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***"The Black Box"
Push Button Control Box***

RR Part # 101786

*Questions? Contact Customer Service @ 800-297-9905
Or
Parts Diagrams see "Parts and Diagrams" section on web at www.rollrite.com*

In this booklet you will find:

INSTALLATION INSTRUCTIONS	3
MOUNTING	3
WIRING.....	3
<i>Main Control Box and Motors</i>	3
<i>Limit Switches</i>	5
<i>Work Lights</i>	6
WIRING DIAGRAM.....	7
OPERATING MANUAL	8
ON/OFF	8
WORK LIGHT	8
PROGRAMMING MODES	8
CH1 AND CH2	8
CH3 AND CH4	9
CH5 AND CH6	9
LOCK OUT FEATURE:	9
PROGRAMMING	10
<i>Limit Switch Programming</i>	10
<i>Application Programming</i>	11
<i>Key fob Programming</i>	11
ROLL-RITE "BLACK BOX" TROUBLESHOOTING.....	12
<i>LED Diagnostics, Unit @ Rest</i>	12
<i>LED Diagnostics, Unit in Operation</i>	12
<i>Fuse Replacement</i>	12
MAINTENANCE MANUAL	13
QUICK REFERENCE GUIDE - DETACH AND PUT IN TRUCK	15

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Installation Instructions

Mounting

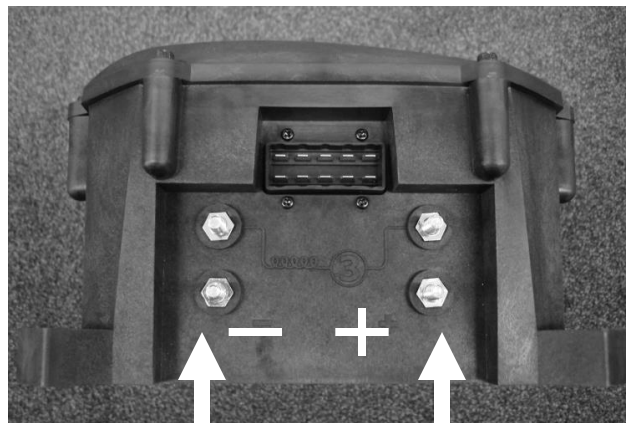
- 1) Determination of wire size: measure from the power source to the desired control box location and from the control box to the motor furthest away from the control box.
 - If the total distance is 85' or less, 6 gauge wire can be used. If so the control box must be mounted within 50' of the power source.
 - If the total distance is greater than 85', 4 gauge wire must be used. If so the control box must be mounted within 65' of the battery.
- 2) Mount the control box.

Wiring

Main Control Box and Motors

- 1) Run 4 or 6 gauge wire (as determined above) from the power source to the control box.
- 2) Attach the wires to the positive/negative posts on the control box (see figure 1) using the supplied terminals and boots, **DO NOT HOOK WIRE TO BATTERY AT THIS TIME.**

