





4674A9DX0.950

Software rel. 1.0X

INSTALLATION, USE AND MAINTENANCE



= Generic danger



= Warning

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

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1 RISKS AND PROTECTIONS BEFORE ASSEMBLY

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



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

2 INTENDED USE

The device you have purchased is a computer which, when connected to a valve or suitable control unit, makes it possible to control all phases of treatment in agricultural applications directly from the cabin of the farming machine it is installed in.

BRAVO 400S features a satellite navigator that – through the external GPS receiver – can be used for agricultural applications and navigation.



BRAVO 400S is not designed for use on public roads and should only be used on farmland.

This device is designed to work on agricultural machinery for spraying and crop spraying applications.

The machine is designed and built in compliance with EN ISO 14982 standard (Electromagnetic compatibility - Forestry and farming machines), harmonized with 2004/108/EC Directive.

3 PRECAUTIONS



- Do not aim water jets at the equipment.
- Do not use solvents or fuel to clean the case outer surface.
- Do not clean equipment with direct water jets.
- Comply with the specified power voltage (12 Vdc).
- In case of voltaic arc welding, remove connectors from BRAVO 400S and disconnect the power cables.
- Only use ARAG genuine spare parts and accessories.
- Bravo 400S can control hydraulic valves to open / close the boom.

The computer does not feature emergency stop devices: the manufacturer must provide all necessary safety devices for the hydraulic boom control.

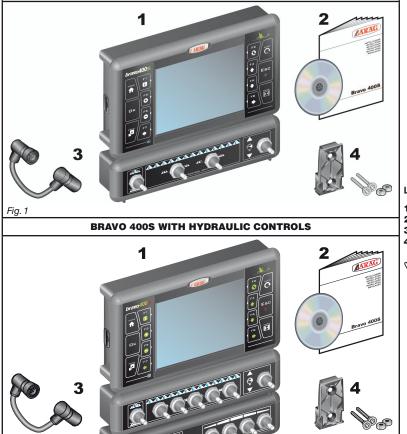
Any time one hydraulic boom section is opened or closed the computer emits an acoustic signal and the display shows the relevant indication. The manufacturer should also provide acoustic and optical warnings in the vicinity of the boom.

4 PACKAGE CONTENT

Fig. 2

The diagram below indicates the components that you will find in the BRAVO 400S computer package:

BRAVO 400S



Legend:

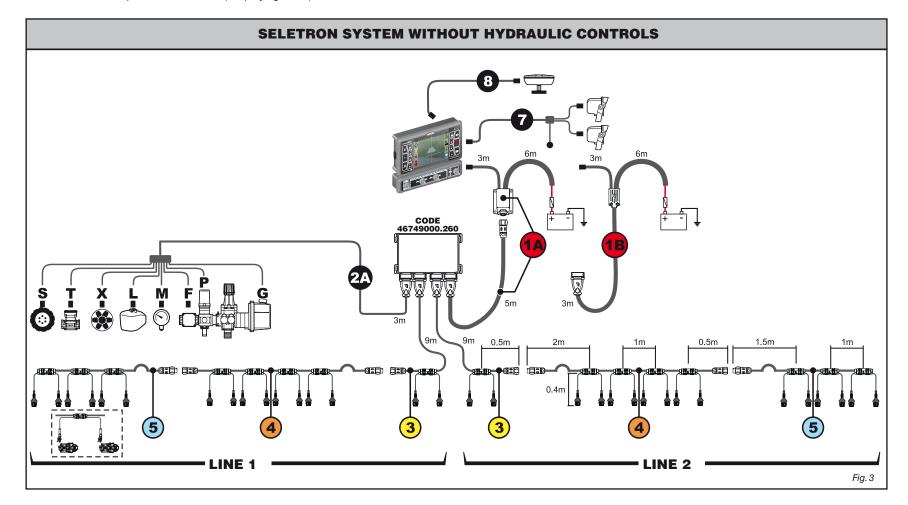
- 1 Bravo 400S
- 2 Instruction manual
- 3 Monitor switch box connection cable
- 4 Fixing kit



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

To connect all parts of the system correctly, make sure to use the proper connection cables specified in Tab. 1 page 8. Consider all possible variants:

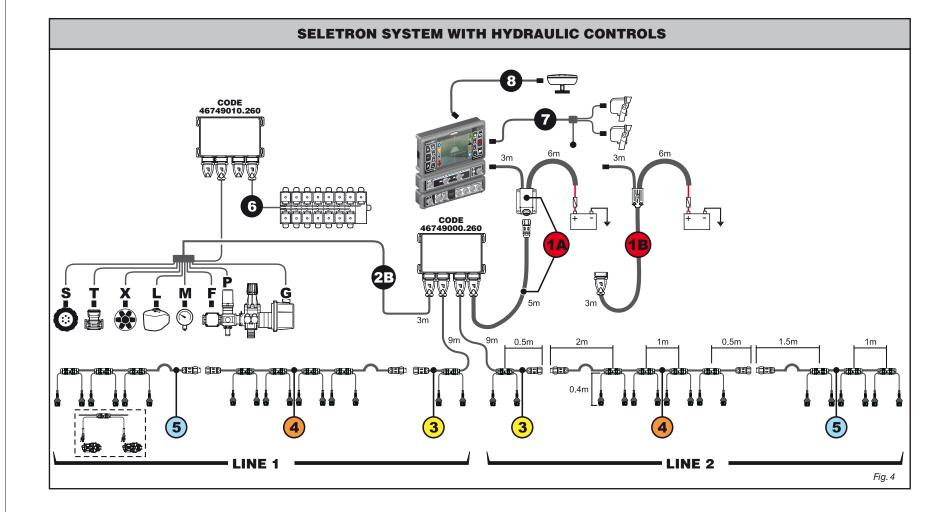
- type of system,
- type of Seletron units connected (single, twin or fourfold)
- number of nozzles per mechanical arm (of spraying boom)



Legend of connection cables:

- 1A Computer / RCU / battery for TRAILED MACHINE
- 1B Computer / RCU / battery for SELF-PROPELLED MACHINE
- 2A Control unit / sensors
- 3 Head-end cable
- Extension cable
- Termination cable
- 7 Cameras / external main control
- 8 GPS receiver

- Speed sensor Filling flowmeter
- RPM sensor
- Level sensor
- Pressure sensor
- Flowmeter
- Control valve
- G Main valve



Legend of connection cables:

- **1A** Computer / RCU / battery for **TRAILED MACHINE**
- **1B** Computer / RCU / battery for **SELF-PROPELLED MACHINE**
- 2B Control unit / sensors / hydraulic RCU
- 3 Head-end cable
- 4 Extension cable
- 5 Termination cable
- 6 Hydraulic unit
- 7 Cameras / external main control
- 8 GPS receiver

- Speed sensor
- Filling flowmeter
- RPM sensor
- Level sensor
- M Pressure sensor
- F Flowmeter
- P Control valve
- G Main valve

Connection cable for MONITOR / **REMOTE CONTROL UNIT - BATTERY** Cable for

2B 467 49010.110 | control unit / sensors /

The cables for single and twin SELETRON feature 2 outputs per joint.

The cables for fourfold SELETRON feature 4 outputs per joint. 900×100

TRAILED M/C Cable for 467 49000.100 | SELF-PROPELLED M/C

Connection cable

hydraulic RCU

control unit / sensors Connection cable

467 49000.150

467 49000.110



STANDARD CABLES FOR SELETRON - SINGLE

MAX. BOOM WIDTH 48 M

50 cm spacing				
3 - STANDARD				

3 - STANDAND	ADLES	
Code	no. of SELETRON nozzle holders	Cable length (m)
467 491 A020.100	2	9.5
467 491 A031.100	3	10.5
4 - STANDARD EXTEN CABLES		ION
	no of	Coblo

467 491 A031.100	3	10.5		
4 - STANDARD EXTENSION CABLES				
Code	no. of SELETRON nozzle holders	Cable length (m)		
467 492 A031.100	3	3.5		
467 492 A041.100	4	3.5		
467 492 A051.100	5	4.5		
467 492 A061.100	6	4.5		
467 492 A071.100	7	5.5		
467 492 A081.100	8	5.5		
467 492 A091.100	9	6.5		
467 492 A101.100	10	6.5		
467 492 A111.100	11	7.5		
467 492 A121.100	12	7.5		
467 492 A131.100	13	8.5		
467 492 A141.100	14	8.5		
467 492 A151.100	15	9.5		
467 492 A161.100	16	9.5		
467 492 A171.100	17	10.5		
467 492 A181.100	18	10.5		
467 492 A191.100	19	11.5		
467 492 A201.100	20	11.5		

5 - STANDARD TERMINATION

CABLES			
Code	no. of SELETRON nozzle holders	Cable length (m)	
467 493 A031.100	3	2.5	
467 493 A041.100	4	2.5	
467 493 A051.100	5	3.5	
467 493 A061.100	6	3.5	
467 493 A071.100	7	4.5	
467 493 A081.100	8	4.5	



STANDARD CABLES FOR SELETRON - TWIN MAX. BOOM WIDTH 24 M

50 cm spacing

3 - STANDARD CENTRAL CABLES		
Code	no. of SELETRON nozzle holders	Cable length (m)
467 491 A020.100	2	9.5
467 491 A031.100	3	10.5
4 - STANDA	RD EXTENS	ION

CABLES			
Code	no. of SELETRON nozzle holders	Cable length (m)	
467 492 A031.100	3	3.5	
467 492 A041.100	4	3.5	
467 492 A051.100	5	4.5	
467 492 A061.100	6	4.5	
467 492 A071.100	7	5.5	
467 492 A081.100	8	5.5	
467 492 A091.100	9	6.5	
467 492 A101.100	10	6.5	
467 492 A111.100	11	7.5	
467 492 A121.100	12	7.5	
E CTANDADD TEDMINATION			

5 - STANDARD TERMINATION CABLES

Code	no. of SELETRON nozzle holders	Cable length (m)
467 493 A031.100	3	2.5
467 493 A041.100	4	2.5
467 493 A051.100	5	3.5
467 493 A061.100	6	3.5



PLUS CABLES FOR SELETRON - TWIN MAX. BOOM WIDTH 36 M

50 cm spacing

3 - PLUS CENTRAL CABLES

Code	no. of SELETRON nozzle holders	Cable length (m)	
467 491 C020.100	2	9.5	
467 491 C031.100	3	10.5	
4 - PLUS EXTENSION CABLES			

4 - PLUS EXT	ENSION CA	BLES
Code	no. of SELETRON nozzle holders	Cable length (m)
467 492 C031.100	3	3.5
467 492 C041.100	4	3.5
467 492 C051.100	5	4.5
467 492 C061.100	6	4.5
467 492 C071.100	7	5.5
467 492 C081.100	8	5.5
467 492 C091.100	9	6.5
467 492 C101.100	10	6.5
467 492 C111.100	11	7.5
467 492 C121.100	12	7.5
467 492 C131.100	13	8.5
467 492 C141.100	14	8.5
467 492 C151.100	15	9.5
467 492 C161.100	16	9.5
467 492 C171.100	17	10.5
467 492 C181.100	18	10.5
467 492 C191.100	19	11.5

5 - PLUS TERMINATION CABLES

20

11.5

467 492 C201.100

Code	no. of SELETRON nozzle holders	Cable length (m)
467 493 C031.100	3	2.5
467 493 C041.100	4	2.5
467 493 C051.100	5	3.5
467 493 C061.100	6	3.5
467 493 C071.100	7	4.5
467 493 C081.100	8	4.5



PLUS CABLES FOR SELETRON - FOURFOLD MAX. BOOM WIDTH 36 M

50 cm spacing

3 - PLUS CENTRAL CABLES		
Code	no. of SELETRON nozzle holders	Cable length (m)
467 491 D020.100	2	9.5
467 491 D031.100	3	10.5

4 - PLUS EXTENSION CABLES					
Code	no. of SELETRON nozzle holders	Cable length (m)			
467 492 D031.100	3	3.5			
467 492 D041.100	4	3.5			
467 492 D051.100	5	4.5			
467 492 D061.100	6	4.5			
467 492 D071.100	7	5.5			
467 492 D081.100	8	5.5			
467 492 D091.100	9	6.5			
467 492 D101.100	10	6.5			
467 492 D111.100	11	7.5			
467 492 D121.100	12	7.5			
467 492 D131.100	13	8.5			
467 492 D141.100	14	8.5			
467 492 D151.100	15	9.5			
467 492 D161.100	16	9.5			
467 492 D171.100	17	10.5			
467 492 D181.100	18	10.5			
467 492 D191.100	19	11.5			
467 492 D201.100	20	11.5			

5 - PLUS TERMINATION CABLES

3 - 1 L00 1 L111	mital lolt of	ADLLO
Code	no. of SELETRON nozzle holders	Cable length (m)
467 493 D031.100	3	2.5
467 493 D041.100	4	2.5
467 493 D051.100	5	3.5
467 493 D061.100	6	3.5
467 493 D071.100	7	4.5
467 493 D081.100	8	4.5

5.2 Monitor and control unit positioning

• The BRAVO 400S series computer must be placed in the control cabin of the farming machine. Observe the following precautions:

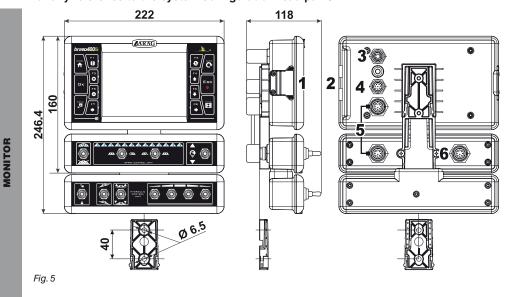


- Do NOT install the monitor in areas where it would be subjected to excessive vibrations or shocks, to prevent any damage or accidental use of the control keys;
- Install the device in a visible position within easy reach by hand; bear in mind that the monitor should not obstruct the operator's freedom of movement or block his view.
- Control units (RCU): secure the control units on the back of the machine, close to the control unit and the hydraulic unit.



Consider all necessary connections of the computer (Fig. 5 and Fig. 6), the cable length, and make sure there is enough space for connectors and cables.

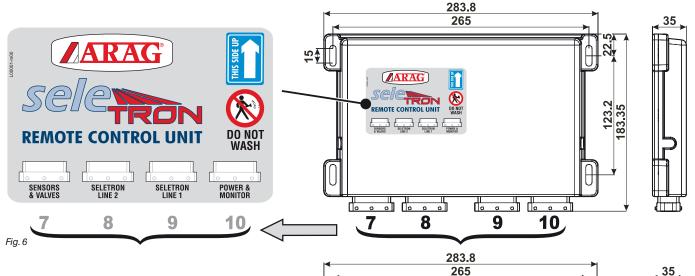
An identification symbol is located next to each connector to indicate its function. For any reference to the system configuration read par. 5.1.



ITE	M	CONNECTION POINTS
	1	SD memory card
	2	USB (2)
Œ	3	GPS receiver
MONITOR	4	Cameras + External main control
M	5	Connection monitor / switch box
	6	Control panel power supply + RCU connection
RCU SELETRON	7	Control unit (G + P) + Sensors + Connection to hydraulic RCU
S F	8	Seletron - Line 1
SEL	9	Seletron - Line 2
	10	Monitor + power supply
RCU HYDRAULIC	11	Connection to Seletron RCU
R(HYDR	12	Connection to Hydraulic unit

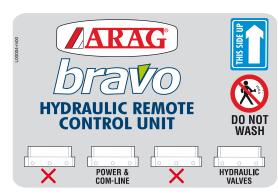


HYDRAULIC RCU

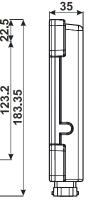


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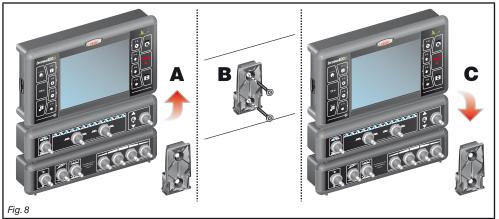


12

12

5.3 Bracket fixing

The monitor must be mounted after having fixed the bracket at the desired location (the previous paragraph shows the bracket drilling template). The bracket must be slid out of the monitor seat (**A**, Fig. 8) and fixed using the supplied screws (**B**). Make sure the bracket is securely mounted, fit the monitor on it, and push it until it locks in place (**C**).

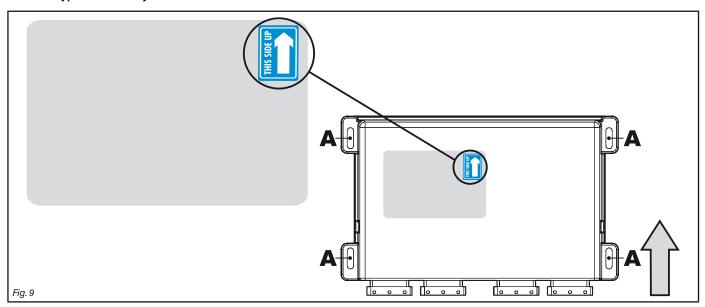


5.4 Control unit (RCU) fixing

Respect the mounting direction of the control units, as specified in Fig. 9 (connectors shall be facing down).



No other type of assembly is allowed.



5.5 Control unit position

The control unit must be fixed with the special brackets supplied and fitted to the unit, positioning it as shown in the manual provided with the assembly.



MAKE SURE TO FOLLOW ALL THE SAFETY INSTRUCTIONS GIVEN IN THE CONTROL UNIT'S MANUAL.

5.6 Hydraulic unit positioning

The hydraulic unit shall be secured to the machine, making sure it is well protected against the elements and the fluid sprayed by the machine.



ARAG IS NOT LIABLE FOR ANY DAMAGE RESULTING FROM THE INSTALLATION BY UNSKILLED PERSONNEL.
ANY SYSTEM DAMAGE CAUSED BY A WRONG INSTALLATION AND/OR CONNECTION AUTOMATICALLY VOIDS THE WARRANTY.



WARNING! DO NOT CONNECT HYDRAULIC UNITS OTHER THAN THE SPECIFIED ONES (SEE ARAG GENERAL CATALOGUE). ARAG IS NOT LIABLE FOR ANY DAMAGE TO THE PRODUCT, MALFUNCTION ERRORS AND ANY KIND OF RISK IF THE MODULE IS CONNECTED TO NON ORIGINAL UNITS OR UNITS NOT SUPPLIED BY ARAG.

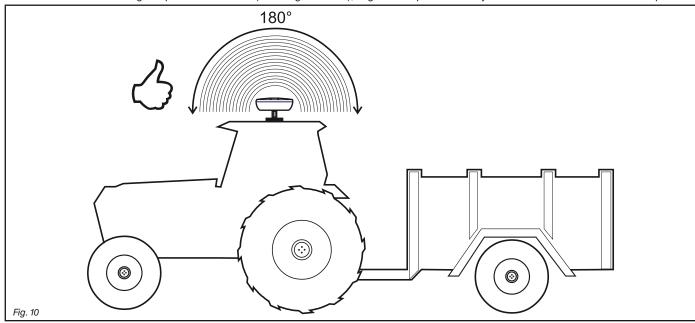
5.7 GPS receiver positioning

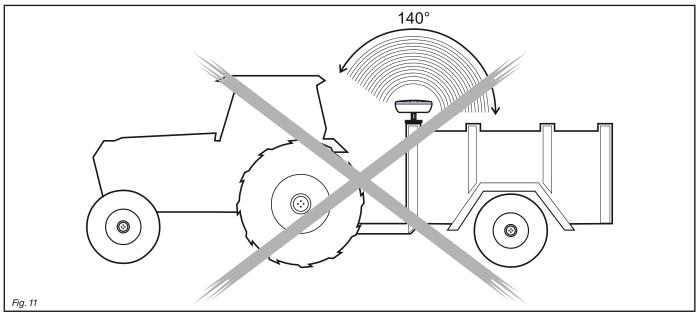


The user must position the GPS receiver correctly as specified in this manual and properly account for the greater obstacle clearance height of the vehicle.

GPS receiver installation:

There are certain essential requirements to be met when installing the GPS receiver on the farming machine: it must be mounted on the highest point of the vehicle (including the trailer); angle of reception in the skyward direction should be as wide as possible.





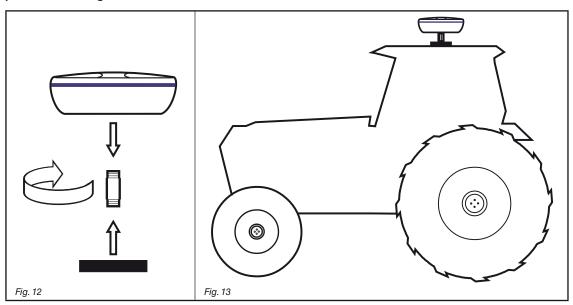
GPS receiver fixing:

If you are using an iron or steel support to fix the receiver, use the supplied magnetic plate.

