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Installation & Operation Manual

Vertical Pivot Gate (VPG) System

VPG Operator-24 (APeX II)

This product is to be installed and serviced by a trained Gate Systems Technician only. Contact AutoGate for a local professional in your area.

Before attempting to install, operate or maintain the operator, you **MUST** read and fully understand this manual and follow all safety instructions.

Safety & Helpful Information

AutoGate and the industry has endorsed three voluntary safety standards related to automatically operated gate systems. In the United States, UL 325 addresses the manufacturing and installation of gate openers and in Canada the standard is CSA 22.2 no. 247-14. ASTM F2200 addresses the design and construction of gates for vehicular traffic that are to be automated.

UL 325: Standard for Door, Drapery, Gate, Louver, and Window Operators and Systems. For obtaining a copy of this standard call Underwriters Laboratory at 1-888-853-3503 or order online at www.comm-2000.com

CAN/CSA 22.2 no. 247-14: Standard for Operators and systems of Doors, Gates, Draperies and Louvres. For obtaining a copy of this standard call CSA at 1-800-463-6727, email at sales@csagroup.org, or order online at [www.http://shop.csa.ca/](http://shop.csa.ca/)

ASTM F2200: Standard Specification for Automated Vehicular Gate Construction. For obtaining a copy of this standard contact ASTM at 1-877-909-2786, email at service@astm.org or order online at www.ASTM.org/.

Automatic vehicular gate operating systems provide convenience and security to the end user. A gate operator is capable of producing high levels of force to move and or reverse gates. If a system is not properly specified, installed, used, and maintained, serious injuries or death can result to someone in the vicinity of a moving gate. Some situations that can lead to a possibility of serious injuries or death include:

- absence of separate pedestrian access (automatic gates are for vehicular traffic only)
- reaching through a gate to operate the system
- attempting to climb under, over, or through a gate or the area covered by the travel of the gate
- children playing on, or in the vicinity of, the gate
- Improperly installed or physical failure of gate supporting hardware, which may allow a gate to “over travel” or fall down or fall from its prescribed mounting position
- unsafe gate designs and/or an absence of required entrapment protection devices
- unsafe installations in which access control devices or pedestrian access areas have been located within reach of or contacted by any part at any time by the moving gate
- modifying a manufacturers design or components and failing to follow instructions
- untrained individuals attempting to adjust, repair, or perform maintenance on a gate system

General Requirements from these standards (include, but are not limited to the following;)

1. Gates shall have smooth bottom edges, with vertical bottom edged protrusions not exceeding 1/2" (0.50 in. /12.7 mm) other than the exceptions listed in ASTM F2200.
2. The minimum height for barbed tape shall not be less than eight foot (8') (2.44 m) above grade.
3. The minimum height for barbed wire shall not be less than six foot (6') (1.83 m) above grade.
4. Protrusions shall not be permitted on any gate. Refer to ASTM F2200 for exceptions

5. Gates shall be designed, constructed and installed such that their movement shall not be initiated by gravity when an automatic operator is disconnected from it's supporting or drive system hardware. A vehicular vertical pivot gate shall be restrained from movement along the arc of its path of travel.

6. The following provisions shall apply to Class I, Class II, and Class III vehicular vertical pivot gates:

All areas of the moving gate panel from the bottom of the gate to the top of the gate or a minimum of 72 in. (1.83 m) above grade, whichever is less, that pass by a fixed stationary object, and in the area of the adjacent fence that the gate covers during the travel of the gate, shall be designed, guarded or screened to prevent a 2 1/4 in. (57 mm) diameter sphere from passing through such areas. 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 on vertical pivot installations, shall not exceed four (4") inches (102 mm). Exception: All other fixed stationary objects greater than 16 in. (406 mm) from the gate frame shall not be required to comply with this section. Horizontal and vertical framing members of a gate shall be smooth, and shall not include protrusions other than gate hardware to a maximum of 1/2"(0.50 in. /12.7 mm). All gates shall be designed with sufficient lateral stability to assure that the gate will enter a receiver guide.

7. Class IV vehicular vertical pivot gates shall be designed, constructed and installed in accordance with security related parameters specific to the application in question.

8. Controls intended for user activation must be located at least six feet (6') 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.

9. A minimum of four (4) WARNING SIGNS shall be installed, two (2) on each side of the gate where easily visible when the gate is open or closed.

10. A vehicular gate operator or vehicular drop arm operator shall have provisions for, or be supplied with, **at least** two (2) independent monitored entrapment protection means as specified in UL 325 Table 31.1 for each entrapment zone. At installation, both entrapment protection devices must be installed.

