



Remote Control Systems

INTEGRATED RECEIVER/ENDGATE and HOIST DRIVER CONTROL MANUAL

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 motor/driver, this system may be used to operate a swinging gate, raise a chute, open 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.
- All controls can be by either Manual Keypad or Remote Control
- Multiple Transmitters can operate a single Receiver.
- Multiple Receivers can be operated by a single Transmitter.
- Up to 4 different Channels can be operated by one Receiver

Manufactured By: Brehon Agrisystems Inc.

102 – 2750 Faithfull Ave.
Saskatoon, SK S7K 6M6
(306) 933 2655 phone/fax
Email: garth.brehon@sasktel.net

Box 3
Maymont, SK S0M 1T0
Web: www.brehonag.com

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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
Safety:	Off/Standby Slide Switch
Functions:	2 to 9 Button (depending on Model)

Receiver:

Power In:	12 vdc
Power Out:	12 vdc @ 10 amps max
Standby:	40mA
Security Code:	3 ⁸ selections
Power Input:	4' non-terminated 16ga wires
Hoist Inputs:	Plug-and-Lock Connector
Indicators:	Power On Red LED Receive RF Data Yellow LED Channel Active Green LED
Options:	Latched/Momentary Data Multi-Channel (1-4) Main Power On/Off Switch Manual Switch Control
Antenna:	7" Flexible Tuned
Case Size:	3.75" x 5" x 19"
Weight:	5 lb.

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Electric Cylinder Model ECL2S/12

Force: 540 lb.
Speed: .75 in/sec.
Stroke 11.8" Full Stroke
Closed Length: 18" Pin-to-pin
Electrical: 9.5A @ 12v Full Load
Duty Cycle: 5%

Hoist Driver (Optional)

Force: 40 in-lb Torque max
Speed: 6 rpm no load
Rotation: +/- 80 degrees
Electrical: 1A @ 12v Full Load
Duty Cycle: 10%
Size: 3" x 3.5" x 3.5"
Weight: 1 lb.
Connector: 4-pin Plug-n-lock
Cabling: 30' of 4 Conductor 18ga. Wire with Fixed Connector both ends

Warning: Be sure truck hoist is securely blocked and valve lever activated safely in both directions before beginning installation!

Think Safety:

**Do Not install or operate where
damage to property or persons may occur.**

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INSTALLATION INSTRUCTIONS

Connecting Power to Receiver:

Using sufficiently heavy gage wire, (not included), connect +12vdc and Ground wires to the wire from the Electric Cylinder marked **POWER IN** using the crimp connectors supplied. The polarity **must** be correct as follows: **+12v on the BLUE wire**, and **GROUND on the BROWN** wire. Power may be supplied from the fused side of the ACCessories on the ignition switch so that the Receiver is only powered while the vehicle ignition key is on or alternatively, connected using an inline fuse directly to battery power. When the Power ON/Off switch on the bottom of the Receiver is turned on the Red LED indicator light should be ON indicating normal operation.

Electric Cylinder Installation:

Before mounting the Electric Cylinder on the end gate, determine the correct location for installing the mounting tabs by extending and retracting the cylinder to ensure required stroke. This can be accomplished once power is supplied to the Receiver by pressing the ENDGATE manual switches on the Receiver.

