navigator

GPS GUIDANCE MONITOR

CE

4674A0000

Software rel. 2.3X

INSTALLATION, 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 RISKS AND PROTECTIONS BEFORE ASSEMBLY

All installation works must be done with battery disconnected, using suitable tools and any individual protection equipment deemed necessary.

Use ONLY clean water for treatment tests and simulations: using chemicals during simulated treatment runs can seriously injure persons in the vicinity.

2 INTENDED USE

The device is a satellite navigator that – through the external GPS receiver – can be used for agricultural applications and navigation.

IMPORTANT:
NAVIGATOR is a GPS GUIDANCE MONITOR, it does not control the status of each section: any intervention on the valves must be made separately, by consulting the instruction manual of the relevant control.
By communicating what happens on the field, Navigator will collect data on the job.

Navigator is not designed for use on public roads and should only be used on farmland.

This device is designed to work on agricultural machinery for spraying and crop spraying applications.
The machine is designed and built in compliance with ISO 14982 standard (Electromagnetic compatibility - Forestry and farming machines), harmonized with 2004/108/EC Directive.

3 PRECAUTIONS

- **Do not aim water jets at the equipment.**
- **Do not use solvents or fuel to clean the case outer surface.**
- **Do not clean equipment with direct water jets.**
- **Comply with the specified power voltage (12 VDC).**
- **In case of voltaic arc welding, remove connectors from Navigator and disconnect the power cables.**
- **Only use ARAG genuine spare parts and accessories.**

4 PACKAGE CONTENT

The table below indicates the components that you will find in the Navigator package:

Fig. 1

Legend:

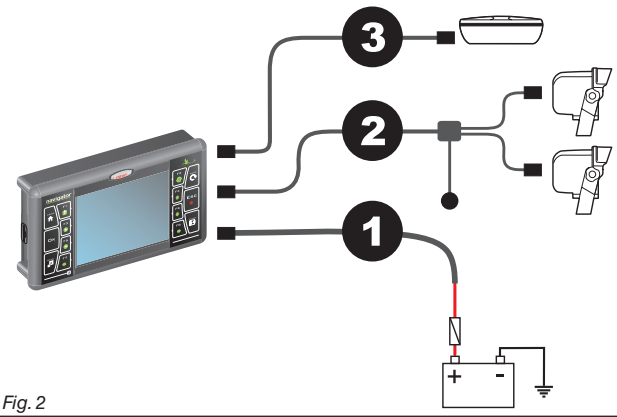
1 Navigator
2 Instruction manual (CD-ROM)
3 Fixing kit
4 Power cable

5 POSITION ON FARMING MACHINE

5.1 System recommended composition

Connect the power cable directly to the battery using the suitable eyelets.
WARNING! DO NOT connect to key-operated switch (15/54).

SYSTEM FOR GPS GUIDANCE MONITOR



Legend of connection cables:

1 Power cable
2 Cameras / spraying activation
3 GPS receiver

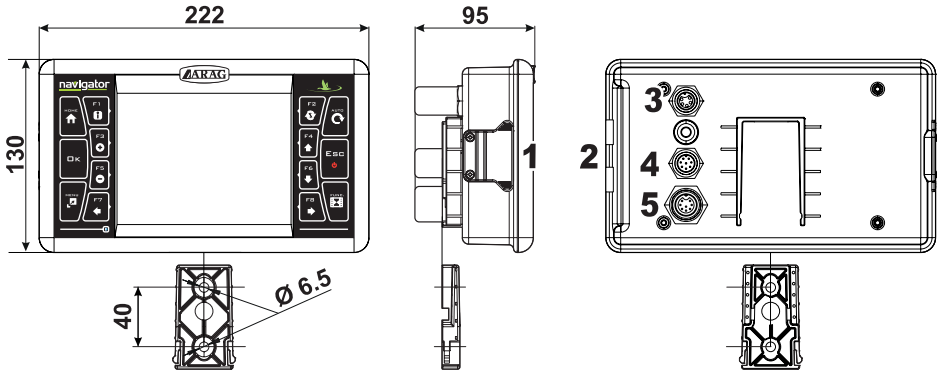
Fig. 2

5.2 Monitor position

• Navigator must be placed in the control cabin of the farming machine. Observe the following precautions:

- Do NOT install the monitor in areas where it would be subjected to excessive vibrations or shocks, to prevent any damage or accidental use of the control keys;
- Install the device in a visible position within easy reach by hand; bear in mind that the monitor should not obstruct the operator's freedom of movement or block his view.

Consider all necessary connections of the computer (Fig. 3), the cable length, and make sure there is enough space for connectors and cables.
An identification symbol is located next to each connector to indicate its function.
For any reference to the system configuration read par. 5.1.



ITEM		CONNECTION POINTS
MONITOR	1	SD memory card
	2	USB (2)
	3	GPS receiver
	4	Cameras + spraying activation
	5	Power supply connection

Fig. 3

5.3 Bracket fixing

The navigator must be mounted after fixing the bracket at the desired location (the previous paragraph shows the bracket drilling template).
The bracket must be slid out of the monitor seat (**A**, Fig. 4) and fixed using the supplied screws (**B**).
Make sure the bracket is securely mounted, fit the monitor on it, and push it until it locks in place (**C**).

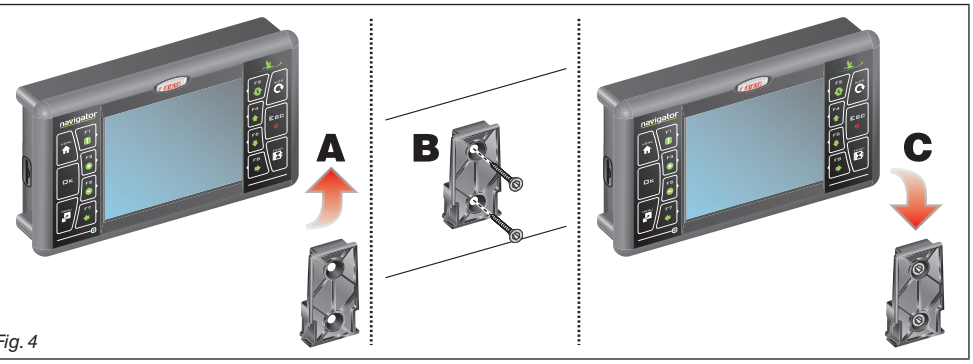


Fig. 4

6 WIRING CONNECTIONS

• Use only the cables provided with the ARAG computers.
• Take care not to break, pull, tear or cut the cables.
• Use of unsuitable cables not provided by ARAG automatically voids the warranty.
• ARAG is not liable for damages to the equipment, persons, animals or objects caused by failure to observe the above instructions.

6.1 Camera connection

Navigator can be connected to one or two cameras **code 46700100** (purchased separately) using the suitable cables listed in the ARAG general catalog. Connect the connector to the monitor (see connection points at par. 5.2) and the other cable end to the camera: ensure it is correctly in place and turn the ring nut clockwise until blocking it.

6.2 Power supply connection

WARNING:
To avoid short circuits, do not connect the power cables to battery before the installation is completed.
Before powering up the navigator, make sure the tractor battery voltage is as specified (12 VDC).

Navigator is supplied directly by the farming machine battery (12 VDC): ALWAYS switch on the system through the computer, and then remember to switch it off using the specific key on the control panel.

If the navigator remains on for a long time with machine off, the tractor battery could run flat: in case of prolonged breaks of the machine with engine off, make sure the computer is off, too.

The power source must be connected as indicated in Fig. 5:

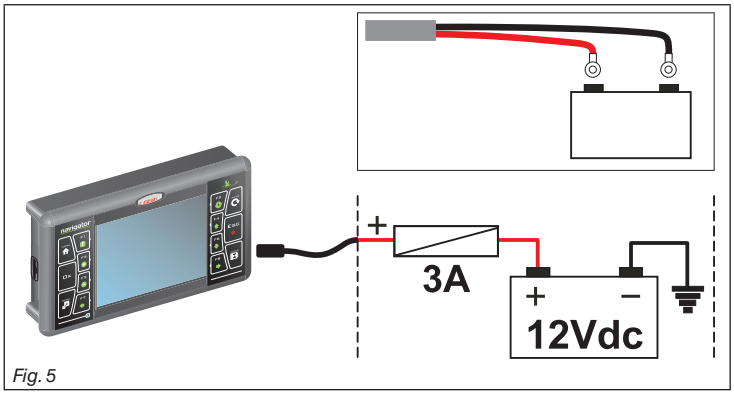


Fig. 5

Connect the power cable directly to the battery using the suitable eyelets.
WARNING! DO NOT connect to key-operated switch (15/54).

6.3 SD memory card

The SD memory card may be used to exchange data with the navigator.

Before using it make sure the card is not protected (Fig. 6).
The system is ONLY compatible with SD or SDHC memory cards.

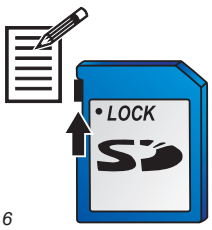


Fig. 6

Fig. 7

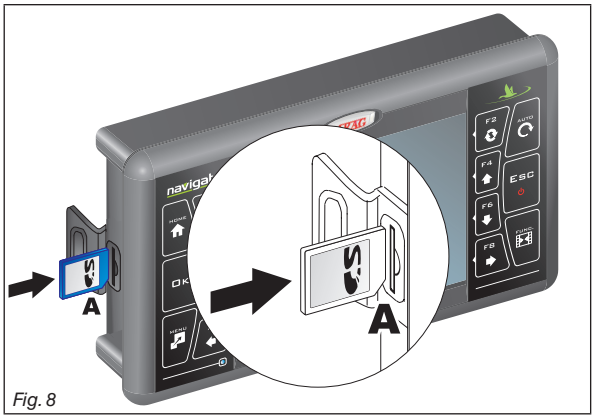


Fig. 8

• Insertion:
Insert the memory card making sure to orient it correctly:
the card cut edge **A** must be face down. Push the card until it engages into place and close the slot with the cover.

• Removal:
Press and immediately release the card into the slot and slide it out.

6.4 Pendrive

The pendrive may be used to exchange data with Navigator.

Before using it make sure the pendrive is not protected.
All pendrives with up to 8 GB memory are compatible.

7 SETUP

7.1 Setup preparation

Before computer setup, check:

- **that all components are correctly installed;**
- **the correct connection to the power source;**
- **the component connection.**

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

7.2 Switching on

Fig. 9

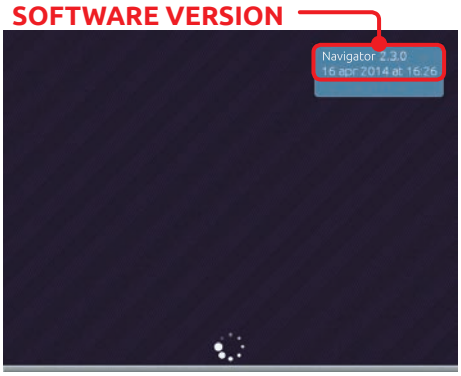


Fig. 10

Keep key pressed until Navigator displays the screen shown in Fig. 9. The software version is shown immediately afterwards (Fig. 10).

FIRST DEVICE SWITCHING ON

Fig. 11

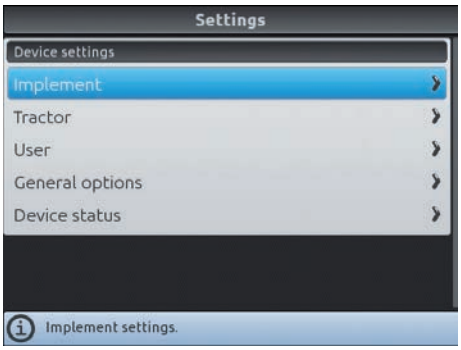


Fig. 12

Upon first switching on, after the software version, Navigator displays the "Home" screen (Fig. 11): press **F8** and enter the device basic settings (chap. 9).

ORDINARY SWITCHING ON

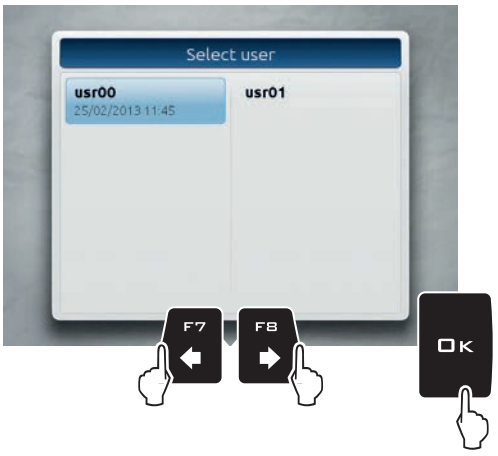


Fig. 13

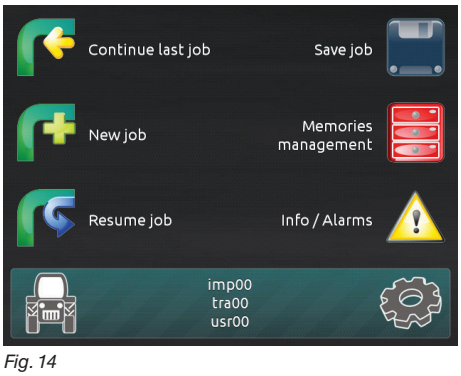


Fig. 14

After the software version, Navigator displays the Select User prompt (Fig. 13).
Press **F7** or **F8** to move across the available items, then press **OK** to confirm your selection.
At this point, Navigator displays the "Home" screen (Fig. 14).

F1 Enter selected character | F2 Delete selected character | F7 F8 Scroll (LEFT / RIGHT) | F4 F6 Scroll (UP / DOWN) | Data increase / decrease | OK Confirm access or data change | Esc Exit the function or data change | Par. 7.4

7.3 Switching off

Fig. 15

Keep **ESC** key pressed until Navigator is switched off.

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

7.4 Use of keys for setup

SELECTION AND ACCESS TO MENU ITEMS

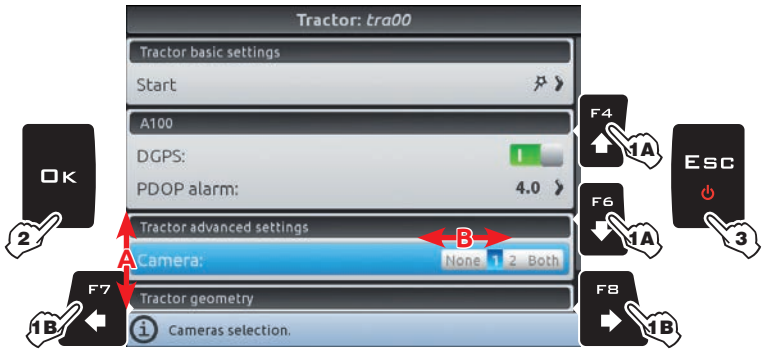


Fig. 16

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

1B Press in succession to move across the available options (LEFT / RIGHT).
Display options (**B**):
None 1 2 Both 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

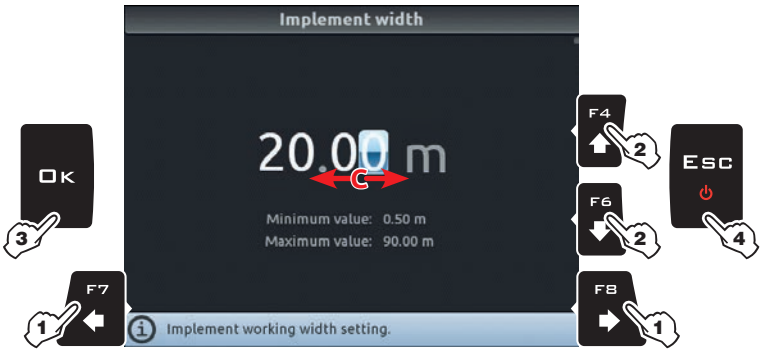


Fig. 17

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. 18

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).
2 Press to:
- Confirm the selected character
- Delete the character before the cursor (when the symbol "⌫" is selected)
- Save the entered text (when the symbol "ok" is selected)

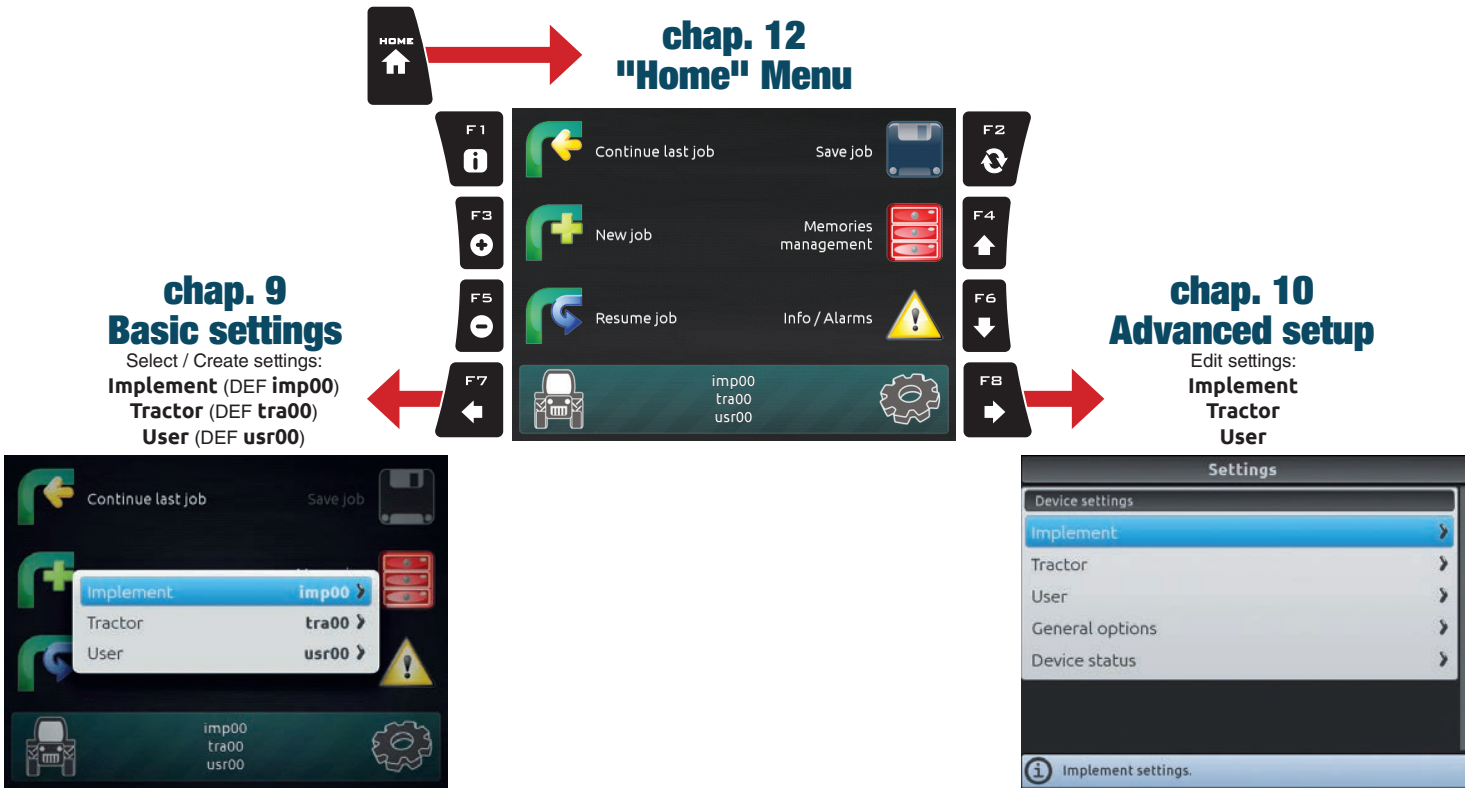
3 Press to delete the character before the cursor
4 Press to exit screen without confirming modification

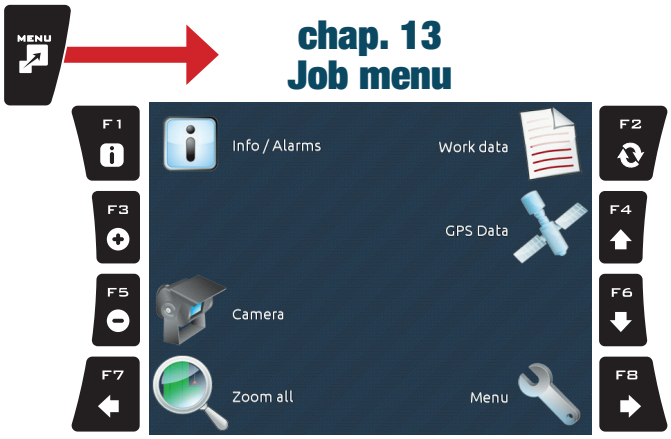
Legend:

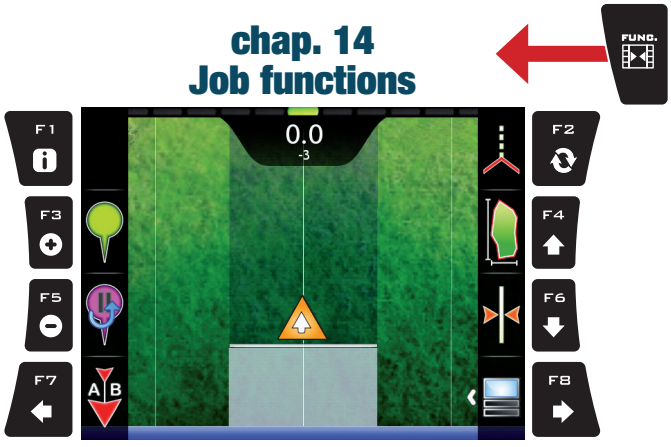
imp03 | Typed Name Cursor	1 Selected character	← → Shift cursor across name characters	⇧ Caps lock	⌫ Deletes the character before the cursor	ok Saves the entered text

8 MENU STRUCTURE

Upon first switching on, press F8 and enter the device basic settings (chap. 9).
Afterwards, it will be possible to select the preset settings by pressing F7.







