



ARAG Navigation Software


**MULTI-PLATFORM SOFTWARE
FOR COMPUTER WITH INTEGRATED GPS GUIDE**

CE

Software rel. 3.6X

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. 12 Seletron connection).

1.2 Switching on

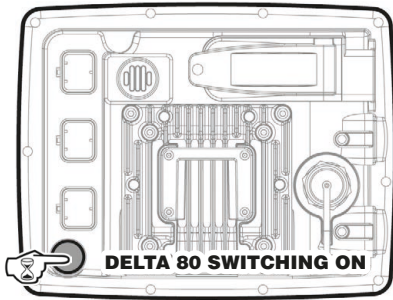


Fig. 1 **SWITCHING ON BRAVO 400S / NINJA**



Fig. 2



Fig. 4

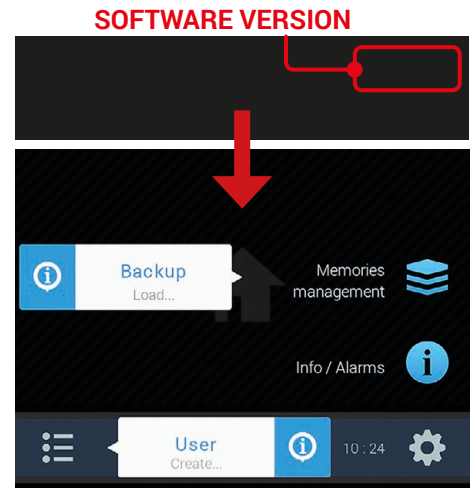


Fig. 3

Keep the switching on button pressed for 3 seconds: after a few seconds the monitor will show the screen Fig. 2. Immediately after, system is checked to detect the compatibility of the connected remote devices and software versions (Fig. 4). Finally, monitor software version followed by screen "Home" (Fig. 3).

AUTOMATIC DETECTION UPON SYSTEM SWITCHING ON

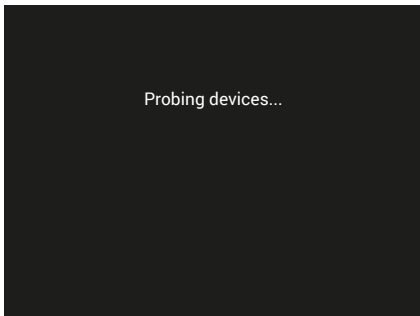


Fig. 5

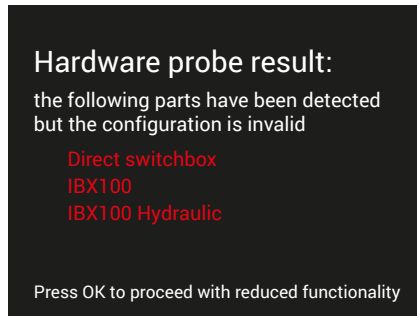


Fig. 6

1 COMPATIBILITY OF REMOTE DEVICES

Screen Fig. 6 indicates that the combination of the connected devices is not envisaged by the system. Check that the connected devices are suitable for use.

2 UPDATE OF REMOTE DEVICES

Screen Fig. 7 indicates that the system has detected a device that is not updated (the hydraulic control unit, in the example). Press **OK** to run the update. Once the procedure is completed, press **OK** to restart the system.

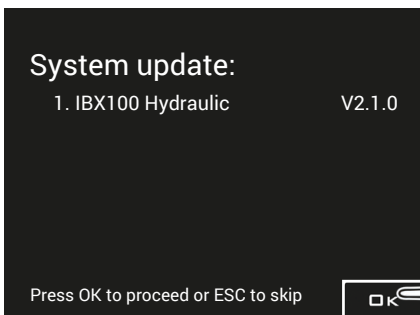


Fig. 7

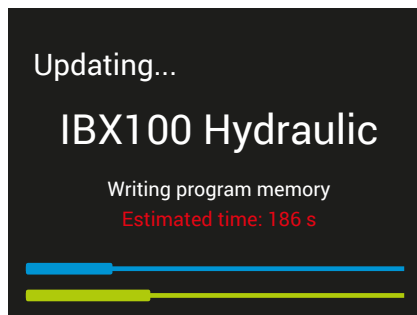


Fig. 8

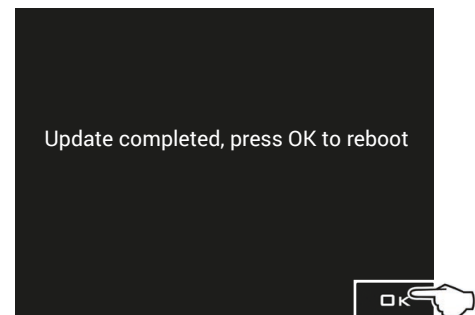


Fig. 9

WARNING: PRESS KEY ESC TO SKIP THE UPDATE AND LOCK THE DEVICE.

FIRST DEVICE SWITCHING ON

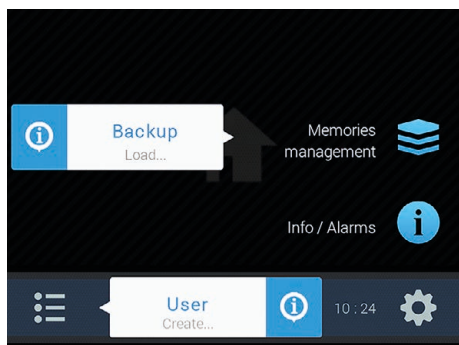


Fig. 10

Upon first switching on, after system checks, the monitor directly accesses screen "Home" (Fig. 10). Set the monitor language.

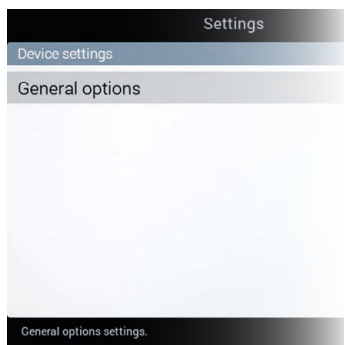


Fig. 11

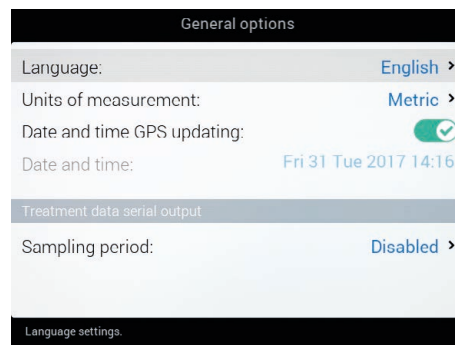


Fig. 12

LANGUAGE SETTING

- In the screen "Home" (Fig. 10) press **FB** to access the menu **Settings** (Fig. 11).
- Select **General options > Language** and set the monitor language.
- Press **ESC** and return to the menu "Home".

Shift to device basic settings (chap. 4).

ORDINARY SWITCHING ON

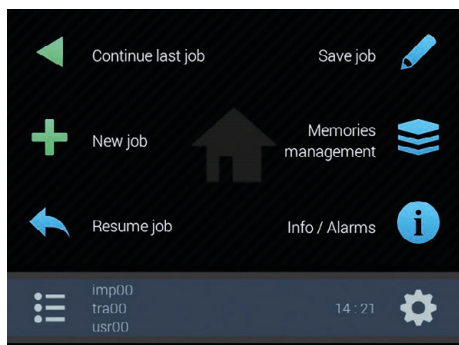


Fig. 13

After system checks, the monitor directly accesses screen "Home" (Fig. 13). Shift to device basic settings (chap. 4).

1.3 Switching off

Keep switching off key (Fig. 14) pressed until the switching off message (Fig. 15) is displayed, then release key. Now press key **OK** to confirm switching off, or key **ESC** to cancel it. **DO NOT KEEP SWITCHING OFF KEY (Fig. 16) PRESSED FOR TOO LONG.**

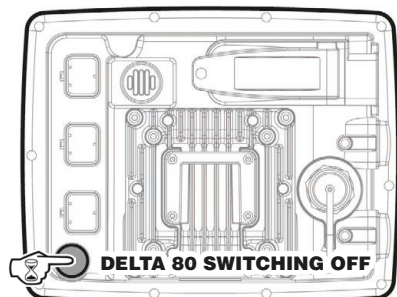


Fig. 14

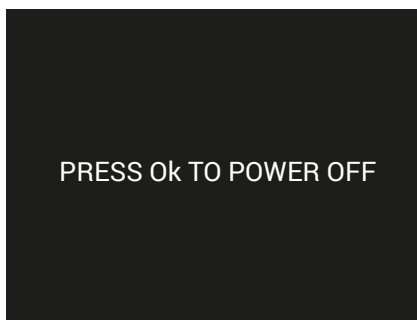


Fig. 15

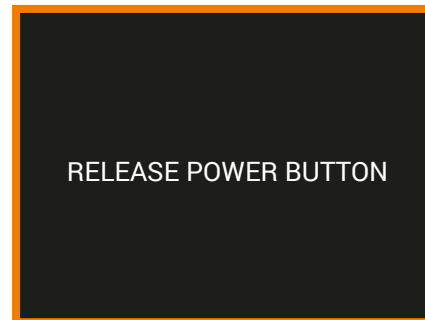


Fig. 16



During switching off, monitor automatically saves the current job: Do NOT press any other key and do NOT disconnect the power supply until 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

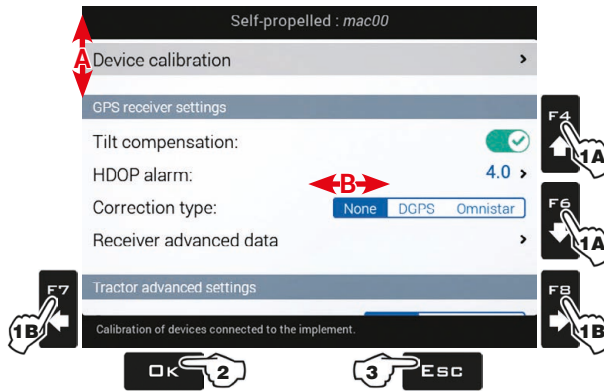


Fig. 17

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 (RIGHT / LEFT).
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

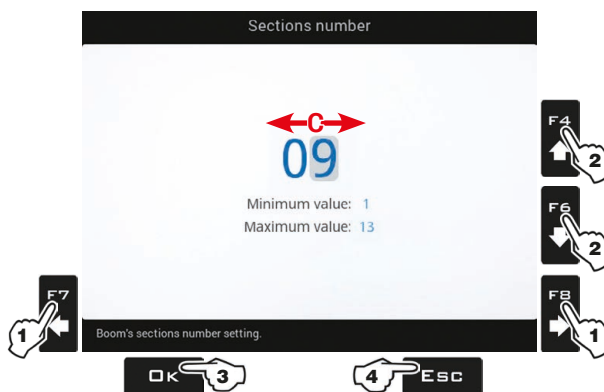


Fig. 18

- 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. 19

Legend:

F1 usr01	Selected character	Shift cursor across name characters	Caps lock	Deletes the character before the cursor	Saves the entered text
Typed Name Cursor					

1A Press in succession to select the character you wish to type (UP / DOWN).

1B Press in succession to select the character you wish to type (RIGHT / LEFT).

Press to:

- 2** confirm the selected character.
- 2** delete the character before the cursor (when symbol "" is selected)
- 2** save the entered text (when symbol "" is selected)
- 3** delete the character before the cursor (when symbol "" is selected)
- 4** save the entered text (when symbol "" is selected)
- 5** exit screen without confirming modification

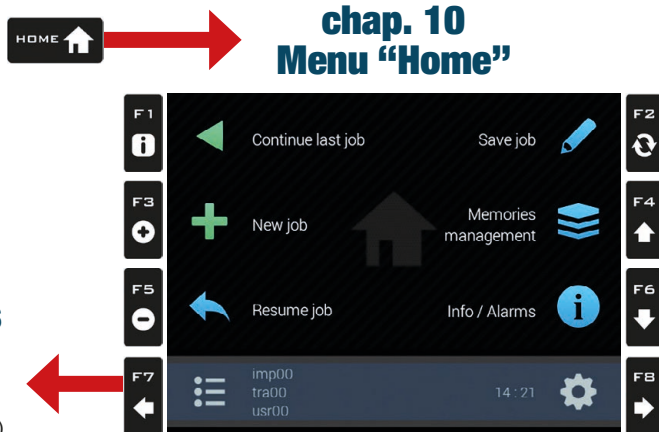
The box at the bottom of the page is a summary of key functions during setup.

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

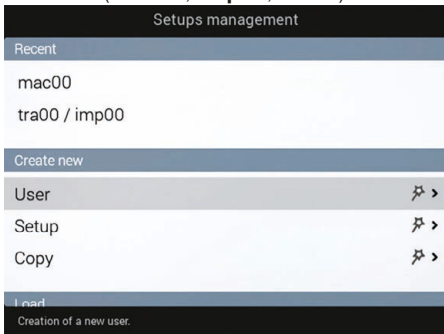


Upon first switching on, enter the device basic settings (chap. 4). Afterwards, it will be possible to select the preset settings by pressing F7.



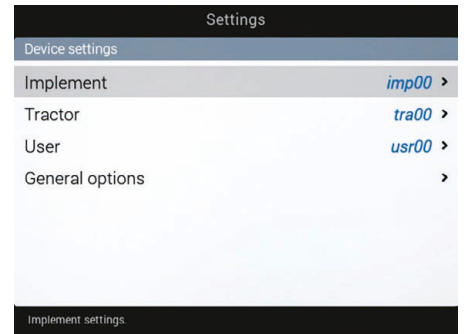
chap. 4 Basic settings

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



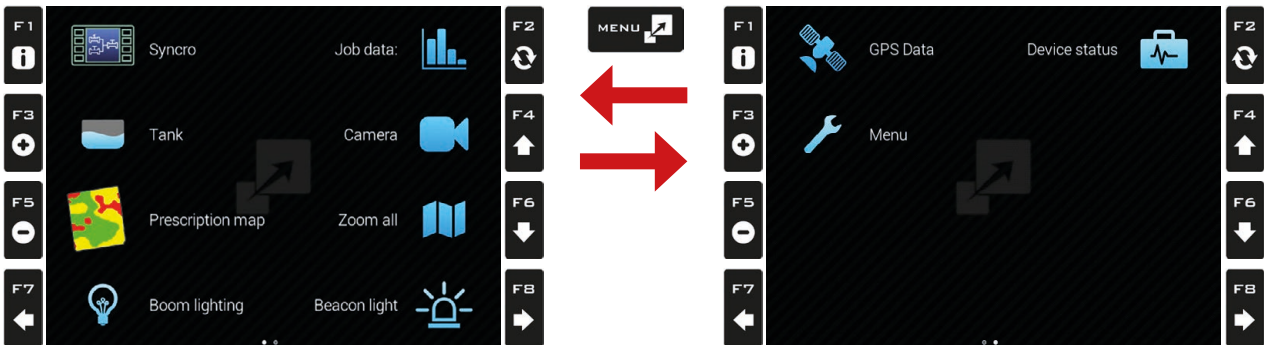
chap. 6 Advanced setup

Edit the created configurations* (chap. 4).
System setup.

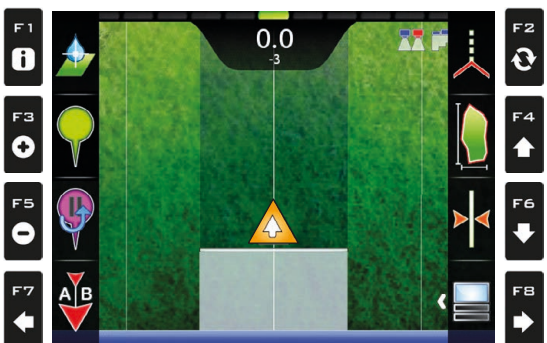


* The type of displayed configuration varies based on the type of system set (chap. 4):
- the "macxx" configuration refers to self-propelling machines,
- the "impxx" and "traxx" configurations refer to the machines with towed or carried implement ("impxx" for the implement, "traxx" for the tractor)

chap. 11 Job menu



chap. 13 Job functions



chap. 9 Automatic functions





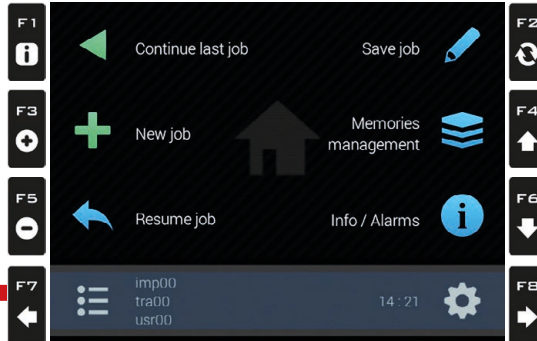
3 MENU STRUCTURE



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

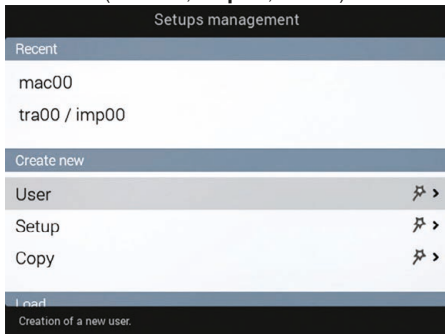


**chap. 10
Menu "Home"**



**chap. 4
Basic settings**

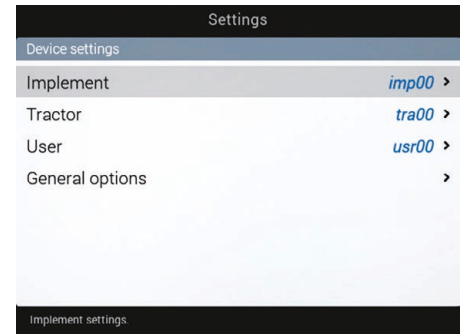
Create / Load settings*:
User ("usrxx")
Configuration
("macxx", "impxx", "traxx")



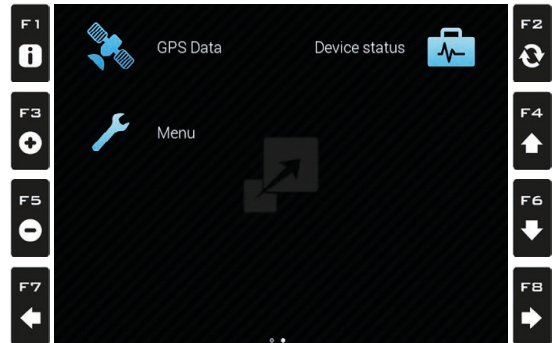
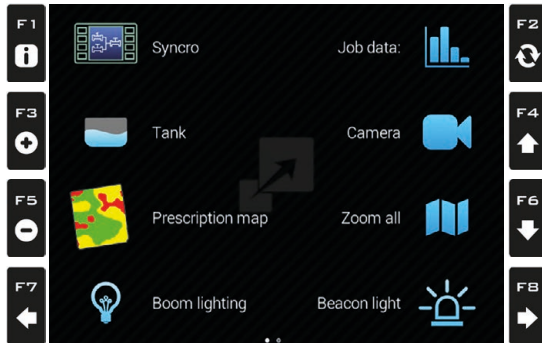
* The type of displayed configuration varies based on the type of system set (chap. 4):
- the "macxx" configuration refers to self-propelling machines,
- the "impxx" and "traxx" configurations refer to the machines with towed or carried implement ("impxx" for the implement, "traxx" for the tractor)

**chap. 6
Advanced setup**

Edit the created configurations*(chap. 4).
System setup.



**chap. 11
Job menu**



**chap. 13
Job functions**



**chap. 8
Automatic functions**



4 BASIC SETTINGS

FIRST SWITCHING ON - SETTINGS

If you have a configuration file (Backup), correctly saved on a pen-drive / SD card, press **F4** (A in Fig. 20) and follow the steps specified in par. 10.4.2. **IN ALL OTHER CASES, PRESS F7 (B): SAVE USER AND MACHINE CONFIGURATION; THEN START GUIDED SETUP BY PRESSING KEY F8** (Fig. 22 o Fig. 23).

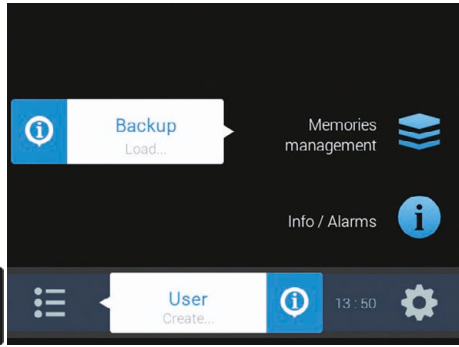


Fig. 20



ACTIVE SETTINGS AT THE END OF GUIDED SETUP

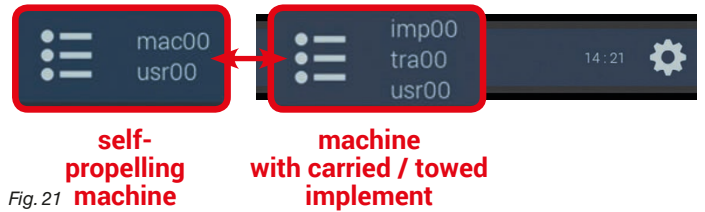


Fig. 21

3 GUIDED SETUP

You can do the following:



Fig. 22

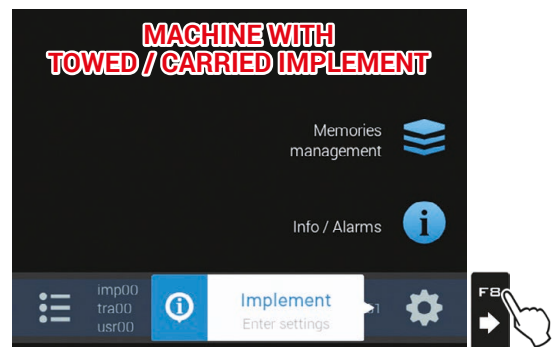




Fig. 23

GUIDED SETUP - MENU

IMPLEMENT / SELF-PROPELLING MACHINE BASIC SETTINGS

- **IMPLEMENT TYPE**
Sprayer (Seletron): system with Seletron valves.
Sprayer (Electrovalves): system with electric valves - with gear motor.
- **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: the measured pressure is used to calculate the spray 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 at the "Buffer zone" see par. 7.3.1 "Buffer Zone" function enabled on page 64.
"Fence" nozzles: allows using the "Fence" nozzles, see par. 7.3.2 "Fence nozzle" function enabled on page 65.
- **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:** automatic guidance control unit.
ECU-S1: ARAG control unit code 4679100
None
- **GPS RECEIVER**
Smart-Ag Smart 6 **AgStar** **Atlas** : ARAG receivers code 467016xx.

A100: ARAG receiver code 520100.693.

- **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:** the monitor simulates the driving.
- **None**

BASIC SETUP PROCEDURE IS NOW COMPLETE. NOW IT IS POSSIBLE TO START THE ADVANCED SETUP PROCEDURE, DESCRIBED IN CHAP. 6. The system assigns to the monitor ONLY the suitable setup menus.

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

5 SYSTEM CONNECTED TO EXTERNAL COMPUTERS

The application detects and manages the connection to external computers of the Bravo 180S, Bravo 300S and Alfa 350 series, which are compatibly updated.

In this mode, the system:

- receives the status of the sections from the connected computer
- allows enabling main valve automatic closing (external computers with direct connection)
- allows enabling section automatic closing (external computers with RCU connection)
- manages the variable application through the prescription map.

To enable this mode, the guided setup procedure has to be run ("Basic settings" on page 10).

GUIDED SETUP - MENU

IMPLEMENT / SELF-PROPELLING MACHINE BASIC SETTINGS

The screen below indicates that the system has detected the connection to an external computer. Press **K** to enable the configuration.



GUIDANCE SETTINGS / BASIC TRACTOR SETTINGS

• **AUTONOMOUS GUIDANCE:** automatic guidance control unit.

ECU-S1: ARAG control unit code 4679100

None

• **GPS RECEIVER**

Smart-Ag Smart 6 **AgStar** **Atlas** : ARAG receivers code 467016xx.



A100: ARAG receiver code 520100.693.

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: the monitor simulates the driving.

None

BASIC SETUP PROCEDURE IS NOW COMPLETE. NOW IT IS POSSIBLE TO START THE ADVANCED SETUP PROCEDURE.

The system assigns to the monitor **ONLY** the suitable setup menus.

SELF-PROPELLING MACHINE

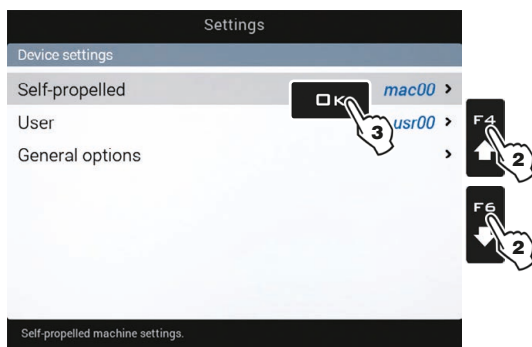


Fig. 24

MACHINE WITH TOWED / CARRIED IMPLEMENT

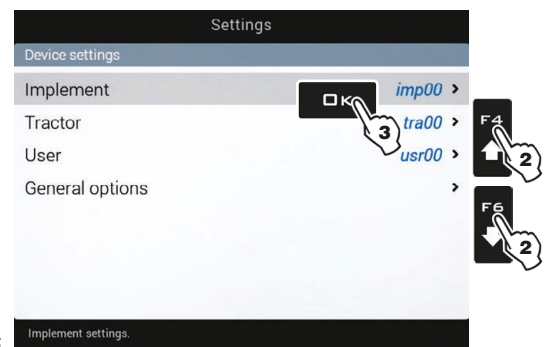


Fig. 25

IMPLEMENT / SELF-PROPELLING MACHINE / TRACTOR SETTINGS

• **EXTERNAL COMPUTER SETTINGS (B180S / B300S / ALFA350)**

Boom settings: coming from the external computer, which cannot be edited.

Valves: Shut-off time, Switch-on time - page 26.

Working parameters: Automatic section control - page 35, **Automatic closing of main valve, Guidance** - page 38.

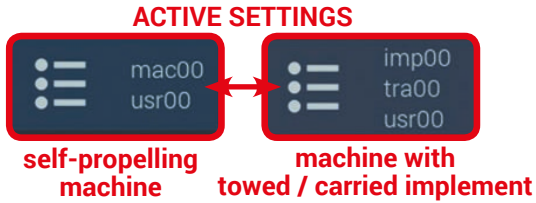
- **IMPLEMENT GEOMETRY** (par. 6.6)
- **GPS RECEIVER SETTINGS** (par. 6.8)
- **AUTONOMOUS GUIDANCE** (par. 6.9)
- **TRACTOR ADVANCED SETTINGS** (par. 6.10)

USER (par. 6.12)

GENERAL OPTIONS (par. 6.13)

REMOTE SUPPORT (par. 6.14)

6 ADVANCED SETUP



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

6.1 Configuration management

Press **F7** in screen "Home" (Fig. 26).

Now it is possible to create a new setup (**A**), or select an existing one (**B**):

in all cases the setup will be enabled and the name will be displayed in screen "Home"

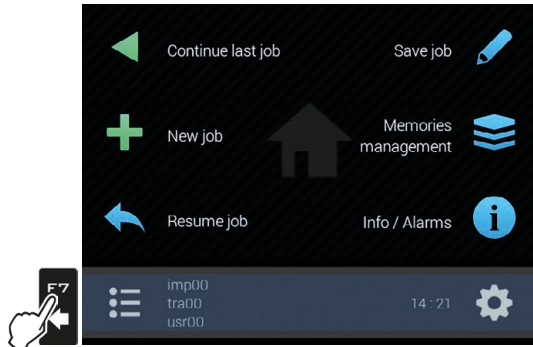


Fig. 26

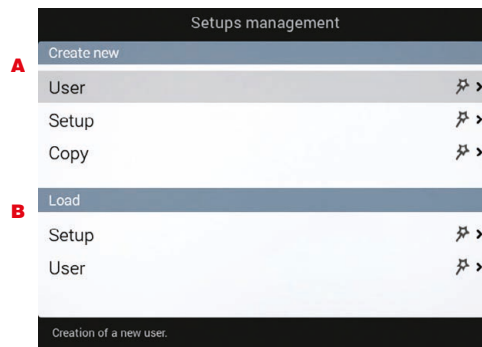


Fig. 27

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

1 Select **Create new > User** (a in Fig. 28) to create a new setup and press **OK**.

2 User's definition: select **Yes** for extended configuration, **No** for device reduced configuration (par. 6.2) - **FOR "NEW USER" ONLY**.

Follow the steps and select the desired options. **OK**: next step **ESC**: previous step.

3 Type the name (in the example of Fig. 29: **usr01**) and press **OK**.

The new setup is now active on the computer (Fig. 30). Before moving on to the advanced setup procedure carry out the basic setup (chap. 4).

You can follow the same procedure for setup **Create new > Configuration (b)**

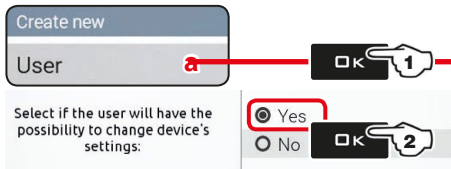


Fig. 28

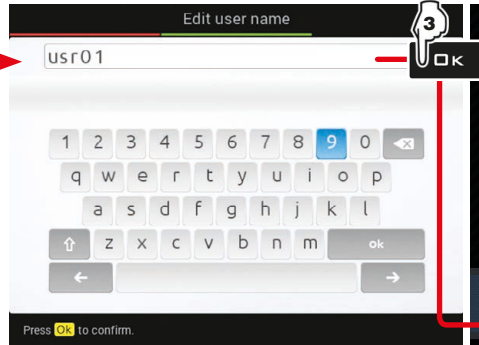


Fig. 29

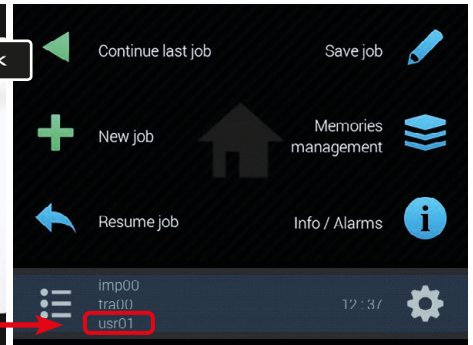


Fig. 30

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

* copy valid only for "Configuration" files

1 Select **Copy** (c in Fig. 31) to copy the active setup and save the data on a new one; press **OK**.

Follow the steps and select the desired options. **OK**: next step **ESC**: previous step.

2 Type the name (in the example of Fig. 32: **imp01**) and press **OK**.

The saved setup is now active on the computer (Fig. 33). Proceed to advanced setup.

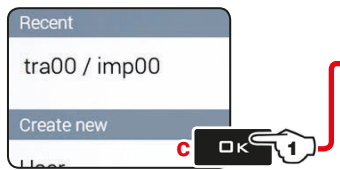


Fig. 31

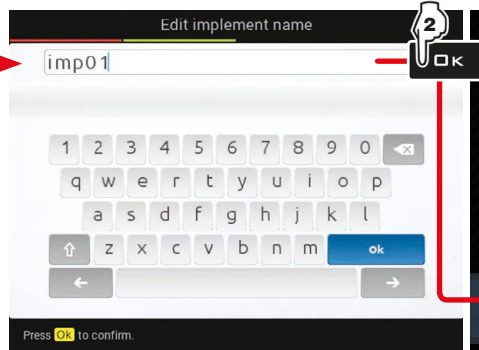


Fig. 32

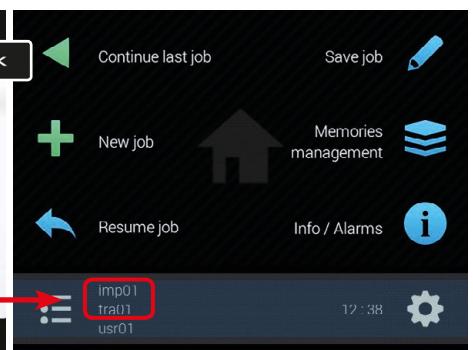


Fig. 33

LOADING A SETUP

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

- 1 Select **Load > Configuration (d)** in Fig. 34 and press **OK**.
- 2 From the example in Fig. 35 select the type of setup to load, and press **OK**.
Follow the steps and select the desired options. **OK**: next step **ESC**: previous step.
The selected setup is now active on the computer (Fig. 36). Proceed to advanced setup.

You can follow the same procedure for setup **Load > User (e)**

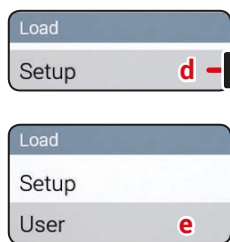


Fig. 34

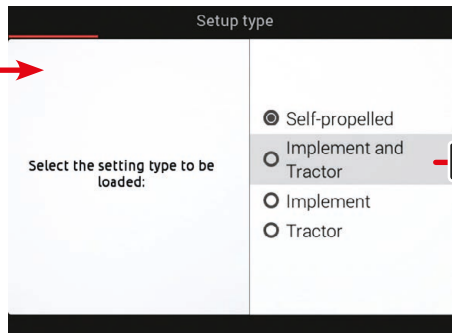


Fig. 35

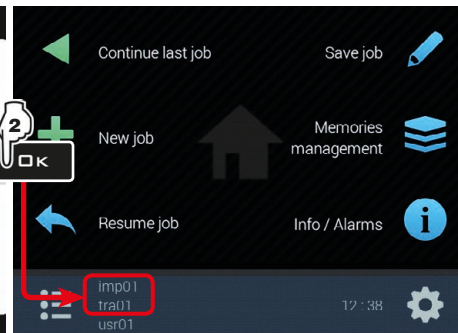


Fig. 36

Now you can start advanced setup: all the modifications will be applied to ACTIVE SETTINGS (mac, imp, tra, usr).

6.2 Device reduced configuration

Allows reducing the access level to control parameters.

- 1 Select **Create new > User** and press **OK**.
- 2 User's definition: select **No** for device reduced configuration (Fig. 37). Press **OK**.
- 3 Type the name (in the example of Fig. 38: **usr01**) and press **OK**.
The new user is now active on the computer (Fig. 39).

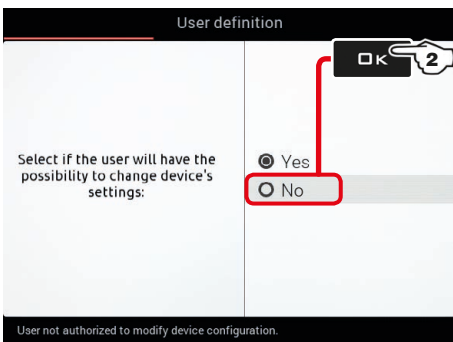


Fig. 37



Fig. 38

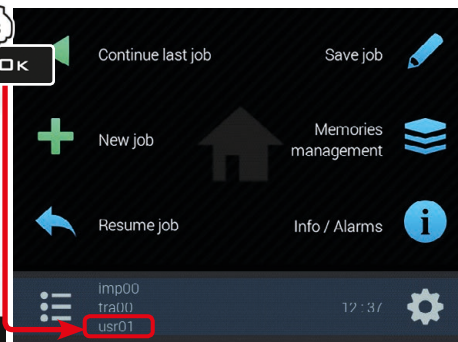
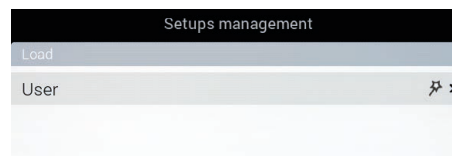


Fig. 39



When reduced configuration is active, configurations (mac, imp, tra) other than those already present CAN NEITHER BE CREATED NOR LOADED. Device configuration cannot be edited and menu structure is simplified.

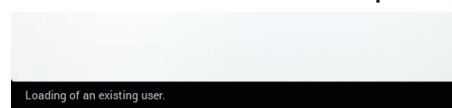


Fig. 40

6.3 Settings

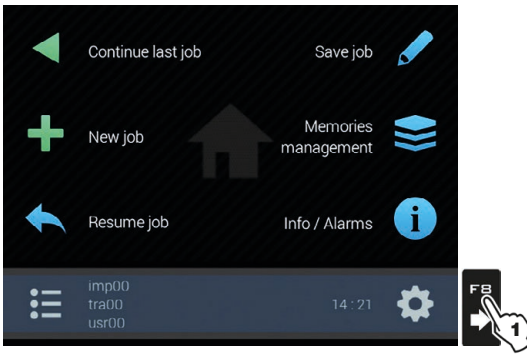


Fig. 41

- 1 In the "Home" screen (Fig. 41) press **F8** to enter menu **Settings** (Fig. 42 / Fig. 43).
- 2 Perform monitor advanced setup: select the desired menu item (with **F4** or **F6**);
- 3 Press **OK** to shift to the selected item setup.

SELF-PROPELLING MACHINE

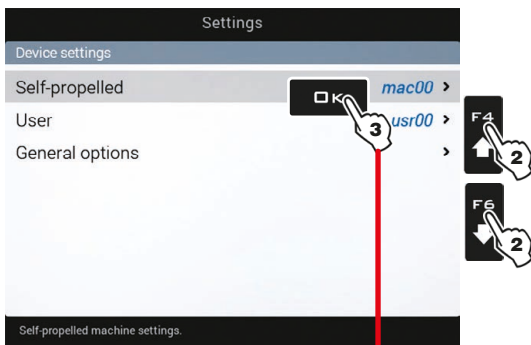


Fig. 42

MACHINE WITH TOWED / CARRIED IMPLEMENT

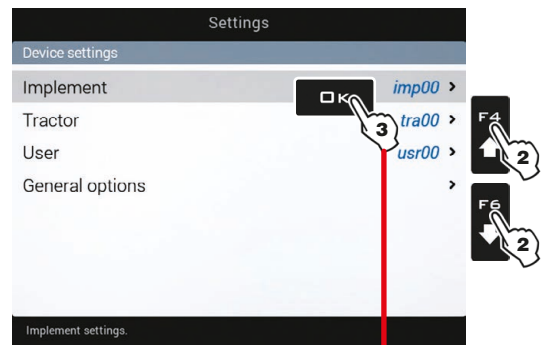


Fig. 43

<p>SELF-PROPELLED</p> <p>IMPLEMENT ADVANCED SETTINGS (par. 6.4) CONNECTION TO SYNCRO DEVICE (par. 6.5) GPS RECEIVER SETTINGS (par. 6.8) AUTONOMOUS GUIDANCE (par. 6.9) TRACTOR ADVANCED SETTINGS (par. 6.10)</p>
<p>USER (par. 6.12)</p>
<p>GENERAL OPTIONS (par. 6.13)</p>
<p>REMOTE SUPPORT (par. 6.14)</p>

<p>IMPLEMENT</p> <p>IMPLEMENT ADVANCED SETTINGS (par. 6.4) CONNECTION TO SYNCRO DEVICE (par. 6.5) IMPLEMENT GEOMETRY (par. 6.6)</p>
<p>TRACTOR</p> <p>GPS RECEIVER SETTINGS (par. 6.8) AUTONOMOUS GUIDANCE (par. 6.9) TRACTOR ADVANCED SETTINGS (par. 6.10)</p>
<p>USER (par. 6.12)</p>
<p>GENERAL OPTIONS (par. 6.13)</p>
<p>REMOTE SUPPORT (par. 6.14)</p>

F1 Enter selected character

F2 Delete selected character

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


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

Data decrease / increase

OK Confirm access or data change

ESC Exit the function or data change

6.4 IMPLEMENT ADVANCED SETTINGS

 THE BASIC SETTINGS (CHAP. 4), AFFECT WHICH AND HOW MENU ITEMS ARE DISPLAYED, HENCE WHICH ADVANCED SETUP IT IS POSSIBLE TO CONTROL.
A NAVIGATION SUMMARY IS AVAILABLE IN Fig. 42 AND Fig. 43.



6.3.1 BLC

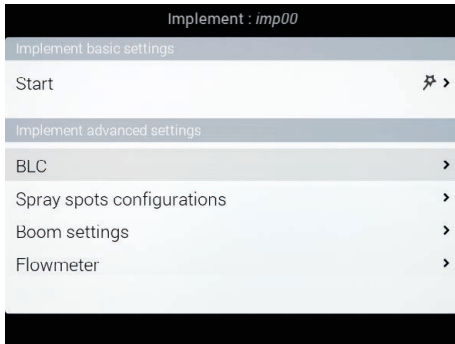


Fig. 44

 This menu is displayed ONLY after having activated the BLC function on the control unit (software license to be purchased separately). To refine system performance, refer to the manual supplied with the BLC kit.



6.3.2 TTC

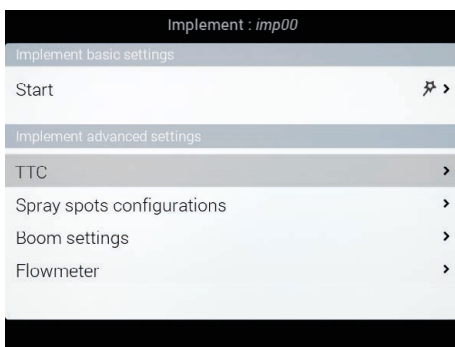



Fig. 45

 This menu is displayed ONLY after having activated the TTC function on the control unit (software license to be purchased separately). To refine system performance, refer to the manual supplied with the TTC kit.

F1 Enter selected character	F2 Delete selected character	F7 F8 Scroll (LEFT / RIGHT)	F4 F6 Scroll (UP / DOWN)	Data decrease / increase	OK Confirm access or data change	ESC Exit the function or data change	Par. 1.4
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6.4.1 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.