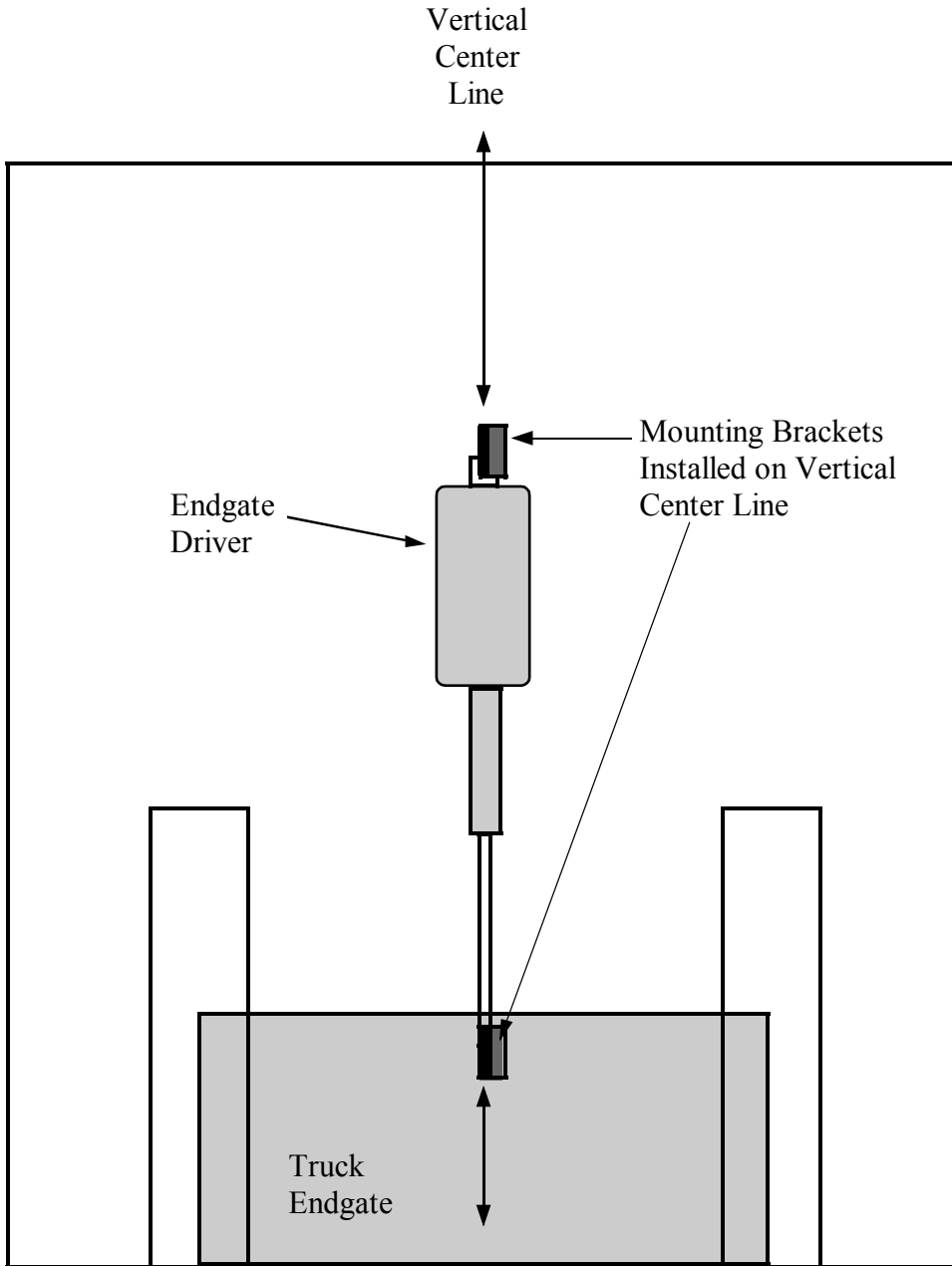
Ensure the grain chute operates freely. Position the mounting tabs such that when the grain chute is fully open the cylinder is not quite fully retracted. Then check to ensure that the distance to fully close does not exceed the electric cylinder stroke length and that the electric cylinder can be mounted free of any obstacles.

Weld or drill/bolt the mount tabs in position on the vertical center-line of the grain chute and box end panel at the desired positions.

Attach the cylinder main body to the top mount tab using the bolt and locknut supplied. Attach the cylinder piston to the moveable grain chute with the snap pin supplied. Route the electrical wire and connect using the insulated crimp terminals supplied. Secure all wires using the cable ties provided.

NOTE: The existing lift handle on the endgate need not be removed, however, it must not be able to lock in any position. This could cause the electric cylinder to stall resulting in reduced service life or destruction.

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ENDGATE DRIVER INSTALLATION DRAWING

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Hoist Driver Installation:

Warning: Be sure truck hoist is securely blocked and valve lever activated safely in both directions before beginning installation!

Before beginning the installation carefully note which direction the lever arm on the valve moves for “up” and “down” and note the Hoist Driver movement as indicated on the label.

With the truck box blocked and resting securely and the engine shut off, operate the hoist control in both directions to ensure there is no pressure on the hydraulic valve and the safety blocks are securely positioned.

Measure the distance the valve lever arm moves in either direction from its center rest position at the mounting pin.

The hoist driver replaces the existing flexible cable control by bolting directly in its place on the top of the hydraulic valve/pump reservoir.

Disconnect the existing flexible cable control from the valve arm and unbolt the cable from the reservoir bracket.

