1.1 - SERIAL NUMBERS

IMPORTANT: WHEN CONTACTING YOUR DEALER OR AGENT, ALWAYS INDICATE YOUR TRACTOR SERIAL NUMBER.





Front axle Serial number







2.12 - SAFETY PROCEDURE TO FOLLOW

2.12.1 - For proper operation

For proper operation of an agricultural tractor, you must be a qualified and approved operator. To be qualified you must understand the written instructions supplied in this manual, have training, and know the safety rules and regulations for the job.

Some regulations specify that no one under the age of 16 years, for example, may operate power machinery. This includes tractors. It is your responsibility to know what these regulations are, and respect them, in the operating area or situation.

These will include, but are not limited to, the following instructions for safe tractor operation.



WARNING: The operator must not drink alcohol or take any medication that may affect his concentration or coordination. If taking medication, whether prescribed or not, the operator must seek medical advice as regards his ability to safely operate machinery.

2.12.2 - Observe the following instructions

- DO NOT ALLOW children or unqualified persons to operate your tractor. Keep others away from the working area.
- Always wear your seat belt securely fastened.
- Where possible, avoid operating the tractor near ditches, embankments and holes. Reduce speed when turning, crossing slopes, and on rough, slippery, or muddy surfaces.
- Stay off slopes too steep for safe operation.
- · Watch where you are going, especially at row ends, on roads, and around trees.
- Passenger seat is only intended for short periods of use
- Do not allow children in the passenger seat.
- DO NOT PERMIT others to ride on the tractor or the implement unless an approved passenger seat is fitted.
- Only hitch attachments and implements to the drawbar and hitch points recommended, and never above the centre line of the rear axle.
- Operate the tractor smoothly no jerky turns, starts or stops. When the tractor is stopped, apply the parking brake securely. Lower the implement and remove the ignition key.
- DO NOT MODIFY OR REMOVE any part of the equipment and **DO NOT USE** attachments unless they are properly matched to your tractor.

2.13 - PROTECTION

2.13.1 - Cab

The ROPS (Roll Over Protective Structure) cab has been designed for this tractor series and meets all the safety and sound legal requirements.

The ROPS cab conforms to the various international safety standards. The ROPS cab must NEVER be drilled or modified to install attachments or implements. Welding on cab components IS NOT PERMITTED. DO NOT attach chains or ropes to the main frame of the cab for pulling purposes. If additional controls or displays are to be added to the operator's area contact your dealer for information.

The ROPS cab together with the seat belt is effective in reducing injuries during overturn accidents. Wearing the seat belt is an important part of this protection.

- Always wear your seat belt adjusted snugly.
- Check the seat belt for damage. A damaged seat belt must be replaced (Fig. 1).



2.13.2 - Damage to the ROPS cab

If the ROPS cab has been damaged as a result of tractor rollover or incident, it must be replaced, NOT repaired. DO NOT use the tractor with a damaged ROPS cab.

2.14 - PREPARING FOR SAFE OPERATION

2.14.1 - Know your equipment

It is important to know the tractor and operation of all its accessories, implements and additional equipment. It is also important to know how to use all the controls, gauges and dials, as well as the rated load capacity, speed range, braking and steering characteristics, turning radius, and operating clearances.

Remember that rain, snow, ice, loose gravel, soft ground, etc. can change the performance of your tractor.

Under poor conditions, slow down and be extra careful, and engage four-wheel drive if fitted.

• Before getting off, always disengage the PTO, lower all attachments and implements to the ground, set the tractor to neutral, activate the Park Lock, stop the engine and remove the ignition key.

NOTE: DO NOT TOUCH, lean on, or reach through any implement mechanism or permit others to do so.

Stay alert! If a part breaks, loosens or does not operate correctly, stop work, switch off the engine, check the machine and carry out any necessary adjustments or repairs before resuming work.

2.17.3 - Safety of bystanders

Watch out for others. DO NOT allow inexperienced or ungualified people to operate the tractor. They may cause injury to themselves or to others.



