



ARAG Navigation Software

**MULTI-PLATFORM SOFTWARE
FOR COMPUTERS WITH INTEGRATED GPS NAVIGATOR**

CE

Software rel. 2.8X

USE AND MAINTENANCE

 = Generic danger

 = Warning

This manual is an integral part of the equipment to which it refers and must accompany the equipment in case of sale or change of ownership. Keep it for any future reference; ARAG reserves the right to modify product specifications and instructions at any moment and without notice.

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1 SETUP

1.1 Setup preparation

Before computer setup, check:

- that all components are correctly installed (control unit and sensors);
- the correct connection to the power source;
- the correct connection of components (control unit and sensors).

Failure to correctly connect system components or to use specified components might damage the device or its components.



WARNING: DO NOT CONNECT THE CONNECTORS TO THE SELETRON NOZZLE HOLDERS. THE SELETRON ELECTRIC CONNECTORS MUST BE CONNECTED AT A LATER TIME, DURING THE PAIRING PROCEDURE (chap. 6 Seletron connection).

1.2 Switching on

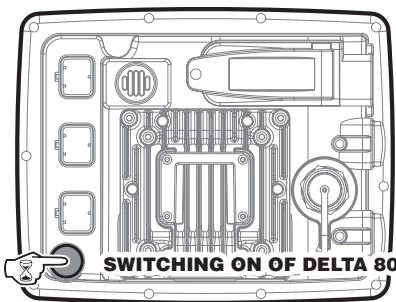


Fig. 1



Fig. 2



Fig. 3

Hold the ON button down for 3 seconds: after a few seconds, the monitor will display the page shown in Fig. 2. The software version is shown immediately afterwards (Fig. 3).

FIRST DEVICE SWITCHING ON

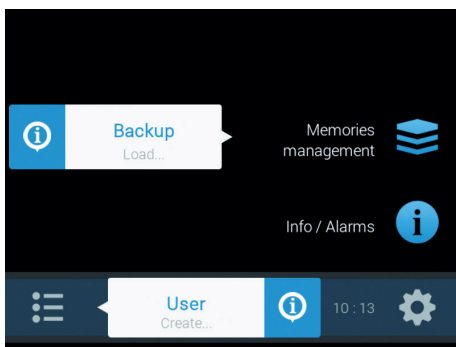


Fig. 4

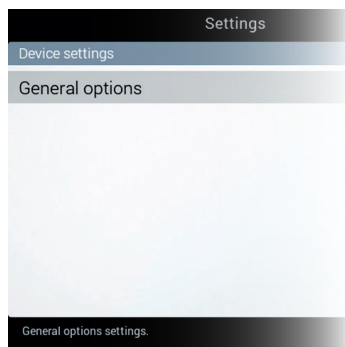


Fig. 5

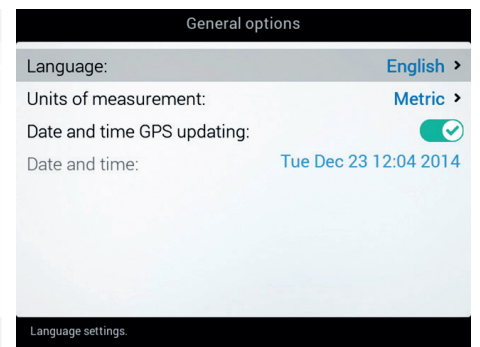


Fig. 6

Upon first switching on, after the software version, the monitor displays the "Home" screen (Fig. 4): Set the monitor language.

LANGUAGE SETTING

- In the "Home" screen (Fig. 4) press **FB** to enter the **Settings** menu (Fig. 5).
- Select **General options > Language** and set the language of the monitor.
- Press **ESC** and return to the "Home" menu.

Go to device basic settings (chap. 4).

ORDINARY SWITCHING ON

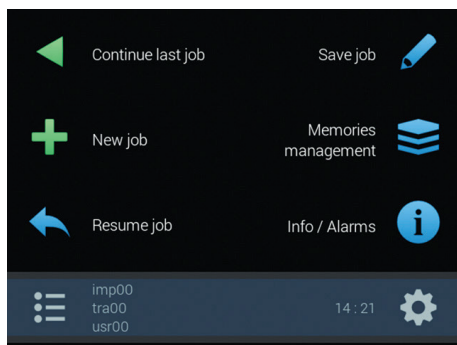
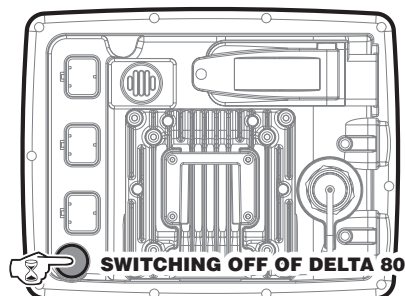


Fig. 7

After the software version, the monitor displays the "Home" screen (Fig. 7). Go to device basic settings (chap. 4).

1.3 Switching off



SWITCHING OFF OF BRAVO 400S / NINJA
Fig. 8

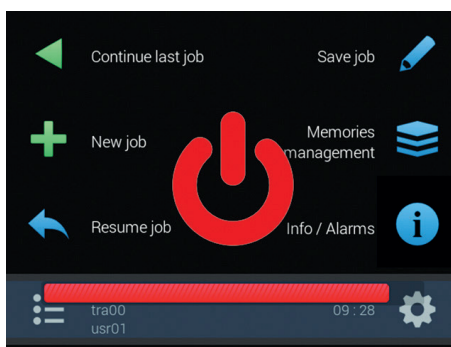


Fig. 9

Hold the button down until the monitor switches off.



During switching off, the monitor automatically saves the current job: Do NOT press any other key and do NOT disconnect the power supply until the monitor turns off.
WARNING: ALWAYS use the special key to switch off the device; otherwise ALL data concerning the spraying and the setup will be lost.

1.4 Use of keys for setup

SELECTION AND ACCESS TO MENU ITEMS

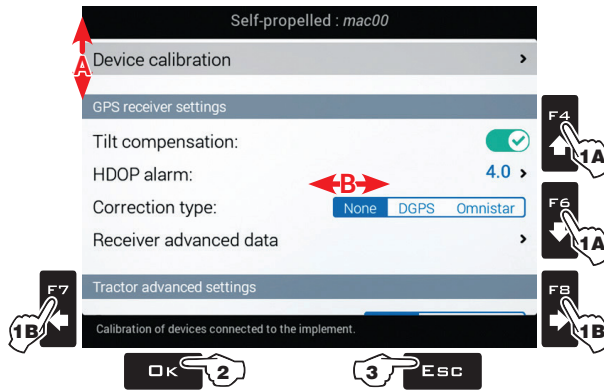


Fig. 10

1A Press in succession to move across the menu items (UP / DOWN). The selected item is highlighted with a gray bar (A).

1B Press in succession to move across the available options (LEFT / RIGHT).

Display options (B):

None DGPS Omnistar The selected item is highlighted with a blue bar.

Active option

Inactive option

2 Press to access the selected item or to confirm modification.

3 Press to exit screen without confirming modification.

ENTERING A NUMERICAL VALUE

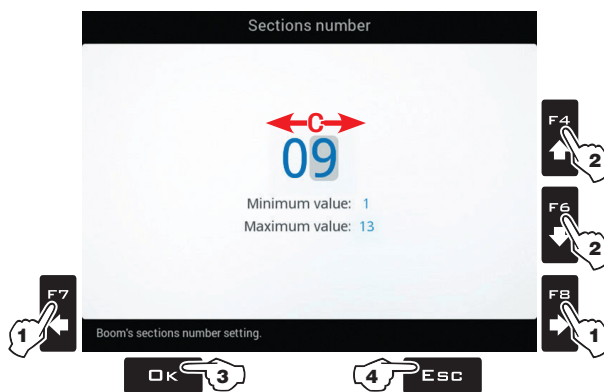


Fig. 11

1 Press to move the cursor (C) across the digits

2 Press to edit the highlighted digit (increase, decrease)

3 Press to confirm.

4 Press to exit screen without confirming modification.

ENTERING TEXT



Fig. 12

Legend:

F1 Enter selected character	F2 Delete selected character	F7 F8 Scroll (LEFT / RIGHT)	F4 F6 Scroll (UP / DOWN)	Data increase / decrease	OK Confirm access or data change	ESC Exit the function or data change	Par. 1.4
usr01 Typed Name Cursor	ok Selected character	← → Shift cursor across name characters	↑ Caps lock	⌫ Deletes the character before the cursor	ok Saves the entered text		

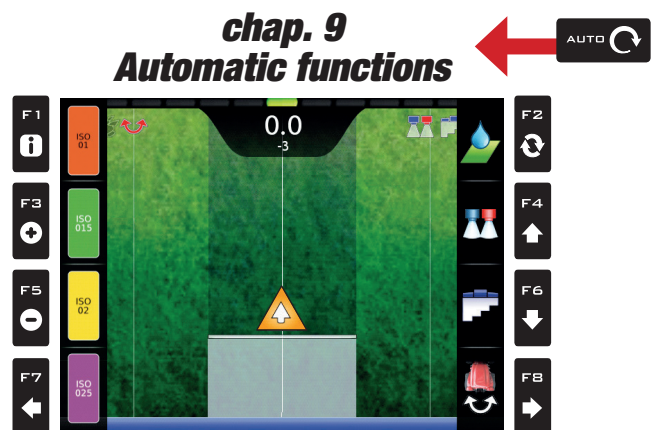
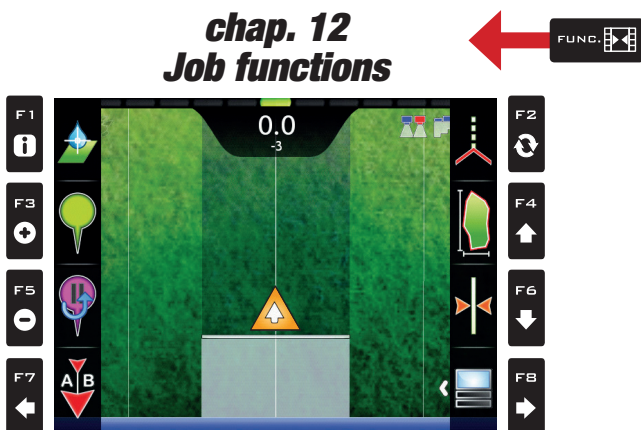
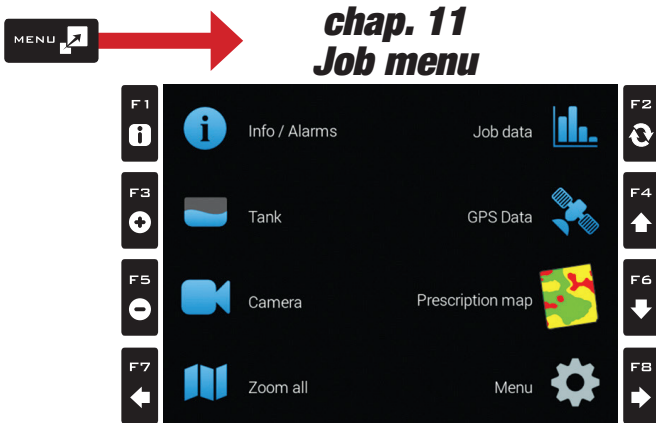
Below is a summary of key functions during setup.

F1 Enter selected character	F2 Delete selected character	F7 F8 Scroll (LEFT / RIGHT)	F4 F6 Scroll (UP / DOWN)	Data increase / decrease	OK Confirm access or data change	ESC Exit the function or data change	Par. 1.4
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2 MENU STRUCTURE



Upon first switching on, run the device basic settings (chap. 4). Afterwards, it will be possible to select the preset settings by pressing F7.



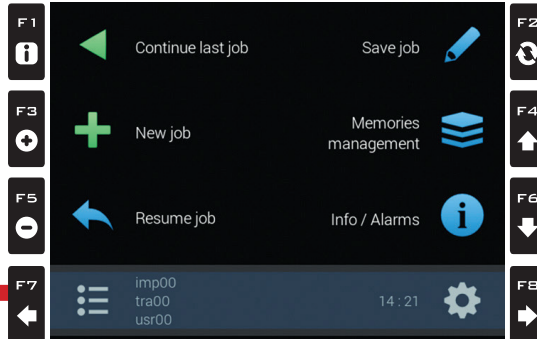


3 MENU STRUCTURE

Upon first switching on, run the device basic settings (chap. 4). Afterwards, it will be possible to select the preset settings by pressing F7.

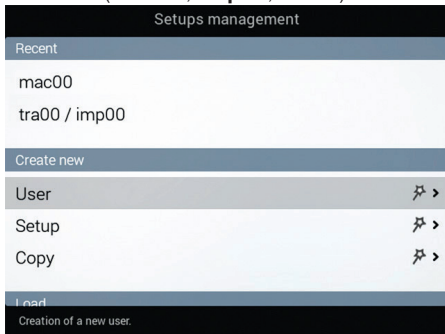


chap. 10 "Home" Menu



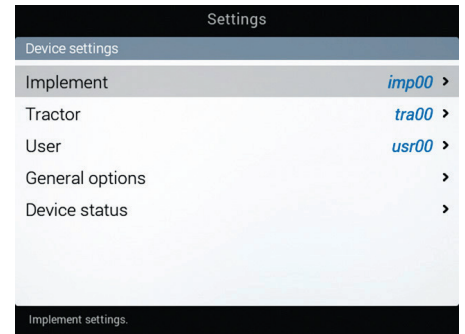
chap. 4 Basic settings

Create / Load settings*:
User ("usrxx")
Configuration ("macxx", "impxx", "traxx")



chap. 5 Advanced setup

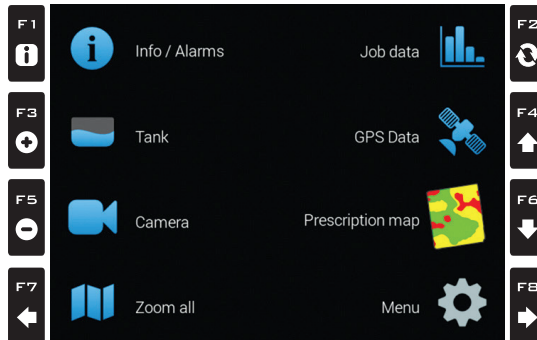
Edit created settings*(chap. 4).
System setup.



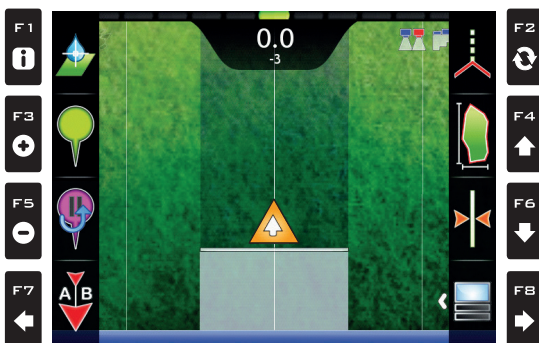
* type of configuration displayed changes depending on set type of system (chap. 4):
- "macxx" type setup is associated with self-propelled machines,
- "impxx" and "traxx" setups are associated with machines with towed or 3-point hitch implement ("impxx" for implement, "traxx" for the tractor).



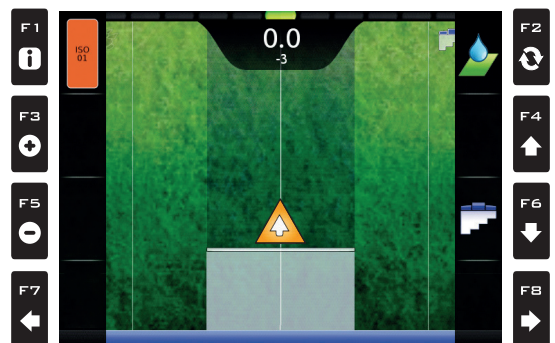
chap. 11 Job menu



chap. 12 Job functions



chap. 8 Automatic functions



4 BASIC SETTINGS

FIRST SWITCH-ON - SETUP

If you have a setup file (Backup), duly stored in a pendrive / SD card, press **F4 (A)** in Fig. 13) and follow the procedure described under par. 10.4.2. IN ANY OTHER CASE, PRESS **F7 (B)**: SAVE USER AND MACHINE CONFIGURATION; START GUIDED SETUP PROCEDURE BY MEANS OF **F8** (Fig. 15 or Fig. 16).

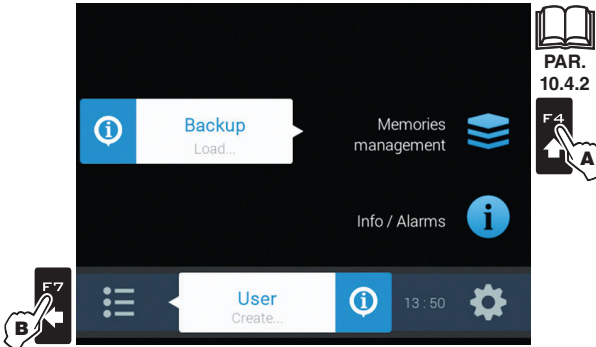


Fig. 13

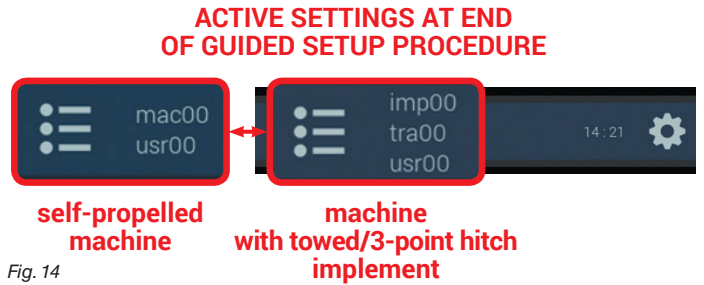


Fig. 14

ADVANCED SETUP

You can do the following:

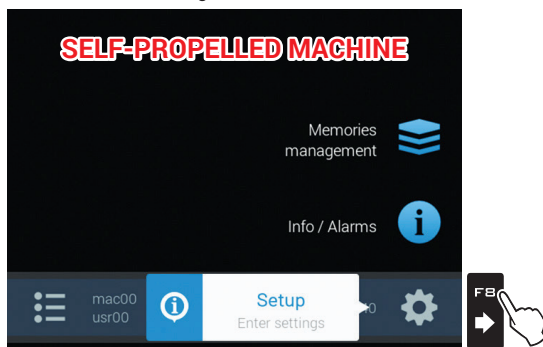


Fig. 15

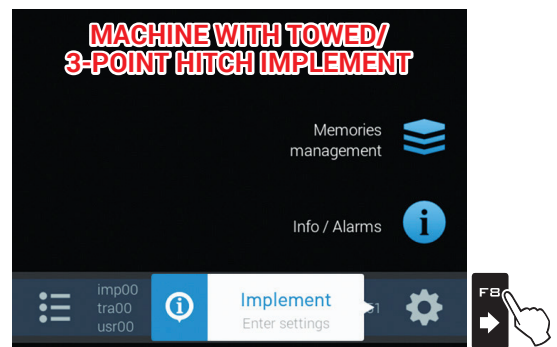




Fig. 16

GUIDED SETUP - MENU

BASIC IMPLEMENT SETTINGS / SELF-PROPELLED

- **IMPLEMENT TYPE**
Sprayer (Seletron): system with Seletron valves.
Sprayer (Electrovalves): system with electric-activated valves - with gearmotor.
- **MAIN VALVE**
 Main control valve installed on the control unit:
None
2 ways (drain valve)
3 ways (main valve)
- **SPRAYING SPOT TYPE**
 Seletron type: single, twin or fourfold
- **FLOWRATE REFERENCE SENSOR**
 Device used to calculate flowrate:
Flowmeter
Pressure sensor: measured pressure is used to calculate application rate.
Both: within the working limits the computer uses the flowmeter, otherwise it uses the pressure sensor, ONLY if properly configured.
- **TERMINAL NOZZLES**
None
"Buffer zone" nozzles: allows enabling the use of nozzles in the "Buffer zone" see par. 7.3.1 "Buffer Zone" function enabled on page 65.
"Fence" nozzles: allows enabling the use of "Fence" nozzles see par. 7.3.2 "Fence nozzle" function enabled on page 66.
- **TANK LEVEL SOURCE**
 Device used to read tank level:
Manual: no device connected
Filling flowmeter
Tank level sensor

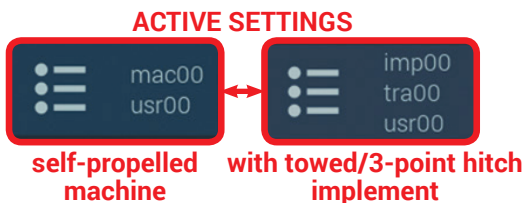
GUIDANCE SETTINGS / BASIC TRACTOR SETTINGS

- **AUTONOMOUS GUIDANCE:** control unit for automatic guidance.
GeoSteer: control unit with built-in control unit.
ECU-S1: ARAG control unit code 4679100
None
- **GPS RECEIVER**
 **A100:** ARAG receiver code 520100.693.
 **Smart-Ag / Smart 6:** ARAG receivers code 467016xx.
 **AgStar:** ARAG receivers code 467016xx.
- NMEA:** all GPS receivers with NMEA183 protocol and with the following features:
 - 10 Hz GGA message; latitude and longitude coordinates with at least 6 decimal digits.
 - 10 Hz VTG message.
 - 0.1 Hz ZDA message.
 - Serial port 57600 bps, n, 8, 1.
- Demo:** monitor simulates guidance.
None

YOU COMPLETED BASIC SETUP. NOW PROCEED TO ADVANCED SETUP DESCRIBED IN CHAP. 5.

F1 Enter selected character	F2 Delete selected character	F7 F8 Scroll (LEFT / RIGHT)	F4 F6 Scroll (UP / DOWN)	Data increase / decrease	OK Confirm access or data change	ESC Exit the function or data change	Par. 1.4
------------------------------------	-------------------------------------	---	--	--------------------------	---	---	-----------------

5 ADVANCED SETUP



Before proceeding with advanced setup, select type of system configuration: all advanced setup changes will be applied to ACTIVE SETTINGS (mac, imp, tra, usr).

SETUPS MANAGEMENT

1 Press **F7** in the "Home" screen (Fig. 17).
 Now it is possible to create a new setup (2A), or select an existing one (2B):
 in all cases the setup will be enabled and the name will be displayed in the "Home" screen.

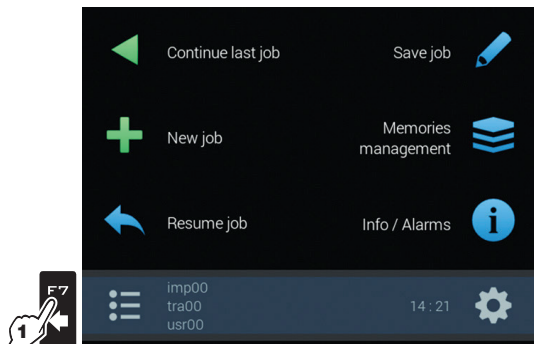


Fig. 17

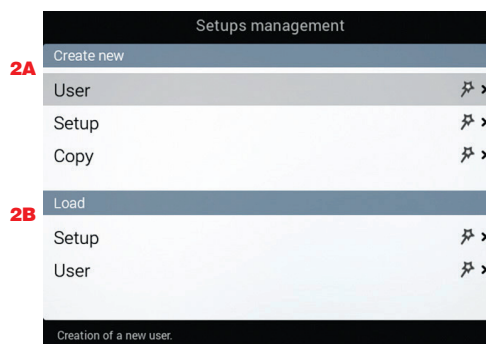


Fig. 18

CREATION OF A NEW SETUP (Create new > User / Create new > Configuration)

Select **Create new > User** (a in Fig. 19) to create a new setup and press **OK**.
 Follow all suggested steps and select required options. **OK**: next step **ESC**: previous step.
 Type the name (in the example of Fig. 20: **usr01**) and press **OK**.
 The new setup is now active on the computer (Fig. 21). Before moving on to the advanced setup procedure, carry out the basic setup (chap. 4).

You can repeat the same steps for setup **Create new > Configuration** (b)

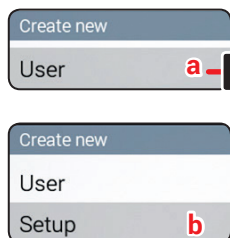


Fig. 19

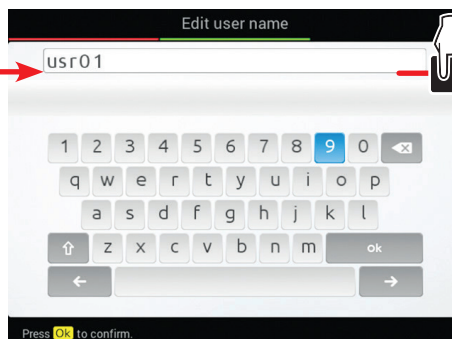


Fig. 20

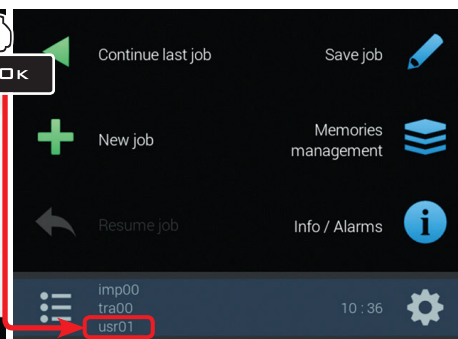


Fig. 21

COPY OF A SETUP (Create new > Copy*: COPY DATA FROM AN EXISTING SETUP)

* copy valid only for files of the "Configuration" type

Select **Copy** (c in Fig. 22) to copy the active setup and save the data on a new one; press **OK**.
 Follow all suggested steps and select required options. **OK**: next step **ESC**: previous step.
 Type the name (in the example of Fig. 23: **imp01**) and press **OK**.
 The saved setup is now active on the computer (Fig. 24). Proceed to advanced setup.



Fig. 22

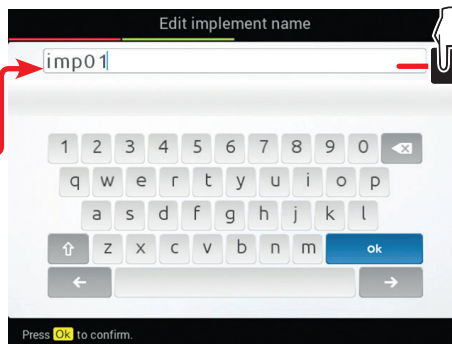


Fig. 23

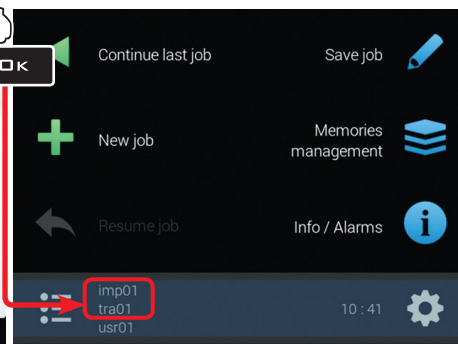


Fig. 24

LOADING A SETUP

Instead of saving, you can activate a previously saved setup.

Select **Load > Configuration (d)** in Fig. 25) and press **OK**.

From the example of Fig. 26 select type of setup to load and press **OK**.

Follow all suggested steps and select required options. **OK**: next step **ESC**: previous step.

The selected setup is now active on the computer (Fig. 27). Proceed to advanced setup.

You can repeat the same steps for setup **Load > User (e)**

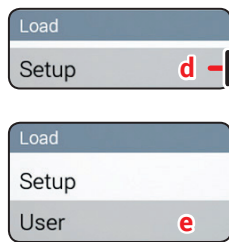


Fig. 25

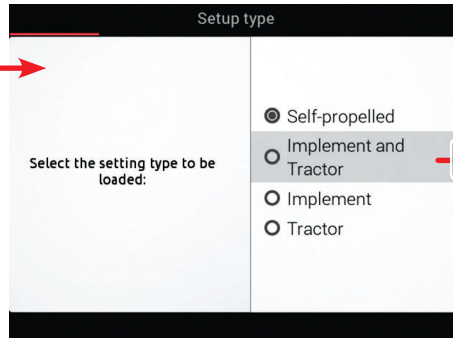


Fig. 26

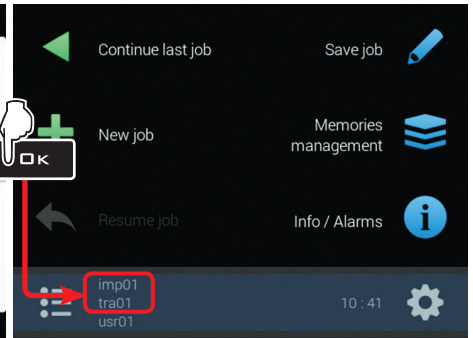
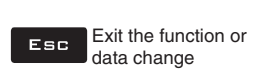
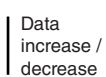


Fig. 27



You can now proceed with advanced setup: all changes will be applied to ACTIVE SETTINGS (mac, imp, tra, usr).



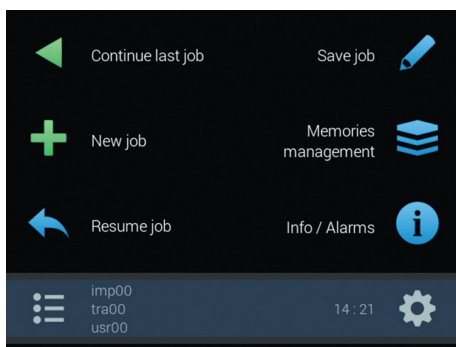


Fig. 28

DEPENDING ON BASIC SETTINGS (CHAP. 4), ITEMS AND MENU LAYOUT WILL CHANGE, AND DEVICE ADVANCED SETUP WILL CHANGE ACCORDINGLY.

AN OVERVIEW OF NAVIGATION CAN BE FOUND IN Fig. 29 AND Fig. 30.

- 1 In the "Home" screen (Fig. 28) press **F8** to enter the **Settings** menu (Fig. 29 / Fig. 30).
- 2 Proceed with monitor advanced setup: select the required menu item (using **F4** or **F6**);
- 3 Use **OK** to go to selected item setup.

SELF-PROPELLED MACHINE

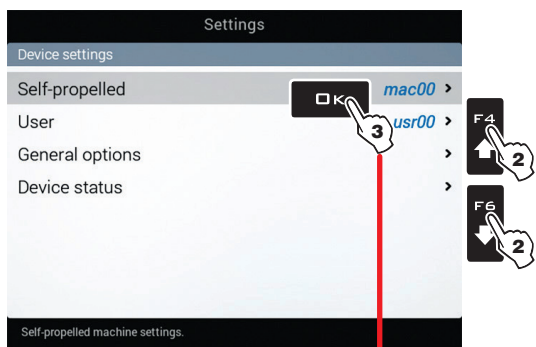


Fig. 29

MACHINE WITH TOWED/3-POINT HITCH IMPLEMENT

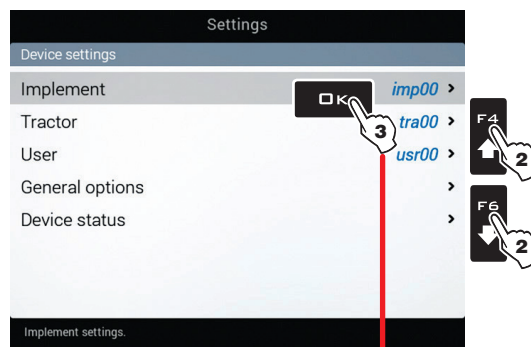
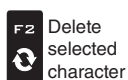


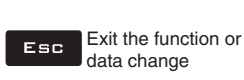
Fig. 30

SELF-PROPELLED IMPLEMENT ADVANCED SETTINGS (par. 5.1) GPS RECEIVER SETTINGS (par. 5.3) TRACTOR ADVANCED SETTINGS (par. 5.5)
USER (par. 5.6)
GENERAL OPTIONS (par. 5.7)
DEVICE STATUS (par. 5.8)

IMPLEMENT IMPLEMENT ADVANCED SETTINGS (par. 5.1) IMPLEMENT GEOMETRY (par. 5.2)
TRACTOR GPS RECEIVER SETTINGS (par. 5.3) TRACTOR ADVANCED SETTINGS (par. 5.5)
USER (par. 5.6)
GENERAL OPTIONS (par. 5.7)
DEVICE STATUS (par. 5.8)



Data increase / decrease



5.1 IMPLEMENT ADVANCED SETTINGS



5.1.1 Spray spots configurations

Allows setting 20 different configurations (i.e., 20 nozzle combinations), which can be selected before starting each job. Each configuration indicates which type of nozzle is installed on the boom's spraying points.

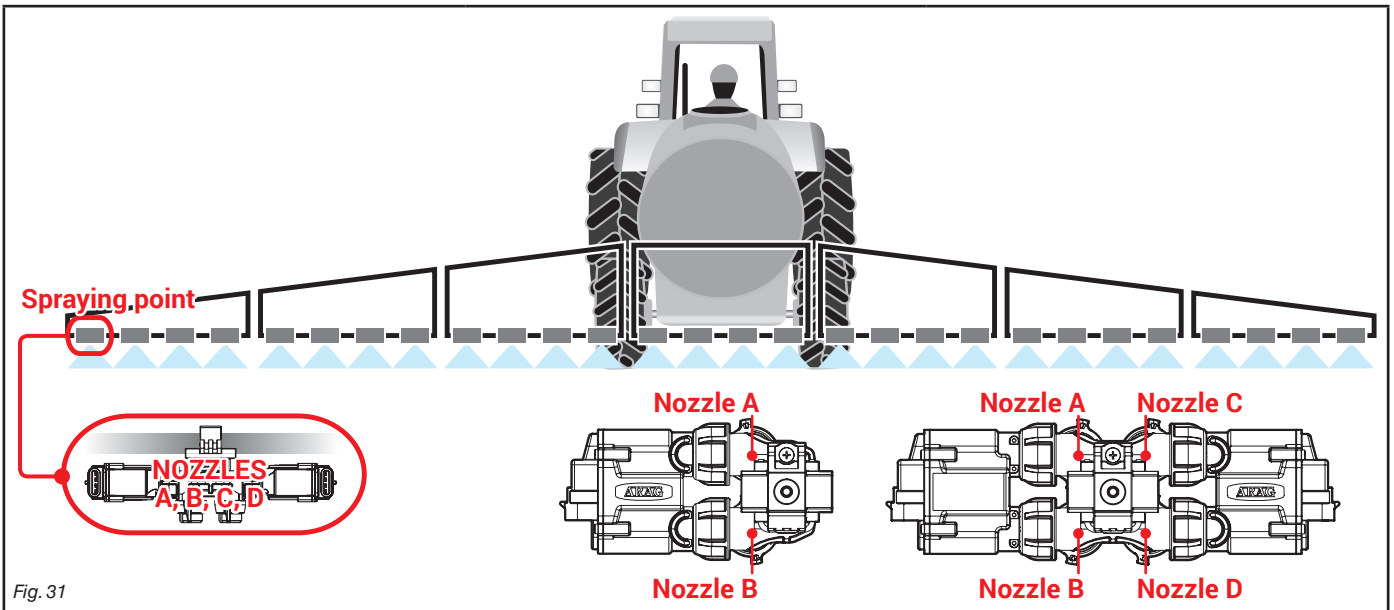


Fig. 31

During guided setup (chap. 4), the computer will ask you to indicate which type of Seleton is installed at said spraying points (single, twin or fourfold). Depending on the selected option the number of nozzles to be programmed in this menu will vary.

- Select the configuration you wish to set up (Fig. 32).
- Select the nozzle you wish to set up (A, B, C or D, in Fig. 33).
- Select one of the suggested nozzles (Fig. 34): if a nozzle is NOT in use, disable it by selecting
- Repeat the setup for each configuration.

The nozzle settings are the same for all spraying points on the boom.

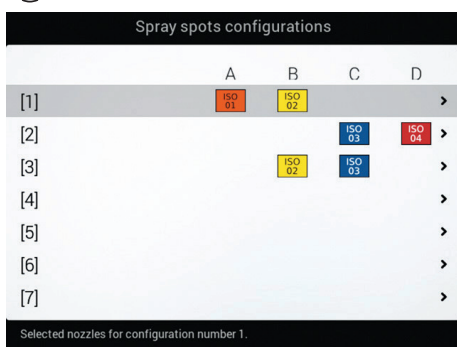


Fig. 32

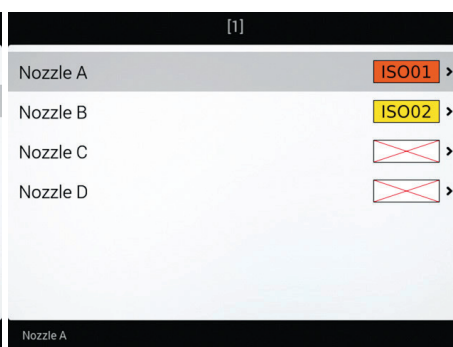


Fig. 33

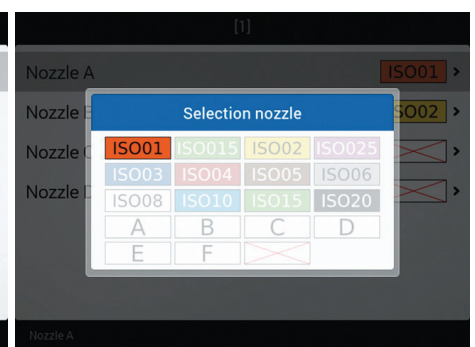


Fig. 34

CONTINUES "Boom settings / Section configuration" on page 15 >>>

5.1.2 Boom settings / Section configuration

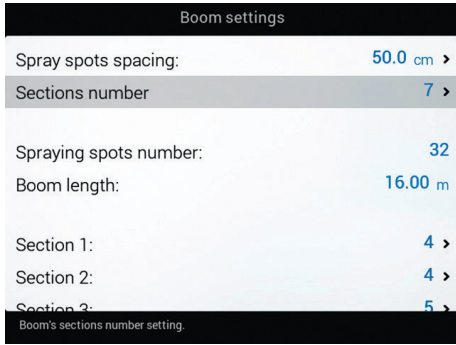


Fig. 35

The operator may choose the way in which the boom is subdivided into different sections: this is done in order to act on the corresponding switch when closing sections manually. With automatic management, instead, the computer acts on each single Seletron separately.

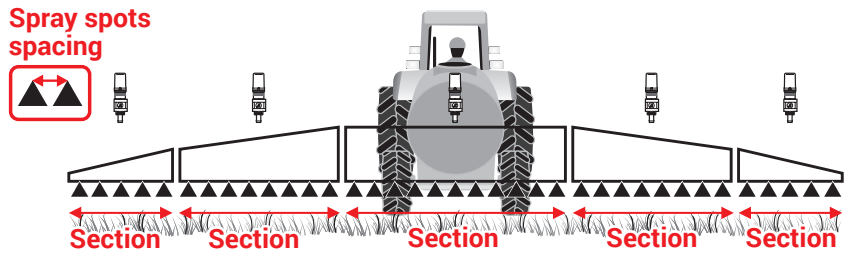


Fig. 36

MODE

ON

The operator may choose the way in which the boom is subdivided into different sections: this is done in order to act on the corresponding control when closing sections manually. With automatic management, instead, the computer acts on each single Seletron separately.

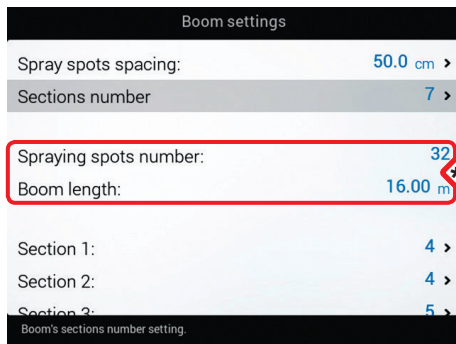


Fig. 37

Depending on the selected settings, the number of spraying points as well as the value of the boom width, displayed in Fig. 37, will change.

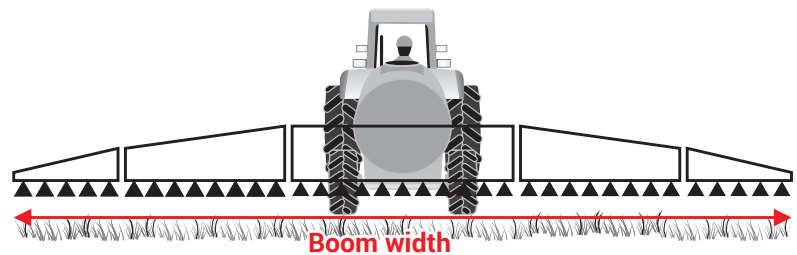


Fig. 38



Fig. 39

Spray spots spacing

Indicate the distance between spraying points (nozzle holders).

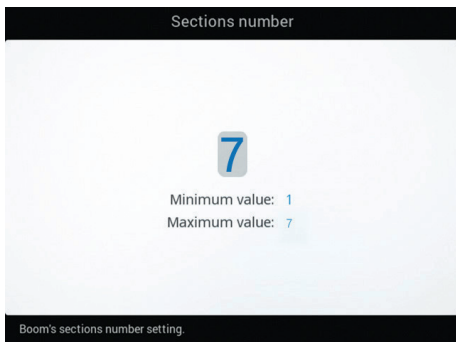


Fig. 40

Sections number

Indicate the number of boom sections.

CONTINUES >>>

F1 Enter selected character	F2 Delete selected character	F7 FB Scroll (LEFT / RIGHT)	F4 F6 Scroll (UP / DOWN)	Data increase / decrease	OK Confirm access or data change	ESC Exit the function or data change	 Par. 1.4
------------------------------------	-------------------------------------	---	--	--------------------------	---	---	---------------------

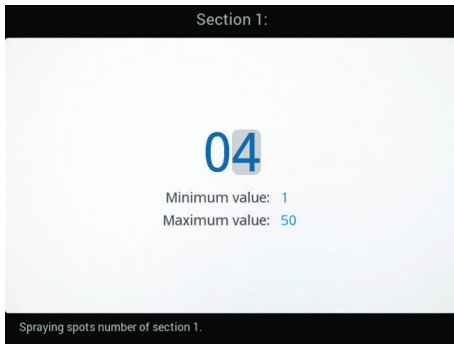


Fig. 41

• Section 1 ÷ 13

- Indicate the number of spraying points (nozzle holders) installed on each boom section.
- Repeat the setup for each section (Fig. 35).

SECTIONS MANAGEMENT

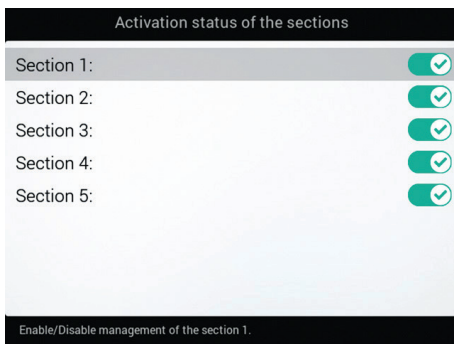


Fig. 42

• Activation status of the sections

It allows to enable/disable specific boom sections.
 (✔ Section enabled / ✘ Section disabled).

- Select the section you wish to set up.
- Repeat the setup for each section (Fig. 42), by disabling the disconnected outputs.

5.1.3 Flowmeter

Enter the values for the flowmeter installed on the system. The table below indicates the values that are automatically set when selecting the flowmeter code. If the installed flowmeter is not displayed, select **Other** and enter the relevant values.

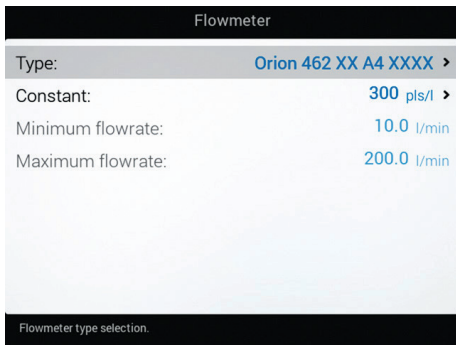


Fig. 43

ORION FLOWMETERS						
Type	Constant		Minimum flowrate		Maximum flowrate	
	pls/l	pls/gal	l/min	GPM	l/min	GPM
4621xA0xxxx	6000	22710	0.5	0.10	10	2.6
4621xA1xxxx	3000	11355	1	0.30	20	5.3
4621xA2xxxx	1200	4542	2.5	0.70	50	13.2
4621xA3xxxx	600	2271	5	1.30	100	26.4
462xxA4xxxx	300	1135	10	2.60	200	52.8
4622xA5xxxx	150	568	20	5.30	400	105.7
4622xA6xxxx	100	378	30	7.90	600	158.5
Other	625	2366	10	2.60	200	52.8

WOLF FLOWMETERS						
Type	Constant		Minimum flowrate		Maximum flowrate	
	pls/l	pls/gal	l/min	GPM	l/min	GPM
462x2xxx	1025	3880	2.5	0.7	50	13.2
462x3xxx	625	2366	5.0	1.3	100	26.4
462x4xxx	250	946	10.0	2.6	200	52.8
462x5xxx	132	500	20.0	5.3	400	105.7
462x7xxx	60	227	40.0	10.6	800	211.3



Fig. 44

• Type

Indicate the type of flowmeter installed.

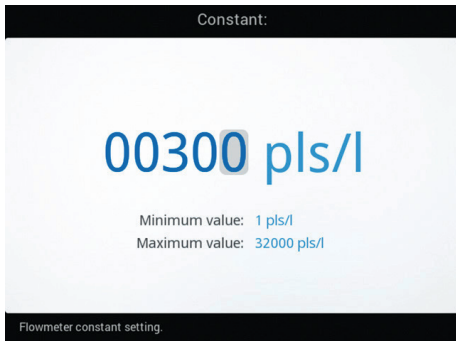


Fig. 45

• Constant

Indicate the constant of the installed flowmeter.



Fig. 46

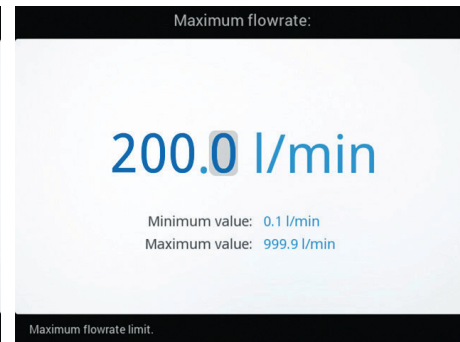


Fig. 47

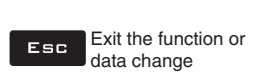
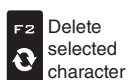
• Minimum flowrate
• Maximum flowrate



The items **Minimum flowrate** and **Maximum flowrate** can be modified only when the option **Other** (Type menu in Fig. 44) is enabled.

Enable the relevant function on the **Alarms** menu (par. 5.1.13) if you want the computer to trigger an alarm when, during spraying, the flowmeter rate is outside the set range.

For the procedure to be followed when an alarm occurs, please refer to par. 13.1 Error messages.



5.1.4 Filling flowmeter



This menu is only visible when the filling flowmeter is selected as tank level source (basic settings, chap. 4).

Filling flowmeter

Type: Orion 462 XX A4 XXXX >

Constant: 300 pls/l >

Minimum flowrate: 10.0 l/min

Maximum flowrate: 200.0 l/min

Filling flowmeter type selection.

Fig. 48

The filling flowmeter allows displaying the tank filling data in real time. Enter the values for the filling flowmeter installed on the system: the table below indicates the values that are automatically set when selecting the flowmeter code. If the installed filling flowmeter is not displayed, select **Other** and enter the relevant values.

ORION FLOWMETERS							WOLF FLOWMETERS						
Type	Constant		Minimum flowrate		Maximum flowrate		Type	Constant		Minimum flowrate		Maximum flowrate	
	pls/l	pls/gal	l/min	GPM	l/min	GPM		pls/l	pls/gal	l/min	GPM	l/min	GPM
462XXA4XXXX	300	1135	10	2.60	200	52.8	462x4xxx	250	946	10.0	2.6	200	52.8
4622XA5XXXX	150	568	20	5.30	400	105.7	462x5xxx	132	500	20.0	5.3	400	105.7
4622XA6XXXX	100	378	30	7.90	600	158.5	462x7xxx	60	227	40.0	10.6	800	211.3
Other	625	2366	10	2.60	200	52.8							

Type:

Orion 462 XX A4 XXXX

Orion 4622 X A5 XXXX

Orion 4622 X A6 XXXX

Wolf 462 X 4 XXX

Wolf 462 X 5 XXX

Wolf 462 X 7 XXX

Other

Orion 10 = 200 l/min (2.6 = 53 GPM)

Fig. 49

• Type

Indicate the type of flowmeter installed.

Constant:

00300 pls/l

Minimum value: 1 pls/l

Maximum value: 32000 pls/l

Flowmeter constant setting.

Fig. 50

• Constant

Indicate the constant of the installed filling flowmeter.

Minimum flowrate:

010.0 l/min

Minimum value: 0.1 l/min

Maximum value: 999.9 l/min

Minimum flowrate limit.

Fig. 51

Maximum flowrate:

200.0 l/min

Minimum value: 0.1 l/min

Maximum value: 999.9 l/min

Maximum flowrate limit.

Fig. 52

• Minimum flowrate
• Maximum flowrate



The items **Minimum flowrate** and **Maximum flowrate** can be modified only when the option **Other** (Fig. 49) is enabled.

Indicate the minimum and maximum pressure for the filling flowmeter installed on the system.

5.1.5 Pressure sensor

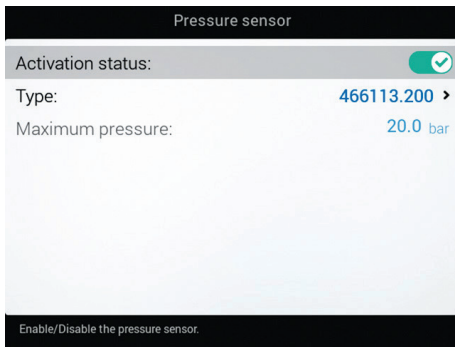


Fig. 53

• Status

To configure the items on this menu, you must enable the pressure sensor (Sensor enabled / Sensor enabled - cannot be modified / Sensor disabled).
 - Enter the values for the pressure sensor installed on the system.

