EQUIPMENT SOLD BY

THE GATE GUY

Practical help. Real installation experience.

AMERICAN ARMOR AUTOMATION

Manufacturer documentation / retailer-supplied copy

Ranch Hand

Single / dual operator manual

The original manufacturer document follows this retailer cover. Manufacturer logos, instructions, safety notices and warranty language are preserved. Match the document to your equipment.

(830) 402-8434
sales@texasgateguy.com
americanarmorgateoperator.com

Installation services are quoted separately through The Gate Guy.
Equipment warranty and installation-labor coverage are separate.

AMERICAN ARMOR

GATE OPERATOR



INSTALLATION MANUAL

030818

CONTENTS

Safety Precautions 2

Applications 3

Pre-Installation Checklist 4

Parts Identification 5

Operator Installation 6-12

- Pivot Arm Installation
- Actuator Installation
- Control Box Installation
- Connecting the Actuator
- Gate Bracket Installation
- Limit Switch Adjustment
- Circuit Board Features
- Circuit Board Feature Locations
- Circuit Board Dip Switch Options

Push to Open Installation 13

Radio Receiver Options 14-15

Troubleshooting guide 16-18

Warranty 19

SAFETY PRECAUTIONS

IMPORTANT - READ CAREFULLY BEFORE BEGINNING INSTALLATION

- **Read this installation manual completely prior to installation.**
- **Installation should be performed by a professional installer.**
- **Required welding should be performed by a qualified welder.**
- **Should electricity be required, use a certified electrician only.**
- **Any device that requires 120 Volts AC should be U.L. approved.**
- **Review with the owner all safety concerns including:**

    - ⇒ **Do not operate the gate unless area around gate is in full view.**
    - ⇒ **Do not allow children or adults to "ride" on gate during operation.**
    - ⇒ **Do not allow children to play in the gate area.**
    - ⇒ **Periodically test the obstruction sensitivity to assure safe and proper operation. *Do not test sensitivity by standing between the gate and the hinge or stop post.***
    - ⇒ **Do not allow children to play with the gate controls.**
    - ⇒ **The "CAUTION AUTOMATIC GATE" sign should be clearly visible from both sides of the gate.**
    - ⇒ **Always insure that the gate has closed securely before leaving area.**
    - ⇒ **Arrange with local fire and law enforcement for emergency access.**

- **Recommend safety devices such as loop detectors, edge switches, and beam detectors when applicable.**
- **Install control devices such as keypads far enough away (5 feet or further) from any moving parts of the operator and gate to prevent possible injury.**
- **Always disconnect the battery or power source when making adjustments or repairs to any part of the gate or operator.**
- **All rollers should be covered to prevent injury.**

APPLICATIONS

The American Armor Products Model RHS/RHD Swing Gate Operator is designed to handle swing gates up to 16 feet in length and 500 pounds each. A professional fence or gate dealer is recommended to assure proper installation. American Armor Products are available only through qualified dealers with an outstanding reputation in the fence and gate industry. These dealers will be able to recommend the proper equipment for particular applications. American Armor Products are 12 Volt DC (*Direct Current*) powered. A 12 Volt marine type battery with connecting posts located on the top is recommended. There are several advantages with 12 Volt DC systems:

- **Low voltage virtually eliminates risk of electrical shock. • Battery powered operators provide up to 200 operations in the event of power outages.**
- ***The battery may be recharged with a trickle charger or by solar energy (eliminating the need for costly trenching to remote entrances).***

If a trickle charger is used and a standard electrical outlet is not readily available, a licensed electrician will be required for proper electrical hook up.

The following table should be used as a guide for capacity of operation of operators only, additional options may reduce the the daily usage. *Please note that the charge capability of solar panels will vary with different geographical locations.*

Charging Methods for Average Daily Usage

Model #	Daily Usage a	1-15	16-30	31-60	61-120	121+
5WKit	5 watt solar panel w/battery	X				
10WKIT	10 watts of solar panel w/battery		X			
	20 watts of solar panel w/battery & regulator			X		
	40 watts of solar panel w/battery & regulator				X	
	1.5 amp automatic charger w/battery				X	
	10 amp automatic charger w/battery					X

Note: Double the amount of solar panels for Dual Gate Operators.

PRE-INSTALLATION CHECKLIST

The following checklist should be used before beginning installation:

Verify that the proper operator has been selected for this application.

Verify proper installation and operation of the gate.

1. *Are the hinges servicable?*
2. *Does the gate swing free and level?*
3. *Will the gate require a locking device?*
4. *Is the hinge and stop posts sturdy enough to handle the gate & operator?*

Determine the general location of the operator, attachment points, and solar panel (if used).

1. *Is there a suitable location for the operator?*
2. *Can the solar panel (if used) be mounted in an unobstructed area facing south (in the northern hemisphere)?*
3. *Will additional solar panel cable be required?*
4. *Is electricity available (if required)?*

Consider safety and access options. Recommend if needed.

1. *Will there be children or animals in the area?*
2. *Are safety loops, edge switches, or photo beam detectors required?*
3. *How can the gate be opened in emergencies?*
4. *How will visitors enter and exit?*
5. *Will vehicles (and trailers) have sufficient room off roadway to operate any control devices such as keypads?*

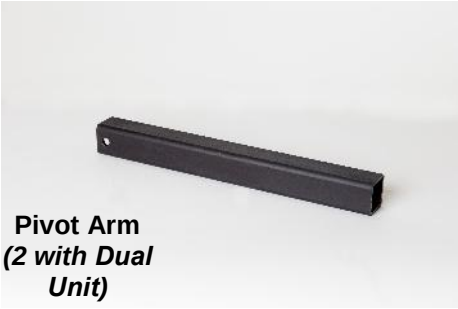
PARTS IDENTIFICATION



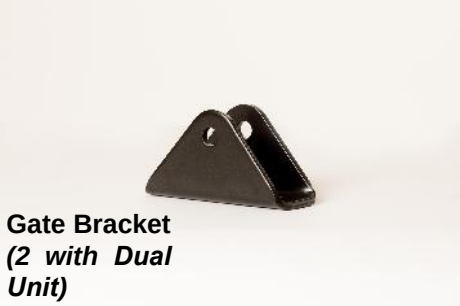
Control Box Assembly with Ranch Hand Circuit Board (Model RHCB) which includes Keyswitch and Pushbutton



American Armor Gate Arm (Model SGA) with 8' cable for single opener and (Model DGA) with 38' cable for dual opener.



