



# Install Manual



## Wireless Turn Signals +

Horn

Hazzard

Auto Cancel

Dash Indicators

EZ Install

Hand Control

# WTS+ Install Manual

Thank You for purchasing the WTS+ turn signal kit.

This document includes the instructions on installing and debugging.

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# WTS+ Install Manual

## Table of Contents

Installation Instructions .....	3
Verify WTS+ Contents. ....	4
Verify Tool Requirements .....	5
Quick Test (Optional) .....	6
Install the Front Module .....	7
Install the Horn .....	9
Install the Front Signal Lights .....	10
1 LED .....	10
2 LED or Splitter .....	13
3 LED Super bright.....	14
4 LED Super bright.....	18
Install the Hand Control .....	21
Identify Hand Control Series .....	21
Standard Hand Control .....	22
Razor Pro.....	25
Expedition .....	27
Dash Indicator Install .....	31
Installing the Rear Brake Module.....	36
Ranger 1500 .....	36
Connecting Power.....	37
Pulse Bar Connection .....	38
Non-Pulse Bar Connection .....	38
Connecting The Modules .....	39
Pairing .....	39
Re-Pairing.....	39
Putting It Back Together .....	40
Wiring Diagram .....	41
Specifications .....	41
Electrical.....	42

# WTS+ Install Manual








## Installation Instructions

The following sections include the installation instructions for all models of the WTS+ kits. Depending on the specific kit being installed there may be specific steps that may be different or in addition to the normal steps. You may also need to skip steps or sections that do not apply to your application.

# WTS+ Install Manual

## Verify WTS+ Contents.

Ensure that all contents are accounted for as indicated in the following table. If there is something missing, please contact us before starting the install.

<p>Front Module (qty 1)</p>	
<p>Front Harness (qty 1)</p>	
<p>Rear Module (qty 2)</p>	
<p>Hand Control (qty 1)</p>	
<p>Front LEDs (qty 2)</p> <p>Choice of LED set based on the kit ordered. 1,2,3 and 4 LEDs per side</p>	
<p>Installation Kit</p> <ul style="list-style-type: none"> <li>- Horn (qty 1)</li> <li>- Zip ties (qty 6)</li> <li>- Indicator Delete Heat shrink (qty 2)</li> <li>- 10x 3/4 Base Unit Mounting Screws (qty 6)</li> <li>- 1/4" panhead sheet metal screw (qty 1)</li> </ul>	
<p>Documentation</p> <ul style="list-style-type: none"> <li>- Cab Card (qty 1)</li> <li>- Quick Start Guide (Qty 1)</li> <li>- Sticker (qty 1)</li> </ul>	

# WTS+ Install Manual

## Verify Tool Requirements

You will need the following tools to perform the installation of the WTS+

- #2 Philips head screwdriver
- #3 Philips head screwdriver
- Side cutter, for trimming zip ties
- Polaris tool kit pliers, for rivet removal
- ¾" hole saw or step bit, depending on LED option
- 4mm allen wrench
- 5mm allen wrench
- 3/16" allen wrench
- 10mm wrench

Note: You may need additional tools for removing instrument cluster or center dash depending on the UTV year and/or model.

# WTS+ Install Manual

## Quick Test (Optional)

If you would like to do a quick test to ensure the WTS+ system works as intended with your UTV, you can take the following steps before doing the installation. This ensures the system works with your UTV before removing any parts or drilling into the UTV. You can refer to the Wiring Diagram for an overview of how the quick test connections should be completed.

**WARNING: This must be done with the key OFF to prevent a possible electrical short.**

1. Ensure the key is off on the UTV.
2. Ensure the left and right LEDs are connected to the Front Turn connectors.
3. Connect the horn, it does not matter which color wire is connected to which terminal.
4. Remove and connect both Rear Brake Modules to each factory rear brake light
5. Connect the Pulse Power connector to the pulse bar on the UTV.
6. Connect the Hand Control Power connector to the harness.
7. Ensure the Dash indicators do not come into contact with each other. You can use some electrical tape to temporarily isolate them.
8. With the Hand Control lever in the forward position, as if activating the horn, turn the key on for the UTV. The WTS+ should turn on and automatically pair up. At this point you should be able to test the functions on the Hand Control. See the user manual for operating instructions.