The table below indicates the values that are automatically set selecting the sensor code. If the installed sensor is not displayed, select **Other** and enter the relevant values.

ARAG PRESSURE SENSOR		
Type	Maximum pressure	
	bar	PSI
ARAG 466113.200	20.0	290
ARAG 466113.500	50.0	725
Other	50.0	725

Depending on the basic settings (**Flowrate reference sensor**, chap. 4), the pressure sensor, once properly set up, can perform different functions:

- **Pressure sensor**: the pressure measured by the sensor is used to calculate the spray rate.
- **Flowmeter**: the pressure sensor displays ONLY the job pressure.
- **Both**: the pressure sensor displays the job pressure when the machine works within the flowmeter limits. When the flowmeter operates outside the limits the pressure measured by the sensor is used to calculate the spray rate.



Fig. 54


• Type

Indicate the type of pressure sensor installed.



Fig. 55

• Maximum pressure

 The item **Maximum pressure** can be modified only when the option **Other** is enabled.
 Indicate the full scale of the pressure sensor installed on the system.

5.1.6 Valves

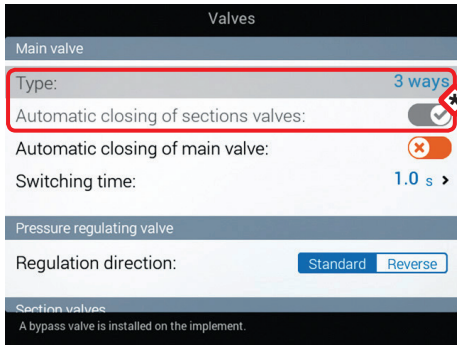


Fig. 56

Set the type of valve installed on the system and the relevant values.

⚠ The items **Main valve > Type** and **Automatic closing of sections valves** appear as a **REMINDER**: they are enabled during guided setup (chap. 4). Therefore, they cannot be modified from this screen.

MAIN VALVE

• Type (REMINDER)

Main control valve installed. Available options are:
None, **2 ways** (drain valve), **3 ways** (main valve)

• Automatic closing of sections valves (REMINDER)

On a Seletron system, automatic closing of sections is enabled by default ("M" type).
 In this mode the section valves are opened or closed by acting on the main control valve depending on the way the controls of the single section valves are set, i.e.:
 - if the controls of the sections are set to OFF and the main control is operated, the sections will remain closed;
 - if the control of one or more section valves is ON, by closing or opening the main valve, also the section valves will be closed or opened.

• Automatic closing of main valve

When all section valves are closed and this option is enabled, main valve automatic closing is performed as well.
 (✔ Automatic closing of main valve enabled / ✘ Automatic closing of main valve disabled)

CONTINUES "• Switching time" on page 22 >>>



5.1.7 Valves

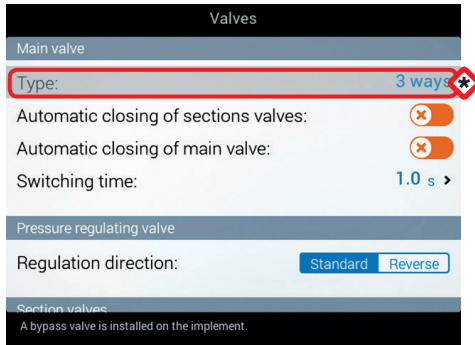


Fig. 57

Set the type of valve installed on the system and the relevant values.

The items **Main valve > Type** is shown as a **REMINDER**: it is activated during the guided setup (chap. 4). It can not therefore be modified on this screen.

MAIN VALVE

• Type (REMINDER)

Main control valve installed. Available options are:
None, 2 ways (drain valve), **3 ways** (main valve)

• Automatic closing of sections valves

Allows to enable/disable the section automatic closing when the main control valve is closed.

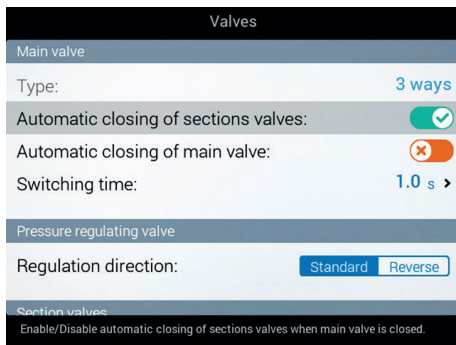


Fig. 58

• **"P" operation mode (option):**
the section valves are controlled independently.
Control functions on the main valve do not affect section valve opening or closing.

• **"M" operation mode (option):**
section valves are opened or closed by acting on the main control valve depending on the way the controls of the single section valves are set, i.e.:
-if the controls of the sections are set to OFF, and the main control is operated, the sections will remain closed;
-if the control of one or more section valves is ON, by closing or opening the main valve, also the section valves will be closed or opened.

ENABLED MODE CANNOT BE MODIFIED: this condition occurs when no main valve is installed on the system or the installed one is a 2 Ways valve.

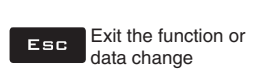
• Automatic closing of main valve

When all section valves are closed and this option is enabled, main valve automatic closing is performed as well.

Automatic closing of main valve enabled / Automatic closing of main valve disabled

DISABLED MODE CANNOT BE MODIFIED: this condition occurs when no main valve is installed on the system.

CONTINUES "• Switching time" on page 22 >>>



• Switching time

Indicate the time between the moment when the command is sent to the main valve and the actual moment in which spraying starts / stops.

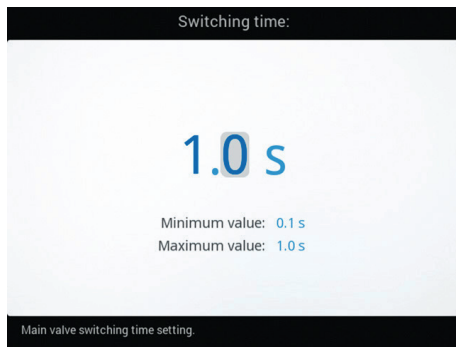
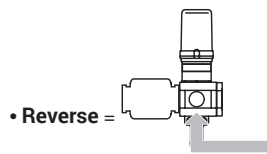
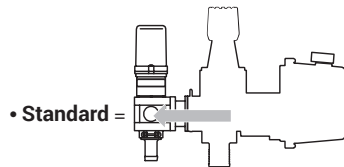


Fig. 59

PRESSURE REGULATING VALVE

• Regulation direction

Indicate the type of installed control valve. Available options are:



CONTINUES >>>

F1 Enter selected character

F2 Delete selected character

F7 **F8** Scroll (LEFT / RIGHT)

F4 **F6** Scroll (UP / DOWN)

Data increase / decrease

OK Confirm access or data change

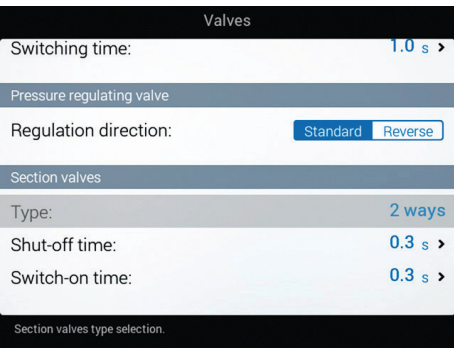
ESC Exit the function or data change



Par. 1.4

MODE

SECTION VALVES



Type (REMINDER)


On a Seletron system, section valves are of the **2 ways** type (without calibrated backflows) and are automatically set.

CONTINUES "• Shut-off time" >>>

Fig. 60

SECTION VALVE

SECTION VALVES



Type

Indicate the type of installed section valves. Available options are:

- **2 Ways** (valves without calibrated backflows)
- **3 Ways** (valves with calibrated backflows)

CONTINUES "• Shut-off time" >>>

Fig. 61

Shut-off time:

0.3 s

Minimum value: 0.1 s
Maximum value: 1.0 s

Section valves shut-off time setting.

Fig. 62

Shut-off time

Indicate the time between the moment when the command is sent to the valves and the actual moment in which product output stops.

Switch-on time:

0.3 s

Minimum value: 0.1 s
Maximum value: 1.0 s

Section valves switch-on time setting.

Fig. 63

Switch-on time

Indicate the time between the moment when the command is sent to the valves and the actual moment in which product output starts.

5.1.8 Nozzles data

Nozzles data		
A ISO01	B 0.40 l/min	C 3.0 bar
ISO015	0.60 l/min	3.0 bar
ISO02	0.80 l/min	3.0 bar
ISO025	1.00 l/min	3.0 bar
ISO03	1.20 l/min	3.0 bar
ISO04	1.60 l/min	3.0 bar
ISO05	2.00 l/min	3.0 bar
ISO06	2.40 l/min	3.0 bar

ISO01 nozzle data settings.

Legend:
A Nozzle
B Reference rate
C Reference pressure

Fig. 64

A	
Flowrate:	1.00 l/min >
Pressure:	5.0 bar >
Minimum pressure:	2.0 bar >
Maximum pressure:	10.0 bar >

Flowrate of the nozzle at reference pressure.

Fig. 65

Allows setting the values of 12 types of ISO nozzles and 6 "User" nozzles (A, B, C, D, E, F).

The values for Flowrate and Pressure can be modified for "User" nozzles ONLY, not for ISO nozzles.

- Select the nozzle you wish to set up (Fig. 64).
- Enter the relevant features (Fig. 65).
- If necessary, repeat the setup for each nozzle.

Flowrate:
01.00 l/min
Minimum value: 0.10 l/min Maximum value: 10.00 l/min

Flowrate of the nozzle at reference pressure.

Fig. 66

Pressure:
05.0 bar
Minimum value: 0.1 bar Maximum value: 50.0 bar

Reference pressure of the nozzle.

Fig. 67

• Flowrate
• Pressure

Set the reference flowrate and pressure for the selected nozzle.

The rate of the nozzle being used allows the monitor to calculate the pressure without a pressure sensor.

Minimum pressure:
02.0 bar
Minimum value: 0.1 bar Maximum value: 50.0 bar

Minimum working pressure of the nozzle.

Fig. 68

Maximum pressure:
10.0 bar
Minimum value: 0.1 bar Maximum value: 50.0 bar

Maximum working pressure of the nozzle.

Fig. 69

• Minimum pressure
• Maximum pressure

Set the pressure limits for the selected nozzle. Enable the relevant function on the **Alarms** menu (par. 5.1.13) if you want the computer to trigger an alarm when the nozzle is outside the set range.

For the procedure to be followed when an alarm occurs, please refer to par. 13.1 Error messages.



Pressure limits for the nozzle in use allow the monitor to select the suitable nozzle during spraying, therefore they must be set correctly.

5.1.9 "Fence" nozzles data

This menu is displayed only if the end nozzles are enabled and set to "Fence" nozzles (basic settings, chap. 4).

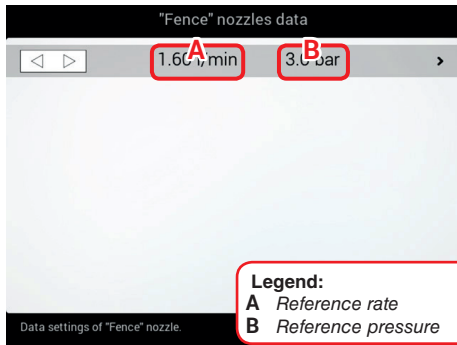


Fig. 70

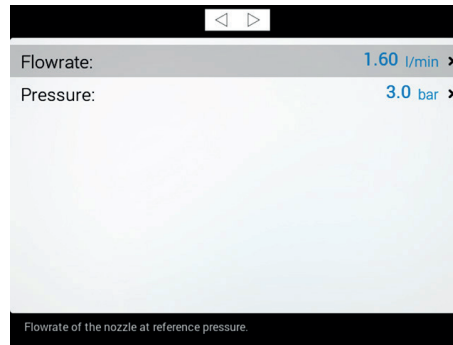


Fig. 71

Allows setting the characteristic data of "Fence" nozzle.
 - Select the nozzle you wish to set up (Fig. 70).
 - Enter the relevant features (Fig. 71).

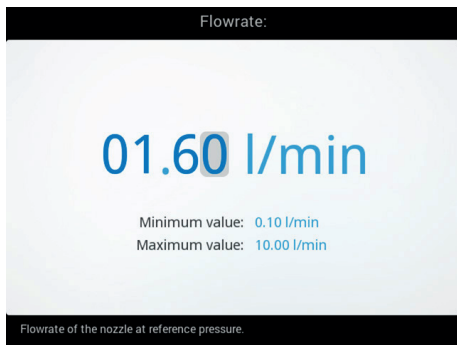


Fig. 72



Fig. 73

- Flowrate
- Pressure

Set the reference flowrate and pressure for the "Fence" nozzle.
 These data allow properly adjusting the application rate when "Fence" nozzles are activated.

CONTINUES "Wheel sensor" on page 26 >>>

5.1.10 Wheel sensor

Information concerning speed is usually received by the GPS, which is connected directly to the monitor. If there is no GPS signal this menu allows to use the wheel sensor as a source of speed data instead of the GPS, and therefore to calculate the data on the basis of the pulses received by the speed sensor installed on the wheel.

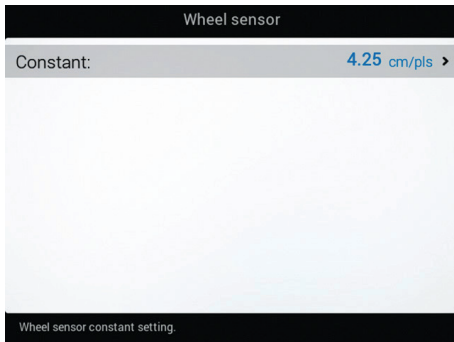


Fig. 74

• Constant

Allows to enter the wheel constant value calculated with the suitable formula. The wheel constant can be calculated with a good approximation by detecting the distance traveled by the wheel with the speed sensor. The longer the distance traveled, the more accurate the wheel constant calculation.

$$K_{wheel} = \frac{\text{distance traveled (cm)}}{\text{no. of detection points} \times \text{wheel rpm}}$$

<distance traveled> distance expressed in cm covered by the wheel along measurement travel;
 <no. of measurement points> number of measurement points (e.g., magnets, bolts, etc.), mounted on wheel;
 <no. of wheel revolutions> number of wheel revolutions required to travel measurement distance.



Take measurements with tires at the operating pressure.

This test must be performed on medium-hard terrain; for application to very soft or very hard terrain, rolling diameter may vary, leading to inaccurate output calculation; when this is the case, repeat the procedure.

During the test, cover the distance with the tank filled up to half capacity with water.

5.1.11 Rev counter

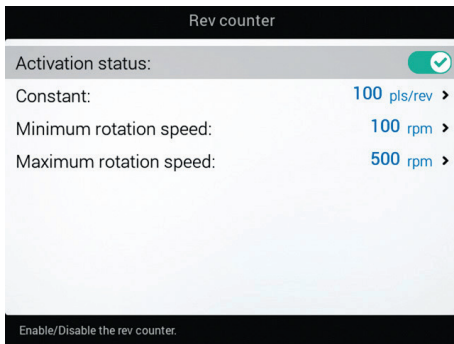


Fig. 75

• Status

To configure the items on this menu, you must enable the rev counter (🟢 Rev counter enabled / 🛑 Rev counter disabled). Enter the values for the rev counter installed on the system.

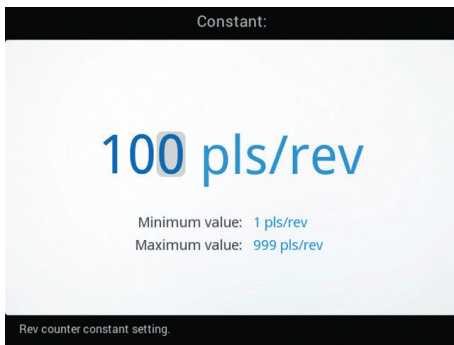


Fig. 76

• Constant

Indicate the constant of the installed rev counter.

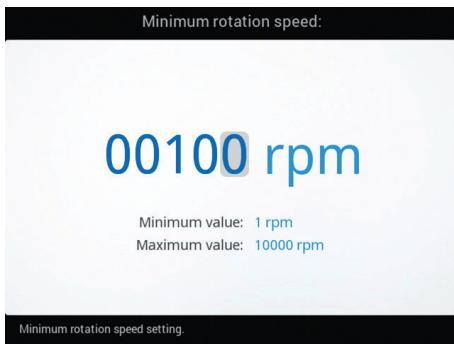


Fig. 77

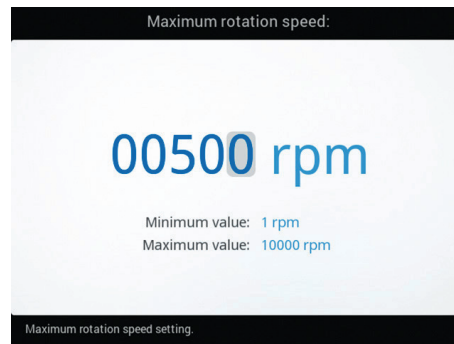


Fig. 78

• Minimum rotation speed
 • Maximum rotation speed

Enable the relevant function on the **Alarms** menu (par. 5.1.13) if you want the computer to trigger an alarm when, during spraying, the measured RPM is outside the set range. For minimum speed, the control is active only when the spraying is active (main switch ON). **For the procedure to be followed when an alarm occurs, please refer to par. 13.1 Error messages.**

5.1.12 Tank

Tank level source:
Manual / Filling flowmeter

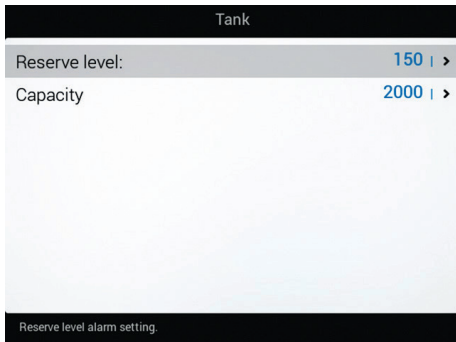


Fig. 79

Tank level source:
Level sensor

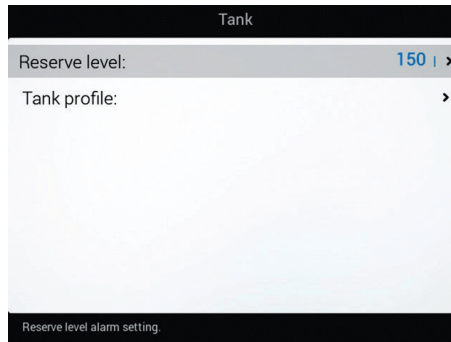


Fig. 80

Allows setting the tank values.

The settings will change according to the selected tank level source (basic settings, chap. 4).

TANK LEVEL SOURCE: MANUAL / FILLING FLOWMETER

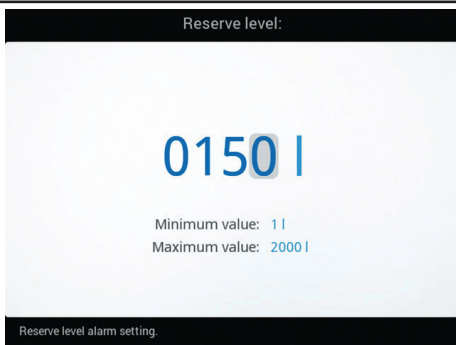


Fig. 81

• Reserve level

Indicate range value.

The tank alarm is triggered when, during spraying, the tank level falls below the set value.

For the procedure to be followed when an alarm occurs, please refer to par. 13.1 Error messages.



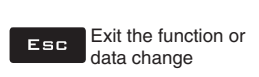
Fig. 82

• Capacity

Indicate tank capacity.



Data increase / decrease



Par. 1.4

TANK LEVEL SOURCE: LEVEL SENSOR

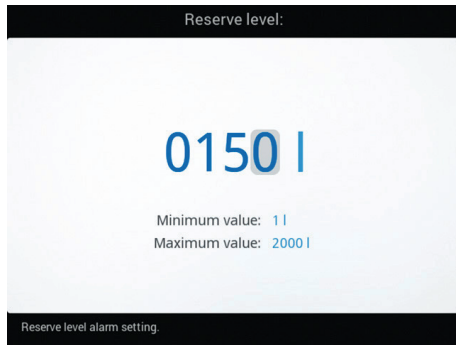


Fig. 83

• Reserve level

Indicate range value.
The tank alarm is triggered when, during spraying, the tank level falls below the set value.
For the procedure to be followed when an alarm occurs, please refer to par. 13.1 Error messages.

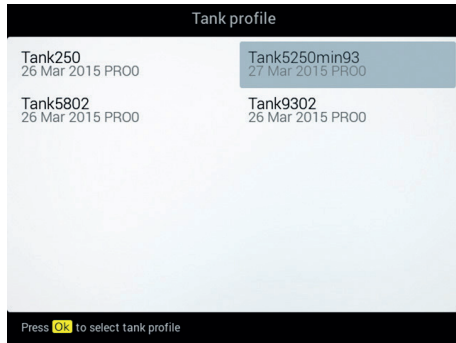


Fig. 84

• Tank profile

The tank profiles can be loaded or saved on the internal memory so as to reconfigure the computer if necessary, solve problems or configure another tank without repeating all operations manually.
In this menu, indicate the current tank profile.
The profiles are ONLY available if copied onto the internal memory (par. 10.4.4), or after calibrating the tank profile (par. 5.1.16).
After loading a tank profile it is NECESSARY to perform a zero calibration of the level sensor (Tank level zero value, par. 5.1.16).

5.1.13 Alarms

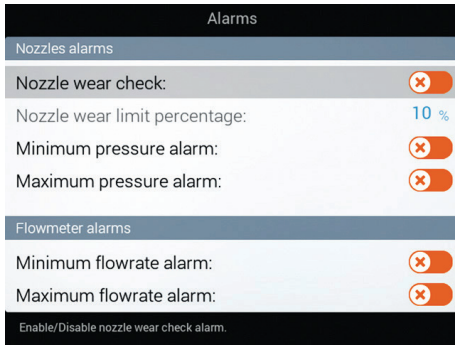


Fig. 85

Set monitor job alarms.

For the procedure to be followed when an alarm occurs, please refer to par. 13.1 Error messages.

NOZZLES ALARMS

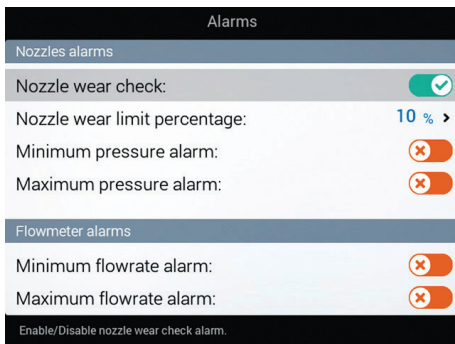


Fig. 86



Fig. 87

• Nozzle wear check

To configure the items on this menu, you must enable the nozzle wear check:

- Check enabled
- Check disabled

This alarm can be enabled ONLY if the system features both flowmeter and pressure sensor.

• Nozzle wear limit percentage

Set the acceptable threshold: the monitor compares the effective rate read by the flowmeter and the one calculated by the pressure sensor.

When the difference between the two rate values exceeds the set percentage the alarm is triggered.

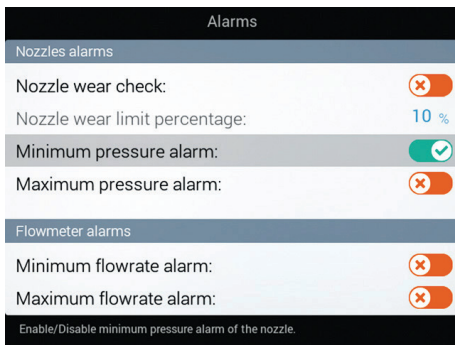


Fig. 88

• Minimum pressure alarm
• Maximum pressure alarm

Allows to enable/disable minimum and maximum pressure alarms for the nozzles in use.

- Select the item you wish to set up.
- Enable/disable the alarm (Alarm enabled / Alarm disabled).
- Repeat the setup for each alarm.

Outside the range set in the **Minimum pressure / Maximum pressure** menus (par. 5.1.8 Nozzles data), the computer triggers an alarm.

CONTINUES >>>

FLOWMETER ALARMS

Alarms	
Nozzles alarms	
Nozzle wear check:	
Nozzle wear limit percentage:	10 %
Minimum pressure alarm:	
Maximum pressure alarm:	
Flowmeter alarms	
Minimum flowrate alarm:	
Maximum flowrate alarm:	
Enable/Disable minimum flowrate alarm.	

• Minimum flowrate alarm
• Maximum flowrate alarm

Allows to enable/disable minimum and maximum flowrate alarms for the flowmeter.

- Select the item you wish to set up.
- Enable/disable the alarm (Alarm enabled / Alarm disabled).
- Repeat the setup for each alarm.

Outside the range set in the **Minimum flowrate / Maximum flowrate** menus (par. 5.1.3 Flowmeter), the computer triggers an alarm.

Fig. 89

REV COUNTER ALARMS

Alarms	
Maximum pressure alarm:	
Flowmeter alarms	
Minimum flowrate alarm:	
Maximum flowrate alarm:	
Rev counter alarms	
Minimum rotation speed alarm:	
Maximum rotation speed alarm:	
Enable/Disable minimum rotation speed alarm.	

• Minimum rotation speed alarm
• Maximum rotation speed alarm

Allows to enable/disable minimum and maximum speed alarms for the rev counter.

- Select the item you wish to set up.
- Enable/disable the alarm (Alarm enabled / Alarm disabled).
- Repeat the setup for each alarm.

Outside the range set in the **Minimum rotation speed / Maximum rotation speed** menus (par. 5.1.11 Rev counter), the computer triggers an alarm.

Fig. 90

5.1.14 Working parameters

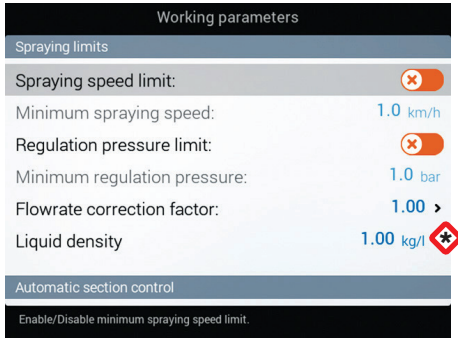


Fig. 91

Set the farming machine job limits.

Item Tank level correction factor is available only if Tank level sensor was selected, under 4 "Basic settings".

SPRAYING LIMITS

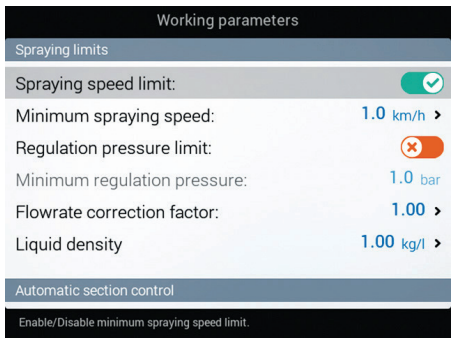


Fig. 92



Fig. 93

• Spraying speed limit

To configure the items on this menu, you must enable the speed limit:

- Limit enabled
- Limite disattivato

• Minimum spraying speed

Set the minimum spraying speed: the monitor closes the main valve when the tractor speed is lower than the set value.

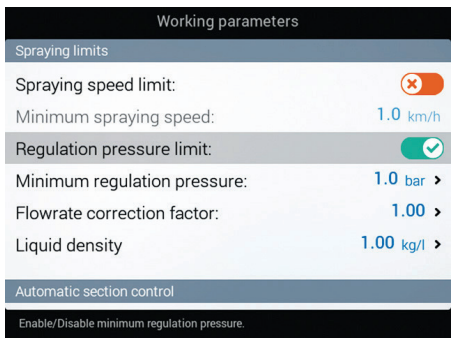


Fig. 94



Fig. 95

• Regulation pressure limit

To configure the items on this menu, you must enable the pressure limit:

- Limit enabled
- Limite disattivato

• Minimum regulation pressure

Set the minimum spraying pressure: the monitor blocks the automatic regulation of the proportional valve when the pressure is lower than the set value.

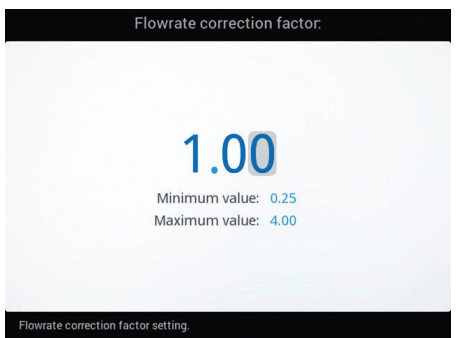


Fig. 96

• Flowrate correction factor

When using a paddle flowmeter and the sprayed fluid has a different viscosity than that of water, the computer could display wrong measurements; to correct them change the flowrate correction factor:

- if at the end of the spraying the tank still contains fluid, reduce the factor;
- if the fluid finishes before the job has ended, increase the factor.



Flowmeters of the ORION series (code 462xxx) are not affected by the viscosity difference of the fluids: set the value to 1.00.

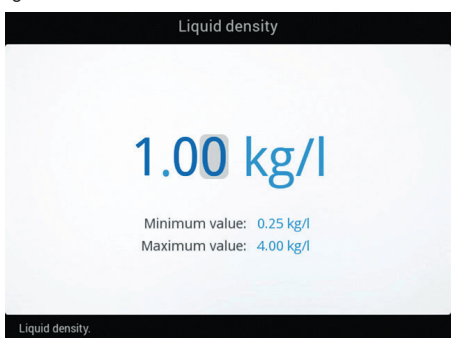


Fig. 97

• Tank level correction factor

If the sprayed fluid is lighter than water, the device may indicate wrong measurements; to correct this measurement, edit the sprayed liquid weight, referred to 1 liter of product.

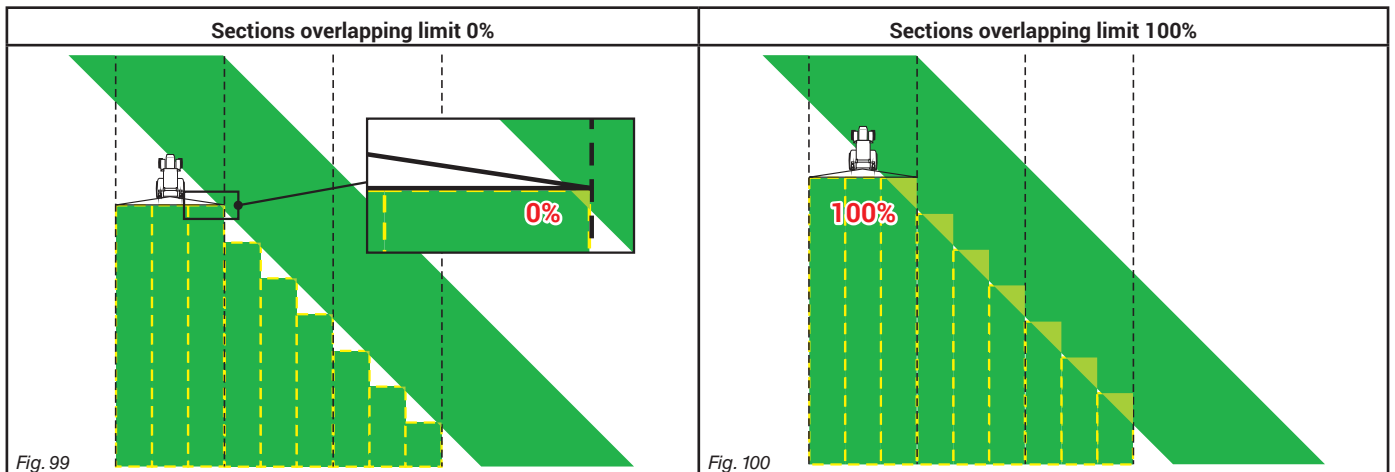
AUTOMATIC SECTION CONTROL

Working parameters	
Flowrate correction factor:	1.00 >
Liquid density	1.00 kg/l >
Automatic section control	
Sections overlapping limit:	100 %
Perimeter overlapping limit:	0 %
Spray closing delay:	0.0 m >
Spray opening advance:	0.0 m >
Sections maximum overlapping limit setting.	

Sections overlapping limit

Set the acceptable threshold for overlapping of already-sprayed areas. When this value is exceeded, the monitor restores the correct spraying: depending on the section management mode enabled (par. 9.7 Boom section management), the monitor will prompt the operator to close the relevant valves or proceed to the automatic closing of the spraying points.

Fig. 98



Working parameters	
Flowrate correction factor:	1.00 >
Liquid density	1.00 kg/l >
Automatic section control	
Sections overlapping limit:	100 %
Perimeter overlapping limit:	0 %
Spray closing delay:	0.0 m >
Spray opening advance:	0.0 m >
Perimeter overlapping limit setting.	

Perimeter overlapping limit

Set the acceptable threshold for overlapping of spraying with respect to field perimeter. When this value is exceeded, the monitor restores the correct spraying: depending on the section management mode enabled (par. 9.7 Boom section management), the monitor will notify the operator that the section valves spraying outside the field perimeter must be opened or closed, or proceed to the automatic opening/closing of the spraying points.



The following conditions are required in order to use this setup:


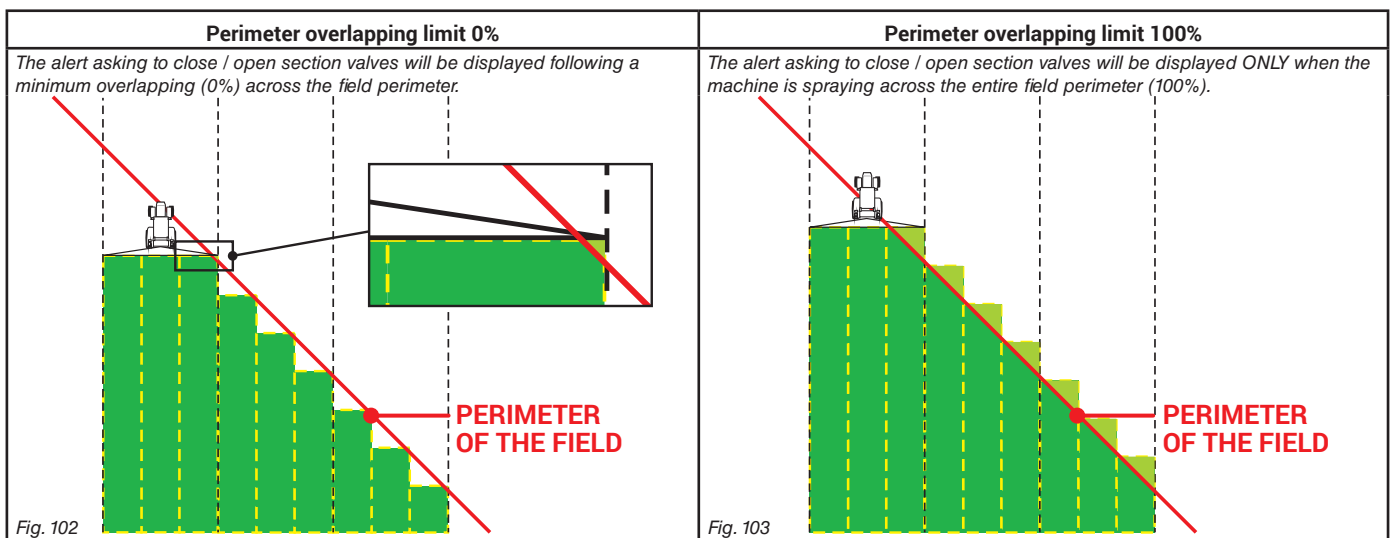

- Drawing the field perimeter (red line in the figures) using the function F4 Surface (par. 12.4).
- Enabling automatic section management: the icon  on the guidance screen indicates that automatic management is enabled.

Fig. 101



CONTINUES >>>

F1 Enter selected character	F2 Delete selected character	F7 F8 Scroll (LEFT / RIGHT)	F4 F6 Scroll (UP / DOWN)	Data increase / decrease	OK Confirm access or data change	ESC Exit the function or data change	 Par. 1.4
------------------------------------	-------------------------------------	---	--	--------------------------	---	---	---

• Spray closing delay

Indicate the distance corresponding to the delayed closing of sections during spraying, to ensure correct spraying range.

NOTE: Negative values indicate that sections are closed in advance with respect to the calculated point.

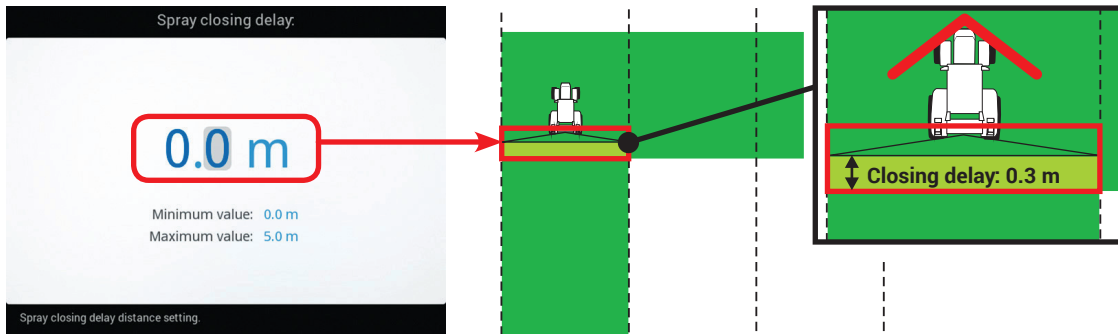


Fig. 104

Fig. 105

• Spray opening advance

Indicate the distance corresponding to the advanced opening of sections during spraying, to ensure correct spraying range.

NOTE: Negative values indicate that section opening is delayed with respect to the calculated point.

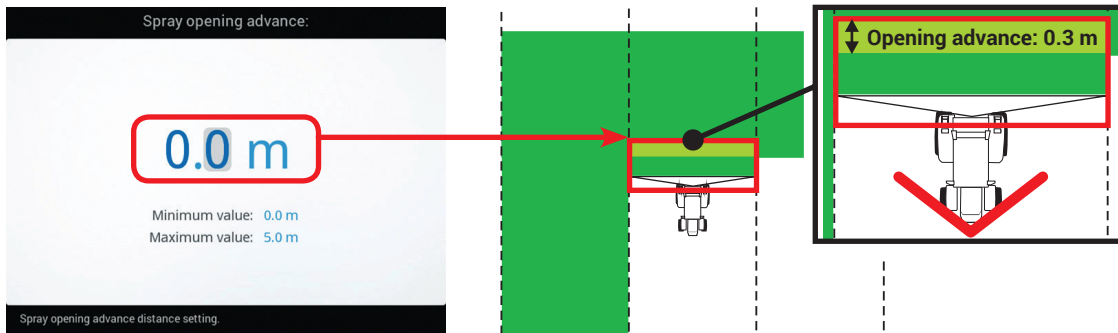


Fig. 106

Fig. 107

GUIDANCE

• Steering radius

By setting this value, an acoustic alarm will indicate the exact moment when the operator must steer in order to align the machine with the following track, avoiding unsprayed or overlapping areas between the two sprays. **The acoustic alarm may be enabled or disabled from the User > Steering warning menu (par. 5.6.4).** This distance should correspond to the implement steering radius (A in Fig. 109), used at the end of the field to change driving direction and resume spraying on the next track, but it will have to be adjusted according to the characteristics of the operator and the speed of the machine.

The alarm is triggered ONLY if the direction of the machine is at an angle of more than 85° with respect to the next track and the straight driving mode is selected (par. 12.2).

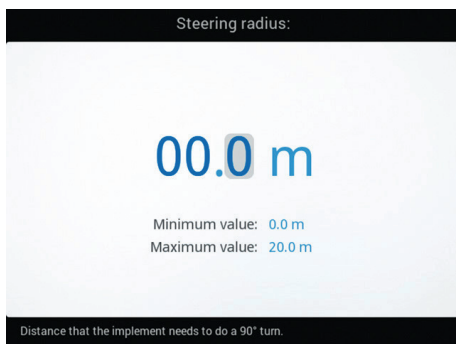


Fig. 108

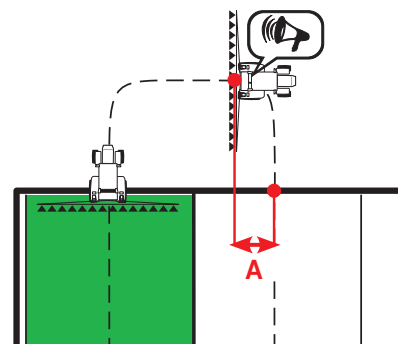


Fig. 109

CONTINUES >>>

• Reference lines distance offset

This value allows changing the distance between the reference tracks.

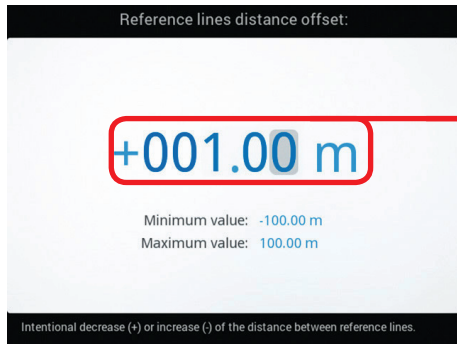


Fig. 110

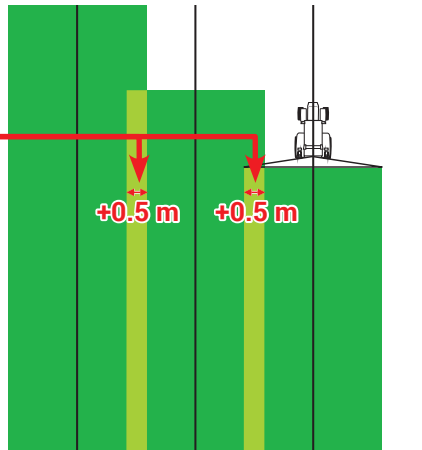


Fig. 111

When the value is positive, the distance between the reference tracks (black lines) decreases. The spray lateral sides overlap.

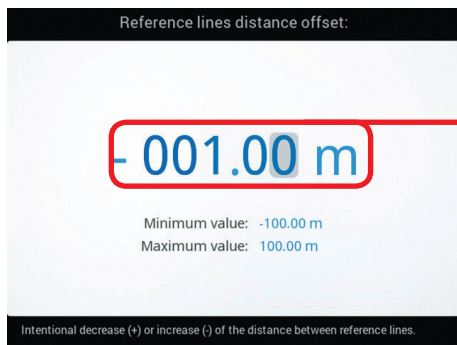


Fig. 112

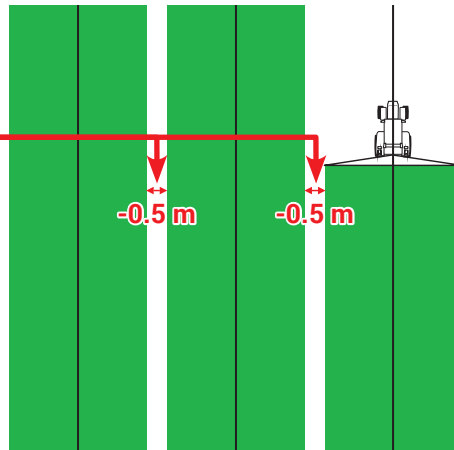
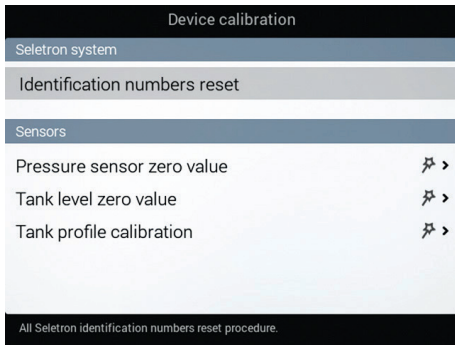


Fig. 113

When the value is negative, the distance between the reference tracks (black lines) increases. Unsprayed spaces are left between one spray and the other.

seleTRON MODE **ON**

5.1.16 Device calibration

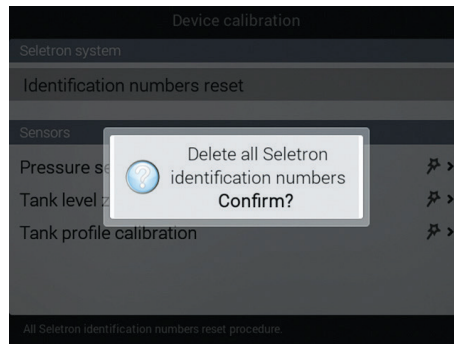
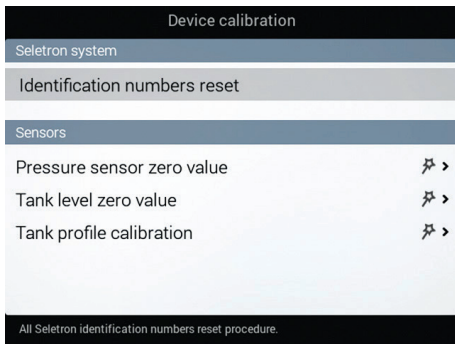


Allows to start calibration for the devices connected to the monitor.

Fig. 114

SELETRON SYSTEM

• Identification numbers reset



Allows to reset the identification numbers of all saved Seletrons, before repeating the pairing procedure (chap. 6).

- Select **Identification numbers reset** (Fig. 115) and press **OK**.
- The message in Fig. 116 is displayed: confirm reset by pressing **OK** again.

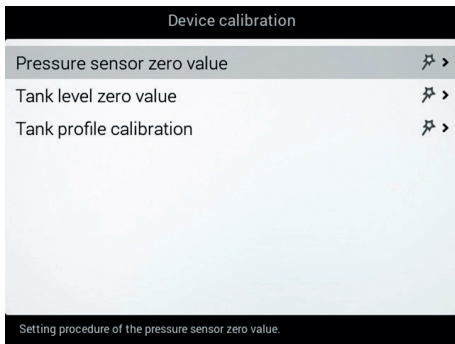
At the end of the reset procedure, DISCONNECT ALL SELETRONS and start a new pairing procedure (chap. 6).

Fig. 115

Fig. 116

SECTION VALVE MODE **ON**

5.1.17 Device calibration



Allows to start calibration for the devices connected to the monitor.

Fig. 117

CONTINUES "• Pressure sensor zero value" on page 37 >>>

F1 Enter selected character

F2 Delete selected character

F7 **F8** Scroll (LEFT / RIGHT)

F4 **F6** Scroll (UP / DOWN)

Data increase / decrease

OK Confirm access or data change

ESC Exit the function or data change

SENSORS

• Pressure sensor zero value

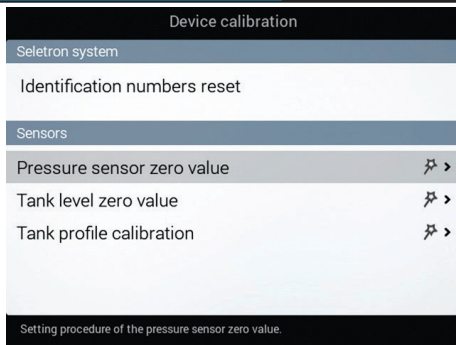


Fig. 118



To access this menu, the pressure sensor must be enabled (☑, par. 5.1.5)

In case a pressure value other than zero is displayed **despite the absence of pressure inside the circuit**, it is necessary to perform zero calibration of the sensor.



Before carrying out any operation, disable the pump by disconnecting it from the power supply. Make sure that the pump is correctly disabled, then open the main valve and all section valves.

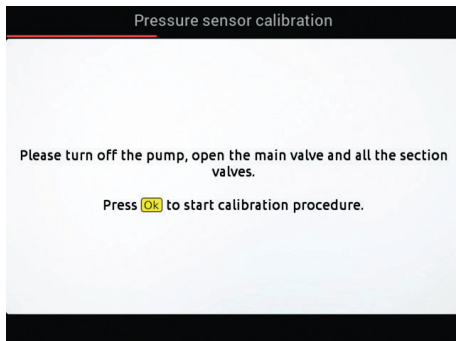


Fig. 119

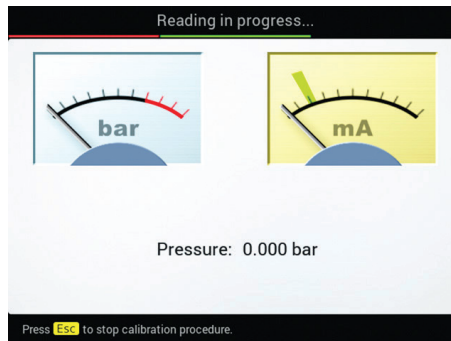


Fig. 120

- 1 Select **Pressure sensor zero value** (Fig. 118) and press **OK**.
- 2 The message in Fig. 119 is displayed: follow the instructions, then start the procedure by pressing **OK**.
- 3 Press **OK** to reset the pressure sensor residual signal.

Value out of range!
If this alarm is displayed, faulty pressure values have been detected: check the sensor operation. If the problem persists, check for residual pressure in the system.

• Tank level zero value

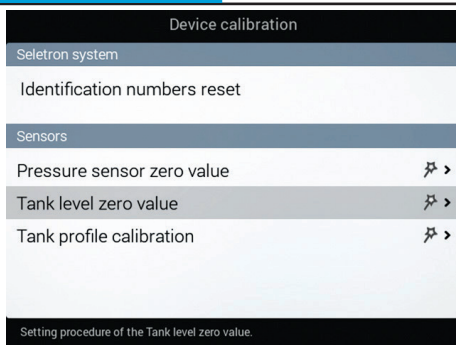


Fig. 121

In the cases below it is necessary to perform the level sensor zero adjustment.
1 The monitor displays the presence of fluid inside the tank, **even when it is empty**;
2 A tank profile has been loaded (par. 5.1.12).



