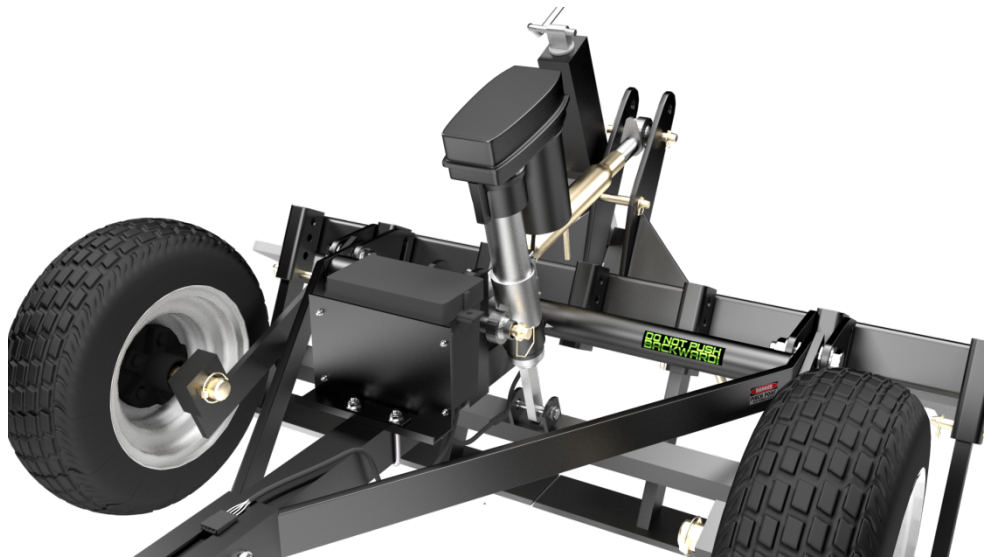




Electric Actuator Setup Guide



Please read and understand setup guide prior to installing the Electric Actuator!

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Thank You,

On behalf of the ABI family we would like to thank you for your recent purchase of the ABI Rascal Electric Actuator. Our Company's goal is to provide our Customers with innovative quality tools and parts, along with first-rate customer care.

These instructions are designed to help you, the customer; get your Electric Actuator hooked up to a tow vehicle, the Rascal, and into use. If there are any further questions after reading these instructions, please feel free to call one of our friendly and knowledgeable Customer Service Staff. To contact our Customer Service Department call 855-211-0598, M-F 8am-8pm EST.

Parts received:

- 1 – Control Box with support plate and built in 30 amp fuse
- 1 – Electric Actuator
- 1 – Double sided 4 prong extension cable
- 1 – Single sided 4 prong extension cable – cable splits out to a three prong connector and out to two bare wire ends
- 1- Rocker switch with mountable swivel arm and bracket
- 1- Double sided 3-prong extension cable
- 1 – 1/4" U bolt with hardware and plate
- 2- Crimp style Ring Terminals

Tools needed for assembly:

Control Box and Wiring Harness:

- 1/2" Combination wrench
- 1/2" Socket with Wrench
- Cable Ties or other means to secure wiring (optional)

Rocker Switch:

- 5/16" Socket with Wrench
- Phillips head screw driver
- 7mm Socket and Wrench

Square Hand Jack Removal and Electric Actuator Installation:

- 3/4" Combination wrench
- 3/4" Socket with Wrench

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Attaching the ATV Side Wiring Harness –

1. Using cable ties, or other means; loosely secure the 4 prong cable with split ends to the frame of the tow vehicle. When securing the wiring harness to the tow vehicle make sure to avoid any areas of high heat or pinch points to prevent any damage to the wiring harness. Make sure the 4 prong end is coming out the back of the tow vehicle. See figure below for reference.

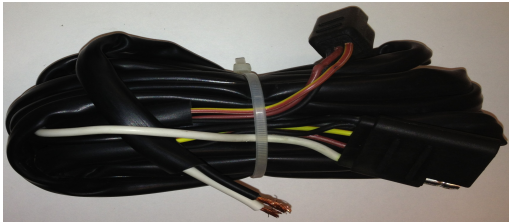


Figure 1

2. Locate the two provided ring terminals, and secure them to the ends of the Black and White wires on the end of the 4 prong cable. To secure the ring terminals, insert the wire into the open end of the ring terminal. See Figure 2. Using either a pair of pliers, or a crimper; squeeze the blue cover down securing the wires to the ring terminals. See figure below for reference.



Figure 2

3. Now secure the wires directly to the battery of the tow vehicle. Ensure that the Black wire is secured to the positive side of the battery, and the white wire is secured to the negative side of the battery.

