

G.Force  **Force Command Systems**

Remote Control

Trailer Chute Opener Series II

INSTALLATION and OPERATING INSTRUCTIONS

The **G.Force** Remote Control is designed to provide the ultimate in convenience and safety to perform tasks remotely. It is a radio frequency (RF) controlled device that allows operation of a gate, chute, etc. from a hand held transmitter operated remotely. The Transmitter, which operates at 418 MHz FM, transmits encoded information to the Receiver, which then decodes the information and performs the desired function. When coupled with the electromechanical driver, this system may be used to open a chute, operate a swinging gate, turn a valve, etc. The Transmitter and Receiver are designed to operate within 300' but actual range is dependent on operating environment.

Features :

- Simplicity of design and quality of engineering.
- User selectable security code.
- Power On/Off switch on Receiver.
- LED Indicator lights.
- 9v Transmitter Battery
- Ease of installation/removal when not in use.
- All controls can be by either Manual Switch or Remote Control
- Multiple Transmitters can operate a single Receiver/Drive.
- Multiple Receiver/Drives can be operated by a single Transmitter.
- Receiver/Drives are "Channel selectable"

Manufactured By: Brehon Agrisystems Inc.

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Specifications:

Transmitter:

Power:	9 volt dc battery
Frequency:	418 MHz
Modulation:	FM
Indicators:	Power/Transmit Red LED
Case Size:	2.6" x 4.1" x .9"
Weight:	.25 lb.
Range:	300'+ (depending on environment)
Antenna:	1.3" Fixed Mini Tuned
Security Code:	3 ⁸ selections
Functions:	2 to 9 Button (depending on Model)

Receiver:

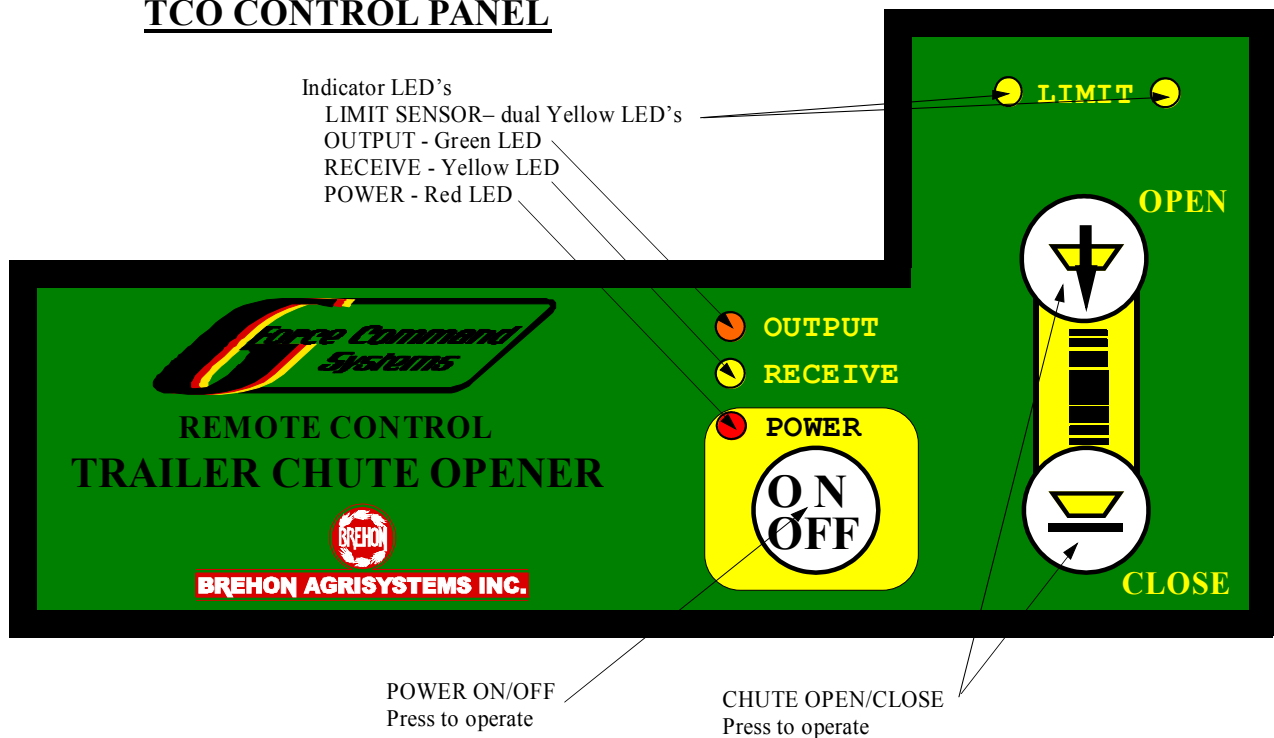
Power In:	12 vdc
Power Out:	12 vdc @ 100 amps max
Standby:	40mA
Security Code:	3 ⁸ selections
Power Input:	2/4 ga. 2 conductor wire with plug n'lock connectors
Indicators:	Power On Red LED Receive RF Data Yellow LED Channel Active Green LED Limit Sensor Encountered dual Yellow LED's
Options:	Multi-Channel Operation (1-4) Main Power On/Off Pushbutton Manual Open/Close Pushbutton Control Programmable Limit Sensor
Antenna:	7" Flexible Tuned