To use this menu the level sensor must be active (Tank level source, chap. 4). Perform the adjustment with empty tank

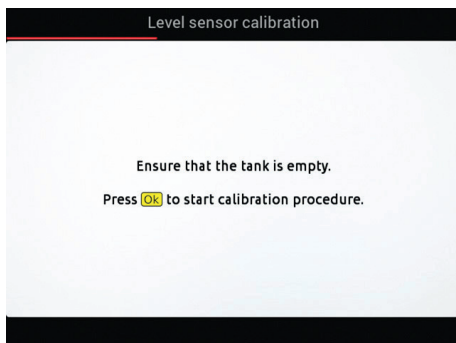


Fig. 122

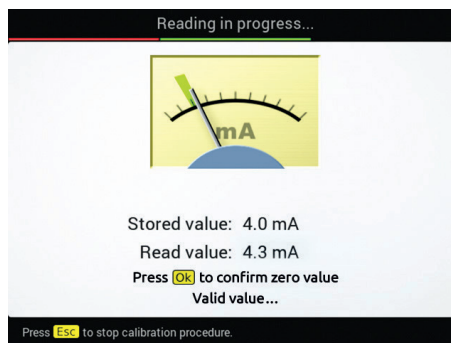


Fig. 123

- 1 Select the item **Tank level zero value** (Fig. 121) and press **OK**.
- 2 The message in Fig. 122 is displayed: follow the instructions, then start the procedure by pressing **OK**.
- 3 Press **OK** to reset the level sensor residual signal.

Value out of range!
If this alarm is displayed, faulty values have been detected: check the sensor operation. If problem persists, check for residual fluid in the tank.

CONTINUES >>>

Tank profile calibration

The calibration of the tank profile is **ONLY** possible if a flowmeter is installed on the system (par. 5.1.3).

! Before starting the procedure carry out the following operations:

- 1 Make sure that the main control is set to OFF (par. "7.2 Operating switches for control unit valves" on page 64 or "5.7.6 Joystick keys configuration" on page 53).
- 2 Fill the tank with clean water **WITHOUT ADDING CHEMICAL SUBSTANCES**. The tank must be full. Visually check the reached level.
- 3 Set the output to the maximum value by acting on the control valve control (nearly 7 s).

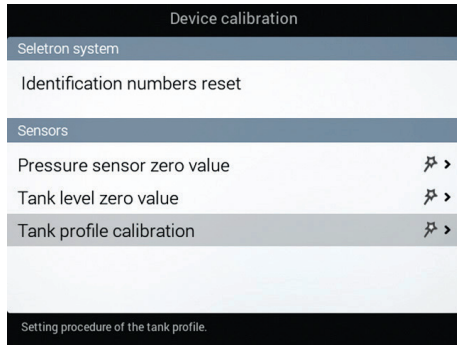


Fig. 124



Fig. 125

4 Select **Tank profile calibration** (Fig. 124) and press **OK**. The calibration starts.

5 The message in Fig. 125 is displayed: follow the instructions, then start the procedure by pressing **OK**.

6 Start the spraying system: open, in succession, all section valves and the main control (**ON**).

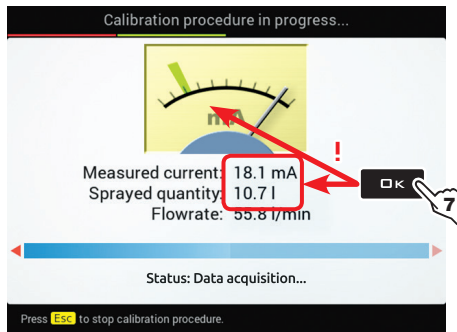


Fig. 126

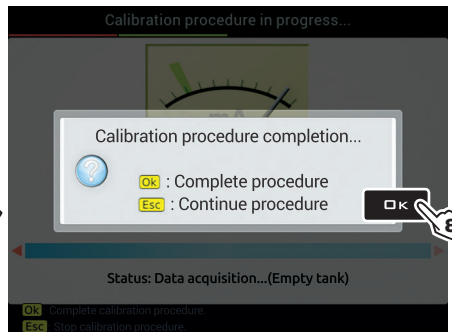


Fig. 127

The display will show in real time the quantity of sprayed water and the calibration status (Fig. 126).

7 When the tank is empty press **OK** to end the procedure: the value read by the level sensor must be lower than 5,0 mA and at least 10 liters must have been sprayed.

8 Press again **OK** again to save the tank profile: the name edit screen is displayed (Fig. 128).

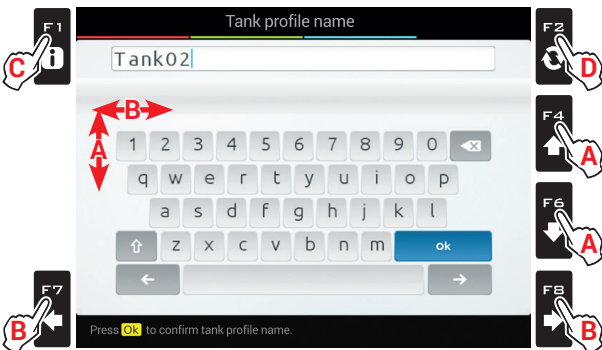


Fig. 128

9 Type in the name:

- A Press in succession to select the character you wish to type (UP / DOWN).
- B Press in succession to select the character you wish to type (RIGHT / LEFT).
- C Press to confirm the selected character
- D Press to delete the character before the cursor
- E Select the symbol **ok** and press **OK** to save the name.

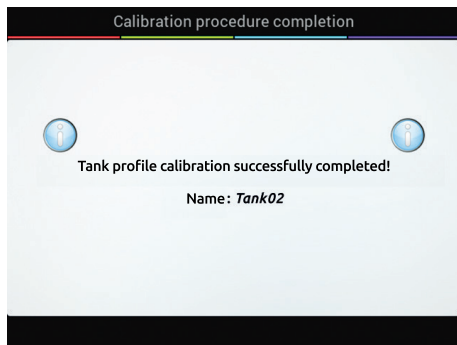


Fig. 129

11 A confirmation message is displayed once the process is completed (Fig. 129). Press **OK** or **ESC**. The calibration is completed.

5.2 IMPLEMENT GEOMETRY (MACHINE WITH TOWED/3-POINT HITCH IMPLEMENT)

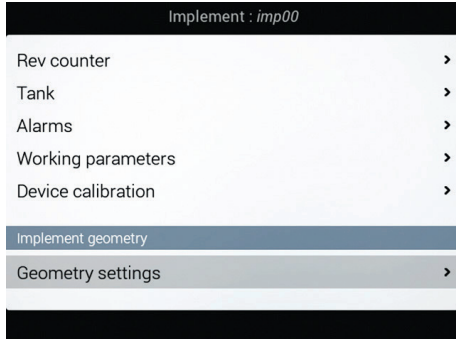


The display layout of this menu depends on the selected basic settings (chap. 4).
FOR GEOMETRY OF SELF-PROPELLED MACHINES REFER TO PAR. 5.5.2 AND 5.5.3.

5.2.1 Geometry settings (TOWED IMPLEMENT)



Settings displayed next will depend on set type of system (chap. 4).



- Enter farming machine measures (Fig. 130).
- Press the arrow keys (UP, DOWN) to move across value descriptions: the image of the selected value will appear on the display.
- Confirm by pressing **OK** to enter setup.
- Set as required.
- Select and enter, one by one, all values.

Fig. 130

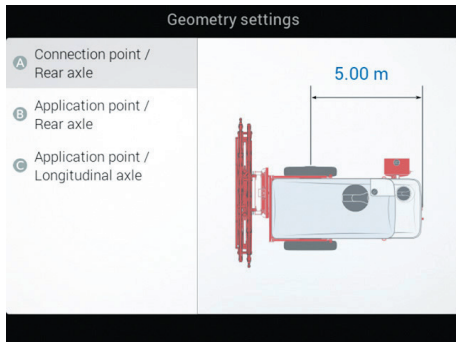


Fig. 131

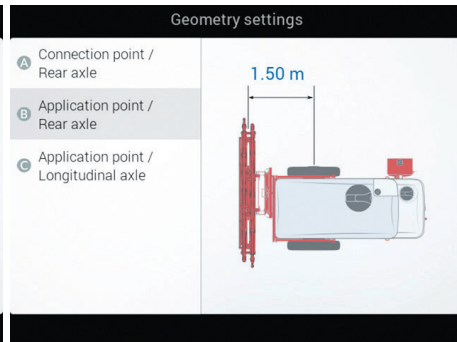


Fig. 132

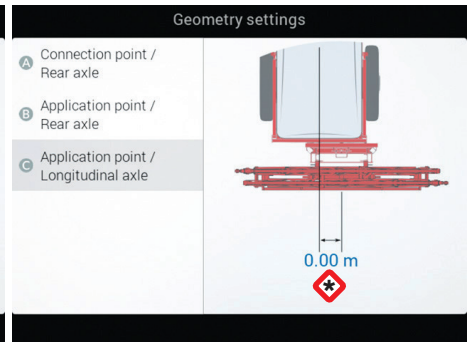


Fig. 133

Application point / Longitudinal axle

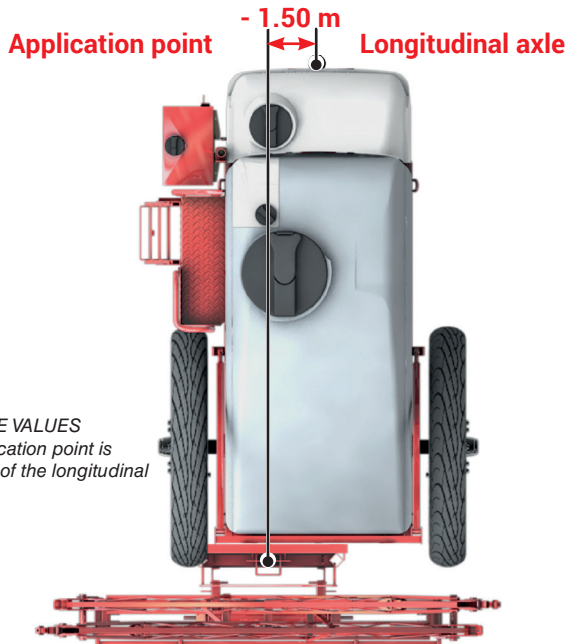


Fig. 134

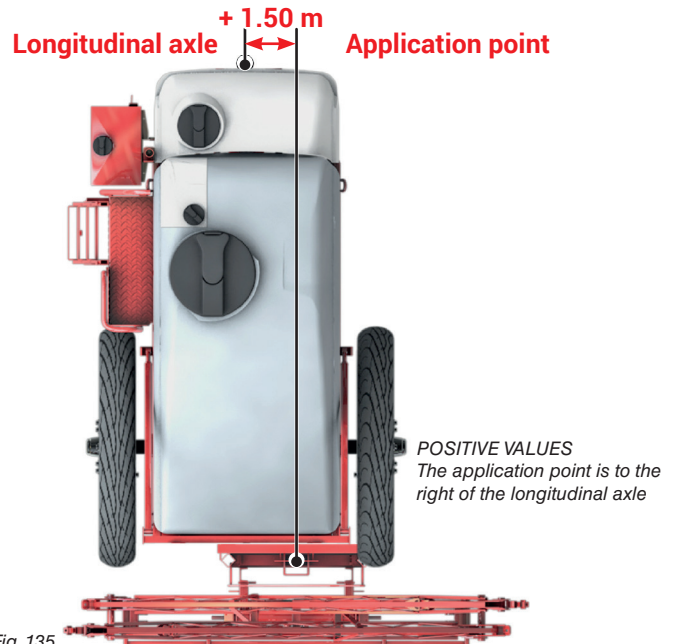


Fig. 135

F1 Enter selected character	F2 Delete selected character	F7 F8 Scroll (LEFT / RIGHT)	F4 F6 Scroll (UP / DOWN)	Data increase / decrease	OK Confirm access or data change	ESC Exit the function or data change	Par. 1.4
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5.2.2 Geometry settings (3-POINT HITCH IMPLEMENT)

 Settings displayed next will depend on set type of system (chap. 4).

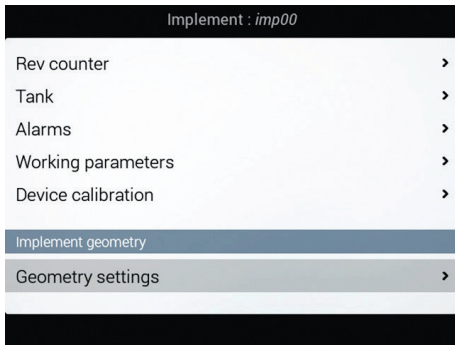


Fig. 136

Enter farming machine measures (Fig. 137).
 - Press the arrow keys (UP, DOWN) to move across value descriptions: the image of the selected value will appear on the display.
 - Confirm by pressing **OK** to enter setup.
 - Set as required.
 - Select and enter, one by one, all values.

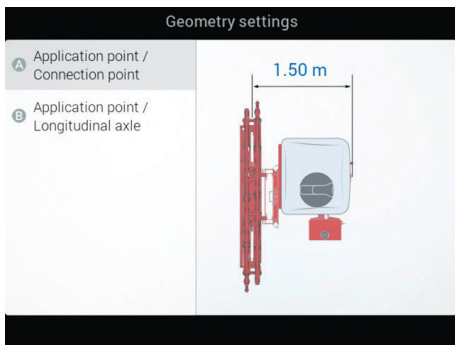


Fig. 137

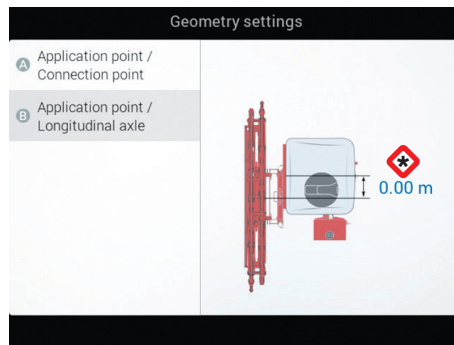


Fig. 138

 Application point / Longitudinal axle

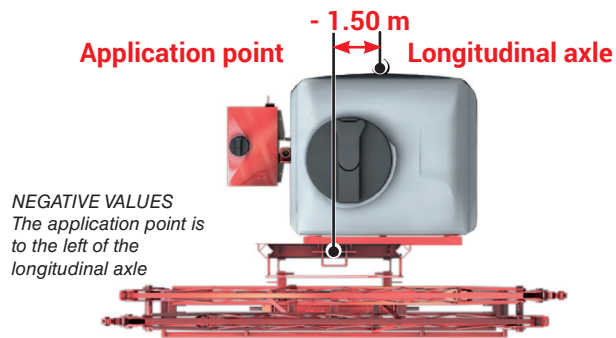


Fig. 139

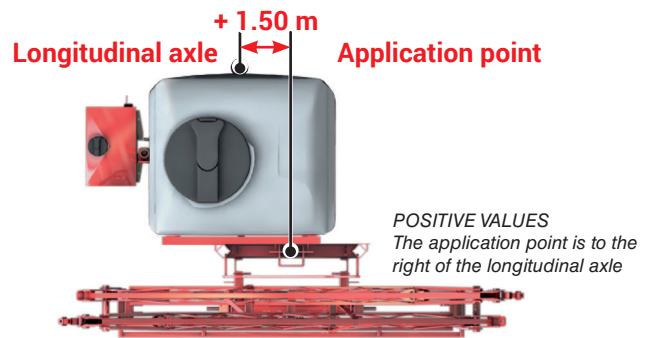



Fig. 140

5.3 GPS RECEIVER SETTINGS

 The items displayed in this menu depend on the basic settings performed (chap. 4).

 **ARAG ACCEPTS NO LIABILITY FOR FAILED OR WRONG OPERATIONS DUE TO THE CONNECTION OF RECEIVERS NOT SUPPLIED BY ARAG.**

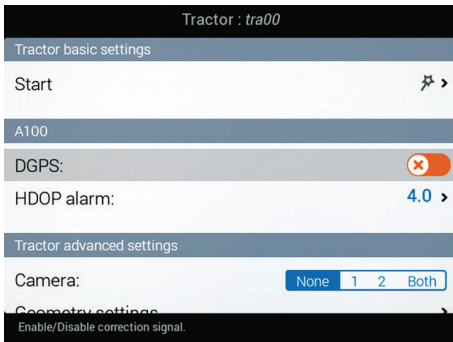


Fig. 141

- A100**
 - DGPS (par. 5.3.1).
 - HDOP alarm (par. 5.3.2).
- Ag Star**
 - HDOP alarm (par. 5.3.2).
 - Correction type (par. 5.3.4).
- Smart-Ag - Smart 6**
 - Tilt compensation (par. 5.3.3).
 - HDOP alarm (par. 5.3.2).
 - Correction type (par. 5.3.4).
 - Receiver advanced data (par. 5.3.5).
- NMEA**
 - DGPS (par. 5.3.1).
 - HDOP alarm (par. 5.3.2).

5.3.1 DGPS

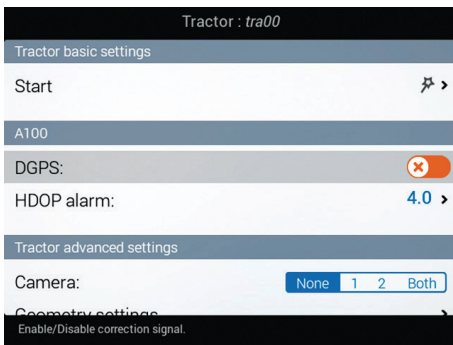





Fig. 142

Allows to enable / disable the DGPS (SBAS) differential correction function
 ( **DGPS correction enabled** /  **DGPS correction disabled**).
 The SBAS differential correction signal is free of charge and available only in some areas of the world.
 This signal allows to obtain a more accurate spraying.
 **WARNING: this function may be used only in Europe (EGNOS), the United States (WAAS) and Japan (MSAS).**

5.3.2 HDOP alarm

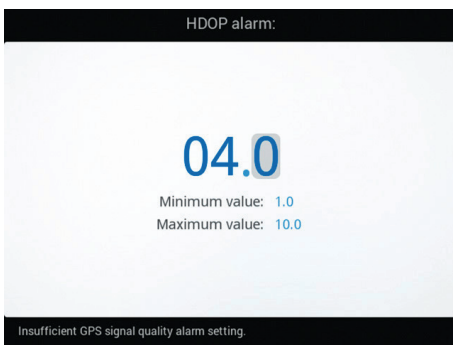


Fig. 143

"HDOP" is the parameter that depends on the position and number of satellites in space that affect the positional precision of the system (longitude and latitude); the lower the value, the higher is the driving precision.
 The precision alarm is triggered when the value of HDOP measured by the GPS receiver is above the set limit. **We recommend NOT to set values above 4.0.**

5.3.3 Tilt compensation

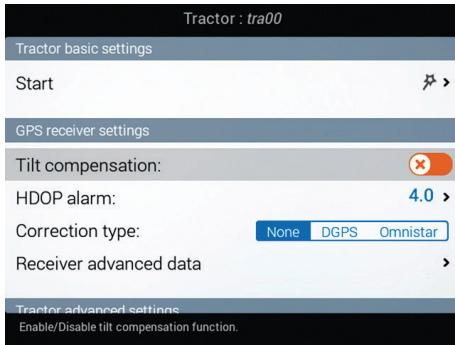


Fig. 144

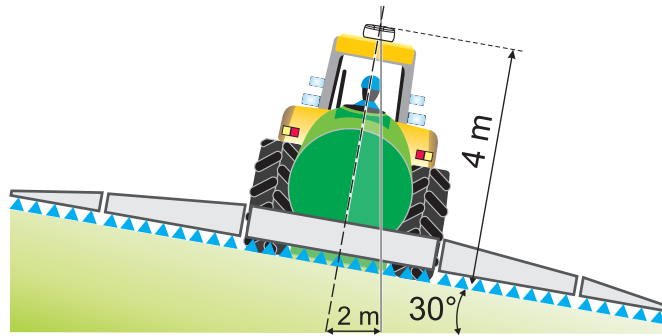


Fig. 145

Allows to enable/disable the tilt compensation function of the vehicle (with antenna only. See ARAG catalog).

(✔️ Tilt compensation enabled / ❌ Tilt compensation disabled).
 The monitor can set off any measurement errors due to ground inclination.
 On steep slopes the error can reach 2 m / 6.5 ft.

5.3.4 Correction type

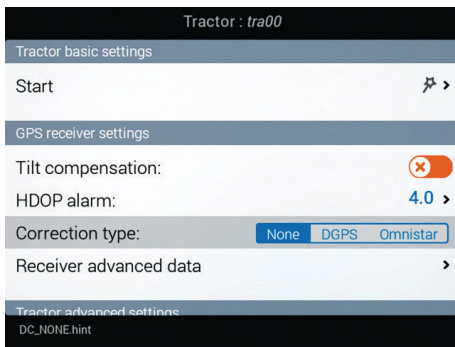


Fig. 146

Allows selecting the DGPS (SBAS) differential correction function or Omnistar®.

- **None** Correction disabled

- **DGPS** DGPS correction enabled:

The SBAS differential correction signal is free of charge and available only in some areas of the world. This signal allows to obtain a more accurate spraying.



WARNING: this function may be used only in Europe (EGNOS), USA (WAAS) and Japan (MSAS).

- **Omnistar** Omnistar® correction enabled (ONLY FOR Smart 6 RECEIVER):

Omnistar® correction signal is available worldwide for a fee and allows to obtain high working accuracy. **WARNING! The differential correction service subscription is not managed by ARAG, but directly by Omnistar®.**

For more information on the subscription, visit Omnistar®'s website.

5.3.5 Receiver advanced data

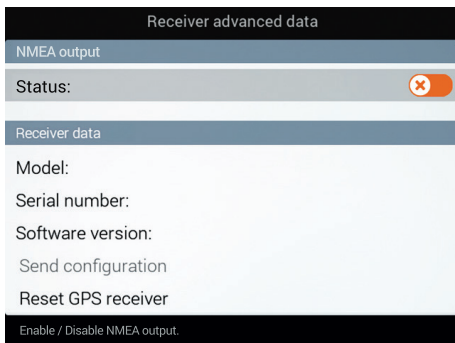


Fig. 147



Fig. 148

Shows the GPS receiver and Omnistar® correction data.

To display Omnistar® select the Region of use in order to correctly activate the Omnistar® service.

5.5 TRACTOR ADVANCED SETTINGS

5.5.1 Camera

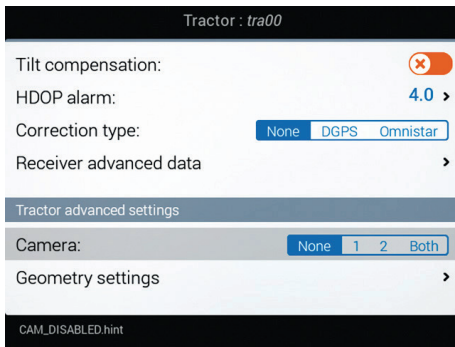


Fig. 150

The monitor can connect to up to 2 cameras in order to monitor the working areas that the operator is unable to see (e.g., when driving in reverse).

From the menu it is possible to enable/disable each single camera individually or both cameras:

- None No camera connected
- 1 1 camera connected to input no.1
- 2 1 camera connected to input no.2
- Both 2 cameras connected

5.5.2 Geometry settings (SELF-PROPELLED WITH REAR BOOM)



Settings displayed next will depend on set type of system (chap. 4).

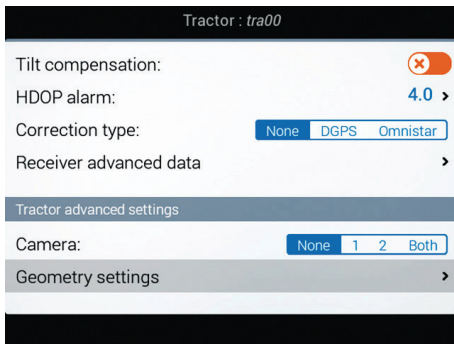


Fig. 151

Enter farming machine measures (Fig. 151).

- Press the arrow keys (UP, DOWN) to move across value descriptions: the image of the selected value will appear on the display.
- Confirm by pressing **OK** to enter setup.
- Set as required.
- Select and enter, one by one, all values.

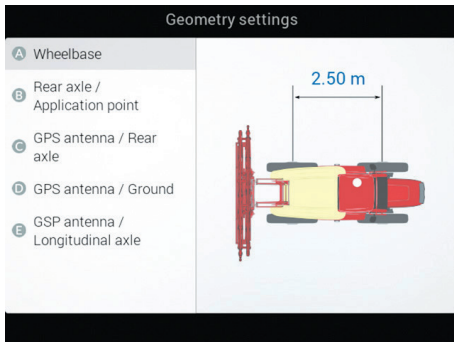


Fig. 152

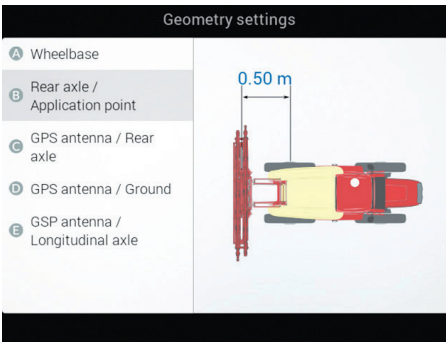


Fig. 153

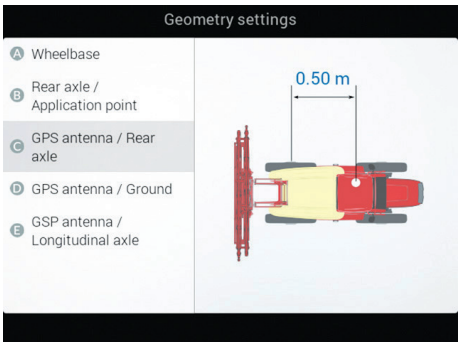


Fig. 154

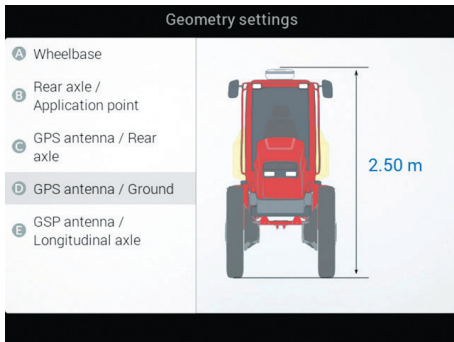


Fig. 155

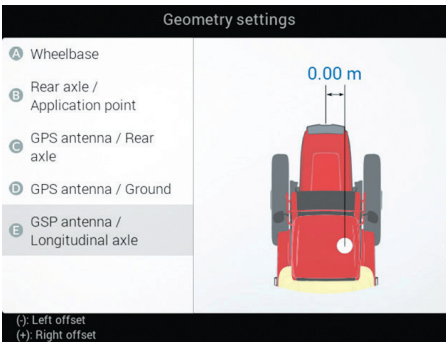


Fig. 156

(-) Left offset
(+) Right offset

F1 Enter selected character	F2 Delete selected character	F7 F8 Scroll (LEFT / RIGHT)	F4 F6 Scroll (UP / DOWN)	Data increase / decrease	OK Confirm access or data change	ESC Exit the function or data change	Par. 1.4
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5.5.3 Geometry settings (SELF-PROPELLED WITH FRONT BOOM)

 Settings displayed next will depend on set type of system (chap. 4).

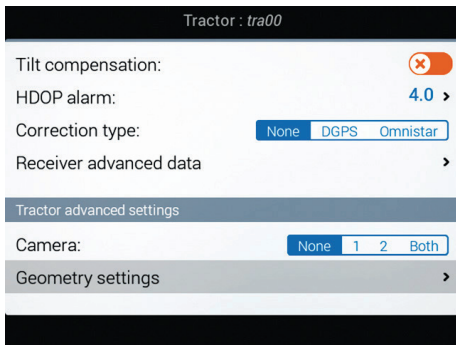


Fig. 157

Enter farming machine measures (Fig. 157).
 - Press the arrow keys (UP, DOWN) to move across value descriptions: the image of the selected value will appear on the display.
 - Confirm by pressing **OK** to enter setup.
 - Set as required.
 - Select and enter, one by one, all values.

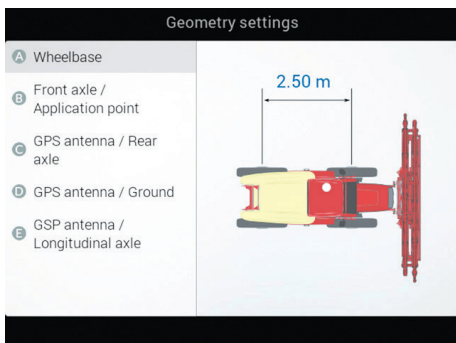


Fig. 158

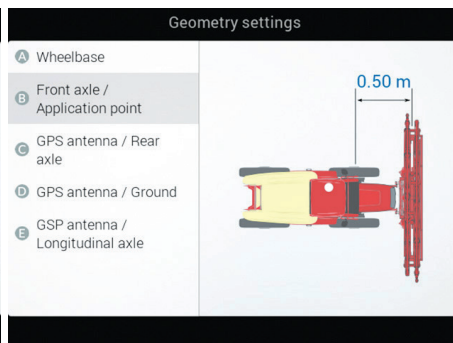


Fig. 159

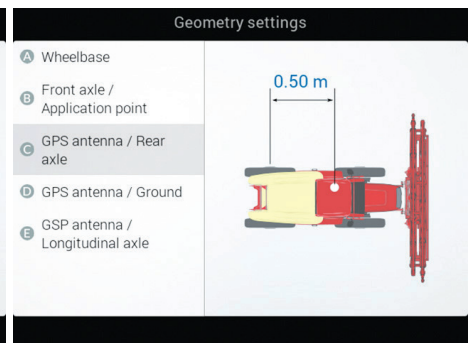


Fig. 160

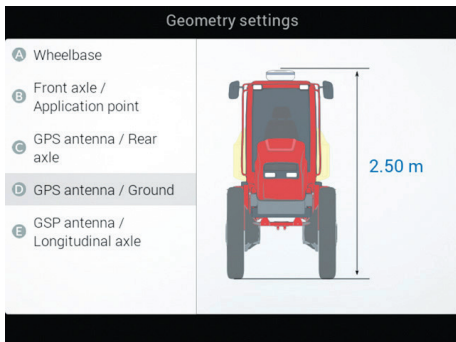


Fig. 161

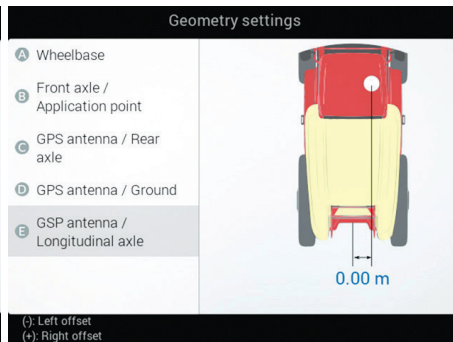


Fig. 162

5.5.4 Geometry settings (TRACTOR WITH TOWED/3-POINT HITCH IMPLEMENT)

 Settings displayed next will depend on set type of system (chap. 4).

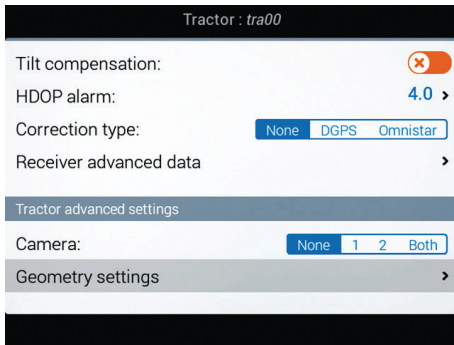


Fig. 163

Enter farming machine measures (Fig. 163).
 - Press the arrow keys (UP, DOWN) to move across value descriptions:
 the image of the selected value will appear on the display.
 - Confirm by pressing **OK** to enter setup.
 - Set as required.
 - Select and enter, one by one, all values.

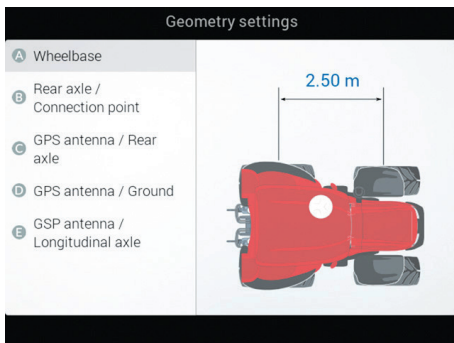


Fig. 164

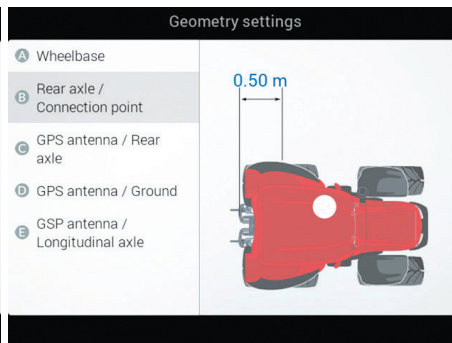


Fig. 165

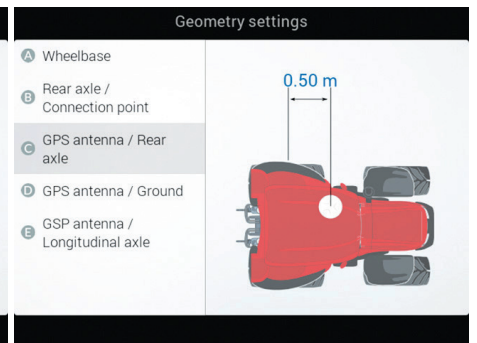


Fig. 166

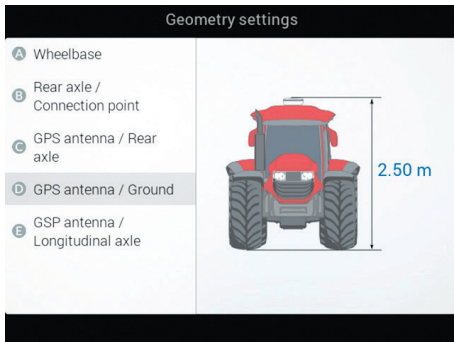


Fig. 167

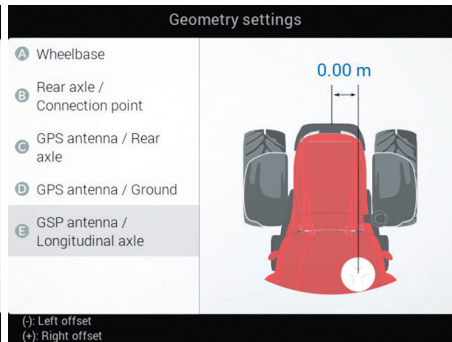



Fig. 168

5.6 USER

 The items displayed in this menu depend on the type of monitor connected (Delta 80, Bravo 400S or Ninja).

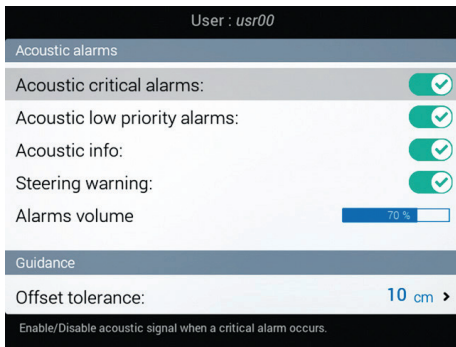


Fig. 169

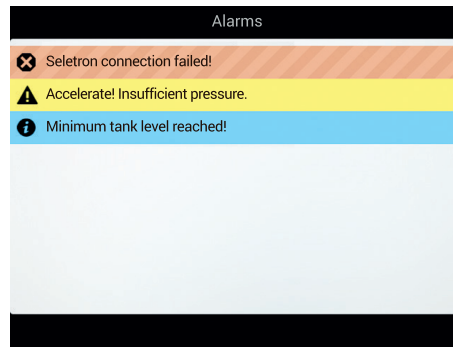


Fig. 170

The monitor features an **Alarm** menu (Fig. 170, accessible from the "Home" menu by pressing **F6**). This page displays all active notifications for the operator. These notifications are rated by importance as **Critical alarms**, **Low priority alarms** and **Info**.

From the **User** menu it is possible to enable / disable acoustic alarms for each notification:

- **Acoustic critical alarms** (par. 5.6.1).
- **Acoustic low priority alarms** (par. 5.6.2).
- **Acoustic info** (par. 5.6.3).
- **Steering warning** (par. 5.6.4).

ACOUSTIC ALARMS

5.6.1 Acoustic critical alarms

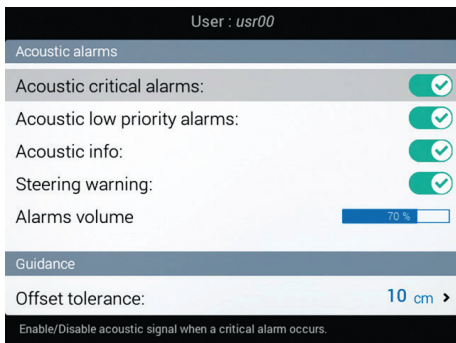




Fig. 171

It allows to enable/disable the acoustic signal when new **Critical alarms** are triggered (Fig. 170).


-  Signal enabled
-  Signal disabled

5.6.2 Acoustic low priority alarms



Fig. 172

It allows to enable/disable the acoustic signal when new **Low priority alarms** (Fig. 170) are triggered.

-  Signal enabled
-  Signal disabled

5.6.3 Acoustic info

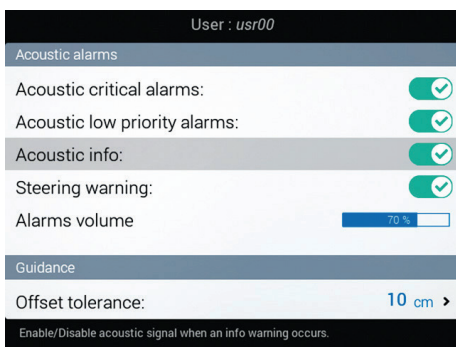




Fig. 173

It allows to enable/disable the acoustic signal when new **Info** (Fig. 170) are triggered.

-  Signal enabled
-  Signal disabled

 F1 Enter selected character	 F2 Delete selected character	 F7 F8 Scroll (LEFT / RIGHT)	 F4 F6 Scroll (UP / DOWN)	Data increase / decrease	 OK Confirm access or data change	 ESC Exit the function or data change	 Par. 1.4
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5.6.4 Steering warning

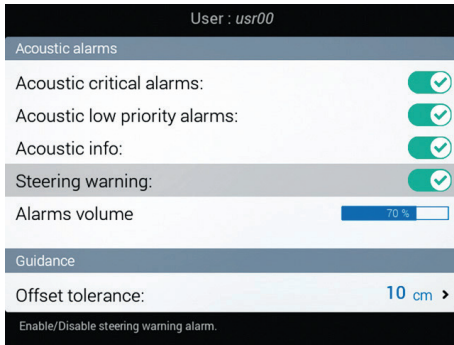


Fig. 174

It allows to enable/disable the acoustic signal when the operator must steer in order to align the machine with the following track, avoiding unsprayed or overlapping areas between the two sprays (**Steering radius** set in par. 5.1.14 Working parameters).

- Signal enabled
- Signal disabled

5.6.5 Alarms volume



THE MENU IS DISPLAYED ONLY ON DELTA 80 (CODE 467500X).

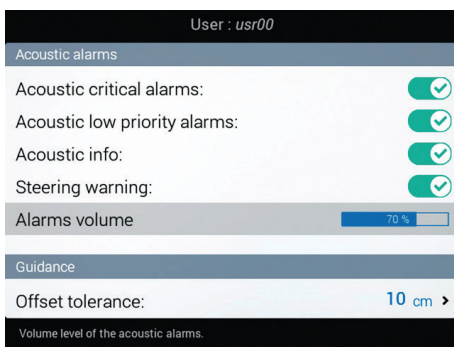


Fig. 175

Press arrow keys to adjust alarm volume (LH = decrease, RH = increase).

GUIDANCE

5.6.6 Offset tolerance

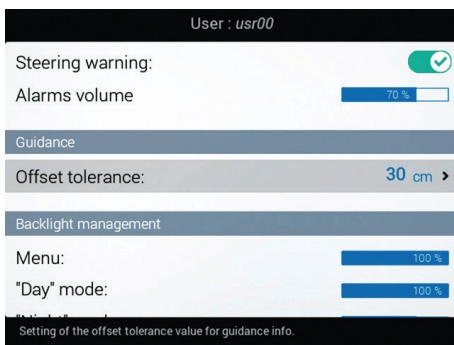


Fig. 176

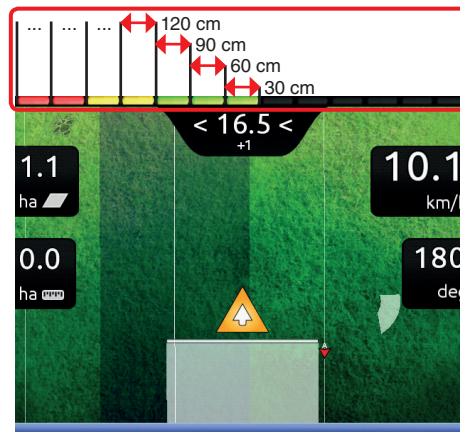


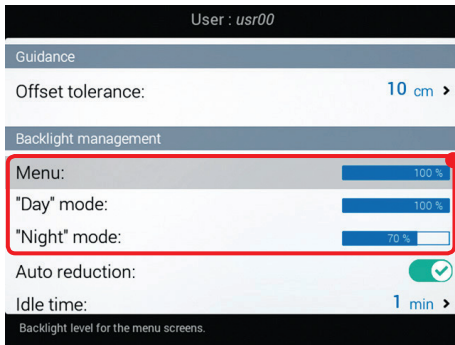
Fig. 177

Vehicle offset from reference line is represented by the LED bar on the side (guidance screen). Each LED on indicates an offset value corresponding to the one set in item **Offset tolerance** (for ex.: 30 cm).

As shown in the example, LED switch-on increases progressively any time that offset reaches a multiple of 30 cm.

BACKLIGHT MANAGEMENT

5.6.7 Backlight

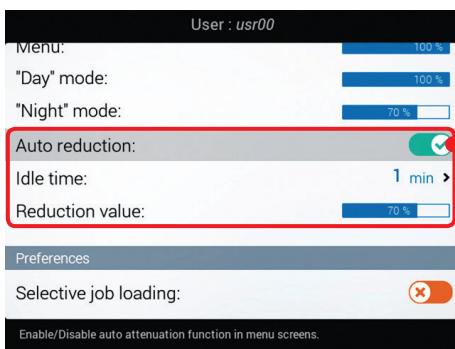


Adjustment is split by type of page:
 - Menu screens.
 - Guidance screen in "Day" mode (par. 12.8.3).
 - Guidance screen in "Night" mode (par. 12.8.3).

Select type of page and press the arrow keys to adjust display backlighting (LH = decrease, RH = increase).

Fig. 178

5.6.8 Dimming



The three items on the side control automatic dimming of display backlighting after a certain period of inactivity.
 THIS APPLIES ONLY TO MENU SCREENS.

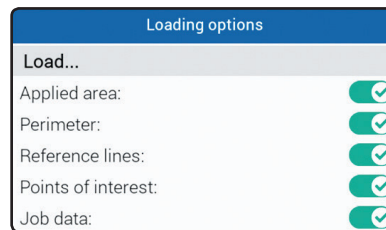
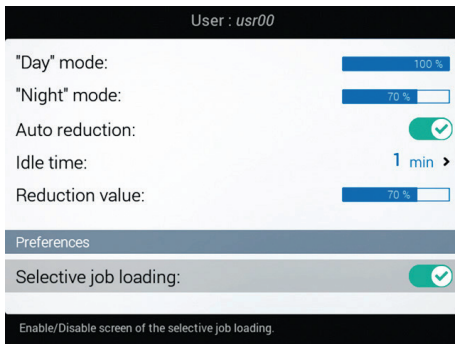
First enable **Auto reduction** item to use this function, then adjust delay time and dimming percentage.

Auto reduction on
Auto reduction off

Fig. 179

PREFERENCES

5.6.9 Selective job loading



It allows enabling/disabling the **Loading options** screen (Fig. 181) when the operator loads a previously saved job (par. 10.5 F5 Resume job).

Screen enabled
Screen disabled

Fig. 181

Fig. 180

5.7 GENERAL OPTIONS

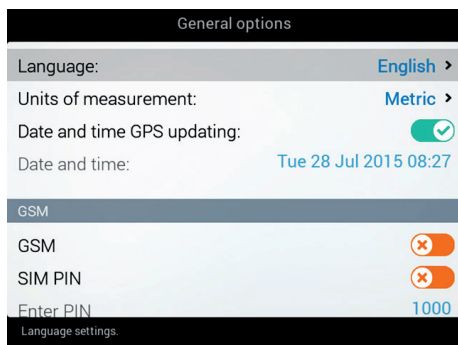


Fig. 182

Set the device system options:

- **Language** (par. 5.7.1).
- **Units of measurement** (par. 5.7.2).
- **Date and time GPS updating** (par. 5.7.3).
- **Date and time** (par. 5.7.4).
- **GSM** (par. 5.7.5)
- **Joystick keys configuration** (par. 5.7.6)

5.7.1 Language



Fig. 183

Set the computer language.

Available languages:

Български, Cesky, Deutsch, English, Español, Français, Ελληνικά, Magyar, 日本の, Italiano, Nederlands, Polski, Portugês, Român, Русский, 中文.

5.7.2 Units of measurement

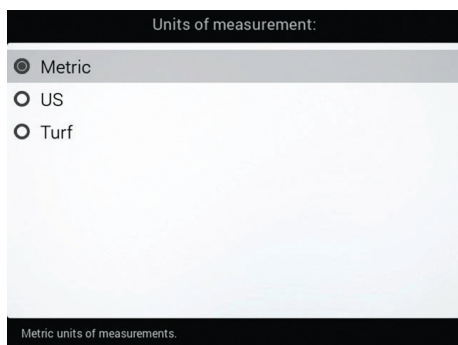


Fig. 184

Set the computer units of measurement:

- **Metric:** km/h, l/ha, l/min, bar, etc...
- **US:** MPH, GPA, GPM, PSI, etc...
- **Turf:** MPH, GPK, GPM, PSI, etc...

F1 Enter selected character

F2 Delete selected character

F7 **F8** Scroll (LEFT / RIGHT)

F4 **F6** Scroll (UP / DOWN)

Data increase / decrease

OK Confirm access or data change

ESC Exit the function or data change



Par. 1.4

5.7.3 Date and time GPS updating

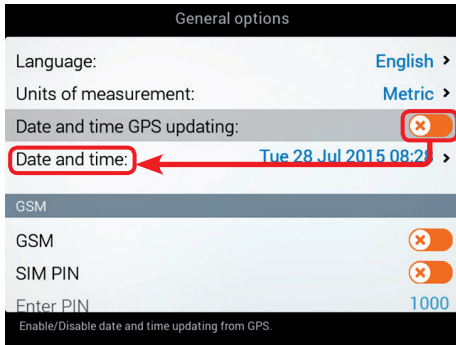


Fig. 185

Allows to enable / disable computer automatic date and time updating.

Acquisition enabled

The local time, date and timezone will be constantly updated thanks to the signal picked up by the GPS receiver.

Acquisition disabled

Set date and time manually.

The display will show the **Date and time** menu (Fig. 185).

5.7.4 Date and time

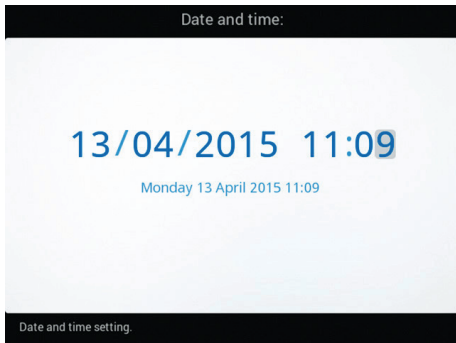
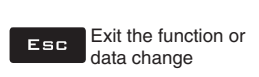


Fig. 186

To configure the items on this menu, you must disable **Date and time GPS updating** (Fig. 185).

Now set the computer time.



5.7.5 GSM



The functions of this menu are available only for Delta 80 and can be used only on Delta 80 with 3G modem (code 4675001).

• GSM

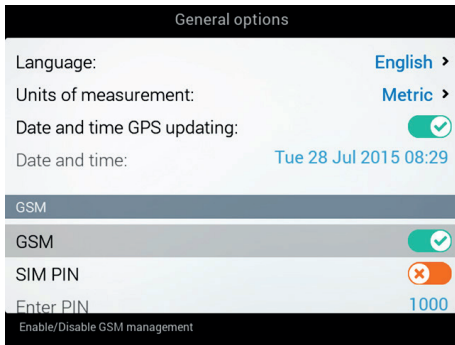


Fig. 187

Allows enabling/disabling the 3G data network.

- Network enabled
- Network disabled

• SIM PIN

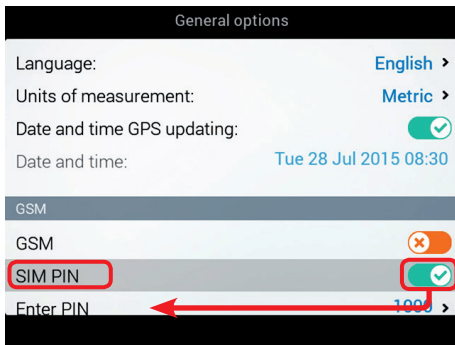


Fig. 188

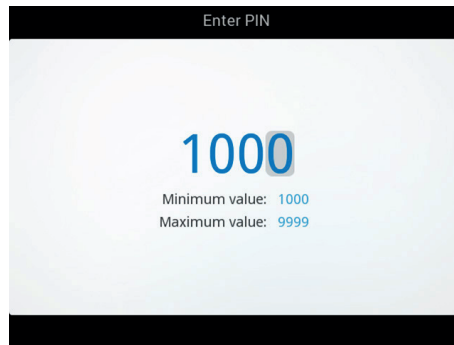


Fig. 189

Allows enabling/disabling the data network PIN.