4. Once the wiring harness is secured to the battery the remainder of the wiring harness can be firmly secured to the tow vehicle. Ensure that enough slack is left for the three prong connector to reach the front of the tow vehicle, as well as some slack on the wires going to the battery.

If you are not comfortable working with electrical wiring, we strongly encourage you to seek the help of someone with experience wiring.

***The electric actuator wiring harness must be hooked directly to the battery of a tow vehicle. Ensure that when the electric actuator wiring harness is fully secured to the tow vehicle battery, that the black wire is secured directly to the positive side, and that the white wire is secured directly to the negative side.*

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***Grounding the electric actuator wiring harness to the frame of the tow vehicle may prevent the electric actuator, or other components; from working properly. Always ground the wiring harness directly to the tow vehicle battery.*

***When securing the wiring harness to the tow vehicle avoid areas around any major heat zones such as: Mufflers, Muffler pipes, radiators, exhaust manifolds, or other high heat areas on the tow vehicle.*

***When securing the wiring harness to the tow vehicle avoid all pinch point areas such as: between the seat of the tow vehicle and the frame, shocks, moving/pivoting parts, dump beds, doors, and other areas where the wiring harness may become smashed, cut, ripped, or torn.*

Assembling the Rocker Switch:

The Rocker switch may be attached at any time during the setup procedure. If working alone we recommend installing the switch to the tow vehicle last, so that the switch may be used later in the assembly process.

1. To assemble the rocker switch for mounting to the tow vehicle locate the bag containing the rocker switch, bracket, and hardware. See figure below.



Figure 3

2. Attach the L shaped bracket to the rocker switch using the two elongated screws coming out the back of the switch. Use a 7mm Socket and Wrench to secure the two black nuts to the screws.



Figure 4

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3. Next, using the shortest of the three remaining screws, to attach the flat bracket to the center hole of the L shaped bracket. Secure the bracket using one of the silver nuts and a 5/16" wrench along with a Phillips head screw driver.

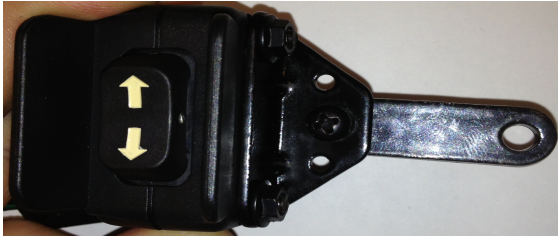


Figure 5

Once a spot has been determined for securing the rocker switch, the remainder of the switch can be assembled. Ensure that the final location allows for some slack in the wiring harness to prevent damage to the wiring harness during use.

4. Using one of the remaining screws loosely secure the remaining curved brackets to the flat bracket. The curved brackets can be placed side by side, or they can be secured with the flat bracket between them. Use a 5/16" wrench along with a Phillips head screwdriver, to secure the nut to the screw.



Figure 6

5. Slip the open end of the curved brackets over the bar where the rocker switch will be located. Secure the fully assembled rocker switch with the final screw, and ensure that all the nuts are secured firmly.

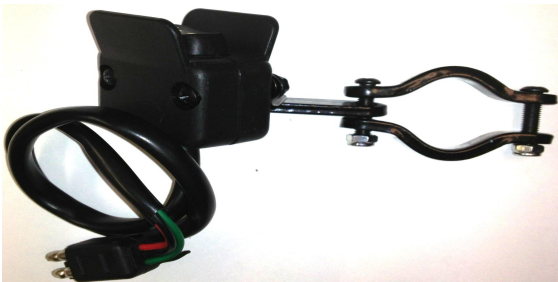


Figure 7

The rocker switch can be slid side to side as desired by loosening the screw between the curved brackets and the flat bracket.

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Attaching the Control Box and Wiring Harness to the Rascal –

The control box needs to be attached to the Rascal with the support plate facing the tow vehicle. This will help to protect the control box from any debris that is flung back from the tires of the tow vehicle. The control box will need to be secured to the frame of the Rascal where the support arms connect to the tongue assembly.