Vertical Pivot Gate Systems	
Operator Entrapment Protection Types	
Type A	Inherent entrapment protection system (built into the control board)
Type B1	Non-contact sensors such as photoelectric sensor (Photo Beam)
Type B2	Contact sensors such as edge sensors
<p>Note – The same type of device shall not be utilized for both entrapment protection means. Use of a single device to cover both the opening and closing directions is in accordance with the requirement; however, a single device is not required to cover both directions. A combination of one Type B1 for one direction and one Type B2 for the other direction is the equivalent of one device for the purpose of complying with the requirements of either entrapment protection means. This operator is provided with Type A built into the control board. The installer is required to install additional entrapment protection devices in each entrapment zone.</p>	

END USER / INSTALLER CHECK OFF LIST

**IT IS RECOMMENDED THAT EACH ITEM ON THIS INSTALLATION CHECKOFF LIST
BE DISCUSSED WITH THE END USER.**

- ___ FOUR WARNING SIGNS SECURELY INSTALLED, TWO (2) ON EACH SIDE OF GATE VISABLE IN BOTH OPEN AND CLOSED POSTION. (REQUIRED)
- ___ TWO MEANS OF ENTRAPMENT PROTECTION ARE INSTALLED TO REVERSE THE GATE IN THE CLOSING DIRECTION (i.e. TYPE A CURRENT SENSING (PROVIDED BY CONTROLLER) and (1) TYPE B (PHOTO EYE) or TYPE D (CONSTANT HOLD BUTTON) PER UL 325—6TH EDITION (REQUIRED)
- ___ OTHER ENTRAPMENT RISKS IN THE GATE TRAVEL AREA HAVE BEEN PROTECTED PER ASTM F-2200 (i.e. SCREENING, FENCING, ETC.) (REQUIRED)
- ___ CUSTOMER ADVISED THAT GATE IS FOR VEHICULAR TRAFFIC ONLY. (REQUIRED)
- ___ A SEPARATE PEDESTRIAN ENTRY AND/OR EXIT IS PROVIDED. (REQUIRED)
- ___ GATE GUARD / FENCED OFF AREA INSTALLED ON BACK SIDE OF OPERATOR. (REQUIRED)
- ___ KICK PLATE INSTALLED ON DOOR SIDE OF OPERATOR. (REQUIRED)
- ___ ALL ACCESS CONTROL DEVICES A MINIMUM OF SIX FOOT (6') AWAY FROM THE MOVING GATE PANEL. (REQUIRED)
- ___ CLASS OF OPERATOR IS APPROVED FOR THE APPLICATION OF THE OPERATOR (CLASS 1,2,3,4) (REQUIRED)
- ___ CONTROLS INTENDED TO RESET GATE AFTER BEING OBSTRUCTED ARE INSTALLED IN LINE OF SIGHT (REQUIRED)
- ___ FIELD WIRING SECURED TO AVOID PINCHING DAMAGE.
- ___ CUSTOMER INSTRUCTED AND IS CLEAR ON PROPER USE OF GATE OPERATOR. (REQUIRED)
- ___ CUSTOMER INSTRUCTED ON PROPER USE OF ALL CONTROL DEVICES USED WITH OPERATOR.
- ___ SAFETY INSTRUCTIONS WERE REVIEWED AND LEFT WITH CUSTOMER. (REQUIRED)
- ___ DISCUSS THE POTENTIAL FOR A PREVENTATIVE SERVICE AND MAINTENANCE CONTRACT.
- ___ A PHOTO OF COMPLETED INSTALLATION TAKEN FROM FRONT AND BACK OF GATE & DATED.
- ___ CUSTOMER TRAINED ON MANUAL OPERATION OF THE GATE.
- ___ CUSTOMER ADVISED NOT TO DISCONNECT THE UL 325 ENTRAPMENT ALARM IN ANY WAY
- ___ ALL ENTRAPMENT PROTECTION MEANS HAVE BEEN TESTED AND VERIFIED FOR PROPER OPERATION

THIS GATE OPERATOR IS INSTALLED FOR USE AS A CLASS _____ INSTALLATION.

Operator Class Designation

CLASS I - RESIDENTIAL VEHICULAR GATE OPERATOR – A vehicular gate operator (or system) intended for use in garages or parking areas associated with a residence of one to four single families.