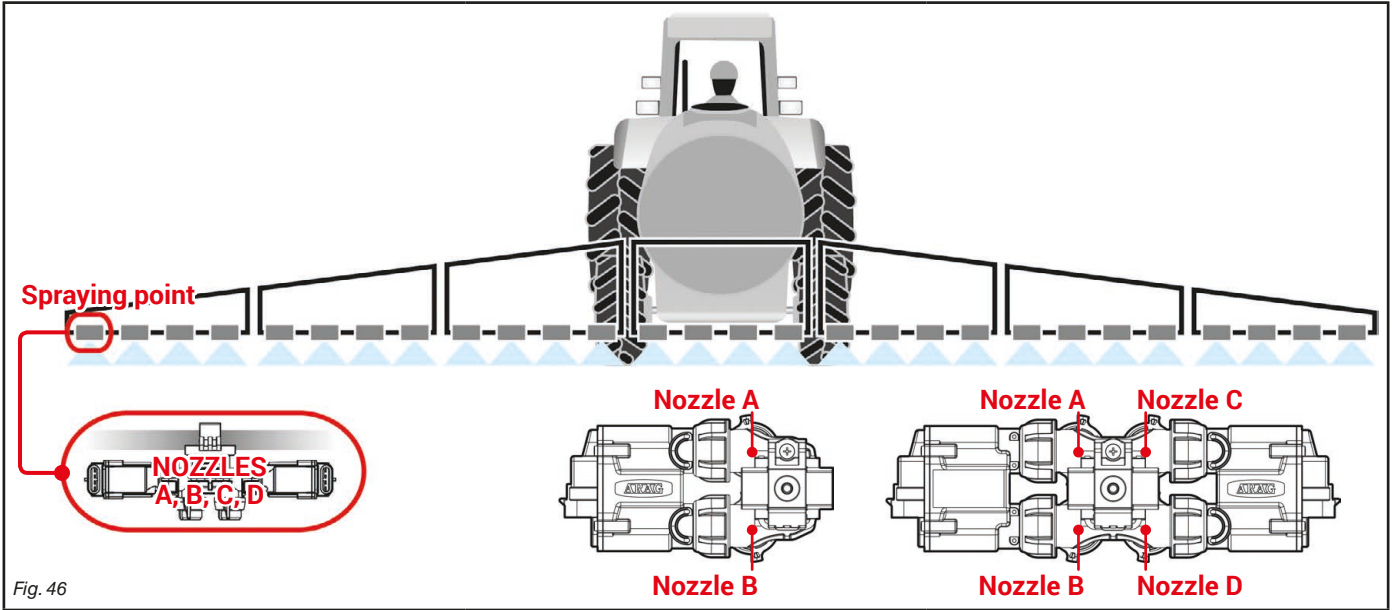




Fig. 46

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. 47).
- Select the nozzle you wish to set up (A, B, C or D, in Fig. 48).
- Select one of the suggested nozzles (Fig. 49): 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.

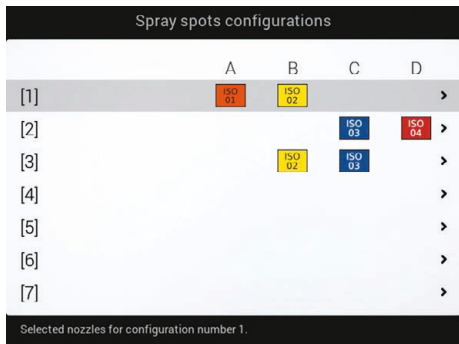


Fig. 47

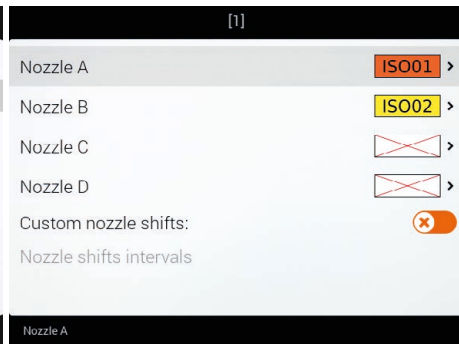


Fig. 48

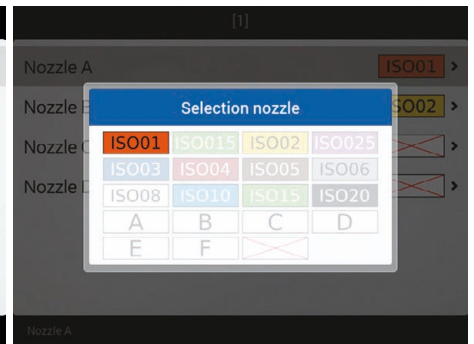


Fig. 49

CONTINUES

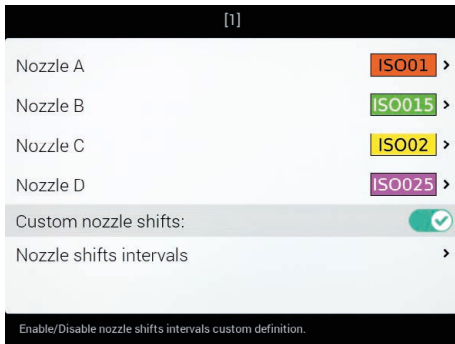
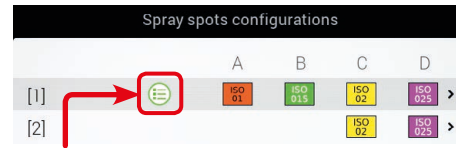


Fig. 50

• Custom nozzle shifts

First of all, enable the menu to configure it (Menu enabled / Menu disabled). Allows activating nozzle customized combination; shift to menu **Nozzle shifts intervals**, from which the combinations can be setup.



The "Customized nozzle change" menu is ACTIVE for configuration 1

Fig. 51

• Nozzle shifts intervals

In a Seletron system, this menu optimizes nozzle automatic selection (par.): it allows setting up one nozzle combination, using ONLY SOME in relation to a flowrate range. Each range has a specific nozzle combination and an exchange flowrate that, once exceeded, will make the computer use the combination of the next range.



Range 1

Range 2

Range 3

Fig. 52

• Number of intervals

Indicate the number of customized ranges.

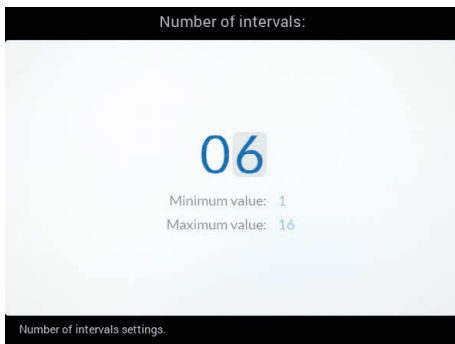


Fig. 53

- Program menus **Nozzle type** and **Shift flowrate** corresponding to each range.
- Set all ranges.

• Nozzle type

Enable /disable the nozzles used for each range.

- Select the menu **Nozzle type** of the first range (Fig. 54).
 - Select the nozzles to be used among the suggested ones: should you disable one or more nozzles, select them using arrow keys **F7** / **FB**, then press **OK** to disable them (one at a time).
- In the example below, out of the four available nozzles, is disabled.



Range 1

Fig. 54

• Shift flowrate

Program the flowrate limit of the corresponding range.

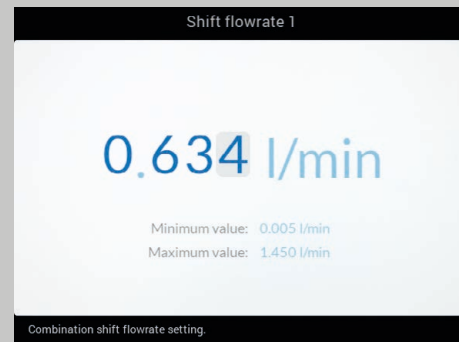
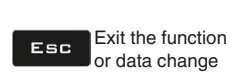


Fig. 55

CONTINUES "Boom settings / Section configuration" on page 18 >>>



Data decrease / increase



6.4.2 Boom settings / Section configuration

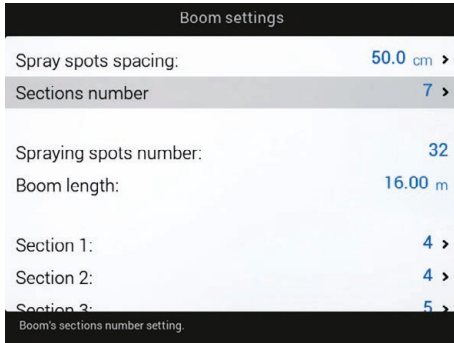


Fig. 56

Spraying points distance

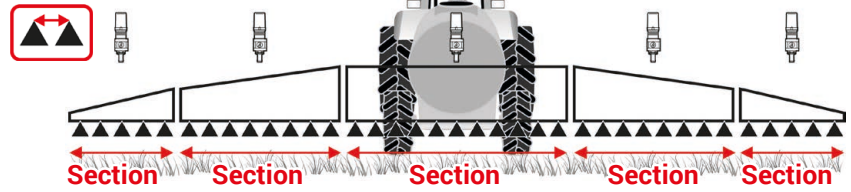


Fig. 57



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.

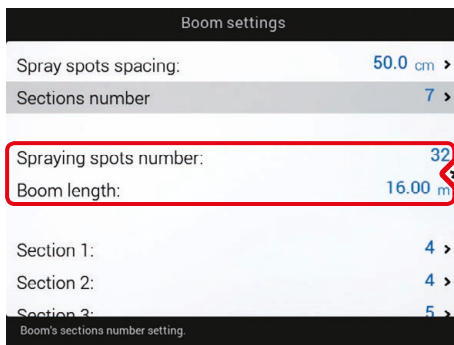


Fig. 58

Depending on the selected settings, the number of spraying points as well as the value of the boom width, displayed in Fig. 58 will change.



Fig. 59

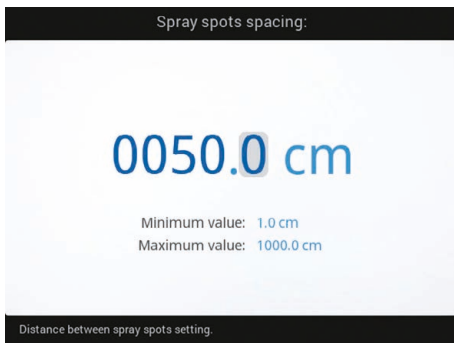


Fig. 60

• Spray spots spacing

Indicate the distance between spraying points (nozzle holders).

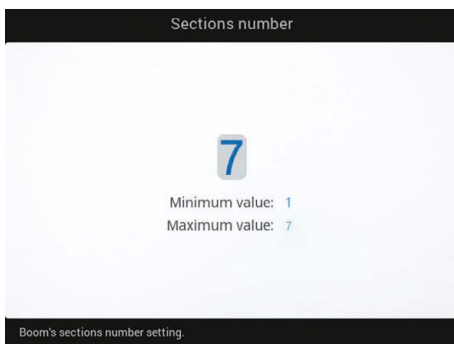


Fig. 61

• Sections number

Indicate the number of boom sections.

CONTINUES >>>



Fig. 62

• Section 1 ÷ 13

- Indicate the number of spraying points (nozzle holders) installed on each boom section.
- Repeat the setup for each section (Fig. 56).

SECTIONS MANAGEMENT

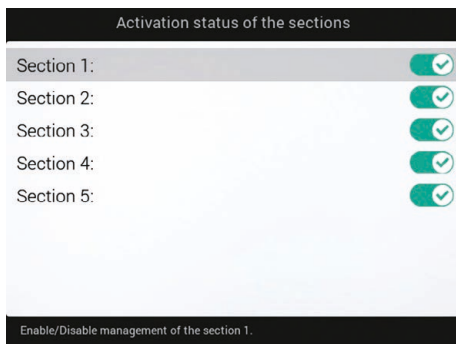


Fig. 63

• Activation status of the sections

It allows enabling/disabling specific boom sections.
 (✔ Section enabled / ✘ Section disabled).

- Select the section you wish to set up.
- Repeat the setup for each section (Fig. 63), by disabling the disconnected outputs.

6.4.3 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.

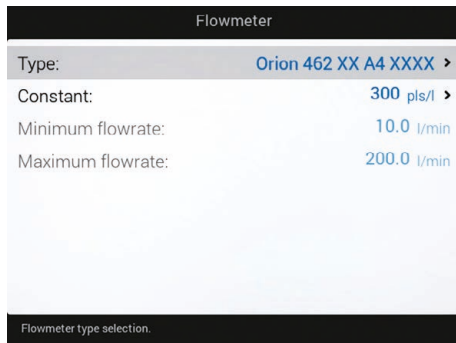


Fig. 64

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

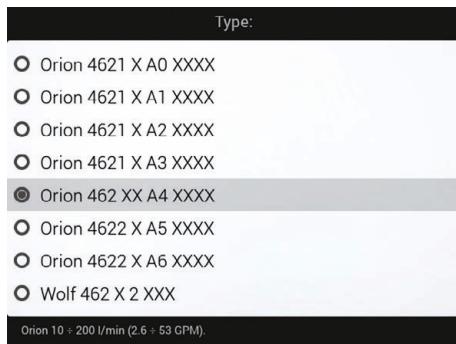


Fig. 65

• Type

Indicate the type of flowmeter installed.

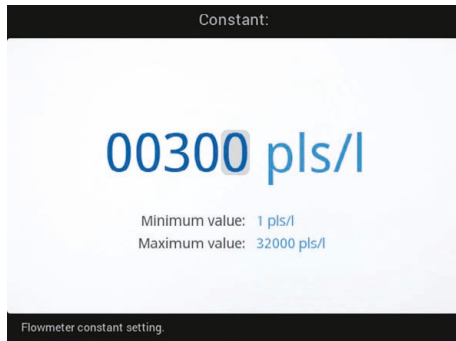


Fig. 66

• Constant

Indicate the constant of the installed flowmeter.



Fig. 67

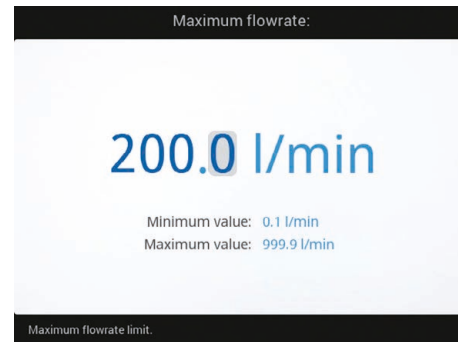


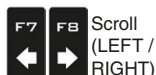
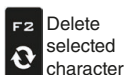
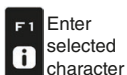
Fig. 68

• Minimum flowrate
• Maximum flowrate

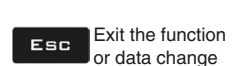


The items **Minimum flowrate** and **Maximum flowrate** can be edited only when option **Other** is enabled (menu **Type** in Fig. 65).


Enable the relevant function of the menu **Alarms** (par. 6.4.13) if you want the computer to trigger an alarm when, during spraying, the flowmeter rate is outside the set range.



Data decrease / increase



6.4.4 Filling flowmeter

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

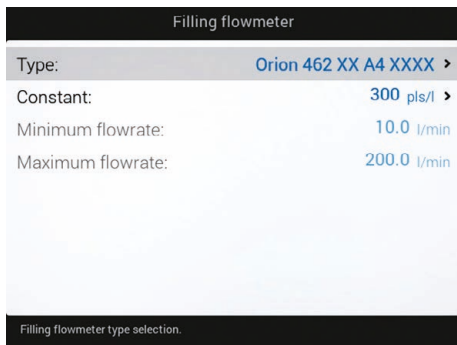


Fig. 69

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							

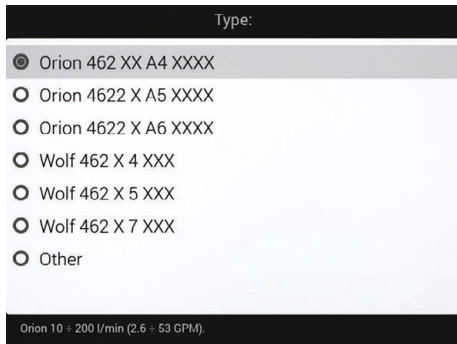


Fig. 70

• Type

Indicate the type of flowmeter installed.

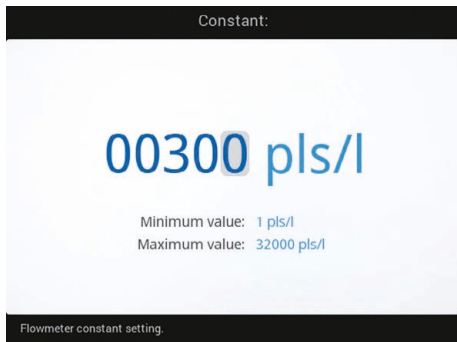


Fig. 71

• Constant

Indicate the constant of the installed filling flowmeter.



Fig. 72

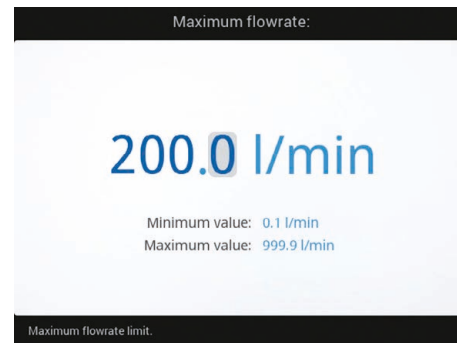

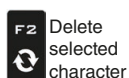
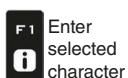


Fig. 73

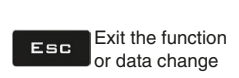
• Minimum flowrate
• Maximum flowrate

 The items **Minimum flowrate** and **Maximum flowrate** can be edited only when option **Other** (Fig. 70) is enabled.

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



Data decrease / increase



6.4.5 Pressure sensor

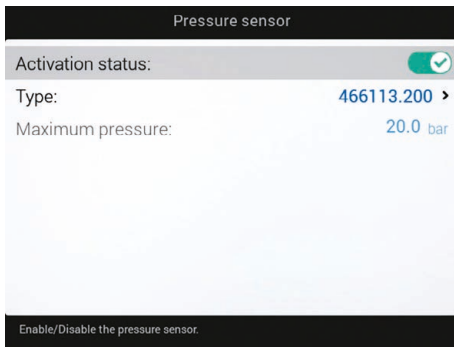


Fig. 74

• Activation 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.

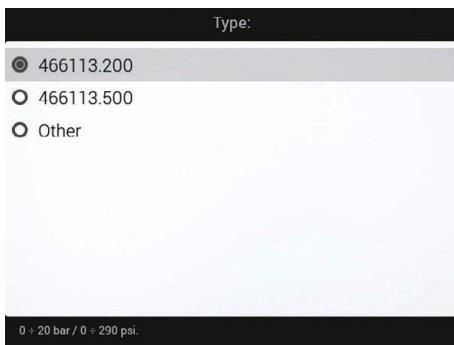


Fig. 75

• Type

Indicate the type of pressure sensor installed.



Fig. 76

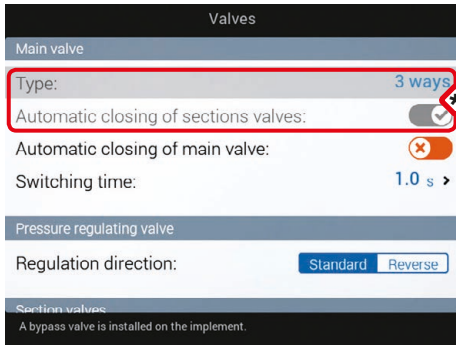
• Maximum pressure



Item Maximum pressure can be edited only when option **Other** is enabled.

Indicate the full scale of the pressure sensor installed on the system.

6.4.6 Valves



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

⚠ Items Main valve > Type and Automatic closing of section valves are shown as REMINDER: they are activated during the guided setup (chap. 4). Therefore, they cannot be modified from this screen.

Fig. 77

MAIN VALVE

• Type (REMINDER)

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

• Automatic closing of section valves (REMINDER)

On a Seletron system, automatic closing of sections is active by default ("M" type).
 In this mode, the section valves are closed or opened by operating the main control valve based on the settings of the controls relating to the single section valves, namely:
 - if section controls are set to OFF, when main control is operated, the sections will stay closed;
 - if the control of one or more section valves is set to ON, when main valve is closed or opened, the section valves will be closed or opened as well.

• Automatic closing of main valve

When all section valves are closed and this option is enabled, the main valve is automatically closed as well.
 (🟢 Main valve automatic closure enabled / 🛑 Main valve automatic closure disabled)

CONTINUES "• Switching time" on page 25 >>>



6.4.7 Valves

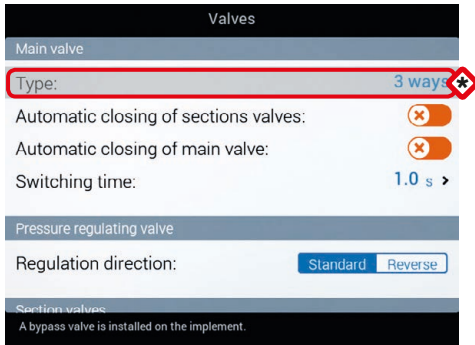


Fig. 78

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

The item Main valve > Type is shown as 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 section valves

Allows enabling/disabling the section automatic closing when the main control valve is closed.

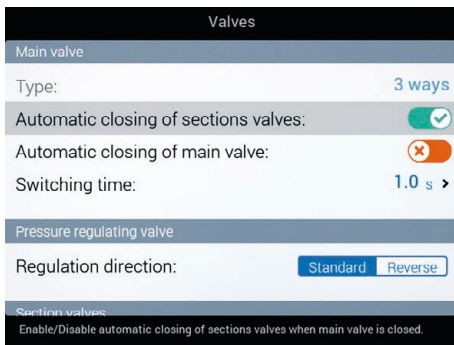


Fig. 79

• "P" operating mode (disabled option):

The section valves are controlled independently.
Main valve control functions do not affect section valve opening or closing.

• "M" operating mode (checked option):

the section valves are closed or opened by operating the main control valve based on the settings of the controls relating to the single section valves, namely:
- if section controls are set to OFF, when main control is operated, the sections will stay closed;
- if the control of one or more section valves is set to ON, when main valve is closed or opened, the section valves will be closed or opened as well.



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.

• Automatic closing of main valve

When all section valves are closed and this option is enabled, the main valve is automatically closed as well.

Main valve automatic closure enabled / Main valve automatic closure disabled



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

CONTINUES "• Switching time" on page 25 >>>

• **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.

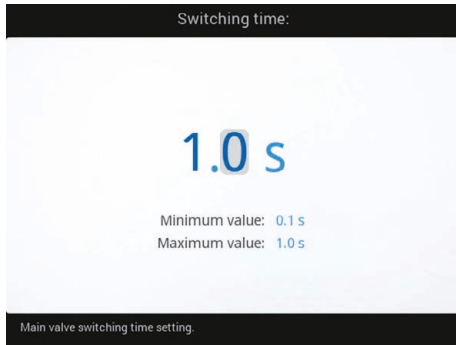
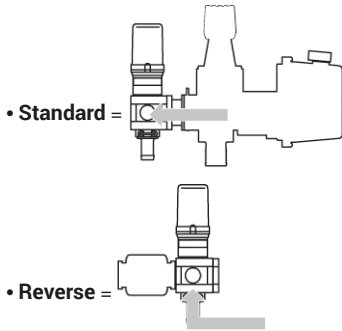


Fig. 80

PRESSURE REGULATING VALVE

• **Regulation direction**

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



CONTINUES >>>



SECTION VALVES

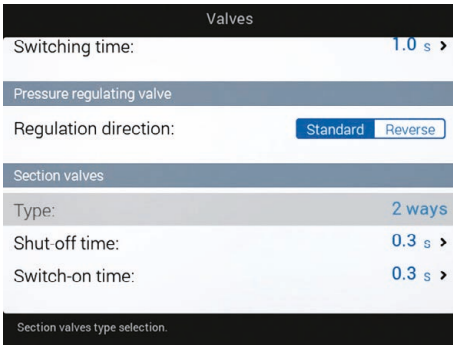


Fig. 81

• Type (REMINDER)

On a Seletron system, section valves are of the **2 ways** type (without metered by-pass) and are automatically set.

CONTINUES "Shut-off time" >>>



SECTION VALVES

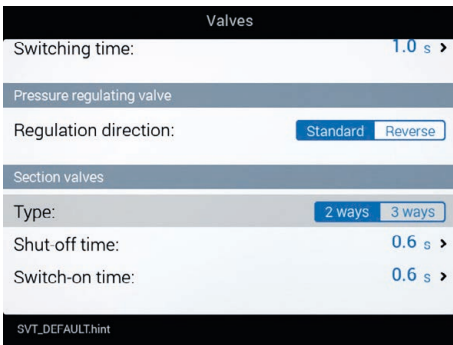


Fig. 82

• Type

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

- **2-Way** (valves without metered by-pass)
- **3-Way** (valves with metered by-passes)

CONTINUES "Shut-off time" >>>



Fig. 83

• 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.



Fig. 84

• 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.

6.4.8 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 flowrate
C Reference pressure

Fig. 85

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. 86

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

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

- Select the nozzle you wish to set up (Fig. 85).
- Enter the relevant features (Fig. 86).
- 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. 87

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

Reference pressure of the nozzle.

Fig. 88

- Flowrate
- Pressure

Set the reference flowrate and pressure for the selected nozzle. The flowrate 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. 89

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

Maximum working pressure of the nozzle.

Fig. 90

- Minimum pressure
- Maximum pressure

Set the pressure limits for the selected nozzle. Enable the relevant function of the menu **Alarms** (par. 6.4.13) if you want the computer to trigger an alarm when the nozzle is outside the set range.


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

6.4.9 "Fence" nozzles data

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

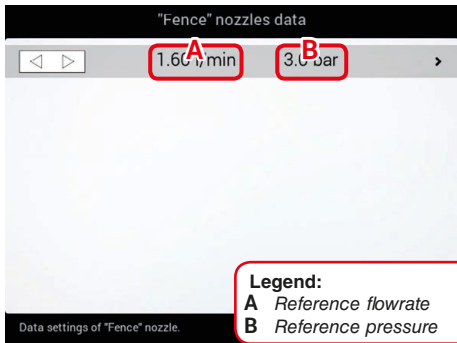


Fig. 91

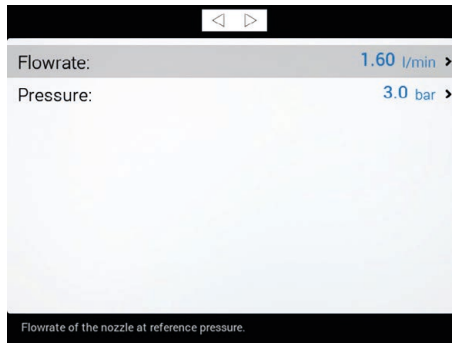


Fig. 92

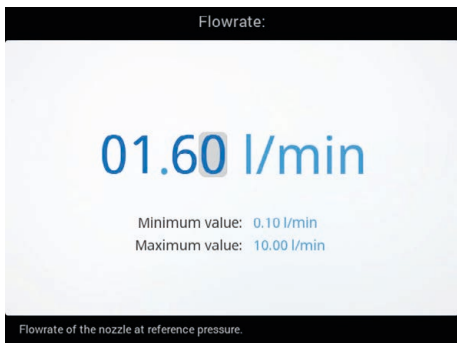


Fig. 93



Fig. 94

Allows setting the values of "Fence" nozzle.

- Select the nozzle you wish to set up (Fig. 91).
- Enter the relevant features (Fig. 92).

- Flowrate
- Pressure

Set the reference flowrate and pressure for the "Fence" nozzle. These data allow the correct adjustment of the application rate when "Fence" nozzles are enabled.

CONTINUES "Wheel sensor" on page 29 >>>

F1 Enter selected character

F2 Delete selected character

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

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

Data decrease / increase

OK Confirm access or data change

ESC Exit the function or data change

6.4.10 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.

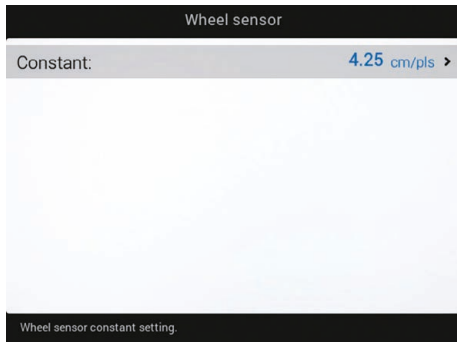


Fig. 95

• Constant

Allows entering 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.

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

<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.

6.4.11 Rev counter

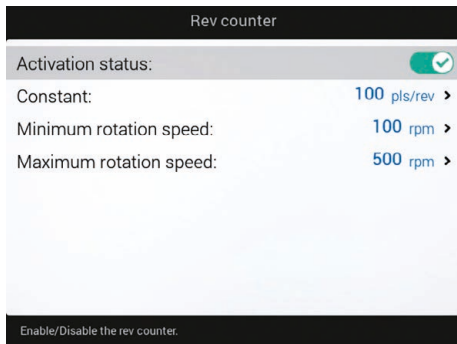


Fig. 96

• Activation 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.

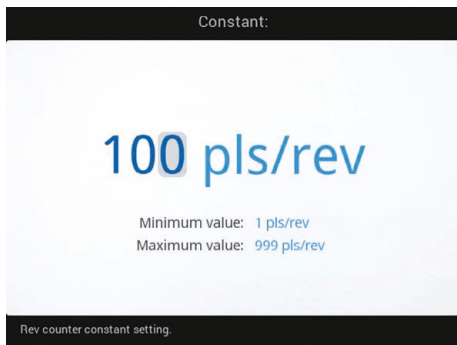


Fig. 97

• Constant

Indicate the constant of the installed rev counter.

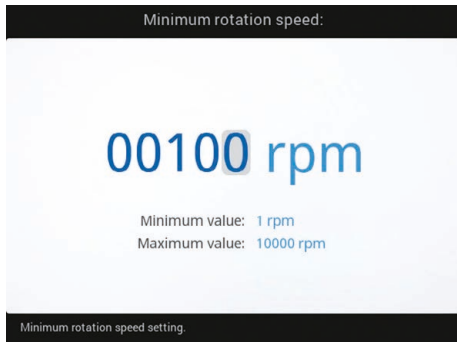


Fig. 98

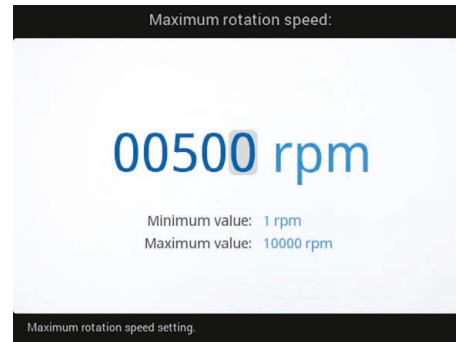


Fig. 99

• Minimum rotation speed
 • Maximum rotation speed

Enable the relevant function of the menu **Alarms** (par. 6.4.13) if you want the computer to trigger an alarm when, during spraying, the measured RPM are outside the set range. For minimum speed, the control is active only when the spraying is active (main switch ON).

6.4.12 Tank

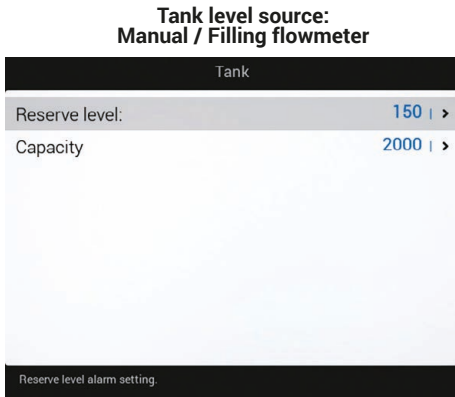


Fig. 100

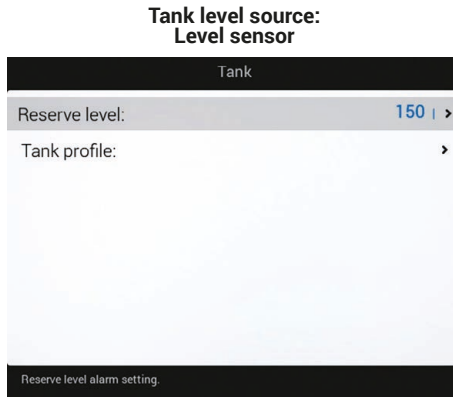


Fig. 101

Allows setting the tank values.

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

TANK LEVEL SOURCE: MANUAL / FILLING FLOWMETER

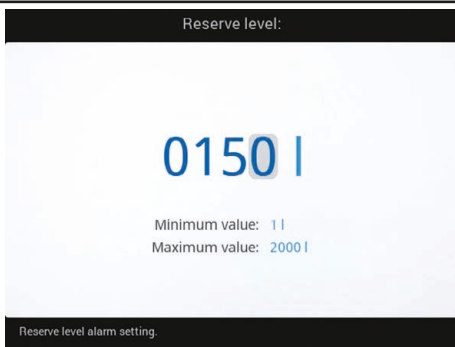


Fig. 102

• Reserve level

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



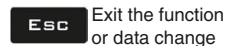
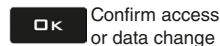
Fig. 103

• Capacity

Indicate tank capacity.



Data decrease / increase



TANK LEVEL SOURCE: LEVEL SENSOR

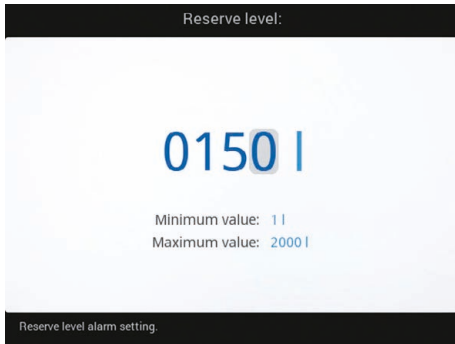


Fig. 104

• Reserve level

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

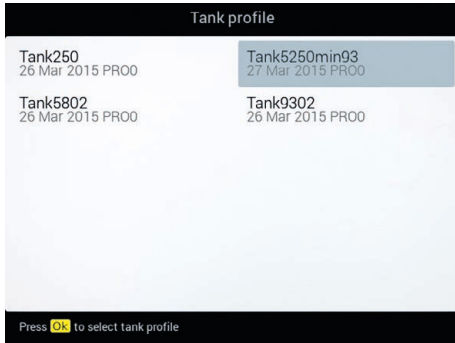


Fig. 105

• Tank profile

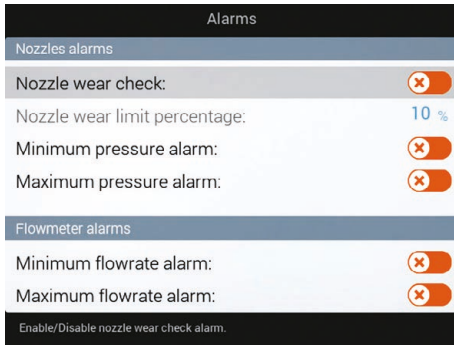
The tank profiles can be loaded or saved on the internal memory so as to reconfigure the computer if necessary, solve problems or configure another tank without repeating all operations manually.

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. 6.4.15).

After loading a tank profile, it is NECESSARY to perform a zero calibration of the level sensor (Tank level zero value, par. 6.4.15).

6.4.13 Alarms



Set monitor job alarms.

Fig. 106

NOZZLES ALARMS

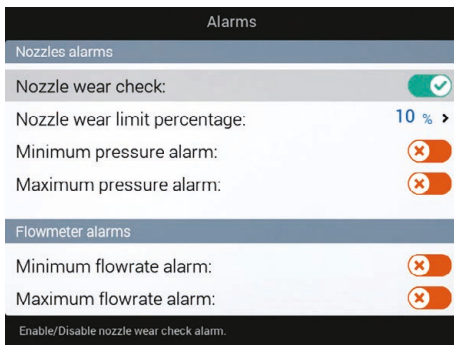


Fig. 107



Fig. 108

• 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.

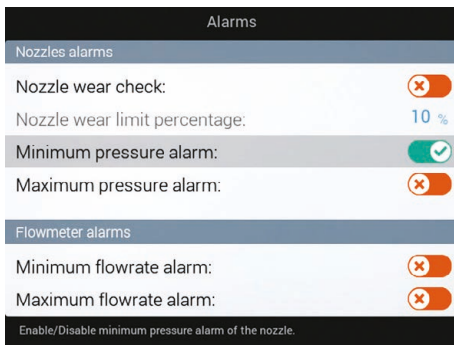


Fig. 109

• Minimum pressure alarm
• Maximum pressure alarm

Allows enabling/disabling 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 menus **Minimum pressure / Maximum pressure** (par. 6.4.8 Nozzles data), the computer triggers an alarm.

CONTINUES >>>

FLOWMETER ALARMS

Alarms	
Nozzles alarms	
Nozzle wear check:	<input type="checkbox"/>
Nozzle wear limit percentage:	10 %
Minimum pressure alarm:	<input type="checkbox"/>
Maximum pressure alarm:	<input type="checkbox"/>
Flowmeter alarms	
Minimum flowrate alarm:	<input checked="" type="checkbox"/>
Maximum flowrate alarm:	<input type="checkbox"/>
Enable/Disable minimum flowrate alarm.	

• Minimum flowrate alarm
• Maximum flowrate alarm

Allows enabling/disabling 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 menus **Minimum flowrate** / **Maximum flowrate** (par. 6.4.3 Flowmeter), the computer triggers an alarm.

Fig. 110

REV COUNTER ALARMS

Alarms	
Maximum pressure alarm:	<input type="checkbox"/>
Flowmeter alarms	
Minimum flowrate alarm:	<input type="checkbox"/>
Maximum flowrate alarm:	<input type="checkbox"/>
Rev counter alarms	
Minimum rotation speed alarm:	<input checked="" type="checkbox"/>
Maximum rotation speed alarm:	<input type="checkbox"/>
Enable/Disable minimum rotation speed alarm.	

• Minimum rotation speed alarm
• Maximum rotation speed alarm

Allows enabling/disabling 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 menus **Minimum rotation speed** / **Maximum rotation speed** (par. 6.4.11 Rev counter), the computer triggers an alarm.

Fig. 111

6.4.14 Working parameters

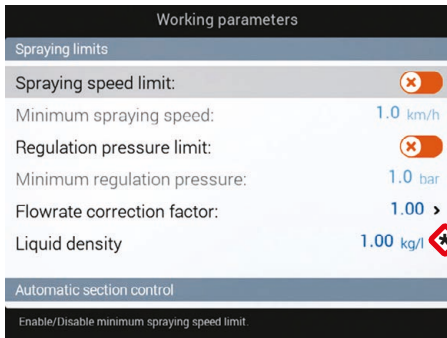


Fig. 112

Set the farming machine job limits.

⚠ Item Tank level correction factor is present only if Tank level sensor has been selected in chapter 4 "Basic setup".

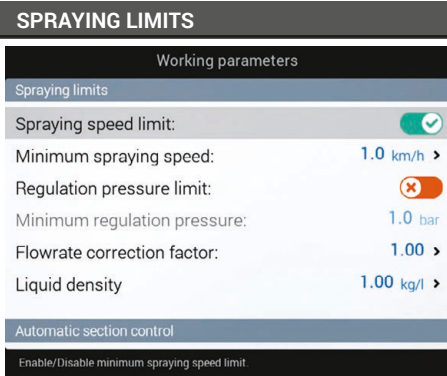


Fig. 113



Fig. 114

• Spraying speed limit

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

- Limit enabled
- Limit disabled

• Minimum spraying speed

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

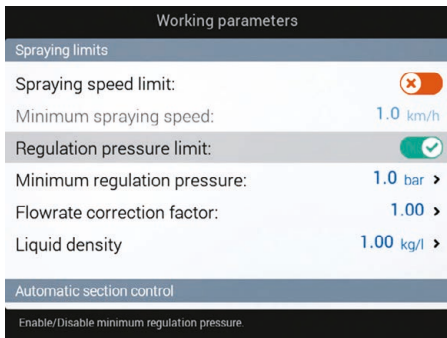


Fig. 115



Fig. 116

• Regulation pressure limit

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

- Limit enabled
- Limit disabled

• 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.

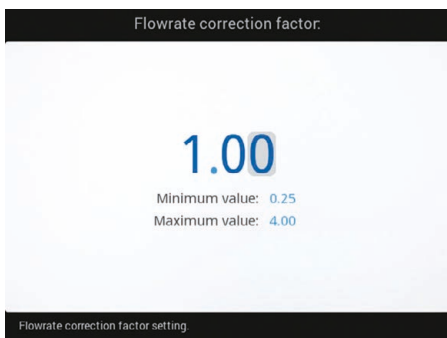


Fig. 117

• 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.

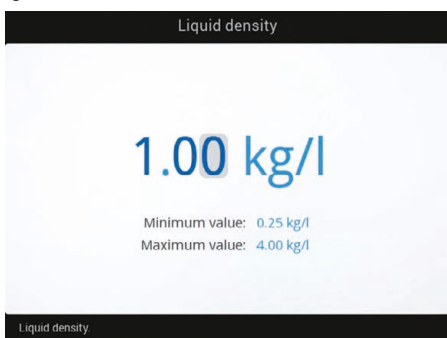


Fig. 118

• 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.	

Fig. 119

• 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.