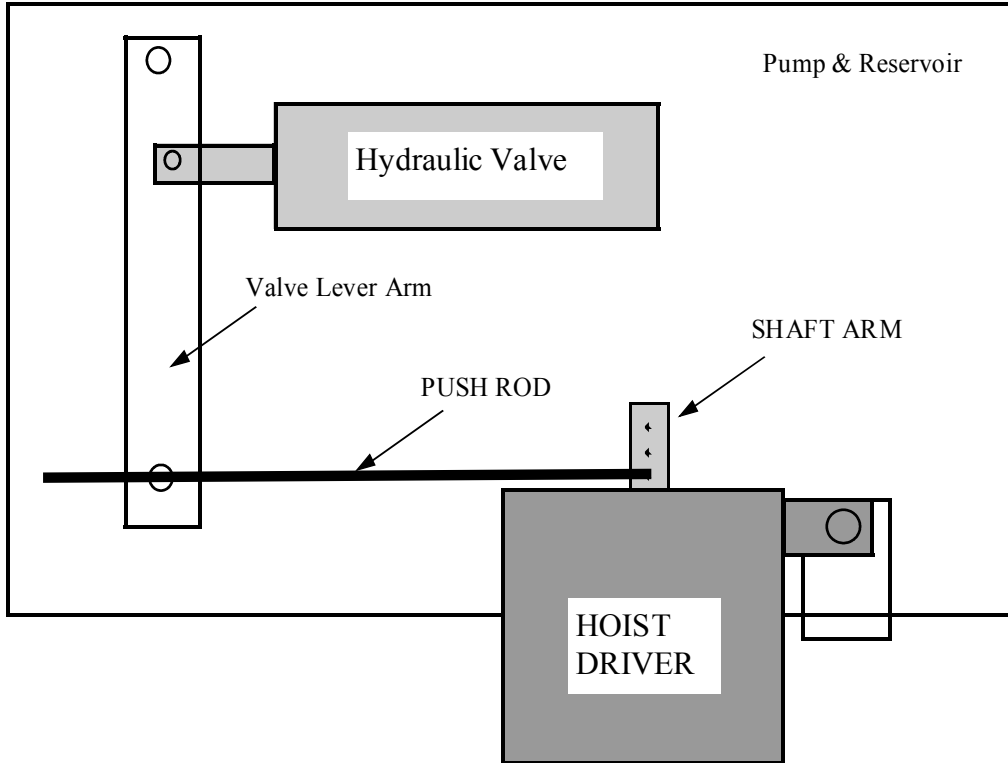
Select the appropriate hole to install the Hoist Driver Push Rod. The distance from the center of the Hoist Driver Shaft Arm to the selected hole should be roughly the same as **but not greater than** the distance the valve lever arm moves in either direction from its center rest position at the mounting pin. The Hoist Driver Shaft Arm is designed to turn 80 degrees in either direction. If it is stalled in either direction because the valve lever arm is not free to move, the Hoist Driver may be damaged or destroyed.

Slide the Hoist Driver Push Rod through the valve lever arm cable clamp and bolt the Hoist Driver to the reservoir mounting tab using the 5/16 x 3/4 bolt, nut, flat washer, and lockwasher, provided. Properly installed, the Hoist Driver Push Rod should be at right angles to the Hoist Driver Shaft Arm. Ensure there is clearance for the movement of the valve lever arm, push rod, and shaft arm.

Tighten the existing valve lever arm cable clamp on to the Hoist Driver Push Rod.

Connect one end of the pre-wired 4 conductor hoist cable back to the Hoist Driver. Route the other end to the Receiver and connect to the Receiver HOIST CONTROL connector. Secure the cable to the truck chassis as required. Note: It does not matter which end is which.

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HOIST DRIVER INSTALLATION DRAWING

