

BOOMPILOT[®]

INSTALLATION MANUAL

Automatic boom section control installation manual
for use with Blanchard REB3 Controller w/Matrix[®] Pro



TeeJet[®]
TECHNOLOGIES

BoomPilot[®]

A Subsidiary of  Spraying Systems Co.[®]

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Safety information

TeeJet Technologies is not responsible for damage or physical harm caused by failure to adhere to the following safety requirements.

As the operator of the vehicle, you are responsible for its safe operation.

The BoomPilot is not designed to replace the vehicle's operator.

Do not leave a vehicle while the BoomPilot is engaged.

Be sure that the area around the vehicle is clear of people and obstacles before and during engagement.

The BoomPilot is designed to support and improve efficiency while working in the field. The driver has full responsibility for the quality and work related results.

Disengage BoomPilot before operating on public roads or when not in use to prevent loss of vehicle control.

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REQUIRED COMPONENTS

Unpack the installation kit and identify the required parts for your installation.

Item	Part Number	Description	Quantity
A	90-xxxx*	Matrix Pro guidance controller kit	1
B	45-05845	Power/CAN/data cable	1
C	198-343	BoomPilot harness, Blanchard 11 sections + master	1
D	45-05648	Cable, Power, 3 position w/COBO connector	1
E	78-05072	BoomPilot section driver module (SDM).....	1
F	020-047	Installation manual, Blanchard REB3 Controller.....	1
G	98-05243	Matrix Pro BoomPilot setup guide	1

*Part number is dependent on kit contents

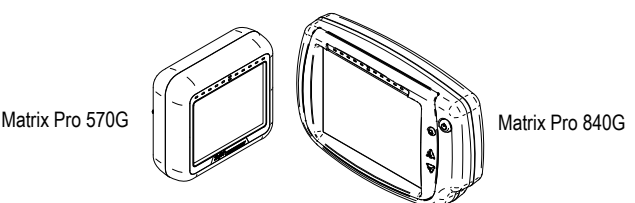
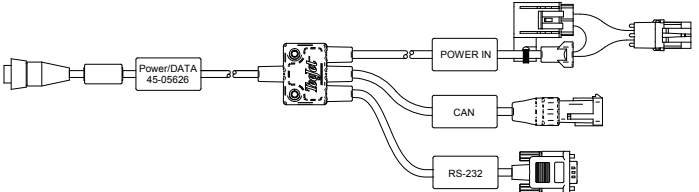
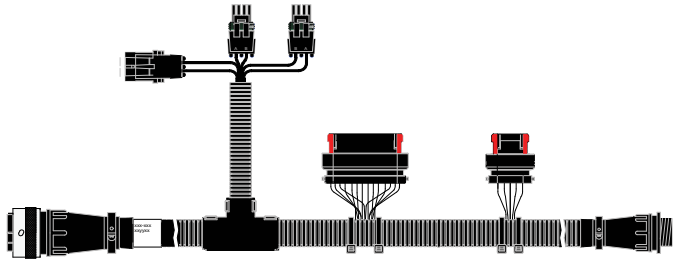