CLASS II – COMMERCIAL / GENERAL ACCESS VEHICULAR GATE OPERATOR – A vehicular gate operator (or system) intended for use in a commercial location or building such as a multi-family housing unit (five or more single family units), hotel, garages, retail store or other buildings accessible by or servicing the general public.

CLASS III – INDUSTRIAL / LIMITED ACCESS VEHICULAR GATE OPERATOR – A vehicular gate operator (or system) intended for use in an industrial location or building such as a factory or loading dock area or other locations not accessible by or intended to service the general public.

CLASS IV - RESTRICTED ACCESS VEHICULAR GATE OPERATOR – A vehicular gate operator (or system) intended for use in a guarded industrial location or building such as an airport security area or other restricted access locations not servicing the general public, in which unauthorized access is prevented via supervision by security personnel.

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WARNING!

TO REDUCE THE RISK OF INJURY OR DEATH, READ AND FOLLOW ALL INSTRUCTIONS!

REDUCE RISK

1. Follow the safety standards of the Occupational Safety and Health Administration (OSHA), as well as any applicable Federal, State, Local Project Specification and Industry Standards or Procedures.
2. Only experienced personnel are to install, operate and maintain the equipment. Serious injury or equipment damage can occur if installed or operated by untrained personnel. Operators of the equipment must follow the specific instructions and safety precautions located in this manual.
3. At NO time should the Gate Panel/Drop Arm be modified in any way.
4. Do not add any additional weight to the Gate Panel/Drop Arm without contacting AutoGate first. This can affect the balancing and operation of the system.
5. Always keep people and objects away from all moving parts and entrapment/pinch points of the system. **NO PERSON OR OBJECT SHOULD CROSS THE PATH OF THE MOVING GATE.**
6. 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 or contact sensor. Sensitivity is adjusted at the "OC" or "CC" programming function. Failure to adjust and reset the gate operator properly can increase the risk of injury or death.
7. Use the belt tension lever release only when the gate panel/drop arm is not moving and powdered down.
8. Install the vehicular gate operator only when the operator is appropriate for the construction of the gate panel/drop arm and the usage class of the gate.
9. The system is intended for only gates used for vehicles. ***Pedestrians must be supplied with a separate access opening.*** The pedestrian access opening shall be designed to promote pedestrian usage. Locate the gate panel/drop arm such that persons will not come in contact with the vehicular gate panel/drop arm during the entire path of travel of the vehicular gate panel/drop arm.
10. The gate must be installed in a location so that enough clearance is maintained between the gate and adjacent structures when opening and closing to reduce the risk of entrapment.
11. Check the area where the gate will be installed and operated for overhead wires, limbs, buildings, signs or any other fixed objects that may interfere with the gate travel.
12. Controls intended for user activation must be located at least six feet (6') away from any moving part of the gate panel/drop arm and where the user is prevented from reaching over, under, around or through the gate panel/drop arm to operate the controls.

SAVE THESE INSTRUCTIONS

Automatic Gate Operators can produce high levels of force, therefore, it is very important that all gate operator system installers and designers are fully aware of potential hazards that exist with an incorrectly installed or designed system. The internal safety capabilities of a gate operator system are not enough to reduce the risk of injury. The operator is only one part of a properly installed system which when combined with all ASTM F2200 requirements and correctly installed approved entrapment devices will yield a completed UL 325, 6th ed. and CSA 22.2 NO. 247-14 listed system that will not only provide convenience and security, but will be safer with a minimal risk of injury. The following information contained in this manual along with the installation checklist provided will make you aware of potential areas that are of a safety concern. Disregarding any of the following may result in **SERIOUS INJURY OR DEATH!**

SAFETY INSTRUCTIONS REGARDING REQUIREMENTS

FOR ENTRAPMENT PROTECTION

This unit is equipped with one (1) INTERNAL means of entrapment protection. (SEE UL 325 SECTION 31.1) AND one (1) **EXTERNAL** monitored entrapment input.

NOTE: If you require additional inputs for entrapment devices, contact AutoGate at 800-944-4283.

INTERNAL:

(TYPE A) Inherent entrapment sensing systems: operator will reverse direction when the inherent TYPE A device senses an obstruction in either direction of travel.

EXTERNAL:

(TYPE B1) Provision for a monitored connection of a non-contact sensor (Photo Beam or equivalent)

PRIMARY PROTECTION- TYPE A INHERENT PROTECTION:

The unit will reverse direction when an obstruction is sensed while moving either direction. Sensitivity is adjusted at the "OC" or "CC" programming function. If an obstruction is sensed while closing by the inherent sensor, the gate will reverse and open to the full open position. The gate will remain open until a renewed intended input is received. (i.e.) Loop sensor, key or card reader, push button). If an input is still present when the gate reached the full open position, this input will need to be renewed or removed and another input given before the close timer will close the gate. (See Page 12).

