ARAG Navigation Software

MULTI-PLATFORM SOFTWARE
FOR COMPUTERS WITH INTEGRATED GPS NAVIGATOR

Software rel. 2.8X

USE AND MAINTENANCE
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.
## Basic settings

### 1 Setup
- Setup preparation
- Switching on
- Switching off
- Use of keys for setup

### 2 Menu structure

### 3 Menu structure

### 4 Basic settings

### 5 Advanced setup

#### 5.1 IMPLEMENT ADVANCED SETTINGS
- Maximum flowrate
- Constant
- Type

#### 5.1.6 Valves
- Maximum pressure

#### 5.1.5 Pressure sensor
- Constant
- Type

#### 5.1.3 Flowmeter
- Type
- Constant
- Minimum flowrate
- Maximum flowrate

#### 5.1.7 Valves
- Automatic closing of main valve

#### 5.1.11 Rev counter
- Status
- Minimum regulation pressure
- Spraying speed limit

#### 5.1.12 Tank
- Reserve level
- Capacity
- Reserve level
- Tank profile

#### 5.1.13 Alarms
- Nozzle wear check
- Nozzle wear limit percentage

#### 5.1.14 Working parameters
- Spraying limits
- Sections overlapping limit
- Perimeter overlapping limit

#### 5.1.16 Device calibration
- Reference lines distance offset

#### 5.1.17 Device calibration
- Identification numbers reset

#### 5.2 IMPLEMENT GEOMETRY

#### 5.2.1 Geometry settings
- Machine with towed/3-point hitch implement

#### 5.2.2 Geometry settings
- Correction type

#### 5.3 GPS RECEIVER SETTINGS
- DGPS

#### 5.3.1 DGPS
- HDOP alarm

#### 5.3.3 Tilt compensation
- Correction type

#### 5.5 TRACTOR ADVANCED SETTINGS
- Camera

#### 5.5.1 Camera
- Geometry settings
- (Self-propelled with front boom)

#### 5.5.2 Geometry settings
- Self-propelled with front boom

#### 5.5.3 Geometry settings
- (tractor with towed/3-point hitch implement)
10 "Home" Menu ................................................................. 80
  10.1 F1 Continue last job .............................................. 81
  10.2 F2 Save job ............................................................ 82
  10.3 F3 New job ............................................................. 83
  10.4 F4 Memories management ........................................ 84
  10.4.1 Jobs export ........................................................ 85
    • KML to USB / SD card ........................................... 85
    • Shape to USB / SD card .......................................... 85
    • Screenshot to USB / SD card ................................. 85
  10.4.2 Backup ............................................................. 86
    • Create backup file on USB1 / SD card ................... 86
    • Load backup file from USB1 / SD card .................. 86
    • Delete all backup files on USB1 / SD card ............. 86
  10.4.3 Internal memory deletions ................................. 87
  10.4.4 Files copy to internal memory .............................. 87
  10.4.5 Remote devices upgrade .................................... 88
    • Upgrade file ......................................................... 88
    • Upgrade monitor firmware .................................... 90
  10.5 F5 Resume job ....................................................... 92
  10.6 F6 Resume job ....................................................... 93
  10.7 F6 Info / Alarms .................................................... 94

11 Job menu ........................................................................ 95
  11.1 F1 Info / Alarms ..................................................... 96
  11.2 F2 Job data ............................................................ 97
  11.3 F2 Job data ............................................................ 98
  11.4 F3 Tank ................................................................. 99
  11.5 F4 GPS Data .......................................................... 100
  11.6 F5 Camera ............................................................. 101
  11.7 F6 Prescription map ............................................... 102
  11.8 F7 Zoom all .......................................................... 103
  11.9 F8 Menu ................................................................. 105
  11.9.1 Speed source ...................................................... 105
    • GPS ................................................................. 105
    • Wheel sensor ...................................................... 105
    • GPS and Wheel sensor ......................................... 105
    • Simulation ......................................................... 106

12 Job functions .................................................................. 106
  12.1 F1 Spray rate ........................................................ 107
  12.2 F2 Guidance mode ................................................ 108
  12.3 F3 Point marking ................................................... 109
  12.3.1 F1 Pause........................................................... 109
  12.3.2 F3/F5/F7 General point marking ......................... 109
  12.4 F4 Surface ............................................................ 110
  12.5 F5 Resume from pause ......................................... 111
  12.6 F6 Align ................................................................. 112
  12.7 F7 New AB ........................................................... 113
  12.8 F8 Display ............................................................. 114
  12.8.1 F2 Tactor themes ............................................... 114
  12.8.2 F4 Spraying themes ............................................ 115
  12.8.3 F6 Daytime/night time display mode ................. 115
  12.8.4 F6 2D/3D display mode ..................................... 115

13 Maintenance / diagnostics / repairs ................................. 116
  13.1 Error messages ....................................................... 116
  13.2 Troubleshooting ..................................................... 119

14 Technical data ................................................................ 120
  14.1 Data and units of measurement shown .................... 120

15 Maintenance / diagnostics / repairs ................................. 124
  15.1 Error messages ....................................................... 124
  15.2 Troubleshooting ..................................................... 126

16 Technical data ................................................................ 127
  16.1 Data and units of measurement shown .................... 127
1 SETUP

1.1 Setup preparation

Before computer setup, check:
- that all components are correctly installed (control unit and sensors);
- the correct connection to the power source;
- the correct connection of components (control unit and sensors).

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

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

1.2 Switching on

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

FIRST DEVICE SWITCHING ON

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

LANGUAGE SETTING
- In the "Home" screen (Fig. 4) press F8 to enter the Settings menu (Fig. 5).
- Select General options > Language and set the language of the monitor.
- Press ESC and return to the "Home" menu.

Go to device basic settings (chap. 4).
ORDINARY SWITCHING ON

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

1.3 Switching off

Hold the button down until the monitor switches off.

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

**SELECTION AND ACCESS TO MENU ITEMS**

1. **Press in succession to move across the menu items (UP / DOWN).** The selected item is highlighted with a gray bar (A).
2. **Press in succession to move across the available options (LEFT / RIGHT).** Display options (B):
   - Active option
   - Inactive option
3. **Press to access the selected item or to confirm modification.**
4. **Press to exit screen without confirming modification.**

**ENTERING A NUMERICAL VALUE**

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**

1. **Press in succession to select the character you wish to type (UP / DOWN).**
2. **Press in succession to select the character you wish to type (RIGHT / LEFT).** Press to:
   - confirm the selected character
   - delete the character before the cursor (when the symbol \[\text{\textbackslash{}char163}\] is selected)
   - save the entered text (when the symbol \[\text{\textbackslash{}char160}\] is selected)
   - delete the character before the cursor (when the OK symbol \[\text{\textbackslash{}char160}\] is selected)
   - save the typed text (when the OK symbol \[\text{\textbackslash{}char160}\] is selected)
3. **Press to exit screen without confirming modification**

Below is a summary of key functions during setup.
Upon first switching on, run the device basic settings (chap. 4). Afterwards, it will be possible to select the preset settings by pressing F7.

**chap. 4 Basic settings**

**chap. 6 Advanced setup**
Edit created settings*: (chap. 4). System setup.

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

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

**chap. 4 Basic settings**

Create / Load settings:
- User (“usrxx”)
- Configuration (“macxx”, “impxx”, “traxx”)

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

**chap. 5 Advanced setup**

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

**chap. 10 "Home" Menu**

**chap. 11 Job menu**

Upon first switching on, run the device basic settings (chap. 4).

**chap. 12 Job functions**

**chap. 8 Automatic functions**
4 BASIC SETTINGS

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

ACTIVE SETTINGS AT END OF GUIDED SETUP PROCEDURE
self-propelled machine
machine with towed/3-point hitch implement

ADVANCED SETUP
You can do the following:

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

MACHINE WITH TOWED/3-POINT HITCH IMPLEMENT

GUIDED SETUP - MENU

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

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

YOU COMPLETED BASIC SETUP. NOW PROCEED TO ADVANCED SETUP DESCRIBED IN CHAP. 5.
Before proceeding with advanced setup, select type of system configuration: all advanced setup changes will be applied to ACTIVE SETTINGS (mac, imp, tra, usr).

SETUPS MANAGEMENT

1 Press F7 in the "Home" screen (Fig. 17).

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

CREATION OF A NEW SETUP (Create new > User / Create new > Configuration)
Select Create new > User (a in Fig. 19) to create a new setup and press OK.
Follow all suggested steps and select required options. OK: next step ESC: previous step.
Type the name (in the example of Fig. 20: us01) and press OK.
The new setup is now active on the computer (Fig. 21). Before moving on to the advanced setup procedure, carry out the basic setup (chap. 4).
You can repeat the same steps for setup Create new > Configuration (b)

COPY OF A SETUP (Create new > Copy*: COPY DATA FROM AN EXISTING SETUP)
* copy valid only for files of the "Configuration" type
Select Copy (c in Fig. 22) to copy the active setup and save the data on a new one; press OK.
Follow all suggested steps and select required options. OK: next step ESC: previous step.
Type the name (in the example of Fig. 23: imp01) and press OK.
The saved setup is now active on the computer (Fig. 24). Proceed to advanced setup.
LOADING A SETUP
Instead of saving, you can activate a previously saved setup.
Select **Load > Configuration** (d in Fig. 25) and press **OK**.
From the example of Fig. 26 select type of setup to load and press **OK**.
Follow all suggested steps and select required options. **OK**: next step **ESC**: previous step.
The selected setup is now active on the computer (Fig. 27). Proceed to advanced setup.

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

You can now proceed with advanced setup: all changes will be applied to **ACTIVE SETTINGS** (mac, imp, tra,usr).
DEPENDING ON BASIC SETTINGS (CHAP. 4), ITEMS AND MENU LAYOUT WILL CHANGE, AND DEVICE ADVANCED SETUP WILL CHANGE ACCORDINGLY.
AN OVERVIEW OF NAVIGATION CAN BE FOUND IN Fig. 29 AND Fig. 30.

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

Fig. 28

SELF-PROPELLED MACHINE

MACHINE WITH TOWED/3-POINT HITCH IMPLEMENT

SELF-PROPELLED
IMPLEMENT ADVANCED SETTINGS (par. 5.1)
GPS RECEIVER SETTINGS (par. 5.3)
TRACTOR ADVANCED SETTINGS (par. 5.5)

USER (par. 5.6)
GENERAL OPTIONS (par. 5.7)
DEVICE STATUS (par. 5.8)

IMPLEMENT
IMPLEMENT ADVANCED SETTINGS (par. 5.1)
IMPLEMENT GEOMETRY (par. 5.2)

TRACTOR
GPS RECEIVER SETTINGS (par. 5.3)
TRACTOR ADVANCED SETTINGS (par. 5.5)

USER (par. 5.6)
GENERAL OPTIONS (par. 5.7)
DEVICE STATUS (par. 5.8)
5.1 IMPLEMENT ADVANCED SETTINGS

5.1.1 Spray spots configurations

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

![Diagram of spraying points and nozzles]

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

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

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

![Table of nozzle settings]

CONTINUES “Boom settings / Section configuration” on page 15 > > >
### 5.1.2 Boom settings / Section configuration

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

![Diagram of boom settings](image)

**Spray spots spacing**

- **Spray spots spacing:** 50.0 cm
- **Sections number:** 7
- **Spraying spots number:** 32
- **Boom length:** 16.00 m
- **Section 1:** 4
- **Section 2:** 4
- **Sections:** 5
- **Boom section number setting:**

![Diagram of sections](image)

**Spray spots spacing**

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

**Spray spots spacing**

Indicate the distance between spraying points (nozzle holders).

**Sections number**

Indicate the number of boom sections.
• **Section 1 ÷ 13**

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

---

**SECTIONS MANAGEMENT**

- **Activation status of the sections**

  It allows to enable/disable specific boom sections.
  - Select the section you wish to set up.
  - Repeat the setup for each section (Fig. 42), by disabling the disconnected outputs.

---

Fig. 41

Fig. 42
5.1.3 Flowmeter

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

<table>
<thead>
<tr>
<th>Flowmeter</th>
<th>ORION FLOWMETERS</th>
<th>WOLF FLOWMETERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type: Orion 462 XX A4 XXXX</td>
<td>Type</td>
<td>Constant</td>
</tr>
<tr>
<td>Constant: 300 pls/l</td>
<td>Type</td>
<td>Constant</td>
</tr>
<tr>
<td>Minimum flowrate: 10.0 l/min</td>
<td>Type</td>
<td>Constant</td>
</tr>
<tr>
<td>Maximum flowrate: 200.0 l/min</td>
<td>Type</td>
<td>Constant</td>
</tr>
<tr>
<td>Orion 462 XA0000</td>
<td>6000</td>
<td>22700</td>
</tr>
<tr>
<td>Orion 462 XA1000</td>
<td>3000</td>
<td>11355</td>
</tr>
<tr>
<td>Orion 462 XA2000</td>
<td>1200</td>
<td>4542</td>
</tr>
<tr>
<td>Orion 462 XA3000</td>
<td>600</td>
<td>2271</td>
</tr>
<tr>
<td>Orion 462 XA4000</td>
<td>300</td>
<td>1135</td>
</tr>
<tr>
<td>Orion 462 XA5000</td>
<td>150</td>
<td>568</td>
</tr>
<tr>
<td>Orion 462 XA6000</td>
<td>100</td>
<td>378</td>
</tr>
<tr>
<td>Orion 10 - 208 l/min (2.6 - 53 GPM)</td>
<td>Other</td>
<td>625</td>
</tr>
</tbody>
</table>

- **Type**
  Indicate the type of flowmeter installed.

- **Constant**
  Indicate the constant of the installed flowmeter.

- **Minimum flowrate**
  - **Maximum flowrate**

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

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

For the procedure to be followed when an alarm occurs, please refer to par. 13.1 Error messages.
This menu is only visible when the filling flowmeter is selected as tank level source (basic settings, chap. 4).

The filling flowmeter allows displaying the tank filling data in real time. Enter the values for the filling flowmeter installed on the system: the table below indicates the values that are automatically set when selecting the flowmeter code.

If the installed filling flowmeter is not displayed, select Other and enter the relevant values.

### ORION FLOWMETERS

<table>
<thead>
<tr>
<th>Type</th>
<th>Constant</th>
<th>Minimum flowrate</th>
<th>Maximum flowrate</th>
</tr>
</thead>
<tbody>
<tr>
<td>462XXA4XXXX</td>
<td>300</td>
<td>1135</td>
<td>2.60</td>
</tr>
<tr>
<td>462XXA5XXXX</td>
<td>150</td>
<td>568</td>
<td>20.0</td>
</tr>
<tr>
<td>462XXA6XXXX</td>
<td>100</td>
<td>378</td>
<td>30.0</td>
</tr>
<tr>
<td>Other</td>
<td>625</td>
<td>2366</td>
<td>2.60</td>
</tr>
</tbody>
</table>

### WOLF FLOWMETERS

<table>
<thead>
<tr>
<th>Type</th>
<th>Constant</th>
<th>Minimum flowrate</th>
<th>Maximum flowrate</th>
</tr>
</thead>
<tbody>
<tr>
<td>462x4xxx</td>
<td>250</td>
<td>946</td>
<td>2.60</td>
</tr>
<tr>
<td>462x5xxx</td>
<td>132</td>
<td>500</td>
<td>20.0</td>
</tr>
<tr>
<td>462x7xxx</td>
<td>60</td>
<td>227</td>
<td>40.0</td>
</tr>
</tbody>
</table>

- **Type**
  Indicate the type of flowmeter installed.

- **Constant**
  Indicate the constant of the installed filling flowmeter.

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

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

To configure the items on this menu, you must enable the pressure sensor.
- Enter the values for the pressure sensor installed on the system.
- The table below indicates the values that are automatically set selecting the sensor code. If the installed sensor is not displayed, select Other and enter the relevant values.

<table>
<thead>
<tr>
<th>Type</th>
<th>Maximum pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARAG 466113.200</td>
<td>20.0 bar 290 PSI</td>
</tr>
<tr>
<td>ARAG 466113.500</td>
<td>50.0 bar 725 PSI</td>
</tr>
<tr>
<td>Other</td>
<td>50.0 bar 725 PSI</td>
</tr>
</tbody>
</table>

Depending on the basic settings (Flowrate reference sensor, chap. 4), the pressure sensor, once properly set up, can perform different functions:
• **Pressure sensor**: the pressure measured by the sensor is used to calculate the spray rate.
• **Flowmeter**: the pressure sensor displays ONLY the job pressure.
• **Both**: the pressure sensor displays the job pressure when the machine works within the flowmeter limits. When the flowmeter operates outside the limits the pressure measured by the sensor is used to calculate the spray rate.

**Status**

To configure the items on this menu, you must enable the pressure sensor.
- Sensor enabled / Sensor enabled - cannot be modified / Sensor disabled.

**Type**

Indicate the type of pressure sensor installed.