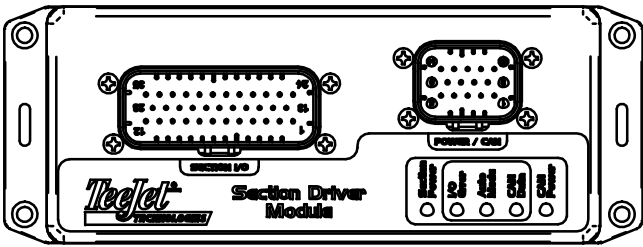
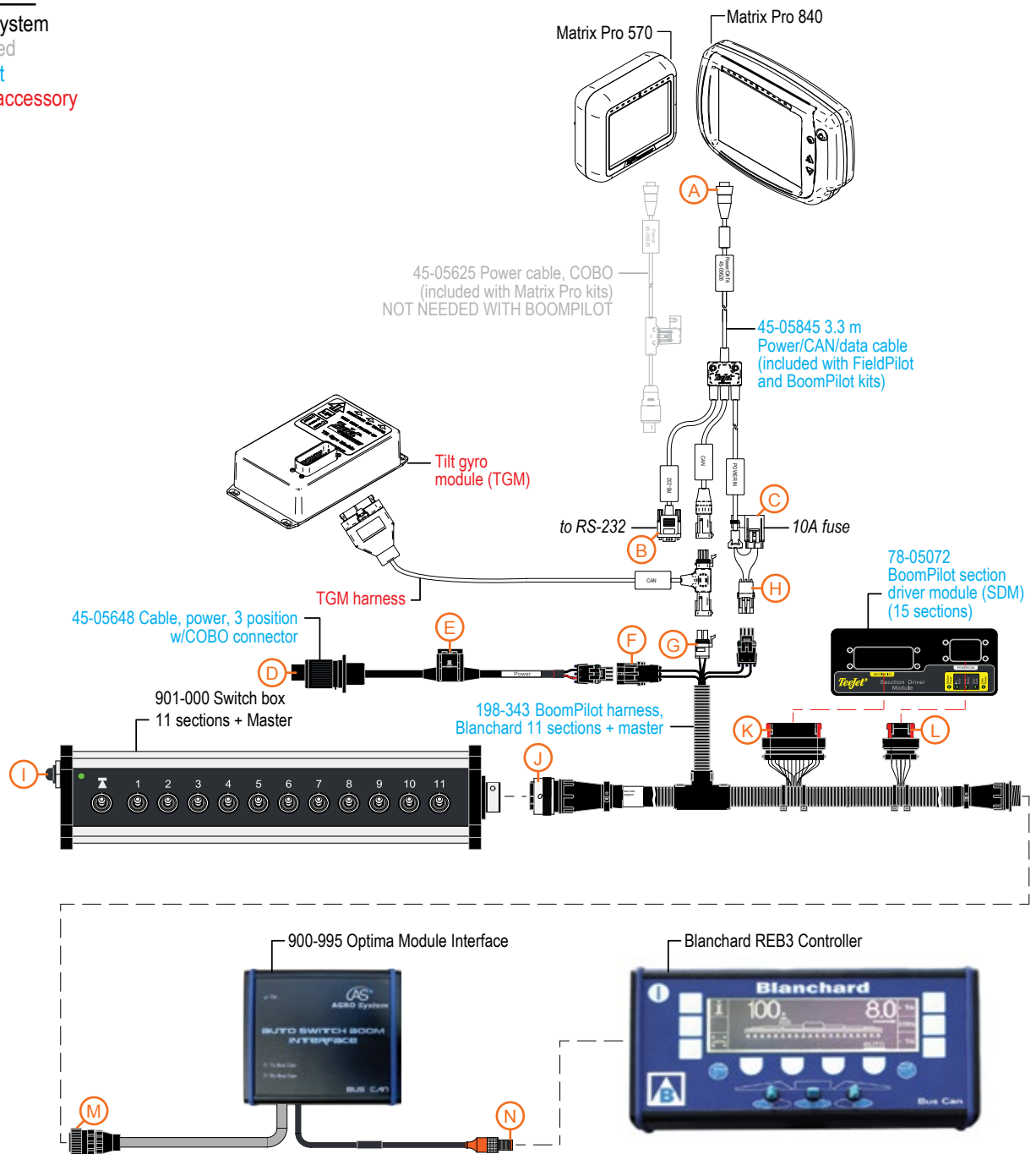
Item	Part #	Description	Illustration
A	Part number is dependent on kit contents	Matrix Pro guidance controller kit	 <p>Matrix Pro 570G Matrix Pro 840G</p>
B	45-05845	Power/CAN/data cable	
C	198-343	BoomPilot harness, Blanchard 11 sections + master	
D	45-05648	Cable, Power, 3 position w/COBO connector	
E	78-05072	BoomPilot section driver module (SDM)	
F	020-047	Installation manual, Blanchard REB3 Controller	
G	98-05243	Matrix Pro BoomPilot setup guide	

Figure 1: System diagram

Existing system
 Not needed
 BoomPilot
 Optional accessory



Connectors and fuses

	Description
A	8 position Connector (Power/CAN/Data to Matrix)
B	9 position Connector (Data in/out, Sub.D. Female)
C	Fuse (10A)
D	3 position Connector (Power, COBO)
E	Fuse (3A)
F	2 position Connector (System Power)
G	4 position Connector (CAN, Matrix and Section Driver Module)

	Description
H	2 position Connector (Power to Matrix Controller)
I	On-off Switch (Switch box)
J	28 position Connector (Connection to Switch box)
K	35 position Connector (Boom Section In/Out to Section Driver Module)
L	14 position Connector (CAN to Section Driver Module)
M	16 position Connector (Boom Section In/Out to OPTIMA Interface)
N	5 position Connector (CAN/Power Connection to REB3 Controller)

PRINCIPLE OF OPERATION

The BoomPilot system controls the sections valves according to the GPS position. The GPS makes it possible to avoid overlaps or skips.