If it does not operate, for example the horn does not work, it's possible the Hand Control is not paired with the Front Module. See the user manual for pairing instructions.

If it is paired and things appear to be working, confirm that the factory rear left and right lights are signaling correctly. If they are flipped, simply unplug them and swap both Rear Brake Modules to the opposite side. **WARNING: Ensure the key is off when doing this and then redo step 8.**

If anything is not working as expected, see the diagnostics section of the user manual; otherwise, if everything is working as expected, you can turn the key off and unplug the devices from the previous steps and continue with the full installation process.

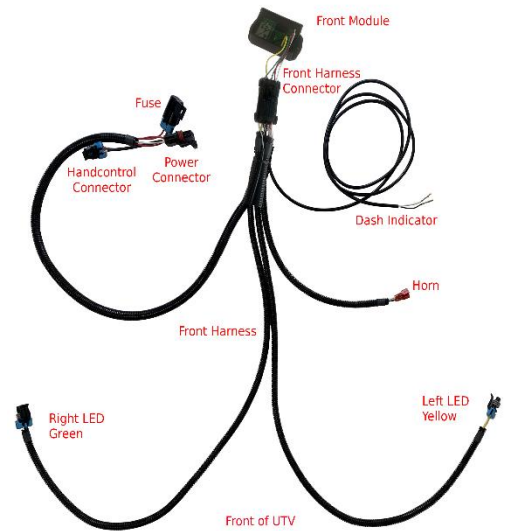


# WTS+ Install Manual

## Install the Front Module

The front module includes the connection to power, the front left and right signal lights, the horn, the hand control power, and the dash indicator wires all integrated into harness.

1. Determine a location for the Front Module. Normally it will be in the front of the UTV under the hood but can be in other locations. The location should consider how the wires for the left and right signal lights are routed to the desired location. The images depicted are from a Ranger XP 1000.
2. Mount the Front Module with the two 10x 3/4 Base Unit Mounting Screws included. Ensure that there is nothing behind the mounting location that can be damaged with the screws. Alternatively, the module can be mounted with double faced tape.



*Front Module Install*

3. Connect the Front Harness to the Front Module.
4. Route the wires to the location where you want to mount the horn, left (Yellow) and right (Green) turn signal, and the power wires. See the sections "Install Front Signal Lights" for detailed instructions on the specific LED style you have.
  - a. Route the front left turn harness with the yellow and white wire to the location where the left amber LED light will be installed.



*Front Left Turn Light Connection*



## WTS+ Install Manual

- b. Route the front right turn harness with the green and white wire to the location where the amber LED light will be installed.



*Front Right Turn Light Connection*

- c. Ensure the location of the right and left harness do not contact moving or hot parts and the intended location of the LEDs do not interfere or encounter moving or hot parts. In addition, you will want to have access behind the LED to route the wires.

# WTS+ Install Manual

## Install the Horn

1. Determine the location of the horn. It can be in any location but needs to be in reach of the horn harness.
2. Mount the horn using the ¼" pan head sheet metal screw provided. Ensure that there is nothing behind the mounting location that can be damaged with the screw. Alternatively, you can use a nut and bolt to mount using an existing hole. Note: It is best to mount the horn facing down to prevent mud and dust from building up and affecting the performance of the horn.



*Typical Horn Location*

3. Connect the horn harness to the horn. It does not matter which connector goes to which terminal on the horn.



*Horn to Harness Connection*

4. For proper sound from the horn ensure the body of the horn is free from contact to surrounding objects. **WARNING: You must use the horn provided, any horn above 4 amps will cause unintended behavior.**

# WTS+ Install Manual

## Install the Front Signal Lights

The front signal lights come in many different styles. The installation of each differs. Follow the instructions for the specific signal light you purchased.

### 1 LED

1. The front left and right lights should look like the picture below.



*Button Front Turn Light*

2. Identify the location you want to mount the turn lights on the UTV. Below is a typical location, however they can be mounted anywhere with a flat area. Ensure there are no obstructions behind the location and there is access to route the wires.