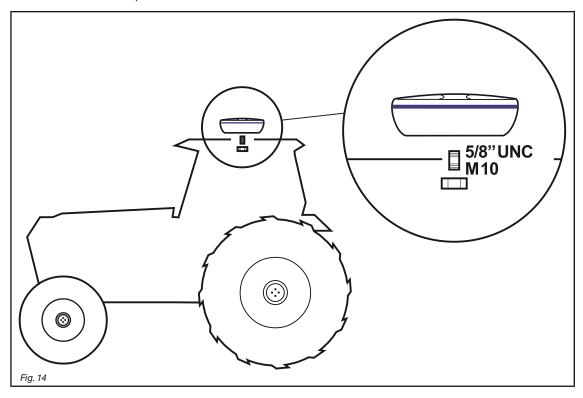
Screw the receiver onto the threaded pin of the plate and tighten until locking it in place (Fig. 12).



It is important that the receiver be positioned on a perfectly flat metal surface with no coating that could prevent the magnetic plate from holding.



If you are not sure whether the magnetic plate will hold on to the machine, it is best to fix the threaded pin directly to the chassis as shown in Fig. 14: drill a hole and secure the pin with an M10 nut from the inside.



 \bigwedge

It is the operator's responsibility to ensure that the system is fixed securely in place. ARAG is not liable for any damage in the event the receiver should come off, regardless of the fixing method used.

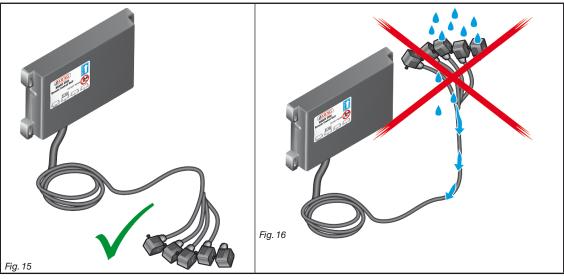
6 WIRING CONNECTIONS



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

6.1 General precautions for a correct harness position

- Securing the cables:
- secure the harness so that it does not interfere with moving parts;
- route the harnesses so that they cannot be damaged or broken by machine movements or twisting.
- Routing the cables to protect against water infiltrations:
- the cable branches must ALWAYS be face down (Fig. 15).



- Fitting the cables to the connection points:
- do not force the connectors by pushing too hard or bending them: the contacts may be damaged and computer operation may be compromised.

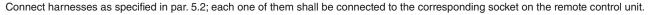


Use ONLY the cables and accessories indicated in the catalogue, having technical features suitable for the use to be made of them

6.2 Switch box connection

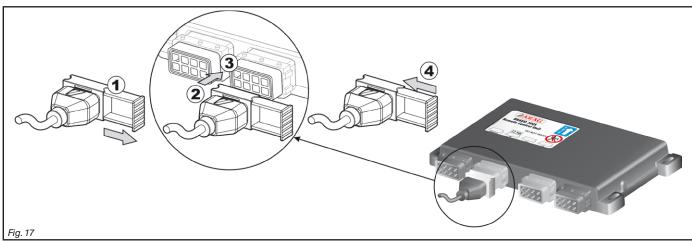
The package includes the cable to connect switch box and monitor (component 3, Fig. 1 and Fig. 2). Fit the connectors (see connection points at par. 5.2), ensure they are correctly in place and turn the ring nut clockwise until blocking them.

6.3 Connecting the Remote Control Units (RCU) (Seletron RCU and hydraulic RCU)





If they prove hard to insert, do not force them, but check the shown position.



- Open connector slide (1, Fig. 17).
- To position connector (2), insert it inside socket (3), then press: during this operation, take care not to bend the electric contacts.
- Close slide (4) until it locks in place.

6.4 Securing the Seletron cables



WARNING! DO NOT CONNECT THE CONNECTORS TO THE SELETRON NOZZLE HOLDERS.

THE SELETRON ELECTRIC CONNECTORS MUST BE CONNECTED AT A LATER TIME, AFTER SETUP (chap. 11 Seletron connection).

Route the cable following these rules:

1 The Seletron units are connected to the RCU (Fig. 18) via two main wiring harnesses (1 and 2), each made up of three types of cables: head-end cable (3), extension cable (4) and termination cable (5);

the termination cable is indispensable in order to close circuit. The system will not operate without a termination cable.

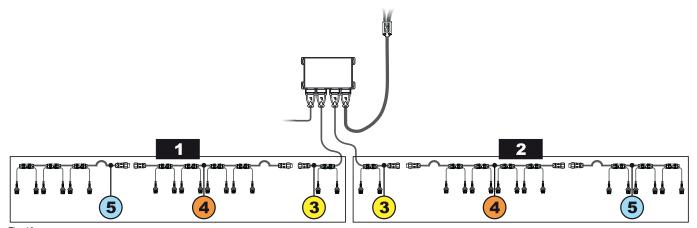


Fig. 18

Consider all necessary connections of the Seletron system, the cable length, and make sure there is enough space for connectors and cables. Secure the cables with ties to protect them from damage.

Thanks to the modular concept of the system, additional <u>EXTENSION</u> cables can be added to the circuit to connect additional nozzle holders and obtain the desired boom length.

To ensure proper operation of the system, observe the wiring diagram and use ONLY dedicated cables for the type of Seletron installed (Tab. 1 - CONNECTION CABLES page 8).

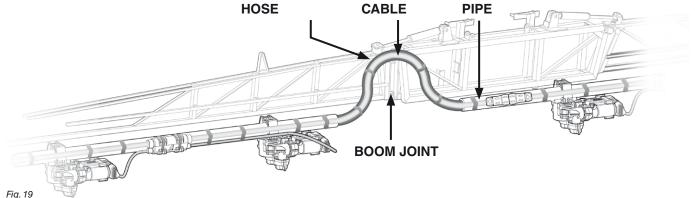


WARNING! THE CABLES DESIGNED FOR CONNECTING TWIN SELETRON UNITS ON BOOMS UP TO 24 M LONG SHOULD NEVER BE USED ON LONGER BOOMS.

2 RCUs, main control valve, flowmeter and pressure sensor must be installed in the front section of the machine; if needed, ONLY the sensors may be moved to a different position and connected using the extensions listed in the catalogue.

Never use an extension for any other components unless you have so agreed with the ARAG Assistance Center.

3 Choose and install the cables so that they retain some freedom of movement at boom joints.



4 ALWAYS secure the main cable connections (3, 4 and 5) to a stationary section of the boom; the head-end cable is longer than the termination to facilitate this.



- 5 Account for any possible boom movement when positioning and fixing the cables.
- 6 Carefully check that no connections or branches are positioned near moving parts and high enough to clear possible obstacles on the ground. Ensure that the Seletron nozzle holders do not become jammed with one another or touch any cables or delicate system areas when the boom is closed or folded away.

7 If space is limited and you need to bend a cable, be sure not to bend it too tight or it may damage.

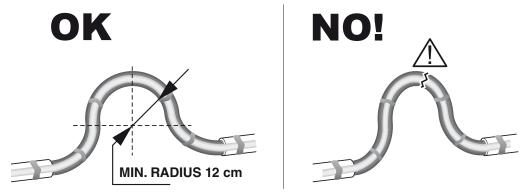
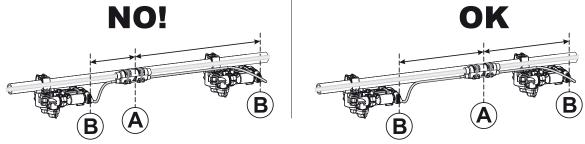


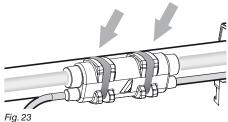
Fig. 21

8 Position the cable so that branches A are equally spaced from Seletron connectors B.

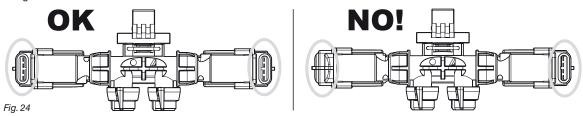


Fia. 22

9 Secure the branches to the boom threading the ties through the suitable recesses.



10 When installing a twin or fourfold nozzle holder, make sure that all connectors are facing the same direction, or the computer might select the wrong nozzle.



11 Any Seletron connectors left unused must be closed using the suitable plugs (code ECS0075). The plugs must be ordered separately. When the connectors are plugged off, the Seletron is sealed. To avoid damaging the internal components, make sure that when using or cleaning the system the plugs and the connectors are not bare or inserted incorrectly.





WARNING! DO NOT CONNECT THE SELETRON UNITS.

THE SELETRON ELECTRIC **CONNECTORS MUST BE CONNECTED AT A LATER TIME,** NO! AFTER SETUP.

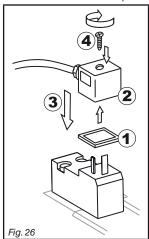


WARNING! TO AVOID DAMAGING ONE OR MORE DEVICES, MAKE SURE THAT NONE OF THE PARTS OF EACH SINGLE SELETRON (BODY, HARNESSES, ETC.) COME INTO CONTACT WITH MOVING PARTS AT ANY TIME WHEN THE SYSTEM IS IN USE (INSTALLATION, COMMISSIONING, USE AND SHUTDOWN OF THE FARMING MACHINE).

ARAG will not be held responsible for any damage to the system, people, animals or objects caused by failure to follow the guidelines outlined above.

Hydraulic valves connection

Bravo 400S can control up to 9 hydraulic functions through double-acting valves.



Fix the connectors to the relevant valves according to the initials indicated in your assembly general diagram (par. 5.1).

- Position seal (1) onto connector (2), then connect the latter pressing it fully home (3): during this operation, take special care not to bend valve electric contacts.
- Insert screw inside connector, and screw it (4) until it is tightened.

The function of each switch on the hydraulic function control panel is described below.

• Connect the connector marked with "DD" to the pilot valve, and then the other connectors, as specified on the table:

CONTROL	MOVE	MENT	CONNECTOR
Section movement / AUX switch opening	Opening	企	1 ÷ 6 A
1 - 2 - 3 - 4 - 5 - 6	Closing	Û	1 ÷ 6 C
	Opening	①	AA
Boom height	Closing	亡	AC
r <u> </u>	Opening		ВА
Boom locking	Closing	₽ T	вс
Boom leveling	Opening	企	CA
Soon leveling	Closing	Û	сс

6.6 Sensor connection

Fix the connectors to the relevant functions according to the initials indicated in your assembly general diagram (par. 5.1).

Harness cables are marked with a symbol denoting their functions: please see the table for correct harness connection.



Use ARAG sensors: use of unsuitable sensors not provided by ARAG automatically voids the warranty.

ARAG is not liable for damage to the equipment, persons or animals caused by failure to observe the above instructions.

ITEM	CONNECTION
F	Flowmeter
L	Level sensor
М	Pressure sensor
S	Speed sensor
Т	Filling flowmeter
Х	RPM sensor

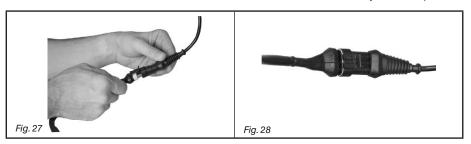
- The products are supplied with the sensor installation instructions.

The following speed sensors can also be used as RPM sensors:

- inductive speed sensor (code 467100.086);
- magnetic speed sensor (code 467100.100).
- Connection of:
- flowmeter:
- pressure sensor;
- level sensor
- · filling flowmeter:
- RPM sensor.

All ARAG sensors use the same type of connector.

Connect the sensor connector to the relevant harness; make sure it is correctly fitted and push it until locking it.



6.7 Camera connection

Bravo 400S can be connected to one or two cameras **code 46700100** (purchased separately) using the suitable cables listed in the ARAG general catalogue.

Connect the connector to the monitor (see connection points at par. 5.2) and the other cable end to the camera: ensure it is correctly in place and turn the ring nut clockwise until blocking it.

6.8 Power supply connection



WARNING:

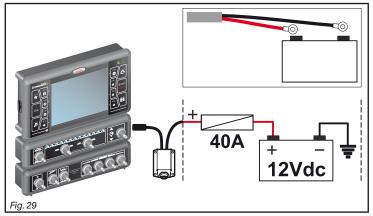
To avoid short circuits, do not connect the power cables to battery before the installation is completed. Before powering up the computer, make sure the tractor battery voltage is as specified (12 Vdc).

BRAVO 400S is supplied directly by the farming machine battery (12 Vdc): ALWAYS switch on the system through the computer, and then remember to switch it off using the specific key on the control panel.



If BRAVO 400S remains on for a long time with the machine off, the tractor battery could run flat: in case of prolonged breaks of the machine with engine off, make sure the computer is off, too.

The power source must be connected as indicated in Fig. 29:





Connect the power cable directly to the battery using the suitable evelets.

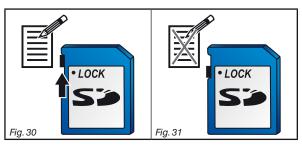
WARNING! DO NOT connect to key-operated switch (15/54).

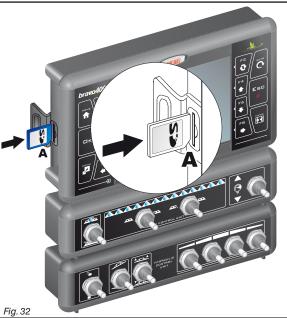
6.9 SD memory card

The SD memory card may be used to exchange data with the BRAVO 400S computer.



Before using it make sure the card is not protected (Fig. 30). The system is ONLY compatible with SD or SDHC memory cards.





Insertion

Insert the memory card making sure to orient it correctly: the card cut edge ${\bf A}$ must be face down; push the card until it engages into place and close the slot with the cover.

Removal

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

6.10 Pen drive

The pen drive may be used to exchange data with the BRAVO 400S computer.



Before using it make sure the pen drive is not protected. All pen drives with up to 8 GB memory are compatible.

SETUP

7.1 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. 11 Seletron connection).

Switching on 7.2



Fig. 33



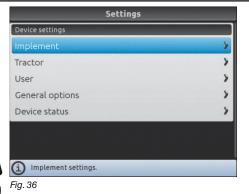
Fig. 34

Keep key pressed until Bravo 400S displays the screen shown in Fig. 33. The software version is shown immediately afterwards (Fig. 34).

FIRST DEVICE SWITCHING ON







version, Bravo 400S displays the "Home" screen (Fig. 35): press FB and enter the device basic settings (chap. 9).

Upon first switching on, after the software

ORDINARY SWITCHING ON





After the software version, Bravo 400S displays the Select User prompt (Fig. 37) Press F4 or F6 to move across the available items, then press $\square K$ to confirm your selection. At this point, Bravo 400S displays the "Home" screen (Fig. 38).

Fig. 38







(LEFT / RIGHT)



(UP / DOWN)

Value Increase / decrease







Switching off



Keep ESC key pressed until Bravo 400S is switched off.

During switching off Bravo 400S saves the current job, do NOT press any other key and do NOT disconnect the power supply until Bravo 400S display 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.

Fig. 39

Use of keys for setup 7.4

SELECTION AND ACCESS TO MENU ITEMS



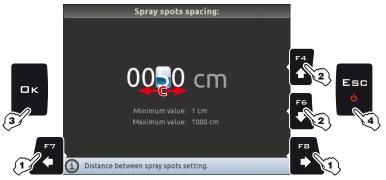
- 1A Press in succession to move across the menu items (UP / DOWN). The selected item is highlighted with a blue bar (A).
- 1B Press in succession to move across the available options (LEFT / RIGHT).

Display options (B):

- ne 12 The selected item is highlighted with a blue bar.
- Active option Inactive option
- 2 Press to access the selected item or to confirm modification.
- 3 Press to exit screen without confirming modification.

Fig. 40

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.

Fig. 41

ENTERING TEXT



- **1A** Press in succession to select the character you wish to type (UP / DOWN).
- 1B Press in succession to select the character you wish to type (RIGHT / LEFT).
- 2 Press to confirm the selected character.
- 3 Press to delete the character before the cursor.
- 4 Press to save the name.
- **5** Press to exit screen without confirming modification.

Legend:

imp03

Typed Name Cursor



Shift cursor across name characters



Selected character



Caps lock

Fig. 42







(LEFT / RIGHT)



(UP /

Value Increase / DOWN) decrease



Confirm access or data change

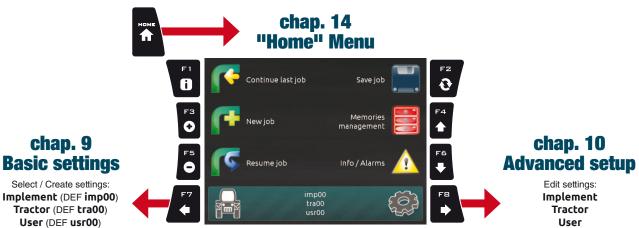




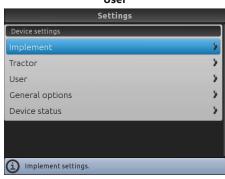
8 MENU STRUCTURE

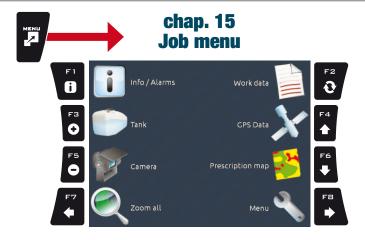


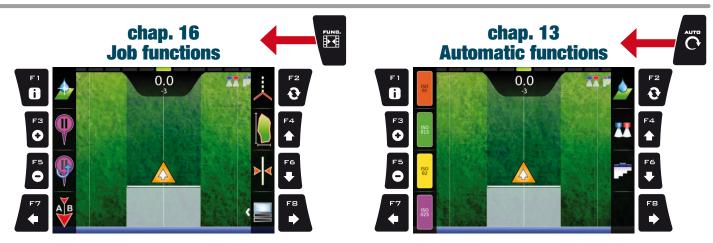
Upon first switching on, press FB and enter the device basic settings (chap. 9). Afterwards, it will be possible to select the preset settings by pressing F7.











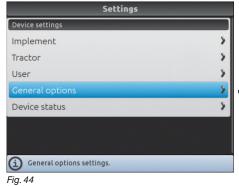
9 BASIC SETTINGS

GUIDED SETUP PROCEDURE UPON FIRST SWITCHING ON

1 LANGUAGE SETTING

- In the "Home" screen (Fig. 43) press FB to enter the Settings menu (Fig. 44).
- Select General options > Language and set the language of Bravo 400S.
- Press ESC and return to the Settings menu. Now select Implement to start guided setup procedure as shown in Fig. 45.



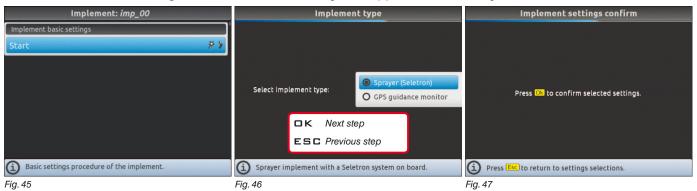


For a correct use of the keys during setting, refer to par. 7.4.

Fig. 43

2 ATTREZZO

- -Upon first switching on, Bravo 400S starts the guided setup procedure for the **Implement**: go through each step selecting the desired options (example in Fig. 46).
- When the message in Fig. 47 appears, the implement setup is complete. Press □ K.
- Press ESC and return to the Settings menu. Now select Tractor to start guided setup procedure as shown in Fig. 48.



BASIC IMPLEMENT SETTINGS

• IMPLEMENT TYPE

Sprayer (Seletron): system with Seletron valves.

GPS guidance monitor: Bravo 400S is only used as a driving aid and does not control spraying (it is not connected to the RCU).

• IMPLEMENT CONNECTION TYPE

3-point hitch: 3-point / self-propelled machine

Towing hitch: towed machine

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: 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.

CONTINUES > > >











Scroll Value (UP / Increase / DOWN) decrease







3 TRACTOR

- Upon first switching on, Bravo 400S starts the guided setup procedure for the Tractor: go through each step selecting the desired options (example in Fig. 49).
- When the message in Fig. 50 appears, the tractor configuration is complete. Press □ K.
- Press ESC and return to the Settings menu.

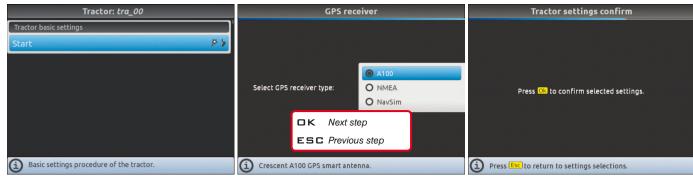


Fig. 49 Fig. 50

BASIC TRACTOR SETTINGS

- A100: ARAG receiver code 520100.693.
- NMEA: all GPS receivers with NMEA183 protocol and with the following features:
 - 10 Hz GGA message; latitude and longitude coordinates with at least 6 decimal digits.
 - 10 Hz VTG message.
 - 0.1 Hz ZTA message.
 - Serial port 57600 bps, n, 8, 1.
- NavSim: available ONLY for ARAG personnel for system diagnostics.
- 4 Basic setup procedure is now complete (*). Now it is possible to start the advanced setup procedure, described in chap. 10.
- (*) This can be started again at any time, by selecting **Start** in the **Implement** and **Tractor** menu.

