



## Thunder Power Tarp Kit Operation Guide

Dual Arm – Curb Side Stowing  
Single Arm – Curb Side Stowing  
Flex Arm – Curb Side Stowing

## USE THE PROCEDURES BELOW TO OPERATE THE TARP SYSTEM

### ***Powering up or down the system***

- To turn the system on or off, locate the “**Open**” and “**Close**” buttons on the keypad controller on the front of the trailer. Press and hold both buttons simultaneously for approximately 3 seconds. The LED status light and the two large buttons will illuminate when the power is on and ready for operation. You can also press and hold the “**On/Open**” and “**Off/Closed**” buttons on the remote for 3 – 5 seconds to power the system on or off.

***One Touch Operation*** - *The one touch function is fully automated. The system will stop when fully opened or closed.*

- To open or close the tarp using the one touch operation feature, press and hold the desired directional button on the keypad or remote for 1 – 1 ½ seconds until the keypad status light turns solid green. Release the button and the keypad status light will start flashing green indicating one touch operation. The tarp will travel in that direction automatically and stop when it is fully open or closed.

### ***Incremental Operation***

- To inch the tarp in either direction, press then release the desired directional button on the keypad or remote for less than 1 – 1 ½ seconds intermittently to move the tarp in that direction.

### ***Press and Hold operation***

- To open or close the tarp using the press and hold feature, press and hold the desired directional button on the keypad or remote for more than 2 ½ seconds or until the keypad status light turns from solid green to solid white. The tarp will travel in that direction until you release the button.

**Never travel with the tarp in a partially covered position. The trailer should always be covered when traveling.**

## OPTIONAL ARM ADJUSTMENT

- As shipped from the factory, the front and rear arms are set to allow the axle to rest lightly on the end caps while following the contour as it moves across the trailer.
- Different types of loads and conditions may require your tarp to operate differently. For this reason the system has been designed to be very versatile. Please see the steps below to adjust your arm if need be.
  1. To help make the arms carry the axle over heaped loads: Increase the knuckle pressure on the front and rear arms by moving the spring pin up to the middle hole. If even more lift is desired, move the spring pin to the top hole.
  2. For tighter arm control in windy conditions, increase the base pivot pressure on the front and rear arms by moving the spring pin up to the middle hole. If even more control is desired, move the spring pin to the top hole.

## PROGRAMING REMOTE TO THE KEYPAD CONTROLLER

1. Four transmitters can be programmed to each keypad controller. Have all of the remote units that are to be programmed ready.
2. To program the remote, open the flip style lid and make sure the remote is set to mode one (the first light is flashing). See figure 4.2
3. Turn keypad controller on by pressing and holding the two large buttons "**Open**" and "**Close**" for approximately 3 seconds – the status LED light and the two large buttons will illuminate when the power is on. See figure 4.1

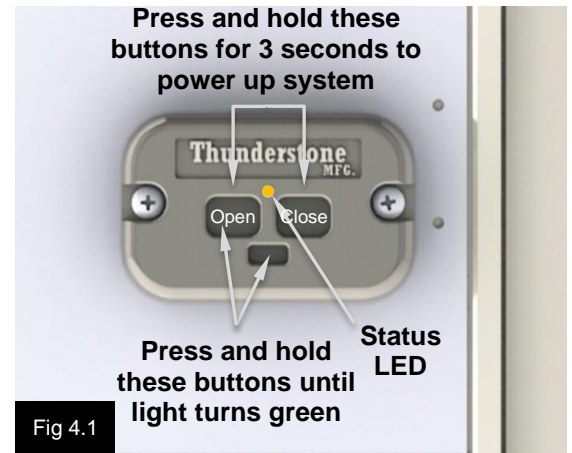


Fig 4.1

4. On the trailer keypad press and hold the program button (small button), then press and hold the large "**Open**" button simultaneously. Release both buttons when the LED turns solid green. The LED will then flash orange rapidly which indicates it is ready to receive remote programming. See figure 4.1

5. On the first remote, press and hold the "**On/Open**" button until the LED on the keypad blinks green rapidly for 2 seconds then turns solid white. Release the button and keypad should then start blinking orange to accept additional remotes.