**Maximum pressure**

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

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

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

**MAIN VALVE**

• **Type (REMINDER)**
  Main control valve installed. Available options are:
  - None
  - 2 ways (drain valve)
  - 3 ways (main valve)

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

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

CONTINUES "• Switching time on page 22 >> >

---

**Fig. 56**

- **Valves**
  - **Type**: 4 ways
  - **Automatic closing of sections valves**: 1.0 s
  - **Pressure regulating valve**: Standard
  - **Regulation direction**: Reverse

---

**ADVANCED SETUP**

"IMPLEMENT"
5.1.7 Valves

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

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

MAIN VALVE

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

- **Automatic closing of sections valves**
  Allows to enable/disable the section automatic closing when the main control valve is closed.

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

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

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

![Switching time](image)

**PRESSURE REGULATING VALVE**

**Regulation direction**

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

- **Standard**
- **Reverse**

![Regulation direction](image)
**Type (REMEMBER)**

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

---

**Shut-off time**

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

---

**Switch-on time**

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

Legend:

A Nozzle
B Reference rate
C Reference pressure

Fig. 64

Flowrate:

01.00 l/min

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

Fig. 66

Pressure:

05.0 bar

Minimum value: 0.1 bar
Maximum value: 50.0 bar

Fig. 67

Minimum pressure:

02.0 bar

Minimum value: 0.1 bar
Maximum value: 50.0 bar

Fig. 68

Maximum pressure:

10.0 bar

Minimum value: 0.1 bar
Maximum value: 50.0 bar

Fig. 69

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

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

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

Set the reference flowrate and pressure for the selected nozzle. The rate of the nozzle being used allows the monitor to calculate the pressure without a pressure sensor.

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

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

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

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

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

**Legend:**
A Reference rate
B Reference pressure

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

**Pressure**

CONTINUES "Wheel sensor" on page 26 > > >
5.1.10 Wheel sensor

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

### Constant

| Constant: | 4.25 cm/ps |

* Fig 74

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

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

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

Take measurements with tires at the operating pressure.
This test must be performed on medium-hard terrain; for application to very soft or very hard terrain, rolling diameter may vary, leading to inaccurate output calculation; when this is the case, repeat the procedure.
During the test, cover the distance with the tank filled up to half capacity with water.

5.1.11 Rev counter

### Status

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

### Constant

- **Constant**
  - Indicate the constant of the installed rev counter.

### Minimum rotation speed

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

**TANK LEVEL SOURCE: LEVEL SENSOR**

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

- **Capacity**
  - Indicate tank capacity.

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

- **Reserve level**
  - Indicate range value.
  - The tank alarm is triggered when, during spraying, the tank level falls below the set value.
  - For the procedure to be followed when an alarm occurs, please refer to par. 13.1 Error messages.
TANK LEVEL SOURCE: LEVEL SENSOR

**Reserve level**

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

**Tank profile**

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

In this menu, indicate the current tank profile.
The profiles are ONLY available if copied onto the internal memory (par. 10.4.4), or after calibrating the tank profile (par. 5.1.16).
After loading a tank profile it is NECESSARY to perform a zero calibration of the level sensor (Tank level zero value, par. 5.1.16).

![Tank profile](image)

Press to select tank profile

*Fig. 83*

*Fig. 84*
5.1.13 Alarms

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

**NOZZLES ALARMS**

- **Nozzle wear check**
  - To configure the items on this menu, you must enable the nozzle wear check:
  - Check enabled
  - Check disabled
  - This alarm can be enabled ONLY if the system features both flowmeter and pressure sensor.

- **Nozzle wear limit percentage**
  - Set the acceptable threshold: the monitor compares the effective rate read by the flowmeter and the one calculated by the pressure sensor. When the difference between the two rate values exceeds the set percentage the alarm is triggered.

- **Minimum pressure alarm**
  - Maximum pressure alarm
  - Allows to enable/disable minimum and maximum pressure alarms for the nozzles in use.
  - Select the item you wish to set up.
  - Enable/disable the alarm (✓ Alarm enabled / X Alarm disabled).
  - Repeat the setup for each alarm.
  - Outside the range set in the Minimum pressure / Maximum pressure menus (par. 5.1.8 Nozzles data), the computer triggers an alarm.

CONTINUES >> > >
### FLOWMETER ALARMS

<table>
<thead>
<tr>
<th>Alarms</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Nozzle alarms</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Nozzle wear check:</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Nozzle wear limit percentage:</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Minimum pressure alarm:</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Maximum pressure alarm:</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Flowrate alarms</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Minimum flowrate alarm:</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Maximum flowrate alarm:</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
</tbody>
</table>

- **Minimum flowrate alarm**
- **Maximum flowrate alarm**

Allows to enable/disable minimum and maximum flowrate alarms for the flowmeter.
- Select the item you wish to set up.
- Enable/disable the alarm (Alarm enabled / Alarm disabled).
- Repeat the setup for each alarm.

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

### REV COUNTER ALARMS

<table>
<thead>
<tr>
<th>Alarms</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum pressure alarm:</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Flowmeter alarms</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Minimum flowrate alarm:</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Maximum flowrate alarm:</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Rev counter alarms</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Minimum rotation speed alarm:</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Maximum rotation speed alarm:</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
</tbody>
</table>

- **Minimum rotation speed alarm**
- **Maximum rotation speed alarm**

Allows to enable/disable minimum and maximum speed alarms for the rev counter.
- Select the item you wish to set up.
- Enable/disable the alarm (Alarm enabled / Alarm disabled).
- Repeat the setup for each alarm.

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

Set the farming machine job limits.

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

---

**SPRAYING LIMITS**

- **Spraying speed limit**
  To configure the items on this menu, you must enable the speed limit:
  - Limit enabled
  - Limit disattivato

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

- **Regulation pressure limit**
  To configure the items on this menu, you must enable the pressure limit:
  - Limit enabled
  - Limit disattivato

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

- **Flowrate correction factor**
  When using a paddle flowmeter and the sprayed fluid has a different viscosity than that of water, the computer could display wrong measurements; to correct them change the flowrate correction factor:
  - if at the end of the spraying the tank still contains fluid, reduce the factor;
  - if the fluid finishes before the job has ended, increase the factor.

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

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

CONTINUES >> >>
AUTOMATIC SECTION CONTROL

<table>
<thead>
<tr>
<th>Working parameters</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Flowrate correction factor:</td>
<td>1.00</td>
</tr>
<tr>
<td>Liquid density</td>
<td>1.00 kg/l</td>
</tr>
</tbody>
</table>

Automatic section control

<table>
<thead>
<tr>
<th>Sections overlapping limit</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Perimeter overlapping limit:</td>
<td>0%</td>
</tr>
<tr>
<td>Spray closing delay:</td>
<td>0.0 m</td>
</tr>
<tr>
<td>Spray opening advance:</td>
<td>0.0 m</td>
</tr>
</tbody>
</table>

Fig. 98

- **Sections overlapping limit**

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

Fig. 99

- **Perimeter overlapping limit**

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

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

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

Fig. 100

The alert asking to close / open section valves will be displayed following a minimum overlapping (0%) across the field perimeter.

The alert asking to close / open section valves will be displayed ONLY when the machine is spraying across the entire field perimeter (100%).

Fig. 101

Fig. 102

Fig. 103

CONTINUES >>>

Par. 1.4

F1 Enter selected character  F2 Delete selected character  F7 Scroll (LEFT / RIGHT)  F4 Scroll (UP / DOWN)  F5 Data increase / decrease  OK Confirm access or data change  ESC Exit the function or data change
5.1.14 Working parameters

**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.

**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.

**GUIDANCE**

**Steering radius**

By setting this value, an acoustic alarm will indicate the exact moment when the operator must steer in order to align the machine with the following track, avoiding unsprayed or overlapping areas between the two sprays. The acoustic alarm may be enabled or disabled from the **User > Steering warning** menu (par. 5.6.4).

This distance should correspond to the implement steering radius (A in Fig. 109), used at the end of the field to change driving direction and resume spraying on the next track, but it will have to be adjusted according to the characteristics of the operator and the speed of the machine.

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

This value allows changing the distance between the reference tracks.

- **Fig. 110**

  Reference lines distance offset:

  ![Image of reference lines distance offset](image1)

  Minimum value: -100.00 m  
  Maximum value: 100.00 m

  Intentional decrease (-) or increase (+) of the distance between reference lines.

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

  ![Image of positive offset](image2)

- **Fig. 112**

  Reference lines distance offset:

  ![Image of reference lines distance offset](image3)

  Minimum value: -100.00 m  
  Maximum value: 100.00 m

  Intentional decrease (-) or increase (+) of the distance between reference lines.

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

  ![Image of negative offset](image4)
**5.1.16 Device calibration**

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

**SELETRON SYSTEM**

- **Identification numbers reset**

  - Allows to reset the identification numbers of all saved Seletrons, before repeating the pairing procedure (chap. 6).
  - Select Identification numbers reset (Fig. 115) and press OK.
  - The message in Fig. 116 is displayed: confirm reset by pressing OK again.
  - At the end of the reset procedure, DISCONNECT ALL SELETRONS and start a new pairing procedure (chap. 6).

**CONTINUES "• Pressure sensor zero value" on page 37 » » »**
To access this menu, the pressure sensor must be enabled (par. 5.1.5).

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

Before carrying out any operation, disable the pump by disconnecting it from the power supply.

Make sure that the pump is correctly disabled, then open the main valve and all section valves.

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

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

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

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

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

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

CONTINUES > > >
• Tank profile calibration

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

Before starting the procedure carry out the following operations:

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

4 Select Tank profile calibration (Fig. 124) and press OK. The calibration starts.
5 The message in Fig. 125 is displayed: follow the instructions, then start the procedure by pressing OK.
6 Start the spraying system: open, in succession, all section valves and the main control (ON).

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

7 When the tank is empty press OK to end the procedure: the value read by the level sensor must be lower than 5,0 mA and at least 10 liters must have been sprayed.
8 Press again OK again to save the tank profile: the name edit screen is displayed (Fig. 128).

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

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

The calibration is completed.
5.2 IMPLEMENT GEOMETRY (MACHINE WITH TOWED/3-POINT HITCH IMPLEMENT)

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

FOR GEOMETRY OF SELF-PROPELLED MACHINES REFER TO PAR. 5.5.2 AND 5.5.3.

5.2.1 Geometry settings (TOWED IMPLEMENT)

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

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

NEGATIVE VALUES
The application point is to the left of the longitudinal axle

POSITIVE VALUES
The application point is to the right of the longitudinal axle
5.2.2 Geometry settings (3-POINT HITCH IMPLEMENT)

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

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

NEGATIVE VALUES
The application point is to the left of the longitudinal axle

POSITIVE VALUES
The application point is to the right of the longitudinal axle

Fig. 136

Fig. 137

Fig. 138

Fig. 139

Fig. 140
5.3 GPS RECEIVER SETTINGS

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

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

5.3.1 DGPS

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

5.3.2 HDOP alarm

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

Fig. 144
Fig. 145

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

The monitor can set off any measurement errors due to ground inclination. On steep slopes the error can reach 2 m / 6.5 ft.

5.3.4 Correction type

Fig. 146

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

- Correction disabled
- 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® correction enabled (ONLY FOR Smart 6 RECEIVER):
  Omnistar® correction signal is available worldwide for a fee and allows to obtain high working accuracy.
  ! WARNING! The differential correction service subscription is not managed by ARAG, but directly by Omnistar®.
  For more information on the subscription, visit Omnistar®’s website.

5.3.5 Receiver advanced data

Fig. 147
Fig. 148

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

5.5.1 Camera

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

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

5.5.2 Geometry settings (SELF-PROPELLED WITH REAR BOOM)

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

Enter farming machine measures (Fig. 151).
- Press the arrow keys (UP, DOWN) to move across value descriptions: the image of the selected value will appear on the display.
- Confirm by pressing OK to enter setup.
- Set as required.
- Select and enter, one by one, all values.

---

Par. 1.4

Confirm access or data change

Exit the function or data change
5.5.3 Geometry settings (SELF-PROPELLED WITH FRONT BOOM)

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

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

Fig. 158

Fig. 159

Fig. 160

Fig. 161

Fig. 162
5.5.4 Geometry settings (TRACTOR WITH TOWED/3-POINT HITCH IMPLEMENT)

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

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

Fig. 163

Fig. 164

Fig. 165

Fig. 166

Fig. 167

Fig. 168
5.6 USER

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

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

From the User menu it is possible to enable / disable acoustic alarms for each notification:
- Acoustic critical alarms (par. 5.6.1).
- Acoustic low priority alarms (par. 5.6.2).
- Acoustic info (par. 5.6.3).
- Steering warning (par. 5.6.4).

### ACOUSTIC ALARMS

#### 5.6.1 Acoustic critical alarms

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

#### 5.6.2 Acoustic low priority alarms

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

#### 5.6.3 Acoustic info

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

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

**Signal enabled**

**Signal disabled**

5.6.5 Alarms volume

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

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

5.6.6 Offset tolerance

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

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

5.6.7 Backlight

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

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

5.6.8 Dimming

The three items on the side control automatic dimming of display backlighting after a certain period of inactivity.
THIS APPLIES ONLY TO MENU SCREENS.
First enable Auto reduction item to use this function, then adjust delay time and dimming percentage.

PREFERENCES

5.6.9 Selective job loading

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

Screen enabled
Screen disabled
5.7 GENERAL OPTIONS

Set the device system options:

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

### 5.7.1 Language

Set the computer language.

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

### 5.7.2 Units of measurement

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...
5.7.3 Date and time GPS updating

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

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

- Acquisition disabled
  Set date and time manually.
  The display will show the Date and time menu (Fig. 185).

5.7.4 Date and time

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

Now set the computer time.
5.7.5 GSM

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

**GSM**

<table>
<thead>
<tr>
<th>Language:</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>Units of measurement:</td>
<td>Metric</td>
</tr>
<tr>
<td>Date and time GPS updating:</td>
<td></td>
</tr>
<tr>
<td>Date and time:</td>
<td>Tue 28 Jul 2015 08:29</td>
</tr>
</tbody>
</table>

**GSM**

- Network enabled
- Network disabled

![Network enabled](image1)

![Network disabled](image2)

**SIM PIN**

<table>
<thead>
<tr>
<th>Language:</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>Units of measurement:</td>
<td>Metric</td>
</tr>
<tr>
<td>Date and time GPS updating:</td>
<td></td>
</tr>
<tr>
<td>Date and time:</td>
<td>Tue 28 Jul 2015 08:30</td>
</tr>
</tbody>
</table>

**SIM PIN**

- PIN enabled
- PIN disabled

![PIN enabled](image3)

![PIN disabled](image4)

**APN**

<table>
<thead>
<tr>
<th>GSM</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIM PIN</td>
</tr>
<tr>
<td>Enter PIN: 1000</td>
</tr>
</tbody>
</table>

**APN**

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

![APN](image5)
5.7.6 Joystick keys configuration

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

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

![Page 0, 1a, 1b, 2]

**Page 0 (“MAIN”)**

- Height (A)
- Height (C)
- Var. geom. L (O)
- Var. geom. L (C)
- Pag. 1a / Pag. 1b access
- Seq. 1 L
- Seq. 1 R
- Boom tilt (O)
- Boom tilt (C)
- Var. geom. R (O)
- Var. geom. R (C)
- Pag. 2 access

**PAGE 1a**

- Arm nr. 1 L (O)
- Arm nr. 1 L (C)
- Arm nr. 2 L (O)
- Arm nr. 2 L (C)
- Pag. 1a / Pag. 1b access
- Boom Lock (O)
- Boom Lock (C)
- Pag. 2 access

CONTINUES > > >
PAGE 1b

- Height (O)
- Height (C)
- Arm nr. 1 L+R (O)
- Arm nr. 1 L+R (C)
- Boom Lock (O)
- Boom Lock (C)
- Pag. 1a / Pag. 1b access
- Main valve switch key

Fig. 195

PAGE 2

- Pressure +
- Pressure -
- AUTO/MAN Rate control
- AUTO/MAN Section control
- AUTO/MAN Boom levelling
- AUTO/MAN Nozzle selection
- Pag. 1a / Pag. 1b access
- Pag. 2 access
- Main valve switch key

FUNCTIONS CURRENTLY NOT IN USE

Fig. 196

END 5.76 Joystick keys configuration
The items displayed in this menu depend on the basic settings performed (chap. 4).

### 5.8 DEVICE STATUS

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

Displayed items are READ-ONLY.