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Electric Motor Drive

Electrical: 12vdc @ 100A Full Load
Torque: 1125 in-lb
Speed: 60 rpm no load
Output Shaft: 3/4" keyed and drilled
Duty Cycle: 5%
Overall Size: 5" x 6" x 15"
Weight: 16 lb.

TCO CONTROL PANEL



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INSTALLATION INSTRUCTIONS

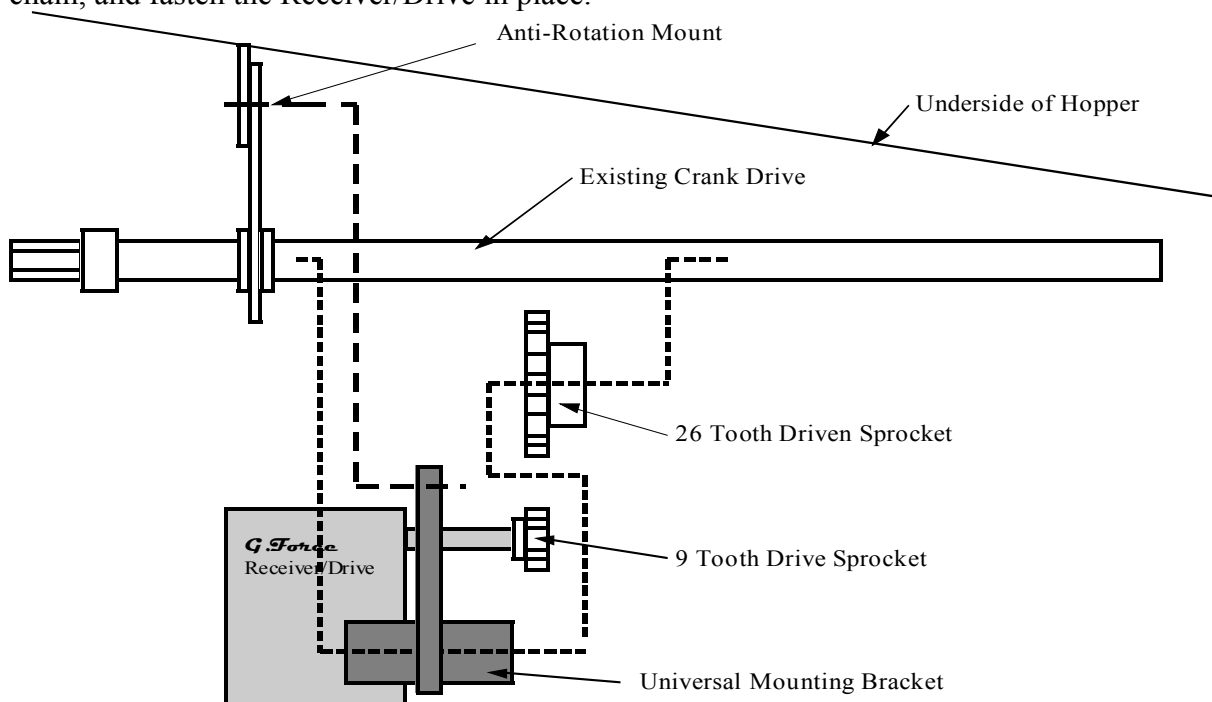
Mechanical Installation:

The **G.Force** Trailer Chute Opener is provided with a universal mounting plate that mounts to the existing cranking shaft and trailer frame to connect the drive. The Mounting Plate and Driven Sprocket are slid onto the existing cranking shaft with the Driven Sprocket tight to the Mounting Plate sleeve so that it aligns with the Drive Sprocket. The Mounting Plate has 2 sets of slotted holes to provide for either left or right hand mount, and for chain tensioning.

The Anti-Rotation Mount is not provided and is dependant upon the trailer design and desired mounting position. If the Mounting Plate is sufficiently close to the existing hanger bracket support frame, a 1/2" bolt will suffice. Otherwise, a simple offset bracket may be welded/bolted to the frame to provide alignment and support.

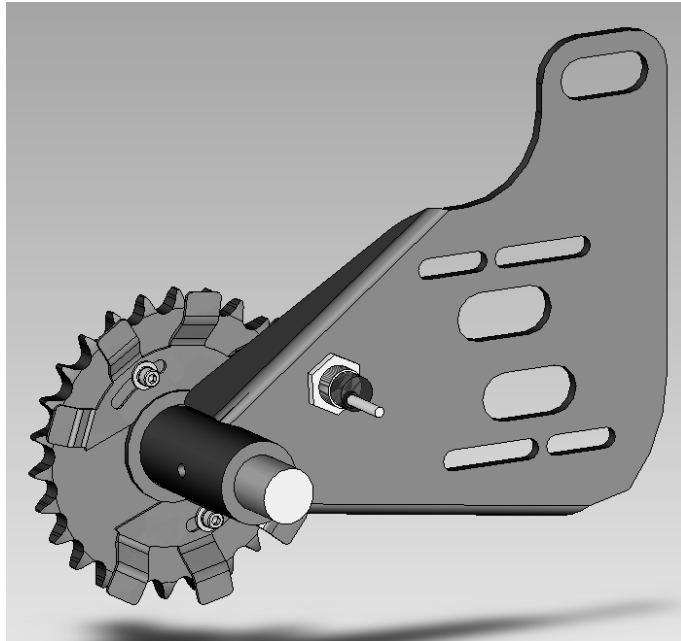
The kit is supplied with a 26-tooth Driven Sprocket and 1" weld-on hub. The customer can choose to mount by welding, pinning, or keying the existing cranking shaft. A 9-tooth Drive sprocket and key is supplied but the sprocket may also be drilled and pinned if desired.

Break the No. 50 chain (supplied) to the required length and connect using the Connector Links supplied in the kit. Slide the Receiver/Drive along the Mounting Plate slotted holes to tighten the chain, and fasten the Receiver/Drive in place.



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Limit Switch Installation:



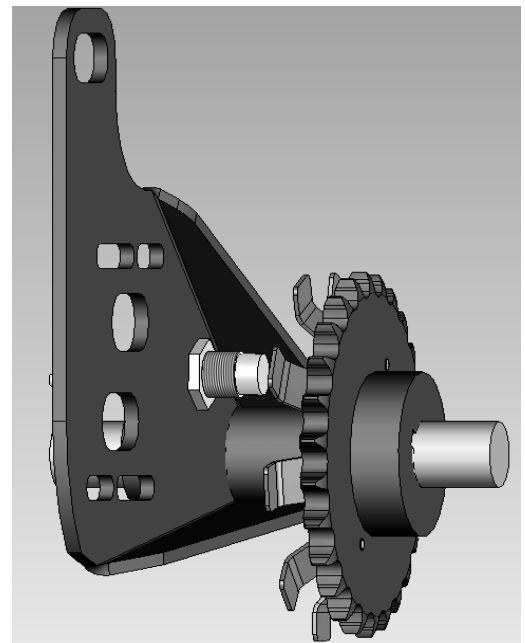
The G. Force Trailer Chute Opener Limit Sensor Kit adds greater flexibility to the Trailer Chute Systems by allowing the operator to open and close the chute to any preset limit with confidence. The kit is composed of an inductive limit sensor and a tabbed plate that attaches to the driven sprocket. The sensor turns on when a tab passes in front of the sensing face. As the sprocket turns, the trailer chute opener counts the tabs passing by the sensor. Once the chute reaches either limit, the two bright yellow Limit LEDs will illuminate and the chute will stop.

Installation:

- 1) Place the tabbed plate on the driven sprocket and thread the provided screws and lockwashers into the pre-threaded holes. Do not tighten yet as this will be adjusted later.
- 2) The limit sensor fits in the mounting plate's $\frac{3}{4}$ " hole as shown. Insert the sensor and tighten so that the sensing face is approximately $\frac{1}{4}$ " away from the tabs. With the drive's power on and the sensor plugged in, an orange LED in the inductive sensor will illuminate when a tab is sensed.

Programming:

- 1) Plug in and turn on the unit.
- 2) Press and release both Open and Close buttons on the driver simultaneously to enter Program Mode. The yellow Data LED will blink slowly.
- 3) **Close** the chute all the way.
- 4) Rotate the tabbed plate so that a tab is centered over the sensor face and fasten the plate in place.
- 5) Press and release both Open and Close buttons again to set the fully closed limit. The Data LED will blink faster to acknowledge the lower limit.
- 6) **Open** the chute to the desired position. Press and release both Open and Close buttons simultaneously again to set the open limit. The Data LED will turn off.



Closed and open limit positions are now stored and will remain even if the power is disconnected. Both can be reset at any time by entering Program Mode again.

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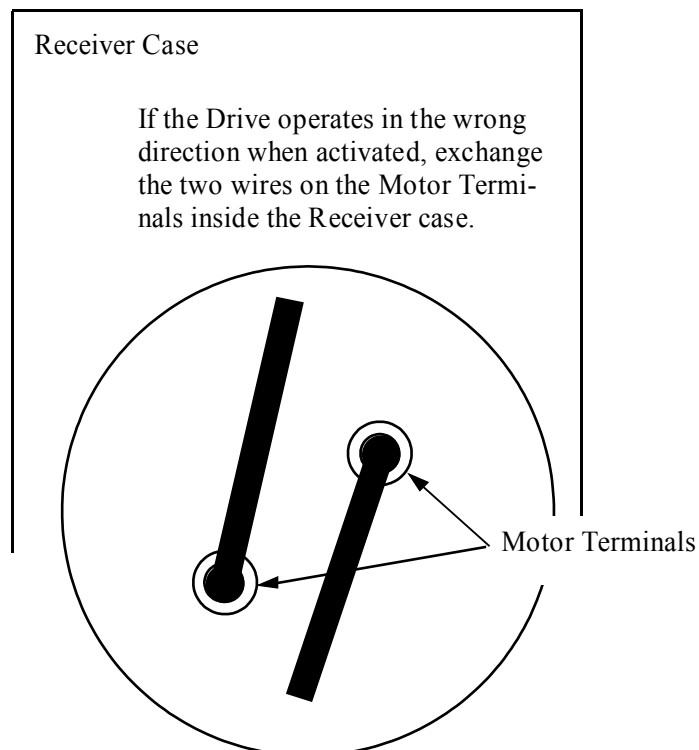
Electrical Installation:

The **G.Force** Trailer Chute Opener is provided with pre-wired connectors. A 20' cable is provided for wiring on the tractor. The trailer wiring has a tractor/trailer disconnect and two plug sets to plug into each of the drives. The polarity **must** be correct as follows: **+12v on the RED STRIPE wire**. A supplied 100A circuit protector is to be installed on the tractor battery to protect against a wiring "short".

