

HOW TO GUIDE: Leica mojo3D and accessories cabling options

This document designed to assist with the installation of the mojo3D and the accessories, these include:

- Basic System
- Port Expansion Cable
- GeoPro antenna
- Multi Section control kit
- Direct serial multi section control
- mojoXact
- SteerDirect steering solutions

An installation should always be carried out with the appropriate product manual, and installation guides where ever possible

Basic System

The mojo3D is supplied with a power cable, GPS antenna and cell modem antenna. The diagram below shows the minimum connections for the mojo3D:

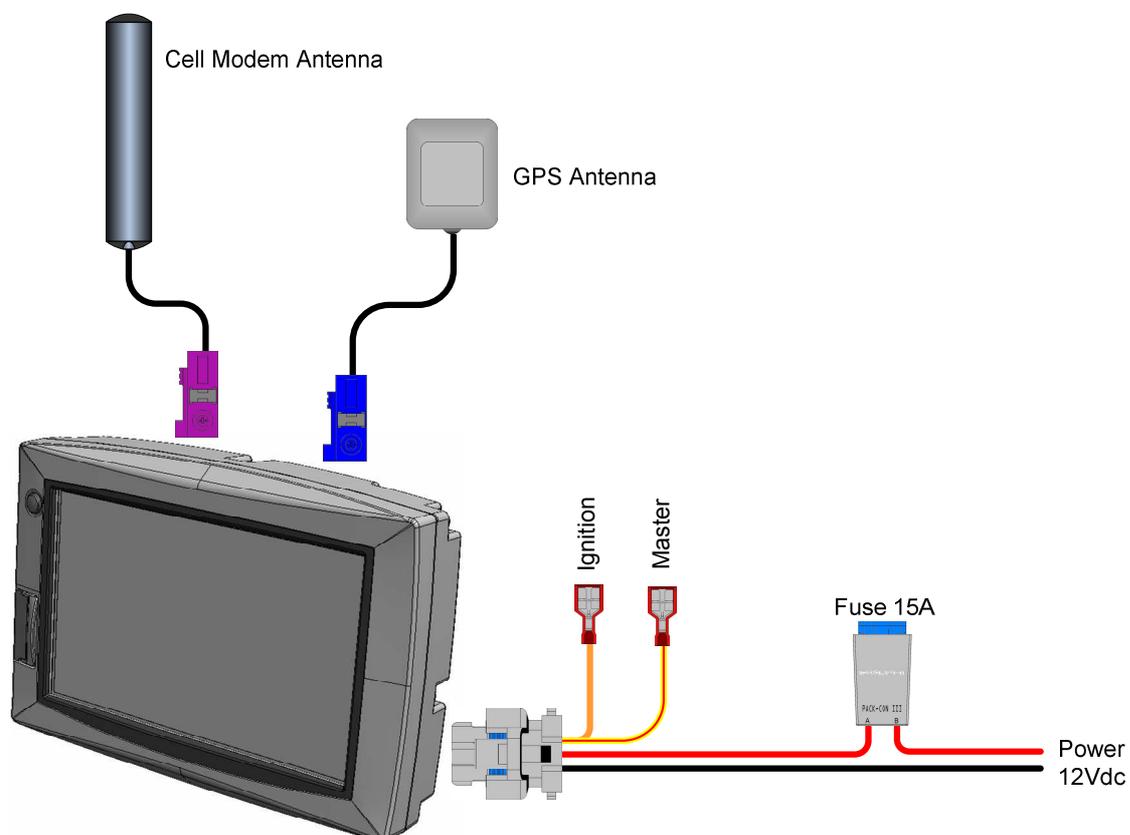


Figure 1.
Shows the mojo3D standard Leica mojo3D kit and the necessary connections for the basic install.

The ignition and master inputs are optional for normal operation.

Cell Modem Antenna: Should be adhered to the inside window of the cab but no closer than 20cm (8") to the operator's normal driving position. The blue connector is keyed so it cannot be connected to the wrong mojo3D connector.

GPS Antenna: Should be mounted to the roof of the machine on the centre line using either the magnetic mount or the supplied tape. The violet connector is keyed so it can't be connected to the wrong mojo3D RF connector.

Power: Must be connected to a permanent 12Vdc power source capable of delivering a constant 2A. The red wire is positive 12V while the black wire is ground. The Orange ignition wire may be connected to a switched ignition power source to automatically power the mojo3D on and off with the machine.

Master Input: The optional master input may be connected to an external switch for remote operation of coverage function. The master input should be 12V when on and ground or floating when off.

Port Expansion Cable

The port expansion cable offers connection to:

- mojoRTK System
- mojoXact System
- NMEA Serial Output data
- Radar Output
- Single Section Control Output
- External CAN Devices Including the Electric/SteerDirect Steer Kits and Multi-Section Kit.
- External Serial Devices including section controllers

mojo3D – Port Expansion Cable **(mojoXact compatible)**

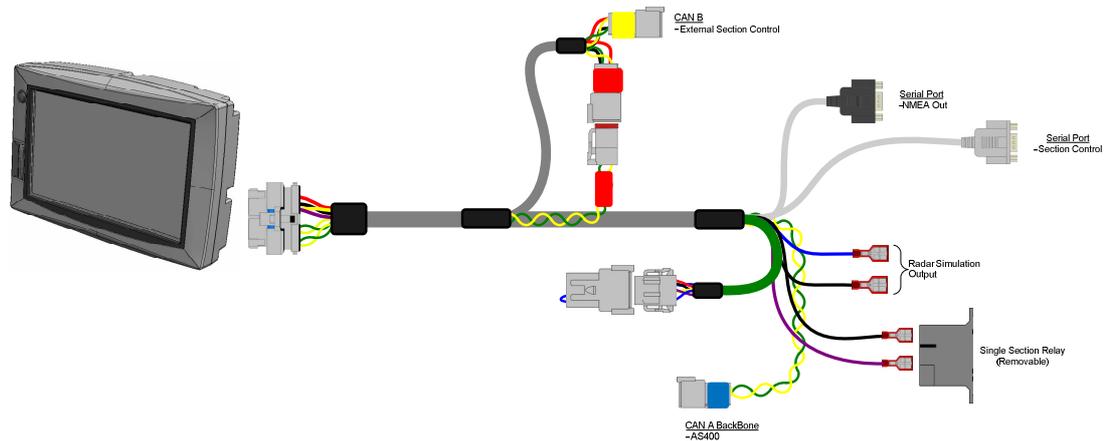


Figure 2.
Shows the mojo3D with the mojoXact compatible port expansion cable (Part Number# 782766)

mojoRTK / NMEA0183 Output: The short D9 connector serial data output port is used to connect to either the mojoRTK console or provide standard NMEA0183 data output to external 3rd party devices. A mojoRTK External Control Cable is required to connect to the mojoRTK console.

