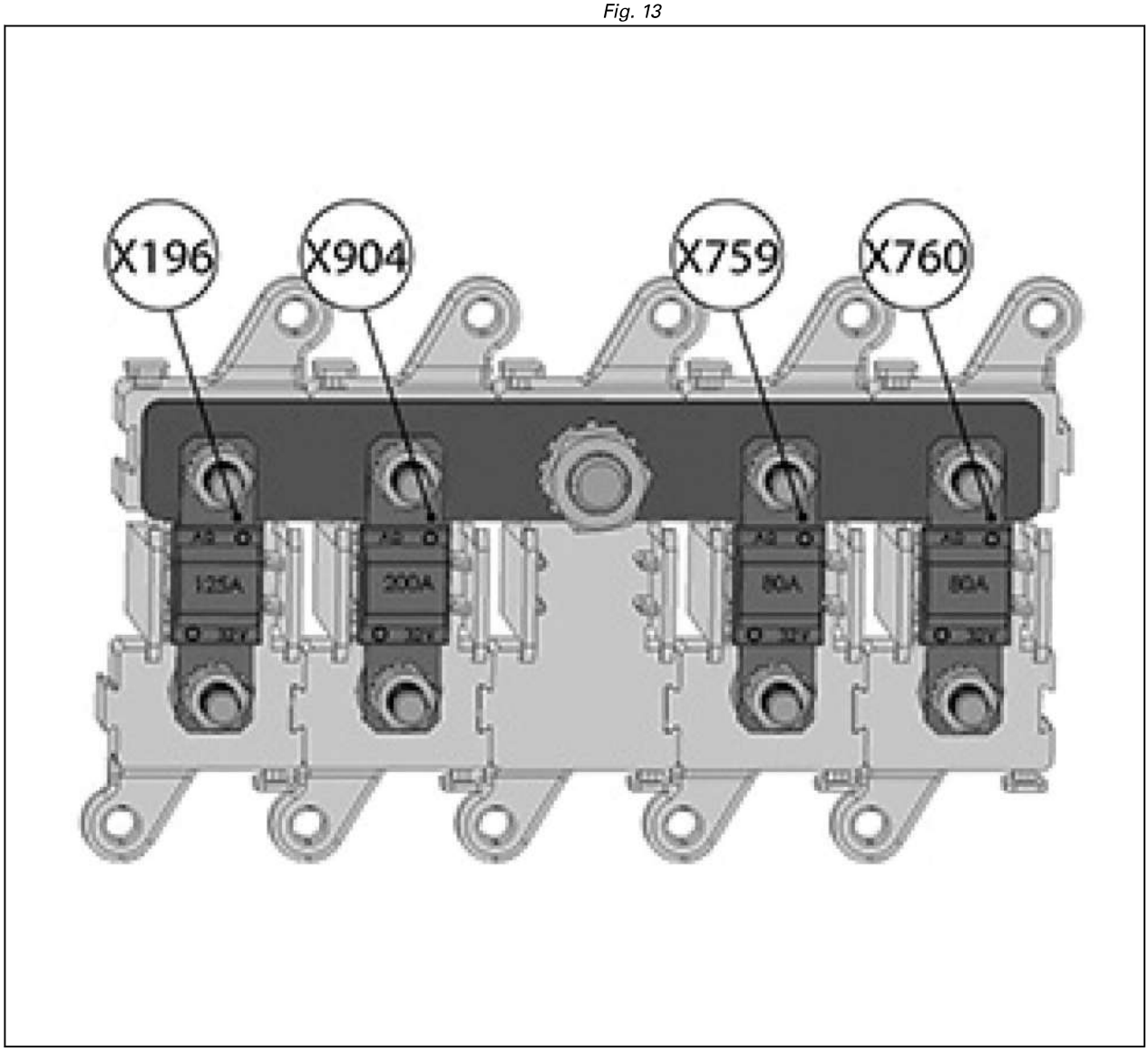


Fig. 14