WARNING: ALWAYS USE A BATTERY. CONNECTING THE UNIT TO ONLY A CHARGER OR GENERATOR WILL DAMAGE THE UNIT!!!

The Wiring Harness is supplied with a disconnect at the Tractor/Trailer and at each Drive. Once the wire is routed, plug the Drives to the harness and plug onto the Tractor supply cable. When the Power On/Off button on the Receiver is pressed the Red LED indicator light should light indicating normal operation.

If the **G.Force** Trailer Chute Opener drive is running in the wrong direction when operated, reverse the two 10 gauge wires **on the motor terminals inside the Receiver case**.



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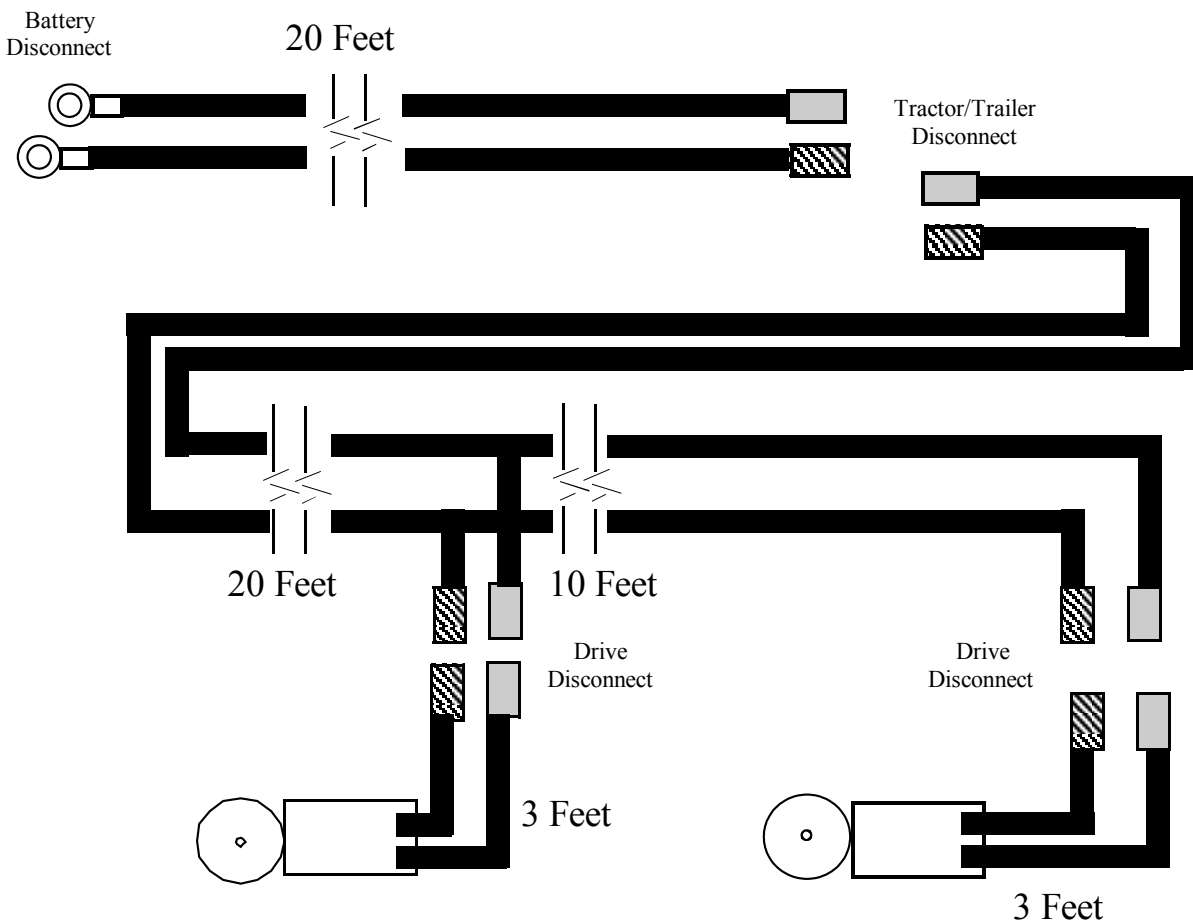
DRIVE CABLING