WARNING: A tractor is a personal piece of machinery. Do not allow others to drive the tractor or to use the implement (Fig. 10). DO NOT ALLOW another person to get on the

implements or any other equipment, including trailers, except in the case of harvesters specially designed for this purpose (for the harvest itself and not for transport purposes). Space should be provided on such equipment so that this type of transport can be carried out in complete safety. DO NOT ALLOW children on the tractor.



· Be certain you can control both speed and steering before moving. Move slowly until you are sure that everything is operating properly. After starting, recheck the steering, right and left. Be certain you have full steering and brake control. If differential is locked, DO NOT operate at high speed or turn the tractor until the differential lock is disengaged.

- DO NOT LIFT a load over anyone.
- Keep others away from the working area. DO NOT ALLOW others to stand beside or walk beneath a raised implement (Fig. 11).



- DO NOT lift objects that do not fit safely into the bucket. Obtain the correct equipment.
- When using a loader, avoid sudden stops, starts, turns, or change of direction. Keep loads close to the ground when transporting.
- DO NOT stand (or allow anyone else to stand) in front of, under, or behind loaded or loading equipment. DO NOT DRIVE a tractor up to someone standing in front of a fixed object.
- Keep others away from universal joints, hitches, drawbars, lift arms, PTO shafts, cylinders, belts, pulleys, and other moving parts. Keep all shields and guards in place.



WARNING: DO NOT STAND, or allow anyone else to stand, between the tractor and implement unless the engine is turned off and the parking brake is engaged, the transmission control lever is in neutral, and all attachments or implements are lowered to the ground.

2.17.4 - Risk of overturning

In the event of an overturn with a tractor fitted with a cab, hold the steering wheel firmly and do not attempt to leave the seat until the tractor has come to a standstill (Fig. 12). If the doors of the cab are obstructed, leave through the rear window or roof hatch.

3.10.3.9 - Air conditioning button

The tractor icon on the LCD screen indicates the recycling function selected by the button 3 and the corresponding indicator light comes on when the compressor is used. When recycling is in ON position, the air conditioning unit

is normally on, and can be switched off by pressing the button 3.



3.10.3.10 - Air recycling (ref. 5)

Recycling is in automatic mode and varies depending on the external temperature.

If the Recycling button 5 is pressed once (ON position) an arrow is displayed inside the tractor icon on the LCD screen.

If the Recycling button 5 is pressed twice (OFF position) an arrow is displayed outside the tractor icon on the LCD screen.

If the Recycling button 5 is pressed a third time, automatic control is restored and the letter A (automatic) appears in the tractor icon.

Each time the unit is activated, if the external temperature is higher than a pre-determined level, before overriding the recycling function wait 2 minutes to change the air inside the cab.

NOTE: If external temperatures are high, it is advisable to work with the system in Recycling mode, with control knob 1 in automatic position.

3.11 - SUN VISOR

(Fig. 26)

To adjust the visor pull vertically down to desired position. To raise visor pull cord (1).



3.12 - ROOF HATCH

(Fig. 27)

This hatch is normally used to ventilate the cab.

The hatch is opened by pressing the button located on the handle and pushing the hatch upwards.

To fully open the hatch (emegency exit), push hard on the handle to force the gas cylinders from their holders. To close the hatch, pull it downwards to engage the ends of the gas cylinder rods in the supports, and continue pulling the hatch downwards until it clicks into locked position.





WARNING: The coupler function is "ON" by default at start-up whatever the status when the tractor engine is stopped.



4.5.9 - Setting restart speeds for shifting

To activate the preset values, press the clutch pedal, the tractor icon (2 Fig. 22) flashes. The required value can be set using the PowerShuttle lever (Fig. 23).

To set value (1 Fig. 22):

Depress the clutch pedal, put the PowerShuttle lever in position (5 Fig. 23), then move the PowerShuttle lever to + or - to adjust to the required value.

To set value (3 Fig. 22):

Depress the clutch pedal, put the PowerShuttle lever in position (6 Fig. 23), then move the PowerShuttle lever to + or - to adjust to the required value.