- PIN enabled
The menu item **Enter PIN** (Fig. 188) is enabled to set the PIN.
- PIN disabled

• APN

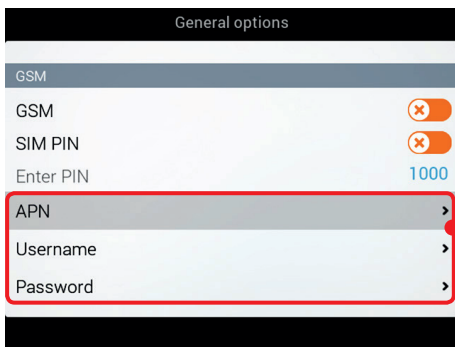
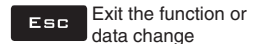
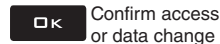


Fig. 190

Allows inserting the APN setting, the username and the password of the data operator.



Data increase / decrease



5.7.6 Joystick keys configuration

The "Explorer" joystick allows directly controlling spraying functions and hydraulic boom movements.



THE MENU IS DISPLAYED ONLY IF THE "EXPLORER" JOYSTICK (CODE 46701801) IS CONNECTED TO THE MONITOR. THE JOYSTICK MUST REPLACE COMPLETELY THE SWITCH PANEL (THEY CANNOT BE BOTH CONNECTED). Instructions for installation and use of the device are supplied with the product.

• Page 0, 1a, 1b, 2

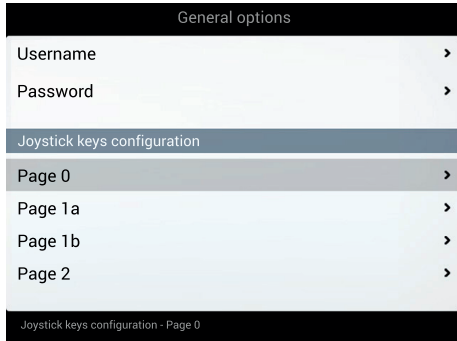


Fig. 191

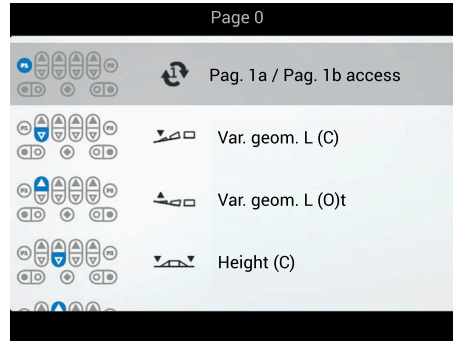


Fig. 192

It allows consulting the functions associated to the joystick.



The displayed items are READ-ONLY.

PAGE 0 ("MAIN")

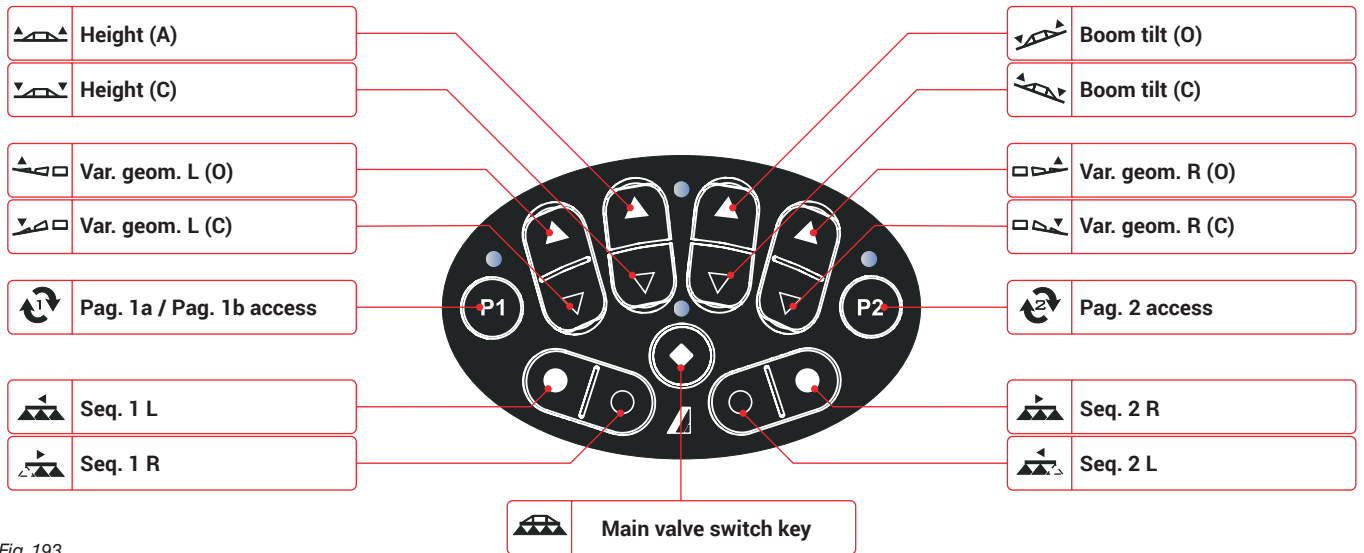


Fig. 193

PAGE 1a

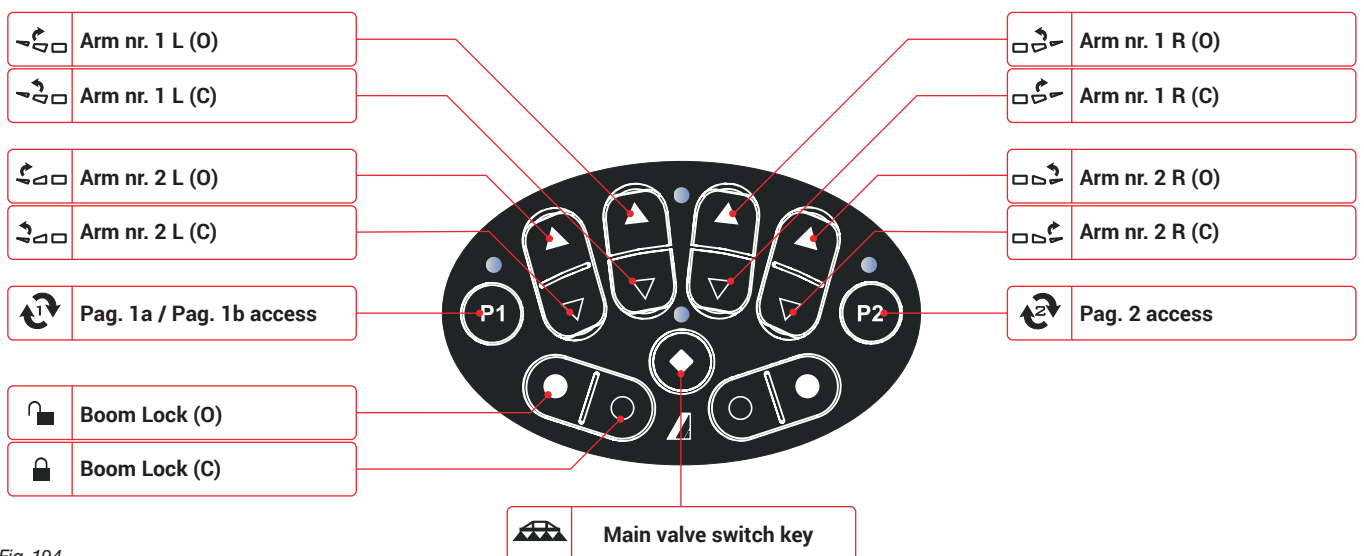


Fig. 194

CONTINUES >>>

PAGE 1b

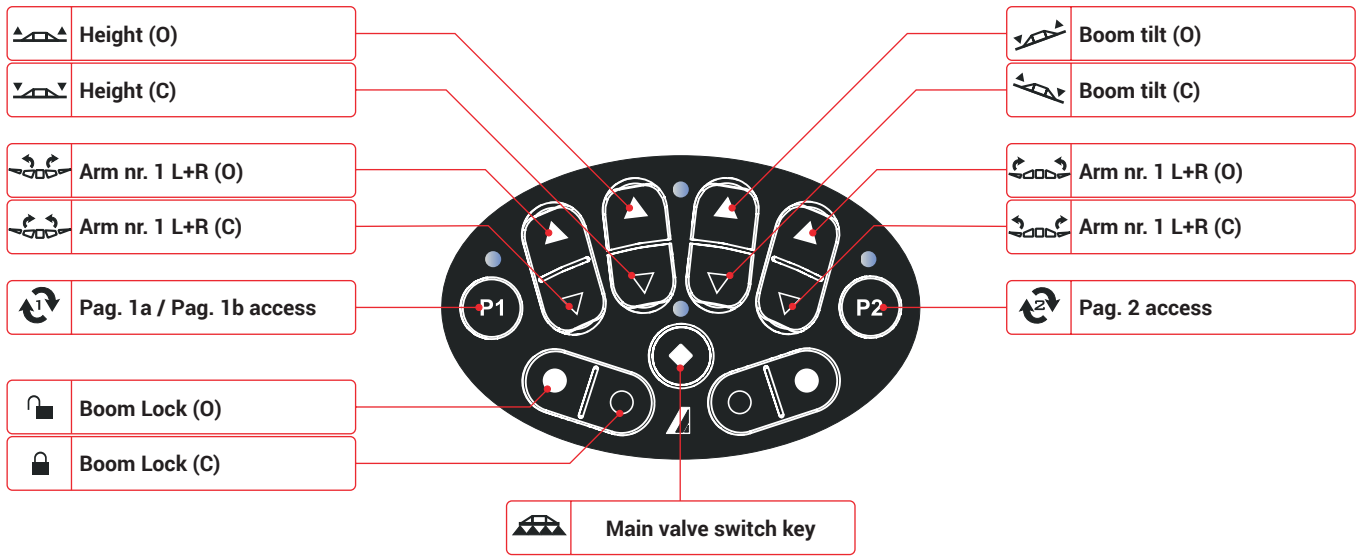


Fig. 195

PAGE 2

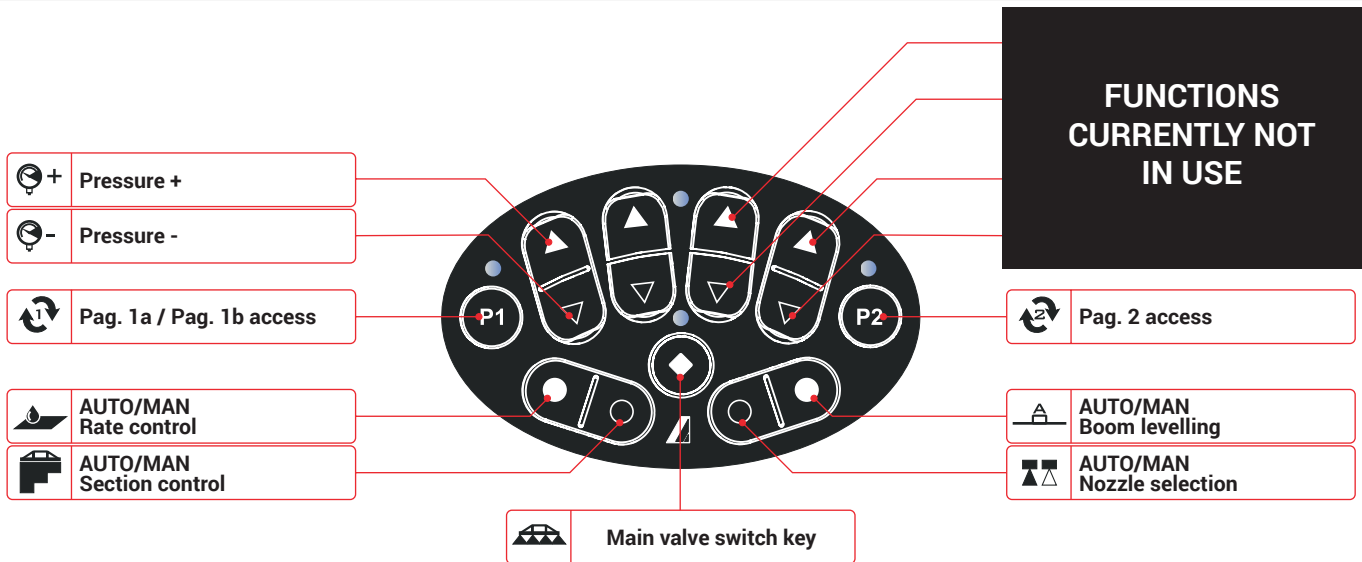




Fig. 196


F1 Enter selected character	F2 Delete selected character	F7 F8 Scroll (LEFT / RIGHT)	F4 F6 Scroll (UP / DOWN)	Data increase / decrease	OK Confirm access or data change	ESC Exit the function or data change	Par. 1.4
------------------------------------	-------------------------------------	---	--	--------------------------	---	---	-----------------

 The items displayed in this menu depend on the basic settings performed (chap. 4).

5.8 DEVICE STATUS

Allows checking the correct operation of the monitor: the description of the selected item will appear on the display.

 Displayed items are READ-ONLY.



MODE

ON


DEVICE TOTALIZERS

Device status	
Device totalizers	
Applied area:	0 ha
Working time:	0 h
Seletron system	
Status of the Seletron system	>
External signals	
Pressure sensor:	0.00 mA
Flowmeter:	0.00 Hz
Total applied area by the device.	

Allows user to view total spraying data, concerning sprayed area and work time

CONTINUES "SELETRON SYSTEM" on page 56 >>>

Fig. 197



SECTION VALVE

MODE

ON

DEVICE TOTALIZERS

Device status	
Device totalizers	
Applied area:	0 ha
Working time:	0 h
External signals	
Pressure sensor:	0.000 mA
Flowmeter:	0.0 Hz
Filling flowmeter:	0.0 Hz
Rev counter:	0.0 Hz
Total applied area by the device.	

Allows user to view total spraying data, concerning sprayed area and work time

CONTINUES "EXTERNAL SIGNALS" on page 57 >>>

Fig. 198

SELETRON SYSTEM

• Status of the Seletron system

This menu has two main functions:

- **INSTALLATION**
Allows to display the progress during Seletron's pairing procedure (chap. 6 Seletron connection).
- **DIAGNOSTICS**
Allows to check the connection of each single Seletron.



CARRY OUT BOTH PROCEDURES WITH RUNNING ENGINE.

SELETRON CONNECTION DIAGNOSTICS

Color legend:

- Correct operation.
- Seletron does not respond.
- Power supply error on Seletron devices: power voltage lower than the allowed value.

The screen in Fig. 199 shows the corresponding number.

Status of the Seletron system									
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40

Monitor seletron discovery.



If necessary, you can repeat the pairing procedure for each Seletron device:
BEFORE STARTING A NEW PAIRING PROCEDURE, YOU MUST RESET THE PREVIOUSLY ALLOCATED IDENTIFICATION NUMBERS.
Use the function Identification numbers reset (par. 5.1.16).

Fig. 199

CONTINUES "EXTERNAL SIGNALS" on page 57 >>>

Enter selected character

Delete selected character

Scroll (LEFT / RIGHT)

Scroll (UP / DOWN)

Data increase / decrease

Confirm access or data change

Exit the function or data change



EXTERNAL SIGNALS

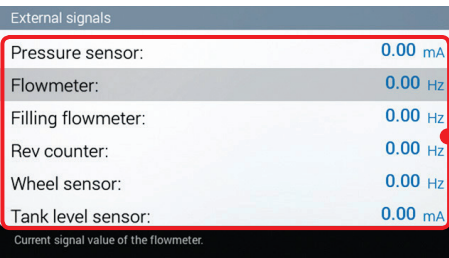


Fig. 200

The monitor detects frequency and current output by each sensor on the system.

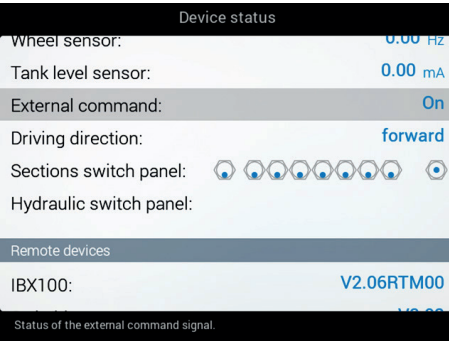


Fig. 201

The monitor displays the status of the external main control which starts the spraying.

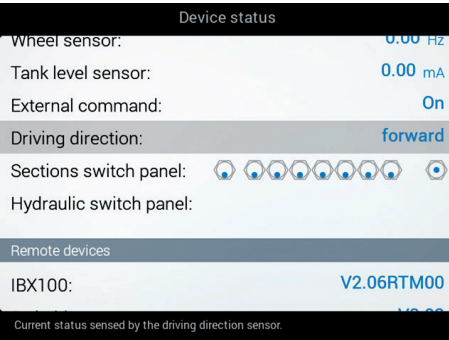


Fig. 202

The monitor detects the driving direction.

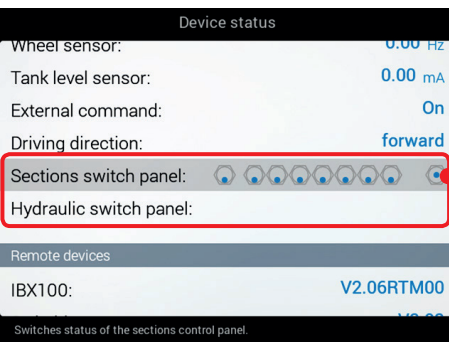


Fig. 203

The monitor displays the status of switches (section valves and/or hydraulic valves), if switch panels are connected.

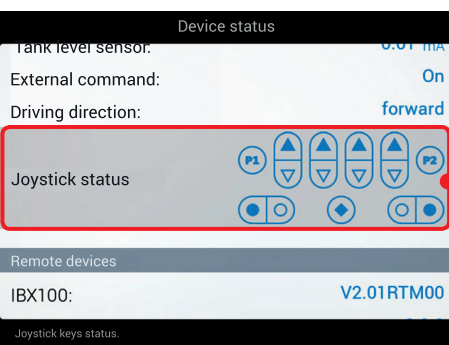
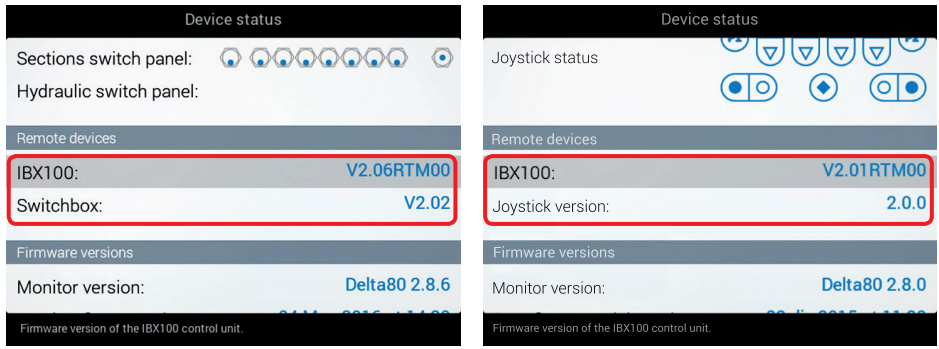


Fig. 204

The monitor displays the status of Explorer joystick buttons (if connected).

CONTINUES >>>

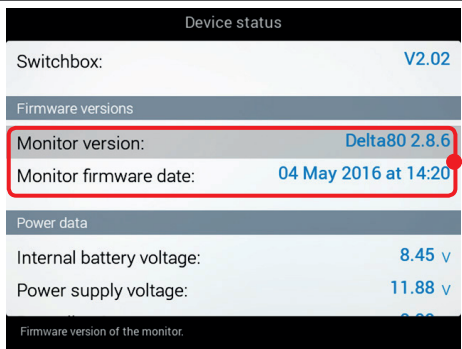
REMOTE DEVICES



The monitor displays the firmware versions of the remote devices connected

Fig. 205

FIRMWARE VERSIONS

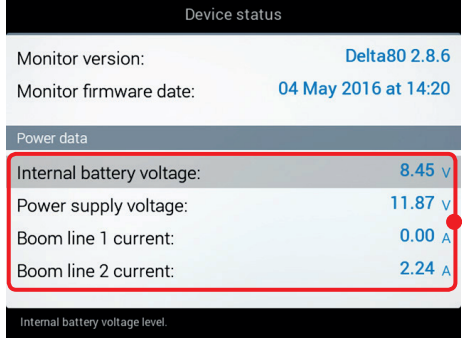


The monitor displays firmware versions.

Fig. 206



POWER DATA



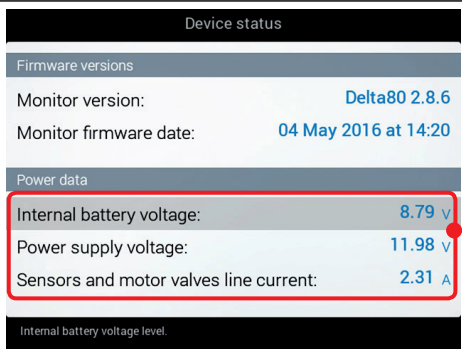
The monitor checks the status of the power supply.

Fig. 207

CONTINUES "Seletron connection" on page 59 >>>



POWER DATA



The monitor checks the status of the power supply.

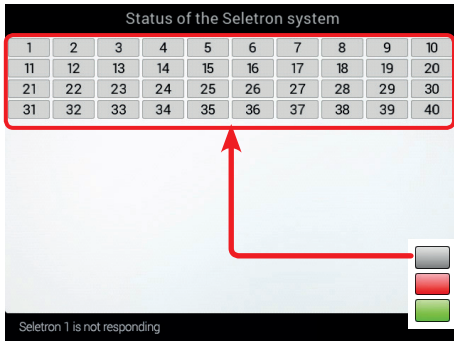
Fig. 208

CONTINUES "Use" on page 63 >>>

6 SELETRON CONNECTION

PLEASE CAREFULLY FOLLOW THE INSTRUCTIONS PROVIDED IN THIS CHAPTER. ANY MISTAKES DURING SELETRON PAIRING/REPLACEMENT MAY LEAD TO SYSTEM OPERATION FAILURE.

BEFORE PROCEEDING, MAKE SURE YOU ARE ABLE TO HEAR THE ACOUSTIC SIGNALS COMING FROM THE MONITOR LOCATED IN THE CABIN (DOORS OPEN, ETC.).




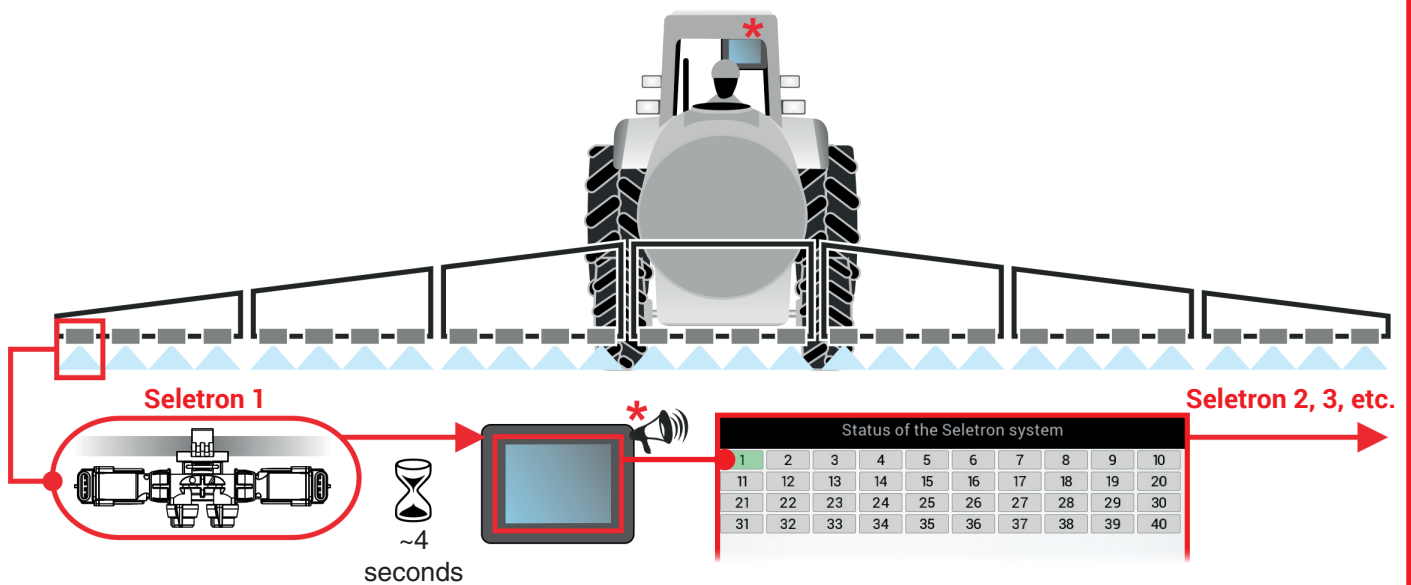
- Access the menu **Settings > Device status > Status of the Seletron system** on the monitor (par. 5.8).
- Make sure that ALL SELETRON DEVICES ARE DISCONNECTED: they must be shown on the display only with the symbols , as shown in Fig. 209.

Fig. 209



BEFORE CONNECTING A NEW SELETRON, MAKE SURE THAT THE PREVIOUS ONE HAS BEEN PAIRED, that the acoustic signal has been made and that the relevant green symbol has been displayed.

In case of errors during the pairing procedure, (the display shows the symbol ) reset all identification numbers and repeat the procedure from the start (par. 5.1.16, Identification number reset).

Fig. 210

- Connect the first Seletron.
Seletron no. 1 is the first on the left, when looking at the boom from behind (Fig. 210).

WAIT FOR THE ACOUSTIC SIGNAL BY THE MONITOR. WAIT FOR THE MONITOR TO DISPLAY THE GREEN SYMBOL FOR THE CONNECTED SELETRON (FIG. 210).

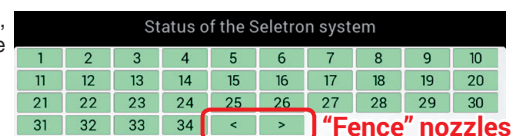
ONLY NOW IS IT POSSIBLE TO PROCEED WITH THE INSTALLATION OF THE FOLLOWING SELETRON.

WARNING: ALL SELETRON DEVICES MUST BE INSTALLED IN A SEQUENCE FROM LEFT TO RIGHT (when looking at the boom from behind).

- Repeat the above steps, connecting all remaining Seletron devices from left to right until the end of the boom.
- Connection sequence if special nozzles are present:

Nozzles for "Buffer zone" (par. 7.3.1): start by connecting Seletron for "Buffer zone" located at the left end of the boom, then connect all the "normal" Seletrons from left to right, and lastly connect Seletron for "Buffer zone" located on the right end of the boom.

"Fence" nozzles (par. 7.3.2): start by connecting all the "normal" Seletrons from left to right, then connect the "Fence" Seletron located on the left end of the boom and lastly connect the "Fence" Seletron located on the right end of the boom.



CONTINUES >>>

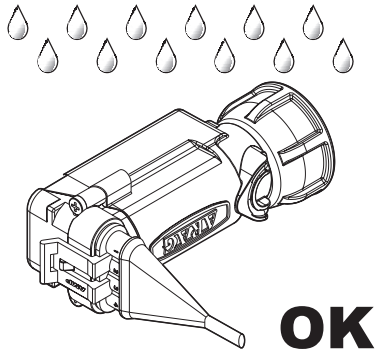
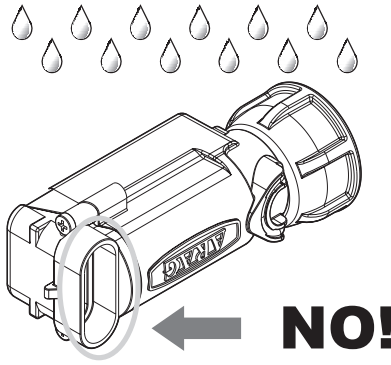


Fig. 211



The products are supplied with valve installation instructions. Make sure the device is correctly fitted and push it until locking it. When the cable is inserted in the connector, the Seletron is sealed. To avoid damaging the internal components, make sure that when using or cleaning the system the connectors are not bare or inserted incorrectly.

CONNECTION SEQUENCE FOR SINGLE AND TWIN SELETRON DEVICES

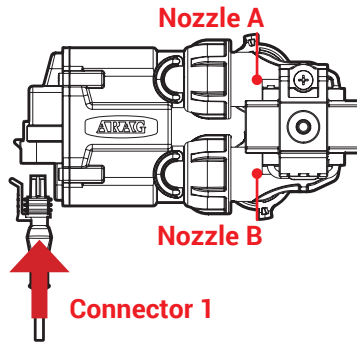


Fig. 212

Connect all Seletron devices in sequence, from left to right until the end of the boom.

CONNECTION SEQUENCE FOR FOURFOLD SELETRON DEVICES

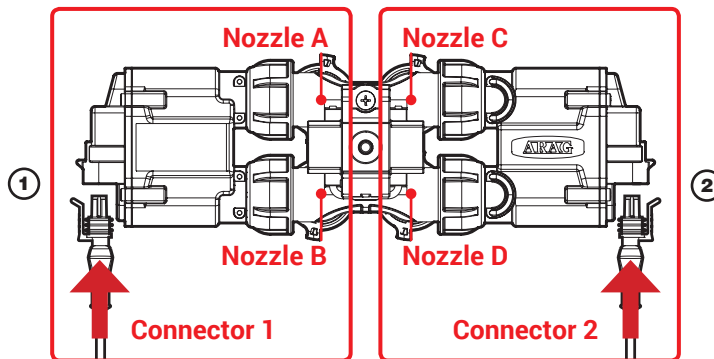


Fig. 213

- 1 Connect in sequence **ONLY SELETRON NOZZLE HOLDERS A AND B**, from left to right until the end of the boom (**connector 1** in Fig. 213).
- 2 Start again from the beginning: this time connect **SELETRON NOZZLE HOLDERS C AND D**, from left to right until the end of the boom (**connector 2**).

SELETRON REPLACEMENT

6.1 Preliminary Operations

⚠ TO AVOID ACCIDENTS, EMPTY THE TANK AND MAKE SURE THAT THE ENTIRE SYSTEM IS COMPLETELY FREE FROM CHEMICALS.

**IMPORTANT: Activate the controls of main valve and sections (ON position).
Enable all nozzles and disable all automatic functions par. "9 Automatic functions" on page 74.**

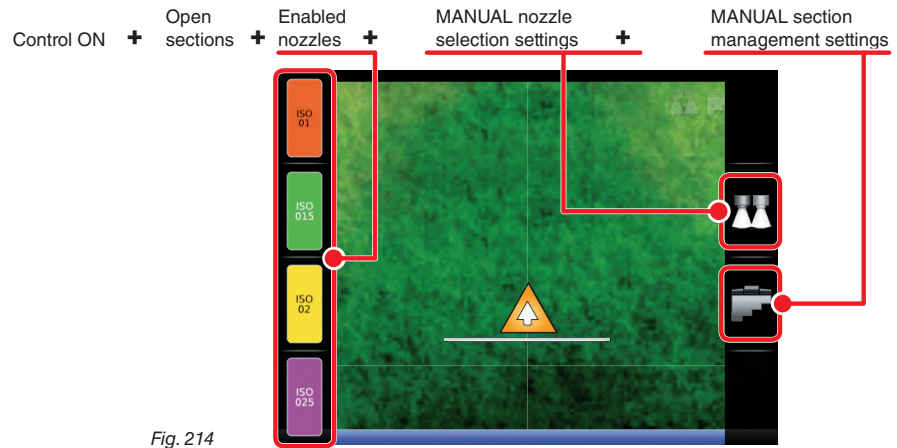


Fig. 214

6.2 Seleton replacement

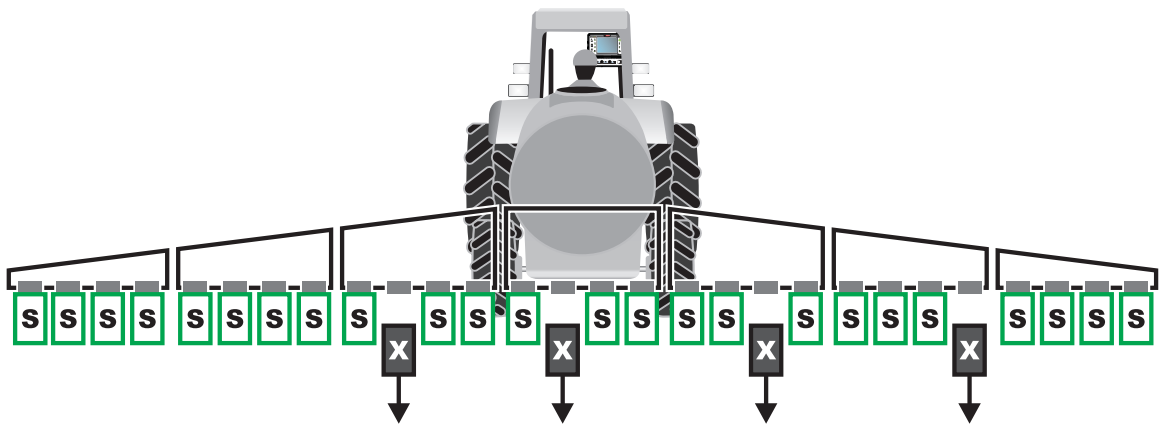
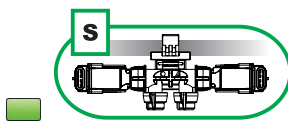
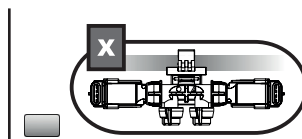


Fig. 215



Correctly paired Seleton



NOT correctly paired Seleton

- ONLY DISCONNECT THE SELETRON DEVICES THAT WERE NOT CORRECTLY PAIRED (X Fig. 215).

CONTINUES >>>

Connect the new Seletron devices: * Fig. 216, IN A SEQUENCE FROM LEFT TO RIGHT (when looking at the boom from behind).

AFTER CONNECTING THE SELETRON, WAIT FOR APPROX. 4 SECONDS, THE MONITOR MAKES AN ACOUSTIC SIGNAL AND DISPLAYS THE GREEN SYMBOL OF THE CONNECTED SELETRON. ONLY NOW is it possible to proceed with the installation of the following Seletron.

Tighten each Seletron onto the relevant nozzle holder, using a torque wrench and a tightening torque of 4.5 Nm / 40 Inch/lbs.

Alternatively, if you do not have a torque wrench, tighten the Seletron devices by hand and make sure there are no leaks.

ARAG IS NOT LIABLE FOR ANY DAMAGE OR MALFUNCTION CAUSED BY THE USE OF TOOLS DIFFERENT FROM THE ONES INDICATED ABOVE.

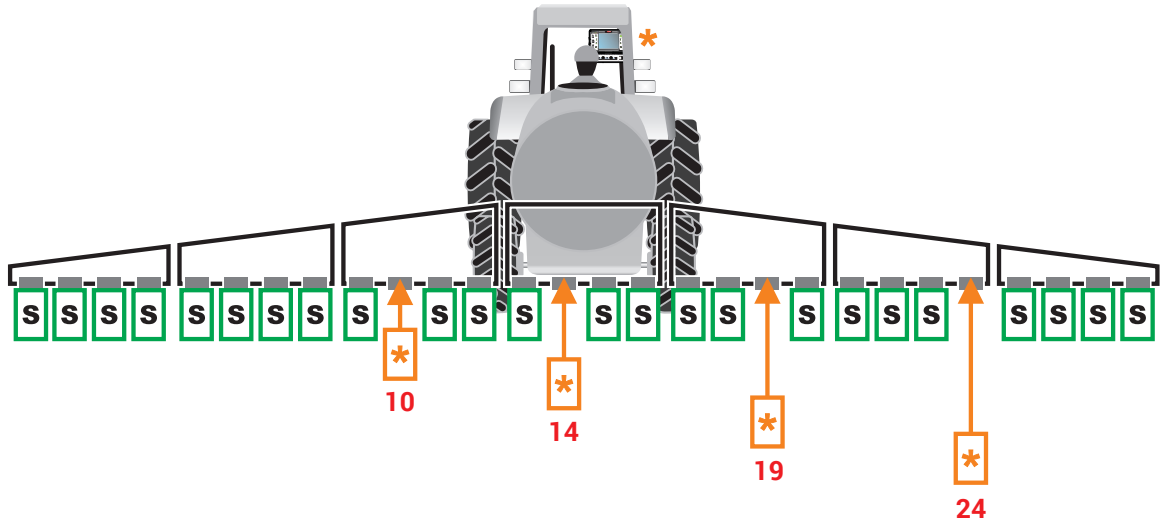
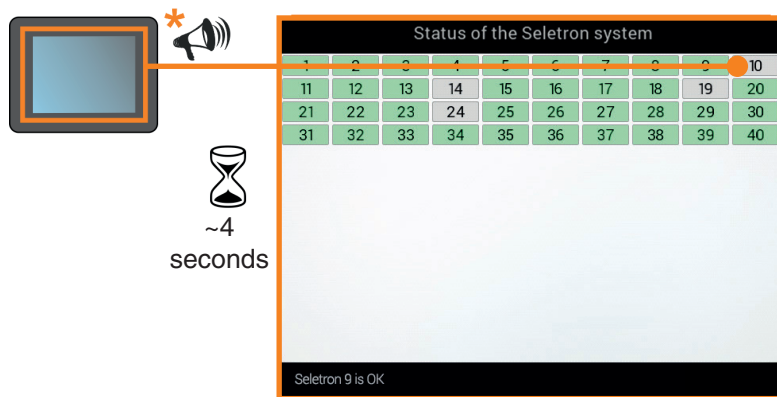


Fig. 216

Seletron connection sequence: 10, 14, 19 and 24.



CONTINUES "Use" on page 63 >>>

7 USE

7.1 Controls

MONITOR BRAVO 400S

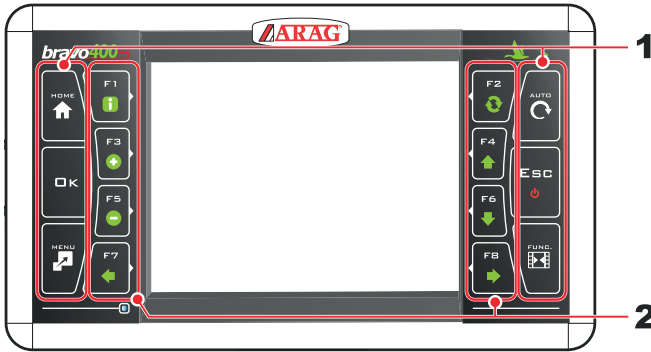


Fig. 217

MONITOR NINJA

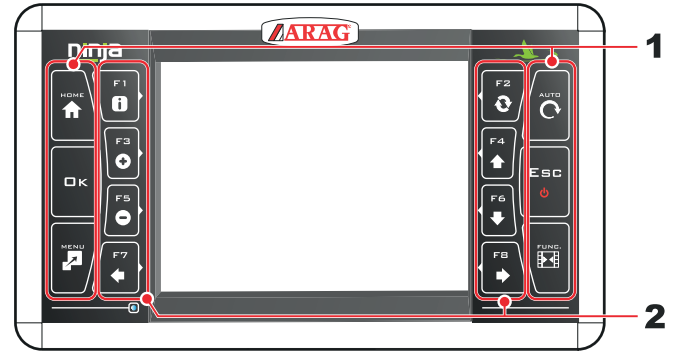


Fig. 218

MONITOR DELTA 80

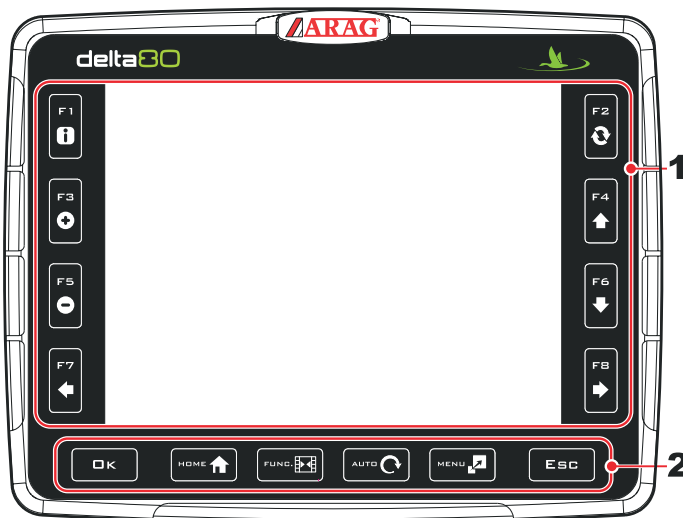


Fig. 219

• Controls on monitors

- 1 Function keys.
- 2 Control and display mode keys.

Function keys are contextual: the function of each depends on what appears on the display, therefore the use of these keys will be illustrated during the description of the corresponding procedures.

SWITCH PANEL

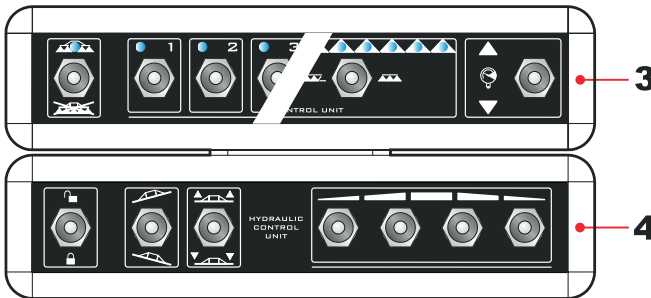


Fig. 220

• Controls to valves and/or hydraulic functions with switch panel (DELTA 80 / BRAVO 400S ONLY)

- 3 Operating switches for control unit valves - par. 7.2
- 4 Operating switches for oil-hydraulic functions (hydraulic valves) - par. 7.3

EXPLORER JOYSTICK

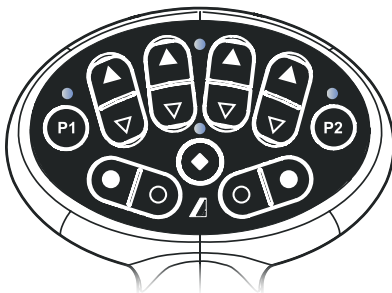


Fig. 221

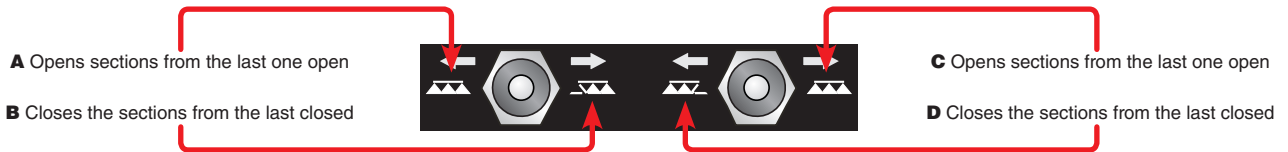
• Controls to valves and/or hydraulic functions with joystick - par. 5.76

7.2 Operating switches for control unit valves

Main control ON	Main control OFF	Open section	Closed section	Increase of output	Decrease of output

• Switches for sequential control

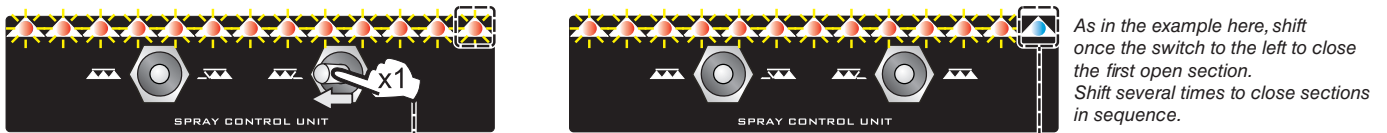
		 Section operating switches Open section Closed section			
Main control ON	Main control OFF			Increase of output	Decrease of output



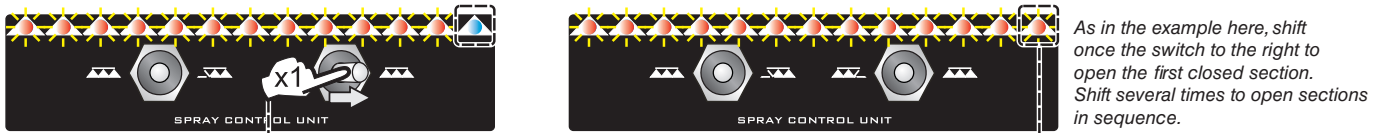
The valves can be opened and closed from the right to the left and vice versa with the section control switches. Prolonged pressure opens / closes the sections of half boom.

Examples:

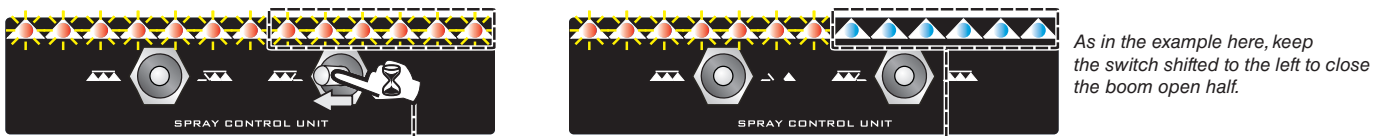
• Closing of one section



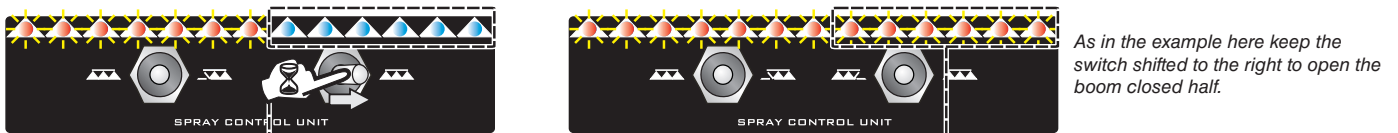
• Opening of one section



• Simultaneous closing of half boom sections



• Simultaneous opening of half boom sections



7.3 Operating switches for hydraulic valves

Release of the boom	Block of the boom	Leveling of the boom clockwise	Leveling of the boom counter-clockwise	Increase height of the boom	Decrease height of the boom	Boom section movement: opening	Boom section movement: closing

7.3.1 "Buffer Zone" function enabled

Some spraying jobs provide for zones called "Buffer zone", where spraying must be reduced or shut off. Further to the nozzles usually used, it is necessary to install special nozzles (e.g.: ASJ AOC), able to reduce the spray or drift, as terminal nozzles on boom. The connection procedure of "Buffer" nozzles is as follows:
 Left "Buffer" nozzle (boom view from behind), 1st boom nozzle, 2nd boom nozzle, ----> Boom nozzle no., Right "Buffer" nozzle (boom view from behind).

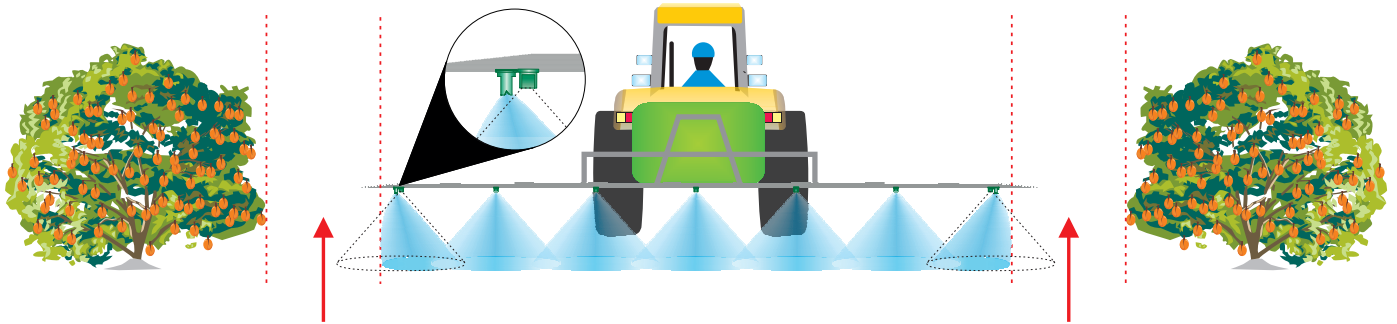


Fig. 222

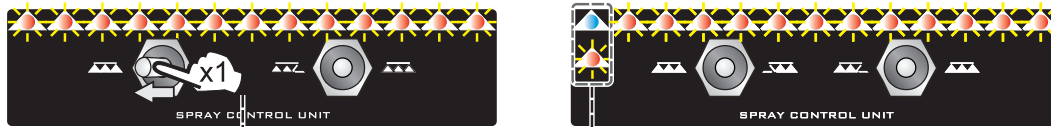
Buffer zone

Buffer zone

If this function is enabled under implement basic settings (chap. 4) it is possible to alternatively select standard or special nozzles.

NOZZLE SELECTION WITH SWITCH PANEL

• Activation of the left-hand special nozzle (when looking at the boom from behind)

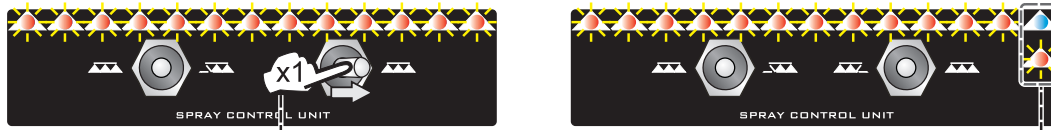


CORRESPONDING ICON ON THE GUIDANCE SCREEN



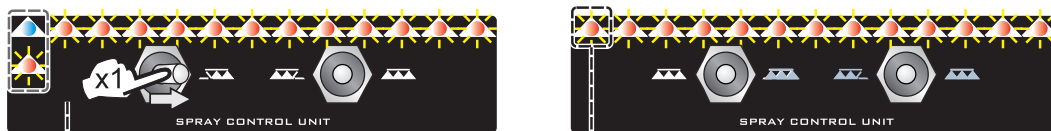
Press switch once to the left to activate the left-hand nozzle for "Buffer zone" and close the standard nozzle. The LH LED blinks.

• Activation of the right-hand special nozzle (when looking at the boom from behind)



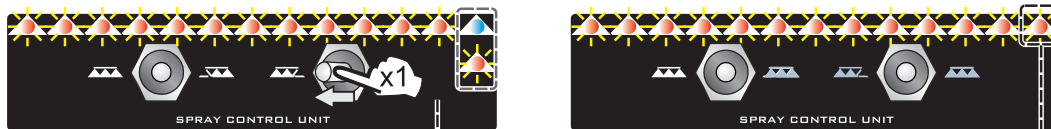
Press switch once to the right to activate the right-hand nozzle for "Buffer zone" and close the standard nozzle. The RH LED blinks.