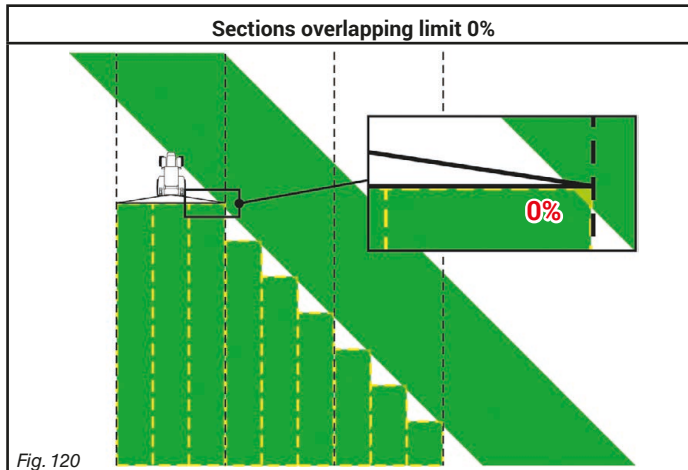


Fig. 120

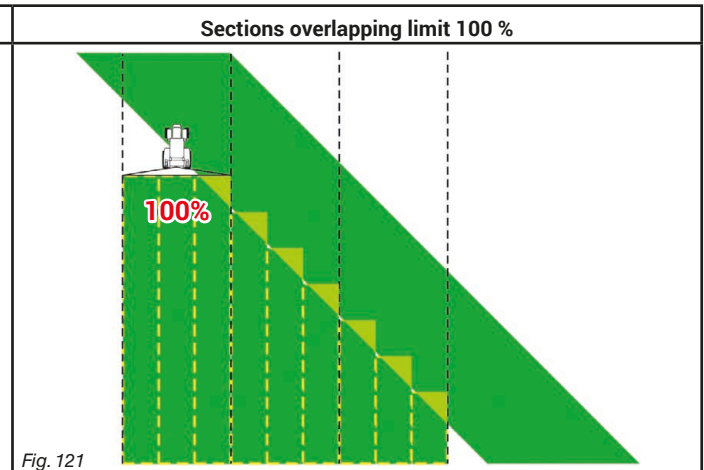


Fig. 121

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.	


Fig. 122

• 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. 13.4).
- Enabling automatic section management: the icon  on the guidance screen indicates that automatic management is enabled.

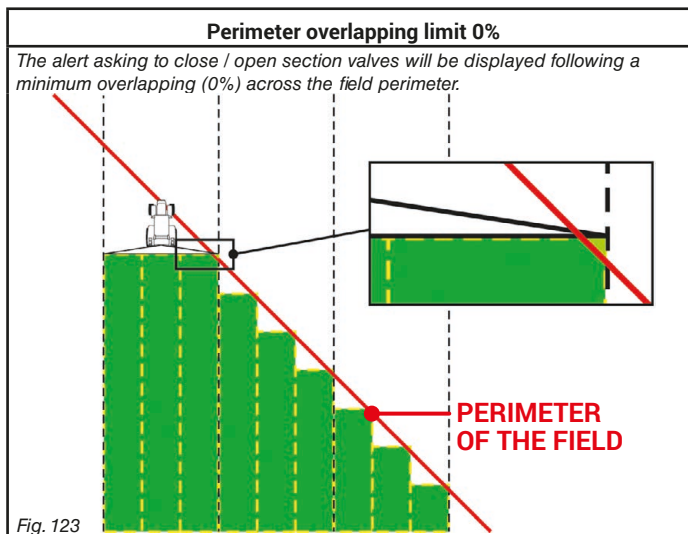


Fig. 123

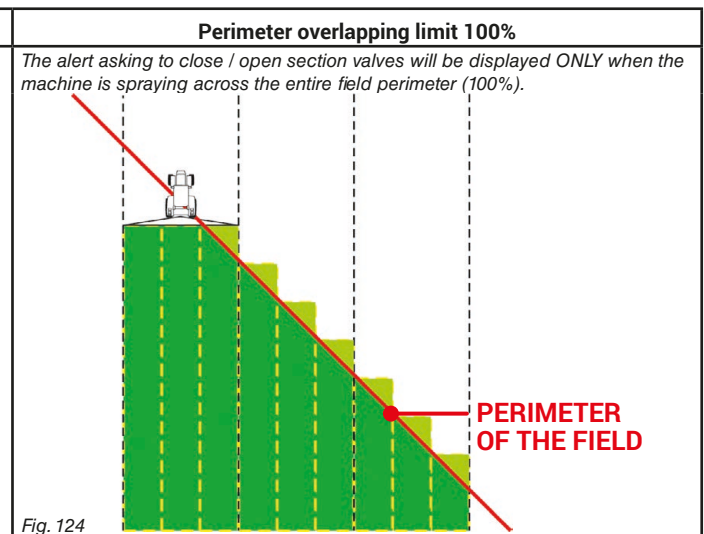
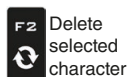
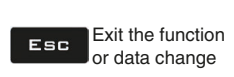


Fig. 124

CONTINUES >>>



Data decrease / increase



• 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.

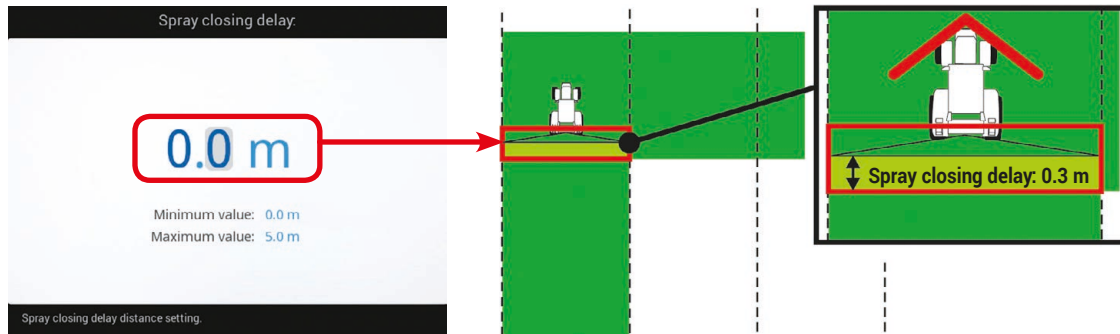


Fig. 125

Fig. 126

• 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.

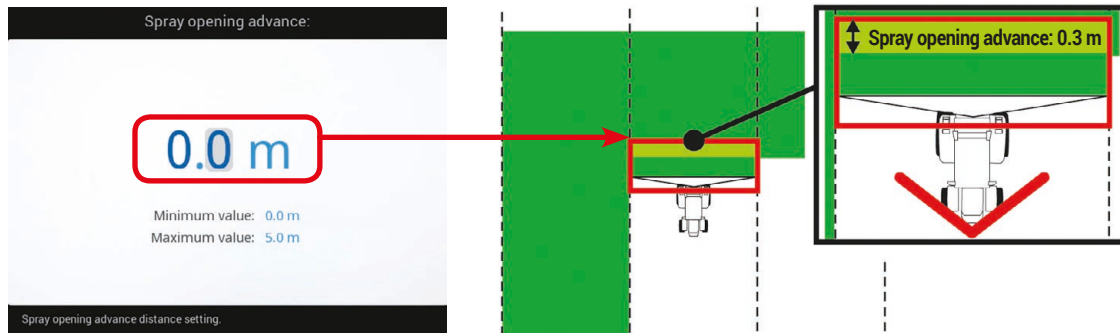


Fig. 127

Fig. 128

CONTINUES >>>

AUTOMATIC REGULATION CONTROL

• Regulating valve positioning

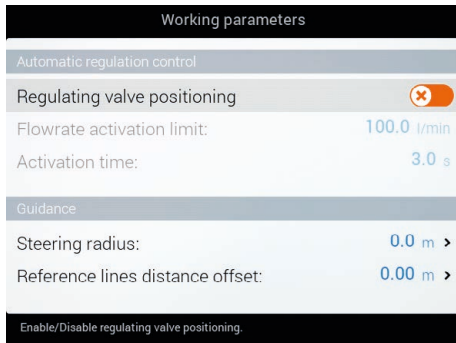
This function proves useful when control units without metered by-passes are used, as well as when the automatic management of spraying points is active (Seletron system type).

OPERATION

When one or more section valves are closed during spraying, the control valve proportionally opens to reduce system pressure. Upon the first modification of the spraying conditions (one or more sections set to **ON**), the control valve closes as much as necessary to restore output correct pressure.

This function allows programming the **Flowrate activation limit** (with one or more sections set to **OFF**), under which the control valve closes for the duration of the **Activation time** set, so that pressure is increased before valves are set to **ON**.

In such a way, the correct spraying will be restored more quickly.



First of all, enable the menu to configure it.
 (🟢 Menu enabled / 🟠 Menu disabled).

Fig. 129



Fig. 130

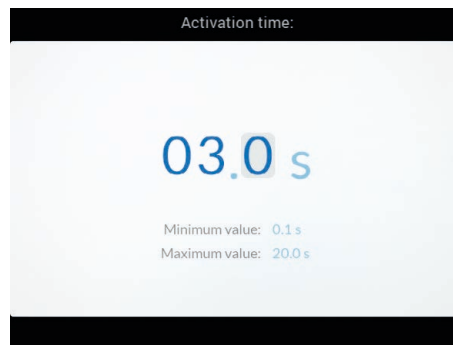


Fig. 131

• Flowrate activation limit

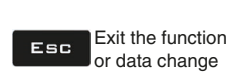
Set the limit flowrate.

• Activation time

Set the operating time.



Data decrease / increase



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 menu User > Steering warning (par. 6.12.4).** This distance should correspond to the implement steering radius (**A** in Fig. 133), 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 track to cover and if the straight driving mode is selected (par. 13.2).



Fig. 132

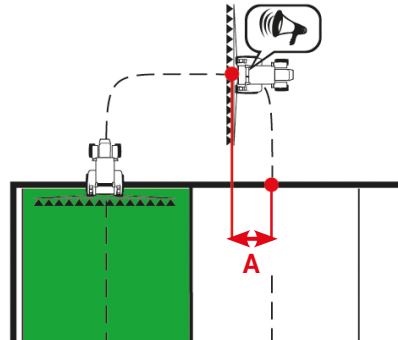


Fig. 133

• Reference lines distance offset

This value allows changing the distance between the reference tracks.

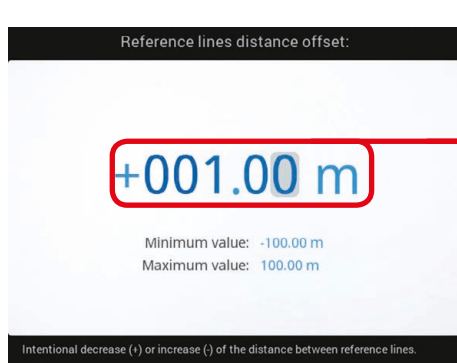


Fig. 134

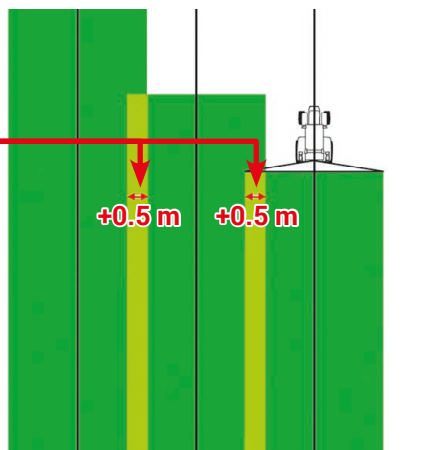


Fig. 135

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

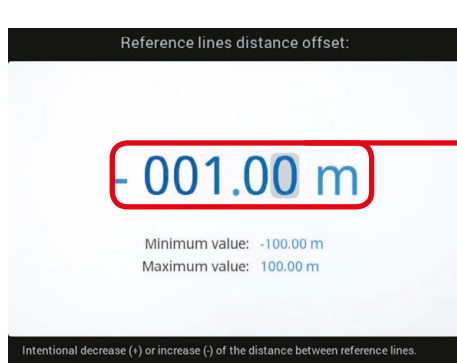


Fig. 136

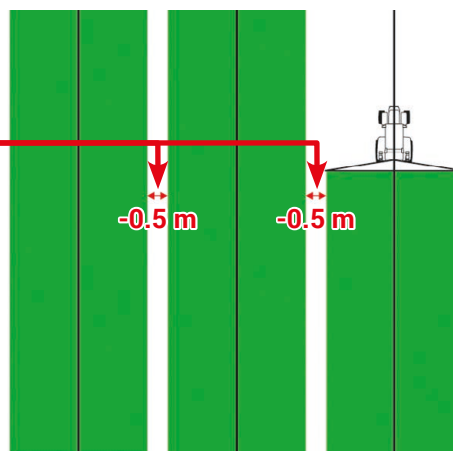



Fig. 137

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

6.4.15 Device calibration

Allows starting calibration for the devices connected to the monitor.

 THE BASIC SETTINGS (CAP. 4) AFFECT WHICH AND HOW MENU ITEMS ARE DISPLAYED, HENCE WHICH ADVANCED SETTING IT IS POSSIBLE TO CONTROL.



MODE

ON

SELETRON SYSTEM

• Identification numbers reset

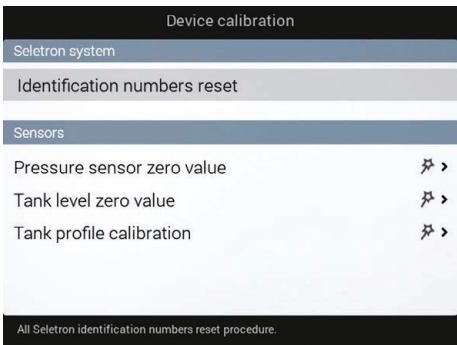


Fig. 138

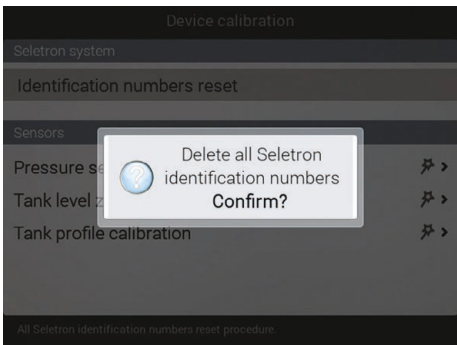


Fig. 139

Allows to reset the identification numbers of all saved Seletron devices, before repeating the pairing procedure (chap. 12).

- Select item **Identification numbers reset** (Fig. 138) and press **OK**.
- The message in Fig. 139 is displayed: confirm reset by pressing **OK** again.

At the end of the reset procedure, DISCONNECT ALL SELETRON DEVICES and start a new pairing procedure (chap. 12).

CONTINUES "Pressure sensor zero value" on page 39 >>>

SENSORS

• Pressure sensor zero value

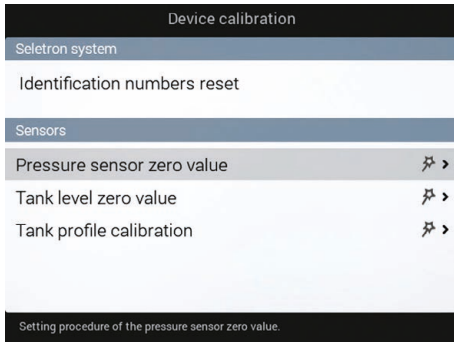


Fig. 140

To access this menu, the pressure sensor must be enabled (OK, par. 6.4.5)

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.

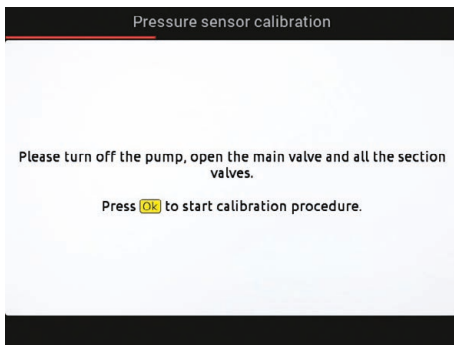


Fig. 141

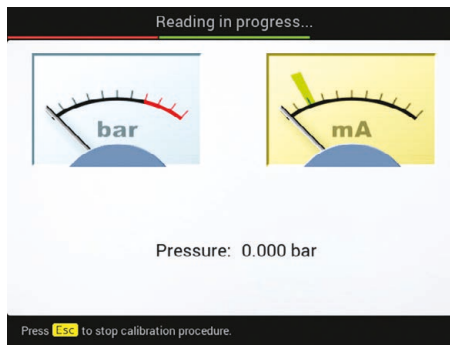


Fig. 142

- 1 Select **Pressure sensor zero value** (Fig. 140) and press **OK**.
- 2 The message in Fig. 141 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

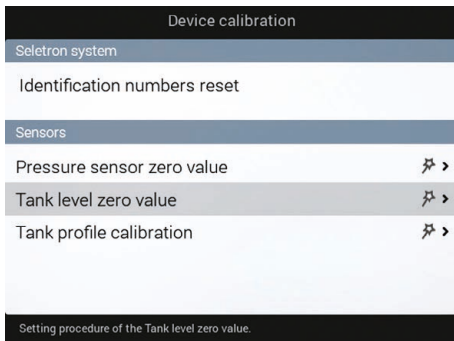


Fig. 143

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. 6.4.12).

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

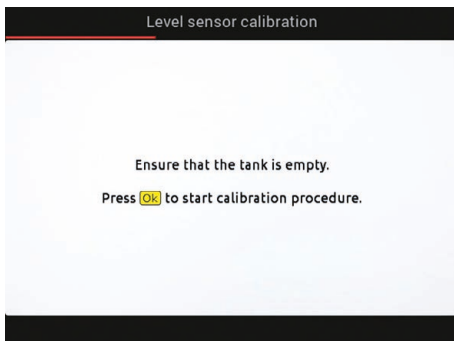


Fig. 144

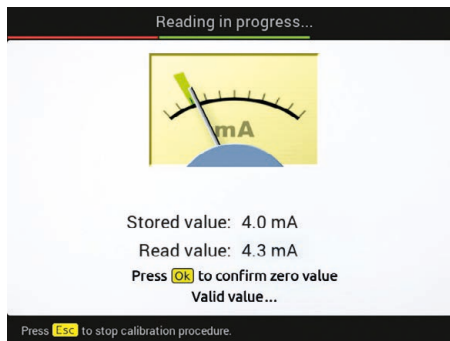


Fig. 145

- 1 Select **Tank level zero value** (Fig. 143) and press **OK**.
- 2 The message in Fig. 144 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. 6.4.3).

Before starting the procedure carry out the following operations:

- 1** Make sure the main control is in OFF position (par. "Z2 Operating switches for control unit valves" on page 63 or 6.4.16 "Explorer" joystick on page 42).
- 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 operating the control valve switch (nearly 7 s).

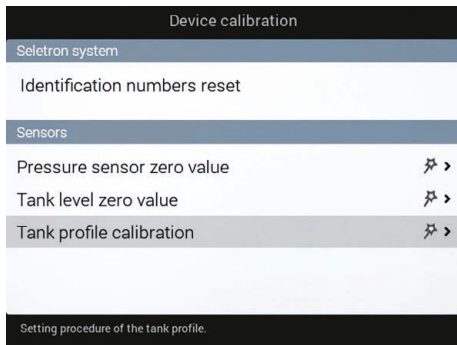


Fig. 146

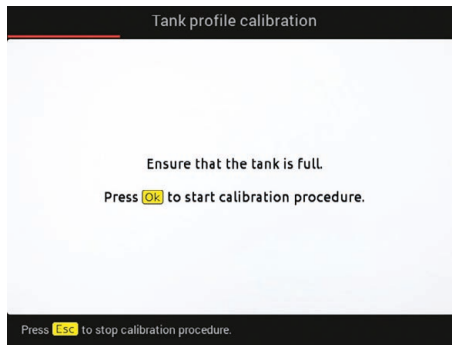


Fig. 147

- 4** Select **Tank profile calibration** (Fig. 146) and press **OK**. The calibration starts.
- 5** The message in Fig. 147 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**).

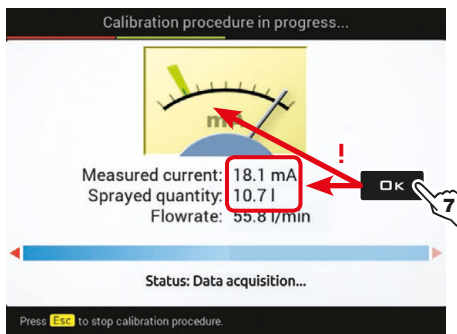


Fig. 148

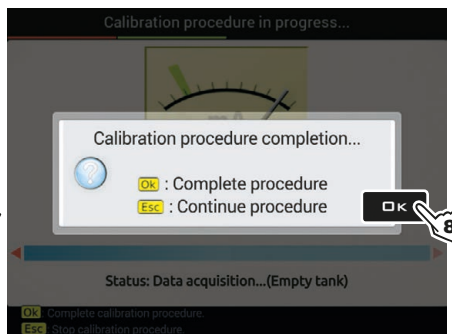


Fig. 149

- The display will show in real time the quantity of sprayed water and the calibration status (Fig. 148).
- 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 **OK** again to save the tank profile: the name edit screen is displayed (Fig. 150).

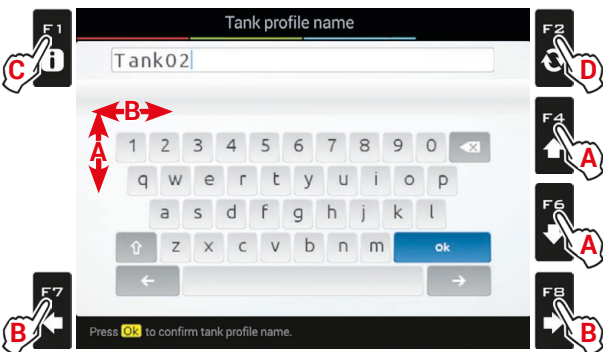


Fig. 150

- 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.

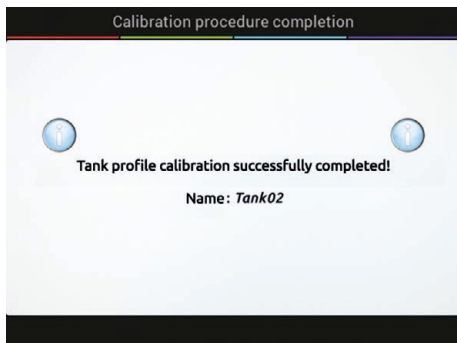


Fig. 151

- 11** A confirmation message is displayed once the process is completed (Fig. 151). Press **OK** or **ESC**. The calibration is completed.

6.4.16 "Explorer" joystick

The "Explorer" joystick allows the direct control of the spraying functions and of boom hydraulic movements. This menu allows consulting the functions associated to the joystick and/or configuring specific functions when each key is pressed. On page 43 and page 44 is a summary of the pre-assigned functions.

 **THE MENU IS DISPLAYED ONLY IF THE "EXPLORER" JOYSTICK (CODE 46701801) IS CONNECTED TO THE MONITOR. THE JOYSTICK MUST FULLY REPLACE THE SWITCH PANEL (THEY CANNOT BE BOTH CONNECTED). The instructions for device installation and use are provided with the product.**

• Pages number

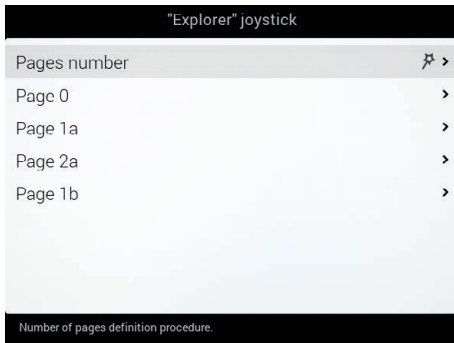


Fig. 152

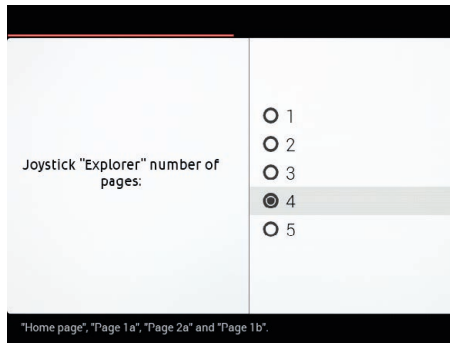


Fig. 153

Defines the number of joystick pages.
 Select **Pages number** and press **OK**. Follow the steps and select the desired options.
OK: next step
ESC: previous step.
 The selected option enables a setup menu for each page (Fig. 152).
 Option 1: page 0
 Option 2: page 0 + 1a
 Option 3: page 0 + 1a + 2a
 Option 4: page 0 + 1a + 2a + 1b (DEFAULT)
 Option 5: page 0 + 1a + 2a + 1b + 2b

• Joystick keys configuration

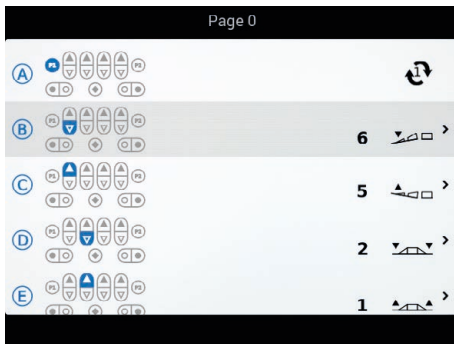


Fig. 154

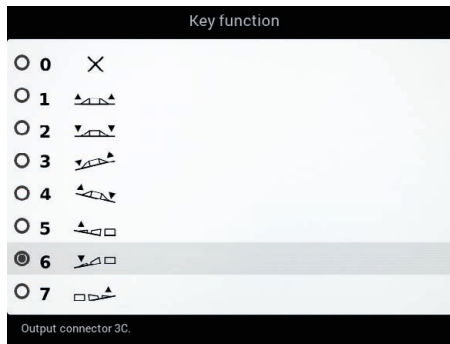

















































Fig. 155

Access the menu corresponding to the page (**Page 0** in the example of Fig. 154). Select key position (shown on the display) and press **OK**; program one of the available options (Fig. 155).
Keys P1 and P2 cannot be customized:
 P1  Access Page 1a / Page1b
 P2  Access Page 2a / Page 2b

Available options:

- | | | | |
|---|---|---|---|
| 0  No function | 9  Arm no. 1 L (C) | 21  Boom lock (O) | 30  AUTO/MAN Rate control |
| 1  Height (O) | 10  Arm no. 1 L (O) | 22  Boom lock (C) | 31  AUTO/MAN Sections management |
| 2  Height (C) | 11  Arm no. 1 R (C) | 23  Seq. 1 L | 32  AUTO/MAN Boom leveling |
| 3  Boom tilt (O) | 12  Arm no. 1 R (O) | 24  Seq. 1 R | 33  AUTO/MAN Nozzle selection |
| 4  Boom tilt (C) | 13  Arm no. 2 L (C) | 25  Seq. 2 R | 34  ON/OFF Controllo timone sterz. |
| 5  Var. geom. L (O) | 14  Arm no. 2 L (O) | 26  Seq. 2 L | 35  Azzeramento angolo timone sterz. |
| 6  Var. geom. L (C) | 15  Arm no. 2 R (C) | 27  Main valve switch key | 36  Timone sterz. controllo man. (Dx) |
| 7  Var. geom. R (O) | 16  Arm no. 2 R (O) | 28  + Pressure | 37  Timone sterz. controllo man. (Sx) |
| 8  Var. geom. R (C) | 17  Arm no. 1 L+R (C) | 29  - Pressure | |
| | 18  Arm no. 1 L+R (O) | | |
| | 19  Arm no. 1 L+R (C) | | |
| | 20  Arm no. 1 L+R (O) | | |

CONTINUES >>>

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

PAGE 0 ("MAIN") - PRESET CONTROLS

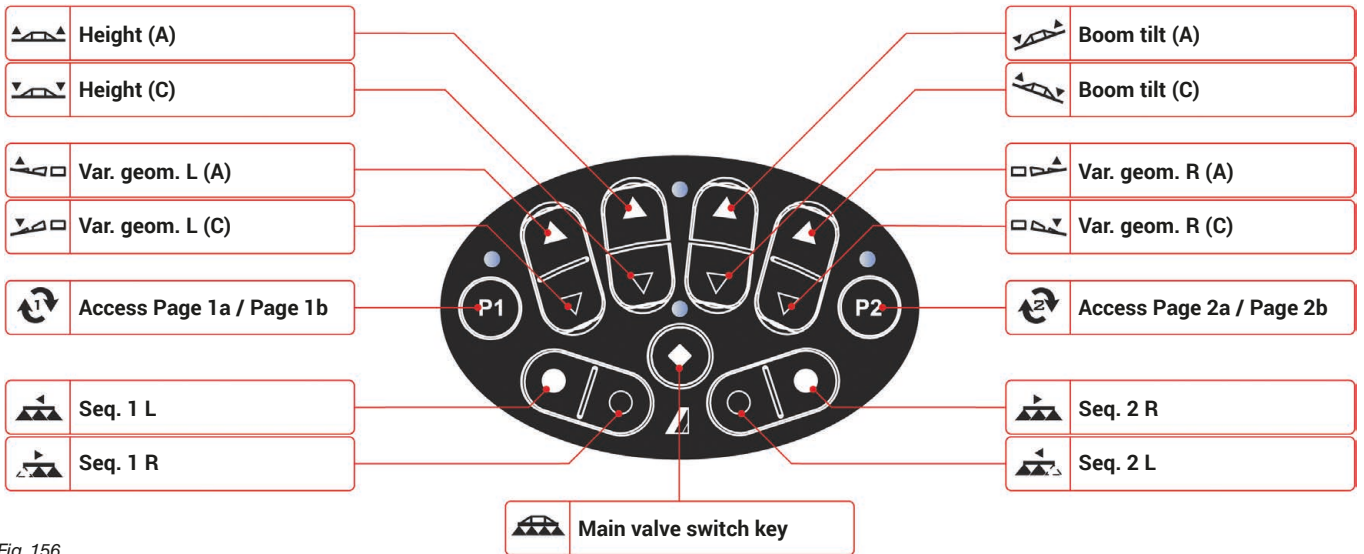


Fig. 156

PAGE 1a - PRESET CONTROLS

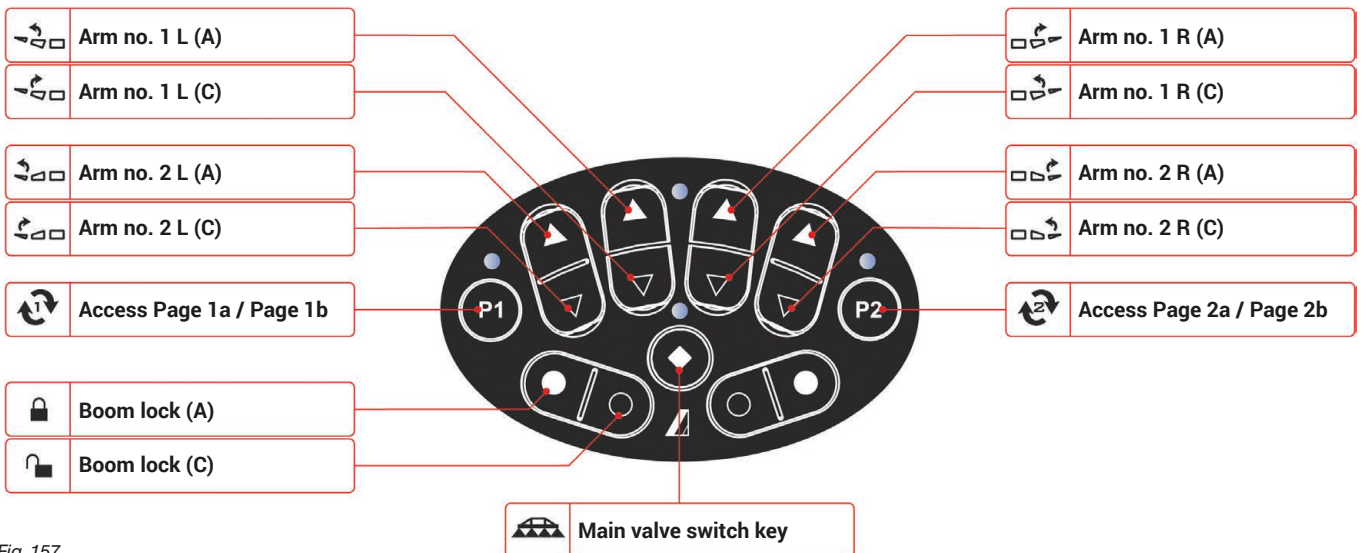


Fig. 157

CONTINUES >>>

F1 Enter selected character

F2 Delete selected character

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

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

Data decrease / increase

OK Confirm access or data change

ESC Exit the function or data change

Par. 1.4

PAGE 1b - PRESET CONTROLS

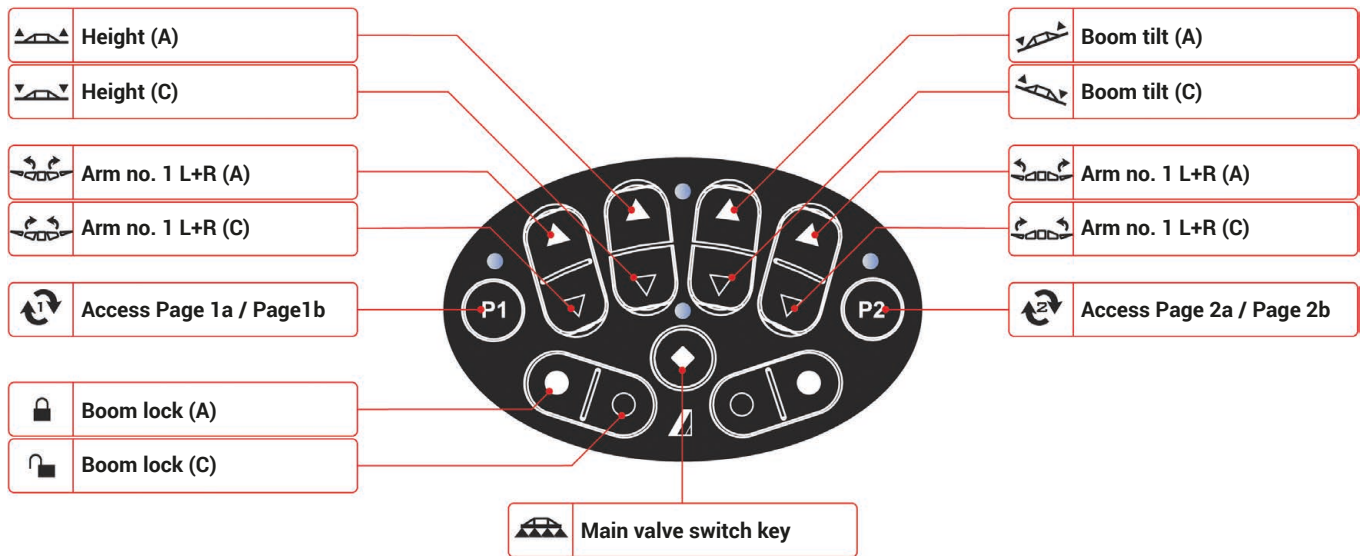


Fig. 158

PAGE 2a - PRESET CONTROLS

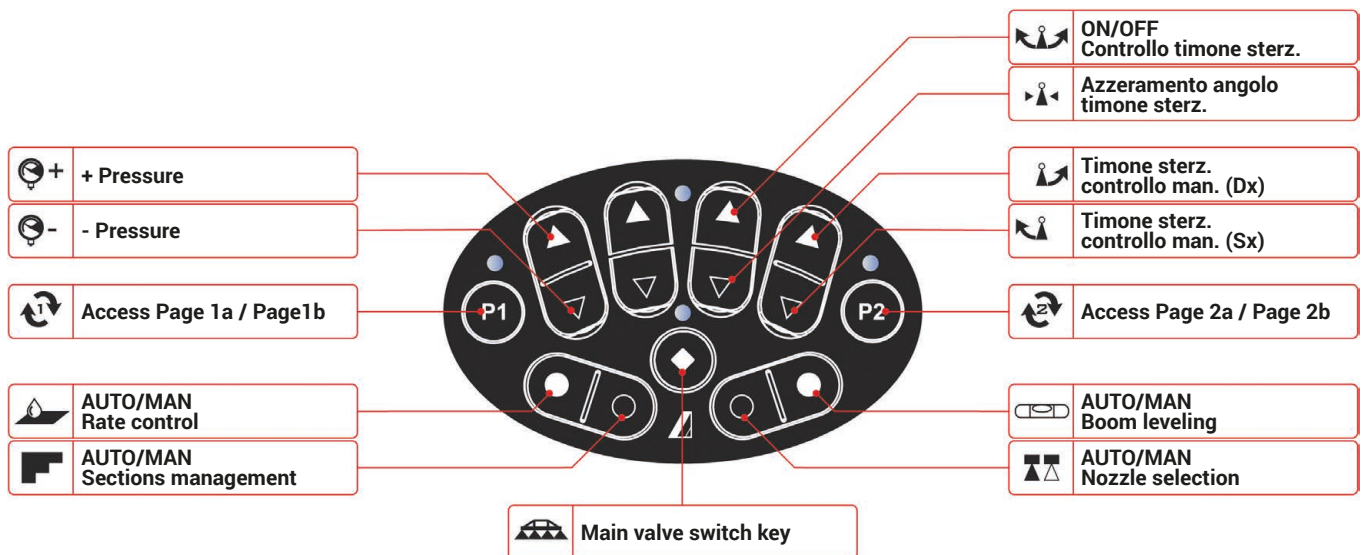


Fig. 159

Page 2b has NO preset controls (option X for all keys).

6.4.17 Lighting devices

Enables the connection to lighting devices and the relevant functions inside the job menu:
Boom lighting (par. 11.4);
Beacon light (par. 11.9).

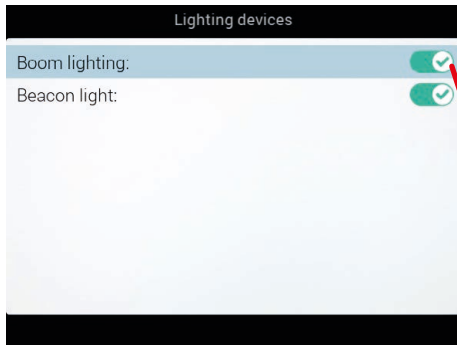


Fig. 160



Fig. 161

6.5 CONNECTION TO SYNCRO DEVICE

6.5.1 Activation status

Enables the remote connection to the Syncro computer as well as function **F 1 Syncro** (job menu, par. 11.1).

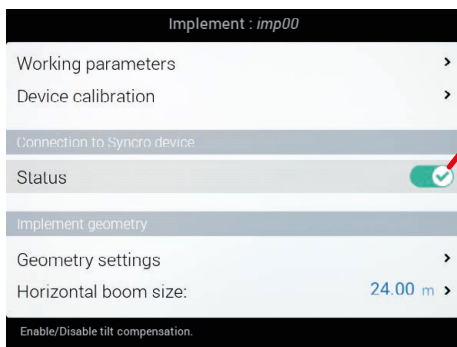


Fig. 162

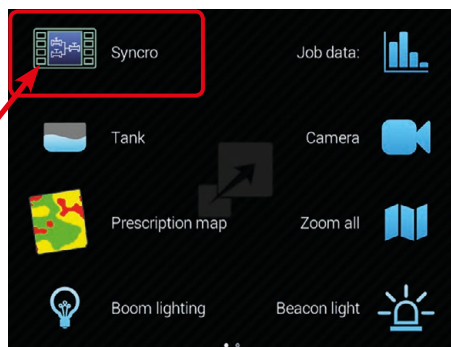
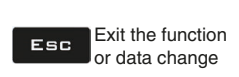
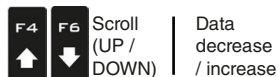


Fig. 163



6.6 IMPLEMENT GEOMETRY (MACHINE WITH TOWED / CARRIED IMPLEMENT)

 The displaying of this menu depends on the selected basic settings (chap. 4).
FOR SELF-PROPELLING MACHINE GEOMETRY, REFER TO PAR. 6.10.2 AND 6.10.3.

6.6.1 Geometry settings (TOWED IMPLEMENT)

 The settings displayed below vary based on the type of system set (chap. 4).