Presettings are different in the Hare and Tortoise ranges. They are stored when the engine is stopped. The displayed value corresponds to the speed in kph obtained when the engine speed is 1800 rpm. If the preset values are set to 0.2, reversal will occur at the same forward and reverse speeds.

NOTE: In all cases, the dynamic stop can be activated by moving the left-hand "forward to neutral" or "reverse to neutral" lever.



Fig. 22





4.13 - ELECTRONIC LINKAGE

(Fig. 40)

- A. Height / depth setting knob
- B. Function selector knob: Position / Intermix / Draft
- C. Maximum lift height setting knob
- D. Manual or automatic lowering speed setting knob
- E. Lift / Lower selector switch with "neutral" position.
- F. Active transport control system knob
- G. Linkage lowering indicator light
- H. Linkage lifting indicator light
- I. Console locking and malfunction self-diagnostic indicator light.
- J. Active transport control system indicator light
- K. Lowering speed automatic control indicator light
- L. Quick soil engagement
- M. Active wheel slip control

N. Linkage console locking indicator light (Data 3 option, Fig. 41)



4.15.4 - Additional spool valve outlets:

Fig. 50: Three additional sockets are provided for cases where the hitched implement needs to use other spool valves:

- 1. Direct outlet pressure
- 2. Rear axle return
- 3. XLS line



Fig. 50

4.15.5 - "Joystick" controls:

Tractors fitted with the Bosch SB23 electrohydraulic spool valves option controlled by a control lever inside the cab or by a Joystick located on the armrest to control the spool valves.

Description (Fig. 51)

- 4-function control Joystick (separate or combined) (Fig. 52).
- A. Lifting
- B. Lowering
- C. Filling (bucket)
- D. Emptying (bucket)



- 2. Extra function control button, e.g.: bucket (open / close jaws).
- 3. Store flow rate (after setting Datatronic parameters) and reset to zero indicator light for stored flowrate
- 4. On/Off switch.



4.15.5.1 - Operating without Datatronic

• For versions without Datatronic, with the Joystick in neutral position:

the floating position cannot be used, the hydraulic flow is at its maximum.

• Joystick in any other position:

move the Joystick in the desired direction(s) and briefly press button 3, (Fig. 60) to record and set the flow.

If a stored flow rate must be changed or cancelled, operate the Joystick then press the Memory key (3) for 5 seconds to restore the maximum flow rate.

4.15.5.2 - Operating with Datatronic 2 (Fig. 52)

When starting the engine, the Joystick is not operational and the red indicator light is lit.

When the Datatronic 2 has been installed, the corresponding settings in the active window are locked (padlock icon displayed on half screens Fig. 53).

- 1. Press button 4 (Fig. 51) to make the Joystick operational. The red indicator light goes out, the padlock disappears from the half screens and values can be set on the Datatronic.
- 2. Move and hold the Joystick in the desired direction to obtain the desired flow, the flow stops as soon as the joystick is released.
- By moving the Joystick to its limit of travel beyond its locked B1 / C1 floating position, and releasing immediately, the flow is automated, and when in OFF position the "~" icon is displayed on the lower screen.

NOTE: The speed and duration of the flow depend on the parameters previously recorded in the Datatronic. To cancel the values, press button 3 (Fig. 51) for approximately 5 seconds (default value 100%). from the screen), adjustment of the Datatronic is now possible.

- 2. Move and hold an EHS control in the desired direction to obtain the desired flow, the flow stops as soon as the Joystick is released.
- 3. Move the "Joystick" control to position B1/C1 and release it immediately to obtain floating position, and the flow rate is automated (the icon is displayed on the Datatronic 3 screen).



4. Still holding the control in the required position, press the memory key 4 for one second. The flow rate is memorised.

NOTE: When using a control and whatever the position used, the flow rate generated shall be that which was previously memorised. To cancel the values, press button (4 Fig. 51) for approximately 5 seconds (default value 100%).

4.15.7 - Emergency manual control of the spool valves

In case of malfunction of the "SMS" or the spool valves controls, the emergency hand controls are available to lift or lower the installed implements.

Button 4 (ON / OFF Fig. 51) flashes and the relevant error code is displayed on the tractor onboard computer (if installed).

