

Vanguard 3501 Swing

CHBOX35
ABOX35



Swing Gate Actuator with Mercury 310 Controller

EN - Installation Reference Manual



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SECTION 1: Vanguard 3501 Overview

Congratulations on selecting a Nice Vanguard 3501 swing gate actuator! With proper selection, system design, installation, and maintenance this actuator should provide years of reliable operation.

IMPORTANT NOTE!

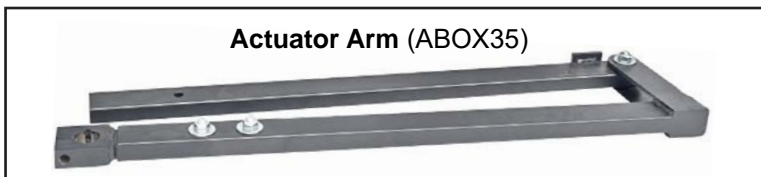
This manual covers ONLY installation of the Vanguard motor/actuator assembly and the setting of the gate open and close limits, but it also requires the installation of one of the following Mercury 310 power options:

- **SolarBOX** (with solar powered Mercury 310 controller)
- **ACBOX** (with AC powered Mercury 310 controller)

For all install, program, operation, maintenance, and safety information, see the Mercury 310 Controller reference manual, P/N **MX5095**.

Vanguard 3501 Specifications	
Drive	Electromechanical Motor Driven Articulated Arm
Gate Length Max.	Up to 20 feet (6 m) leaf
Gate Weight Max	Up to 1000 lbs (453 kg)
Temperature Rating	-4° to 122° F (-20° to 50° C)
Operating Voltage	12VDC
Input voltage	12V rated solar panel (23.5V Open Circuit Voltage) or 18-24V high current DC power source.
Actuator Dimensions (WxHxD)	17.8" x 12" x 8.3"
User Controls	Mercury 310 control board

Vanguard 3501 Kit Contents		
PART#	DESCRIPTION	QTY
ABOX35	Actuator Arm, Articulating	1
CHBOX35	Actuator Motor Chassis	1
10025215	Gate Bracket	1
1125-35	Actuator Hardware Kit	1
3500AAA	Arm Insert, Adjustable Alum.	1
-----	Actuator Cable (12 or 42 feet)	1



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Important Safety Information!



Hazards, associated with automatic gates, can be reduced with proper site design, installation, and use. Installers, maintenance crews, and owners/users must read and follow the safety requirements found in Nice | HySecurity® product manuals.

Safety Messages

The safety messages below inform you about potential hazards that can result in injury. Safety messages specifically address level of exposure to operator and are preceded by one of four words: **DANGER**, **WARNING**, **CAUTION** or **NOTICE**.



DANGER

Indicates a hazardous situation which, if not avoided, **WILL** result in **DEATH** or **SERIOUS INJURY**.



CAUTION

Indicates a hazardous situation which, if not avoided, **COULD** result in **MINOR** or **MODERATE INJURY**.



WARNING

Indicates a hazardous situation which, if not avoided, **COULD** result in **DEATH** or **SERIOUS INJURY**.

NOTICE

Addresses practices not related to personal injury. Indicates damage to equipment is probable if the hazardous situation is not avoided.

Industrial Symbols

These international safety symbols may appear on product or in its literature to alert of potential personal injury hazards. Obey all safety messages that follow these symbols to avoid possible injury or death.

Symbol	Safety Hazard
	Entrapment Zone
	Possible Pinch Point

Symbol	Safety Hazard
	Attention: Take Notice
	Danger: Keep Away



It is important that only qualified installers handle installation of HySecurity Gate vehicular gate operators. A “qualified” installer has one of the following:

1. A minimum of three years experience installing similar equipment.
2. Proof of attending a HySecurity Technical Training seminar within the past three years.
3. Significant manufacturer endorsements of technical aptitude in gate operator installation and operation.

Underwriter Laboratories (UL) and the American Society for Testing and Materials (ASTM) are responsible for current safety standards and regulations regarding gate operators and automated gates. All aspects of gate installation must comply with the appropriate safety standard. For the most up-to-date ASTM F2200 Gate and Fence Standards, refer to www.astm.org. For UL 325 Safety Standard, refer to www.ul.com. Consult local government agencies for up-to-date rules and regulations as certain municipalities have established licensing, codes or regulations that regulate automated gate system design and installation.

General Safety Information

A gate operator is only a component in a gate system. The other parts of the gate system can include the gate, the external entrapment sensors, access controls, and vehicle detectors. To have a gate system that provides for safety, security, and reliable operation it is essential these components operate together as a system.

It is the responsibility of the system designer and/or installer to ensure any safety or operational issues have been addressed.

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WARNING

To reduce the risk of injury or death:

- **READ AND FOLLOW ALL INSTRUCTIONS!**
- Never let children operate or play with gate controls. Keep the remote control away from children.
- Always keep people and objects away from gate. **NO ONE SHOULD CROSS THE PATH OF THE MOVING GATE!**
- Test the gate operator monthly. The gate **MUST** reverse on contact with a rigid object or stop when an object activates the non-contact sensors. After adjusting the force or the limit of travel, retest the gate operator. Failure to adjust and retest the gate operator properly can increase the risk of injury or death.
- Use the emergency release only when the gate is not moving.
- **KEEP GATES PROPERLY MAINTAINED!** Read the user's manual. Have a qualified service person make repairs to gate hardware.
- The entrance is for vehicles only. Pedestrians must use separate entrance.
- **SAVE THESE INSTRUCTIONS!**

Identifying Gate Operator Category and UL 325 Usage Class

The UL 325 standard covers gate operators. Within this safety standard several Usage Classes are described that define different types of installations where gate operators can be applied. Some operators are restricted in their usage application. Appropriate Usage Classes are shown in the Specifications.



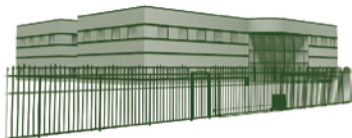
Class I:

Intended for use in a location of one to four single family dwellings or a parking area associated with one to four single family dwellings.



Class II:

Intended for use in a commercial location or building such as a multi-family housing units (five or more single family units) hotels, garages, retail stores or other buildings servicing general public.



Class III:

Intended for use in an industrial location or building such as factories or loading docks or other locations not accessible by the general public.



Class IV:

Intended for use in guarded industrial locations or buildings such as an airport security area or other restricted access location, not servicing general public, in which access is monitored by security personnel or via closed circuitry.

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Vehicular Traffic Only



WARNING

This automatic gate operator is not designed nor is it intended for pedestrian traffic. Vehicular gate operators must by their nature be powerful to function reliably. This power can cause injury or death. Accordingly, direct all pedestrian traffic to a separate walk-through gate.

Install this gate operator only when:

- The operator is appropriate for the construction of the gate and the Usage Class of the site.
- All openings of a horizontal slide gate are guarded or screened from the bottom of the gate to a minimum of 1.83 m (6 ft) above the ground to prevent a 57.2 mm (2-1/4 in) diameter sphere from passing through the openings anywhere in the gate, and in that portion of the adjacent fence that the gate covers in the open position.
- All exposed pinch points are eliminated or guarded.
- Guarding is supplied for exposed rollers.

The operator is intended for installation only on gates used for vehicles. Pedestrians must be supplied with a separate access opening. For pedestrian access in the vicinity of an automated vehicular gate, separate pedestrian access shall be provided or available. The pedestrian access shall be in a location such that a pedestrian shall not come in contact with a moving vehicular access gate during the entire path of travel of the vehicular gate. A pedestrian gate shall not be incorporated into an automated vehicular gate panel.

The gate must be installed in a location so that enough clearance is supplied between the gate and adjacent structures when opening and closing to reduce the risk of entrapment. Swinging gates shall not open into public access areas.

The gate must be properly installed and work freely in both directions prior to the installation of the gate operator. Do not over-tighten the operator clutch or pressure relief valve to compensate for an improperly installed, improperly functioning, or damaged gate.

Permanently mounted controls intended for user activation must be located at least 1.83 m (6 ft) away from any moving part of the gate and where the user is prevented from reaching over, under, around or through the gate to operate the controls. **Exception:** Emergency access controls only accessible by authorized personnel (e.g. fire, police, EMS) may be placed at any location in the line-of-sight of the gate.

The Stop and/or Reset button must be located in the line-of-sight of the gate. Activation of the reset control shall not cause the operator to start.

A minimum of two (2) WARNING SIGNS shall be installed, in the area of the gate. Each placard is to be visible by persons located on the side of the gate on which the placard is installed.

For gate operators utilizing a non-contact sensor (Photo Eye):

- See instructions on the placement of non-contact sensors for each type of application.
- Care shall be exercised to reduce the risk of nuisance tripping, such as when a vehicle trips the sensor while the gate is still moving.
- One or more non-contact sensors shall be located where the risk of entrapment or obstruction exists, such as the perimeter reachable by a moving gate or barrier.

For a gate operator utilizing a contact sensor (Edge):

- One or more contact sensors shall be located where the risk of entrapment or obstruction exists, such as at the leading edge, trailing edge, and postmounted both inside and outside of a vehicular horizontal slide gate.
- A hardwired contact sensor shall be located and its wiring arranged so that the communication between the sensor and the gate operator is not subjected to mechanical damage.
- A wireless device that transmits radio frequency (RF) signals to the gate operator for entrapment protection functions shall be located where the transmission of the signals are not obstructed or impeded by building structures, natural landscaping or similar obstruction. A wireless device shall function under the intended end-use conditions.
- One or more contact sensors shall be located on the inside and outside leading edge of a swing gate. Additionally, if the bottom edge of a swing gate is greater than 152 mm (6 in) but less than 406 mm (16 in) above the ground at any point in its arc of travel, one or more contact sensors shall be located on the bottom edge.

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Use of Vehicle Detectors

Use of vehicle detectors (loop detectors) is strongly encouraged to prevent damage to vehicles caused by gates closing on them. This is not considered to be a safety item as most vehicle detectors cannot provide protection to pedestrians. In some situations, photoelectric devices may be used as vehicle detectors, but should be wired accordingly.

Gate Construction and Safety

Gate construction plays a very important role in ensuring the safety of any automated gate system. The standard for gate construction is ASTM F2200. Below are key areas to address in gate design for safety. For complete information consult the standard. Copies of the standard are available at: <https://www.astm.org/Standards/F2200.htm>.

Another source of information is available from DASMA, the Door and Access System Manufacturer's Association. The Association publishes Technical Data Sheets, one of which concerns ASTM F2200. For more information, see:

<http://www.dasma.com/PDF/Publications>

General Requirements for Gate Construction:

- Gates shall be constructed in accordance with the provisions given for the appropriate gate type listed. Refer to ASTM F2200 for additional gate types.
- Gates shall be designed, constructed and installed to not fall over more than 45 degrees from the vertical plane, when a gate is detached from the supporting hardware.
- Gates shall have smooth bottom edges, with vertical bottom edged protrusions not exceeding 0.50 in (12.7 mm) other than the Exceptions listed ASTM F2200.
- The minimum height for barbed wire shall not be less than 6 ft (1.83 m) above grade. The minimum height for barbed tape shall not be less than 8 ft (2.44 m) above grade.
- An existing gate latch shall be disabled when a manually operated gate is retrofitted with a powered gate operator.
- A gate latch shall not be installed on an automatically operated gate.
- Protrusions shall not be permitted on any gate. Consult ASTM F2200 for exceptions.
- Gates shall be designed, constructed and installed such that their movement shall not be initiated by gravity when an automatic operator is disconnected.
- For pedestrian access in the vicinity of an automated vehicular gate, a separate pedestrian gate shall be provided. The pedestrian gate shall be installed in a location such that a pedestrian shall not come in contact with a moving vehicular access gate. A pedestrian gate shall not be incorporated into an automated vehicular gate panel.
- Any non-automated gate that is to be automated shall be upgraded to conform to the provisions of this specification.
- This specification shall not apply to gates generally used for pedestrian access and to vehicular gates not to be automated.
- Any existing automated gate, when the operator requires replacement, shall be upgraded to conform to the provisions of this specification in effect at that time.

The following provisions shall apply to Class I, Class II, Class III, and Class IV vehicular horizontal slide gates:

All weight bearing exposed rollers 8 ft (2.44 m), or less, above grade shall be guarded or covered.

All openings shall be designed, guarded, or screened from the bottom of the gate to the top of the gate or a minimum of 72 inch (1.83 m) above grade, whichever is less, to prevent a 2-1/4 inch (57 mm) diameter sphere from passing through the openings anywhere in the gate, and in that portion of the adjacent fence that the gate covers in the open position. The gate panel shall include the entire section of the moving gate, including any back frame or counterbalance portion of the gate.

A gap, measured in the horizontal plane parallel to the roadway, between a fixed stationary object nearest the roadway (such as a gate support post) and the gate frame when the gate is in either the fully open position or the fully closed position, shall not exceed 2-1/4 inches (57 mm).

Exception: All other fixed stationary objects greater than 16 inches (406 mm) from the gate frame shall not be required to comply with this section.

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Positive stops are provided to limit travel to the designed fully open and fully closed positions. These stops shall be installed at either the top of the gate, or at the bottom of the gate where such stops shall horizontally or vertically project no more than is required to perform their intended function.

All gates shall be designed with sufficient lateral stability to assure that the gate will enter a receiver guide. Consult ASTM F2200 for details on various gate panel types.

External Entrapment Protection Sensors

Most HySecurity gate operators are equipped with a Type A, Inherent Entrapment Sensor (IES). UL 325 Safety Standard compliance requires installation of external entrapment protection sensors, the number of which, depends on entrapment hazards that exist at each particular installation.

To comply with UL 325, the following external sensors may be used:

- Contact sensors, such as edge sensors
- Non-contact sensors, such as photo eyes

Site designer or installer can choose either photo eyes, edge sensors, or a combination of these devices.

UL 325 Safety Standard for automatic sliding gates specifically requires that edge sensors, photo eyes, or a combination of both devices be installed to protect against pedestrian entrapment in BOTH directions of gate travel and wherever entrapment hazards exist.

UL 325 Standard Definitions

- The operator shall monitor for the presence of every device at least once during each open and close cycle (32.1.8)
- It shall not be possible to make simple modifications in the field by adding, suppressing or changing, either on the operator or external entrapment protection device(s), to bypass, interfere with, or otherwise defeat the monitoring function. (32.1.10)
- Entrapment zones are now defined for each gate type (4.23, 4.24, 4.29, 4.34).

Slide Gates: To enable fully automatic operation, all SLIDE gate operators will require a minimum of TWO monitored external entrapment protection sensors (one for each direction) to protect entrapment zones in both the open and close direction of travel.

Preferred solution for slide gates: A photo eye for the close direction and a hard-wired edge sensor for the open direction that is mounted to the face of the leading post of the fence behind the gate. (Reach through injuries are the most common hazard associated with automatic sliding gates).

Swing Gates: To enable fully automatic operation, all SWING gate operators will require a minimum of ONE monitored external entrapment protection sensor to protect entrapment zones in either the open or close direction of travel. However, an additional monitored sensor is required if there is a risk of entrapment in both directions of gate travel.

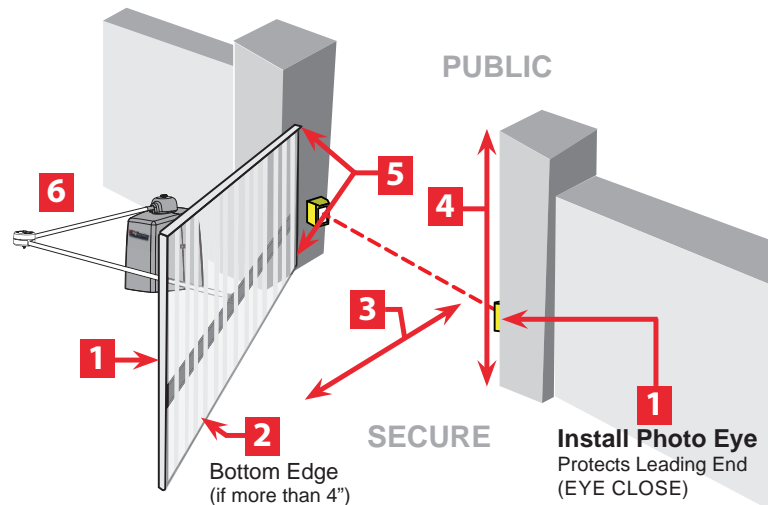
Preferred solution for swing gates: A photo eye for the close direction and/or a hard-wired wrap-around edge sensor on the leading edge of the gate, which protects for both directions of gate travel.