Pivot Arm
(2 with Dual Unit)



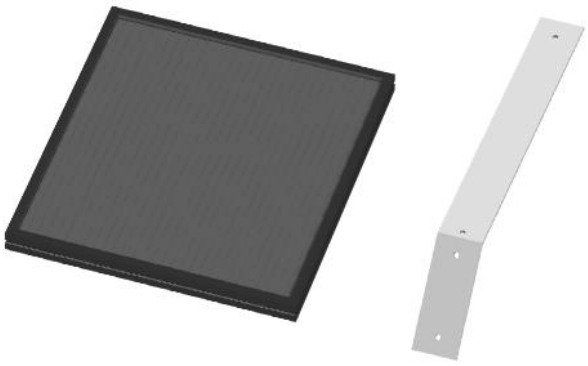
Gate Bracket
(2 with Dual Unit)



Bolt On Pivot Arm (optional)
(2 required with Dual Unit)



Hardware Kit
(2 with Dual unit)



5 Watt Solar Panel & Bracket (optional)
(2 required with Dual Unit)



Automatic Battery Charger (optional)

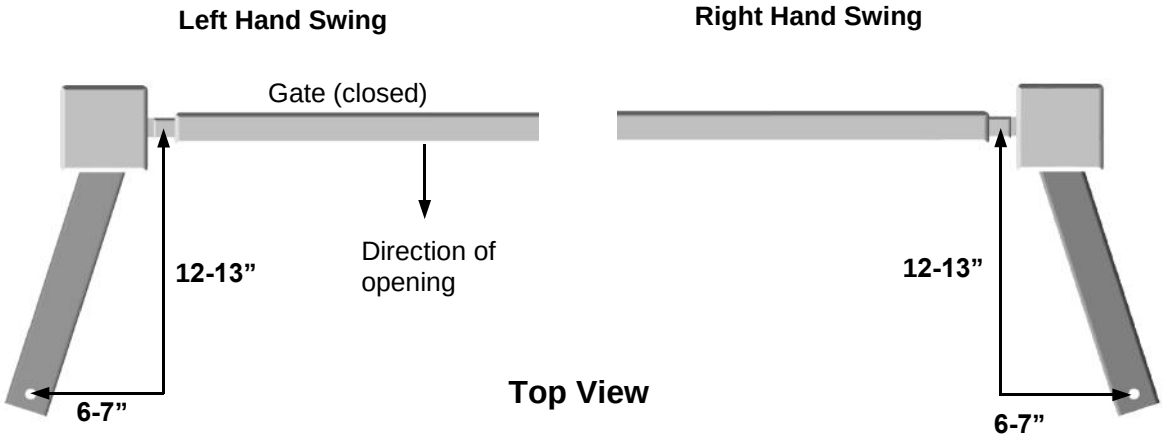
OPERATOR INSTALLATION

STEP 1 **PIVOT ARM INSTALLATION (standard pull to open)**

Location of Pivot Point.

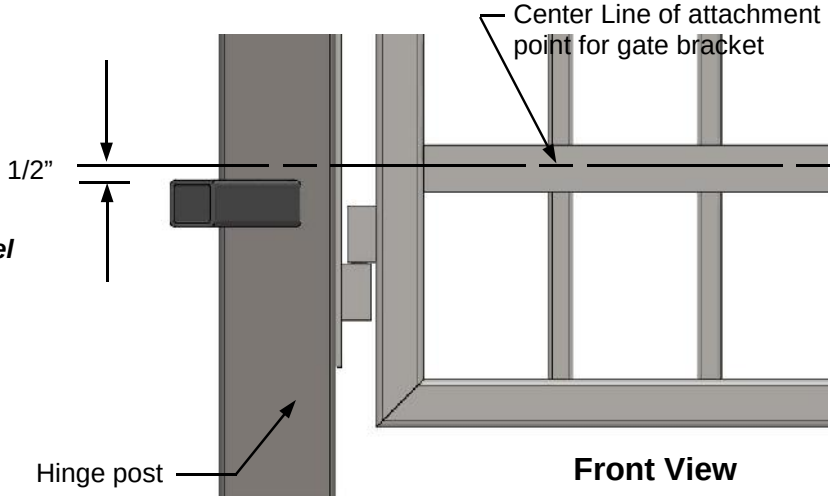
Notes:
PULL TO OPEN pulls gate open (*actuator is extended when gate is in the closed position*).
PUSH TO OPEN pushes the gate open (*actuator is retracted when gate is in the closed position*).
For PUSH TO OPEN installations see page 11.

If a LGK the LONG GATE KIT is to be used, refer to the LGK instructions for pivot point location.
The following instructions provide up to 105° of swing.



Measurements are taken from the center of the hinge.