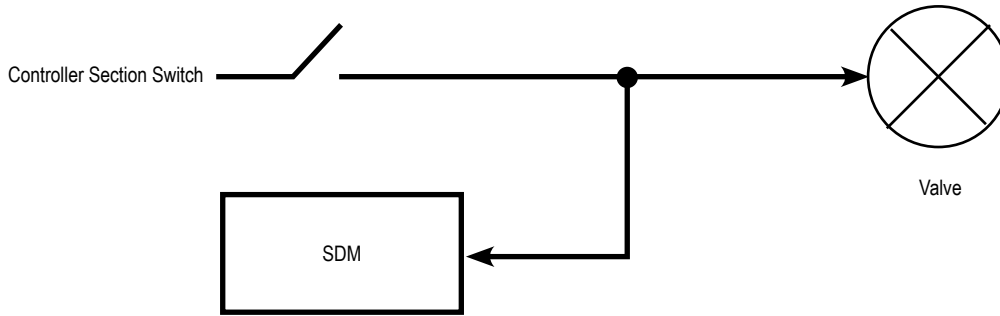
The Section Driver Module (SDM) is designed for switching active high when spraying. This means that a 12V signal is issued to control the corresponding section valve.

The SDM is connected in parallel with the controller section switches.

The BoomPilot controls the section valves in automatic mode, and the controller section switches should be set to off unless the operator wants to override the auto mode and thus force spraying.

The BoomPilot monitors the controller section switches that controls the valves in manual mode. The the Master switch can be used both in automatic mode as well as in manual mode.

Figure 2: Principle of operation



INSTALLATION



If there are questions concerning the installation of the BoomPilot system on this vehicle, or due to the changes in component specifications the parts supplied in the kit are not exactly as presented in this document, please contact your dealer or TeeJet Customer service representative for clarification before installation. TeeJet Technologies is not responsible for misuse or incorrect installation of the system.

NOTE: All references to left and right are stated as if the user is seated in the driver's seat.

NOTE: BE VERY CAREFUL TO ABSOLUTELY SECURE ALL CABLES AND HOSES SO THAT THEY DON'T INTERFERE WITH THE MANY MOVING PARTS OF THE MACHINE!

1. LOCATE THE CONNECTION POINT FOR THE SDM HARNESS

Locate the existing system's switchbox and Blanchard REB3 console. As shown in system diagram, the Optima Module Interface serves as a link between the Blanchard REB3 Controller and the BoomPilot Section Driver Module (E).