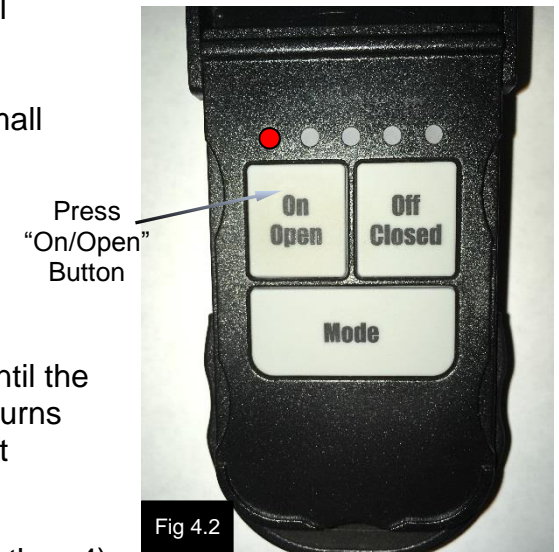


Fig 4.2

6. Repeat step 5 until the desired amount of remotes (no more than 4) are programmed. The LED will blink red two times once programming has been completed or will go back to regular operating mode after 10 seconds of inactivity. Pressing the programming button will also exit programming mode.

*The control box resets the list of remotes it remembers every time you enter the programming mode to program a remote. Remotes that were previously programmed are removed from the control box memory and will no longer be able to control the system. This is why all remotes need to be programmed at the same time.*

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

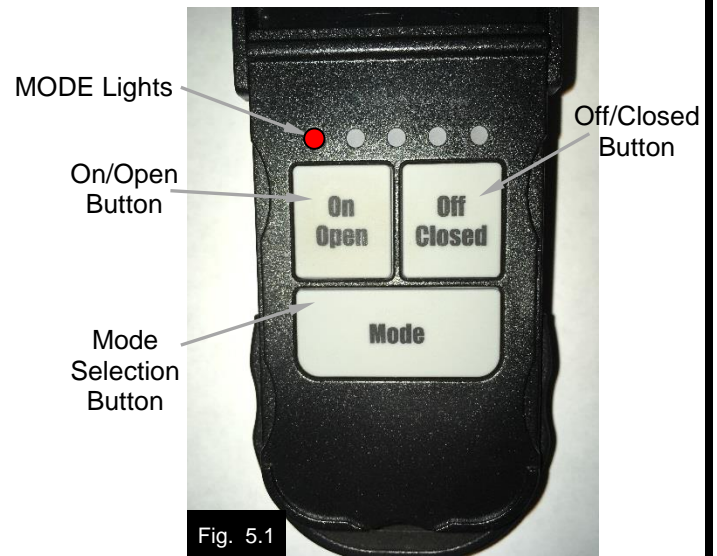
This device complies with Industry Canada licence-exempt RSS-xxx standard. Operation is subject to the following two conditions:

- (1) This device may not cause interference, and
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

## BLOCKING FUNCTIONS ON REMOTE (Optional)

*This function allows modes to be blocked if not used.*

1. Open flip style lid. Observe the flashing light.
2. Press and hold the **"Mode"** button for 10 seconds until light 1 stays lit.
3. Press the **"On/Open"** button if the lit mode function will be used. Select and press the **"Off/Close"** button if you want this function to be blocked out.
4. Repeat Step 3 for all five functions.
  - a. 1 LIGHT - TARP SYSTEM
  - b. 2 LIGHTS- FRONT HOPPER
  - c. 3 LIGHTS- REAR HOPPER
  - d. 4 LIGHTS- AUXILIARY
  - e. 5 LIGHTS WORK LIGHTS
5. When the last function has been selected, the light on the first mode function will stay lit for approximately 3 seconds to indicate active and return to flashing when process is complete.
6. When selecting modes, only the ones selected to be **"On"** will be accessible.



## TROUBLESHOOTING GUIDE

### Remote will not operate properly:

- Check battery strength. Open remote and watch the lights across the top. If all 5 lights light up it is at full charge, 4 lights is  $\frac{3}{4}$  charge, 3 lights is  $\frac{1}{2}$  charge, 2 lights is  $\frac{1}{4}$  charge, no lights is dead battery. Replace batteries if necessary.
- Bad antenna in the remote control not sending signal to the receiver.
- Bad antenna in the keypad controller on the nose of the trailer.
- Remote was not properly programmed. (Repeat remote programming steps above)