ENTRAPMENT ALARM:

Will activate upon the primary inherent sensor sensing a second obstruction before reaching a limit switch. Once activated, the gate will remain at rest and an alarm will sound. The alarm can only be cleared by someone in the line of sight and **MUST** be an "INTENDED" reset. Access control devices of any kind that require an intended activation may be used for this reset. Devices that will cause an incidental reset cannot be used. These include; vehicle detectors, probes, timers, motion sensors, photo beams. Turning off the master power switch is an acceptable method of resetting the gate operator.

WARNING!

**FAILURE TO COMPLY WITH THIS REQUIREMENT MAY RESULT
IN SERIOUS INJURY OR DEATH**

APPROVED VPG-24 OBSTRUCTION DETECTION DEVICES

PHOTO BEAMS

- 1) EMX INDUSTRIES
- 2) EMX INDUSTRIES
- 3) Prime-GUARD
- 4) Reflecti-GUARD

MODEL#: IRB-MON
MODEL#: IRB-RET
MODEL#: PG-K-RW
MODEL#: RG-K-R

TRANSMITTER / RECEIVER TYPE
REFLECTOR TYPE PHOTO BEAM
TRANSMITTER / RECEIVER TYPE
REFLECTOR TYPE PHOTO BEAM

WARNING!

TO REDUCE THE RISK OF INJURY OR DEATH, READ AND FOLLOW ALL INSTRUCTIONS!

SAFETY INSTRUCTIONS FOR INSTALLER AND END USER

Proper design is important in your system layout and installation. Entrapment devices must be used at all available points where injury or property damage may occur. For protection from injury to persons, use approved Infrared Reversing Beams across the driveway. Entrapment devices are monitored and the failure of such will disable your operator. Reversing Loops (Vehicle Detectors) should be installed in front and behind the gate to provide a reverse signal or stop signal to the gate operator. All reversing devices should be tested and inspected monthly. If a Reversing Loop or Loop detector malfunctions, operator should be disabled until repair can be made by an experienced service company.

In providing the service of “designer” or “installer” of the operator and gate system, you are responsible for educating the **END USER** on proper and safe operation of the gate system. All precautions to eliminate hazards **MUST** be taken before the system can be put into operation. All identified entrapment areas require two means of protection against entrapment. Refer to ASTM F2200 for diagrams of common entrapment areas.

- Check the National, State & Local building and fire codes **BEFORE** installation
- A minimum of one (1) approved external entrapment device must be properly installed or you will **NOT** be in compliance with the January 2016 UL 325 Code, 6th Edition. *(Also required to test gate operation during install after the power has been hooked up).*
- Pedestrians **must** use a separate entrance/exit and **never** the vehicular entrance/exit gate.
- **NEVER** activate the gate from long distances where visibility of the gate cannot be seen. Anyone operating the gate should always operate it in a safe manner.
- **NEVER** allow children or anyone to play on or around the gate at any time.
- **DO NOT** affix any adhesive material within thirty (30) days of receiving the system.
- **DO NOT** attach anything to the gate over four (4) pounds total weight or four (4) square feet without consulting AutoGate for re-balancing instructions. **The gate must remain balanced to ensure safe and reliable operation.**
- The gate and operator are designed to work together. **DO NOT** attempt to install an unauthorized gate without AutoGate’s prior authorization and instructions, in doing so will **VOID** the operator warranty.
- **DO NOT ALLOW** any access control devices to be mounted within six feet (6’) of the moving gate or in such a way that someone could reach their hand or arm through the gate to activate it.

WARNING!

THE GATE OPERATOR IS DESIGNED AND FACTORY BALANCED FOR THE SPECIFIC GATE IT WAS SUPPLIED WITH.

DO NOT MODIFY THE GATE IN ANY WAY OR ADD SIGNS WEIGHING MORE THAN FOUR (4) LBS TOTAL OR FOUR (4) SQUARE FT.

FAILURE TO COMPLY WITH THIS REQUIREMENT WILL VOID THE WARRANTY AND MAY RESULT IN SERIOUS INJURY OR DEATH.