IMPORTANT NOTICE!

Installers must assess each specific site and install sensors that protect all potential entrapment zones. For more information or to see the latest operator manuals, go to: support.hysecurity.com

Entrapment Zone Points:

1. Leading Edge
2. Bottom Edge Entry / Exit
3. Gate/Vehicle
4. Posts
5. Post Pivot / Pinch Points
6. Arm Movement



Swing Gate Potential Entrapment Zones

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UL 325 Recommended Sensor Listing:

Edge sensors and photo eyes must be tested and labeled as “Recognized Components” or otherwise certified to UL 325 requirements in order to be deemed acceptable for use in a gate operator.

Study all Safety Instructions and consider your specific installation to determine where greatest entrapment risks exist. Locate edge sensors and/or photo sensors accordingly. Be certain that a sufficient number of sensors are used so that pedestrians are protected from entrapment in both directions of gate travel and all hazard areas are fully protected.

Nice/HySecurity gate operators utilizing the SmartCNX Controller or the SmartTouch 720/725 Controller require external entrapment sensors that are BlueBus capable, or have a 10k Ohm or 4-wire pulsed monitoring output. Mercury Controllers require external entrapment sensors that are BlueBus capable, or have a 10k Ohm monitoring output. Other Nice/HySecurity gate operators require external entrapment sensors that utilize Normally Closed (NC) contact means of monitoring. The operator instructions shall list the maximum number of open and close entrapment protection devices capable of being connected to the operator.

Refer to UL website at www.ul.com for most up-to-date list of gate operator safety standards (UL 325). Refer to www.astm.org for a complete list of ASTM F2200 Gate and Fence Standards.

Recommended External Entrapment Protection Sensors List



The following sensors have been tested with Nice | HySecurity gate operators by an independent laboratory and certified to comply with UL 325 7th Edition. Select sensors from this list for UL compliant gate automation solutions. Contact the sensor manufacturer for specific recommendations for use.

Recommended Sensors					Compatible Control Boards				
Type	Mfg. Part # or Model	Brand	Nice Hysecurity Part #	Max Range	Smart Touch	Smart DC	SmartCNX / SmartTouch 725	1050	Mercury 310
Photo Eyes (Retro-Reflective)	E3K-R10K4-NR-1	Omron	MX000999	40 ft	•	•	•		
	NIR-50-325	EMX	-	45 ft	•	•	•	•	•
	IRB-RET	EMX	-	53 ft	•	•	•	•	•
	IRB-RET2	EMX	-	53 ft	•	•	•	•	•
	E-931-S50RRGQ	Seco-Larm	-	46 ft	•	•	•		•
Photo Eyes (Thru-Beam)	Blue Bus Era Photo Eyes	Nice HySecurity	EPMB/A, EPMOB/A, EPLOB/A, EPMAB/A, EMBORB/A	45 ft			•	•	•
	OVS-50TNR	Optex	-	33 ft	•	•			
	IRB-MON	EMX	MX3990	65 ft	•	•	•		•
	IRB-MON2*	EMX	MX5792-01	65 ft	•	•	•		•
	E-960-D90GQ	Seco-Larm	-	90 ft	•	•	•		•
Edge Sensors	Sentir Series**	ASO Safety	"AS1502-* AS1501-**"	-	•	•	•	•	•
	CPT Models	Miller Edge	-	-	•	•	•	•	•
Edge Sensor Converters	Hy2NC (Converts 10K to NC Monitoring)	HySecurity	MX4018	-	•	•			
	GEM103 (Converts 10K to Pulsed Monitoring)	Miller Edge	-	-				•	
Edge Wireless Kits	iGAZE RE Kit	Transmitter Solutions	-	-	•	•	•	•	•
	WEL-200	EMX	-	-	•	•	•	•	•
	RB-G-K10C	Miller Edge	-	-	•	•	•	•	•
Multi-Input Module	The Solution – MIM-62	Miller Edge	-	-	•	•	•		•

*IRB-MON2 photo eyes are pre-bundled with HySecurity SwingSmart DC, SlideSmart DC and SlideDriver operators.

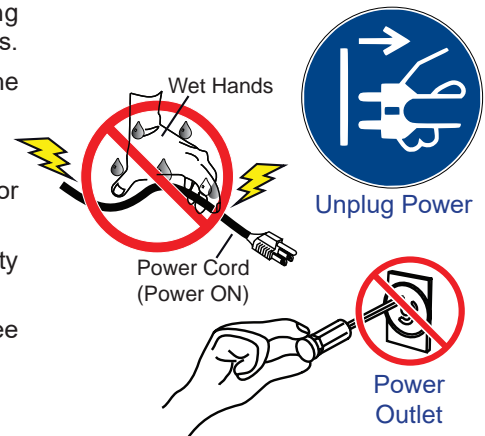
**Sentir Series ASO edge sensors are pre-bundled with HySecurity SlideSmart DC, and SlideDriver operators.

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Electrical Safety

- Turn gate operator and all circuit breakers OFF before performing maintenance on the gate operator or making contact with output receptacles.
- Never insert any objects into output receptacles during operation. The possibility exists of electrical shock, electrocution, or death.
- Never let power wires lay in water.
- Never use damaged or worn wire when connecting equipment. Inspect for cuts in the insulation.
- Never grab or touch a live power cord or cable with wet hands. The possibility exists of electrical shock, electrocution or death.
- Always make certain that proper power has been selected for the job. See Cable Selection Chart in this manual.



Grounding Safety

- Always make sure that electrical circuits are properly grounded to a suitable earth ground (ground rod) per the National Electrical Code (NEC) and local codes. Severe injury or death by electrocution can result from operating an ungrounded operator.
- Never use gas piping as an electrical ground.



Battery Safety

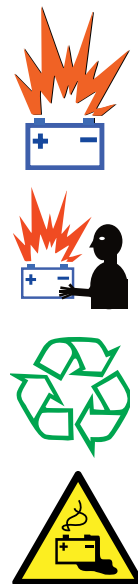
HySecurity operators use sealed Absorbed Glass Mat (AGM) batteries and HySecurity highly recommends replacing used batteries with new AGM-type batteries.

CAUTION

Batteries used with HySecurity gate operator contain materials considered hazardous to environment. Proper battery disposal is required by federal law. Refer to *Hazardous Waste Regulations* federal guidelines.

To reduce risk of fire or injury to persons:

- Observe polarity between batteries and charging circuit.
- Never mix battery sizes, types, or brands. Charging circuit on HySecurity DC operators is designed for AGM-type batteries, not flooded lead acid-type or lithium batteries.
- Exercise care in handling batteries. Be aware metal found in rings, bracelets, and keys can conduct electricity, short batteries, and cause potential injury.
- Do not open or mutilate batteries. Battery cells contain corrosive materials which may cause burns and other injuries. Material within batteries is toxic.
- Always dispose of batteries properly. Do not place batteries in fire. Battery cells may explode. Follow federal guidelines for proper disposal of hazardous waste.
- Always keep battery cables in good working condition. Repair or replace all worn cables.
- Replace batteries according to instructions found in DC Battery Replacement.
- Do not charge frozen battery. Battery can explode. If frozen, warm the battery to at least 61°F (16°C).



Environmental Safety/Hazardous Materials and Proper Disposal

Decommissioning is a controlled process used to safely retire a piece of equipment that is no longer serviceable. If the equipment poses an unacceptable and unreparable safety risk due to wear or damage or is no longer cost effective to maintain (beyond life-cycle reliability) and is to be decommissioned (demolition and dismantlement), be sure to follow rules below.

- Do not pour waste oil directly onto the ground, down a drain or into any water source.

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- Contact the county Department of Public Works or recycling agency in your area and arrange for proper disposal of any electrical components, waste or oil associated with this equipment.
- When the life cycle of this equipment is over, remove battery and bring to appropriate facility for lead reclamation. Use safety precautions when handling batteries that contain sulfuric acid.
- When the life cycle of this equipment is over, it is recommended that the frame and all other metal and plastic parts be sent to a recycling center.



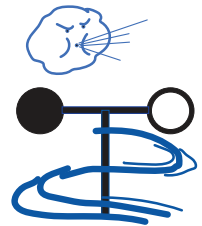
Metal and plastic recycling involves the collection of metal and plastic from discarded products and its transformation into raw materials to use in manufacturing a new product.

Recyclers and manufacturers alike promote the process of recycling metal and plastic. Using a metal and plastic recycling center promotes energy cost savings.

Wind Load Factors & Site Prep

Wind load is always a factor when considering the appropriate gate for a particular site. Solid gate panels produce a larger wind load than gates with slats or open decorative features. If you are installing a gate operator in a high wind area, gate design will affect the load on the gate operator because wind load acts the same as an obstruction. Good gate panel design presents a low surface area to reduce the wind load.

If gate is heavy and near weight capacity of what the gate operator can handle (see specifications), make sure it has an open design that allows wind to flow through it. A solid or semi-solid gate design under certain wind load conditions may cause damage to gate operator and is not covered by the HySecurity Limited Warranty.



Several factors play into calculations of wind load on a gate panel. To find out maximum wind speed in areas around the United States, search for US government wind speed maps on the internet. If you don't know how to calculate for wind load, ask a mechanical engineer or site architect for assistance prior to installing gate operator and gate panels.

When the IES trips, it sends a signal to gate operator to stop and reverse direction. This feature may be falsely triggered in excessively windy conditions because wind itself, acting over surface area of gate panel, can provide necessary force to trigger IES.

CAUTION

Do not adjust IES sensitivity to accommodate for inappropriately designed gate panels. Loss of IES sensitivity increases mechanical wear on gate hardware and gate operator. It may also pose a safety hazard. Compensating for wind loads by adjusting IES may set IES sensitivity to a level which, when encountering an obstruction, ignores obstruction and fails to reverse direction. For more information, refer to Adjusting the IES Sensitivity.

Maintenance of Gate Systems

To keep your automated gate system performing both safely and reliably it is important to ensure that the components of that system are functioning properly.

At least monthly:

- Disconnect the gate operator and manually move the gate through its range of travel. Note any squeaks from rollers or hinges or areas of binding. The gate should travel smoothly and quietly throughout its range. If it does not, contact a gate professional to correct the problem.
- Reconnect the gate operator and perform the following tests:
 - » With the gate opening, block any photo eyes and/or depress any safety edges used to protect the open direction. The gate should stop and/or reverse.
 - » With the gate closing, block any photo eyes and/or depress any safety edges used to protect the close direction. The gate should stop and/or reverse.
 - » Using a suitable obstruction in the path of the gate (a solid, immovable object), run the gate in the open direction until it contacts the obstruction. The gate should stop and/or reverse.
 - » Using a suitable obstruction in the path of the gate (a solid, immovable object), run the gate in the close direction until it contacts the obstruction. The gate should stop and/or reverse.

SECTION 2: Installation Concerns



IMPORTANT!

- Gate operator installation is **NOT** a “do-it-yourself” project. Contract a qualified gate operator installation company to install this system to ensure a safe and reliable installation.
- It is the responsibility of the property owner to ensure the installer is qualified to carry out the installation in a safe and professional manner.
- Consult local government agencies for up-to-date rules and regulations to satisfy licensing, codes or regulations that regulate automated gate system design and installation.
- The gate for which the gate operator is intended to be used should itself be installed correctly so that it is level and plumb and the gate opens easily and evenly.



WARNING!

- Read all safety information in control box installation manual when installing a swing gate system!
- Be aware of all moving parts and avoid close proximity to any pinch points.

2.1 Tools Needed for Installation

Below is a list of tools suggested for installation of the Vanguard Series actuator:

- Welder (option for gate bracket)
- Drill and assorted bit sizes
- 1/2” and 3/8” wrench and/or nut driver
- Basic hand tools (screwdrivers, pliers, etc..)
- Bubble Level (for leveling actuator)
- Measuring tape (for locating post position)
- 1/8” and 5/32” hex keys (for set screws)
- Circlip pliers (for removing retaining ring, Step 3, page 17)

Vanguard 3501 Operator/Actuator Mechanical Installation



**Vanguard 3501
Operator Chassis**
(Cover Removed)
(P/N CHBOX35)

**Vanguard 3501
Actuator Assembly**
(P/N ABOX35)

SECTION 3: Actuator Mechanical Installation

1 DETERMINE LOCATION OF MOUNTING POST

- Refer to IMAGE 1-2 and determine the angle (A) that the gate will travel.
- Refer to IMAGES 1-1 and 1-2 and select coordinates B and C for the mounting post location. Distances of B are from the center of gate hinge to the center of the mounting post. Note that longer gates will operate at slower speeds.
- Refer to TABLE 1-1 for optimum dimensions and approximate opening times for different gate sizes.

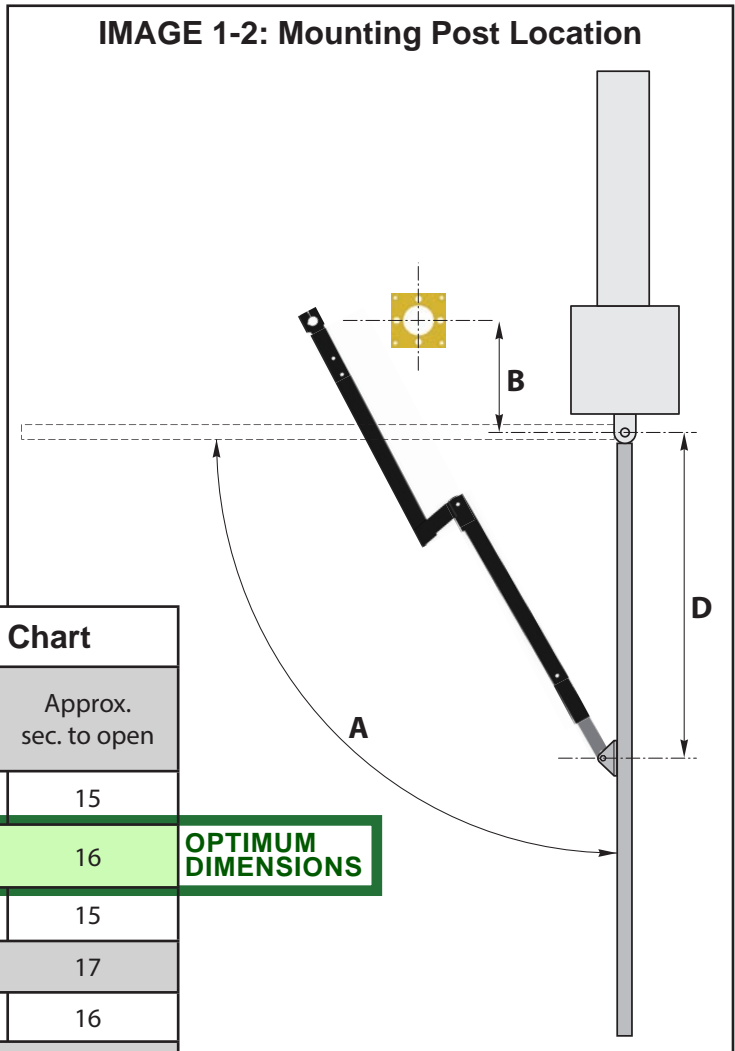
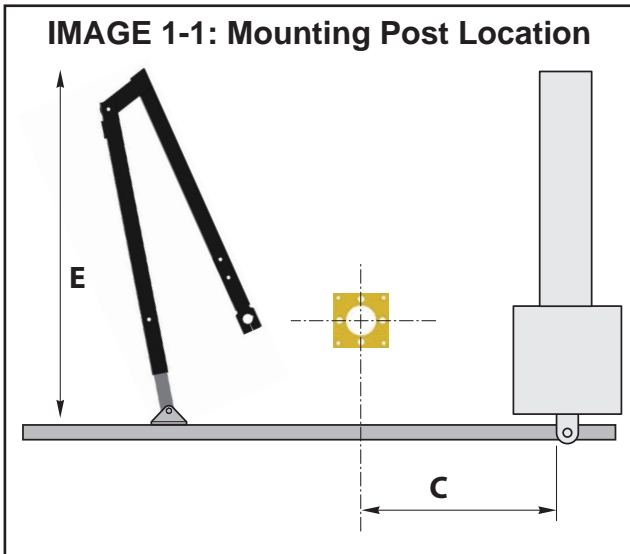


TABLE 1-1: Mounting Post Location Chart

A Open Degrees	B Inches	C Inches	D Inches	E Inches	Approx. sec. to open
90	10	31.2	46.3	40.6	15
90	10	30	47.1	42	16
92	15	30	42.1	34	15
97	13.5	25.5	46.3	46.8	17
97	15	25	45	47.1	16
100	20	25	40	43.7	13
107	20	20	42.4	53.5	17
110	25	20	37.4	50.6	13
116	25	15	39.3	58.4	16
117	20	15	44.3	50.3	20

OPTIMUM DIMENSIONS

2

DETERMINE HEIGHT OF MOUNTING POST

The Vanguard actuator chassis is designed for installation on top of a 4" x 4" square post with a 1/4" wall thickness (not supplied).