2. MOUNT & CONNECT SDM

1. Mount SDM (E) as shown where LED's can be seen for troubleshooting.
2. Connect SDM (E) to BoomPilot Harness (C).

Figure 3: Connect SDM

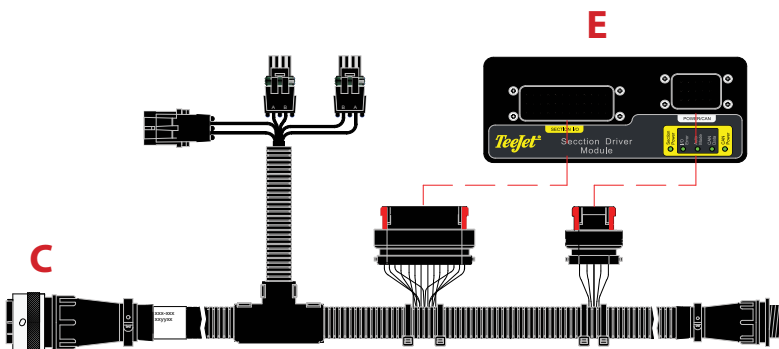
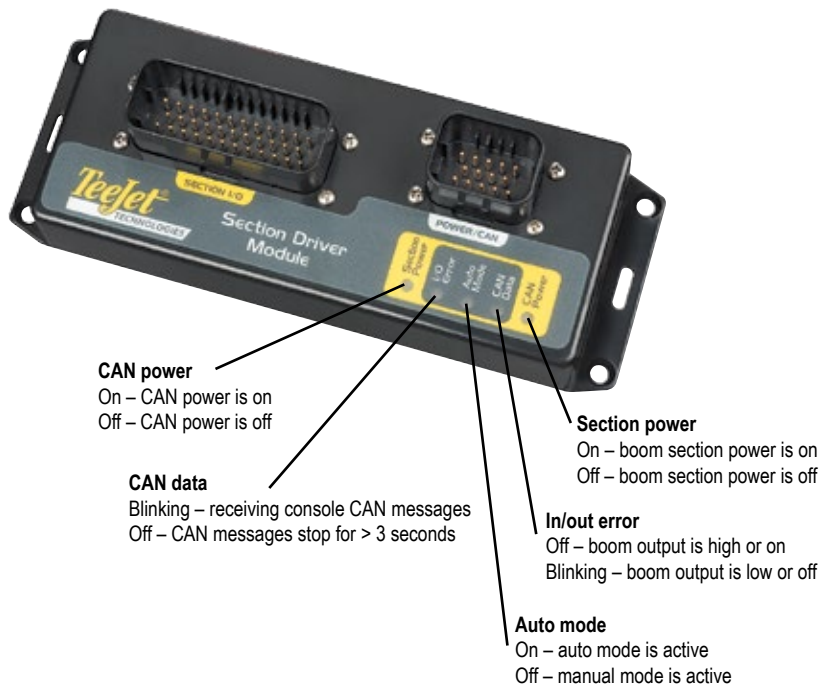


Figure 4: LED description



3. DISCONNECT & RECONNECT HARNESSSES & CABLES

The BoomPilot SDM harness (C) tees into the existing system's connection between the Blanchard REB3 rate controller and the switchbox.

1. Disconnect existing connection between the Blanchard REB3 rate controller and the switchbox.
2. Connect BoomPilot harness (C) to the switchbox.
3. Connect BoomPilot harness (C) to Optima Module Interface.
4. Connect Optima Module Interface to existing Blanchard REB3 console.