Operation: Move one of the levers on the spool valves by pressing as shown (A) to lower or by pulling as shown (B) to lift.

Stop the engine, then restart it in order to reactivate the "SMS" controls.



4.16 - THREE-POINT LINKAGE

IMPORTANT: To prevent rear linkage damage when operating trailed attachments, care should be taken when turning to prevent the implement from fouling the linkage.

4.16.1 - Linkage

The tractor is supplied with Category 3 ball joint linkage or with optional category 3 fast linkage hitches.

4.16.2 - Lower links

- Fixed ball end type (Fig. 62)
- Hook and ball type (Fig. 63)

The hooks engage automatically in the ball joints which are fitted to the hitch pins. The normal balls are used for clevisend linkage; the balls with guide cones are used for single pin linkage. Ensure the linkage is properly locked.

The hooks can be unlocked for uncoupling from the cab, using cables (accessory).



- Release the "Park Lock" parking brake. For this purpose:
 - take off the spacer (Ref. 4 Fig. 78) after removing the screw ref. 5,
 - refit and tighten the screw Ref. 5 (Fig. 79).



Fig. 78



4.18.1 - Limp home mode



DANGER: When the tractor is stopped, the gear range must be in neutral position (middle position) and the brake must be engaged.

CAUTION: Once the tractor is started, the transmission is driven totally by meshing if a gear range (hare or tortoise) is engaged. Press down the clutch pedal, because any transmission ratio can be selected.

If the transmission ratio control is not possible due to a breakdown, the tractor can be driven mechanically using a limp home lever.

Maximum speed in the "Hare" range is 34 kph in forward position and 25 kph in reverse position. For the "Tortoise"

range, maximum speed is 15 kph in forward position and 11 kph in reverse position.

- Stop the engine if it is running.
- Open the cover located on the cab floor (right-hand side) (Fig. 73).
- Remove the protective shield (Fig. 74 and Fig. 75).
- Position the limp home lever on the range control (Ref. 2 Fig. 80) and select the limp home range:
 - clockwise direction, tortoise range,
 - anti-clockwise direction, hare range.

NOTE: The maximum speed when shifting range is 2 kph.

IMPORTANT: When changing range, only use the supplied limp home lever, because the coupling mechanism in the control unit could be damaged (maximum allowed torque 10 Nm).



• Start the tractor while pressing down the red button (limp home button) (Fig. 81).



5.3 - USER GUIDE

5.3.1 - Engine, fuel and cooling systems

- 1. Check / Clean dry air filter element(s) (section 5.9).
- 2. Check radiator coolant level (section 5.10).
- 3. Clean main radiator and all other cooler element fins (section 5.10).
- 4. Observe level of smoke emission from exhaust.

5.3.2 - Electrical system and instruments

- 5. Check battery condition and electrolyte level.
- 6. Check tightness of battery connections and battery safety.

5.3.3 - Front axle and steering

- Check oil level in front axle and epicyclic drive units (4WD).
- 8. Grease drive shaft/front axle universal joints (4WD) (section 5.6).
- 9. Lubricate the steering pivots / suspended front axle.
- 10. Check steering and toe-in adjustment (including tyre wear and damage).

5.3.4 - Transmission and hydraulics

- 11. Check transmission / auxiliary hydraulic oil level.
- 12. Check oil level in the rear final drive units (according to model).

5.3.5 - Clutch

13. Check the clutch liquid level.

5.3.6 - General

- 14. Top up cab windscreen washers (section 5.7).
- 15. Lubricate all points with grease or oil as specified in the Operator Instruction Book (section 5.6).

5.8 - FUEL SYSTEM

5.8.1 - Fuel prefilter and filter

Check the prefilter bowl for water at regular intervals and drain as necessary (5. Fig. 15).

Change 150 micron prefilter element every 400 hours.

Drain the water from the prefilter sediment bowl every 100 hours.

Place a receptacle beneath the element (5), then open the tap in the lower section to allow water and sediment to run out, close the taps, then operate the fuel lift pump.

Replace the filter element(s) every 400 hours (6 Fig. 15).

