BOOMPILOT®

INSTALLATION MANUAL

Automatic boom section control installation manual for use with Amazone Amatron+ & Amatron 3 controllers w/Matrix® Pro

TeeJet TECHNOLOGIES

BoomPilot®

A Subsidiary of **Spraying Systems Co.®**

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.

Table of contents

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INTRODUCTION TO MATRIX PRO GS – BOOMPILOT

Principle of operation

The Matrix Pro GS controls the sprayer according to the GPS position as well as the GPS guidance to avoid overlaps or skips. The Matrix Pro GS controls the sprayer in automatic mode and monitor the sprayer in manual mode. The operator is always able to override the control of the sprayer via the master key on the Amatron rate controller.

Features

The Matrix Pro GS and the Amazone BoomPilot interface, in combination with Amatron+ or Amatron-3, adds 'Automatic boom section control' to Amazone sprayers.

Software version

The Amatron and the Matrix Pro GS communicates via a special interface using the Amaclick CAN bus protocol. The software version in the Amazone job-computer must be v7.07.16 or higher. If the job-computer software is older than 7.07.12, please contact your Amazone dealer.
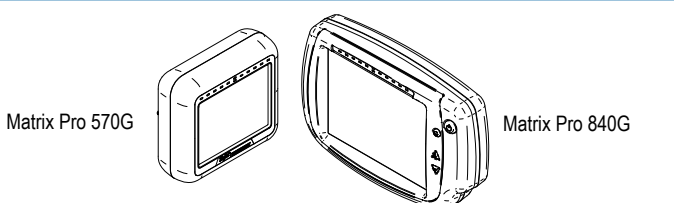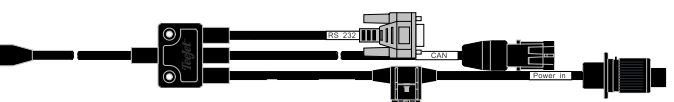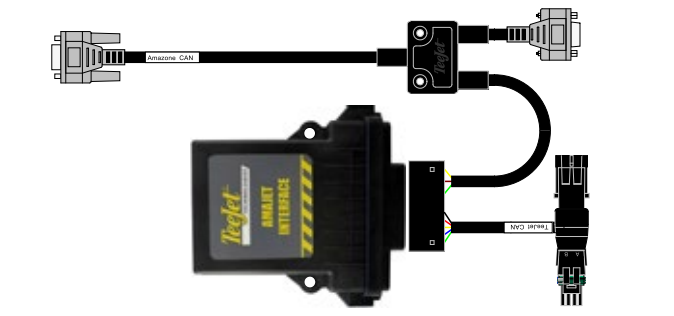
NOTE: Messages on AMABUS system as to if the BOOM/TOWER is active/inactive while in the transport position were not implemented prior to version 7.07.12.