Figure 1 - Connecting to Power



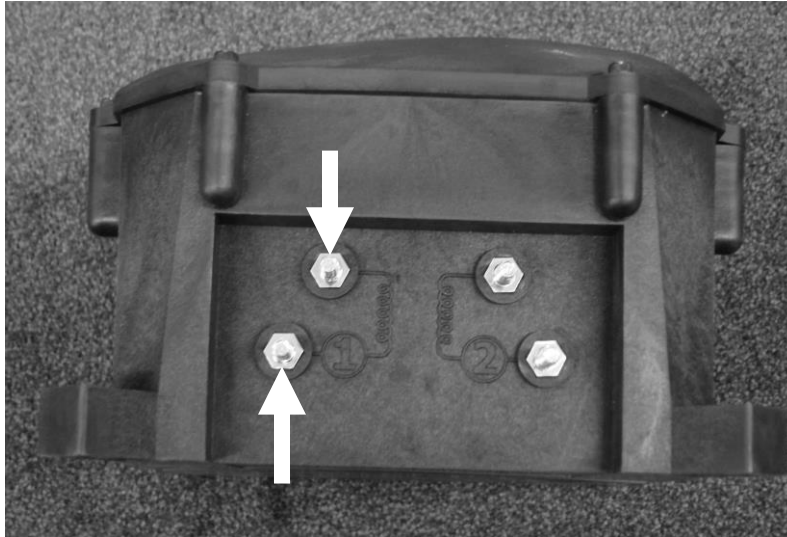
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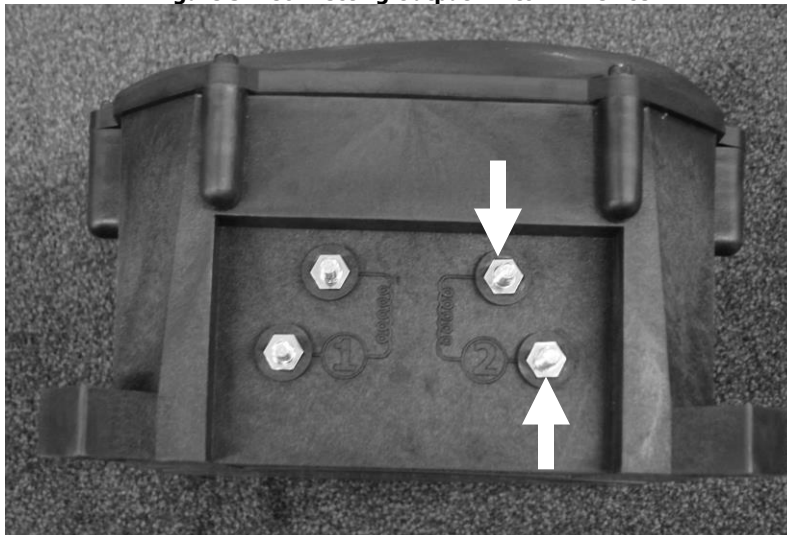
- 3) Run 4 or 6 ga. wire (as determined before) from the first motor (usually the tarp motor) to circuit one on the control box (see figure 2). Attach both ends using provided terminals and protective boots.

Figure 2 - Connecting Output #1 to Motor



- 4) If applicable run 4 or 6 ga as determined above from the second device to be powered (usually the front hopper door motor or the valve to operate the tower in a detachable container application) to circuit 2 on the control box (see figure 3). Attach both ends using provided terminals and protective boots.

Figure 3 – Connecting Output #2 to 2nd Device



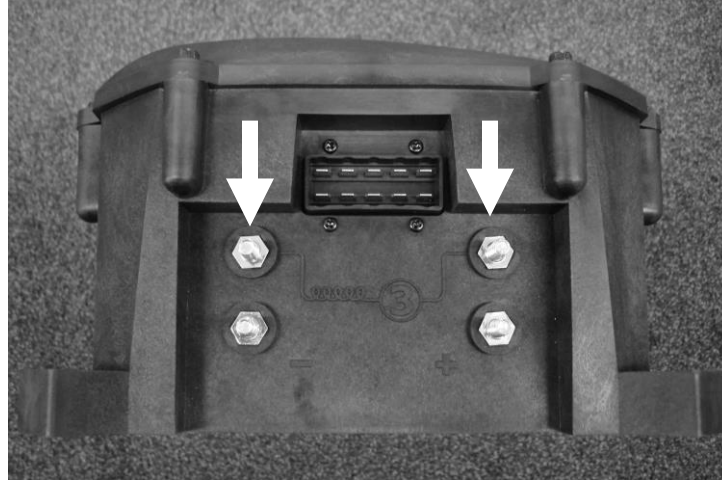
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- 5) If applicable run 4 or 6 ga as determined above from the third device to be powered (usually the rear hopper door motor or the valve to operate the sliding pivots in a detachable container application) to circuit 3 on the control box (see figure 4). Attach both ends using provided terminals and protective boots.

Figure 4 - Connecting Output #3 to 3rd Device



- 6) Fill all boots with Dielectric grease. This should be done monthly to maintain proper corrosion free connections.
- 7) Attach the positive and negative leads to the battery/power supply. Be sure to wire the 40A modified reset breaker as close to the battery as possible in the positive lead. Positive and Negative must be correct.