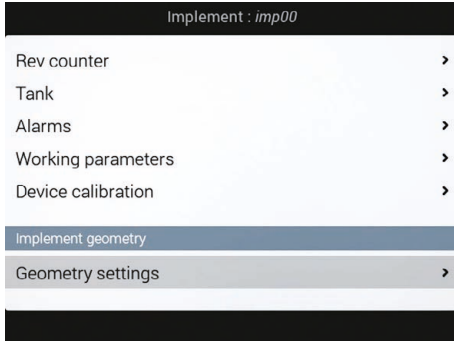


Fig. 164

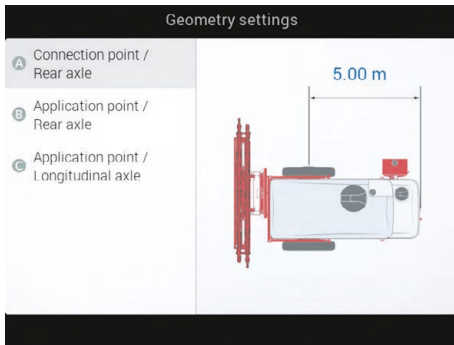


Fig. 165

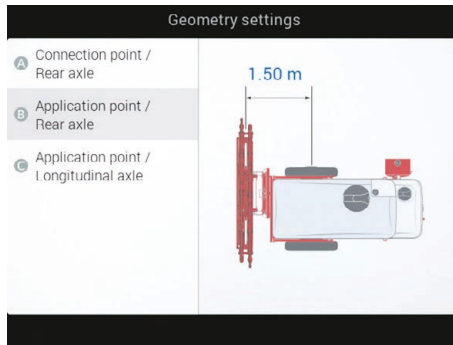


Fig. 166

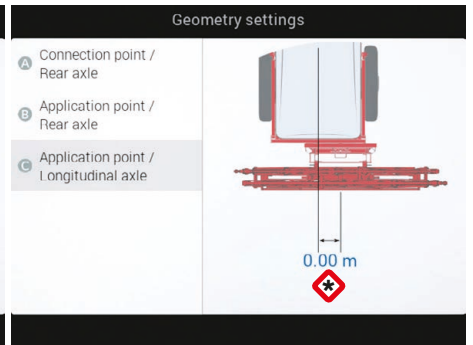


Fig. 167

 Application point / Longitudinal axle

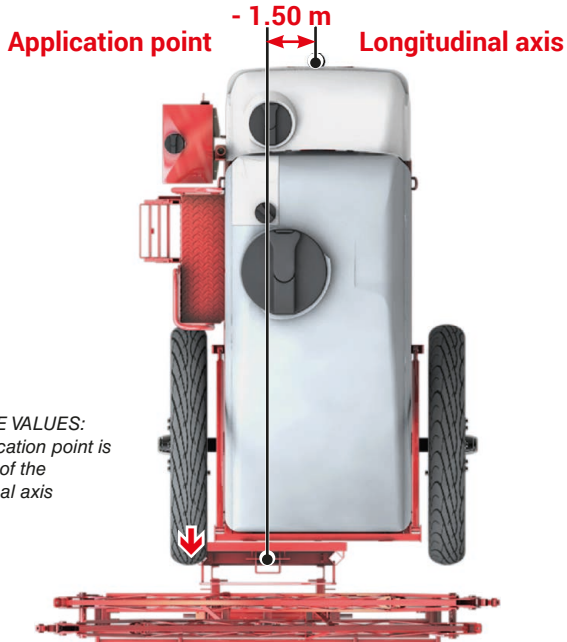


Fig. 168

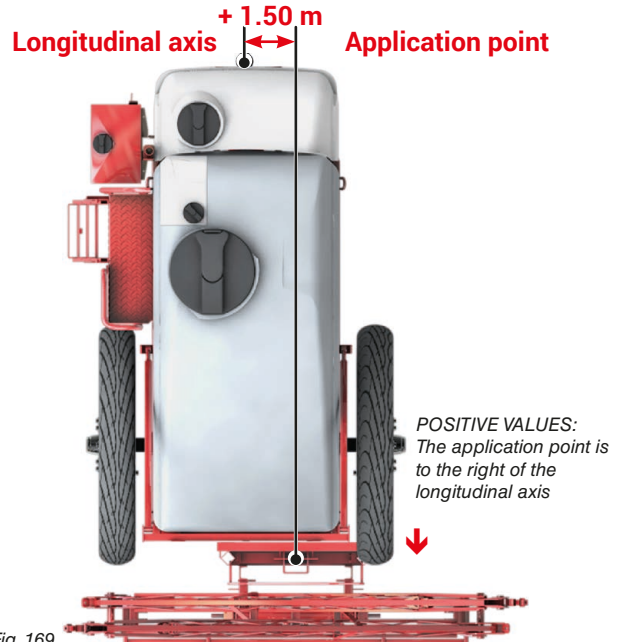


Fig. 169

F1 Enter selected character

F2 Delete selected character

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

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

Data decrease / increase

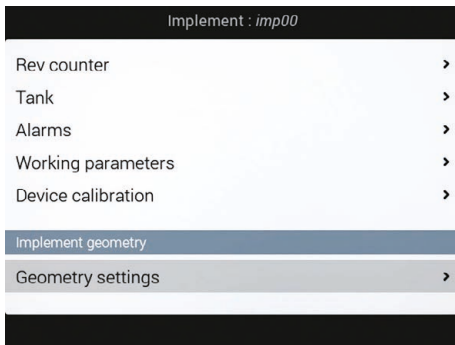
OK Confirm access or data change

ESC Exit the function or data change


Par. 1.4

6.6.2 Geometry settings (CARRIED IMPLEMENT)

 The settings displayed below vary based on the type of system set (chap. 4).



Enter farming machine measures (Fig. 171).
 - Press arrow keys (UP, DOWN) to move among the value descriptions: the image of the selected value will be displayed.
 - Confirm by pressing **OK** to enter setup.
 - Enter the value.
 - Select and enter, one by one, all values.

Fig. 170

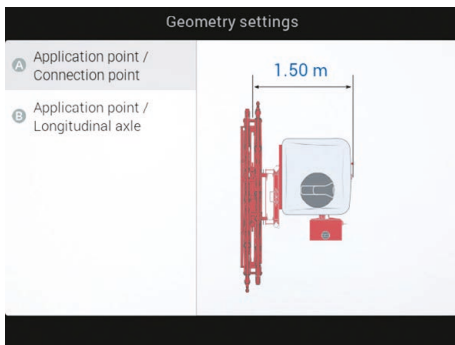


Fig. 171

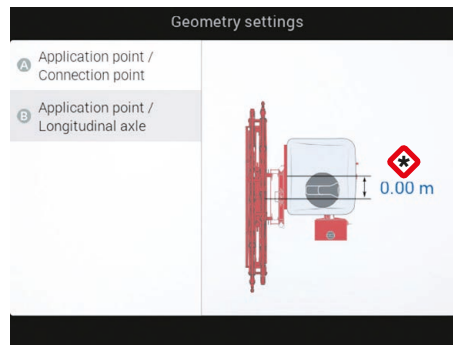



Fig. 172

 Application point / Longitudinal axle

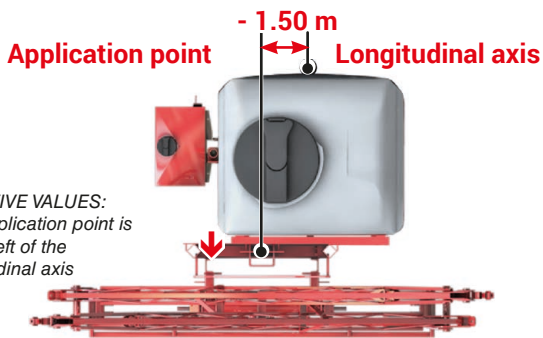


Fig. 173

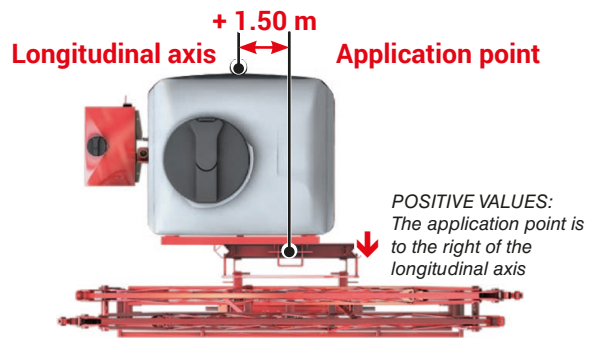


Fig. 174

6.7 HORIZONTAL BOOM SIZE

Enter the corresponding value.

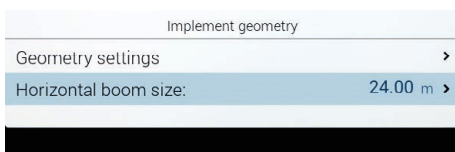


Fig. 175

F1 Enter selected character

F2 Delete selected character

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

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

Data decrease / increase

OK Confirm access or data change

ESC Exit the function or data change

6.8 GPS RECEIVER SETTINGS



The items displayed in this menu depend on the basic settings (chap. 4) and on the features of the connected receiver. The connection of ARAG receivers, models Smart Ag - Ag Star - Smart 6 - Atlas, entails a guided pairing procedure assigning to the monitor ONLY the suitable setup menus. Hereinafter is a summary of the settings:

Smart-Ag, Ag Star, Smart 6, Atlas

- Tilt compensation (par. 6.8.1).
- Correction type (par. 6.8.2).
- HDOP alarm (par. 6.8.3).
- Receiver advanced data (par. 6.8.4).
- Receiver update (par. 6.8.5)

A100

- Correction type (par. 6.8.2).
- Minimum quality (par. 6.8.6).
- HDOP alarm (par. 6.8.3).

NMEA

- Minimum quality (par. 6.8.6).
- HDOP alarm (par. 6.8.3).
- Baudrate (par. 6.8.7).

! ARAG SHALL NOT ACCEPT ANY LIABILITY DUE TO ANY FAILURE OR MALFUNCTION CAUSED BY THE CONNECTION OF RECEIVERS NOT SUPPLIED BY ARAG.

6.8.1 Tilt compensation

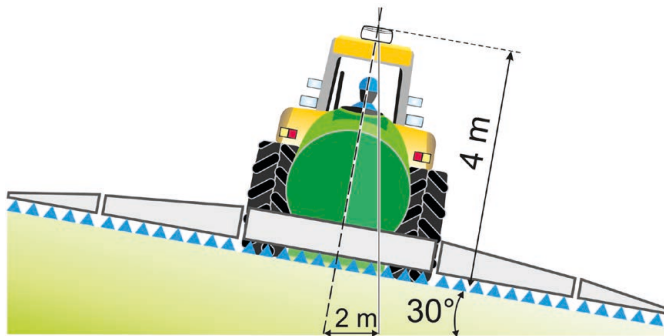


Fig. 176

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.

6.8.2 Correction type

Allows selecting the differential correction function:

- None Correction disabled

- SBAS DGSP 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).

- Terrastar-L / Terrastar-C (for preset receiver ONLY):

Terrastar is a privately-owned company supplying differential correction signals all over the world via satellite.

The GPS receiver must be preset to receive this type of signal. Service is available at a fee which depends on the type of accuracy required and time of use.

- Terrastar-L - SBAS / Terrastar-C - SBAS :

This option allows enabling the SBAS correction in case the Terrastar (L or C) correction is temporarily unavailable.

- RTK (on Delta 80 ONLY with modem 3G - code 4675001, connected to a preset receiver):


differential correction system, much more accurate compared to SBAS and Terrastar, but requiring correction signals from base station (CORS) networks very close to the receiver since the satellites in view must be the same.

These data are received through a 3G module connected to the Internet.

- RTK - SBAS:

This option allows enabling the SBAS correction in case the RTK correction is temporarily unavailable.

F1 Enter selected character	F2 Delete selected character	F7 F8 Scroll (LEFT / RIGHT)	F4 F6 Scroll (UP / DOWN)	Data decrease / increase	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 (chap. 4) and on the features of the connected receiver. The connection of ARAG receivers, models Smart Ag - Ag Star - Smart 6 - Atlas, entails a guided pairing procedure assigning to the monitor ONLY the suitable setup menus.

6.8.3 HDOP alarm

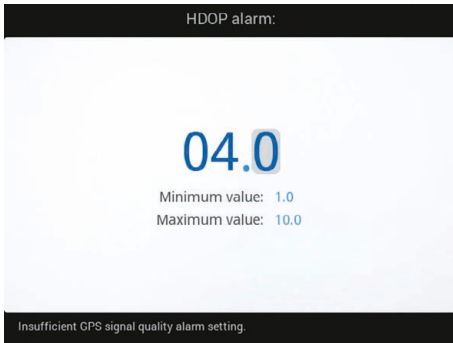


Fig. 177

"HDOP" is the parameter with which the position and number of satellites in space 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.**

6.8.4 Receiver advanced data

Shows the GPS receiver data and the type of correction.

6.8.5 Receiver update - for Smart range receivers ONLY

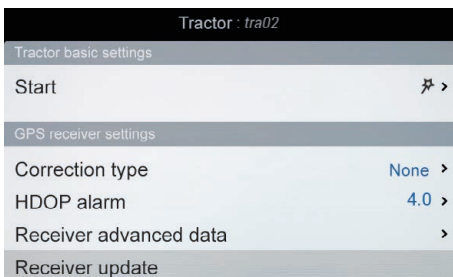


Fig. 178

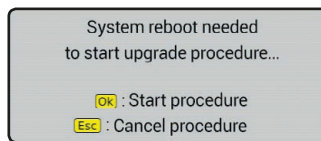


Fig. 179

Allows updating the GPS receiver if the used receiver (Smart series) is not updated to the version compatible with the guidance monitor.

- Select **Software update** (Fig. 178) and press **OK**.
- The message in Fig. 179 is displayed: confirm the update by pressing **OK** again.

6.8.6 Minimum quality - for NMEA / A100 receivers ONLY

Allows selecting the minimum accuracy level requested for the GPS signal.

- **None**: no check is made on the signal accuracy level.
- **SBAS**: the accuracy level is checked by displaying an alarm if it is below the SBAS differential correction.

6.8.7 Baudrate - for NMEA receiver ONLY

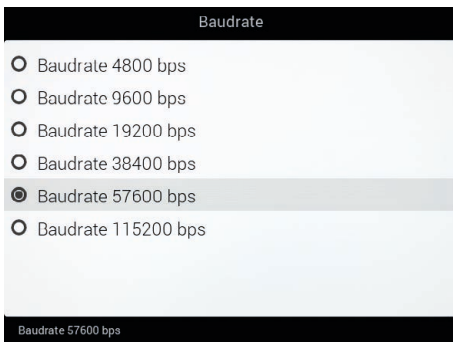



Fig. 180

Typical value of the connected NMEA receiver.

6.9 AUTONOMOUS GUIDANCE

 The displaying of this menu depends on the selected basic settings (chap. 4).

6.9.1 Guidance configuration

This screen provides "quick" access to the settings of the ECU-S1 control unit for automatic guidance.

 **Adjust the parameters ONLY from the control unit direct interface.**
To refine performance, refer to the manual supplied with ECU-S1.

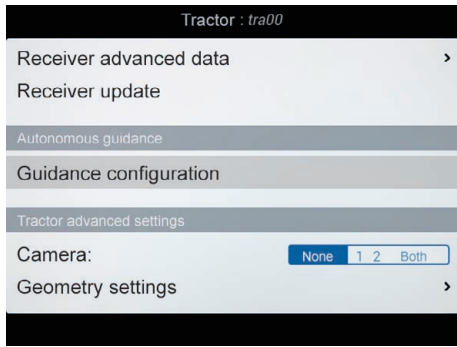


Fig. 181

Public liability disclaimer notice:
As the operator of this vehicle YOU ARE RESPONSIBLE FOR ITS SAFE OPERATION!
By pressing **OK**, you certify that you understand how this automatic steering system works and you accept full responsibility for its safe operation.

Fig. 182

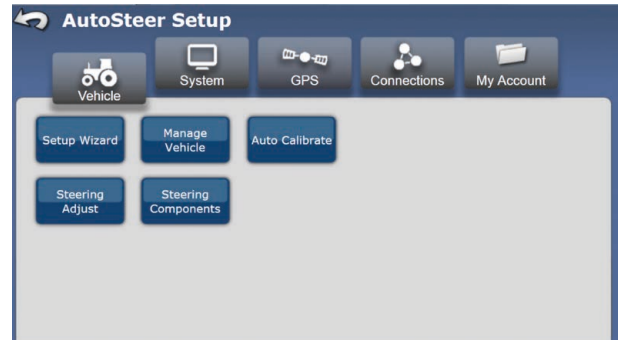


Fig. 183

F1 Enter selected character

F2 Delete selected character

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

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

Data decrease / increase

OK Confirm access or data change

ESC Exit the function or data change

6.10 TRACTOR ADVANCED SETTINGS

6.10.1 Camera

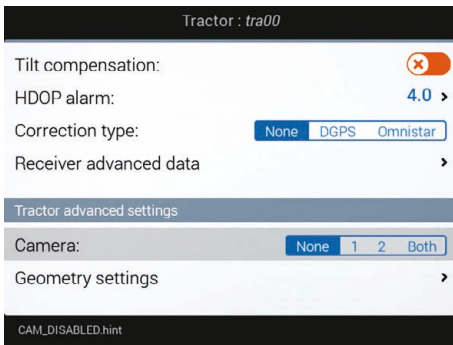


Fig. 184

It is possible to connect up to 2 cameras to the monitor 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:

- No camera connected
- 1 camera connected to input no.1
- 1 camera connected to input no.2
- 2 cameras connected

6.10.2 Geometry settings (SELF-PROPELLING MACHINE WITH REAR BOOM)

The settings displayed below vary based on the type of system set (chap. 4).

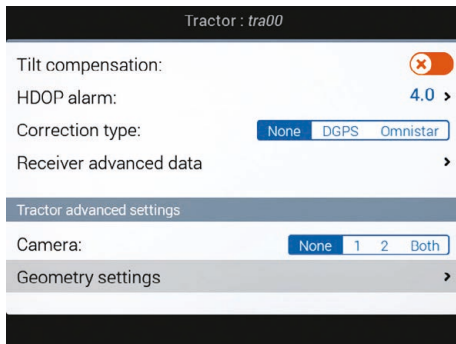


Fig. 185

Enter farming machine measures (Fig. 185).

- Press arrow keys (UP, DOWN) to move among the value descriptions: the image of the selected value will be displayed.
- Confirm by pressing **OK** to enter setup.
- Enter the value.
- Select and enter, one by one, all values.

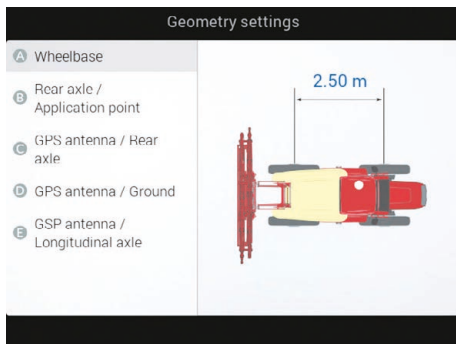


Fig. 186

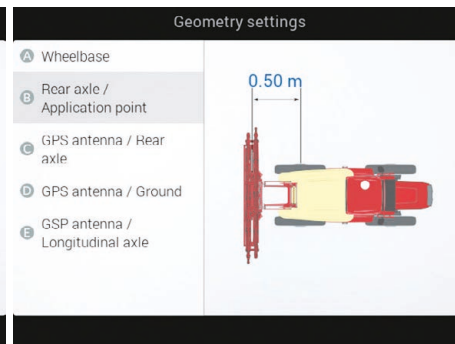


Fig. 187

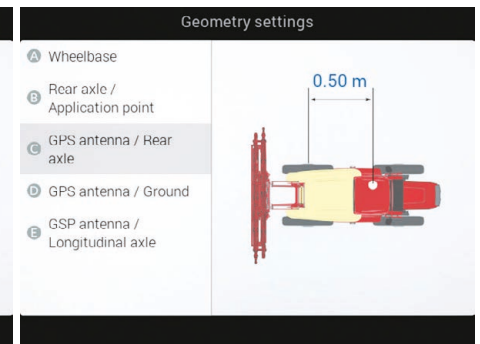


Fig. 188

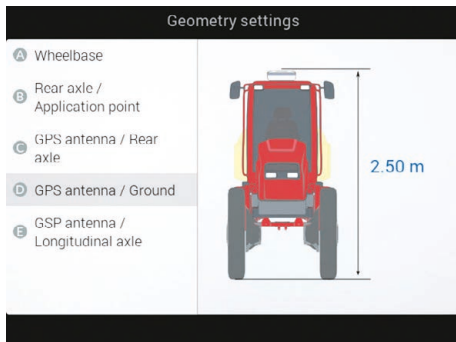


Fig. 189

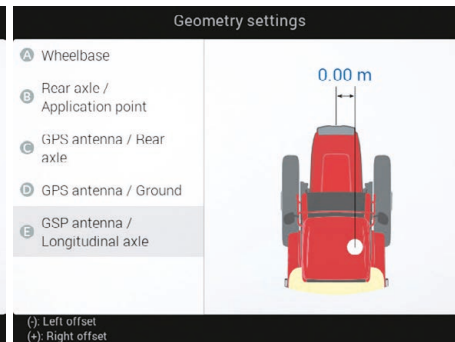
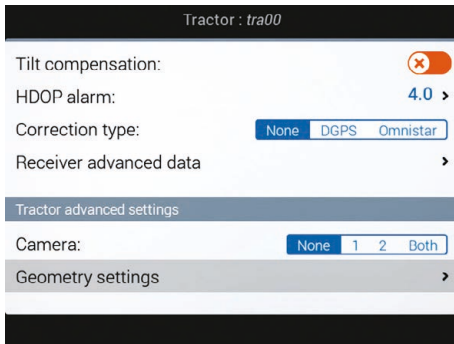


Fig. 190

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

 The settings displayed below vary based on the type of system set (chap. 4).



Enter farming machine measures (Fig. 191).
 - Press arrow keys (UP, DOWN) to move among the value descriptions:
 the image of the selected value will be displayed.
 - Confirm by pressing **OK** to enter setup.
 - Enter the value.
 - Select and enter, one by one, all values.

Fig. 191

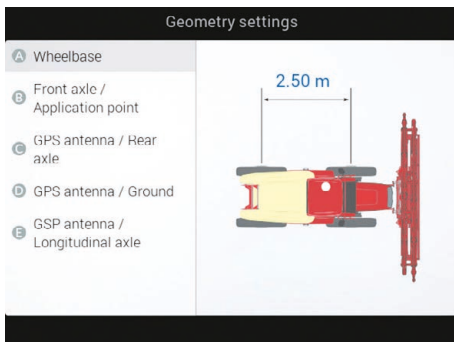


Fig. 192

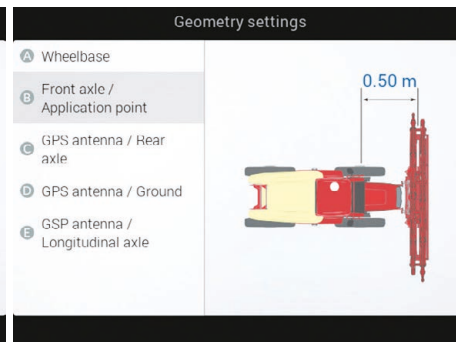


Fig. 193

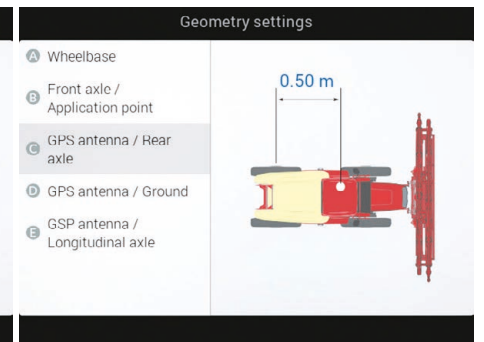


Fig. 194

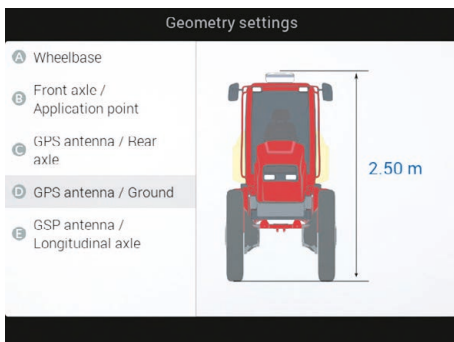


Fig. 195

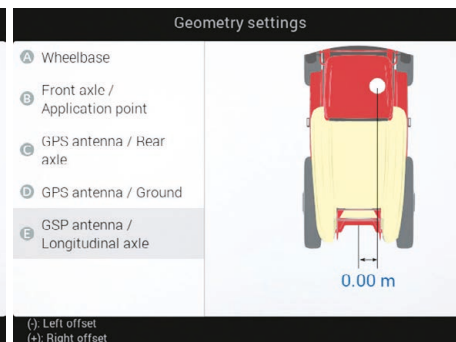



Fig. 196

F1  Enter selected character


F2  Delete selected character

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

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

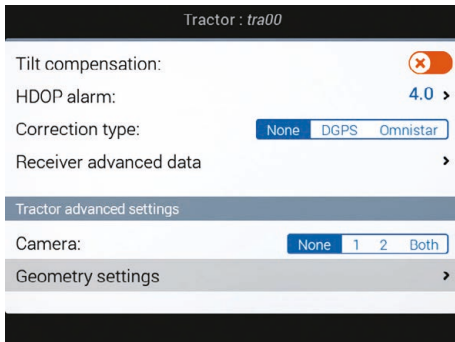
Data decrease / increase

OK  Confirm access or data change

ESC  Exit the function or data change

6.10.4 Geometry settings (TRACTOR WITH CARRIED/TOWED IMPLEMENT)

 The settings displayed below vary based on the type of system set (chap. 4).



Enter farming machine measures (Fig. 197).
 - Press arrow keys (UP, DOWN) to move among the value descriptions: the image of the selected value will be displayed.
 - Confirm by pressing **OK** to enter setup.
 - Enter the value.
 - Select and enter, one by one, all values.

Fig. 197

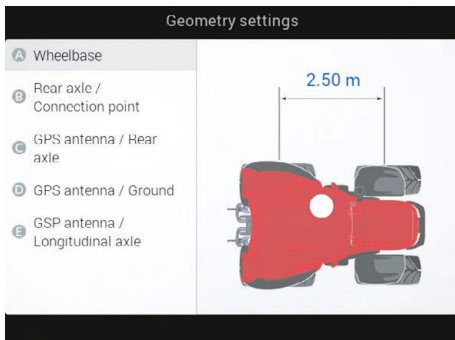


Fig. 198

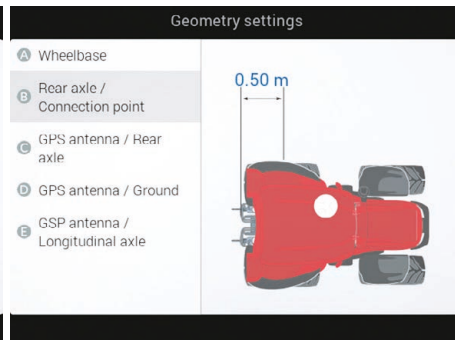


Fig. 199

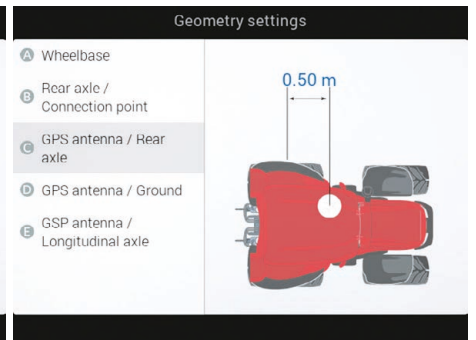


Fig. 200

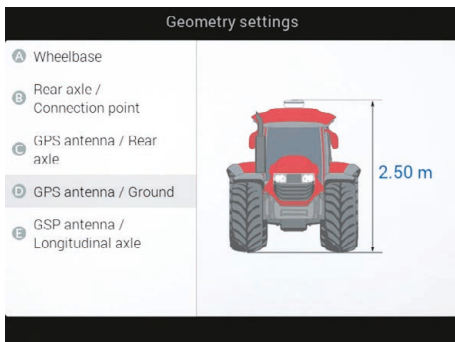


Fig. 201

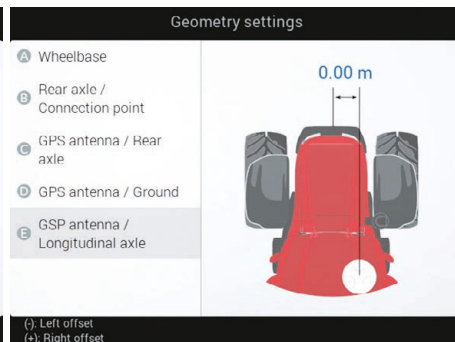


Fig. 202

6.11 HORIZONTAL BOOM SIZE

Enter the corresponding value.

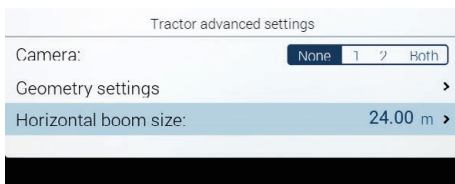
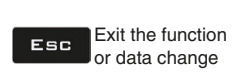
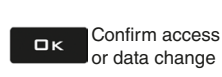


Fig. 203



Data decrease / increase



6.12 USER

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

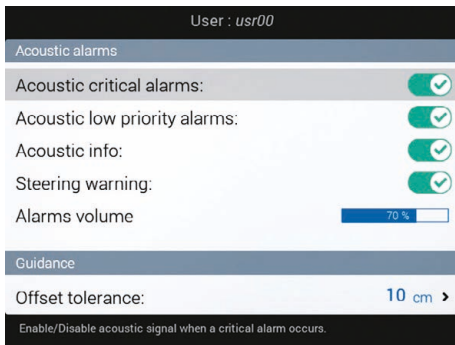


Fig. 204

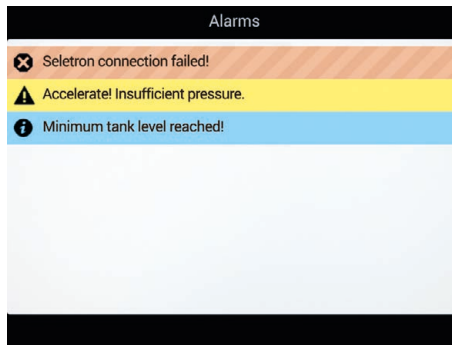


Fig. 205

The monitor features a menu **Alarms** (Fig. 205, accessible from the "Home" menu by pressing **F6**). This page displays all active notifications for the operator. Based on their importance, notifications are rated in **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. 6.12.1).
- **Acoustic low priority alarms** (par. 6.12.2).
- **Acoustic info** (par. 6.12.3).
- **Steering warning** (par. 6.12.4).

ACOUSTIC ALARMS

6.12.1 Acoustic critical alarms

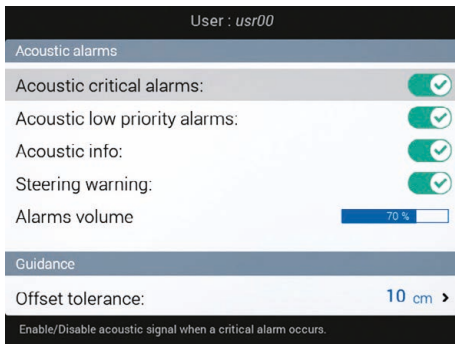




Fig. 206

It allows to enable/disable the acoustic signal when new **Critical alarms** (Fig. 205) occur.

-  **Signal enabled**
-  **Signal disabled**

6.12.2 Acoustic low priority alarms

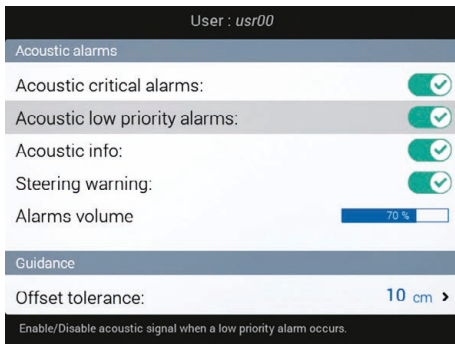




Fig. 207

It allows enabling/disabling the acoustic signal when new **Low priority alarms** (Fig. 205) occur.

-  **Signal enabled**
-  **Signal disabled**

6.12.3 Acoustic info

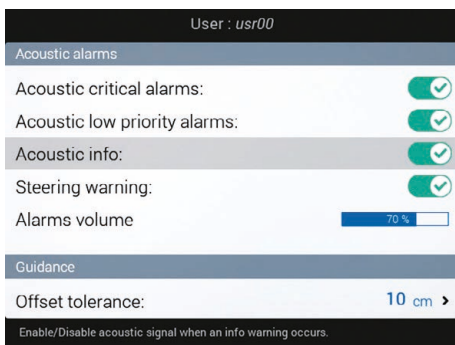




Fig. 208

It allows enabling/disabling the acoustic signal when new **Info** (Fig. 205) occur.

-  **Signal enabled**
-  **Signal disabled**

6.12.4 Steering warning

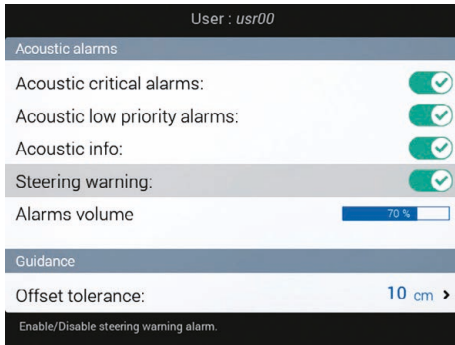


Fig. 209

It allows enabling/disabling 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, par 6.4.14 Working parameters).

- Signal enabled
- Signal disabled

6.12.5 Alarms volume



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

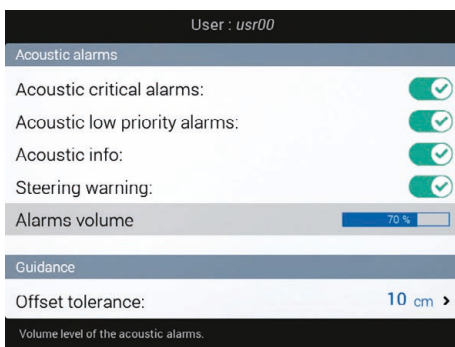


Fig. 210

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

GUIDANCE

6.12.6 Offset tolerance

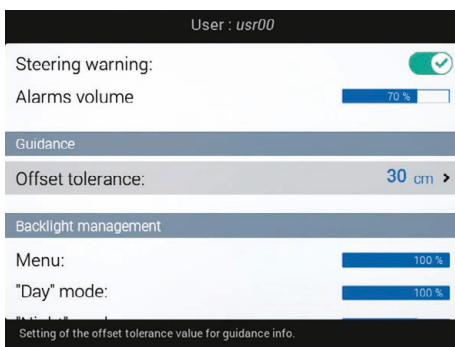


Fig. 211

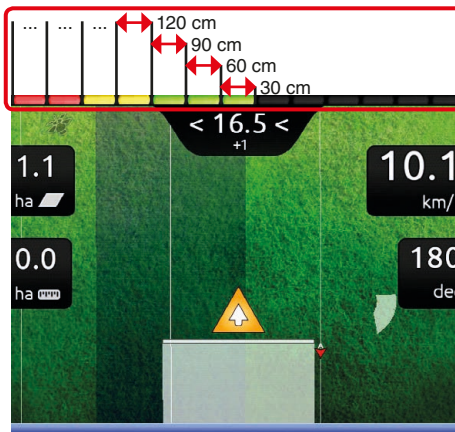


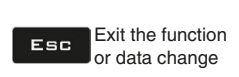
Fig. 212

The deviation of the machine compared to the reference line is represented by the LED bar at the side (guidance screen). Each LED ON indicates an offset value corresponding to the one set in item **Offset tolerance** (e.g.: 30 cm).

By following the example, the LEDs come on progressively whenever the deviation reaches a multiple of 30 cm



Data decrease / increase



6.12.7 Displayed data configuration

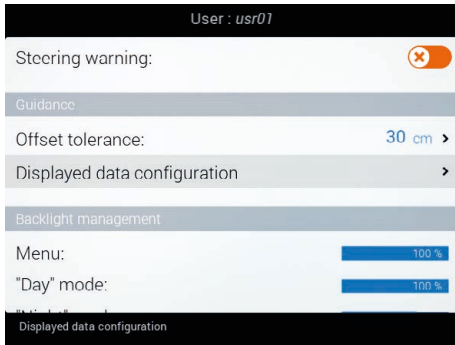


Fig. 213

Allows setting the data of the spraying you want to display on the guidance screen (Fig. 214). Two data pages are available on each side, which can be alternated using keys **F7** / **F8**. Both pages can be customized: select the data position (menu **Page 1 settings** or **Page 2 settings**) and program one among the options available in Fig. 217.

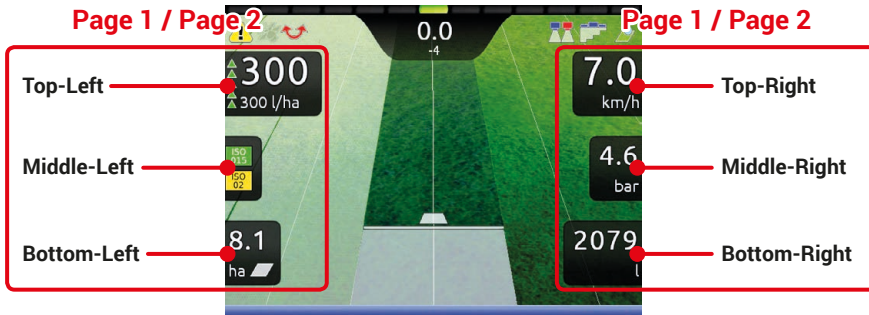


Fig. 214

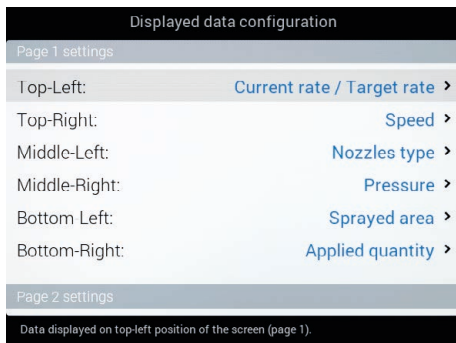


Fig. 215

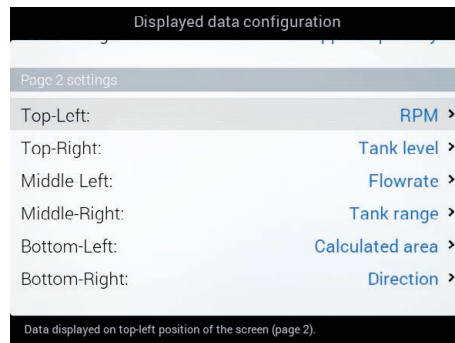


Fig. 216

Available options (EXAMPLE)

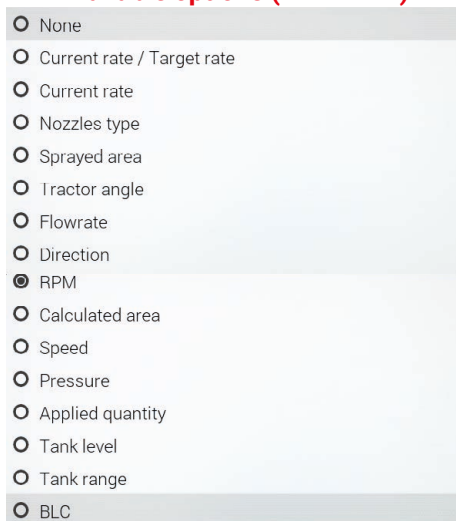


Fig. 217

BACKLIGHT MANAGEMENT

6.12.8 Backlight

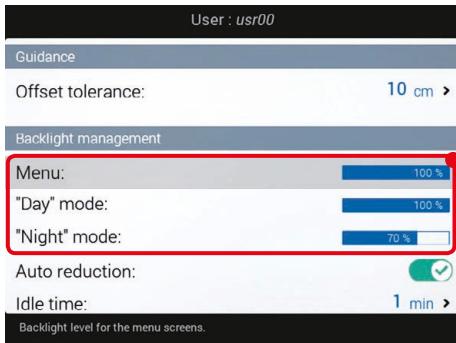


Fig. 218

The adjustment is divided by type of screen:
 - Menu screens.
 - Guidance screen in "Daytime" mode (par. 13.8.3).
 - Guidance screen in "Night time" mode (par. 13.8.3).

Select the type of screen and press the arrow keys to adjust display backlighting (LH = decreases, RH = increases).

6.12.9 Attenuation

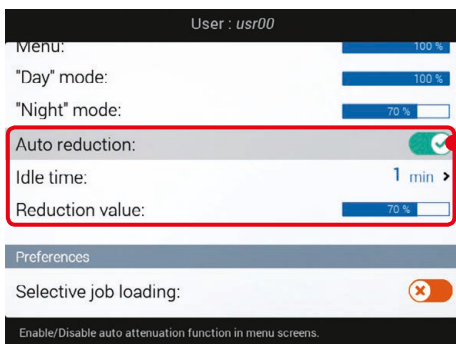


Fig. 219

The three items at the side define display automatic attenuation after a long period of inactivity. IT APPLIES TO MENU SCREENS, ONLY.

First of all, enable **Auto reduction** to use the function, then adjust the waiting time and the attenuation percentage.

- Automatic attenuation enabled
- Automatic attenuation disabled

PREFERENCES

6.12.10 Selective job loading

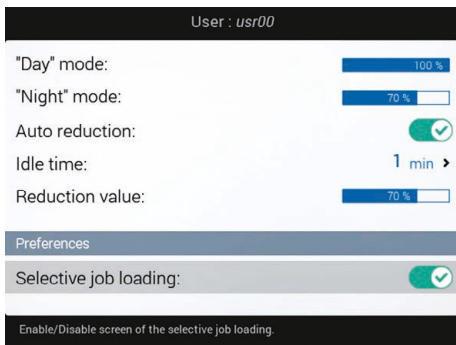


Fig. 220

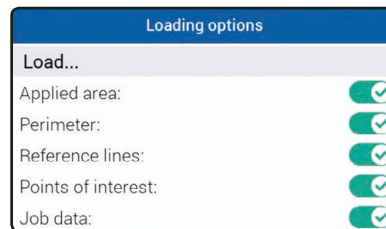


Fig. 221

It allows enabling/disabling the **Loading options** (Fig. 221) screen when the operator loads a previously saved job (par. 10.5 F5 Resume job).

- Screen enabled
- Screen disabled

6.13 GENERAL OPTIONS

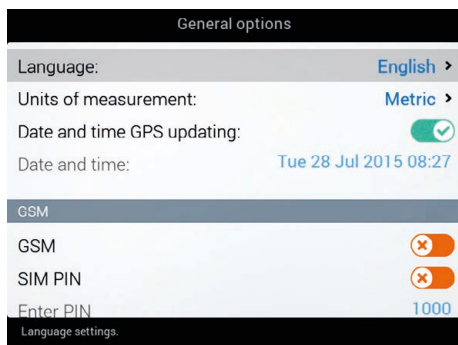


Fig. 222

Set the device system options:

- **Language** (par. 6.13.1).
- **Units of measurement** (par. 6.13.2).
- **Date and time GPS updating** (par. 6.13.3).
- **Date and time** (par. 6.13.4).
- **GSM** (par. 6.13.6)

6.13.1 Language

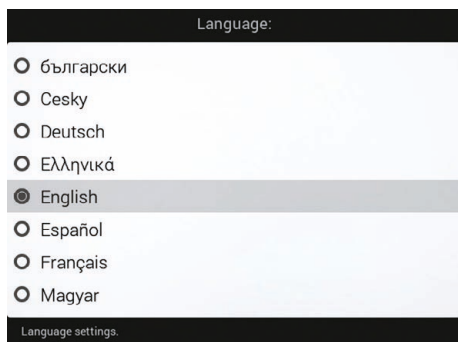


Fig. 223

Set the computer language.