• Deactivation of the left-hand special nozzle (when looking at the boom from behind)



Press switch once to the right to deactivate the left-hand nozzle for "Buffer zone" and open the standard nozzle. The LH LED stops blinking and will stay on steadily.

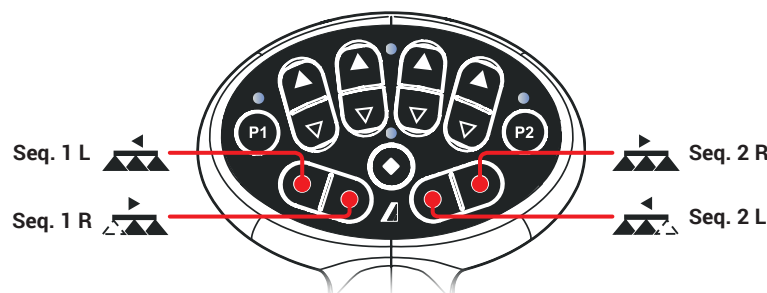
• Deactivation of the right-hand special nozzle (when looking at the boom from behind)



Press switch once to the left to deactivate the right-hand nozzle for "Buffer zone" and open the standard nozzle. The RH LED stops blinking and will stay on steadily.

NOZZLE SELECTION WITH JOYSTICK II

The operation is similar to the one of the sequential switch panel just described. The functions related to the activation of nozzles are in the "Main" page. For all the details about use, refer to the instructions supplied with the joystick.



7.3.2 "Fence nozzle" function enabled

This function provides for the installation of specific nozzles at the end of the boom, which allow spraying of areas that traditional nozzles cannot reach because of the boom dimensions (e.g. fences). The activation does not interrupt the supply of the other boom nozzles. The procedure for connection as well as detection of Seletrons and "Fence" nozzles is carried out as follows: first connect all the boom nozzles, then the left "Fence" nozzle and the right "Fence" nozzle. By setting reference pressure and flowrate for the "Fence" nozzle, it is possible to check the supply of all the nozzles according to the set application rate. The spraying range of the "Fence" nozzle is not included in the calculation of the applied area.

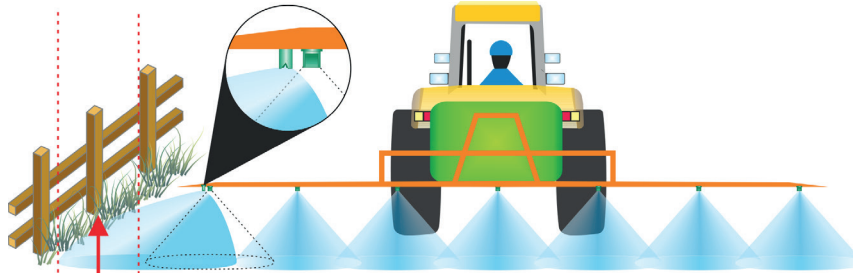


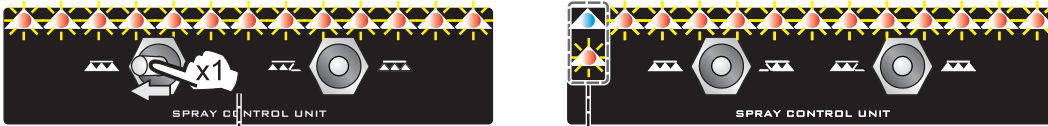
Fig. 223

Fence zone

If this function is enabled under implement basic settings (chap. 4) it is possible to select standard or special nozzles: the activation of "Fence" nozzles does not interrupt the supply of the other boom nozzles.

NOZZLE SELECTION WITH SWITCH PANEL

- Activation of the left-hand special nozzle (when looking at the boom from behind)

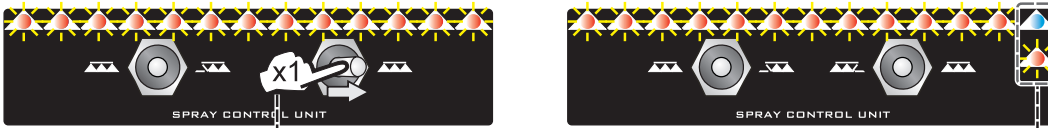


Press switch once to the left, the left "Fence" nozzle activates. The LH LED blinks.



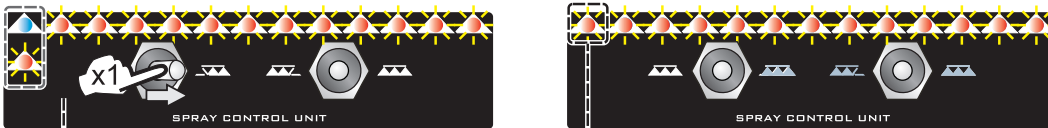
CORRESPONDING ICON ON THE GUIDANCE SCREEN

- Activation of the right-hand special nozzle (when looking at the boom from behind)



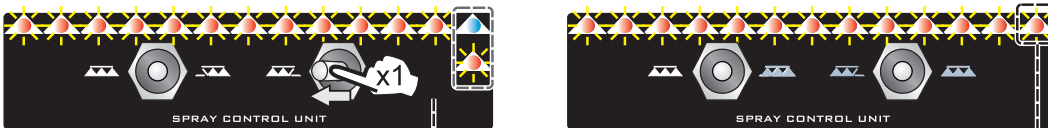
Press switch once to the right, the right "Fence" nozzle activates. The RH LED blinks.

- Deactivation of the left-hand special nozzle (when looking at the boom from behind)



Press switch once to the right, the left "Fence" nozzle deactivates. The LH LED stops blinking and will stay on steadily.

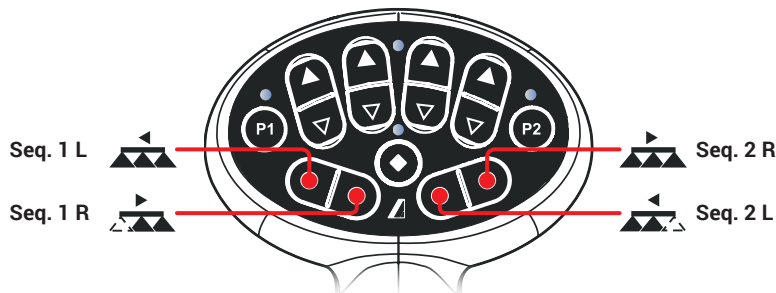
- Deactivation of the right-hand special nozzle (when looking at the boom from behind)



Press switch once to the left, the right "Fence" nozzle deactivates. The RH LED stops blinking and will stay on steadily.

NOZZLE SELECTION WITH JOYSTICK

The operation is similar to the one of the sequential switch panel just described. The functions related to the activation of nozzles are in the "Main" page. For all the details about use refer to the instructions supplied with the joystick.



7.4 Guidance screen

USING THE KEYS

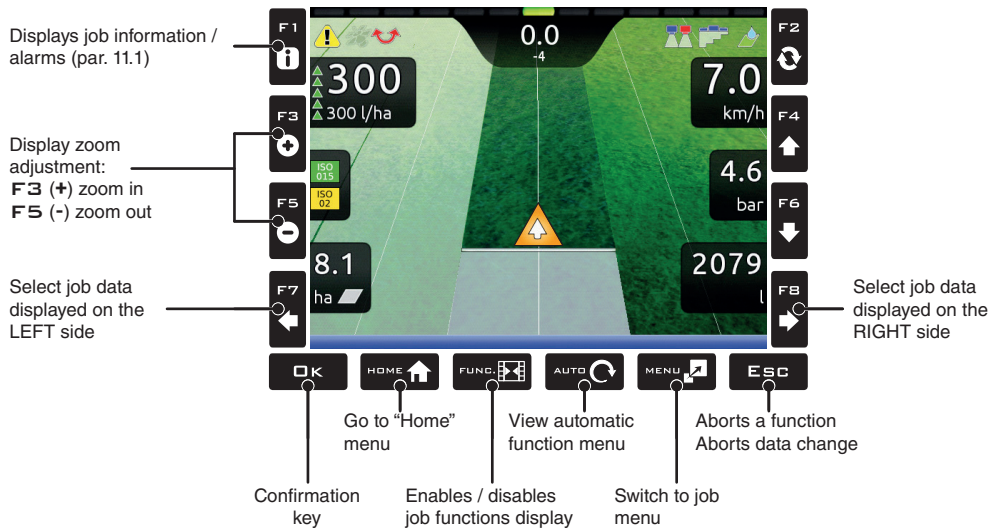


Fig. 224

F 1 ÷ F 8: Contextual function keys

These keys control what is shown on the display (display zoom adjustment, etc., Fig. 224)

When the function list is displayed, they perform specific functions: the function of each key depends on what appears on the display, therefore the use of these keys will be illustrated during the description of the corresponding procedures.

DISPLAY ITEMS

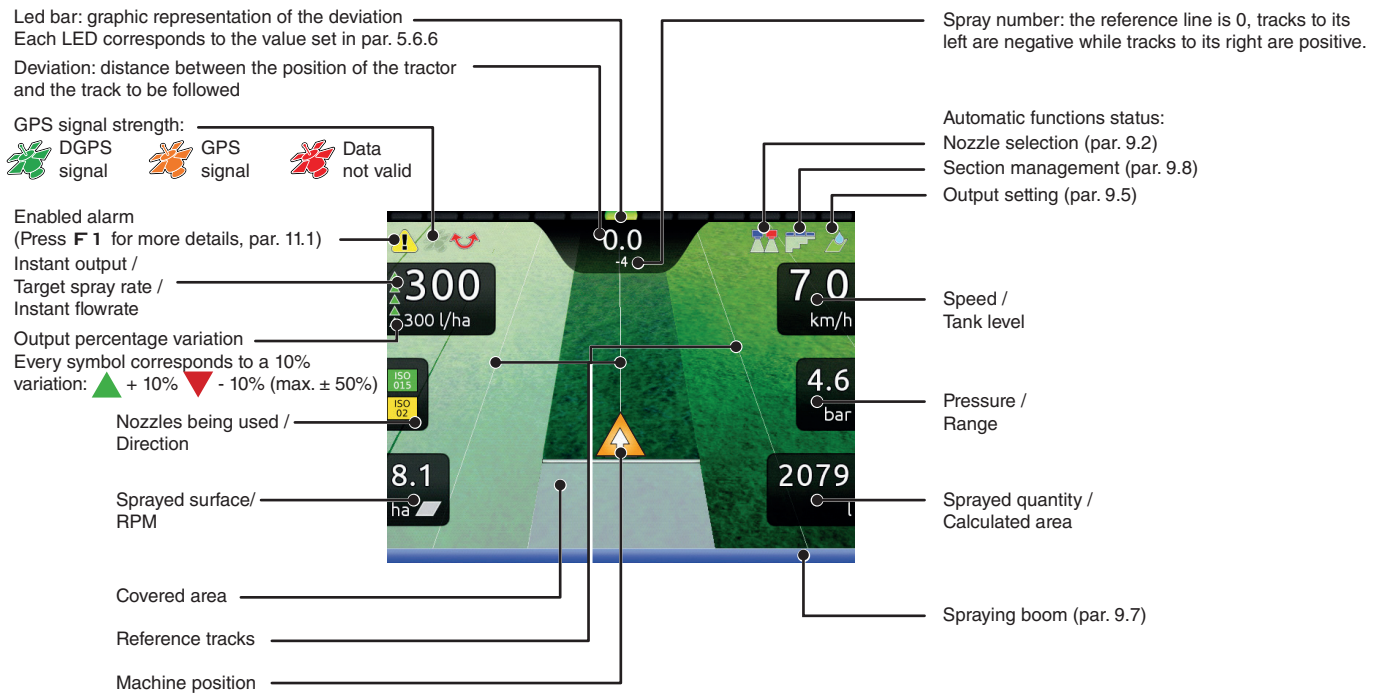


Fig. 225

7.5 Spraying a field

Let us assume we want to spray a field along parallel lines, but only once the edges of the field have been sprayed.

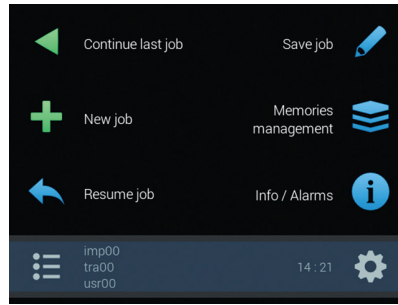


Fig. 226

- Go to the beginning of the field to be sprayed.
- Turn the monitor on (par. 1.2). After self-diagnostics, the monitor displays the "Home" screen (Fig. 226).
- Begin a new job, using the function **F3 New job** (par. 10.3).
- Enter spraying settings.

SPRAYING SETTINGS

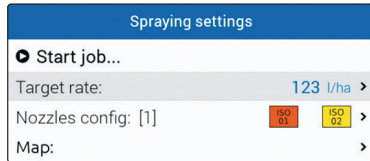
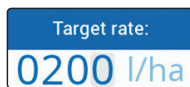


Fig. 228



Target rate

- Set the spray rate value for the treatment (Fig. 228). Press **OK** to confirm the value.

Fig. 227

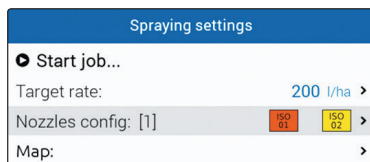


Fig. 229

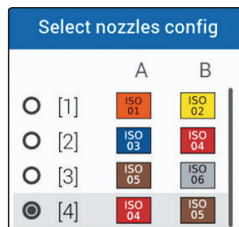


Fig. 230

Select nozzles config

- Select a nozzle configuration from the list (Fig. 230). With this data indicate which nozzles are installed on the boom spraying points (preset configurations in the **Spray spots configurations** menu, par. 5.1.1).
- Press **OK** to confirm.

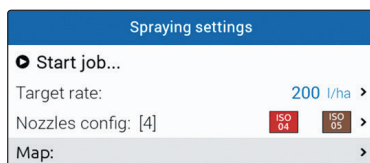


Fig. 231

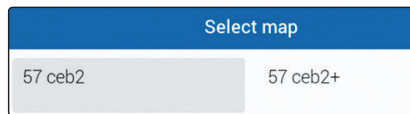


Fig. 232

Map

- If there is at least one map (on the internal memory), you can select a prescription map for the spraying. According to the position detected by the GPS receiver, the monitor will use the appropriate spray rate for the area that is being sprayed (par. 9.6 Importing and using a prescription map).
- Select a map from the list (Fig. 232).
- Press **OK** to confirm.

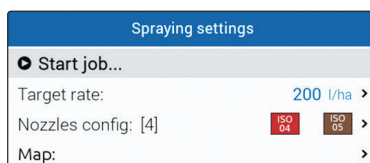


Fig. 233



Fig. 234

Start job

- Select **▶** and press **OK** to switch to guidance.

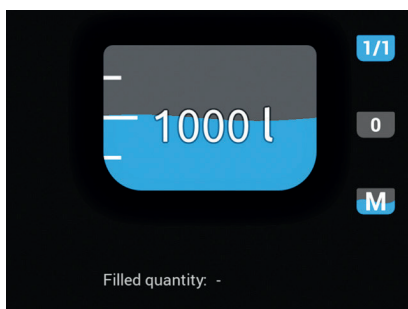


Fig. 235

- In the job menu, set the tank level with the function **F3 Tank** (par. 11.4).
- Start spraying by acting on the main valve control.
- Start moving along the field perimeter.

MARKING POINTS A AND B

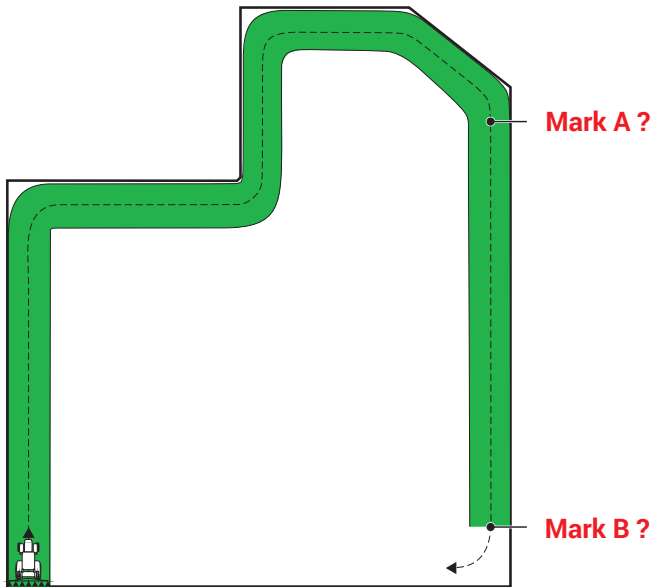



Fig. 236

• While moving along the perimeter of the field, you will mark points A and B (as described in par. 12.7 F7 New AB).

This operation is fundamental for the monitor to guide you, during spraying, along tracks parallel to the reference track obtained by marking points A and B.

 We recommend marking points A and B while the machine is moving, at both ends of a straight line that is as long as possible: the longer the line marked by points A and B, the lower the error caused by any deviations of the machine itself.

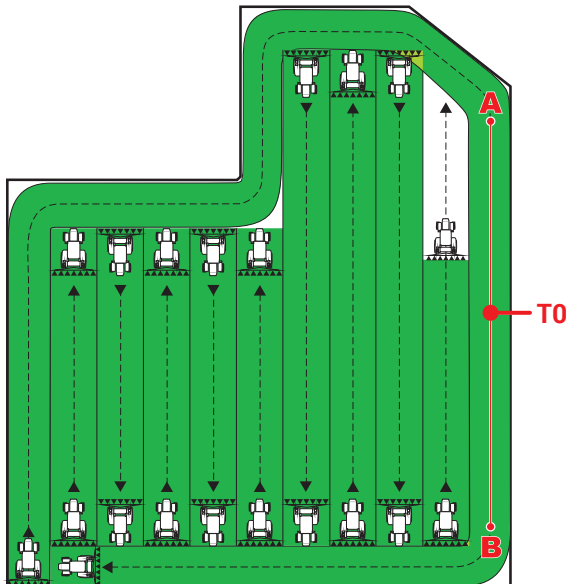


Fig. 237

• Once the line from A to B has been marked (TO), it will be possible to spray the rest of the field along parallel lines, (Fig. 237), by following the reference tracks shown on the display (Fig. 238).

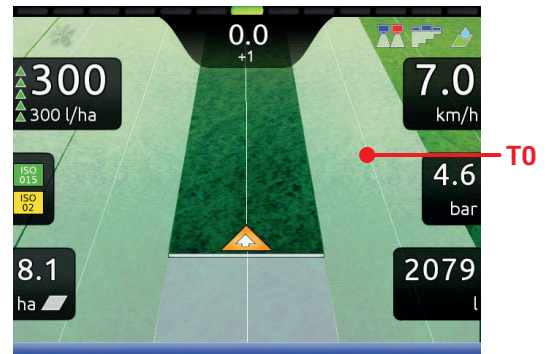



Fig. 238

 At the beginning of a new job the monitor gives driving directions in the "Straight parallel" mode. To change guidance mode see function F2 Guidance mode (par. 12.2).

CONTINUES "Automatic functions - SELETRON MODE" on page 74 >>>



7.6 Guidance screen

USING THE KEYS

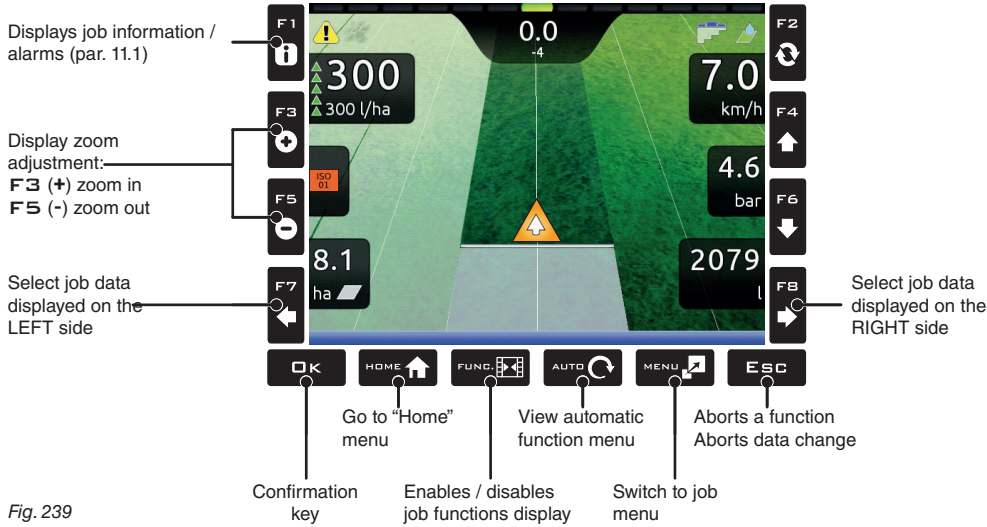


Fig. 239

F 1 ÷ F 8: Contextual function keys

These keys control what is shown on the display (display zoom adjustment, etc., Fig. 239)

When the function list is displayed, they perform specific functions: the function of each key depends on what appears on the display, therefore the use of these keys will be illustrated during the description of the corresponding procedures.

DISPLAY ITEMS

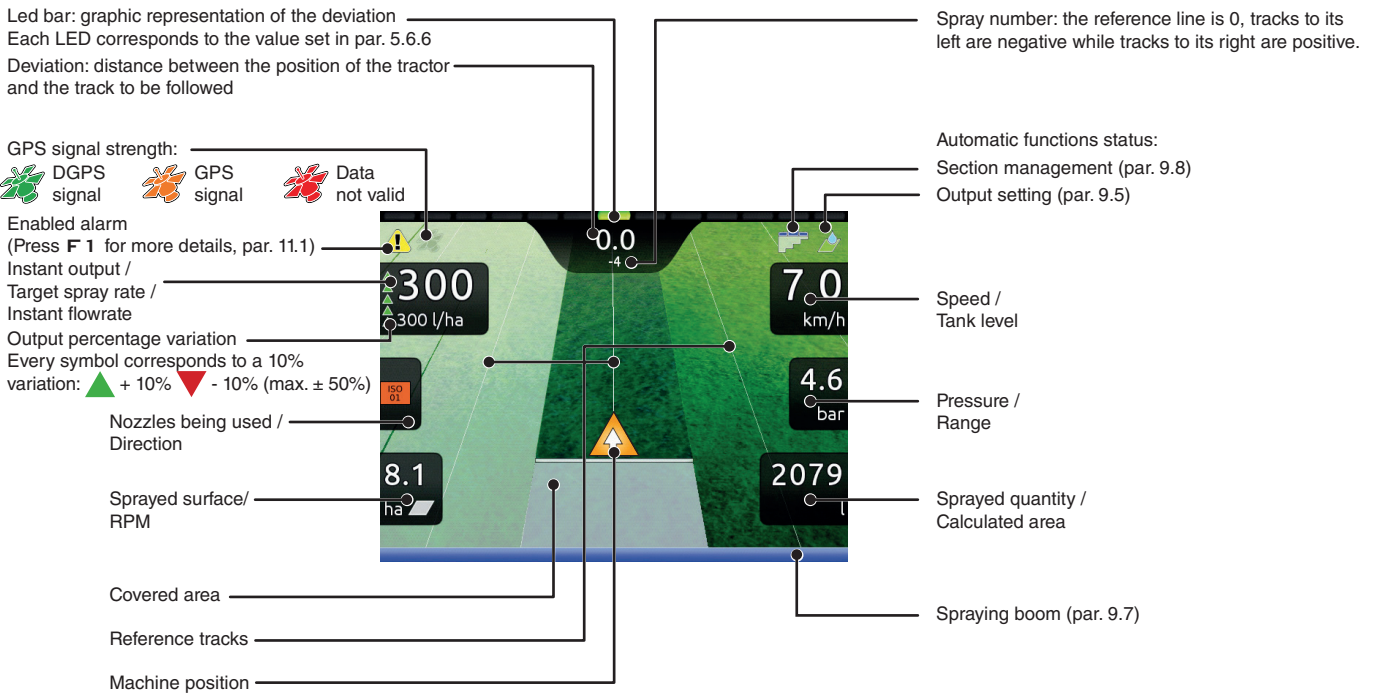


Fig. 240



7.7 Spraying a field

Let us assume we want to spray a field along parallel lines, but only once the edges of the field have been sprayed.

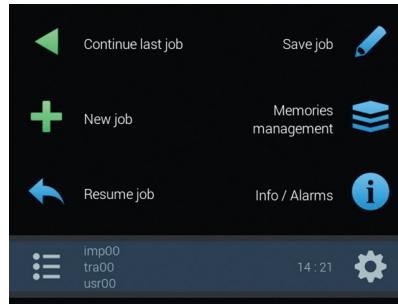


Fig. 241

- Go to the beginning of the field to be sprayed.
- Turn the monitor on (par 1.2). After self-diagnostics, the monitor displays the "Home" screen (Fig. 241).
- Begin a new job, using the function **F3 New job** (par. 10.3).
- Enter spraying settings.

SPRAYING SETTINGS

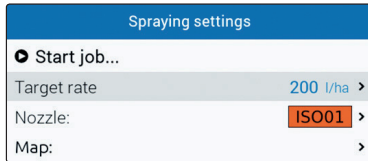


Fig. 242

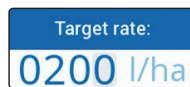


Fig. 243

Target rate

- Set the spray rate value for the treatment (Fig. 243). Press **OK** to confirm the value.

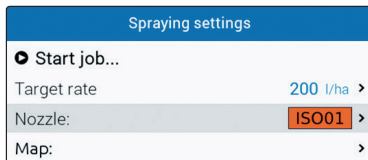


Fig. 244

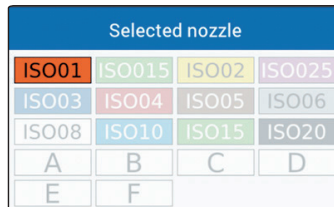


Fig. 245

Selected nozzle

- Select a nozzle from the list (Fig. 245). With this data indicate which nozzles are installed on the boom spraying points.
- Press **OK** to confirm.

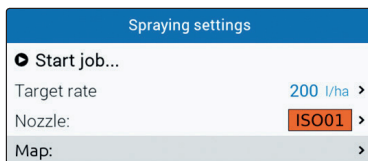


Fig. 246

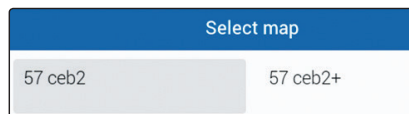


Fig. 247

Map

If there is at least one map (on the internal memory), you can select a prescription map for the spraying. According to the position detected by the GPS receiver, the monitor will use the appropriate spray rate for the area that is being sprayed (par. 9.6 Importing and using a prescription map).

- Select a map from the list (Fig. 247).
- Press **OK** to confirm.

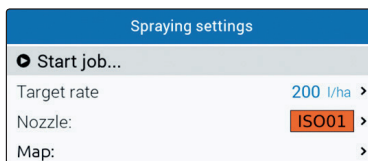


Fig. 248

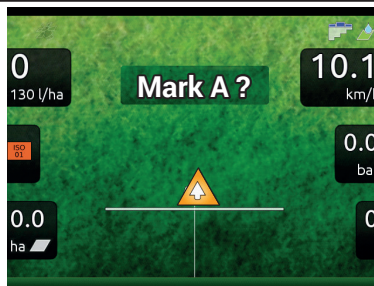


Fig. 249

Start job

- Select **▶** and press **OK** to switch to guidance.

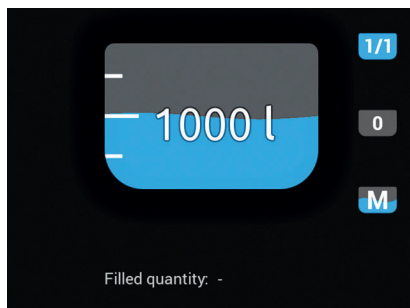


Fig. 250

- In the job menu, set the tank level with the function **F3 Tank** (par. 11.4).
- Start spraying by acting on the main valve control.
- Start moving along the field perimeter.



MARKING POINTS A AND B

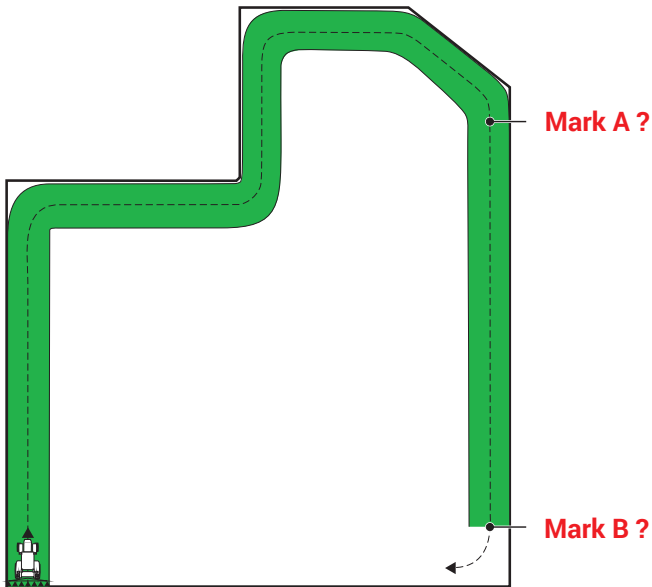


Fig. 251

- While moving along the perimeter of the field, you will mark points A and B (as described in par. 12.7 F7 New AB).

This operation is fundamental for the monitor to guide you, during spraying, along tracks parallel to the reference track obtained by marking points A and B.



We recommend marking points A and B while the machine is moving, at both ends of a straight line that is as long as possible: the longer the line marked by points A and B, the lower the error caused by any deviations of the machine itself.

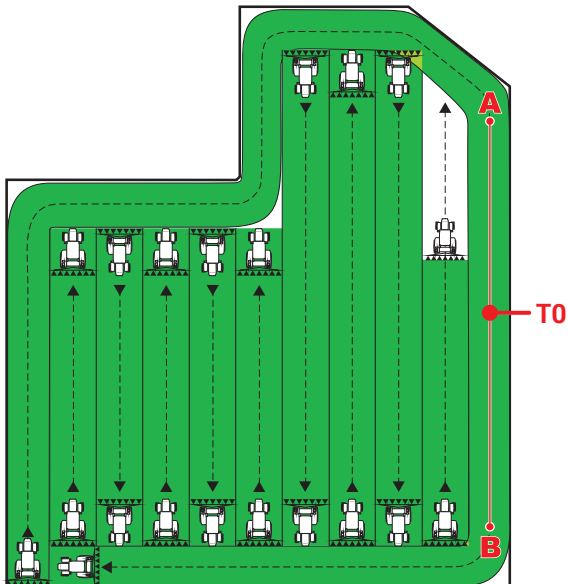


Fig. 252

- Once the line from A to B has been marked (T0), it will be possible to spray the rest of the field along parallel lines (Fig. 252), by following the reference tracks shown on the display (Fig. 253).

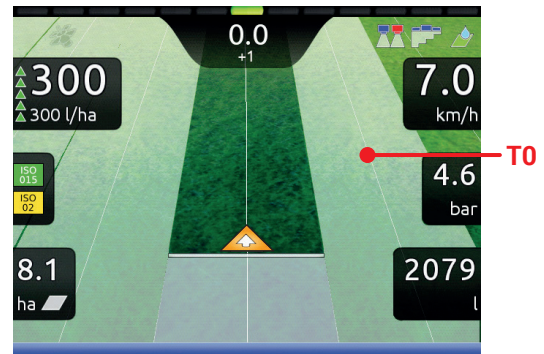


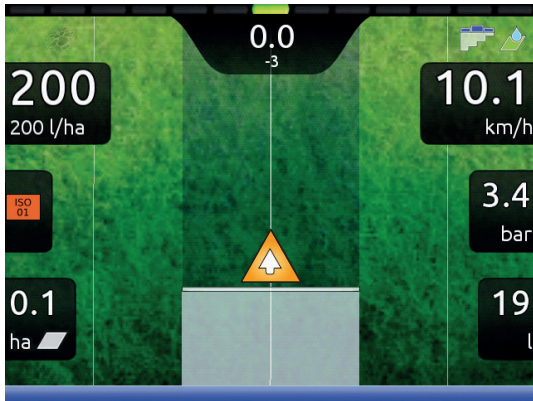
Fig. 253



At the beginning of a new job the monitor gives driving directions in the "Straight parallel" mode. To change guidance mode see function F2 Guidance mode (par. 12.2).



8 AUTOMATIC FUNCTIONS



To access automatic functions, start a job (**New job, Resume job, Continue last job**, chap. 10 "Home" Menu); in the guidance screen press **AUTO**. When the list is active (Fig. 254), pressing the key at the side will enable the relevant function.

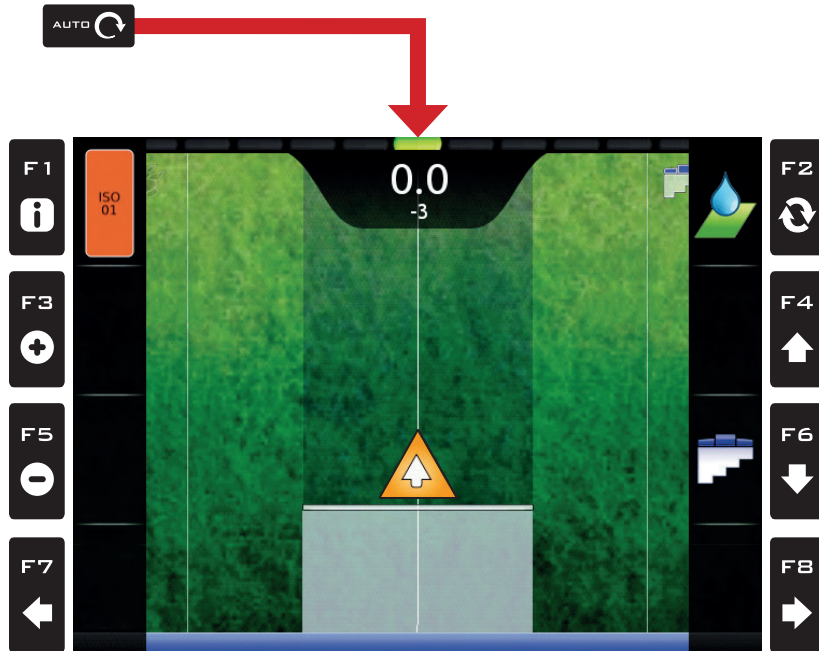


Fig. 254

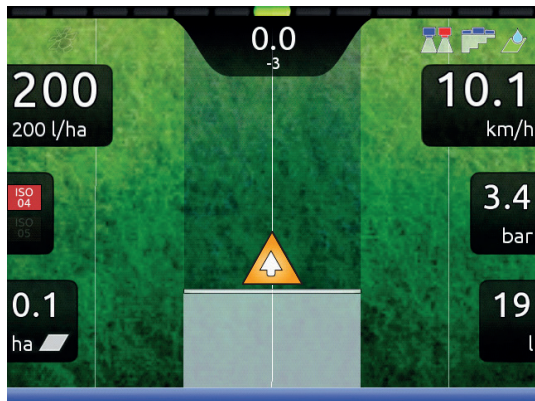
The table below lists all available job functions and the corresponding function keys:

Par.	
--	ISO 01 F1 NOT IN USE

Par.	
9.5	F2 ON/OFF automatic adjustment
9.8	F6 ON/OFF section automatic management

CONTINUES "Output adjustment" on page 77 >>>

9 AUTOMATIC FUNCTIONS



To access automatic functions, start a job (**New job, Resume job, Continue last job**, chap. 10 "Home" Menu); in the guidance screen press **AUTO**. When the list is active (Fig. 255), pressing the key at the side will enable the relevant function.

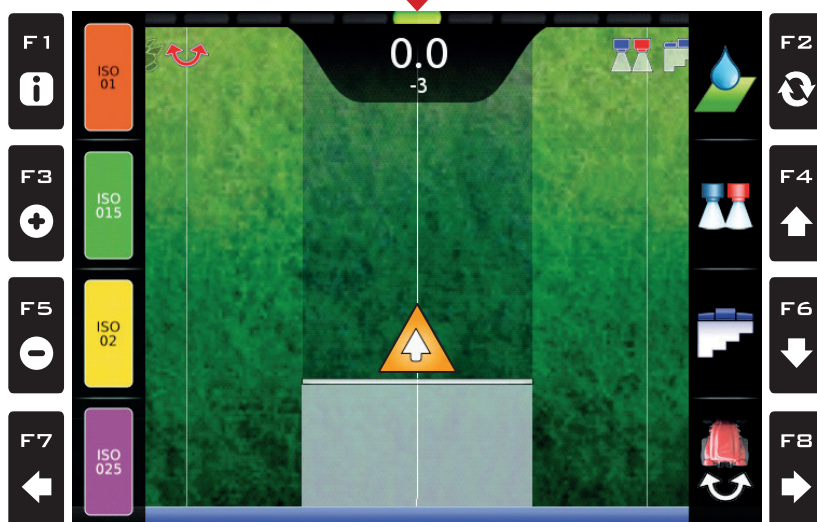





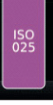





Fig. 255

The table below lists all available job functions and the corresponding function keys:

			
Par.		Par.	
9.3		F 1	Manual selection of NOZZLE A
9.3		F 3	Manual selection of NOZZLE B
9.3		F 5	Manual selection of NOZZLE C
9.3		F 7	Manual selection of NOZZLE D
9.5		F 2	ON/OFF automatic adjustment
9.2		F 4	Automatic nozzle selection ON / OFF
9.8		F 6	ON/OFF section automatic management

9.1 How the automatic nozzle selection works (SELETRON system)

In a traditional system, the farming machine speed limits depend on the minimum and maximum pressure of the nozzle in use and on the desired spray rate. For instance, if we were spraying 100 l/ha with a violet evenfan nozzle ISO110025, the minimum operating speed shall be 6.9 km/h (corresponding to a pressure of 1 bar) while maximum speed shall be 13.9 Km/h (corresponding to a pressure of 4 bars). This operation field can be restrictive for the features of both crop to be treated and machine.

Operation field of possible combinations of ISO11002 and ISO110025 nozzles

When automatic nozzle selection is enabled, the monitor (using Seletron devices) will enable the nozzle, or combination of nozzles, according to the set spray rate and driving speed. This system allows to widen the machine operating range, i.e. in the above instance, using ISO11002 yellow (A) and ISO110025 violet (B) nozzles, that work correctly at a speed from 5.5 km/h to 24.9 km/h.

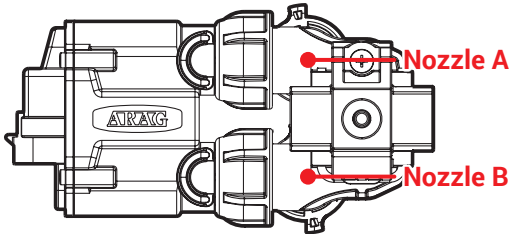


Fig. 256

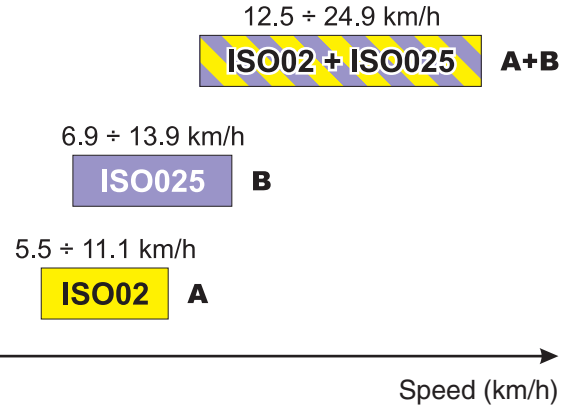


Fig. 257

According to the set data and those detected by the sensors, the monitor will select the suitable nozzle configuration, constantly checking that:

- spraying pressure remains within the range selected for each single nozzle at all times
- if more than one nozzle configuration is possible, the configuration where working pressure is as close as possible to the working range of the nozzle is selected
- nozzle replacement is significantly reduced

When setting a treatment, make sure to couple compatible nozzles.

For example:

- **Compatible nozzles:** the rate at 1 bar of the ISO025 nozzle is LOWER than the rate at 5 bars of the ISO02 nozzle (Fig. 258).
- **NON compatible nozzles:** the rate at 1 bar of the ISO05 nozzle is HIGHER than the rate at 5 bars of the ISO02 nozzle (Fig. 259).

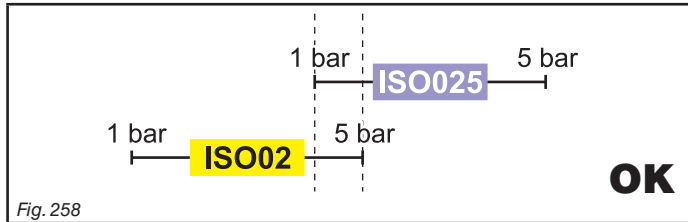


Fig. 258

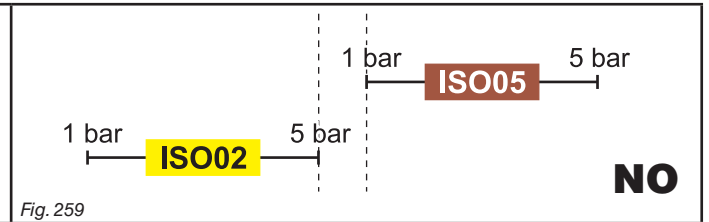


Fig. 259

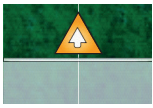
In the same way, the overall rate of both nozzles at MINIMUM pressure shall be LOWER than the rate of the high rate nozzle at MAXIMUM pressure.

When setting the treatment (par. 7.5) the monitor automatically checks the rates and in case the above conditions are not respected, the computer will display the message Wrong nozzles configuration!



9.2 F4 Automatic nozzle selection ON/OFF

Enables / disables automatic nozzle selection on all spraying points (DEFAULT: ON).



- 1 In the guidance screen, press **AUTO**.
- 2 Press **F4** (Fig. 260) to enable or disable automatic selection.

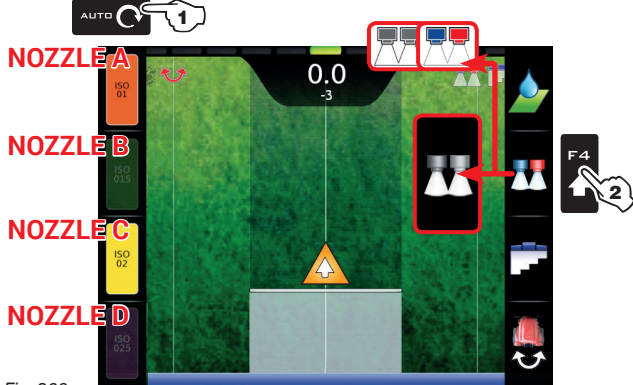
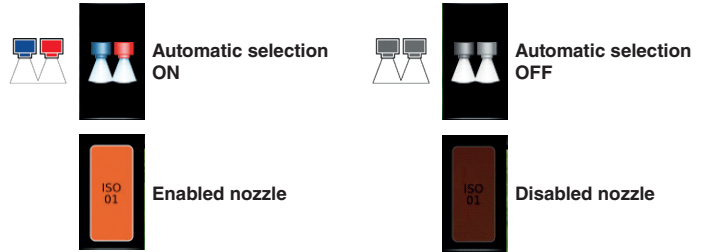


Fig. 260



The number of nozzles displayed in Fig. 260 will vary according to the spraying point setting (par. 5.1.1).



9.3 F1/F3/F5/F7 Manual nozzle selection

Allows to select manually nozzles A, B, C, D in use on the spraying points. This function is enabled ONLY when automatic nozzle selection is disabled (par. 9.2).



- 1 In the guidance screen, press **AUTO**.
- 2 Press **F4** to disable automatic nozzle selection (par. 9.2 F4 Automatic nozzle selection ON/OFF).
- 3 Press the button next to the nozzle (Fig. 261) to enable or disable the corresponding nozzle.

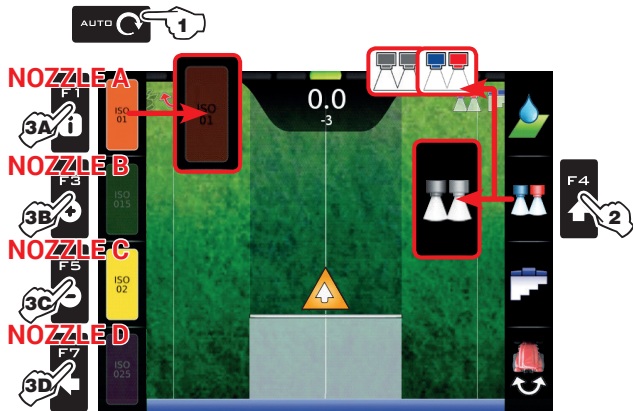


Fig. 261



The number of nozzles displayed in Fig. 261 will vary according to the spraying point setting (par. 5.1.1).

CONTINUES "Output adjustment" on page 77 >>>

F1 Enter selected character

F2 Delete selected character

F7 F8 Scroll (LEFT / RIGHT)

F4 F6 Scroll (UP / DOWN)

Data increase / decrease

OK Confirm access or data change

ESC Exit the function or data change



9.4 Output adjustment

The monitor can control chemical output with an automatic adjustment function (par. 9.5, *DEFAULT: ON*).

AUTOMATIC ADJUSTMENT ON



The monitor keeps the set application rate constant regardless of the changes in speed and boom section status.

In this case the spray rate can be set with the function **F1** Spray rate (par. 12.1), or by uploading a prescription map (par. 9.6) from one of the external memories (pendrive / SD card).

If necessary, during spraying, it is possible to operate the output control (par. 7.2 or 5.7.6) to adjust output to crop conditions, increasing or decreasing momentarily the application rate up to $\pm 50\%$.

AUTOMATIC ADJUSTMENT OFF (MANUAL)



Rate manual regulation shall be carried out using the proper control (par. 7.2 or 5.7.6).



9.5 F2 Automatic adjustment ON/OFF

Enables / disables automatic output adjustment (*DEFAULT: ON*).



- 1 In the guidance screen, press **AUTO**.
- 2 Press **F2** (Fig. 262) to enable or disable automatic adjustment.

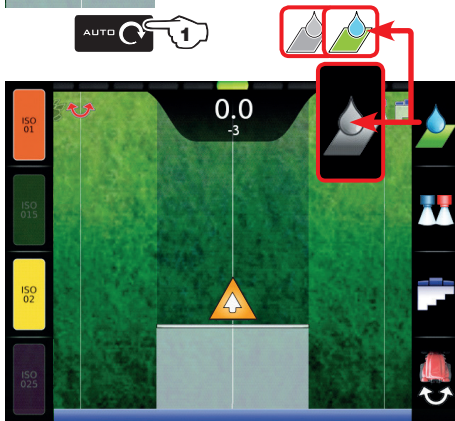


Fig. 262



9.6 Importing and using a prescription map

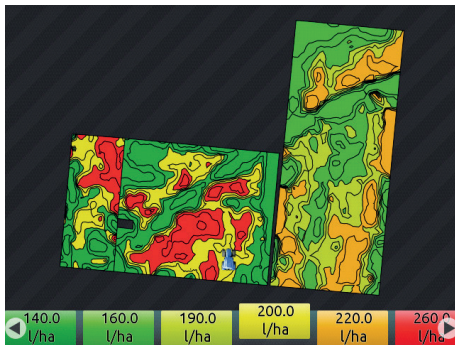


Fig. 263

The monitor can vary output by using the data contained in a "prescription map", which indicates the exact quantity of fluid that must be sprayed at every point in the field.

The map is created thanks to a special analysis and simulation software. The correct spray rate is established for every point on the map, in order to obtain the optimal yield from a field with the minimum expenditure in terms of materials and time.

To enable the monitor to read and use the collected information, the following is required:

- The prescription map must be in "Shapefile ESRI®" format.
- The database field containing the indication of the spray rate that must be applied to the different areas must be named "Rate".
- The database may include other fields, provided that these contain exclusively numerical values (the presence of any alphabetic characters will prevent the database from being imported correctly).

ESRI® is a registered trademark of ESRI, California, USA

At this point you must transfer the prescription map from one of the external memories (pendrive / SD card) onto the monitor:


- Create a new folder named "maps" on the used memory.
- Save the map in the just created map.
- Copy the map onto the internal memory, through the menu **Files copy to internal memory > Maps from USB** (par. 10.4.4) or **Files copy to internal memory > Maps from SD card** (par. 10.4.4).
- Select one of the functions in the menu "Home": **F1 Continue last job** (par. 10.1), **F3 New job** (par. 10.3) or **F5 Resume job** (par. 10.5).
- In the job start screen select the desired prescription map.
- Proceed with the job. According to the position detected by the GPS receiver, the monitor will use the appropriate spray rate for the area that is being sprayed (Fig. 263).

If the tractor is on a "black" area on the map, i.e., without a spray rate indication, the monitor stops spraying by managing every single section.

F1 Enter selected character	F2 Delete selected character	F7 FB Scroll (LEFT / RIGHT)	F4 F6 Scroll (UP / DOWN)	Data increase / decrease	OK Confirm access or data change	ESC Exit the function or data change	 Par. 1.4
---------------------------------------	--	--	---	--------------------------	--	--	--------------


9.7 Boom section management

AUTOMATIC MANAGEMENT ON

 The section valves are closed or opened automatically.

 To change section valve management mode, use function **F6 Automatic section management ON/OFF** (par. 9.8).

AUTOMATIC MANAGEMENT OFF (MANUAL)

 Section valves must be opened or closed manually.

TREATMENT AND BOOM SECTION STATUS

 Main control **OFF**
Sections **OFF**

 Main control **OFF**
Sections **ON**

 Section **ON**

 Section **OFF**

 Zone to be sprayed
OPEN SECTION

 Zone already sprayed
CLOSE SECTION

OPENING AND CLOSING SIGNALS

MANUAL MANAGEMENT OF THE SPRAYING POINTS

When the overlapping exceeds the value set for the **Sections overlapping limit** (par. 5.1.14), the monitor warns that the relevant spraying points must be **CLOSED** (Fig. 264). Close the valves through the relevant controls: the monitor will confirm closure on display. As the machine advances, the signal is triggered for each valve.