---

#### DEVICE TOTALIZERS

<table>
<thead>
<tr>
<th>Device status</th>
<th>Applied area: 0 ha</th>
<th>Working time: 0 h</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selletron system</td>
<td>Status of the Selletron system</td>
<td></td>
</tr>
<tr>
<td>External signals</td>
<td>Pressure sensor: 0.00 mA</td>
<td>Flowmeter: 0.0 Hz</td>
</tr>
<tr>
<td></td>
<td>Revolution: 0.00 mm</td>
<td>Filling flowmeter: 0.0 Hz</td>
</tr>
<tr>
<td></td>
<td>Total applied area by the device</td>
<td></td>
</tr>
</tbody>
</table>

Fig. 197

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

CONTINUES "SELETTRON SYSTEM" on page 56 > > >

---

#### DEVICE TOTALIZERS

<table>
<thead>
<tr>
<th>Device status</th>
<th>Applied area: 0 ha</th>
<th>Working time: 0 h</th>
</tr>
</thead>
<tbody>
<tr>
<td>External signals</td>
<td>Pressure sensor: 0.000 mA</td>
<td>Flowmeter: 0.0 Hz</td>
</tr>
<tr>
<td></td>
<td>Filling flowmeter: 0.0 Hz</td>
<td>Rev counter: 0.0 Hz</td>
</tr>
<tr>
<td></td>
<td>Total applied area by the device</td>
<td></td>
</tr>
</tbody>
</table>

Fig. 198

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

CONTINUES "EXTERNAL SIGNALS" on page 57 > > >
SELETRON SYSTEM

• Status of the Seletron system

This menu has two main functions:

• INSTALLATION
  Allows to display the progress during Seletron's pairing procedure (chap. 6 Seletron connection).

• DIAGNOSTICS
  Allows to check the connection of each single Seletron.

*CARRY OUT BOTH PROCEDURES WITH RUNNING ENGINE.*

SELETRON CONNECTION DIAGNOSTICS

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

The screen in Fig. 199 shows the corresponding number.

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

If necessary, you can repeat the pairing procedure for each Seletron device:

-BEFORE STARTING A NEW PAIRING PROCEDURE, YOU MUST RESET THE PREVIOUSLY ALLOCATED IDENTIFICATION NUMBERS.

Use the function Identification numbers reset (par. 5.1.16).

CONTINUES "EXTERNAL SIGNALS" on page 57 > > >
## EXTERNAL SIGNALS

<table>
<thead>
<tr>
<th>External signals</th>
<th>Device status</th>
<th>Function description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pressure sensor: 0.00 mA</td>
<td>Status of the external main control which starts the spraying.</td>
<td></td>
</tr>
<tr>
<td>Flowmeter: 0.00</td>
<td>Tank level sensor: 0.00 mA</td>
<td>The monitor detects the driving direction.</td>
</tr>
<tr>
<td>Filling flowmeter: 0.00</td>
<td>External command: On</td>
<td>The monitor displays the status of switches (section valves and/or hydraulic valves), if switch panels are connected.</td>
</tr>
<tr>
<td>Rev counter: 0.00</td>
<td>Driving direction: forward</td>
<td>The monitor displays the status of Explorer joystick buttons (if connected).</td>
</tr>
<tr>
<td>Wheel sensor: 0.00</td>
<td>Sections switch panel:</td>
<td></td>
</tr>
<tr>
<td>Tank level sensor: 0.00 mA</td>
<td>Hydraulic switch panel:</td>
<td></td>
</tr>
</tbody>
</table>

**Fig. 201**

```
Device status

<table>
<thead>
<tr>
<th>Wire sensor: 0.00 mA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tank level sensor: 0.00 mA</td>
</tr>
<tr>
<td>External command: On</td>
</tr>
<tr>
<td>Driving direction: forward</td>
</tr>
<tr>
<td>Sections switch panel:</td>
</tr>
<tr>
<td>Hydraulic switch panel:</td>
</tr>
</tbody>
</table>
```

**Fig. 202**

```
Device status

<table>
<thead>
<tr>
<th>Wire sensor: 0.00 mA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tank level sensor: 0.00 mA</td>
</tr>
<tr>
<td>External command: On</td>
</tr>
<tr>
<td>Driving direction: forward</td>
</tr>
<tr>
<td>Sections switch panel:</td>
</tr>
<tr>
<td>Hydraulic switch panel:</td>
</tr>
</tbody>
</table>
```

**Fig. 203**

```
Device status

<table>
<thead>
<tr>
<th>Tank level sensor: 0.00 mA</th>
</tr>
</thead>
<tbody>
<tr>
<td>External command: On</td>
</tr>
<tr>
<td>Driving direction: forward</td>
</tr>
<tr>
<td>Joystick status</td>
</tr>
</tbody>
</table>
```

**Fig. 204**

```
Device status

<table>
<thead>
<tr>
<th>Joystick status</th>
</tr>
</thead>
</table>
```

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

<table>
<thead>
<tr>
<th>Device status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sections switch panel:</td>
</tr>
<tr>
<td>Hydraulic switch panel:</td>
</tr>
<tr>
<td>Remote devices</td>
</tr>
<tr>
<td>IBX100:</td>
</tr>
<tr>
<td>Switchbox:</td>
</tr>
<tr>
<td>Firmware versions</td>
</tr>
<tr>
<td>Monitor version:</td>
</tr>
<tr>
<td>Monitor firmware date:</td>
</tr>
<tr>
<td>Power data</td>
</tr>
<tr>
<td>Internal battery voltage:</td>
</tr>
<tr>
<td>Power supply voltage:</td>
</tr>
<tr>
<td>Boom line 1 current:</td>
</tr>
<tr>
<td>Boom line 2 current:</td>
</tr>
</tbody>
</table>

The monitor displays the firmware versions of the remote devices connected.

---

### FIRMWARE VERSIONS

<table>
<thead>
<tr>
<th>Device status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switchbox:</td>
</tr>
<tr>
<td>Firmware versions</td>
</tr>
<tr>
<td>Monitor version:</td>
</tr>
<tr>
<td>Monitor firmware date:</td>
</tr>
<tr>
<td>Power data</td>
</tr>
<tr>
<td>Internal battery voltage:</td>
</tr>
<tr>
<td>Power supply voltage:</td>
</tr>
</tbody>
</table>

The monitor displays firmware versions.

---

### POWER DATA

<table>
<thead>
<tr>
<th>Device status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitor version:</td>
</tr>
<tr>
<td>Monitor firmware date:</td>
</tr>
<tr>
<td>Power data</td>
</tr>
<tr>
<td>Internal battery voltage:</td>
</tr>
<tr>
<td>Power supply voltage:</td>
</tr>
<tr>
<td>Sensors and motor valves line current:</td>
</tr>
</tbody>
</table>

The monitor checks the status of the power supply.

**CONTINUES "Seletron connection" on page 59 > > >**

---

**END 5.8 Device status**
SELETRON CONNECTION

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

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

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

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

Before proceeding, make sure you are able to hear the acoustic signals coming from the cabin (doors open, etc.).

- Access the menu Settings > Device status > Status of the Seletron system on the monitor (par. 5.8).
- Make sure that all Seletron devices are disconnected: they must be shown on the display only with the symbols , as shown in Fig. 209.

Fig. 209

Seletron 1 is not responding.

Seletron 2, 3, etc.

Seletron 1

~4 seconds

Before connecting a new Seletron, make sure that the previous one has been paired, that the acoustic signal has been made and that the relevant green symbol has been displayed.

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

Fig. 210

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

Wait for the acoustic signal by the monitor.

Wait for the monitor to display the green symbol for the connected Seletron (Fig. 210).

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

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

- Repeat the above steps, connecting all remaining Seletron devices from left to right until the end of the boom.

- Connection sequence if special nozzles are present:

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

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

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

**CONNECTION SEQUENCE FOR SINGLE AND TWIN SELETRON DEVICES**

![Diagram of connection sequence for single and twin Seletron devices](image)

**CONNECTION SEQUENCE FOR FOURFOLD SELETRON DEVICES**

![Diagram of connection sequence for fourfold Seletron devices](image)

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

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

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

- Control ON
- Open sections
- Enabled nozzles
- MANUAL nozzle selection settings
- MANUAL section management settings

6.2 Seletron replacement

- ONLY DISCONNECT THE SELETRON DEVICES THAT WERE NOT CORRECTLY PAIRED (Fig. 215).
Connect the new Seletron devices: Fig. 216, in a sequence from left to right (when looking at the boom from behind).

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

Tighten each Seletron onto the relevant nozzle holder, using a torque wrench and a tightening torque of 4.5 Nm / 40 Inch/lbs. Alternatively, if you do not have a torque wrench, tighten the Seletron devices by hand and make sure there are no leaks.

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

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

Fig. 216

---

CONTINUES “Use” on page 63 > >>
7.1 Controls

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.

- Controls on monitors
  1 Function keys.
  2 Control and display mode keys.

- Controls to valves and/or hydraulic functions with switch panel (DELTA 80 / BRAVO 400S ONLY)
  3 Operating switches for control unit valves - par. 7.2
  4 Operating switches for oil-hydraulic functions (hydraulic valves) - par. 7.3

- Controls to valves and/or hydraulic functions with joystick - par. 5.7.6
### 7.2 Operating switches for control unit valves

<table>
<thead>
<tr>
<th>Switches for sequential control</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Main control ON</strong></td>
</tr>
</tbody>
</table>

**A** Opens sections from the last one open

**B** Closes the sections from the last closed

**C** Opens sections from the last one open

**D** Closes the sections from the last closed

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

#### Examples:

- **Closing of one section**
  - As in the example here, shift once the switch to the left to close the first open section. Shift several times to close sections in sequence.

- **Opening of one section**
  - As in the example here, shift once the switch to the right to open the first closed section. Shift several times to open sections in sequence.

- **Simultaneous closing of half boom sections**
  - As in the example here, keep the switch shifted to the left to close the boom open half.

- **Simultaneous opening of half boom sections**
  - As in the example here keep the switch shifted to the right to open the boom closed half.

### 7.3 Operating switches for hydraulic valves

<table>
<thead>
<tr>
<th>Switches for hydraulic valves</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Release of the boom</strong></td>
</tr>
</tbody>
</table>
Some spraying jobs provide for zones called "Buffer zone", where spraying must be reduced or shut off. Further to the nozzles usually used, it is necessary to install special nozzles (e.g.: ASJ AOC), able to reduce the spray or drift, as terminal nozzles on boom. The connection procedure of "Buffer" nozzles is as follows:

Left "Buffer" nozzle (boom view from behind), 1st boom nozzle, 2nd boom nozzle, ---> Boom nozzle no., Right "Buffer" nozzle (boom view from behind).

Fig. 222

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

### NOZZLE SELECTION WITH SWITCH PANEL

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

  ![Image](image1.png)

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

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

  ![Image](image2.png)

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

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

  ![Image](image3.png)

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

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

  ![Image](image4.png)

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

### NOZZLE SELECTION WITH JOYSTICK II

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

![Image](image5.png)
7.3.2 "Fence nozzle" function enabled

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

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

NOZZLE SELECTION WITH SWITCH PANEL

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

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

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

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

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

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

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

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

NOZZLE SELECTION WITH JOYSTICK

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

#### USING THE KEYS

<table>
<thead>
<tr>
<th>Key(s)</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1</td>
<td>Go to “Home” menu</td>
</tr>
<tr>
<td>F2</td>
<td>Switch to job menu</td>
</tr>
<tr>
<td>F3</td>
<td>Aborts a function</td>
</tr>
<tr>
<td>F4</td>
<td>Aborts data change</td>
</tr>
<tr>
<td>F5</td>
<td>Confirmation key</td>
</tr>
<tr>
<td>F6</td>
<td>Enables/disables job functions display</td>
</tr>
</tbody>
</table>

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

- **Select job data displayed on the LEFT side**

- **Select job data displayed on the RIGHT side**

---

#### DISPLAY ITEMS

- **Spray number:** Reference line is 0, tracks to its left are negative while tracks to its right are positive.
- **Automatic functions status:**
  - Spraying boom (par. 9.7)
- **Output setting:** (par. 9.5)
  - Section management
  - Target spray rate
- **Other items:**
  - Deviation: distance between the position of the tractor and the track to be followed
  - GPS signal strength:
  - DGPS signal
  - GPS signal
  - Data not valid
  - Nozzles being used/Direction
  - Sprayed surface/RPM
  - Covered area
  - Reference tracks
  - Machine position
  - Sprayed quantity/Calculated area
  - Speed/Tank level
  - Pressure/Range

---

**Fig. 224**

- **F 1 ÷ F 8:** Contextual function keys
  - These keys control what is shown on the display (display zoom adjustment, etc., Fig. 224)
  - When the function list is displayed, they perform specific functions: the function of each key depends on what appears on the display, therefore the use of these keys will be illustrated during the description of the corresponding procedures.
Spraying a field

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

Fig. 226

**SPRAYING SETTINGS**

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

**Target rate**

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

**Select nozzles config**

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

**Map**

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

**Start job**

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

**Start spraying by acting on the main valve control.**

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

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

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

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. 237), by following the reference tracks shown on the display (Fig. 238).

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

#### USING THE KEYS

<table>
<thead>
<tr>
<th>Function</th>
<th>Key(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Displays job information / alarms (par. 11.1)</td>
<td>F1</td>
</tr>
<tr>
<td>Display zoom adjustment:</td>
<td>F3 (+)</td>
</tr>
<tr>
<td>F5 (-) zoom out</td>
<td></td>
</tr>
<tr>
<td>Select job data displayed on the LEFT side</td>
<td>F12</td>
</tr>
<tr>
<td>Go to &quot;Home&quot; menu</td>
<td>F13</td>
</tr>
<tr>
<td>View automatic function menu</td>
<td>F14</td>
</tr>
<tr>
<td>Aborts a function</td>
<td>F15</td>
</tr>
<tr>
<td>Aborts data change</td>
<td>F16</td>
</tr>
<tr>
<td>Switch to job menu</td>
<td>F17</td>
</tr>
</tbody>
</table>

**F 1 to F 8:** Contextual function keys

These keys control what is shown on the display (display zoom adjustment, etc., Fig. 239). When the function list is displayed, they perform specific functions: the function of each key depends on what appears on the display, therefore the use of these keys will be illustrated during the description of the corresponding procedures.

#### DISPLAY ITEMS

- **Spray number:** the reference line is 0, tracks to its left are negative while tracks to its right are positive.
- **Automatic functions status:**
  - Section management (par. 9.8)
  - Output setting (par. 9.5)
- **Speed / Tank level:**
- **Pressure / Range:**
- **Sprayed quantity / Calculated area:**
- **Spraying boom (par. 9.7):**

**GPS signal strength:**

- **DGPS signal**
- **GPS signal**
- **Data not valid**

**Enabled alarm** (Press F1 for more details, par. 11.1):

- **Instant output**
- **Target spray rate**
- **Instant flowrate**
- **Output percentage variation**
- **Every symbol corresponds to a 10% variation:**
  - +10%
  - -10% (max. ±50%)

**Nozzles being used / Direction:**

**Sprayed surface / RPM:**

**Covered area**

**Reference tracks**

**Machine position**

**Fig. 240**

*Fig. 239* Confirmation key

*Fig. 240* Enables / disables job functions display

*Fig. 240* Switch to job menu

*Fig. 240* Displays job information / alarms (par. 11.1)
Let us assume we want to spray a field along parallel lines, but only once the edges of the field have been sprayed.

Fig. 241

**SPRAYING SETTINGS**

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

- **Selected nozzle**
  - Select a nozzle from the list (Fig. 245).
  - Press OK to confirm.

- **Map**
  - If there is at least one map (on the internal memory), you can select a prescription map for the spraying. According to the position detected by the GPS receiver, the monitor will use the appropriate spray rate for the area that is being sprayed (par. 9.6 Importing and using a prescription map).
  - Select a map from the list (Fig. 247).
  - Press OK to confirm.

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

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

Mark A?

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

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

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

Mark B?

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

At the beginning of a new job the monitor gives driving directions in the "Straight parallel" mode.

To change guidance mode see function F2 Guidance mode (par. 12.2).
To access automatic functions, start a job (New job, Resume job, Continue last job, chap. 10 "Home" Menu); in the guidance screen press AUTO. When the list is active (Fig. 254), pressing the key at the side will enable the relevant function.

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

<table>
<thead>
<tr>
<th>Par.</th>
<th>F1</th>
<th>NOT IN USE</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.5</td>
<td>F2</td>
<td>ON/OFF automatic adjustment</td>
</tr>
<tr>
<td>9.8</td>
<td>F6</td>
<td>ON/OFF section automatic management</td>
</tr>
</tbody>
</table>

CONTINUES "Output adjustment" on page 77 >>>
To access automatic functions, start a job (New job, Resume job, Continue last job, chap. 10 "Home" Menu); in the guidance screen press AUTO. When the list is active (Fig. 255), pressing the key at the side will enable the relevant function.