*Typical Front Light Location*

3. Mark the center of the location and drill a  $\frac{3}{4}$ " hole. It is recommended using a hole saw or step bit to produce a more accurate hole.

## WTS+ Install Manual



*Drilling Operation*

4. Remove the rubber grommet from the orange lens/fixture.



*Grommet Removal*

5. Insert the orange lens/fixture through the hole from the backside.



*Orange Lens/Fixture Placement*

6. Slip the grommet back over and past the orange lens/fixture to the black wire jacket. Next, press the grommet into the hole drilled in a previous step as shown below.

## WTS+ Install Manual



*Grommet Placement*

7. Press the orange lens/fixture into the grommet



*Pressing lens/fixture into Grommet*

8. Repeat steps 4 through 8 of the above steps for the opposite lens/fixture installation.

## WTS+ Install Manual

### 2 LED or Splitter

1. To mount the 2 LEDs, a splitter is used as pictured below.



2. Mount two single button LEDs as described in the section above titled One LED.
3. Connect both LEDs to the splitter.
4. Connect the splitter to the Front Harness.



## WTS+ Install Manual

### 3 LED Super bright

1. The front light should look as pictured below.



2. Identify the location you want to mount the turn lights on the UTV. Below is a typical location, however they can be mounted anywhere with a flat area. Ensure there are no obstructions behind the location and there is access to route the wires.



*Typical Front Light Location*

3. Using the included adhesive tape as a template, affix the tape to the location. Be aware the LED is not symmetrical; the lead wires are off to one side. The large cut out off to the center of the tape is where the wires will pass through. Be sure to take this into account when doing both the right and left side.

## WTS+ Install Manual



*Affix or use the tape as a template.*



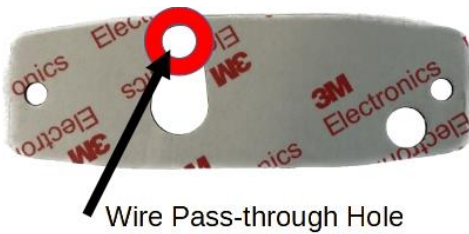
*3 LED Tape position*

4. Using a 7/64" drill bit, drill the mounting hole locations.



*3 LED mount hole locations*

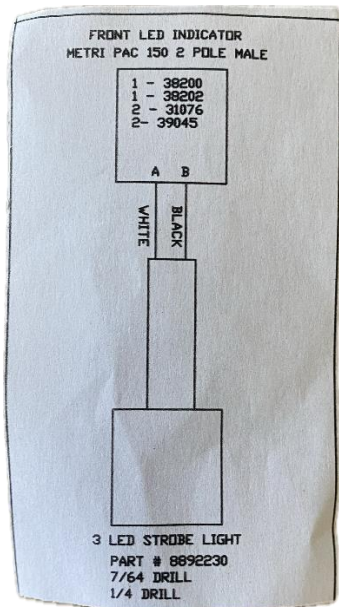
5. Using a 1/4" drill bit, drill a hole for the wires to pass-through to the back side. It should be located towards the outside of the tape and match up with the lead wires of the LED.



*3 LED wire pass through hole location*

## WTS+ Install Manual

6. Feed the wires into the wire pass-through hole to the back side.
7. Mount the LED using the provided Philips head screws.
8. Insert the white wire into the pin marked A and the black wire into the pin marked B. Slide the pin into the connector until it clicks into position. It may be useful to mark the A or B pin with a marker to ensure you can properly identify it when assembling behind the plastic.



*Connector with wires pre inserted for illustration.*



*Connector with A and B pin displayed.*

9. Note: The brown wire is not used.
10. Slip the blue retaining clip on to the connector and slide until it clicks into place.

## WTS+ Install Manual



*Connector with blue retaining clip pre-positioned for illustration.*

11. With the connector assembly complete, insert the connector into the Front Harness connector.



12. Repeat steps 3 through 11 of the above steps for the opposite LED installation.

## WTS+ Install Manual

### 4 LED Super bright

1. The front light should look as pictured below.



2. Identify the location you want to mount the turn lights on the UTV. Below is a typical location, however they can be mounted anywhere with a flat area. Ensure there are no obstructions behind the location and there is access to route the wires.