- The top of the post should be 2" above the centerline of the location where the gate attach bracket will be mounted to the gate (IMAGE 2-1).
- The gate attach bracket should be mounted to a structural member on the gate. **DO NOT attach the bracket to pickets.**
- The mounting post should be square to the gate in the closed position and level for proper operation.
- Conduit should be considered at this time for cable routing from the control box to the chassis assembly



CAUTION

Never weld parts to the gate or posts when the control board is powered to avoid irreparable damage to the circuit board!

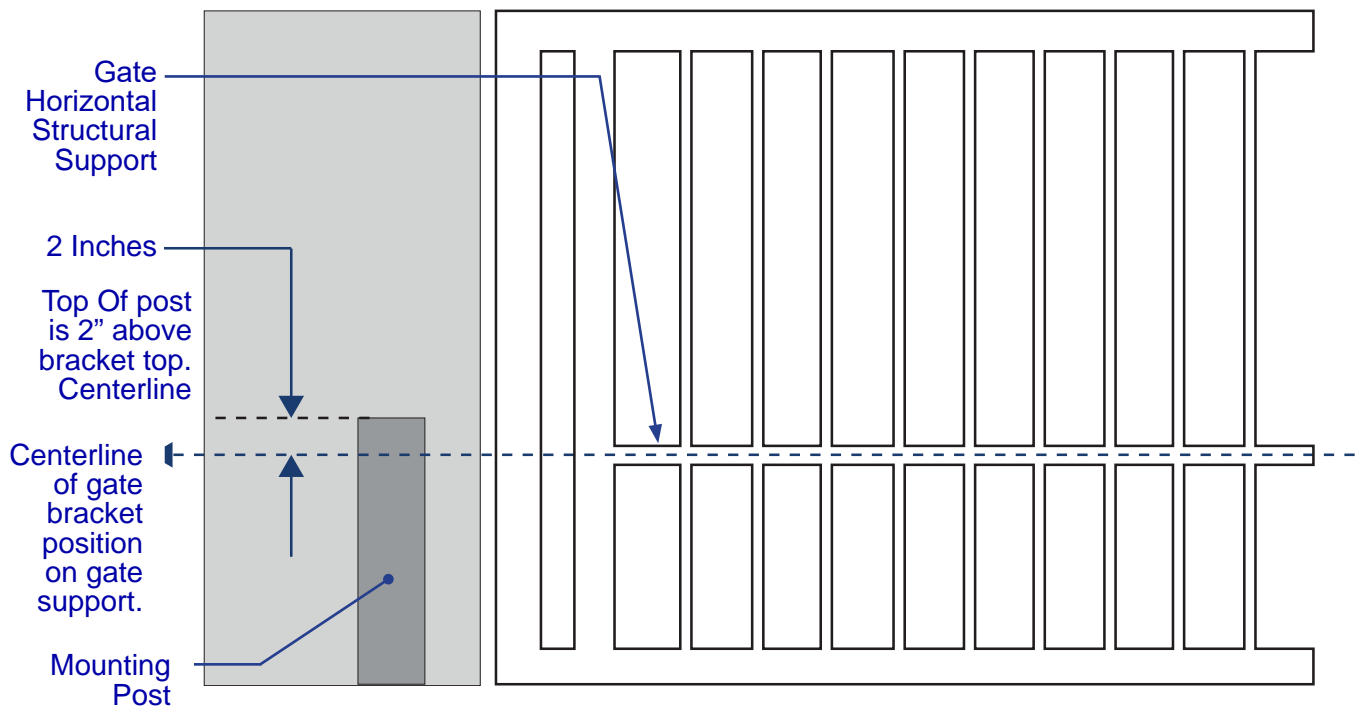


IMAGE 2-1: Determining Height Of Mounting Post

3

WELD THE MOUNTING BRACKET TO POST

1. To remove Vanguard cover, loosen middle screws (x2), remove end screws (x2), and lift off cover.
2. Remove the mounting bracket from the CHBOX35 chassis bottom by removing the four bolts and lock washers (IMAGE 3-1). Retain the hardware for later reassembly.
3. Weld the mounting bracket to the top of the mounting post (IMAGE 3-2):
 - The bracket should be level and square to the post.
 - Tack welds may be made from the top inside of the bracket and post.
 - Bottom welds should be made for permanent rigidity.

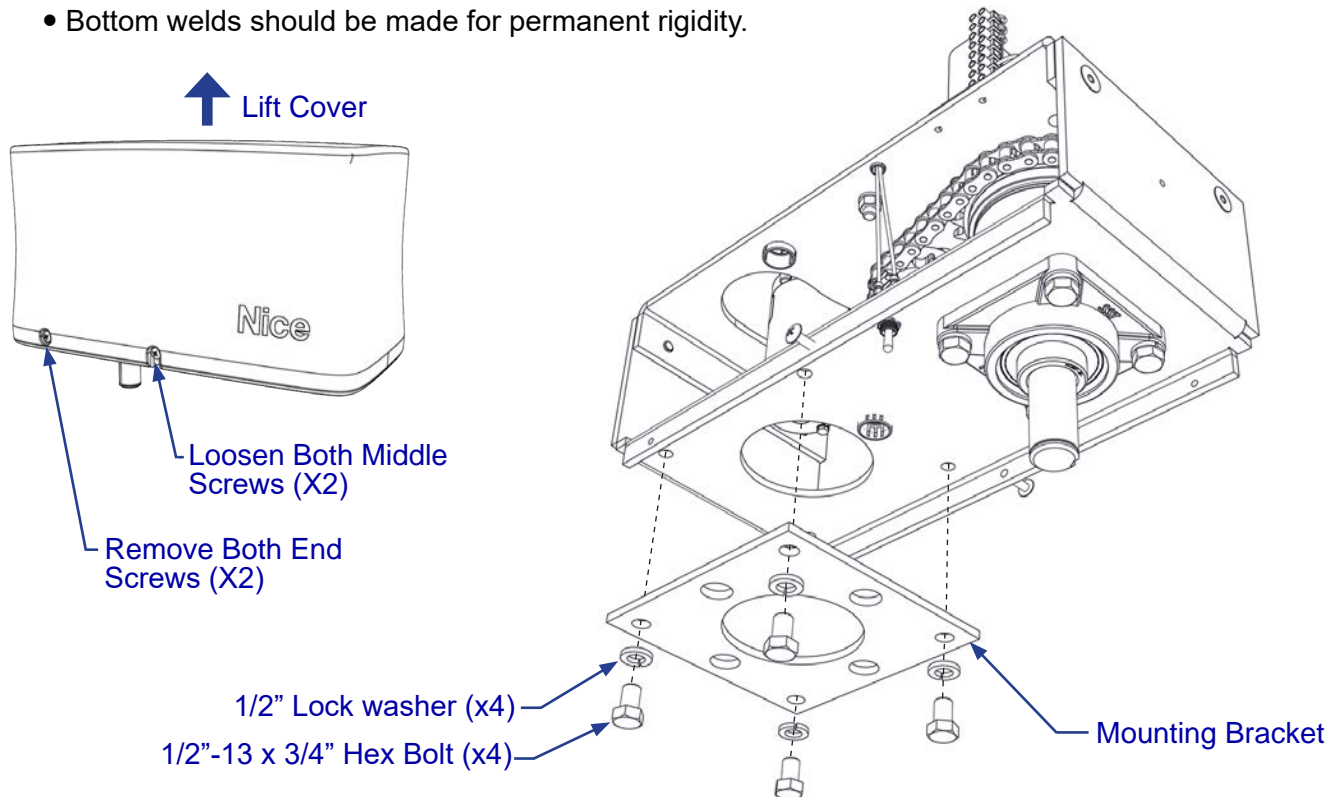


IMAGE 3-1: Removing Cover And Mounting Bracket From Chassis

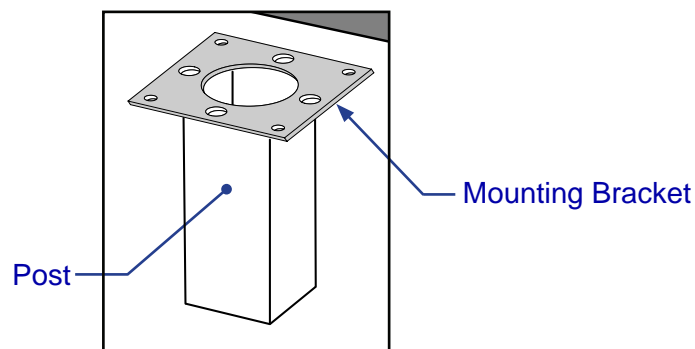


IMAGE 3-2: Weld Mounting Bracket To Post

4 MOUNT CHASSIS TO POST

Set the chassis on the mounting bracket in correct orientation (IMAGE 4-1), then secure (IMAGE 4-2) using (4) 1/2"-13 x 3/4" hex bolts and lock washers removed in the previous instruction.