REQUIRED COMPONENTS

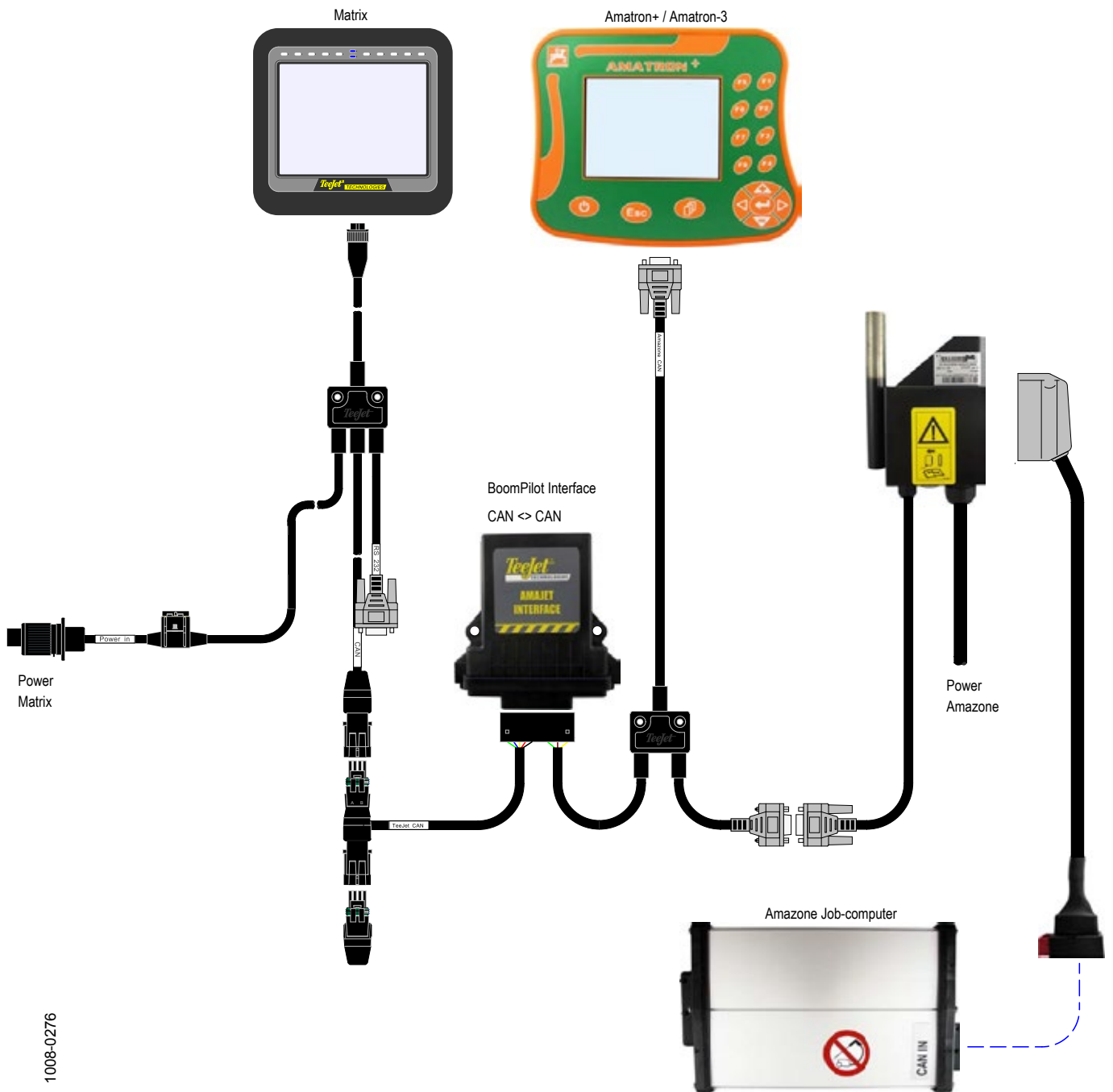Unpack the installation kit and identify the required parts for your installation.

Item	Part Number	Description	Quantity
A	90-xxxxx*	Matrix Pro GS guidance controller kit	1
B	45-05826	Power/CAN/Data cable w/COBO connector	1
C	90-02883	Amatron+ / Amatron-3 BoomPilot interface with harness.	1
	45-05919	Harness, Amazone Interface	1
	78-05108	Interface, Amazone BoomPilot	1
	98-05328	Installation manual, Amazone Amatron+ / Amatron-3 Controller	1
D	45-08101	CAN bus termination	1

Part number is dependent on kit contents

Item	Part #	Description	Illustration
A	Part number is dependent on kit contents	Matrix Pro GS guidance controller kit	Matrix Pro 570G Matrix Pro 840G
B	45-05826	Power/CAN/data cable w/COBO connector.	
C	90-02883	Amatron+ / Amatron-3 BoomPilot Interface with harness.	
		45-05919 — Harness, Amazone Interface	
		78-05108 — Interface, Amazone BoomPilot	
		98-05328 — Installation manual, Amazone- Amatron+ / Amatron-3 Controller.	
D	45-08101	CAN bus termination.	

The Amazone system can include a joy-stick or/and a Amaclick switch box, so your system may vary from the system overview drawing, see the possible combinations on the next page.

Figure 1: System diagram

Matrix

Amatron+ / Amatron-3

BoomPilot Interface
CAN <> CAN

Power
Matrix

Power
Amazone

Amazone Job-computer

1008-0276

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The TeeJet BoomPilot interface communicates with the Amatron via the Amaclick protocol using the same CAN bus-id. **The Amaclick and the BoomPilot interface cannot be connected at the same time.**

AMACLICK is an optional ergonomic CAN bus switch box, typical used in special crops which often require manual on/off control of the individual sections. When the BoomPilot interface is connected, manual on/off control of the individual sections must be done via the joy-stick or Amatron.