### Tarp will not operate properly:

1. Ensure the keypad is powered up. If the keypad is on, the LED and buttons will be illuminated. If the LED is not on, power the keypad on by pushing both **“Open”** and **“Close”** buttons simultaneously for 3 – 5 seconds until LED illuminates.
2. Check circuit breaker near the battery to make sure it is not tripped. If tripped, reset.
3. Check voltage output at circuit breaker located near battery. If no voltage or low voltage, replace the circuit breaker.
4. Check all terminal connections to make sure they are properly secured and free of corrosion. Locations to check: battery, circuit breaker near battery, male and female plugs (pigtail), inner control box connections, and the motor lead connections.
5. Check for input power at 2-pole trailer connector using a voltmeter. Verify proper voltage.
6. Check voltage at motor output. To do so, remove motor leads and connect the volt meter tester leads to the output terminals. Activate in one direction, check voltage, activate in opposite direction, and verify voltage.
7. Disconnect power leads from motor. Check for motor operation by using a set of jumper cables to go direct from battery to motor terminals. To reverse direction, remove the jumper cables from terminals and swap the leads to the opposite terminals. If motor does not operate in one or both directions, replace the motor.
8. Check for keypad controller fault blink codes. (see next page for fault code meanings)

## KEYPAD CONTROLLER BLINK CODES

### 2 Red Flashes      Program Stall / Overload      Repeats 15 seconds or until button is pushed.

- Indicates proper tension at the end of the cycle. (Normal Operation)
- If flashing code before the end of the cycle something is interfering with the proper operation.
- Check system for obstructions or damage that would cause added difficulty to roll the tarp.
- Repair issue by removing obstruction or repairing damage and try running system again.

### 3 Red Flashes      Motor Over Heat Protection      Repeats until fault is corrected.

- Allow the system to cool down and then try operating the system again.
- This will rarely happen with normal usage and probably indicates a problem with the motor and should be looked at in a Thunderstone dealer service shop as soon as possible.

### 4 Red Flashes      Over Voltage Protection      Repeats until voltage drops below 15.5 volts.

- Check batteries and alternator to find where the excess voltage is coming from.
- Repair the problem and try running the system again.

### 5 Red Flashes      Under Voltage Protection      Repeats until voltage rises above 7.5 volts.

- Check batteries for proper voltage and replace if necessary.
- Check for loose or corroded connections at the battery, circuit breaker, and at the trailer plug and receptacle.
- Check for looseness at the connections on the motor.

### 6 Red Flashes      Ground Fault Protection      Repeats until fault is corrected.

1. Remove the motor leads off the motor and touch them together. Verify if blinking has stopped. If so, the motor will need to be replaced. If blinking continues, reconnect motor leads & proceed to step 2.

2. Disconnect the quick connector for the motor wires in the nose of the trailer. See Figure 6.1. Insert a paperclip or equivalent across the contacts in the connector of the side coming from the inner control box. **DO NOT ATTEMPT TO RUN TARP SYSTEM.** Verify if blinking stops. If so, there is a ground fault in the wiring from the connector to the motor. Look for any cuts or pinched wires throughout the tarp arms. Replace or fix damaged wire.

3. If blinking doesn't stop after performing the previous steps, the inner control module may need to be replaced.



Fig. 6.1

Quick  
Connector

### 7 Red Flashes      Drive Motor Shorted      Requires removing power to reset.

- If fault will not reset then further motor diagnosing should be done at a dealer shop.
- Replace motor.

### 8 Red Flashes      Communications Failure      Repeats until fault is corrected.

- Check for cable damage or disconnection between the inner control box module and the external keypad controller.

## MANUAL OPERATION

Your Thunder Electric Tarp System should operate smoothly and provide years of service. In the unlikely event that an issue arises with the electric drive motor for the system, please follow these instructions to manually open and close the tarp system.

1. Remove the motor shaft drive nut and bolt assembly from the roll tube axle. See figure 7.1. **Note: Save the nut and bolt. If drive bolt will not come out due to excess tension from the drive motor, disconnect the motor leads and use jumper cables from a battery source to drive the motor in a direction that removes this tension.**
2. Remove the manual tarp crank handle from the crank handle retainer on the side of the trailer as seen in figure 7.2.
3. Locate the spline on the tarp roll tube, rear of the trailer seen in figure 7.3.
4. Slide the tarp crank handle universal joint and roll tube drive spline together (rear of trailer) by pushing the universal joint in-place until fully engaged with the roll tube spline. See figure 7.4.
5. Roll the tarp open and closed with the crank handle.
6. When finished, return the handle to the tarp crank handle retainer on the side of the trailer for storage and/or transport.

**CAUTION:** *The front and rear arms are spring loaded and can shift when the bolts are removed. Use an OSHA approved work platform when performing any maintenance on the motor or arms.*

*Do not travel with the motor disengaged from the roll-tube as the motor may slide off and cause the arm to fall, causing trailer or tarp system damage. It is recommended that the motor and arm assembly be secured to the front ladder assembly with a bungee cord if the trailer must travel while tarp system is disengaged.*