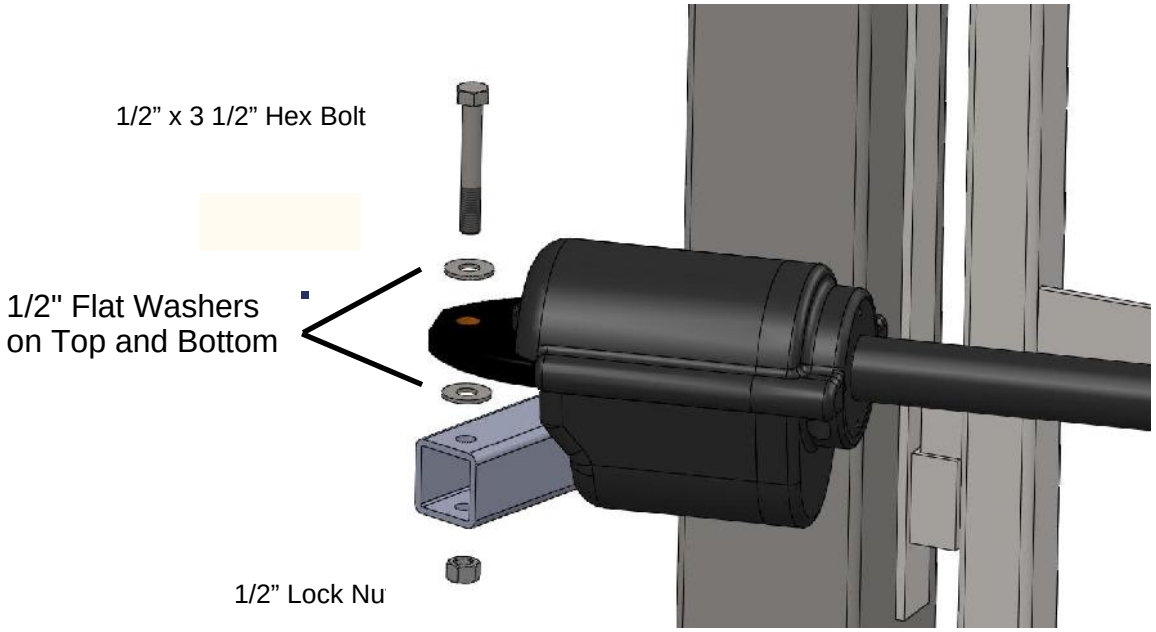
Vertical position of pivot arm



Pivot ArmMust be level

STEP 2 Actuator Installation

Do not over tighten nut

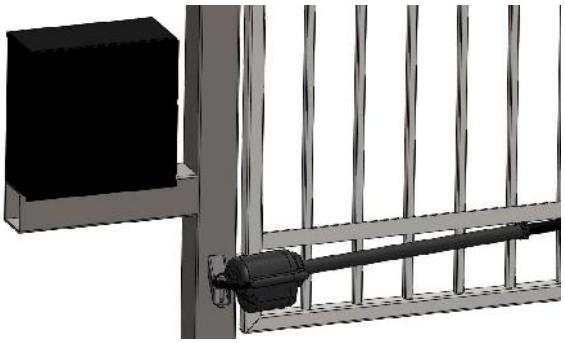


STEP 3 Control Box Installation

Mount the control box within 4 feet of the pivot arm. Use mounting hardware capable of supporting the weight of the control box with the battery installed.

Mounting holes are not provided since mounting surfaces will vary.

Set battery inside of control box with terminals toward the front *(Do not use any battery with side*



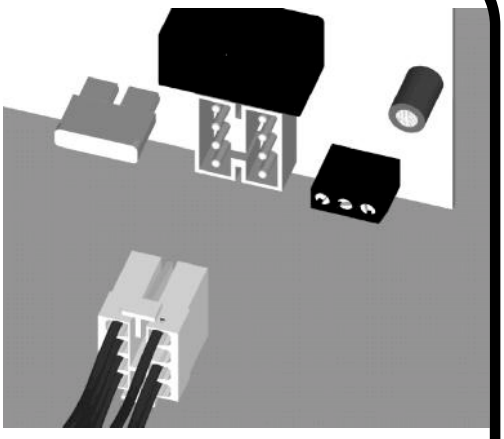
STEP 4 Connecting the Actuator (s)

Connect the RED power wire (s) to the battery positive (+) and the BLACK power wire (s) to the battery negative (-)

Check to make sure Single/Dual switch is set correctly. To the right for Single and to the left for Dual.

Connect actuator cable to the either to the master or the slave connector on the control board.

If a Dual is being installed and conduit is being used under the drive (recommended), cut the slave (opposite side where control box is mounted) actuator cable about 12” from the white connector. Run the remaining cable across the drive through conduit and up through the control box. Cutoff any excess cable and splice the short piece back to the cable.



STEP 5 GATE BRACKET INSTALLATION

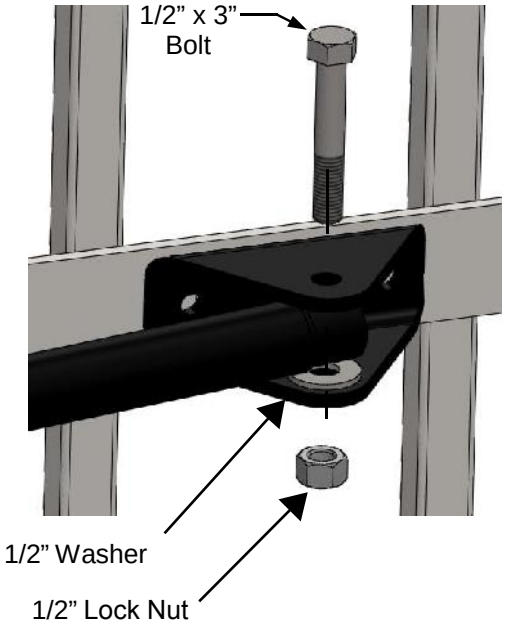
Activate push button on the side of the control box and extend the actuator until it stops (***PULL TO OPEN only, leave actuator retracted for PUSH TO OPEN***). **WARNING: Do not let extension tube rotate as it extends. Do not insert fingers or tools in the hole at the end of the extension tube .**

Align the hole in the end of the actuator extension tube with the holes in the gate bracket and locate gate bracket mounting position with the gate in the closed position. Weld or bolt the gate bracket to the gate using 3/8” bolts, lock washers, and nuts.

Tip: *Tack weld or C clamp at first if uncertain about location. Run the unit through a complete cycle to insure proper operation then mount permanently .*

Bolt the actuator to the gate bracket as shown.

Bracket should attach 52” - 56” from the center of the hinge.