9 BASIC SETTINGS

GUIDED SETUP PROCEDURE UPON FIRST SWITCHING ON

1 LANGUAGE SETTING

- In the "Home" screen (Fig. 19) press F8 to enter the **Settings** menu (Fig. 20).
- Select **General options > Language** and set the language of Navigator.
- Press ESC and return to the **Settings** menu. Now select **Implement** to start guided setup procedure as shown in Fig. 21.

Fig. 19

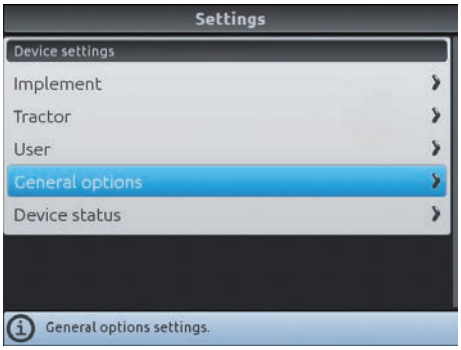


Fig. 20

For a correct use of the keys during setting, refer to par. 7.4.

2 IMPLEMENT

- Upon first switching on, Navigator starts the guided setup procedure for the **Implement**: go through each step selecting the desired options (example in Fig. 22).
OK: next step ESC: previous step.
- When the message in Fig. 23 appears, the implement setup is complete. Press OK.
- Press ESC and return to the **Settings** menu. Now select **Tractor** to start guided setup procedure as shown in Fig. 24.

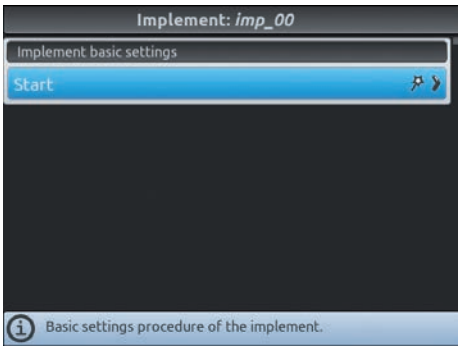


Fig. 21

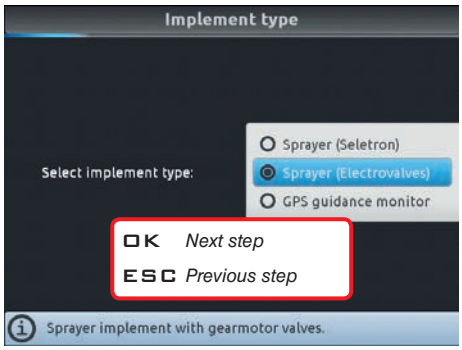


Fig. 22

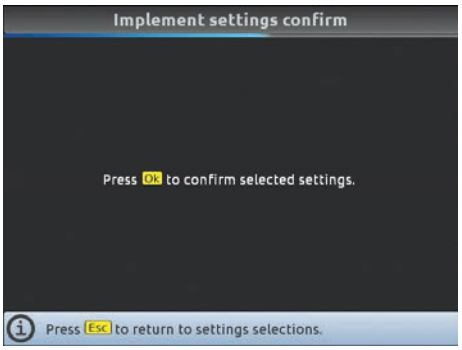


Fig. 23

BASIC IMPLEMENT SETTINGS

• IMPLEMENT TYPE

Sprayer (Seletron): system with Seletron valves.
Sprayer (Electrovalves): system with electric-activated valves - with gearmotor.
GPS guidance monitor: Navigator is only used as a driving aid and does not control spraying (it is not connected to the RCU).

• IMPLEMENT CONNECTION TYPE

Rear 3-point hitch
Towing hitch
Front 3-point hitch

• SWITCH PANEL TYPE

Sequential section switches: switch panel with sequential control.
5 section switches (Direct): 5-way switch panel.
7 section switches (Direct): 7-way switch panel.
External command: no switch panel: spraying enabled through external main control.
Keyboard: no switch panel: spraying enabled through monitor keyboard.

CONTINUES > > >

F1 Enter selected character | F2 Delete selected character | F7 F8 Scroll (LEFT / RIGHT) | F4 F6 Scroll (UP / DOWN) | Data increase / decrease | OK Confirm access or data change | ESC Exit the function or data change | Par. 7.4

3 TRACTOR

- Upon first switching on, Navigator starts the guided setup procedure for the **Tractor**: go through each step selecting the desired options (example in Fig. 25).
- When the message in Fig. 26 appears, the tractor configuration is complete. Press **OK**.
- Press **ESC** and return to the **Settings** menu.

Fig. 24

Fig. 25

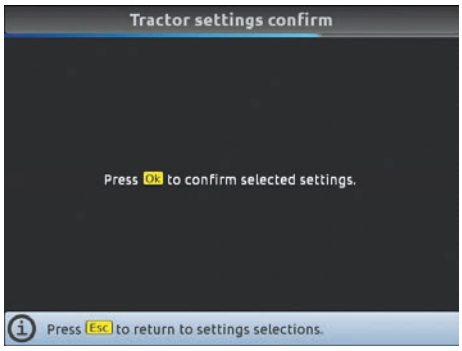


Fig. 26

BASIC TRACTOR SETTINGS

- **A100**: ARAG receiver code 520100.693.
- **Smart-Ag / Smart 6**: ARAG receivers code 467016xx.
- **NMEA**: all GPS receivers with NMEA183 protocol and with the following features:
  - 10 Hz GGA message; latitude and longitude coordinates with at least 6 decimal digits.
  - 10 Hz VTG message.
  - 0.1 Hz ZDA message.
  - Serial port 57600 bps, n, 8, 1.
- **Demo**: Navigator simulates the driving.
- **None**

4 Basic setup procedure is now complete (*). Now it is possible to start the advanced setup procedure, described in chap. 10.

(*) This can be started again at any time, by selecting **Start** *in the* **Implement** *and* **Tractor** *menu.*

END 9 Basic settings

10 ADVANCED SETUP

Fig. 27

Before carrying out the advanced setup procedure, select the type of Implement, Tractor and User you wish to use: all modifications made to the advanced setup will be applied to the ACTIVE SETTINGS (in the example here imp00, tra00, usr00).

IMPLEMENT, TRACTOR AND USER TYPE SELECTION

1 Press **F7** in the "Home" screen (Fig. 28).
2 In the screen shown in Fig. 29 select the **Implement** (**Tractor** or **User**) and press **OK**.
Now it possible to create a new setup (**3a** or **3b**), or select an existing one (**3c**):
in all cases the setup will be enabled and the name will be displayed in the "Home" screen (Fig. 27).

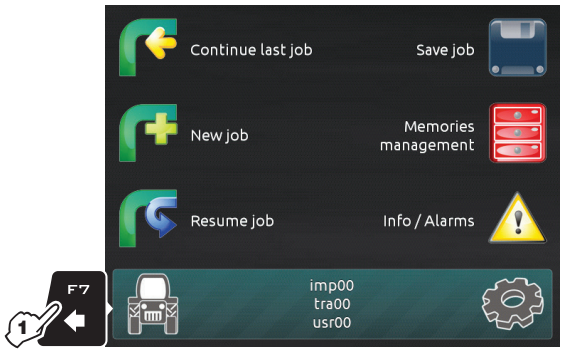


Fig. 28

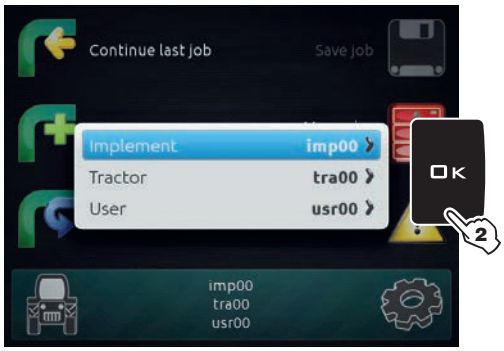


Fig. 29

3a NEW SETUP CREATION:

Select **New implement** (**a** in Fig. 30) to create a new setup and press **OK**.
Type the name (in the example of Fig. 31: **imp01**) and press **OK**.
The new setup is now active on the computer (Fig. 32). Before moving on to the advanced setup procedure repeat the basic setup (chap. 9).
You can follow the same procedure for **Tractor** (**b**) *and* **User** (**c**).

Fig. 30

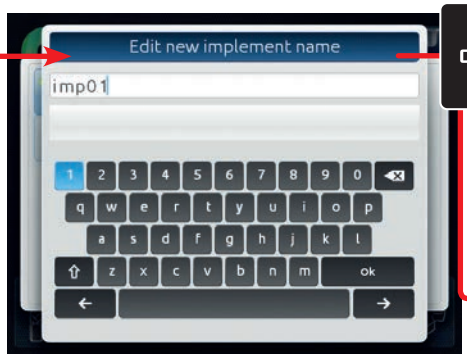


Fig. 31

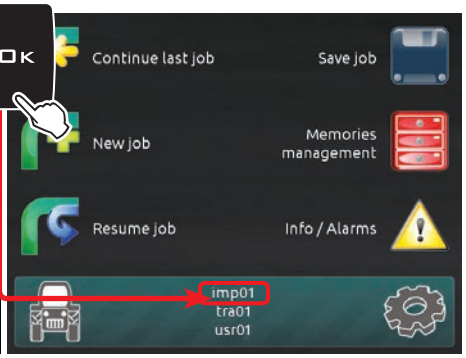


Fig. 32

3b NEW SETUP CREATION (BY COPYING DATA FROM AN EXISTING SETUP):

Select **Copy** (**d** in Fig. 33) to copy the active setup and save the data on a new one; press **OK**.
Type the name (in the example of Fig. 34: **imp01**) and press **OK**.
The saved setup is now active on the computer (Fig. 35). Proceed to advanced setup.
You can follow the same procedure for **Tractor** (**e**) *and* **User** (**f**).

Fig. 33

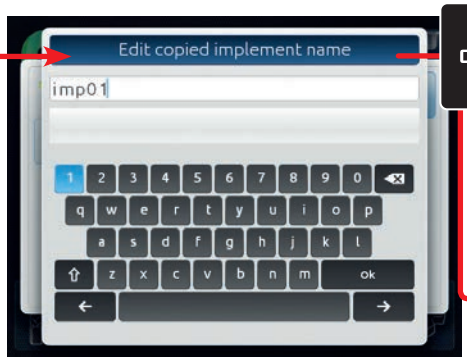


Fig. 34

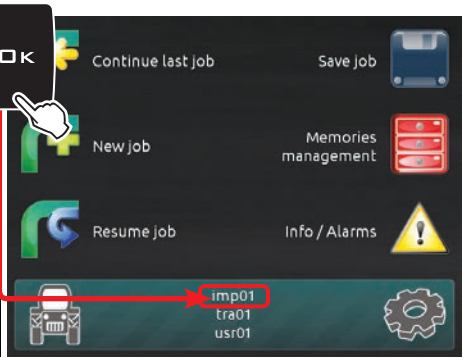


Fig. 35

CONTINUES

F1 Enter selected character | F2 Delete selected character | F7 F8 Scroll (LEFT / RIGHT) | F4 F6 Scroll (UP / DOWN) | Data increase / decrease | OK Confirm access or data change | ESC Exit the function or data change | Par. 7.4

3c SETUP SELECTION:
Instead of saving, you can select a previously saved setup.
Select the setup from the names on the list (**g** in the example of Fig. 36: **imp00**) and press **OK**.
The selected setup is now active on the computer (Fig. 37). Proceed to advanced setup.
You can follow the same procedure for **Tractor** (**h**) *and* **User** (**i**).

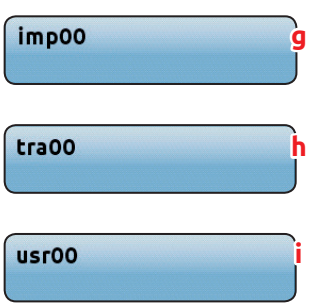


Fig. 36

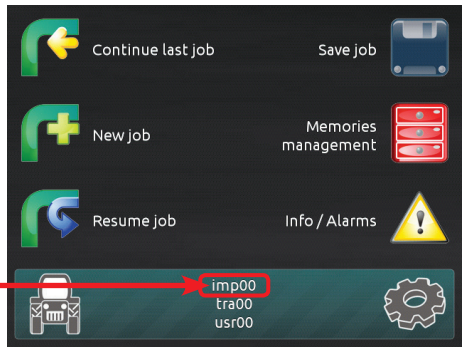


Fig. 37

Now you can start the advanced setup procedure: all modifications will be applied to the ACTIVE SETUP (in the example below imp00, tra00, usr00).

ADVANCED SETUP

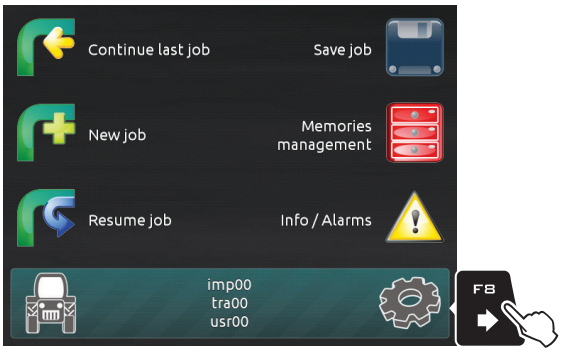


Fig. 38

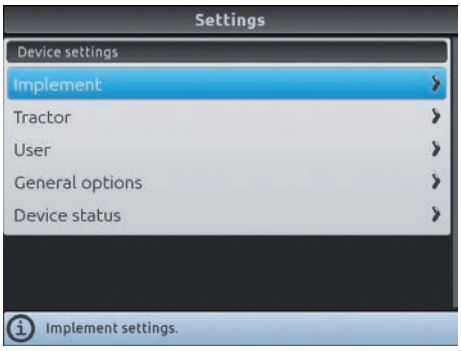


Fig. 39

- In the "Home" screen (Fig. 38) press **F8** to enter the **Settings** menu (Fig. 39).

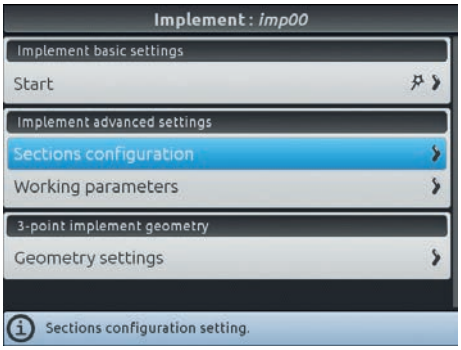


Fig. 40

- Start advanced setup procedure for Navigator: select the desired menu item (with **F4** or **F6**) and press **OK** to enter settings for the selected item.

THE BASIC SETTINGS (Chap. 9) AFFECT WHICH MENU ITEMS ARE DISPLAYED IN Fig. 40 AND WHICH ADVANCED SETTINGS IT IS POSSIBLE TO CONTROL.

Below is a summary of key functions during setup.
For the full description, see par. 7.4.

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

Par. 7.4

The type of implement displayed depends on the selected basic settings (chap. 9), affecting which items are displayed in Fig. 41.

10.1 Implement

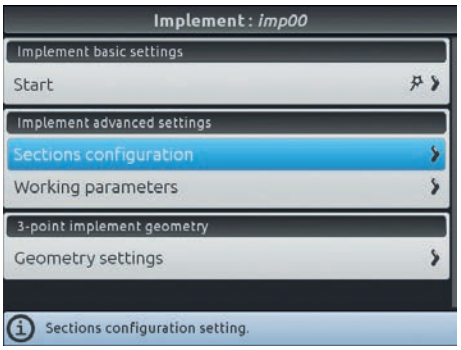


Fig. 41

Advanced implement settings

- **Sections configuration** (par. 10.1.1).
- **Working parameters** (par. 10.1.2).

Carried implement geometry settings

- **Geometry settings** (par. 10.1.3).

10.1.1 Sections configuration

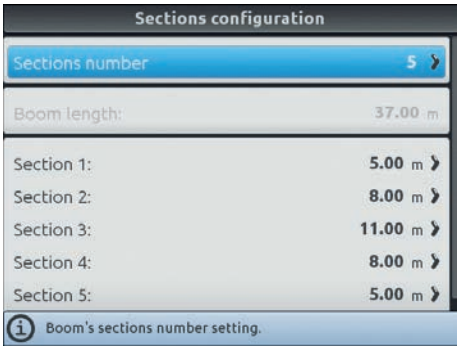


Fig. 42

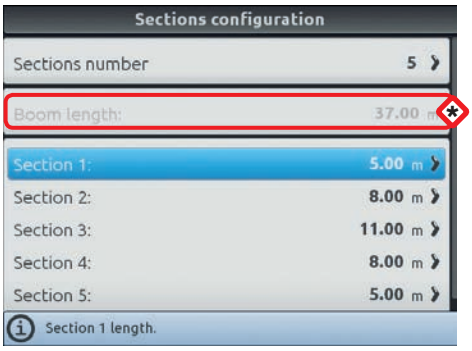


Fig. 44

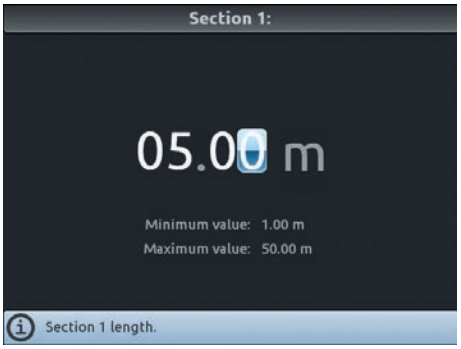


Fig. 46

• Sections number

- Indicate the number of boom sections.

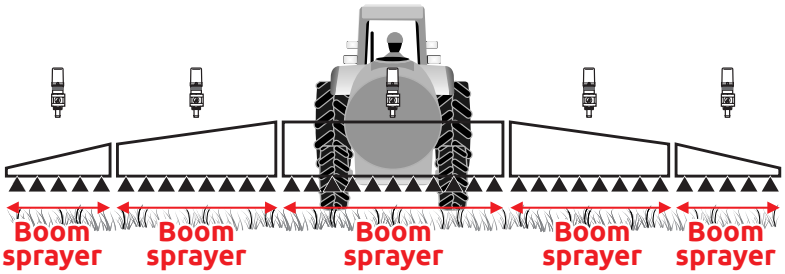


Fig. 43

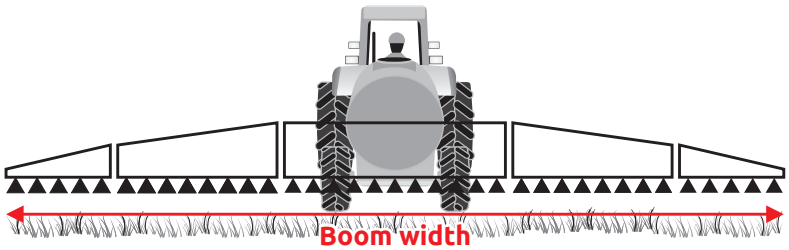


Fig. 45

The boom width value displayed in Fig. 44 will vary depending on the selected setup.

• Section 1

- Indicate the width of each section.

F1 Enter selected character | F2 Delete selected character | F7 F8 Scroll (LEFT / RIGHT) | F4 F6 Scroll (UP / DOWN) | Data increase / decrease | OK Confirm access or data change | ESC Exit the function or data change | Par. 7.4

10.1.2 Working parameters

Set the farming machine job limits.

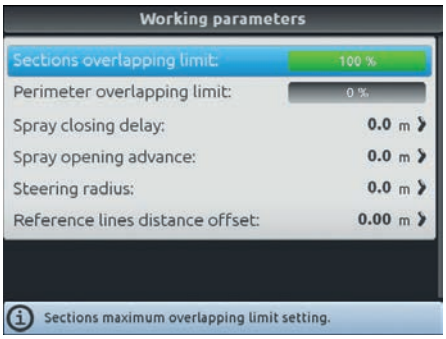


Fig. 47

• Sections overlapping limit

Set the acceptable threshold for overlapping of already-sprayed areas.
When this threshold is exceeded, Navigator will prompt the operator to close the relevant valves.