CAN Port: The expansion bus connector is the CAN port used to connect to the Electric Steer Kit and/or the Multi-Section Kit.

Radar Output: The Radar output simulates a ground speed radar signal to connect to 3rd party devices that can receive a radar input. The Black wire is ground while the blue wire is the radar variable frequency output. The output frequency is 26.11Hz/Km/hr (42Hz/mph) and receiving devices should be setup for this scale.

Single Section Control Output: An isolated switched output via a relay is provided for single section control. This switch is provided by the two grey wires. Up to 30A can be switched through the relay to power 3rd party equipment.

Leica mojo3D Standalone

The Leica mojo3D is designed to operate in a variety of modes. Illustrated in this section is the standalone mode where the system is not connected to an RTK device.

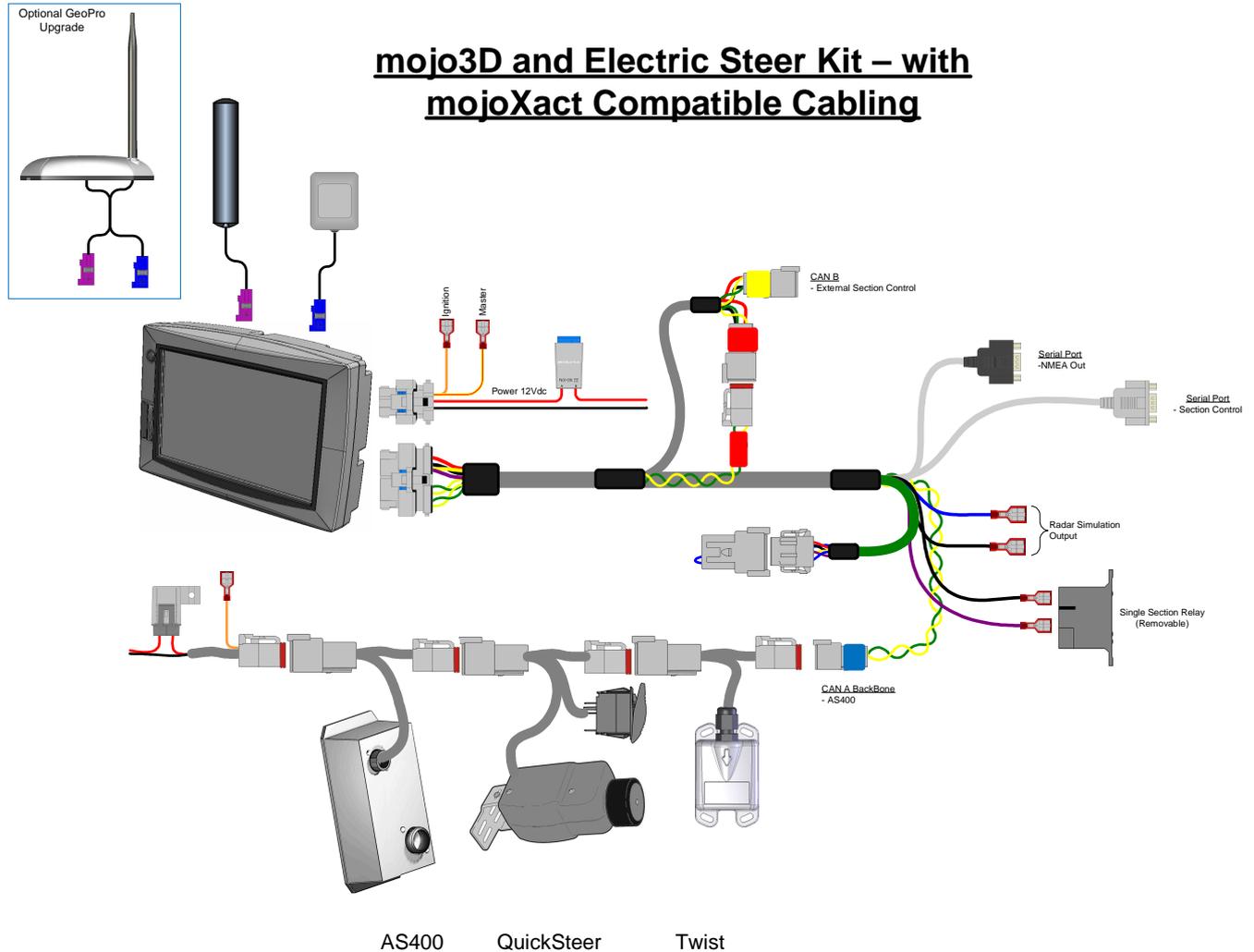


Figure 3. Shows the mojo3D with the mojoXact compatible port expansion cable (Part Number# 782766) connected to the Twist terrain compensation module, Leica QuickSteer, and a multi section AS400 voltage control kit.

Power: The power connection for the Electric Steer Kit should be able to supply 5A continuous from a permanent 12V supply. If the Multi-Section Kit is also being used then this connection must be able to supply 13A continuous and the Multi-Section Kit must be connected closest to the power source. A 5m (16.4') cable is supplied so that direct connection to the battery is possible if required. The Orange ignition wire may be connected to a switched ignition power source.