Fig. 255
The table below lists all available job functions and the corresponding function keys:

<table>
<thead>
<tr>
<th>Par.</th>
<th>Function Description</th>
<th>Function Key</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.3</td>
<td>Manual selection of NOZZLE A</td>
<td>F1</td>
</tr>
<tr>
<td>9.3</td>
<td>Manual selection of NOZZLE B</td>
<td>F3</td>
</tr>
<tr>
<td>9.3</td>
<td>Manual selection of NOZZLE C</td>
<td>F5</td>
</tr>
<tr>
<td>9.3</td>
<td>Manual selection of NOZZLE D</td>
<td>F7</td>
</tr>
<tr>
<td>9.5</td>
<td>ON/OFF automatic adjustment</td>
<td>F2</td>
</tr>
<tr>
<td>9.2</td>
<td>Automatic nozzle selection ON / OFF</td>
<td>F4</td>
</tr>
<tr>
<td>9.8</td>
<td>ON/OFF section automatic management</td>
<td>F6</td>
</tr>
</tbody>
</table>
9.1 How the automatic nozzle selection works (SELETRON system)

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

**Operation field of possible combinations of ISO11002 and ISO110025 nozzles**

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

![Diagram showing speed and nozzle combinations](Image)

According to the set data and those detected by the sensors, the monitor will select the suitable nozzle configuration, constantly checking that:
- spraying pressure remains within the range selected for each single nozzle at all times
- if more than one nozzle configuration is possible, the configuration where working pressure is as close as possible to the working range of the nozzle is selected
- nozzle replacement is significantly reduced

When setting a treatment, make sure to couple compatible nozzles.
For example:
- **Compatible nozzles**: the rate at 1 bar of the ISO025 nozzle is LOWER than the rate at 5 bars of the ISO02 nozzle (Fig. 258).
- **NON compatible nozzles**: the rate at 1 bar of the ISO05 nozzle is HIGHER than the rate at 5 bars of the ISO02 nozzle (Fig. 259).

![Compatible nozzles](Image)

<table>
<thead>
<tr>
<th>1 bar</th>
<th>ISO02</th>
<th>5 bar</th>
<th>ISO05</th>
<th>1 bar</th>
<th>ISO02</th>
<th>5 bar</th>
<th>ISO05</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OK</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

⚠️ When setting the treatment (par. 7.5) the monitor automatically checks the rates and in case the above conditions are not respected, the computer will display the message Wrong nozzles configuration!
9.2 F4 Automatic nozzle selection ON/OFF

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

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

Fig. 260

Automatic selection ON
Automatic selection OFF
Enabled nozzle
Disabled nozzle

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

9.3 F1/F3/F5/F7 Manual nozzle selection

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

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

Fig. 261

Enabled nozzle
Disabled nozzle

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

CONTINUES “Output adjustment” on page 77 >> >
9.4 Output adjustment

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

### AUTOMATIC ADJUSTMENT ON

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

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

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

### AUTOMATIC ADJUSTMENT OFF (MANUAL)

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

9.5 F2 Automatic adjustment ON/OFF

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

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

9.6 Importing and using a prescription map

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

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

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

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

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

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

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

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

**AUTOMATIC MANAGEMENT ON**
- The section valves are closed or opened automatically.
- To change section valve management mode, use function F6. Automatic section management ON/OFF (par. 9.8).

**AUTOMATIC MANAGEMENT OFF (MANUAL)**
- Section valves must be opened or closed manually.

**TREATMENT AND BOOM SECTION STATUS**

<table>
<thead>
<tr>
<th>Main control</th>
<th>Sections</th>
<th>Main control</th>
<th>Sections</th>
<th>Section</th>
<th>Zone to be sprayed</th>
<th>Zone already sprayed</th>
</tr>
</thead>
<tbody>
<tr>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>ON</td>
<td>OFF</td>
<td>OPEN SECTION</td>
<td>CLOSE SECTION</td>
</tr>
</tbody>
</table>

**OPENING AND CLOSING SIGNALS**

**MANUAL MANAGEMENT OF THE SPRAYING POINTS**

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

As the machine advances, the signal is triggered for each valve.

When overlapping returns within the set limit, the monitor warns to OPEN the relevant spraying points (Fig. 265). Open the valves through the relevant controls (par. 7.2 or 5.7.6): the monitor will confirm opening on display.

As the machine advances, the signal is triggered for each valve.

**AUTOMATIC MANAGEMENT OF THE SPRAYING POINTS**

When overlapping of ONE or MORE spraying points is above the set value for the **Sections overlapping limit** (par. 5.1.14) the monitor CLOSES the relevant valves (Fig. 266). It is not necessary to intervene on their controls.

The monitor closes the sections automatically. Job interruption is shown on the display in real time.

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

**Automatic section closing**

**Automatic section opening**
9.8 F6 Automatic section management ON/OFF

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

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

<table>
<thead>
<tr>
<th>Par.</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.1</td>
<td><strong>F1</strong> Continue last job</td>
</tr>
<tr>
<td>10.2</td>
<td><strong>F2</strong> Save job</td>
</tr>
<tr>
<td>10.3</td>
<td><strong>F3</strong> New job</td>
</tr>
<tr>
<td>10.4</td>
<td><strong>F4</strong> Memories management</td>
</tr>
<tr>
<td>10.5</td>
<td><strong>F5</strong> Resume job</td>
</tr>
<tr>
<td>10.7</td>
<td><strong>F6</strong> Info / Alarms</td>
</tr>
<tr>
<td>5</td>
<td><strong>F7</strong> Select / Create settings for <strong>User</strong>, <strong>Tractor</strong> and <strong>Implement</strong></td>
</tr>
</tbody>
</table>

**Fig. 269**

Select / Create settings for **User**, **Tractor** and **Implement**

Edit settings for **User**, **Tractor** and **Implement**
1. Press **F1** to continue the last job, from the point where it has been interrupted.
2. Check the **Spraying settings** in Fig. 271; modify them if necessary.
3. Select **and press OK** to switch to guidance mode.
4. Complete the job (Fig. 272).
10.2

F2 Save job

Save current job

1 Press **F2** to save current job: the name edit screen is displayed (Fig. 274). Type the name.

2A Press in succession to select the character you wish to type (UP / DOWN).

2B Press in succession to select the character you wish to type (RIGHT / LEFT).

3 Press to:

3 Confirm the selected character.

3 Delete the character before the cursor (when the symbol “□” is selected).

3 Save the entered text (when the symbol “□” is selected).

4 Press to delete the character before the cursor.

5 Save the typed text (when the “OK” symbol is selected “□”).

6 Press to exit screen without confirming modification.

Legend:

- **imp03 |** Typed Name Cursor
- **Selected character**
- **Shift cursor across name characters**
- **Caps lock**
- **Deletes the character before the cursor**
- **Saves the entered text**

**job01** Successfully saved!

Fig. 275

A confirmation message is displayed once the process is completed (Fig. 275). Press **ESC**.
1 Press **F3** to start a new spraying. If the current job has not been saved yet, the monitor will prompt the user to save it (Fig. 276). Press **OK** to continue without saving (2A) or **ESC** to interrupt the procedure and save (2B).

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

**2B** The **ESC** key stops the beginning of a new job.

**3A** The **OK** key allows switching to the treatment start page without saving the job.

**3B** Save the previous job with the function **Save job** (par. 10.2).

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

Check the **Spraying settings** in Fig. 278; change them if necessary.
Manage and copy data between internal and external memories (Pendrive / SD card).

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

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

ARAG monitors can use different internal memories:
- Bravo 400S: Pendrive + SD Card
- Delta 80: Pendrive
- Ninja: SD card

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

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

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

Press F4 to enter Memories management.

**KML to USB / SD card**

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

- Select the item KML format to USB 1 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 to USB / SD card**

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

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

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

**Screenshot to USB / SD card**

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

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

The image is saved on the USB pendrive, inside a folder named “screen-shots”.
10.4.2 Backup

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

Press F4 to enter Memories management.

- **Create backup file on USB1 / SD card**

  Allows to save a (backup) copy of system settings to USB pendrive.
  - Select Create backup file on USB1 (Fig. 283) and press OK. Monitor requests you to confirm saving (OK: confirm, ESC: cancel).
  - A confirmation message (Fig. 284) is displayed once the process is completed. Press ESC.

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

- **Load backup file from USB1 / SD card**

  Allows to load onto the device a (backup) copy of system settings and ACTIVATE THEM.
  - Select Load backup file from USB1 (Fig. 285) and press OK.
  - Select backup folder to load (Fig. 286) and press OK.
  - Monitor requests you to confirm the following: ALL active settings will be lost (OK: confirm, ESC: cancel).

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

- **Delete all backup files on USB1 / SD card**

  Allows to delete all backups from the USB pendrive.
  - Select Delete all backup files on USB1 (Fig. 284) and press OK. Monitor requests you to confirm deletion (OK: confirm, ESC: cancel).
10.4.3 Internal memory deletions

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

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

Press **F4** to enter Memories management.

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

Example:

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

10.4.4 Files copy to internal memory

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

The following data can be copied in the internal memory:

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

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

- Select Maps from USB (Fig. 291) and press **K**. Monitor requests you to confirm import **K**: confirm, **ESC**: cancel
- A confirmation message (Fig. 292) is displayed once the process is completed. Press **ESC**.

**WARNING:** FILES HAVING THE SAME NAME WILL BE OVERWRITTEN.
10.4.5 Remote devices upgrade

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

**Upgrade files**

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

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

- Insert the pendrive in a pendrive reader and connect it to the computer. The window to the right will appear: select _Open folder to view the files_.
- The pendrive explorer window will open: create a new folder and name it “s19”

![Fig. 293](image1)

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

![Fig. 294](image2)

**CONTINUES**
Check the list of updates provided by default in the internal memory (steps 1 and 2). If the desired file is not available, download the update at www.aragnet.com in "download" section and copy update file to device internal memory (function on the side, par. 10.4.4).

RUNNING THE UPDATE:

1. Select the Upgrade file menu and press OK.

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

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

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

4. When the message in Fig. 300 appears, the upgrade is complete. Press OK.
When both memories are available, use the pen drives to exchange job data and system updates. This does not apply to the monitor equipped ONLY with SD card reader.

The following paragraphs will provide an example using a pen drive: the procedure is identical with a SD card.

**Upgrade monitor firmware**

Allows updating monitor firmware.

Before starting the procedure copy the upgrade files onto the pendrive.
- Insert the pendrive in a pendrive reader and connect it to the computer.
- The window to the right will appear: select **Open folder to view the files**.
- Content window of the pendrive will open.
- Select the upgrade file and drop it onto the pendrive explorer window.

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

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

**Example 1**

**Example 2**

CONTINUES >>
RUNNING THE UPDATE:
1. Select Upgrade monitor firmware (Fig. 304) and press \(\text{OK}\). Message in Fig. 305 is displayed once the process is completed.
2. Remove the pen drive then restart the monitor.

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

When installation is completed, the computer automatically reboots.

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

To CANCEL THE COMPLETE DELETION, press again \(\text{F3}\) before the end of the update: the message will appear and the system will be updated without deleting all data: the message will appear Full erase option disabled and the system will be updated without deleting all data.
Enables procedure for resuming a previously saved job.

1. Press F5 to resume a previous job, from the list of saved jobs. As for the New job function (par. 10.3), if the current job has not been saved yet, the monitor will prompt the user to save it.

2. Select the job among those in the list (Fig. 311) and press OK to confirm the selection.

2a. When an "old" job is resumed, the monitor provides guidance information by restoring the conditions which were active at the time of saving. If the Loading options screen is enabled (see par. 5.6.9), it is possible to choose which information to load (Fig. 312).

3. Check the Spraying settings in Fig. 313; modify them if necessary.

4. Select and press OK to switch to guidance mode.

5. Complete the job (Fig. 314).

---

**Example:**

**Fig. 311**

Resume job

<table>
<thead>
<tr>
<th>Job</th>
<th>Date/Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>job01</td>
<td>22/12/2015 09:20</td>
</tr>
<tr>
<td>job02</td>
<td>22/12/2015 09:21</td>
</tr>
</tbody>
</table>

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

2a. In this screen, it is possible to enable or disable the information memorized during the last saving (✓ Value enabled, × Value disabled).

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

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

**Fig. 312**

**Loading options**

- **Applied area**
- **Perimeter**
- **Reference lines**
- **Points of interest (POI)**
- **Job data**

**Fig. 313**

**Spraying settings**

<table>
<thead>
<tr>
<th>Rate</th>
<th>Nozzles config. [1]</th>
</tr>
</thead>
<tbody>
<tr>
<td>123 l/ha</td>
<td><img src="image" alt="Nozzles config." /></td>
</tr>
</tbody>
</table>

**Fig. 314**

**CONTINUES "F6 Info / Alarms" on page 94 > > >**
10.6 F5 Resume job

Enables procedure for resuming a previously saved job.

1 Press F5 to resume a previous job, from the list of saved jobs.
   As for the New job function (par. 10.3), if the current job has not been saved yet, the monitor will prompt the user to save it.

2 Select the job among those in the list (Fig. 319) and press OK to confirm the selection.

2a When an “old” job is resumed, the monitor provides guidance information by restoring the conditions which were active at the time of saving.
   If the Loading options screen is enabled (see par. 5.6.9), it is possible to choose which information to load (Fig. 320).

3 Check the Spraying settings in Fig. 315; modify them if necessary.

4 Select and press OK to switch to guidance mode.

5 Complete the job (Fig. 316).

---

1 Press F5 to resume a previous job, from the list of saved jobs.

2 Select the job among those in the list (Fig. 319) and press OK to confirm the selection.

2a When an “old” job is resumed, the monitor provides guidance information by restoring the conditions which were active at the time of saving.
   If the Loading options screen is enabled (see par. 5.6.9), it is possible to choose which information to load (Fig. 320).

3 Check the Spraying settings in Fig. 315; modify them if necessary.

4 Select and press OK to switch to guidance mode.

5 Complete the job (Fig. 316).

---

In this screen it is possible to enable or disable the information memorized during the last saving

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

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

---

CONTINUES “F6 Info / Alarms” on page 94 > > >
10.7 F6 Info / Alarms

Displays job information / alarms.

Press F6 to view the Info / Alarms menu (Fig. 320). This screen gives an overview of the active notifications for the operator, rated by importance as Critical alarms, Low priority alarms and Info.
To access job menu start a job (New job, Resume job, Continue last job. chap. 10 "Home" Menu); in the guidance screen press Menu. In the job menu (Fig. 321), pressing any key at the side will enable the relevant function.

The table sums up all menu items and corresponding keys:

<table>
<thead>
<tr>
<th>Par.</th>
<th>Key</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.1</td>
<td>F1</td>
<td>Info / Alarms Displays job information / alarms</td>
</tr>
<tr>
<td>11.2</td>
<td>F2</td>
<td>Job data Displays job data</td>
</tr>
<tr>
<td>11.4</td>
<td>F3</td>
<td>Tank Tank filling management</td>
</tr>
<tr>
<td>11.5</td>
<td>F4</td>
<td>GPS Data Displays GPS data</td>
</tr>
<tr>
<td>11.6</td>
<td>F5</td>
<td>Camera Displays images from connected cameras</td>
</tr>
<tr>
<td>11.7</td>
<td>F6</td>
<td>Prescription map Overview of the prescription map in use</td>
</tr>
<tr>
<td>11.8</td>
<td>F7</td>
<td>Zoom all Overview of the field during spraying</td>
</tr>
<tr>
<td>11.9</td>
<td>F8</td>
<td>Menu Job settings menu</td>
</tr>
</tbody>
</table>

Enter selected character
Delete selected character
Scroll (LEFT / RIGHT)
Scroll (UP / DOWN)
Data increase / decrease
Confirm access or data change
Exit the function or data change
11.1

F1 Info / Alarms

Displays job information / alarms

1. In the guidance screen, press **Menu**.
2. Press **F1** to view the **Info / Alarms** menu (Fig. 323).
   This screen gives an overview of the active notifications for the operator, rated by importance as **Critical alarms**, **Low priority alarms** and **Info**.

Fig. 322

Fig. 323

<table>
<thead>
<tr>
<th>Key</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1</td>
<td>Enter selected character</td>
</tr>
<tr>
<td>F2</td>
<td>Delete selected character</td>
</tr>
<tr>
<td>F7</td>
<td>Scroll (LEFT / RIGHT)</td>
</tr>
<tr>
<td>F8</td>
<td>Scroll (UP / DOWN)</td>
</tr>
<tr>
<td>F9</td>
<td>Data increase / decrease</td>
</tr>
<tr>
<td>OK</td>
<td>Confirm access or data change</td>
</tr>
<tr>
<td>ERC</td>
<td>Exit the function or data change</td>
</tr>
</tbody>
</table>
11.2
F2 Job data

<table>
<thead>
<tr>
<th>Job data</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Applied area:</strong> 0.00 ha</td>
</tr>
<tr>
<td><strong>Applied quantity:</strong> 0 l</td>
</tr>
<tr>
<td><strong>Average application rate:</strong> 0 l/ha</td>
</tr>
<tr>
<td><strong>Nozzles:</strong></td>
</tr>
<tr>
<td><strong>Calculated area:</strong> 0.00 ha</td>
</tr>
<tr>
<td><strong>Working time:</strong> 00:00</td>
</tr>
<tr>
<td><strong>Application time:</strong> 00:00</td>
</tr>
<tr>
<td><strong>Average productivity:</strong> 0.0 ha/h</td>
</tr>
</tbody>
</table>

*Fig. 325*

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

*Fig. 324*

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

*Fig. 326*

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

CONTINUES "F3 Tank" on page 99 > >>
11.3
F2 Job data

Displays job data

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

**Fig. 327**

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

**Fig. 328**

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

**Fig. 329**

CONTINUES “F3 Tank” on page 99 > > >
11.4
F3 Tank

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

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

- **TANK LEVEL SOURCE: LEVEL SENSOR**
The computer displays the real quantity of fluid inside the tank, detected by the level sensor.