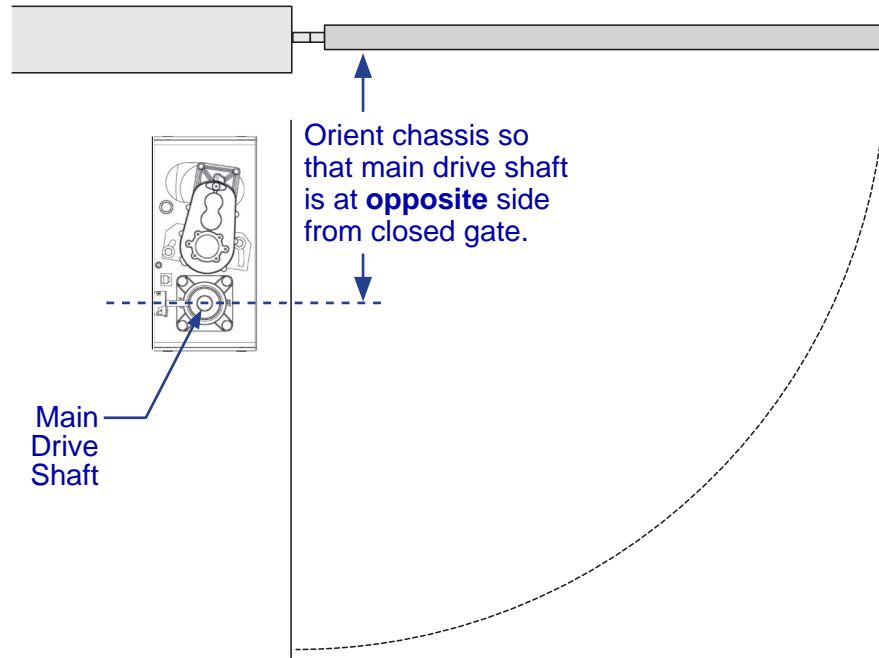


IMAGE 4-1: Proper Orientation Of Chassis To Gate

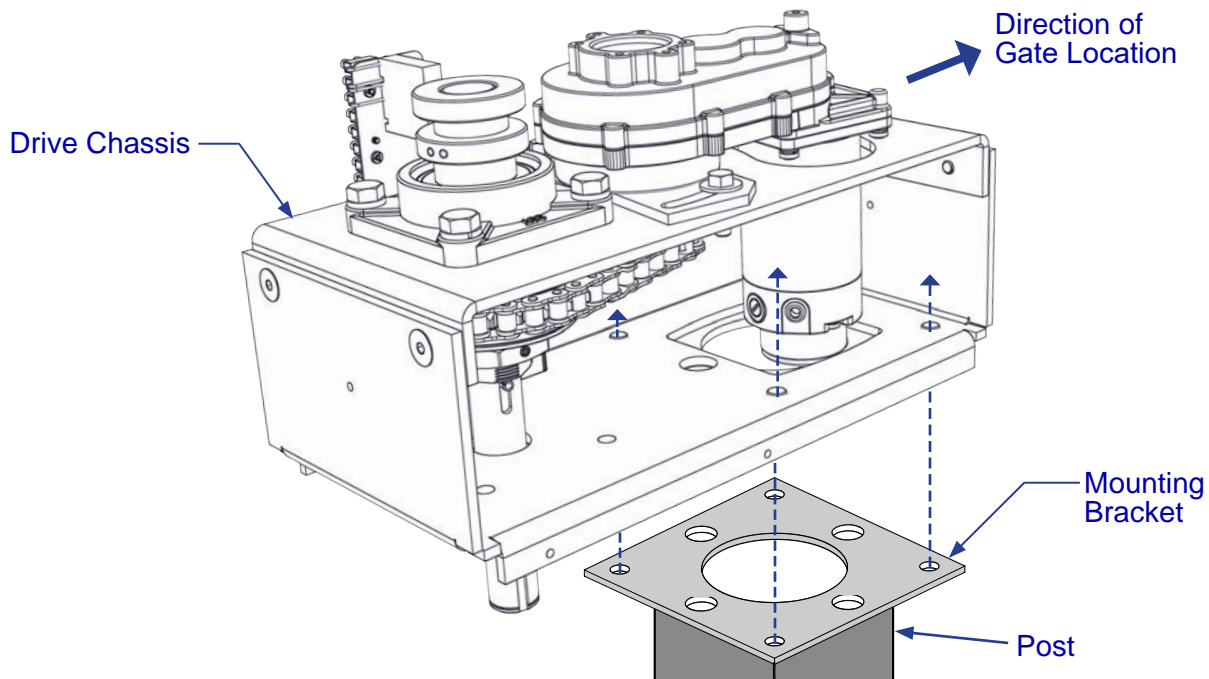


IMAGE 4-2: Mounting Chassis To Mounting Bracket

5

MOUNT PRIMARY ARM COLLAR TO DRIVE SHAFT

1. Install the primary arm collar to the main drive shaft using the 1/4" key stock (IMAGE 5-1, DETAIL A).

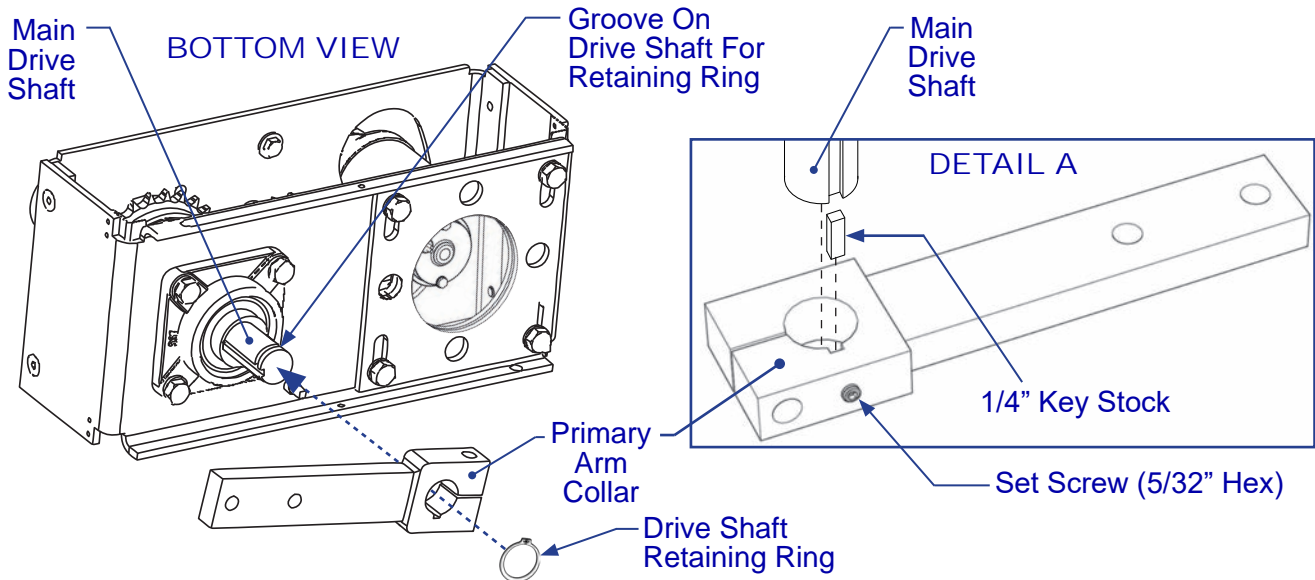


IMAGE 5-1: Mounting Primary Arm Collar To Main Drive Shaft

2. The collar should be installed on the shaft as far up as possible (IMAGE 5-2). Use 5/32" hex key to tighten set screw. Insert 1/2"-13x3" hex bolt into collar and affix with 1/2" hex nut (IMAGE 5-2) using 1/2" wrench.
3. Use retaining ring pliers to insert the retaining ring (DETAIL A) into groove on driveshaft (DETAIL B).

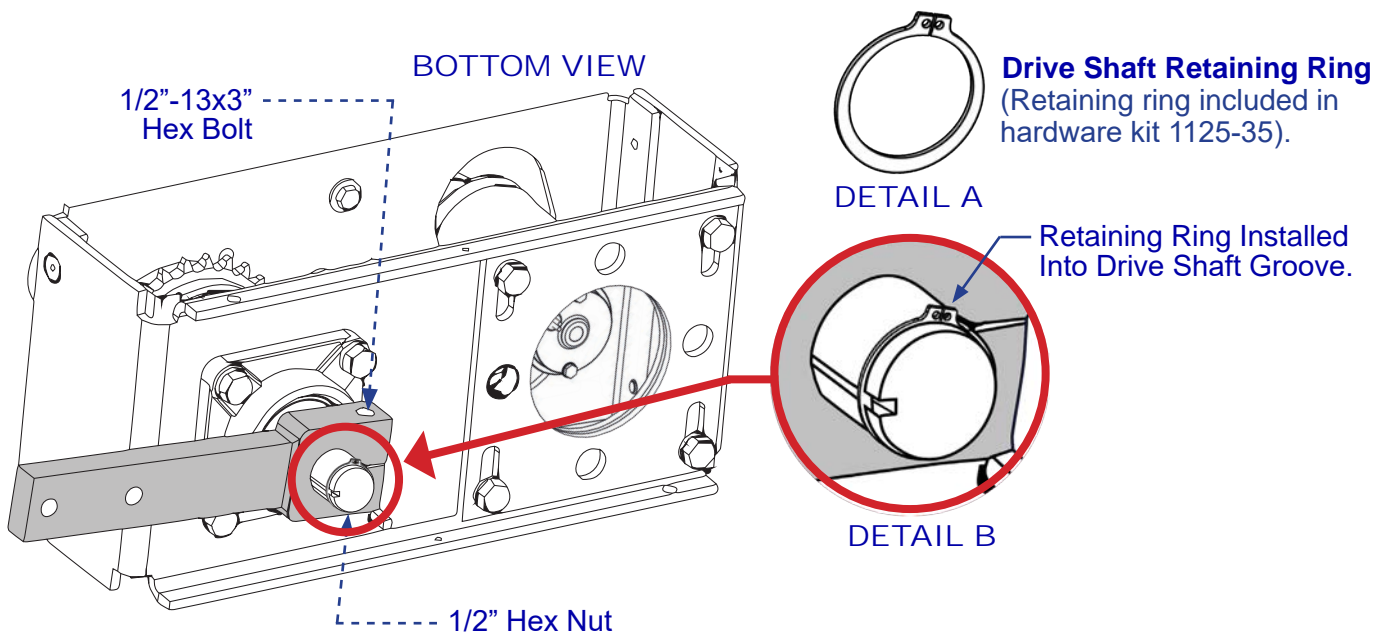


IMAGE 5-2: Primary Arm Collar Mounted To Main Drive Shaft

6

ATTACH PRIMARY ARM TO ARM COLLAR

Attach the Primary Arm to the Arm Collar using 1/2"-13 x 1-3/4" hex bolts (x2), 1/2" flat washers (x4) and 1/2"-13 hex nuts (x2) per IMAGE 6-1 and 6-2 below:

NOTICE

The two ears on the primary arm should point toward the direction of the closed gate.

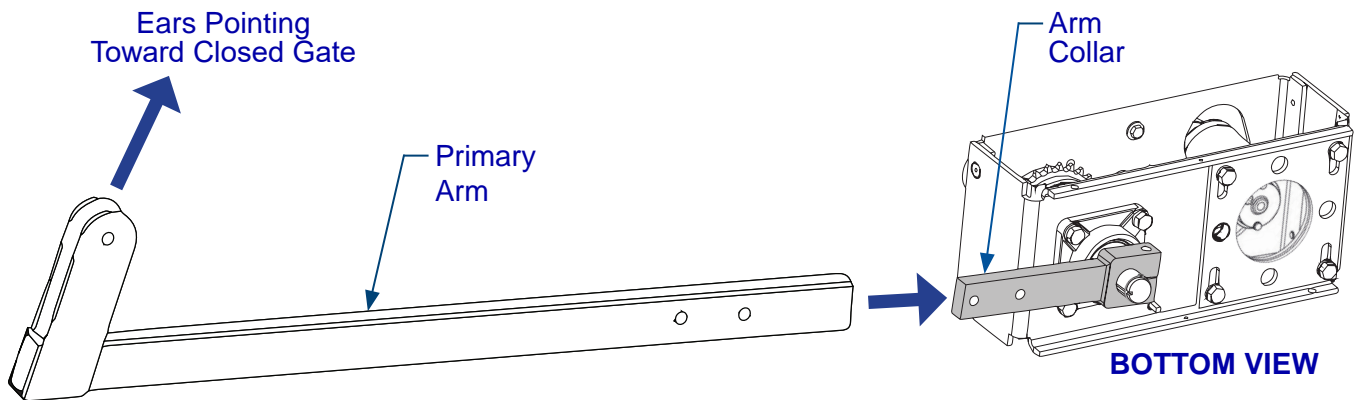


IMAGE 6-1: Install Primary Arm to Collar of the Main Drive Shaft (Bottom View)

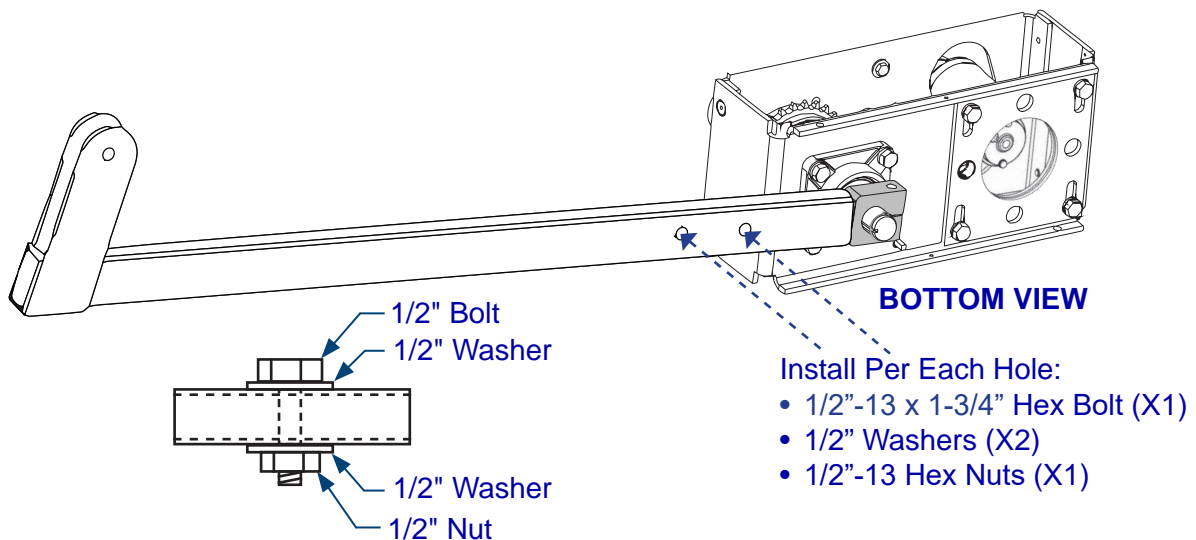


IMAGE 6-2: Primary Arm Installed to Collar of the Main Drive Shaft (Bottom View)

Vanguard 3501 Automatic Swing Gate Actuator

Installation Reference Manual

7

ASSEMBLE ARM ASSEMBLY

Refer to the exploded view of the arm assembly below (IMAGE 7-1), then proceed to the next page for assembly instructions.

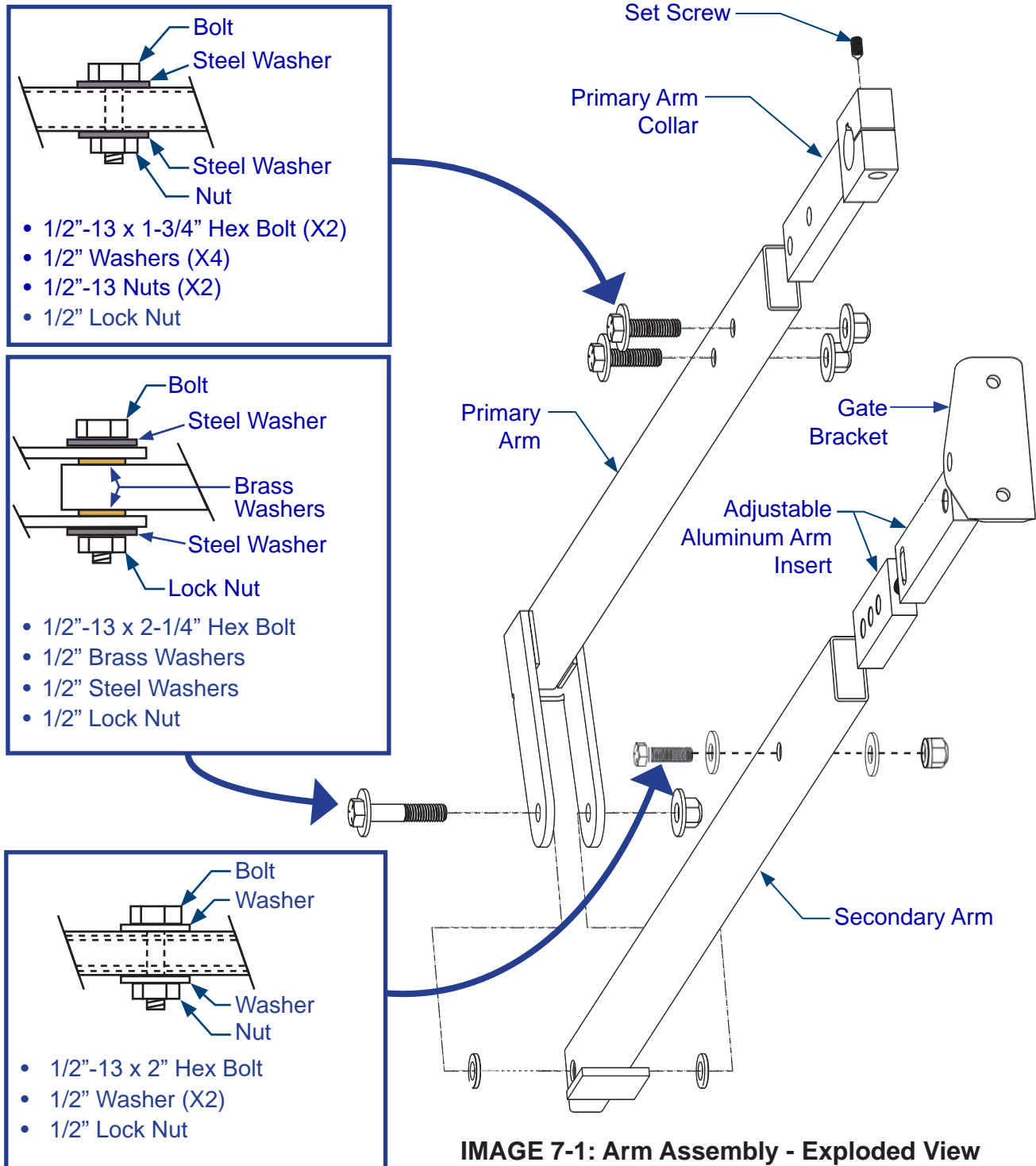


IMAGE 7-1: Arm Assembly - Exploded View

7: ASSEMBLE ARM ASSEMBLY (Cont.)

1. Attach the secondary arm to the primary arm using a 1/2"-13 x 2-1/4" hex bolt, brass washers and lock nut (see IMAGE 7-2). The stop tab should be positioned away from the gate.

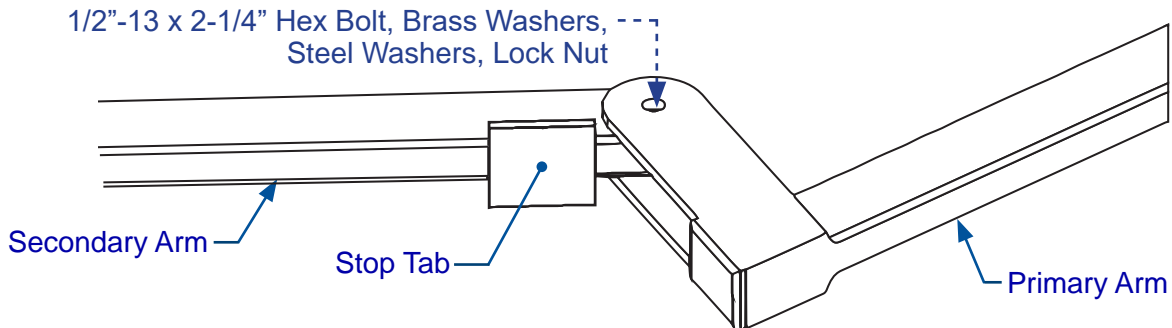


IMAGE 7-2: Install Secondary Arm to Primary Arm

2. Install the aluminum adjustable arm insert to the secondary arm using the 1/2" x 1-1/2" hex bolt and nut (IMAGE 7-3). Use the middle hole in the arm insert to affix it within the secondary arm.