Available languages:

български, Cesky, Deutsch, Eesti, Ελληνικά, English, Español, Français, Magyar, Italiano, 日本語, Lietuvių, Nederlands, Polski, Português, Român, Русский, 中文.

6.13.2 Units of measurement

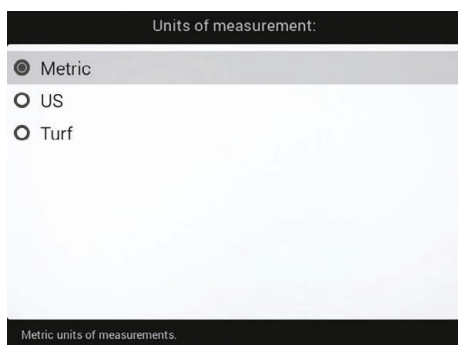


Fig. 224

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...

6.13.3 Date and time GPS updating

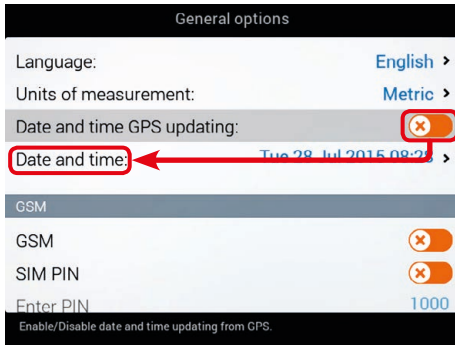


Fig. 225

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 menu **Date and time** (Fig. 225).

6.13.4 Date and time

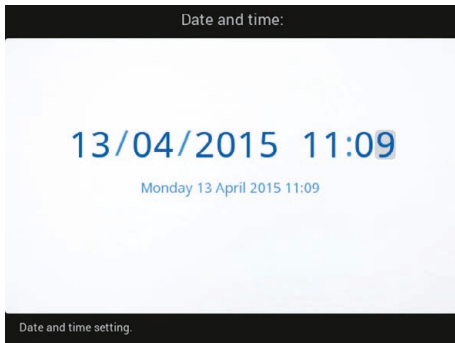


Fig. 226

To configure this menu (Fig. 225), disable **Date and time GPS updating**.

Now set the computer time.

6.13.5 Sampling period



This function IS NOT AVAILABLE if the automatic guidance ECU S1 or the connection to B180S/300S/Alfa350 is set.

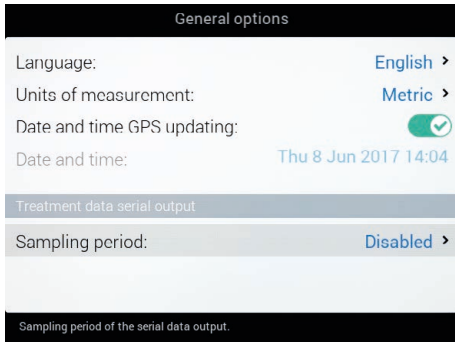


Fig. 227



Fig. 228

Allows sending spraying instantaneous data in text format, through serial communication. Set a recording frequency (Fig. 228) to enable the data output.

Set the serial port of the recording device as follows:
19200 8 - N - 1

Legend:
19200 = speed (bps)
8 = data bit
N = parity (None)
1 = stop bit

Ask to Arag technical service the availability of the adapting cables for your data recording system.

DATA RECORDING FILE

Once sampling time has been set, system generates a "lastjob.txt" file (containing the active job data), and other "jobxx.txt" files, corresponding to the recorded jobs. Files are automatically recorded on the enabled serial port.

The sent data can be displayed on Personal Computer with a text editor. Each file will contain the following data:

Device	Sw Version	Sw Type	GPSQ	Date	Time	Lat	Lon	M Unit	Speed	Boom Width	Covered Area	Target Rate	Appl Rate	Flow	Press	Spr Qty	Tank Level	Sections	Sect1 Width	Sect2 Width	Sect3 Width	Sect4 Width	Sect5 Width	ActNozzle	Selected Job
B400s	1.7.7	S: diserbo	1	05/12/2005	13:42:14	44,64226197	10,78941207	0	3,1	65,6	910,411	0	0,15	2,7	2	660	4182	11111	0,0	5,0	5,0	5,0	5,0	ISO01	J3
Delta80		Q: orchard sprayer M: multi-row sprayer			Coordinated Universal Time		Without GPS receiver: empty fields	0: EU 1: US 2: TURF		with open sections														crop sprayer: name of enabled nozzle orchard sprayer: boom sprayer name multi-row sprayer: boom name	

Device	Sw Version	Sw Type	GPSQ	Date	Time	Lat	Lon	M Unit	Speed	Boom Width	Covered Area	Target Rate	Appl Rate	Flow	Press	Spr Qty	Tank Level	Tot Spray Spot	Act Spray Spot	Spot Spacing	Seletron Map	Act Nozzle A	Act Nozzle B	Act Nozzle C	Act Nozzle D
B400s	1.7.7	N: Seletron	1	05/12/2005	13:42:14	44,64226197	10,78941207	0	3,1	65,6	910,411	0	0,15	2,7	2	660	4182	48	48	50,0	FFFF0000	ISO01	ISO02	ISO03	ISO04
Delta80					Coordinated Universal Time		Without GPS receiver: empty fields	0: EU 1: US 2: TURF		with open sections								Total spraying points	Active spraying points		Map of Seletron status in hexadecimal format 1: open 0: closed				

These data represent just a mere example. In real facts they will always be different according to the type of spraying.

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

6.13.6 GSM



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

• GSM

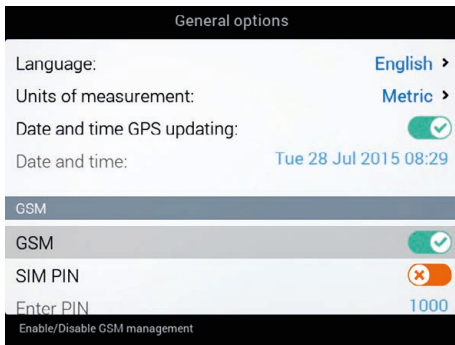


Fig. 229

Allows enabling/disabling the 3G data network.

- Network enabled
- Network disabled

• SIM PIN

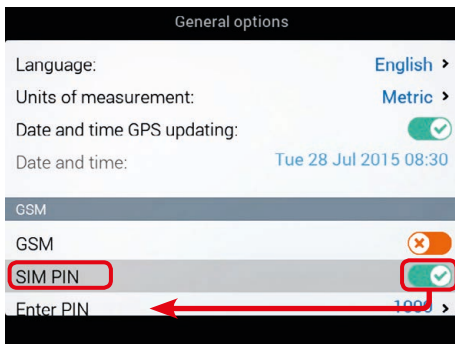


Fig. 230

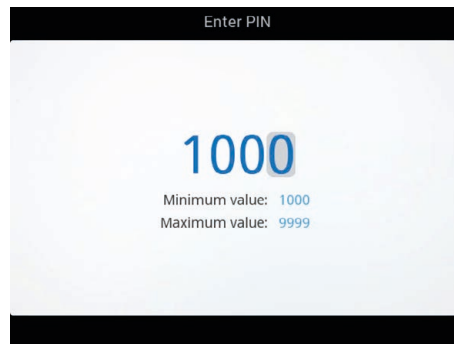


Fig. 231

Allows enabling/disabling the PIN code for data network.

- PIN enabled
The PIN insertion (Fig. 230) menu item, which allows setting the PIN, is enabled.
- PIN disabled

• APN

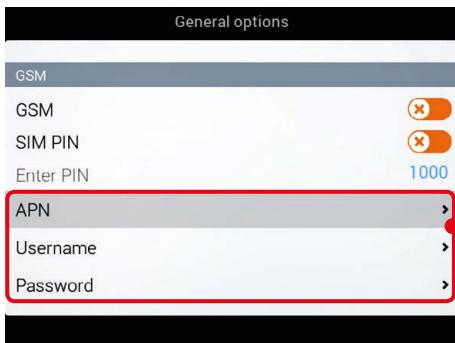


Fig. 232

Allows entering the APN setup, the username and the password of the data operator.

6.14 REMOTE SUPPORT



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

Function to be exclusively used by Arag technical service staff.

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

7 USE

7.1 Controls

MONITOR BRAVO 400S

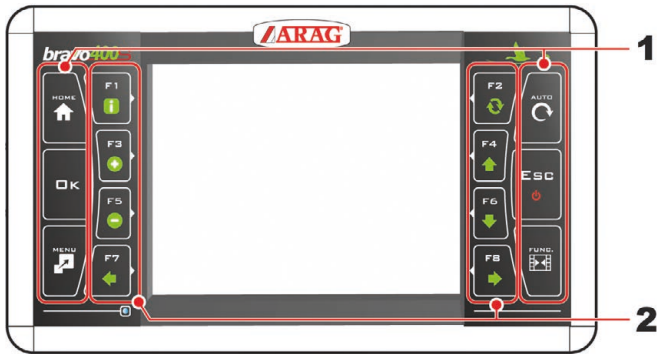


Fig. 233

MONITOR NINJA

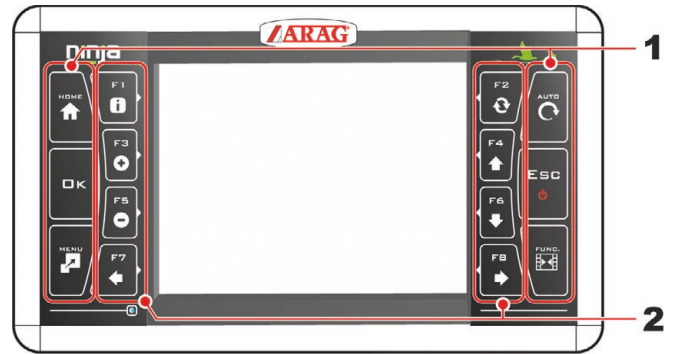


Fig. 234

MONITOR DELTA 80



Fig. 235

• Controls on the monitor

1 Function keys.

2 Control and display keys

Function keys are contextual: 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.

SWITCH PANEL

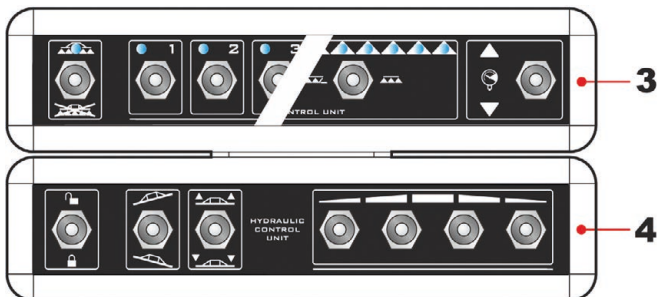


Fig. 236

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

3 Switches used to operate control unit valves - par. 7.2

4 Switches used to operate hydraulic valves - par. 7.3

JOYSTICK EXPLORER

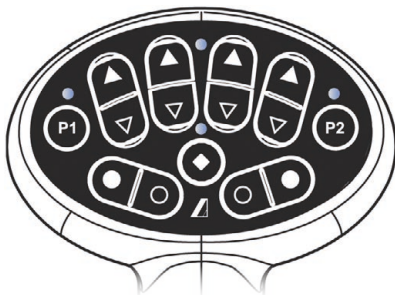


Fig. 237

• Controls to valves and/or hydraulic functions with joystick - par. 6.4.16

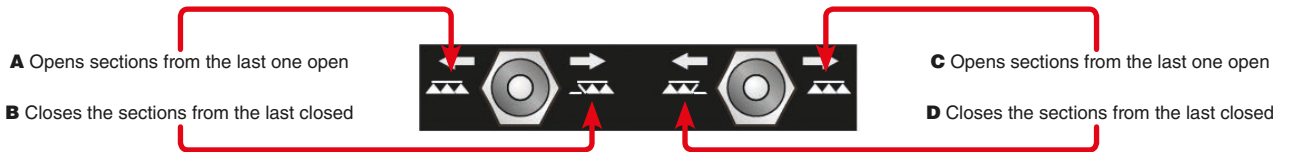
F1 Enter selected character	F2 Delete selected character	F7 FB Scroll (LEFT / RIGHT)	F4 F6 Scroll (UP / DOWN)	Data decrease / increase	OK Confirm access or data change	ESC Exit the function or data change	Par. 1.4
------------------------------------	-------------------------------------	---	--	--------------------------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

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

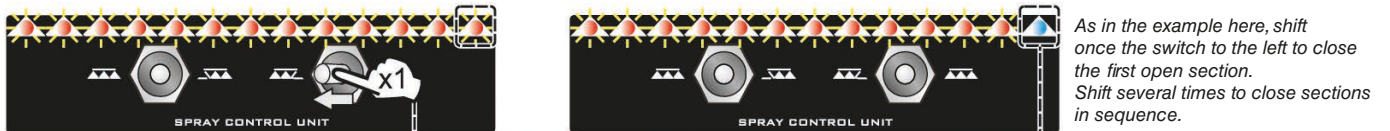
Main control ON	Main control OFF	Section operating switches Open section Closed section	Increase of output	Decrease of output



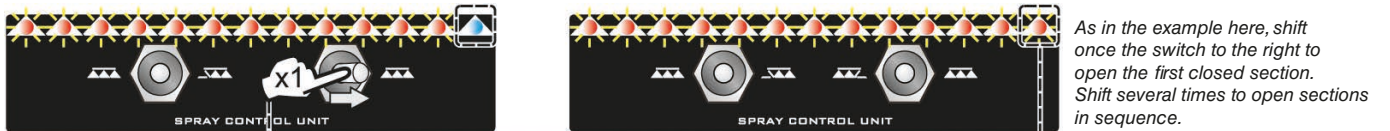
The valves can be opened and closed from the right to the left and vice versa with the section control switches. Prolonged pressure opens / closes the sections of half boom.

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 of the boom height of the boom	Decrease of the boom	Boom section movement: opening	Boom section movement: closing

Enter selected character	Delete selected character	Scroll (LEFT / RIGHT)	Scroll (UP / DOWN)	Data decrease / increase	Confirm access or data change	Exit the function or data change	Par. 1.4
--------------------------	---------------------------	-----------------------	--------------------	--------------------------	-------------------------------	----------------------------------	----------

7.3.1 "Buffer Zone" function enabled

Some spraying modes entail special areas called "Buffer zones", where spraying must be reduced or absent. Besides the normally used nozzles, special nozzles must be installed (e.g.: ASJ AOC), which reduce the jet or the drift effect at boom end sides. To connect the "Buffer" nozzles, proceed as follows:
 LH "Buffer" nozzle (boom view from back), 1st boom nozzle, 2nd boom nozzle, ---> No. of boom nozzle, RH "Buffer" nozzle (boom view from back).

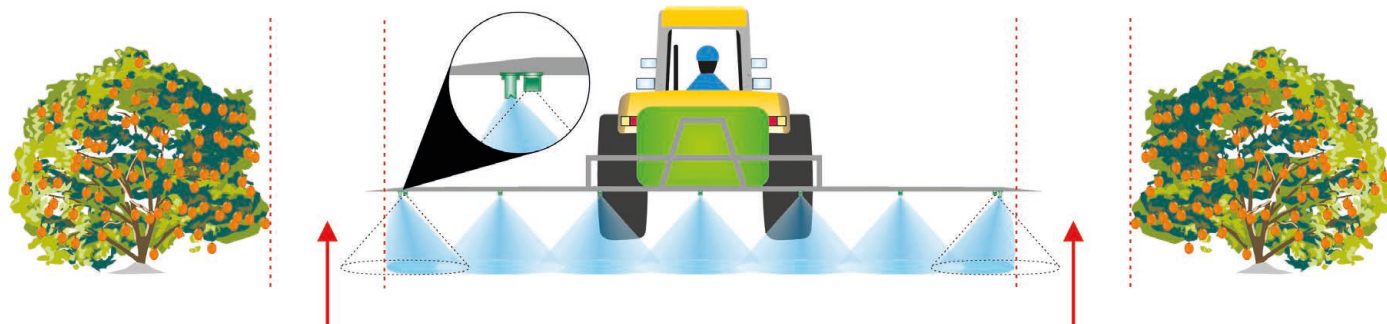


Fig. 238

Buffer zone

Buffer zone

By enabling the function in implement basic settings (chap. 4) standard nozzles or special nozzles can be alternately selected.

NOZZLE SELECTION THROUGH THE SWITCH PANEL

• LH special nozzle enabling (Boom view from back)



CORRESPONDING ICON ON GUIDANCE SCREEN

Press switch to the left once to enable the LH "Buffer zone" nozzle and to close the standard one. The LED on the left flashes alternately.

• RH special nozzle enabling (Boom view from back)



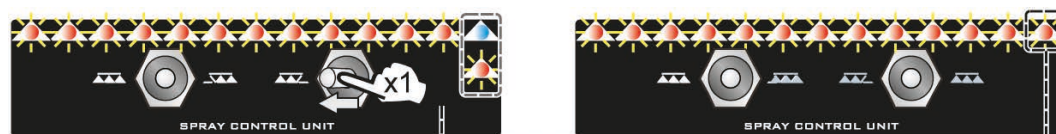
Press switch to the right once to enable the RH "Buffer zone" nozzle and to close the standard one. The LED on the right flashes alternately.

• LH special nozzle disabling (Boom view from back)



Press switch to the right once to disable the LH "Buffer zone" nozzle and to enable the standard one. The LED on the left no longer flashes and is steady.

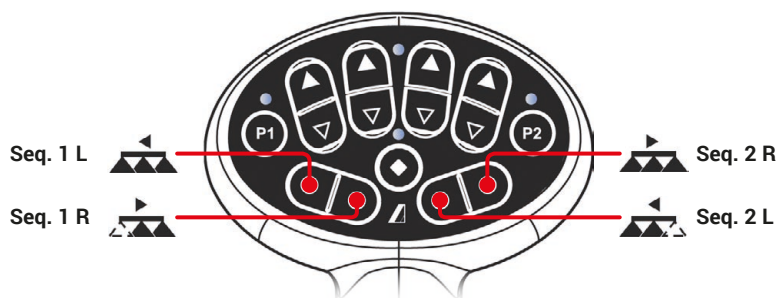
• RH special nozzle disabling (Boom view from back)



Press switch to the left once to disable the RH "Buffer zone" nozzle and to enable the standard one. The LED on the right no longer flashes and is steady.

NOZZLE SELECTION THROUGH THE JOYSTICK

The operation is similar to the one just described for the sequential switch panel. The functions associated to nozzle enabling are included in the "Main" page. For further details, refer to the instructions provided with the joystick.



7.3.2 "Fence nozzle" function enabled

This function entails the assembly of specific nozzles at boom end; these nozzles allow spraying areas that cannot be reached by the traditional nozzles due to the boom size (i.e. fences). The enabling of such nozzles does not stop the output from the other boom nozzles. The connection and pairing procedure of seletron devices and "Fence" nozzles is the following: at first connect all boom nozzles, then the left "Fence" nozzle and the right "Fence" nozzle. By setting the reference flowrate and pressure for the "Fence" nozzle, it is possible to control the output of all nozzles based on the set spray rate. The width covered by the fence nozzle is not included in the calculation of the applied area.

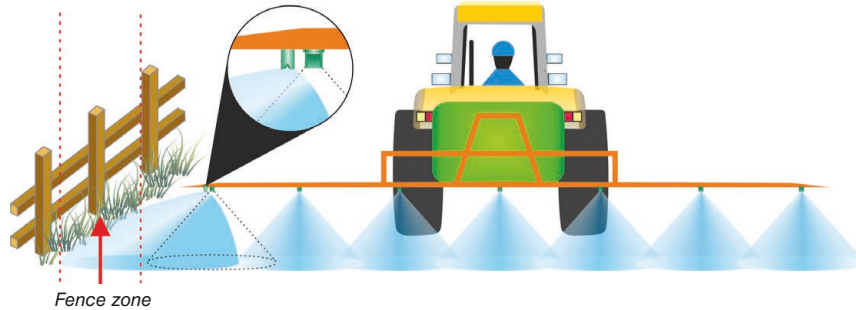
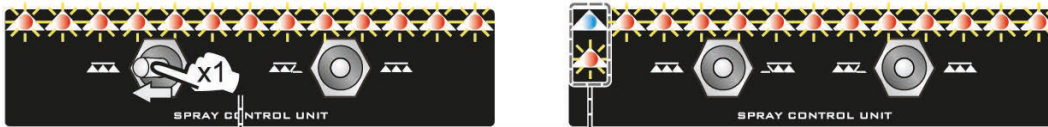


Fig. 239

By enabling the function in implement basic settings (chap. 4) standard nozzles or special nozzles can be selected: **the enabling of "Fence" nozzles does not stop the output from the other boom nozzles.**

NOZZLE SELECTION THROUGH THE SWITCH PANEL

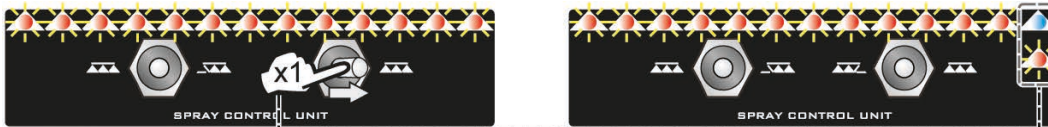
• LH special nozzle enabling (Boom view from back)



Press switch to the left once to enable the LH "Fence" nozzle. The LED on the left flashes alternately.

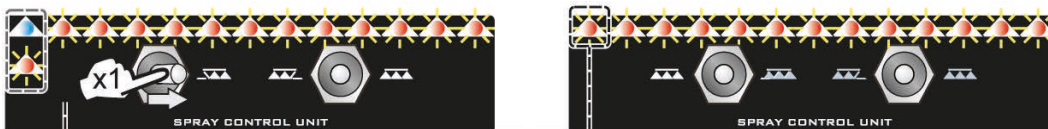
CORRESPONDING ICON ON GUIDANCE SCREEN

• RH special nozzle enabling (Boom view from back)



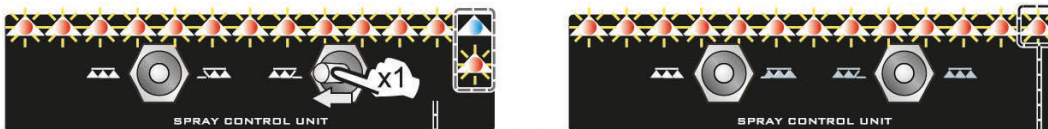
Press switch to the right once to enable the RH "Fence" nozzle. The LED on the right flashes alternately.

• LH special nozzle disabling (Boom view from back)



Press switch to the right once to disable the LH "Fence" nozzle. The LED on the left no longer flashes and is steady.

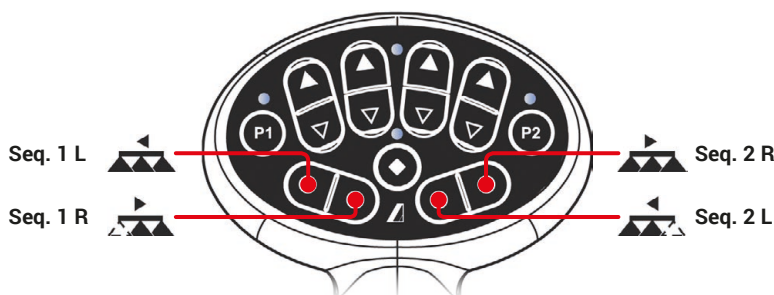
• RH special nozzle disabling (Boom view from back)



Press switch to the left once to disable the RH "Fence" nozzle. The LED on the right no longer flashes and is steady.

NOZZLE SELECTION THROUGH THE JOYSTICK

The operation is similar to the one just described for the sequential switch panel. The functions associated to nozzle enabling are included in the "Main" page. For further details, refer to the instructions provided with the joystick.



7.4 Guidance screen

USING THE KEYS

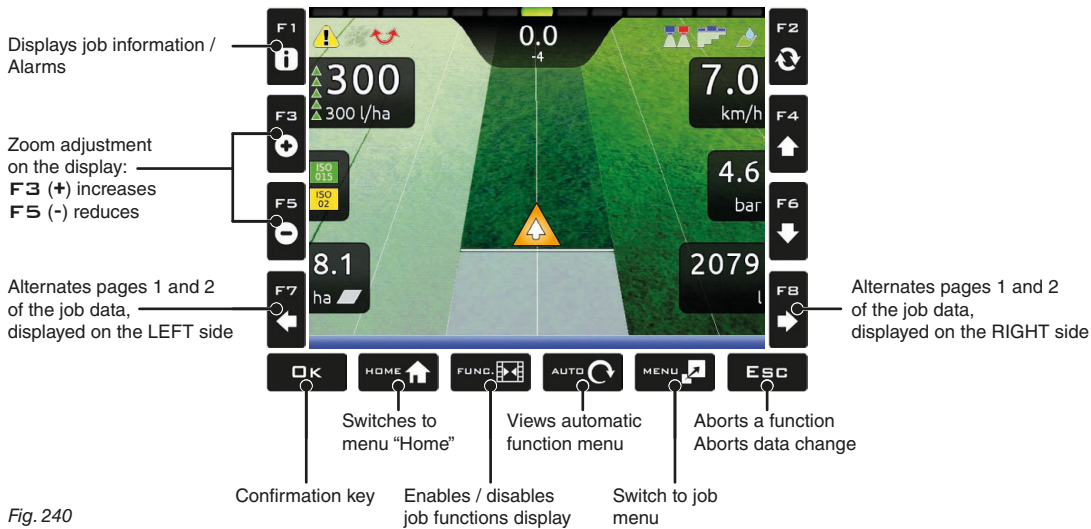


Fig. 240

F 1 ÷ F 8: Contextual function keys

These keys control what is shown on the display (guidance page zoom adjustment, etc., Fig. 240)

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

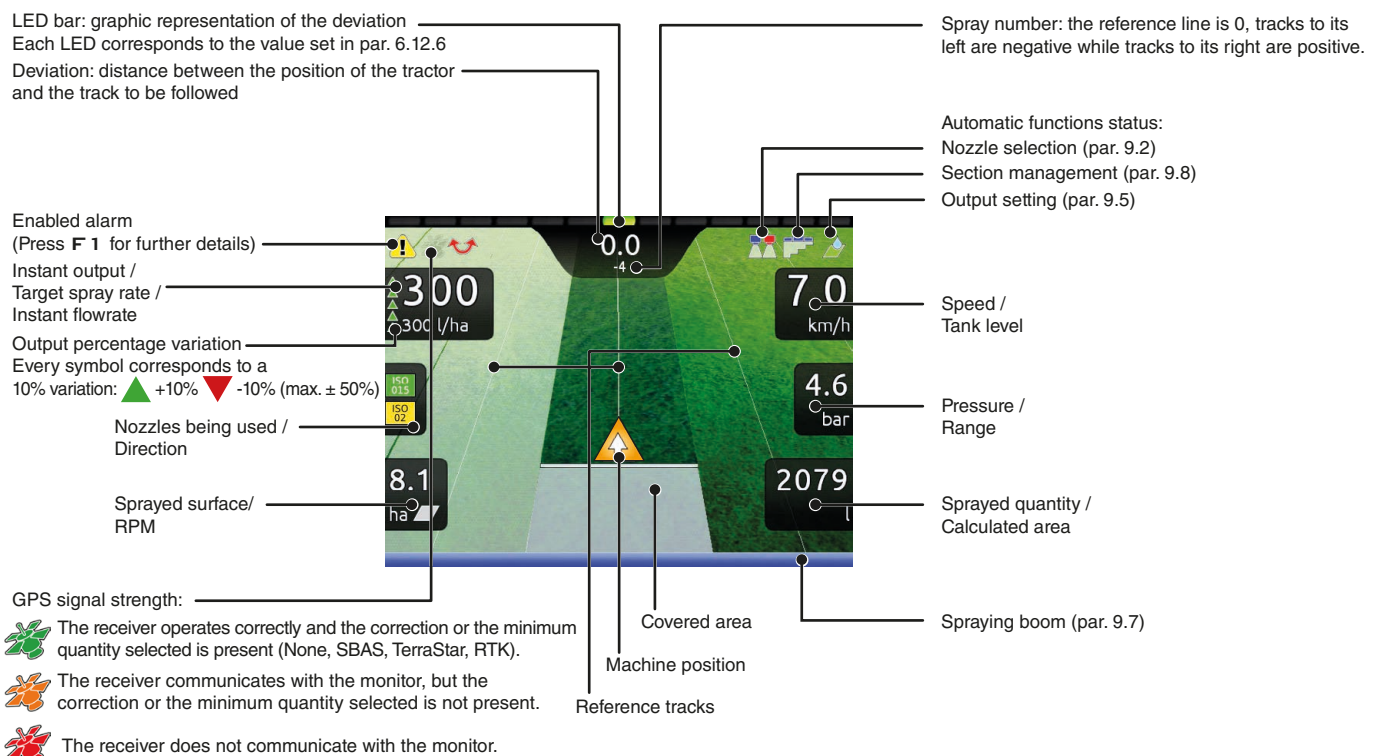


Fig. 241

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.

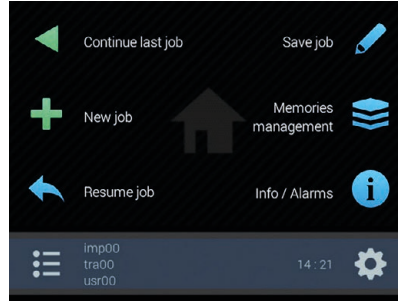


Fig. 242

- Go to the beginning of the field to be sprayed.
- Switch the monitor on (par 1.2). After self-diagnosis, the monitor displays screen "Home" (Fig. 242).
- Begin a new spraying, using the function **F3** New job (par. 10.3).
- Enter spraying settings.

SPRAYING SETTINGS

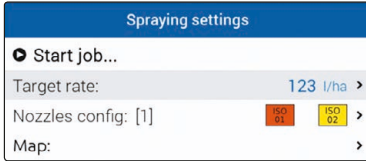


Fig. 244



Target rate

- Set the spray rate value for the spraying (Fig. 244). Press **OK** to confirm the set value.

Fig. 243

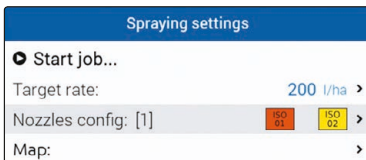


Fig. 245

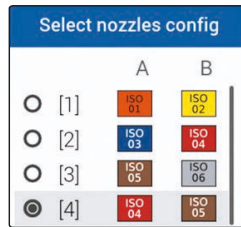


Fig. 246

Select nozzles config

- Select a nozzle configuration from the list (Fig. 246). With this data indicate which nozzles are installed on the boom spraying points (preset configurations in the menu **Spray spots configurations**, par. 6.4.1).
- Press **OK** to confirm.

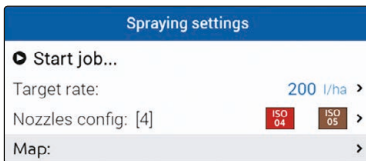


Fig. 247

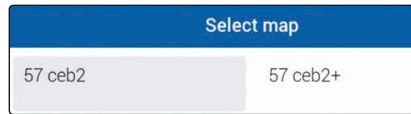


Fig. 248

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. 248).
- Press **OK** to confirm.



Fig. 249

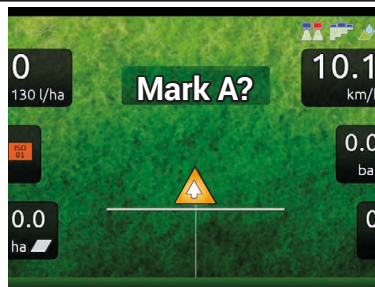


Fig. 250

Start job

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

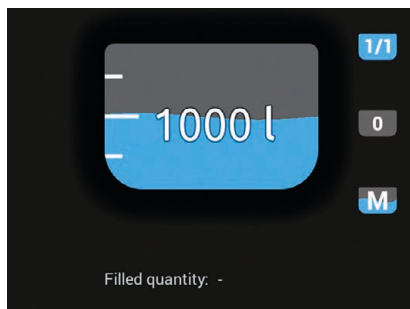


Fig. 251

- In the job menu, set the tank level with the function **Tank** (par. 11.2).
- Start spraying by acting on the main valve control.
- Start moving along the field perimeter.

MARKING POINTS A AND B

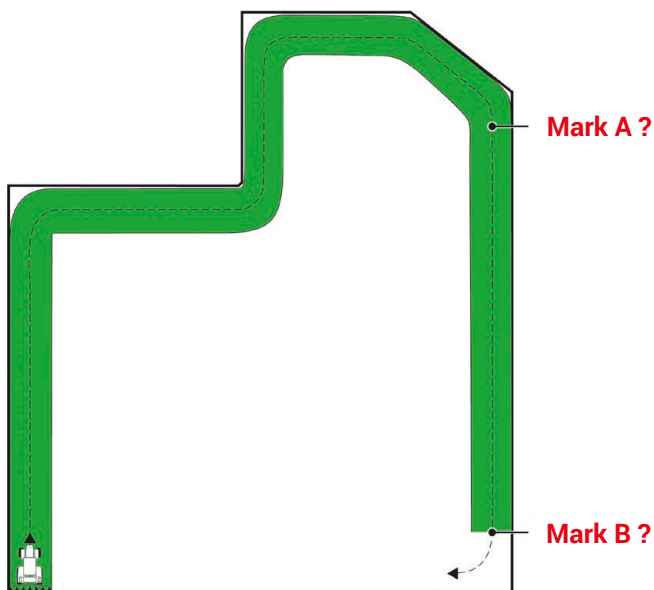



Fig. 252

• While moving along the perimeter of the field, you will mark points A and B (as described in par. 13.7 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.

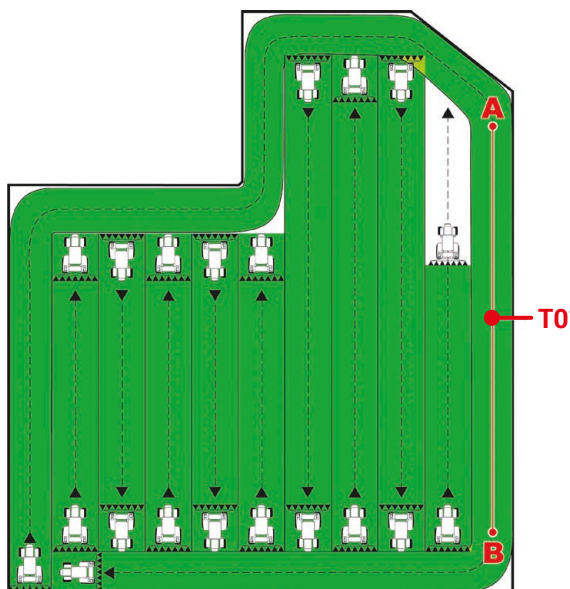



Fig. 253

• 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. 253), by following the reference tracks shown on the display (Fig. 254).



Fig. 254

 At the beginning of a new job the monitor gives guidance directions in the "Straight parallel" mode. To change driving mode see function F2 Driving mode (par. 13.2).

CONTINUES "Funzioni automatiche - SELETRON MODE" on page 73 >>>



7.6 Guidance screen

USING THE KEYS

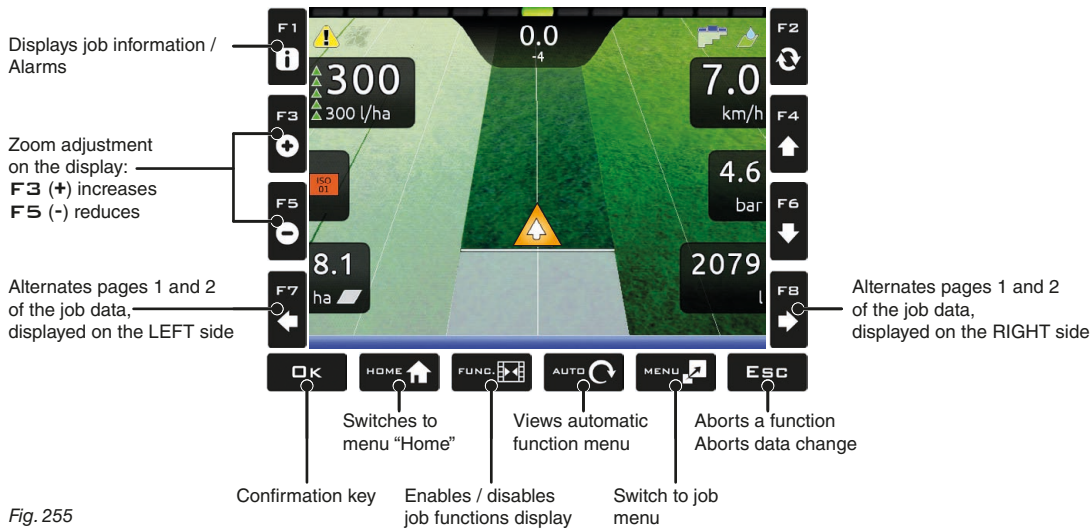


Fig. 255

F 1 ÷ F 8: Contextual function keys

These keys control what is shown on the display (guidance page zoom adjustment, etc., Fig. 255)

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

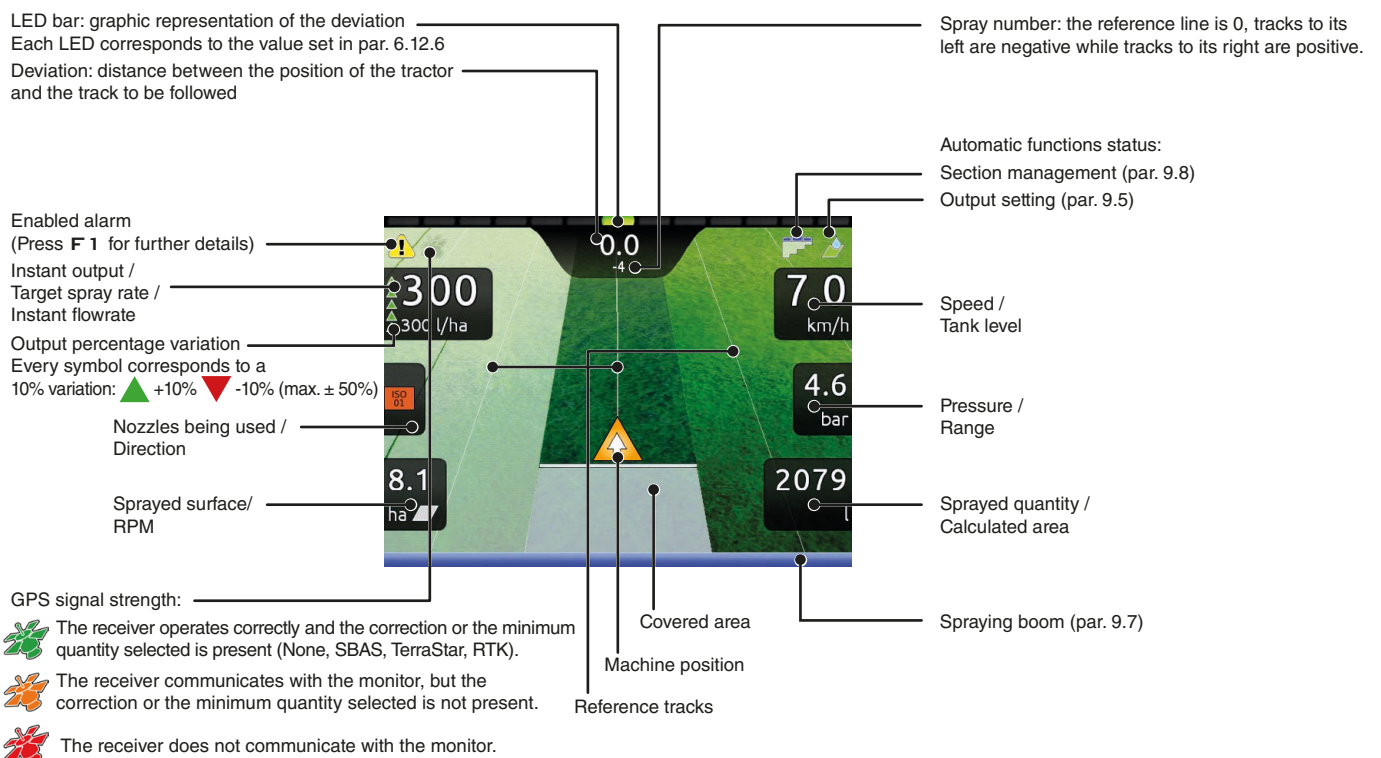


Fig. 256

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 decrease / increase

OK Confirm access or data change

ESC Exit the function or data change





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.

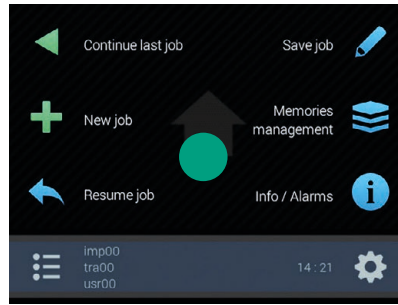


Fig. 257

- Go to the beginning of the field to be sprayed.
- Switch the monitor on (par 1.2). After self-diagnosis, the monitor displays screen "Home" (Fig. 257).
- Begin a new spraying, using the function **F3** New job (par. 10.3).
- Enter spraying settings.