- **TANK LEVEL SOURCE: MANUAL / FILLING FLOWMETER**
The computer calculates the quantity of fluid inside the tank (by processing the job data), and allows to enable several manual procedures:
  - Complete filling, according to the tank capacity (Fig. 332)
  - Level reset (Fig. 333)
  - Filled quantity manual setup (Fig. 334)

**TANK FILLING**

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

**LEVEL RESET**

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

**FILLED QUANTITY MANUAL SETUP**

- Press F6 to set the quantity of liquid filled in the tank.
- Set the value and confirm.
The display will show the tank level that has been reached.

It is not possible to set values higher than tank total capacity.
1 In the guidance screen, press **Menu**.
2 Press **F4** to view the **GPS Data** menu (Fig. 336).
   This screen shows the data sent to the GPS receiver.

---

**Fig. 335**

---

<table>
<thead>
<tr>
<th><strong>GPS Data</strong></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Latitude</td>
<td>0.00000000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Longitude</td>
<td>0.00000000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Altitude</td>
<td>0 m</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DGPS Age</td>
<td>0 sec</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of satellites</td>
<td>0.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HDOP</td>
<td>0.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roll</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pitch</td>
<td>0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Fig. 336**

---

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

---

*Enabled for GPS receiver Smart-Ag Tilt and Smart 6T models only.* (see General ARAG Cat.)
11.6  
F5 Camera

Displays images from connected cameras

1. In the guidance screen, press Menu.
2. Press F5 to view the Camera menu (Fig. 338).

By connecting one or more cameras, it is possible to monitor working areas and at the same time view spraying data.

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

Fig. 337  

Fig. 338

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

In the guidance screen, press **Menu**.

Press **F6** to view the **Prescription map** menu (Fig. 340).

From this screen it is possible to view data of the prescription map during spraying and to check the position of the machine on the map.

**Spray rate values legend:**
The highlighted box displays the spray rate referred to the machine's current position.
11.8 F7 Zoom all

Overview of the field during spraying

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

**INDICATORS AND POINTS OF INTEREST ON THE FIELD**

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

Surface inside the field perimeter ("SURFACE" function (par. 12.4)
Surface outside the field perimeter (see "SURFACE" function)
Machine position
Sprayed surface
Scale
General points of interest
Cursor

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

It indicates the machine position outside the displayed area

CONTINUES
MARKING POINTS OF INTEREST

The general points of interest can be memorized with this procedure or with the specific function (par. 12.3.2).

In this screen it is possible to memorize one point of the field even if the tractor is in another position:
1. In field overview screen (Fig. 343) press OK. Cursor A will appear.
2. Press F4 / F6 / F7 / F8 to move the cursor in the exact point to be marked.
3. Press OK (Fig. 344).
4. Press F7 / F8 to select the type of marker.
5. Press OK to confirm (Fig. 345).

REMOVING POINTS OF INTEREST

1. In field overview screen (Fig. 346) 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. 347) / ESC to cancel.
11.9 F8 Menu

Job settings menu

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

**Fig. 348**

**Settings menu**

- **Alarms**
- **Working parameters**
- **Speed source**
- **User**
- **Device status**

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

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

**11.9.1 Speed source**

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

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

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

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

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

- **GPS and Wheel sensor**
  
  When this option is enabled, the monitor uses both sources:
  - the guidance information and the accessory functions are active thanks to the data sent by the GPS receiver;
  - the output is adjusted (par. 9.4) according to the speed read by the wheel sensor.

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

**Fig. 350**

**Fig. 351**

**SIMULATION SPEED**

Edit simulation speed *(DEF 6.0 km/h - 3.7 MPH)*:

- **F3** increases,
- **F5** decreases

**WARNING:** guidance information and all accessory functions (surface calculation, alignment, etc.) are disabled.
12 JOB FUNCTIONS

To access job functions start a job (New job, Resume job, Continue last job, chap. 10 "Home" Menu); in the guidance screen press Func.

When the list is active (Fig. 352), pressing the key at the side will enable the relevant function.

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

<table>
<thead>
<tr>
<th>Par.</th>
<th>Target rate</th>
<th>Guidance mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.1</td>
<td>F1</td>
<td>F2</td>
</tr>
<tr>
<td></td>
<td>Change spray rate</td>
<td>Select guidance mode</td>
</tr>
<tr>
<td>12.3</td>
<td>F3</td>
<td>F4</td>
</tr>
<tr>
<td></td>
<td>Point marking</td>
<td></td>
</tr>
<tr>
<td></td>
<td>It groups the marking of more points:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>F1 Pause</td>
<td>F4</td>
</tr>
<tr>
<td></td>
<td>Save job breaking point</td>
<td></td>
</tr>
<tr>
<td></td>
<td>F3/F5/F7</td>
<td>F6</td>
</tr>
<tr>
<td></td>
<td>General point of interest saving</td>
<td>Align</td>
</tr>
<tr>
<td>12.5</td>
<td>F5</td>
<td>F7</td>
</tr>
<tr>
<td></td>
<td>Resume from pause</td>
<td>F8</td>
</tr>
<tr>
<td></td>
<td>Guidance indications to return to job breaking point</td>
<td></td>
</tr>
<tr>
<td>12.7</td>
<td>F7</td>
<td></td>
</tr>
<tr>
<td></td>
<td>New AB</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Create a new AB track</td>
<td></td>
</tr>
</tbody>
</table>

Fig. 352
The table below lists all available job functions and the corresponding function keys (unavailable functions are displayed in gray).
In the guidance screen, press **Func**.

2 Press **F1** to enable the function.

3 Change the spray rate value for the job (Fig. 354).

4 Confirm the data.
12.2  F2 Guidance mode

Selecting guidance mode:

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

Fig. 355

Fig. 356

**A - STRAIGHT GUIDANCE MODE**

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.

Fig. 357

**B - CURVED GUIDANCE MODE**

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

Fig. 358

**C - PIVOT MODE**

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

Fig. 360

**D - FREE GUIDANCE MODE**

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.

Fig. 361
12.3  
**F3 Point marking**

It groups the available options for marking points of interest.

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

---

**12.3.1 F1 Pause**

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

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

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

---

**12.3.2 F3/F5/F7 General point marking**

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

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

---

*Fig. 362*

*Fig. 363*

*Fig. 364*

*Fig. 365*
1. In the guidance screen, press **Func**.
2. Press **F4** to start the surface calculation procedure (function list disappears).
3. 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.
4. Press **F3** (Left) or **F4** (Right); a white line will be displayed to draw the field perimeter as the tractor moves (Fig. 367).

   **Fig. 367**

5. 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.
6. Press **F4** to complete the surface calculation procedure (Fig. 368). The computer will connect starting and end points and will calculate the surface.

   **Fig. 368**

---

**FIELD PERIMETER ON MACHINE LEFT-HAND SIDE**

**FIELD PERIMETER ON MACHINE RIGHT-HAND SIDE**

---

The field external edge (white line) follows the trajectory of the most external open section valve. When all section valves are closed, the field edge starts from the boom center.
12.5 **F5 Resume from pause**

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

1. In the guidance screen, press **Func.**
2. Press **F5** to obtain guidance information and enable the return to job breaking point procedure.

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

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

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

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

**ESC** the monitor goes back to displaying guidance information for the job but the symbol is saved.
Moves the closest reference track, re-aligning it to the position of the machine. This function is useful when you need to re-align the machine, whilst continuing to drive in the same direction (for example, for corn, sugar cane).

1. In the guidance screen, press Func.
2. Press F6 to align with the current position.

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

Once this function has been used, it is not possible to restore the original reference track.
12.7 F7 New AB

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

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

The reference track T0 and all tracks to be followed during the job will appear on the display (Fig. 377).

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

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

WARNING:
Points A and B can be marked only when the vehicle is moving.
The previous track T0 cannot be restored.
12.8 **F8 Display**

Allows to select different display modes. Includes several functions:

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

---

### 12.8.1 **F2 Tractor themes**

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

---

#### TRACTOR THEME 1 (DEFAULT)

---

#### THEME 2

---

#### THEME 3

---

#### THEME 4

---

#### THEME 5
12.8.2 **F4 Spraying themes**

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. 381](image)

### THEME 2

![Fig. 381](image)

### THEME 3

![Fig. 381](image)

### THEME 4

![Fig. 381](image)

### THEME 5

![Fig. 381](image)

12.8.3 **F6 Daytime/night time display mode**

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. 382](image)

### NIGHT TIME DISPLAY MODE

![Fig. 382](image)

12.8.4 **F8 2D/3D display mode**

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. 383](image)

### 3D DISPLAY MODE

![Fig. 383](image)
### 13 MAINTENANCE / DIAGNOSTICS / REPAIRS

#### 13.1 Error messages

<table>
<thead>
<tr>
<th>MESSAGE ON DISPLAY</th>
<th>CAUSE</th>
<th>REMEDY</th>
<th>JOB MODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive! Machine stopped</td>
<td>Main control ON with machine stopped</td>
<td>• Start the machine.</td>
<td>Master ON + Automatic adjustment ON</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Disable the main control (OFF)</td>
<td></td>
</tr>
<tr>
<td>Connection to ECU not detected!</td>
<td>Communication problems between monitor and control unit (ECU)</td>
<td>• Check condition of connection cables (and connectors) between monitor and control unit (ref. instruction manual)</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>The cables are damaged</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GPS receiver not connected!</td>
<td>Wrong connection of receiver cable to the monitor</td>
<td>• Check connection to receiver (ref. instruction manual)</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>The receiver connection cable is damaged</td>
<td>• Replace the cable</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The receiver is damaged</td>
<td>• Replace the receiver</td>
<td></td>
</tr>
<tr>
<td>Insufficient GPS signal quality!</td>
<td>The position and number of satellites do not allow a suitable driving precision</td>
<td>• Wait for signal strength to improve</td>
<td>–</td>
</tr>
<tr>
<td>GPS receiver gives invalid data!</td>
<td>The receiver is establishing a connection to the satellites</td>
<td>• Wait for connection</td>
<td>–</td>
</tr>
<tr>
<td>DGPS correction not available!</td>
<td>DGPS signal unavailable in the working area</td>
<td>• Disable DGPS correction (par. 5.3.1)</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>DGPS connecting</td>
<td>• Wait for connection</td>
<td>–</td>
</tr>
<tr>
<td>Omnistar correction missing!</td>
<td>Acquiring OmniSTAR® signal</td>
<td>• Wait until OmniSTAR® signal acquisition stage is completed</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>The connected GPS receiver does not support the OmniSTAR® signal</td>
<td>• Disable OmniSTAR® correction (par. 5.3.4)</td>
<td>–</td>
</tr>
<tr>
<td>Activate pump! Missing flowrate</td>
<td>Main control ON but rate at zero</td>
<td>• Start the pump and move the machine.</td>
<td>Master ON + Automatic adjustment ON</td>
</tr>
<tr>
<td>Minimum tank level reached!</td>
<td>Tank level is lower than the set reserve value</td>
<td>• Fill the tank (par. 11.4)</td>
<td>Master ON</td>
</tr>
<tr>
<td></td>
<td>Minimum value was not set correctly</td>
<td>• Check set reserve value (par. 5.1.12)</td>
<td></td>
</tr>
<tr>
<td>Maximum tank level reached!</td>
<td>Tank level reached set maximum value</td>
<td>• Stop filling the tank (par. 11.4)</td>
<td>–</td>
</tr>
<tr>
<td>Automatic regulation blocked!</td>
<td>Pressure does not reach set value</td>
<td>• Increase driving speed</td>
<td>Master ON + Automatic adjustment ON</td>
</tr>
<tr>
<td></td>
<td>Limit was not set correctly</td>
<td>• Check set limit (par. 5.1.14)</td>
<td></td>
</tr>
</tbody>
</table>

CONTINUES
<table>
<thead>
<tr>
<th>MESSAGE ON DISPLAY</th>
<th>CAUSE</th>
<th>REMEDY</th>
<th>JOB MODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Invalid signal of the pressure sensor!</td>
<td>Signal from pressure sensor is out of allowed range</td>
<td>• Check the sensor and connection cable (and connector) status (ref. instruction manual)</td>
<td>--</td>
</tr>
</tbody>
</table>
| Decelerate! Pressure too high      | The pressure exceeds the maximum level allowed for the nozzle being used | • Decrease driving speed  
• Adjust the operating pressure so as to respect the previously set limits for nozzles in use  
• Check set maximum pressure for nozzles in use (par. 5.1.8)                                                                                                                                                                                                                                                     | Master ON                                    |
| Accelerate! Insufficient pressure  | The pressure does not reach the minimum value for the nozzle in use   | • Increase driving speed  
• Adjust the operating pressure so as to respect the previously set limits for nozzles in use  
• Check set minimum pressure for nozzle in use (par. 5.1.8)                                                                                                                                                                                                                                                     | Master ON                                    |
| Flowmeter out of range!           | Rate out of the limits allowed by flowmeter                           | • Modify working conditions to suit flowmeter limits (speed, pressure, etc.)  
• Make sure that flowmeter parameters are set correctly (par. 5.1.3)                                                                                                                                                                                                                                                                                               | Master ON                                    |
| Decelerate! Insufficient flowrate  | Flowrate does not reach the value requested for output               | • Decrease driving speed  
• Make sure that flowmeter parameters are set correctly (par. 5.1.3)                                                                                                                                                                                                                                                                                               | Master ON + Automatic adjustment ON           |
| Accelerate! Too high flowrate      | The flowrate exceeds the value required for output                    | • Increase driving speed  
• Make sure that settings in the Implement advanced settings menu (boom width, flowmeter, etc. chap. 5.1) are set correctly                                                                                                                                                                                                                                                                 | Master ON + Automatic adjustment ON           |
| Reduce rotation speed!            | RPM exceeds the maximum set value                                    | • Decrease the rotation speed of the moving part  
• Check the constant set for the rev counter (par. 5.1.11)                                                                                                                                                                                                                                                                                               | --                                           |
| Increase rotation speed!          | RPM does not reach the minimum value                                 | • Increase the rotation speed of the moving part  
• Check the constant set for the rev counter (par. 5.1.11)                                                                                                                                                                                                                                                                                                   | Master ON                                    |
| Check nozzles wear status!        | Difference between measured and calculated flowrate (according to selected nozzle data) higher than set value | • Check that the set nozzle coincides with the one installed on the boom (par. 5.1.1)  
• Replace nozzles                                                                                                                                                                                                                                                                                                                                                   | Master ON + Automatic adjustment ON           |

CONTINUES
<table>
<thead>
<tr>
<th>MESSAGE ON DISPLAY</th>
<th>CAUSE</th>
<th>REMEDY</th>
<th>JOB MODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switch box connection not detected!</td>
<td>Communication problems between monitor and switches</td>
<td>• Check condition of connection cables (and connectors) between monitor and switch box</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>The cables are damaged</td>
<td>• Replace the cable</td>
<td>–</td>
</tr>
<tr>
<td>Joystick connection not detected!</td>
<td>Communication problems between monitor and joystick</td>
<td>• Check condition of connection cables (and connectors) between monitor, ECU and joystick</td>
<td>–</td>
</tr>
<tr>
<td>Seletron connection failed!</td>
<td>One or more spraying points do not respond</td>
<td>• Identify the unrecognized spraying point with the dedicated menu</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Device status &gt; Status of the Seletron system (par. 5.8)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Check that the corresponding spraying point is connected correctly</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Check condition of harness on the corresponding spraying point</td>
<td></td>
</tr>
<tr>
<td>Seletron system error!</td>
<td>Low supply voltage on one or more spraying points</td>
<td>Check battery voltage level</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Identify the unrecognized spraying point with the dedicated menu</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Device status &gt; Status of the Seletron system (par. 5.8)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Check condition of harness on the corresponding spraying point</td>
<td></td>
</tr>
<tr>
<td>Job origin too far away!</td>
<td>The current position is too far away from the job origin.</td>
<td>• Redefine the job origin.</td>
<td>–</td>
</tr>
<tr>
<td>Incompatible ECU firmware version!</td>
<td>The ECU firmware version is obsolete.</td>
<td>• Update the ECU firmware (par. 10.4.5).</td>
<td>–</td>
</tr>
<tr>
<td>ECU power supply voltage out of range!</td>
<td>Power voltage supply is not within the required range (9÷16 V)</td>
<td>Check power supply</td>
<td>–</td>
</tr>
<tr>
<td>External battery power supply missing!</td>
<td>Power supply is not feeding any voltage at all</td>
<td>Check power supply</td>
<td>–</td>
</tr>
<tr>
<td>Boom line 1: Too high power consumption!</td>
<td>Boom 1 power line detected a high absorption</td>
<td>Check the Seletron, connection cable and connector status</td>
<td>–</td>
</tr>
<tr>
<td>Boom line 2: Too high power consumption!</td>
<td>Boom 2 power line detected a high absorption</td>
<td>Check the Seletron, connection cable and connector status</td>
<td>–</td>
</tr>
<tr>
<td>Regulation line: Too high power consumption!</td>
<td>The power line controlling the main valve and the regulation valve detected a high absorption</td>
<td>Check the valve, connection cable and connector status</td>
<td>–</td>
</tr>
<tr>
<td>Hydraulic line: Too high power consumption!</td>
<td>The power line controlling the hydraulic functions detected a high absorption</td>
<td>Check the valve, connection cable and connector status</td>
<td>–</td>
</tr>
</tbody>
</table>
## 13.2 Troubleshooting