Limit Switches

If installing limit switches (typically only for the grain trailer hopper door application), see diagram on next page for basic detail – see the limit switch installation instructions that came with your kit for more details.

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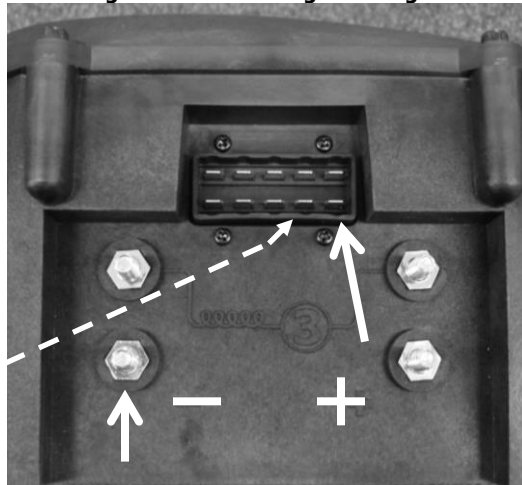
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Work Lights

This box is capable of powering LED work lights or up to two 60 watt Halogen lamps (15 amp circuit).

- 1) Using a ring terminal on the negative lead from the light and connect to the negative post on control box (see figure 5).
- 2) Remove the rubber cover from the spade terminal indicated in figure 5. Crimp the provided female spade to the positive switch lead from the light to and connect to the spade terminal.
- 3) Grease all connections! If the rubber spade terminal cover was removed from the additional spades, please reinstall the cover on the open spades.

Figure 5 - Connecting Work Lights



** Spade indicated by the dashed line arrow is only used in applications where the box is activating an electronic valve on a hydraulic pump.*

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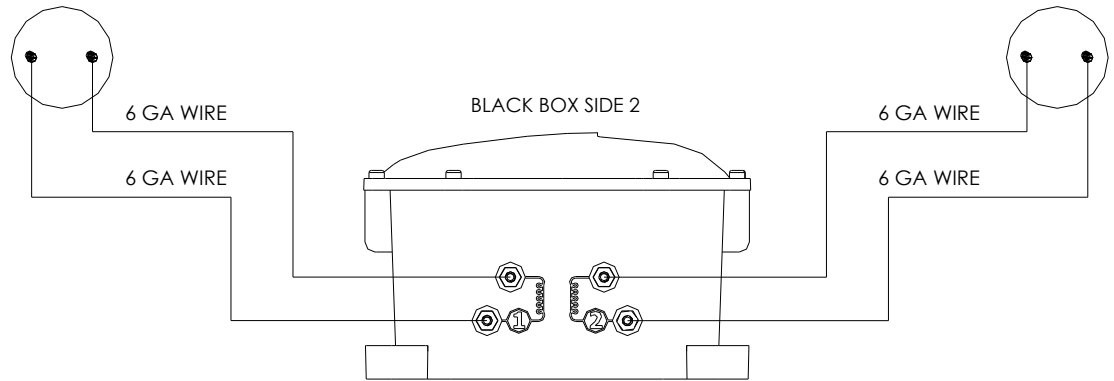
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Wiring Diagram