Figure 2: Possible combinations
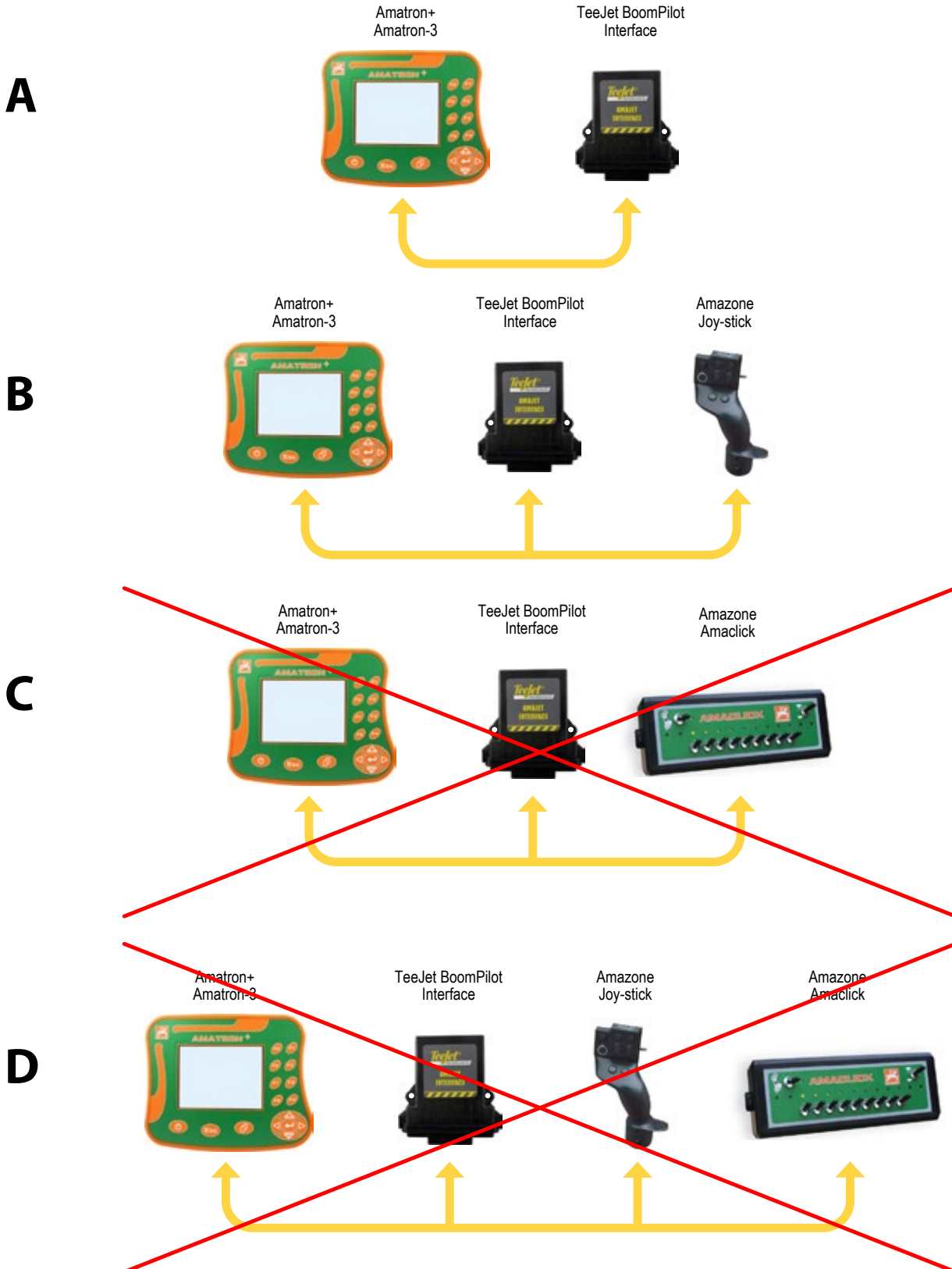
INSTALLATION

⚠ 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 THAT THEY DON'T INTERFERE WITH THE MANY MOVING PARTS OF THE MACHINE.