ORIENTATION

The *AutoGate Vertical Pivot Gate (VPG)* in this manual is referred to as “system”. The VPG has many features that make it effective, reliable, and easy to use and some of these important features are summarized in the table below. Note, not all systems are identical, such as, width or height of the gate panel/drop arm or finish. Accessories such as lights, sirens, keypads and other accessory component options vary. Below are some key features to the System.

Feature	Explanation
All Electric Operation. <i>NO HYDRAULICS!</i>	24 volt DC with input voltage of 120-volt (standard) or 240-volt single phase. Built-in battery backup for continued operation during power outages. Can be outfitted with solar charging for remote locations without AC power. No hydraulic fluids (for environmentally sensitive areas). Batteries are not included, but are required.
Gate Panel Options	Ranging from highly decorative pickets to a simple chain link or industrial anti-climb pales for military or correctional facilities.
Opens Completely	The VPG opens fully to 90°. Easily accommodates tall vehicles and equipment.
Duty Cycle: Continuous	The operator is engineered and rated for continuous duty and is specifically designed for constant use throughout the day.
Low Maintenance	Requires only periodic lubrication and annual tension adjustment. Very low order of service required compared to our competition.

GLOSSARY & TERMS

Figure 1.1 through 1.3 will orient you to the basic components of the system. Most of the terms are self explanatory; however, the following will help you understand certain components and terms.

Operator - A mechanical device used to open and close (raise and lower) a gate panel/drop arm system.

False Panel - Parallel to operator enclosure is the *False Panel*. It is permanently attached to the operator and is comprised of two inch (2”) steel tubing and sheet metal. Its purpose is to protect pedestrian, technician, and system users from being in the area of the pivoting gate panel/drop arm.

Hand (or handing) - The system comes in left hand or right hand configurations. This refers to the location of the operator when viewed from the secured side of the closed Gate. To illustrate “handing” see the figure 1.1 for an example of a Right Handed (RH) system.

Section #1 Operator Orientation

All of the operators mechanical and electrical components are housed inside the operator (See Figure 1.2 through Figure 1.3). The operator is a lockable steel cabinet that mounts on a concrete pad. A separate electrical enclosure is also housed inside the operator. The electrical enclosure contains the master control circuit board and the terminal blocks/wire management system. It may also house a variety of optional electrical components and configuration custom to your specific order.

(Also refer to DWG 103-DR-APEX)

Figure 1.1 Operator (not depicting gate panel/drop arm)