Leica QuickSteer: The QuickSteer is to be mounted to the steering column. For details on how to install the QuickSteer using its Universal QuickSteer Bracket consult the Leica QuickSteer User Manual supplied with the product.

Note: The following cables supplied with the QuickSteer are not required for installation with the mojo3D:

- 676093: QuickSteer CAN Cable
- 676092: QuickSteer Generic Power Cable

These two cables are only supplied for connection to the mojoRTK system, instead the QuickSteer should be connected to the QuickSteer CAN interface cable only.

Switch: The guidance switch serves two functions:

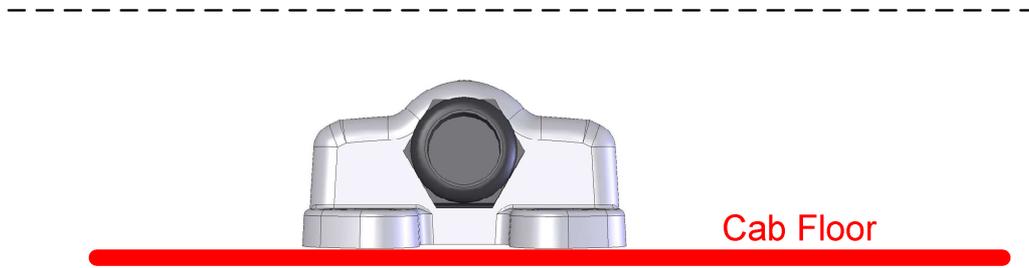
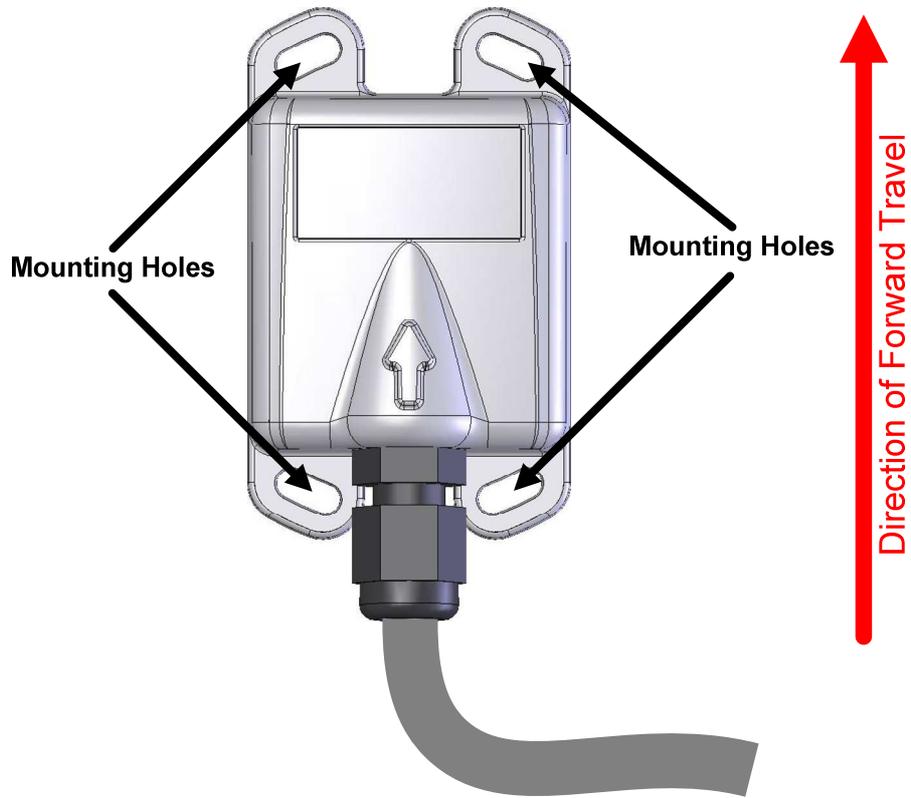
- Power Isolation for the QuickSteer
- Steering Engage function

The wires on the QuickSteer CAN interface cable are numbered; these numbers correspond to the numbered terminal pins on the switch.

The switch is a standard size and should fit into a spare switch location on the machines operating panel.

Leica Twist: The Leica Twist must be oriented flat on the floor with the arrow facing in the forward direction of travel. The Leica Twist should be mounted out of the way in a location where it's unlikely to be struck by pedals or feet. No interaction with the Leica Twist is required.

The Leica Twist needs to be firmly bolted to the Cab floor using the four Screws and nuts supplied. 5mm Holes should be drilled into the rubber mat using the Leica Twist as a template.



mojo3D and SteerDirect (Case #1)