Discard old filter elements as required by environmental protection regulations.

- 1. Clean the filter and surrounding area.
- 2. Open fast fitting ring A and remove the filter element.
- 3. Fill and assemble the new filter element.
- 4. Turn the fast fitting ring until it clicks into the ON position.
- 5. Activate the supply pump to fill the filters (MT525B to MT545B).
- 6. Switch on the ignition and allow the electric fuel lift pump to operate for 30 seconds. Start the engine and check the fuel filter for tightness.
- 7. Bleed the fuel system.

NOTE: To avoid water condensing in the fuel tank, refill with fuel at the end of the working day.



5.8.2 - Bleeding the fuel system

To ensure correct operation of the engine, the fuel system must be in perfect condition and free of air.

The bleeding of the fuel supply system is automatic. However, to avoid activating the starter motor for too long, it is recommended to trigger the circuit with the supply pump manual lever (MT525B to MT545B).

Do not disconnect any unions or pipes.

NOTE: The pump lever must be moved to its limit of travel. If the pump does not operate and no resistance is felt when the lever reaches its limit of travel, activate the starter to change the pump control cam position.

IMPORTANT: Only activate the starter motor once in a 30 second interval to avoid overheating.

Clean fuel lift pump strainer every 400 hours.

5.8.3 - Fuel injection pump, regulator and injectors

The injection pump and injectors must be adjusted and checked by your dealer or agent.

5.8.4 - Fuel tank

Drain the fuel tank every 1200 hours with the hose located under the tank (Fig. 16).



5.20 - ELECTRICAL EQUIPMENT

The 12 volts circuit is a negative ground system.

5.20.1 - Batteries

Wipe the battery top and coat the terminals with liquid paraffin every 400 hours.



WARNING: Batteries generate explosive gases. Sparks, flames, lit cigarettes or any flammable source must be kept away. Wear appropriate safety goggles when working near batteries.

5.20.2 - Alternator

Check the fan and alternator belts tension every 400 hours. Retighten the nuts.

Get your dealer or agent to check the alternator every 1,200 hours or once a year.

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 system.

5.20.3 - Trailer socket (ISO)

Connection (Fig. 46).

- 1. Left-hand direction indicator
- 2. Reversing light
- 3. Ground
- 4. Right-hand direction indicator
- 5. RH side light
- 6. Stop
- 7. LH side light



Fig. 46

6.1 - ENGINE

Specifications	MT525B	MT535B	MT545B	MT555B	MT565B	MT575B
Engine	CAT 3056	CAT 3056	CAT 3056	66ETA	66ETA	66ETA
Number of cylinders	6	6	6	6	6	6
Turbocharger	yes	yes	yes	yes	yes	yes
Bore (mm)	100	100	100	108	108	108
Stroke (mm)	127	127	127	120	120	120
Cubic capacity (I)	6	6	6	6.6	6.6	6.6
Nominal power (ISO Kw)	87	98.5	106	113	125	137
At engine speed in rpm	2200	2200	2200	2200	2200	2200
Nominal power (ISO Kw)	94	106	114	120	132.5	143
At engine speed in rpm	2200	2200	2200	2200	2200	2200
Maximum torque (ISO Nm)	500	565	590	650	720	780
Engine speed at maximum torque	1400	1400	1400	1400	1400	1400
Idle speed	950	950	950	950	950	950
Maximum rated speed (rpm) (Idle speed high)	2354	2354	2354	2354	2354	2354
Lubrication	Gear type pump - strainer on suction side and external replaceable cartridge type filter(s).					
Valves	Overhead, push-rod operated					
Valves clearance (Cold) Inlet (mm) Exhaust (mm)	0.20 0.45	0.20 0.45	0.20 0.45	0.35 0.35	0.35 0.35	0.35 0.35
Engine oil cooler	yes	yes	yes	yes	yes	yes

6.1.1 - Fuel system and air filter

	MT525B / MT535B / MT545B	MT525B / MT535B / MT545B		
Fuel filter with sediment bowl	yes			
Number of elements	1			
Injection pump	Bosh VP30			
Injectors and nozzle holders	Bosh			
Cold weather starting	Thermostart	Grid heater		
Air cleaner: two-stage, dry element with clogging indicator.				