END 9 Basic settings



















10 ADVANCED SETUP

ACTIVE SETTINGS



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

Fig. 51

IMPLEMENT, TRACTOR AND USER TYPE SELECTION

1 Press F7 in the "Home" screen (Fig. 52)

2 In the screen shown in Fig. 53 select the **Implement** (**Tractor** or **User**) and press □ K.

Now it possible to create a new setup (3a or 3b), or select an existing one (3c):

in both cases the setup will be enabled and the name will be displayed in the "Home" screen (Fig. 51).



Fig. 52 Fig. 53

3a NEW SETUP CREATION:

Select **New Implement** (**∂** in Fig. 54) to create a new setup and press □ K.

Type the name (in the example of Fig. 55: **imp01**) and press □ K.

The new setup is now active on the computer (Fig. 56). Before moving on to the advanced setup procedure repeat the basic setup (chap. 9).

You can follow the same procedure for Tractor (b) and User (c) setup.



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

Select **Copy implement** (d in Fig. 57) to copy the active setup and save the data on a new one; press $\square K$.

Type the name (in the example of Fig. 58: imp01) and press $\square K$.

The saved setup is now active on the computer (Fig. 59). Proceed to advanced setup.



CONTINUES











Scroll (UP / DOWN) Value Increase / decrease







3c SETUP SELECTION:

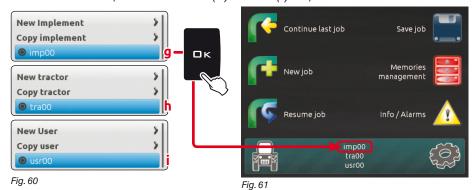
Instead of saving, you can select a previously saved setup.

Select the setup from the names on the list (9 in the example of Fig. 60: imp00) and press

K.

The selected setup is now active on the computer (Fig. 61). Proceed to advanced setup.

You can follow the same procedure for Tractor (h) and User (i) setup.



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

ADVANCED SETUP



Fig. 63

Implement: imp00 Implement basic setting F> Implement advanced settings Boom settings > Flowmeter > Filling flowmeter > > Pressure sensor Spray spots configurations setting.

Fig. 64

Fig. 62

- Start guided setup procedure for Bravo 400S: select the desired menu item (with F4 or F6) and press **K** to enter settings for the selected item.

THE BASIC SETTINGS (Chap. 9), AFFECT WHICH MENU ITEMS ARE DISPLAYED IN Fig. 64 AND WHICH ADVANCED SETTINGS IT IS POSSIBLE TO CONTROL.

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













Value





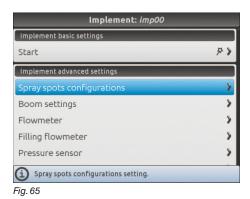






The type of implement displayed depends on the selected basic settings (chap. 9), affecting which items are displayed in Fig. 65.

10.1 Implement - SPRAYER (SELETRON)



Implement advanced settings

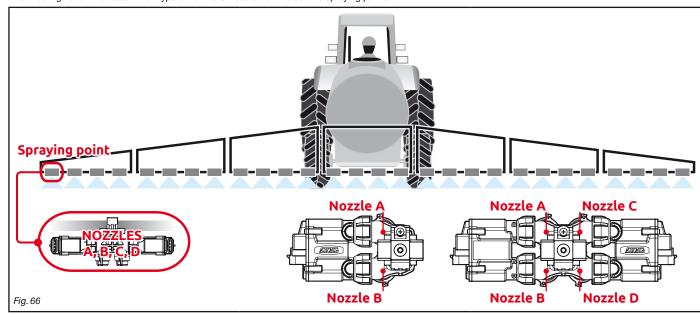
- Spray spots configurations (par. 10.1.1).
- Boom settings (par. 10.1.2).
- Flowmeter (par. 10.1.3).
- Filling flowmeter (par. 10.1.4).
- Pressure sensor (par. 10.1.5).
- Valves (par. 10.1.6).
- Nozzles data (par. 10.1.7).
- Wheel sensor (par. 10.1.8).
- Rev counter (par. 10.1.9).
- Tank (par. 10.1.10).
- Alarms (par. 10.1.11).
- Working parameters (par. 10.1.12).
- Device calibration (par. 10.1.13).

Implement geometry

- 3-point implement geometry settings (par. 10.1.14).
- Towed implement geometry settings (par. 10.1.15).

10.1.1 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.



During guided setup (chap. 9), 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. 67).
- Select the nozzle you wish to set up (A, B, C or D, in Fig. 68).
- Select one of the suggested nozzles (Fig. 69): 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.













Scroll (UP / DOWN) Value Increase / decrease



Exit function or data change



10.1.2 Boom settings



Fig. 70

Depending on the selected settings, the number of spraying points as well as the value of the boom width, displayed in Fig. 70, will change.

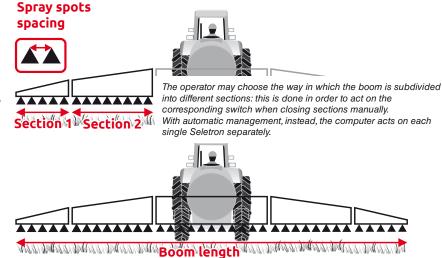


Fig. 71



Fig. 72



Fig. 73



FIG. 74

Spray spots spacing

Indicate the distance between spraying points (nozzle holders).

Sections number

Indicate the total 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. 70).



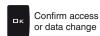








Scroll (UP / DOWN) Value Increase / decrease





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



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

378

2366

7.90

600 158.5

200 52.8

30

10 2.60

ORION FLOWMETERS

Туре	Constant			mum rate	Maximum flowrate	
	pls/l	pls/gal	l/min	GPM	l/min	GPM
462x 2xxx	1025	3880	2.5	0.7	50	13.2
462x3xxx	625	2366	5.0	1.3	100	26.4
462x4xxx	250	946	10.0	2.6	200	52.8
462x5xxx	132	500	20.0	5.3	400	105.7
462x7xxx	60	227	40.0	10.6	800	211.3

WOLF FLOWMETERS

Fig. 75

	Туре:	
0	Orion 4621 X A0 XXXX	
0	Orion 4621 X A1 XXXX	
0	Orion 4621 X A2 XXXX	
0	Orion 4621 X A3 XXXX	
0	Orion 462 XX A4 XXXX	
0	Orion 4622 X A5 XXXX	
0	Orion 4622 X A6 XXXX	
0	Wolf 462 X 2 XXX	
(i)	Orion 10 ÷ 200 l/min (2.6 ÷ 53 GPM).	

• Туре

4622xA6xxxx

Other

Indicate the type of flowmeter installed.

100

625



Constant

Indicate the constant of the installed flowmeter.

Fig. 77



Maximum flowrate: 200.⊌ l/min Minimum value: 0.1 l/min Maximum value: 999.9 l/min Maximum flowrate limit.

Minimum flowrate Maximum flowrate

> The items Minimum flowrate and Maximum flowrate can be modified only when the option Other (Type menu in Fig. 76) is enabled.

Enable the relevant function on the Alarms menu (par. 10.1.11) 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. 17.1 Error messages.

Fig. 78

selected character

Delete selected character



(LEFT / RIGHT)

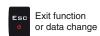


Fig. 79

(UP / DOWN)

Value Increase / decrease







Filling flowmeter



Fig. 80

Activation status

To configure the items on this menu, you must enable the filling flowmeter

(Flowmeter enabled / Flowmeter disabled).

Enter the values for the filling flowmeter installed on the system: the following table indicates the values which will be set automatically by selecting the corresponding flowmeter code.

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

ORION FLOWMETERS

П	plo/gol	., .			
	pis/gai	I/min	GPM	l/min	GPM
	1135	10	2.60	200	52.8
	568	20	5.30	400	105.7
	378	30	7.90	600	158.5
		568	568 20	568 20 5.30	568 20 5.30 400

Other	625	2366	10	2.60	200	52.8

WOLF FLOWMETERS

Туре	Constant		Minimum flowrate		Maximum flowrate	
	pls/l	pls/gal	l/min	GPM	l/min	GPM
462x4xxx	250	946	10.0	2.6	200	52.8
462x5xxx	132	500	20.0	5.3	400	105.7
462x7xxx	60	227	40.0	10.6	800	211.3



Fig. 81



Indicate the type of flowmeter installed.

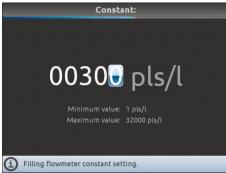


Fig. 82

Constant

Indicate the constant of the installed filling flowmeter.

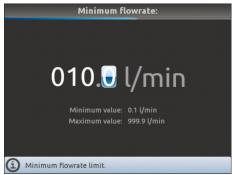
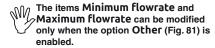


Fig. 83



Fig. 84

Minimum flowrate Maximum flowrate



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











(UP / DOWN) Value







10.1.5 Pressure sensor

Pressure sensor Activation status: Type: 466113.200 \$ Maximum pressure: 20.0 bar i Enable/Disable the pressure sensor. Fig. 85

Activation status

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

- Enter the values for the pressure sensor installed on the system.

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

ARAG PRESSURE SENSOR

	Maximum pressure			
Туре	bar	PSI		
ARAG 466113.200	20.0	290		
ARAG 466113.500	50.0	725		
Other	50.0	725		

Depending on the basic settings (**Delivery cal. sensor**, chap. 9), 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.



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.

Fig. 87

Pressure sensor's fullscale setting.













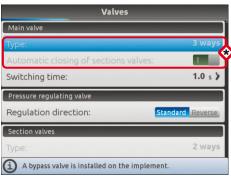


Value

Increase /

decrease

10.1.6 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. 9). Therefore, they cannot be modified from this screen.

Fig. 88

MAIN VALVE

• Type (REMINDER)

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

Automatic closing of sections valves (REMINDER)

On a Seletron system, automatic closing of sections is automatically enabled ("M" type):

The section valves are closed or opened by acting on the main switch, provided that the section valve specific switch is in the correct position, i.e. if the section switches are set to OFF (lever down), acting on the main switch the sections will not be controlled. If one or more section valve switches are set to ON (lever up), opening or closing the main switch opens or closes the section valves as well.

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.

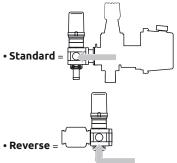


Fia. 89

PRESSURE REGULATING VALVE

Regulation direction

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



CONTINUES > > >







Scroll (LEFT / RIGHT)



Scroll (UP / DOWN)

Increase /

decrease







SECTION VALVES



Type (REMINDER)

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



Fig. 91

Shut-off time

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



Fig. 92

Switch-on time

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

END 10.1.6 Valves











Scroll Value (UP / Increase / DOWN) decrease

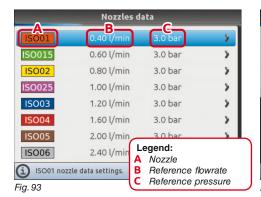


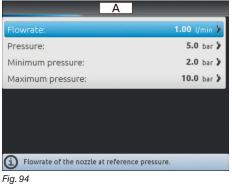




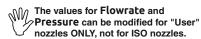
ADVANCED SETUP "IMPLEMENT - SPRAYER (SELETRON)"

10.1.7 Nozzles data





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



- Select the nozzle you wish to set up (Fig. 93).
- Enter the relevant features (Fig. 94).
- If necessary, repeat the setup for each nozzle.



Fig. 95



Fig. 97



Fig. 96



Fig. 98

FlowratePressure

Set the reference flowrate and pressure for the selected nozzle.

The rate of the nozzle being used allows Bravo 400S to calculate the pressure without a pressure sensor.

Minimum pressureMaximum pressure

Set the pressure limits for the selected nozzle. Enable the relevant function on the **Alarms** menu (par. 10.1.11) 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. 17.1 Error messages.

Pressure limits for the nozzle in use allow Bravo 400S to select the suitable nozzle during spraying, therefore they must be set correctly.

















10.1.8 Wheel sensor

Information concerning speed is usually received by the GPS, which is connected directly to Bravo 400S.

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

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.

Kwheel = distance traveled (cm)

no. of detection points x 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 tyres 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.

10.1.9 Rev counter



Activation status

To configure the items on this menu, you must enable the rev counter (Rev counter enabled / Rev counter disabled).

Enter the values for the rev counter installed on the system.





Constant

Indicate the constant of the installed rev counter.

Fig. 101



Fig. 102



Fig. 103

Minimum rotation speedMaximum rotation speed

Enable the relevant function on the **Alarms** menu (par. 10.1.11) 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. 17.1 Error messages.







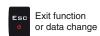


Scroll (LEFT / BIGHT)



Scroll (UP / DOWN) Value Increase / decrease







10.1.10 Tank



Set tank capacity and range value.

Fig. 104



Capacity

Indicate tank capacity.

Fig. 105



Fig. 106

• 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. 17.1 Error messages.







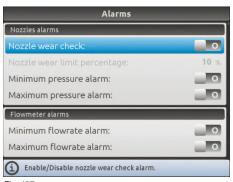








10.1.11 Alarms



Set Bravo 400S job alarms.

For the procedure to be followed when an alarm occurs, please refer to par. 17.1 Error messages.

Fig. 107

NOZZLES ALARMS

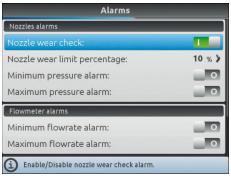


Fig. 108



Fig. 109

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

Check disabled

Nozzle wear check

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

Nozzle wear limit percentage

Set the acceptable threshold: Bravo 400S compares the effective rate read by the flowmeter and the one calculated by the pressure sensor.

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

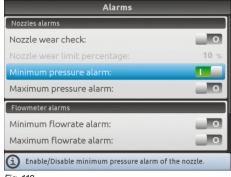


Fig. 110

 Minimum pressure alarm Maximum pressure alarm

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

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

Outside the range set in the **Minimum pressure** / **Maximum pressure** menus (par. 10.1.7 Nozzles data), the computer triggers an alarm.

CONTINUES >>>













Value Increase / decrease







FLOWMETER ALARMS



Minimum flowrate alarmMaximum flowrate alarm

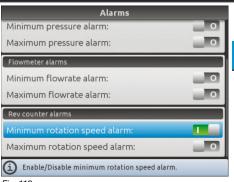
Allows to enable/disable minimum and maximum flowrate alarms for the flowmeter.

- 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. 10.1.3 Flowmeter), the computer triggers an alarm.

Fig. 111

REV COUNTER ALARMS



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. 10.1.9), the computer triggers an alarm.

Fig. 112

END 10.1.11 Alarms













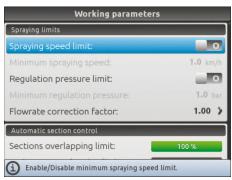








10.1.12 Working parameters



Set the farming machine job limits.

Fig. 113

SPRAYING LIMITS

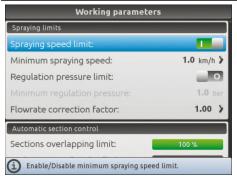


Fig. 114

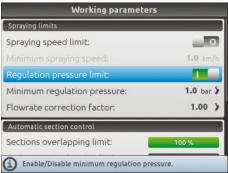


Fig. 116



Fig. 118



Fig. 115



Fig. 117

Spraying speed limit

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

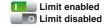


Minimum spraying speed

Set the minimum spraying speed: Bravo 400S 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:



Minimum regulation pressure

Set the minimum spraying pressure: Bravo 400S blocks the automatic regulation of the proportional valve when the pressure is lower than the set value.

Flowrate correction factor

Set the density factor of the sprayed fluid.

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 factor to 1.00.

CONTINUES > > >







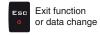


Scroll (LEFT / RIGHT)



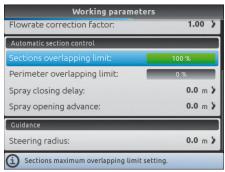
(UP / DOWN)







AUTOMATIC SECTION CONTROL

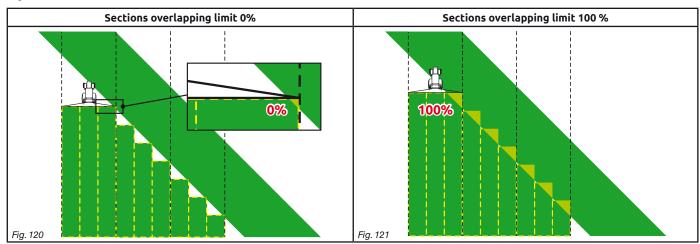


Sections overlapping limit

Set the acceptable threshold for overlapping of already-sprayed areas.

When this value is exceeded, Bravo 400S restores the correct spraying: depending on the section management mode enabled (par. 13.7 Boom section management), Bravo 400S will prompt the operator to close the relevant valves or proceed to the automatic closing of boom sections.

Fig. 119



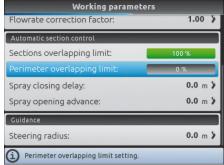


Fig. 122

Perimeter overlapping limit

Set the acceptable threshold for overlapping of spraying with respect to field perimeter.

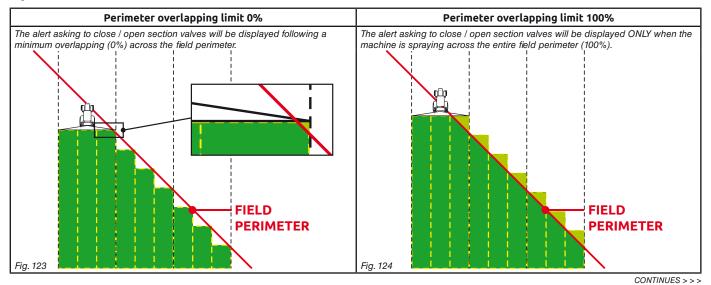
When this value is exceeded, Bravo 400S restores the correct spraying:

Bravo 400S will notify the operator that the section valves spraying outside the field perimeter must be opened or closed.

W TI

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. 16.4).
- Enabling automatic section management: the icon on the guidance screen indicates that automatic management is enabled.



Enter selected character





Scroll (LEFT / RIGHT)



Scroll (UP / DOWN) Value Increase / decrease Con or d



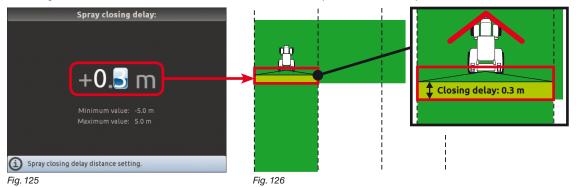
Esc Exit function or data change



Spray closing delay

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

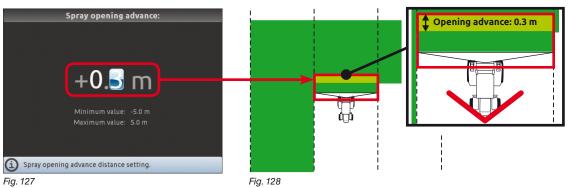
NOTE: Negative values indicate that sections are closed in advance with respect to the calculated point.



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.

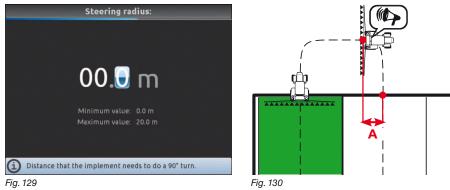


GUIDANCE

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 menu User > Steering warning (par. 10.4.4). This distance should correspond to the implement steering radius (A in Fig. 130), 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.



END 10.1.12 Working parameters











Scroll (UP / DOWN)

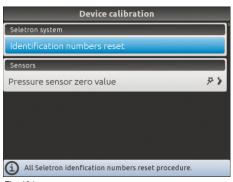








10.1.13 Device calibration

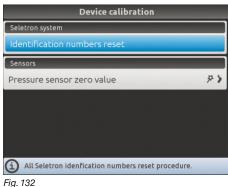


Allows to start calibration for the devices connected to Bravo 400S.

Fig. 131

SELETRON SYSTEM

Identification numbers reset







Allows to reset the identification numbers of all saved Seletrons, before repeating the pairing procedure (chap. 11).

- Select Identification numbers reset (Fig. 132) and press □ K.
- The message in Fig. 133 is displayed: confirm reset by pressing □ K again.

At the end of the reset procedure, **DISCONNECT ALL SELETRONS and start a** new pairing procedure (chap. 11).