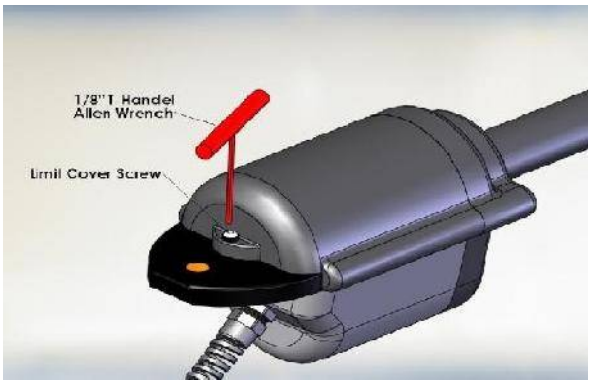


PROUDLY MADE IN THE U.S.A. BY

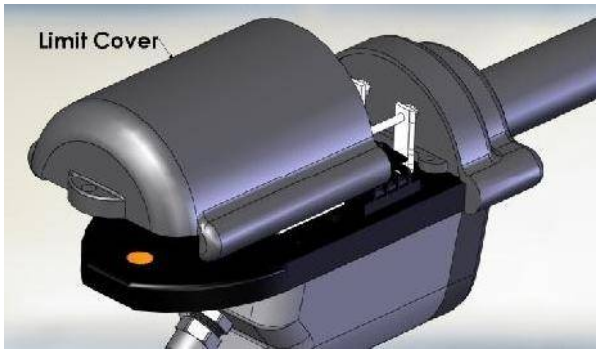
AMERICAN ARMOR PRODUCTS

LIMIT ADJUSTMENT FOR THE AMERICAN ARMOR ACTUATOR

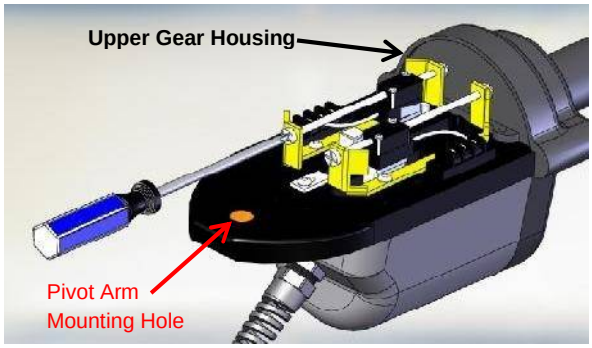
Using a 1/8” Allen Wrench (T-Handel Type Wrench is Recommended), Remove the screw and rubber washer that secures the limit cover to the main chassis.



Once screw is removed, take off the limit cover by lifting to the up and out to access the limits.



Using a #2 Philips head screwdriver adjust the limits by turning the limit screw clockwise or counter clockwise as needed.



For Pull To Open Installations

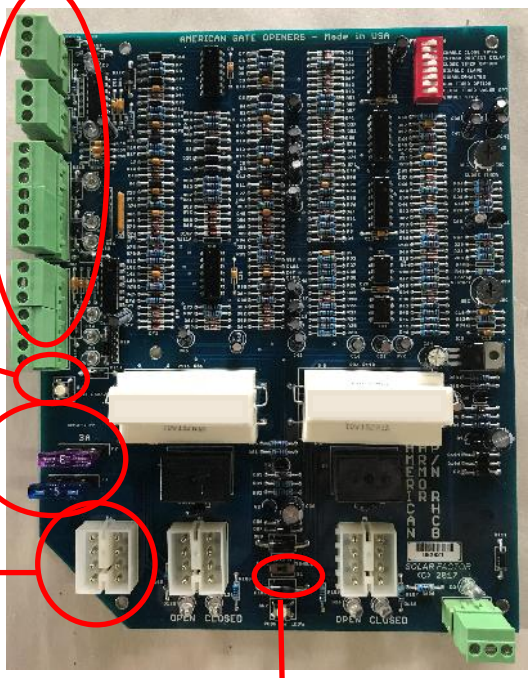
- **The CLOSED limit is the limit closest to the gear housing and turning COUNTER CLOCKWISE will STOP the gate SOONER.**
- **The open limit is closest to the pivot arm mounting hole and turning counter clockwise will open the gate farther.**

CIRCUIT BOARD FEATURES

SIMPLE REMOVABLE CONNECTORS PULL STAIGHT OUT FOR REMOVAL

OPERATE GATE BUTTON ON THE BOARD

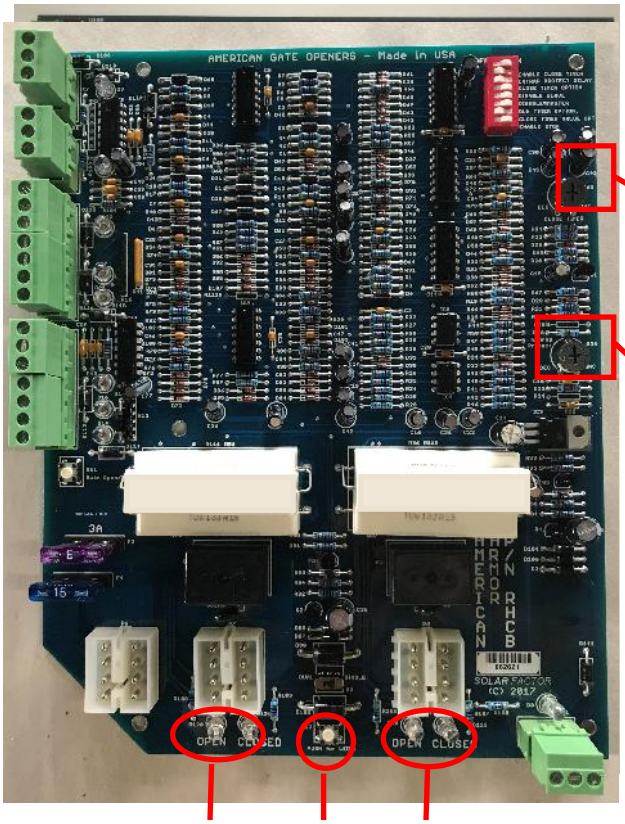
FUSED 12V 3AMP INPUTS



FUSED EMERGANCY OPEN PLUG

USE THIS CONNECTOR TO OPEN THE GATE WHEN THE BOARD IN THE EVENT THE BOARD IS NOT FUCTIONAL. JUST REMOVE THE WHITE PLUG FROM THE MASTER OR SLAVE CONNECTORS AND PLUG INTO THE EMERGENCY PLUG. THE 15A FUSE WILL POP WHEN GATE IS FULLY OPEN.ENTRAPMENT PROTECTION ADJUSTMENT

SINGLE DUAL SWITCH
Allows for single independant main arm connections for single gate or connet two arms for dual gate.