BLACK BOX WIRING DIAGRAM FOR UP TO 3 MOTORS

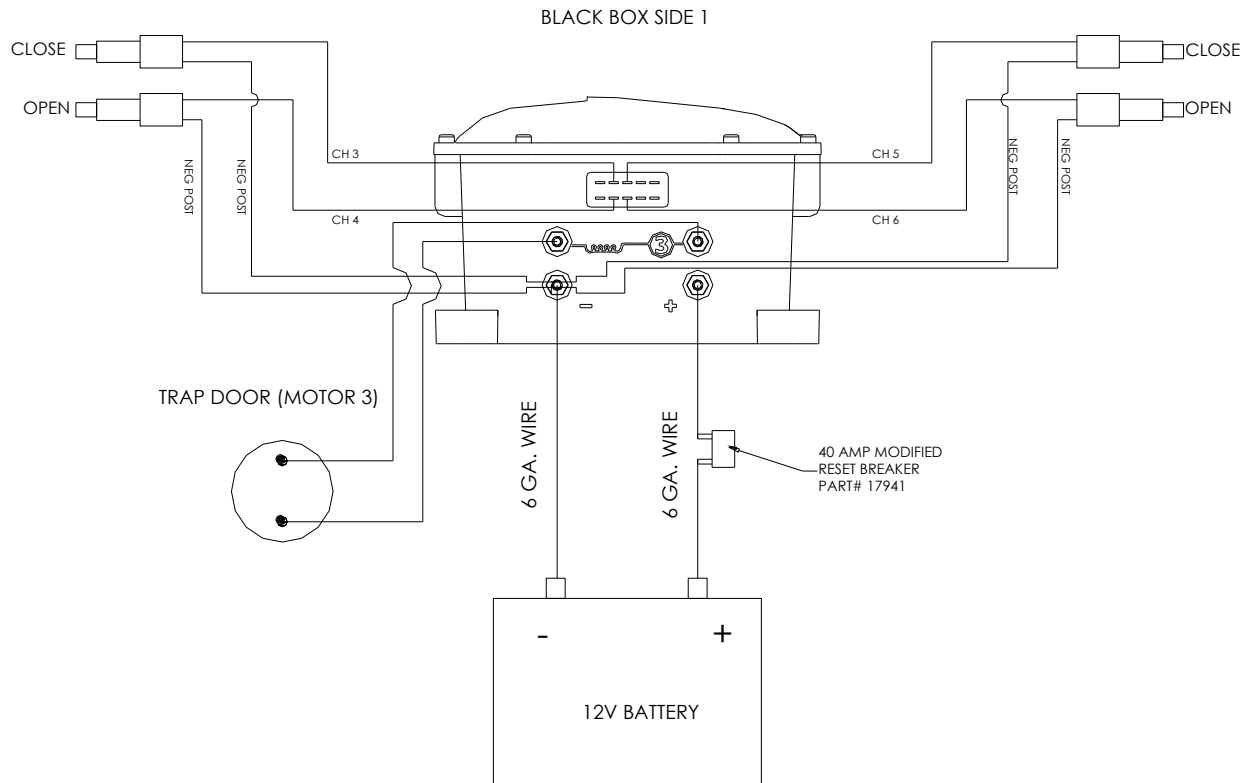
TARP (MOTOR 1)

TRAP DOOR (MOTOR 2)



LIMIT SWITCHES
FOR TRAP DOOR (MOTOR 2)
(FLIP DIP SWITCHES 7 & 8)

LIMIT SWITCHES
FOR TRAP DOOR (MOTOR 3)
(FLIP DIP SWITCHES 9 & 10)