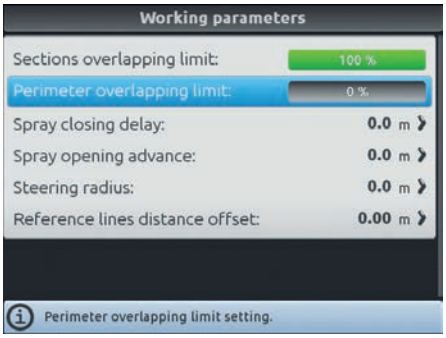


Fig. 48

• Perimeter overlapping limit

Set the acceptable threshold for overlapping of spraying with respect to field perimeter.
When this value is exceeded, Navigator will notify the operator that the section valves spraying outside the field perimeter must be opened or closed.

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. 14.3).

CONTINUES > > >

F1 Enter selected character | F2 Delete selected character | F7 F8 Scroll (LEFT / RIGHT) | F4 F6 Scroll (UP / DOWN) | Data increase / decrease | OK Confirm access or data change | ESC Exit the function or data change | Par. 7.4

• Spray closing delay

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

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

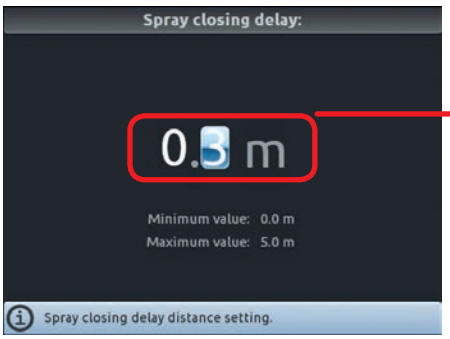


Fig. 49

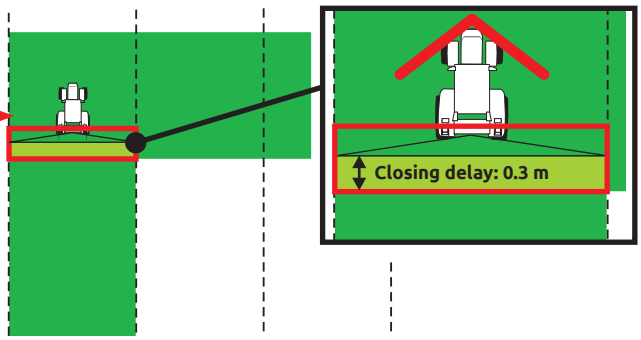


Fig. 50

• 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. 51

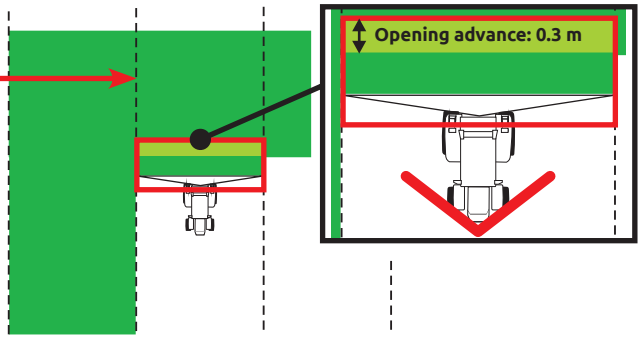


Fig. 52

• 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.
This distance should correspond to the implement steering radius (**A** in Fig. 54), used at the end of the field to change driving direction and resume spraying on the next track, but it will have to be adjusted according to the characteristics of the operator and the speed of the machine.

The alarm is triggered ONLY if the direction of the machine is at an angle of more than 85° with respect to the next track.

Fig. 53

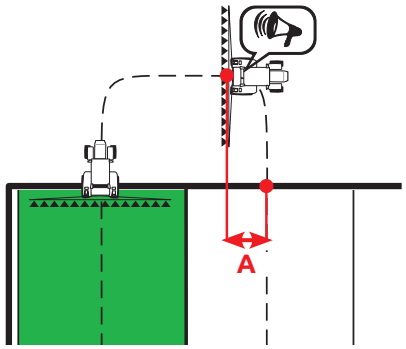


Fig. 54

CONTINUES > > >

• Reference line distance compensation

This value allows changing the distance between the reference tracks.

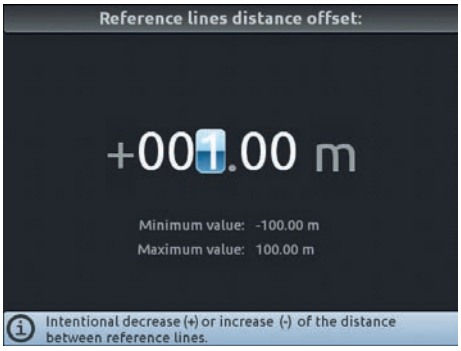


Fig. 55

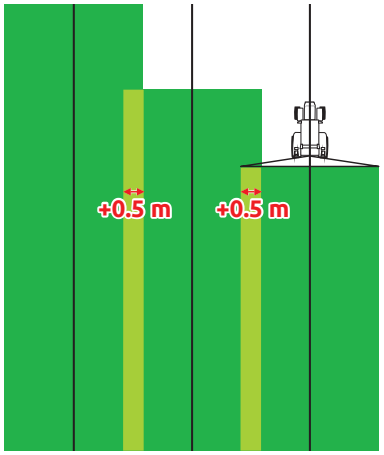


Fig. 56

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

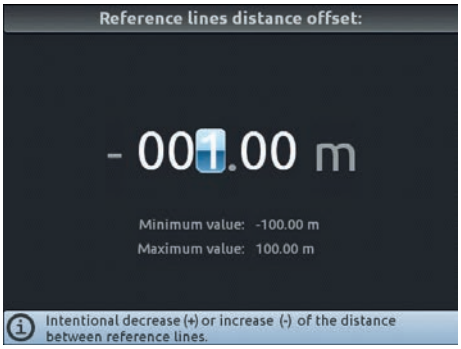


Fig. 57

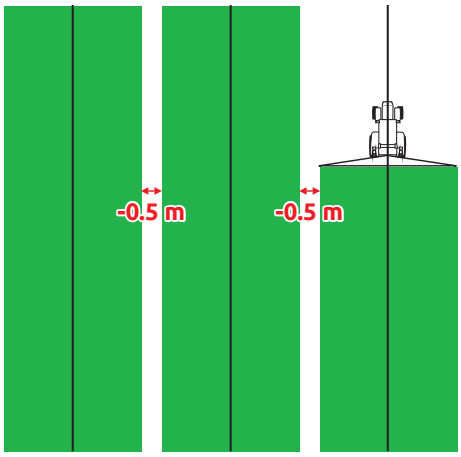


Fig. 58

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

END 10.1.2 Working parameters

The geometry of the displayed implement depends on the selected basic settings (chap. 9).

10.1.3 Towed implement geometry settings (SYSTEM WITH 3-POINT HITCH REAR/FRONT)

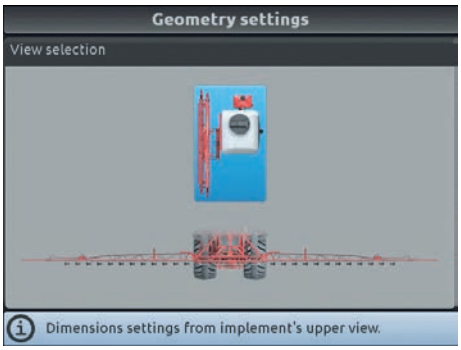


Fig. 59

Enter farming machine measures:
- Press the arrow keys (UP, DOWN, LEFT, RIGHT) to move across different implement views.
- Confirm by pressing OK to enter setup.

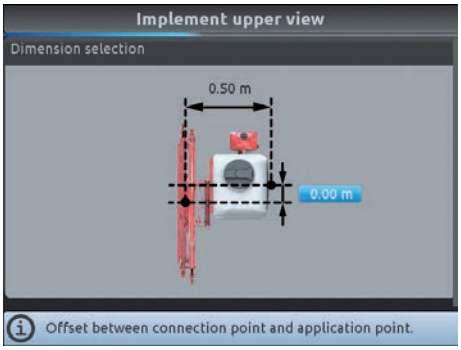


Fig. 60

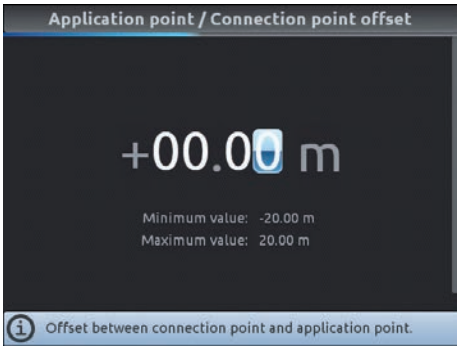
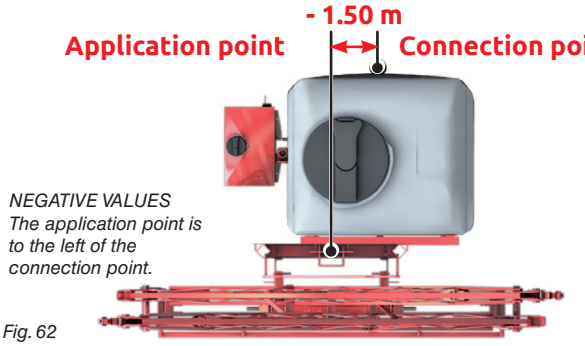


Fig. 61

• Implement upper view

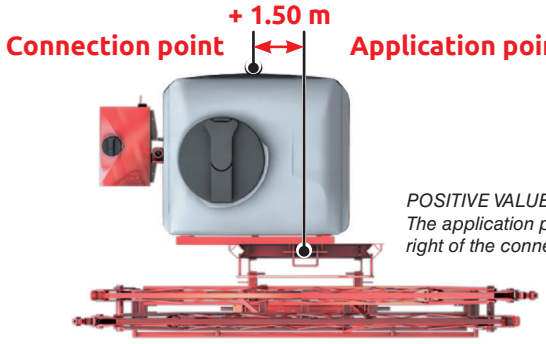
- Press the arrow keys (UP, DOWN, LEFT, RIGHT) to move across values: the description of the selected value will appear on the display.
- Confirm by pressing OK to enter setup.
- Enter the value.
- Select and enter, one by one, all values.

Offset between connection point and application point



NEGATIVE VALUES
The application point is to the left of the connection point.

Fig. 62



POSITIVE VALUES
The application point is to the right of the connection point.

Fig. 63

THE CONNECTION POINT OF A SELF-PROPELLED MACHINE COINCIDES WITH THE REAR AXLE OF THE VEHICLE.

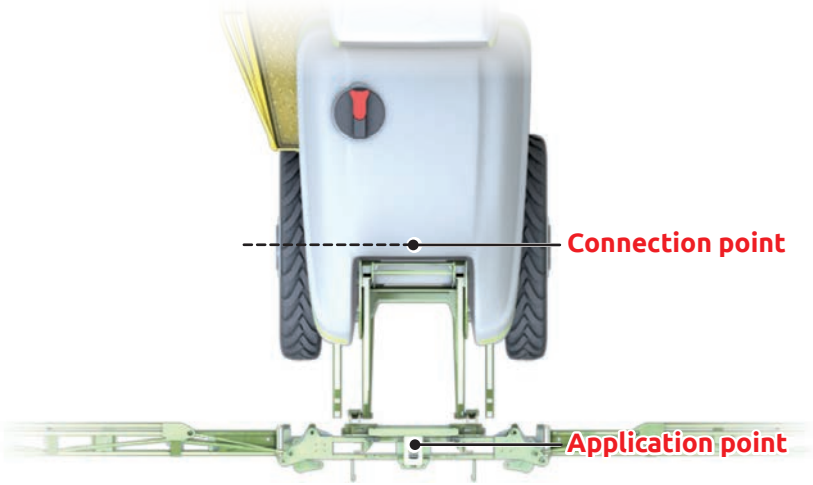


Fig. 64

CONTINUES > > >

F1 Enter selected character | F2 Delete selected character | F7 F8 Scroll (LEFT / RIGHT) | F4 F6 Scroll (UP / DOWN) | Data increase / decrease | OK Confirm access or data change | Esc Exit the function or data change | Par. 7.4

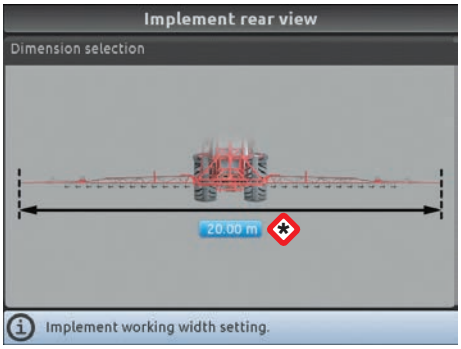


Fig. 65

Fig. 66

• Implement rear view

- Confirm by pressing OK to enter setup.
- Enter the value.

Implement width

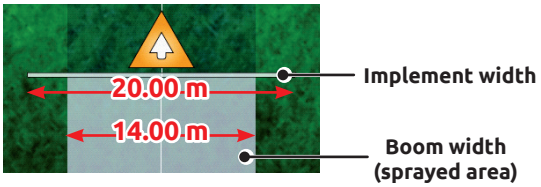


Fig. 67

The width set for the implement is shown on the display in the guidance screen: usually it is equal to the boom width, and thus to the covered area diagram.

If you wish to see two different widths displayed on the guidance screen, as in the example of Fig. 67, set the **Implement width** to a different value than the boom width (par. 10.1.1).

END 10.1.3 Towed implement geometry settings (SYSTEM WITH 3-POINT HITCH REAR/FRONT)

The geometry of the displayed implement depends on the selected basic settings (chap. 9).

10.1.4 Towed implement geometry settings (SYSTEM WITH TOWING HITCH)

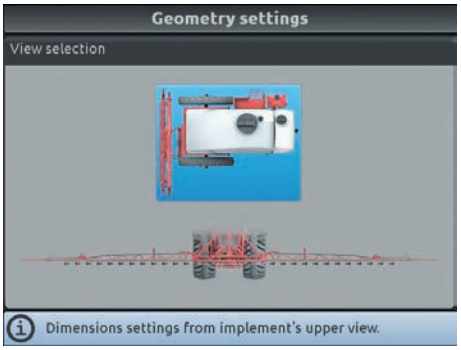


Fig. 68

Enter farming machine measures:
- Press the arrow keys (UP, DOWN, LEFT, RIGHT) to move across different implement views.
- Confirm by pressing OK to enter setup.

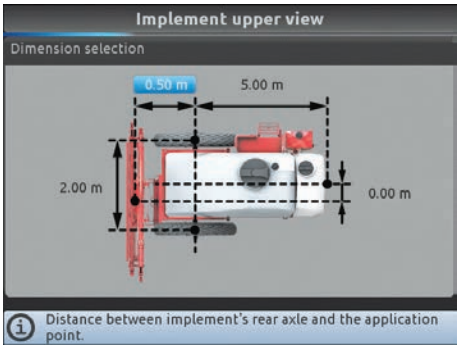


Fig. 69

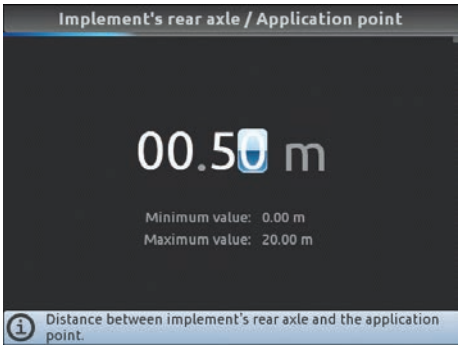
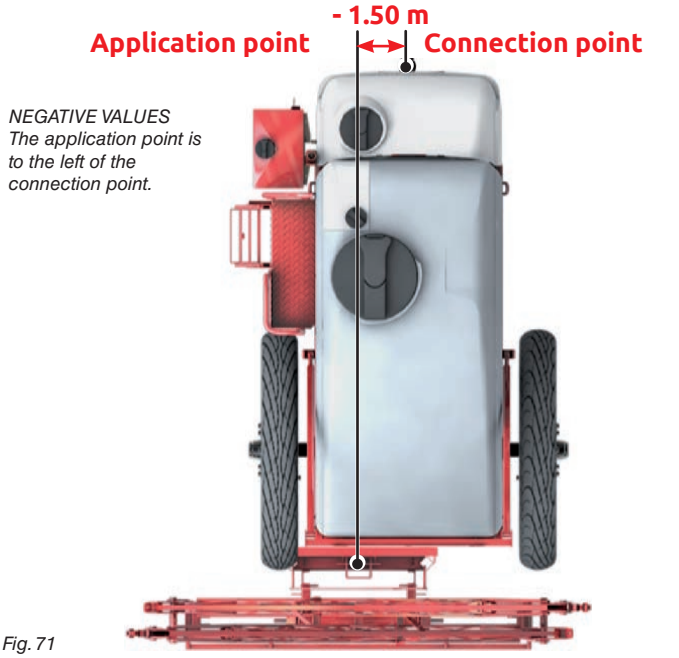


Fig. 70

• Implement upper view

- Press the arrow keys (UP, DOWN, LEFT, RIGHT) to move across values: the description of the selected value will appear on the display.
- Confirm by pressing OK to enter setup.
- Enter the value.
- Select and enter, one by one, all values.

Offset between connection point and application point



NEGATIVE VALUES
The application point is to the left of the connection point.

Fig. 71

POSITIVE VALUES
The application point is to the right of the connection point.

Fig. 72

CONTINUES > > >

F1 Enter selected character | F2 Delete selected character | F7 F8 Scroll (LEFT / RIGHT) | F4 F6 Scroll (UP / DOWN) | Data increase / decrease | OK Confirm access or data change | Esc Exit the function or data change | Par. 7.4

> > > 10.1.4 Towed implement geometry settings (SYSTEM WITH TOWING HITCH)

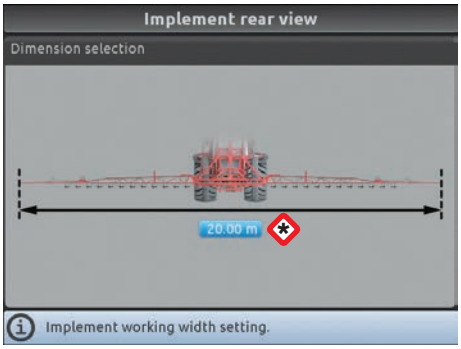


Fig. 73

Fig. 74

• Implement rear view

- Confirm by pressing OK to enter setup.
- Enter the value.

Implement width

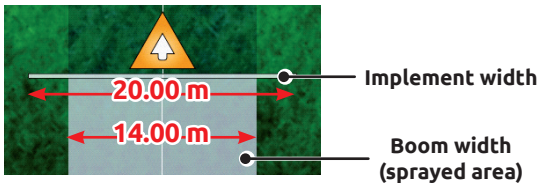


Fig. 75

The width set for the implement is shown on the display in the guidance screen: usually it is equal to the boom width, and thus to the covered area diagram.

If you wish to see two different widths displayed on the guidance screen, as in the example of Fig. 75, set the **Implement width** to a different value than the boom width (par. 10.1.1).

END 10.1.4 Towed implement geometry settings (SYSTEM WITH TOWING HITCH)

F1 Enter selected character | F2 Delete selected character | F7 F8 Scroll (LEFT / RIGHT) | F4 F6 Scroll (UP / DOWN) | Data increase / decrease | OK Confirm access or data change | ESC Exit the function or data change | Par. 7.4

10.2 Tractor

The tractor setup depends on the selected basic settings (chap. 9), which affect which items are displayed in Fig. 76.

Fig. 76

A100
- **DGPS** (par. 10.2.1).
- **PDOP alarm** (par. 10.2.2).

Smart-Ag - Smart 6
- **Tilt compensation** (par. 10.2.3).
- **Tilt calibration procedure** (par. 10.2.4).
- **PDOP alarm** (par. 10.2.2).
- **Correction type** (par. 10.2.5).
- **Receiver advanced data** (par. 10.2.6).

NMEA
- **DGPS** (par. 10.2.1).
- **HDOP alarm** (par. 10.2.7).

Tractor advanced settings
- **Camera** (par. 10.2.8).

Tractor geometry
- **Tractor geometry settings** (par. 10.2.9).

10.2.1 DGPS

Fig. 77

Allows to enable / disable the DGPS (SBAS) differential correction function (**DGPS correction enabled / DGPS correction disabled**).
The SBAS differential correction signal is free of charge and available only in some areas of the world.
This signal allows to obtain a more accurate spraying.

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

10.2.2 PDOP alarm

Fig. 78

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

10.2.3 Tilt compensation

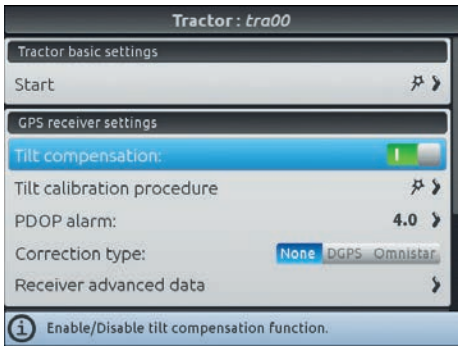


Fig. 79

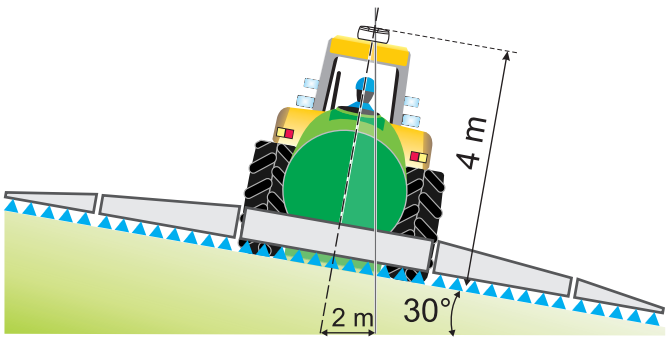


Fig. 80

Allows to enable/disable the tilt compensation function of the vehicle (*with antenna only. See ARAG catalog*).
(**Tilt compensation enabled / Tilt compensation disabled**).
Navigator can set off any measurement errors due to ground inclination.
On steep slopes the error can reach 2 m / 6.5 ft.