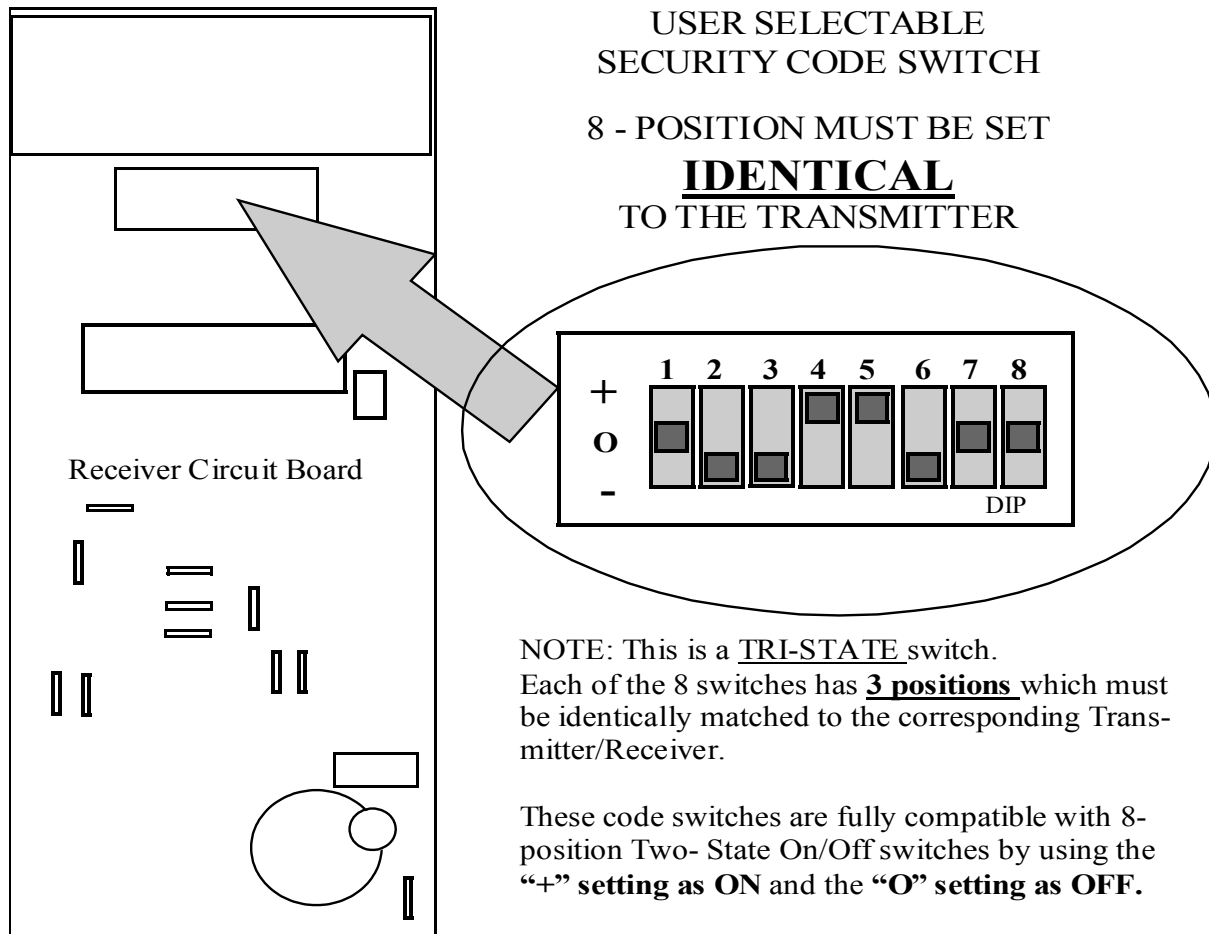
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General Operation:

RECEIVER:

The Receiver is equipped with a Power On/Off switch on the outside of the case. When the switch is ON, the Red LED should be lit indicating normal operation.

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 6 screws securing the case from the rear and open the case.



NOTE: This is a TRI-STATE switch.

Each of the 8 switches has **3 positions** which must be identically matched to the corresponding Transmitter/Receiver.

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**.

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The Endgate and Hoist can be operated using the Transmitter, or alternatively, by pressing the desired UP/DOWN arrows on the Receiver to activate the Manual Switches. Whenever the endgate or hoist is operating, the Green LED indicating power to that device, will be lit.

Only one device can be operating at a time. The Hoist Driver will return to its Off (Neutral) position before allowing any other output. The Manual Switches have priority over the Transmitter signal when the Hoist Driver is in its OFF position.

The Receiver has two automatically resetting fuses. Fuse F1 (1 Amp) is intended to protect the RF receiver and data circuitry, and Fuse F2 (10 Amp) is intended to protect the relays from overload. These fuses will automatically reset when cooled

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.

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 which 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.

NOTE: The STOP button shown/included on the Transmitters is NOT USED as both the Hoist and Endgate **only operate while a button is held.**

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ENDGATE DRIVER:

The Endgate Driver will only operate while its transmitter button/ manual switch control button is depressed. Release the button immediately when the endgate is fully opened or closed. Do not operate in a stalled condition. This could result in reduced service life or destruction of the Endgate Driver.

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

HOIST DRIVER:

The **G. Force** Hoist Driver shaft arm is designed to move each way from center and stay in that position until its transmitter button/ manual switch control button is released or, as a safety default, until input signal is otherwise lost. It will then return to the center Off (neutral) position. This results in a slight delay from the time the button is released until the hoist actually stops. **The Stop button on the transmitter is not used** - the actuator automatically returns to the center (neutral) position.

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

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