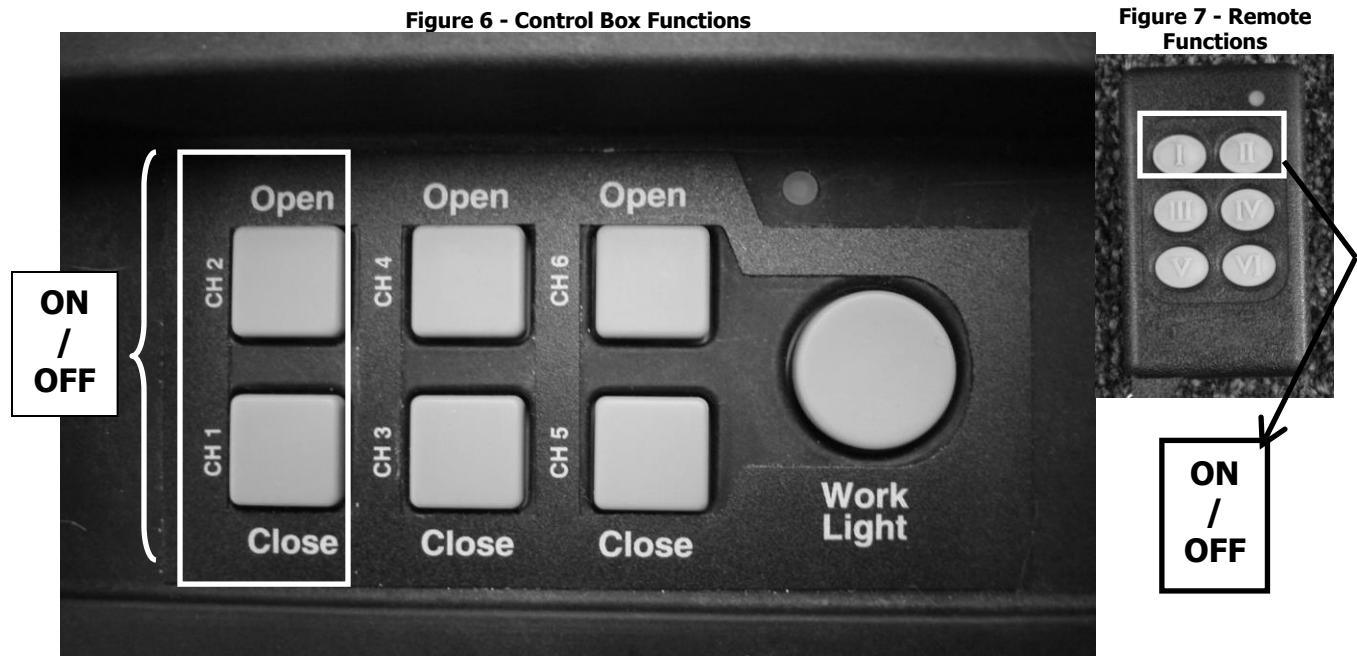


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Operating Manual



ON/OFF – To turn the control box on or off, press CH1 and CH2 simultaneously for 2 seconds. This can be done from the box itself (see figure 6) or from the key fob (see figure 7) by pressing buttons I & II simultaneously.

Work Light – If your system is equipped with work lights, press the Work Light button or Buttons III & IV on the key fob at the same time to turn them on or off. **THIS IS NOT THE ON/OFF BUTTON FOR THE CONTROL BOX!**

Programming Modes – Your black control box and remotes come preprogrammed! Do not attempt to enter the programming modes unless you are turning the limit switch features on or you have to reprogram the box to add or re-learn remote key fobs.

- Limit switch programming: press and release the work light button 6 times within 6 seconds to enter limit switch programming mode (see the Limit Switch Programming section below for details).
- Remote key fob programming: press and hold the work light button for 6 seconds to enter the remote learning mode (see the Key fob reprogramming section below for details).

CH1 and CH2 – control buttons for output #1 on the control box (typically connected to the tarp motor). These two buttons correspond to buttons I and II respectively on the remote key fob. Pressing these two buttons at the same time and holding for 2 seconds will turn the control box on and off.

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CH3 and CH4 – control buttons for output #2 on the control box (typically connected to hopper door or tower up/down). These two buttons correspond to buttons III and IV respectively on the remote key fob. Press and release these two buttons at the same time on the key fob to operate the work light from the remote.

CH5 and CH6 – control buttons for output #3 on the control box (typically connected to hopper door or sliding pivots). These two buttons correspond to buttons V and VI respectively on the remote key fob.

Lock Out Feature:

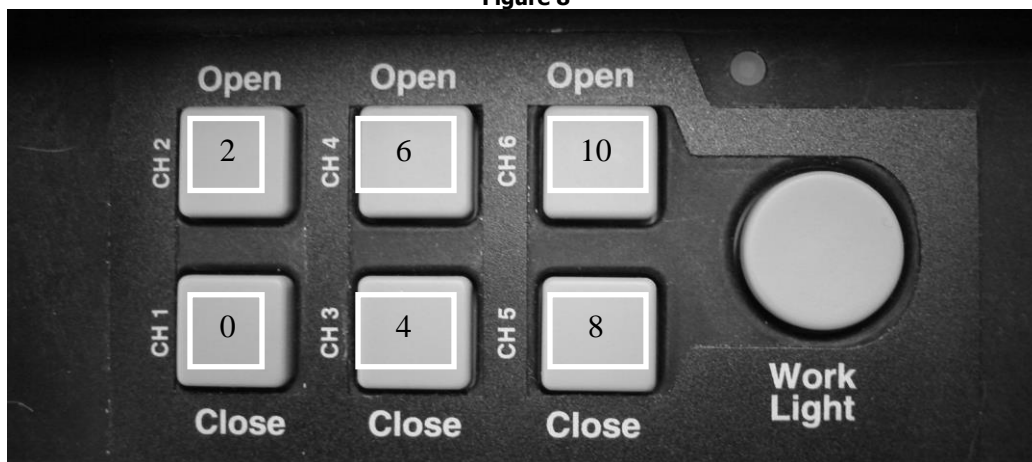
The control box incorporates a safety feature to shut off automatically after 6 minutes* of inactivity. Press buttons 1 & 2 simultaneously on the box or remote for two seconds (as described above) to power the unit back up.