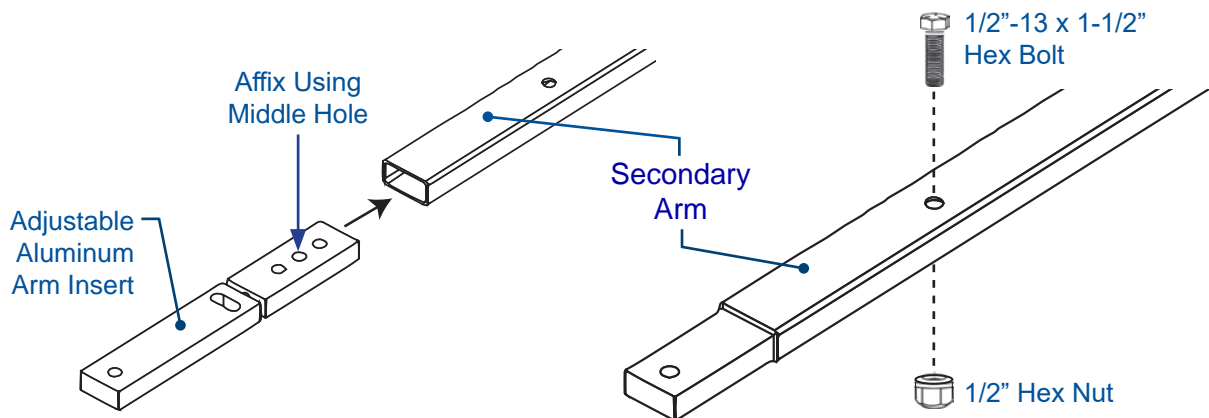


IMAGE 7-3: Install Aluminum Adjustable Arm to Secondary Arm

NOTICE

Once limits are set and the board has been programmed, this aluminum arm can be adjusted to fine tune the closed gate position.

8

AFFIX GATE BRACKET TO ACTUATOR ARM

If security is of the utmost importance, then the bracket may be connected to the actuator arm using the 1/2" x 3" bolt, washers, and lock nut (IMAGE 8-1).

However, to enable quick manual opening of the gate in case of power failure, it is recommended to use the quick release hitch pin with R-clip (IMAGE 8-2, next page).

NOTICE

See **INSTRUCTION 14** for information about using the motor switch to de-energize the motor to allow free movement of the actuator arm.

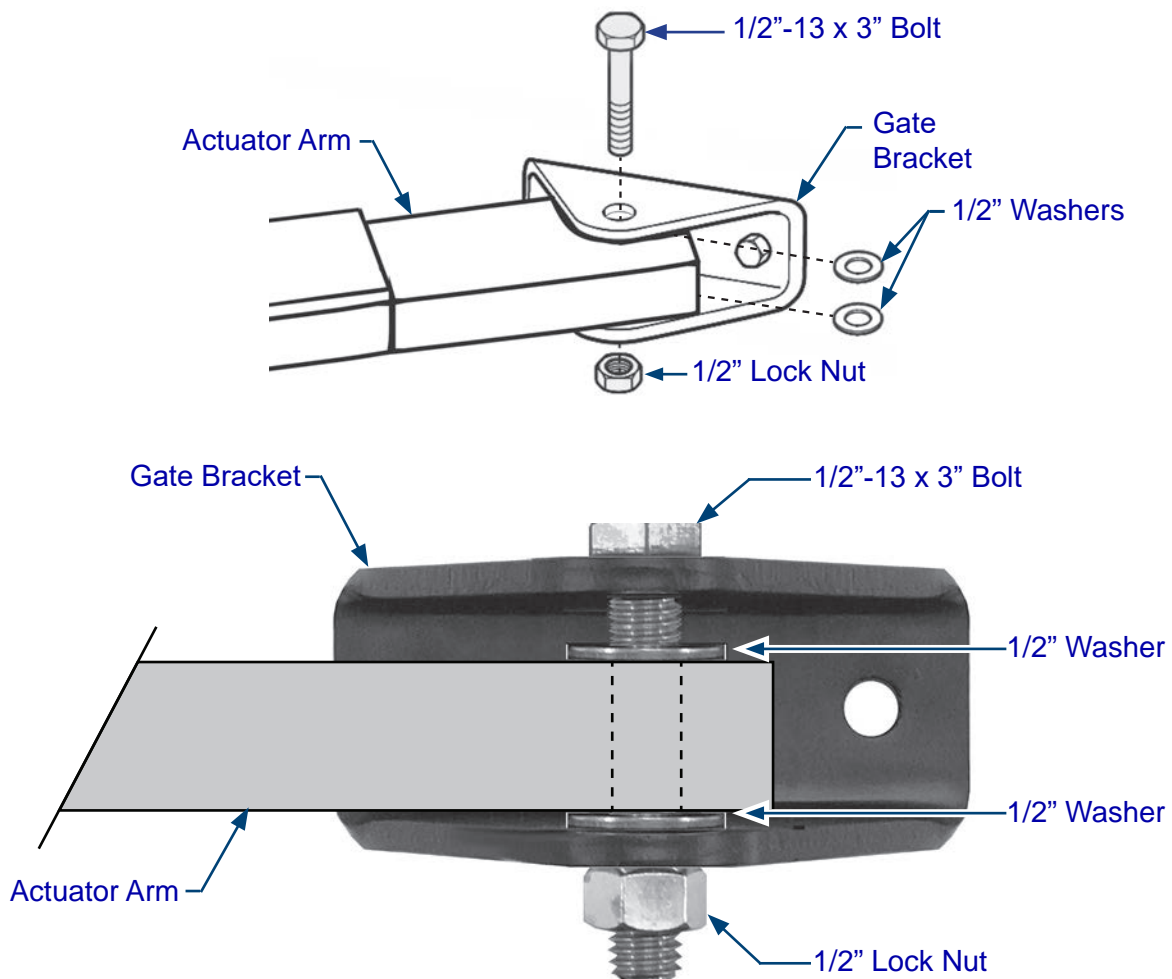


IMAGE 8-1: Install Gate Bracket to Actuator Arm Using Bolt, Washer, and Nut

8: AFFIX GATE BRACKET TO ACTUATOR ARM (Cont.)

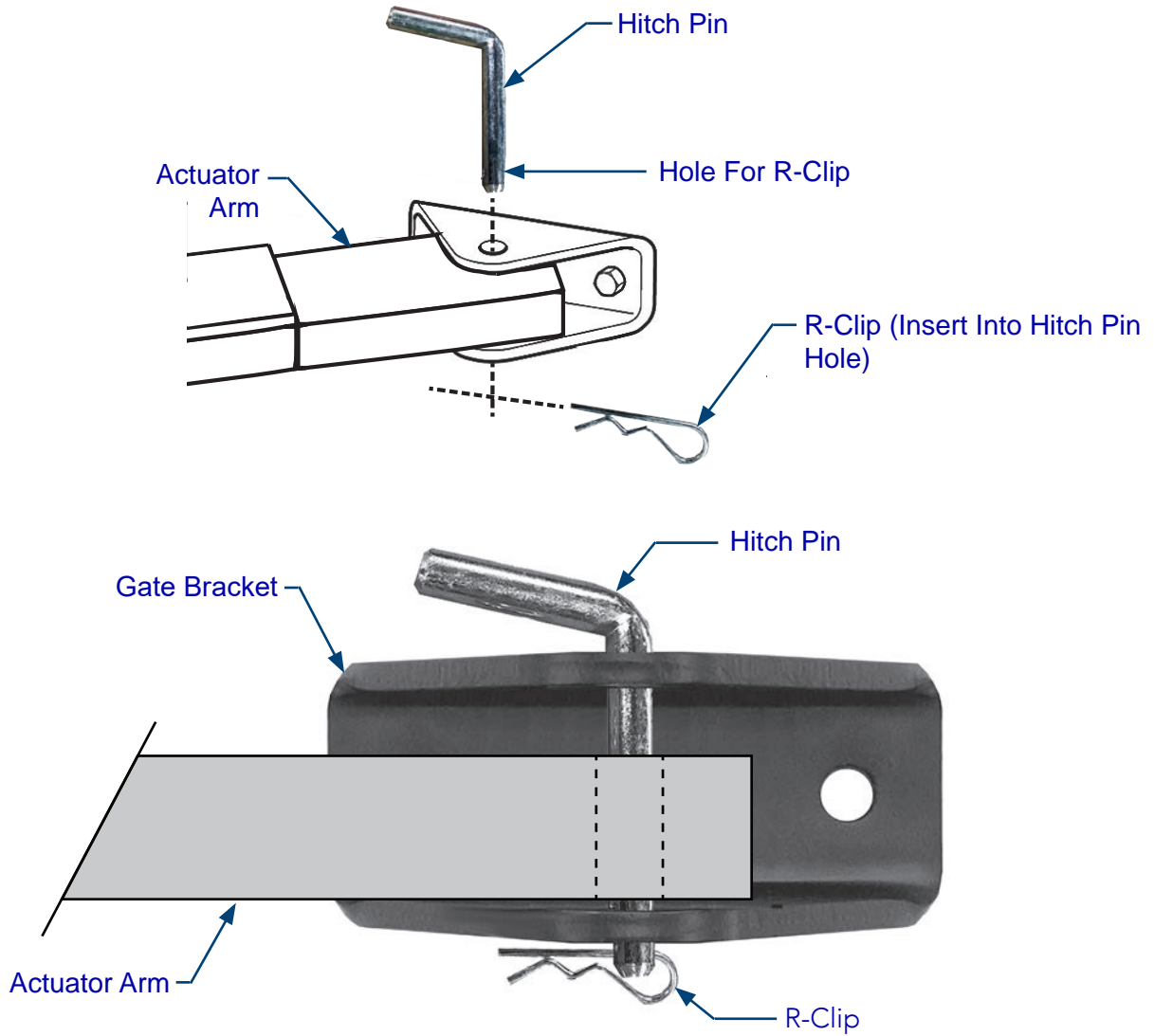
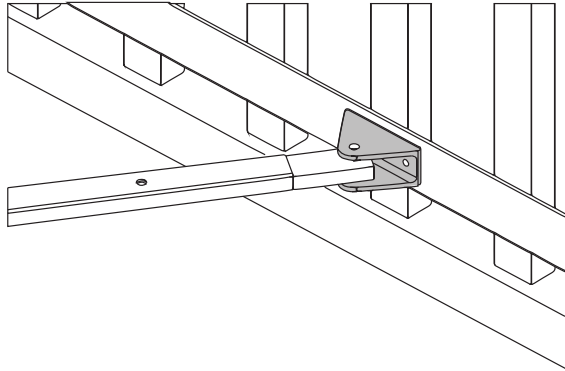


IMAGE 8-2: Gate Bracket to Actuator Arm Using Hitch Pin and R-Clip

9

INSTALL GATE BRACKET TO GATE SUPPORT

1. Put gate in closed position, then push the arm assembly up against the gate (IMAGE 9-1).

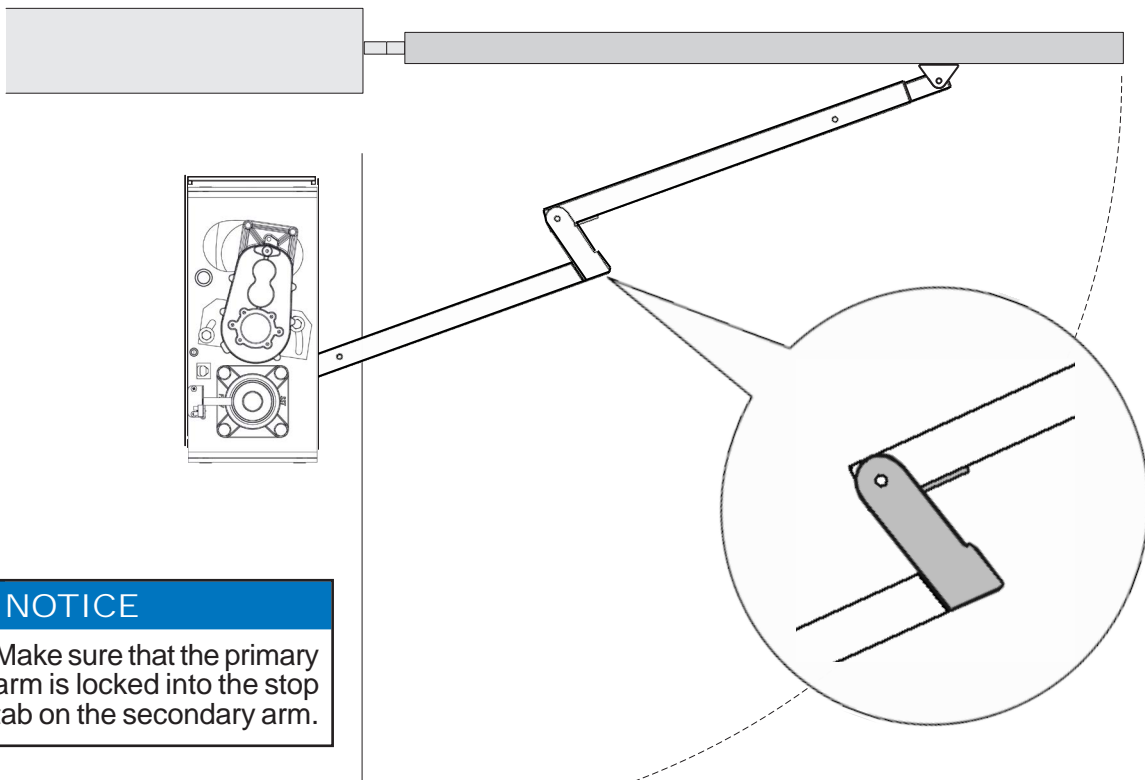


NOTICE

See **INSTRUCTION 14** for information about using the motor switch to de-energize the motor to allow free movement of the actuator arm/shaft.

IMAGE 9-1: Positioning Gate Bracket On Gate Structural Support

2. Make sure that the primary arm is locked into the stop tab on the secondary arm (IMAGE 9-2).
3. Tack weld or clamp the gate attach bracket to the gate.



NOTICE

Make sure that the primary arm is locked into the stop tab on the secondary arm.

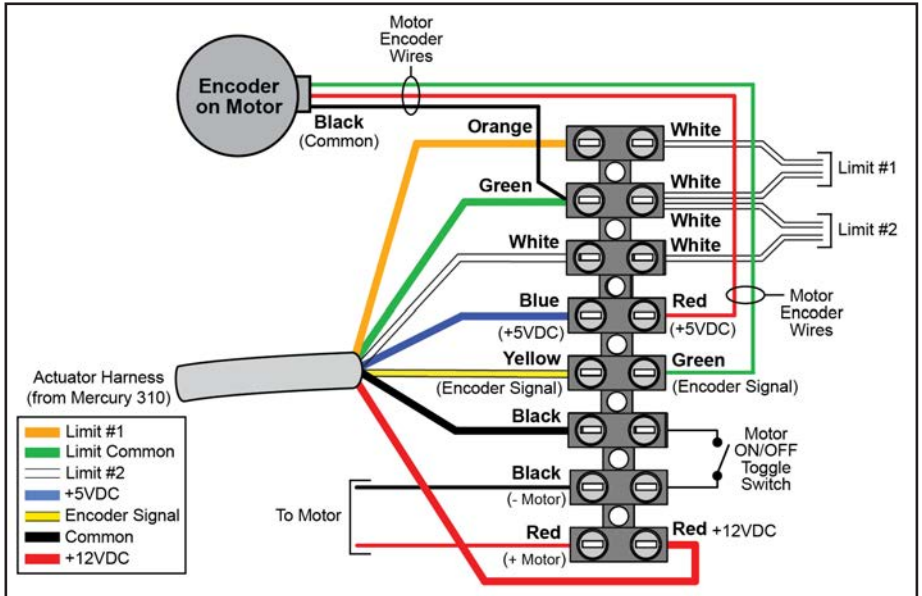
IMAGE 9-2: Ensuring Primary Arm Locked Into Stop Tab of Secondary Arm

IMPORTANT NOTICE!