Figure 5: Switchbox to BoomPilot harness to Optima Module Interface

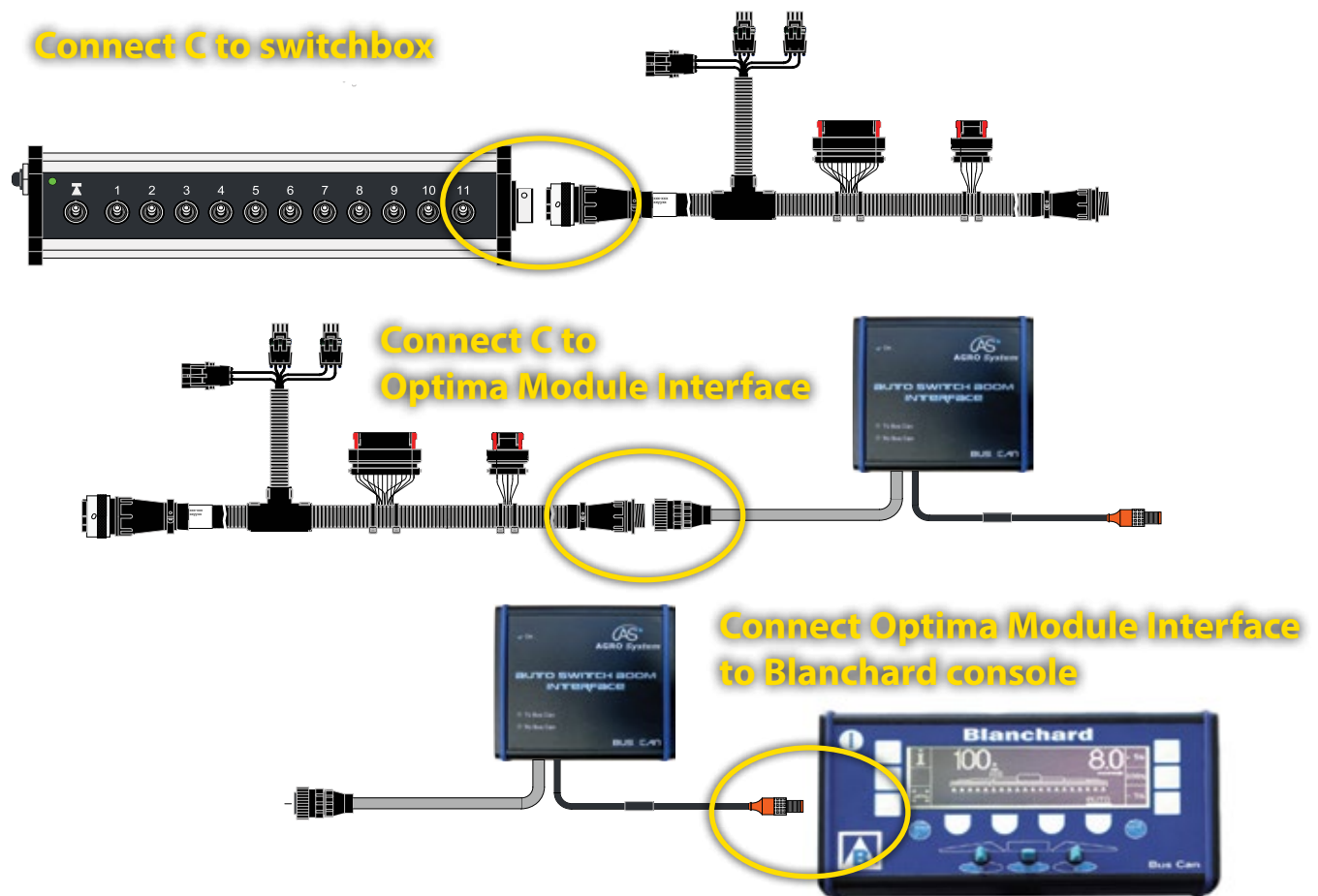
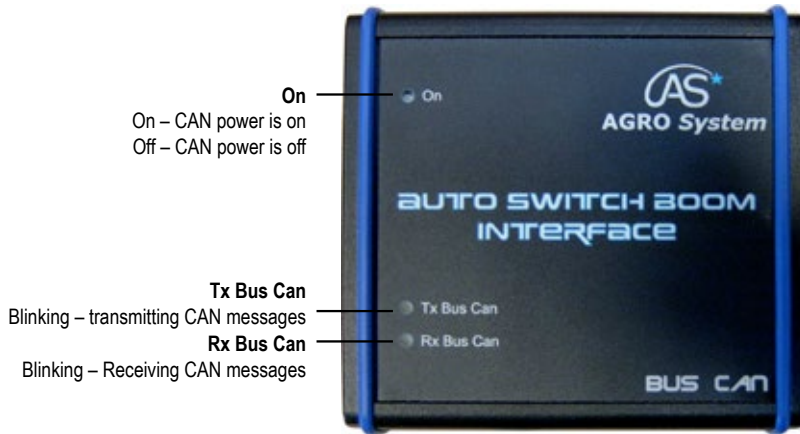


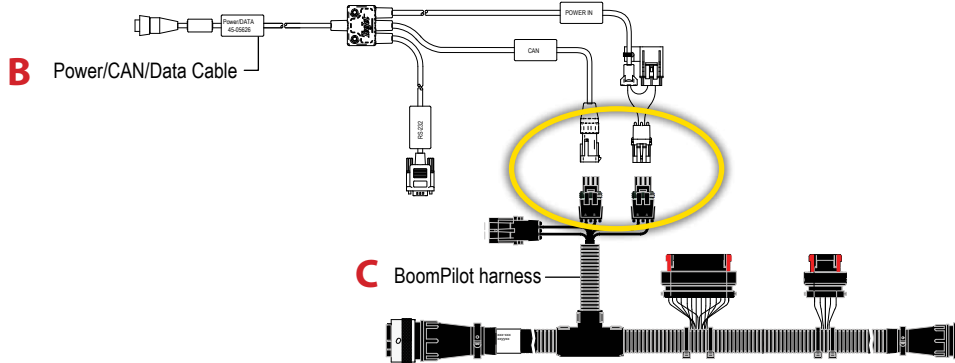
Figure 6: LED description



5. CONNECT POWER/CAN/DATA CABLE TO BOOMPILOT HARNESS

Connect Power/CAN/data cable (B) to BoomPilot harness (C).