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

### 14.1 Data and units of measurement shown

<table>
<thead>
<tr>
<th>Menu</th>
<th>Data</th>
<th>Min.</th>
<th>Max.</th>
<th>UoM</th>
<th>DEFAULT</th>
<th>Other values that can be set / Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Implemented</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Number of nozzles for each spraying point</td>
<td>--</td>
<td>--</td>
<td>n°</td>
<td>1</td>
<td>2, 4 Selection during guided setup</td>
</tr>
<tr>
<td></td>
<td>Spraying point 1</td>
<td>Nozzle A</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>ISO01</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nozzle B</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>ISO02</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nozzle C</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>ISO03</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nozzle D</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>ISO04</td>
</tr>
<tr>
<td></td>
<td>Spraying point 2</td>
<td>Nozzle A</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>ISO05</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nozzle B</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>ISO06</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nozzle C</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>ISO07</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nozzle D</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>ISO08</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nozzle E</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>ISO09</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nozzle F</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>ISO10</td>
</tr>
<tr>
<td></td>
<td>Spraying point 3</td>
<td>Nozzle A</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>ISO11</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nozzle B</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>ISO12</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nozzle C</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>ISO13</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nozzle D</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>ISO14</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nozzle E</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>ISO15</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nozzle F</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>ISO16</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Spraying spots configurations</td>
<td>Number of nozzles for each spraying point</td>
<td>--</td>
<td>--</td>
<td>n°</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Spraying point 1</td>
<td>Nozzle A</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle B</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle C</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle D</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle E</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle F</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle G</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle H</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle I</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle J</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle K</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle L</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle M</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle N</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle O</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle P</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Spraying point 2</td>
<td>Nozzle A</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle B</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle C</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle D</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle E</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle F</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle G</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle H</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle I</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle J</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle K</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle L</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle M</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle N</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle O</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle P</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Spraying point 3</td>
<td>Nozzle A</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle B</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle C</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle D</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle E</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle F</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle G</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle H</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle I</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle J</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle K</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle L</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle M</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle N</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle O</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle P</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Spraying point 4 + 20</td>
<td>Nozzle A</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle B</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle C</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle D</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle E</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle F</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle G</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle H</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle I</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle J</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle K</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle L</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle M</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle N</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle O</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nozzle P</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Boom settings</td>
<td>Spray spots spacing</td>
<td>1</td>
<td>1000</td>
<td>cm</td>
<td>50 cm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sections number</td>
<td>1</td>
<td>13</td>
<td>n°</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Activation status of the sections</td>
<td>Section 1 - 13</td>
<td>--</td>
<td>--</td>
<td>Enabled</td>
</tr>
<tr>
<td></td>
<td>Flowmeter</td>
<td>Type</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>Orion 462xxA4xxxx</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Constant</td>
<td>1</td>
<td>32000</td>
<td>pls*/l</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Minimum flowrate</td>
<td>0.1</td>
<td>999.9</td>
<td>l/min</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maximum flowrate</td>
<td>0.1</td>
<td>264.1</td>
<td>GPM</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>Filling flowmeter</td>
<td>Type</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>Orion 462xxA4xxxx</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Constant</td>
<td>1</td>
<td>32000</td>
<td>pls*/l</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Minimum flowrate</td>
<td>0.1</td>
<td>999.9</td>
<td>l/min</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maximum flowrate</td>
<td>0.1</td>
<td>264.1</td>
<td>GPM</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>Pressure sensor</td>
<td>Status</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>Disabled</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Type</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>466119.200, 466119.500, Other</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maximum pressure</td>
<td>0.1</td>
<td>150.0</td>
<td>bar</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>2175</td>
<td>PSI</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>Main valve</td>
<td>Type</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>3 ways</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Automatic closing of sections valves</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>Enabled</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Automatic closing of main valve</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>Disabled</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Switching time</td>
<td>0.1</td>
<td>1.0</td>
<td>s</td>
<td>1.0 s</td>
</tr>
<tr>
<td></td>
<td>Pressure regulating valve</td>
<td>Regulation direction</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>Standard</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Section valves</td>
<td>Shut-off time</td>
<td>0.1</td>
<td>1.0</td>
<td>s</td>
<td>0.3 s</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Switch-on time</td>
<td>0.1</td>
<td>1.0</td>
<td>s</td>
<td>0.3 s</td>
</tr>
</tbody>
</table>

* pls = pulse
## Technical Data

### Implement Menu Data

<table>
<thead>
<tr>
<th>Min. Value</th>
<th>Max. Value</th>
<th>UoM</th>
<th>DEFAULT</th>
<th>Other values that can be set / Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flowrate: ISO01</td>
<td>0.10 l/min</td>
<td>GPM</td>
<td>0.10 l/min</td>
<td></td>
</tr>
<tr>
<td>Flowrate: ISO012</td>
<td>0.60 l/min</td>
<td>GPM</td>
<td>0.60 l/min</td>
<td></td>
</tr>
<tr>
<td>Flowrate: ISO015</td>
<td>0.80 l/min</td>
<td>GPM</td>
<td>0.80 l/min</td>
<td></td>
</tr>
<tr>
<td>Flowrate: ISO025</td>
<td>1.00 l/min</td>
<td>GPM</td>
<td>1.00 l/min</td>
<td></td>
</tr>
<tr>
<td>Flowrate: ISO04</td>
<td>1.20 l/min</td>
<td>GPM</td>
<td>1.20 l/min</td>
<td></td>
</tr>
<tr>
<td>Flowrate: ISO05</td>
<td>1.60 l/min</td>
<td>GPM</td>
<td>1.60 l/min</td>
<td></td>
</tr>
<tr>
<td>Flowrate: ISO06</td>
<td>2.00 l/min</td>
<td>GPM</td>
<td>2.00 l/min</td>
<td></td>
</tr>
<tr>
<td>Flowrate: ISO07</td>
<td>2.40 l/min</td>
<td>GPM</td>
<td>2.40 l/min</td>
<td></td>
</tr>
<tr>
<td>Flowrate: ISO08</td>
<td>3.00 l/min</td>
<td>GPM</td>
<td>3.00 l/min</td>
<td></td>
</tr>
<tr>
<td>Flowrate: ISO09</td>
<td>4.00 l/min</td>
<td>GPM</td>
<td>4.00 l/min</td>
<td></td>
</tr>
<tr>
<td>Flowrate: ISO10</td>
<td>5.00 l/min</td>
<td>GPM</td>
<td>5.00 l/min</td>
<td></td>
</tr>
<tr>
<td>Flowrate: ISO11</td>
<td>6.00 l/min</td>
<td>GPM</td>
<td>6.00 l/min</td>
<td></td>
</tr>
<tr>
<td>Flowrate: ISO12</td>
<td>8.00 l/min</td>
<td>GPM</td>
<td>8.00 l/min</td>
<td></td>
</tr>
<tr>
<td>Flowrate: ISO13</td>
<td>10.00 l/min</td>
<td>GPM</td>
<td>10.00 l/min</td>
<td></td>
</tr>
</tbody>
</table>

### Nozzles Data

<table>
<thead>
<tr>
<th>Flowrate</th>
<th>Pressure</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.10 l/min</td>
<td>0.1 bar</td>
<td>ISO nozzles - cannot be modified</td>
</tr>
<tr>
<td>0.03 GPM</td>
<td>2.6 GPM</td>
<td>User nozzles - customizable</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Flowrate</th>
<th>Pressure</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.10 l/min</td>
<td>0.1 bar</td>
<td>Default ISO nozzles: 1.0 ÷ 5.0 bar, 15 ÷ 70 PSI</td>
</tr>
<tr>
<td>0.03 GPM</td>
<td>2.6 GPM</td>
<td>Default user nozzles: 2.0 ÷ 10.0 bar, 30 ÷ 145 PSI</td>
</tr>
</tbody>
</table>

### Wheel sensor

<table>
<thead>
<tr>
<th>Status</th>
<th>Constant</th>
<th>Minimum pressure</th>
<th>Maximum pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.01 cm/pls*</td>
<td>0.1 50.0 bar</td>
<td>1.45 725 PSI</td>
</tr>
<tr>
<td></td>
<td>0.01 inch/pls*</td>
<td>1.45 725 PSI</td>
<td>1.45 725 PSI</td>
</tr>
</tbody>
</table>

### "Fence" nozzles data

<table>
<thead>
<tr>
<th>Flowrate</th>
<th>Pressure</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.10 l/min</td>
<td>0.1 bar</td>
<td></td>
</tr>
<tr>
<td>0.03 GPM</td>
<td>2.6 GPM</td>
<td></td>
</tr>
</tbody>
</table>

### Rev counter

<table>
<thead>
<tr>
<th>Status</th>
<th>Constant</th>
<th>Minimum rotation speed</th>
<th>Maximum rotation speed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 999 pls/rev**</td>
<td>1 10000 rpm</td>
<td>1 10000 rpm</td>
</tr>
</tbody>
</table>

### Tank

<table>
<thead>
<tr>
<th>Reserve level</th>
<th>Capacity</th>
<th>Tank profile</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2000 l</td>
<td>1 25000 gal</td>
<td>Visible only with Level sensor enabled</td>
</tr>
</tbody>
</table>

### Alarms

<table>
<thead>
<tr>
<th>Nozzles alarms</th>
<th>Flowmeter alarms</th>
<th>Rev counter alarms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nozzle wear check</td>
<td>Minimum flowrate alarm</td>
<td>Minimum rotation speed alarm</td>
</tr>
<tr>
<td>1 50 %</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>10 %</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

---

* pls = pulse, ** rev = revolution
## Implement

<table>
<thead>
<tr>
<th>Menu</th>
<th>Data</th>
<th>Min.</th>
<th>Max.</th>
<th>UoM</th>
<th>DEFAULT</th>
<th>Other values that can be set / Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spraying limits</td>
<td>Spraying speed limit</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Disabled</td>
<td>Enabled</td>
</tr>
<tr>
<td></td>
<td>Minimum spraying speed 0.4</td>
<td>99.9</td>
<td>km/h</td>
<td>1.0</td>
<td>km/h</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Regulation pressure limit 0.2</td>
<td>99.9</td>
<td>mph</td>
<td>0.6</td>
<td>mph</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Minimum regulation pressure 0.1</td>
<td>99.9</td>
<td>bar</td>
<td>1.0</td>
<td>bar</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Flowrate correction factor 0.25</td>
<td>4.00</td>
<td>m</td>
<td>1.0</td>
<td>m</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Level correction factor 0.25</td>
<td>4.00</td>
<td>kg/l</td>
<td>1.0</td>
<td>kg/l</td>
<td></td>
</tr>
</tbody>
</table>

### Working parameters

#### Automatic section control

<table>
<thead>
<tr>
<th>Menu</th>
<th>Data</th>
<th>Min.</th>
<th>Max.</th>
<th>UoM</th>
<th>DEFAULT</th>
<th>Other values that can be set / Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sections overlapping limit</td>
<td>0</td>
<td>100</td>
<td>%</td>
<td>100</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>Perimeter overlapping limit</td>
<td>0</td>
<td>100</td>
<td>%</td>
<td>0</td>
<td>%</td>
<td></td>
</tr>
</tbody>
</table>

#### Guidance

<table>
<thead>
<tr>
<th>Menu</th>
<th>Data</th>
<th>Min.</th>
<th>Max.</th>
<th>UoM</th>
<th>DEFAULT</th>
<th>Other values that can be set / Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference line distance compensation</td>
<td>-100.00</td>
<td>100.00</td>
<td>m</td>
<td>+000.00</td>
<td>m</td>
<td></td>
</tr>
</tbody>
</table>

### Geometry settings

#### Towed/3-Point Hitch Implement

<table>
<thead>
<tr>
<th>Menu</th>
<th>Data</th>
<th>Min.</th>
<th>Max.</th>
<th>UoM</th>
<th>DEFAULT</th>
<th>Other values that can be set / Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheelbase</td>
<td>0.50</td>
<td>20.00</td>
<td>m</td>
<td>2.50</td>
<td>m</td>
<td></td>
</tr>
<tr>
<td>Rear axle / Connection point</td>
<td>0.50</td>
<td>64.00</td>
<td>m</td>
<td>8.20</td>
<td>m</td>
<td></td>
</tr>
<tr>
<td>GPS antenna / Rear axle</td>
<td>0.00</td>
<td>20.00</td>
<td>m</td>
<td>1.64</td>
<td>ft</td>
<td></td>
</tr>
<tr>
<td>GPS antenna / Ground</td>
<td>0.00</td>
<td>64.00</td>
<td>m</td>
<td>8.20</td>
<td>ft</td>
<td></td>
</tr>
<tr>
<td>GPS antenna / Longitudinal axle</td>
<td>-8.00</td>
<td>8.00</td>
<td>m</td>
<td>0.00</td>
<td>m</td>
<td></td>
</tr>
</tbody>
</table>

### GPS receiver

<table>
<thead>
<tr>
<th>Menu</th>
<th>Data</th>
<th>Min.</th>
<th>Max.</th>
<th>UoM</th>
<th>DEFAULT</th>
<th>Other values that can be set / Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>A100</td>
<td>DGPS</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Disabled</td>
<td>Enabled</td>
</tr>
<tr>
<td>AgStar</td>
<td>HDOP alarm</td>
<td>1.0</td>
<td>10.0</td>
<td>--</td>
<td>4.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Correction type</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>None</td>
<td>DGPS</td>
</tr>
<tr>
<td>Smart-Ag / Smart 6</td>
<td>Receiver advanced data</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>Europe, Africa</td>
<td>United States - East / United States - Center / United States - West / South America / Atlantic Ocean - West / Atlantic Ocean - East / India, Middle East / Asia / Australia</td>
</tr>
<tr>
<td>NMEA</td>
<td>DGPS</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Disabled</td>
<td>Enabled</td>
</tr>
</tbody>
</table>

### Tractor

<table>
<thead>
<tr>
<th>Menu</th>
<th>Data</th>
<th>Min.</th>
<th>Max.</th>
<th>UoM</th>
<th>DEFAULT</th>
<th>Other values that can be set / Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheelbase</td>
<td>0.50</td>
<td>20.00</td>
<td>m</td>
<td>2.50</td>
<td>m</td>
<td></td>
</tr>
<tr>
<td>Rear axle / Connection point</td>
<td>0.50</td>
<td>64.00</td>
<td>m</td>
<td>8.20</td>
<td>m</td>
<td></td>
</tr>
<tr>
<td>GPS antenna / Rear axle</td>
<td>0.00</td>
<td>20.00</td>
<td>m</td>
<td>1.64</td>
<td>ft</td>
<td></td>
</tr>
<tr>
<td>GPS antenna / Ground</td>
<td>0.00</td>
<td>64.00</td>
<td>m</td>
<td>8.20</td>
<td>ft</td>
<td></td>
</tr>
<tr>
<td>GPS antenna / Longitudinal axle</td>
<td>-8.00</td>
<td>8.00</td>
<td>m</td>
<td>0.00</td>
<td>m</td>
<td></td>
</tr>
</tbody>
</table>

CONTINUES >>>
### Tractor

<table>
<thead>
<tr>
<th>Geometry settings</th>
<th>Wheelbase</th>
<th>Rear axle / Application point</th>
<th>GPS antenna / Rear axle</th>
<th>GPS antenna / Ground</th>
<th>GPS antenna / Longitudinal axle</th>
<th>Wheelbase</th>
<th>Front axle / Application point</th>
<th>GPS antenna / Rear axle</th>
<th>GPS antenna / Ground</th>
<th>GPS antenna / Longitudinal axle</th>
</tr>
</thead>
<tbody>
<tr>
<td>SELF-PROPELLED WITH REAR BOOM</td>
<td>0.50 20.00 m 2.80 m</td>
<td>0.50 64.00 ft 9.19 ft</td>
<td>-20.00 20.00 m 2.40 m</td>
<td>-64.00 64.00 ft 7.87 ft</td>
<td>0.00 20.00 m 3.50 m</td>
<td>0.50 20.00 m 2.80 m</td>
<td>0.50 64.00 ft 9.19 ft</td>
<td>-20.00 20.00 m 2.40 m</td>
<td>-64.00 64.00 ft 7.87 ft</td>
<td>0.00 20.00 m 3.50 m</td>
</tr>
<tr>
<td>SELF-PROPELLED WITH FRONT BOOM</td>
<td>0.50 20.00 m 2.80 m</td>
<td>0.50 64.00 ft 9.19 ft</td>
<td>-20.00 20.00 m 2.40 m</td>
<td>-64.00 64.00 ft 7.87 ft</td>
<td>0.00 20.00 m 3.50 m</td>
<td>0.50 20.00 m 2.80 m</td>
<td>0.50 64.00 ft 9.19 ft</td>
<td>-20.00 20.00 m 2.40 m</td>
<td>-64.00 64.00 ft 7.87 ft</td>
<td>0.00 20.00 m 3.50 m</td>
</tr>
</tbody>
</table>