AUTOMATIC CLOSE TIMER ADJUSTMENT FROM 10 TO 70 SECONDS.
Turn counter clockwise to reduce time

Turn clockwise to increse time

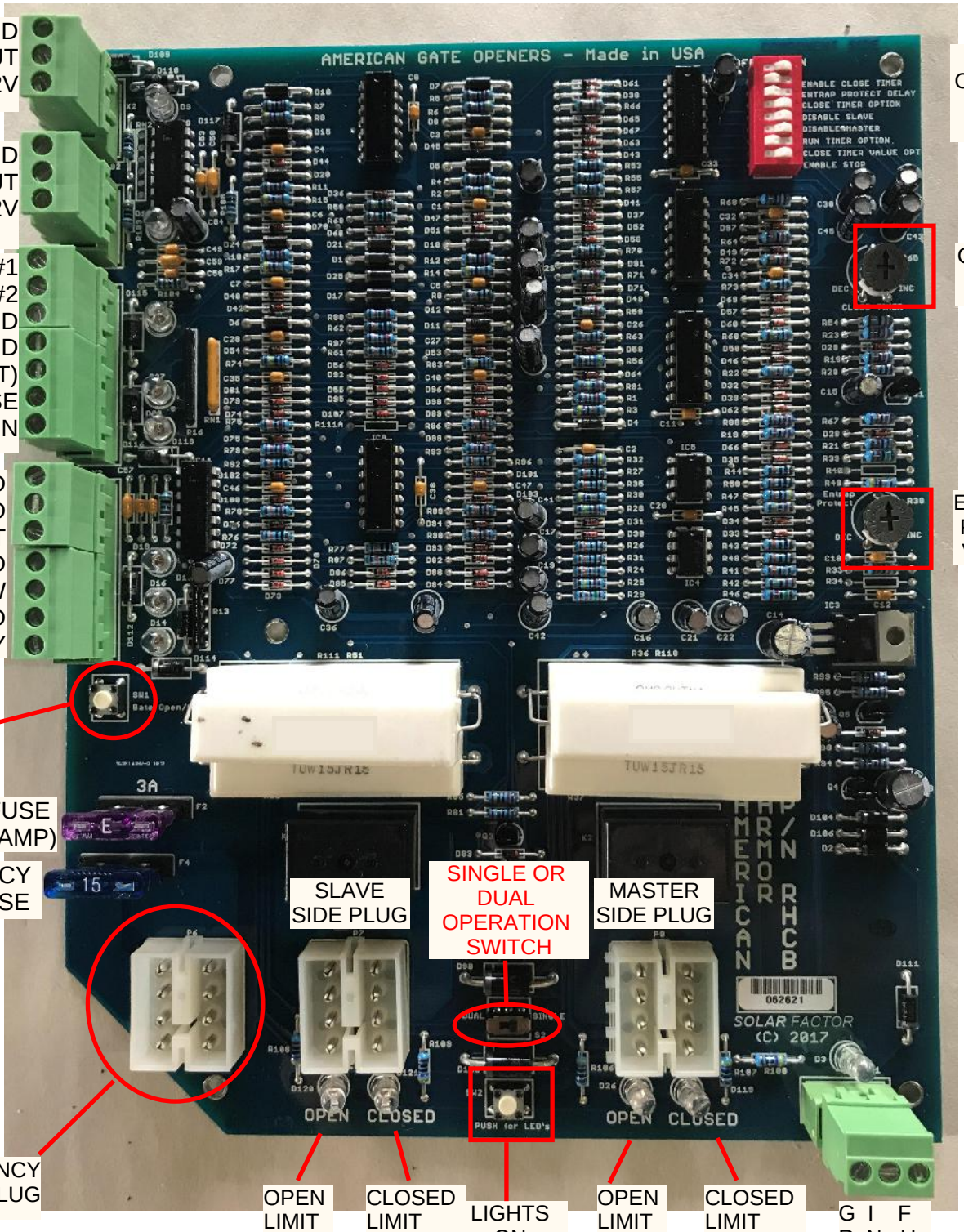


ENTRAPMENT PROTECTION ADJUSTMENT

Used to adjust the force of the gate when an obstruction is encountered. THIS SETTING MUST BE ADJUSTED TO PREVENT BODILY INJURY. Arrow on knob shows the ajustment setting from 9 o'clock to 3 o'clock To reduce gate force turn knob counter clockwise and to increse gate force turn knob clockwise.

SUPER BRIGHT LITE EMITTING DIODES FOR EASY OPEN AND CLOSED LIMIT IDENTIFICATION WITH ACTIVATE BUTTON FOR SOLAR USE

CIRCUIT BOARD FEATURE LOCATIONS



GROUND INPUT FUSED 12V

GROUND INPUT FUSED 12V

EDGE/SAFTEY#1
EDGE/SAFTEY#2
GROUND
GROUND
STOP (NO LIGHT)
CLOSE
OPEN

GROUND
GROUND
FREE EXIT
GROUND
SHADOW
GROUND
SAFTEY

OPEN OR CLOSE THE GATE BUTTON

12V INPUT FUSE (3 AMP)