Figure 7: Connect power/CAN/data cable to BoomPilot harness



6. CONNECTING TO POWER

COBO Cable

Connect Power cable (D) to BoomPilot harness (C).

Warning: When connecting the system to 12V power it's very important that the polarity is correct, if not the system will be damaged.

Figure 8: COBO Cable

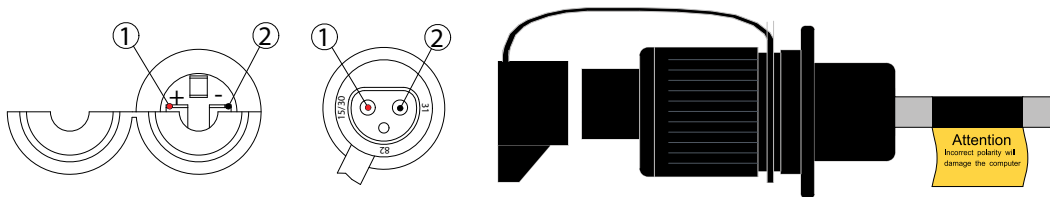
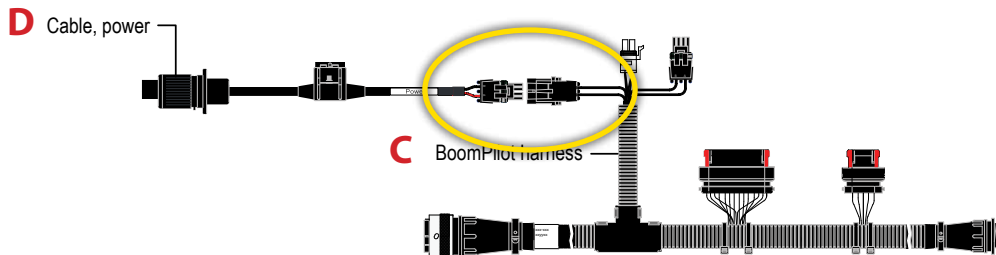


Figure 9: Connect power cable to BoomPilot harness



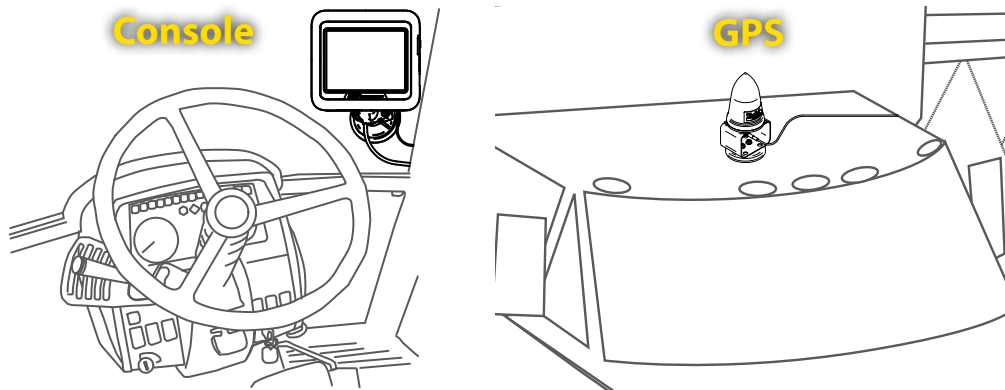
Battery Cable (Optional)

If a power connector (Socket) isn't available in the tractor cabin, an optional battery cable can be used (PN 96ET14).

7. RECOMMENDED ELECTRONICS INSTALLATION

The control console can be mounted to the operator's preference. The GPS antenna should be mounted in the center on top of the cab on a metal surface of at least 10 cm square.

Figure 10: Recommended electronics installation



8. COMPLETE ELECTRONIC INSTALLATION

Refer to the Matrix Pro BoomPilot Setup Guide for further instructions on setting up and using your Matrix Pro for ABSC.

If not using a Matrix Pro, please refer to the owner's manual supplied with the guidance system to complete the electronic installation and setup.

SYSTEM CHECK

After connecting the power connector, it is time to make a system check. To check the system, it is necessary to have full GPS signal. To obtain full GPS signal, the vehicle must be placed outside.