SENSORS

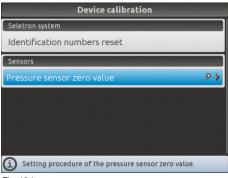


Fig. 134

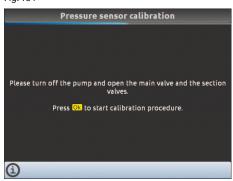


Fig. 135



o access this menu, the pressure sensor must be enabled (🔃 , par. 10.1.5)

Pressure sensor zero value

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

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

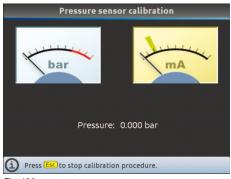


Fig. 136

1 Select Pressure sensor zero value (Fig. 134) and press □ K.

2 The message in Fig. 135 is displayed: follow the instructions, then start the procedure by pressing DK.

3 Press □ K 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.













Increase / decrease



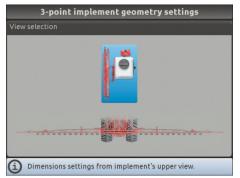






The geometry of the displayed implement depends on the selected basic settings (chap. 9).

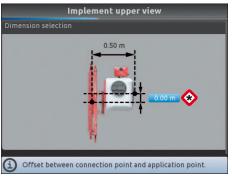
10.1.14 3-point implement geometry settings (SYSTEM WITH 3-POINT HITCH)

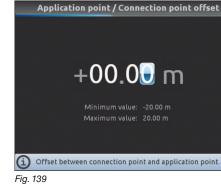


Enter farming machine measures:

- Press the arrow keys (UP, DOWN, LEFT, RIGHT) to move across different implement views.
- Confirm by pressing **GK** to enter setup.

Fig. 137



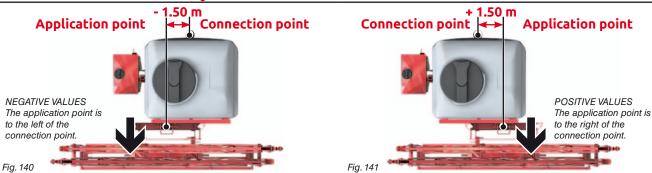


Implement upper view

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

Fig. 138





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



CONTINUES > > >







F8 (



Scroll (UP / DOWN)

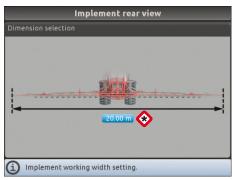






ADVANCED SETUP "IMPLEMENT - SPRAYER (SELETRON)"

>>> 10.1.14 3-point implement geometry settings (SYSTEM WITH 3-POINT HITCH)





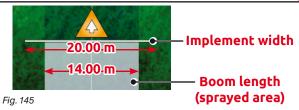
• Implement rear view

- Confirm by pressing $\hfill\square\,\ensuremath{\mathbf{K}}$ to enter setup.
- Enter the value.

Fig. 143

Fig. 144

♦ Implement width



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

If you wish to see two different widths displayed on the guidance screen, as in the example of Fig. 145, set the **Implement width** to a different value than the boom width (**Implement > Boom settings** menu, par 10.1.2).

END 10.1.14 3-point implement geometry settings (SYSTEM WITH 3-POINT HITCH)











Scroll Value Increase / DOWN)



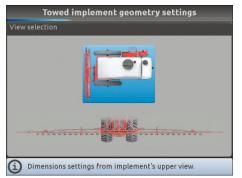






The geometry of the displayed implement depends on the selected basic settings (chap. 9).

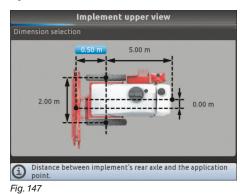
10.1.15 Towed implement geometry settings (SYSTEM WITH TOWING HITCH)



Enter farming machine measures:

- Press the arrow keys (UP, DOWN, LEFT, RIGHT) to move across different implement views.
- Confirm by pressing **DK** to enter setup.

Fig. 146



Implement's rear axle / Application point

OO.5

Minimum value: 0.00 m

Maximum value: 20.00 m

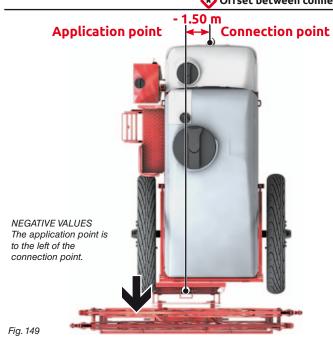
Distance between implement's rear axle and the application point.

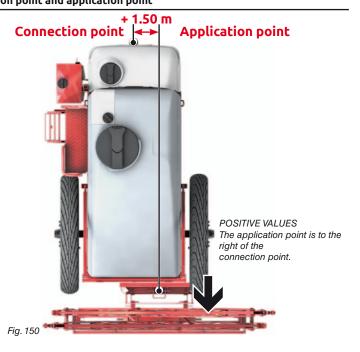
Fig. 148

Implement upper view

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

Offset between connection point and application point





CONTINUES > > >















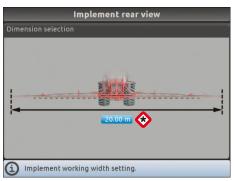






ADVANCED SETUP "IMPLEMENT - SPRAYER (SELETRON)"

>>> 10.1.15 Towed implement geometry settings (SYSTEM WITH TOWING HITCH)



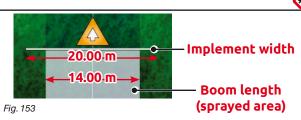


• Implement rear view

- Confirm by pressing **G** K to enter setup.
- Enter the value.

Fig. 151

♠ Implement width



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

If you wish to see two different widths displayed on the guidance screen, as in the example of Fig. 153, set the **Implement width** to a different value than the boom width (**Implement > Boom settings** menu, par 10.1.2).

END 10.1.15 Towed implement geometry settings (SYSTEM WITH TOWING HITCH)











Scroll Value (UP / Increase / DOWN)





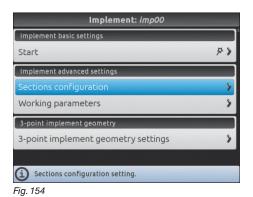


ADVANCED SETUP "IMPLEMENT - GPS GUIDANCE MONITOR"



The type of implement displayed depends on the selected basic settings (chap. 9), which affect which items are displayed in Fig. 154.

10.2 Implement - GPS GUIDANCE MONITOR



Implement advanced settings

- Sections configuration (par. 10.2.1).
- Working parameters (par. 10.2.2).

Implement geometry

- 3-point implement geometry settings (par. 10.2.3).
- Towed implement geometry settings (par. 10.2.4).

10.2.1 Sections configuration



Fig. 155

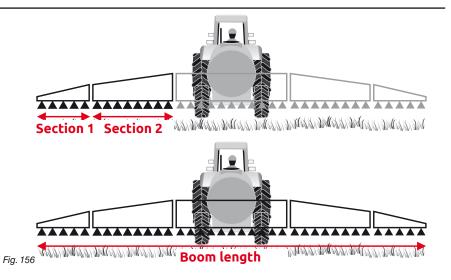
The boom width value displayed in Fig. 155 will vary depending on the selected setup.



Fig. 157



Fig. 158



Sections number

Indicate the total number of boom sections.

• Section 1 ÷ 13

- Indicate the width of each boom section.
- Repeat the setup for each section (Fig. 155).



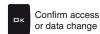


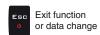








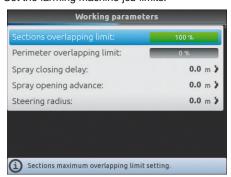






Working parameters

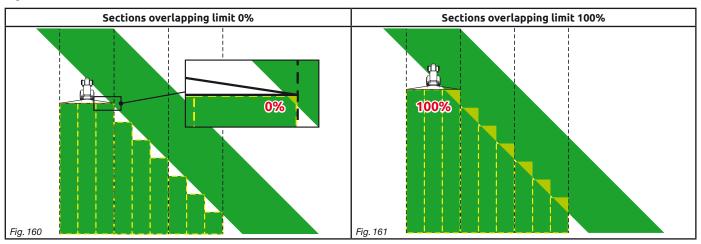
Set the farming machine job limits.



Sections overlapping limit

Set the acceptable threshold for overlapping of already-sprayed areas. When this value is exceeded, Bravo 400S restores the correct spraying: depending on the section management mode enabled (par. 13.7 Boom section management), Bravo 400S will prompt the operator to close the relevant valves or proceed to the automatic closing of boom sections.

Fig. 159



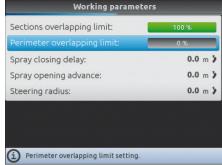


Fig. 162

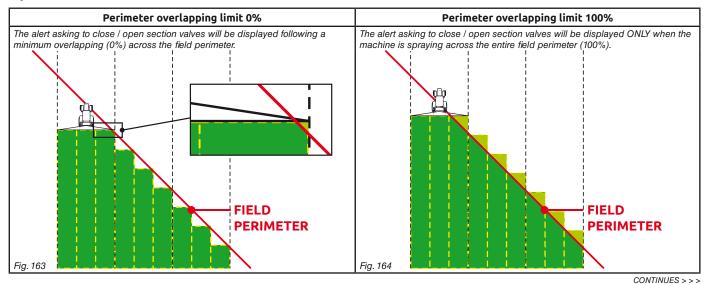
Perimeter overlapping limit

W

Set the acceptable threshold for overlapping of spraying with respect to field perimeter. When this value is exceeded, Bravo 400S restores the correct spraying: Bravo 400S will notify the operator that the section valves spraying outside the field perimeter must be opened or closed.

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

- Drawing the field perimeter (red line in the figures) using the function F4 Surface (par. 16.4).
- Enabling automatic section management: the icon on the guidance screen indicates that automatic management is enabled.



selected character









(UP / DOWN) Value

Confirm access Increase / or data change decrease

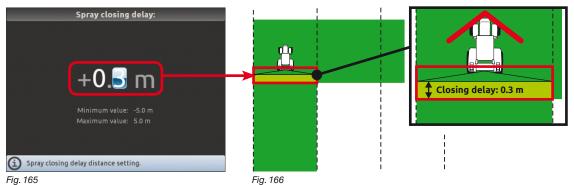




Spray closing delay

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

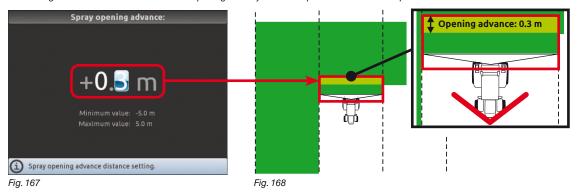
NOTE: Negative values indicate that sections are closed in advance with respect to the calculated point.



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.

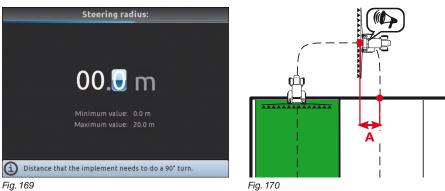


Steering radius

By setting this value, an acoustic alarm will indicate the exact moment when the operator must steer in order to align the machine with the following track, avoiding unsprayed or overlapping areas between the two sprays.

This distance should correspond to the implement steering radius (A in Fig. 170), 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.



END 10.2.2 Working parameters







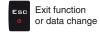




Scroll (UP / DOWN)





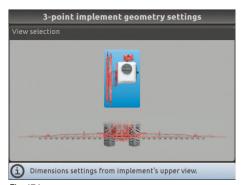






The geometry of the displayed implement depends on the selected basic settings (chap. 9).

10.2.3 3-point implement geometry settings (SYSTEM WITH 3-POINT HITCH)



Enter farming machine measures:

- Press the arrow keys (UP, DOWN, LEFT, RIGHT) to move across different implement views.
- Confirm by pressing □ K to enter setup.



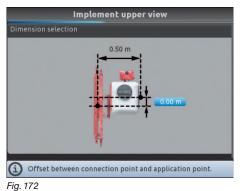
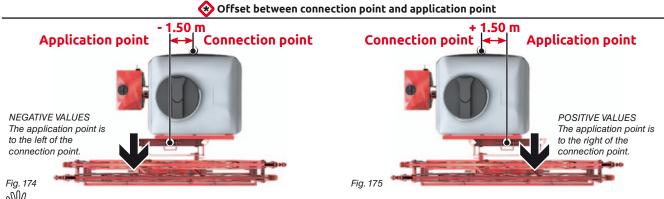




Fig. 173

Implement upper view

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



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

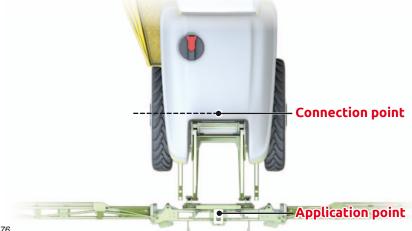


Fig. 176

CONTINUES > > >











Scroll Value Increase / DOWN)

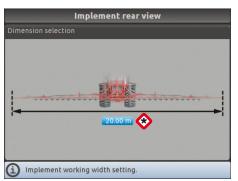






ADVANCED SETUP "IMPLEMENT - GPS GUIDANCE MONITOR"

>>> 10.2.3 3-point implement geometry settings (SYSTEM WITH 3-POINT HITCH)





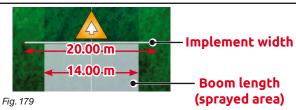
• Implement rear view

- Confirm by pressing **GK** to enter setup.
- Enter the value.

Fig. 177

Fig. 178

♠ Implement width



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

If you wish to see two different widths displayed on the guidance screen, as in the example of Fig. 179, set the **Implement width** to a different value than the boom width (**Implement > Sections configuration** menu, par 10.2.1).

END 10.2.3 3-point implement geometry settings (SYSTEM WITH 3-POINT HITCH)







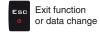










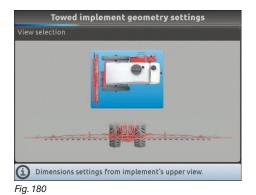






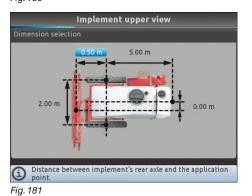
The geometry of the displayed implement depends on the selected basic settings (chap. 9).

10.2.4 Towed implement geometry settings (SYSTEM WITH TOWING HITCH)



Enter farming machine measures:

- Press the arrow keys (UP, DOWN, LEFT, RIGHT) to move across different implement views.
- Confirm by pressing **DK** to enter setup.



Implement's rear axle / Application point

OO.5

Minimum value: 0.00 m

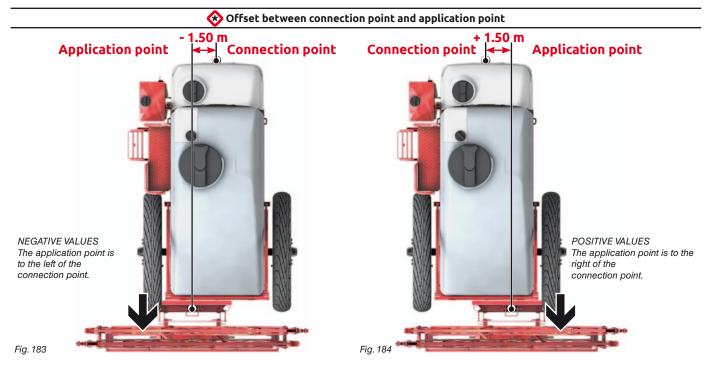
Maximum value: 20.00 m

Distance between implement's rear axle and the application point.

Fig. 182

Implement upper view

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



CONTINUES > > >











Scroll (UP / DOWN)

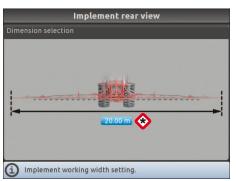






ADVANCED SETUP "IMPLEMENT - GPS GUIDANCE MONITOR"

>>> 10.2.4 Towed implement geometry settings (SYSTEM WITH TOWING HITCH)





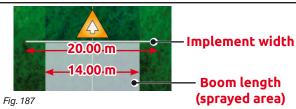
• Implement rear view

- Confirm by pressing **GK** to enter setup.
- Enter the value.

Fig. 185

Fia. 186

♦ Implement width



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

If you wish to see two different widths displayed on the guidance screen, as in the example of Fig. 187, set the **Implement width** to a different value than the boom width (**Implement > Sections configuration** menu, par 10.2.1).

END 10.2.4 Towed implement geometry settings (SYSTEM WITH TOWING HITCH)





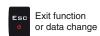














Tractor

The tractor setup depends on the selected basic settings (chap. 9), which affect which items are displayed in Fig. 188.



• DGPS (par. 10.3.1).

A100 / GPS receiver

PDOP / HDOP alarm (par. 10.3.2).

Tractor advanced settings

• Camera (par. 10.3.3).

Tractor geometry

• Tractor geometry settings (par. 10.3.4).

10.3.1 DGPS



Allows to enable / disable the DGPS (SBAS) differential correction function

(DGPS correction enabled / DGPS correction disabled).

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

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

Fia. 189

10.3.2 PDOP / HDOP alarm

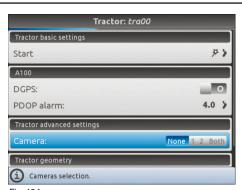


"PDOP" and "HDOP" are parameters that depend on the position and number of satellites in space that affect the positional precision of the system (longitude and latitude); the lower the value, the higher is the driving precision.

The precision alarm is triggered when the value of PDOP or HDOP measured by the GPS receiver is above the set limit. We recommend NOT to set values above 4.0.

Fig. 190

10.3.3 Camera



It is possible to connect up to 2 cameras to Bravo 400S 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

2 1 camera connected to input no.2

Both 2 cameras connected

Fig. 191











(UP / DOWN)





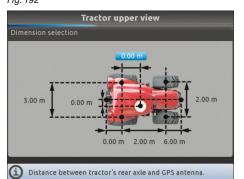


10.3.4 Tractor geometry settings



Fig. 192

Fig. 193



Enter farming machine measures:

- Press the arrow keys (UP, DOWN, LEFT, RIGHT) to move across different tractor views.
- Confirm by pressing **DK** to enter setup.



Tractor upper view

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



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

- Press the arrow keys (UP, DOWN, LEFT, RIGHT) to move across values: the description of the selected value will appear on the display. - Confirm by pressing $\,\square\, K$ to enter setup.

- Select and enter, one by one, all values.

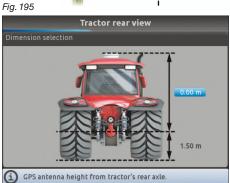


Fig. 196



GPS antenna / Rear axle height 00.0 m Maximum value: 20.00 m GPS antenna height from tractor's rear axle.

Fig. 197



Steering angle

• Tractor rear view

- Enter the value.

- Press $\square \, \mathbf{K}$ to enter maximum steering angle setup.
- Enter the value.

















Fig. 198

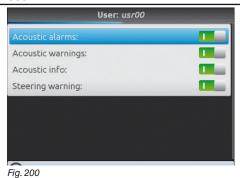








10.4 User



Alarms

Critical alarms

Increase rotation speed!

Low priority alarms
Decelerate! Insufficient flowrate

Info
Minimum tank level reached!

RPM value lower than minimum set limit.

Fig. 201

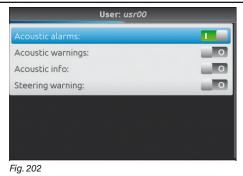
Bravo 400S features an **Alarms** menu (Fig. 201, accessible from the "Home" menu by pressing **F6**). This page displays all active notifications for the operator.

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 alarms (par. 10.4.1).
- Acoustic warnings (par. 10.4.2).
- Acoustic info (par. 10.4.3).
- Steering warning (par. 10.4.4).

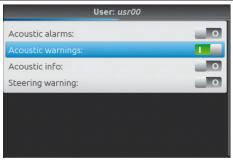
10.4.1 Acoustic alarms



Allows to enable/disable the acoustic signal when new **Alarms** (Fig. 201) are triggered.

Signal enabled

10.4.2 Acoustic warnings



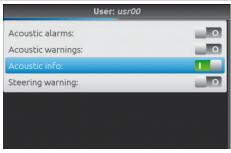
Allows to enable/disable the acoustic signal when new Low priority alarms (Fig. 201) are triggered.

Signal enabled
Signal disabled

Signal disabled

Fig. 203

10.4.3 Acoustic info

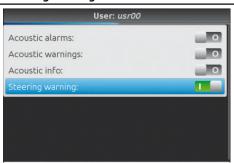


Allows to enable/disable the acoustic signal when new Info (Fig. 201) are triggered.

Signal enabled
Signal disabled

Fig. 204

10.4.4 Steering warning



Allows to enable/disable the acoustic signal when the operator must steer in order to align the machine with the following track, avoiding unsprayed or overlapping areas between the two sprays (**Steering radius** set in par. 10.1.12 or 10.2.2 Working parameters).