*Typical Front Light Location*

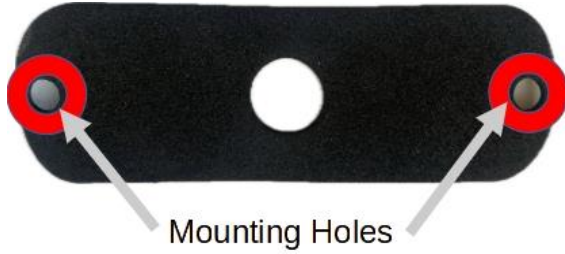
3. Using the included black gasket as a template, mark the side and center holes. The large hole in the center of the gasket is where the wires will pass through, the side holes are used to fasten the light to the body panel. Note: You may want to use tape measure to locate the gasket and ensure consistency on both sides.



*Use the gasket as a template.*

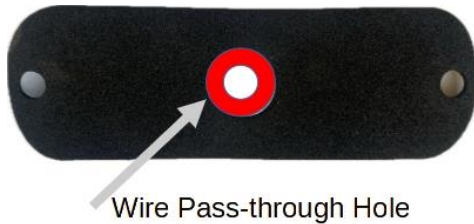
4. Using a 7/64" drill bit, drill the mounting hole locations.

## WTS+ Install Manual



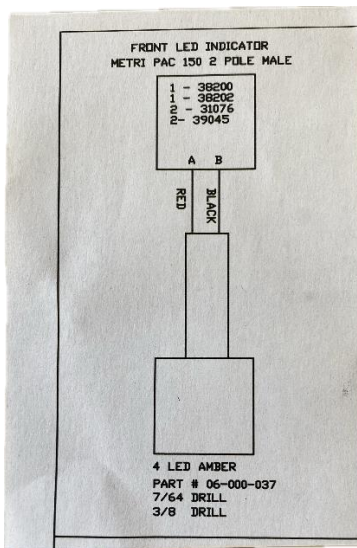
*4 LED mount hole locations*

- Using a 3/8" drill bit, drill a hole for the wires to pass-through to the back side. It should be located at the center of the gasket and match up with the lead wires of the LED.



*4 LED wire pass through hole location*

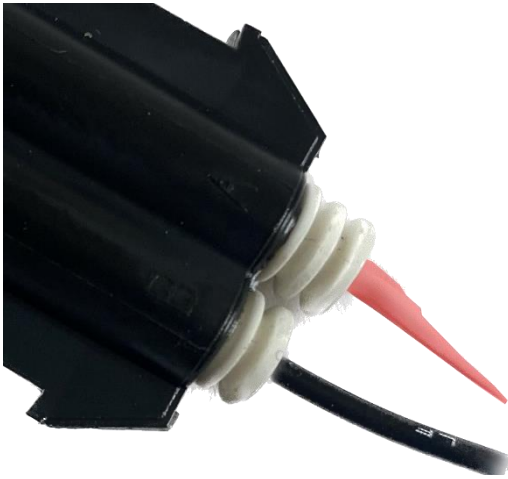
- Feed the wires into the wire pass through hole to the back side.
- Mount the LED using the provided Philips head screws.
- Insert the red wire into the pin marked A and the black wire into the pin marked B. Slide the pin into the connector until it clicks into position. It may be useful to mark the A or B pin with a marker to ensure you can properly identify it when assembling behind the plastic.



*Connector with wires pre inserted for illustration.*

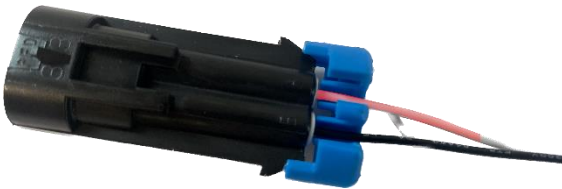


## WTS+ Install Manual



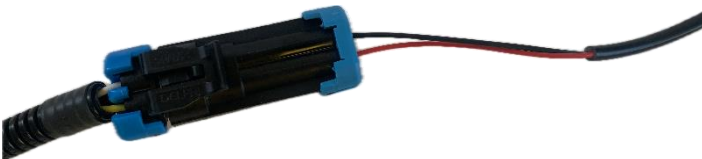
*Connector with A and B pin displayed.*

9. Slip the blue retaining clip on to the connector and slide until it clicks into place.



*Connector with blue retaining clip pre-positioned for illustration.*

10. With the connector assembly complete, insert the connector into the Front Harness connector.







11. Repeat steps 3 through 11 of the above steps for the opposite LED installation.

# WTS+ Install Manual

## Install the Hand Control

### Identify Hand Control Series

Identify the hand control series and ensure it matches with your side by side. The installation of the hand control differs for each series and is detailed in the corresponding section.