Check AUTOMATIC mode:

Blanchard REB3 Controller/switchbox:

- Switches on REB3 computer are deactivated once the CAN interface is connected.
- Please use switches on the switchbox to manually drive the section valves.
- Switches should be in OFF position when working in Automatic mode.
- The Master switch will control the sprayer and should be ON to enable automatic switching of the sections.

Matrix Pro:

- Turn on the Matrix Pro console
- Encode the number of sections and the width of each (Refer to the Matrix Pro user manual)
- Wait for GPS signal
- Set the BoomPilot mode to AUTOMATIC
◀ Status Bar Icon will change to green ▲
- Drive forward (> 2 km/h)
- Observe that all valves open
- Check that the valves close when the Master switch is set to OFF

Figure 11: Automatic to all booms on mode



Check MANUAL mode:

Switchbox:

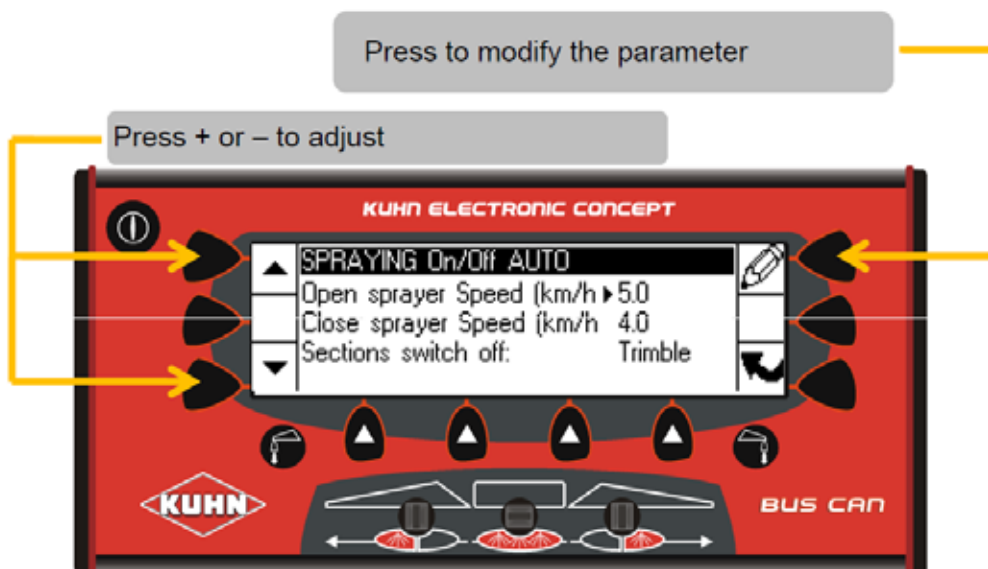
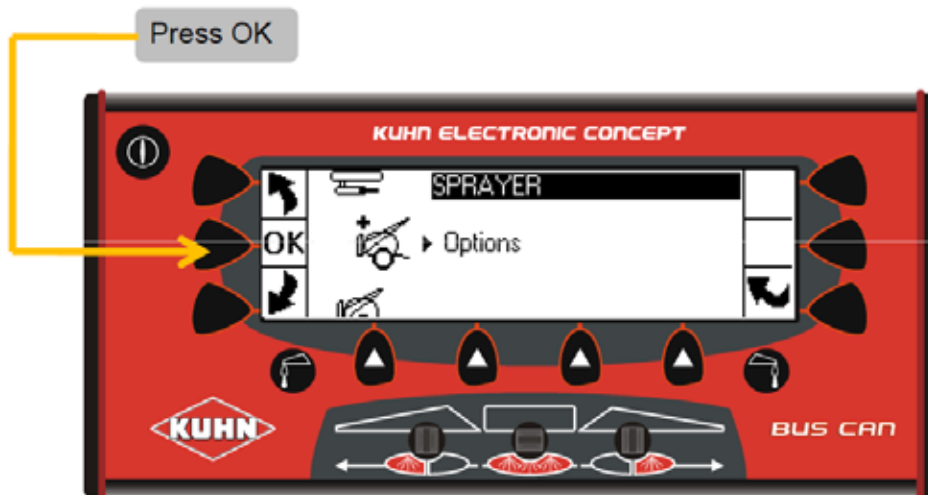
- Set the section switches to ON
- Set the Master switch to ON