10.2.4 Tilt calibration procedure

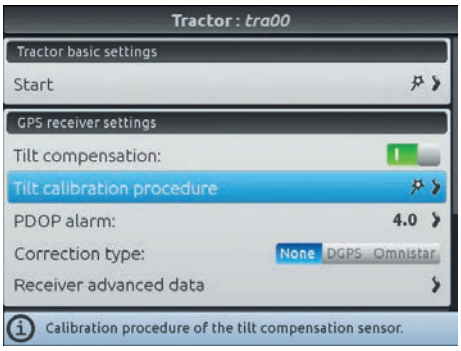


Fig. 81

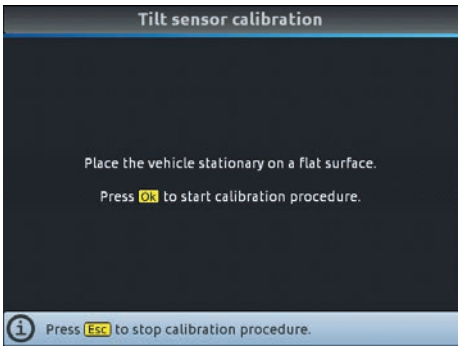


Fig. 82

Select **Tilt calibration procedure** and press OK.

WARNING: To carry out the calibration, the vehicle must be stationary on a level surface.

10.2.5 Correction type

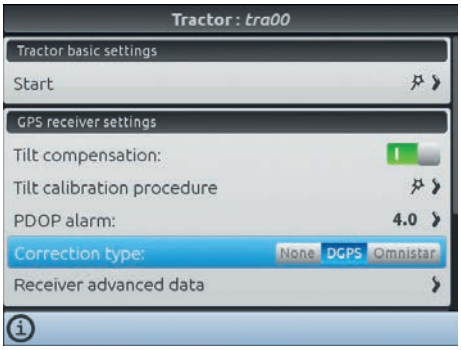


Fig. 83

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

- None **Correction disabled**

- DGPS **DGPS correction enabled:**

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

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

- Omnistar **Omnistar® correction enabled:**

Omnistar® correction signal is available worldwide for a fee and allows to obtain high working accuracy.
WARNING! The differential correction service subscription is not managed by ARAG, but directly by Omnistar®.
For more information on the subscription, visit Omnistar®'s website.

10.2.6 Receiver advanced data

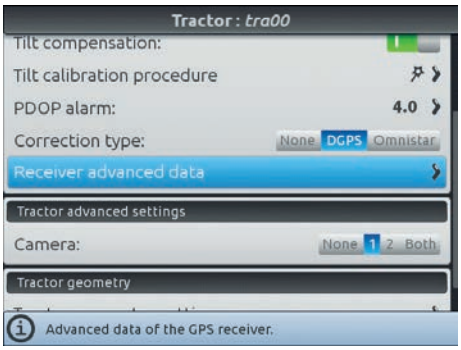


Fig. 84

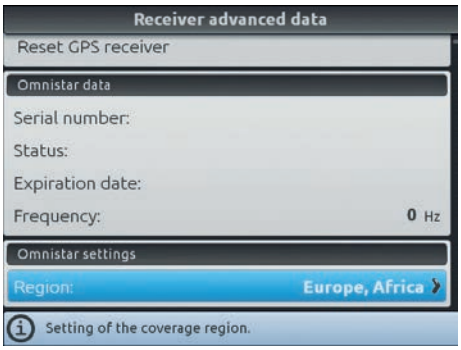


Fig. 85

Shows the GPS receiver and Omnistar® correction data.
To display Omnistar® select the Region of use in order to correctly activate the Omnistar® service.

10.2.7 HDOP alarm

Fig. 86

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

10.2.8 Camera

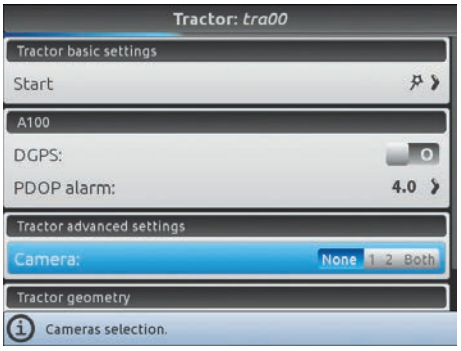


Fig. 87

Navigator can connect to up to 2 cameras in order to monitor the working areas that the operator is unable to see (e.g., when driving in reverse).
From the menu it is possible to enable/disable each single camera individually or both cameras:

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

10.2.9 Tractor geometry settings

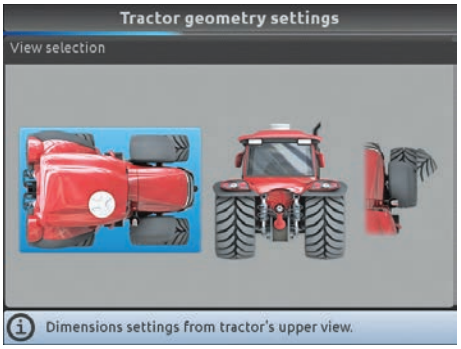


Fig. 88

Enter farming machine measures:
- Press the arrow keys (UP, DOWN, LEFT, RIGHT) to move across different tractor views.
- Confirm by pressing OK to enter setup.

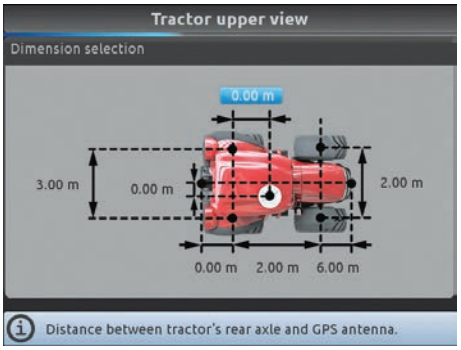


Fig. 89

Fig. 90

• Tractor upper view

- Press the arrow keys (UP, DOWN, LEFT, RIGHT) to move across values: the description of the selected value will appear on the display.
- Confirm by pressing OK to enter setup.
- Enter the value.
- Select and enter, one by one, all values.

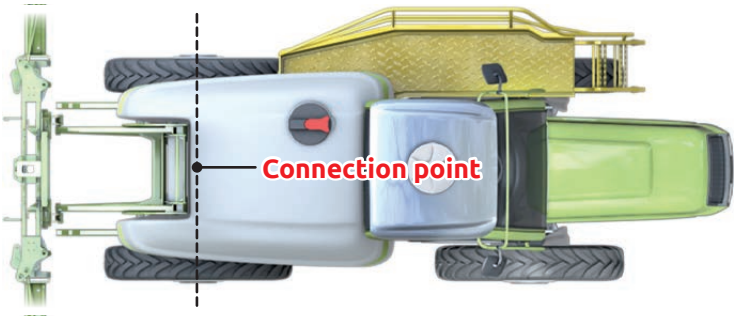


Fig. 91

THE CONNECTION POINT OF A SELF-PROPELLED MACHINE COINCIDES WITH THE REAR AXLE OF THE VEHICLE.

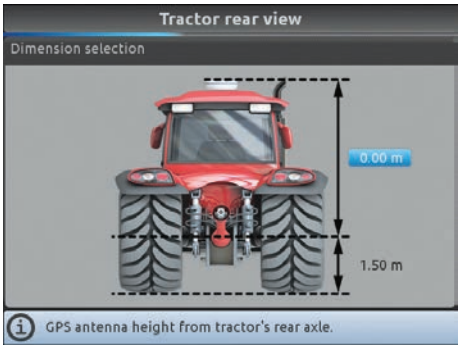


Fig. 92

Fig. 93

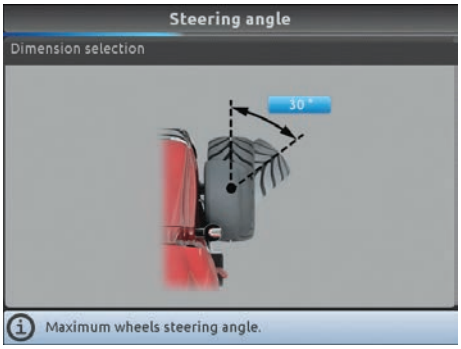


Fig. 94

Fig. 95

• Tractor rear view

- Press the arrow keys (UP, DOWN, LEFT, RIGHT) to move across values: the description of the selected value will appear on the display.
- Confirm by pressing OK to enter setup.
- Enter the value.
- Select and enter, one by one, all values.

• Steering angle

- Press OK to enter maximum steering angle setup.
- Enter the value.

F1 Enter selected character | F2 Delete selected character | F7 F8 Scroll (LEFT / RIGHT) | F4 F6 Scroll (UP / DOWN) | Data increase / decrease | OK Confirm access or data change | ESC Exit the function or data change | Par. 7.4

10.3 User

Fig. 96

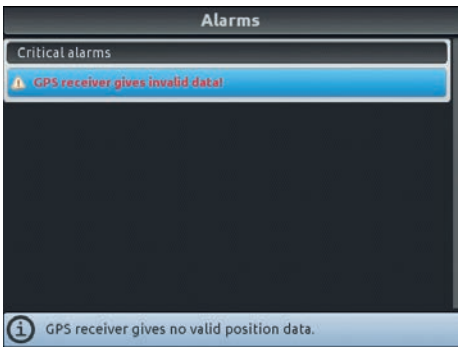


Fig. 97

Navigator features an **Alarm** menu (Fig. 97, accessible from the "Home" menu by pressing **F6**). This page displays all active notifications for the operator.

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

ACOUSTIC ALARMS

10.3.1 Acoustic critical alarms

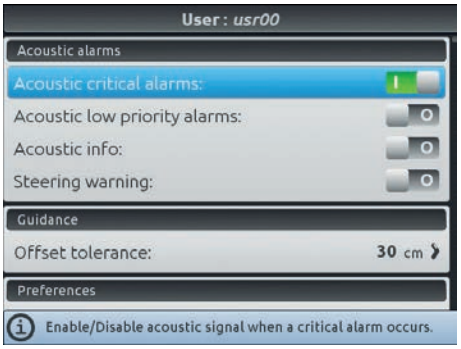


Fig. 98

It allows to enable/disable the acoustic signal when new **Critical alarms** are triggered (Fig. 97).
Signal enabled
Signal disabled

10.3.2 Acoustic low priority alarms

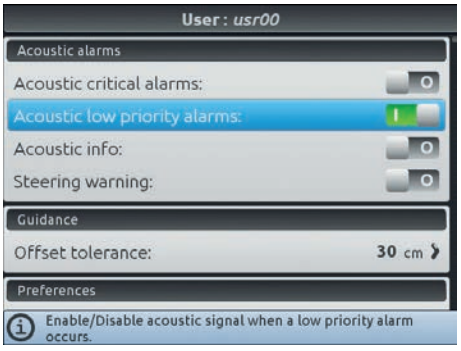


Fig. 99

It allows to enable/disable the acoustic signal when new **Low priority alarms** (Fig. 97) are triggered.
Signal enabled
Signal disabled

10.3.3 Acoustic info

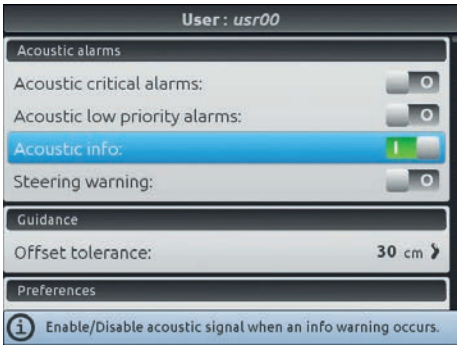


Fig. 100

It allows to enable/disable the acoustic signal when new **Info** (Fig. 97) are triggered.
Signal enabled
Signal disabled

10.3.4 Steering warning

Fig. 101

It allows to enable/disable the acoustic signal when the operator must steer in order to align the machine with the following track, avoiding unsprayed or overlapping areas between the two sprays (**Steering radius** set in par. 10.1.2 Working parameters).

Signal enabled
Signal disabled

GUIDANCE

10.3.5 Offset tolerance

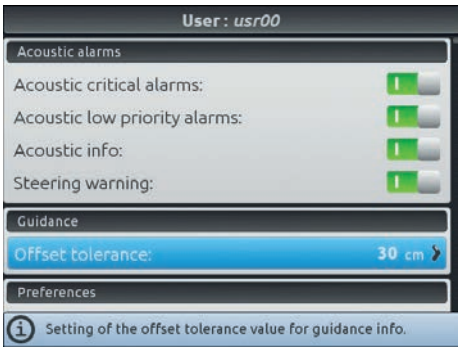


Fig. 102

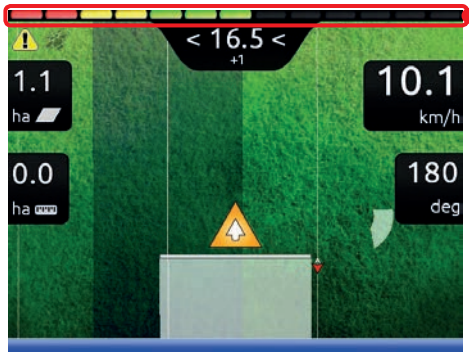


Fig. 103

The guidance screen displays a LED bar according to the offset with respect to the reference line.
Each LED indicates an offset value corresponding to the one set in item **Offset tolerance** (for ex.: 30 cm).

PREFERENCES

10.3.6 Selective job loading

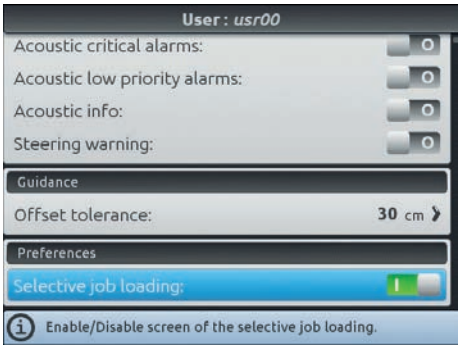


Fig. 104

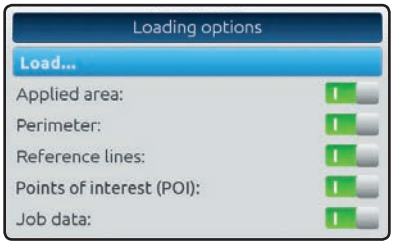


Fig. 105

It allows enabling/disabling the **Loading options** screen (Fig. 105) when the operator loads a previously saved job (par. 12.5 F5 **Resume job**).

Screen enabled
Screen disabled

F1 Enter selected character | F2 Delete selected character | F7 F8 Scroll (LEFT / RIGHT) | F4 F6 Scroll (UP / DOWN) | Data increase / decrease | OK Confirm access or data change | Esc Exit the function or data change | Par. 7.4

10.4 General options

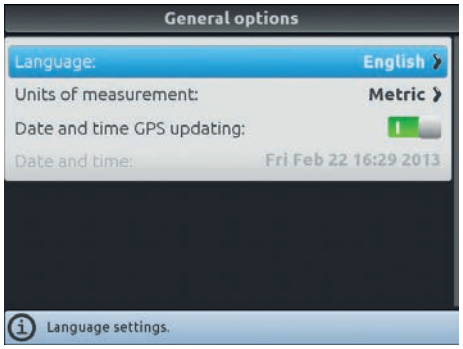


Fig. 106

Set the device system options:

- **Language** (par. 10.4.1).
- **Unit of measurement** (par. 10.4.2).
- **Date and time GPS updating** (par. 10.4.3).
- **Date and time** (par. 10.4.4).

10.4.1 Language

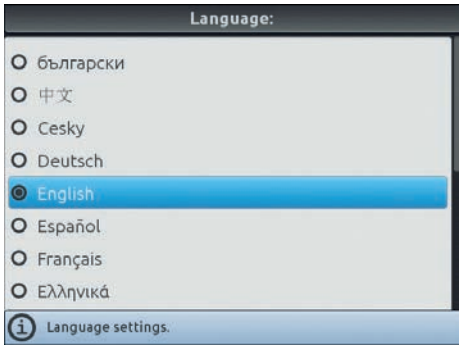


Fig. 107

Set the computer language.

Available languages:
български, Cesky, Deutsch, English, Español, Français, Ελληνικά, Magyar, 日本の, Italiano, Nederlands, Polski, Português, Român, Русский, 中文.

10.4.2 Unit of measurement

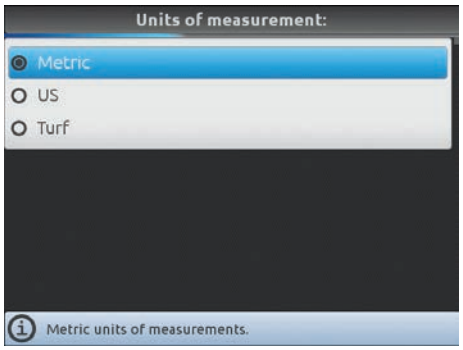


Fig. 108

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.

10.4.3 Date and time GPS updating

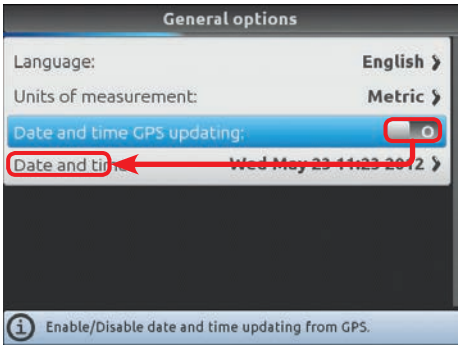


Fig. 109

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

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

Acquisition disabled
Set date and time manually.
The display will show the Date and Time menu (Fig. 109).

10.4.4 Date and Time

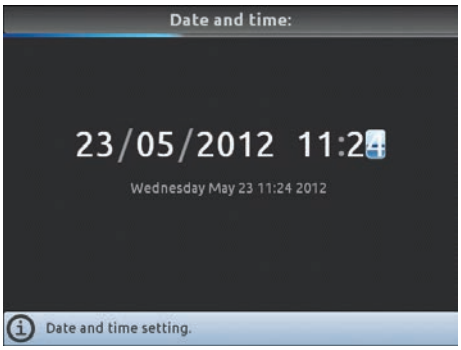


Fig. 110

To configure the items on this menu, you must disable **Date and time GPS updating** (Fig. 109).

Now set the computer time.

F1 Enter selected character | F2 Delete selected character | F7 F8 Scroll (LEFT / RIGHT) | F4 F6 Scroll (UP / DOWN) | Data increase / decrease | OK Confirm access or data change | ESC Exit the function or data change | Par. 7.4

The aspect of this menu depends on the selected basic settings (chap. 9), which affect which items are displayed in Fig. 111.

10.5 Device status

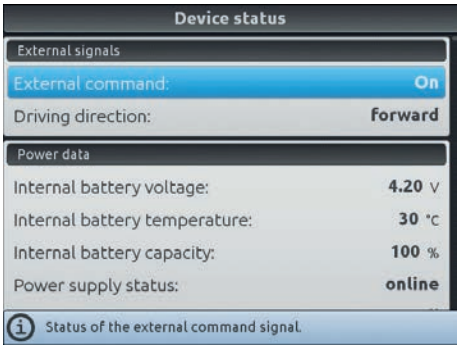


Fig. 111

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

Displayed items are READ-ONLY.

EXTERNAL SIGNALS

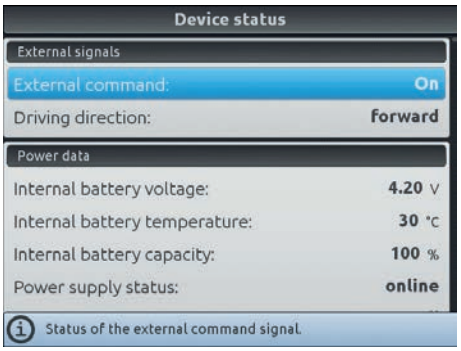


Fig. 112

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

Fig. 113

Navigator detects the driving direction.

POWER SUPPLY DATA

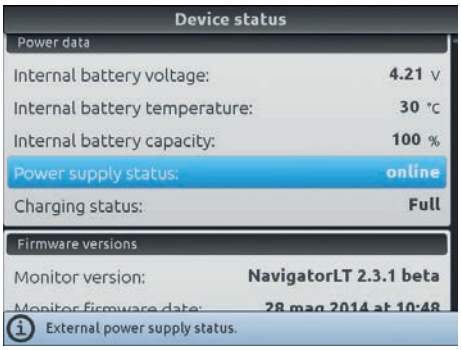


Fig. 114

The device checks the status of the power supply.