1. CONSOLE

A secure, mechanical mounting solution needs to be employed for permanent mounts within an operating vehicle.

Figure 3: Recommended console placement
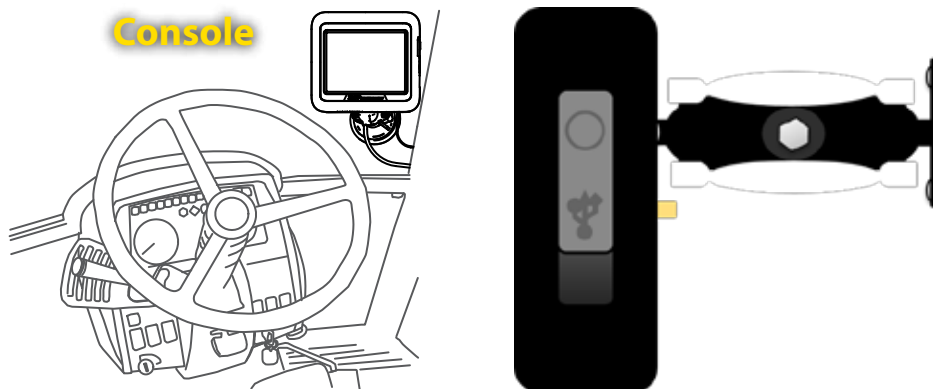
2. ANTENNA

The GPS Antenna base is magnetic. Position the antenna in the centre of the vehicle at the highest point with a clear view of the sky. A metal plate with adhesive strips has been included in the kit for easy mounting and installation.

Figure 4: Antenna placement
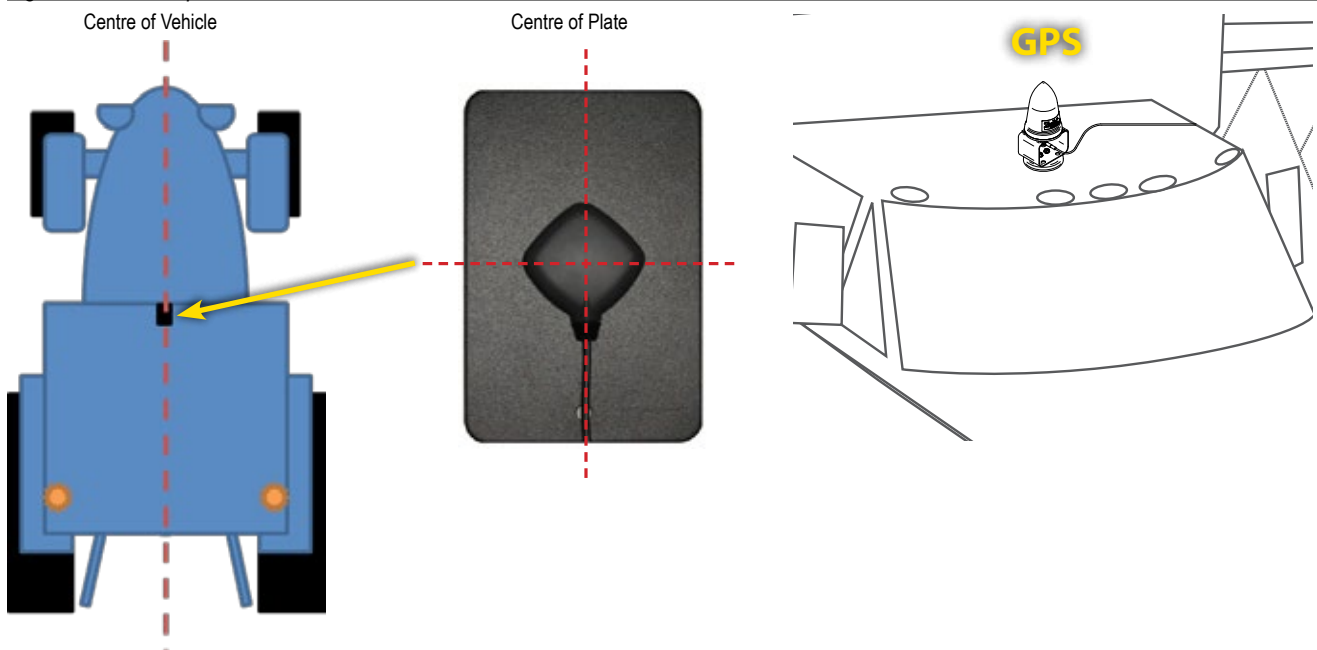
⚠ *It is STRONGLY recommended to use this metal plate underneath the antenna as it will improve signal acquisition. Once the antenna has been positioned, route the antenna cable carefully to avoid damage.*