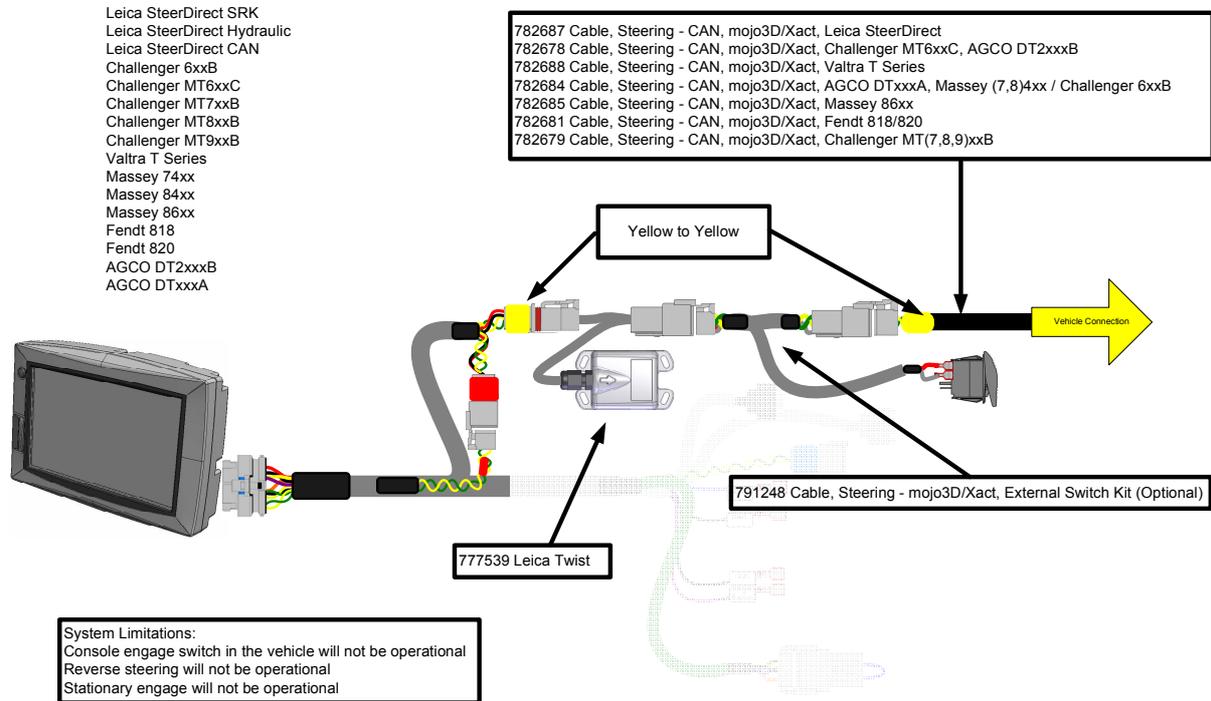


Figure 4. Shows the first case of a mojo3D with the mojoXact compatible port expansion cable (Part Number# 782766) connected to the Leica Twist terrain compensation module, optional external engage switch (Part Number# 791248), and a SteerDirect steering cable

mojo3D and SteerDirect (Case #2)

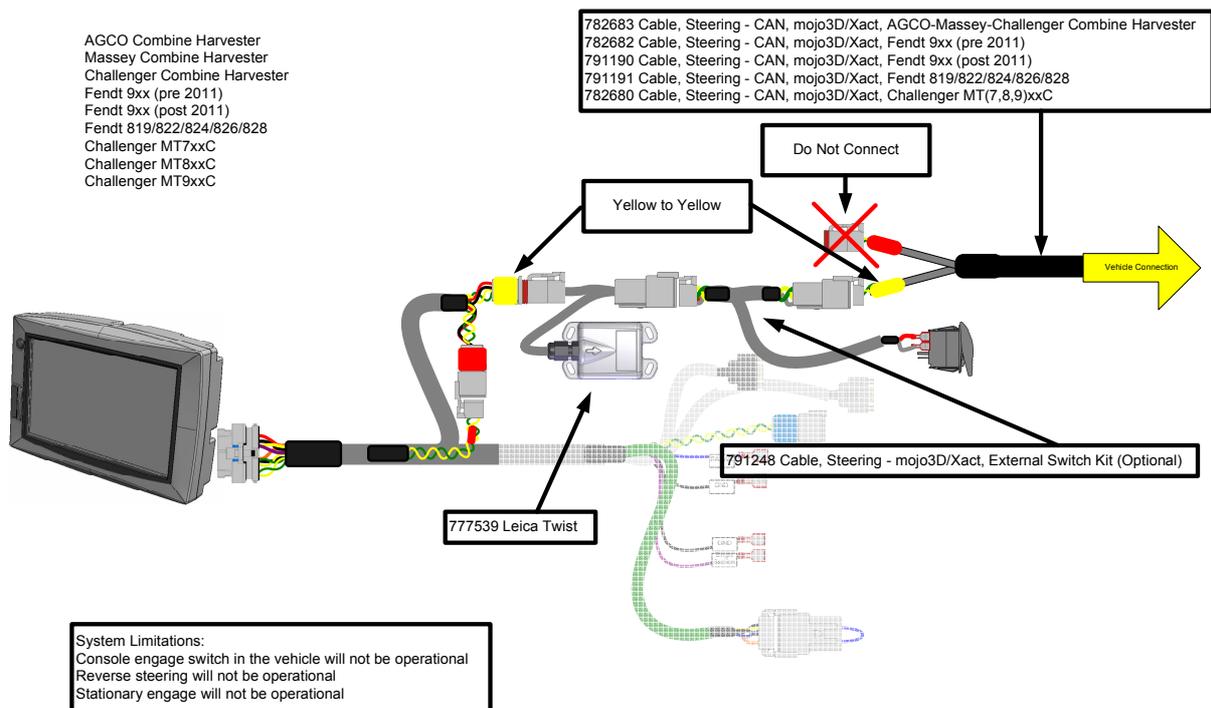


Figure 5. Shows the second case of a mojo3D with the mojoXact compatible port expansion cable (Part Number# 782766) connected to the Leica Twist terrain compensation module, optional external engage switch (Part Number# 791248), and a SteerDirect steering cable

mojo3D and SteerDirect (Case #3)