Signal enabled
Signal disabled

Fig. 205







Scroll (LEFT / RIGHT)



Scroll Value Increase / DOWN)







General options

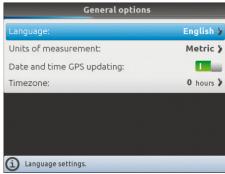


Fig. 206

Set the device system options:

- Language (par. 10.5.1). Units of measurement (par. 10.5.2).
- Date and time GPS updating (par. 10.5.3).
- Timezone (par. 10.5.4).
 Date and time (par. 10.5.5).

10.5.1 Language



Set the computer language.

Fig. 207

10.5.2 Units of measurement

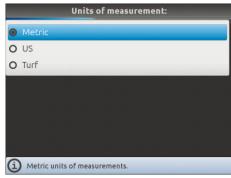


Fig. 208

Set the computer units of measurement:

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





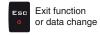














10.5.3 Date and time GPS updating

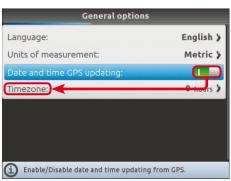


Fig. 209

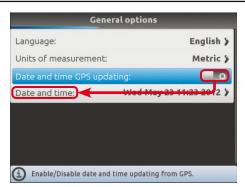


Fig. 210

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

Updating enabled

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

The display will show the menu Timezone (Fig. 209).

Updating disabled Set date and time manually.

The display will show the menu Date and time (Fig. 210).

10.5.4 Timezone

Timezone: +0 hours

Fig. 211

Timezone data setting.

To configure this menu, you must enable Date and time GPS updating (Fig. 209).

Now set your local timezone with respect to Greenwich Mean Time*.

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

* List of the main timezones:

United Kingdom, Portugal, Liberia	0
Azores	-1
Mid-Atlantic islands	-2
Argentina, Brazil	-3
AST (USA), Venezuela	-4
EST (USA), Colombia	-5
CST (USA), Eastern Mexico	-6
MST (USA)	-7
PST (USA)	-8
AKST (USA)	-9
HST (USA), Hawaii	-10
Midway Islands	-11
Enewetak	-12

Central Europe (Germany, France, Italy)	+1
Latvia, Lithuania, Romania, Greece, Israel	+2
Western Russia, Iraq	+3
United Arab Emirates	+4
Pakistan	+5
Kazakhstan	+6
Thailand	+7
China, Western Australia	+8
Japan	+9
Eastern Australia	+10
Eastern Russia	+11
Fiji Islands, New Zealand	+12

10.5.5 Date and time



To configure the items on this menu, you must disable **Date and time GPS updating** (Fig. 210). Now set the computer time.











(UP / DOWN)





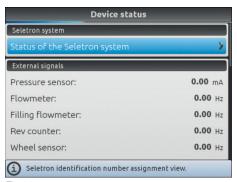


ADVANCED SETUP "DEVICE STATUS - SPRAYER (SELETRON)"



The aspect of this menu depends on the selected basic settings (chap. 9), which affect which items are displayed in Fig. 213.

10.6 Device status - SPRAYER (SELETRON)



Allows checking the correct operation of Bravo 400S: the description of the selected item will appear on the display.

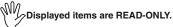


Fig. 213

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. 11 Seletron connection).

• DIAGNOSTICS

Allows to check the connection of each single Seletron.

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. 214 shows the corresponding number: select the Seletron device by using the arrow keys (UP, DOWN, RIGHT, LEFT).



Fig. 214

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

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

Use the function Identification numbers reset (par. 10.1.13).

CONTINUES > > >





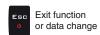






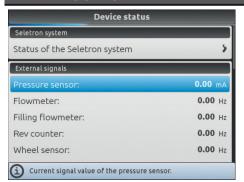






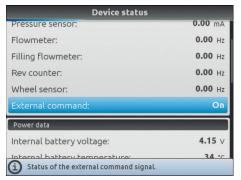


EXTERNAL SIGNALS



Bravo 400S detects frequency and current sent by each sensor on the system.

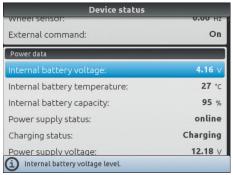
Fig. 215



Bravo 400S displays the status of the external main control which starts the spraying.

Fig. 216

POWER DATA

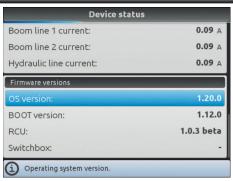


717 Fig. 218

Device status Internal battery temperature 95 % Internal battery capacity: Power supply status: online Charging Charging status: Power supply voltage: 12.19 V Sensors and motor valves line current: 0.09 A 0.09 A Boom line 1 current 0.09 A Boom line 2 current: Hydraulic line current: 0.09 A Current consumption of boom line number 1.

Bravo 400S checks the status of the power supply.

FIRMWARE VERSIONS



Bravo 400S displays firmware versions.

rig. 219

END 10.6 Device status - SPRAYER (SELETRON)











Scroll Value Increase / DOWN)









The aspect of this menu depends on the selected basic settings (chap. 9), which affect which items are displayed in Fig. 220.

10.7 Device status - GPS GUIDANCE MONITOR

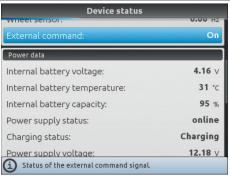


Allows checking the correct operation of Bravo 400S: the description of the selected item will appear on the display.

Displayed items are READ-ONLY.

Fig. 220

EXTERNAL SIGNALS



Bravo 400S displays the status of the external main control which starts the spraying.

Fig. 221

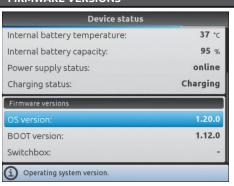
POWER DATA



Bravo 400S checks the status of the power supply.

Fig. 222

FIRMWARE VERSIONS



Bravo 400S displays firmware versions.

Fig. 223







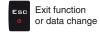














11 SELETRON CONNECTION

000

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

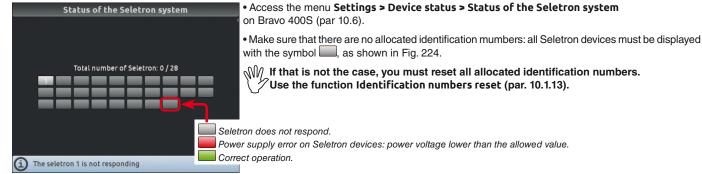


Fig. 224

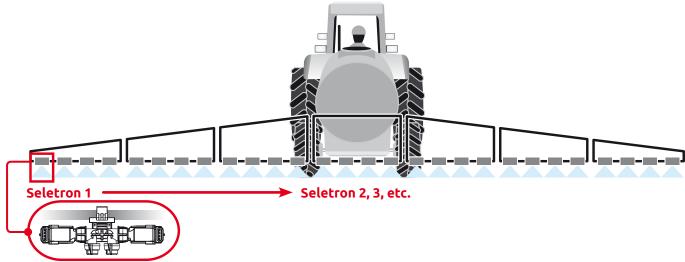


Fig. 225

- Connect the first Seletron device and wait for the acoustic signal from the cabin: Seletron 1 is the one furthest to the left when looking at the machine from behind (Fig. 225).
- Wait until you hear the acoustic signal, then connect the following Seletron device; continue to connect the remaining ones, from left to right until the end of the boom (waiting to hear the acoustic signal before each one).



Fig. 226



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.

CONTINUES > > >

CONNECTION SEQUENCE FOR SINGLE AND TWIN SELETRON DEVICES

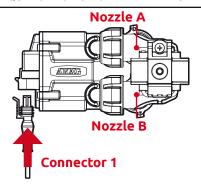


Fig. 227

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

CONNECTION SEQUENCE FOR FOURFOLD SELETRON DEVICES

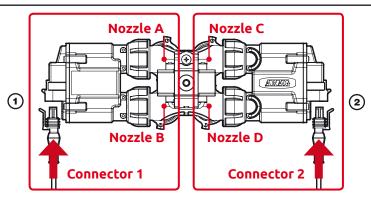


Fig. 228

- 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. 228).
- 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).

CONNECTION ERRORS

- The acoustic signal from the cabin is not emitted: check the status of the last connected Seletron device on the display (Fig. 224). If the corresponding Seletron is represented with the symbol or limit of the corresponding Seletron is represented with the symbol or limit of the corresponding Seletron is represented with the symbol or limit of the corresponding Seletron is represented with the symbol or limit of the corresponding Seletron is represented with the symbol or limit of the corresponding Seletron is represented with the symbol or limit of the corresponding Seletron is represented with the symbol or limit of the corresponding Seletron is represented with the symbol or limit of the corresponding Seletron is represented with the symbol or limit of the corresponding Seletron is represented with the symbol or limit of the corresponding Seletron is represented with the symbol or limit of the corresponding Seletron is represented with the symbol or limit of the corresponding Seletron is represented with the symbol or limit of the corresponding Seletron is represented with the symbol or limit of the corresponding Seletron is represented with the symbol or limit of the corresponding Seletron is represented with the symbol or limit of the corresponding Seletron is represented with the symbol or limit of the corresponding Seletron is represented by the corresponding Seletron is represented b
- If the problem persists on the same Seletron, replace it before repeating the procedure.

END 11 Seletron connection

12 USE



When Bravo 400S is configured as a GPS GUIDANCE MONITOR (chap. 9) it does not control the valves: any intervention must be made separately. For valve control see the relevant instruction manual.

The opening / closing of sections must be notified to Bravo 400S with the dedicated switches (par. 12.2) to provide information on the activity in the field manually. In this way, Bravo 400S will collect data on the job.

12.1 Controls on computer

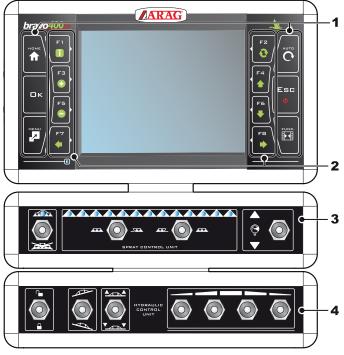


Fig. 229

Legend:

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

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

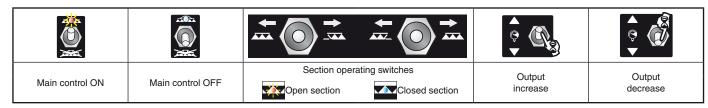
- 3 Operating switches for control unit valves
 4 Operating switches for oil-hydraulic functions (hydraulic valves)

12.2 Operating switches for control unit valves

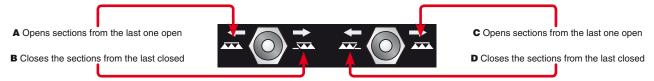
♦ WARNING

When Bravo 400S is configured as a GPS GUIDANCE MONITOR (chap. 9) the switches signal the status of each section but do not control them: any intervention on the valves must be made separately, by consulting the instruction manual of the relevant control.

Communicating what happens on the field, Bravo 400S will collect data on the job.



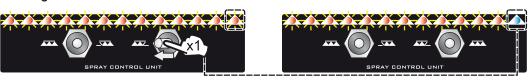
Switches for sequential control



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.

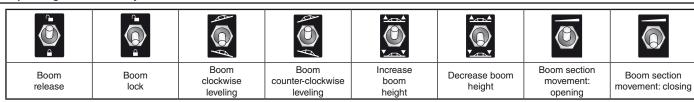
• Simultaneous opening of half boom sections





As in the example here keep the switch shifted to the right to open the boom closed half.

12.3 Operating switches for hydraulic valves

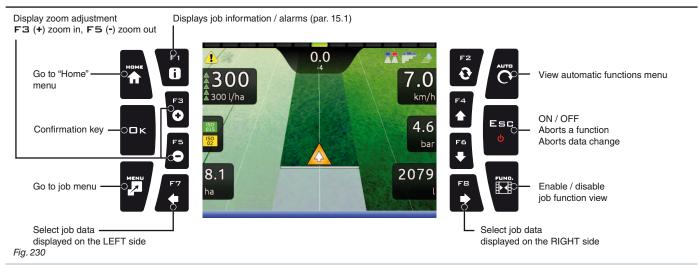


Guidance screen



When Bravo 400S is configured as a GPS GUIDANCE MONITOR (chap. 9) the display shows a limited amount of information.

USING THE KEYS

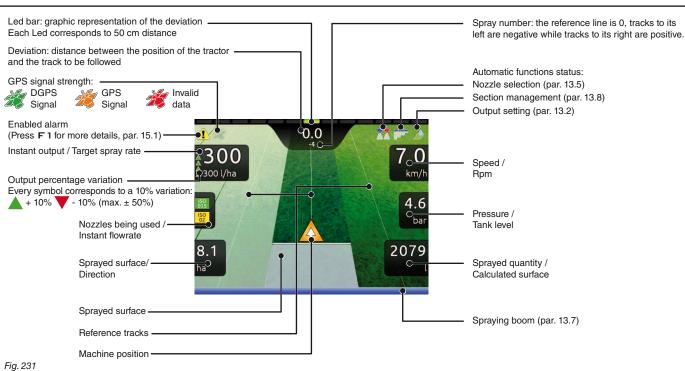


F1 ÷ F8: Contextual function keys

These keys control what is shown on the display (display zoom adjustment, etc., Fig. 230)

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



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. 232

- Go the beginning of the field to be sprayed.
- · Switch Bravo 400S on (par 7.2). After self-diagnostics, Bravo 400S displays the "Home" screen (Fig. 232).
- Begin a new job, using the function **F3 New job** (par. 14.3).
- Enter spraying settings.

When Bravo 400S is configured as a GPS GUIDANCE MONITOR (chap. 9) the settings are limited to starting the spraying.

SPRAYING SETTINGS





Target rate

- Set the spray rate value for the treatment (Fig. 234). Press **G**K to confirm the value.

Fig. 233



Fig. 235

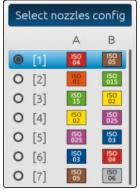


Fig. 236

Select nozzles config.

- Select a nozzle configuration from the list (Fig. 236). With this data indicate which nozzles are installed on the boom spraying points (preset configurations in the menu Spray spots configurations, par. 10.1.1).

- Press **C** to confirm.



Fig. 237



Fig. 238

Мар

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,

Bravo 400S will use the appropriate spray rate for the area that is being sprayed (par. 13.3 Importing and using a prescription map).

- Select a map from the list (Fig. 238).
- Press **DK** to confirm.

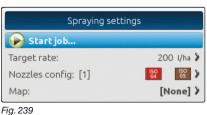


Fig. 240



Start job

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

CONTINUES







(LEFT / RIGHT)



Scroll (UP / DOWN)





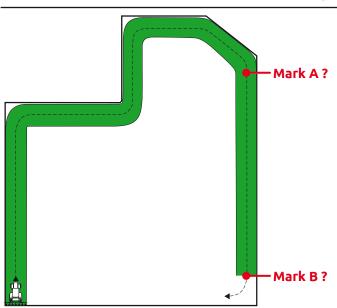




- In the job menu, set the tank level with the function F3 Tank (par. 15.3).
- Start spraying by acting on the main control valve switch.
- Start moving along the field perimeter.

Fig. 241

MARKING POINTS A AND B

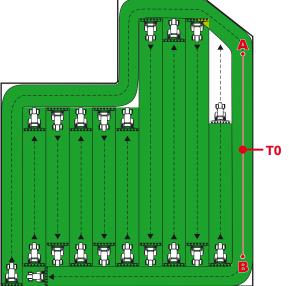


• While moving along the perimeter of the field, you will mark points A and B (as described in par. 16.7 F7 New AB).

This operation is fundamental for Bravo 400S to guide you, during spraying, along tracks parallel to the reference track obtained by marking points A and B.

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

Fig. 242



• 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. 243), by following the reference tracks shown on the display (Fig. 244).

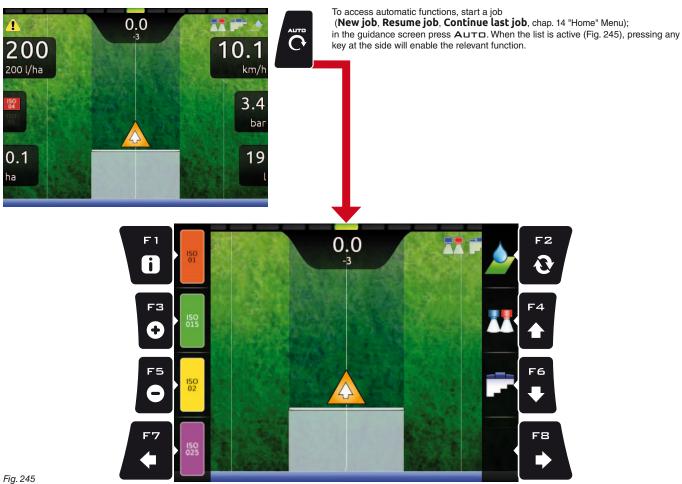


Fig. 244

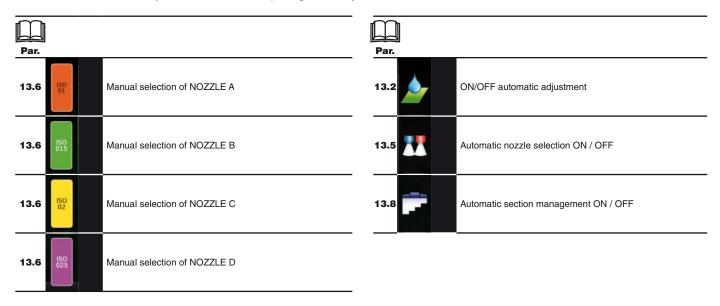
Fia. 243

At the beginning of a new job Bravo 400S gives driving directions in the "Straight parallel" mode. To change guidance mode see function F2 Guidance mode (par. 16.2).

13 AUTOMATIC FUNCTIONS



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





















13.1 Output adjustment

Bravo 400S can control chemical output with an automatic adjustment function (par. 13.2, DEFAULT: ON).

AUTOMATIC ADJUSTMENT ON

AUTOMATIC ADJUSTMENT OF

Bravo 400S keeps the set spray rate constant regardless from the changes in speed and boom section status.

In this case the spray rate can be set with the function **F 1 Spray rate** (par. 16.1), or by uploading a prescription map (par. 13.3) from one of the external memories (SD card or pendrive).

If necessary, during spraying, it is possible to intervene on the dedicated switch (par. 12.2) to adjust output to crop conditions, increasing or decreasing momentarily the application rate up to $\pm 50\%$.



AUTOMATIC ADJUSTMENT OFF (MANUAL)



Rate manual regulation shall be carried out with the suitable switch (par. 12.2).

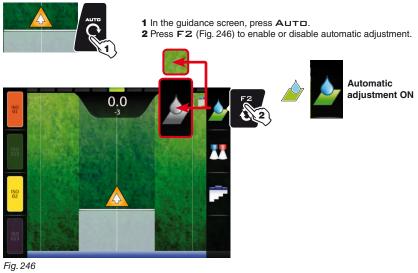




13.3

13.2 F2 Automatic adjustment ON/OFF

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





140.0 160.0 190.0 1/ha 1/ha 1/ha Fig. 247

Importing and using a prescription map

Bravo 400S 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 Bravo 400S 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 (SD card or pendrive) onto Bravo 400S:

- Save the map on one of the external memories.
- Copy the map onto the internal memory, through the menu Maps > Copy to internal memory (from SD card par. 14.4.2, or pendrive par. 14.4.3).
- Select one of the functions in the "Home" menu: F1 Continue last job (par. 14.1), F3 New job (par. 14.3) or F5 Resume job (par. 14.5).
- In the job start screen select the desired prescription map.
- Proceed with the job. According to the position detected by the GPS receiver, Bravo 400S will use the appropriate spray rate for the area that is being sprayed (Fig. 247).

If the tractor is on a "black" area on the map, i.e., without a spray rate indication, Bravo 400S stops spraying.











Scroll (UP / DOWN)







"AUTOMATIC FUNCTIONS" - MANUAL / AUTOMATIC NOZZLE SELECTION

13.4 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.

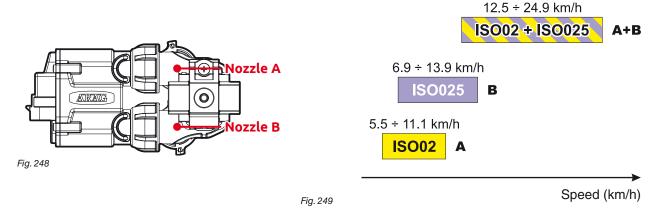
For instance, if we were spraying 100 l/ha with a violet evenfan nozzle ISO110025, the minimum operating speed shall be 6.9 km/h (corresponding to a pressure of 1 bar) while maximum speed shall be 13.9 Km/h (corresponding to a pressure of 4 bars).

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, Bravo 400S (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.

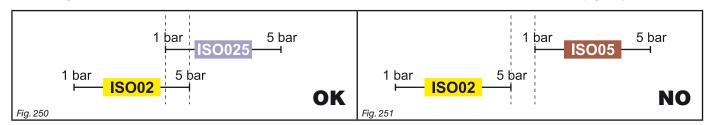


According to the set data and those detected by the sensors, Bravo 400S selects the suitable nozzle configuration constantly checking that:

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

When setting a 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. 250).
- 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. 251).