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3. BOOMPILOT INTERFACE

Connect the BoomPilot interface cable to the Amazone CAN bus, as the last item before the Amatron controller.

*Figure 5: BoomPilot interface cable to the Amazone CAN bus*
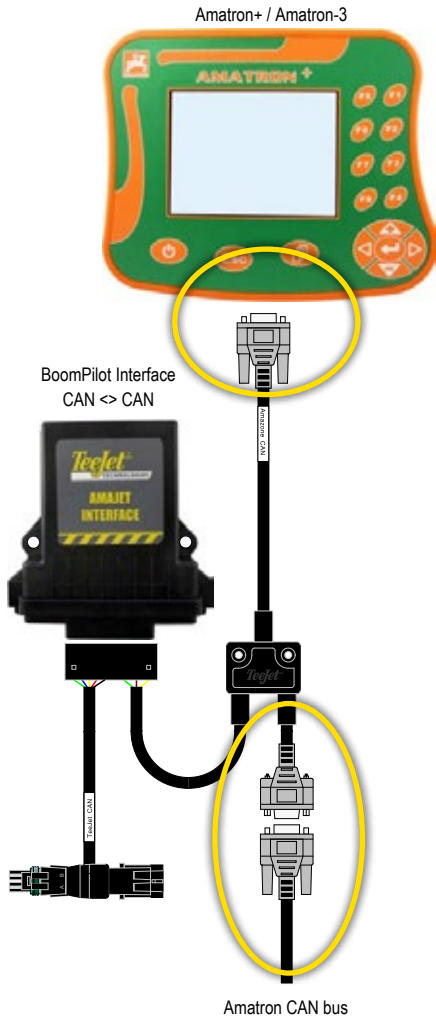
4. CAN/POWER/DATA CABLE & CAN TERMINATION

Connect the BoomPilot interface cable to the TeeJet CAN bus via the CAN/Power/Data cable. The CAN bus termination ends the CAN bus.

The TeeJet system can include other CAN bus modules like camera selector module or similar, so the your system may vary from the picture shown in the example.