EMERGANCY OPEN FUSE

EMERGENCY OPEN PLUG

DIP SWITCH OPTIONS SEE NEXT PAGE FOR DETAILS

CLOSE TIMER VALUE KNOB

ENTRAPMENT PROTECTION VALUE KNOB

SLAVE SIDE PLUG

SINGLE OR DUAL OPERATION SWITCH

MASTER SIDE PLUG

OPEN LIMIT LIGHT

CLOSED LIMIT LIGHT

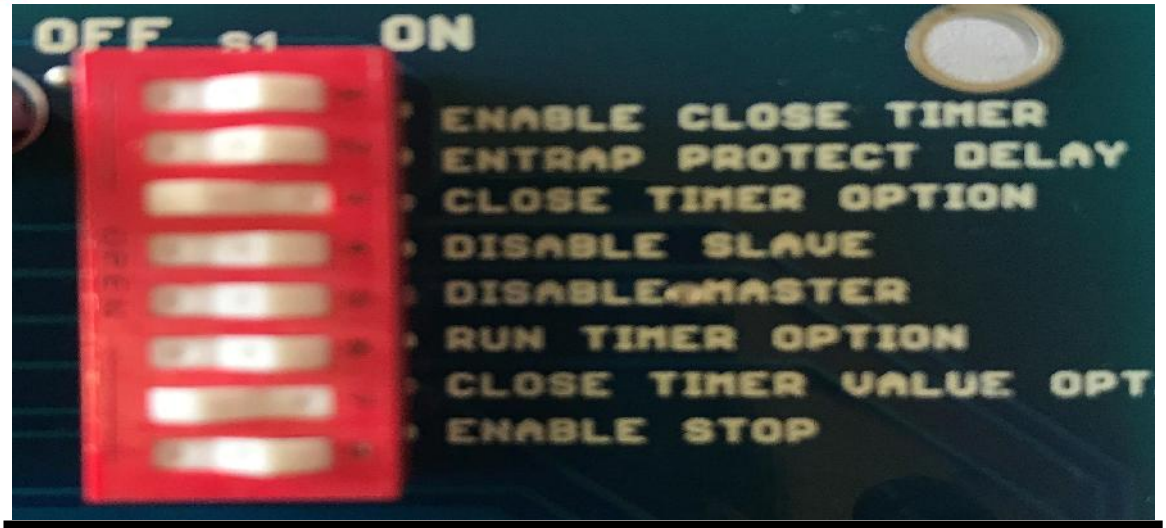
LIGHTS ON BUTTON

OPEN LIMIT LIGHT

CLOSED LIMIT LIGHT

GROUND INPUT FUSED 12V

CIRCUIT BOARD DIP SWITCH OPTIONS



#1 ENABLE CLOSE TIMER
ON....AUTOMATICALLY CLOSES GATE
OFF..GATE DOES NOT AUTOMATICALLY CLOSE (FACTORY)

#2 ENTRAPMENT PROTECTION DELAY
ON....4 SECOND DELAY START OF SENSING (FACTORY)
OFF..2 SECOND DELAY OF START OF SENSING

#3 CLOSE TIMER OPTION
ON....GATE ONLY AUTO CLOASES FROM OPEN LIMIT (FACTORY)
OFF..GATE AUTO CLOSES FOR ANY POSITION

#4 DISABLE SLAVE
ON....DISABLES SLAVE SIDE PLUG
OFF..ENABLES SLAVE SIDE PLUG (FACTORY)

#5 DISABLE MASTER
ON....DISABLES MASTER SIDE PLUG
OFF..ENABLES MASTER SIDE PLUG (FACTORY)

#6 RUN TIMER OPTION
ON....REVERSES GATE WHEN RUN TIMER ACTIVATES
OFF..STOPS GATE WHEN RUN TIMER ACTIVATES (FACTORY)

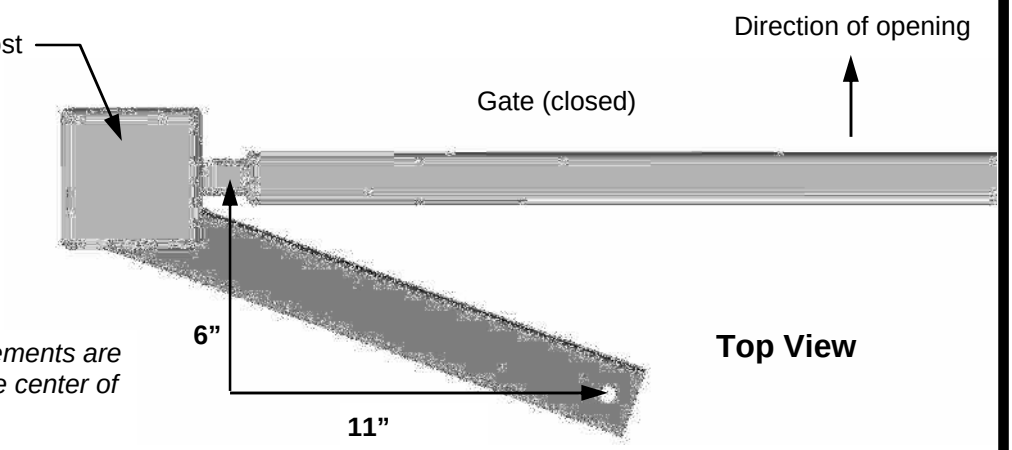
#7 CLOSE TIMER VALUE OPTION (ADJUSTABLE WITH TOP KNOB)
ON....20 TO 70 SECOND TIMER (FACTORY)
OFF..10 TO 35 SECOND TIMER

#8 ENABLE STOP
ON....ENABLES STOP CIRUIT
OFF..DISABLES STOP CIRCUIT (FACTORY)

PUSH TO OPEN INSTALLATION

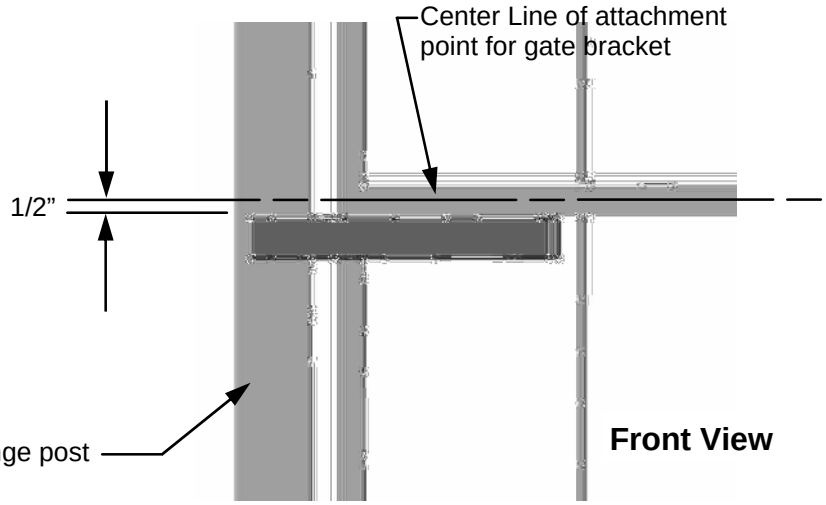
STEP 1 **PIVOT ARM (s) INSTALLATION**

Location of pivot point



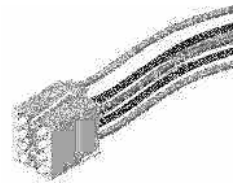
Both measurements are taken from the center of the hinge.