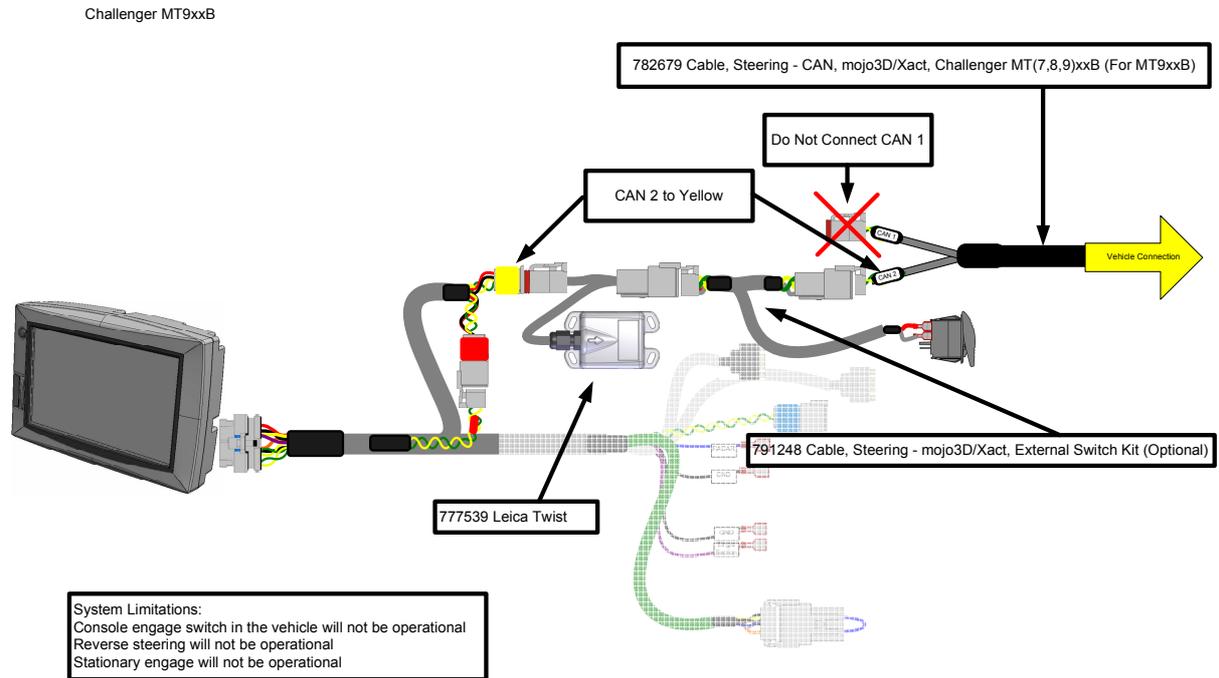


Figure 6. Shows the third case of a mojo3D with the mojoXact compatible port expansion cable (Part Number# 782766) connected to the Leica Twist terrain compensation module, optional external engage switch (Part Number# 791248), and a SteerDirect steering cable

mojo3D and SteerDirect (Case #4)

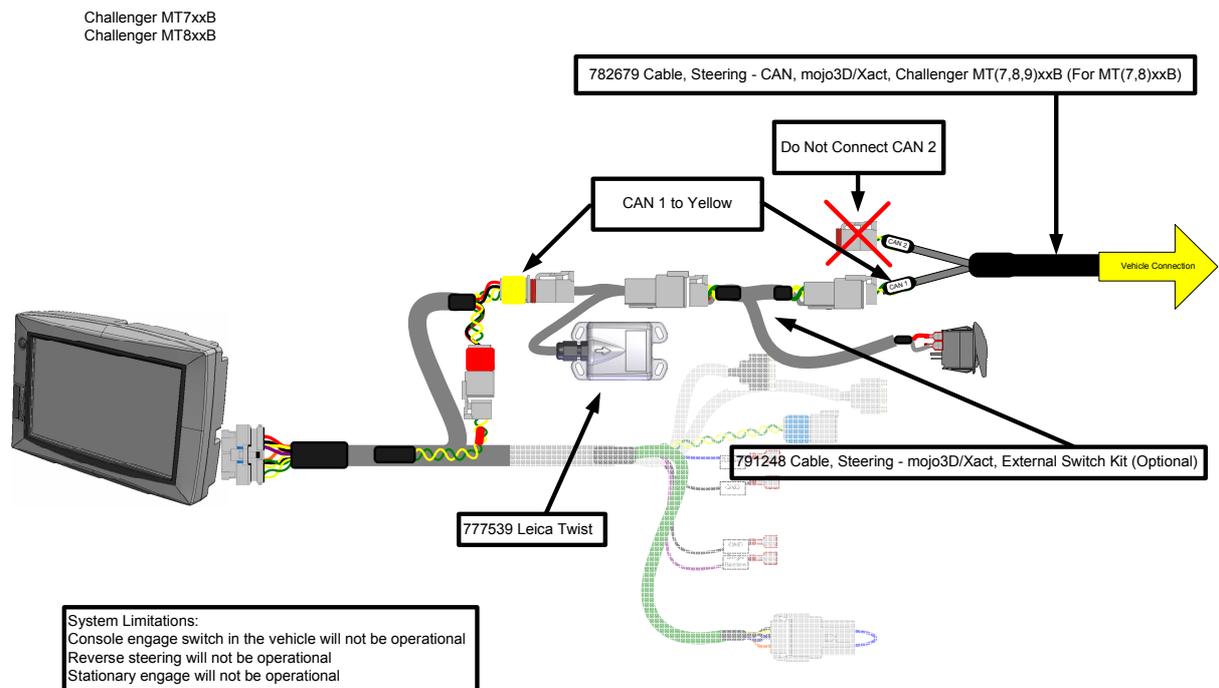


Figure 7. Shows the final case of a mojo3D with the mojoXact compatible port expansion cable (Part Number# 782766) connected to the Leica Twist terrain compensation module, optional external engage switch (Part Number# 791248), and a SteerDirect steering cable