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.12.5) Bravo 400S automatically checks the rates and in case the above conditions are not respected, the computer will display the message Wrong nozzles configuration!

"AUTOMATIC FUNCTIONS" - MANUAL / AUTOMATIC NOZZLE SELECTION



13.5 F4 Automatic nozzle selection ON/OFF

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

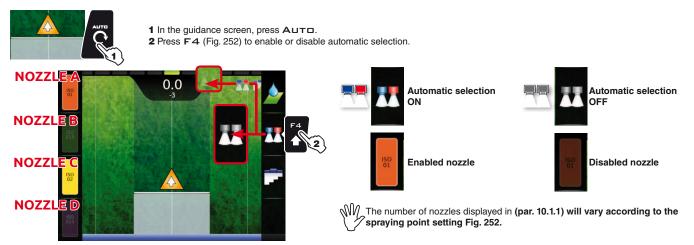


Fig. 252



13.6 F 1/F 3/F 5/F 7
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. 13.5).



Fig. 253

















"AUTOMATIC FUNCTIONS" - F6 AUTOMATIC SECTION MANAGEMENT ON/OFF

13.7 Boom section management



When Bravo 400S is configured as a GPS GUIDANCE MONITOR (chap. 9) section management is always MANUAL.

AUTOMATIC MANAGEMENT ON

AUTOMATIC MANAGEMENT OFF (MANUAL)



The section valves are closed or opened automatically.



Section valves must be opened or closed manually.



To change section valve management mode, use function F6 Automatic section management ON/OFF (par. 13.8).

TREATMENT AND BOOM SECTION STATUS





Zone already sprayed
CLOSE SECTION

OPENING AND CLOSING SIGNALS

Section

ON

MANUAL SECTION MANAGEMENT

When overlapping is above the set value for the **Sections overlapping limit** (par. 10.1.12 / 10.2.2), Bravo 400S warns that the relevant sections must be CLOSED (Fig. 254). Close the section valve with the relevant switch: Bravo 400S will confirm closure on the display.

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

When overlapping returns within acceptable levels, Bravo 400S signals that the relevant sections can be OPENED (Fig. 255).

Open the section valve with the relevant switch: Bravo 400S will confirm opening on the display. As the machine advances, the signal is triggered for each section.

Closing signal



Opening signal

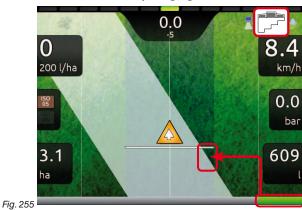


Fig. 254

T AUTOMATIC SECTION MANAGEMENT

When overlapping of ONE or ALL boom sections is above the set value for the **Sections overlapping limit** (par. 10.1.12 / 10.2.2), Bravo 400S CLOSES the relevant sections (Fig. 256). It is not necessary to intervene on the switches.

Bravo 400S closes the sections automatically. Job interruption is shown on the display in real time.

When overlapping returns within the set limit, Bravo 400S opens the relevant sections automatically. Job resumption is shown on the display in real time (Fig. 257).

Automatic section closing



Automatic section opening



"AUTOMATIC FUNCTIONS" - F6 AUTOMATIC SECTION MANAGEMENT ON/OFF



13.8 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. 258) to enable or disable automatic management.



Automatic section management





















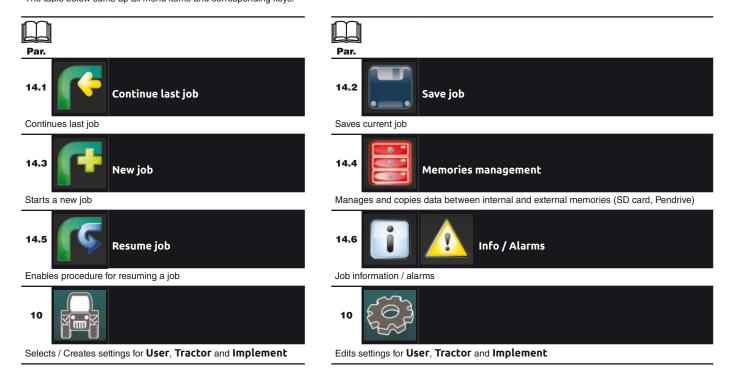


14 "HOME" MENU



Fig. 259

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







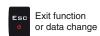






Value Increase / decrease









14.1 F1 Continue last job

Continues last job.

- 1 Press F 1 to continue the last job, from the point where it has been interrupted.
- 2 Check Spraying settings (Target rate, Nozzles config, Map in Fig. 261); change them if necessary.
- 3 Select and press □ K to switch to guidance mode.
- 4 Complete the job (Fig. 262).



Fig. 260

When the last job is resumed, Bravo 400S provides guidance information by restoring the conditions which were active at the time of interruption:
- Guidance mode

- Marking points A and B
- Marking points for surface calculation



















14.2 FZ Save job

Saves current job





9

Caps lock

Selected character

Fig. 263

- 1 Press F2 to save current job: the name edit screen is displayed (Fig. 264).
- **2A** Press in succession to select the character you wish to type (UP / DOWN)
- **2B** Press in succession to select the character you wish to type (RIGHT / LEFT).
- 3 Press to confirm the selected character.
- 4 Press to delete the character before the cursor.
- 5 Press to save the name
- 6 Press to exit screen without confirming modification



A confirmation message is displayed once the process is completed (Fig. 265). Press **ESG**.

Legend:

job_01

Typed Name Cursor

Shift cursor across name characters

Fig. 265



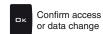


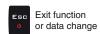














Value

Increase /



F3 New job

Starts a new job

1 Press F3 to start a new job. Bravo 400S asks to save the current job (Fig. 266). Press □ K to continue without saving (2A) or ESC to interrupt the procedure and save (2B).



2B The ESC key stops the beginning of a new job. **3B** Save the previous job with the function **Save job** (par. 14.2). Now start from point 1 to begin a new job.



Fig. 267

2A The $\square K$ key allows switching to the treatment start page without saving the job.



Fig. 268

Check Spraying settings (Target rate, Nozzles config, Map in Fig. 268); change them if necessary.

CONTINUES







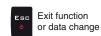
(LEFT / RIGHT)



(UP / DOWN) Value

Increase /







"HOME" MENU - F4 MEMORIES MANAGEMENT



14.4 F4 Memories management Manages and copies data between internal and external memories (SD card, Pendrive)

 $Allows \ to \ upload, save \ and/or \ delete \ the \ data \ memorized \ on \ Bravo \ 400S \ or \ on \ an \ external \ memory \ (SD \ card \ / \ Pendrive);$ said data concern jobs carried out, maps or machine configurations. The operations that can be carried out will be illustrated in the following paragraphs.

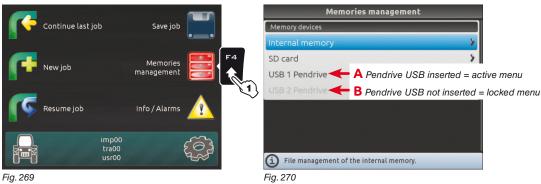


Fig. 270

CONTINUES



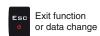














Value

Increase /

Internal memory

Allows to transfer the saved data concerning Implements, Tractors, Users, Jobs or Maps, from the internal memory of Bravo 400S onto an "external" support (SD card or USB pendrive).

The following paragraphs will use Implements as an example: the same procedure will be valid for all other cases (Tractors, Users, etc., Fig. 272).

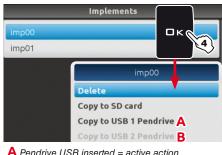


- 1 Press F4 to enter Memories management
- 2 Select the Internal memory menu and press □ K.
- 3 Select Implements (Fig. 272) and press □ K.
- 4 In the list of memorized names select the desired implement (Fig. 273) and press □ K.

A list of actions that can be performed for the selected implement will appear (**Delete** etc., Fig. 273). These will be described below.



Internal memory □K@ 3) Tractors Users Jobs Maps (i) Internal memory "Implements "management. Fig. 272

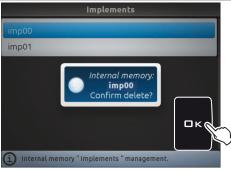


 \mathbf{A} Pendrive USB inserted = active action B Pendrive USB not inserted = locked action

Fig. 273

• Delete





Allows to delete data from Bravo 400S internal memory.

- Select **Delete** (Fig. 274) and press □ K.
- The message in Fig. 275 is displayed: confirm deletion by pressing □K again.

Copy to SD card



Allows to copy data from Bravo 400S internal memory onto a SD card.

- Select the item **Copy to SD card** (Fig. 276) and press □ K;

ERROR MESSAGES



SC card copy error!

A file with the same name already exists on the SD card. You can do the following:

- Press **DK** to replace the file.

WARNING: ALL data in the replaced file will be lost.

- There is no more space available on the SD card: delete a few files from the memory and try saving again

- Press **ESC** to avoid replacing the file; check its contents or edit its name before trying to save again.

(par. 14.4.2 - SD card > Implements > Delete). The SD card is locked.

Remove the protection and try saving again.

Copy to USB Pendrive (1 or 2)



Allows to copy data from Bravo 400S internal memory onto a pendrive.

Select the item Copy to USB Pendrive (Fig. 277) and press
K;

ERROR MESSAGES



A file with the same name already exists on the pendrive. You can do the following:

- Press **C** to replace the file.

WARNING: ALL data in the replaced file will be lost.

- Press ESC to avoid replacing the file; check its contents or edit its name before trying to save again.



- There is no more space available on the pendrive. delete a few files from the memory and try saving again (par. 14.4.3 - USB Pendrive > Implements > Delete).

- The pendrive is locked.

Remove the protection and try saving again.











(UP / DOWN)

Value Increase / decrease







"HOME" MENU - F4 MEMORIES MANAGEMENT > SD CARD

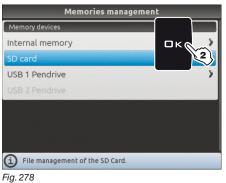
SD card

Allows to transfer the saved data concerning Implements, Tractors, Users, Jobs or Maps, from the SD card onto the internal memory of Bravo 400S. The following paragraphs will use Implements as an example: the same procedure will be valid for all other cases (Tractors, Users, etc., Fig. 279).



- 1 Press F4 to enter Memories management.
- 2 Select the SD card menu and press CK.
- 3 Select Implements (Fig. 279) and press □ K. 4 In the list of memorized names select the desired implement (Fig. 280) and press □ K.

A list of actions that can be performed for the selected implement will appear (Delete etc., Fig. 280). These will be described below.





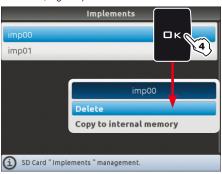


Fig. 280

Delete





imp00

Already exists on Internal memory! Overwrite it?

Allows to delete data from the SD card. - Select **Delete** (Fig. 281) and press □ K.

- The message in Fig. 282 is displayed: confirm
- deletion by pressing □ K again.

Fig. 281

Copy to internal memory



Fig. 284

Allows to copy data from the SD card onto Bravo 400S internal memory.

- Select the item Copy to internal memory (Fig. 283) and press □ K;

ERROR MESSAGES

A file with the same name already exists on the internal memory. You can do the following:

- Press **C** to replace the file.

WARNING: ALL data in the replaced file will be lost.

- Press $\mathbf{E}\mathbf{S}\mathbf{C}$ to avoid replacing the file; check its contents or edit its name before trying to save again.

Fig. 283

CONTINUES







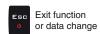






Value Increase / decrease







Remote devices upgrade

Allows to upgrade the software of the devices connected to Bravo 400S: Seletron RCU (control unit), hydraulic RCU, switch box, etc.

Before starting the procedure copy the upgrade files onto the SD card.

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



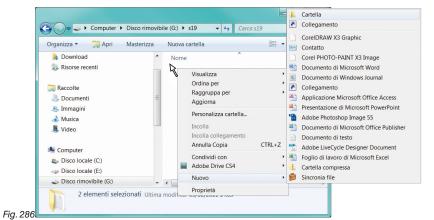


Fig. 285

- Select the upgrade file and drop it onto the SD card explorer window, in the folder named "s19".
- Insert the SD card in its slot on Bravo 400S.

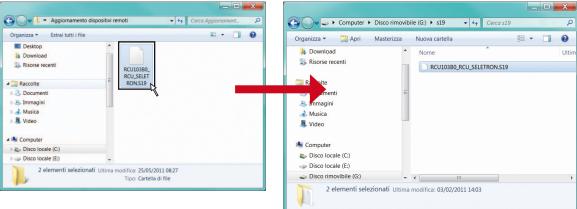


Fig. 287

CONTINUES









(UP / Increase / DOWN) decrease







>>> 14.4.2 SD card



1 Select the **Remote devices upgrade** menu and press □ K.

Fig. 288 (2) Remote devices upgrade Upgrade file: O SW0005 112 Start upgrade procedure 78 O SW0053,100 (SEQUENTIAL) Upgrade file selection. Upgrade file selection.

2 Enter the Upgrade file menu, select the desired file from the list (Fig. 290) and press □ K.

Available upgrades:
• RCUTRON:

- Seletron RCU upgrade
- RCU:

(RCU)

- Hydraulic RCU upgrade • SEQUENTIAL:
- sequential control switches upgrade

Fig. 289 Fig. 290 (3) Remote devices upgrade Programming remote device Upgrade file: RCU103B0_RCU_SELETRON > Start upgrade pro File: RCU103B0_RCU_SELETRON (RCUTRON) Press Ok to start remote devices upgrade procedure. Start upgrade procedure of the remote device. Press Esc to stop remote device upgrade procedure. Fig. 292

3 Now select Start upgrade procedure and press □ K.

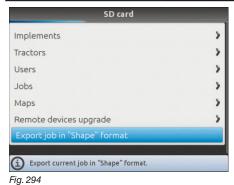
Follow the instructions on the display and start the setup procedure (Fig. 292).



- When the message in Fig. 293 appears, the upgrade is complete. Press DK.

Fig. 293

Export job in "Shape" format



Allows to memorize job data onto a map, saving it onto the SD card. Data in the file can be displayed on a Personal Computer with a "Shape" file viewer (.shp).

- Select Export job in "Shape" format (Fig. 294) and press □ K.
- A confirmation message appears once the process is completed. Press □ K.

Enter selected











Scroll (UP / DOWN)









"HOME" MENU - F4 MEMORIES MANAGEMENT > USB PENDRIVE

USB Pendrive

Allows to transfer the saved data concerning Implements, Tractors, Users, Jobs or Maps, from the pendrive onto Bravo 400S internal memory. The following paragraphs will use Implements as an example: the same procedure will be valid for all other cases (Tractors, Users, etc., Fig. 296).



- 1 Press F4 to enter Memories management.
- 2 Select the **USB Pendrive** menu and press □ K.
- 3 Select Implements (Fig. 296) and press □ K.
- 4 In the list of memorized names select the desired implement (Fig. 297) and press □ K.

A list of actions that can be performed for the selected implement will appear (Delete etc., Fig. 297). These will be described below.





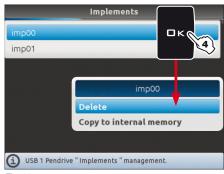


Fig. 297

Delete





imp00

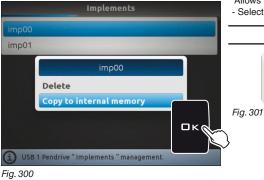
Already exists on

Internal memory

Allows to delete data from the pendrive.

- Select **Delete** (Fig. 298) and press □ K. - The message in Fig. 299 is displayed: confirm
- deletion by pressing $\square K$ again.

Copy to internal memory



Allows to copy data from the pendrive onto Bravo 400S internal memory.

- Select the item Copy to internal memory (Fig. 300) and press □K;

ERROR MESSAGES

A file with the same name already exists on the internal memory. You can do the following:

- Press **C** to replace the file.

WARNING: ALL data in the replaced file will be lost.

- Press $\mathbf{E} \mathbf{S} \mathbf{C}$ to avoid replacing the file; check its contents or edit its name before trying to save again.

CONTINUES





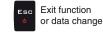






(UP / DOWN) Value







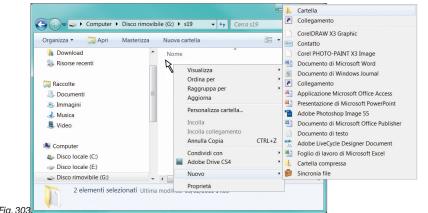
Remote devices upgrade

Allows to upgrade the software of the devices connected to Bravo 400S: Seletron RCU (control unit), hydraulic RCU, switch box, 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"





- Select the upgrade file and drop it onto the pendrive explorer window, in the folder named "s19".
- Insert the SD card in its slot on Bravo 400S.

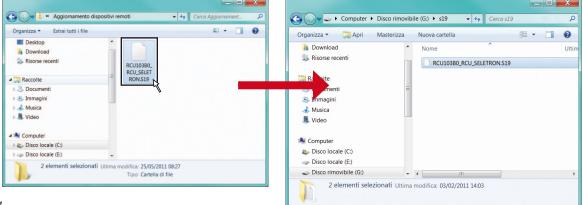


Fig. 304

CONTINUES





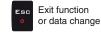






(UP / DOWN)







Value

> > > 14.4.3 USB Pendrive

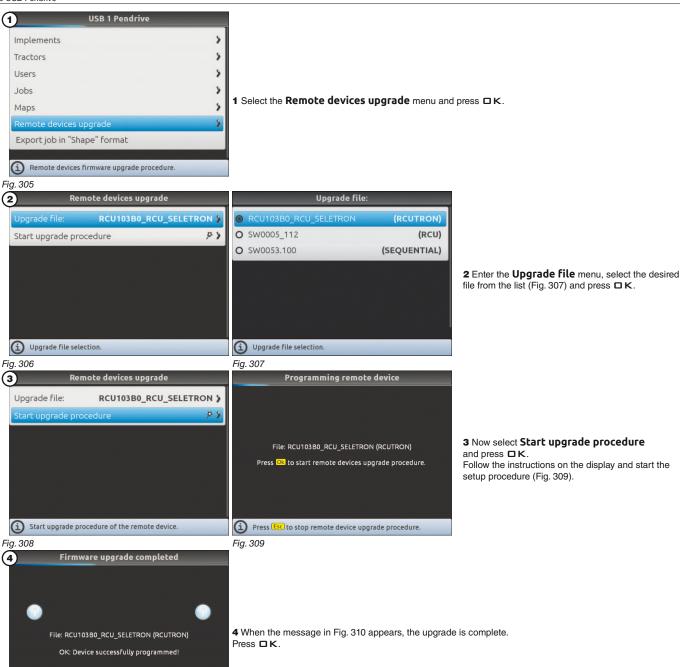


Fig. 310

• Export job in "Shape" format

Remote device firmware successfully programmed!



Allows to memorize job data onto a map, saving it onto the pendrive. Data in the file can be displayed on a Personal Computer with a "Shape" file viewer (.shp).

- Select **Export job in "Shape" format** (Fig. 311) and press □ K.

Value

Increase /

decrease

- A confirmation message appears once the process is completed. Press □ K.

Enter selected character









Scroll (UP / DOWN)









14.5 F5 Resume job Enables procedure for resuming a previously interrupted job.

- 1 Press F 1 to resume a previous job, from the list of saved jobs.
- ${\bf 2}\,$ In the list, select the desired configuration (Fig. 312) and press $\,\square\,{\bf K}\,$ to confirm.
- 3 Check Spraying settings (Target rate, Nozzles config, Map in Fig. 313); change them if necessary.
- 4 Select and press □ K to switch to guidance mode.
- **5** Complete the job (Fig. 314).

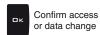


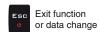
When the last job is resumed, Bravo 400S provides guidance information by restoring the conditions which were active at the time of saving:

- Guidance mode
- Marking points A and B
- Marking points for surface calculation















14.6 F6 Info / Alarms Displays job information / alarms.



Fig. 315



1 Press F6 to view the Info / Alarms menu (Fig. 316).

This screen gives an overview of the active notifications for the operator, rated by importance as **Critical alarms**, Low priority alarms and Info.