Matrix Pro:

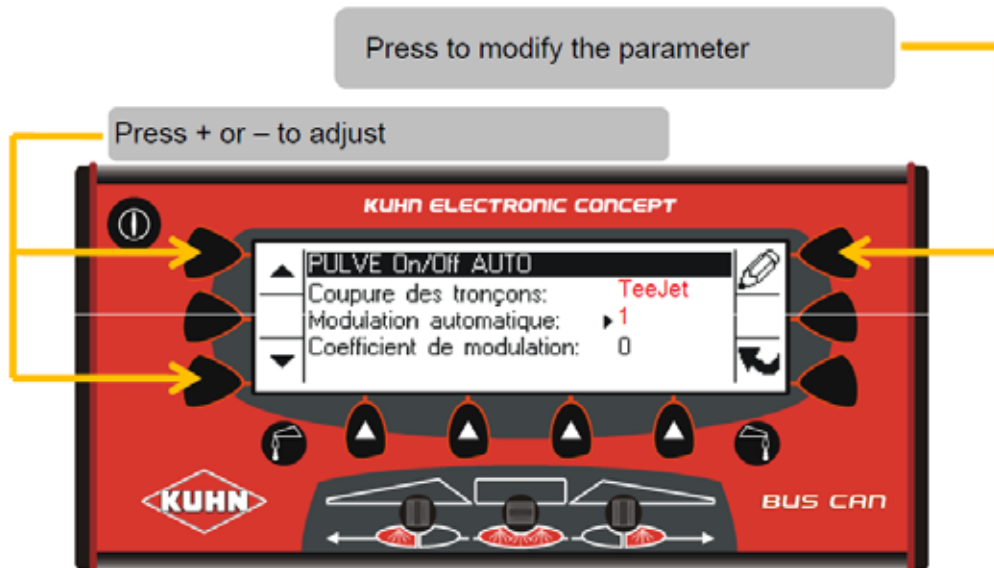
- Set the BoomPilot mode to MANUAL
◀ Status Bar Icon will change to red ▲
- Check in the 'Vehicle View Screen' (Matrix Pro) that the section icons turn off and on according to the valve/switch status
- Observe that all valves are open

SETTING BLANCHARD CONSOLE OPTIONS

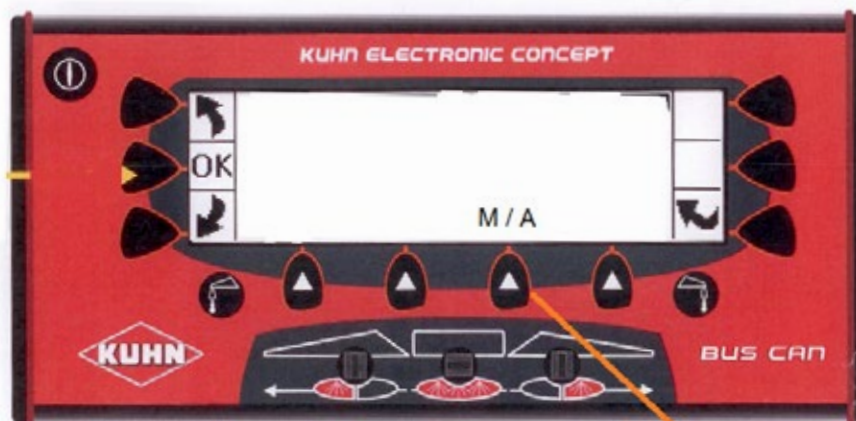
Use the following notes to setup your Blanchard console for use with BoomPilot and Matrix.



If the machine is equipped with an external system for section control, you need to set the brand (Trimble, Pico, Rinex, Teejet).



In case of work with an external source of section control, it is necessary to set the type of information received. 0 = No coupling, 1= Section control only, 2= dose modulation only, 3= section control and dose modulation



Console is in working mode:
Choose A



Shut off the sections with button in direction down.
(Don't choose the direction up!)

BOOMPILOT[®]

USER MANUAL

A series of equipment-specific installation kits have been developed to work in conjunction with your automated boom section control system. This kit contains the necessary components and instructions to install ABSC on a Blanchard REB3 Controller w/Matrix[®] Pro. Please review this manual thoroughly before beginning the installation process.

BoomPilot[®]



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