1. With the support plate of the control box facing the tow vehicle line up the predrilled holes at the bottom of the support plate so that the u bolt can be inserted into each hole.
2. Insert the u bolt into the two predrilled holes on the bottom of the support plate
3. Next, place the flat bracket into the ends of the u bolts under the bottom of the frame, and loosely secure it using the two provided ½” nuts.
4. Before fully securing the control box to the frame of the Rascal ensure that the control box is pushed up as close as it can to where the support arms are welded to the tongue assembly. Make sure that all the wires coming out of the control box are not resting between the control box and the frame of the Rascal, and tighten the ½” bolts fully.
5. Now connect the remaining double sided 4 prong extension cable to the 4 prong connector coming from the control box.
6. Optionally, loosely secure the double sided 4 prong extension cable to the frame of the rascal by using wire ties, or other means.
7. With the double sided 4 prong wiring harness loosely secured, make sure that both ends of the cable will properly reach the control box and the end of the wiring harness on the tow vehicle with some slack on both sides. Lastly, secure the cable firmly to the frame of the Rascal.

***When securing the wiring harness to the frame of the Rascal allow some slack on control box side and on the ATV side. This will prevent the wiring harness from pulling tight during operation and use, which may cause damage to the wiring harness.*

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Attaching the Electric Actuator to the Rascal –

The electric actuator will replace the square hand jack on the front of the Rascal. The square hand jack will need to be removed in order for the electric actuator to be installed. Make sure to keep the bottom bolt that attaches the square hand jack to the Rascal, as this will be needed to secure the electric actuator back in its place.

1. To attach the electric actuator to the Rascal the square hand jack will need to be removed. Before removing the square hand jack, ensure that the Rascal is securely hooked to a tow vehicle.
2. Once the Rascal is fully secure to the tow vehicle, lower the finish rake on the back of the Rascal down to a 90 degree angle.
3. Now raise the wheels of the Rascal till the finish rake and scarifier's/profile blade(s)/Vibraflex rest on the ground. The square hand jack should be loose, and able to slide back and forth on the securing pin and bolt at the bottom. If it is not able to be moved, turn the handle either raising or lowering the wheels till the square hand jack is able to move freely.
4. Remove the lynch pin at the end of the securing pin, and slide the pin back so the square hand jack is able to be moved out of the way. If the securing pin lynch pin is on the top link side, the pin will need to be fully removed and reinserted so that the lynch pin is on the electric actuator side. *Note** if the pin will not easily move, turn the top link using the center handle till the pin can be removed, or slide back out of the way.*
5. With the square hand jack moved out of the way, remove the bolt from the bottom of the square hand jack using a ¾" combination wrench and a ¾" Socket with wrench. Set the bolt off to the side as it will be needed to install the electric actuator.
6. Using the ½" bolt that was removed from the square hand jack, attach the bottom of the actuator to the Rascal frame.
7. Connect the end of the two prong cable coming from the actuator to the two prong cable coming from the control box.
8. Now hold onto the black motor portion of the electric actuator, and use the switch from the ATV side wiring harness to raise the actuator up to the securing pin. *Note** if the electric actuator does not make a sound, or does not move; make sure that all of the wiring harness is properly connected together, and try again. If the electric actuator still does not move or make a sound please contact the ABI Customer Service team for additional trouble shooting solutions.*
9. With the actuator fully raised, slide the pin into the eye located half way up the shaft of the electric actuator.

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10. Secure the electric actuator to the pin using the provided lynch pin.

The electric actuator is now ready to be used with your ABI model Rascal.