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











Value

Increase /

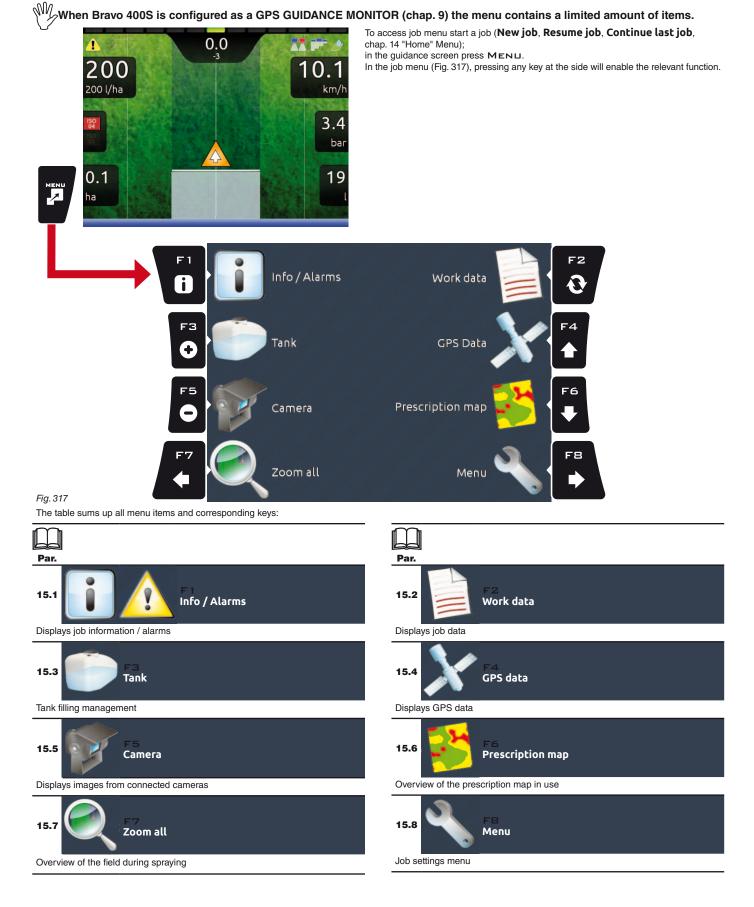








15 JOB MENU

























15.1 F 1 Info / Alarms

Displays job information / alarms

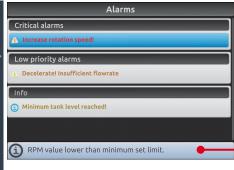


1 In the guidance screen, press MENU.

2 Press F 1 to view the Info / Alarms menu (Fig. 319).

This screen gives an overview of the active notifications for the operator, rated by importance as **Critical alarms**, **Low priority alarms** and **Info**.





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

Fig. 318

Fig. 319





Scroll (LEFT / RIGHT)



Value Increase / N) decrease







15.2 F2 Work data

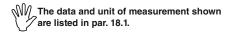
Displays job data



- In the guidance screen, press Menu.
 Press F2 to view job data (Fig. 321 and Fig. 322).
 Press F4 / F6 to scroll data.



Fig. 320



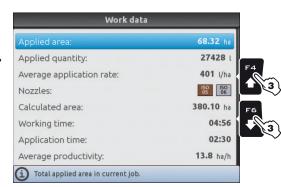


Fig. 321



Fig. 322

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







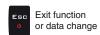
















F3 Tank 15.3

Manages tank filling.



- 1 In the guidance screen, press MENU.
- 2 Press F3 to view the Tank menu (Fig. 324).



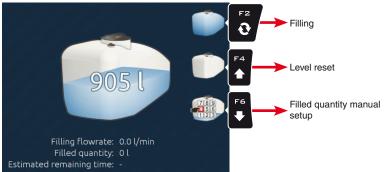
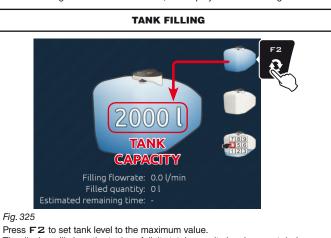


Fig. 323

Fig. 324 In this screen it is possible to enable several procedures:

- Filling (Fig. 325)
- Level reset (Fig. 326)
- Filled quantity manual setup (Fig. 327)

When the filling flowmeter is connected, the display shows the filling data in real time.



The display will show the tank as full: its total capacity has been set during advanced setup (par. 10.1.10).

LEVEL RESET Filling flowrate: 0.0 l/min Filled quantity: 0 l Estimated remaining time: Fig. 326 Press F4 to set tank level to zero. The display will show the tank as empty.

FILLED QUANTITY MANUAL SETUP



- Press ${f F6}$ 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.

Fig. 327











(UP / DOWN)

Value Increase / decrease









Fig. 328

F4 GPS Data 15.4

Displays GPS data



- 1 In the guidance screen, press MENU.
 2 Press F4 to view the GPS Data menu (Fig. 329).
- This screen shows the data sent to the GPS receiver.





GPS Data 44.65921315 Longitude: 10.79183667 Altitude: 43 m DGPS Age: **2.5** sec Number of satellites: 10 PDOP: 1.0 (i) Latitude of current machine's position.

Fig. 329

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



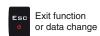
















15.5 F5 Camera Displays images from connected cameras



1 In the guidance screen, press MENU.
2 Press F5 to view the Camera menu (Fig. 331).
By connecting one or more cameras, it is possible to monitor working areas and at the same time view spraying data.

Enable camera view during advanced setup (par. 10.3.3).







F2 Switch view between the two cameras

F7 Select job data displayed on the LEFT side of the screen. F8 Select job data displayed

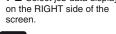




Fig. 331 Fig. 330









Scroll (UP / Value DOWN) decrease









15.6 F6 Prescription map Overview of the prescription map in use

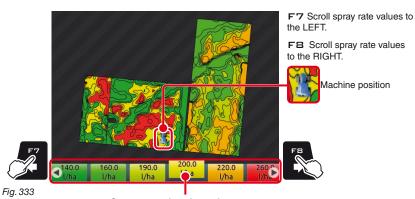


1 In the guidance screen, press MENU.
2 Press F6 to view the **Prescription map** menu (Fig. 333).

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



Fig. 332



Spray rate values legend: The highlighted box displays the spray rate referred to the machine's current position



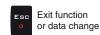














Value

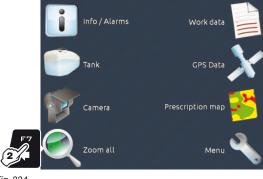
Increase /



15.7 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. 335).



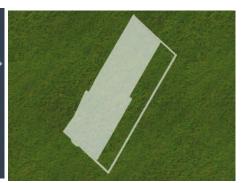


Fig. 334 Fig. 335















15.8 F8 Menu Job settings menu



- 1 In the guidance screen, press MENU.
- 2 Press FB to view the **Menu Settings** menu (Fig. 337).





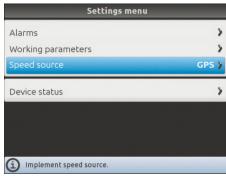


Fig. 337

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

- Alarms (par. 10.1.11).
- Working parameters (par. 10.1.12).
- Device status (par. 10.6).

15.8.1 Speed source

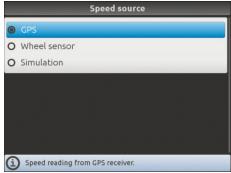


Fig. 338

Simulation

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

Information concerning speed is received by the GPS, which is connected directly to Bravo 400S.

• 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. 10.1.8).

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



Fig. 339

SIMULATION SPEED

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

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





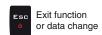






Value (UP / Increase / DOWN) decrease







16 **JOB FUNCTIONS**

When Bravo 400S is configured as a GPS GUIDANCE MONITOR (chap. 9) job functions are limited.

0.0 200 200 l/ha km/h 3.4 bar 0.1 19 ha

To access job functions start a job (**New job**, **Resume job**, **Continue last job**, chap. 14 "Home" Menu);

in the guidance screen press \mathbf{Func} .

When the list is active (Fig. 340), pressing the key at the side will enable the relevant function.

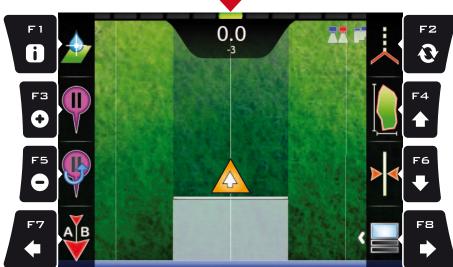
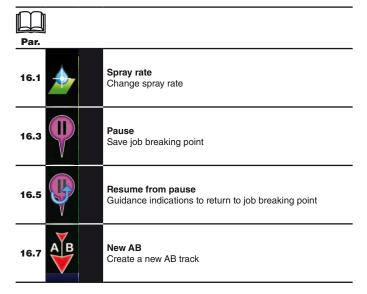
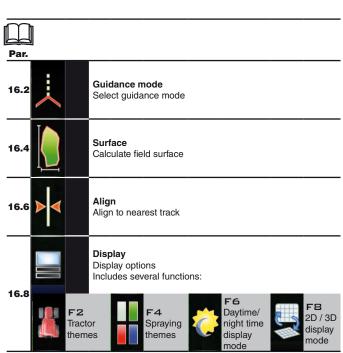


Fig. 340 The table below lists all available job functions and the corresponding function keys:









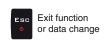






Value







F 1 Spray rate 16.1

Change spray rate



- 1 In the guidance screen, press Func.
 2 Press F 1 to enable the function.
- 3 Change the spray rate value for the job (Fig. 342). 4 Confirm the data.



Fig. 341





















F2 Guidance mode 16.2

Selecting guidance mode



- 1 In the guidance screen, press FUNG.
- 2 Press F2 to enable the function.
- 3 Select a guidance mode (Fig. 344): press F4 and F6 to move across the available items (A Straight guidance mode, B Curved guidance mode or C Free guidance mode)
- 4 Confirm selection.





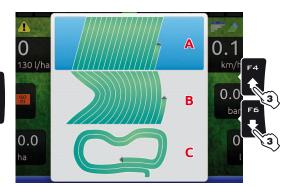


Fig. 343

Fig. 344

A - STRAIGHT GUIDANCE MODE

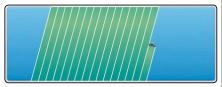


Fig. 345

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.

Any bends in the trajectory between A and B will be

B - CURVED GUIDANCE MODE

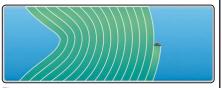
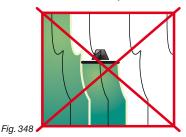


Fig. 346

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.

The trajectory between **A** and **B** will be saved and Bravo 400S will create evenly distributed tracks.



C - 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.













Increase / decrease









16.3 F3 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 when you are in the position you wish to save (A in Fig. 349):
The symbol will be placed exactly on that point.



Bravo 400S can save ONLY ONE BREAKING POINT: every time you save a point, the previous one will be deleted.

Fig. 349





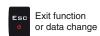






Value Increase / decrease









F4 Surface 16.4

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



- 1 In the guidance screen, press Func.
- 2 Press F4 to start the surface calculation procedure (function list disappears).

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

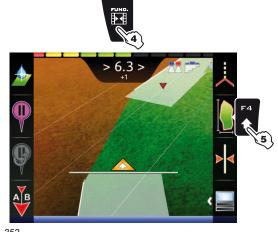
3 Press F3 (Left) or F4 (Right): a white line will be displayed to draw the field perimeter as the tractor moves (Fig. 351).





Fig. 350

- 4 Drive along the perimeter of the field or of the surface you wish to measure. When you get close to the calculation starting point, press Func again.
- 5 Press F4 to complete the surface calculation procedure (Fig. 352). The computer will connect starting and end points and will calculate the surface.
 6 To view Calculated area, press Menu followed by F2 (access to the Work data screen, par. 15.2).



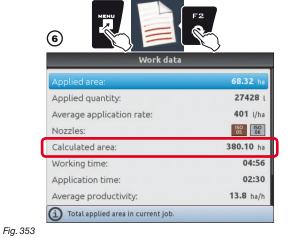
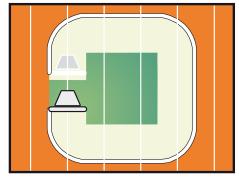


Fig. 352

FIELD PERIMETER ON MACHINE LEFT-HAND SIDE

FIELD PERIMETER ON MACHINE RIGHT-HAND SIDE



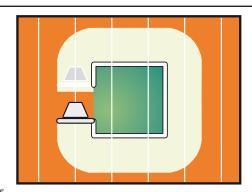


Fig. 355

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.





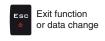






Value (UP / Increase / DOWN) decrease





"JOB FUNCTIONS" - F5 RESUME FROM PAUSE



16.5 F5 Resume from pause Guidance indications to return to job breaking point, previously saved with function F3 Pause (par. 16.3).

1 In the guidance screen, press Func.

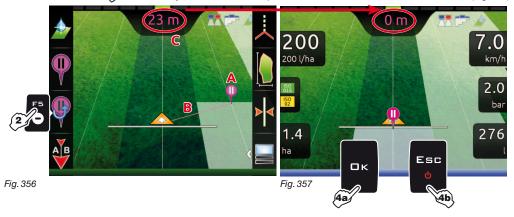
2 Press F5 to obtain guidance information and enable the return to job breaking point procedure.

The fuchsia line **B** in Fig. 356 (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. 356). **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. 357): press

 K or ESC to exit the procedure.



□ K Bravo 400S goes back to displaying guidance information for the job and the symbol is erased.

ES□ Bravo 400S goes back to displaying guidance information for the job but the symbol is saved.





















16.6 F6 Align

Moves the closest reference track, re-aligning it to the position of the machine.

This function is useful when you need to re-align the machine, whilst continuing to drive in the same direction (for example, for corn, sugar cane).



1 In the guidance screen, press Func.

2 Press F6 to align with the current position.

The closest reference track (A in Fig. 358) moves and becomes aligned with the center of the tractor: all other reference tracks move accordingly. After the alignment, the deviation value >2.0> (B) becomes 0.0.

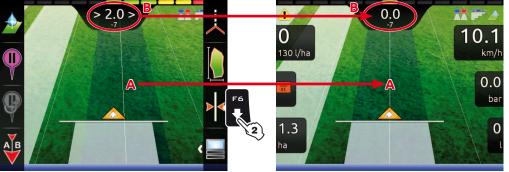


Fig. 359

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













16.7 F7 New AB Saves two points A and B on the field, which Bravo 400S uses to draw a line that will act as a reference track (T0, Fig. 362) for the current job.



1 In the guidance screen, press Func.

2 Drive along the stretch you wish to use as a reference for the job.

Press F7 to enable the function: the request Mark A? will appear on the display (Fig. 360).

3 Press □ K. The display shows the message **Drive!** (Fig. 361).

4 Keep driving, when you have reached the minimum distance (30 m / 95.5 ft), the request Mark B? will appear on the display. Press □ K.

The reference track **T0** and all tracks to be followed during the job will appear on the display (Fig. 362).









When this function is used, Bravo 400S 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.

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





















16.8 FB Display Allows to select different display modes. Includes several functions:

- 1 In the guidance screen, press Fund.
 2 Press FB. A list of options concerning display modes will appear (Fig. 363).
 Pressing each key will enable the corresponding function:
- F2 changes spraying themes (par. 16.8.1); F4 changes tractor themes (par. 16.8.2); F6 switches between 2D/3D display mode (par. 16.8.3);
- FB switches between daytime/night time display mode (par. 16.8.4);.





Fig. 364

Fig. 363

16.8.1 F2 Tractor themes







Fig. 365

1 In the guidance screen, press Func.

- 2 Press FB to view the available options.
- ${\bf 3} \ \mathsf{Press} \ {\bf F2} \ \mathsf{in} \ \mathsf{succession} \ \mathsf{to} \ \mathsf{scroll} \ \mathsf{tractor} \ \mathsf{themes}.$

TRACTOR THEME 1 (DEFAULT)



Fig. 366

Fig. 367





THEME 4



Fig. 369

Fig. 370



THEME 3









(UP / DOWN) Value Increase / decrease







16.8.2 F4 Spraying themes







1 In the guidance screen, press Func.

- 2 Press FB to view the available options.
- ${\bf 3} \ {\rm Press} \ {\bf F4}$ in succession to scroll spraying color combinations.

SPRAYING THEME 1 (DEFAULT)



Fig. 372

Fig. 373

THEME 2



THEME 3

THEME 4







THEME 5

16.8.3 F6 Daytime/night time display mode





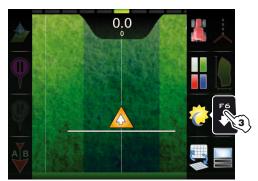
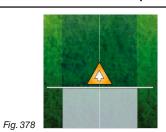


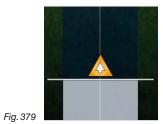
Fig. 377

- 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)



NIGHT TIME DISPLAY MODE



16.8.4 FB 2D/3D display mode



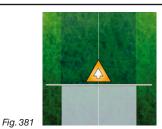




Fig. 380

- **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)



3D DISPLAY MODE













Scroll (UP / DOWN)









17 MAINTENANCE / DIAGNOSTICS / REPAIRS

17.1 Error messages

MESSAGE ON DISPLAY	CAUSE	REMEDY	WORK MODE
Drive! Machine stopped	Main switch ON with machine stopped	Start the machine. Move main switch downwards (position OFF)	Main ON + AUTO adjustment ON
Connection to RCU not detected!	Communication problems between monitor and control unit (RCU)	Check condition of connection cables (and connectors) between monitor and control unit (par. 5.2).	
	The cables are damaged	Replace the cable	
	Wrong connection of receiver cable to Bravo 400S	Check connection to receiver (par. 5.2 - 5.7)	
GPS receiver not connected!	The receiver connection cable is damaged	Replace the cable	
	The receiver is damaged	Replace the receiver	
Insufficient GPS signal quality!	The position and number of satellites do not allow a suitable driving precision	Wait for signal strength to improve	
GPS receiver gives invalid data!	The receiver is establishing a connection to the satellites	Wait for connection	
DGPS correction not available!	DGPS signal unavailable in the working area	Disable DGPS correction (par. 10.3.1)	
	DGPS connecting	Wait for connection	
Activate pump! Missing flowrate	Main switch ON with machine stopped but rate at zero	Start the pump and move the machine.	AUTO adjustment
	Tank level is lower than the set range value	• Fill the tank (par. 15.3)	Main ON
Minimum tank level reached!	Minimum value was not set correctly	Check set range value (par. 10.1.10).	
	Pressure does not reach set value	Increase driving speed	Main ON
Automatic adjustment locked!	Limit was not set correctly	• Check set limit (par. 10.1.12 - 10.2.2)	+ AUTO adjustment
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. 10.1.7)	Main 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. 10.1.7)	Main 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. 10.1.3)	Main ON

MAINTENANCE / DIAGNOSTICS / REPAIRS

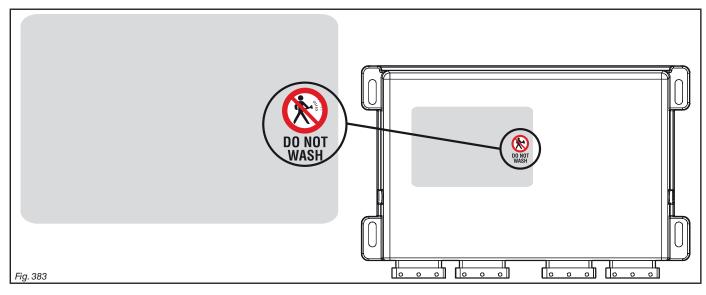
MESSAGE ON DISPLAY	CAUSE	REMEDY	WORK MODE
Decelerate! Insufficient flowrate	Flowrate does not reach the value requested for output	Decrease driving speed Make sure that flowmeter parameters are set correctly (par. 10.1.3)	Main ON + AUTO adjustment ON
Accelerate! Too high flowrate	The flowrate exceeds the value required for output	Increase driving speed Make sure that settings in the Settings Implement menu (boom width, flowmeter, etc. chap. 10.1 - 10.2) are set correctly	Main ON + AUTO 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. 10.1.9)	
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. 10.1.9)	Main 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. 10.1.1) Replace nozzles	Main ON + AUTO adjustment ON
Switch box connection not detected!	Communication problems between monitor and switches	Check condition of connection cables (and connectors) between monitor and switch box	
	The cables are damaged	Replace the cable	
Seletron connection failed!	One or more spraying points do not respond	Identify the unrecognized spraying point with the dedicated menu Device status > Status of the Seletron system (par. 10.6) Check that the corresponding spraying point is connected correctly Check condition of harness on the corresponding spraying point	
		Check battery voltage level	
Seletron system error!	Low supply voltage on one or more spraying points	Identify the unrecognized spraying point with the dedicated menu Device status > Status of the Seletron system (par. 10.6) Check condition of harness on the corresponding spraying point	

17.2 Troubleshooting

FAULT	CAUSE	REMEDY		
The display does not exitely an	No power supply	Check power supply connection		
The display does not switch on	Computer is OFF	Press the ON key		
Valve controls take no effect	Valves not connected	Connect the connectors		
One valve does not open	No power supply to valve	Check valve electric connection and operation		
Speed reading is unstable	Job start procedure was launched at a point too far from the field to be sprayed	Start a new job (par. 12.5) closer to the field.		
Output volume readout inaccurate	Wrong setup	Check boom setup (par. 10.1.2 - 10.2.1) Check the setup of the flowmeter constant (par. 10.1.3) Check pressure sensor full scale setting (par. 10.1.5)		
Distance traveled count displayed does not match actual distance covered	Wrong setup	Check boom setup (par. 10.1.2 - 10.2.1) Check implement geometry (par. 10.1.14 - 10.1.15 - 10.2.3 - 10.2.4) Check tractor geometry (par. 10.3.4)		
Sprayed fluid count displayed does not match litres/gal actually sprayed	Wrong setup	Check the setup of the flowmeter constant (par. 10.1.3) Check selected nozzle configuration (par. 10.1.1 - par. 12.5)		
	Wrong setup	Check spray rate setup (par. 12.5 - 16.1) Check the setup of the boom width (par. 10.1.2)		
Unable to reach output volume value set for the automatic operation	System not adequately sized to provide required rate	Check maximum pressure valve setting Make sure control valve is adequate for specific system		
	Control valve malfunction	Check valve operation		
	Wrong setup	Check full scale setup for pressure sensor (par. 10.1.5)		
Instantaneous pressure readout inaccurate	Pressure sensor not calibrated	Perform the calibration (par. 10.1.13)		
	Pressure sensor wrong installation	Check connections to pressure sensor		
	Wrong setup	Check pressure sensor setting (par. 10.1.5)		
Instantaneous pressure is not displayed	Computer does not receive signals from pressure sensor	Check connections to pressure sensor		
	Pressure sensor wrong installation	Check connections to pressure sensor		
Rpm readout inaccurate	Wrong setup	Check rpm sensor constant setting (par. 10.1.9)		
Rpm value not displayed	Monitor does not receive signals from RPM sensor	Check connections to RPM sensor		
npili value not displayed	Rpm sensor wrong installation	Check connections to RPM sensor		
Pump failure alarm permanently active	Monitor does not receive signals from Pump Protector sensor	Check connections to Pump Protector sensor		

17.3 Cleaning rules

- Clean only with a soft wet cloth.DO NOT use aggressive detergents or products.DO NOT aim water jets directly at monitor and control unit.