Standard Hand Control	 A black hand control device with a silver metal housing. The housing has the 'WTS+' logo and a stylized vehicle icon. It features a black trigger on the right side and a black cable with a connector on the left.
Razor Pro	 A black hand control device with a silver metal housing. The housing has the 'WTS+' logo and a stylized vehicle icon. It features a black cable with a blue connector on the right side and a black cable with a connector on the left.
Expedition	 A black hand control device with a silver metal housing. The housing has the 'WTS+' logo and a stylized vehicle icon. It features a black cable with a blue connector on the left side and a black cable with a connector on the right side.
Ranger 1500	 A black hand control device with a silver metal housing. The housing has the 'WTS+' logo and a stylized vehicle icon. It features a black cable with a blue connector on the left side and a black cable with a connector on the right side.

# WTS+ Install Manual

## Standard Hand Control

Standard Hand Control with the clamp attached.



1. Locate the steering wheel column at the attachment point for the steering and tilt lever. The images depicted are from a Ranger XP 1000.



*Lower Steering Wheel Adjustment Bolt*

2. Remove the lower bolt using a 4mm allen wrench and 10mm socket.



*Lower Bolt Removed*

3. Remove the mount from the Hand Control main body. Use a 3/16" allen wrench, remove the top bolt from the turn signal Hand Control mount. Using your fingers, remove the bottom bolt, bushing and nut.

## WTS+ Install Manual



*Hand Control Mount Removal*

4. Place the Hand Control and Hand Control mount around the steering column.



*Hand Control Mount To Steering Column*

5. Finger tighten the top mount bolt
6. Insert the bushing into the gas strut hole location.



*Bushing Location*

## WTS+ Install Manual

7. Assemble the Hand Control, Hand Control mount and gas strut with the bushing using the provided M6 Bolt and M6 Nylock nut. Use an M5 allen wrench and 10mm socket. Use hand tools only to prevent stripping of plastic threads.
8. Tighten the upper bolt with hand tool 3/16" allen wrench.
9. Tighten the lower bolt with M5 allen wrench and 10mm socket.
10. Ensure freedom of movement for the tilt steering wheel.
11. Run the cable through the dash and through the factory hole in the firewall to the front of the UTV.



*Cable Wire Routing*

12. From the front of the UTV, connect the Hand Control connector to the harness.



*Hand Control Connection To Harness*

# WTS+ Install Manual

## Razor Pro

Razor Pro Hand Control with the clamp attached.



1. Locate the steering wheel column at the circular surface, just behind the steering wheel. Pictured below from the right of the steering wheel.



*Steering wheel mounting surface.*

2. Separate the WTS+ mounting bracket from the Hand Control by removing the four socket head cap screws using a 5/32" allen wrench.



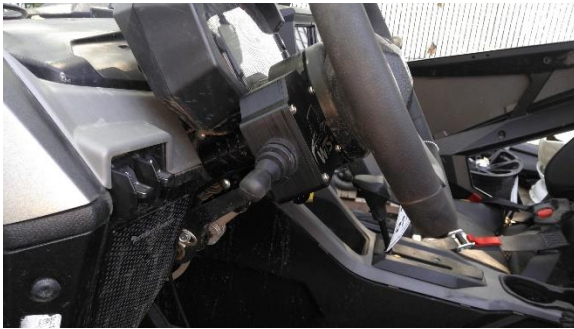
*Disassembled Hand Control.*

3. Place the clamp over the circular mounting surface on the steering column.
4. Insert the Hand Control back into the bracket making sure to align the four holes of the Hand Control and the four holes of the bracket.