Leica mojo3D Section Control Options

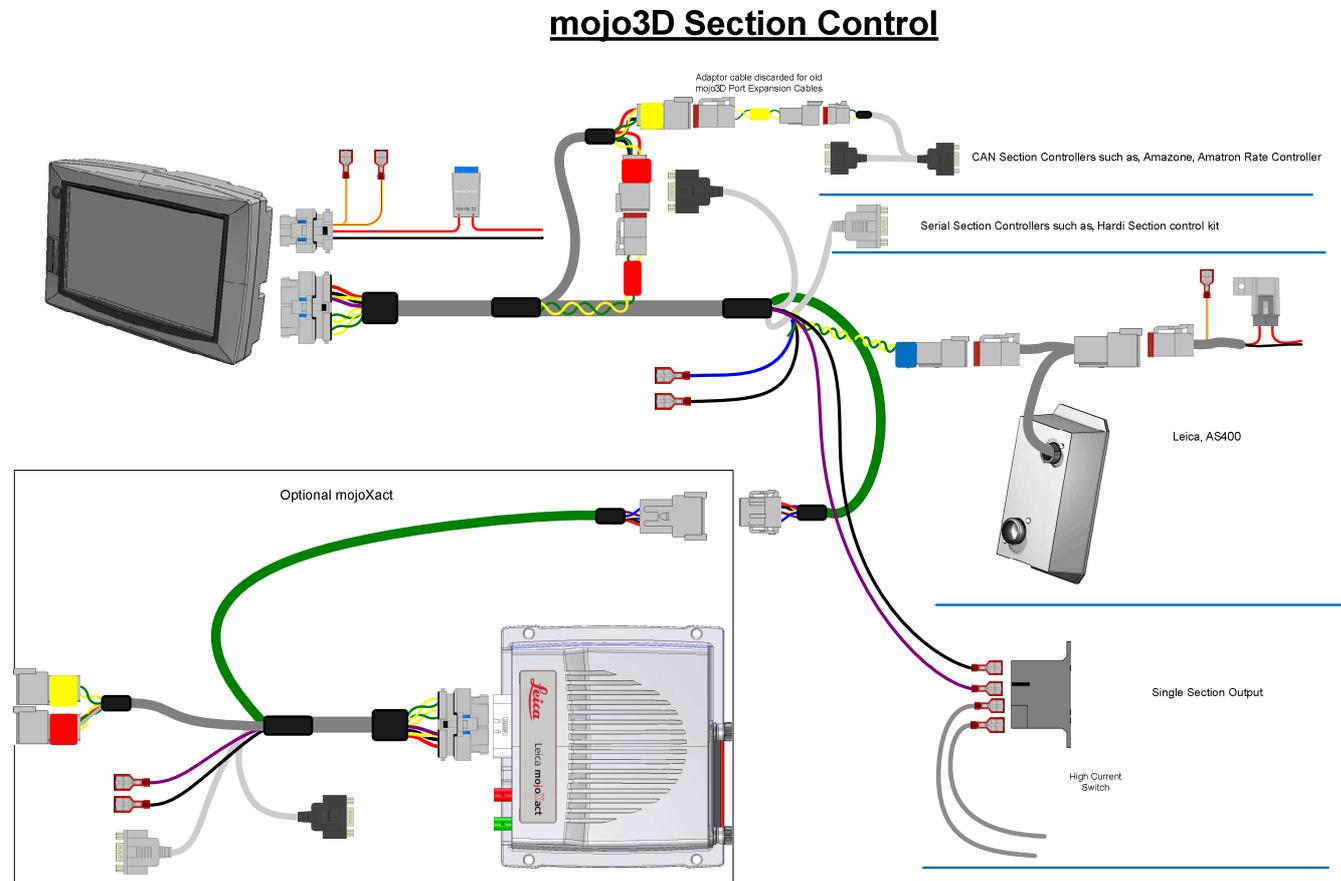


Figure 8.

Diagram shows the various section control options for the mojo3D and their connection to the mojo3D port expansion cable. This is applicable for when the mojo3D is used on its own or with the mojoXact.

Options available:

- Single section control – standard with mojo3D port expansion cable.
- Multi section control kit for voltage control using the AS400 (Part number #6004481). This also requires a controller specific cable
- CAN section control such as with the Amazone Amatron+ serial multi section control kit (Part number #6006322).
- Serial section control such as with the Hardi 5500/6500 serial multi section control kit (Part number #6005996).

Power: The power connection for the Multi-Section Control kit should be able to supply 8A continuous from a permanent 12V supply. If the Electric Steer Kit is also being used then this connection must be able to supply 13A continuous and the Multi-Section Control Kit must be connected closest to the power source. A 5m (16.4') cable is supplied so that direct connection to the battery is possible if required. The Orange ignition wire may be connected to a switched ignition power source.

AS400: The AS400 section controller should be located in the cab and provides up to 13 section control. For more information regarding the AS400 mounting, section connection and other features please consult the AS400 user manual.

Leica mojo3D with a mojoXact

The Leica mojo3D is specifically designed to operate with the Leica mojoXact to provide RTK positioning and highly accurate steering.