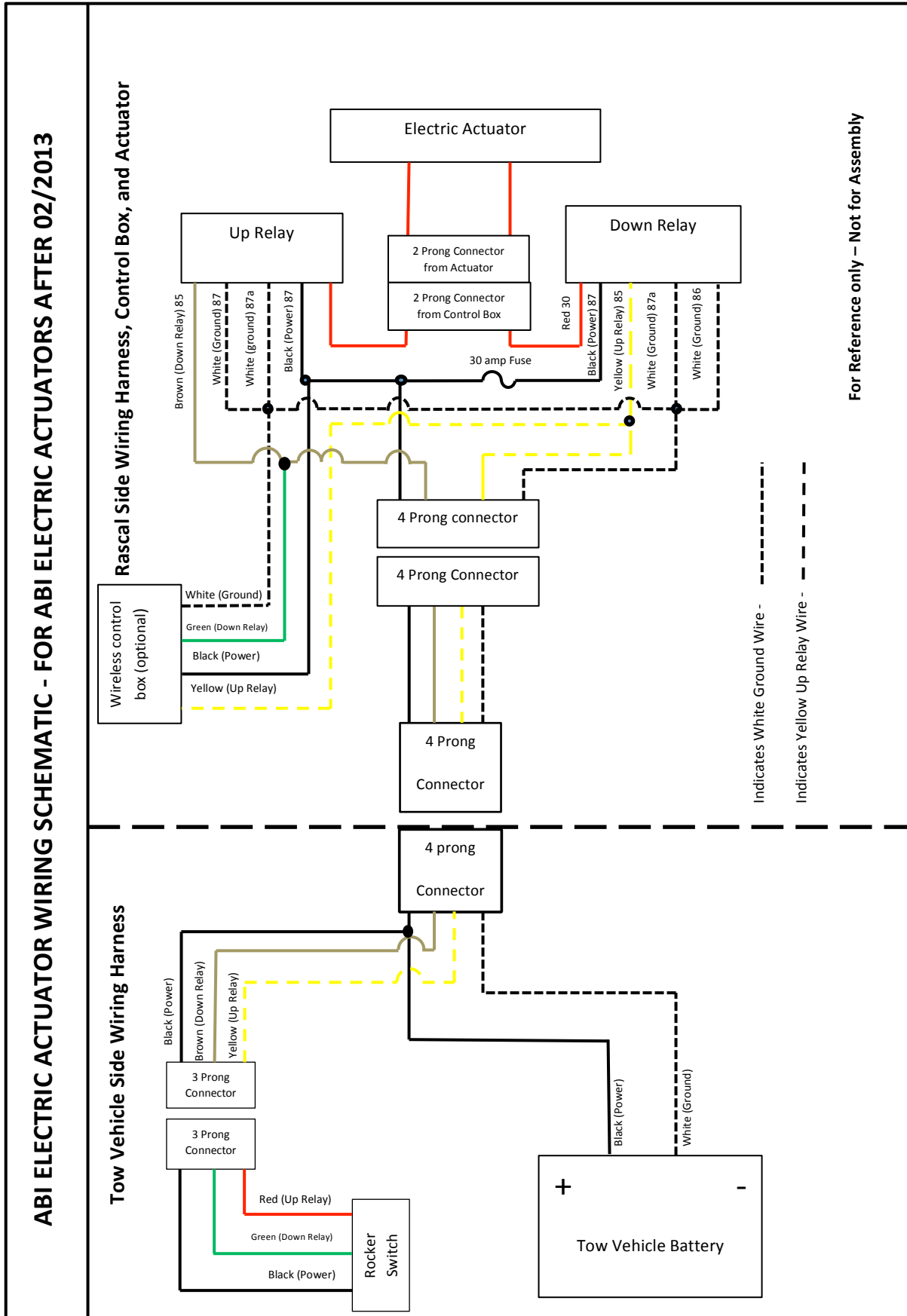
Connecting the Wireless Control Unit (Optional) –

The effective range of the wireless unit is between 0-10' from the control unit. The wireless unit may not function properly outside of this distance.

1. Remove the wireless control box with two key fobs from the packaging.
2. Remove the key fobs from the connecting cable of the wireless control box, and place off to the side.
3. Open the control box for the electric actuator and locate the white rectangular connector inside the box.
4. Connect the end of the wireless control box to the white rectangular connector. Make sure the tab and slot on the connector line up properly before securing the two ends together.
5. Insert the fully connected unit back into the electric actuator control box and close the lid of the control box back fully.

The wireless control option is now ready to be used.

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Basic Troubleshooting Guide –

A clicking noise can be heard inside the control box, and the electric actuator will not raise or lower. The 30 amp fuse inside the control box may have blown, or may have become damaged. If this is the case replace the fuse and ensure the electric actuator is working properly. If this does not resolve the issue please contact the ABI Customer Support Staff for additional troubleshooting solutions.

The fuse inside the control box is not blown or damaged, and a clicking noise can still be heard coming from the control box. The positive or ground wire on the ATV side wiring harness may not be fully connected to the tow vehicle battery. Check to make sure the both wires are firmly connected to the battery of the tow vehicle, and make sure the electric actuator is working properly. If this does not resolve the issue please contact the ABI Customer Support Staff for additional troubleshooting solutions.

The actuator will raise/lower but will not lower/raise again. Contact the ABI Customer Service Support Staff for troubleshooting solutions.

When I press the buttons on the wireless key fob nothing happens. Make sure that the red light is lighting up on the top of the key fob when the button is pressed. If the red light is coming on the wireless unit may be out of range. If the wireless unit is within 0-10' and nothing is happening then the battery in the key fob may be low. Try using the second key fob and ensure the actuator works properly when the button is pressed. If this resolves the issue, then the battery of the first key fob is low and will need to be replaced. If the issue is not resolved by this means please contact the ABI Customer Support Staff for additional troubleshooting solutions.

**For additional questions or help with setting up the electric actuator, please feel free to contact the ABI Customer Support Staff for additional help. The ABI Customer Support Staff can be reached at by phone at:
855-211-0598 M-F, 8am-8pm EST.**