The **G. Force** Trailer Chute System is supplied with 2 gauge-conductor wire and Heavy-Duty plug and lock connectors for “plug-and-play” operation. Battery Connects supplied — 3/8” diameter lugs.

It is recommended that the customer install a circuit protector when connecting directly to batteries to protect against an electrical short in the wiring.

NOTE: ENSURE CORRECT POLARITY!

The **RED STRIPE/MARKED** wire must be connected to + 12 vdc.



Think Safety:
Do Not install or operate where damage to property or persons may occur.

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General Operation:

RECEIVER:

The Receiver is equipped with a Power On/Off button on the outside of the case. When the button is pressed, the Red LED should light indicating normal operation. The Trailer Chute Opener may be operated using the manual pushbuttons on the drive case, or by remote control. Press the Power On/Off button again to turn power Off.

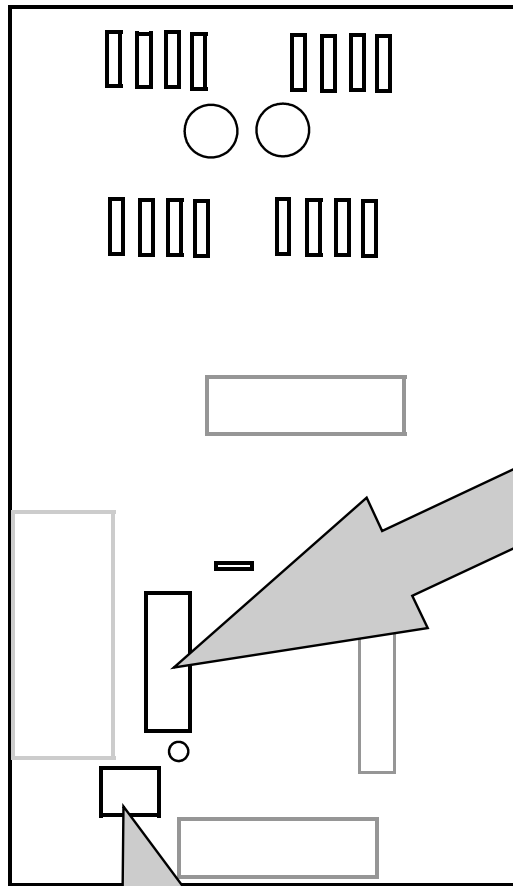
There are three protection modes for the drive:

- a) If “low voltage” supply occurs to the drive, the drive will continue to operate but will reduce speed automatically to maintain maximum torque. The Green LED will blink slowly. Low voltage is defined as less than 10 volts supply. The “blinking” status will remain until another input signal is received or the unit is turned off.
- b) If a “high temperature” status occurs the Green LED will flash rapidly. The drive will not operate in that direction until the circuit has cooled, but may operate in the reverse direction. Cooling in generally about 30 seconds. The “blinking” status will remain until another input signal is received or the unit is turned off.
- c) If a “current overload” status occurs the drive is protected by a 100 Amp auto-resetting thermal breaker at the tractor battery which turns the drive off. This fuse trips with an audible “click” and the drive will not operate until the fuse cools and resets (generally about 15 seconds). The Red Power LED will stay on indicating power connected and the Green LED will blink slowly indicating a “low voltage” status, however, the drive will not operate until the fuse resets.