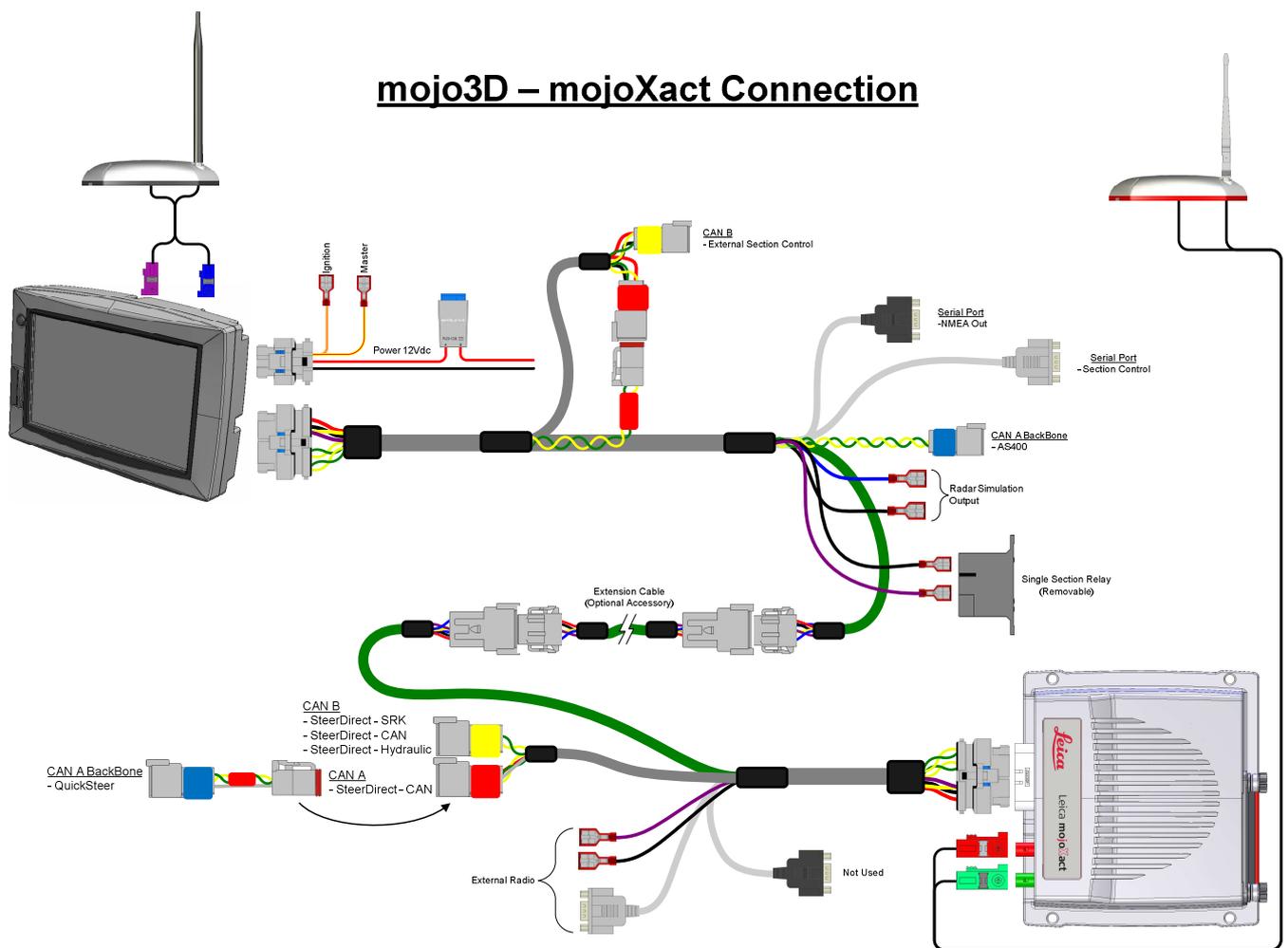


Figure 9. Diagram shows how the mojo3D with the mojoXact compatible port expansion cable (Part number # 782766). This connects to the mojoXact port expansion cable (Part number #781764) and mojoXact to provide additional accuracy and steering kit options for the mojo3D. The Diagram also shows the optional port expansion extension cable (Part number #781763).

Leica mojo3D and mojoXact Steer kit Connections

There are multiple configurations that can take place when connecting a Leica mojoXact to a SteerDirect or QuickSteer solution. This section illustrates the different configurations possible

mojoXact & QuickSteer

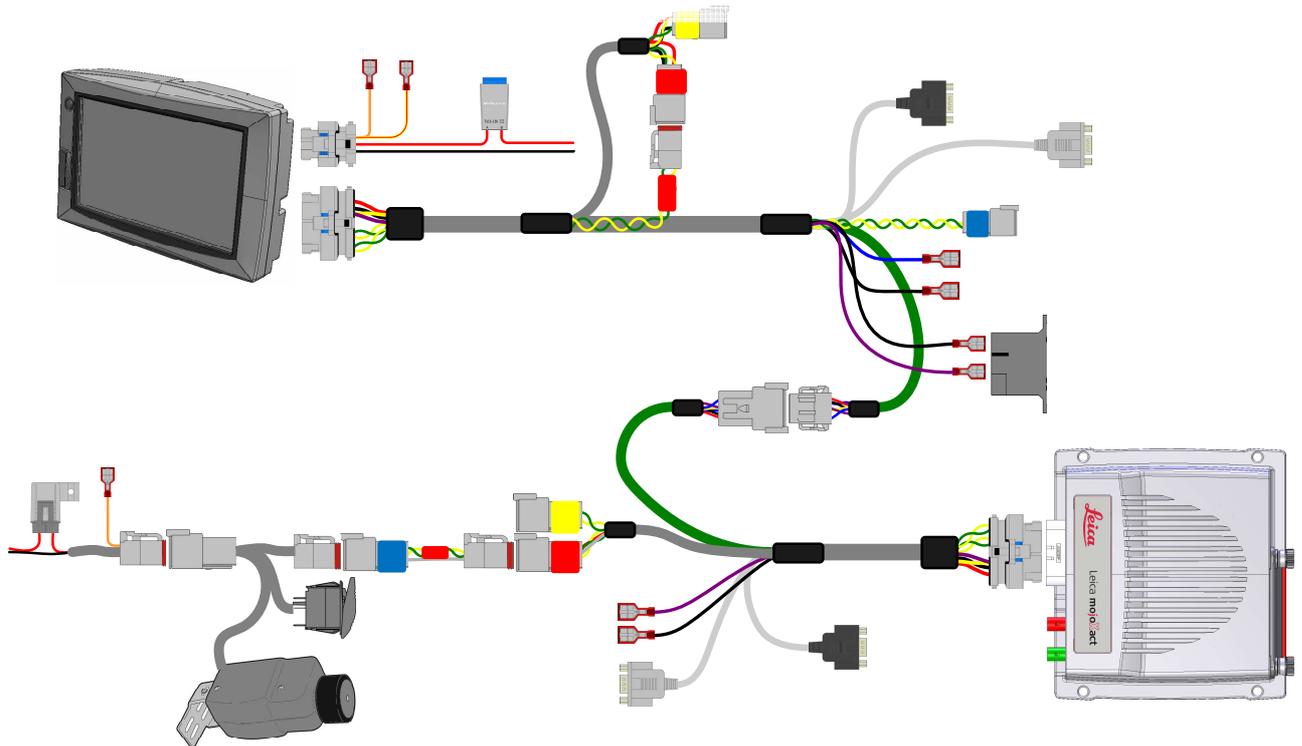


Figure 10.
Diagram shows the steering cable connections when a Leica Quicksteer electric steer kit (Part number #6006481) is used with a mojo3D and mojoXact.