Permanent welds or bolt attachment should only be completed after wiring and once limits are set per the following sections.

Vanguard 3501 Actuator & Power Wiring

Vanguard 3501



Vanguard 3501 Wiring Diagram

SECTION 4: Vanguard 3501 Actuator Wiring

NOTICE

Before attempting to wire actuator to the Mercury 310 controller, ensure gate mechanically opens and closes freely without binding and that actuator(s) and any safety sensors and/or loops have been properly installed.

4.1 Vanguard Motor Chassis Wiring

10

WIRE ACTUATOR CABLE TO CHASSIS TERMINAL STRIP

Located inside the chassis assembly next to the limit switch assembly is a terminal strip (IMAGE 10-1). Wire the harness cable to the terminal strip as shown in IMAGE 10-2 on next page.

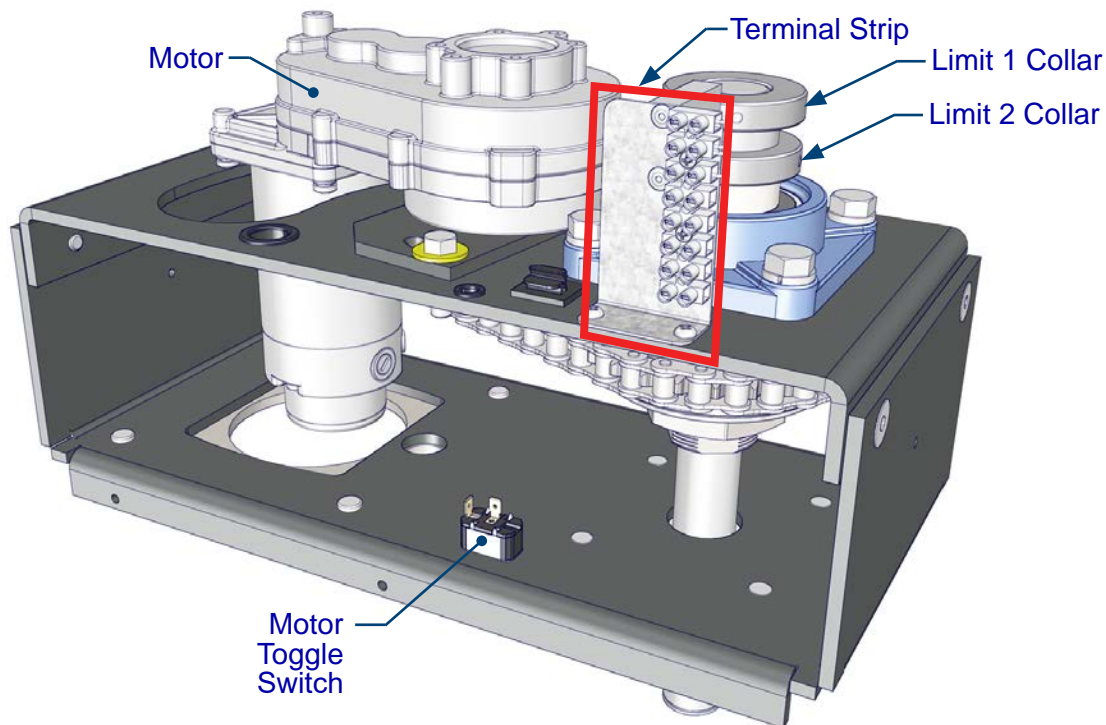


IMAGE 10-1: Terminal Strip Location

WIRE ACTUATOR CABLE TO TERMINAL STRIP (Cont.)

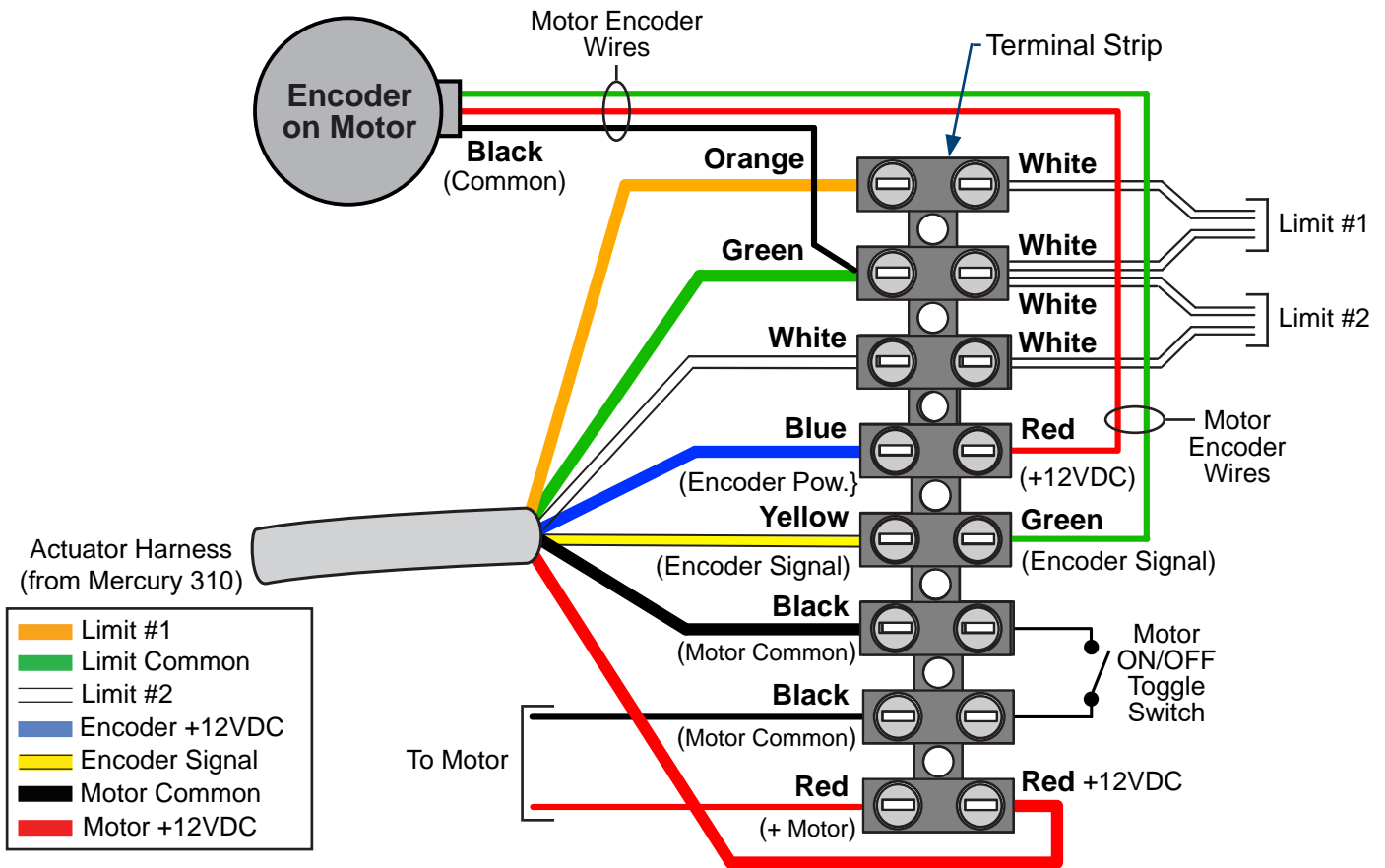


IMAGE 10-2: Wiring Actuator to Chassis Terminal Strip

11 RUN ACTUATOR CABLE(S) TO CONTROL BOX

Run the cable of the actuator closest to the control box through a hole (with rubber grommet) in the bottom on the control box.

If a dual gate installation:

1. Dig a trench across the driveway deep enough to accommodate the longer harness cable from the actuator furthest from the control box.
2. Run the cable through an appropriate conduit and lay this in the trench.
3. Cover the trench and use asphalt patch if needed.
4. Run the 2nd cable into a hole (with rubber grommet) into the bottom of the control box.

NOTICE

Ensure cable(s) extends into control box sufficiently to reach the MOTOR inputs on the control board.

4.2 Mercury 3501 Controller Wiring

12 WIRE ACTUATOR CABLE TO CONTROL BOARD

Refer to the Mercury Controller image below (IMAGE 12-1) to locate the Motor 1 & 2 actuator inputs. The wire functions for the actuator cable are shown in TABLE 12-1.

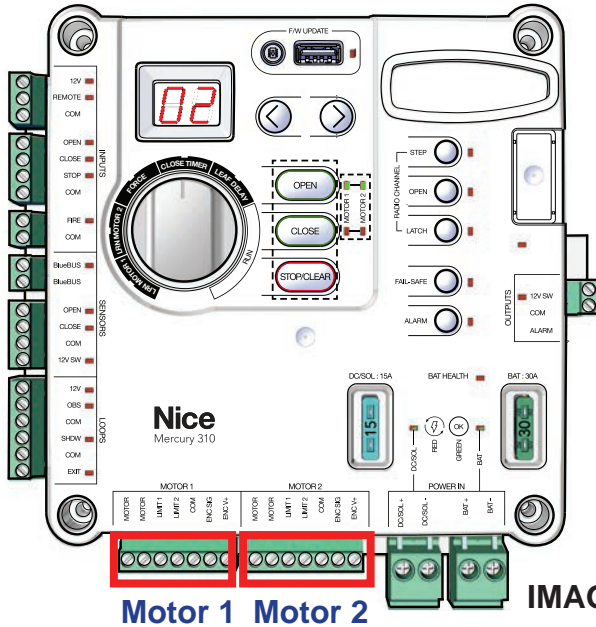
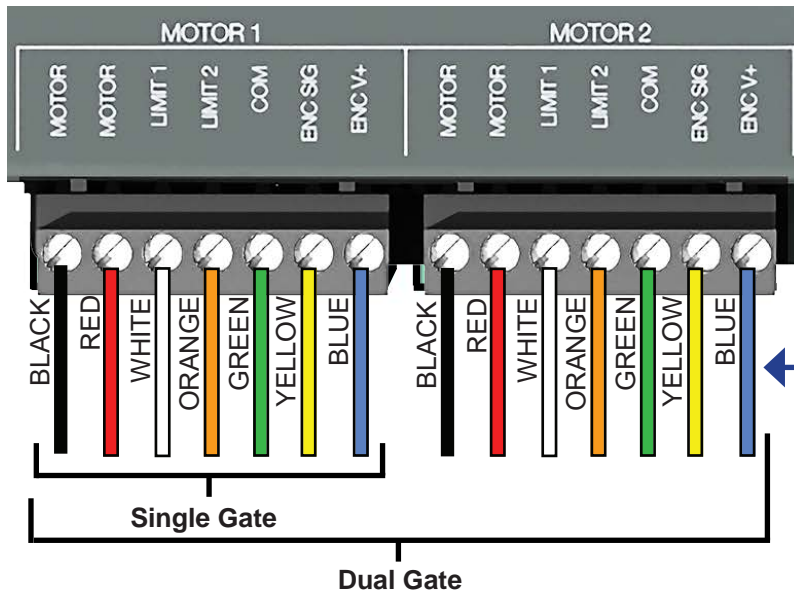


TABLE 12-1: Vanguard Actuator Wire Functions	
Wire Color	Wire Function
White	Limit 1
Orange	Limit 2
Green	Limit Common
Black	MOTOR - (Negative) 12VDC
Red	MOTOR + (Positive) 12VDC
Blue	Encoder Power 12VC
Yellow	Encoder Signal

IMAGE 12-1: Mercury 310 Motor 1/2 Inputs

Wire actuator wires to the Mercury Controller inputs (IMAGE 12-2):

- **Single Gate:** Wire actuator cable to **MOTOR 1** input connector as shown (IMAGE 12-2).
- **Dual Gate:** Wire actuator cable to **MOTOR 2** and **MOTOR 2** input connectors as shown (IMAGE 12-2).



NOTICE
Mercury motor wiring is the same for push-to-open and pull-to-open gate installations.

IMAGE 12-2: Actuator to Mercury Controller Board Wiring

13

INSTALL CONTROL BOX AND APPLY POWER

At this point it is necessary to apply power to the Mercury control board in order to set the limit collars in INSTRUCTION 15.

NOTICE

After applying power, do not yet apply any “Learning” processes until after the limit collars have been adjusted per INSTRUCTION 15.



IMPORTANT!

There is a “motor switch” on the bottom of the drive chassis used to de-energize the motor for manually opening the gate. However, if this switch is inadvertently turned OFF during installation, the motor will not operate. See INSTRUCTION 14, IMAGE 14-1 (next page) for switch location and ON/OFF orientation in case this is an issue.

14

MANUALLY OPERATING THE GATE

To manually open or close the gate, perform the following:

1. Flip the motor toggle switch on bottom of motor chassis to OFF per IMAGE 14-1 (flip toward motor).
2. Pull or push the gate at the actuator arm "elbow" or at edge of gate.
3. To put gate operator back into service, flip motor switch back to ON per IMAGE 14-1 (flip toward shaft).

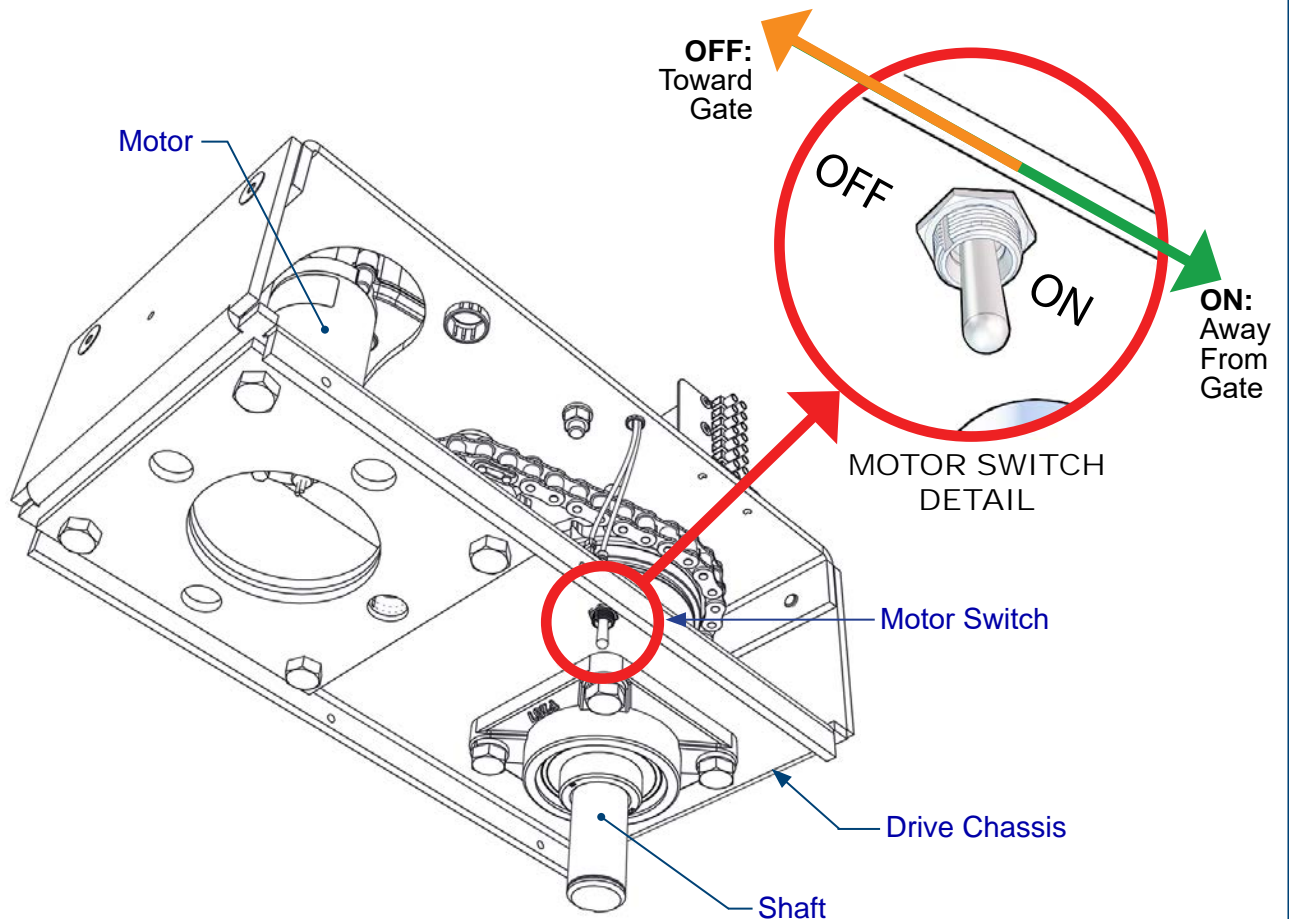
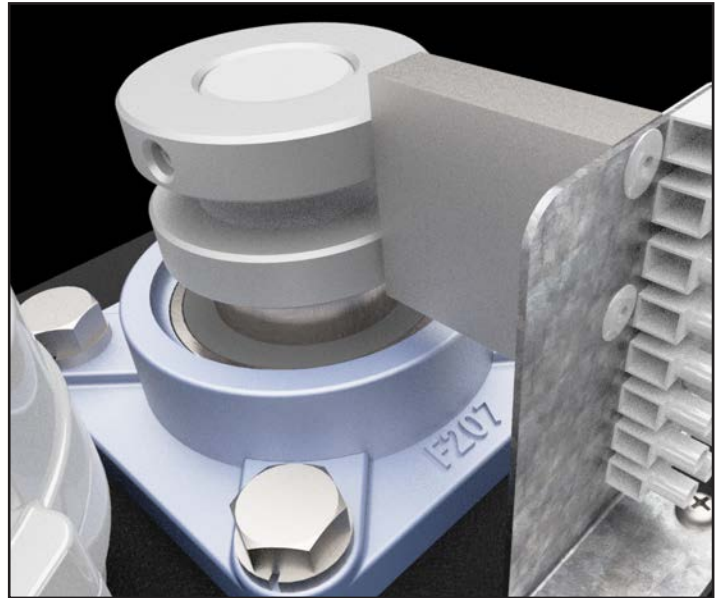