SPRAYING SETTINGS

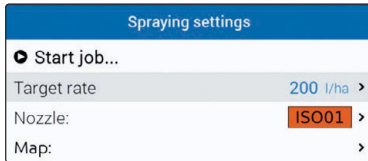


Fig. 259



Target rate

- Set the spray rate value for the spraying (Fig. 259). Press **OK** to confirm the set value.

Fig. 258

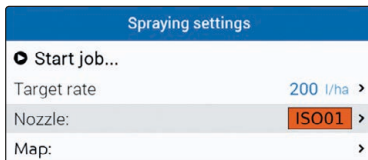


Fig. 260

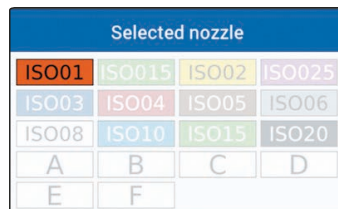


Fig. 261

Selected nozzle

- Select the nozzle among the ones on the list (Fig. 261). With this data indicate which nozzles are installed on the boom spraying points.
- Press **OK** to confirm.

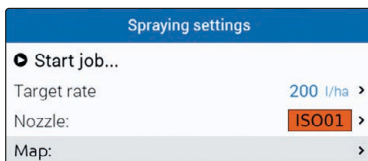


Fig. 262

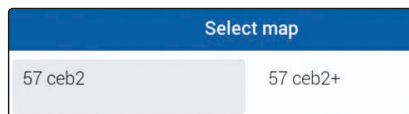


Fig. 263

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. 263).
- Press **OK** to confirm.

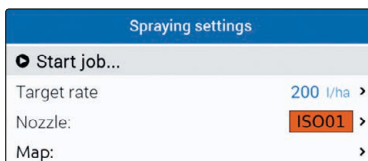


Fig. 264

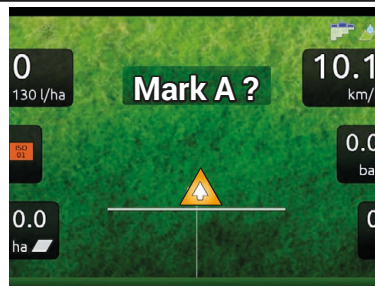


Fig. 265

Start job

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

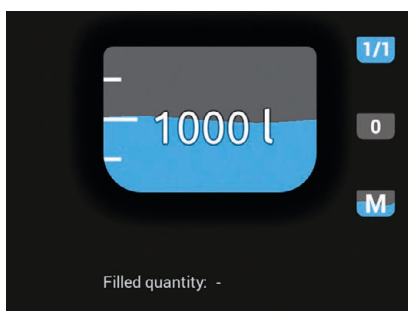


Fig. 266

- In the job menu, set the tank level with the function Tank (par. 11.2).
- Start spraying by acting on the main valve control.
- Start moving along the field perimeter.



MARKING POINTS A AND B

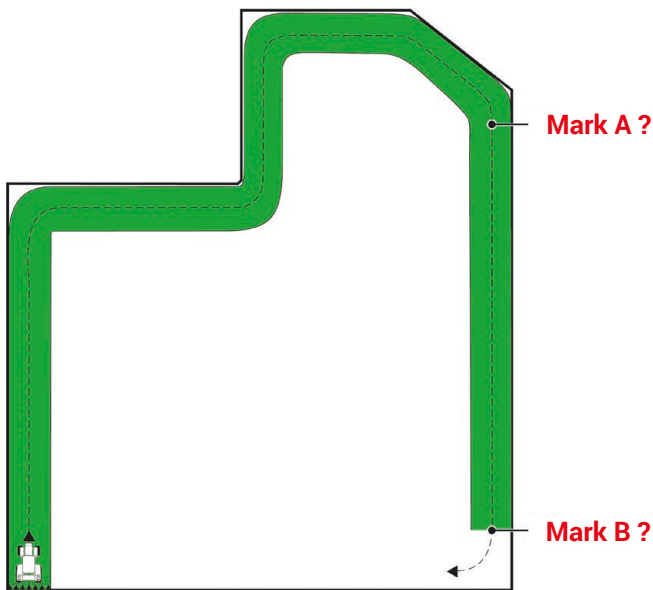



Fig. 267

- While moving along the perimeter of the field, you will mark points A and B (as described in par. 13.7 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.

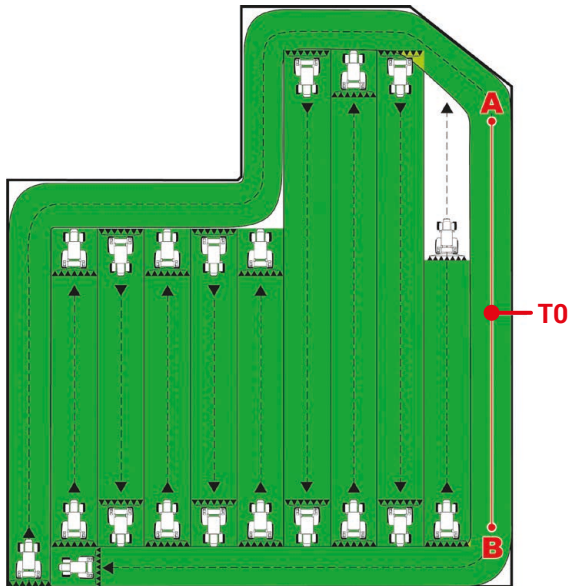



Fig. 268

- 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. 268), by following the reference tracks shown on the display (Fig. 269).

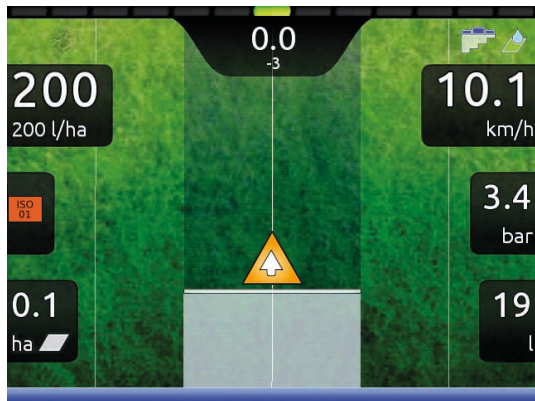


Fig. 269

 At the beginning of a new job the monitor gives guidance directions in the "Straight parallel" mode. To change driving mode see function F2 Driving mode (par. 13.2).



8 AUTOMATIC FUNCTIONS



To access automatic functions, start a spraying (**New job, Resume job, Continue last job**, chap. 10 Menu "Home"); in the guidance screen, press **АВТО**. When the list is active (Fig. 270), pressing the key at the side will enable the relevant function.



Fig. 270

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



Par.

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

CONTINUES "Output adjustment" on page 76 >>>

F1 Enter selected character

F2 Delete selected character

F7 F8 Scroll (LEFT / RIGHT)

F4 F6 Scroll (UP / DOWN)

Data decrease / increase

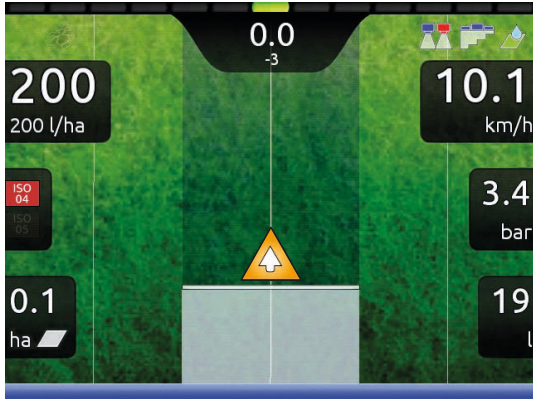
OK Confirm access or data change

ESC Exit the function or data change



Par. 1.4

9 AUTOMATIC FUNCTIONS



To access automatic functions, start a spraying (**New job, Resume job, Continue last job**, chap. 10 Menu "Home"); in the guidance screen, press **AUTO**. When the list is active (Fig. 271), pressing the key at the side will enable the relevant function.

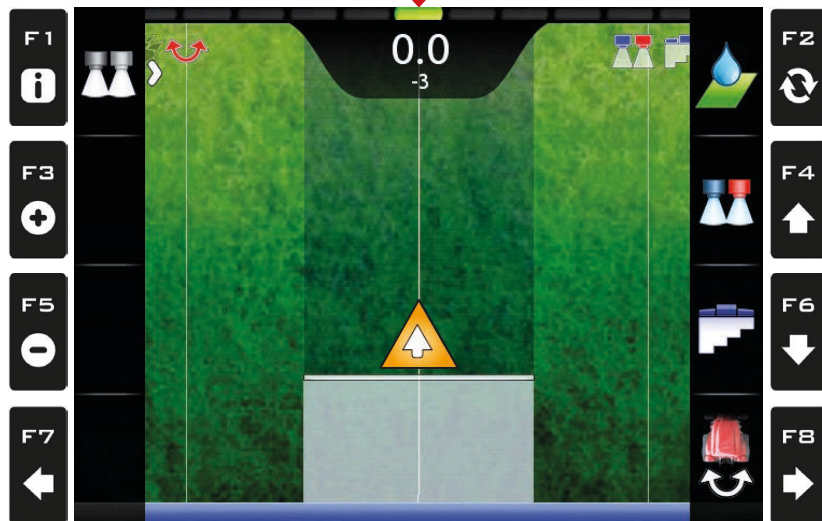


Fig. 271

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

Par.	Icon	Key	Description
9.3	Nozzle icon	F1	Nozzle manual selection. Includes several options:
	ISO 01	F1	Manual selection of NOZZLE A
	ISO 015	F3	Manual selection of NOZZLE B
	ISO 02	F5	Manual selection of NOZZLE C
	ISO 025	F7	Manual selection of NOZZLE D

Par.	Icon	Key	Description
9.5	Water drop icon	F2	ON/OFF automatic adjustment
9.2	Nozzle icon	F4	Automatic nozzle selection ON / OFF
9.8	Section icon	F6	ON/OFF section automatic management

F1 Enter selected character

F2 Delete selected character

F7 F8 Scroll (LEFT / RIGHT)

F4 F6 Scroll (UP / DOWN)

Data decrease / increase

OK Confirm access or data change

ESC Exit the function or data change

Par. 1.4

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.

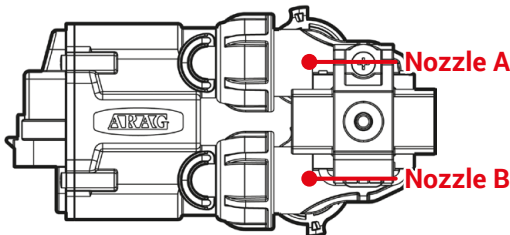


Fig. 272

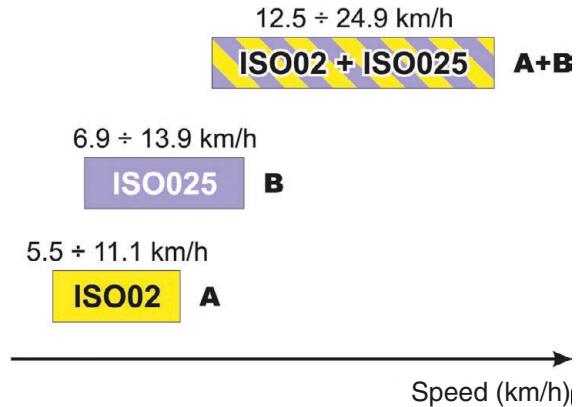


Fig. 273

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

- the spraying pressure always remains within the job features set for each single nozzle;
- in case of many possible nozzle configurations, the operating pressure of the configuration in use is as close as possible to the operating range of the nozzle;
- required number of nozzle changes is as low as possible.

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

For example:

- **Compatible nozzles:** the flowrate at 1 bar of the ISO025 nozzle is LOWER than the flowrate at 5 bars of the ISO02 nozzle (Fig. 274).
- **NON-compatible nozzles:** the flowrate at 1 bar of the ISO05 nozzle is HIGHER than the flowrate at 5 bars of the ISO02 nozzle (Fig. 275).

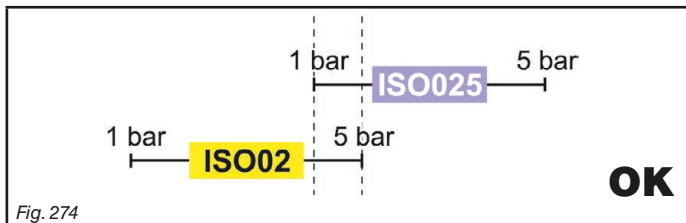


Fig. 274

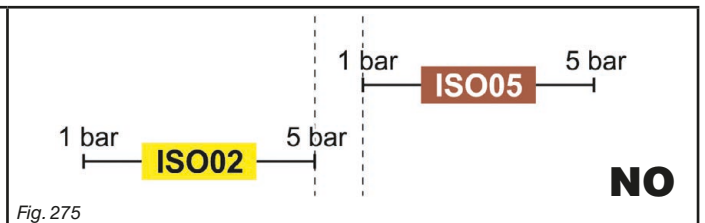


Fig. 275

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 spraying (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. 276) to enable or disable automatic selection.

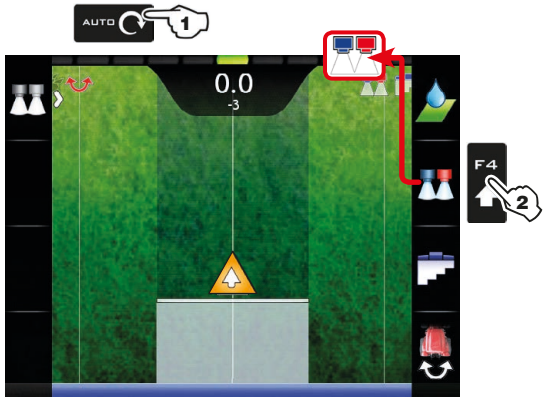


Fig. 276



The number of nozzles displayed in Fig. 276 will vary according to the spraying point setting (par. 6.4.1).



9.3 F1/F3/F5/F7 Nozzle manual selection

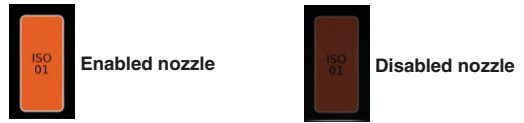
Allows to select manually nozzles A, B, C, D in use on the spraying points. This function is enabled ONLY when automatic nozzle selection is disabled (par. 9.2).



- 1 In the guidance screen, press **AUTO**.
- 2 Press **F1** to enable nozzle manual selection. The list of available nozzles will be displayed.
- 3 Press the button next to the nozzle (Fig. 277) to enable or disable the corresponding nozzle.



Fig. 277



The number of nozzles displayed in Fig. 277 will vary according to the spraying point setting (par. 6.4.1).

CONTINUES "Output adjustment" on page 76 >>>

F1 Enter selected character

F2 Delete selected character

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

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

Data decrease / increase

OK Confirm access or data change

ESC Exit the function or data change

9.4 Output adjustment

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

AUTOMATIC ADJUSTMENT ON



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

In this case the spray rate can be set with the function **F 1** Spray rate (par. 13.1), 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 intervene on the output control (par. 7.2 or 6.4.16) 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 with the suitable control (par. 7.2 or 6.4.16).

9.5 F2 ON/OFF automatic adjustment Enables / disables automatic output adjustment (*DEFAULT: ON*).

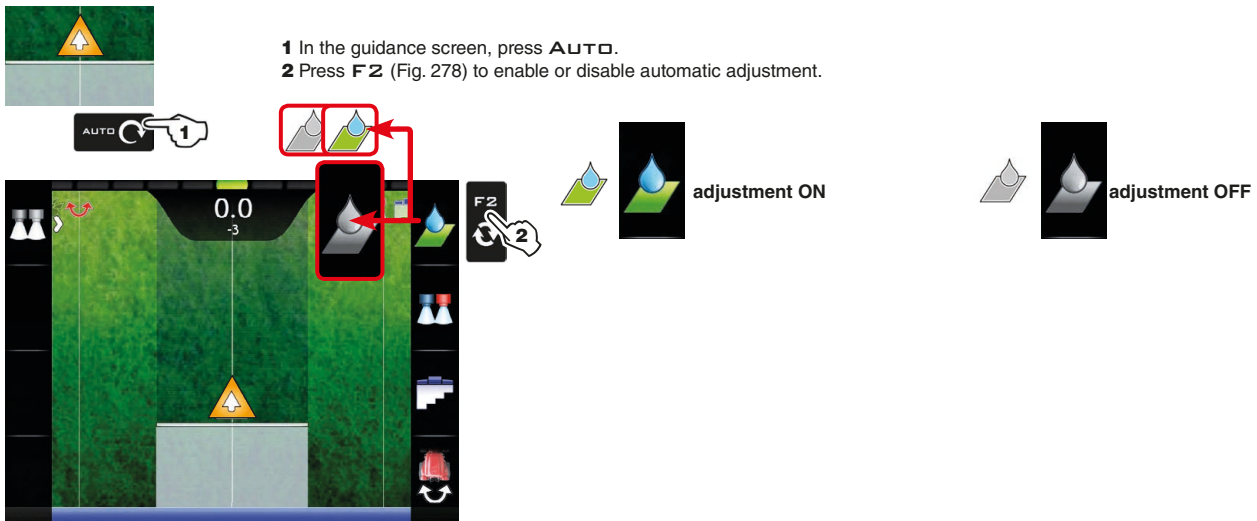


Fig. 278

9.6 Importing and using a prescription map

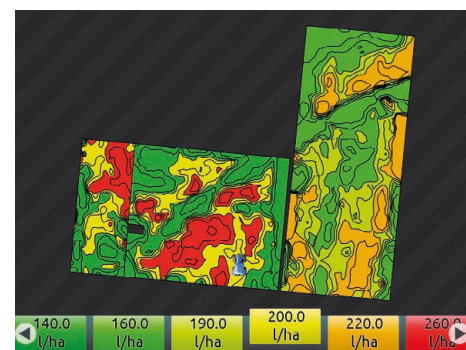


Fig. 279

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 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.
- Paste the map on the internal memory, with 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)
- Carry out one of the functions of menu "Home": **F 1** Continue last job (par. 10.1), **F 3** New job (par. 10.3) or **F 5** Resume job (par. 10.5).
- In the spraying start screen select the desired prescription map.
- Proceed with 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 (Fig. 279).

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

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

SPRAYING 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 overlapping is above the set value for the **Sections overlapping limit** (par. 6.4.14), the monitor warns that the relevant spraying points must be CLOSED (Fig. 280). 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. 281). Open the valves through the relevant controls (par. 7.2 or 6.4.16): the monitor will confirm opening on the display. As the machine advances, the signal is triggered for each valve.

Closing signal



Fig. 280

Opening signal



Fig. 281



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. 6.4.14) the monitor closes the relevant valves (Fig. 282). It is not necessary to intervene on the controls. The monitor closes the sections automatically. Spraying interruption is shown on the display in real time.

When overlapping returns within the set limits, the monitor opens the relevant valves automatically. Spraying resumption is shown on the display in real time (Fig. 283).

Automatic section closing



Fig. 282

Automatic section opening



Fig. 283

F1 Enter selected character

F2 Delete selected character

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

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

Data decrease / increase

OK Confirm access or data change

ESC Exit the function or data change

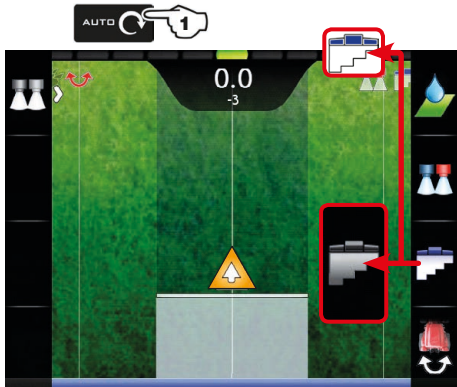

Par. 1.4

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. 284) to enable or disable automatic management.



Automatic section management
ON



Automatic section management
OFF

Fig. 284

F1 Enter selected character

F2 Delete selected character

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

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

Data decrease / increase

OK Confirm access or data change

ESC Exit the function or data change



10 MENU "HOME"

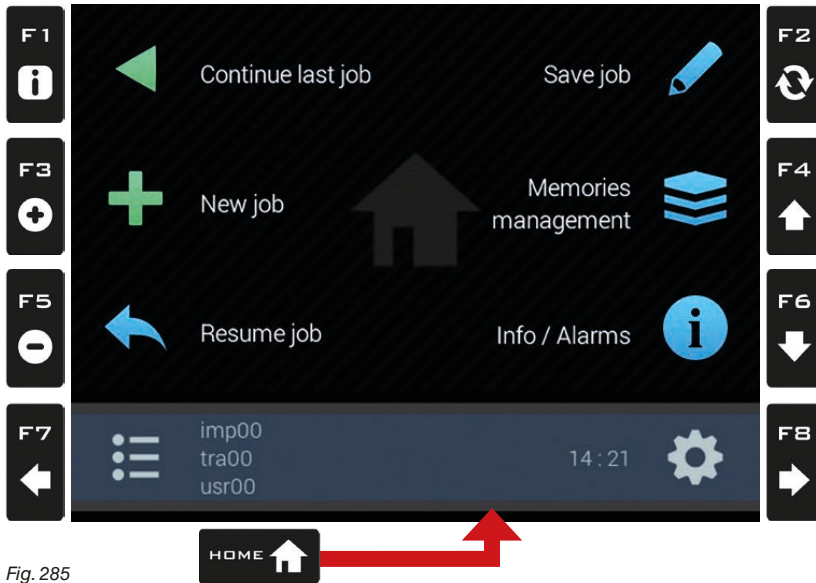


Fig. 285


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:

	Icon	Key	Function
10.1		F1 Continue last job	Continues last job
10.3		F3 New job	Starts a new spraying
10.5		F5 Resume job	Activates procedure for resuming a job
6		F7	Selects / Creates settings User, Tractor and Implement

	Icon	Key	Function
10.2		F2 Save job	Saves current job
10.4		F4 Memories management	Manages and copies data between internal and external memories (Pendrive / SD card)
10.7		F6 Info / Alarms	Job information / alarms
6		F8	Edits settings User, Tractor and Implement

10.1
F 1 Continue last job

Continues last job.

- 1 Press **F 1** to continue the last job, from the point where it has been interrupted.
- 2 Check the **Spraying settings** in Fig. 287; modify them if necessary.
- 3 Select  and press **OK** to switch to driving mode.
- 4 Complete the spraying (Fig. 288).

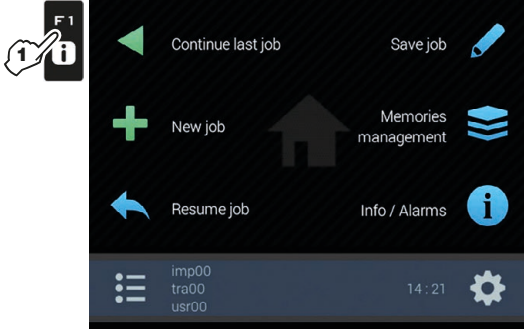


Fig. 286

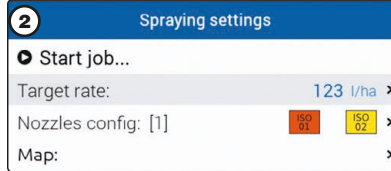


Fig. 287

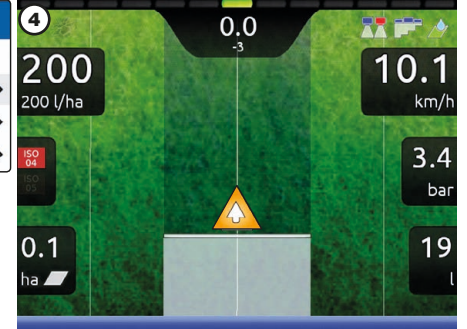


Fig. 288

F1 Enter selected character

F2 Delete selected character

F7 F8 Scroll (LEFT / RIGHT)

F4 F6 Scroll (UP / DOWN)

Data decrease / increase

OK Confirm access or data change

ESC Exit the function or data change

10.2
F2 Save job

Saves current job

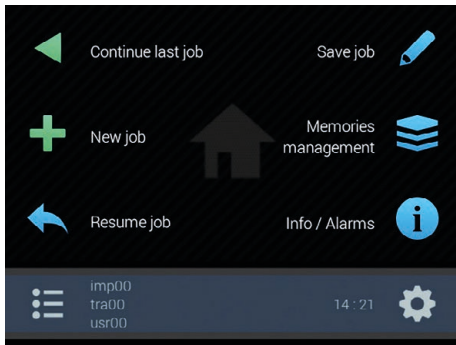


Fig. 289

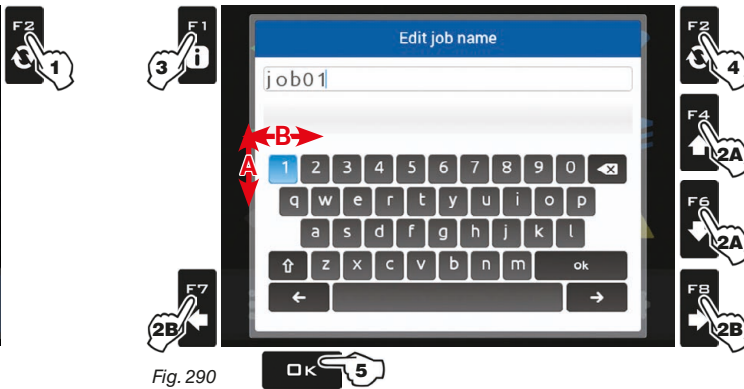


Fig. 290

- 1** Press **F2** to save current job: the name edit screen is displayed (Fig. 290). 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).
- Press to:
- 3** confirm the selected character.
- 3** delete the character before the cursor (when symbol "⌫" is selected).
- 3** save the entered text (when symbol "ok" is selected).
- 4** delete the character before the cursor.
- 5** save the entered text (when symbol "ok" is selected).
- 6** exit screen without confirming modification.

Legend:

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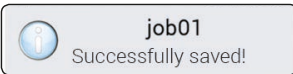


Fig. 291

A confirmation message is displayed once the process is completed (Fig. 291). Press **ESC**.



10.3
F3 New job

Starts 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. 292). Press **OK** to continue without saving (**2A**) or **ESC** to interrupt the procedure and save (**2B**).

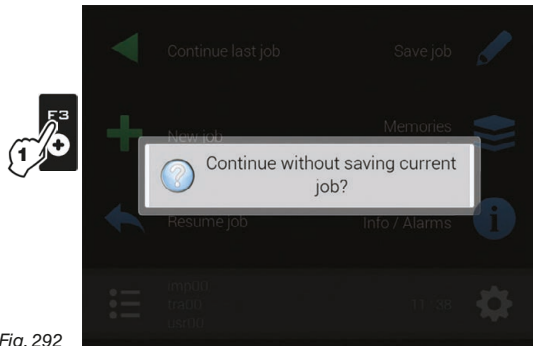


Fig. 292

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**.

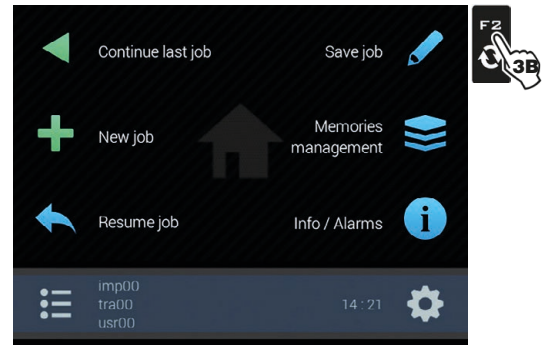


Fig. 293

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

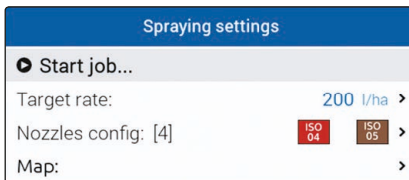


Fig. 294

Check the **Spraying settings** in Fig. 294; change them if necessary.

CONTINUES



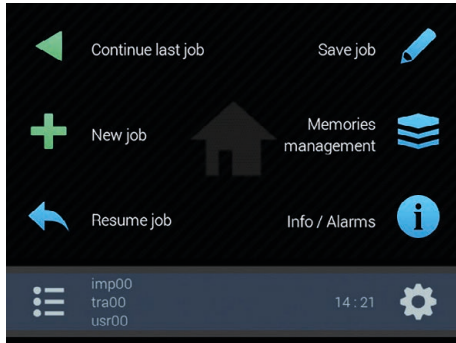
10.4

F4 Memories management

Manages and copies data between internal and external memories (Pendrive / SD card).

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

When both memories are available, use the pendrives for the exchange of the job data and of the system update data. The monitor featuring ONLY the SD card reader is an exception. The following paragraphs refer to an example with a pendrive: the procedure is the same with a SD card.



ARAG monitors can use different external 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. 295

10.4.1 Jobs export

Allows exporting the saved data to an external memory device (Pendrive / SD card).

 **When both memories are available, use the pendrives for the exchange of the job data and of the system update data. The monitor featuring ONLY the SD card reader is an exception.**
The following paragraphs refer to an example with a pendrive: the procedure is the same with a SD card.



Press **F4** to access **Memories management**.

• **KML format to USB / KML format to SD card**

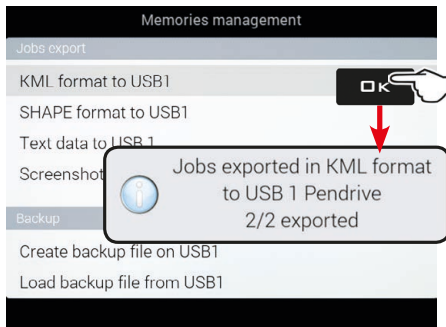


Fig. 296

Allows exporting in KML format all the jobs currently saved inside the internal memory and saving them on the USB Pendrive.
 Data in the file can be displayed on a Personal Computer with Google Earth®.

- Select **KML format to USB 1** (Fig. 296) 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".

• **SHAPE format to USB / SHAPE format to SD card**

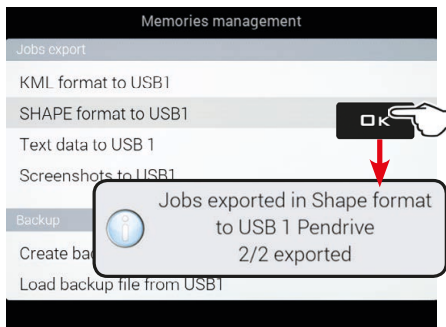


Fig. 297

Allows exporting in SHAPE format all the jobs currently saved inside the internal memory and saving them on the USB Pendrive.
 Data in the file can be displayed on a Personal Computer with a "Shape" file viewer (.shp).

- Select **SHAPE format to USB 1** (Fig. 297) 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".

• **Text data to USB1**

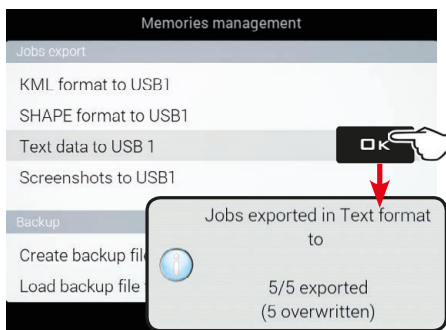


Fig. 298

Allows saving the job data on the USB Pendrive, in text format.

- Select **Text data to USB 1** (Fig. 298) and press **OK**.
- A confirmation message appears once the operation is completed. Press **OK**.

System carries out data saving only under the following conditions:

- speed above 0.3 km/h, and/or
- main control ON + (at least) one section ON

The data are saved on the USB pendrive, inside a folder named "text".

DATA RECORDING FILE

System generates a "lastjob.txt" file (containing the active job data), and other "jobxx.txt" files, corresponding to the names of the recorded jobs.
 Data in the file can be displayed on Personal Computer with a text editor.
 These are just indicative data and represent a mere example: in real facts they will always be different according to the type of spraying. A detailed description is available in page 60.

• **Screenshots to USB / Screenshots to SD card**

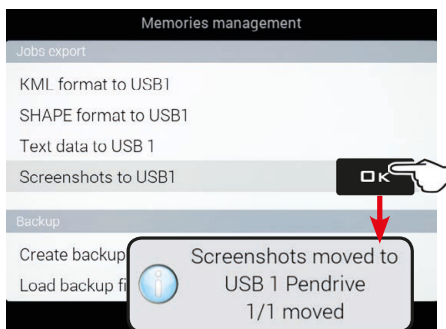


Fig. 299

The prolonged pressure of **F8** saves a screen-shot of the image displayed inside the internal memory (max 10 images).
 This menu allows saving the images stored on the USB Pendrive.

- Select **Screenshots to USB 1** (Fig. 299) and press **OK**.
- A confirmation message appears once the operation is completed. Press **OK**.

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

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

Manages the system setting exchange between the monitor and an external memory device.



When both memories are available, use the pendrives for the exchange of the job data and of the system update data. The monitor featuring ONLY the SD card reader is an exception.

The following paragraphs refer to an example with a pendrive: the procedure is the same with a SD card.



Press **F4** to access **Memories management**.

• Create backup file on USB / Create backup file on SD card

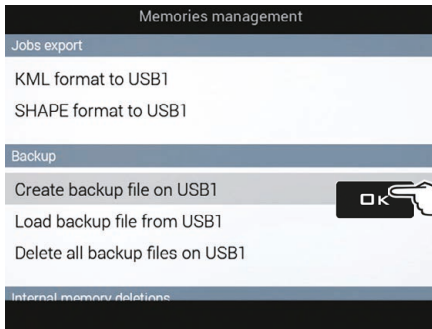


Fig. 300

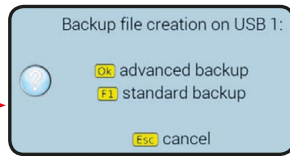


Fig. 301

Allows saving a copy (backup) of system settings on the USB pendrive.

- Select **Create backup file on USB1** (Fig. 300) and press **OK**.

Select the type of saving method:

OK: advanced backup (saves a ".abk" type backup)

F1: standard backup (saves a ".zip" type backup)

ESC: cancel.

- A confirmation message (Fig. 302 / Fig. 303) appears once the saving is completed. Press **ESC**.

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

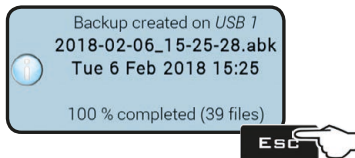


Fig. 302

ADVANCED BACKUP: SAVE A ".ABK" TYPE BACKUP

Besides the complete copy of all the saved settings and files, it contains also additional information that can be used in case of system technical service.

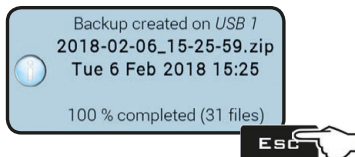
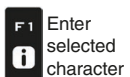


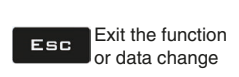
Fig. 303

STANDARD BACKUP: SAVE A ".ZIP" TYPE BACKUP

Complete copy of all saved settings and files.



Data decrease / increase



• Load backup file from USB / Load backup file from SD card

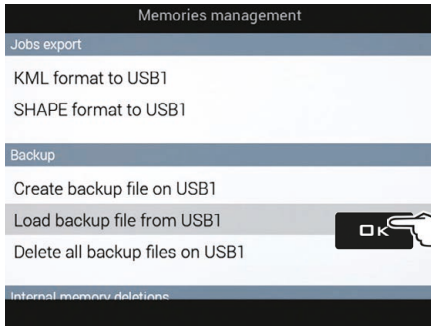


Fig. 308

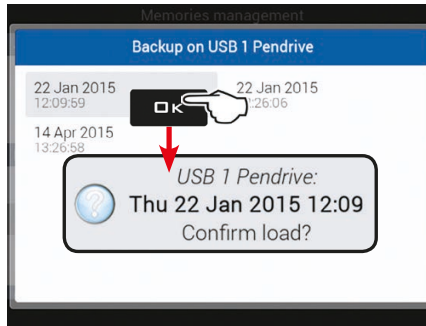


Fig. 309

Allows loading on the device a copy (backup) of system settings, thus ENABLING THEM.

Before carrying out this operation, it is recommended to create a backup of the existing settings.

- Select **Load backup file from USB1** (Fig. 308) and press **OK**.
 - Select the backup folder to be loaded (Fig. 309) and press **OK**.
- The monitor requires to confirm: **ALL the settings active till that moment will be lost** (**OK**: confirm, **ESC**: cancel).

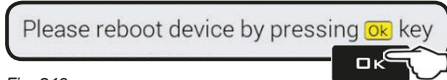


Fig. 310

- The message in Fig. 310 is displayed once loading is completed. Reboot the device by pressing key **OK**.

• Delete all backup files on USB / Delete all backup files on SD card

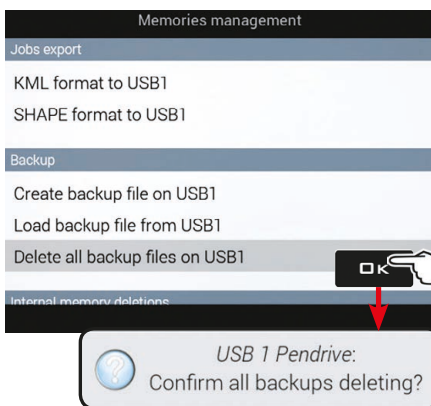


Fig. 311

Allows deleting all the backups from the USB pendrive.

- Select **Delete all backup files on USB1** (Fig. 301) and press **OK**. The monitor requires to confirm the deletion (**OK**: confirm, **ESC**: cancel).

10.4.3 Internal memory deletions

Allows deleting data from the 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 access **Memories management**.

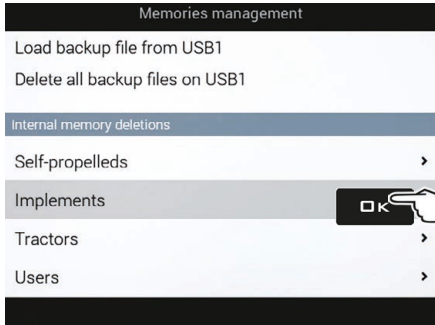


Fig. 304

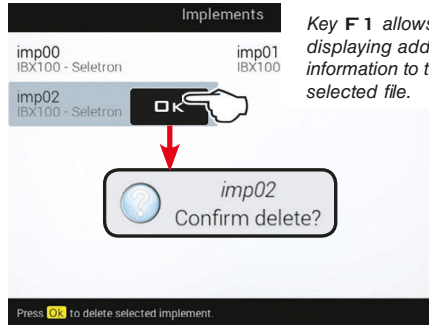


Fig. 305

Key **F1** allows displaying additional information to the selected file.



Example:



- Select **Implements** (Fig. 304) and press **OK**.
- Scroll the list of the names present inside memory: select the desired implement (Fig. 305) and press **OK**.
- The message in the figure is displayed: confirm deletion by pressing **OK**.

10.4.4 Files copy to internal memory

Allows copying data from an external memory device to the monitor internal memory.

These are the data that can be copied on the internal memory:

- **Maps from USB / Maps from SD card:** create a folder called **"maps"** on the external memory and add inside it the prescription map files (*.dbf, *.shp, *.shx)
- **Tank profiles from USB / Tank profiles from SD card:** create a folder called **"ibx100-tank-profiles"** on the external memory and insert inside it the tank profile files (extension *.pro) compatible with ECU IBX100.



When both memories are available, use the pendrives for the exchange of the job data and of the system update data.

The monitor featuring ONLY the SD card reader is an exception.

The following paragraphs refer to an example with a pendrive: the procedure is the same with a SD card.

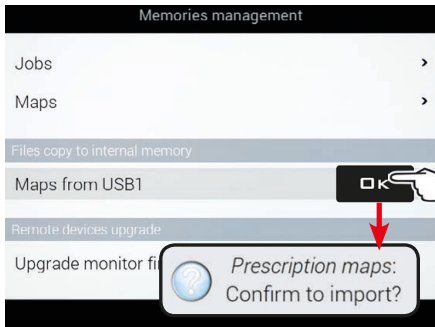


Fig. 306

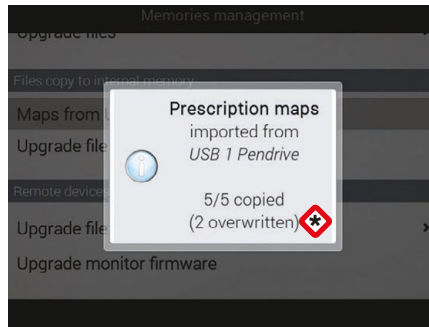
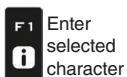
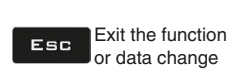


Fig. 307

- Select **Maps from USB** (Fig. 306) and press **OK**. The monitor requires to confirm the import **OK: confirm, ESC: cancel**
- A confirmation message (Fig. 307) appears once the process is completed. Press **ESC**.
- WARNING: THE FILES HAVING THE SAME NAME WILL BE REPLACED.**



Data decrease / increase



10.4.5 Remote devices upgrade

When both memories are available, use the pendrives for the exchange of the job data and of the system update data. The monitor featuring ONLY the SD card reader is an exception. The following paragraphs refer to an example with a pendrive: the procedure is the same with a SD card.

• Upgrade monitor firmware

Allows updating the monitor firmware.



Fig. 312

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**.
- Pendrive content window will open.

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

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

Based on the device to be upgraded, the upgrade contents may consist of one or several files. Always copy all displayed files.