When overlapping returns within the set limit, the monitor warns to **OPEN** the relevant spraying points (Fig. 265). Open the valves through the relevant controls (par. 7.2 or 5.7.6): the monitor will confirm opening on display. As the machine advances, the signal is triggered for each valve.

Closing signal



Fig. 264

Opening signal

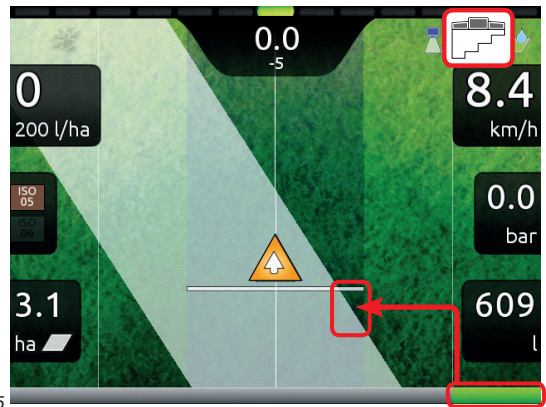


Fig. 265

AUTOMATIC MANAGEMENT OF THE SPRAYING POINTS

When overlapping of **ONE** or **MORE** spraying points is above the set value for the **Sections overlapping limit** (par. 5.1.14) the monitor **CLOSES** the relevant valves (Fig. 266). It is not necessary to intervene on their controls. The monitor closes the sections automatically. Job interruption is shown on the display in real time.

When overlapping returns within the set limit, the monitor opens the relevant valves automatically. Job resumption is shown on the display in real time (Fig. 267).

Automatic section closing



Fig. 266

Automatic section opening

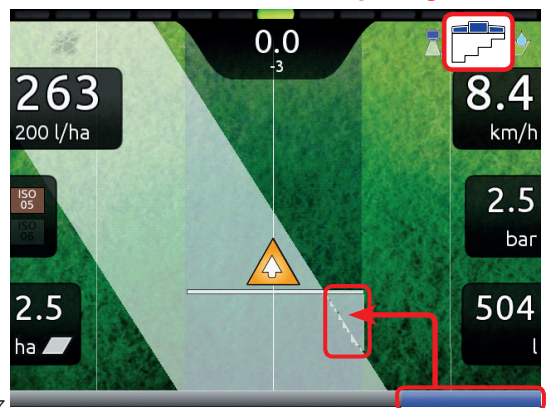
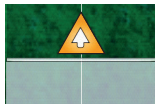


Fig. 267



9.8 F6 Automatic section management ON/OFF

Enables / disables automatic boom section management (*DEFAULT: ON*).



- 1 In the guidance screen, press **AUTO**.
- 2 Press **F6** (Fig. 268) to enable or disable automatic management.

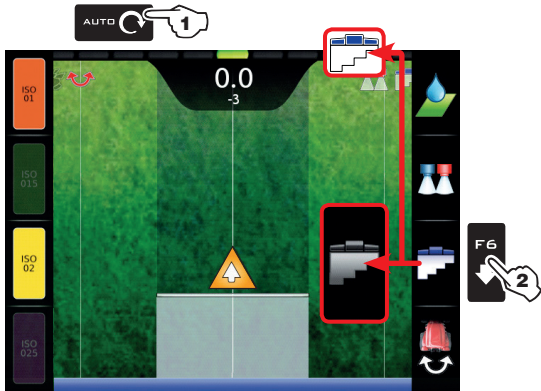
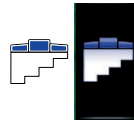
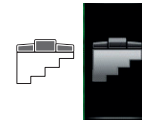


Fig. 268



Automatic section management
ON



Automatic section management
OFF

F1 Enter selected character

F2 Delete selected character

F7 **F8** Scroll (LEFT / RIGHT)

F4 **F6** Scroll (UP / DOWN)

Data increase / decrease

OK Confirm access or data change

ESC Exit the function or data change



Par. 1.4

10 "HOME" MENU

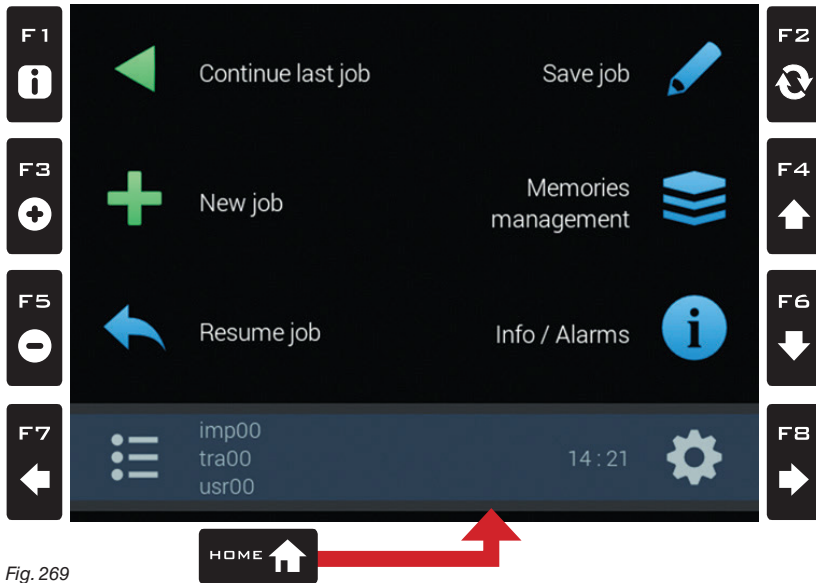







Fig. 269


To enter the menu press the **HOME** key: once inside the menu, pressing each key will enable the corresponding function. The table below sums up all menu items and corresponding keys:

Par.	
10.1	 F1 Continue last job Continues last job
10.3	 F3 New job Start a new spraying
10.5	 F5 Resume job Activate procedure for resuming a job
5	 F7 Select / Create settings for User, Tractor and Implement

Par.	
10.2	 F2 Save job Save current job
10.4	 F4 Memories management Manage and copy data between internal and external memories (Pendrive)
10.7	  F6 Info / Alarms Job information / alarms
5	 F8 Edit settings for User, Tractor and Implement

10.1
F1 Continue last job

Continues last job.

- 1 Press **F1** to continue the last job, from the point where it has been interrupted.
- 2 Check the **Spraying settings** in Fig. 271; modify them if necessary.
- 3 Select  and press **OK** to switch to guidance mode.
- 4 Complete the job (Fig. 272).

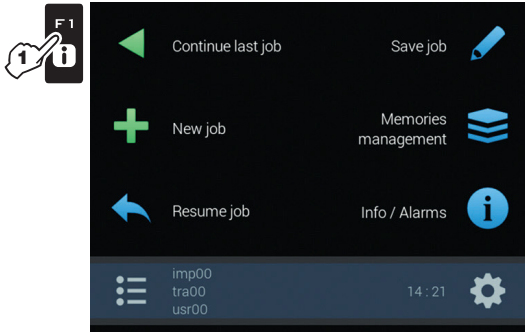


Fig. 270

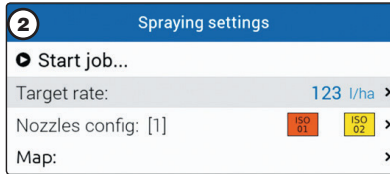


Fig. 271

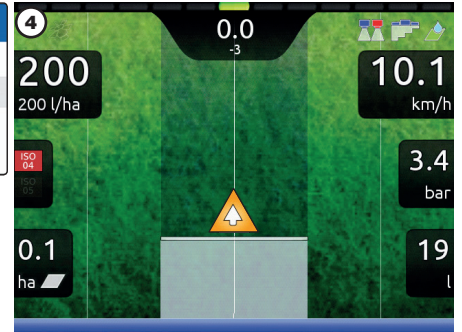


Fig. 272

10.2
F2 Save job

Save current job

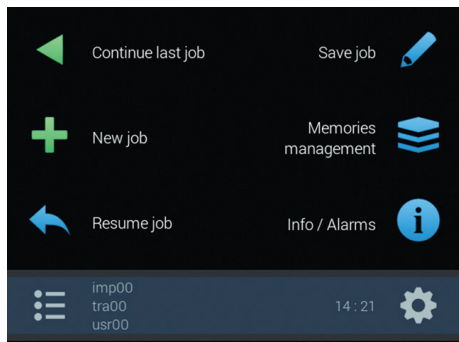


Fig. 273

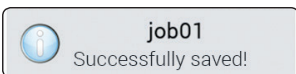


Fig. 274

- 1 Press **F2** to save current job: the name edit screen is displayed (Fig. 274). Type the name.
- 2A Press in succession to select the character you wish to type (UP / DOWN).
- 2B Press in succession to select the character you wish to type (RIGHT / LEFT).
- 3 Confirm the selected character.
- 3 Delete the character before the cursor (when the symbol "**<x**" is selected).
- 3 Save the entered text (when the symbol "**ok**" is selected).
- 4 Press to delete the character before the cursor.
- 5 save the typed text (when the "OK" symbol is selected "**ok**").
- 6 Press to exit screen without confirming modification.

Legend:

imp03 Typed Name Cursor	1 Selected character	← → Shift cursor across name characters	↑ Caps lock	<x Deletes the character before the cursor	ok Saves the entered text
------------------------------	-------------------------	--	----------------	---	------------------------------



A confirmation message is displayed once the process is completed (Fig. 275). Press **ESC**.

Fig. 275



10.3
F3 New job

Start a new spraying

1 Press **F3** to start a new spraying. If the current job has not been saved yet, the monitor will prompt the user to save it (Fig. 276). Press **OK** to continue without saving (**2A**) or **ESC** to interrupt the procedure and save (**2B**).

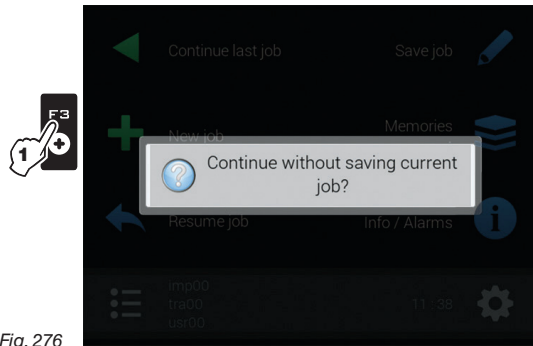


Fig. 276



! IF AT THIS STAGE YOU CHOOSE TO CONTINUE WITHOUT SAVING (2A), ALL CURRENT JOB DATA WILL BE LOST.

2B The **ESC** key stops the beginning of a new job.
3B Save the previous job with the function **Save job** (par. 10.2). Now start from point **1** to begin a new spraying and pass directly to step **2A**.

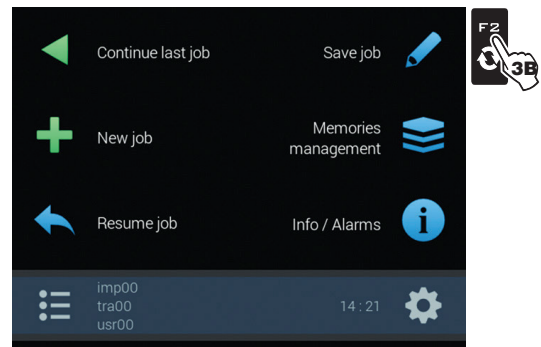


Fig. 277

2A The **OK** key allows switching to the treatment start page without saving the job.

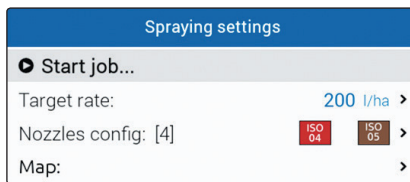


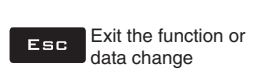
Fig. 278

Check the **Spraying settings** in Fig. 278; change them if necessary.

CONTINUES



Data increase / decrease



Par. 1.4



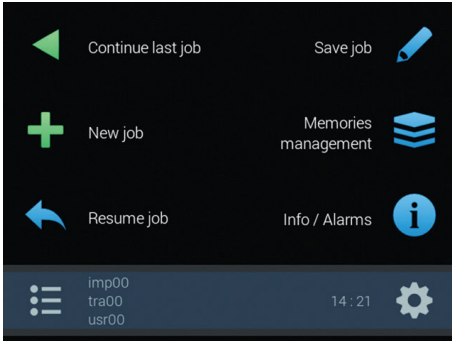
10.4
F4 Memories management

Manage and copy data between internal and external memories (Pendrive / SD card).

Allows to upload, save and/or delete the data memorized on monitor or on an external memory; said data concern jobs carried out, maps or machine configurations. All operations are described in detail in the following paragraphs.



When both memories are available, use the pen drives to exchange job data and system updates. This does not apply to the monitor equipped ONLY with SD card reader. The following paragraphs will provide an example using a pen drive: the procedure is identical with a SD card.



ARAG monitors can use different internal memories:

Bravo 400S: Pendrive + SD Card

Delta 80: Pendrive

Ninja: SD card



The items displayed in this menu depend on the type of external memory used.

Fig. 279

F1 Enter selected character

F2 Delete selected character

F7 **F8** Scroll (LEFT / RIGHT)

F4 **F6** Scroll (UP / DOWN)

Data increase / decrease

OK Confirm access or data change

ESC Exit the function or data change



Par. 1.4

10.4.1 Jobs export

Allows to export saved data on an external memory (Pen drive / SD card).

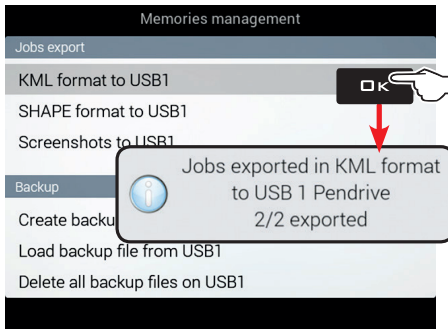


When both memories are available, use the pen drives to exchange job data and system updates. This does not apply to the monitor equipped ONLY with SD card reader. The following paragraphs will provide an example using a pen drive: the procedure is identical with an SD card.



Press **F4** to enter **Memories management**.

• **KML to USB / SD card**



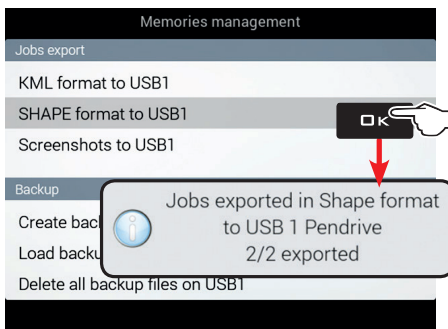
It allows to export in KML format all jobs currently saved in the internal memory and save them to USB Pendrive. Data in the file can be displayed on a Personal Computer with Google Earth®.

- Select the item **KML format to USB 1** (Fig. 280) and press **OK**.
- A confirmation message appears once the process is completed. Press **OK**.

The map is saved on the USB pendrive, inside a folder named "kml".

Fig. 280

• **Shape to USB / SD card**



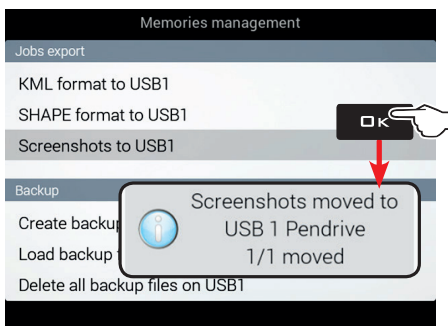
It allows to export in SHAPE format all jobs currently saved in the internal memory and save them to USB Pendrive. Data in the file can be displayed on a Personal Computer with a "Shape" file viewer (.shp).

- Select the item **SHAPE format to USB 1** (Fig. 281) and press **OK**.
- A confirmation message appears once the process is completed. Press **OK**.

The map is saved on the USB pendrive, inside a folder named "shapes".

Fig. 281

• **Screenshot to USB / SD card**



By pressing and holding **F8** it is possible to save an image of the displayed screen on the internal memory (max. 10 images). This menu allows saving the images stored in the USB Pendrive.

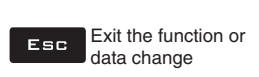
- Select the item **Screenshots to USB 1** (Fig. 282) and press **OK**.
- A confirmation message appears at the end of the operation. Press **OK**.

The image is saved on the USB pendrive, inside a folder named "screen-shots".

Fig. 282



Data increase / decrease



10.4.2 Backup

It manages exchange of system settings between the monitor and an external memory.

When both memories are available, use the pen drives to exchange job data and system updates. This does not apply to the monitor equipped ONLY with SD card reader. The following paragraphs will provide an example using a pen drive: the procedure is identical with an SD card.



Press **F4** to enter **Memories management**.

• Create backup file on USB1 / SD card

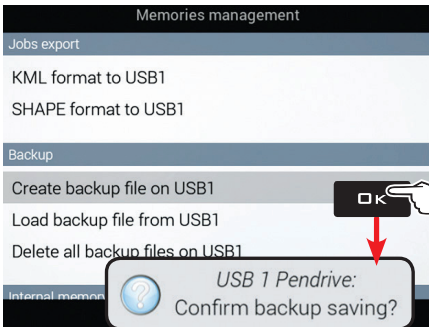


Fig. 283

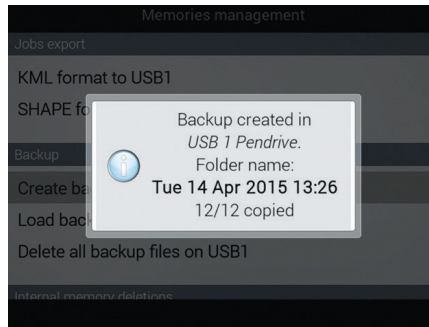


Fig. 284

Allows to save a (backup) copy of system settings to USB pendrive.

- Select **Create backup file on USB1** (Fig. 283) and press **OK**.
- Monitor requests you to confirm saving (**OK**: confirm, **ESC**: cancel).
- A confirmation message (Fig. 284) is displayed once the process is completed. Press **ESC**.

The backup is saved on the USB pendrive, inside a folder named "backups".

• Load backup file from USB1 / SD card

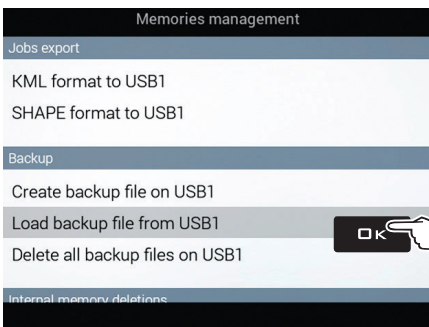


Fig. 285

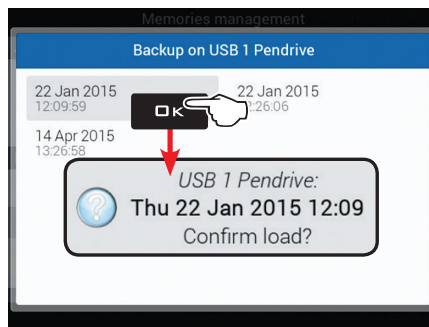


Fig. 286

Allows to load onto the device a (backup) copy of system settings and **ACTIVATE THEM**.

Before doing this, we recommend you to save a backup of existing settings.

- Select **Load backup file from USB1** (Fig. 285) and press **OK**.
- Select backup folder to load (Fig. 286) and press **OK**.
- Monitor requests you to confirm the following: **ALL active settings will be lost** (**OK**: confirm, **ESC**: cancel).

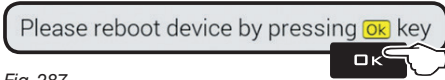


Fig. 287

- Message in Fig. 287 is displayed once the process is completed. Reboot device by pressing **OK**.

• Delete all backup files on USB1 / SD card

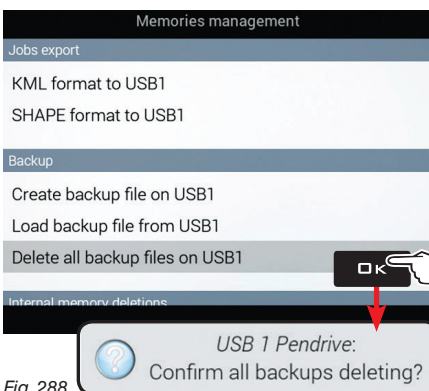


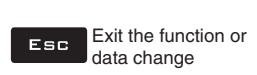
Fig. 288

Allows to delete all backups from the USB pendrive.

- Select **Delete all backup files on USB1** (Fig. 284) and press **OK**.
- Monitor requests you to confirm deletion (**OK**: confirm, **ESC**: cancel).



Data increase / decrease



10.4.3 Internal memory deletions

Allows to delete data from monitor internal memory. **THE CURRENTLY USED FILES MUST NOT BE DELETED.**

The following paragraphs will use Implements as an example: the same procedure will be valid for all other cases (Tractors, Users, etc.).



Press **F4** to enter **Memories management**.

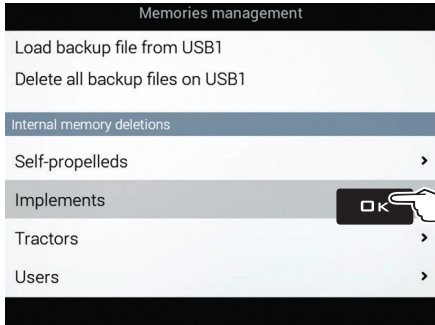


Fig. 289

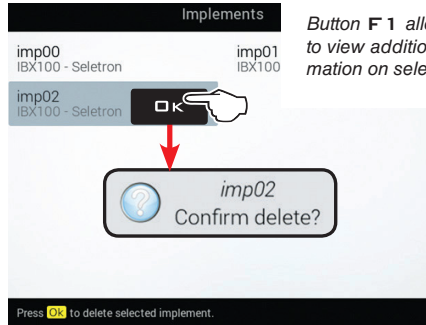
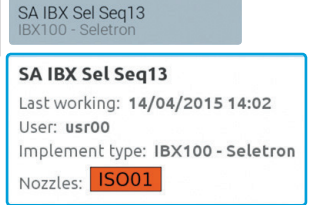


Fig. 290

Button **F1** allows you to view additional information on selected file.



Example:



- Select **Implements** (Fig. 289) and press **OK**.
- In the list of memorized names select the desired implement (Fig. 290) and press **OK**.
- The message in the figure is displayed: confirm deletion by pressing **OK**.

10.4.4 Files copy to internal memory

Allows to copy data from an external memory onto monitor internal memory.

The following data can be copied in the internal memory:

- **Maps from USB / Maps from SD card:** it is necessary to create a "maps" folder in the external memory and insert in it the prescription map files (*.dbf, *.shp, *.shx)
- **Tank profiles from USB / Tank profiles from SD card:** it is necessary to create an "ibx100-tank-profiles" folder in the external memory and insert it in the tank profile files (*.pro extension) compatible with ECU IBX100.
- **Upgrade file from USB / Upgrade file from SD card:** it is necessary to create an "s19" folder in the external memory and insert it in the update files (*.s19 extension).



When both memories are available, use the pen drives to exchange job data and system updates. This does not apply to the monitor equipped ONLY with SD card reader. The following paragraphs will provide an example using a pen drive: the procedure is identical with an SD card.

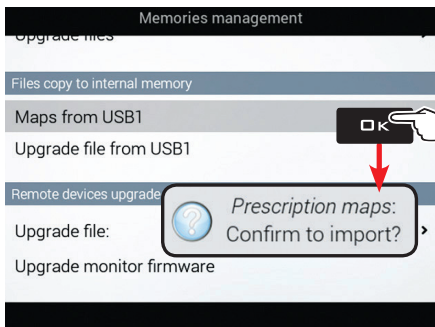


Fig. 291

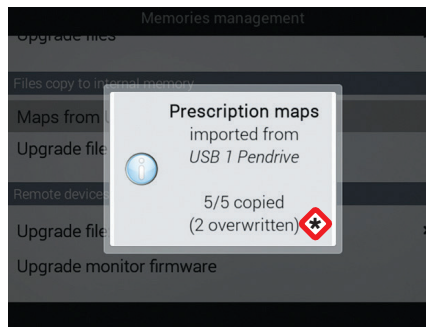


Fig. 292

- Select **Maps from USB** (Fig. 291) and press **OK**. Monitor requests you to confirm import
- OK**: confirm, **ESC**: cancel
- A confirmation message (Fig. 292) is displayed once the process is completed. Press **ESC**.
- WARNING: FILES HAVING THE SAME NAME WILL BE OVERWRITTEN.**

10.4.5 Remote devices upgrade



When both memories are available, use the pen drives to exchange job data and system updates. This does not apply to the monitor equipped ONLY with SD card reader. The following paragraphs will provide an example using a pen drive: the procedure is identical with an SD card.

• Upgrade files

Allows to upgrade the software of the devices connected to the monitor: ECU IBX100 (remote control unit), switch panel, joystick, etc.

Before starting the procedure copy the upgrade files onto the pendrive.

- Insert the pendrive in a pendrive reader and connect it to the computer. The window to the right will appear: select **Open folder to view the files**.
- The pendrive explorer window will open: create a new folder and name it "s19"



Fig. 293

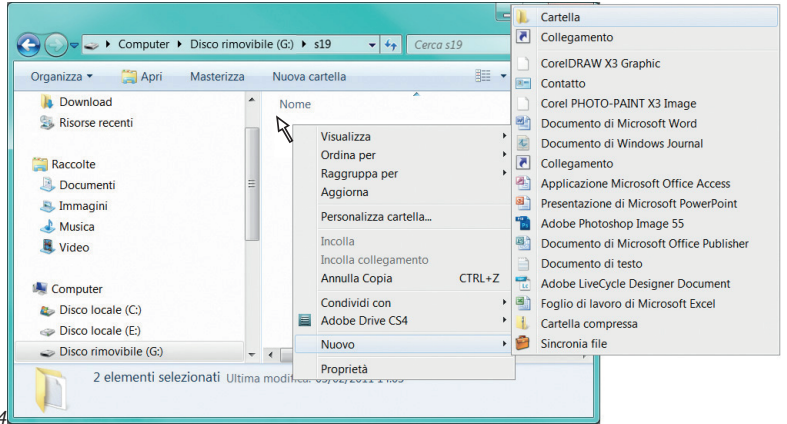


Fig. 294

- Select the upgrade file and drop it onto the pendrive explorer window, in the folder named "s19".
- Insert the pendrive in its slot on the monitor.

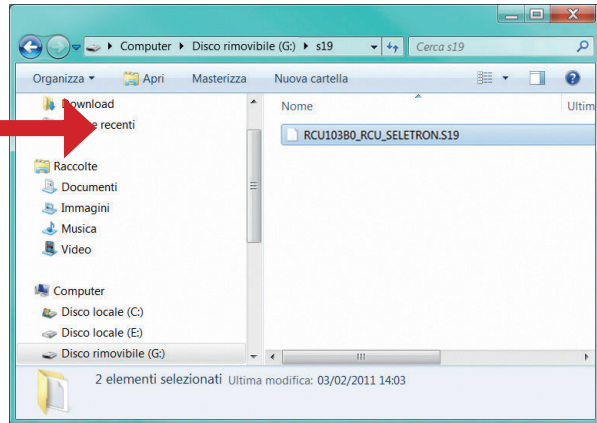
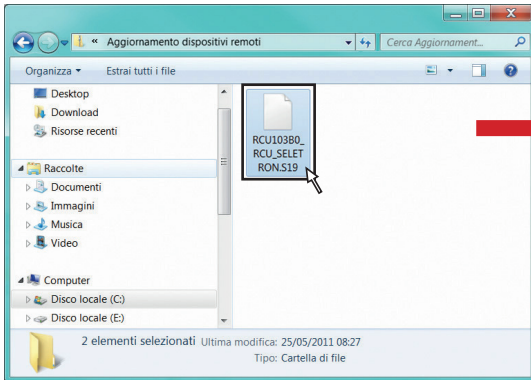


Fig. 295

CONTINUES

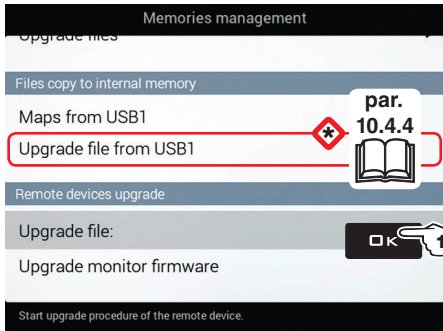


Fig. 296

Check the list of updates provided by default in the internal memory (steps 1 and 2). IF THE DESIRED FILE IS NOT AVAILABLE, download the update at www.aragnet.com in "download" section and copy update file to device internal memory (function on the side, par. 10.4.4).

RUNNING THE UPDATE:

1 Select the **Upgrade file** menu and press **OK**.

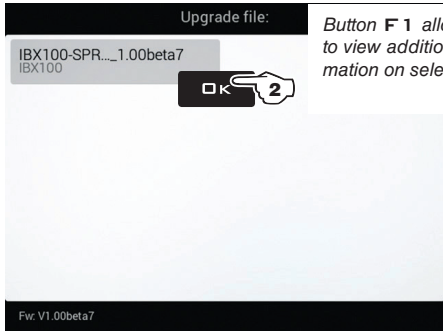
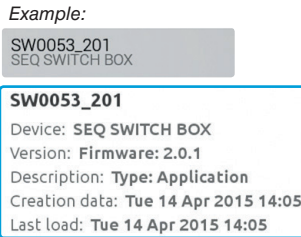


Fig. 297



2 Scroll the list: select the desired file from the list (Fig. 297) and press **OK**.

Available upgrades:

- IBX100 Aragnet Sprayer (for ECU with water controls)
- IBX100 Hydraulic Arag (for ECU with hydraulic controls)
- SWITCHBOX (for "Standard" switch panel)
- SEQ SWITCHBOX (for sequential control switch panel)
- SELETRON (for "Seletron" valve)
- JOYSTICK (for joystick "Explorer")

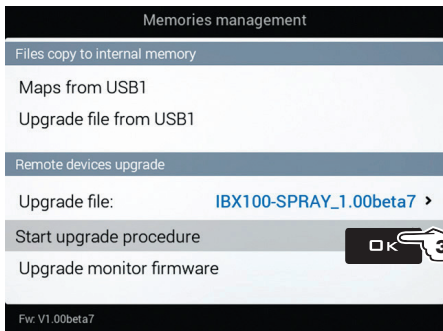


Fig. 298



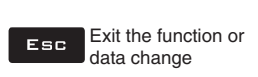
Fig. 299

3 Now select **Start upgrade procedure** (Fig. 298) and press **OK**. Follow the instructions on the display and start the setup procedure (Fig. 299).



Fig. 300

4 When the message in Fig. 300 appears, the upgrade is complete. Press **OK**.



When both memories are available, use the pen drives to exchange job data and system updates. This does not apply to the monitor equipped ONLY with SD card reader.
 The following paragraphs will provide an example using a pen drive: the procedure is identical with a SD card.

• Upgrade monitor firmware

Allows updating monitor firmware.



Fig. 301

Before starting the procedure copy the upgrade files onto the pendrive.

- Insert the pendrive in a pendrive reader and connect it to the computer.
- The window to the right will appear: select **Open folder to view the files**.
- Content window of the pendrive will open.

- Select the upgrade file and drop it onto the pendrive explorer window.

WARNING: save file in the main directory of the USB pendrive or the monitor will not be able to read it.

According to the device to be updated, the update content may be composed of one or more files. Always copy all the files displayed.

Example 1

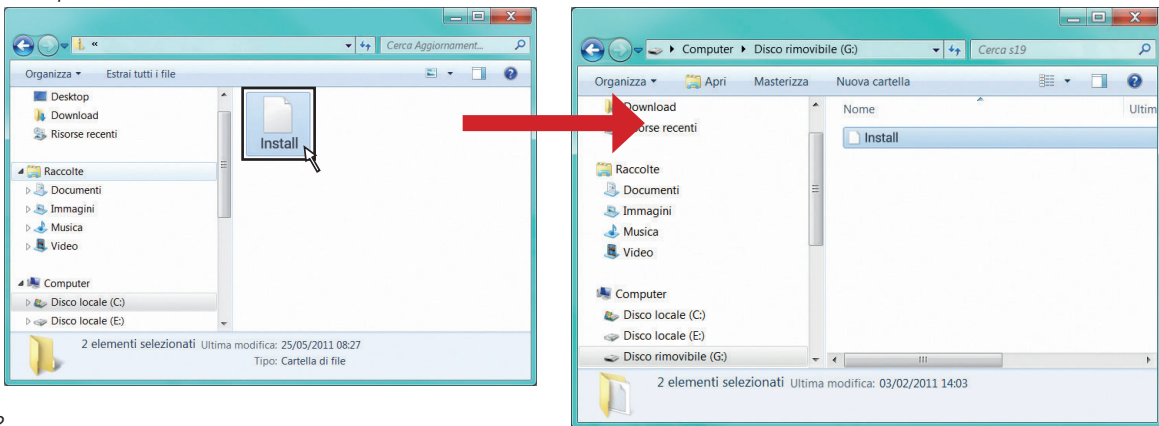


Fig. 302

Example 2

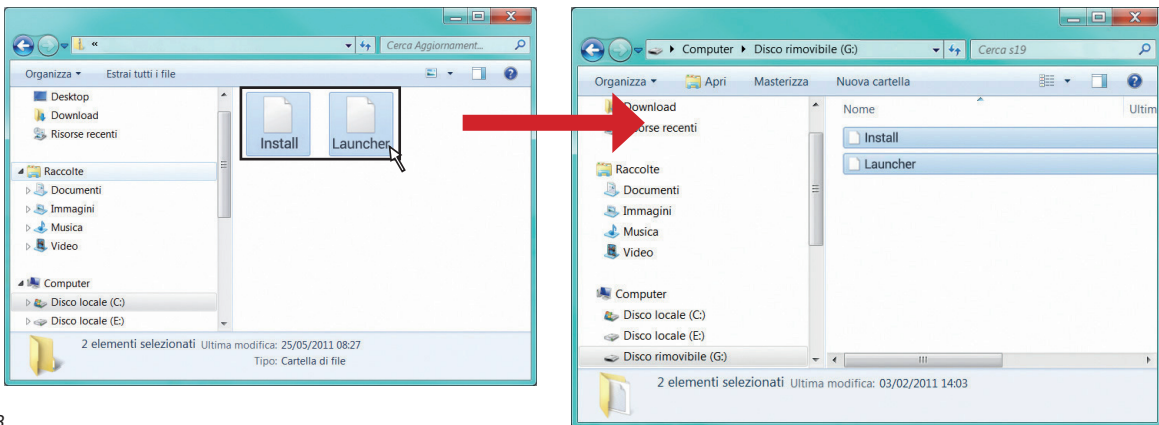


Fig. 303

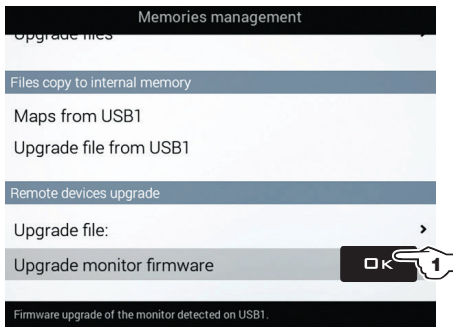
CONTINUES >>>

>>> • Upgrade monitor firmware

- Insert the pendrive in its slot on the monitor.

RUNNING THE UPDATE:

- 1 Select **Upgrade monitor firmware** (Fig. 304) and press **OK**. Message in Fig. 305 is displayed once the process is completed.
- 2 Remove the pen drive then restart the monitor.



Please reboot device to proceed with the upgrade...

Fig. 305

IF YOU SELECT THE UPDATE FUNCTION, SYSTEM IS PRESET TO KEEP ANY PREVIOUSLY SET CONFIGURATION. DEPENDING ON THE CRITICALITY OF THE UPDATE, THERE ARE CASES IN WHICH ITS INSTALLATION MAY FULLY DELETE ALL THE SETTINGS AND THE FILES SAVED. PLEASE REFER TO THE "README" FILE FOUND IN THE PACKAGE FOR ANY FURTHER DETAIL ON THIS MATTER.

Fig. 304

At power-on, the computer will check data and start installation.

WARNING: DURING THE FOLLOWING OPERATIONS DO NOT SWITCH THE MONITOR OFF AND DO NOT POWER OFF!

When installation is completed, the computer automatically reboots.

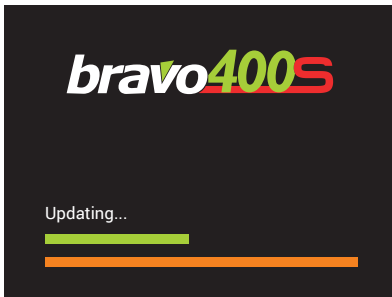


Fig. 306



Fig. 307

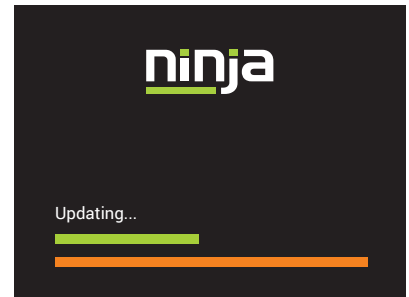


Fig. 308

If necessary, it is possible to **FORCE THE COMPLETE DELETION** of all the settings and of the files saved. When the update is in progress and before its end (i.e. before the coloured progression bars reach the right end) it is necessary to press the button once **F3**: the message will appear Full erase option activated and the system will be completely reset at the end of the update.

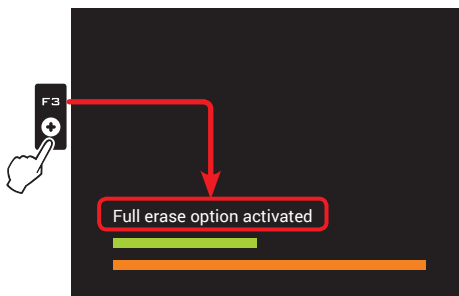


Fig. 309

To **CANCEL THE COMPLETE DELETION**, press again **F3** before the end of the update: the message will appear and the system will be updated without deleting all data: the message will appear Full erase option disabled and the system will be updated without deleting all data.

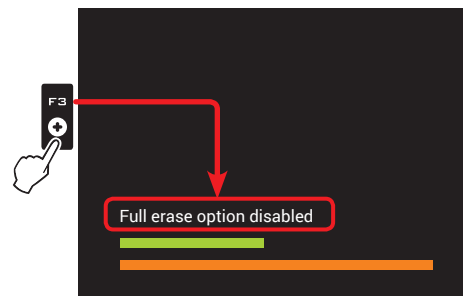
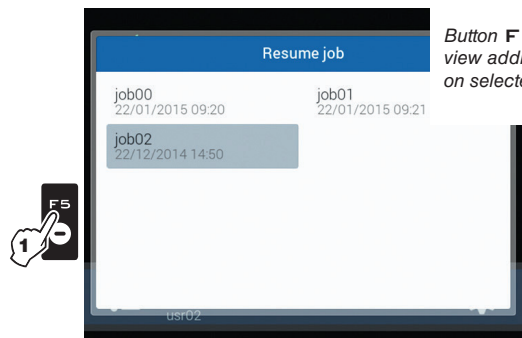


Fig. 310

10.5
F5 Resume job

Enables procedure for resuming a previously saved job.

- 1 Press **F5** to resume a previous job, from the list of saved jobs. As for the **New job** function (par. 10.3), if the current job has not been saved yet, the monitor will prompt the user to save it.
- 2 Select the job among those in the list (Fig. 311) and press **OK** to confirm the selection.
- 2a When an "old" job is resumed, the monitor provides guidance information by restoring the conditions which were active at the time of saving. If the **Loading options** screen is enabled (see par. 5.6.9), it is possible to choose which information to load (Fig. 312).
- 3 Check the **Spraying settings** in Fig. 313; modify them if necessary.
- 4 Select **▶** and press **OK** to switch to guidance mode.
- 5 Complete the job (Fig. 314).



Button **F1** allows you to view additional information on selected file.

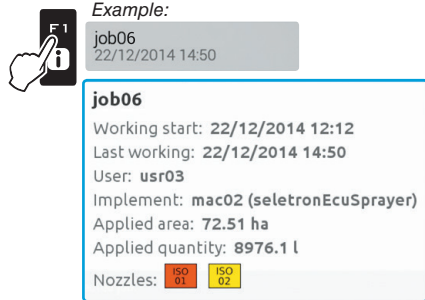
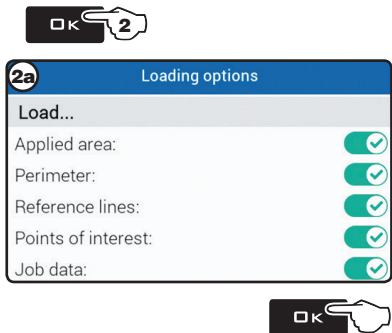


Fig. 311



In this screen it is possible to enable or disable the information memorized during the last saving (**✔ Value enabled, ✘ Value disabled**).

- Select, one by one, the parameters shown in the list and start the setup procedure:
 - **Applied area** disabling this parameter resets the relevant counter.
 - **Perimeter** disabling this parameter resets the calculated surface counter.
 - **Reference lines**
 - **Points of interest (POI)**
 - **Job data** disabling this parameter resets all counters;
- upon job loading a new spraying start date and time will be saved.

Fig. 312

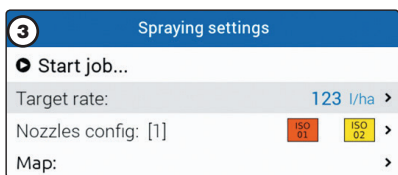


Fig. 313

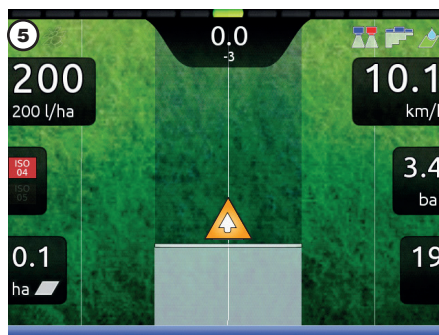



Fig. 314

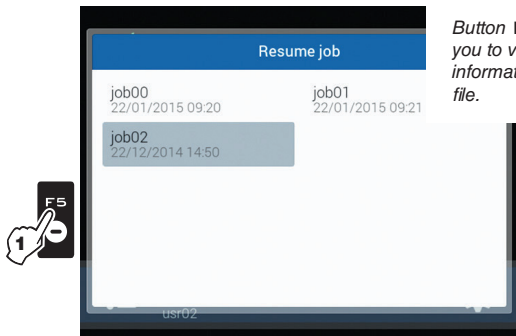
CONTINUES "F6 Info / Alarms" on page 94 >>>



10.6
F5 Resume job

Enables procedure for resuming a previously saved job.

- 1 Press **F5** to resume a previous job, from the list of saved jobs. As for the **New job** function (par. 10.3), if the current job has not been saved yet, the monitor will prompt the user to save it.
- 2 Select the job among those in the list (Fig. 319) and press **OK** to confirm the selection.
- 2a When an "old" job is resumed, the monitor provides guidance information by restoring the conditions which were active at the time of saving. If the **Loading options** screen is enabled (see par. 5.6.9), it is possible to choose which information to load (Fig. 320).
- 3 Check the **Spraying settings** in Fig. 315; modify them if necessary.
- 4 Select  and press **OK** to switch to guidance mode.
- 5 Complete the job (Fig. 316).



Button **F1** allows you to view additional information on selected file.

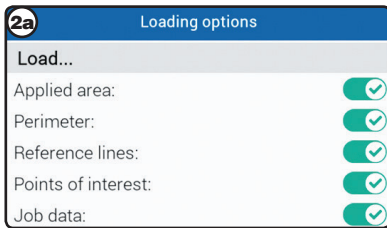




Example:

job06
22/12/2014 14:50

job06
Working start: 22/12/2014 12:12
Last working: 22/12/2014 14:50
User: usr03
Implement: mac02 (seletronEcuSprayer)
Applied area: 72.51 ha
Applied quantity: 8976.1 l
Nozzles: ISO 01

Fig. 315



In this screen it is possible to enable or disable the information memorized during the last saving ( Value enabled,  Value disabled).

- Select, one by one, the parameters shown in the list and start the setup procedure:
- **Applied area** disabling this parameter resets the relevant counter.
- **Perimeter** disabling this parameter resets the calculated surface counter.
- **Reference lines**
- **Points of interest (POI)**
- **Job data** disabling this parameter resets all counters; upon job loading a new spraying start date and time will be saved.

- Select **Start job...** and press **OK** to switch to **Spraying settings**.

Fig. 316

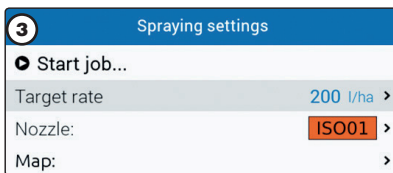


Fig. 317

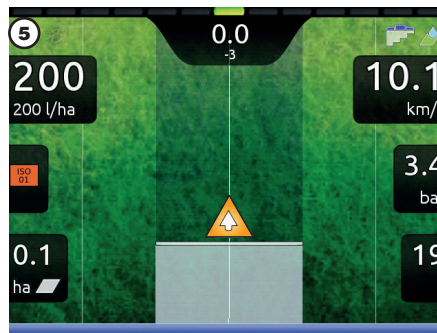


Fig. 318

CONTINUES "F6 Info / Alarms" on page 94 >>>

F1 Enter selected character

F2 Delete selected character

F7 **F8** Scroll (LEFT / RIGHT)

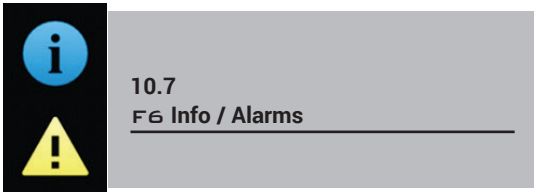
F4 **F6** Scroll (UP / DOWN)

Data increase / decrease

OK Confirm access or data change

ESC Exit the function or data change





Displays job information / alarms.

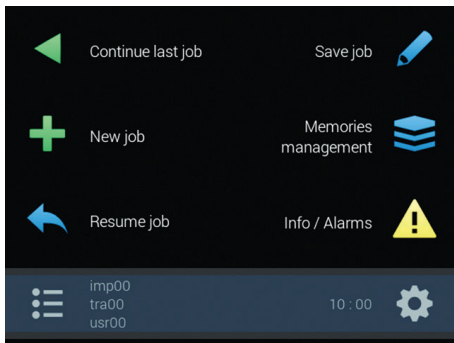


Fig. 319

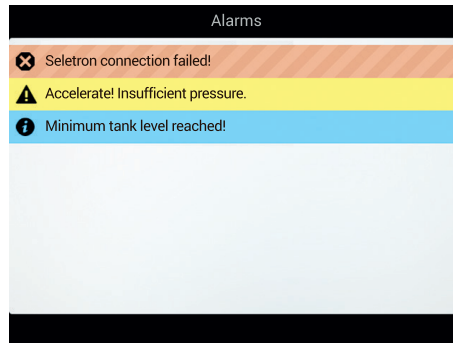
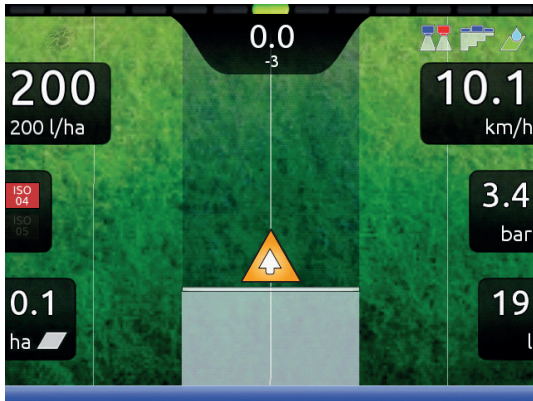


Fig. 320

1 Press **F6** to view the **Info / Alarms** menu (Fig. 320). This screen gives an overview of the active notifications for the operator, rated by importance as **Critical alarms**, **Low priority alarms** and **Info**.

11 JOB MENU



To access job menu start a job (**New job, Resume job, Continue last job**, chap. 10 "Home" Menu); in the guidance screen press **MENU**.
In the job menu (Fig. 321), pressing any key at the side will enable the relevant function.

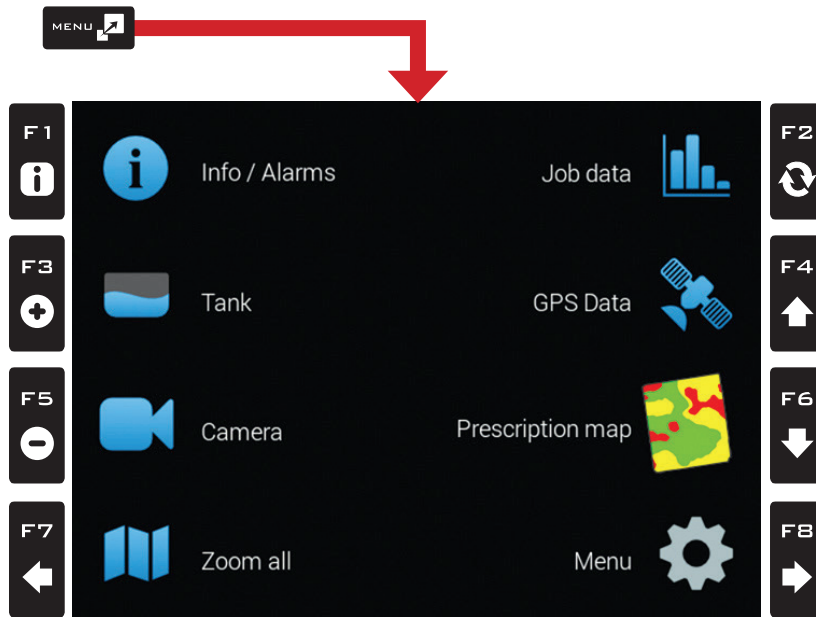


















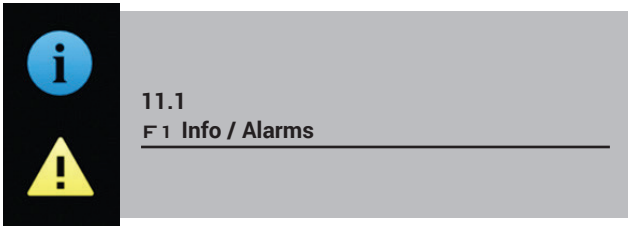


Fig. 321

The table sums up all menu items and corresponding keys:

 Par.		 Par.	
11.1	  F 1 Info / Alarms	11.2	 F 2 Job data
Displays job information / alarms		Displays job data	
11.4	 F 3 Tank	11.5	 F 4 GPS Data
Tank filling management		Displays GPS data	
11.6	 F 5 Camera	11.7	 F 6 Prescription map
Displays images from connected cameras		Overview of the prescription map in use	
11.8	 F 7 Zoom all	11.9	 F 8 Menu
Overview of the field during spraying		Job settings menu	

 F 1 Enter selected character	 F 2 Delete selected character	 F 7 F 8 Scroll (LEFT / RIGHT)	 F 4 F 6 Scroll (UP / DOWN)	Data increase / decrease	 OK Confirm access or data change	 ESC Exit the function or data change	 Par. 1.4
--	---	---	--	--------------------------	--	--	--



Displays job information / alarms



- 1 In the guidance screen, press **MENU**.
- 2 Press **F 1** to view the **Info / Alarms** menu (Fig. 323). This screen gives an overview of the active notifications for the operator, rated by importance as **Critical alarms**, **Low priority alarms** and **Info**.