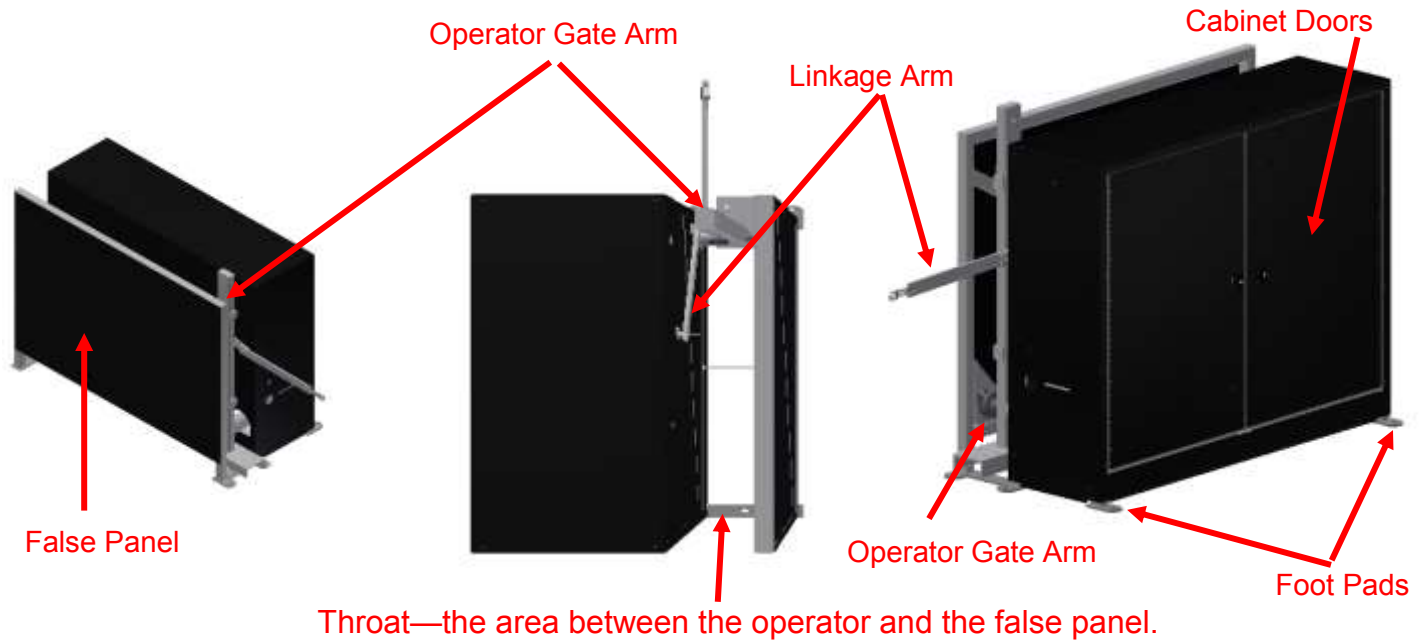
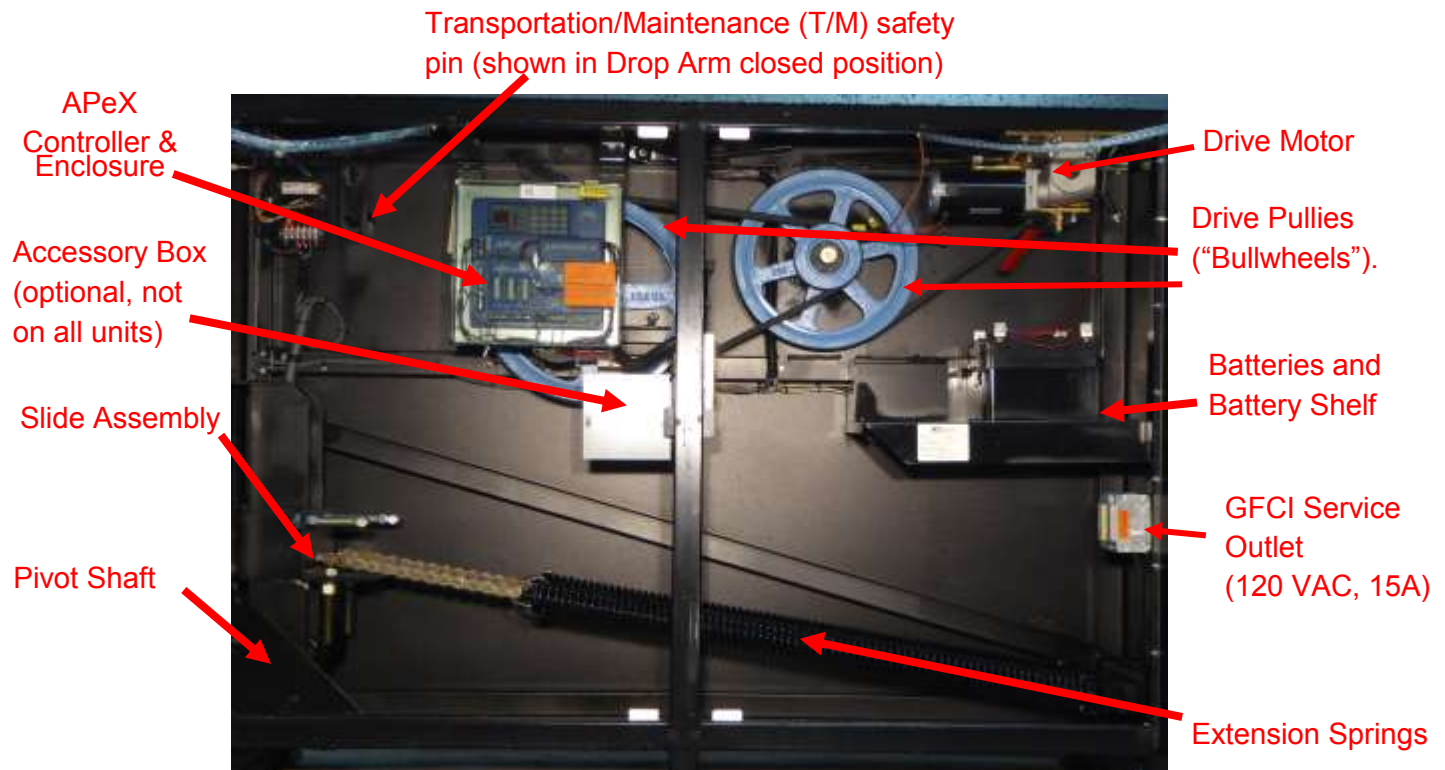