Example 1

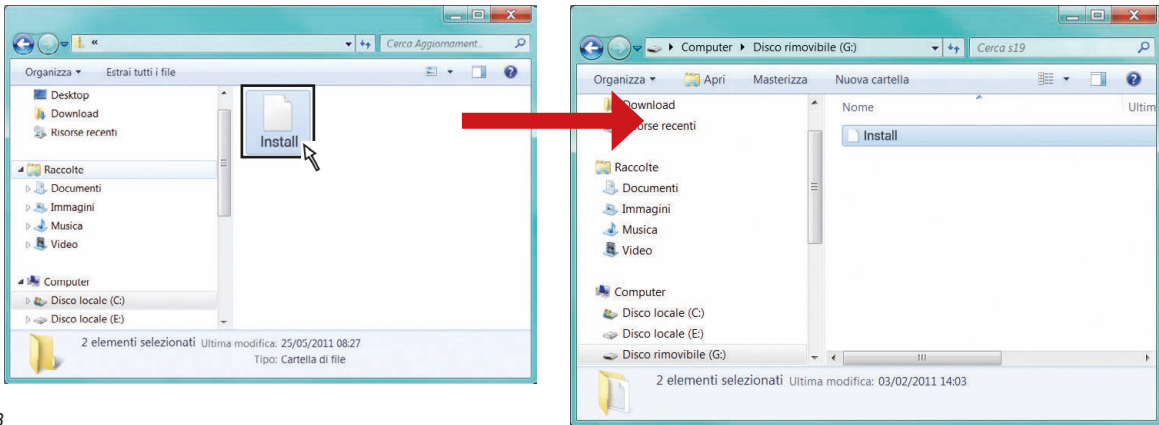


Fig. 313

Example 2

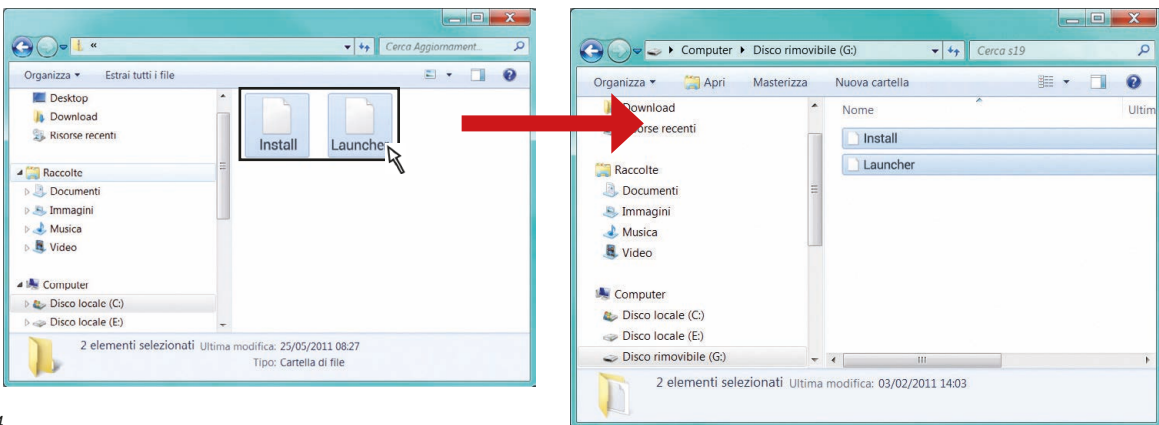
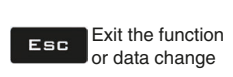


Fig. 314

CONTINUES >>>



Data decrease / increase

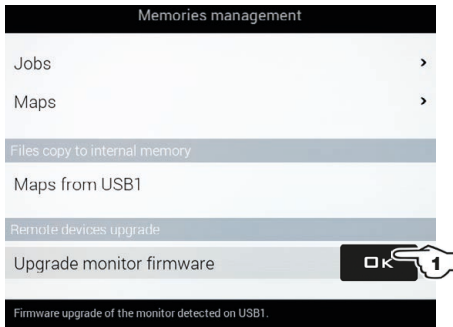


>>> Upgrade monitor firmware

- Insert the pendrive in its slot on the monitor.

STARTING THE UPDATE:

- 1 Select **Upgrade monitor firmware** (Fig. 315) and press **OK**. The message in Fig. 316 is displayed once loading is completed.
- 2 Remove the pendrive and restart the monitor.



Please reboot device to proceed with the upgrade...

Fig. 316

IF YOU SELECT THE UPDATE FUNCTION, SYSTEM IS PRESET TO KEEP ANY PREVIOUSLY SET CONFIGURATION. THERE ARE CIRCUMSTANCES, BASED ON THE UPDATE CRITICALITY, WHERE ITS INSTALLATION COULD COMPLETELY DELETE ALL THE SETTINGS AND SAVED FILES. PLEASE REFER TO THE "README" FILE FOUND IN THE PACKAGE FOR ANY FURTHER DETAIL ON THIS MATTER.

Fig. 315

Upon switching on, the computer will check data and start installation.

WARNING: DURING THE FOLLOWING OPERATIONS DO NOT TURN THE MONITOR OFF AND DO NOT DISCONNECT IT FROM THE POWER SUPPLY!

At the end of the installation the computer will reboot automatically.

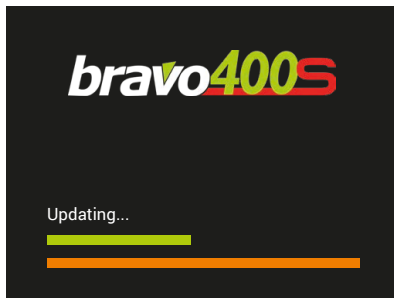


Fig. 317

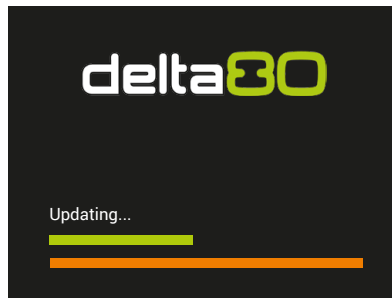


Fig. 318

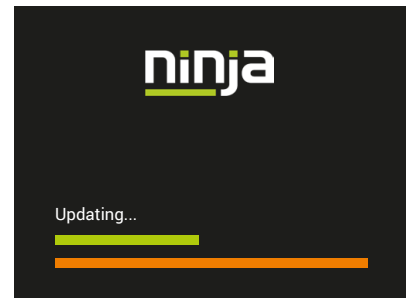


Fig. 319

Should this prove necessary, the **COMPLETE DELETION** of all settings and files can be **FORCED**. While the update is in progress, and before it is completed (i.e. before the colored progress bars reach the right end), press **F3** once: the message **Full erase option activated** will be thus displayed and the system will be completely reset once the update is completed.

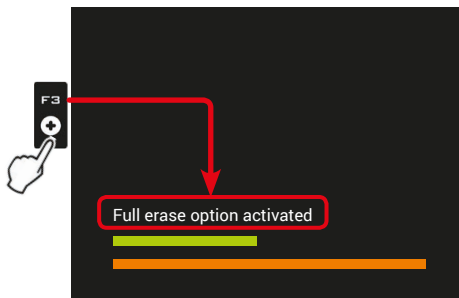


Fig. 320

Should you wish to **CANCEL THE COMPLETE DELETION**, press **F3** again before the update is completed: in this case, message **Full erase option disabled** will be displayed and the system will be updated without deleting all data.

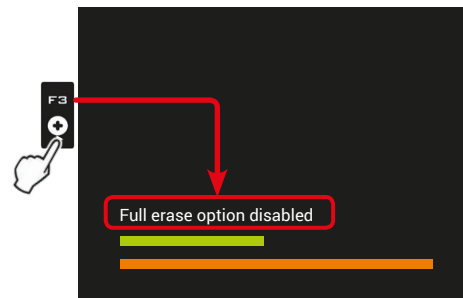


Fig. 321

F1 Enter selected character

F2 Delete selected character

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

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


Data decrease / increase

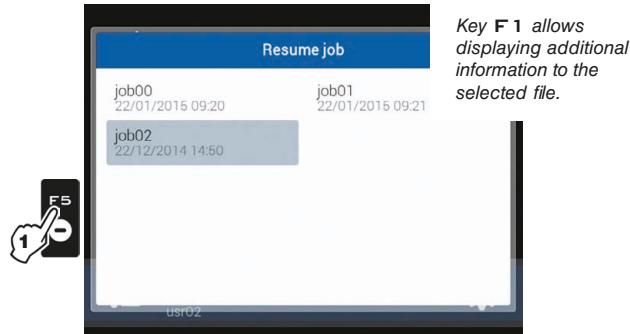
OK Confirm access or data change

ESC Exit the function or data change

10.5
F5 Resume job

Enables procedure for resuming a previously saved spraying.

- 1 Press **F5** to resume a previous spraying, from the list of saved ones. As for the function **New job** (par. 10.3), if the current job has not been saved yet, the monitor asks to save it.
- 2 Select the job among those in the list (Fig. 322) 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. In screen **Loading options** (enabled in par. 6.12.10), it is possible to choose the information to be loaded (Fig. 323).
- 3 Check the **Spraying settings** in Fig. 324; modify them if necessary.
- 4 Select  and press **OK** to switch to driving mode.
- 5 Complete the spraying (Fig. 325).



Key **F1** allows displaying additional information to the selected file.

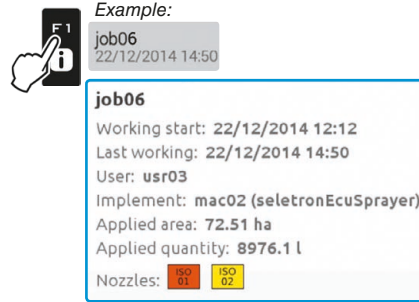
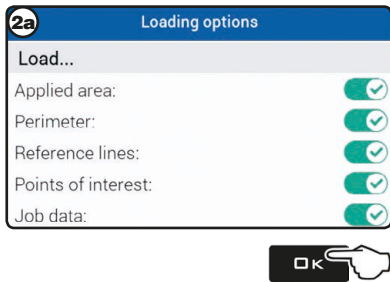




Fig. 322



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**
- **Job data** disabling this parameter resets all counters; upon job loading a new spraying start date and time will be saved.

Fig. 323

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

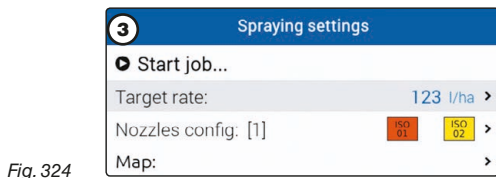


Fig. 324



Fig. 325

CONTINUES "F6 Info / Alarms" on page 92 >>>



10.6
F5 Resume job

Enables procedure for resuming a previously saved spraying.

- 1 Press **F5** to resume a previous spraying, from the list of saved ones. As for the function **New job** (par. 10.3), if the current job has not been saved yet, the monitor asks to save it.
- 2 Select the job among those in the list (Fig. 326) 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. In screen **Loading options** (enabled in par. 6.12.10), it is possible to choose the information to be loaded (Fig. 327).
- 3 Check the **Spraying settings** in Fig. 328; modify them if necessary.
- 4 Select and press **OK** to switch to driving mode.
- 5 Complete the spraying (Fig. 329).



Key **F1** allows displaying additional information to the selected file.

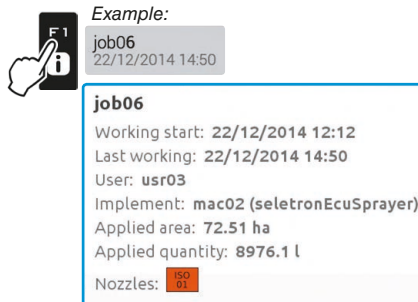
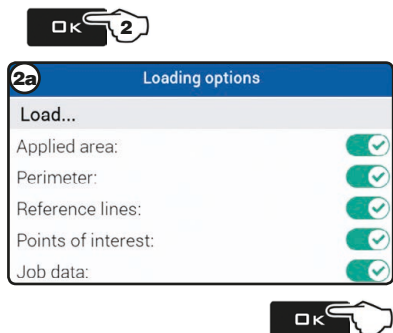


Fig. 326



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**
- **Job data** disabling this parameter resets all counters; upon job loading a new spraying start date and time will be saved.

Fig. 327

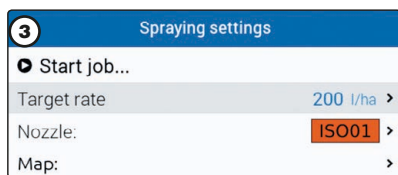


Fig. 328



Fig. 329

CONTINUES "F6 Info / Alarms" on page 92 >>>

F1 Enter selected character

F2 Delete selected character

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

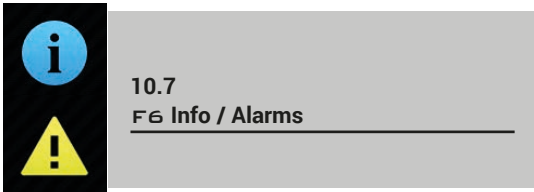
F4 **F6** Scroll (UP / DOWN)

Data decrease / increase

OK Confirm access or data change

ESC Exit the function or data change





Displays job information / alarms.

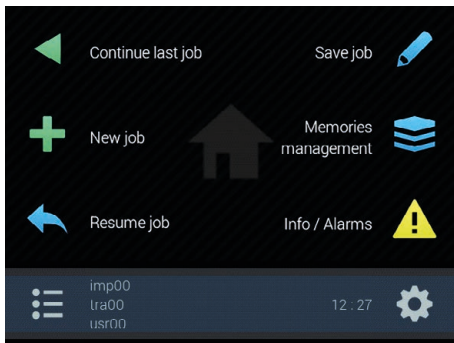


Fig. 330



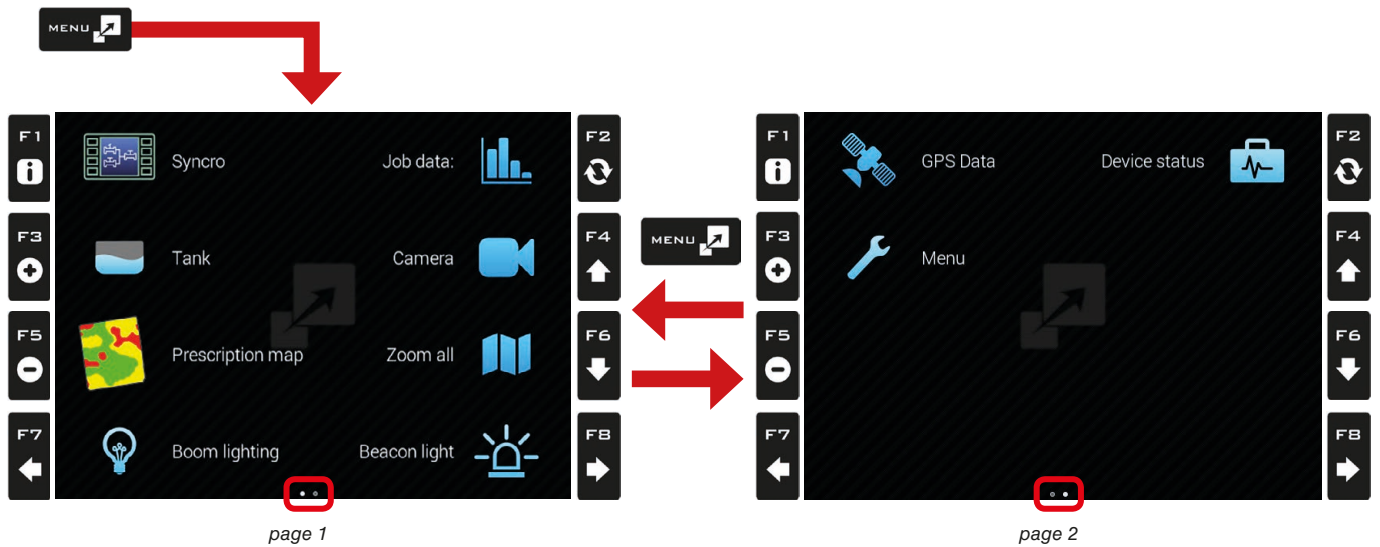
Fig. 331

1 Press **F6** to display the menu **Info / Alarms** (Fig. 331). This screen gives an overview of the active notifications for the operator, rated by importance, in **Critical alarms**, **Low priority alarms** and **Info**.

11 JOB MENU

To access the job menu, press **MENU**. Pressing the key at the side will enable the relevant function.

WARNING: function position is variable, hence also that of the corresponding key.



The table below sums up all menu items. If several pages are present, press **MENU** in sequence to scroll them.

Icon	Par.
	11.1 Syncro Displays the auxiliary circuit control screen (remote connection to Syncro).
	11.2 Tank Tank filling management
	11.3 Prescription map Overview of the prescription map in use
	11.4 Boom lighting Turns boom lighting ON / OFF
	11.5 Job data Displays job data
	11.7 Camera Displays images from connected cameras
	11.8 Zoom all Overview of the field during spraying
	11.9 Beacon light Turns tractor flasher ON / OFF

Icon	Par.
	11.10 GPS Data Displays GPS data
	11.11 Menu Job settings menu
	11.12 Device status Checks device operation

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

Displays the auxiliary circuit control screen (remote connection to Syncro).



This menu is displayed ONLY IF the connection to Syncro is duly configured (par. 6.5). The instructions for device installation and use are provided with the product.

1 Press key **MENU**.

2 Press the key at the side of menu **Syncro**.

This screen allows controlling the Syncro computer from the Bravo 400S, Delta 80 and Ninja monitors. The use of the keys is the same.

A system with IBX100 ECU is necessary; refer to the relevant installation manual.

System settings can be configured ONLY by the Syncro.

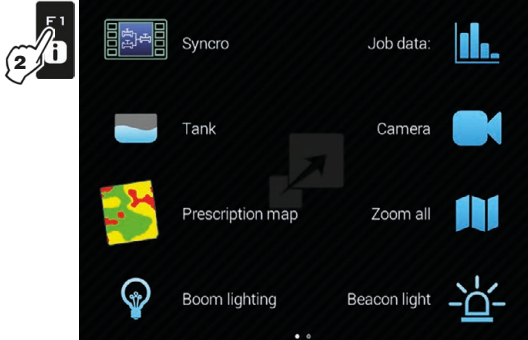


Fig. 332

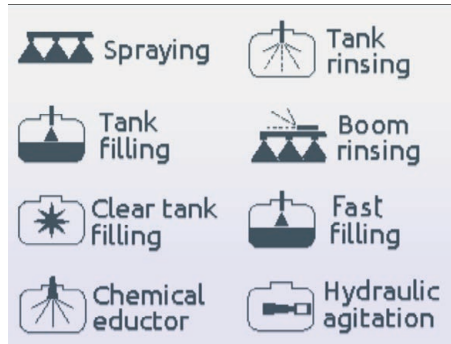


Fig. 333

F1 Enter selected character

F2 Delete selected character

F7 F8 Scroll (LEFT / RIGHT)

F4 F6 Scroll (UP / DOWN)

Data decrease / increase

OK Confirm access or data change

ESC Exit the function or data change



Par. 1.4

11.2 Tank

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

- 1 Press key **MENU**.
- 2 Press the key at the side of menu **Tank**.

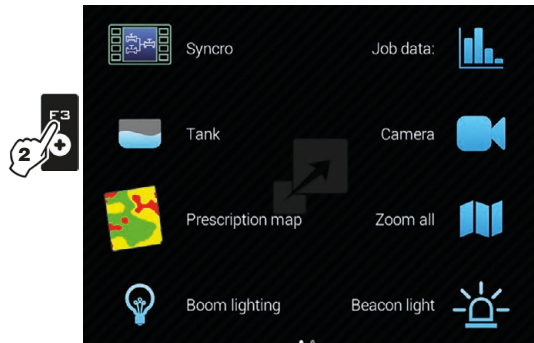


Fig. 334

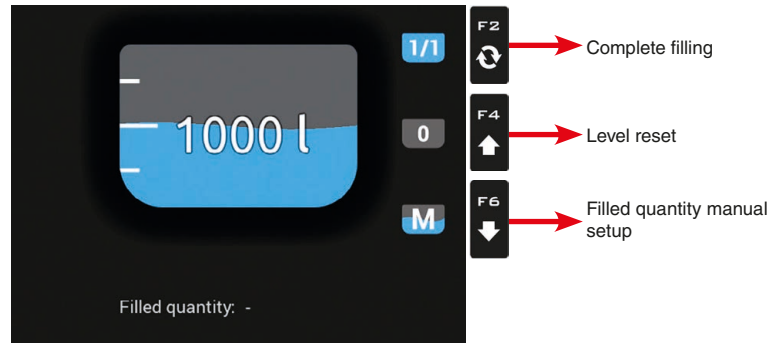


Fig. 335

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 enabling several manual procedures:

- Complete filling, according to the tank capacity (Fig. 336)
- Level reset (Fig. 337)
- Filled quantity manual setup (Fig. 338)

TANK FILLING

A screenshot of the tank filling screen showing a tank level of 2000 l. The text 'TANK CAPACITY' is displayed below the tank level. A hand icon points to the F2 key. Below the tank level, it says 'Filled quantity: -'. A text box explains: 'When the filling flowmeter is connected, the display shows the filling data in real time.'

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. 6.4.12).

Fig. 336

LEVEL RESET

A screenshot of the level reset screen showing a tank level of 0 l. A hand icon points to the F4 key. Below the tank level, it says 'Filling flowrate: -', 'Filled quantity: -', and 'Estimated remaining time: -'.

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

Fig. 337

FILLED QUANTITY MANUAL SETUP

A screenshot of the filled quantity manual setup screen showing a tank level of 0147 l. A hand icon points to the F6 key. Below the tank level, it says 'Filling flowrate: -', 'Filled quantity: -', and 'Estimated remaining time: -'. A text box explains: 'It is not possible to set values higher than tank total capacity.'

- 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.

Fig. 338



11.3
Prescription map

Overview of the prescription map in use

- 1 Press key **MENU**.
- 2 Press the key at the side of menu **Prescription map**.

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.

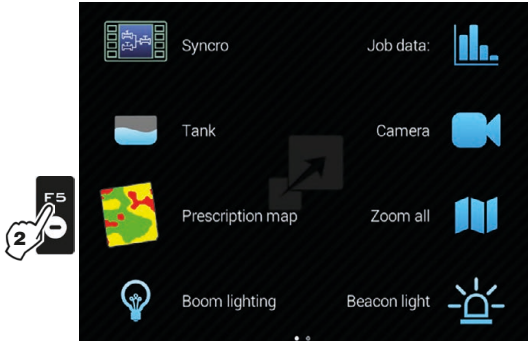


Fig. 339

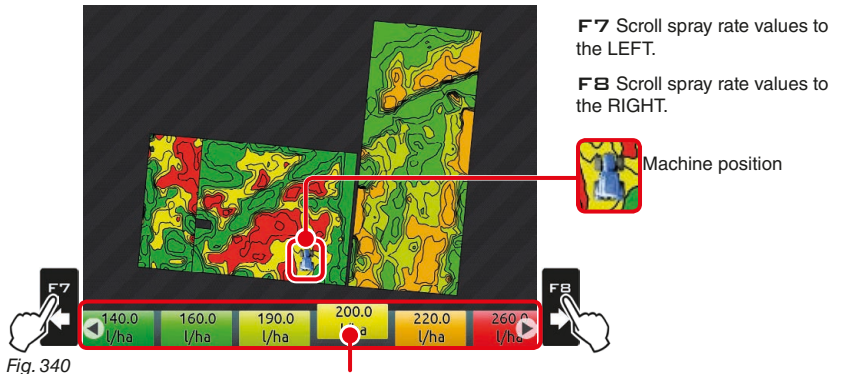


Fig. 340

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 decrease / increase

OK Confirm access or data change

ESC Exit the function or data change

Par. 1.4



**11.4
Boom lighting**

Turns boom lighting ON / OFF

- 1 Press key **MENU**.
- 2 Press the key at the side of **Boom lighting** menu.



Fig. 341

11.5
Job data

Displays job data

- 1 Press key **MENU**.
- 2 Press the key at the side of menu to display the job data.
- 3 Press **F4** / **F6** to scroll data.

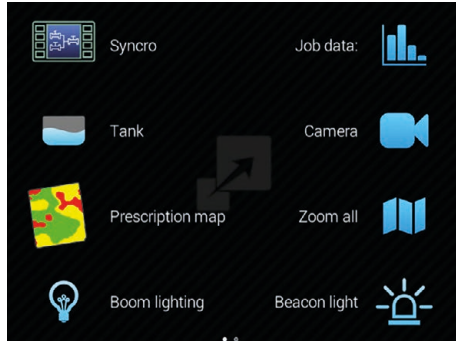


Fig. 342

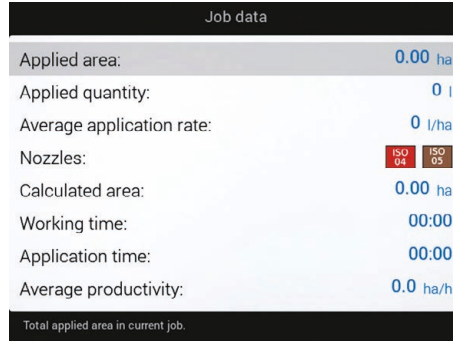


Fig. 343

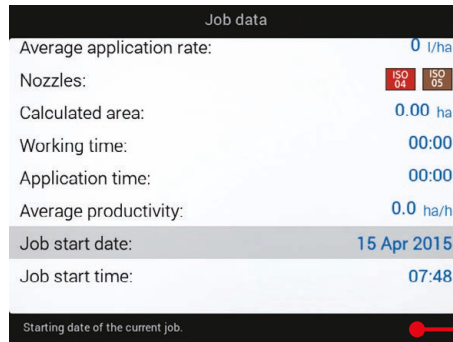


Fig. 344

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

F1 Enter selected character

F2 Delete selected character

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

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

Data decrease / increase

OK Confirm access or data change

ESC Exit the function or data change



11.6
Job data

Displays job data

- 1 Press key **MENU**.
- 2 Press the key at the side of menu to display the job data.
- 3 Press **F4 / F6** to scroll data.

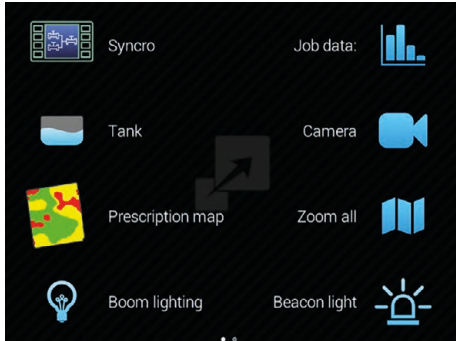


Fig. 345



Fig. 346

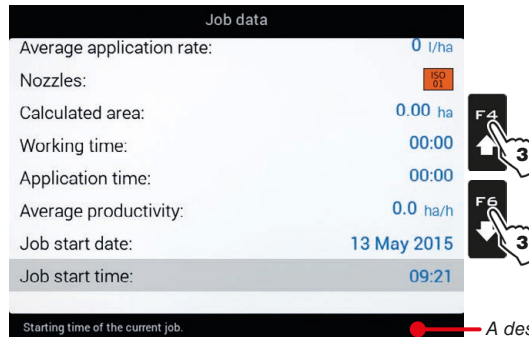


Fig. 347

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

F1 Enter selected character

F2 Delete selected character

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

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

Data decrease / increase

OK Confirm access or data change

ESC Exit the function or data change





11.7
Camera

Displays images from connected cameras

- 1 Press key **MENU**.
 - 2 Press the key at the side of menu **Camera**.
- 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. 6.10.1).

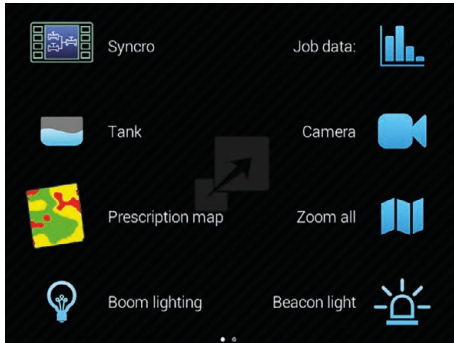


Fig. 348



Fig. 349

- F2** Alternates the displaying of the two cameras
- F7** Selects the job data displayed on the LEFT side of the screen.
- FB** Selects the job data displayed on the RIGHT side of the screen.

F1 Enter selected character

F2 Delete selected character

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

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

Data decrease / increase

OK Confirm access or data change

ESC Exit the function or data change



Par. 1.4



11.8
Zoom all

Overview of the field during spraying

- 1 Press key **MENU**.
- 2 Press the key at the side of menu **Zoom all**.

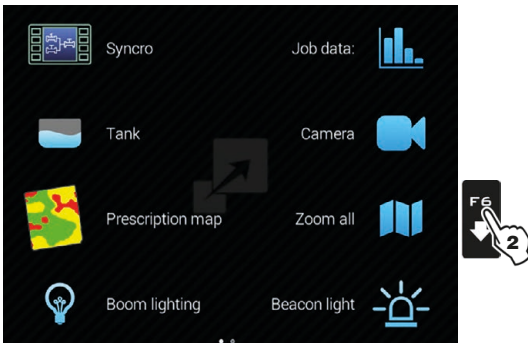
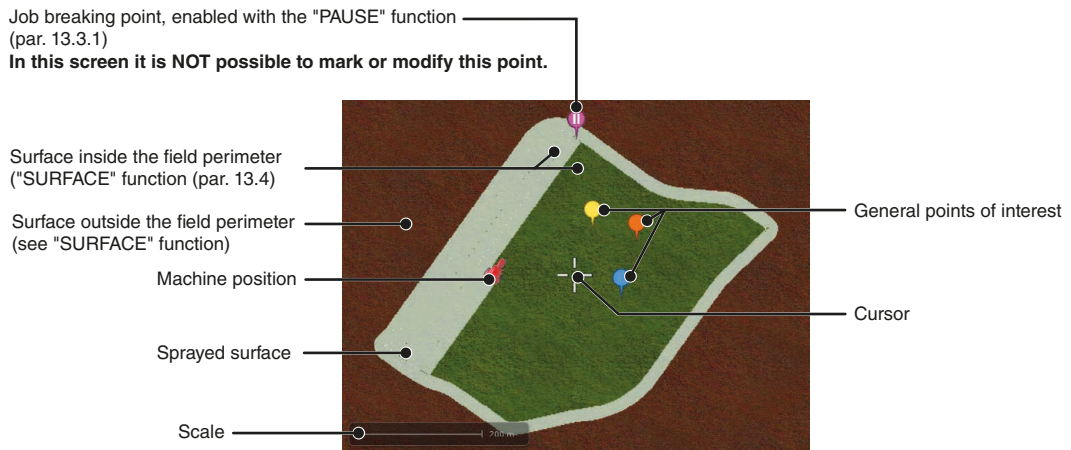


Fig. 350

INDICATORS AND POINTS OF INTEREST ON THE FIELD



Display zoom adjustment:
F3 (+) increases,
F5 (-) reduces

It indicates the machine position outside the displayed area

Fig. 351

CONTINUES

F1 Enter selected character

F2 Delete selected character

F7 F8 Scroll (LEFT / RIGHT)

F4 F6 Scroll (UP / DOWN)

Data decrease / increase

OK Confirm access or data change

ESC Exit the function or data change



Par. 1.4

MARKING POINTS OF INTEREST

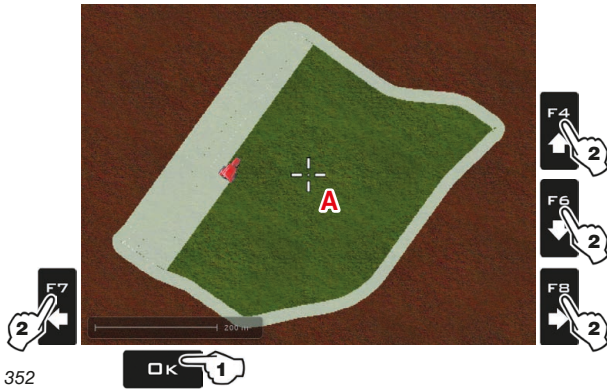


Fig. 352

The general points of interest can be memorized with this procedure or with the specific function (par. 13.3.2). 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 the field overview screen (Fig. 352) press **OK**.
- Cursor **A** will appear.
- 2 Press **F4 / F6 / F7 / F8** to move the cursor in the exact point to be marked.
- 3 Press **OK** (Fig. 353).
- 4 Press **F7 / F8** to select the type of marker.
- 5 Press **OK** to confirm (Fig. 354).

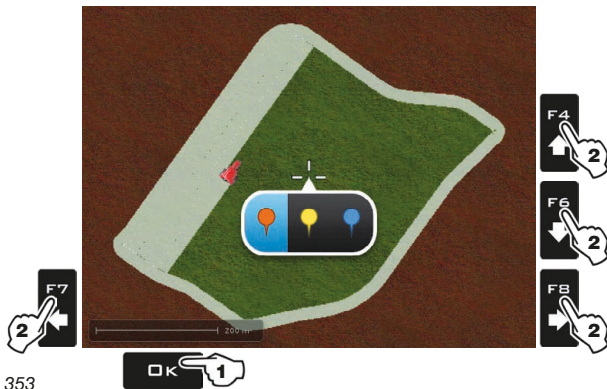


Fig. 353

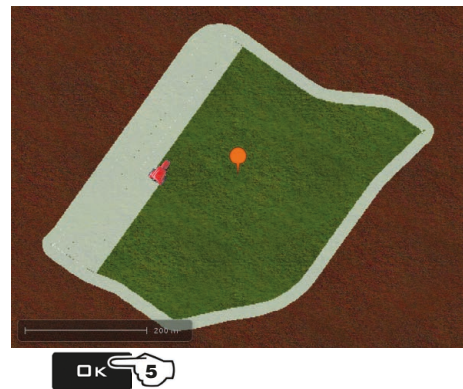


Fig. 354

REMOVING POINTS OF INTEREST

- 1 In the field overview screen (Fig. 355) press **OK**. Cursor **A** will appear.
- 2 Press **F4 / F6 / F7 / F8** 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. 356) / **ESC** to cancel.

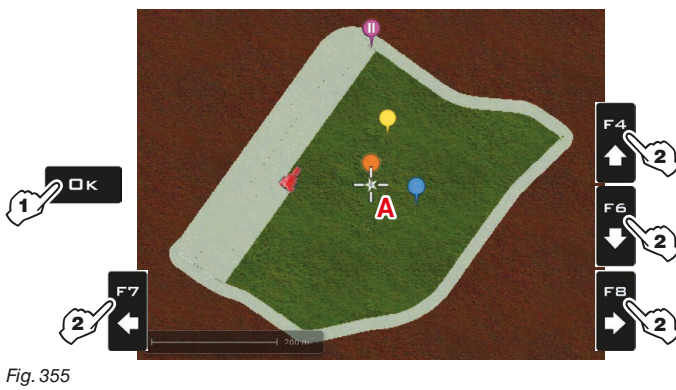


Fig. 355

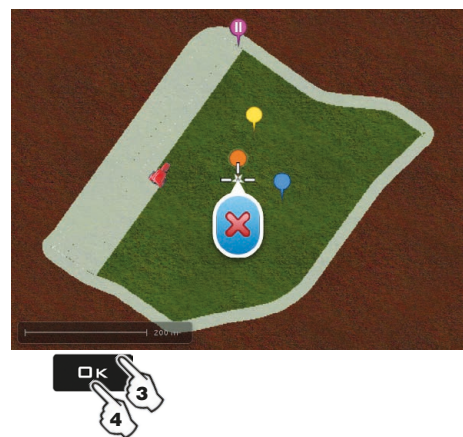


Fig. 356

F1 Enter selected character

F2 Delete selected character

F7 / F8 Scroll (LEFT / RIGHT)

F4 / F6 Scroll (UP / DOWN)

Data decrease / increase

OK Confirm access or data change

ESC Exit the function or data change





11.9
Beacon light

Turns tractor flasher ON / OFF

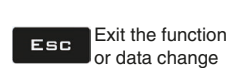
- 1 Press key **MENU**.
- 2 Press the key at the side of **Beacon light** menu.



Fig. 357



Data decrease / increase



11.10
GPS Data

Displays GPS data

- 1 Press key **MENU**.
- 2 Press the key at the side of **GPS Data** menu.
This screen shows the data sent to the GPS receiver.

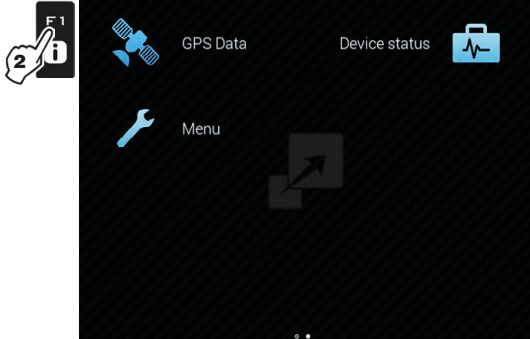


Fig. 358

GPS Data	
Latitude:	0.00000000 °
Longitude:	0.00000000 °
Altitude:	0 m
DGPS Age:	0 sec
Number of satellites:	0.0
HDOP:	0.0
Roll:	0
Pitch:	0
Latitude of current machine's position.	

Fig. 359

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

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

F1 Enter selected character

F2 Delete selected character

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

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

Data decrease / increase

OK Confirm access or data change

ESC Exit the function or data change

11.11
Menu

Job settings menu

- 1 Press key **MENU**.
- 2 Press the key at the side of menu **Settings menu**.

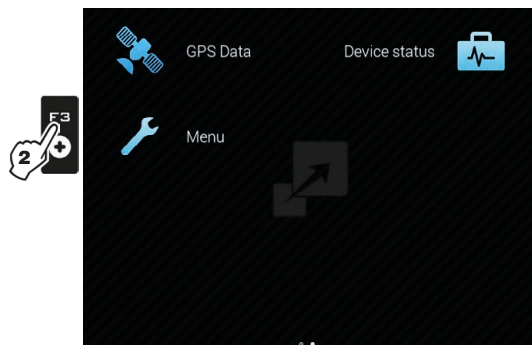


Fig. 360

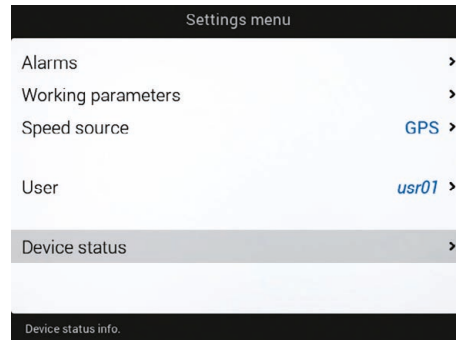


Fig. 361

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

- **Alarms** (par. 6.4.13).
- **Working parameters** (par. 6.4.14).
- **Speed source** (par. 11.11.1).
- **User** (par. 6.12).
- **Device status** (par. 11.12).

11.11.1 Speed source

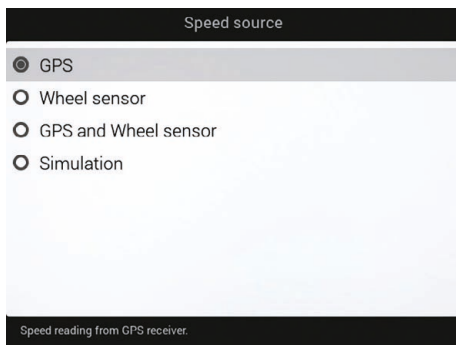


Fig. 362

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

• 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. 6.4.10).

• 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.

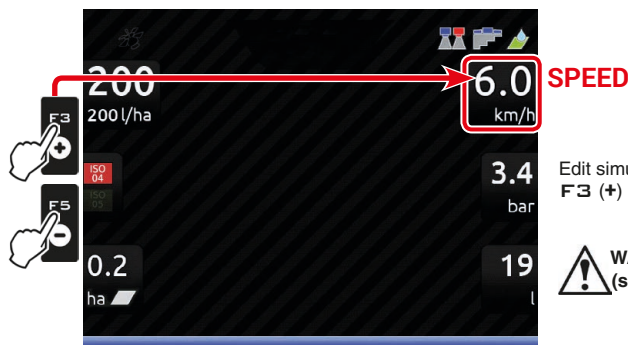


Fig. 363

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.

11.12
Device status

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



The items displayed in this menu are **READ-ONLY**; they depend on the basic settings (chap. 4).

- 1 Press key **MENU**.
- 2 Press the key at the side of menu **Device status**.

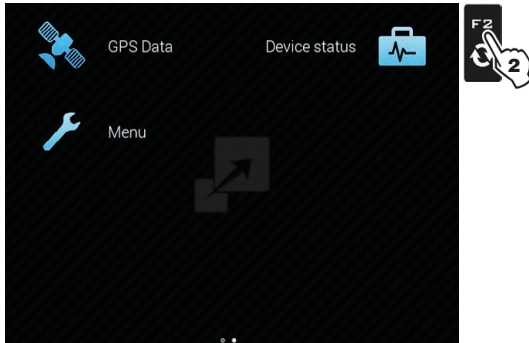


Fig. 366

seleTRON **MODE**
ON

DEVICE TOTALIZERS

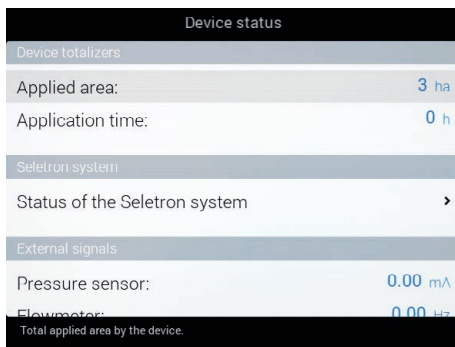


Fig. 364

Allows consulting the spraying total data relating to applied area and job time

CONTINUES "SELETRON SYSTEM" on page 107 >>>

SECTION VALVE **MODE**
ON

DEVICE TOTALIZERS

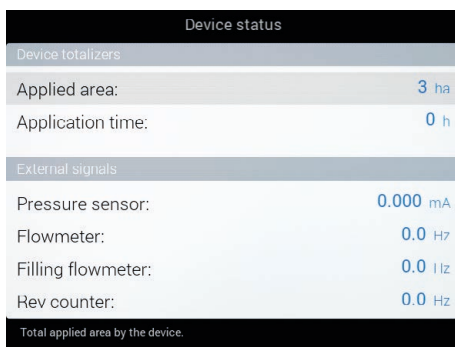


Fig. 365

Allows consulting the spraying total data relating to applied area and job time

CONTINUES "EXTERNAL SIGNALS" on page 108 >>>

F1 Enter selected character

F2 Delete selected character

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

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

Data decrease / increase

OK Confirm access or data change

ESC Exit the function or data change

SELETRON SYSTEM
• Status of the Seletron system

This menu has two main functions:

• INSTALLATION

Allows displaying the progress during Seletron's pairing procedure (chap. 12 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.