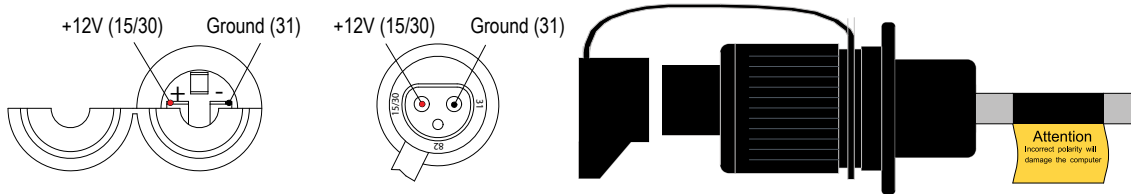*Figure 6: CAN/Power/data cable & CAN termination*
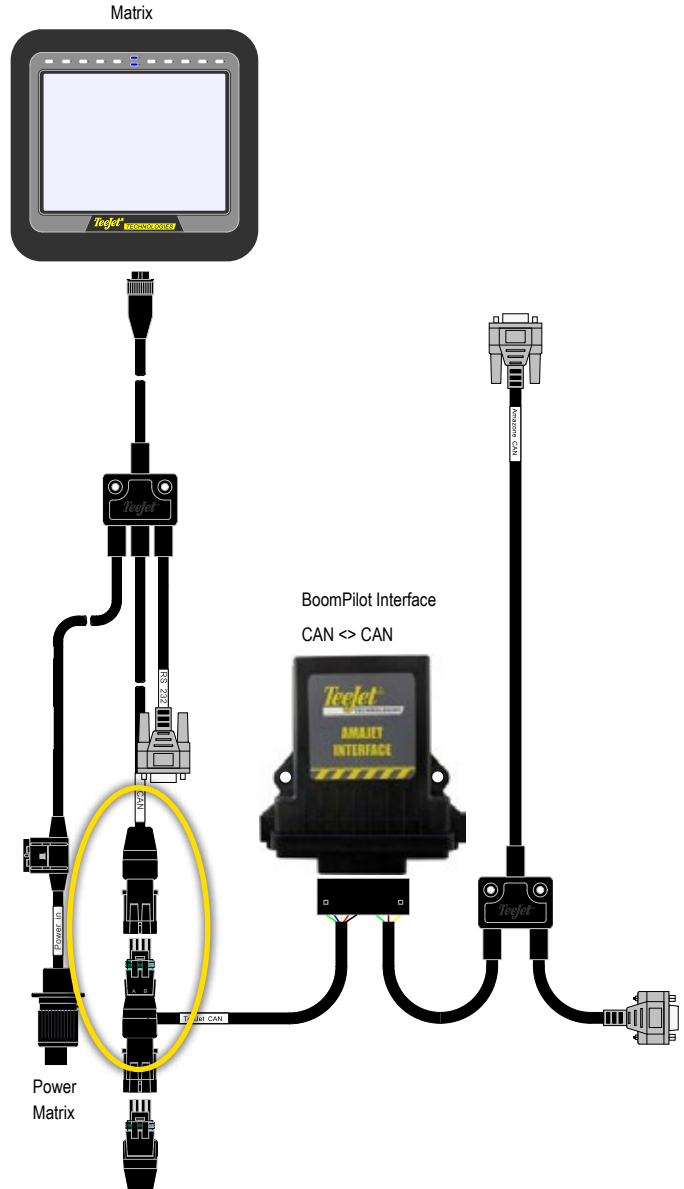
5.   POWER

Connect the Matrix Pro GS to constant power via the 3P connector (Only the big pins no. 15/30 and no. 31 are used).

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

+12V (15/30)   Ground (31)   +12V (15/30)   Ground (31)

Attention
Incorrect polarity will damage the computer

Pos.	Description
1	+12V (15/30)
2	Ground (31)

Optional Battery Cable

If your tractor doesn't support two power sockets, TeeJet offer an 'Y-Power cable', PN 198-332 (Contact your TeeJet dealer).
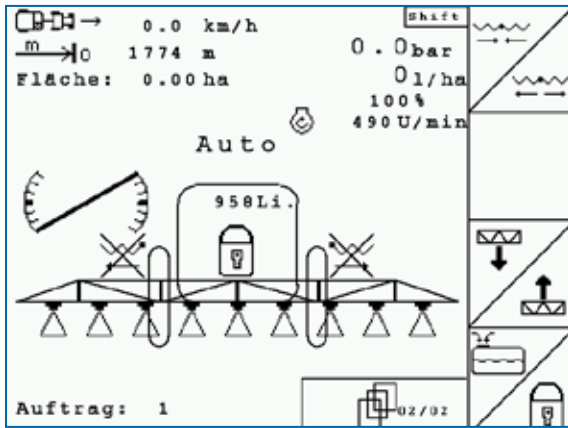
198-332
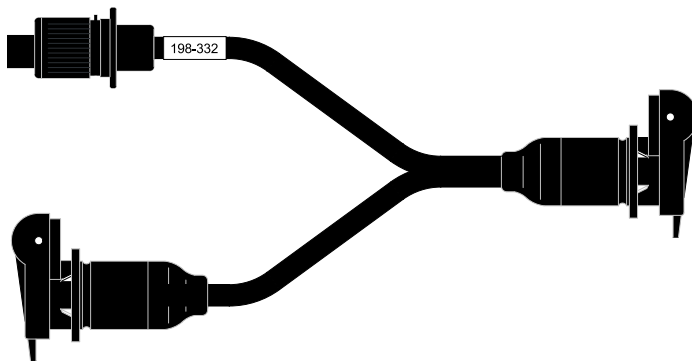
6.   COMPLETE ELECTRONIC INSTALLATION

Refer to the Matrix Pro GS BoomPilot Setup in the full user manual for further instructions on setting up and using your Matrix Pro GS for automatic boom section control.