SECURITY CODE:

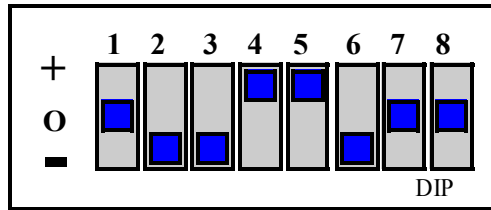
The Receiver is equipped with an 8-position switch used to set the user security code. The security code is provided to prevent unwanted operation of the Receiver by other devices. Only a Transmitter with identical switch settings will be able to "talk" to this Receiver. When the switches are set identically and the transmitter "talks" to the Receiver, the yellow “RECEIVE” light will come on. This indicates that valid data with a matching security code has been received. Position these switches to any desired On/Off pattern for your own security code. REMEMBER: The 8-position switch on the Transmitter must be set IDENTICALLY. To access the security code switch, remove the screws on the Receiver front panel, and gently remove the panel.

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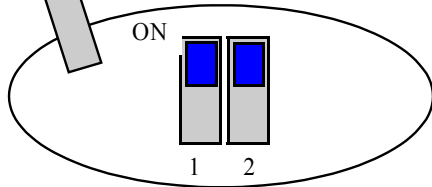


SECURITY CODE SWITCH

USER SELECTABLE 8 - Switch SWITCH MUST BE SET **IDENTICALLY** TO THE TRANSMITTER



NOTE: This is a TRI-STATE switch.
Each of the 8 switches has **3 positions** which must be identically matched to the corresponding Transmitter. These code switches are fully compatible with 8-position Two- State On/Off switches by using the “+” setting as ON and the “O” setting as OFF.



CHANNEL SELECT SWITCH

Two Switch 2-Position Selector to match Receiver with Transmitter channel output

Each ***G.Force*** Trailer Chute Opener has its own receiver; therefore, multi-drive systems must have the identical security code settings to be operated by the same transmitter. In addition, to select which drive is operated by the chosen transmitter channel, each ***G.Force*** Trailer Chute Opener has a user settable “Channel Select” 2-position DIP Switches.

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CHANNEL SELECT SETTINGS:

The **G.Force** Trailer Chute Opener comes with a 2-position DIP Switch to match the Drive to the desired transmitter channel. Be sure that each drive is set to a different channel so that the chutes do not operate simultaneously. Select the switch settings as follows:

	Switch 1	Switch 2
Channel 1 (Front Chute)	OFF	OFF
Channel 2 (Rear Chute)	ON	OFF
Channel 3	OFF	ON
Channel 4	ON	ON

The **G.Force** Trailer Chute Opener drives can be operated using the Transmitter, or alternatively, by operating the OPEN/CLOSE momentary pushbutton switches on the Receiver. Whenever the **G.Force** Trailer Chute Opener drive is operated, the Green LED indicating output power to that device, will be lit. When input is received from the Transmitter, the Yellow LED data RECEIVE will light.

The **G.Force** Trailer Chute Opener has two automatically resetting fuses. Fuse F1 (1 Amp) is intended to protect the RF receiver and data circuitry, and Fuse F2 (40 Amp) is intended to protect the drives from overload. These fuses will automatically reset when cooled.

The Receiver power should be turned Off when not in use to prevent undesired operation.

TRANSMITTER:

The Transmitter is powered by a 9v battery which, when installed, should light the red "power" light when a switch is pressed. If the battery does not exceed 7 volts the Power light will not come On, indicating battery replacement is required.

The Transmitter is also equipped with an OFF/Standby switch to prevent accidental operation. In the OFF position the transmitter Red LED will not light and the transmitter will not activate even when a button is pressed. To operate, slide the switch to STANDBY. The transmitter remains off until a button is pressed, at which time the Red LED will light and the transmitter will emit signal. No battery power is used when simply in Standby mode with no buttons pressed.

Set the 8-position switch to your own security code which matches the code on the Receiver to which it is to "talk". Note that any number of Transmitters can "talk" to the same Receiver as long as they have the security code that matches the receiver.

To access the Transmitter security code switch or battery, remove the 4 screws in the back of the Transmitter case and open the case.

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