From screen Fig. 367 it is possible to display the relevant 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.



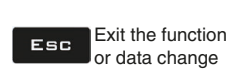
If necessary, you can and repeat the pairing procedure for each Seletron device:
BEFORE STARTING A NEW PAIRING PROCEDURE, YOU MUST RESET THE PREVIOUSLY ALLOCATED IDENTIFICATION NUMBERS.
 Use function Identification numbers reset (par. 6.4.15).

Fig. 367

CONTINUES "EXTERNAL SIGNALS" on page 108 >>>



Data decrease / increase



EXTERNAL SIGNALS

External signals	
Pressure sensor:	0.00 mA
Flowmeter:	0.00 Hz
Filling flowmeter:	0.00 Hz
Rev counter:	0.00 Hz
Wheel sensor:	0.00 Hz
Tank level sensor:	0.00 mA

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

Fig. 368

Device status	
Rev counter:	0.00 Hz
Wheel sensor:	0.00 Hz
Tank level sensor:	0.00 mA
External command:	On
Driving direction:	Forward
Sections switch panel:	
Hydraulic switch panel:	

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

The monitor detects the driving direction.

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

Fig. 369

Device status	
Tank level sensor:	0.00 mA
External command:	On
Driving direction:	Forward
Joystick status:	

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

Fig. 370

FIRMWARE VERSIONS

Firmware versions	
Monitor version:	Bravo400S 3.4.1
Monitor firmware date:	2017-03-23 14:09 +0100
Build hash:	f827 14e3 684e
OS version:	1.32.0-R
BOOT version:	1.17.0-R
Switchbox:	V2.02
IBX100-Sprayer:	V3.4.0
IBX100-Hydraulic:	V2.1.0
IBX100-Hydraulic S/N:	381016

The monitor displays firmware versions.

Serial number of the hydraulic control unit (if connected).

Fig. 371

CONTINUES >>>

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



POWER DATA	
Power data	
Internal battery voltage:	4.15 V
Internal battery capacity:	95 %
Power supply voltage:	11.42 V
Boom line 1 current:	0.00 A
Boom line 2 current:	2.57 A

The monitor checks the status of the power supply.

Fig. 372



POWER DATA	
Power data	
Internal battery voltage:	4.16 V
Internal battery capacity:	95 %
Power supply voltage:	11.41 V
Sensors and motor valves line current:	2.55 A

The monitor checks the status of the power supply.

Fig. 373

MEMORY STATUS	
Device status	
Internal battery voltage:	4.15 V
Internal battery capacity:	95 %
Power supply voltage:	11.39 V
Boom line 1 current:	0.00 A
Boom line 2 current:	2.58 A
Memory status	
Memory usage:	0 %
Percentage of used memory.	

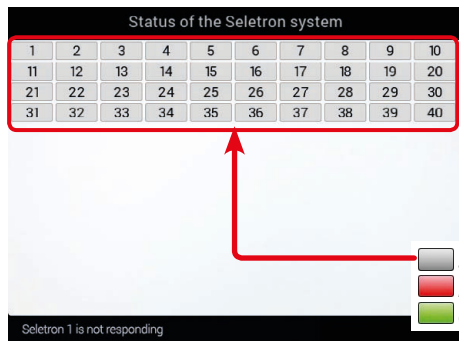
Percentage of the memory used by the system for the job in progress.

Fig. 374

12 SELETRON CONNECTION

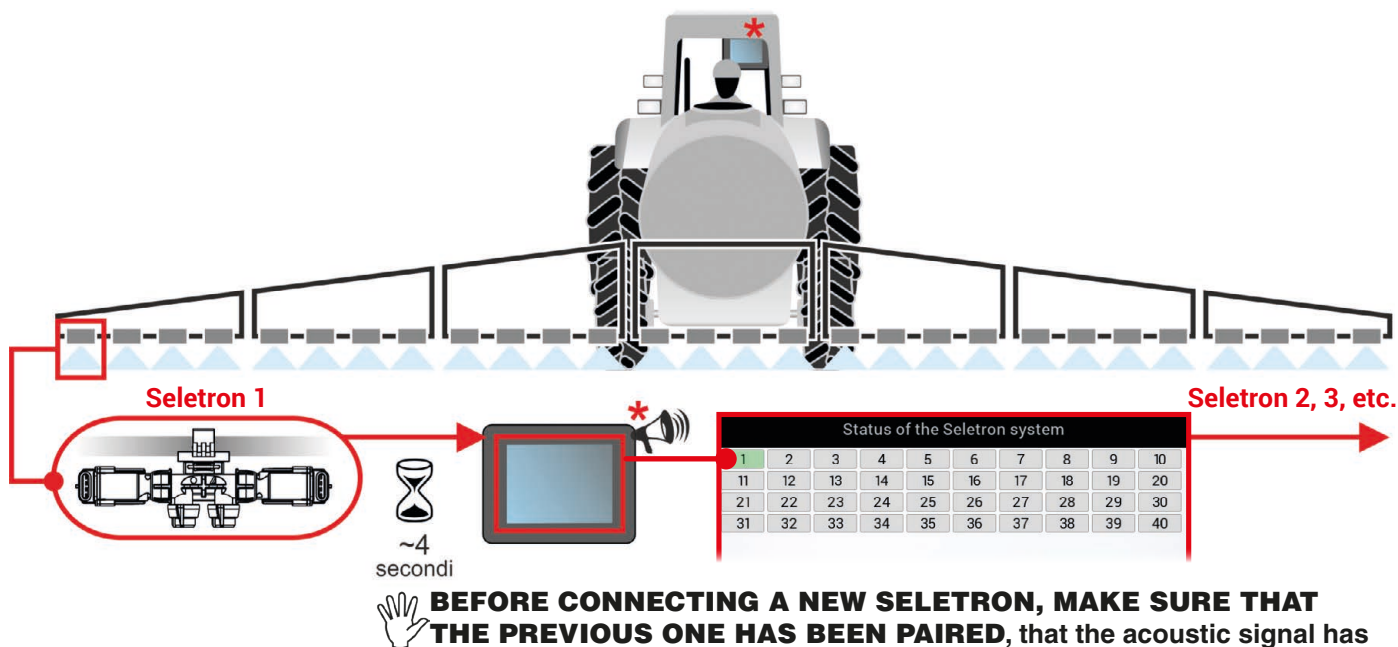
PLEASE CAREFULLY FOLLOW THE INSTRUCTIONS PROVIDED IN THIS CHAPTER. ANY MISTAKE DURING SELETRON PAIRING/REPLACEMENT MAY LEAD TO SYSTEM OPERATION FAILURE.

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



• Access menu **Device status > Status of the Seletron system** on the monitor (par 11.12).
 Make sure that ALL SELETRON DEVICES ARE DISCONNECTED: they must be shown on the display only with the symbols as shown in Fig. 375.

Fig. 375



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. 6.4.15, Identification numbers reset).

Fig. 376

- Connect the first Seletron. Seletron no. 1 is the first on the left, when looking at the boom from behind (Fig. 376).

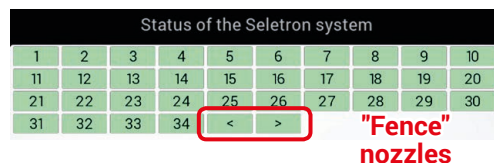
WAIT FOR THE ACOUSTIC SIGNAL BY THE MONITOR. WAIT FOR THE MONITOR TO DISPLAY THE GREEN SYMBOL FOR THE CONNECTED SELETRON (FIG. 376).

- **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 with special nozzles:
"Buffer zone" nozzles (par. 7.3.1): start by connecting the "Buffer zone" Seletron, which is located on boom left end, then connect all the "standard" Seletrons in their correct order from left to right and, at last, connect the "Buffer Zone" Seletron located on boom right end.

"Fence" nozzles (par. 7.3.2): start by connecting all "standard" Seletrons in their correct order from left to right, then connect the "Fence" Seletron located on boom left end and, at last, connect the "Fence" Seletron connected on boom right end.



CONTINUES >>>

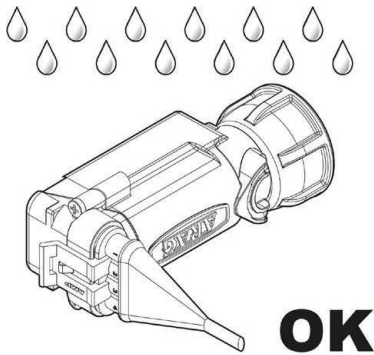
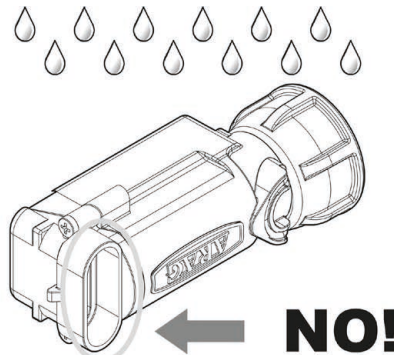


Fig. 377



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

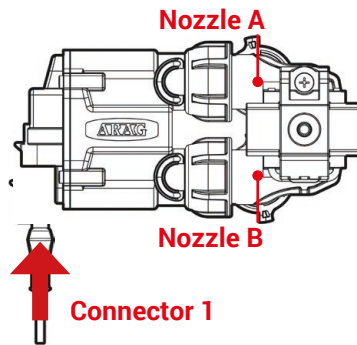


Fig. 378

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

CONNECTION SEQUENCE FOR FOURFOLD SELETRON DEVICES

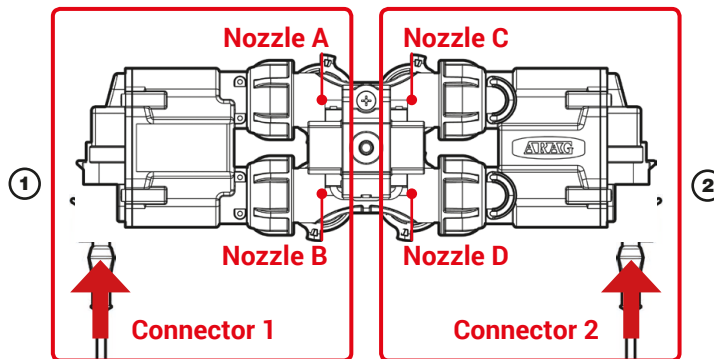


Fig. 379

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. 379).
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

12.1 Preliminary Operations

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

**IMPORTANT: Operate main valve and section controls (ON position).
Enable all nozzles and disable all automatic functions par. "9 Automatic functions" on page 73.**

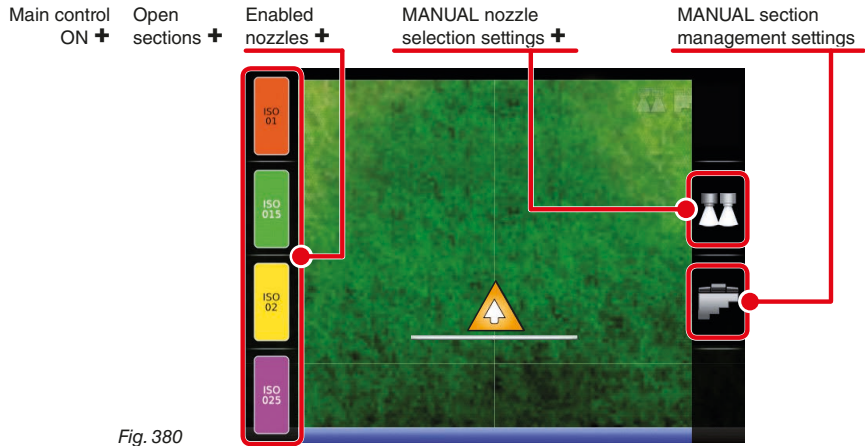


Fig. 380

12.2 Seletron replacement

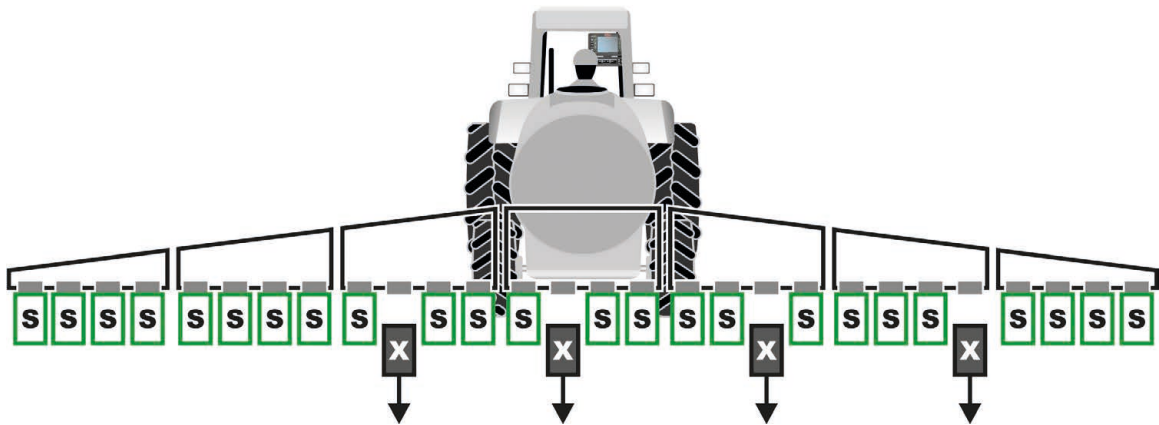
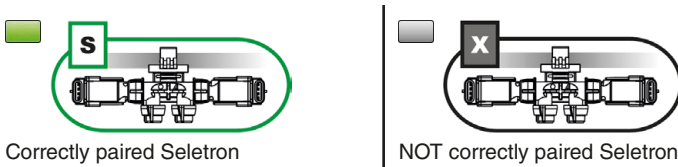



Fig. 381



- ONLY DISCONNECT THE SELETRON DEVICES THAT WERE NOT CORRECTLY PAIRED ( Fig. 381).

CONTINUES >>>

Connect the new Seletron devices: * Fig. 382, 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.**

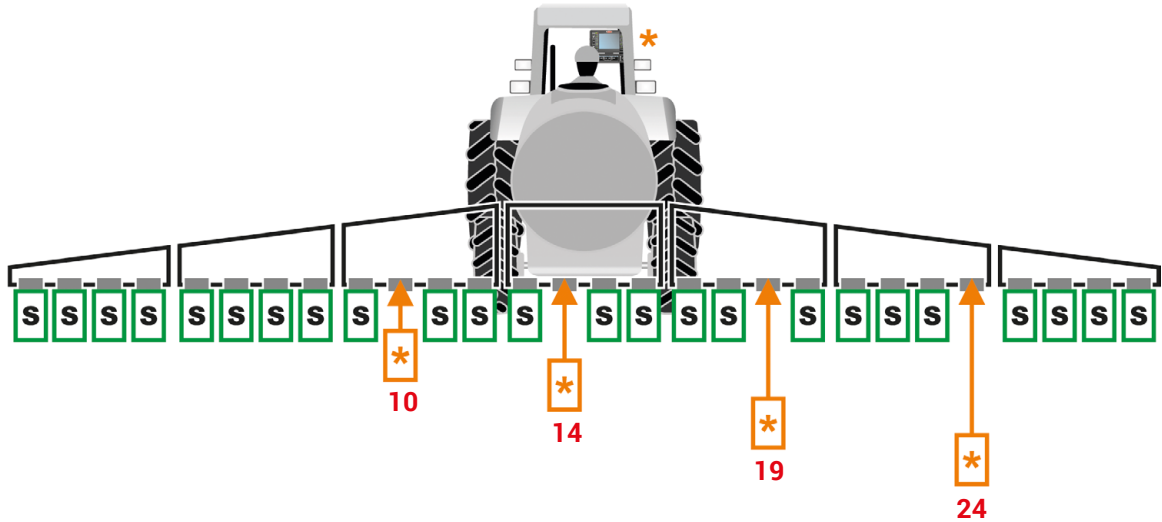


Fig. 382

Seletron connection sequence: 10, 14, 19 and 24

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

Seletron 9 is OK

CONTINUES "Use" on page 62 >>>

F1 Enter selected character

F2 Delete selected character

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

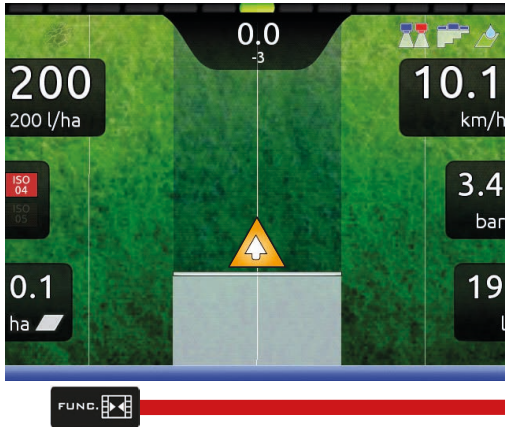
F4 **F6** Scroll (UP / DOWN)

Data decrease / increase

OK Confirm access or data change

ESC Exit the function or data change

13 JOB FUNCTIONS



To access job functions start a spraying (**New job, Resume job, Continue last job**, chap. 10 Menu "Home"); in the guidance screen, press **FUNC.**
When the list is active (Fig. 383), pressing the key at the side will enable the relevant function.

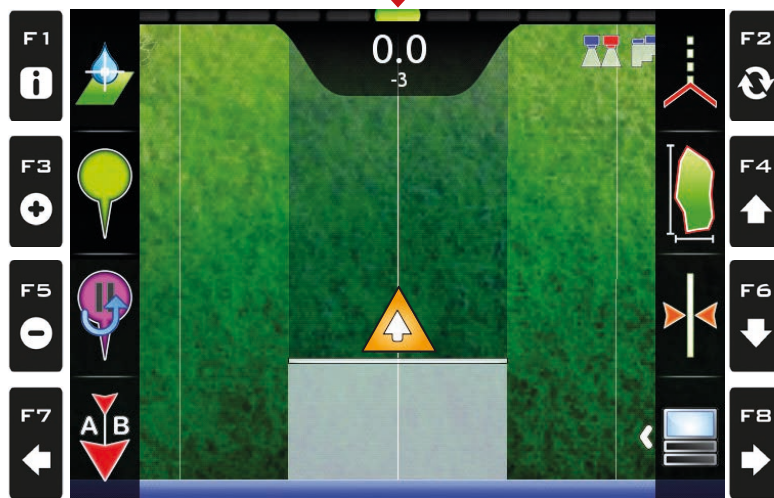


Fig. 383

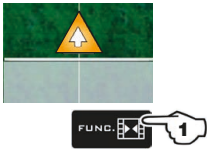
The table below lists all available job functions and the corresponding function keys (unavailable functions are displayed in gray).

Par.		Par.			
13.1	F1	Spray rate Change spray rate	13.2	F2	Driving mode Select driving mode
13.3	F3	Point marking Groups the marking of more points:	13.4	F4	Surface Calculate field surface
	F1	Pause Save job breaking point	13.6	F6	Align Align to nearest track
	F3/F5/F7	General point of interest saving	13.8	F8	Display Display options Includes several functions:
13.5	F5	Resume from pause Guidance indications to return to job breaking point		F2	Tractor themes
13.7	F7	New AB Create a new AB track		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 decrease / increase	OK Confirm access or data change	ESC Exit the function or data change	Par. 1.4
------------------------------------	-------------------------------------	---	--	--------------------------	---	---	-----------------

13.1 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 spraying (Fig. 385).
- 4 Confirm the value.



Fig. 384



Fig. 385

F1 Enter selected character

F2 Delete selected character

F7 FB Scroll (LEFT / RIGHT)

F4 F6 Scroll (UP / DOWN)

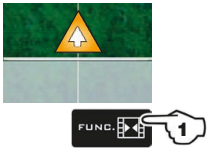
Data decrease / increase

OK Confirm access or data change

ESC Exit the function or data change

13.2 F2 Driving mode

Selecting driving mode:



- 1 In the guidance screen, press **FUNG.**
- 2 Press **F2** to enable the function.
- 3 Select a driving mode (Fig. 387): press **F4** and **F6** to move across the available items (**A - Straight driving mode, B - Curved driving mode, C - Pivot mode** or **D - Free driving mode**)
- 4 Confirm the selection.

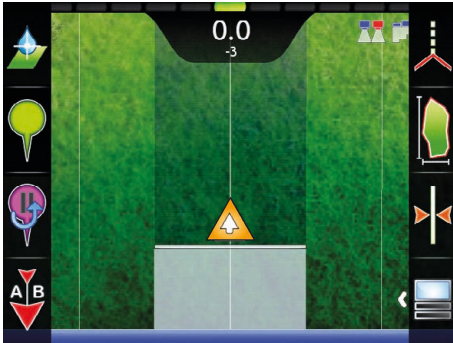


Fig. 386

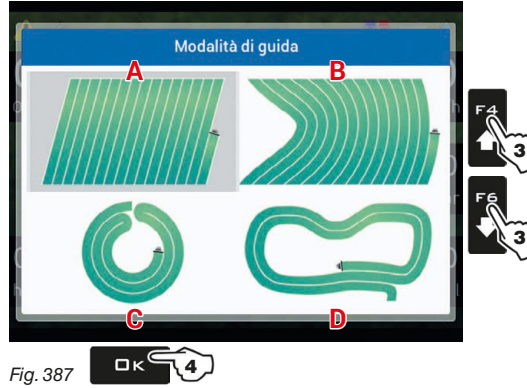


Fig. 387

A - STRAIGHT DRIVING MODE

Fig. 388

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** and **B** as previously marked. Upon creation of the reference track, any bends in the trajectory between **A** and **B** will be ignored.

B - CURVED DRIVING MODE

Fig. 389

Fig. 390

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. 390). The trajectory between **A** and **B** will be saved and the monitor will create evenly distributed tracks.

C - PIVOT MODE

Fig. 391

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

D - FREE DRIVING MODE

Fig. 392

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.

F1 Enter selected character

F2 Delete selected character

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

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

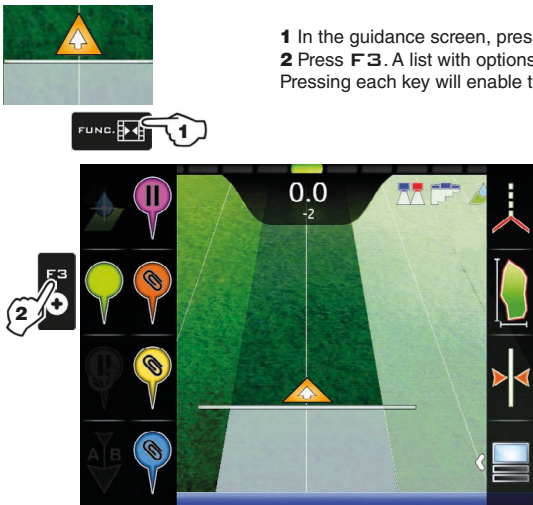
Data decrease / increase

OK Confirm access or data change

ESC Exit the function or data change

13.3
F3 Point marking


It groups the available options for marking points of interest.

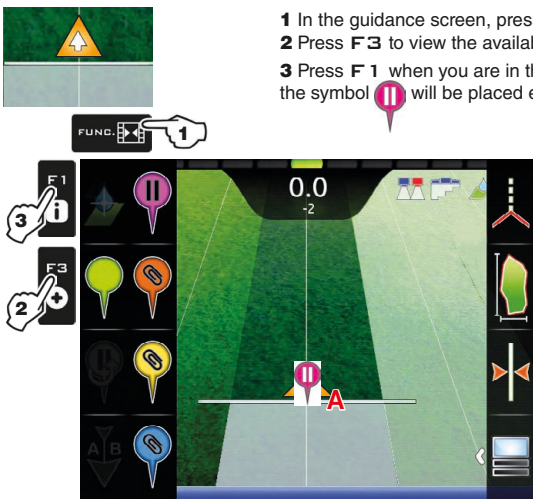


- 1 In the guidance screen, press **FUNC.**
- 2 Press **F3**. A list with options for marking the points will appear (Fig. 393). Pressing each key will enable the corresponding function.

Fig. 393

13.3.1
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. 394): the symbol  will be placed exactly on that point.

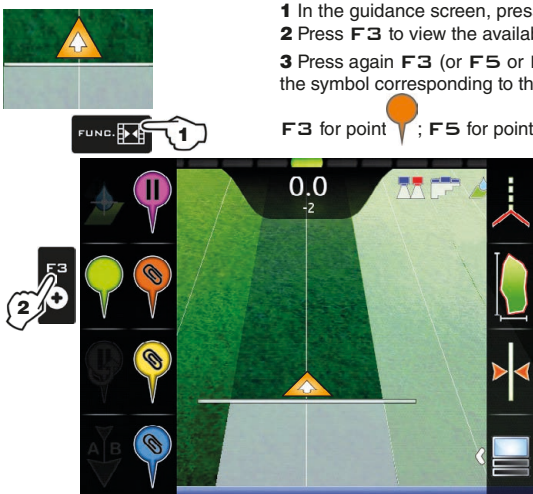
Fig. 394

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




13.3.2
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. 396): the symbol corresponding to the pressed key will be displayed exactly on that point:

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

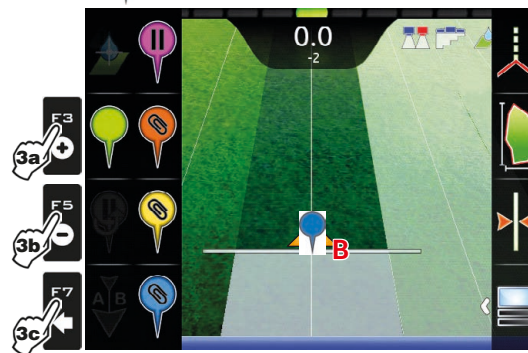


Fig. 395

Fig. 396

13.4 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 message **Field edge side selection** prompting the operator to select which side of the machine to use as a reference to define the field perimeter will appear.

3 Press **F3** (Left) or **F4** (Right): a white line will be displayed to draw the field perimeter as the tractor moves (Fig. 398).

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 **F6** to complete the surface calculation procedure (Fig. 399). The computer will connect starting and end points and will calculate the surface.



Fig. 397

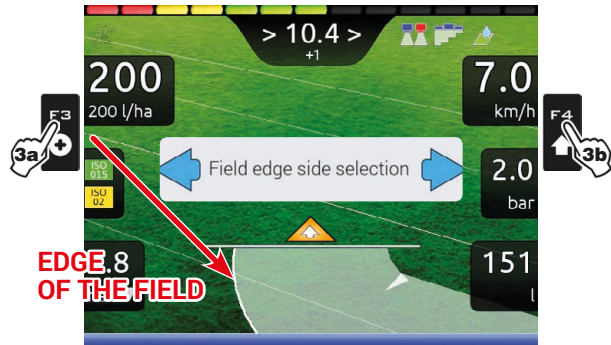


Fig. 398

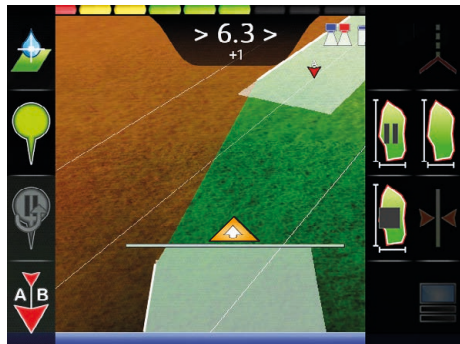


Fig. 399

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.

FIELD EDGE ON THE LEFT SIDE

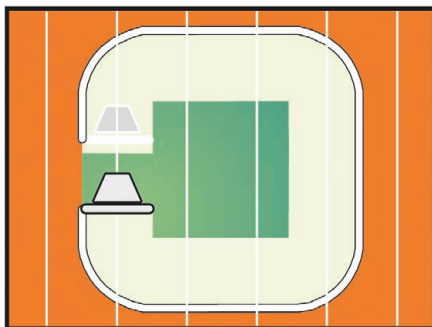


Fig. 400

FIELD EDGE ON THE RIGHT SIDE



Fig. 401

• Pause function in area calculation

This function can be used when changes in direction or maneuvers are necessary while the perimeter is being marked, but they do not have to be included (for example close to an obstacle or to the field end).

- Press **FUNC** and then **F4**: the field edge will no longer be drawn (Fig. 402);
- Press **FUNC** again, then **F4** to restore perimeter marking (Fig. 404);
- Continue the procedure described above (point 4).

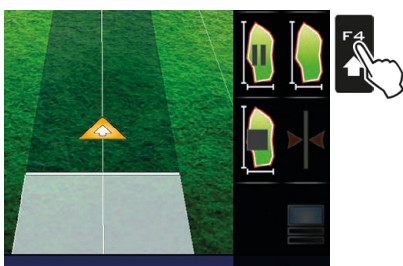


Fig. 402

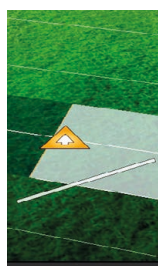


Fig. 403

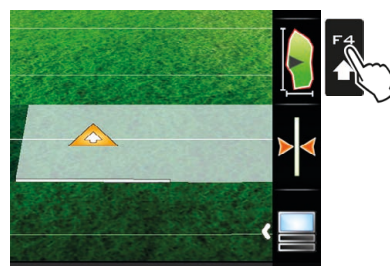


Fig. 404



Fig. 405



13.5 F5 Resume from pause

Guidance indications to return to job breaking point previously saved with function "F1 Pause" (par. 13.3.1).

- 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. 406 (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. 406).
- 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. 407): press **OK** or **ESC** to exit the procedure.

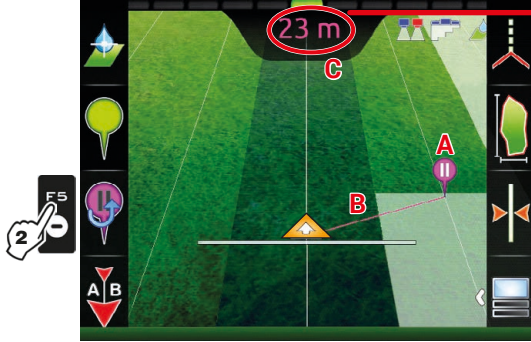
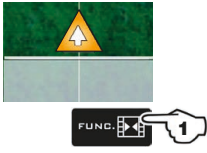


Fig. 406



Fig. 407



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

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

F1 Enter selected character

F2 Delete selected character

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

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

Data decrease / increase

OK Confirm access or data change

ESC Exit the function or data change





13.6 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. 408) 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. 408

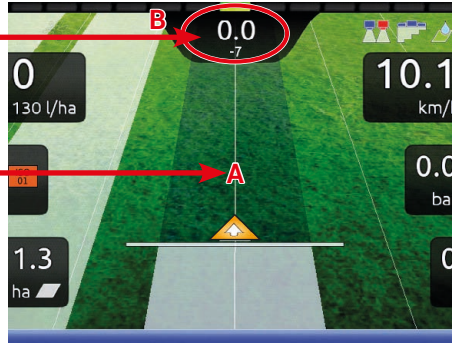


Fig. 409

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 decrease / increase

OK Confirm access or data change

ESC Exit the function or data change

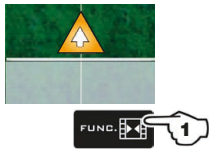
Par. 1.4



13.7 F7 New AB

Saves two points A and B on the field, which the monitor uses to draw a line that will act as a reference track (T0, Fig. 412) for the current spraying.

- 1 In the guidance screen, press **FUNC.**
- 2 Drive along the stretch you wish to use as a reference for the spraying. Press **F7** to enable the function: the request **Mark A?** (Fig. 410) will appear on the display.
- 3 Press **OK**. The display shows the message **Drive!** (Fig. 411).
- 4 Keep driving, when you have reached the minimum distance (30 m / 95.5 ft), the request **Mark B?** Press **OK** will be displayed. The reference track **T0** and all tracks to be followed during the spraying will appear on the display (Fig. 412).



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. 410



Fig. 411

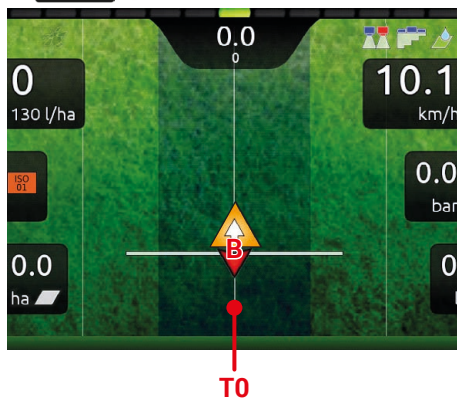


Fig. 412

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 **FB** Scroll (LEFT / RIGHT)

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

Data decrease / increase

OK Confirm access or data change

ESC Exit the function or data change



Par. 1.4

13.8 F8 Display

Allows to select different display modes. Includes several options.



- 1 In the guidance screen, press **FUNC**.
- 2 Press **F8**. A list of options concerning display modes will appear (Fig. 413). Pressing each key will enable the corresponding function:
 - F2** changes tractor themes (par. 13.8.1);
 - F4** changes spraying themes (par. 13.8.2);
 - F6** switches between daytime/night time display mode (par. 13.8.3);
 - F8** switches between 2D/3D display mode (par. 13.8.4);

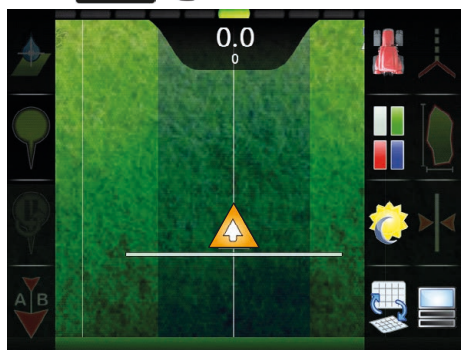


Fig. 413

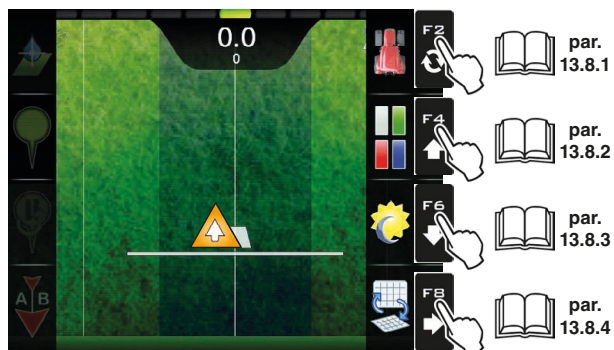


Fig. 414

13.8.1 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.

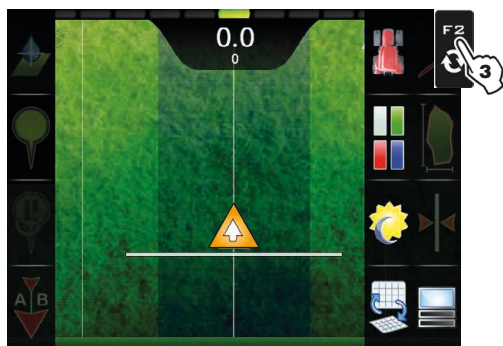


Fig. 415

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 decrease / increase

OK Confirm access or data change

ESC Exit the function or data change

Par. 1.4

13.8.2 F4 Spraying themes

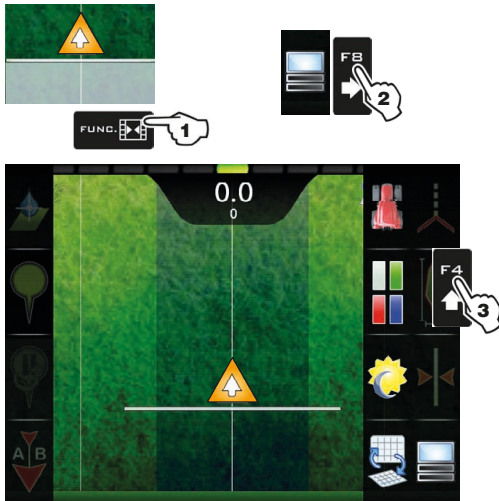
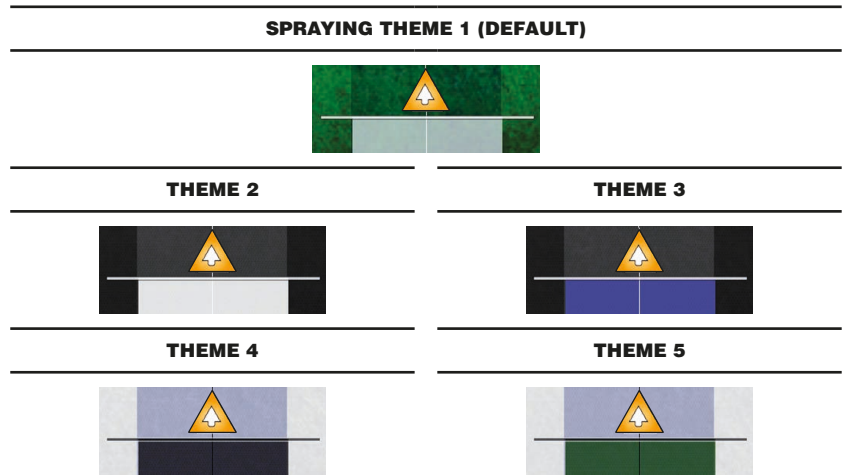


Fig. 416

- 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.



13.8.3 F6 Daytime/night time display mode

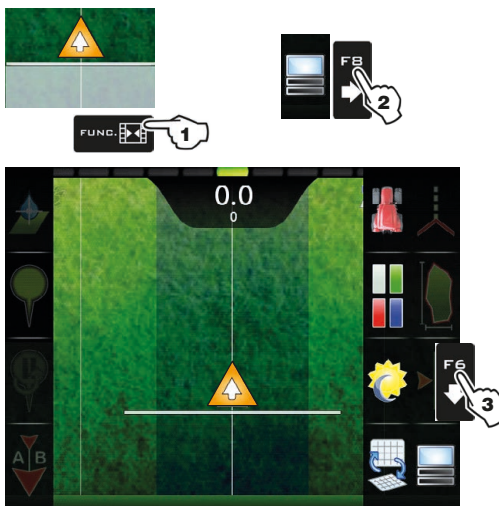
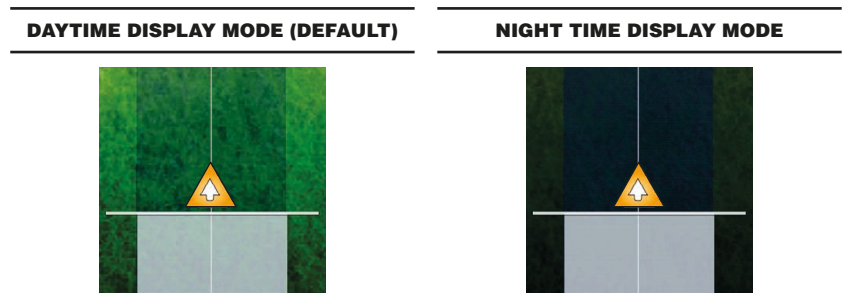


Fig. 417

- 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.



13.8.4 F8 2D/3D display mode

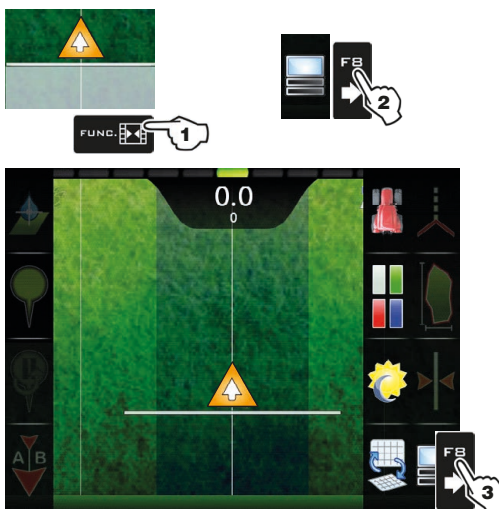
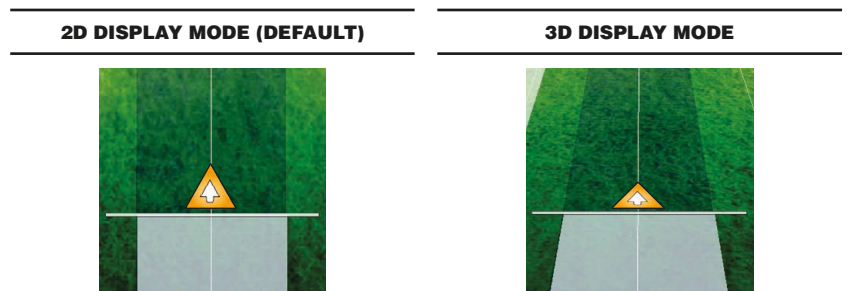


Fig. 418

- 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 decrease / increase

OK Confirm access or data change

ESC Exit the function or data change

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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