FIRMWARE VERSIONS

Fig. 115

Navigator displays firmware versions.

11 USE

IMPORTANT:
Navigator does not control the status of each section: any intervention on the valves must be made separately, by consulting the instruction manual of the relevant control.
By communicating what happens on the field, Navigator will collect data on the job.

11.1 Controls on computer

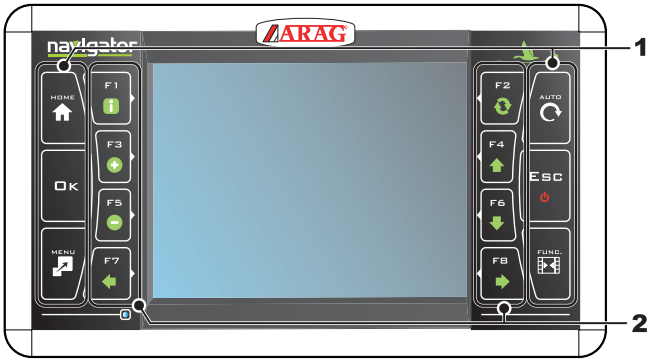


Fig. 116

Legend:

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

11.2 Guidance screen

USING THE KEYS

Fig. 117

F1 ÷ F8: Contextual function keys
These keys control what is shown on the display (display zoom adjustment, etc., Fig. 117)
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

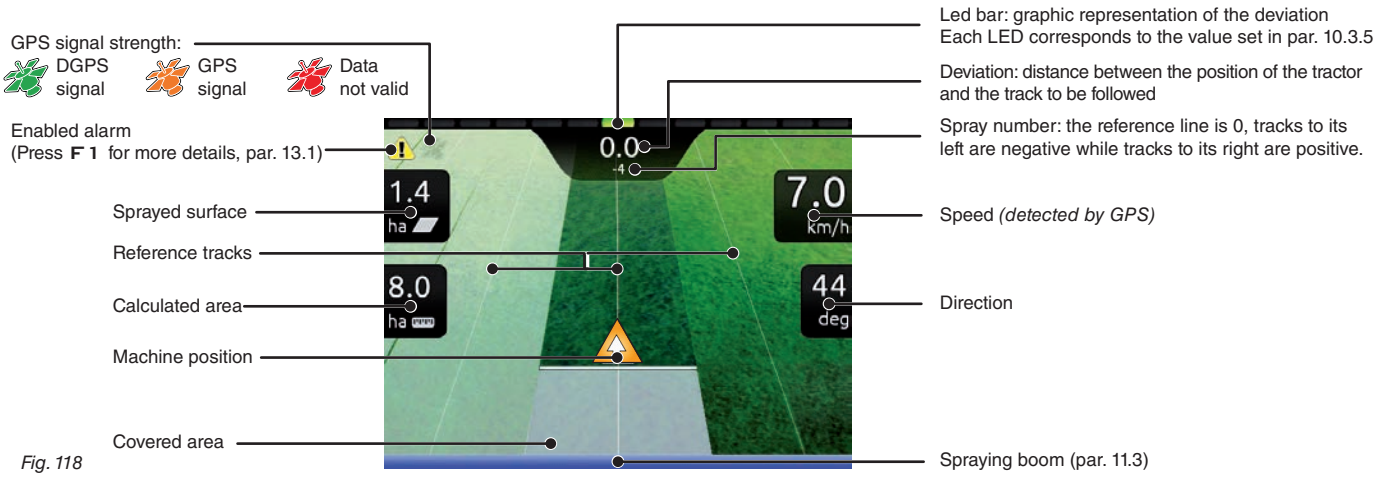


Fig. 118

11.3 Boom section management

Navigator does not automatically manage the closing/opening of sections, which must always be controlled manually.

TREATMENT AND BOOM SECTION STATUS

Main control **OFF** Sections **OFF**	Main control **OFF** Sections **ON**	Section **ON**	Section **OFF**	Zone to be sprayed **OPEN SECTION**	Zone already sprayed **CLOSE SECTION**

OPENING AND CLOSING SIGNALS

When the overlapping exceeds the value set for the **Sections overlapping limit** (par. 10.1.2), Navigator warns to INTERRUPT the spraying (Fig. 119).

When overlapping returns within the set limits, Navigator warns to START the spraying (Fig. 120).

Closing signal

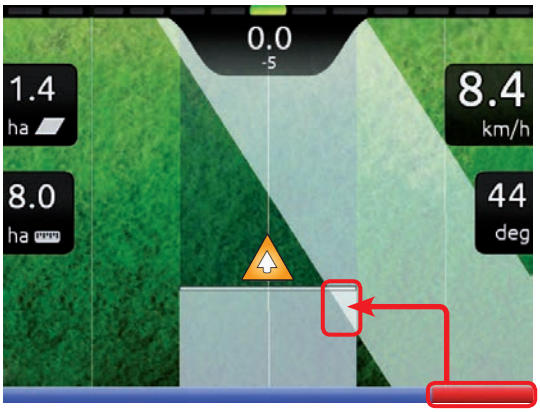


Fig. 119

Opening signal

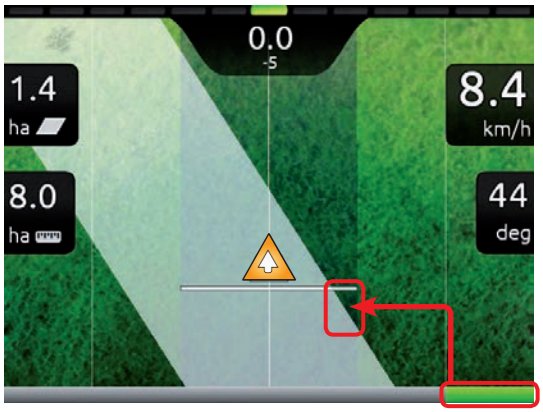


Fig. 120

11.4 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.

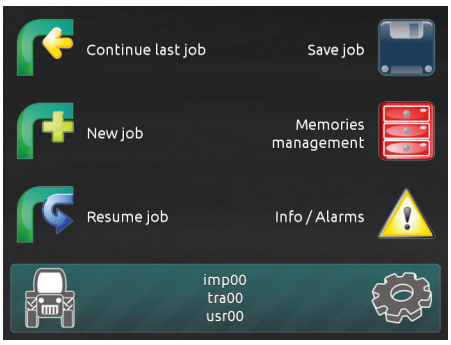


Fig. 121

- Go the beginning of the field to be sprayed.
- Switch Navigator on (par. 7.2).
After self-diagnostics, Navigator displays the "Home" screen (Fig. 121).
- Begin a new job, using the function F3 **New job** (par. 12.3).

SPRAYING START

Fig. 122

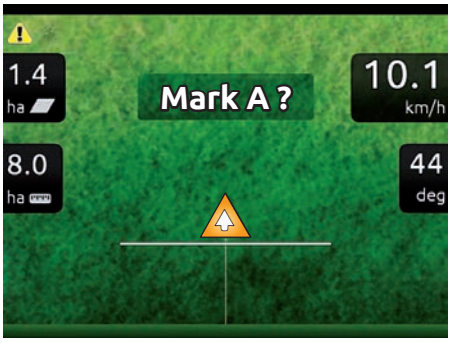


Fig. 123

Job Start

Press OK to switch to guidance.

MARKING POINTS A AND B

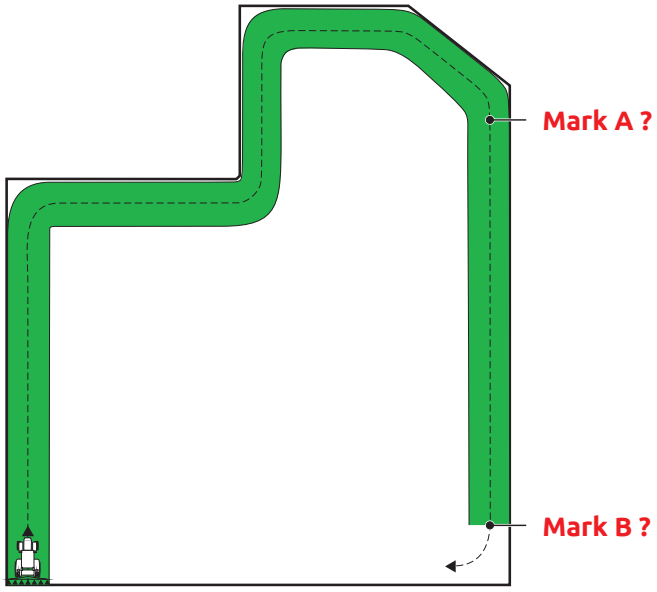


Fig. 124

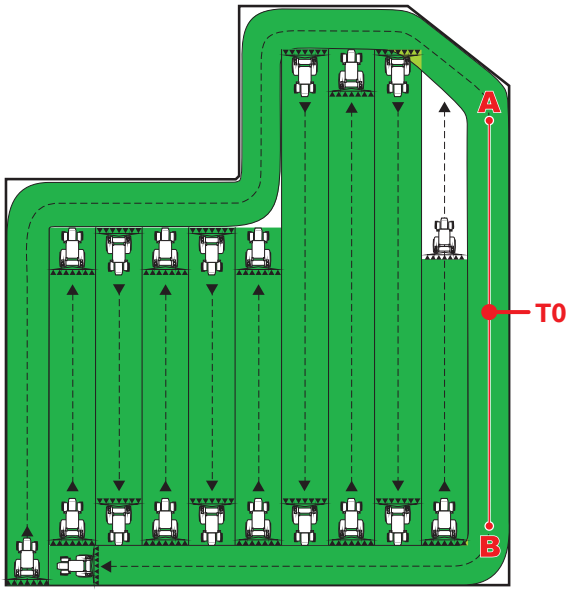


Fig. 125

Fig. 126

- While moving along the perimeter of the field, you will mark points A and B (as described in par. 14.6 F7 New AB).

This operation is fundamental for Navigator 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.

- 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. 125), by following the reference tracks shown on the display (Fig. 126).

At the beginning of a new job Navigator gives driving directions in the "Straight parallel" mode.
To change guidance mode see function F2 Guidance mode (par. 14.1).

12 "HOME" MENU

Fig. 127

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

Par.		
12.1	F1 **Continue last job**	Continues last job
12.3	F3 **New job**	Start a new spraying
12.5	F5 **Resume job**	Activate procedure for resuming a job
10	F7	Select / Create settings for **User**, **Tractor** and **Implement**

Par.		
12.2	F2 **Save job**	Save current job
12.4	F4 **Memories management**	Manage and copy data between internal and external memories (SD card, Pendrive)
12.6	F6 **Info / Alarms**	Job information / alarms
10	F8	Edit settings for **User**, **Tractor** and **Implement**

F1 Enter selected character | F2 Delete selected character | F7 F8 Scroll (LEFT / RIGHT) | F4 F6 Scroll (UP / DOWN) | Data increase / decrease | OK Confirm access or data change | ESC Exit the function or data change | Par. 7.4

12.1
F1 Continue last job

Continues last job.

1 Press **F1** to continue the last job, from the point where it has been interrupted.

2 Select and press **OK** to switch to guidance mode.

3 Complete the job (Fig. 129).

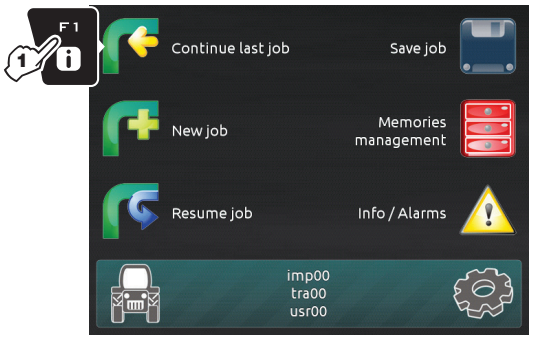


Fig. 128

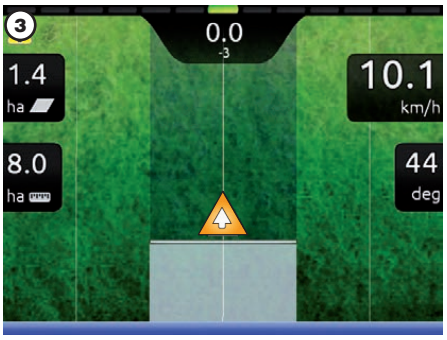


Fig. 129

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

Par. 7.4

12.2 F2 Save job

Save current job.

Fig. 130

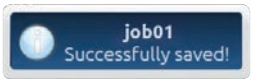
Fig. 131

1 Press **F2** to save current job: the name edit screen is displayed (Fig. 130). Type the name.
2A Press in succession to select the character you wish to type (UP / DOWN)
2B Press in succession to select the character you wish to type (RIGHT / LEFT).
3 Press to:
- Confirm the selected character
- Delete the character before the cursor (when the symbol is selected "⌫")
- Save the entered text (when the symbol "ok" is selected)

4 Press to delete the character before the cursor
5 Press to exit screen without confirming modification

Legend:

imp03 | Typed Name Cursor	1 Selected character	← → Shift cursor across name characters	⇧ Caps lock	⌫ Deletes the character before the cursor	ok Saves the entered text



A confirmation message is displayed once the process is completed (Fig. 132). Press **ESC**.

Fig. 132

F1 Enter selected character	F2 Delete selected character	F7 F8 Scroll (LEFT / RIGHT)	F4 F6 Scroll (UP / DOWN)	Data increase / decrease	OK Confirm access or data change	Esc Exit the function or data change	Par. 7.4

12.3 F3 New job

Start a new spraying.

1 Press F3 to start a new spraying. If the current job has not been saved yet, Navigator will prompt the user to save it (Fig. 133).
Press OK to continue without saving (**2A**) or ESC to interrupt the procedure and save (**2B**).

Fig. 133

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. 12.2).
Now start from point **1** to begin a new spraying and pass directly to step **2A**.

Fig. 134

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

Fig. 135

F1 Enter selected character | F2 Delete selected character | F7 F8 Scroll (LEFT / RIGHT) | F4 F6 Scroll (UP / DOWN) | Data increase / decrease | OK Confirm access or data change | Esc Exit the function or data change | Par. 7.4

12.4 F4 Memories management

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

Allows to upload, save and/or delete the data memorized on Navigator or on an external memory (SD card / pendrive); said data concern jobs carried out or machine configurations. The operations that can be carried out will be illustrated in the following paragraphs.

Fig. 136

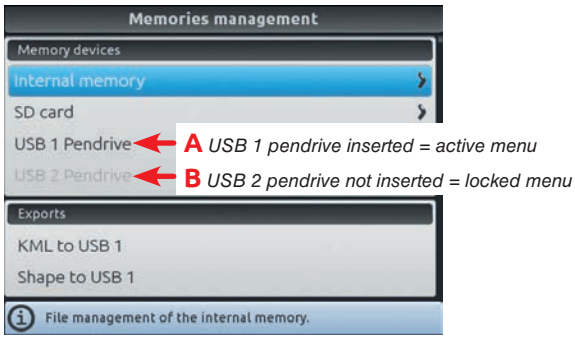


Fig. 137

F1 Enter selected character | F2 Delete selected character | F7 F8 Scroll (LEFT / RIGHT) | F4 F6 Scroll (UP / DOWN) | Data increase / decrease | OK Confirm access or data change | ESC Exit the function or data change | Par. 7.4

12.4.1 Internal memory

It allows to transfer the saved data (Fig. 139) from the internal memory of Navigator onto an "external" support (SD card or USB pendrive).
The following paragraphs will use Implements as an example: the same procedure will be valid for all other cases (Tractors, Users, etc., Fig. 139).

1 Press F4 to enter **Memories management**.
2 Select the **Internal memory** menu and press OK.
3 Select **Implements** (Fig. 139) and press OK.
4 In the list of memorized names select the desired implement (Fig. 140) and press OK.
A list of actions that can be performed for the selected implement will appear (**Delete** etc., Fig. 140). These will be described below.
The option **[Select all...]** *allows performing the same operation simultaneously on ALL implements of the list.*

Fig. 138

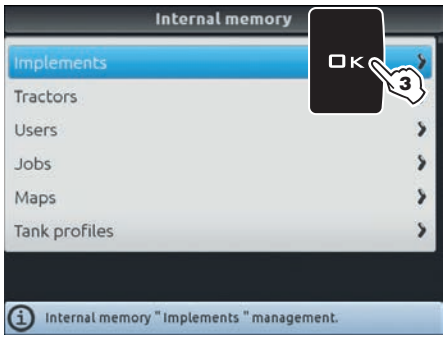


Fig. 139

A *USB Pendrive inserted = active action*
B *USB Pendrive not inserted = locked action*

Fig. 140

• Delete

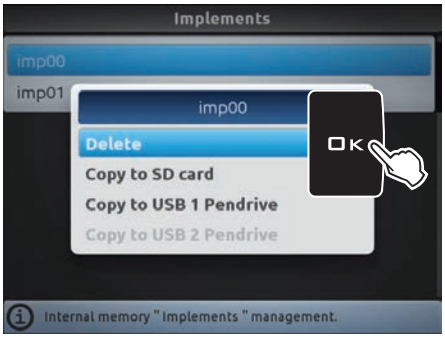


Fig. 141

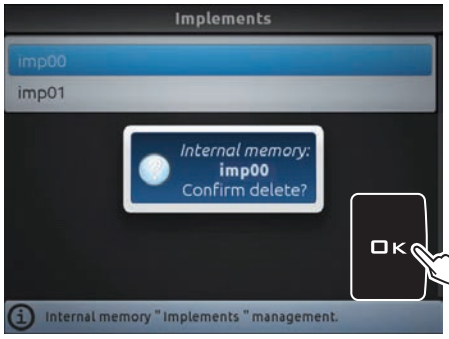


Fig. 142

Allows to delete data from Navigator internal memory.

- Select **Delete** (Fig. 141) and press OK.
- The message in Fig. 142 is displayed: confirm deletion by pressing OK again.

The currently used files must NOT be deleted.

• Copy onto SD card

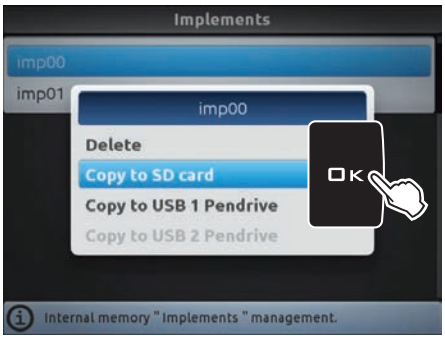
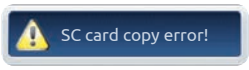


Fig. 143

Allows to copy data from Navigator internal memory onto a SD card.
- Select the item **Copy to SD card** (Fig. 143) and press OK.

ERROR MESSAGES	
	A file with the same name already exists on the SD card. You can do the following: - Press OK to replace the file. **WARNING: ALL data in the replaced file will be lost.** - Press ESC to avoid replacing the file; check its contents or edit its name before trying to save again.
	- There is no more space available on the SD card: delete a few files from the memory and try saving again (par. 12.4.2 - **SD card > Implements > Delete**). - The SD card is locked. Remove the protection and try saving again.

• Copy to USB pendrive (1 or 2)

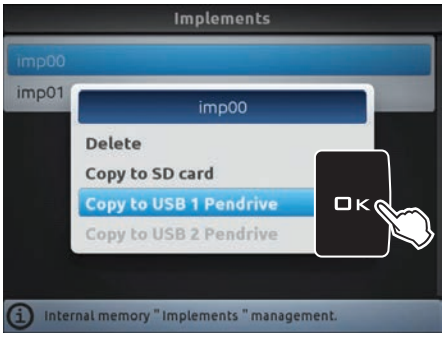
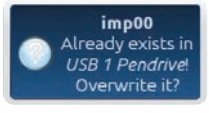


Fig. 144

Allows to copy data from Navigator internal memory onto a pendrive.
- Select the item **Copy to USB pendrive** (Fig. 144) and press OK.

ERROR MESSAGES	
	A file with the same name already exists on the pendrive. You can do the following: - Press OK to replace the file. **WARNING: ALL data in the replaced file will be lost.** - Press ESC to avoid replacing the file; check its contents or edit its name before trying to save again.
	- There is no more space available on the pendrive: delete a few files from the memory and try saving again (par. 12.4.3 - **USB pendrive > Implements > Delete**). - The pendrive is locked. Remove the protection and try saving again.

F1 Enter selected character | F2 Delete selected character | F7 F8 Scroll (LEFT / RIGHT) | F4 F6 Scroll (UP / DOWN) | Data increase / decrease | OK Confirm access or data change | Esc Exit the function or data change | Par. 7.4

12.4.2 SD card

It allows transferring the saved data (Fig. 146) from the SD card onto the internal memory of Navigator.
The following paragraphs will use Implements as an example: the same procedure will be valid for all other cases (Tractors, Users, etc., Fig. 146).