7.5.4 - Use

In the drop-down menu select **-DUAL-** and **-FRONT CTRL-**; a new display appears in the lower half of the screen :

- Ref.15: Position of the rear linkage control in %
- Ref. 16: Lifting / lowering indicator light for rear implement
- Ref.17: ELC status (Locked / Unlocked)
- Ref.18: Front Dual Control status -ON- (activated) / -OFF- (deactivated).
- Ref.19: Front implement lifting / lowering indicator light.
- Ref.20: Front linkage position in %.

To use the DUAL once the data has been stored and on each start up, it is necessary to unlock the console, the joystick (if fitted) and to place the Datatronic in the **-ON-** position, ref. 18, using the corresponding key.



NOTE: If the value is incorrect (e.g.: front-to-rear implement length is too high), or if you trigger the furrow start or end phase but halt before this phase is entirely completed, the rear plough that is still in the high position will change to the low position after eight seconds.

In static mode, if the Dual is active, you can place the implements on the ground (front and rear) in two different ways:

- Place the front implement on the ground by using its spool valve lever and the rear implement using selector switch (Q).
- 2. Place selector switch (Q) in the lowering position: the front lift control lowers then 8 seconds afterwards the rear lift control lowers.

To activate the **road transport mode or adjust** the use positions, it **is necessary to deactivate the DUAL function (OFF position)**.

NOTE: For the best use of FRONT DUAL it is recommended that the suspended front axle function be deactivated.

7.6 - TRAILED IMPLEMENT CONTROL (TIC)

7.6.1 - General

TIC is a system that controls the trailed rear implement on the swinging drawbar. In working mode, the wheel slip, implement depth and force applied to the swinging drawbar are analysed by the calculator that varies the height of the implement. However, in versions without draft control, only the wheel slip and depth button act upon the height of the implement. The information required for the system is acquired by 3 sensors:

- 1. swinging drawbar draft sensor (optional),
- 2. position sensor on the trailed implement,
- 3. ground speed radar.

The information is then processed by the DATA 2 onboard computer and the electronic linkage control calculator that controls an electrohydraulic spool valve.

The TIC is at presently available only on tractors equipped with LOAD SENSING hydraulics.



7.6.2 - Description of the adjustment screen

(See section 7.4)

Press key 2 or 3 (Fig. 20), the drop-down menu appears. Select **-TRAIL ADJ-** above **-DUAL-**. Two new symbols are displayed (Fig. 24):

- **Ref. A to B:** This information is used to adapt the height of the implement to the "headland furrow" mode.
- **Ref. C to D:** This information is used to adapt the depth of the rear implement to "working" mode. To select one of the display windows, use keys 6-1 and 6-2 (Fig. 23).

Transport parameters: description (Fig. 53)



Total distance covered during work (kilometres)

Hours worked



Total fuel used during work (litres)



Instant fuel consumption (litres / hour)



Allows field or transport parameters to be selected. When the window (Fig. 53) is open and active, the window (Fig. 50) is displayed.



Shortcut icon providing access to the **MEMORIES**

application by pressing the key \ll_5 when the window is active. The window (Fig. 51) is displayed. (see section 7.3. MEMORIES application)

7.9.6 - Headland application

HEADLAND menu displayed in the right-hand window for example (Fig. 54):

This display is used to view the programmed sequences.



- To display this menu, press key **«**₂ twice. The first press selects the window and the second press displays the list if no application was activated previously. The active application is indicated by the green icon at the top right-hand of the window (27 Fig. 54), and on b/w screens the active window is indicated by the same icon in reverse video.
- To select the HEADLAND menu, select the application using the encoder. The selected application is displayed in a black frame (28 Fig. 54).
- Validate by pressing the encoder or the key «2. The window (Fig. 55) is displayed.



• Pressing the key $\ll_{\rm 5}$ (facing symbol 29) calls up the HEADLAND configuration menu. The window (Fig. 56) is displayed.