## WTS+ Install Manual

5. Reinstall the four socket head cap screws using a 5/32" allen wrench. Be careful and ensure the screws do not strip the threads and you do not over tighten.
6. When you are finished the Hand Control should look like the picture below.



*Installed Hand Control.*

7. Ensure freedom of movement for the tilt steering wheel.
8. Run the cable through the dash and through the factory hole in the firewall to the front of the UTV. Note: This dash is not of a Razor Pro but used for illustration.



*Cable Wire Routing*

9. From the front of the UTV, connect the Hand Control connector to the harness.



*Hand Control Connection To Harness*

# WTS+ Install Manual

## Expedition

Expedition Hand Control with clamps and hardware.



1. Locate the steering wheel column at the cover surface, just behind the steering wheel. Pictured below from the right of the steering wheel.



2. Remove the factory fasteners to allow for secure mounting.
  - a. Cut the cover around the fasteners. Note: The threads will spin before breaking free. There is a hole saw bit included that should be used to cut the cover away from the fastener.



## WTS+ Install Manual

- b. Remove the cover to expose the factory support bracket.



- c. Remove the factory fasteners. Using a flat blade screwdriver, wedge the tip into the seam and hold to prevent the internal nut from spinning. Use a proper torx bit and carefully remove the factory fastener.



3. Attach the top bracket to the Hand Control using two ss 10-32x5/8 shcs with a 5/32" allen wrench as shown.



4. Reinstall the factory cover and the Hand Control using two M6-1.00x15 mm shcs. Note: keep the two shcs hand tight to allow for slight adjustments when installing the bottom bracket.



## WTS+ Install Manual

5. Install the bottom bracket.



- a. Attach the bottom bracket to the Hand Control using two ss 10-32x5/8 shcs with a 5/32" allen wrench.
  - b. Feed the M6x60 shcs through the bottom bracket and the factory slot pictured above. Tighten with the locknut.
6. Adjust the Hand Control fit and tighten all fasteners for secure mounting.
  7. Secure the wire to the factory cover.
    - a. Attach the zip tie to the cover
    - b. Loop the zip tie around the wire
    - c. Trim the zip tie



# WTS+ Install Manual

## Ranger 1500

Ranger 1500 Hand Control with clamps and hardware.



## WTS+ Install Manual

### Dash Indicator Install

The WTS+ comes standard with lead wires for feeding the turn signal pulses to the factory dash indicator lights. This feature is optional and may not work for all models and years.

If you do not want to use this feature, follow the steps below to ensure no unintended grounding of the lead wires.

1. Locate the lead wires on the harness.



2. Slip the included heat shrink over each pin such that the pins are fully covered and evenly hidden inside the heat shrink.



3. Apply heat to the heat shrink tubing with a lighter or something similar until it has fully shrunk down around the lead wires.
4. You are finished with the process for not using the dash indicator wires

If you would like to use the factory dash indicators follow the steps below.



## WTS+ Install Manual

1. Remove the instrument cluster



*Instrument Cluster Removal*

2. Disconnect the connector to the instrument cluster and set the instrument cluster aside.



*Instrument Cluster Disconnect*

3. Open the back of the connector



*Connector Back Opening*

4. Remove the front side of the connector

## WTS+ Install Manual



Connector Front



5. Look for pin 6 & 7 and remove the blue plugs.



Pin Identification

## WTS+ Install Manual

6. Insert the black and white wires as pictured below.  
White wire to pin 6 and the black wire to pin 7.



*Connector with Lead Wires Installed*

7. Ensure the pins are set properly and reconnect the front and back of the connector.



*Connector Reassembled*

8. Reconnect the connector back to the instrument cluster

## WTS+ Install Manual



*Instrument Cluster Reconnected*



# WTS+ Install Manual

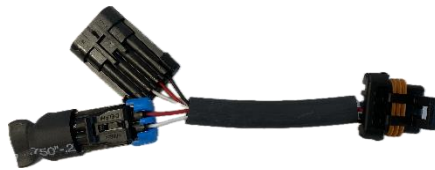
## Installing the Rear Brake Module

1. Remove the factory rear brake light.
2. Unplug the factory brake light from the connector.
3. Plug the WTS+ Rear Brake Module into both the factory connector and the factory brake light.
4. Repeat the above steps on the other side.
5. It may be advantageous to leave both brake lights out until after powering and pairing to make it simpler to flip the Rear Brake Modules from one side to the other if they are paired oppositely. If they are, they can simply be unplugged and swapped from one side to the other or flipped in the internal settings.