1 Press F4 to enter **Memories management**.
2 Select the **SD card** menu and press OK.
3 Select **Implements** (Fig. 146) and press OK.
4 In the list of memorized names select the desired implement (Fig. 147) and press OK.
A list of actions that can be performed for the selected implement will appear (**Delete** etc., Fig. 147). These will be described below.
The option **[Select all...]** *allows performing the same operation simultaneously on ALL implements of the list,* ***EXCEPT THE ACTIVE ONE.***

Fig. 145

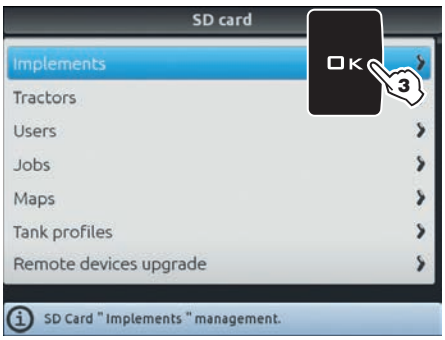


Fig. 146

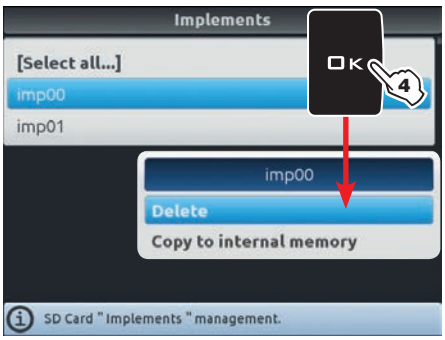


Fig. 147

• Delete

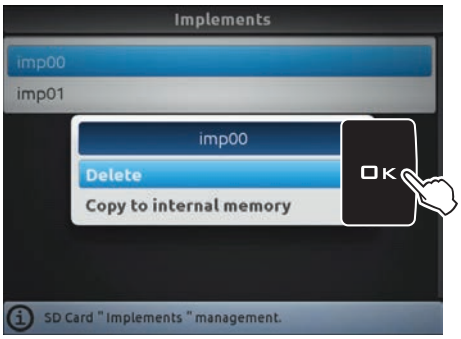


Fig. 148

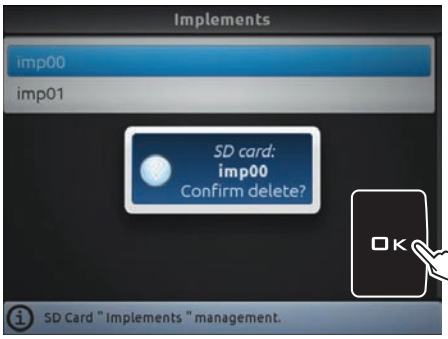


Fig. 149

Allows to delete data from the SD card.

- Select **Delete** (Fig. 148) and press OK.
- The message in Fig. 149 is displayed: confirm deletion by pressing OK again.

• Copy onto internal memory

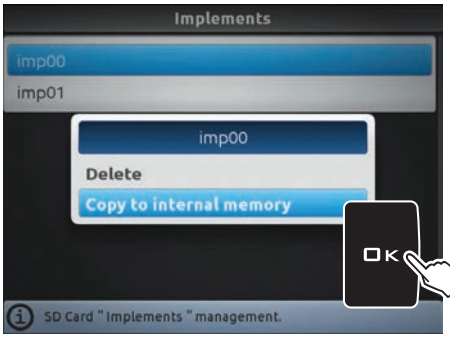


Fig. 150

Allows to copy data from the SD card onto Navigator internal memory.
- Select the item **Copy to internal memory** (Fig. 150) and press OK.

ERROR MESSAGES

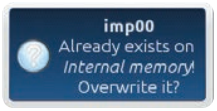


Fig. 151

Fig. 152

ERROR 1: a file with the same name already exists on the internal memory.

ERROR 2: a file with the same name already exists on the internal memory and it is being used.

- Press OK to replace the file **(all data in the replaced file will be lost).**
- Press ESC to avoid replacing the file (check its contents or edit its name before trying to save again).

12.4.3 USB pendrive

It allows transferring the saved data (Fig. 154) from the pendrive onto the internal memory of Navigator.
The following paragraphs will use Implements as an example: the same procedure will be valid for all other cases (Tractors, Users, etc., Fig. 154).

1 Press F4 to enter **Memories management**.
2 Select the **USB 1 pendrive** menu and press OK.
3 Select **Implements** (Fig. 154) and press OK.
4 In the list of memorized names select the desired implement (Fig. 155) and press OK.
A list of actions that can be performed for the selected implement will appear (**Delete** etc., Fig. 155). These will be described below.
The option **[Select all...]** *allows performing the same operation simultaneously on ALL implements of the list,* ***EXCEPT THE ACTIVE ONE.***

Fig. 153

Fig. 154

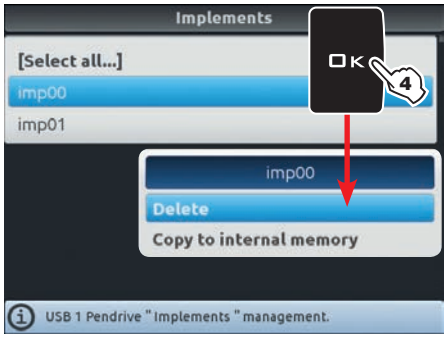


Fig. 155

• Delete

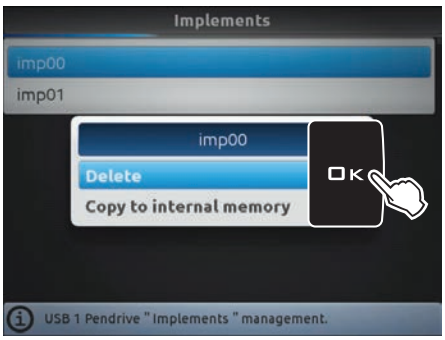


Fig. 156

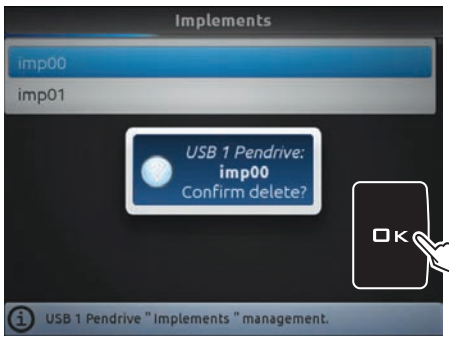


Fig. 157

Allows to delete data from the pendrive.

- Select **Delete** (Fig. 156) and press OK.
- The message in Fig. 157 is displayed: confirm deletion by pressing OK again.

• Copy onto internal memory

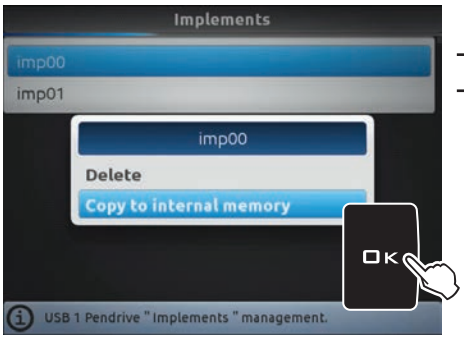


Fig. 158

Allows to copy data from the pendrive onto Navigator internal memory.
- Select the item **Copy to internal memory** (Fig. 158) and press OK.

ERROR MESSAGES

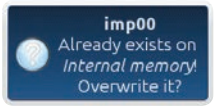


Fig. 159

Fig. 160

ERROR 1: a file with the same name already exists on the internal memory.

ERROR 2: a file with the same name already exists on the internal memory and it is being used.

- Press OK to replace the file **(all data in the replaced file will be lost).**
- Press ESC to avoid replacing the file (check its contents or edit its name before trying to save again).

12.4.4 Exports

Allows to export saved data to the USB pendrive.

• KML on SD

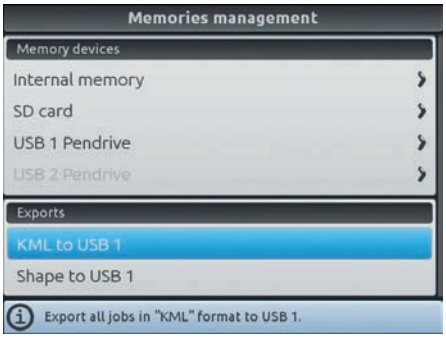


Fig. 161

It allows to export the current job onto a map in "KML" format and to save it on the USB pendrive.
Data in the file can be displayed on a Personal Computer with Google Earth®.

- Select the item **KML to USB 1** 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 on SD

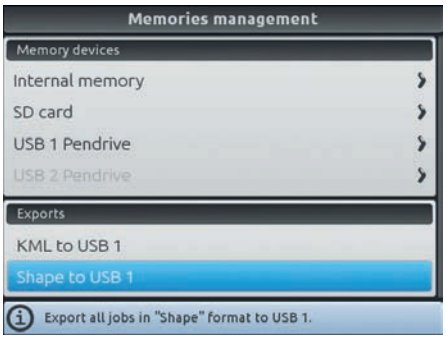


Fig. 162

It allows to export the current job onto a map in "Shape" format and to save it on the USB pendrive.
Data in the file can be displayed on a Personal Computer with a "Shape" file viewer (.shp).

- Select the item **Shape to USB 1** 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 "shape".

12.5 F5 Resume job

Enables procedure for resuming a previously saved job.

1 Press F5 to resume a previous job, from the list of saved jobs.
As for the **New job** function (par. 12.3), if the current job has not been saved yet, Navigator will prompt the user to save it.

2 Select the job among those in the list (Fig. 163) and press OK to confirm the selection.

2a When an "old" job is resumed, Navigator provides guidance information by restoring the conditions which were active at the time of saving.
If the **Loading options** screen is enabled (see par. 10.3.6), it is possible to choose which information to load (Fig. 164).

3 Press OK to switch to the guidance mode.

4 Complete the job (Fig. 165).

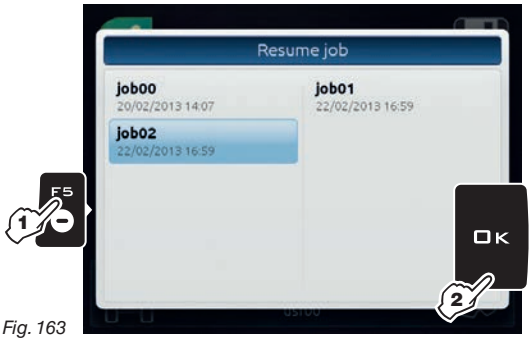


Fig. 163

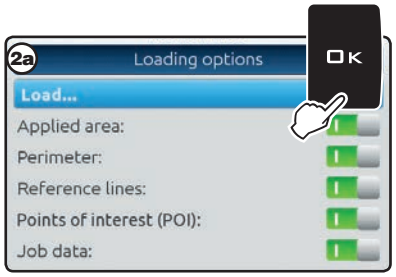


Fig. 164

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

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

- Select **Load...** and press OK to switch to **Spraying settings**.

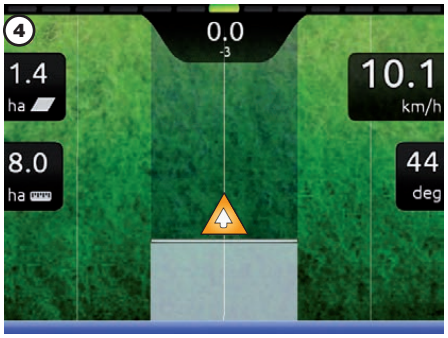


Fig. 165

F1 Enter selected character | F2 Delete selected character | F7 F8 Scroll (LEFT / RIGHT) | F4 F6 Scroll (UP / DOWN) | Data increase / decrease | OK Confirm access or data change | Esc Exit the function or data change | Par. 7.4

12.6
F6 Info / Alarms

Displays job information / alarms.

Fig. 166

Fig. 167

1 Press F6 to view the **Info / Alarms** menu (Fig. 167).

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

13 JOB MENU

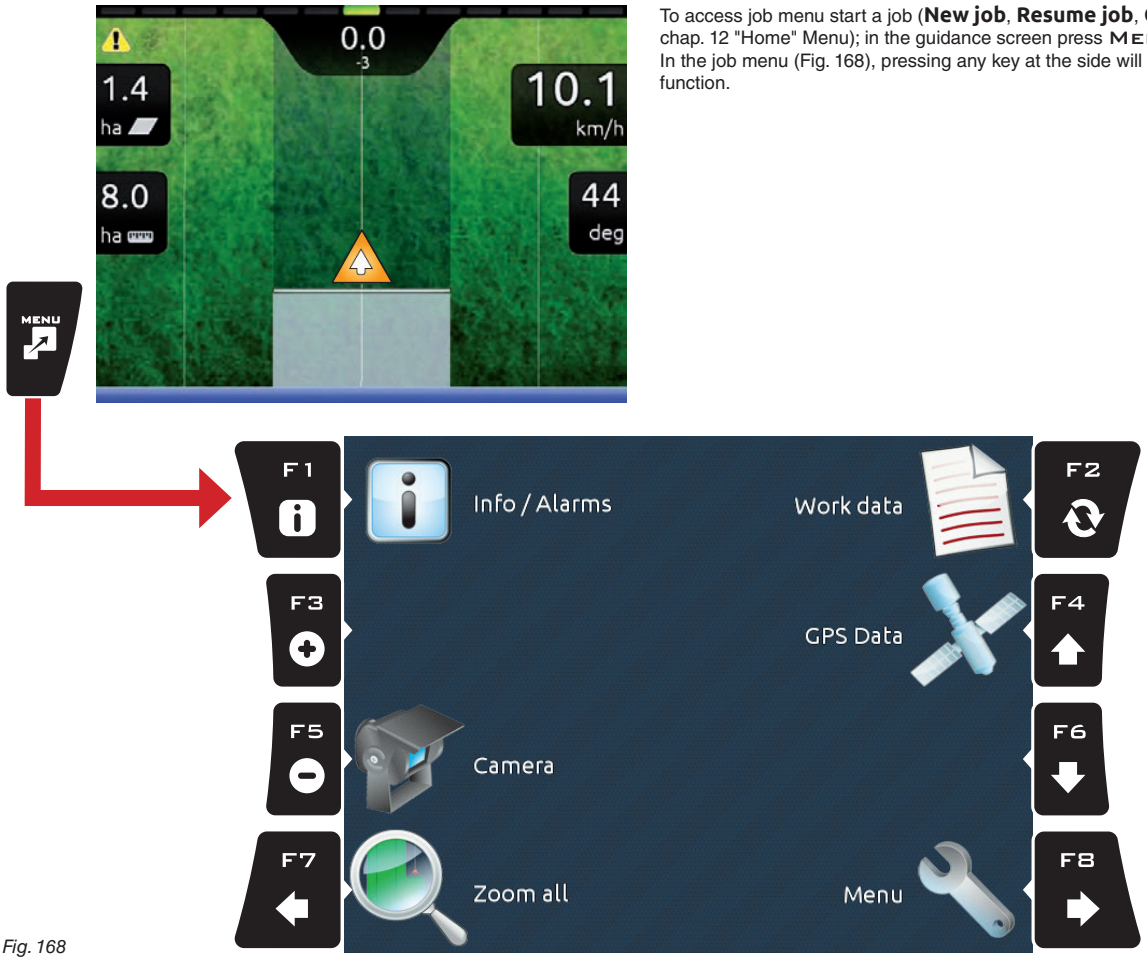


Fig. 168

To access job menu start a job (**New job**, **Resume job**, **Continue last job**, chap. 12 "Home" Menu); in the guidance screen press MENU.
In the job menu (Fig. 168), pressing any key at the side will enable the relevant function.

The table sums up all menu items and corresponding keys:

Par.		
13.1		**F1 Info / Alarms**
	Displays job information / alarms	
		**F3**
	NOT USED	
13.4		**F5 Camera**
	Displays images from connected cameras	
13.5		**F7 Zoom all**
	Overview of the field during spraying	

Par.		
13.2		**F2 Job data**
	Displays job data	
13.3		**F4 GPS data**
	Displays GPS data	
		**F6**
	NOT USED	
13.6		**F8 Menu**
	Job settings menu	

F1 Enter selected character | F2 Delete selected character | F7 F8 Scroll (LEFT / RIGHT) | F4 F6 Scroll (UP / DOWN) | Data increase / decrease | OK Confirm access or data change | ESC Exit the function or data change | Par. 7.4

13.1
F1 Info / Alarms

Displays job information / alarms.

1 In the guidance screen, press MENU.
2 Press F1 to view the **Info / Alarms** menu (Fig. 170).

Fig. 169

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

Fig. 170

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

Par. 7.4

13.2 F2 Job data

Displays job data.

1 In the guidance screen, press **MENU**.
2 Press **F2** to view the job data (Fig. 172).
3 Press **F4** / **F6** to scroll data.

Displayed data and relevant units of measurement are indicated in par. 16.1.

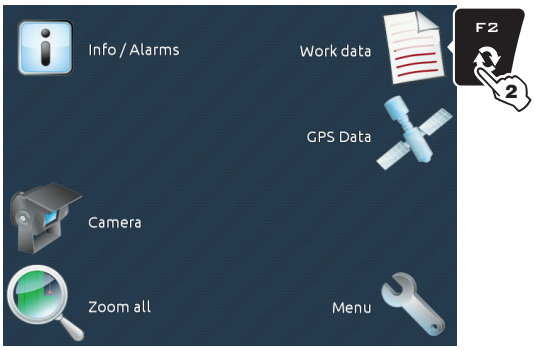


Fig. 171

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

Fig. 172

F1 Enter selected character | F2 Delete selected character | F7 F8 Scroll (LEFT / RIGHT) | F4 F6 Scroll (UP / DOWN) | Data increase / decrease | OK Confirm access or data change | ESC Exit the function or data change | Par. 7.4

13.3 F4 GPS data

Displays GPS data.

1 In the guidance screen, press **MENU**.
2 Press **F4** to view the **GPS data** menu (Fig. 174).
This screen shows the data sent to the GPS receiver.

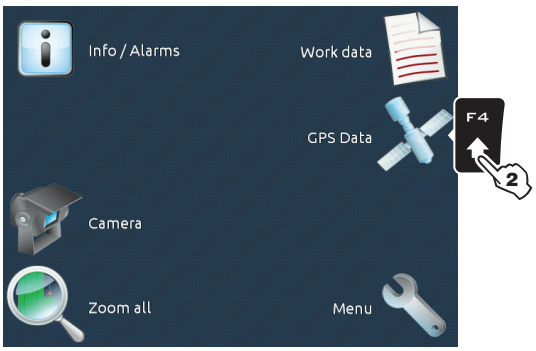


Fig. 173

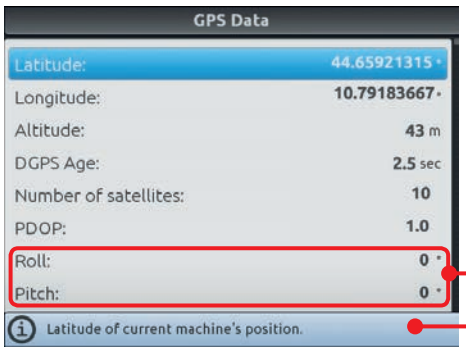


Fig. 174

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

A description of the selected data 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 increase / decrease | OK Confirm access or data change | ESC Exit the function or data change | Par. 7.4

13.4
F5 Camera

Displays images from connected cameras.

1 In the guidance screen, press **MENU**.
2 Press **F5** to view the **Camera** menu (Fig. 176).
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. 10.2.8).

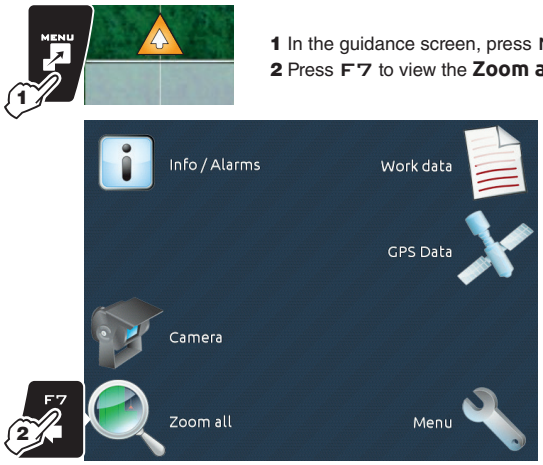
Fig. 175

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

Fig. 176

13.5 F7 Zoom all

Overview of the field during spraying.