To lock the box down manually (shut off), press 1 & 2 simultaneously on the box or remote for two seconds as described above.

*Boxes produced after 8-10-09 may have programmable time out feature. To adjust the time delay before automatic shut off:

- 1) Turn the box on
- 2) Press and release the work light button 6 times, wait until the light stops flashing press the work light button again, the LED will flash once, press the work light button a final time, LED will flash once – you are now in the program mode you need to be in to adjust the automatic shut down time.
- 3) Reference figure 8 below, # indicated on the button represents minutes until the box automatically shuts down. "0" means it will not shut down automatically.
- 4) After selecting shut down time wait for the LED to return to green. Programming complete.

Figure 8



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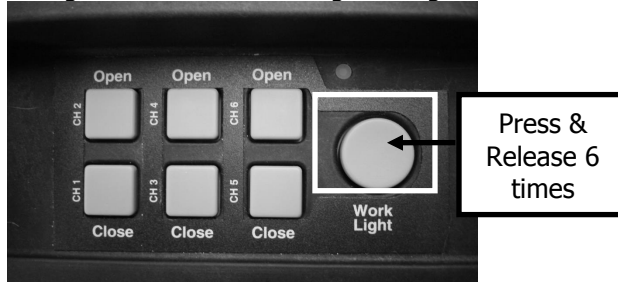
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Programming

Limit Switch Programming – This section typically only applies to grain trailer hopper door power kit installations. In not using limit switches, all channels should be turned off (see steps below).

The control box is capable of utilizing 6 limit switches, one to limit travel of the three motors in each direction. Once limit switches are installed (see limit switch installation instructions) you have to program the box so that it knows they are there. Please read the following steps and then proceed.

Figure 9 - Limit Switch Programming



- 1) Confirm that the box is turned on (the status LED should be green).
- 2) Press and release the work light button 6 times within 6 seconds (see fig. 9 above) – The green LED will flash 3 times and then change to Red.
- 3) Press and release the channel button corresponding to each limit switch that needs to be activated (see table below). The red LED will flash once to confirm that the limit switch function is activated. Pressing it a second time will turn the limit switch function back off. The red LED will flash twice to indicate that the function is turned off.
- 4) Wait 8 seconds for the box to exit programming mode – the LED will turn green.

Table 1 – Limit Switch Programming

Output	Button	Function	Spade Terminal / Corresponding Channel
Motor #1	CH1	Open	
	CH2	Close	
Motor #2	CH3	Open	
	CH4	Close	
Motor #3	CH5	Open	
	CH6	Close	

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Application Programming – *This section is for reference only.* All boxes come preprogrammed for the application. See the application table below for channel settings.

Application	CH 1	CH 2	CH 3	CH 4	CH 5	CH 6
Construction/Ag	Off	On	Off	Off	Off	Off
Waste	Off	On	Off	On	Off	Off