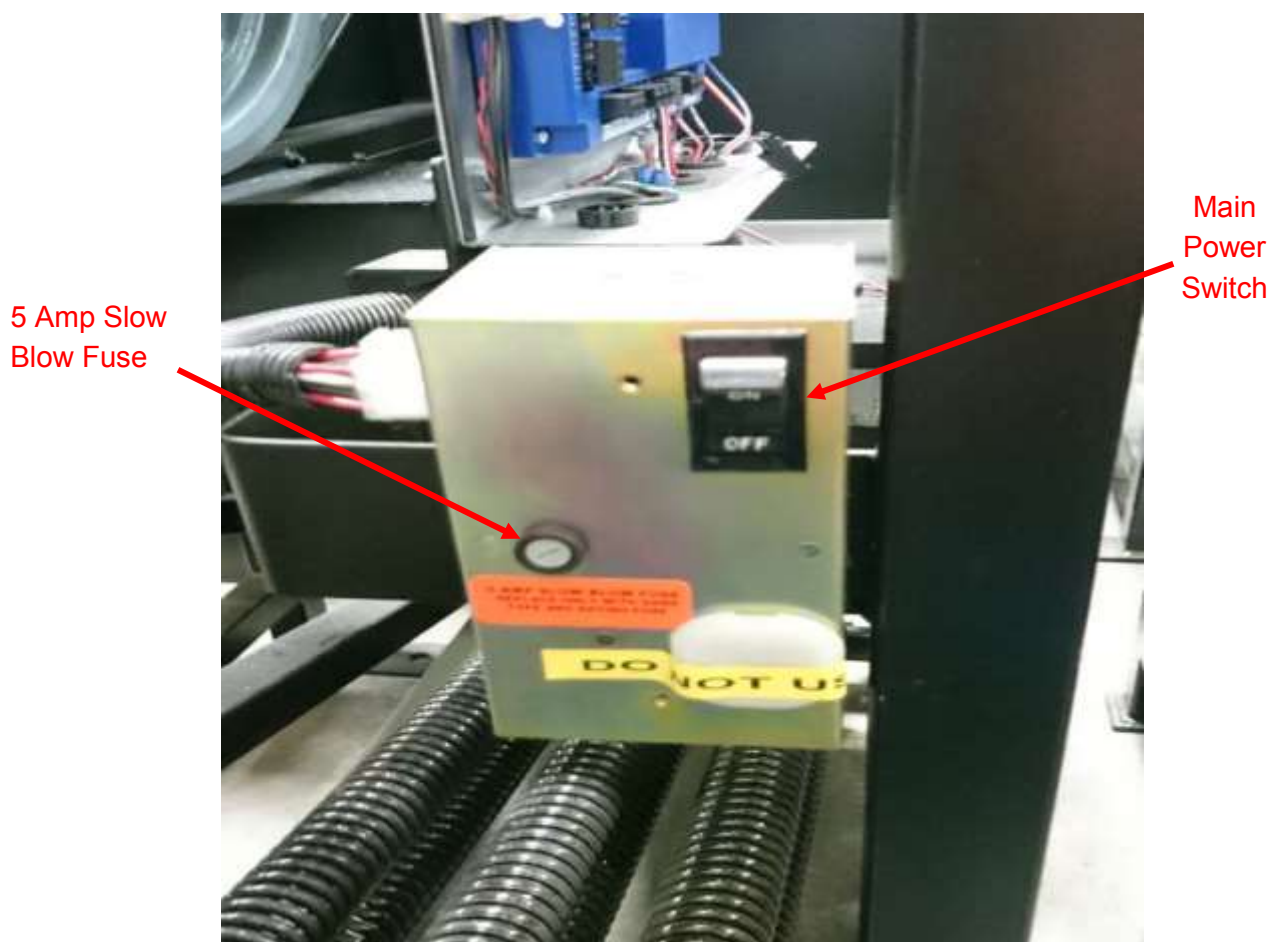