1 In the guidance screen, press MENU.
2 Press F7 to view the **Zoom all** menu (Fig. 178).

Fig. 177

INDICATORS AND POINTS OF INTEREST ON THE FIELD

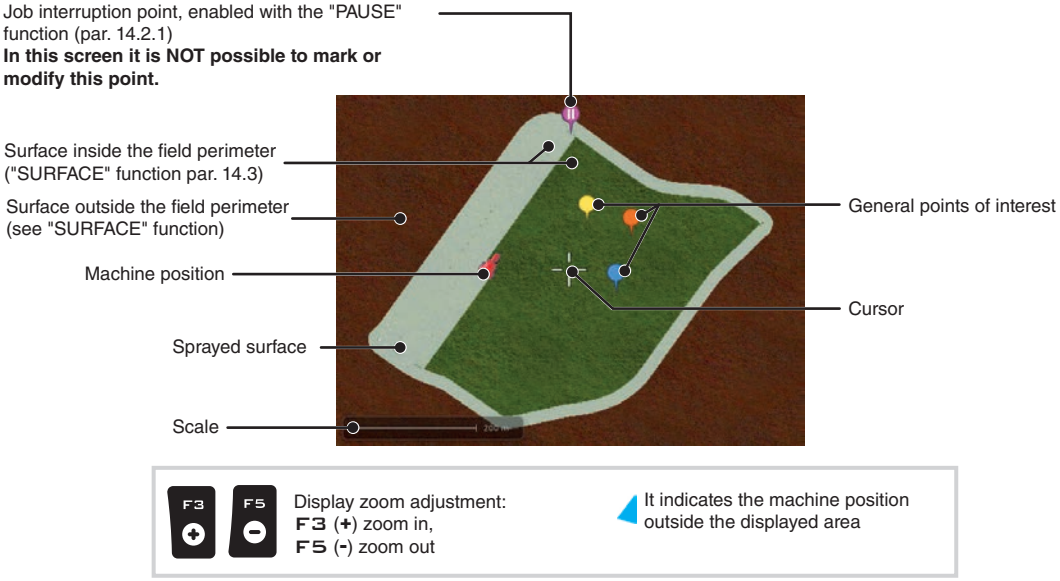


Fig. 178

CONTINUES

F1 Enter selected character | F2 Delete selected character | F7 F8 Scroll (LEFT / RIGHT) | F4 F6 Scroll (UP / DOWN) | Data increase / decrease | OK Confirm access or data change | ESC Exit the function or data change | Par. 7.4

MARKING POINTS OF INTEREST

Fig. 179

The general points of interest can be memorized with this procedure or with the specific function (par. 14.2.2).
It is possible to mark more points.

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

1 In field overview screen (Fig. 179) 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. 180).
4 Press **F7** / **F8** to select the type of marker.
5 Press **OK** to confirm (Fig. 181).

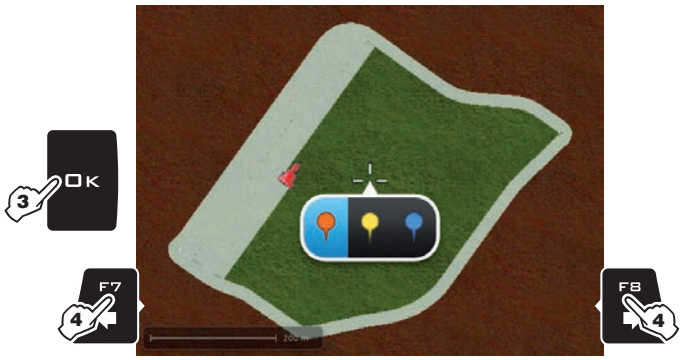


Fig. 180

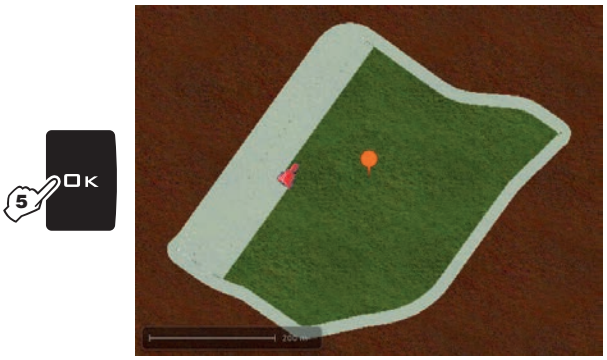


Fig. 181

REMOVING POINTS OF INTEREST

1 In field overview screen (Fig. 182) 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. 183) / **ESC** to cancel.

Fig. 182

Fig. 183

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

Par. 7.4

13.6 F8 Menu

Job settings menu.

1 In the guidance screen, press MENU.
2 Press F8 to view the **Settings menu** (Fig. 185).

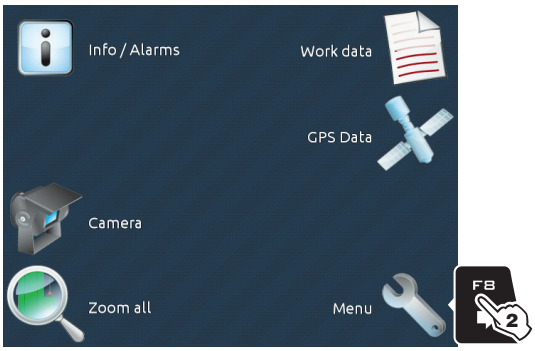


Fig. 184

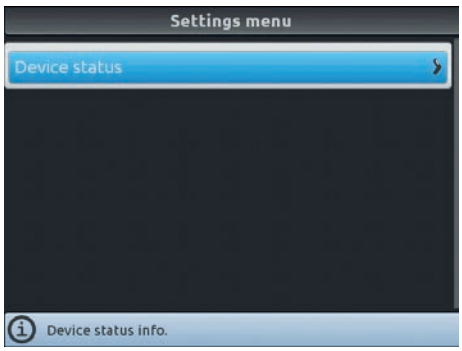


Fig. 185

In this screen it is possible to access several different menus, which can be useful during spraying:
• **Device status** (par. 10.5).

F1 Enter selected character | F2 Delete selected character | F7 F8 Scroll (LEFT / RIGHT) | F4 F6 Scroll (UP / DOWN) | Data increase / decrease | OK Confirm access or data change | ESC Exit the function or data change | Par. 7.4

14 JOB FUNCTIONS

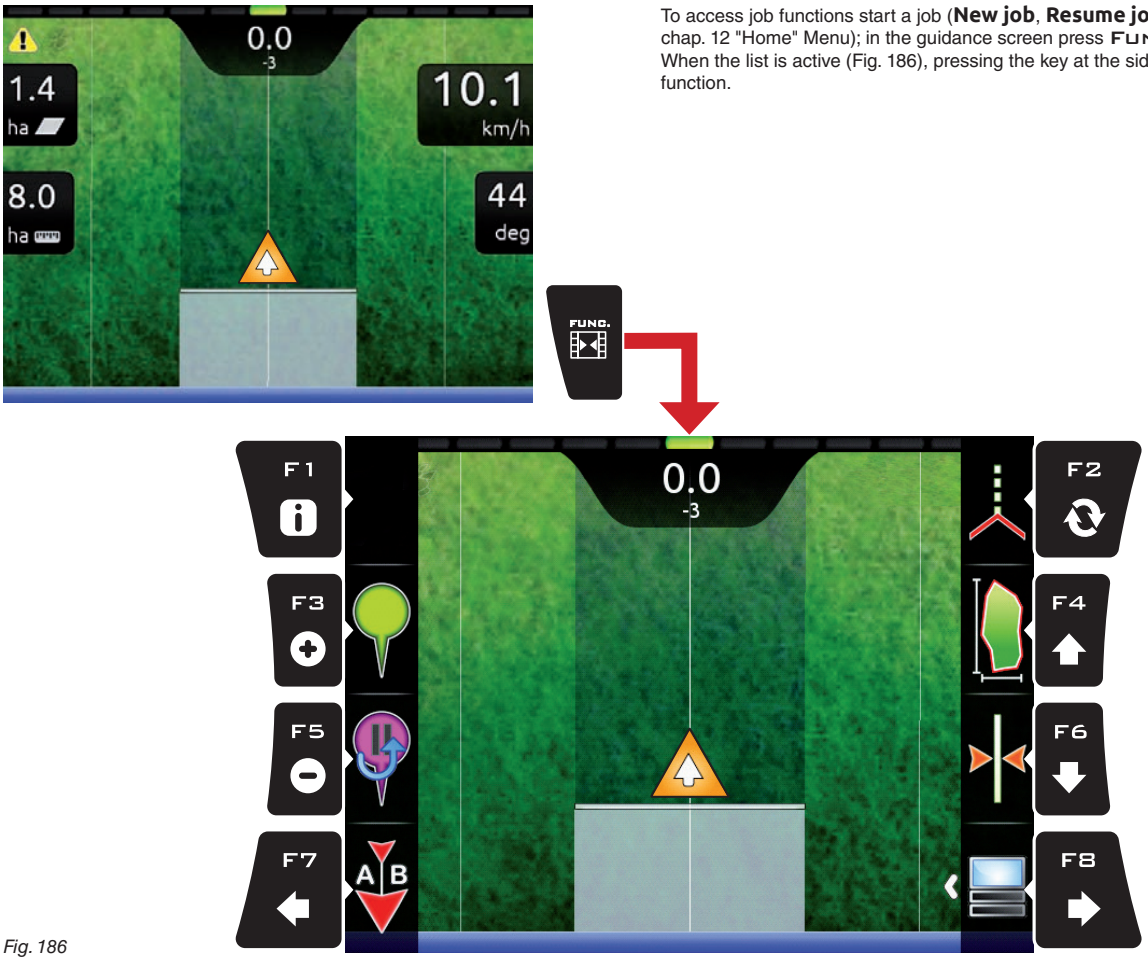


Fig. 186

To access job functions start a job (**New job**, **Resume job**, **Continue last job**, chap. 12 "Home" Menu); in the guidance screen press FUNC.
When the list is active (Fig. 186), pressing the key at the side will enable the relevant function.

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

Par.			
--		F1	*NOT USED*
14.2		F3	**Point marking** It groups the marking of more points:
		F1	**Pause** Save job breaking point
		F3/F5/F7	General point of interest saving
14.4		F5	**Resume from pause** Guidance indications to return to job breaking point
14.6	A B	F7	**New AB** Create a new AB track

Par.			
14.1		F2	**Guidance mode** Select guidance mode
14.3		F4	**Surface** Calculate field surface
14.5		F6	**Align** Align to nearest track
14.7		F8	**Display** Display options Includes several functions:
		F2	Tractor themes
		F4	Spraying themes
		F6	Daytime/ night time display mode
		F8	2D / 3D display mode

F1 Enter selected character | F2 Delete selected character | F7 F8 Scroll (LEFT / RIGHT) | F4 F6 Scroll (UP / DOWN) | Data increase / decrease | OK Confirm access or data change | ESC Exit the function or data change | Par. 7.4

14.1 F2 Guidance mode

Selecting guidance mode:

1 In the guidance screen, press **FUNC**.
2 Press **F2** to enable the function.
3 Select a guidance mode (Fig. 188): press **F4** and **F6** to move across the available items (**A - Straight guidance mode**, **B - Curved guidance mode**, **C - Pivot mode** or **D - Free guidance mode**)
4 Confirm selection.

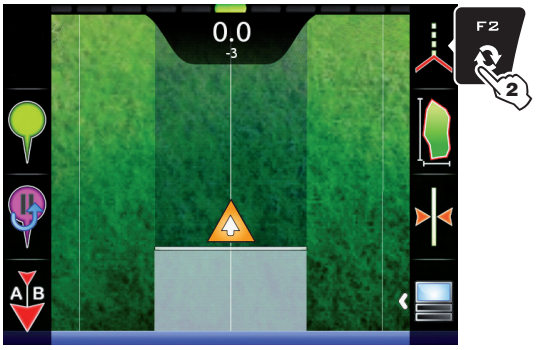


Fig. 187

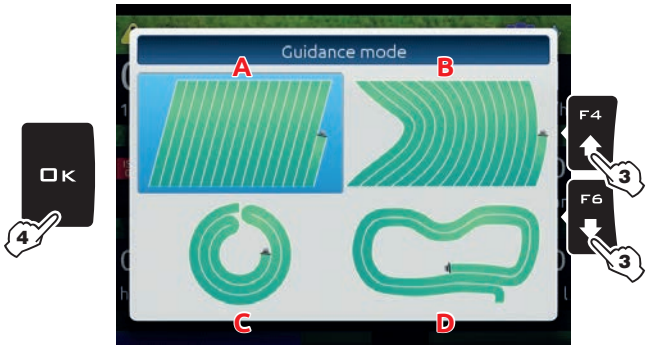


Fig. 188

A - STRAIGHT GUIDANCE MODE

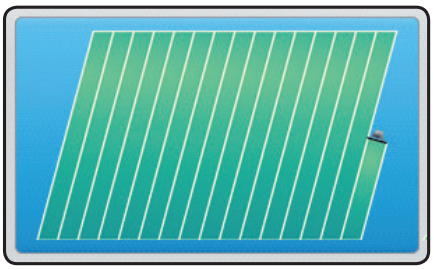


Fig. 189

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

B - CURVED GUIDANCE MODE

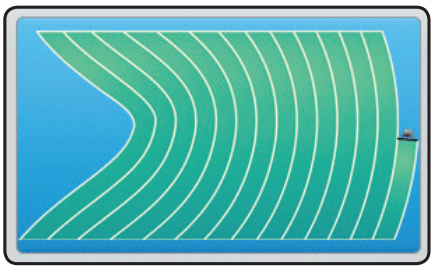


Fig. 190

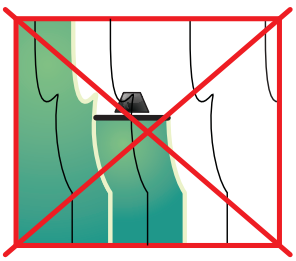


Fig. 191

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. 191).
The trajectory between **A** and **B** will be saved and Navigator will create evenly distributed tracks.

C - PIVOT MODE

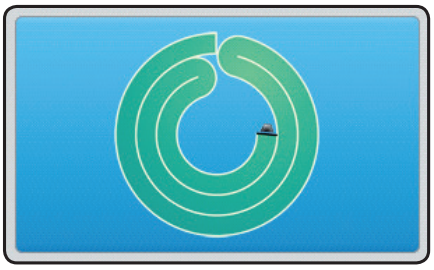


Fig. 192

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

D - FREE GUIDANCE MODE

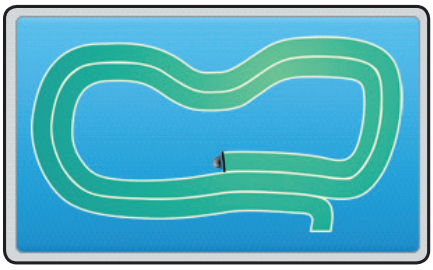


Fig. 193

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.

14.2 F3 Point marking

It groups the available options for marking points of interest.

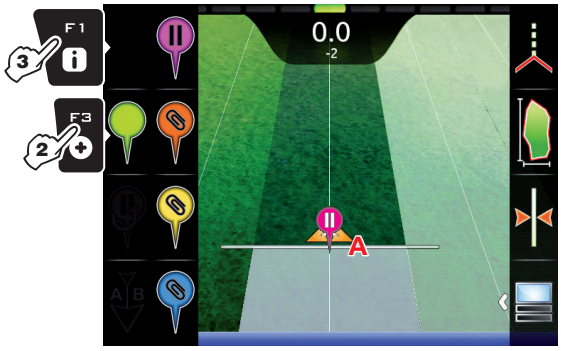
1 In the guidance screen, press **FUNC**.
2 Press **F3**. A list with options for marking the points will appear (Fig. 194).
Pressing each key will enable the corresponding function.

Fig. 194

14.2.1 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. 195):
the symbol will be placed exactly on that point.



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

Fig. 195

14.2.2 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. 13.5). 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. 197):
the symbol corresponding to the pressed key will be displayed exactly on that point:
F3 for point ; **F5** for point ; **F7** for point .

Fig. 196

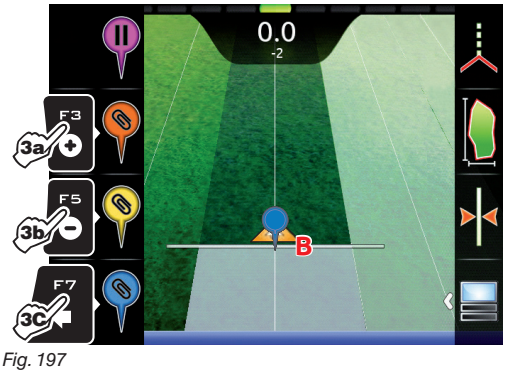


Fig. 197

14.3 F4 Surface

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

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

2 Press **F4** to start the surface calculation procedure (function list disappears).
The following message will appear: **Field edge side selection** prompting the operator to select which side of the machine to use as a reference to define the field perimeter.

3 Press **F3** (*Left*) or **F4** (*Right*): a white line will be displayed to draw the field perimeter as the tractor moves (Fig. 199).

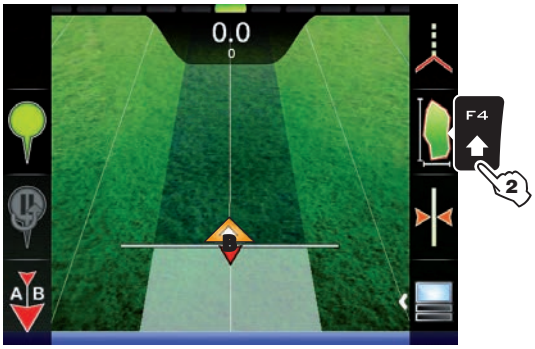


Fig. 198

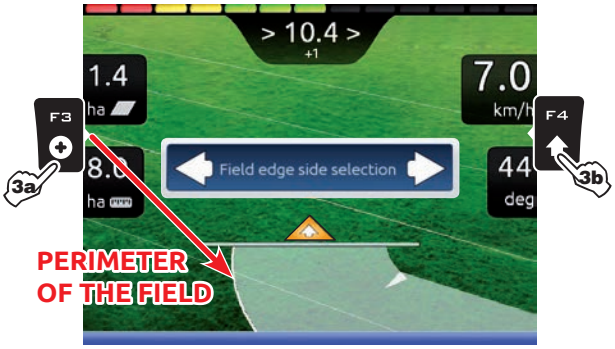


Fig. 199

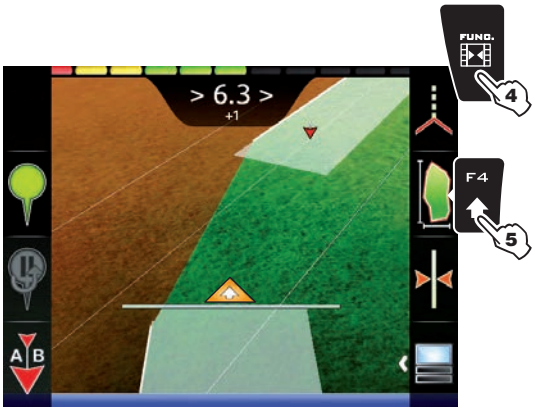


Fig. 200

4 Drive along the perimeter of the field or of the surface you wish to measure. When you get close to the calculation starting point, press **FUNC** again.

5 Press **F4** to complete the surface calculation procedure (Fig. 200).
The computer will connect starting and end points and will calculate the surface.

FIELD PERIMETER ON MACHINE LEFT-HAND SIDE

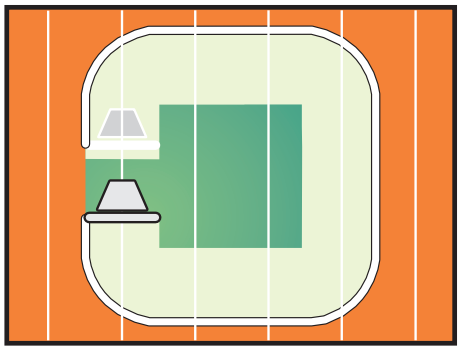


Fig. 201

FIELD PERIMETER ON MACHINE RIGHT-HAND SIDE

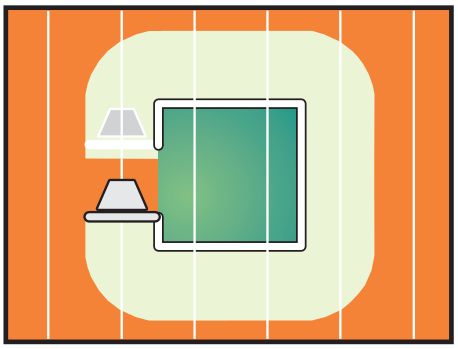


Fig. 202

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.

F1 Enter selected character | F2 Delete selected character | F7 F8 Scroll (LEFT / RIGHT) | F4 F6 Scroll (UP / DOWN) | Data increase / decrease | OK Confirm access or data change | ESC Exit the function or data change | Par. 7.4

14.4 F5 Resume from pause

Guidance indications to return to job breaking point , previously saved with function "F1 Pause" (par. 14.2.1).

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. 203 (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. 203).

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. 204): press OK or ESC to exit the procedure.

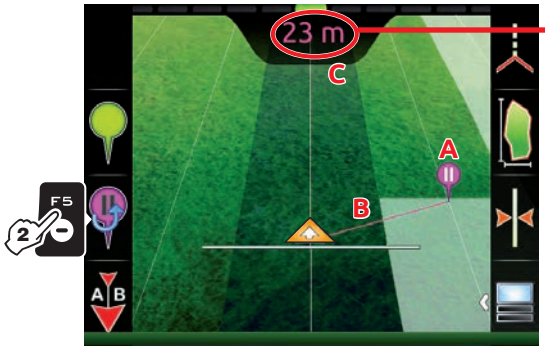


Fig. 203

Fig. 204

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

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

14.5 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. 205) 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**.