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

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TRANSPORT MODE NOTES

When in transport mode with the boom locked and tower locked, all jobs on the Matrix Pro GS console should be closed.

Figure 7: Amatron work screen with boom locked and tower locked

SYSTEM CHECK

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

Amatron

Refer to the Amatron setup guide for further instructions on setting up the Amatron, if not already done.

1. Turn on the Amatron. It's important the Amatron is turned on before the Matrix Pro GS.
2. Unfold the boom so the Amatron is unlocked.
3. Select the work screen.

Matrix Pro GS

Refer to the Matrix Pro GS user manual for further instructions on setting up and using your Matrix Pro GS for automatic boom section control.

1. Turn on the Matrix Pro GS console.
2. Encode the number of sections and the width of each and other necessary settings like distance from antenna to boom, overlap% etc.
3. Wait for GPS signal and start a new job.
4. Set the BoomPilot mode to AUTOMATIC (Press the ▲ icon).
    ◄ Matrix Pro GS status bar Icon will change to green ▲.
    ◄ Amatron manual boom section keys on the work screen will disappear
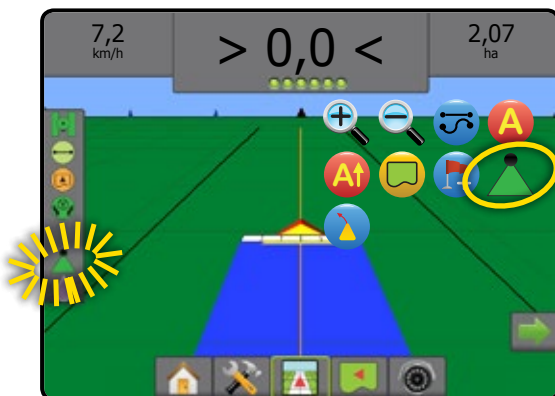
Figure 8: Automatic to all booms on mode

Figure 9: Amatron work screen,
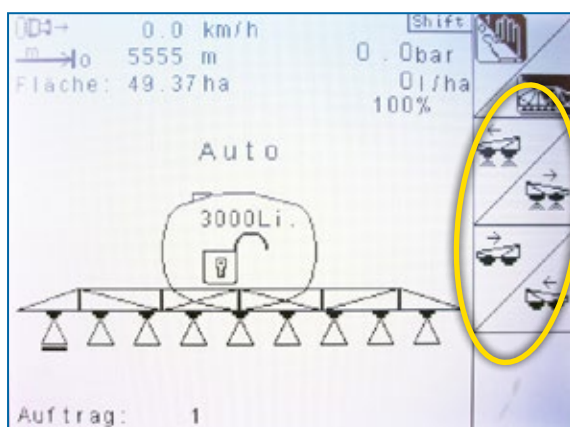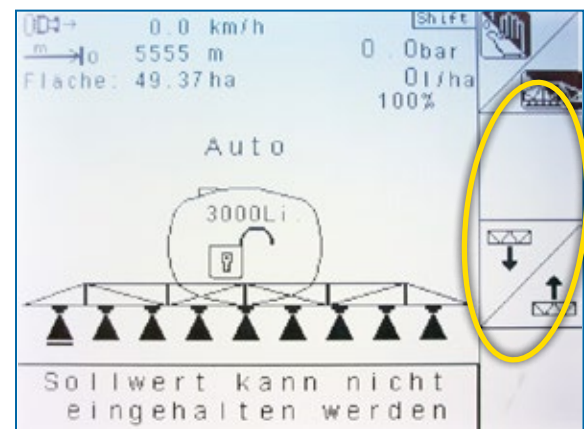*when the Matrix Pro GS is in MANUAL mode*

Figure 10: Amatron work screen
when the Matrix Pro GS is in AUTO mode

5. Drive forward (> 1.2 km/h).
6. Observe that all boom section valves open and the boom indication in the Matrix Pro GS shows ON (White)
7. Check that the valves close when the master key is set to OFF in the Amatron, or by spraying over an applied area, check the boom indication in the Matrix Pro GS, shows OFF (Transparent).

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INSTALLATION 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 BoomPilot on a Amazone Amatron+ / Amatron-3 controller. Please review this manual thoroughly before beginning the installation process.

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