18 TECHNICAL DATA

Description	Bravo 400S
Display	LCD 5,7", 65000 colors, 500 cd/m ²
Rated supply voltage	12 Vdc (9 ÷ 15 Vdc)
Consumption (valves excluded)	monitor: 0,4 A / Seletron RCU: 0,6 A / Hydraulic RCU: 1,5 A
Working temperature	0 °C ÷ 45 °C +32 °F ÷ +113 °F
Storage temperature	-20 °C ÷ 45 °C -4 °F ÷ +113 °F
Digital inputs	for open collector sensors: max 2000 imp*/s
Analog input	4 ÷ 20 mA
Weight (without cables)	monitor: 1567 g (Bravo code 4674A9D20.950) Seletron RCU: 1143 g / Hydraulic RCU: 1143 g
SD card reader	Yes
2 USB 2.0 ports	HOST
Protection against polarity inversion	•
Protection against short-circuit	•

18.1 The data and unit of measurement shown

/lenu	Data		Min.	Max.	UoM	DEFAULT	Other values that can be set / Notes
	Number of nozzles for	or each spraying point			no.	1	2, 4 Selection during guided setup
		Nozzle A				ISO01	
		Nozzle B				Disabled	
	Spraying point 1	Nozzle C				Disabled	
		Nozzle D				Disabled	
		Nozzle A				ISO02	_
	Covering point 0	Nozzle B				Disabled	
	Spraying point 2	Nozzle C				Disabled	
		Nozzle D				Disabled	_
		Nozzle A				ISO03	
	Spraying point 3	Nozzle B				Disabled	
	Spraying point 3	Nozzle C				Disabled	
		Nozzle D				Disabled	Nozzle:
	Spraying point 4					Disabled	ISO01 ISO015 ISO02 ISO025 ISO03 ISO04
pray spots	Spraying point 5					Disabled	, , , , , , , , , , , , , , , , , , , ,
onfigurations	Spraying point 6					Disabled	ISO05 ISO06 ISO08 ISO10 ISO15 ISO20
	Spraying point 7					Disabled	_ A B C D E F
	Spraying point 8					Disabled	,,,,,,
	Spraying point 9					Disabled	
	Spraying point 10					Disabled	_
	Spraying point 11					Disabled	_
	Spraying point 12					Disabled	_
	Spraying point 13					Disabled	_
	Spraying point 14					Disabled	_
	Spraying point 15					Disabled	_
	Spraying point 16					Disabled	_
	Spraying point 17					Disabled	_
	Spraying point 18					Disabled	_
	Spraying point 19					Disabled	_
	Spraying point 20					Disabled	
	Spray spots spacing		1	1000	cm	50 cm	
soom settings			0.39	393.70	inches	19.68 inches	
	Sections number		1	13	no.	9	All I a Company of the Company of th
	Section 1 ÷ 13		1	50	no.	4	Number of spraying points for each section
	Туре					Orion 462xxA4xxxx	Orion 4621xA0xxxx, Orion 4621xA1xxxx, Orion 4621xA2xxx Orion 4621xA3xxxx, Orion 4622xA5xxxx, Orion 4622xA6xxx Wolf 462x2xxx, Wolf 462x3xxx, Wolf 462x4xxx, Wolf 462x5x Wolf 462x7xxx, Other
lowmotor	Constant		1	32000	pls*/l		
lowmeter	Constant		4	32000	pls*/gal		_
	Minimum flowrate		0.1	999.9	(l/min)		Fixed settings for each flowmeter except Other
			0.1	264.1	GPM		- i ixed settings for each flowingter except other
	Maximum flowrate		0.1	999.9	(l/min)		_
	waxiiiuiii ilowiale		0.1	264.1	GPM		
	Activation status					Disabled	ENABLED
	Type					Orion	Orion 4622xA5xxxx, Orion 4622xA6xxxx,
	туре					462xxA4xxxx	Wolf 462x4xxx, Wolf 462x5xxx, Wolf 462x7xxx, Other
illing flowmeter	Constant		<u>1</u>	32000 32000	pls*/l pls*/gal		_
5	Mindre and		0.1	999.9	I/min		— — — — — — — — — — — — — — — — — — —
	Minimum flowrate		0.1	264.1	GPM		Fixed settings for each flowmeter except Other
	Maximum flowrate		0.1	999.9 264.1	I/min GPM		_ _
	Activation status					Disabled	Enabled
	Туре					466113.200	466113.500, Other
ressure sensor			0.1	150.0	bar		·
	Maximum pressure		1	2175	PSI		 Fixed settings for each sensor except Other

110

lenu	Data		Min.	Max.	UoM	DEFAULT		ues that can be set / Notes
		Туре				3 ways	2 ways, None	Selection during guided setup
	Main valve	Automatic closing of sections valves				Enabled	Disabled	Selection during guided setup
alvoc		Switching time	0.1	1.0	S	1.0 s		
llves Pressure regulatin valve	Pressure regulating valve	Regulation direction				Standard	Reverse	
		Туре				2 ways	Automatic s	selection during guided setup
	Section valves	Shut-off time Switch-on time	0.1	1.0	S S	0.6 s 0.2 s		
	10004				s 	0.40 l/min		
	ISO01	Flowrate -			GPM	0.10 GPM		
	ISO015	Flowrate			I/min GPM	0.60 l/min 0.15 GPM	-	
	ICONS	Flourata			I/min	0.15 GPW 0.80 I/min	-	
	ISO02	Flowrate			GPM	0.20 GPM		
	ISO025	Flowrate			I/min GPM	1.00 I/min 0.25 GPM	-	
	10000				GPIVI /min	0.25 GPM 1.20 l/min	-	
	ISO03	Flowrate			GPM	0.30 GPM		
	ISO04	Flowrate -			I/min	1.60 I/min	-	
					GPM I/min	0.40 GPM 2.00 l/min		
	ISO05	Flowrate			GPM	0.50 GPM	· ISO nozzle: -	s - cannot be modified
	ISO06	Flowrate -			I/min	2.40 l/min		
					GPM I/min	0.60 GPM 3.20 l/min	-	
	ISO08	Flowrate			GPM	0.80 GPM	-	
	ISO10	Flowrate			I/min	4.00 l/min		
					GPM Vmin	1.00 GPM 6.00 l/min	-	
	ISO15	Flowrate			I/min GPM	1.50 GPM		
les data	ISO20	Flowrate			I/min	8.00 l/min		
ico uaia	10027	, wiate			GPM	2.00 GPM		
	Pressure				<u>bar</u> PSI	3.0 bar 40 PSI	-	
		Flowrato	0.10	10.00	l/min	1.00 l/min		
	Α	Flowrate	0.03	2.6	GPM	0.26 GPM	- -	
	В	Flowrate	0.10	10.00 2.6	l/min GPM	2.00 l/min 0.53 GPM		
			0.03	10.00	I/min	3.00 l/min	-	
	С	Flowrate	0.03	2.6	GPM	0.79 GPM		
	D	Flowrate	0.10	10.00	l/min GPM	4.00 l/min 1.06 GPM	User nozzle	es - customizable
			0.03	2.6	I/min	5.00 l/min	-	
	Е	Flowrate	0.03	2.6	GPM	1.32 GPM	- -	
	F	Flowrate	0.10	10.00	l/min	6.00 l/min		
			0.03	2.6 50.0	GPM bar	1.59 GPM 5.0 bar	-	
	Pressure	-	1.45	725	PSI	70 PSI	-	
	N.A.		0.1	50.0	bar	Default ISO noz	zzles:	
	Minimum pressure	-	1.45	725	PSI	- 1.0 ÷ 5.0 bar 15 ÷ 70 PSI		
			0.1	50.0	bar	Default user no	zzles:	
	Maximum pressure	-		-	PSI	2.0 ÷ 10.0 bar		
			1.45 0.01	725	cm/pls*	30 ÷ 145 PSI 38.33 cm/pls*		
el sensor	Constant	-	0.01			15.09 inch/pls*		
	Activation status					Disabled	Enabled	
counter	Constant		1	999	pls*/rev**			
-	Minimum rotation spe Maximum rotation spe	-	1	10000	rpm	100 rpm 500 rpm		
	•	Jeu	1	99999	rpm l	2000 I		
,	Capacity	<u> </u>	1	25000	gal	528 gal		
(Reserve level		1	2000	Ī	150 l		
			1	500	gal	40 gal	Enabled	
		Nozzle wear check				Disabled	Enabled Visible ONL	Y with Pressure sensor enabled
	Nozzloo olormo	Nozzle wear limit percentage	1	50	%	10 %		Y with Pressure sensor enabled
	Nozzles alarms							with Fiessule sensor enabled
		Minimum pressure alarm Maximum pressure alarm				Disabled Disabled	Enabled Enabled	
ms		Minimum flowrate alarm				Disabled	Enabled	
	Flowmeter alarms	Maximum flowrate alarm				Disabled	Enabled	
		Minimum rotation speed				Disabled	Enabled	
	Rev counter alarms	alarm Maximum rotation speed						
		maximum fotation Speed				Disabled	Enabled	

^{*} pls = pulse ** rev = revolution

Implement rear view

Implement width

Implement - SPRAYER (SELETRON) Menu Min. Max. UoM **DEFAULT** Other values that can be set / Notes Data Spraying speed limit Disabled Enabled 0.4 99 9 km/h 1.0 km/h Minimum spraying speed 0.2 99.9 mph 0.6 mph Spraying limits Regulation pressure limit Disabled Enabled 0.1 99.9 bar 1.0 bar Minimum regulation pressure PSI 15 PSI 1449 Flowrate correction factor 0.25 4.00 1.00 Working Sections overlapping limit 0 100 100 % parameters Perimeter overlapping limit 0 100 % 0 % Automatic section -5.0 5.0 m 0.0 m Spray closing delay control -16.00 16.00 ft 0.00 ft -5.0 5.0 0.0 m m Spray opening advance -16.00 16.00 ft 0.00 ft 0.0 20.0 $0.0 \, \text{m}$ m Guidance Steering radius 0.00 65.00 ft 0.00 ft Distance between 0.00 0.50 m 20.00 m connection point and 0.00 64.00 ft 1.64 ft 3-point application point Implement upper view implement -20.00 20.00 0.00 m m Offset between connection System with 3-point hitch, selected during guided setup geometry point and application point -64.00 64.00 ft 0.00 ft settings 0.50 90.00 m 20.00 m Implement rear view Implement width 0.50 290.00 ft 65.62 ft Distance between 0.00 20.00 0.50 m m implement's rear axle and 0.00 64.00 ft 1.64 ft the application point Distance between 0.00 20.00 5.00 m m connection point and Towed implement upper view implement's rear axle 0.00 16.40 ft 64.00 ft 0.50 2.00 m Distance between tractor's 5.00 m System with Towing hitch, selected during guided setup geometry wheels 0.50 15.00 ft 6.56 ft 20.00 -20.00 m 0.00 m Offset between connection point and application point -64.00 64.00 ft 0.00 ft 0.50 90.00 m 20.00 m

Menu	Data		Min.	Max.	UoM	DEFAULT	Other values that can be set / Notes	
Sections	Sections number		1	13	n°	1		
configuration	Section 1 ÷ 13		1.00	50.00	m	20.00 m	- Width of each section	
Comiguration	Section 1 ÷ 13		2.00	164.04	ft	6.56 ft	— Width of each section	
	Sections overlapping I		0	100	%	100 %		
	Perimeter overlapping	limit	0	100	%	0 %		
	Spray closing delay		-5.0	5.0	m	0.0 m		
Working			-16.00	16.00	ft	0.00 ft		
	Spray opening advance	e.	-5.0	5.0	m	0.0 m		
	— a contract of the contract o		-16.00	16.00	ft	0.00 ft		
	Steering radius		0.0	20.0	m	0.0 m		
		Distance between	0.00	65.00	ft	0.00 ft		
	Implement upper view	connection point and	0.00	20.00	m	0.50 m	_	
3-point		application point	0.00	64.00	ft	1.64 ft	_ _ System with 3-point hitch , selected during guided setup _	
implement geometry		Offset between connection point and application point	-20.00	20.00	m	0.00 m		
settings			-64.00	64.00	ft	0.00 ft		
-	Implement rear view	Implement width	0.50	90.00	m	20.00 m		
	implement real view		0.50	290.00	ft	65.62 ft		
		Distance between	0.00	20.00	m	0.50 m		
		implement's rear axle and the application point	0.00	64.00	ft	1.64 ft	_	
		Distance between	0.00	20.00	m	5.00 m	_	
	Implement upper view	connection point and implement's rear axle	0.00	64.00	ft	16.40 ft	_	
	t apper view	Distance between tractor's	0.50	5.00	m	2.00 m	 System with Towing hitch, selected during guided setup 	
geometry		wheels	0.50	15.00	ft	6.56 ft		
		Offset between connection	-20.00	20.00	m	0.00 m	_	
		point and application point	-64.00	64.00	ft	0.00 ft	_	
	Implement rear view	Implement width	0.50	90.00	m	20.00 m	_	
	Implement rear view	Implement width	0.50	290.00	ft	65.62 ft	_	

0.50

290.00

ft

65.62 ft

> > > 18.1 The data and unit of measurement shown

Tractor							
Menu	Data		Min.	Max.	UoM	DEFAULT	Other values that can be set / Notes
A100 Receiver	DGPS					Disabled	Receiver selected during guided setup
	PDOP alarm		1.0	10.0		4.0	— Neceiver selected during guided setup
NMEA Receiver	DGPS					Enabled	Receiver selected during guided setup
	HDOP alarm		1.0	10.0		4.0	neceiver selected during guided setup
Tractor advanced settings	Camera					None	1, 2, Both
		Distance between tractor's	-20.00	20.00	m	0.00 m	
		rear axle and GPS antenna	- 64.00	64.00	ft	0.00 ft	
		Distance between rear	0.50	10.00	m	3.00 m	
		tractor's wheels	0.50	35.00	ft	9.84 ft	
		Horizontal distance between connection point and GPS	-8.00	8.00	m	0.00 m	
		antenna	-25.00	25.00	ft	0.00 ft	
		Distance between front	0.50	10.00	m	2.00 m	
	Tractor upper view	tractor's wheels	0.50	35.00	ft	6.56 ft	
		Vertical distance between	0.00	20.00	m	0.00 m	
Tractor geometry settings		rear connection point and tractor's rear wheels axis	0.00	64.00	ft	0.00 ft	
· ·		Distance between tractor's	0.50	20.00	m	2.00 m	
		front axle and rear axle	0.50	64.00	ft	6.56 ft	
		Vertical distance between front connection point and	0.50	20.00	m	6.00 m	
		tractor's front wheels axis	0.50	64.00	ft	19.69 ft	
		GPS antenna height from	0.00	20.00	m	0.00 m	
	Tro atom recording:	tractor's rear axle	0.00	64.00	ft	0.00 ft	
	Tractor rear view	Rear axle height from the	0.20	5.00	m	1.50 m	
		ground	0.20	15.00	ft	4.92 ft	
	Steering angle		0	90	0	30 °	

User						
Menu	Data	Min.	Мах.	UoM	DEFAULT	Other values that can be set / Notes
Acoustic alarn	ns				Disabled	Enabled
Acustica low p	priority alarms				Disabled	Enabled
Acoustic info					Disabled	Enabled
Steering warn	ing				Disabled	Enabled

General options							
Menu	Data	Min.	Мах.	UoM	DEFAULT	Other values that can be set / Notes	
Language					English	Cesky, Deutsch, Español, Français, Magyar, Italiano, Polski, Portugês, Русский	
Unit of meas	urement	==			Metric	US, Turf	
Date and tim	e GPS updating				Enabled	Disabled	
Timezone		-12	14	h	0 h	Visible ONLY with Date and time GPS updating enabled	
Date and tim	e					Visible ONLY with Date and time GPS updating disabled	

Work data - SPRAYER (SELETRON)

Data	'	UoM	
Applied area	ha	ac	ksqft
Applied quantity	1	gal	gal
Average application rate	l/ha	GPA	GPK
Nozzles			
Calculated area	ha	ac	ksqft
Working time	hh:mm	hh:mm	hh:mm
Application time	hh:mm	hh:mm	hh:mm
Average productivity	ha/h	ac/h	ksqft/h
Job start date	dd/mm/yyyy	dd/mm/yyyy	dd/mm/yyyy
Job start time	hh:mm	hh:mm	hh:mm

Work data - GPS GUIDANCE MONITOR

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

END 18.1 The data and unit of measurement shown

19 END-OF-LIFE DISPOSAL

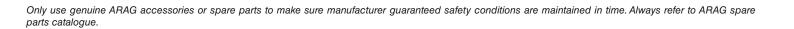
Dispose of the system in compliance with the established legislation in the country of use.

20 GUARANTEE TERMS

1. ARAG s.r.l. guarantees this apparatus for a period of 360 days (1 year) from the date of sale to the client user (date of the goods delivery note).

The components of the apparatus, that in the unappealable opinion of ARAG are faulty due to an original defect in the material or production process, will be repaired or replaced free of charge at the nearest Assistance Center operating at the moment the request for intervention is made. The following costs are excluded:

- disassembly and reassembly of the apparatus from the original system;
- transport of the apparatus to the Assistance Center.
- 2. The following are not covered by the guarantee:
- damage caused by transport (scratches, dents and similar);
- damage due to incorrect installation or to faults originating from insufficient or inadequate characteristics of the electrical system, or to alterations resulting from environmental, climatic or other conditions;
- damage due to the use of unsuitable chemical products, for spraying, watering, weedkilling or any other crop treatment, that may damage the apparatus;
- malfunctioning caused by negligence, mishandling, lack of know how, repairs or modifications carried out by unauthorized personnel;
- incorrect installation and regulation;
- damage or malfunction caused by the lack of ordinary maintenance, such as cleaning of filters, nozzles, etc.:
- anything that can be considered to be normal wear and tear.
- 3. Repairing the apparatus will be carried out within time limits compatible with the organisational needs of the Assistance Center.
 - No guarantee conditions will be recognized for those units or components that have not been previously washed and cleaned to remove residue of the products used.
- 4. Repairs carried out under guarantee are guaranteed for one year (360 days) from the replacement or repair date.
- 5. ARAG will not recognize any further expressed or intended guarantees, apart from those listed here.
 - No representative or retailer is authorized to take on any other responsibility relative to ARAG products.
 - The period of the guarantees recognized by law, including the commercial guarantees and allowances for special purposes are limited, in length of time, to the validities given here.
 - In no case will ARAG recognize loss of profits, either direct, indirect, special or subsequent to any damage.
- 6. The parts replaced under guarantee remain the property of ARAG.
- 7. All safety information present in the sales documents regarding limits in use, performance and product characteristics must be transferred to the end user as a responsibility of the purchaser.
- 8. Any controversy must be presented to the Reggio Emilia Law Court.





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