Image 14-1: Motor Switch Location and On/Off Orientation

NOTICE

The motor switch may be used for manually moving of the gate whether the gate operator is powered or un-powered.

Vanguard 3501 Limit Learning & Final Bracket Installation



Vanguard 3501 Limit Collar Assembly

SECTION 5: Setting/Learning Gate Limits

15 SET LIMIT 1 & 2 COLLARS

After applying power to the Vanguard motor assembly (Step 13), the limit collars on the motor assembly (IMAGE 15-1) may be set using the following procedure:

NOTICE

For dual gate installations, perform this operation on only one motor at a time.

1. Ensure the Function Knob is set for the appropriate gate (**LRN MOTOR 1** for a single gate and **LRN MOTOR 2** for the second gate of a dual gate system).
2. Loosen the set screw on both limit collars (IMAGE 15-1) just to the point where each collar can be turned by hand, but still hold its place on the shaft.
3. Press (and hold) the Left or Right Arrow button on Controller (IMAGE 15-2), until gate reaches the desired open or close position.

NOTICE

When using the Left or Right Arrow Button to move the gate to a desired open or close position, the gate will automatically stop when the magnet sensor detects any limit. If this occurs, then rotate the appropriate collar away from the magnet sensor, and press and hold the Left or Right Arrow button again to move the gate to a desired position.

4. Rotate **Limit 1** collar (top one) by hand until Magnet 1 of that collar is aligned with the Magnet Sensor (IMAGE 15-3). The Limit LEDs (red and green) on the control board will flash (IMAGE 15-2) to indicate **Limit 1** is now set. Re-tighten set screw for that collar.
5. Press (and hold) the Left or Right Arrow button on Controller until gate reaches the desired open or closed position (the opposite position from **Step 3**, above).
6. Rotate the **Limit 2** collar (bottom one) by hand until Magnet 1 of that collar is aligned with the Magnet Sensor (IMAGE 15-3). The Limit LEDs (red and green) on the control board will flash (IMAGE 15-2) to indicate **Limit 2** is now set. Re-tighten set screw for that collar.

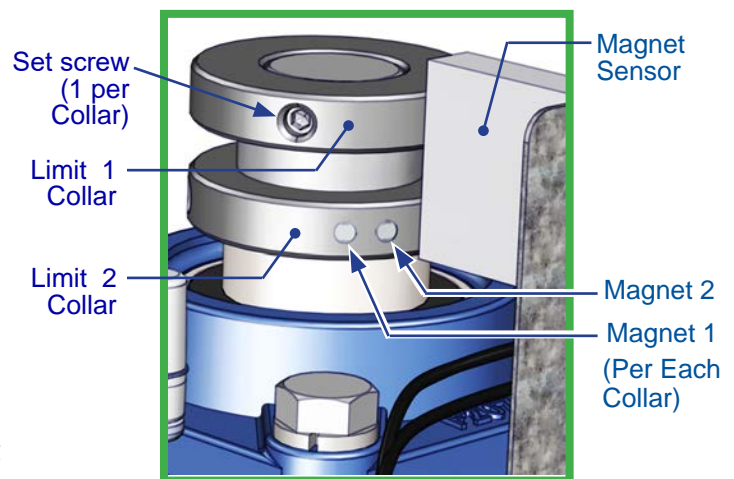


IMAGE 15-1: Limit Collar Features

15: SET LIMIT 1 & 2 COLLARS (Cont)

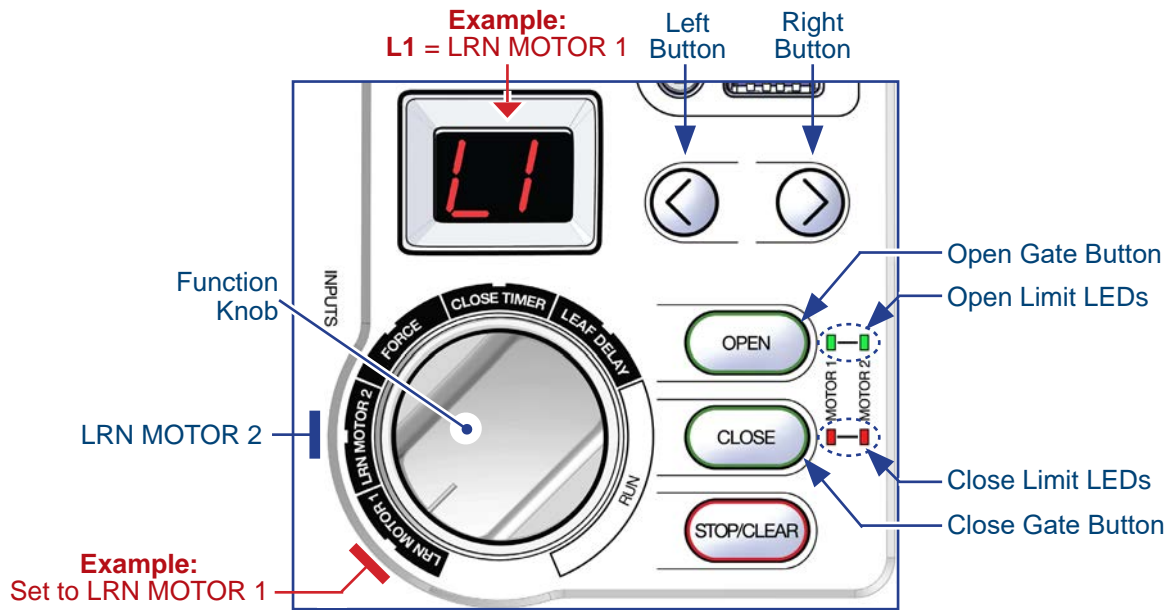


IMAGE 15-2: Mercury 310 Limit Learn Controls

Top View

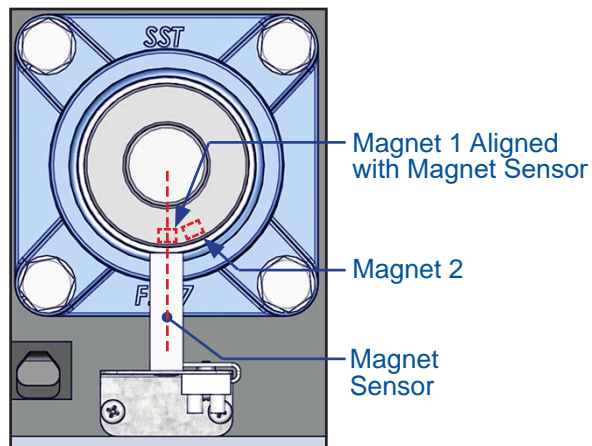


IMAGE 15-3: Magnet and Sensor Position

16

MERCURY 310 CONTROLLER LIMIT LEARN PROCEDURE

After the close and open limit collars in the actuator have been set (INSTRUCTION 15), the Mercury 310 controller must be programmed to recognize these limits, so that when the gate is operated, the controller knows when to stop at the mechanically set limit of travel.

NOTICE

Mechanical limits for the limit collars on the Vanguard actuator(s) must be set (INSTRUCTION 15) prior to starting the Mercury controller learn limits procedure.

1. Set Mercury function knob to **LRN MOTOR 1** (display will flash **L1** if unlearned or glow solid if already learned. See note below to clear previously learned limits).
2. Press and hold Left or Right button to "jog" gate into position about halfway between open and close limits. (motor starts 2 seconds after being pressed, and will stop when button is released).
3. Start learn procedure by pressing and holding both Left and Right Arrow Buttons for one (1) second.
4. Display will show solid **L1** and gate will run at slow speed to first limit.
5. After reaching first limit, display flashes between **OP** and **CL** (Open/Close LEDs also flash).
6. Observe the *current* position of the gate and do only one of the following:
 - If gate is at *open* limit, press the Open button.
 - If gate is at *close* limit, press the Close button.
7. Gate will now automatically run to the second limit at slow speed and stop, then run to the first limit at normal speed and stop, and finally run to the second limit at normal speed and stop.

NOTICE

During gate movement at normal speed, travel percentage is shown in display.

8. When finished, the display will show either **OP** or **CL**, depending on motor wiring and what button was pressed during the procedure.
9. To program the Learn Limits for Motor 2 of a dual gate system, set the function knob to **LRN MOTOR 2** and perform all the previous steps for that motor (display will show **L2**).
10. Other Function Knob settings may now be set. Refer to the note below concerning the Standby feature. To clear programmed learned limits (i.e. to relearn limits), refer to instructions on the next page.

NOTICE

If there is no user input for two minutes after the Limit Learn procedure is finished, the Mercury 310 controller automatically enters Standby. Press any button to "wake" the controller from this mode. Refer to the next page for more information on the Standby feature. To continue programming the Mercury 310 controller, refer to the Mercury 310 Controller reference manual, P/N **MX5095**

16: MERCURY 310 CONTROLLER LIMIT LEARN PROCEDURE

Clearing Programmed Learned Limits for a Motor

If you wish to clear limits already programmed for a motor, follow the instructions below (i.e. Motor 1):

1. Set the Function Knob to **LRN MOTOR 1**.
2. Press and hold the Stop Button for five (5) seconds until **L1** flashes in the display to indicate limits are cleared and can be re-learned.

To clear Motor 2 learned limits (for a dual gate system), set to **LRN MOTOR 2** (display will show **L2**) and repeat the above steps.

This procedure erases the previous motor information.

Standby Mode

The Mercury Controller enters Standby, or "low power mode", when it's not in use. This is a significant power saving feature for solar applications.

After the learn limit(s) procedure is performed, the Standby feature is automatically enabled, and the controller will enter Standby after two minutes of no user input to the Mercury 310 controller.

During normal operation, the controller enters Standby after two minutes of controller inactivity or fifteen seconds after a gate operation.

When the controller is in Standby:

- A red "heartbeat" decimal point will flash every two seconds in the lower right of the display to indicate the controller is ON, functioning normally, and in Standby.
- Any active LEDs and 12V switched outputs are turned OFF.
- Pressing any button will "wake" the board for two minutes.

Standby is not entered for two minutes if the rotary switch position is changed or any on-board buttons are pressed.

For more information, refer to the Mercury 310 Controller reference manual, P/N **MX5095**

17

WELD OR BOLT GATE BRACKET TO GATE

Now that the open and close limit collars are set, weld the gate bracket to the gate supporting structure. If welding is not possible, drill two holes to match bracket and affix with two 3/8"-16 x 2-1/2" hex bolts and 3/8" nuts included in the kit (IMAGE 17-1).



CAUTION

Never weld parts to the gate or posts when the control board is powered to avoid irreparable damage to the circuit board!



IMPORTANT!

Ensure bracket centerline is 2" BELOW the top of the mounting post for the actuator chassis. See IMAGE 2-1.

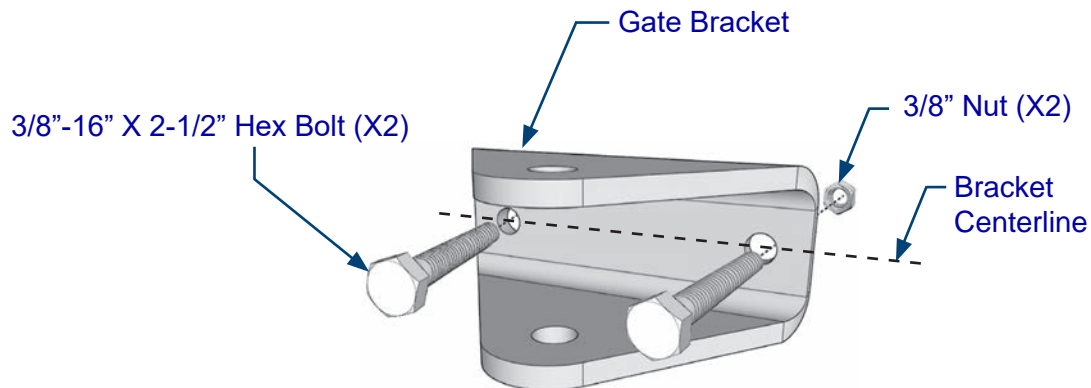


IMAGE 17-1: Gate Bracket and Hardware

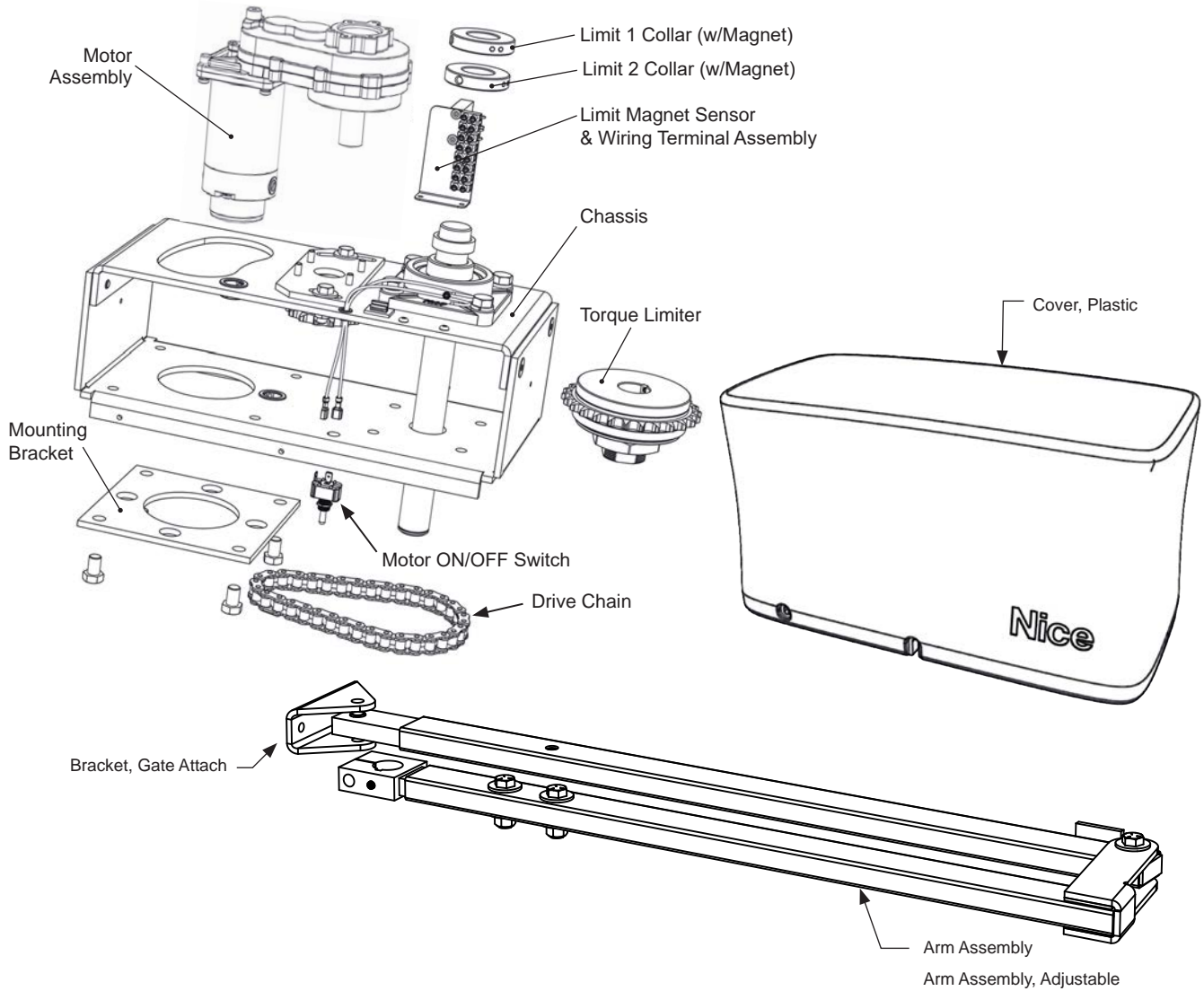
Vanguard 3501 Automatic Swing Gate Actuator