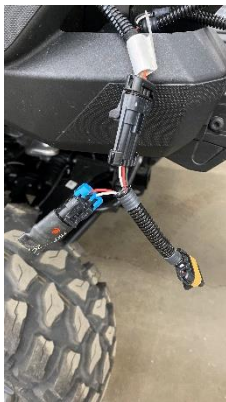


## Ranger 1500

In addition to the steps in the above section the Ranger 1500 must have an additional Brake Decoder installed. It must be installed on the left (driver) side ahead of the rear module.



1. Plug the decoder directly into the factory harness. This will be the end of the decoder without the orange seal.
2. Plug the decoder end with the orange seal into the corresponding connector of the rear module.
3. Ensure the rear module, the end with the orange seal, is plugged into the factory light.



# WTS+ Install Manual

## Connecting Power

Connecting the power to the WTS+ harness is simple and done in one of two methods depending on whether your UTV has a pulse bar or not.

**WARNING: Ensure the key is in the off position when connecting to power.**





# WTS+ Install Manual

## Pulse Bar Connection

1. Locate an empty port on the pulse bar.
2. Remove the cap to expose the port for use
3. Plug the pulse connector from the WTS+ harness into the exposed port
4. Ensure the connector clicks and seats properly

## Non-Pulse Bar Connection

1. Connect the WTS+ harness's pulse connector into the Pulse Female to Ring Connector.



2. Connect the Pulse Female to Ring Connector wires to a 12-volt power distribution system.

Red = Positive

White = Negative

# WTS+ Install Manual

## Connecting The Modules

For a more detailed description of the pairing and unpairing process, see the User Manual. In normal circumstances you should not need to do any Re-Pairing. The information is included to aid in the event the modules do not pair up correctly.

### Pairing

1. Ensure all Hand Control modules, UTVs with WTS+ already installed, in the area are turned off with no power to them.
2. Push the Hand Control to the horn position, forward.
3. Turn on the Hand Control and release the lever after a couple of seconds.
4. You should be paired at this point; test by pressing a button and verify it does the corresponding action.
5. If the above does not work, try the Repairing Procedure below.

### Re-Pairing

1. Ensure all Hand Control modules, UTVs with WTS+ already installed, in the area are turned off with no power to them.
2. Push the Hand Control to the horn position, forward.
3. Turn on the Hand Control and release the lever after a couple of seconds.
4. Pull the Hand Control lever back towards the driver, hazard position, for up to twenty seconds until the lights begin to flash. Let go of the lever.
5. All modules, Hand Control, Front, Rear, etc should be flashing to indicate they are unpaired.
6. If a module does not unpair right away, wait for 5-10 minutes for them to flash and unpair.
7. When all modules flash, they are unpaired.

# WTS+ Install Manual

## Putting It Back Together

With the WTS+ front harness, Hand Control, front signal lights and horn installed and tested, perform the following tasks to complete the install.

1. Zip tie the harness and any other wires to ensure they do not move during operation.
  - a. Ensure no wires contact or interfere with any moving or hot parts.
  - b. Tie any extra length of the harness to contain it.
2. Reattach any factory parts removed during the install process
  - a. Instrument cluster
  - b. Center dash cover
  - c. Firewall dash rubber cover – ensure it is reset properly
  - d. Hood Cover
  - e. Any other components removed to make the install easier, such as seats etc.
3. If you have done the quick test, the devices should be already paired and ready to go. If you did not, then see the Pairing section in this document to complete the process.

# WTS+ Install Manual

## Wiring Diagram



## Specifications

## WTS+ Install Manual

Electrical	
Volts	12 vdc
Fuse	10 Amp
Max Amp	4 Amp max per point
Front LED	.1 Amp
Horn	4 amps

# WTS+ Install Manual