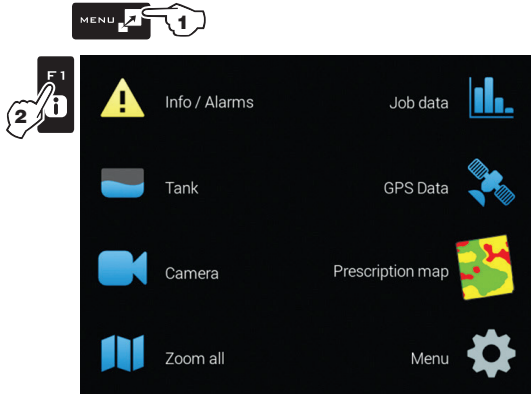


Fig. 322

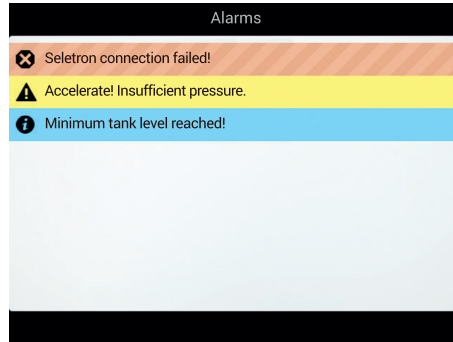


Fig. 323

F1 Enter selected character

F2 Delete selected character

F7 **F8** Scroll (LEFT / RIGHT)

F4 **F6** Scroll (UP / DOWN)

Data increase / decrease

OK Confirm access or data change

ESC Exit the function or data change



11.2
F2 Job data

Displays job data



- 1 In the guidance screen, press **MENU**.
- 2 Press **F2** to view job data (Fig. 325 and Fig. 326).
- 3 Press **F4** / **F6** to scroll data.

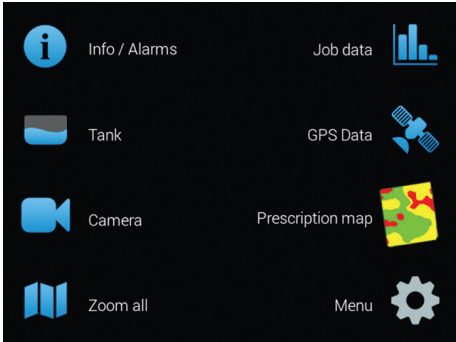


Fig. 324

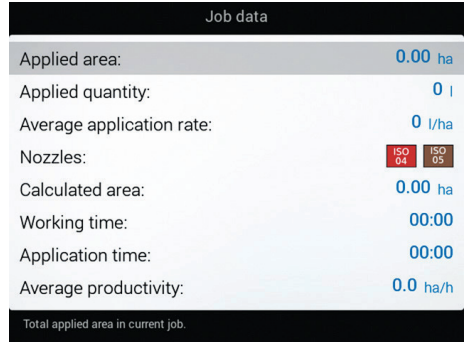



Fig. 325



 Data and units of measurement shown are listed in par. 14.1.

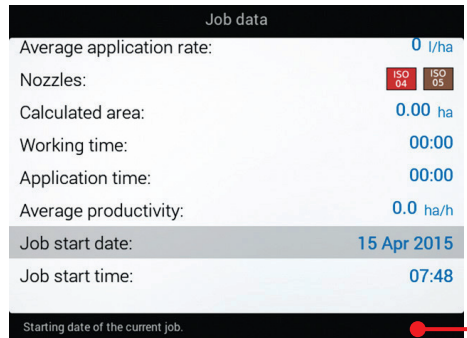


Fig. 326



A description of the selected data is shown at the bottom of the display.

CONTINUES "F3 Tank" on page 99 >>>



11.3
F2 Job data

Displays job data



- 1 In the guidance screen, press **MENU**.
- 2 Press **F2** to view job data (Fig. 328 and Fig. 329).
- 3 Press **F4 / F6** to scroll data.



Fig. 327

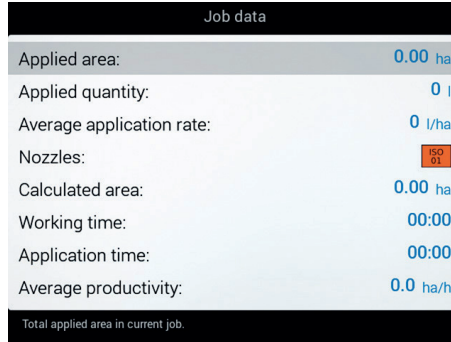


Fig. 328



Data and units of measurement shown are listed in par. 16.1.



Fig. 329



A description of the selected data is shown at the bottom of the display.

CONTINUES "F3 Tank" on page 99 >>>

F1 Enter selected character

F2 Delete selected character

F7 **F8** Scroll (LEFT / RIGHT)

F4 **F6** Scroll (UP / DOWN)

Data increase / decrease

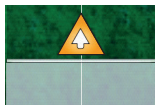
OK Confirm access or data change

ESC Exit the function or data change



11.4
F3 Tank

Manages tank filling.
The management mode will change according to the device set for the tank level reading (basic settings, chap. 4).



- 1 In the guidance screen, press **MENU**.
- 2 Press **F3** to view the **Tank** menu (Fig. 331).

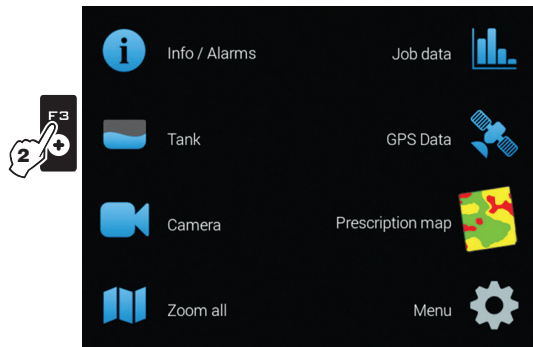


Fig. 330

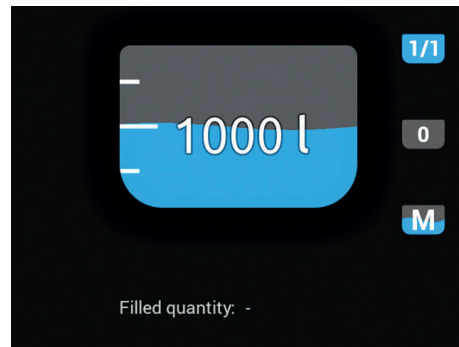


Fig. 331

- F2 → Complete filling
- F4 → Level reset
- F6 → Filled quantity manual setup

• **TANK LEVEL SOURCE: LEVEL SENSOR**

The computer displays the real quantity of fluid inside the tank, detected by the level sensor.

• **TANK LEVEL SOURCE: MANUAL / FILLING FLOWMETER**

The computer calculates the quantity of fluid inside the tank (by processing the job data), and allows to enable several manual procedures:

- Complete filling, according to the tank capacity (Fig. 332)
- Level reset (Fig. 333)
- Filled quantity manual setup (Fig. 334)

TANK FILLING

Fig. 332

Press **F2** to set tank level to the maximum value.
The display will show the tank as full: its total capacity has been set during advanced setup (par. 5.1.12).

LEVEL RESET

Fig. 333

Press **F4** to set tank level to zero.
The display will show the tank as empty.

FILLED QUANTITY MANUAL SETUP

Fig. 334

- Press **F6** to set the quantity of liquid filled in the tank.
- Set the value and confirm.

The display will show the tank level that has been reached.

It is not possible to set values higher than tank total capacity.

11.5
F4 GPS Data

Displays GPS data



- 1** In the guidance screen, press **MENU**.
- 2** Press **F4** to view the **GPS Data** menu (Fig. 336). This screen shows the data sent to the GPS receiver.

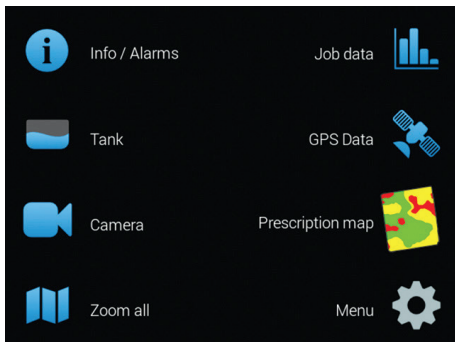
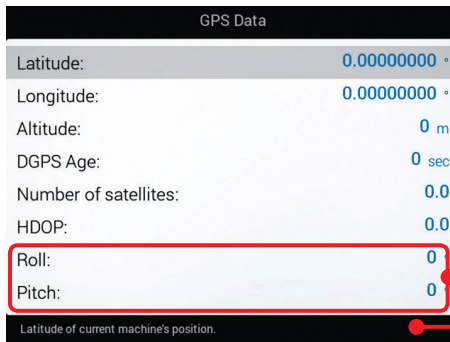


Fig. 335



Enabled for GPS receiver Smart-Ag Tilt and Smart 6T models only. (see General ARAG Cat.)

A description of the selected data is shown at the bottom of the display.

Fig. 336

F1 Enter selected character

F2 Delete selected character

F7 **F8** Scroll (LEFT / RIGHT)

F4 **F6** Scroll (UP / DOWN)

Data increase / decrease

OK Confirm access or data change

ESC Exit the function or data change



Par. 1.4

11.6
F5 Camera

Displays images from connected cameras



- 1 In the guidance screen, press **MENU**.
 - 2 Press **F5** to view the **Camera** menu (Fig. 338).
- By connecting one or more cameras, it is possible to monitor working areas and at the same time view spraying data.

Enable camera view during advanced setup (par. 5.5.1).

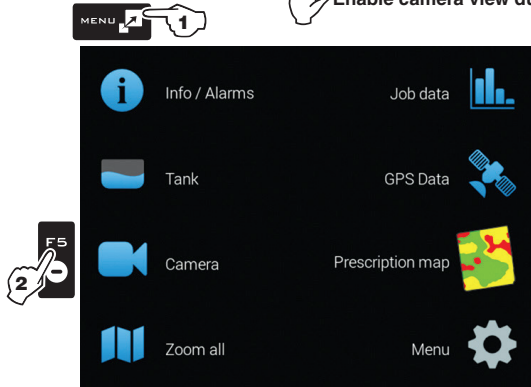


Fig. 337



Fig. 338

- F2 Switch view between the two cameras
- F7 Select job data displayed on the LEFT side of the screen.
- F8 Select job data displayed on the RIGHT side of the screen.

F1 Enter selected character

F2 Delete selected character

F7 **F8** Scroll (LEFT / RIGHT)

F4 **F6** Scroll (UP / DOWN)

Data increase / decrease

OK Confirm access or data change

ESC Exit the function or data change

Par. 1.4

11.7
F6 Prescription map

Overview of the prescription map in use



- 1 In the guidance screen, press **MENU**.
 - 2 Press **F6** to view the **Prescription map** menu (Fig. 340).
- From this screen it is possible to view data of the prescription map during spraying and to check the position of the machine on the map.

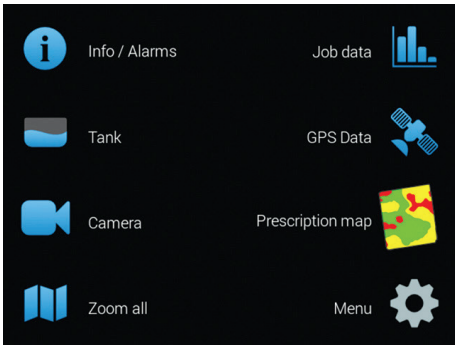


Fig. 339

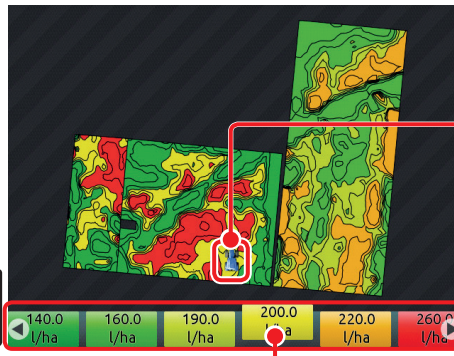
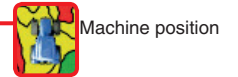


Fig. 340

F7 Scroll spray rate values to the LEFT.

F8 Scroll spray rate values to the RIGHT.



Spray rate values legend:

The highlighted box displays the spray rate referred to the machine's current position

F1 Enter selected character

F2 Delete selected character

F7 F8 Scroll (LEFT / RIGHT)

F4 F6 Scroll (UP / DOWN)

Data increase / decrease

OK Confirm access or data change

ESC Exit the function or data change

Par. 1.4



11.8
F7 Zoom all

Overview of the field during spraying



- 1 In the guidance screen, press **MENU**.
- 2 Press **F7** to view the **Zoom all** menu (Fig. 342).

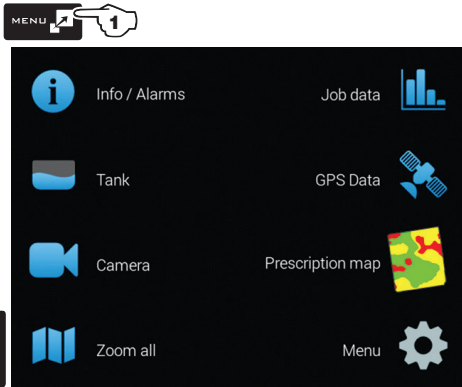


Fig. 341

INDICATORS AND POINTS OF INTEREST ON THE FIELD

Job interruption point, enabled with the "PAUSE" function (par. 12.3.1)
In this screen it is NOT possible to mark or modify this point.

Surface inside the field perimeter ("SURFACE" function (par. 12.4))
Surface outside the field perimeter (see "SURFACE" function)

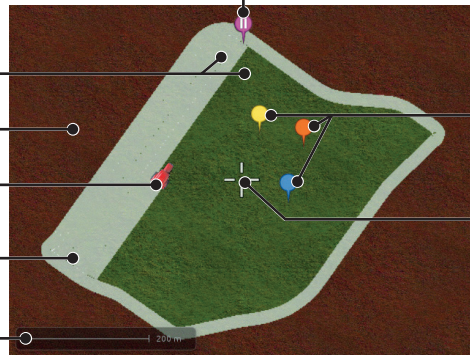
Machine position

Sprayed surface

Scale

General points of interest

Cursor



Display zoom adjustment:
F3 (+) zoom in,
F5 (-) zoom out

It indicates the machine position outside the displayed area

Fig. 342

CONTINUES

F1 Enter selected character

F2 Delete selected character

F7 F8 Scroll (LEFT / RIGHT)

F4 F6 Scroll (UP / DOWN)

Data increase / decrease

OK Confirm access or data change

ESC Exit the function or data change



Par. 1.4

MARKING POINTS OF INTEREST



Fig. 343

The general points of interest can be memorized with this procedure or with the specific function (par. 12.3.2). It is possible to mark more points.

In this screen it is possible to memorize one point of the field even if the tractor is in another position:

1 In field overview screen (Fig. 343) press **OK**.

Cursor **A** will appear.

2 Press **F4 / F6 / F7 / FB** to move the cursor in the exact point to be marked.

3 Press **OK** (Fig. 344).

4 Press **F7 / FB** to select the type of marker.

5 Press **OK** to confirm (Fig. 345).

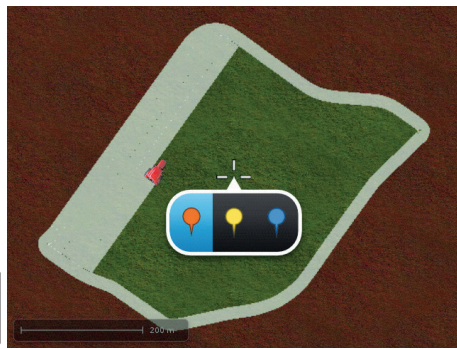


Fig. 344



Fig. 345

REMOVING POINTS OF INTEREST

1 In field overview screen (Fig. 346) press **OK**. Cursor **A** will appear.

2 Press **F4 / F6 / F7 / FB** to move the cursor near or on the marked point; when the point is selected, the symbol **★** will appear in the middle of the cursor.

3 Press **OK** twice to delete (Fig. 347) / **ESC** to cancel.



Fig. 346

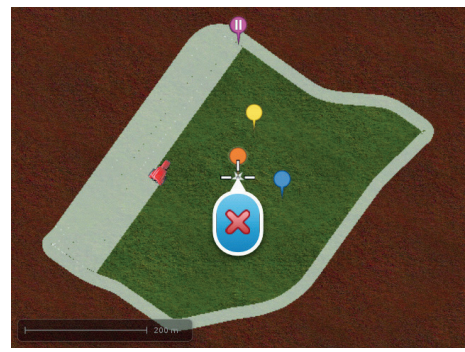


Fig. 347

F1 Enter selected character

F2 Delete selected character

F7 **FB** Scroll (LEFT / RIGHT)

F4 **F6** Scroll (UP / DOWN)

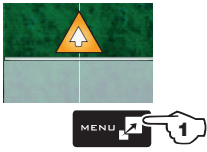
Data increase / decrease

OK Confirm access or data change

ESC Exit the function or data change

11.9
F8 Menu

Job settings menu



- 1 In the guidance screen, press **MENU**.
- 2 Press **F8** to view the **Settings menu** (Fig. 349).



Fig. 348

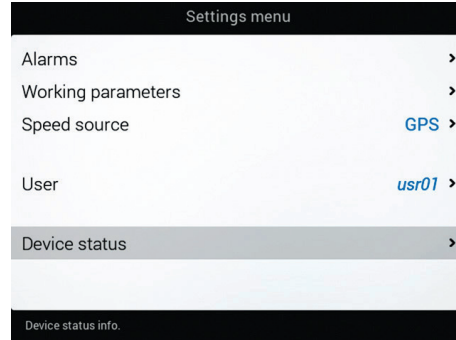


Fig. 349

In this screen it is possible to access several different menus, which can be useful during spraying:

- **Alarms** (par. 5.1.13).
- **Working parameters** (par. 5.1.14).
- **Speed source** (par. 11.9.1).
- **User** (par. 5.6).
- **Device status** (par. 5.8).

11.9.1 Speed source

Allows to select the source for speed calculation. Available options:

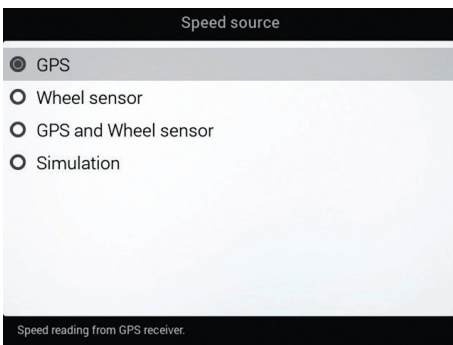


Fig. 350

• GPS

Information concerning speed is received by the GPS, which is connected directly to the monitor.

• Wheel sensor

When this option is enabled, the speed is calculated on the basis of the pulses received by the speed sensor installed on the wheel.

! WARNING: guidance information and all accessory functions (surface calculation, alignment, etc.) are disabled.

The wheel constant must be entered during the setup procedure (par. 5.1.10).

• GPS and Wheel sensor

When this option is enabled, the monitor uses both sources:

- the guidance information and the accessory functions are active thanks to the data sent by the GPS receiver;
- the output is adjusted (par. 9.4) according to the speed read by the wheel sensor.

• Simulation

Allows to enable speed simulation in order to carry out adjustment tests even when the machine is stationary.

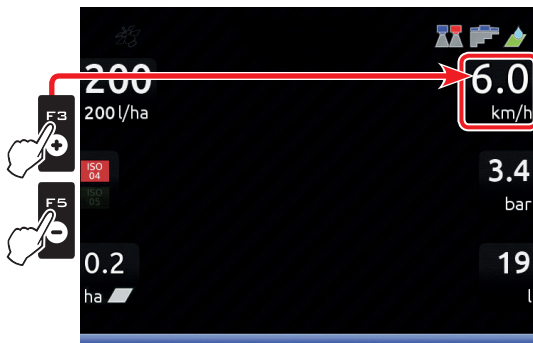
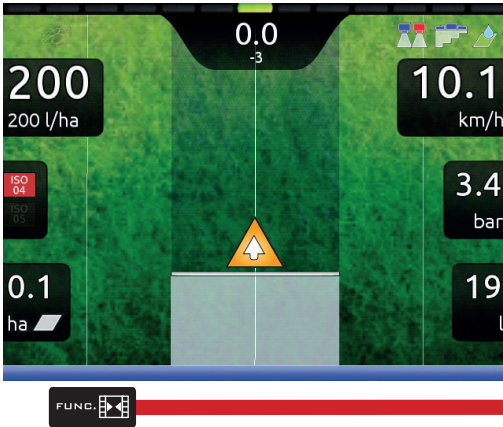


Fig. 351

Edit simulation speed (DEF 6.0 km/h - 3.7 MPH):
F3 (+) increases, F5 (-) decreases

! WARNING: guidance information and all accessory functions (surface calculation, alignment, etc.) are disabled.

12 JOB FUNCTIONS



To access job functions start a job (**New job, Resume job, Continue last job**, chap. 10 "Home" Menu); in the guidance screen press **FUNC**. When the list is active (Fig. 352), pressing the key at the side will enable the relevant function.

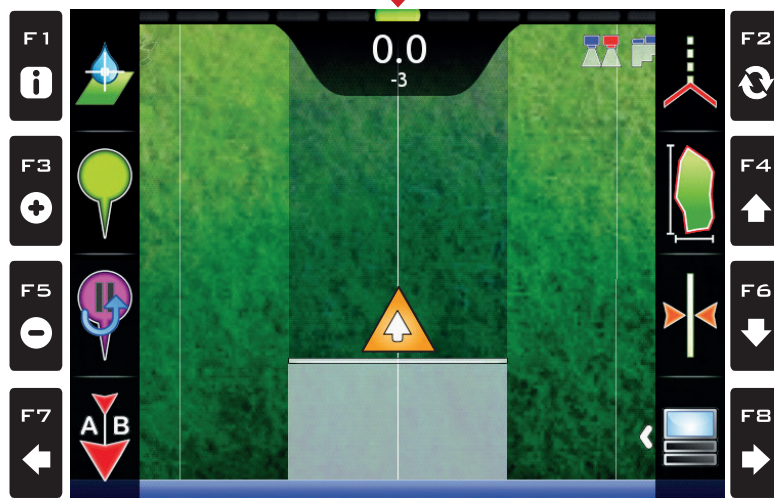


Fig. 352

The table below lists all available job functions and the corresponding function keys (unavailable functions are displayed in gray).

Par.		Par.	
12.1	F1 Target rate Change spray rate	12.2	F2 Guidance mode Select guidance mode
12.3	F3 Point marking It groups the marking of more points:	12.4	F4 Surface Calculate field surface
12.5	F5 Resume from pause Guidance indications to return to job breaking point	12.6	F6 Align Align to nearest track
12.7	F7 New AB Create a new AB track	12.8	F2 Tractor themes
	F3/F5/F7 General point of interest saving		F4 Spraying themes
			F6 Daytime/night time display mode
			F8 2D / 3D display mode

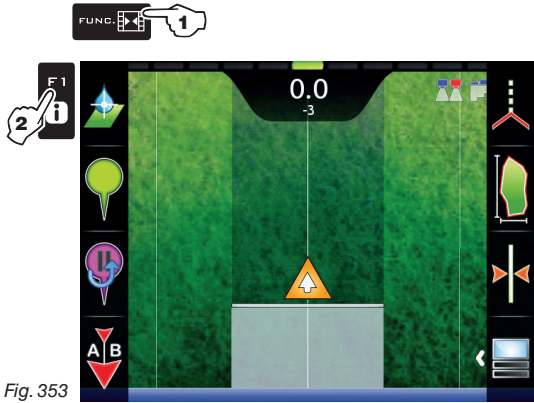
F1 Enter selected character	F2 Delete selected character	F7 F8 Scroll (LEFT / RIGHT)	F4 F6 Scroll (UP / DOWN)	Data increase / decrease	OK Confirm access or data change	ESC Exit the function or data change	Par. 1.4
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12.1 F 1 Spray rate

Change spray rate



- 1 In the guidance screen, press **FUNC.**
- 2 Press **F 1** to enable the function.
- 3 Change the spray rate value for the job (Fig. 354).
- 4 Confirm the data.



F1 Enter selected character	F2 Delete selected character	F7 F8 Scroll (LEFT / RIGHT)	F4 F6 Scroll (UP / DOWN)	Data increase / decrease	OK Confirm access or data change	ESC Exit the function or data change	Par. 1.4
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12.2 F2 Guidance mode

Selecting guidance mode:



- 1 In the guidance screen, press **FUNC**.
- 2 Press **F2** to enable the function.
- 3 Select a guidance mode (Fig. 356): press **F4** and **F6** to move across the available items (**A - Straight guidance mode**, **B - Curved guidance mode**, **C - Pivot mode** or **D - Free guidance mode**)
- 4 Confirm selection.

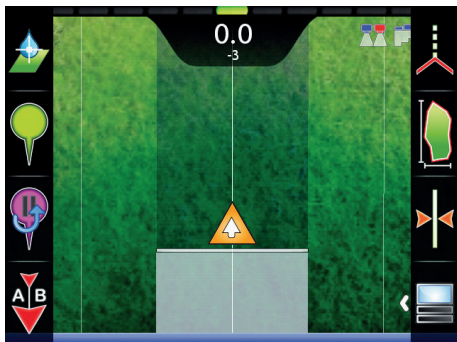


Fig. 355

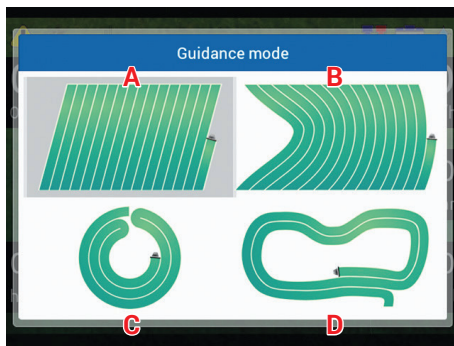


Fig. 356



A - STRAIGHT GUIDANCE MODE

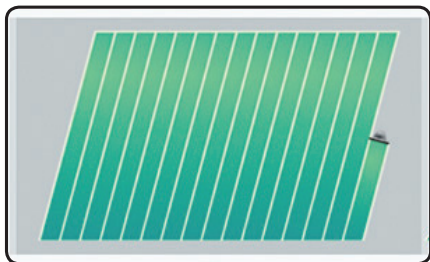


Fig. 357

The tracks appearing on the display, which will act as a guidance reference, are perfectly straight and parallel to the reference line joining point **A** to point **B** as previously marked. Upon creation of the reference track, any bends in the trajectory between **A** and **B** will be ignored.

B - CURVED GUIDANCE MODE

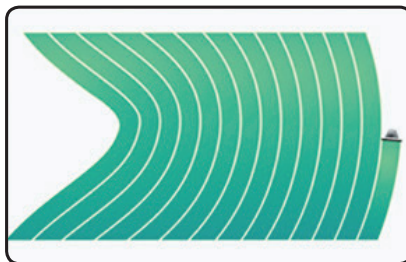


Fig. 358

The tracks appearing on the display, which will act as a guidance reference, include portions that are not straight, but do not include sharp bends (Fig. 359). The trajectory between **A** and **B** will be saved and the monitor will create evenly distributed tracks.

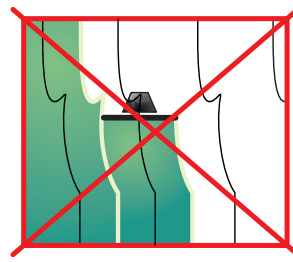


Fig. 359

C - PIVOT MODE

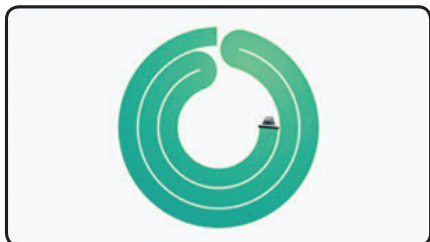


Fig. 360

Specific mode for spraying of field with movable pivots. The circular trajectory between **A** and **B** will be memorized and the monitor will create concentric, evenly distributed tracks.

D - FREE GUIDANCE MODE

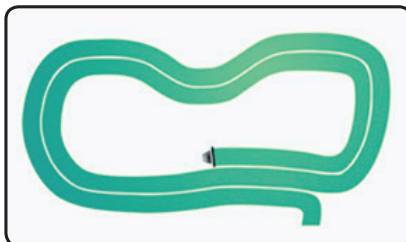
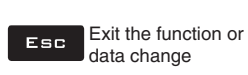
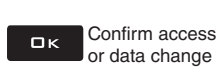


Fig. 361

No guidance references are shown on the display. The operator will drive freely and will be able to check the spraying range on the display in real time.

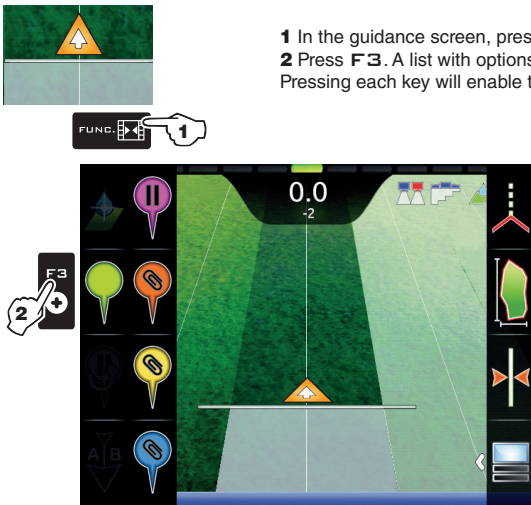


Data increase / decrease



12.3
F3 Point marking

It groups the available options for marking points of interest.

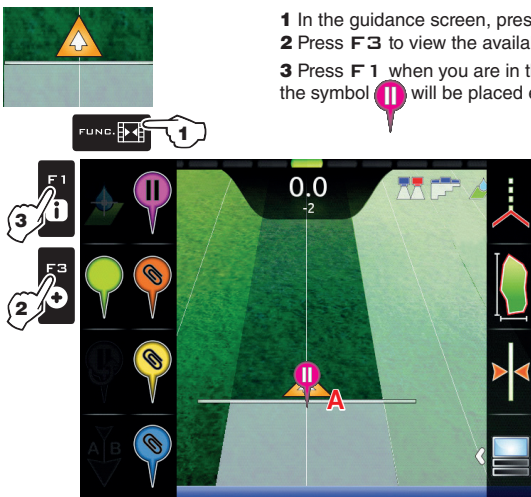


- 1 In the guidance screen, press **FUNC.**
- 2 Press **F3**. A list with options for marking the points will appear (Fig. 362). Pressing each key will enable the corresponding function.

Fig. 362

12.3.1
F1 Pause

Saves job breaking point, which will be shown on the display with the symbol



- 1 In the guidance screen, press **FUNC.**
- 2 Press **F3** to view the available options.
- 3 Press **F1** when you are in the position you wish to save (**A** in Fig. 363): the symbol will be placed exactly on that point.

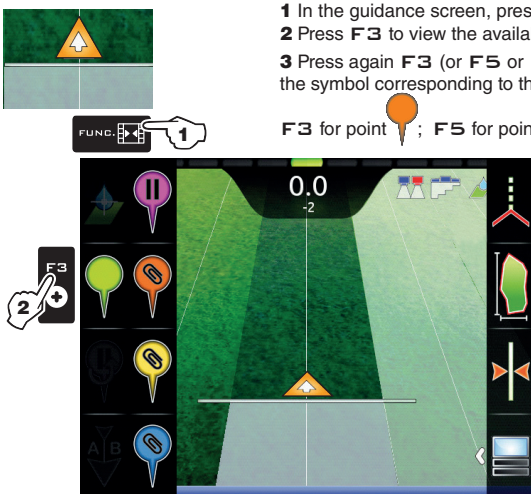
The monitor can save **ONLY ONE BREAKING POINT:** every time you save a point, the previous one will be deleted.

Fig. 363

12.3.2
F3/F5/F7 General point marking

Saving of general points of interest

The general points of interest can be memorized with this procedure or in the field overview screen (par. 11.8). It is possible to mark more points.



- 1 In the guidance screen, press **FUNC.**
- 2 Press **F3** to view the available options.
- 3 Press again **F3** (or **F5** or **F7**) to save the point of interest (**B** in Fig. 365): the symbol corresponding to the pressed key will be displayed exactly on that point:

F3 for point ; **F5** for point ; **F7** for point .

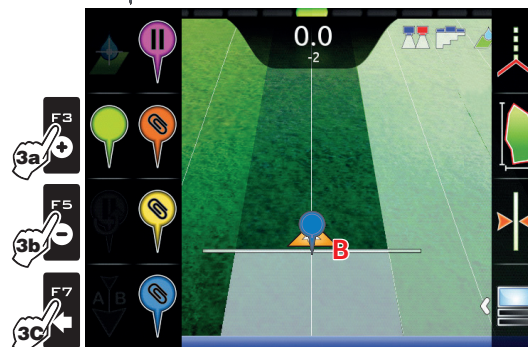


Fig. 364

Fig. 365

12.4 F4 Surface

Enables the procedure to calculate field surface by driving along its perimeter.



- 1 In the guidance screen, press **FUNC.**
- 2 Press **F4** to start the surface calculation procedure (function list disappears). The following message will appear: **Field edge side selection** prompting the operator to select which side of the machine to use as a reference to define the field perimeter.
- 3 Press **F3** (Left) or **F4** (Right): a white line will be displayed to draw the field perimeter as the tractor moves (Fig. 367).



Fig. 366

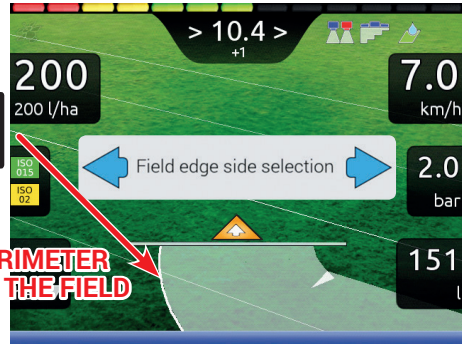


Fig. 367

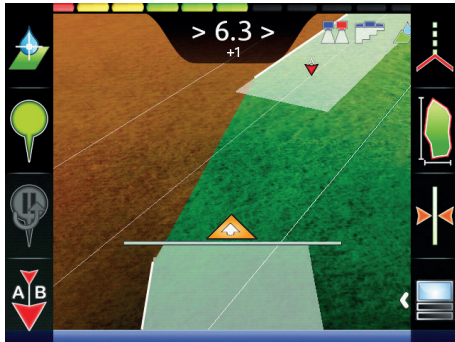


Fig. 368

- 4 Drive along the perimeter of the field or of the surface you wish to measure. When you get close to the calculation starting point, press **FUNC.** again.
- 5 Press **F4** to complete the surface calculation procedure (Fig. 368). The computer will connect starting and end points and will calculate the surface.

FIELD PERIMETER ON MACHINE LEFT-HAND SIDE

FIELD PERIMETER ON MACHINE RIGHT-HAND SIDE

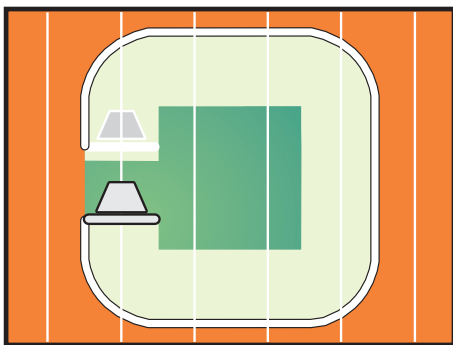


Fig. 369

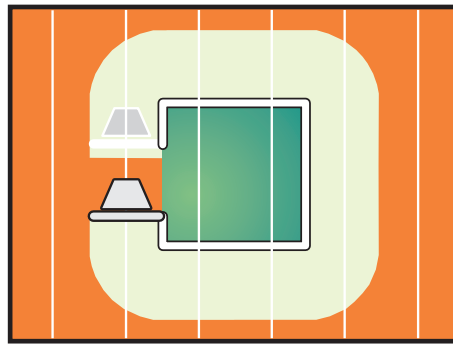


Fig. 370

The field external edge (white line) follows the trajectory of the most external open section valve. When all section valves are closed, the field edge starts from the boom center.



12.5 F5 Resume from pause

Guidance indications to return to job breaking point previously saved with function "F1 Pause" (par. 12.3.1).

1 In the guidance screen, press **FUNC.**

2 Press **F5** to obtain guidance information and enable the return to job breaking point procedure.

The fuchsia line **B** in Fig. 371 (which connects the position of the machine to that of the breaking point) shows the direction to be followed to reach the point marked as **A**. The display shows in fuchsia the distance between your position and the breaking point (**C** in Fig. 371).

3 Continue driving and make sure that the distance is decreasing: you are reaching the breaking point. When you are close to it, you can see it on the display.

4 Once you have reached the position, the value of the distance reaches "zero" (Fig. 372): press **OK** or **ESC** to exit the procedure.

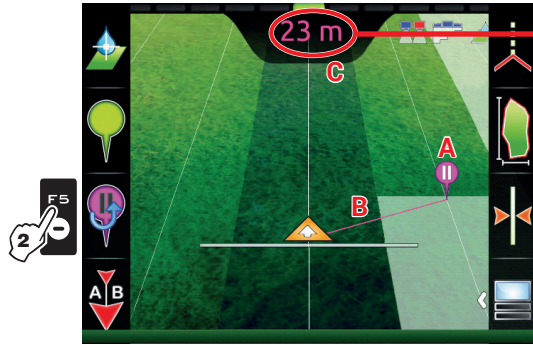
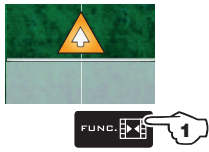


Fig. 371



Fig. 372

OK the monitor goes back to displaying guidance information for the job and the symbol is erased.

ESC the monitor goes back to displaying guidance information for the job but the symbol is saved.



F1 Enter selected character

F2 Delete selected character

F7 **F8** Scroll (LEFT / RIGHT)

F4 **F6** Scroll (UP / DOWN)

Data increase / decrease

OK Confirm access or data change

ESC Exit the function or data change





12.6 F6 Align

Moves the closest reference track, re-aligning it to the position of the machine. This function is useful when you need to re-align the machine, whilst continuing to drive in the same direction (for example, for corn, sugar cane).



1 In the guidance screen, press **FUNC.**

2 Press **F6** to align with the current position.

The closest reference track (**A** in Fig. 373) moves and becomes aligned with the center of the tractor: all other reference tracks move accordingly. After the alignment, the deviation value **>2.0>** (**B**) becomes **0.0**.



Fig. 373

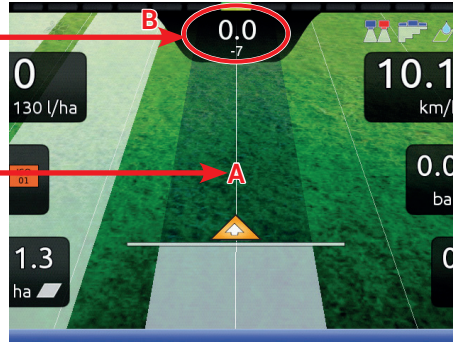


Fig. 374

Once this function has been used, it is not possible to restore the original reference track.

F1 Enter selected character

F2 Delete selected character

F7 **F8** Scroll (LEFT / RIGHT)

F4 **F6** Scroll (UP / DOWN)

Data increase / decrease

OK Confirm access or data change

ESC Exit the function or data change

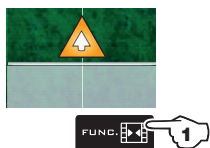
Par. 1.4



12.7 F7 New AB

Saves two points A and B on the field, which monitor uses to draw a line that will act as a reference track (**T0**, Fig. 377) for the current job.

- 1 In the guidance screen, press **FUNC.**
- 2 Drive along the stretch you wish to use as a reference for the job. Press **F7** to enable the function: the request **Mark A?** will appear on the display. (Fig. 375).
- 3 Press **OK**. The display shows the message **Drive!** (Fig. 376).
- 4 Keep driving, when you have reached the minimum distance (30 m / 95.5 ft), the request **Mark B?** will appear on the display. Press **OK**.



The reference track **T0** and all tracks to be followed during the job will appear on the display (Fig. 377).
 We recommend marking points **A** and **B** while the machine is moving, at both ends of a straight line that is as long as possible: the longer the line marked by points **A** and **B**, the lower the error caused by any deviations of the machine itself.



Fig. 375



Fig. 376

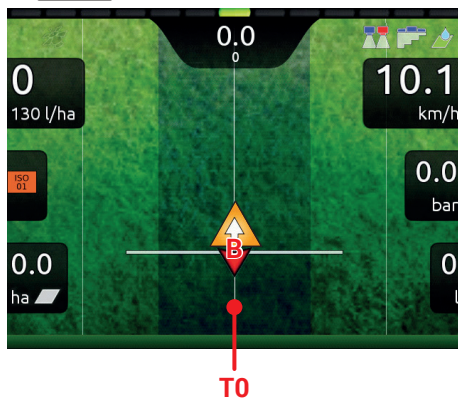


Fig. 377

When this function is used, the monitor deletes the previous reference track **T0** (if present), and prompts the operator to save two **NEW** points **A** and **B** on the field, which create a **NEW** reference track.

WARNING:
 Points **A** and **B** can be marked only when the vehicle is moving.
 The previous track **T0** cannot be restored.

F1 Enter selected character

F2 Delete selected character

F7 **F8** Scroll (LEFT / RIGHT)

F4 **F6** Scroll (UP / DOWN)

Data increase / decrease

OK Confirm access or data change

ESC Exit the function or data change

Par. 1.4

12.8 F8 Display

Allows to select different display modes. Includes several functions:



- 1 In the guidance screen, press **FUNC**.
- 2 Press **F8**. A list of options concerning display modes will appear (Fig. 378). Pressing each key will enable the corresponding function:
 - F2** changes tractor themes (par. 12.8.1);
 - F4** changes spraying themes (par. 12.8.2);
 - F6** switches between daytime/night time display mode (par. 12.8.3);
 - F8** switches between 2D/3D display mode (par. 12.8.4);

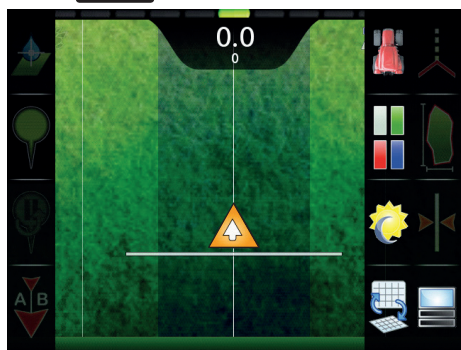


Fig. 378

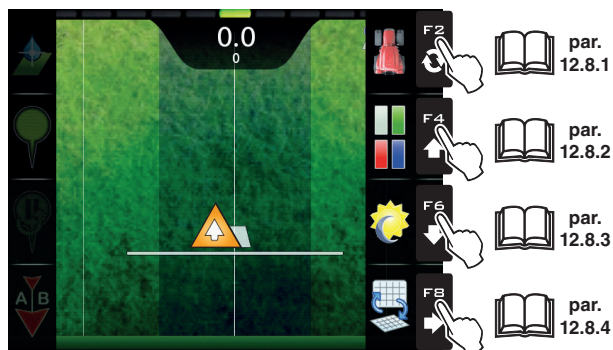


Fig. 379

12.8.1 F2 Tractor themes



- 1 In the guidance screen, press **FUNC**.
- 2 Press **F8** to view the available options.
- 3 Press **F2** in succession to scroll tractor themes.

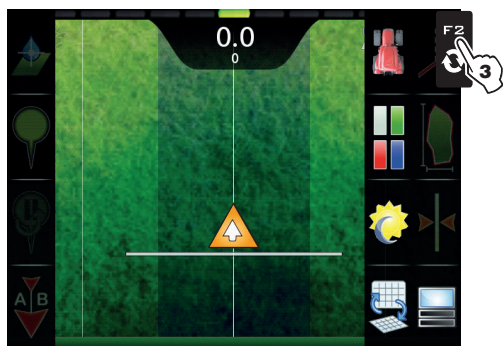


Fig. 380

TRACTOR THEME 1 (DEFAULT)



THEME 2



THEME 3



THEME 4



THEME 5



F1 Enter selected character

F2 Delete selected character

F7 **F8** Scroll (LEFT / RIGHT)

F4 **F6** Scroll (UP / DOWN)

Data increase / decrease

OK Confirm access or data change

ESC Exit the function or data change


Par. 1.4

12.8.2 F4 Spraying themes

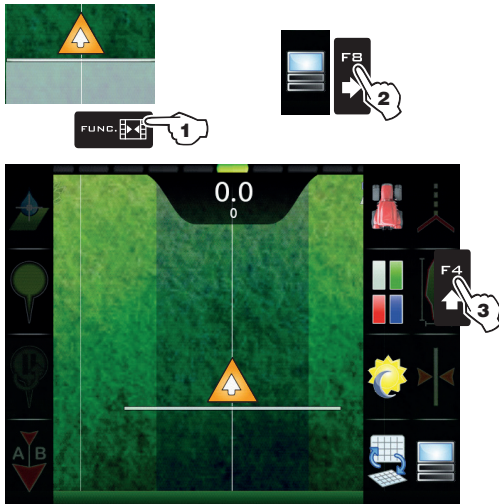
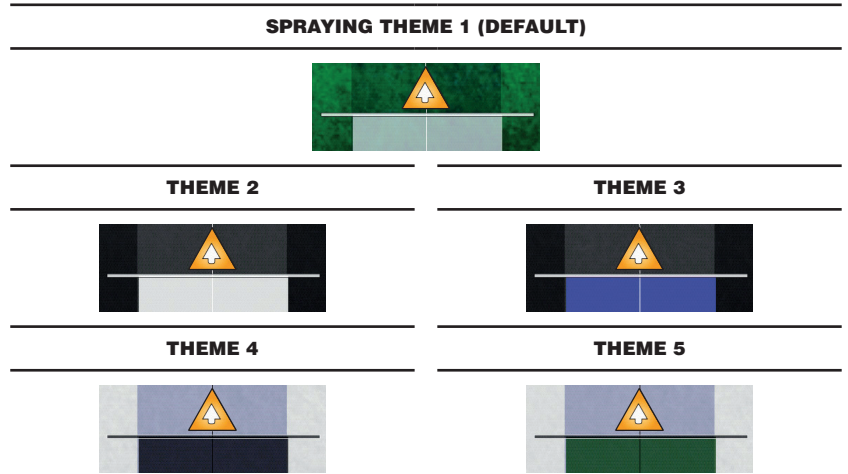


Fig. 381

- 1 In the guidance screen, press **FUNC**.
- 2 Press **FB** to view the available options.
- 3 Press **F4** in succession to scroll spraying color combinations.



12.8.3 F6 Daytime/night time display mode

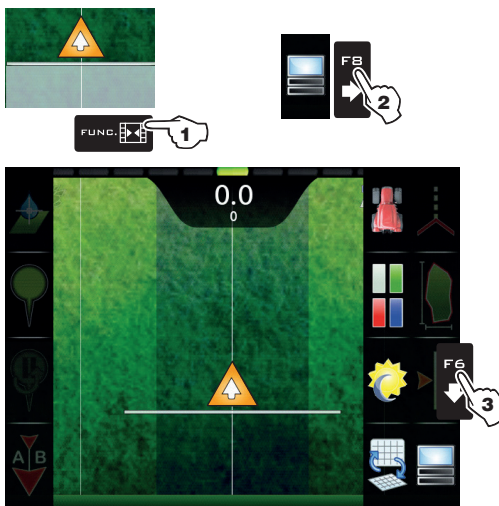
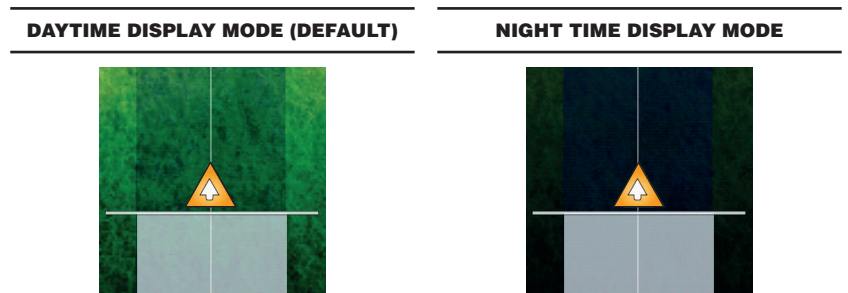


Fig. 382

- 1 In the guidance screen, press **FUNC**.
- 2 Press **FB** to view the available options.
- 3 Press **F6** in succession to switch between daytime and night time display mode.