Vertical position of pivot arm (s)



Pivot arm must be level

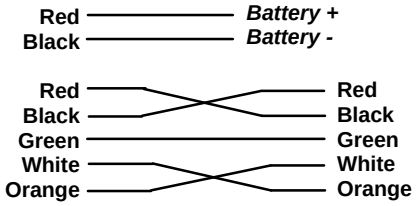
Rewiring actuator (s) for push to open



8 Pin Connector (s)

Must be re-wired for proper operation

Strip back 6” of black sleeve from connector end of the actuator cable. Cut and reconnect the white/orange and the red/black motor wires as shown:



Continue with STEP 2, page 7

Ranch Code Receiver and Transmitter

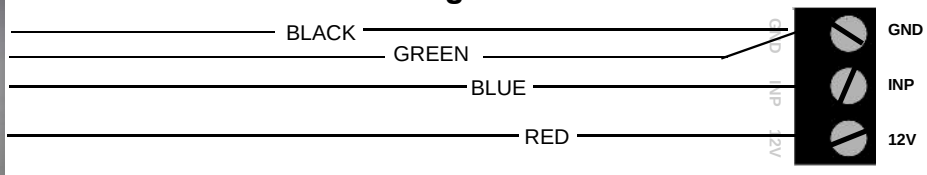
Do not confuse the receiver code switches with the red program switches on the gate control board.

Never set all code switches to the same position. Transmitters must match code switches for proper operation.

If power is taken directly from battery or connected as shown below, receiver should be configured for 12VDC



Ranch Code Receiver Wiring





Ranch Code Receiver pre-wired with circuit board plug



Remove cover by sliding dip witch access door to the right



Set dip switche code on left to match transmitter



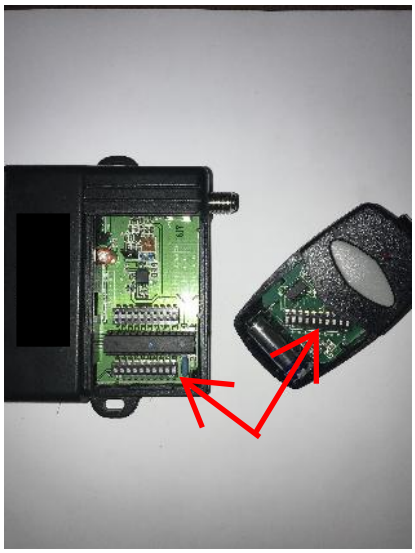
Ranch Code Transmitter Part # RCT



Slide dip switch cover down sets switch code



Remove battery saver tab



Set dip switch code on receiver to match transmitter and replace covers

RECEIVER OPTIONS

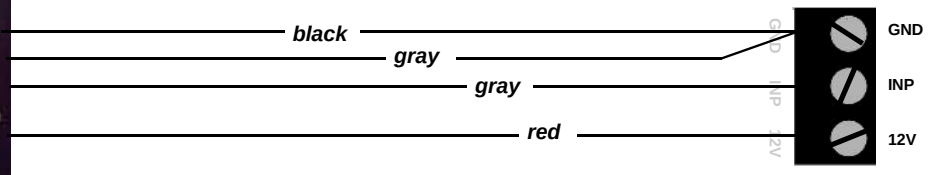
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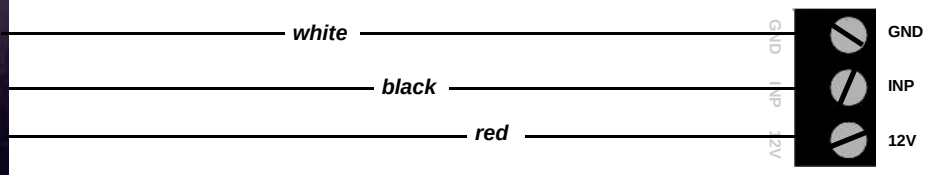