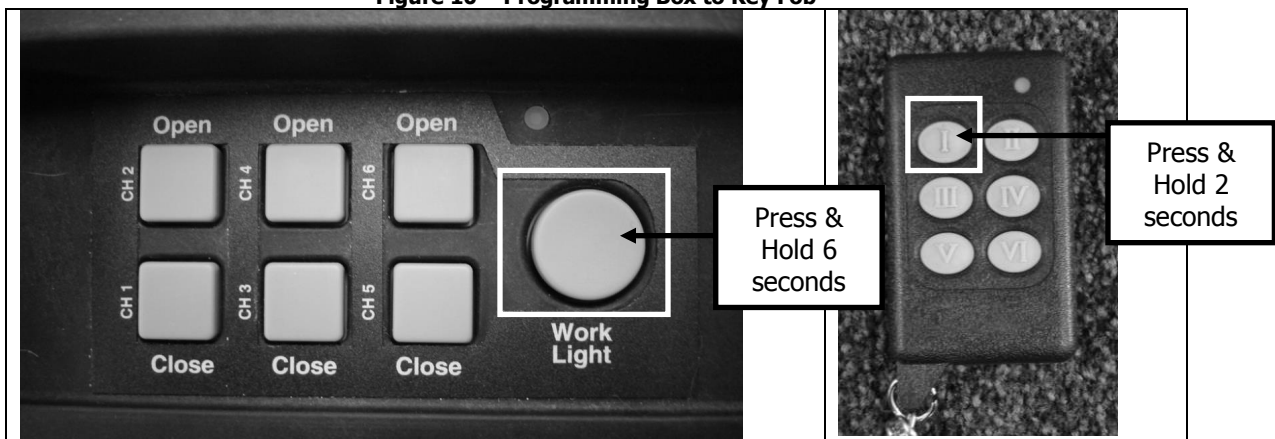
- 1) Confirm that the box is turned on (the status LED should be green).
- 2) Press and release the work light button 6 times within 6 seconds – The green LED will flash 3 times and then change to Red.
- 3) Press and release the work light button one additional time – The LED will flash red and change again to Solid Red.
- 4) Press and release each channel button to verify the correct setting for each (see table above for application specific channel settings). The LED will flash green once to confirm that the setting is turned on or it will flash green twice to indicate that the setting is turned off.
- 5) Wait 8 seconds for the box to exit programming mode – the LED will turn green.

Key fob Programming – the control box comes preprogrammed to the two supplied remote key fobs. If for any reason you should need to re-program them or additional key fobs follow the following procedure:

- 1) Confirm that the box is turned on (the status LED should be lit green).
- 2) Press and hold the round work light button for 6 seconds. The LED will flash red 3 times to indicate program mode.
- 3) Press and hold button I (see figure 10 below) on the first key fob for 2 seconds then release. Press button I for 2 seconds on the second key fob. Repeat for each additional key fob that is to be programmed.
- 4) Let box stand until Status LED returns to green. Programming is complete.

The control box will learn a maximum of 4 key fobs. All key fobs must be programmed at the same time. Programming an additional key fob at a later date will erase all previously stored key fobs.

Figure 10 – Programming Box to Key Fob



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Roll-Rite "Black Box" Troubleshooting

LED Diagnostics, Unit @ Rest

No Light	-----	No Power or box is locked out (see Lock out feature)
Green	Continuous	Everything is OK
Green	Single Blink	Low Battery Warning. Recharge your Battery soon
Green	Double Blink	Battery is nearly dead and must be recharged before unit will operation
Yellow	Continuous	Fuse 1 (5 Amp – see fig. 10) is Blown
Yellow	Single Blink	Fuse 2 (10 Amp – see fig. 10) is Blown
Yellow	Double Blink	Fuse 3 (15 Amp – see fig. 10) is Blown
Yellow	Triple Blink	Fuse 4 (15 Amp – see fig 10) is Blown
Red	Continuous	Unit is in Program Mode