12.8.4 F8 2D/3D display mode

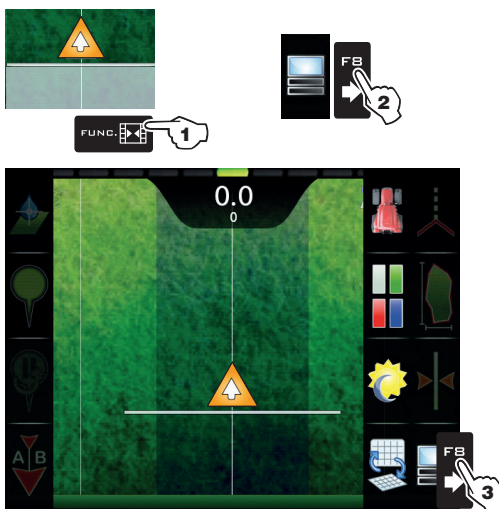
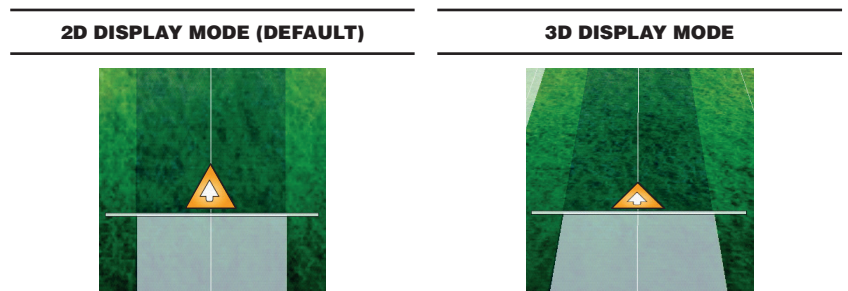


Fig. 383

- 1 In the guidance screen, press **FUNC**.
- 2 Press **FB** to view the available options.
- 3 Press **FB** in succession to switch between 2D and 3D display mode.



F1 Enter selected character

F2 Delete selected character

F7 **FB** Scroll (LEFT / RIGHT)

F4 **F6** Scroll (UP / DOWN)




Data increase / decrease

OK Confirm access or data change

ESC Exit the function or data change

13 MAINTENANCE / DIAGNOSTICS / REPAIRS

13.1 Error messages

MESSAGE ON DISPLAY	CAUSE	REMEDY	JOB MODE
Drive! Machine stopped	Main control ON with machine stopped	<ul style="list-style-type: none"> Start the machine. Disable the main control (OFF) 	Master ON + Automatic adjustment ON 
Connection to ECU not detected!	Communication problems between monitor and control unit (ECU)	<ul style="list-style-type: none"> Check condition of connection cables (and connectors) between monitor and control unit (ref. instruction manual) 	--
	The cables are damaged	<ul style="list-style-type: none"> Replace the cable 	--
GPS receiver not connected!	Wrong connection of receiver cable to the monitor	<ul style="list-style-type: none"> Check connection to receiver (ref. instruction manual) 	--
	The receiver connection cable is damaged	<ul style="list-style-type: none"> Replace the cable 	--
	The receiver is damaged	<ul style="list-style-type: none"> Replace the receiver 	--
Insufficient GPS signal quality!	The position and number of satellites do not allow a suitable driving precision	<ul style="list-style-type: none"> Wait for signal strength to improve 	--
GPS receiver gives invalid data!	The receiver is establishing a connection to the satellites	<ul style="list-style-type: none"> Wait for connection 	--
DGPS correction not available!	DGPS signal unavailable in the working area	<ul style="list-style-type: none"> Disable DGPS correction (par. 5.3.1) 	--
	DGPS connecting	<ul style="list-style-type: none"> Wait for connection 	--
Omnistar correction missing!	Acquiring OmniSTAR® signal	<ul style="list-style-type: none"> Wait until OmniSTAR® signal acquisition stage is completed 	--
	The connected GPS receiver does not support the OmniSTAR® signal	<ul style="list-style-type: none"> Disable OmniSTAR® correction (par. 5.3.4) 	--
Activate pump! Missing flowrate	Main control ON but rate at zero	<ul style="list-style-type: none"> Start the pump and move the machine. 	Master ON + Automatic adjustment ON 
Minimum tank level reached!	Tank level is lower than the set reserve value	<ul style="list-style-type: none"> Fill the tank (par. 11.4) 	Master ON
	Minimum value was not set correctly	<ul style="list-style-type: none"> Check set reserve value (par. 5.1.12) 	
Maximum tank level reached!	Tank level reached set maximum value	<ul style="list-style-type: none"> Stop filling the tank (par. 11.4) 	--
Automatic regulation blocked!	Pressure does not reach set value	<ul style="list-style-type: none"> Increase driving speed 	Master ON + Automatic adjustment ON 
	Limit was not set correctly	<ul style="list-style-type: none"> Check set limit (par. 5.1.14) 	

CONTINUES

MESSAGE ON DISPLAY	CAUSE	REMEDY	JOB MODE
Invalid signal of the pressure sensor!	Signal from pressure sensor is out of allowed range	<ul style="list-style-type: none"> • Check the sensor and connection cable (and connector) status (ref. instruction manual) 	--
Decelerate! Pressure too high	The pressure exceeds the maximum level allowed for the nozzle being used	<ul style="list-style-type: none"> • Decrease driving speed • Adjust the operating pressure so as to respect the previously set limits for nozzles in use. • Check set maximum pressure for nozzles in use (par. 5.1.8) 	Master ON
Accelerate! Insufficient pressure	The pressure does not reach the minimum value for the nozzle in use	<ul style="list-style-type: none"> • Increase driving speed • Adjust the operating pressure so as to respect the previously set limits for nozzles in use. • Check set minimum pressure for nozzle in use (par. 5.1.8) 	Master ON
Flowmeter out of range!	Rate out of the limits allowed by flowmeter	<ul style="list-style-type: none"> • Modify working conditions to suit flowmeter limits (speed, pressure, etc.) • Make sure that flowmeter parameters are set correctly (par. 5.1.3) 	Master ON
Decelerate! Insufficient flowrate	Flowrate does not reach the value requested for output	<ul style="list-style-type: none"> • Decrease driving speed • Make sure that flowmeter parameters are set correctly (par. 5.1.3) 	Master ON + Automatic adjustment ON
Accelerate! Too high flowrate	The flowrate exceeds the value required for output	<ul style="list-style-type: none"> • Increase driving speed • Make sure that settings in the Implement advanced settings menu (boom width, flowmeter, etc. chap. 5.1) are set correctly 	Master ON + Automatic adjustment ON
Reduce rotation speed!	RPM exceeds the maximum set value	<ul style="list-style-type: none"> • Decrease the rotation speed of the moving part • Check the constant set for the rev counter (par. 5.1.11) 	--
Increase rotation speed!	RPM does not reach the minimum value	<ul style="list-style-type: none"> • Increase the rotation speed of the moving part • Check the constant set for the rev counter (par. 5.1.11) 	Master ON
Check nozzles wear status!	Difference between measured and calculated flowrate (according to selected nozzle data) higher than set value	<ul style="list-style-type: none"> • Check that the set nozzle coincides with the one installed on the boom (par. 5.1.1) • Replace nozzles 	Master ON + Automatic adjustment ON

CONTINUES



MESSAGE ON DISPLAY	CAUSE	REMEDY	JOB MODE
Switch box connection not detected! (DELTA 80 / BRAVO 400S ONLY)	Communication problems between monitor and switches	• Check condition of connection cables (and connectors) between monitor and switch box	--
	The cables are damaged	• Replace the cable	
Joystick connection not detected!	Communication problems between monitor and joystick	• Check condition of connection cables (and connectors) between monitor, ECU and joystick	--
Seletron connection failed!	One or more spraying points do not respond	<ul style="list-style-type: none"> • Identify the unrecognized spraying point with the dedicated menu Device status > Status of the Seletron system (par. 5.8) • Check that the corresponding spraying point is connected correctly • Check condition of harness on the corresponding spraying point 	--
Seletron system error!	Low supply voltage on one or more spraying points	Check battery voltage level	--
		<ul style="list-style-type: none"> • Identify the unrecognized spraying point with the dedicated menu Device status > Status of the Seletron system (par. 5.8) • Check condition of harness on the corresponding spraying point 	--
Job origin too far away!	The current position is too far away from the job origin.	• Redefine the job origin.	--
Incompatible ECU firmware version!	The ECU firmware version is obsolete.	• Update the ECU firmware (par. 10.4.5).	--
ECU power supply voltage out of range!	Power voltage supply is not within the required range (9÷16 V)	Check power supply	--
External battery power supply missing!	Power supply is not feeding any voltage at all	Check power supply	--
Boom line 1: Too high power consumption!	Boom 1 power line detected a high absorption	Check the Seletron, connection cable and connector status	--
Boom line 2: Too high power consumption!	Boom 2 power line detected a high absorption	Check the Seletron, connection cable and connector status	--
Regulation line: Too high power consumption!	The power line controlling the main valve and the regulation valve detected a high absorption	Check the valve, connection cable and connector status	--
Hydraulic line: Too high power consumption!	The power line controlling the hydraulic functions detected a high absorption	Check the valve, connection cable and connector status	--

END OF PAR. 13.1 ERROR MESSAGES

13.2 Troubleshooting

FAULT	CAUSE	REMEDY
The display does not switch on	No power supply	• Check power supply connection
	Computer is OFF	• Press the ON key
Valve controls take no effect	Valves not connected	• Connect the connectors
One valve does not open	No power supply to valve	• Check valve electric connection and operation
Output volume readout inaccurate	Wrong setup	• Check boom setup (par. 5.1.2) • Check the setup of the flowmeter constant (par. 5.1.3) • Check pressure sensor full scale setting (par. 5.1.5)
Distance traveled count displayed does not match actual distance covered	Wrong setup	• Check the boom setup (par. 5.1.2) • Check implement geometry (par. 5.2.1 - 5.2.2 - 5.5.2 - 5.5.3) • Check tractor geometry (par. 5.5.2 - 5.5.3 - 5.5.4)
Sprayed fluid count displayed does not match liters/gal actually sprayed	Wrong setup	• Check the setup of the flowmeter constant (par. 5.1.3) • Check selected nozzle configuration (par. 5.1.1 - par. 7.5)
Unable to reach output volume value set for the automatic operation	Wrong setup	• Check spray rate setup (par. 7.5 - 12.1) • Check the setup of the boom width (par. 5.1.2)
	System not adequately sized to provide required rate	• Check maximum pressure valve adjustment • Make sure control valve is adequate for specific system
	Control valve malfunction	• Check valve operation
Instantaneous pressure readout inaccurate	Wrong setup	• Check full scale setup for pressure sensor (par. 5.1.5)
	Pressure sensor not calibrated	• Perform the calibration (par. 5.1.16)
	Pressure sensor wrong installation	• Check connections to pressure sensor
Instantaneous pressure is not displayed	Wrong setup	• Check pressure sensor setting (par. 5.1.5)
	Computer does not receive signals from pressure sensor	• Check connections to pressure sensor
	Pressure sensor wrong installation	• Check connections to pressure sensor
Rpm readout inaccurate	Wrong setup	• Check rpm sensor constant setting (par. 5.1.11)
Rpm value not displayed	Monitor does not receive signals from RPM sensor	• Check connections to RPM sensor
	Rpm sensor wrong installation	• Check connections to RPM sensor

14 TECHNICAL DATA
14.1 Data and units of measurement shown

Implement							
Menu	Data	Min.	Max.	UoM	DEFAULT	Other values that can be set / Notes	
	Number of nozzles for each spraying point	--	--	n°	1	2, 4 Selection during guided setup	
Spray spots configurations	Spraying point 1	Nozzle A	--	--	--	ISO01	Nozzle:
		Nozzle B	--	--	--	Disabled	
		Nozzle C	--	--	--	Disabled	
		Nozzle D	--	--	--	Disabled	
	Spraying point 2	Nozzle A	--	--	--	ISO02	
		Nozzle B	--	--	--	Disabled	
		Nozzle C	--	--	--	Disabled	
		Nozzle D	--	--	--	Disabled	
	Spraying point 3	Nozzle A	--	--	--	ISO03	
		Nozzle B	--	--	--	Disabled	
		Nozzle C	--	--	--	Disabled	
		Nozzle D	--	--	--	Disabled	
	Spraying point 4 ÷ 20	--	--	--	Disabled		
Boom settings	Spray spots spacing	1	1000	cm	50 cm		
	Sections number	0.39	393.70	inches	19.68 inches		
	Section 1 ÷ 13	1	13	n°	--	Variable setting defined by the connected switch panel	
	Activation status of the sections	Section 1 ÷ 13	--	--	--	Enabled	Disabled
Flowmeter	Type	--	--	--	Orion 462xxA4xxxx	Orion 4621xA0xxxx, Orion 4621xA1xxxx, Orion 4621xA2xxxx, Orion 4621xA3xxxx, Orion 4622xA5xxxx, Orion 4622xA6xxxx, Wolf 462x2xxx, Wolf 462x3xxx, Wolf 462x4xxx, Wolf 462x5xxx, Wolf 462x7xxx, Other	
	Constant	1	32000	pls*/l	--		
		4	32000	pls*/gal	--		
	Minimum flowrate	0.1	999.9	l/min	--	Fixed settings for each flowmeter except Other	
		0.1	264.1	GPM	--		
Maximum flowrate	0.1	999.9	l/min	--			
		0.1	264.1	GPM	--		
Filling flowmeter	Type	--	--	--	Orion 462xxA4xxxx	Orion 4622xA5xxxx, Orion 4622xA6xxxx, Wolf 462x4xxx, Wolf 462x5xxx, Wolf 462x7xxx, Other	
	Constant	1	32000	pls*/l	--		
		4	32000	pls*/gal	--		
	Minimum flowrate	0.1	999.9	l/min	--	Fixed settings for each flowmeter except Other	
		0.1	264.1	GPM	--		
Maximum flowrate	0.1	999.9	l/min	--			
		0.1	264.1	GPM	--		
Pressure sensor	Status	--	--	--	Disabled	Enabled	
	Type	--	--	--	466113.200	466113.500, Other	
	Maximum pressure	0.1	150.0	bar	--	Fixed settings for each sensor except Other	
		1	2175	PSI	--		
Valves	Main valve	Type	--	--	--	3 ways	2 ways, None Selection during guided setup
		Automatic closing of sections valves	--	--	--	Enabled	Disabled Selection during guided setup
	Pressure regulating valve	Automatic closing of main valve	--	--	--	Disabled	Enabled
		Switching time	0.1	1.0	s	1.0 s	
		Regulation direction	--	--	--	Standard	Reverse
	Section valves	Type	--	--	--	2 ways	Automatic selection during guided setup
		Shut-off time	0.1	1.0	s	0.3 s	
	Switch-on time	0.1	1.0	s	0.3 s		

* pls = pulse

CONTINUES >>>

>>> 14.1 Data and units of measurement shown

Implement						
Menu	Data	Min.	Max.	UoM	DEFAULT	Other values that can be set / Notes
	ISO01 Flowrate	--	--	l/min	0.40 l/min	
		--	--	GPM	0.10 GPM	
	ISO015 Flowrate	--	--	l/min	0.60 l/min	
		--	--	GPM	0.15 GPM	
	ISO02 Flowrate	--	--	l/min	0.80 l/min	
		--	--	GPM	0.20 GPM	
	ISO025 Flowrate	--	--	l/min	1.00 l/min	
		--	--	GPM	0.25 GPM	
	ISO03 Flowrate	--	--	l/min	1.20 l/min	
		--	--	GPM	0.30 GPM	
	ISO04 Flowrate	--	--	l/min	1.60 l/min	
		--	--	GPM	0.40 GPM	
	ISO05 Flowrate	--	--	l/min	2.00 l/min	ISO nozzles - cannot be modified
		--	--	GPM	0.50 GPM	
	ISO06 Flowrate	--	--	l/min	2.40 l/min	
		--	--	GPM	0.60 GPM	
	ISO08 Flowrate	--	--	l/min	3.20 l/min	
		--	--	GPM	0.80 GPM	
	ISO10 Flowrate	--	--	l/min	4.00 l/min	
		--	--	GPM	1.00 GPM	
	ISO15 Flowrate	--	--	l/min	6.00 l/min	
		--	--	GPM	1.50 GPM	
Nozzles data	ISO20 Flowrate	--	--	l/min	8.00 l/min	
		--	--	GPM	2.00 GPM	
	Pressure	--	--	bar	3.0 bar	
		--	--	PSI	40 PSI	
	A Flowrate	0.10	10.00	l/min	1.00 l/min	
		0.03	2.6	GPM	0.26 GPM	
	B Flowrate	0.10	10.00	l/min	2.00 l/min	
		0.03	2.6	GPM	0.53 GPM	
	C Flowrate	0.10	10.00	l/min	3.00 l/min	
		0.03	2.6	GPM	0.79 GPM	
	D Flowrate	0.10	10.00	l/min	4.00 l/min	User nozzles - customizable
		0.03	2.6	GPM	1.06 GPM	
	E Flowrate	0.10	10.00	l/min	5.00 l/min	
		0.03	2.6	GPM	1.32 GPM	
	F Flowrate	0.10	10.00	l/min	6.00 l/min	
		0.03	2.6	GPM	1.59 GPM	
	Pressure	0.1	50.0	bar	5.0 bar	
		1.45	725	PSI	70 PSI	
	Minimum pressure	0.1	50.0	bar	Default ISO nozzles: 1.0 ÷ 5.0 bar	
		1.45	725	PSI	15 ÷ 70 PSI	
	Maximum pressure	0.1	50.0	bar	Default user nozzles: 2.0 ÷ 10.0 bar	
		1.45	725	PSI	30 ÷ 145 PSI	
Wheel sensor	Constant	0.01	2000.00	cm/pls*	38.33 cm/pls*	
		0.01	780.00	inch/pls*	15.09 inch/pls*	
"Fence" nozzles data	Flowrate	0.10	10.00	l/min	1.60 l/min	
		0.03	2.6	GPM	0.40 GPM	
	Pressure	0.1	50.0	bar	3.0 bar	
		1.45	725	PSI	40 PSI	
	Status	--	--	--	Disabled	Enabled
Rev counter	Constant	1	999	pls*/rev**	100 pls*/rev**	
	Minimum rotation speed	1	10000	rpm	100 rpm	
	Maximum rotation speed	1	10000	rpm	500 rpm	
	Reserve level	1	2000	l	150 l	
		1	500	gal	40 gal	
Tank	Capacity	1	99999	l	2000 l	Can be viewed only with Filling flowmeter enabled or manual tank level source (selection during guided setup)
	Tank profile	--	--	--	--	Visible only with Level sensor enabled (selection during guided setup)
	Nozzle wear check	--	--	--	Disabled	Enabled Visible ONLY with Pressure sensor enabled
Nozzles alarms	Nozzle wear limit percentage	1	50	%	10 %	Visible ONLY with Pressure sensor enabled
	Minimum pressure alarm	--	--	--	Disabled	Enabled
	Maximum pressure alarm	--	--	--	Disabled	Enabled
Flowmeter alarms	Minimum flowrate alarm	--	--	--	Disabled	Enabled
	Maximum flowrate alarm	--	--	--	Disabled	Enabled
	Minimum rotation speed alarm	--	--	--	Disabled	Enabled
Rev counter alarms	Maximum rotation speed alarm	--	--	--	Disabled	Enabled

* pls = pulse
** rev = revolution

>>> 14.1 Data and units of measurement shown

Implement							
Menu	Data	Min.	Max.	UoM	DEFAULT	Other values that can be set / Notes	
Working parameters	Spraying limits	Spraying speed limit	--	--	--	Disabled	Enabled
		Minimum spraying speed	0.4	99.9	km/h	1.0 km/h	
			0.2	99.9	mph	0.6 mph	
		Regulation pressure limit	--	--	--	Disabled	Enabled
		Minimum regulation pressure	0.1	99.9	bar	1.0 bar	
			1	1449	PSI	15 PSI	
	Flowrate correction factor	0.25	4.00	--	1.00		
	Level correction factor	0.25	4.00	kg/l	1.00 kg/l		
			33.38	534.11	oz/gal	133.53 oz/gal	
	Automatic section control	Sections overlapping limit	0	100	%	100 %	
Perimeter overlapping limit		0	100	%	0 %		
Spray closing delay		0.0	5.0	m	0.0 m		
		0.00	16.00	ft	0.00 ft		
Spray opening advance		0.0	5.0	m	0.0 m		
		0.00	16.00	ft	0.00 ft		
Guidance	Steering radius	0.0	20.0	m	0.0 m		
		0.00	65.00	ft	0.00 ft		
	Reference line distance compensation	-100.00	100.00	m	+000.00 m		
		-328.08	328.08	ft	+000.00 ft		
Geometry settings	3-POINT HITCH IMPLEMENT	Application point / Connection point offset	0.00	20.00	m	1.50 m	Tractor with 3-POINT HITCH IMPLEMENT , selected during guided setup
		Application point / Longitudinal axle	-20.00	20.00	m	0.00 m	
			-64.00	64.00	ft	0.00 ft	
			0.00	20.00	m	5.00 m	
	TOWED IMPLEMENT	Connection point / Rear axle	0.00	64.00	ft	16.40 ft	Tractor with TOWED IMPLEMENT , selected during guided setup
		Application point / Rear axle	0.00	20.00	m	1.50 m	
			0.00	64.00	ft	4.92 ft	
		Application point / Longitudinal axle	-20.00	20.00	m	0.00 m	
		-64.00	64.00	ft	0.00 ft		

GPS receiver								
Menu	Data	Min.	Max.	UoM	DEFAULT	Other values that can be set / Notes		
GPS receiver	A100	DGPS	--	--	--	Disabled	Enabled	
		HDOP alarm	1.0	10.0	--	4.0		
	AgStar	HDOP alarm	1.0	10.0	--	4.0		
		Correction type	--	--	--	None	DGPS	
		Tilt compensation	--	--	--	Disabled	Enabled	
	Smart-Ag / Smart 6	HDOP alarm	1.0	10.0	--	4.0		
		Correction type	--	--	--	None	DGPS / Omnistar®	
		Receiver advanced data	Region	--	--	--	Europe, Africa	United States - East / United States - Center / United States - West / South America / Atlantic Ocean - West / Atlantic Ocean - East / India, Middle East / Asia / Australia
	NMEA	DGPS	--	--	--	Disabled	Enabled	
		HDOP alarm	1.0	10.0	--	4.0		

Tractor								
Menu	Data	Min.	Max.	UoM	DEFAULT	Other values that can be set / Notes		
Camera		--	--	--	None	1, 2, Both		
Geometry settings	TOWED/3-POINT HITCH IMPLEMENT	Wheelbase	0.50	20.00	m	2.50 m	Tractor with TOWED/3-POINT HITCH IMPLEMENT , selected during guided setup	
			0.50	64.00	ft	8.20 ft		
		Rear axle / Connection point	0.00	20.00	m	0.50 m		
			0.00	64.00	ft	1.64 ft		
		GPS antenna / Rear axle	-20.00	20.00	m	0.50 m		
		GPS antenna / Ground	-64.00	64.00	ft	1.64 ft		
			0.00	20.00	m	2.50 m		
			0.00	64.00	ft	8.20 ft		
GSP antenna / Longitudinal axle	-8.00	8.00	m	0.00 m				
		-25.00	25.00	ft	0.00 ft			

CONTINUES >>>

>>> 14.1 Data and units of measurement shown

Tractor							
Menu	Data	Min.	Max.	UoM	DEFAULT	Other values that can be set / Notes	
Geometry settings	Wheelbase	0.50	20.00	m	2.80 m		
		0.50	64.00	ft	9.19 ft		
	Rear axle / Application point	0.00	20.00	m	1.50 m		
		0.00	64.00	ft	4.92 ft		
	SELF-PROPELLED WITH REAR BOOM	GPS antenna / Rear axle	-20.00	20.00	m	2.40 m	Self-propelled WITH REAR BOOM , selected during guided setup
			-64.00	64.00	ft	7.87 ft	
	GPS antenna / Ground	0.00	20.00	m	3.50 m		
		0.00	64.00	ft	11.48 ft		
	GSP antenna / Longitudinal axle	-8.00	8.00	m	0.00 m		
		-25.00	25.00	ft	0.00 ft		
	Wheelbase	0.50	20.00	m	2.80 m		
		0.50	64.00	ft	9.19 ft		
	Front axle / Application point	0.50	20.00	m	1.50 m		
		0.50	64.00	ft	4.92 ft		
SELF-PROPELLED WITH FRONT BOOM	GPS antenna / Rear axle	-20.00	20.00	m	2.40 m	Self-propelled WITH FRONT BOOM , selected during guided setup	
		-64.00	64.00	ft	7.87 ft		
GPS antenna / Ground	0.00	20.00	m	3.50 m			
	0.00	64.00	ft	11.48 ft			
GSP antenna / Longitudinal axle	-8.00	8.00	m	0.00 m			
	-25.00	25.00	ft	0.00 ft			

User						
Menu	Data	Min.	Max.	UoM	DEFAULT	Other values that can be set / Notes
Acoustic alarms	Acoustic critical alarms	--	--	--	Disabled	Enabled
	Acoustic low priority alarms	--	--	--	Disabled	Enabled
	Acoustic info	--	--	--	Disabled	Enabled
	Steering warning	--	--	--	Disabled	Enabled
	Alarms volume (DELTA 80 / BRAVO 400S ONLY)	0	100	%	70 %	
Guidance	Offset tolerance	3	100	cm	30	
		1	39	inches	12	
Backlight management	Menu	0	100	%	100 %	
	"Day" mode	0	100	%	100 %	
	"Night" mode	0	100	%	70 %	
	Auto reduction	--	--	--	Enabled	Disabled
	Idle time	1	20	min	1	
Preferences	Reduction value	0	100	%	70 %	
	Selective job loading	--	--	--	Disabled	Enabled

General options						
Menu	Data	Min.	Max.	UoM	DEFAULT	Other values that can be set / Notes
Language		--	--	--	English	Български, Cesky, Deutsch, English, Español, Français, Ελληνικά, Magyar, 日本, Italiano, Nederlands, Polski, Português, Român, Русский, 中文.
Units of measurement		--	--	--	Metric	US, Turf
Date and time GPS updating		--	--	--	Enabled	Disabled
Date and time		--	--	--	--	Visible ONLY with Date and time GPS updating disabled

Job data			
Data		UoM	
Applied area	ha	ac	ksqft
Applied quantity	l	gal	gal
Average application rate	l/ha	GPA	GPK
Nozzles	--	--	--
Calculated area	ha	ac	ksqft
Working time	hh:mm	hh:mm	hh:mm
Application time	hh:mm	hh:mm	hh:mm
Average productivity	ha/h	ac/h	ksqft/h
Job start date	dd/mm/yyyy	dd/mm/yyyy	dd/mm/yyyy
Job start time	hh:mm	hh:mm	hh:mm

END OF PAR. 14.1 DATA AND UNITS OF MEASUREMENT SHOWN





15 MAINTENANCE / DIAGNOSTICS / REPAIRS

15.1 Error messages

MESSAGE ON DISPLAY	CAUSE	REMEDY	JOB MODE
Drive! Machine stopped	Main control ON with machine stopped	<ul style="list-style-type: none"> Start the machine. Disable the main control (OFF) 	Master ON + Automatic adjustment ON 
Connection to ECU not detected!	Communication problems between monitor and control unit (ECU)	<ul style="list-style-type: none"> Check condition of connection cables (and connectors) between monitor and control unit (ref. instruction manual) 	--
	The cables are damaged	<ul style="list-style-type: none"> Replace the cable 	--
GPS receiver not connected!	Wrong connection of receiver cable to the monitor	<ul style="list-style-type: none"> Check connection to receiver (ref. instruction manual) 	--
	The receiver connection cable is damaged	<ul style="list-style-type: none"> Replace the cable 	--
	The receiver is damaged	<ul style="list-style-type: none"> Replace the receiver 	--
Insufficient GPS signal quality!	The position and number of satellites do not allow a suitable driving precision	<ul style="list-style-type: none"> Wait for signal strength to improve 	--
GPS receiver gives invalid data!	The receiver is establishing a connection to the satellites	<ul style="list-style-type: none"> Wait for connection 	--
DGPS correction not available!	DGPS signal unavailable in the working area	<ul style="list-style-type: none"> Disable DGPS correction (par. 5.3.1) 	--
	DGPS connecting	<ul style="list-style-type: none"> Wait for connection 	--
Omnistar correction missing!	Acquiring OmniSTAR® signal	<ul style="list-style-type: none"> Wait until OmniSTAR® signal acquisition stage is completed 	--
	The connected GPS receiver does not support the OmniSTAR® signal	<ul style="list-style-type: none"> Disable OmniSTAR® correction (par. 5.3.4) 	--
Activate pump! Missing flowrate	Main control ON but rate at zero	<ul style="list-style-type: none"> Start the pump and move the machine. 	Master ON + Automatic adjustment ON 
Minimum tank level reached!	Tank level is lower than the set reserve value	<ul style="list-style-type: none"> Fill the tank (par. 11.4) 	Master ON
	Minimum value was not set correctly	<ul style="list-style-type: none"> Check set reserve value (par. 5.1.12) 	
Maximum tank level reached!	Tank level reached set maximum value	<ul style="list-style-type: none"> Stop filling the tank (par. 11.4) 	--
Automatic regulation blocked!	Pressure does not reach set value	<ul style="list-style-type: none"> Increase driving speed 	Master ON + Automatic adjustment ON 
	Limit was not set correctly	<ul style="list-style-type: none"> Check set limit (par. 5.1.14) 	
Invalid signal of the pressure sensor!	Signal from pressure sensor is out of allowed range	<ul style="list-style-type: none"> Check the sensor and connection cable (and connector) status (ref. instruction manual) 	--

CONTINUES



MESSAGE ON DISPLAY	CAUSE	REMEDY	JOB MODE
Decelerate! Pressure too high	The pressure exceeds the maximum level allowed for the nozzle being used	<ul style="list-style-type: none"> • Decrease driving speed • Adjust the operating pressure so as to respect the previously set limits for nozzles in use. • Check set maximum pressure for nozzles in use (par. 5.1.8) 	Master ON
Accelerate! Insufficient pressure	The pressure does not reach the minimum value for the nozzle in use	<ul style="list-style-type: none"> • Increase driving speed • Adjust the operating pressure so as to respect the previously set limits for nozzles in use. • Check set minimum pressure for nozzle in use (par. 5.1.8) 	Master ON
Flowmeter out of range!	Rate out of the limits allowed by flowmeter	<ul style="list-style-type: none"> • Modify working conditions to suit flowmeter limits (speed, pressure, etc.) • Make sure that flowmeter parameters are set correctly (par. 5.1.3) 	Master ON
Decelerate! Insufficient flowrate	Flowrate does not reach the value requested for output	<ul style="list-style-type: none"> • Decrease driving speed • Make sure that flowmeter parameters are set correctly (par. 5.1.3) 	Master ON + Automatic adjustment ON 
Accelerate! Too high flowrate	The flowrate exceeds the value required for output	<ul style="list-style-type: none"> • Increase driving speed • Make sure that settings in the Implement advanced settings menu (boom width, flowmeter, etc. chap. 5.1) are set correctly 	Master ON + Automatic adjustment ON 
Reduce rotation speed!	RPM exceeds the maximum set value	<ul style="list-style-type: none"> • Decrease the rotation speed of the moving part • Check the constant set for the rev counter (par. 5.1.11) 	--
Increase rotation speed!	RPM does not reach the minimum value	<ul style="list-style-type: none"> • Increase the rotation speed of the moving part • Check the constant set for the rev counter (par. 5.1.11) 	Master ON
Check nozzles wear status!	Difference between measured and calculated flowrate (according to selected nozzle data) higher than set value	<ul style="list-style-type: none"> • Check that the selected nozzle coincides with the one installed on the boom (par. 7.7) • Replace nozzles 	Master ON + Automatic adjustment ON 
Switch box connection not detected! (DELTA 80 / BRAVO 400S ONLY)	Communication problems between monitor and switches	<ul style="list-style-type: none"> • Check condition of connection cables (and connectors) between monitor and switch box 	--
	The cables are damaged	<ul style="list-style-type: none"> • Replace the cable 	
Joystick connection not detected!	Communication problems between monitor and joystick	<ul style="list-style-type: none"> • Check condition of connection cables (and connectors) between monitor, ECU and joystick 	--
Job origin too far away!	The current position is too far away from the job origin.	<ul style="list-style-type: none"> • Redefine the job origin. 	--
Incompatible ECU firmware version!	The ECU firmware version is obsolete.	<ul style="list-style-type: none"> • Update the ECU firmware (par. 10.4.5). 	--
ECU power supply voltage out of range!	Power voltage supply is not within the required range (9÷16 V)	Check power supply	--
External battery power supply missing!	Power supply is not feeding any voltage at all	Check power supply	--
Regulation line: Too high power consumption!	The power line controlling the main valve and the regulation valve detected a high absorption	Check the valve, connection cable and connector status	--
Hydraulic line: Too high power consumption!	The power line controlling the hydraulic functions detected a high absorption	Check the valve, connection cable and connector status	--

END OF PAR. 15.1 ERROR MESSAGES



15.2 Troubleshooting

FAULT	CAUSE	REMEDY
The display does not switch on	No power supply	• Check power supply connection
	Computer is OFF	• Press the ON key
Valve controls take no effect	Valves not connected	• Connect the connectors
One valve does not open	No power supply to valve	• Check valve electric connection and operation
Output volume readout inaccurate	Wrong setup	• Check boom setup (par. 5.1.2) • Check the setup of the flowmeter constant (par. 5.1.3) • Check pressure sensor full scale setting (par. 5.1.5)
Distance traveled count displayed does not match actual distance covered	Wrong setup	• Check the boom setup (par. 5.1.2) • Check implement geometry (par. 5.2.1 - 5.2.2 - 5.5.2 - 5.5.3) • Check tractor geometry (par. 5.5.2 - 5.5.3 - 5.5.4)
Sprayed fluid count displayed does not match liters/gal actually sprayed	Wrong setup	• Check the setup of the flowmeter constant (par. 5.1.3) • Check the selected nozzle at job start (par. 7.7)
Unable to reach output volume value set for the automatic operation	Wrong setup	• Check spray rate setup (par. 7.7 - 12.1) • Check the setup of the boom width (par. 5.1.2)
	System not adequately sized to provide required rate	• Check maximum pressure valve adjustment • Make sure control valve is adequate for specific system
	Control valve malfunction	• Check valve operation
Instantaneous pressure readout inaccurate	Wrong setup	• Check full scale setup for pressure sensor (par. 5.1.5)
	Pressure sensor not calibrated	• Perform the calibration (par. 5.1.16)
	Pressure sensor wrong installation	• Check connections to pressure sensor
Instantaneous pressure is not displayed	Wrong setup	• Check pressure sensor setting (par. 5.1.5)
	Computer does not receive signals from pressure sensor	• Check connections to pressure sensor
	Pressure sensor wrong installation	• Check connections to pressure sensor
Rpm readout inaccurate	Wrong setup	• Check rpm sensor constant setting (par. 5.1.11)
Rpm value not displayed	Monitor does not receive signals from RPM sensor	• Check connections to RPM sensor
	Rpm sensor wrong installation	• Check connections to RPM sensor



16 TECHNICAL DATA

16.1 Data and units of measurement shown

Implement							
Menu	Data	Min.	Max.	UoM	DEFAULT	Other values that can be set / Notes	
Section configuration	Spray spots spacing	1	1000	cm	50 cm		
		0.39	393.70	inches	19.68 inches		
	Sections number	1	13	n°	--	Variable setting defined by the connected switch panel	
	Section 1 ÷ 13	1	50	n°	4	Number of spraying points for each section	
	Activation status of the sections	Section 1 ÷ 13		--	--	Enabled Disabled	
Flowmeter	Type	--	--	--	Orion 462xxA4xxxx	Orion 4621xA0xxxx, Orion 4621xA1xxxx, Orion 4621xA2xxxx, Orion 4621xA3xxxx, Orion 4622xA5xxxx, Orion 4622xA6xxxx, Wolf 462x2xxx, Wolf 462x3xxx, Wolf 462x4xxx, Wolf 462x5xxx, Wolf 462x7xxx, Other	
	Constant	1	32000	pls*/l	--		
		4	32000	pls*/gal	--		
	Minimum flowrate	0.1	999.9	l/min	--	Fixed settings for each flowmeter except Other	
		0.1	264.1	GPM	--		
	Maximum flowrate	0.1	999.9	l/min	--		
		0.1	264.1	GPM	--		
Filling flowmeter	Type	--	--	--	Orion 462xxA4xxxx	Orion 4622xA5xxxx, Orion 4622xA6xxxx, Wolf 462x4xxx, Wolf 462x5xxx, Wolf 462x7xxx, Other	
	Constant	1	32000	pls*/l	--		
		4	32000	pls*/gal	--		
	Minimum flowrate	0.1	999.9	l/min	--	Fixed settings for each flowmeter except Other	
		0.1	264.1	GPM	--		
	Maximum flowrate	0.1	999.9	l/min	--		
		0.1	264.1	GPM	--		
Pressure sensor	Status	--	--	--	Disabled	Enabled	
	Type	--	--	--	466113.200	466113.500, Other	
	Maximum pressure	0.1	150.0	bar	--	Fixed settings for each sensor except Other	
		1	2175	PSI	--		
Valves		Type	--	--	--	3 ways 2 ways, None Selection during guided setup	
	Main valve	Automatic closing of sections valves	--	--	--	Enabled	Disabled Selection during guided setup
		Automatic closing of main valve	--	--	--	Disabled	Enabled
		Switching time	0.1	1.0	s	1.0 s	
	Pressure regulating valve	Regulation direction	--	--	--	Standard	Reverse
		Type	--	--	--	2 ways	Automatic selection during guided setup
	Section valves	Shut-off time	0.1	1.0	s	0.3 s	
Switch-on time		0.1	1.0	s	0.3 s		

* pls = pulse

CONTINUES >>>



>>> 16.1 Data and units of measurement shown

Implement							
Menu	Data	Min.	Max.	UoM	DEFAULT	Other values that can be set / Notes	
Nozzles data	ISO01	Flowrate	--	--	l/min	0.40 l/min	
			--	--	GPM	0.10 GPM	
	ISO015	Flowrate	--	--	l/min	0.60 l/min	
			--	--	GPM	0.15 GPM	
	ISO02	Flowrate	--	--	l/min	0.80 l/min	
			--	--	GPM	0.20 GPM	
	ISO025	Flowrate	--	--	l/min	1.00 l/min	
			--	--	GPM	0.25 GPM	
	ISO03	Flowrate	--	--	l/min	1.20 l/min	
			--	--	GPM	0.30 GPM	
	ISO04	Flowrate	--	--	l/min	1.60 l/min	
			--	--	GPM	0.40 GPM	
	ISO05	Flowrate	--	--	l/min	2.00 l/min	ISO nozzles - cannot be modified
			--	--	GPM	0.50 GPM	
	ISO06	Flowrate	--	--	l/min	2.40 l/min	
		--	--	GPM	0.60 GPM		
	ISO08	Flowrate	--	--	l/min	3.20 l/min	
			--	--	GPM	0.80 GPM	
	ISO10	Flowrate	--	--	l/min	4.00 l/min	
			--	--	GPM	1.00 GPM	
	ISO15	Flowrate	--	--	l/min	6.00 l/min	
			--	--	GPM	1.50 GPM	
	ISO20	Flowrate	--	--	l/min	8.00 l/min	
			--	--	GPM	2.00 GPM	
	Pressure		--	--	bar	3.0 bar	
			--	--	PSI	40 PSI	
	A	Flowrate	0.10	10.00	l/min	1.00 l/min	
			0.03	2.6	GPM	0.26 GPM	
	B	Flowrate	0.10	10.00	l/min	2.00 l/min	
			0.03	2.6	GPM	0.53 GPM	
	C	Flowrate	0.10	10.00	l/min	3.00 l/min	
			0.03	2.6	GPM	0.79 GPM	
	D	Flowrate	0.10	10.00	l/min	4.00 l/min	User nozzles - customizable
			0.03	2.6	GPM	1.06 GPM	
	E	Flowrate	0.10	10.00	l/min	5.00 l/min	
			0.03	2.6	GPM	1.32 GPM	
	F	Flowrate	0.10	10.00	l/min	6.00 l/min	
			0.03	2.6	GPM	1.59 GPM	
	Pressure		0.1	50.0	bar	5.0 bar	
			1.45	725	PSI	70 PSI	
	Minimum pressure		0.1	50.0	bar	Default ISO nozzles: 1.0 ÷ 5.0 bar	
			1.45	725	PSI	15 ÷ 70 PSI	
	Maximum pressure		0.1	50.0	bar	Default user nozzles: 2.0 ÷ 10.0 bar	
			1.45	725	PSI	30 ÷ 145 PSI	
Wheel sensor	Constant		0.01	2000.00	cm/pls*	38.33 cm/pls*	
			0.01	780.00	inch/pls*	15.09 inch/pls*	
	Status		--	--	--	Disabled	Enabled
Rev counter	Constant		1	999	pls*/rev**	100 pls*/rev**	
	Minimum rotation speed		1	10000	rpm	100 rpm	
	Maximum rotation speed		1	10000	rpm	500 rpm	
	Reserve level		1	2000	l	150 l	
			1	500	gal	40 gal	
Tank	Capacity		1	99999	l	2000 l	Can be viewed only with Filling flowmeter enabled or manual tank level source (selection during guided setup)
			1	25000	gal	528 gal	
	Tank profile		--	--	--	--	Visible only with Level sensor enabled (selection during guided setup)
	Nozzle wear check		--	--	--	Disabled	Enabled Visible ONLY with Pressure sensor enabled
Nozzles alarms	Nozzle wear limit percentage		1	50	%	10 %	Visible ONLY with Pressure sensor enabled
	Minimum pressure alarm		--	--	--	Disabled	Enabled
	Maximum pressure alarm		--	--	--	Disabled	Enabled
Flowmeter alarms	Minimum flowrate alarm		--	--	--	Disabled	Enabled
	Maximum flowrate alarm		--	--	--	Disabled	Enabled
Rev counter alarms	Minimum rotation speed alarm		--	--	--	Disabled	Enabled
	Maximum rotation speed alarm		--	--	--	Disabled	Enabled

* pls = pulse
** rev = revolution

CONTINUES >>>



>>> 16.1 Data and units of measurement shown

Implement							
Menu	Data	Min.	Max.	UoM	DEFAULT	Other values that can be set / Notes	
Working parameters	Spraying limits	Spraying speed limit	--	--	--	Disabled	Enabled
		Minimum spraying speed	0.4	99.9	km/h	1.0 km/h	
			0.2	99.9	mph	0.6 mph	
		Regulation pressure limit	--	--	--	Disabled	Enabled
		Minimum regulation pressure	0.1	99.9	bar	1.0 bar	
			1	1449	PSI	15 PSI	
		Flowrate correction factor	0.25	4.00	--	1.00	
		Level correction factor	0.25	4.00	kg/l	1.00 kg/l	
			33.38	534.11	oz/gal	133.53 oz/gal	
		Sections overlapping limit	0	100	%	100 %	
Automatic section control	Perimeter overlapping limit	0	100	%	0 %		
	Spray closing delay	0.0	5.0	m	0.0 m		
		0.00	16.00	ft	0.00 ft		
	Spray opening advance	0.0	5.0	m	0.0 m		
		0.00	16.00	ft	0.00 ft		
Guidance	Steering radius	0.0	20.0	m	0.0 m		
		0.00	65.00	ft	0.00 ft		
	Reference line distance compensation	-100.00	100.00	m	+000.00 m		
		-328.08	328.08	ft	+000.00 ft		
Geometry settings	3-POINT HITCH IMPLEMENT	Application point / Connection point offset	0.00	20.00	m	1.50 m	
			0.00	64.00	ft	4.92 ft	Tractor with 3-POINT HITCH IMPLEMENT , selected during guided setup
		Application point / Longitudinal axle	-20.00	20.00	m	0.00 m	
			-64.00	64.00	ft	0.00 ft	
	TOWED IMPLEMENT	Connection point / Rear axle	0.00	20.00	m	5.00 m	
			0.00	64.00	ft	16.40 ft	
		Application point / Rear axle	0.00	20.00	m	1.50 m	Tractor with TOWED IMPLEMENT , selected during guided setup
			0.00	64.00	ft	4.92 ft	
	Application point / Longitudinal axle	-20.00	20.00	m	0.00 m		
		-64.00	64.00	ft	0.00 ft		

GPS receiver							
Menu	Data	Min.	Max.	UoM	DEFAULT	Other values that can be set / Notes	
GPS receiver	A100	DGPS	--	--	--	Disabled	Enabled
		HDOP alarm	1.0	10.0	--	4.0	
	AgStar	HDOP alarm	1.0	10.0	--	4.0	
		Correction type	--	--	--	None	DGPS
		Tilt compensation	--	--	--	Disabled	Enabled
	Smart-Ag / Smart 6	HDOP alarm	1.0	10.0	--	4.0	
		Correction type	--	--	--	None	DGPS / Omnistar®
		Receiver advanced data					United States - East / United States - Center / United States - West / South America / Atlantic Ocean - West / Atlantic Ocean - East / India, Middle East / Asia / Australia
		Region	--	--	--	Europe, Africa	
	NMEA	DGPS	--	--	--	Disabled	Enabled
HDOP alarm		1.0	10.0	--	4.0		

Tractor							
Menu	Data	Min.	Max.	UoM	DEFAULT	Other values that can be set / Notes	
Camera		--	--	--	None	1, 2, Both	
Geometry settings	TOWED/3-POINT HITCH IMPLEMENT	Wheelbase	0.50	20.00	m	2.50 m	
			0.50	64.00	ft	8.20 ft	
		Rear axle / Connection point	0.00	20.00	m	0.50 m	
			0.00	64.00	ft	1.64 ft	
		GPS antenna / Rear axle	-20.00	20.00	m	0.50 m	Tractor with TOWED/3-POINT HITCH IMPLEMENT , selected during guided setup
			-64.00	64.00	ft	1.64 ft	
		GPS antenna / Ground	0.00	20.00	m	2.50 m	
			0.00	64.00	ft	8.20 ft	
	GSP antenna / Longitudinal axle	-8.00	8.00	m	0.00 m		
		-25.00	25.00	ft	0.00 ft		

CONTINUES >>>

>>> 16.1 Data and units of measurement shown

Tractor							
Menu	Data	Min.	Max.	UoM	DEFAULT	Other values that can be set / Notes	
Geometry settings	Wheelbase	0.50	20.00	m	2.80 m	Self-propelled WITH REAR BOOM , selected during guided setup	
		0.50	64.00	ft	9.19 ft		
	Rear axle / Application point	0.00	20.00	m	1.50 m		
		0.00	64.00	ft	4.92 ft		
	GPS antenna / Rear axle	-20.00	20.00	m	2.40 m		
		-64.00	64.00	ft	7.87 ft		
	GPS antenna / Ground	0.00	20.00	m	3.50 m		
		0.00	64.00	ft	11.48 ft		
	GSP antenna / Longitudinal axle	-8.00	8.00	m	0.00 m		
		-25.00	25.00	ft	0.00 ft		
	Wheelbase	0.50	20.00	m	2.80 m		Self-propelled WITH FRONT BOOM , selected during guided setup
		0.50	64.00	ft	9.19 ft		
	Front axle / Application point	0.50	20.00	m	1.50 m		
		0.50	64.00	ft	4.92 ft		
GPS antenna / Rear axle	-20.00	20.00	m	2.40 m			
	-64.00	64.00	ft	7.87 ft			
GPS antenna / Ground	0.00	20.00	m	3.50 m			
	0.00	64.00	ft	11.48 ft			
GSP antenna / Longitudinal axle	-8.00	8.00	m	0.00 m			
	-25.00	25.00	ft	0.00 ft			

User						
Menu	Data	Min.	Max.	UoM	DEFAULT	Other values that can be set / Notes
Acoustic alarms	Acoustic critical alarms	--	--	--	Disabled	Enabled
	Acoustic low priority alarms	--	--	--	Disabled	Enabled
	Acoustic info	--	--	--	Disabled	Enabled
	Steering warning	--	--	--	Disabled	Enabled
	Alarms volume (DELTA 80 / BRAVO 400S ONLY)	0	100	%	70 %	
Guidance	Offset tolerance	3	100	cm	30	
		1	39	inches	12	
Backlight management	Menu	0	100	%	100 %	
	"Day" mode	0	100	%	100 %	
	"Night" mode	0	100	%	70 %	
	Auto reduction	--	--	--	Enabled	Disabled
	Idle time	1	20	min	1	
Preferences	Reduction value	0	100	%	70 %	
		0	100	%	70 %	
Preferences	Selective job loading	--	--	--	Disabled	Enabled

General options						
Menu	Data	Min.	Max.	UoM	DEFAULT	Other values that can be set / Notes
Language		--	--	--	English	български, Cesky, Deutsch, English, Español, Français, Ελληνικά, Magyar, 日本, Italiano, Nederlands, Polski, Portugês, Român, Русский, 中文.
Units of measurement		--	--	--	Metric	US, Turf
Date and time GPS updating		--	--	--	Enabled	Disabled
Date and time		--	--	--	--	Visible ONLY with Date and time GPS updating disabled

Job data			
Data		UoM	
Applied area	ha	ac	ksqft
Applied quantity	l	gal	gal
Average application rate	l/ha	GPA	GPK
Nozzles	--	--	--
Calculated area	ha	ac	ksqft
Working time	hh:mm	hh:mm	hh:mm
Application time	hh:mm	hh:mm	hh:mm
Average productivity	ha/h	ac/h	ksqft/h
Job start date	dd/mm/yyyy	dd/mm/yyyy	dd/mm/yyyy
Job start time	hh:mm	hh:mm	hh:mm

END 16.1 Data and units of measurement shown

Only use genuine ARAG accessories or spare parts to make sure manufacturer guaranteed safety conditions are maintained in time. Always refer to ARAG spare parts catalog.

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