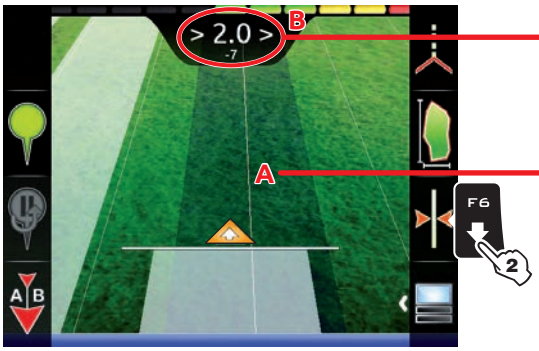


Fig. 205

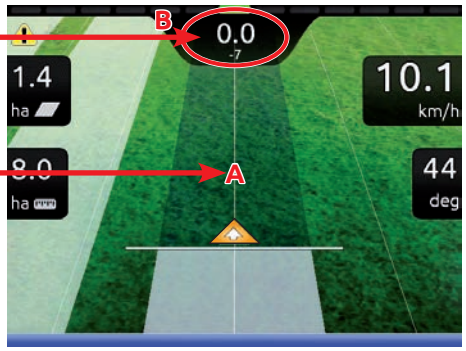


Fig. 206

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

14.6 F7 New AB

Saves two points A and B on the field, which Navigator uses to draw a line that will act as a reference track (T0, Fig. 209) for the current job.

1 In the guidance screen, press FUNC.
2 Drive along the stretch you wish to use as a reference for the job.
Press F7 to enable the function: the request **Mark A?** will appear on the display. (Fig. 207).
3 Press OK. The display shows the message **Drive!** (Fig. 208).
4 Keep driving, when you have reached the minimum distance (30 m / 95.5 ft), the request **Mark B?** will appear on the display. Press OK.
The reference track T0 and all tracks to be followed during the job will appear on the display (Fig. 209).

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.

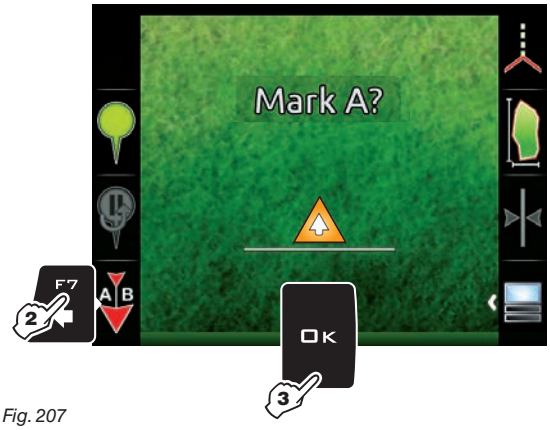


Fig. 207

Fig. 208

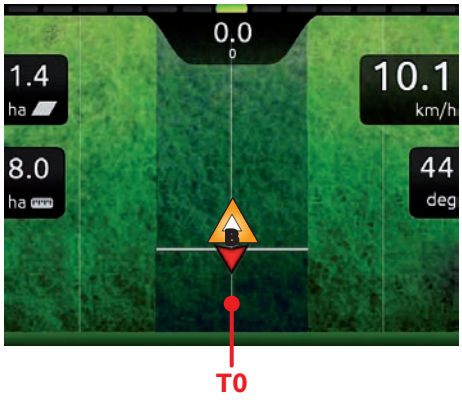


Fig. 209

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

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

F1 Enter selected character | F2 Delete selected character | F7 F8 Scroll (LEFT / RIGHT) | F4 F6 Scroll (UP / DOWN) | Data increase / decrease | OK Confirm access or data change | ESC Exit the function or data change | Par. 7.4

14.7 F8 Display

Allows to select different display modes. Includes several functions:

1 In the guidance screen, press **FUNC**.
2 Press **F8**. A list of options concerning display modes will appear (Fig. 210).
Pressing each key will enable the corresponding function:
F2 changes tractor themes (par. 14.7.1);
F4 changes spraying themes (par. 14.7.2);
F6 switches between daytime/night time display mode (par. 14.7.3);
F8 switches between 2D/3D display mode (par. 14.7.4).

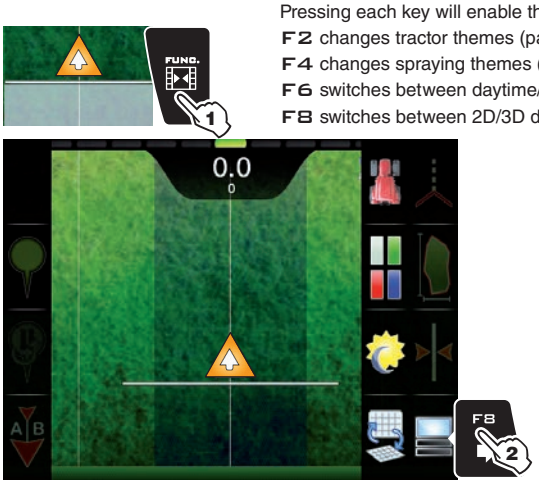


Fig. 210

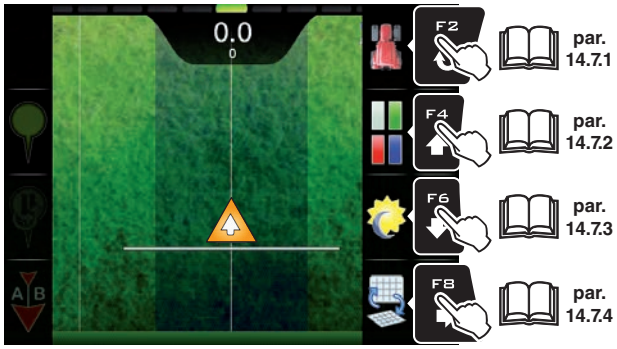


Fig. 211

14.7.1 F2 Tractor themes

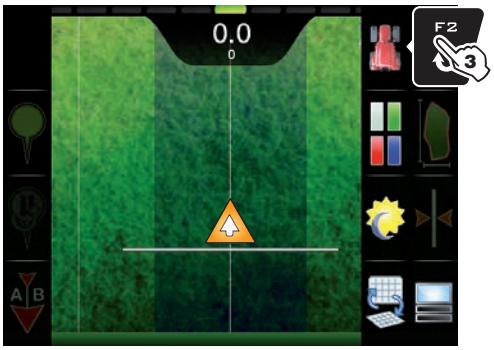


Fig. 212

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

TRACTOR THEME 1 (DEFAULT)

Fig. 213

THEME 2

Fig. 214

THEME 3

Fig. 215

THEME 4

Fig. 216

THEME 5

Fig. 217

F1 Enter selected character | F2 Delete selected character | F7 F8 Scroll (LEFT / RIGHT) | F4 F6 Scroll (UP / DOWN) | Data increase / decrease | OK Confirm access or data change | ESC Exit the function or data change | Par. 7.4

14.7.2 F4 Spraying themes

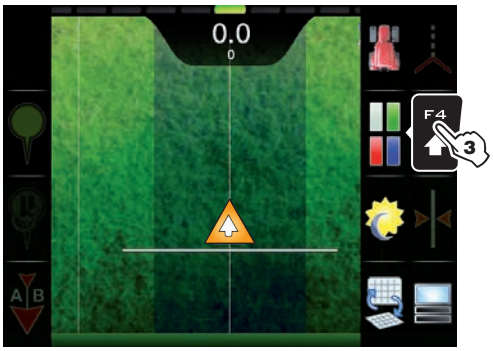


Fig. 218

1 In the guidance screen, press **FUNC**.
2 Press **F8** to view the available options.
3 Press **F4** in succession to scroll spraying color combinations.

SPRAYING THEME 1 (DEFAULT)

Fig. 219

THEME 2

Fig. 220

THEME 3

Fig. 221

THEME 4

Fig. 222

THEME 5

Fig. 223

14.7.3 F6 Daytime/night time display mode

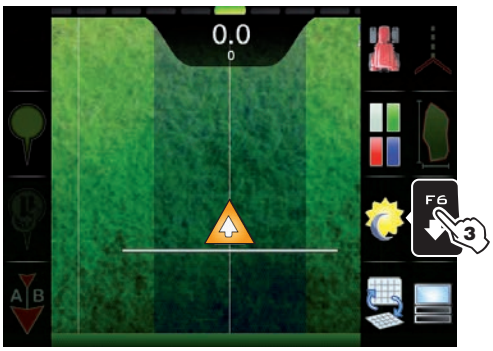


Fig. 224

1 In the guidance screen, press **FUNC**.
2 Press **F8** to view the available options.
3 Press **F6** in succession to switch between daytime and night time display mode.

DAYTIME DISPLAY MODE (DEFAULT)

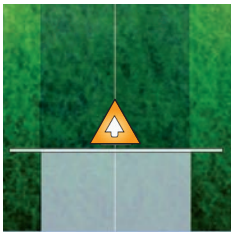


Fig. 225

NIGHT TIME DISPLAY MODE

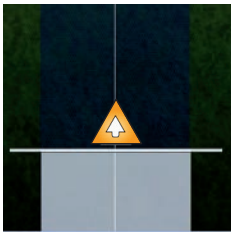


Fig. 226

14.7.4 F8 2D/3D display mode

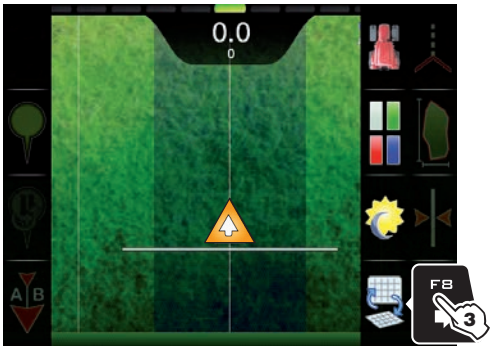


Fig. 227

1 In the guidance screen, press **FUNC**.
2 Press **F8** to view the available options.
3 Press **F8** in succession to switch between 2D and 3D display mode.

2D DISPLAY MODE (DEFAULT)

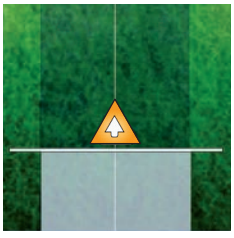


Fig. 228

3D DISPLAY MODE

Fig. 229

F1 Enter selected character | F2 Delete selected character | F7 F8 Scroll (LEFT / RIGHT) | F4 F6 Scroll (UP / DOWN) | Data increase / decrease | OK Confirm access or data change | ESC Exit the function or data change | Par. 7.4

15 MAINTENANCE / DIAGNOSTICS / REPAIRS

15.1 Error messages

MESSAGE ON DISPLAY	CAUSE	REMEDY
GPS receiver not connected!	Wrong connection of receiver cable to Navigator	• Check connection to receiver **(par. 5.2).**
	The receiver connection cable is damaged	• Replace the cable.
	The receiver is damaged	• Replace the receiver.
Insufficient GPS signal quality!	The position and number of satellites do not allow a suitable driving precision	• Wait for signal strength to improve.
GPS receiver gives invalid data!	The receiver is establishing a connection to the satellites	• Wait for connection.
DGPS correction not available!	DGPS signal unavailable in the working area	• Disable DGPS correction **(par. 10.2.1).**
	DGPS connecting	• Wait for connection.
Job origin too far away!	The current position is too far away from the job origin.	• Redefine the job origin.

15.2 Troubleshooting

FAULT	CAUSE	REMEDY
The display does not switch on	No power supply	• Check power supply connection.
	Computer is OFF	• Press the ON key.
Speed reading is unstable	Job start procedure was launched at a point too far from the field to be sprayed	• Start a new job **(par. 11.4)** close to the field.
Distance traveled count displayed does not match actual distance covered	Wrong setup	• Check the boom setup **(par. 10.1.1)**. • Check implement geometry **(par. 10.1.3 - 10.1.4)**. • Check tractor geometry **(par. 10.2.9)**.

15.3 Cleaning rules

- Clean only with a soft wet cloth.
- DO NOT use aggressive detergents or products.
- Do not clean the monitor with direct water jets.

16 TECHNICAL DATA

Description	Navigator
Display	LCD 5,7", 65000 colors, 500 cd/m²
Rated supply voltage	12 Vdc (9 ÷ 15 Vdc)
Consumption (valves excluded)	monitor: 0.4 A
Operating temperature	0 °C ÷ 45 °C +32 °F ÷ +113 °F
Storage temperature	-20 °C ÷ 45 °C -4 °F ÷ +113 °F
Weight (without cables)	monitor: 811 g
SD card reader	•
2 USB 2.0 ports	HOST
Protection against polarity inversion	•
Protection against short-circuit	•

16.1 Data and units of measurement shown

Implement

Menu	Data		Min.	Max.	UoM	DEFAULT	Other values that can be set / Notes
Section configuration	Number of sections		1	13	n°	1	
	Section 1 ÷ 13		1.00	50.00	m	20.00 m	Width of each section
			2.00	164.04	ft	6.56 ft	
Working parameters	Sections overlapping limit		0	100	%	100 %	
	Perimeter overlapping limit		0	100	%	0 %	
	Spray closing delay		0.0	5.0	m	0.0 m	
			0.00	16.00	ft	0.00 ft	
	Spray closing advance		0.0	5.0	m	0.0 m	
			0.00	16.00	ft	0.00 ft	
	Steering radius		0.0	20.0	m	0.0 m	
			0.00	65.00	ft	0.00 ft	
	Reference line distance compensation:		-100.00	100.00	m	000.00 m	
			-328.08	328.08	ft	000.00 ft	
Geometry settings	Implement upper view	Distance between connection point and hitch point	0.00	20.00	m	0.50 m	System with **3-point hitch**, selected during guided setup
			0.00	64.00	ft	1.64 ft	
		Offset between connection point and hitch point	-20.00	20.00	m	0.00 m	
			-64.00	64.00	ft	0.00 ft	
	Implement rear view	Implement width	0.50	90.00	m	20.00 m	
			0.50	290.00	ft	65.62 ft	
	Implement upper view	Distance between implement's rear axle and the application point	0.00	20.00	m	0.50 m	System with **Towing hitch**, selected during guided setup
			0.00	64.00	ft	1.64 ft	
		Distance between connection point and implement's rear axle	0.00	20.00	m	5.00 m	
			0.00	64.00	ft	16.40 ft	
		Distance between tractor's wheels	0.50	5.00	m	2.00 m	
			0.50	15.00	ft	6.56 ft	
		Offset between connection point and hitch point	-20.00	20.00	m	0.00 m	
			-64.00	64.00	ft	0.00 ft	
	Implement rear view	Implement width	0.50	90.00	m	20.00 m	
			0.50	290.00	ft	65.62 ft	

CONTINUES > > >

> > > 16.1 Data and units of measurement shown

Tractor

Menu	Data			Min.	Max.	UoM	DEFAULT	Other values that can be set / Notes
GPS receiver	A100	DGPS		--	--	--	Disabled	Enabled
		PDOP alarm		1.0	10.0	--	4.0	
	Smart-Ag / Smart 6	Tilt compensation		--	--	--	Disabled	Enabled
		PDOP alarm		1.0	10.0	--	4.0	
		Correction type		--	--	--	None	DGPS / Omnistar®
		Receiver advanced data	Region	--	--	--	Europe, Africa	United States - East / United States - Center / United States - West / South America / Atlantic Ocean - West / Atlantic Ocean - East / India, Middle East / Asia / Australia
	NMEA	DGPS		--	--	--	Disabled	Enabled
		HDOP alarm		1.0	10.0	--	4.0	
Tractor advanced settings	Camera			--	--	--	None	1, 2, Both
Tractor geometry settings	Tractor upper view	Distance between tractor's rear axle and GPS antenna		-20.00	20.00	m	0.50 m	
				- 64.00	64.00	ft	1.64 ft	
		Distance between rear tractor's wheels		0.50	10.00	m	1.80 m	
				0.50	35.00	ft	5.91 ft	
		Horizontal distance between connection point and GPS antenna		-8.00	8.00	m	0.00 m	
				-25.00	25.00	ft	0.00 ft	
		Distance between front tractor's wheels		0.50	10.00	m	1.80 m	
				0.50	35.00	ft	5.91 ft	
		Vertical distance between rear connection point and tractor's rear wheels axle		0.00	20.00	m	0.50 m	
				0.00	64.00	ft	1.64 ft	
		Distance between tractor's front axle and rear axle		0.50	20.00	m	2.50 m	
				0.50	64.00	ft	8.20 ft	
		Vertical distance between front connection point and tractor's front axle		0.50	20.00	m	0.50 m	
				0.50	64.00	ft	1.64 ft	
	Tractor rear view	GPS antenna height from tractor's rear axle		0.00	20.00	m	2.50 m	
				0.00	64.00	ft	8.20 ft	
		Rear axle height from the ground		0.20	5.00	m	0.80 m	
				0.20	15.00	ft	2.62 ft	
	Steering angle			0	90	°	54 °	

User

Menu	Data	Min.	Max.	UoM	DEFAULT	Other values that can be set / Notes
Acoustic critical alarms		--	--	--	Enabled	Disabled
Acoustic low priority alarms		--	--	--	Enabled	Disabled
Acoustic info		--	--	--	Enabled	Disabled
Steering warning		--	--	--	Enabled	Disabled
Offset tolerance		10	100	cm	30	
		4	39	inches	12	
Selective job loading		--	--	--	Disabled	Enabled

General options

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

Job data

Data		UoM	
Sprayed surface	ha	ac	ksqft
Calculated area	ha	ac	ksqft
Working time	hh:mm	hh:mm	hh:mm
Application time	hh:mm	hh:mm	hh:mm
Average productivity	ha/h	ac/h	ksqft/h
Job start date	dd/mm/yyyy	dd/mm/yyyy	dd/mm/yyyy
Job start time	hh:mm	hh:mm	hh:mm

END 16.1 Data and units of measurement shown

17 END-OF-LIFE DISPOSAL

This device contains a lithium polymer battery that, at end of life, must be disposed of according to the prevailing rules.

Should it be necessary to replace the battery, do not disassemble the device but contact ARAG directly.

The device must be used and stored at the temperature indicated in chapter "Technical data" of this manual.
Excessive temperature oscillations may cause acid leakage, overheating, explosion or self-combustion of the battery and consequent injuries and/or damages to persons.
Do not open, remove, drill or throw the device in the fire.
In case of battery leakage and accidental contact with the leaked out fluids, thoroughly rinse the concerned area and seek immediately medical advice.

18 GUARANTEE TERMS

1. ARAG s.r.l. guarantees this apparatus for a period of 360 days (1 year) from the date of sale to the client user (date of the goods delivery note).
   The components of the apparatus, that in the unappealable opinion of ARAG are faulty due to an original defect in the material or production process, will be repaired or replaced free of charge at the nearest Assistance Center operating at the moment the request for intervention is made. The following costs are excluded:
- disassembly and reassembly of the apparatus from the original system;
- transport of the apparatus to the Assistance Center.

2. The following are not covered by the guarantee:
- damage caused by transport (scratches, dents and similar);
- damage due to incorrect installation or to faults originating from insufficient or inadequate characteristics of the electrical system, or to alterations resulting from environmental, climatic or other conditions;
- damage due to the use of unsuitable chemical products, for spraying, watering, weedkilling or any other crop treatment, that may damage the apparatus;
- malfunctioning caused by negligence, mishandling, lack of know how, repairs or modifications carried out by unauthorized personnel;
- incorrect installation and regulation;
- damage or malfunction caused by the lack of ordinary maintenance, such as cleaning of filters, nozzles, etc.;
- anything that can be considered to be normal wear and tear.

3. Repairing the apparatus will be carried out within time limits compatible with the organizational needs of the Assistance Center.
   No guarantee conditions will be recognized for those units or components that have not been previously washed and cleaned to remove residue of the products used;
4. Repairs carried out under guarantee are guaranteed for one year (360 days) from the replacement or repair date.
5. ARAG will not recognize any further expressed or intended guarantees, apart from those listed here.
   No representative or retailer is authorized to take on any other responsibility relative to ARAG products.
   The period of the guarantees recognized by law, including the commercial guarantees and allowances for special purposes are limited, in length of time, to the validities given here.
   In no case will ARAG recognize loss of profits, either direct, indirect, special or subsequent to any damage.
6. The parts replaced under guarantee remain the property of ARAG.
7. All safety information present in the sales documents regarding limits in use, performance and product characteristics must be transferred to the end user as a responsibility of the purchaser.
8. Any controversy must be presented to the Reggio Emilia Law Court.

Conformity Declaration CE

ARAG s.r.l.
Via Palladio, 5/A
42048 Rubiera (RE) - Italy
P.IVA 01801480359

Dichiara

che il prodotto
descrizione: **Computer**
modello: **Bravo 400S / Navigator / Navigator LT**
serie: **4674Axxxx e 4674ACSTExx**

risponde ai requisiti di conformità contemplati nelle seguenti Direttive Europee:
2004/108/CE
(Compatibilità Elettromagnetica)

Riferimenti alle Norme Applicate:
ISO 14982
(Macchine agricole e forestali - Compatibilità elettromagnetica
Metodi di prova e criteri di accettazione)

Rubiera, 24 aprile 2014

Giovanni Montorsi

(Presidente)

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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