### User

#### Acoustic alarms
- Acoustic critical alarms: Disabled
- Acoustic low priority alarms: Disabled
- Acoustic info: Disabled
- Steering warning: Disabled

#### Guidance
- Offset tolerance: 3 100 cm 30

#### Backlight management
- Menu: 0 100 % 100 %
- "Day" mode: 0 100 % 100 %
- "Night" mode: 0 100 % 70 %
- Auto reduction: Enabled
- Idle time: 1 20 min 1
- Reduction value: 0 100 % 70 %

#### Preferences
- Selective job loading: Disabled

### General options

#### Language
- English

#### Units of measurement
- Metric

#### Date and time
- Visible only with Date and time GPS updating disabled

### Job data

<table>
<thead>
<tr>
<th>Data</th>
<th>UoM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applied area</td>
<td>ha ac ksqft</td>
</tr>
<tr>
<td>Applied quantity</td>
<td>l gal gal</td>
</tr>
<tr>
<td>Average application rate</td>
<td>l/a GPA GPK</td>
</tr>
<tr>
<td>Nozzles</td>
<td>-- -- --</td>
</tr>
<tr>
<td>Calculated area</td>
<td>ha ac ksqft</td>
</tr>
<tr>
<td>Working time</td>
<td>hh:mm hh:mm hh:mm</td>
</tr>
<tr>
<td>Application time</td>
<td>hh:mm hh:mm hh:mm</td>
</tr>
<tr>
<td>Average productivity</td>
<td>ha/h ac/h ksqft/h</td>
</tr>
<tr>
<td>Job start date</td>
<td>dd/mm/yyyy dd/mm/yyyy dd/mm/yyyy</td>
</tr>
<tr>
<td>Job start time</td>
<td>hh:mm hh:mm hh:mm</td>
</tr>
</tbody>
</table>

---

END OF PAR. 14.1 DATA AND UNITS OF MEASUREMENT SHOWN
### 15 MAINTENANCE / DIAGNOSTICS / REPAIRS

#### 15.1 Error messages

<table>
<thead>
<tr>
<th>MESSAGE ON DISPLAY</th>
<th>CAUSE</th>
<th>REMEDY</th>
<th>JOB MODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive! Machine stopped</td>
<td>Main control ON with machine stopped</td>
<td>• Start the machine.</td>
<td>Master ON + Automatic adjustment ON</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Disable the main control (OFF)</td>
<td></td>
</tr>
<tr>
<td>Connection to ECU not detected!</td>
<td>Communication problems between monitor and</td>
<td>• Check condition of connection cables (and</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>control unit (ECU)</td>
<td>connectors) between monitor and control unit</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(ref. instruction manual)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The cables are damaged</td>
<td>• Replace the cable</td>
<td>--</td>
</tr>
<tr>
<td>GPS receiver not connected!</td>
<td>Wrong connection of receiver cable to the</td>
<td>• Check connection to receiver (ref. instruction</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>monitor</td>
<td>manual)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The receiver connection cable is damaged</td>
<td>• Replace the cable</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>The receiver is damaged</td>
<td>• Replace the receiver</td>
<td>--</td>
</tr>
<tr>
<td>Insufficient GPS signal quality!</td>
<td>The position and number of satellites do not</td>
<td>• Wait for signal strength to improve</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>allow a suitable driving precision</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GPS receiver gives invalid data!</td>
<td>The receiver is establishing a connection to the</td>
<td>• Wait for connection</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>satellites</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DGPS correction not available!</td>
<td>DGPS signal unavailable in the working area</td>
<td>• Disable DGPS correction (par. 5.3.1)</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>DGPS connecting</td>
<td>• Wait for connection</td>
<td>--</td>
</tr>
<tr>
<td>Omnistar correction missing!</td>
<td>Acquiring OmniSTAR® signal</td>
<td>• Wait until OmniSTAR® signal acquisition stage is completed</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>The connected GPS receiver does not support the</td>
<td>• Disable OmniSTAR® correction (par. 5.3.4)</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>OmniSTAR® signal</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Activate pump! Missing flowrate</td>
<td>Main control ON but rate at zero</td>
<td>• Start the pump and move the machine.</td>
<td>Master ON + Automatic adjustment ON</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimum tank level reached!</td>
<td>Tank level is lower than the set reserve value</td>
<td>• Fill the tank (par. 11.4)</td>
<td>Master ON</td>
</tr>
<tr>
<td></td>
<td>Minimum value was not set correctly</td>
<td>• Check set reserve value (par. 5.1.12)</td>
<td></td>
</tr>
<tr>
<td>Maximum tank level reached!</td>
<td>Tank level reached set maximum value</td>
<td>• Stop filling the tank (par. 11.4)</td>
<td>--</td>
</tr>
<tr>
<td>Automatic regulation blocked!</td>
<td>Pressure does not reach set value</td>
<td>• Increase driving speed</td>
<td>Master ON + Automatic adjustment ON</td>
</tr>
<tr>
<td></td>
<td>Limit was not set correctly</td>
<td>• Check set limit (par. 5.1.14)</td>
<td></td>
</tr>
<tr>
<td>Invalid signal of the pressure sensor!</td>
<td>Signal from pressure sensor is out of allowed</td>
<td>• Check the sensor and connection cable (and</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>range</td>
<td>connector) status (ref. instruction manual)</td>
<td></td>
</tr>
</tbody>
</table>

CONTINUES
<table>
<thead>
<tr>
<th>MESSAGE ON DISPLAY</th>
<th>CAUSE</th>
<th>REMEDY</th>
<th>JOB MODE</th>
</tr>
</thead>
</table>
| Decelerate! Pressure too high                                                    | The pressure exceeds the maximum level allowed for the nozzle being used                                       | • Decrease driving speed  
• Adjust the operating pressure so as to respect the previously set limits for nozzles in use.  
• Check set maximum pressure for nozzles in use (par. 5.1.8) | Master ON              |
| Accelerate! Insufficient pressure                                                 | The pressure does not reach the minimum value for the nozzle in use                                            | • Increase driving speed  
• Adjust the operating pressure so as to respect the previously set limits for nozzles in use.  
• Check set minimum pressure for nozzle in use (par. 5.1.8) | Master ON              |
| Flowmeter out of range!                                                            | Rate out of the limits allowed by flowmeter                                                                    | • Modify working conditions to suit flowmeter limits (speed, pressure, etc.)  
• Make sure that flowmeter parameters are set correctly (par. 5.1.3) | Master ON              |
| Decelerate! Insufficient flowrate                                                  | Flowrate does not reach the value requested for output                                                         | • Decrease driving speed  
• Make sure that flowmeter parameters are set correctly (par. 5.1.3) | Master ON + Automatic adjustment ON |
| Accelerate! Too high flowrate                                                      | The flowrate exceeds the value required for output                                                             | • Increase driving speed  
• Make sure that settings in the Implement advanced settings menu (boom width, flowmeter, etc. chap. 5.1) are set correctly | Master ON + Automatic adjustment ON |
| Reduce rotation speed!                                                             | RPM exceeds the maximum set value                                                                               | • Decrease the rotation speed of the moving part  
• Check the constant set for the rev counter (par. 5.1.11) | --                     |
| Increase rotation speed!                                                           | RPM does not reach the minimum value                                                                            | • Increase the rotation speed of the moving part  
• Check the constant set for the rev counter (par. 5.1.11) | Master ON              |
| Check nozzles wear status!                                                         | Difference between measured and calculated flowrate (according to selected nozzle data) higher than set value | • Check that the selected nozzle coincides with the one installed on the boom (par. 7.7)  
• Replace nozzles | Master ON + Automatic adjustment ON |
| Switch box connection not detected! (DELTA 80 / BRAVO 400S ONLY)                   | Communication problems between monitor and switches  
The cables are damaged                                                      | • Check condition of connection cables (and connectors) between monitor and switch box  
• Replace the cable | --                     |
| Joystick connection not detected!                                                  | Communication problems between monitor and joystick                                                           | • Check condition of connection cables (and connectors) between monitor, ECU and joystick | --                     |
| Job origin too far away!                                                           | The current position is too far away from the job origin.                                                     | • Redefine the job origin.                                  | --                     |
| Incompatible ECU firmware version!                                                | The ECU firmware version is obsolete.                                                                           | • Update the ECU firmware (par. 10.4.5).                     | --                     |
| ECU power supply voltage out of range!                                            | Power voltage supply is not within the required range (9÷16 V)                                                 | Check power supply                                             | --                     |
| External battery power supply missing!                                            | Power supply is not feeding any voltage at all                                                                | Check power supply                                             | --                     |
| Regulation line: Too high power consumption!                                      | The power line controlling the main valve and the regulation valve detected a high absorption                  | Check the valve, connection cable and connector status         | --                     |
| Hydraulic line: Too high power consumption!                                       | The power line controlling the hydraulic functions detected a high absorption                                 | Check the valve, connection cable and connector status         | --                     |

**END OF PAR. 15.1 ERROR MESSAGES**
## 15.2 Troubleshooting

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

### 16.1 Data and units of measurement shown

<table>
<thead>
<tr>
<th>Implement</th>
<th>Data</th>
<th><strong>Min.</strong></th>
<th><strong>Max.</strong></th>
<th><strong>UoM</strong></th>
<th><strong>DEFAULT</strong></th>
<th><strong>Other values that can be set / Notes</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Menu</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Orion 4621xA0xxxx, Orion 4621xA1xxxx, Orion 4621xA2xxxx, Orion 4621xA3xxxx, Orion 4622xA5xxxx, Orion 4622xA6xxxx, Wolf 462x2xxxx, Wolf 462x3xxxx, Wolf 462x4xxxx, Wolf 462x5xxxx, Wolf 462x7xxxx, Other</td>
</tr>
<tr>
<td><strong>Section configuration</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spray spots spacing</td>
<td>1</td>
<td>1000</td>
<td>cm</td>
<td>50 cm</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.39</td>
<td>393.70</td>
<td>inches</td>
<td>19.68 inches</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sections number</td>
<td>1</td>
<td>13</td>
<td>n°</td>
<td></td>
<td>Variable setting defined by the connected switch panel</td>
<td></td>
</tr>
<tr>
<td>Section 1 ÷ 13</td>
<td>1</td>
<td>50</td>
<td>n°</td>
<td>4</td>
<td>Number of spraying points for each section</td>
<td></td>
</tr>
<tr>
<td>Activation status of the sections</td>
<td>Section 1 ÷ 13</td>
<td></td>
<td></td>
<td>Enabled</td>
<td>Disabled</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Orion 462xxA4xxxx</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Flowmeter</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td></td>
<td></td>
<td></td>
<td>Orion 462xxA4xxxx</td>
<td>Orion 4622xA5xxxx, Orion 4622xA6xxxx, Wolf 462x4xxxx, Wolf 462x5xxxx, Wolf 462x7xxxx, Other</td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>1</td>
<td>32000</td>
<td>pls*/l</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>32000</td>
<td>pls*/gal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimum flowrate</td>
<td>0.1</td>
<td>264.1</td>
<td>GPM</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum flowrate</td>
<td>0.1</td>
<td>999.9</td>
<td>l/min</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Filling flowmeter</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td></td>
<td></td>
<td></td>
<td>Orion 462xxA4xxxx</td>
<td>Orion 4622xA5xxxx, Orion 4622xA6xxxx, Wolf 462x4xxxx, Wolf 462x5xxxx, Wolf 462x7xxxx, Other</td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>1</td>
<td>32000</td>
<td>pls*/l</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>32000</td>
<td>pls*/gal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimum flowrate</td>
<td>0.1</td>
<td>264.1</td>
<td>GPM</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum flowrate</td>
<td>0.1</td>
<td>999.9</td>
<td>l/min</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Pressure sensor</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td></td>
<td></td>
<td></td>
<td>Orion 46611.200</td>
<td>466113.500, Other</td>
<td></td>
</tr>
<tr>
<td>Maximum pressure</td>
<td>0.1</td>
<td>150.0</td>
<td>bar</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>2175</td>
<td>PSI</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td></td>
<td></td>
<td></td>
<td>Orion 462xxA4xxxx</td>
<td>Orion 4622xA5xxxx, Orion 4622xA6xxxx, Wolf 462x4xxxx, Wolf 462x5xxxx, Wolf 462x7xxxx, Other</td>
<td></td>
</tr>
<tr>
<td><strong>Valves</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Main valve</td>
<td></td>
<td></td>
<td></td>
<td>3 ways</td>
<td>2 ways, None</td>
<td>Selection during guided setup</td>
</tr>
<tr>
<td>Automatic closing of sections valves</td>
<td></td>
<td></td>
<td></td>
<td>Enabled</td>
<td>Disabled</td>
<td>Selection during guided setup</td>
</tr>
<tr>
<td>Automatic closing of main valve</td>
<td></td>
<td></td>
<td></td>
<td>Disabled</td>
<td>Enabled</td>
<td></td>
</tr>
<tr>
<td>Switching time</td>
<td>0.1</td>
<td>1.0</td>
<td>s</td>
<td>1.0 s</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Pressure regulating valve</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regulation direction</td>
<td></td>
<td></td>
<td></td>
<td>Standard</td>
<td>Reverse</td>
<td></td>
</tr>
<tr>
<td><strong>Section valves</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td></td>
<td></td>
<td></td>
<td>2 ways</td>
<td></td>
<td>Automatic selection during guided setup</td>
</tr>
<tr>
<td>Shut-off time</td>
<td>0.1</td>
<td>1.0</td>
<td>s</td>
<td>0.3 s</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Switch-on time</td>
<td>0.1</td>
<td>1.0</td>
<td>s</td>
<td>0.3 s</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* pls = pulse
<table>
<thead>
<tr>
<th>Implement</th>
<th>Data</th>
<th>Min.</th>
<th>Max.</th>
<th>UoM</th>
<th>DEFAULT</th>
<th>Other values that can be set / Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISO01</td>
<td>Flowrate</td>
<td>--</td>
<td>--</td>
<td>l/min</td>
<td>0.40 l/min</td>
<td>ISO nozzles - cannot be modified</td>
</tr>
<tr>
<td>ISO15</td>
<td>Flowrate</td>
<td>--</td>
<td>--</td>
<td>GPM</td>
<td>0.10 GPM</td>
<td></td>
</tr>
<tr>
<td>ISO02</td>
<td>Flowrate</td>
<td>--</td>
<td>--</td>
<td>l/min</td>
<td>0.60 l/min</td>
<td></td>
</tr>
<tr>
<td>ISO10</td>
<td>Flowrate</td>
<td>--</td>
<td>--</td>
<td>GPM</td>
<td>0.20 GPM</td>
<td></td>
</tr>
<tr>
<td>ISO03</td>
<td>Flowrate</td>
<td>--</td>
<td>--</td>
<td>l/min</td>
<td>1.00 l/min</td>
<td></td>
</tr>
<tr>
<td>ISO04</td>
<td>Flowrate</td>
<td>--</td>
<td>--</td>
<td>GPM</td>
<td>0.25 GPM</td>
<td></td>
</tr>
<tr>
<td>ISO05</td>
<td>Flowrate</td>
<td>--</td>
<td>--</td>
<td>l/min</td>
<td>1.60 l/min</td>
<td></td>
</tr>
<tr>
<td>ISO14</td>
<td>Flowrate</td>
<td>--</td>
<td>--</td>
<td>GPM</td>
<td>0.40 GPM</td>
<td></td>
</tr>
<tr>
<td>ISO06</td>
<td>Flowrate</td>
<td>--</td>
<td>--</td>
<td>l/min</td>
<td>2.00 l/min</td>
<td></td>
</tr>
<tr>
<td>ISO18</td>
<td>Flowrate</td>
<td>--</td>
<td>--</td>
<td>GPM</td>
<td>0.50 GPM</td>
<td></td>
</tr>
<tr>
<td>ISO15</td>
<td>Flowrate</td>
<td>--</td>
<td>--</td>
<td>l/min</td>
<td>2.40 l/min</td>
<td></td>
</tr>
<tr>
<td>ISO20</td>
<td>Flowrate</td>
<td>--</td>
<td>--</td>
<td>GPM</td>
<td>0.60 GPM</td>
<td></td>
</tr>
<tr>
<td>ISO22</td>
<td>Flowrate</td>
<td>--</td>
<td>--</td>
<td>l/min</td>
<td>3.00 l/min</td>
<td></td>
</tr>
<tr>
<td>ISO19</td>
<td>Flowrate</td>
<td>--</td>
<td>--</td>
<td>GPM</td>
<td>0.80 GPM</td>
<td></td>
</tr>
<tr>
<td>ISO15</td>
<td>Flowrate</td>
<td>--</td>
<td>--</td>
<td>l/min</td>
<td>4.00 l/min</td>
<td></td>
</tr>
<tr>
<td>ISO20</td>
<td>Flowrate</td>
<td>--</td>
<td>--</td>
<td>GPM</td>
<td>1.00 GPM</td>
<td></td>
</tr>
<tr>
<td>ISO22</td>
<td>Flowrate</td>
<td>--</td>
<td>--</td>
<td>l/min</td>
<td>6.00 l/min</td>
<td></td>
</tr>
<tr>
<td>ISO15</td>
<td>Flowrate</td>
<td>--</td>
<td>--</td>
<td>GPM</td>
<td>1.50 GPM</td>
<td></td>
</tr>
<tr>
<td>ISO20</td>
<td>Flowrate</td>
<td>--</td>
<td>--</td>
<td>l/min</td>
<td>8.00 l/min</td>
<td></td>
</tr>
<tr>
<td>ISO22</td>
<td>Flowrate</td>
<td>--</td>
<td>--</td>
<td>GPM</td>
<td>2.00 GPM</td>
<td></td>
</tr>
</tbody>
</table>