mojoXact SteerDirect-SRK & SteerDirect-Hydraulic

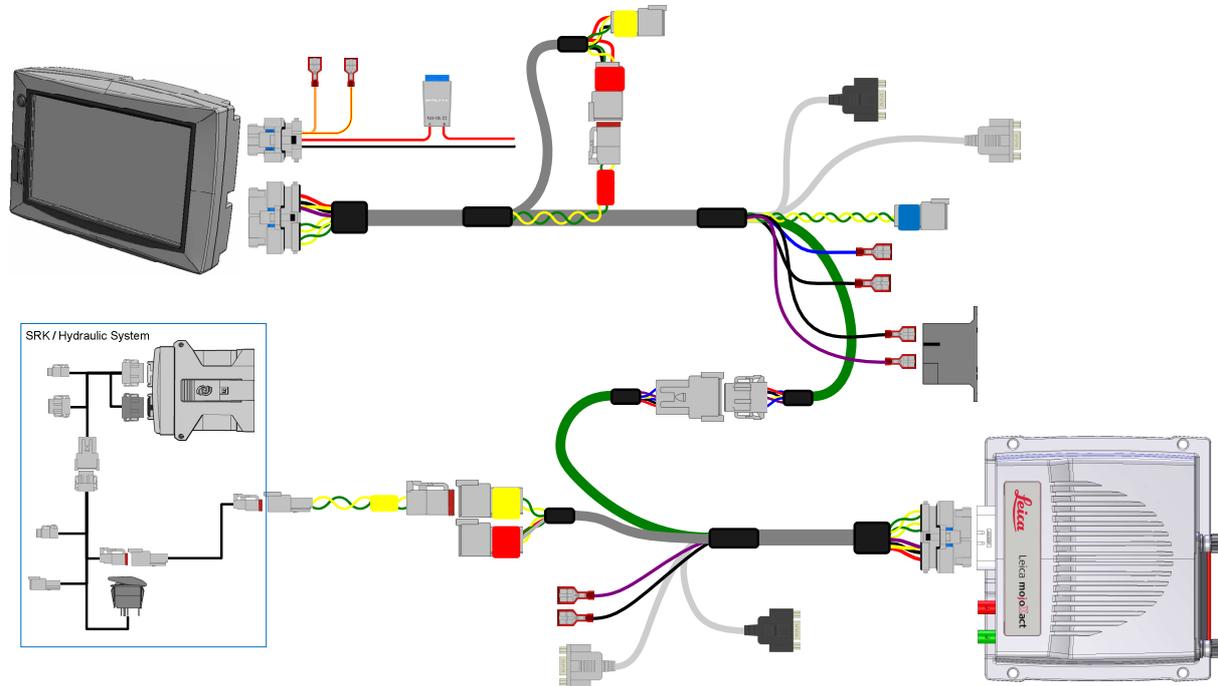


Figure 11. Diagram shows the steering cable connections when a Steer Direct SRK or Hydraulic kit are used with a mojo3D and mojoXact.

mojoXact SteerDirect-CAN

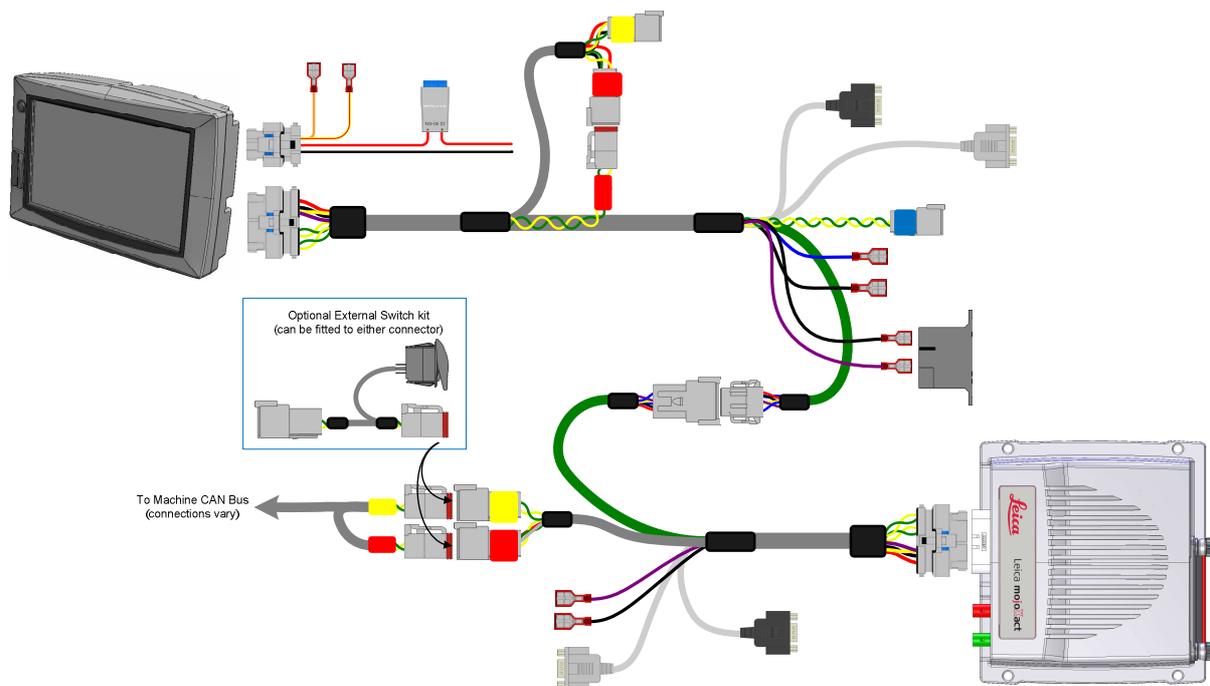


Figure 12. Diagram shows where the Steer Direct CAN cables connect when they are used in conjunction with a mojo3D and mojoXact. The Diagram also shows the optional external switch kit (Part number #791248). This is available for when a vehicle does not have a factory installed steering engage switch fitted.

Leica mojo3D with a mojoRTK Console

To connect a Leica mojo3D to a mojoRTK Console to provide accurate auto steer and RTK positioning one of the following parts in addition to a port expansion cable are needed.

675593: mojoRTK External Control Cable (Non-Australian Version)



675594: mojoRTK External Control Cable (Australian Version)