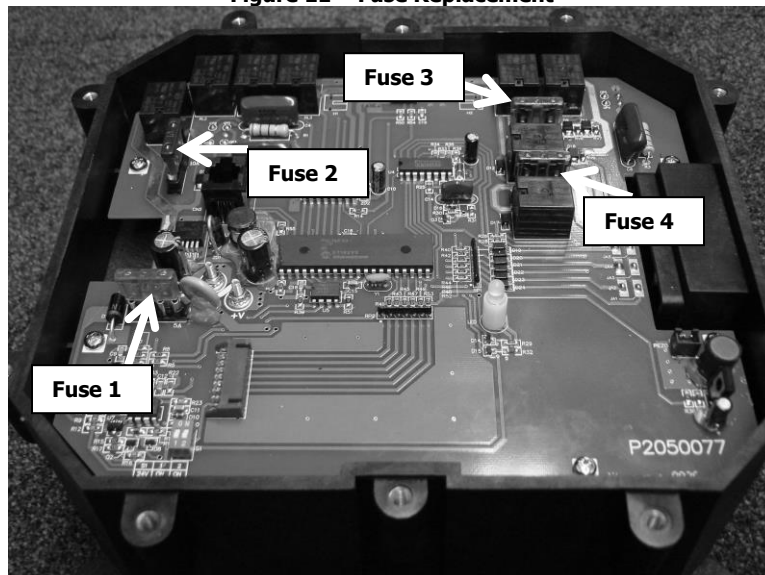
LED Diagnostics, Unit in Operation

Red	Continuous	Confirms it is in operation
Red	Single Blink	Low Battery warning. Recharge soon
Red	Double Blink	Battery is nearly dead – unit will not operate until charged

Fuse Replacement:

- 1) Using the codes above to diagnose which fuse is blown
- 2) Remove the 10 bolts that hold the lid in place
- 3) Carefully lift lid and unplug switch leads
- 4) Do not touch circuit board any more than necessary
- 5) Carefully locate (see Fig. 11) & remove the blown fuse and replace it with a fuse that is the same size
- 6) Replace the lid
 - a. Plug switch leads in
 - b. Arrange so that they will not be pinched as lid is replaced
 - c. Insure that gasket is in place in groove in lid
 - d. Press lid back into place and replace 10 lid bolts
 - e. Tighten lid bolts in a star pattern to insure lid tightens evenly

Figure 11 – Fuse Replacement



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Maintenance Manual

Roll Rite, LLC designs its tarping systems and power kits to be as maintenance free as possible, contributing to the overall value of the product.

Maintenance intervals vary based on environmental conditions.

Roll Rite, LLC recommends that:

- All electrical connections should be cleaned and greased regularly to prevent corrosion (fill all electrical boots, limit switch boots, etc. with dielectric grease). Electrical connections can be found at all motors, switches, contactors, limit switches, control boxes and batteries.
- All bearings with grease fittings and tower legs must be greased regularly.
- Check and tension all set screws. Set screws should be tightened until they touch and then torque them $\frac{3}{4}$ of a revolution beyond that.
- Check motor mounting bolts and torque to 70 in-lbs (5.8 ft-lbs).
- All mounting hardware should be checked to insure all system components are securely fastened.
- Visually inspect all moving parts for abnormal or excessive wear.

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Quick Reference Guide - Detach and Put in truck

Black Box Operation:

- ❖ **ON/OFF** – To turn the control box on or off, press CH1 and CH2 simultaneously for 2 seconds. This can be done from the box itself (see figure 6) or from the key fob (see figure 7) by pressing buttons I & II simultaneously.
- ❖ **Work Light** – If your system is equipped with work lights, turn the control box on and then press the Work Light button or button III & IV at the same time to turn them on or off. THIS IS NOT THE ON/OFF BUTTON FOR THE CONTROL BOX!
- ❖ **CH1 and CH2** – control buttons for output #1 on the control box (typically connected to the tarp motor). These two buttons correspond to buttons I and II respectively on the remote key fob. Pressing these two buttons at the same time and holding for 2 seconds will turn the control box on and off.
- ❖ **CH3 and CH4** – control buttons for output #2 on the control box (typically connected to hopper door or tower up/down). These two buttons correspond to buttons III and IV respectively on the remote key fob. Press and release these two buttons at the same time on the key fob to operate the work light from the remote.
- ❖ **CH5 and CH6** – control buttons for output #3 on the control box (typically connected to hopper door or sliding pivots). These two buttons correspond to buttons V and VI respectively on the remote key fob.

Lock Out Feature:

The control box incorporates a safety feature to shut off automatically after 6 minutes of inactivity (this is programmable – see “Lock Out Feature” section in your operating instructions). Press buttons 1 & 2 simultaneously on the box or remote for two seconds (as described above) to power the unit back up.

To lock the box down manually (shut off), press 1 & 2 simultaneously on the box or remote for two seconds as described above.

If you have any issues please call Roll Rite – 800-297-9905

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Additionally we would love to hear from you if you have any questions or issues:

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