Multi-Code



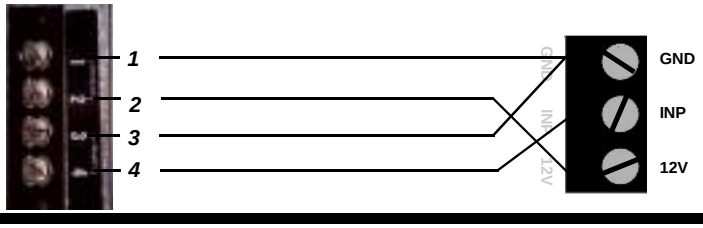


Allister



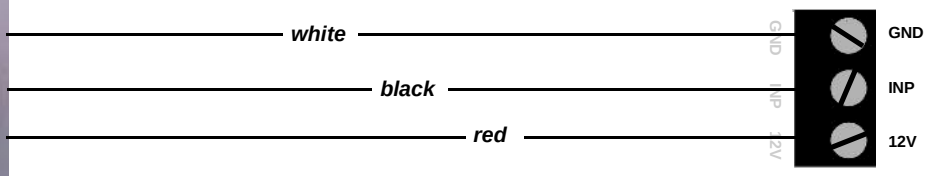


Lift-Master



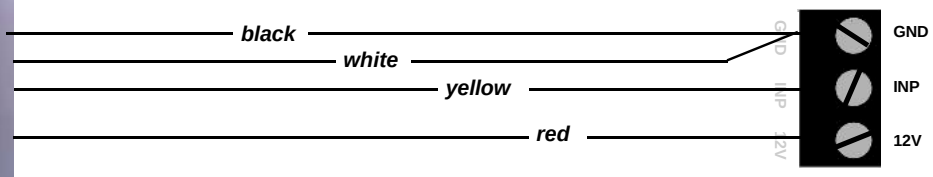


Genie



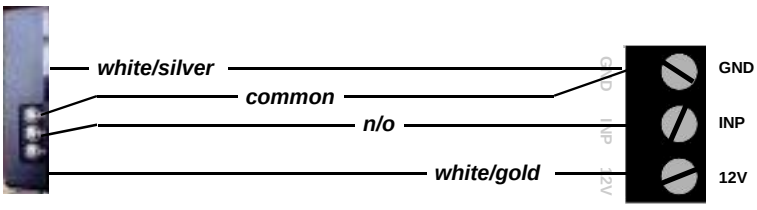


Heddolf





Linear



TROUBLESHOOTING OPERATOR & ACCESSORIES

Some troubleshooting will require a hand held multimeter. An inexpensive digital multimeter may be purchased at Radio Shack or a local electric supply company. Refer to the owners manual for instructions.

SYMPTOM *Gate opens OK but after closing, opens back up.*

1. Excessive closing pressure on gate. Re-adjust the close limit switch on the actuator.
2. Automatic reverse sensitivity is set too sensitive. Re-adjust - **CAUTION: Automatic reverse sensitivity should be set sensitive enough to avoid injury.**
3. Gate is mechanically binding. Disconnect actuator from gate and eliminate binding.
4. Battery voltage is too low. Battery voltage should be 12 to 14 volts under load. Check solar panel output or battery charger output or re-evaluate usage.
5. Replace circuit board.

SYMPTOM *Gate moves only a few feet, then stops or reverses.*

1. Battery voltage is too low. Battery voltage should be 12 to 14 volts under load. Check solar panel output or battery charger output or reevaluate usage.
2. Gate is mechanically binding. Disconnect actuator from gate and eliminate binding.
3. Actuator extension tube is bent. Inspect for damage and replace extension tube if required.
4. Current sensitivity is adjusted too sensitive. Re-adjust current sensitivity.
5. Replace circuit board.

SYMPTOM *Gate surges too much. Does not run smooth.*

1. Pivot arm is not ridged. Re-weld and/or brace pivot arm.
2. Bolts are loose. Snug all bolts. Pivot arm bolt should be snug but not tight.
3. Gate is too limber. Reinforce gate.

SYMPTOM *Gate will open using push button on side of box, but not with transmitter.*

1. Code switches do not match. Check that the code switches in the transmitter and the receiver match.
2. Low or dead battery in transmitter. Replace battery.
3. Fuse blown on circuit board. Check fuses on gate control board.
4. Low battery in operator. Battery voltage should be 12 to 14 volts under load.
5. Replace receiver.

SYMPTOM *Transmitter works, but not very far.*

Note: Transmission distances will vary according to terrain, obstructions, and electrical interference. The normal range from inside a vehicle is 50-100 feet while 100-150 feet may be obtained from outside the vehicle.

1. Low battery in transmitter. Replace battery.
2. Transmitter malfunctioning. Try a different transmitter.
3. Antenna not making good connection. Be sure center conductor of antenna is penetrating the female connector on the side of the gate box.
4. Reception is being blocked. Raise the height of the antenna using a #244 antenna extension kit.
5. Replace receiver.

SYMPTOM *Gate randomly opens, closes, or stops for no reason.*

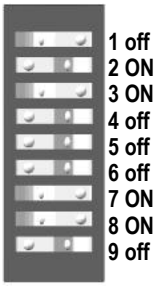
1. Transmitter is stuck on. Check all transmitters, keypads, pushbuttons, etc. for a stuck button.
2. Transmitter and receiver code switches are all down, up, or in the middle. Change at least one switch position in the transmitter and receiver.
3. Push button on side of control box is defective. Disconnect and test.

SYMPTOM ***Gate will not open or close.***

Disconnect the solar panel or charger and measure the battery voltage. Battery should read 12 or more volts and never drop below 11 volts when operating.

Reset program switches to factory setting. # 2,# 3,# 7,# 8 **ON,** all others **OFF**.

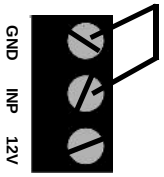
RED & WHITE PROGRAM SWITCHES



Disconnect all accessories from the circuit board - receivers, push buttons, keypads, loops, phones, intercoms, etc.

Activate the operator by momentarily shorting **GND** to **INP** on one of the three pin connectors.

If the operator works, reconnect each accessory individually starting with push button and test operation.



Momentarily short with a piece of wire or needle nose.

Disconnect actuator from circuit board and inspect pins in the connector for damage or poor connections.

Check for proper limit switch configuration (multimeter required) on the connector from the actuator:



GATE IN OPEN POSITION .....Orange & Green wires are shorted, White & Green wires are open.
GATE IN CLOSED POSITION ..White & Green wires are shorted, Orange & Green wires are open.
GATE IN MID TRAVEL..... White, Green, & Orange wires are open, no shorts.

Replace circuit board.

AMERICAN ARMOR PRODUCTS

LIMITED THREE-YEAR WARRANTY

American Armor Products are warranted against defects for a period of 36 months from the date of purchase, providing recommended installation procedures are followed. This warranty is in lieu of all other warranties expressed or implied (some states do not allow limitations on how long an implied warranty lasts, so this limitation may not apply to you) and shall be considered void if damage was due to improper installation or use, connection to improper power source, or if damage was caused by fire, flood, or lightning. The manufacturer will not be responsible for any labor charges incurred in the removal or replacement of defective parts.

In case of failure due to defective material or workmanship during the warranty period, the defective part will be repaired or replaced at the manufacturer's option at no charge if returned freight prepaid. New or factory rebuilt replacements may be used. Replacement parts are warranted for the remaining portion of the original warranty period. The manufacturer will pay standard ground freight on the return of repaired or replaced items in warranty.