Installation Reference Manual



SECTION 6: Part Drawings

Vanguard Motor Chassis and Actuator Drawing



This drawing is a representation and should be used for parts reference only.

Part Name	Part Number	Vanguard Model
Arm Assembly	ABOX35	all
Arm Assembly, Adjustable	10021790	all
Bracket, Gate Attach Kit	10021290	all
Bracket, Post Mount	10038315	all
Chassis Assembly, 3501	CHBOX35	all
Collar and Magnet	10021490	all
Cover, Plastic	MX4774	all
Gearmotor	73090005	all
Limit Block Assembly	10058890	all
Toggle Switch	10024290	all
Torque Limiter	10040690	all

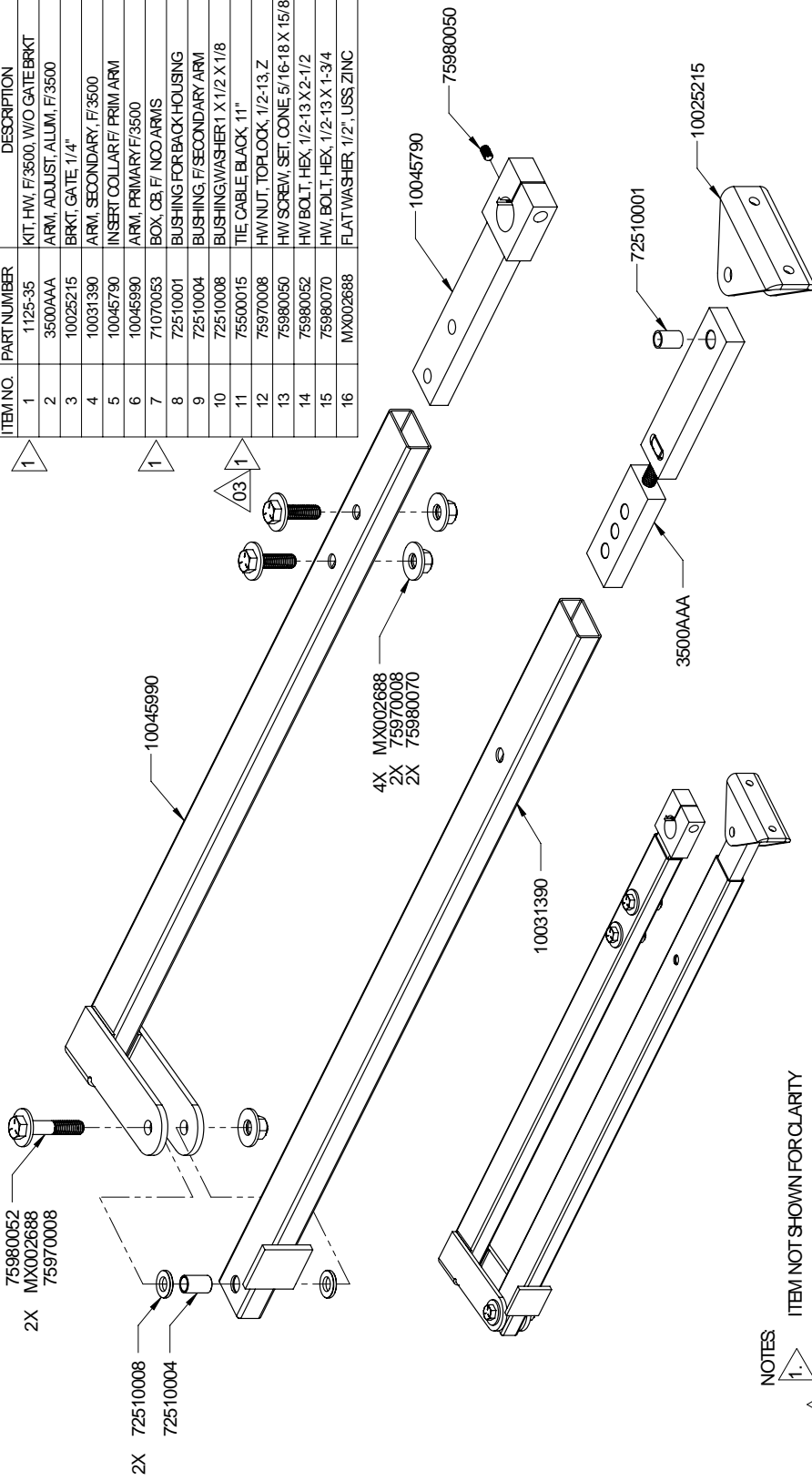
Vanguard 3501 Automatic Swing Gate Actuator

Installation Reference Manual

Vanguard ABOX35 Actuator Arm Assembly

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	1125-35	KIT, HW, F/3500, W/O GATE BRKT	1
2	3500AAA	ARM, ADJUST, ALUMI, F/3500	1
3	10025215	BRKT, GATE 1/4"	1
4	10031390	ARM, SECONDARY, F/3500	1
5	10045790	INSERT COLLAR/ PRIM ARM	1
6	10045990	ARM, PRIMARY F/3500	1
7	71070053	BOX, CB, F/ NOO ARMS	1
8	72510001	BUSHING FOR BACK HOUSING	1
9	72510004	BUSHING, F SECONDARY ARM	1
10	72510008	BUSHING, WASHER 1 X 1/2 X 1/8	2
11	75500015	TIE CABLE, BLACK, 11"	1
12	75970008	HW NUT, TOP LOCK, 1/2-13, Z	3
13	75980050	HW SCREW, SET, CONE, 5/16-18 X 15/8	1
14	75980052	HW BOLT, HEX, 1/2-13 X 2-1/2	1
15	75980070	HW, BOLT, HEX, 1/2-13 X 1-3/4	2
16	MX002688	FLAT WASHER, 1/2", USS, ZINC	6

ABOX35



NOTES

1. ITEM NOT SHOWN FOR CLARITY
2. USE SMALL CABLE TIE TO FIX UNBOLTED END OF PRIMARY ARM 10045990
3. USE 75500015 TO FIX PRIMARY ARM 10054490 TO SECONDARY ARM 10031390 FOR SHIPPING

Vanguard 3501 Automatic Swing Gate Actuator

Installation Reference Manual

Nice

SECTION 7: Warranty

LIMITED WARRANTY—NICE-BRANDED PRODUCTS

1. Warranty.

Hy-Security Gate, Inc. (“HySecurity”) warrants that at the time of sale, each Nice-branded gate operator product that it sells will, in all material respects, conform to the then applicable specification for the product and will be free from defects in material and manufacture.

The following additional durational warranties apply to products purchased through a distributor authorized by HySecurity to sell Nice products (“Authorized Distributor”), depending on whether (1) the product is purchased through an Authorized Distributor and (2) whether a timely and complete product registration is submitted to HySecurity.

It is therefore important that you register your product with HySecurity, online at www.hysecurity.com/warranty, within the 60-day period described below.

1(a) Nice-branded Products Purchased Through Authorized Distributors and Properly Registered

For any gate operator product that is purchased from an Authorized Distributor (this excludes product purchased through internet resellers or any distributor not authorized by HySecurity to sell Nice products), if the product registration is completed by the Dealer/Installer or End User within 60 days of the date of purchase, the following warranty terms will apply. HySecurity warrants that the product will remain serviceable for the following periods:

- Electromechanical pad-mounted Slide and Swing operators: Three years after the date of installation,
- Electromechanical linear actuator Swing operators: Three years after the date of installation,
- Electromechanical barrier arm operators: Three years after the date of installation,
- Nice-branded accessories: Three years after the date of installation, *provided that* the Three-Year warranty period in (a), (b), or (c) will not extend beyond four years from the date that the product was shipped from HySecurity.

The preceding warranty durations do not apply to the products or components described below (e-f), which have a shorter warranty period:

- Batteries: One Year from date of shipment from HySecurity.
- Components subject to normal wear including, but not limited to, chains, belts, idler wheels, sprockets and fuses: One Year from date of installation.

1(b) Nice Products Not Purchased Through an Authorized Distributor or Not Properly Registered within 60 Days

For any product that is not purchased from an Authorized Distributor or for which the product registration was not completed by the Dealer/Installer/End User within sixty (60) days of the date of purchase, the following **Two-Year Limited Warranty** will apply: HySecurity warrants that the product will remain serviceable for Two Years from the date that the product was shipped from HySecurity.

1(c) Replacement Parts

HySecurity warrants that replacement parts (whether new or reconditioned) will remain serviceable for One Year from the date that the part was shipped from HySecurity or the remaining period of the Gate Operator warranty, whichever is longer.

1(d) Limitations and Exclusions Applicable to Each of the Preceding Warranties.

The preceding warranties shall not apply to equipment that has been (1) installed, maintained, or used improperly or contrary to instructions; (2) subjected to negligence, accident, vandalism, or damaged by severe weather, wind, flood, fire, terrorism or war; or (3) damaged through improper operation, maintenance, storage or abnormal or extraordinary use or abuse. Any modification made to products will void the warranty unless the modifications are approved in writing by HySecurity in advance of the change (this exclusion does not apply to normal installation of approved accessories and/or protective devices or sensors). It is the responsibility of the Distributor, Dealer/Installer, or End User to ensure that the software version in the product is maintained to the latest revision level.

The preceding warranties do not extend to accessories when those items carry the name plate of a manufacturer other than HySecurity or Nice and they are not a part of the base model. HySecurity disclaims all warranties for such accessory components, which carry only the original warranty, if any, of their original manufacturer. HySecurity hereby assigns its rights under such manufacturer warranties—to the extent that such rights are assignable—to Buyer.

These warranties extend to HySecurity’s Distributors, to the Dealer/Installer, and to the first End User of the product following installation. They do not extend to subsequent purchasers. **2. Limitation of Certain Implied Warranties and Exclusion of Other Warranties.**

The warranties contained in Section 1 are the exclusive express warranties given by HySecurity and supersede any previous, contrary or additional representations, whether oral or written. Any prior or extrinsic representations or agreements are discharged or nullified. ANY IMPLIED WARRANTIES, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO PERIOD OF THE APPLICABLE EXPRESS WARRANTY FOR THE PRODUCT OR COMPONENT. HYSECURITY HEREBY DISCLAIMS AND EXCLUDES ALL OTHER WARRANTIES—INCLUDING ANY LIABILITY FOR INFRINGEMENT, AND ANY WARRANTIES OTHERWISE ARISING FROM COURSE OF DEALING, COURSE OF PERFORMANCE, OR USAGE OF TRADE.

Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

3. Buyer’s Exclusive Remedies for Any Nonconformity.

If a Nice product fails to conform to the warranties in Section 1, Buyer must notify and order replacement parts from the Distributor through which the product was purchased within a reasonable time and in no event more than thirty (30) days after the discovery of the nonconformity. HySecurity will investigate and, in the event of a breach, will provide, within a reasonable period of time, one of the following: (1) repair or replacement of any nonconforming products or components or (2) refund of the price upon return of the nonconforming items. HySecurity reserves the right to supply used or reconditioned material for all warranty claims. HySecurity will not be considered to be in breach of or default under this Warranty because of any failure to perform due to conditions beyond its reasonable control, including any force majeure. This warranty does not cover any incidental expenses, including fines or penalties, temporary security, labor, shipping, travel time or standby time that are incurred for inspection or replacement of any nonconforming items. As a condition of warranty coverage, warranty claims must be submitted in accordance with the procedures described on the HySecurity form, “RMA Procedures.”

THE REMEDY SELECTED BY HYSECURITY IN ACCORDANCE WITH THIS PARAGRAPH SHALL BE THE EXCLUSIVE AND SOLE REMEDY OF BUYER FOR ANY BREACH OF WARRANTY.

4. Exclusion of Consequential and Incidental Damages.

HYSECURITY AND NICE SHALL NOT BE LIABLE FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES, WHETHER RESULTING FROM NONDELIVERY OR FROM THE USE, MISUSE, OR INABILITY TO USE THE PRODUCT OR FROM DEFECTS IN THE PRODUCT OR FROM HYSECURITY’S OR NICE’S OWN NEGLIGENCE. This exclusion applies regardless of whether such damages are sought for breach of warranty, breach of contract, negligence, or strict liability. This exclusion does not apply to claims for bodily injury or death.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation may not apply to you.

5. Severability.

If any provision of this warranty is found to be invalid or unenforceable, then the remainder shall have full force and effect.

6. Proprietary Rights.

HySecurity and Nice retain and reserve all right, title, and interest in the intellectual property rights of their products, including any accompanying proprietary software. No ownership of any intellectual property rights in the products or accompanying software is transferred to Distributor, Dealer/Installer, or End User.

7. Applicable Law.

This warranty will be interpreted, construed, and enforced in all respects in accordance with the laws of the State of Washington, without reference to its choice of law principles. The U.N. Convention on Contracts for the International Sale of Goods will not apply to this warranty.

This warranty gives you specific legal rights, and you may also have other rights which vary from State to State.

Vanguard 3501 Automatic Swing Gate Actuator

Installation Reference Manual

Document Revisions

Name	Description Of Change	Date
Curtis Harvey	Rev-B: Approved Sensor List & product name updated.	04/23/24

Installation Information and Sign-Offs

Installation Acceptance

Address where opener is located

Installer name, number and address

End user name and telephone number

Contact Information: Visit <https://support.hysecurity.com/hc/en-us> for installation manuals, replacement part instructions, part diagrams and more. Qualified Nice distributors are experienced and trained to assist in resolving installation problems. For the name of a qualified distributor near you, call Nice at 800-321-9947. *Before contacting your distributor or Nice Technical Support, obtain the serial number of your operator.