Pressure

| ISO01 | -- | -- | bar | 3.0 bar |
| ISO15 | -- | -- | PSI | 40 PSI  |

Flowrate

| ISO01 | 0.1 10.00 | l/min | 1.00 l/min |
| ISO15 | 0.03 2.6 | GPM  | 0.26 GPM  |

Flowrate

| ISO01 | 0.1 10.00 | l/min | 2.00 l/min |
| ISO15 | 0.03 2.6 | GPM  | 0.53 GPM  |

Flowrate

| ISO01 | 0.1 10.00 | l/min | 3.00 l/min |
| ISO15 | 0.03 2.6 | GPM  | 0.79 GPM  |

Flowrate

| ISO01 | 0.1 10.00 | l/min | 4.00 l/min |
| ISO15 | 0.03 2.6 | GPM  | 1.06 GPM  |

Flowrate

| ISO01 | 0.1 10.00 | l/min | 5.00 l/min |
| ISO15 | 0.03 2.6 | GPM  | 1.32 GPM  |

Flowrate

| ISO01 | 0.1 10.00 | l/min | 6.00 l/min |
| ISO15 | 0.03 2.6 | GPM  | 1.59 GPM  |

Minimum pressure

| ISO01 | 0.1 | 50.0 bar | 1.0 | 5.0 bar |
| ISO15 | 1.45 725 PSI | 15 | 70 PSI |

Maximum pressure

| ISO01 | 0.1 | 50.0 bar | 2.0 | 10.0 bar |
| ISO15 | 1.45 725 PSI | 30 | 145 PSI |

Wheel sensor

| ISO01 | Constant | 0.01 | 2000.00 cm/pls* | 38.33 cm/pls* |
| ISO15 | 0.01 | 780.00 inch/pls* | 15.09 inch/pls* |

Rev counter

| ISO01 | Status | -- | -- | Disabled | Enabled |
| ISO15 | Constant | 1 | 999 | 100 psi/rev** | 100 psi/rev** |

Minimum rotation speed

| ISO01 | 1 | 10000 rpm |
| ISO15 | Maximum rotation speed | 1 | 10000 rpm |

Reserve level

| ISO01 | 1 | 2000 l | 150 l |
| ISO15 | 1 | 500 gal | 40 gal |

Capacity

| ISO01 | 1 | 25000 gal |
| ISO15 | 1 | 2000 l | 528 gal |

Tank profile

| ISO01 | Nozzle wear check | -- | -- | Disabled | Enabled |
| ISO15 | Nozzle wear limit percentage | 1 | 50 % | 10 % | Visible ONLY with Pressure sensor enabled |

Alarms

| ISO01 | Minimum pressure alarm | -- | -- | Disabled | Enabled |
| ISO15 | Maximum pressure alarm | -- | -- | Disabled | Enabled |

Flowmeter alarms

| ISO01 | Minimum flowrate alarm | -- | -- | Disabled | Enabled |
| ISO15 | Maximum flowrate alarm | -- | -- | Disabled | Enabled |

Rev counter alarms

| ISO01 | Minimum rotation speed alarm | -- | -- | Disabled | Enabled |
| ISO15 | Maximum rotation speed alarm | -- | -- | Disabled | Enabled |

* pls = pulse
** rev = revolution

CONTINUES >>
## Technical Data

### Implement

<table>
<thead>
<tr>
<th>Menu</th>
<th>Data</th>
<th>Min.</th>
<th>Max.</th>
<th>UoM</th>
<th>DEFAULT</th>
<th>Other values that can be set / Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spraying limits</td>
<td>Working parameters</td>
<td>Spraying limits</td>
<td>Working parameters</td>
<td>Automatic section control</td>
<td>Guidance</td>
<td></td>
</tr>
<tr>
<td>Spraying speed limit</td>
<td>Spraying limits</td>
<td>Spraying speed limit</td>
<td>Spraying limits</td>
<td>Automatic section control</td>
<td>Guidance</td>
<td></td>
</tr>
<tr>
<td>Minimum spraying speed</td>
<td>Spraying limits</td>
<td>Minimum spraying speed</td>
<td>Spraying limits</td>
<td>Automatic section control</td>
<td>Guidance</td>
<td></td>
</tr>
<tr>
<td>Regulation pressure limit</td>
<td>Spraying limits</td>
<td>Regulation pressure limit</td>
<td>Spraying limits</td>
<td>Automatic section control</td>
<td>Guidance</td>
<td></td>
</tr>
<tr>
<td>Minimum regulation pressure</td>
<td>Spraying limits</td>
<td>Minimum regulation pressure</td>
<td>Spraying limits</td>
<td>Automatic section control</td>
<td>Guidance</td>
<td></td>
</tr>
<tr>
<td>Flowrate correction factor</td>
<td>Spraying limits</td>
<td>Flowrate correction factor</td>
<td>Spraying limits</td>
<td>Automatic section control</td>
<td>Guidance</td>
<td></td>
</tr>
<tr>
<td>Level correction factor</td>
<td>Spraying limits</td>
<td>Level correction factor</td>
<td>Spraying limits</td>
<td>Automatic section control</td>
<td>Guidance</td>
<td></td>
</tr>
</tbody>
</table>

### GPS receiver

<table>
<thead>
<tr>
<th>Menu</th>
<th>Data</th>
<th>Min.</th>
<th>Max.</th>
<th>UoM</th>
<th>DEFAULT</th>
<th>Other values that can be set / Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>A100</td>
<td>GPS receiver</td>
<td>DGPS</td>
<td>--</td>
<td>--</td>
<td>Disabled</td>
<td>Enabled</td>
</tr>
<tr>
<td>AgStar</td>
<td>GPS receiver</td>
<td>HDOP alarm</td>
<td>1.0</td>
<td>10.0</td>
<td>--</td>
<td>4.0</td>
</tr>
<tr>
<td>Correction type</td>
<td>GPS receiver</td>
<td>Correction type</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>None</td>
</tr>
<tr>
<td>HDOP alarm</td>
<td>GPS receiver</td>
<td>HDOP alarm</td>
<td>1.0</td>
<td>10.0</td>
<td>--</td>
<td>4.0</td>
</tr>
<tr>
<td>Correction type</td>
<td>GPS receiver</td>
<td>Correction type</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>None</td>
</tr>
<tr>
<td>Smart-Ag / Smart 6</td>
<td>Receiver advanced data</td>
<td>Region</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>Europe, Africa</td>
</tr>
<tr>
<td>NMEA</td>
<td>GDGPS</td>
<td>--</td>
<td>--</td>
<td>Disabled</td>
<td>Enabled</td>
<td></td>
</tr>
<tr>
<td>HDOP alarm</td>
<td>Tractor</td>
<td>1.0</td>
<td>10.0</td>
<td>--</td>
<td>4.0</td>
<td></td>
</tr>
</tbody>
</table>

### Tractor

<table>
<thead>
<tr>
<th>Menu</th>
<th>Data</th>
<th>Min.</th>
<th>Max.</th>
<th>UoM</th>
<th>DEFAULT</th>
<th>Other values that can be set / Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Camera</td>
<td>Geometry settings</td>
<td>Wheelbase</td>
<td>--</td>
<td>None</td>
<td>1, 2, Both</td>
<td></td>
</tr>
<tr>
<td>Wheelbase</td>
<td>Geometry settings</td>
<td>Wheelbase</td>
<td>0.50</td>
<td>20.00</td>
<td>m</td>
<td>2.50 m</td>
</tr>
<tr>
<td>Rear axle / Connection point</td>
<td>Geometry settings</td>
<td>Rear axle / Connection point</td>
<td>0.00</td>
<td>64.00</td>
<td>ft</td>
<td>8.20 ft</td>
</tr>
<tr>
<td>GPS antenna / Rear axle</td>
<td>Geometry settings</td>
<td>GPS antenna / Rear axle</td>
<td>0.00</td>
<td>64.00</td>
<td>ft</td>
<td>1.64 ft</td>
</tr>
<tr>
<td>GPS antenna / Ground</td>
<td>Geometry settings</td>
<td>GPS antenna / Ground</td>
<td>0.00</td>
<td>64.00</td>
<td>ft</td>
<td>1.64 ft</td>
</tr>
<tr>
<td>GPS antenna / Longitudinal axle</td>
<td>Geometry settings</td>
<td>GPS antenna / Longitudinal axle</td>
<td>0.00</td>
<td>64.00</td>
<td>ft</td>
<td>2.50 m</td>
</tr>
</tbody>
</table>

CONTINUES > > >
### Technical Data

**Tractor**

<table>
<thead>
<tr>
<th>Menu</th>
<th>Data</th>
<th>Min.</th>
<th>Max.</th>
<th>UoM</th>
<th>DEFAULT</th>
<th>Other values that can be set / Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheelbase</td>
<td>SELF-PROPELLED WITH REAR BOOM</td>
<td>0.50</td>
<td>20.00</td>
<td>m</td>
<td>2.80 m</td>
<td>Self-propelled WITH REAR BOOM, selected during guided setup</td>
</tr>
<tr>
<td>Rear axle / Application point</td>
<td>SELF-PROPELLED WITH REAR BOOM</td>
<td>0.00</td>
<td>20.00</td>
<td>m</td>
<td>1.50 m</td>
<td></td>
</tr>
<tr>
<td>GPS antenna / Rear axle</td>
<td>SELF-PROPELLED WITH REAR BOOM</td>
<td>-20.00</td>
<td>20.00</td>
<td>m</td>
<td>2.40 m</td>
<td></td>
</tr>
<tr>
<td>GPS antenna / Ground</td>
<td>SELF-PROPELLED WITH REAR BOOM</td>
<td>-4.00</td>
<td>64.00</td>
<td>ft</td>
<td>7.87 ft</td>
<td></td>
</tr>
<tr>
<td>GSP antenna / Longitudinal axle</td>
<td>SELF-PROPELLED WITH REAR BOOM</td>
<td>-25.00</td>
<td>25.00</td>
<td>ft</td>
<td>0.00 ft</td>
<td></td>
</tr>
<tr>
<td>Wheelbase</td>
<td>SELF-PROPELLED WITH FRONT BOOM</td>
<td>0.50</td>
<td>20.00</td>
<td>m</td>
<td>2.80 m</td>
<td></td>
</tr>
<tr>
<td>Front axle / Application point</td>
<td>SELF-PROPELLED WITH FRONT BOOM</td>
<td>0.50</td>
<td>20.00</td>
<td>m</td>
<td>1.50 m</td>
<td></td>
</tr>
<tr>
<td>GPS antenna / Rear axle</td>
<td>SELF-PROPELLED WITH FRONT BOOM</td>
<td>-20.00</td>
<td>20.00</td>
<td>m</td>
<td>2.40 m</td>
<td></td>
</tr>
<tr>
<td>GPS antenna / Ground</td>
<td>SELF-PROPELLED WITH FRONT BOOM</td>
<td>0.00</td>
<td>20.00</td>
<td>m</td>
<td>3.50 m</td>
<td></td>
</tr>
<tr>
<td>GSP antenna / Longitudinal axle</td>
<td>SELF-PROPELLED WITH FRONT BOOM</td>
<td>-6.00</td>
<td>8.00</td>
<td>m</td>
<td>0.00 m</td>
<td></td>
</tr>
<tr>
<td>Wheelbase</td>
<td>SELF-PROPELLED WITH FRONT BOOM</td>
<td>0.50</td>
<td>20.00</td>
<td>m</td>
<td>2.80 m</td>
<td></td>
</tr>
<tr>
<td>Rear axle / Application point</td>
<td>SELF-PROPELLED WITH FRONT BOOM</td>
<td>0.00</td>
<td>20.00</td>
<td>m</td>
<td>1.50 m</td>
<td></td>
</tr>
<tr>
<td>GPS antenna / Rear axle</td>
<td>SELF-PROPELLED WITH FRONT BOOM</td>
<td>-20.00</td>
<td>20.00</td>
<td>m</td>
<td>2.40 m</td>
<td></td>
</tr>
<tr>
<td>GPS antenna / Ground</td>
<td>SELF-PROPELLED WITH FRONT BOOM</td>
<td>0.00</td>
<td>20.00</td>
<td>m</td>
<td>3.50 m</td>
<td></td>
</tr>
<tr>
<td>GSP antenna / Longitudinal axle</td>
<td>SELF-PROPELLED WITH FRONT BOOM</td>
<td>-6.00</td>
<td>8.00</td>
<td>m</td>
<td>0.00 m</td>
<td></td>
</tr>
</tbody>
</table>

### User

<table>
<thead>
<tr>
<th>Menu</th>
<th>Data</th>
<th>Min.</th>
<th>Max.</th>
<th>UoM</th>
<th>DEFAULT</th>
<th>Other values that can be set / Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acoustic alarms</td>
<td>Acoustic critical alarms</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>Disabled</td>
<td>Enabled</td>
</tr>
<tr>
<td>Acoustic low priority alarms</td>
<td>Acoustic info</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>Disabled</td>
<td>Enabled</td>
</tr>
<tr>
<td>Steering warning</td>
<td>Alarms volume (DELTA 80 / BRAVO 400S ONLY)</td>
<td>0</td>
<td>100</td>
<td>%</td>
<td>70 %</td>
<td></td>
</tr>
<tr>
<td>Guidance</td>
<td>Offset tolerance</td>
<td>3</td>
<td>100</td>
<td>cm</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Backlight management</td>
<td>Menu</td>
<td>0</td>
<td>100</td>
<td>%</td>
<td>100 %</td>
<td></td>
</tr>
<tr>
<td>“Night” mode</td>
<td>0</td>
<td>100</td>
<td>%</td>
<td>70 %</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Auto reduction</td>
<td>Idle time</td>
<td>1</td>
<td>20</td>
<td>min</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Reduction value</td>
<td>Preferences</td>
<td>0</td>
<td>100</td>
<td>%</td>
<td>70 %</td>
<td></td>
</tr>
</tbody>
</table>

### General options

<table>
<thead>
<tr>
<th>Menu</th>
<th>Data</th>
<th>Min.</th>
<th>Max.</th>
<th>UoM</th>
<th>DEFAULT</th>
<th>Other values that can be set / Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language</td>
<td>ȳдiγaцoχ, Cesky, Deutsch, English, Espanol, Français, Ελληνικά, Magyar, 日本語, Italiano, Nederlands, Polski, Portugês, Română, Русский, 中文</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>English</td>
<td></td>
</tr>
<tr>
<td>Units of measurement</td>
<td>Date and time GPS updating</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>Enabled</td>
<td>Disabled</td>
</tr>
<tr>
<td>Date and time</td>
<td>Preferences</td>
<td>Selective job loading</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>Disabled</td>
</tr>
</tbody>
</table>

### Job data

<table>
<thead>
<tr>
<th>Data</th>
<th>UoM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applied area</td>
<td>ha, ac, ksqft</td>
</tr>
<tr>
<td>Applied quantity</td>
<td>l, gal, gal</td>
</tr>
<tr>
<td>Average application rate</td>
<td>l/ha, GPA, GPK</td>
</tr>
<tr>
<td>Nozzles</td>
<td>--</td>
</tr>
<tr>
<td>Calculated area</td>
<td>ha, ac, ksqft</td>
</tr>
<tr>
<td>Working time</td>
<td>hh:mm, hh:mm, hh:mm</td>
</tr>
<tr>
<td>Application time</td>
<td>hh:mm, hh:mm, hh:mm</td>
</tr>
<tr>
<td>Average productivity</td>
<td>ha/h, ac/h, ksqft/h</td>
</tr>
<tr>
<td>Job start date</td>
<td>dd/mm/yyyy, dd/mm/yyyy, dd/mm/yyyy</td>
</tr>
<tr>
<td>Job start time</td>
<td>hh:mm, hh:mm, hh:mm</td>
</tr>
</tbody>
</table>

*END 16.1 Data and units of measurement shown*
Only use genuine ARAG accessories or spare parts to make sure manufacturer guaranteed safety conditions are maintained in time. Always refer to ARAG spare parts catalog.