Figure 1.2 Components Housed in the Operator (**NOTE:** Picture may not depict exact



APeX Power Box Receptacle

The APeX power box receptacle is rated for only 1 amp of AC current draw. Use of high amp draw appliances (i. e. heat mats, heat tape, electric power tools) is not permitted to be powered off this receptacle. All heater, heat mat options or power tools shall be powered off the AC receptacle located underneath the battery shelf. Damage caused by not following these guidelines will not be the responsibility of the manufacturer.



ACCESSORY COMPONENTS

If your system came with accessory or optional components that require installation or setup, you must review this section for Operator Wiring & Testing. Instructions are provided by the component manufacturer. In general, those instructions provide guidance needed for installing and using these accessory components.

The following table lists the accessory components that may have been provided with your system.

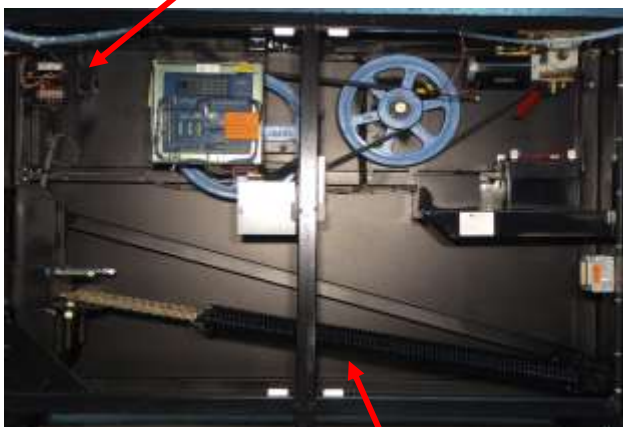
Component or System	Comments
<p>Note: Certain components should be considered mandatory on all systems. These are noted below and should be procured, installed, and tested before the system is commissioned and used by the End User.</p>	
<p>Vehicle Loops & Loop Detectors</p>	<p>These are required to restrict or limit gate operation under certain vehicle detection or in conjunction with access control vehicle presence. A socket for the loop detector electronic control modules are included on the control board. Installer must install loops in the roadway, install the control module (detector), complete the hookup, and program/adjust detector sensitivity for good interaction of the loops and the gate system.</p>
<p>External Entrapment Devices B1– Non Contact Obstruction Device (See approved list on Page 7) (Refer to Figure 5.1 for wire connections)</p>	<p>Used to stop and reverse the Gate Panel when closing. If an object passes through or blocks the beam, the Gate Panel will remain open while the beam is blocked. AutoGate's maximum length is 26'. Always check the photo beam instructions to assure sensors are properly set per the manufacturers instructions.</p> <p>If you did not order an photo beam sensor from AutoGate, an approved device list is on page seven (7) & MUST be installed in order to be in compliant with UL325 6th Edition and CSA 22.2 No. 247-14. Always follow the device manufacturer's instructions for proper installation.</p>
<p>Traffic Signal Lights—1 lens, 2 lens, or 3 lens (Ex: Red, Yellow, Green)</p>	<p>Used to warn of the system's presence and operation. AutoGate recommends a Red LED lens at all times, except when the Gate Panel/Drop Arm is in its fully open position, in which case we recommend a Yellow (amber) flashing lens.</p>
<p>Warning Signs, Reflective Tape, Warning Lights</p>	<p>Drivers should be alerted to the presence of a high-stopping power system, and that striking the system will cause injury or death. Speed limits should also be posted. Contact AutoGate for specific warning signs, reflective tape, and warning lights that can be affixed to the Gate Panel/Drop Arm.</p>

Section #2 PREPARATIONS PRIOR TO INSTALLATION

T/M (Transportation & Maintenance) Safety Pin Warning!

When you receive your system, it has a safety device called a T/M Safety Pin installed. (see Figures 2.1- 2.3 below). This pin is installed during shipping, installation, and whenever maintenance is being performed. **DO NOT remove this pin until the instructions in this manual directs you to do so!**

Figure 2.1 T/M Pin location from inside operator



Springs Are Under High Tension!—**CAUTION!!**

FIGURE 2.2



Figure 2.3

T/M Pin viewed from the operator and in the operator throat.



Keys are stored during transportation

SITE PREPARATION & PLANNING

Inspect the site and verify there are no underground utilities, overhead wires, or other obstructions that can affect your installation and use. Keep routine foot traffic away from the system to reduce the chance of pedestrians or site personnel contact with a moving system. A separate pedestrian gate or turnstile is required for the use of the system by anything other than vehicular traffic.

Determine if there are any accessory components to be installed with your system and necessary conduit used for traffic lights, in-ground loops, access control stations, etc. and factor them into your site layout and installation plan.

High voltage and control wiring must ***NOT*** be run in the same conduit.

Concrete Pads

Concrete pads are required to install the VPG Operator and Yoke. Along with securing the operator to the entry / exit point, the pad provides a fixed and adequate foundation to resist wind and maintain stability for many years of operation. Prior to pouring the concrete for the operator pad ensure the soil is undisturbed or compacted to local or governing standards. **(See DWG. 102-P)**

4' X 7' Operator Pad Options:

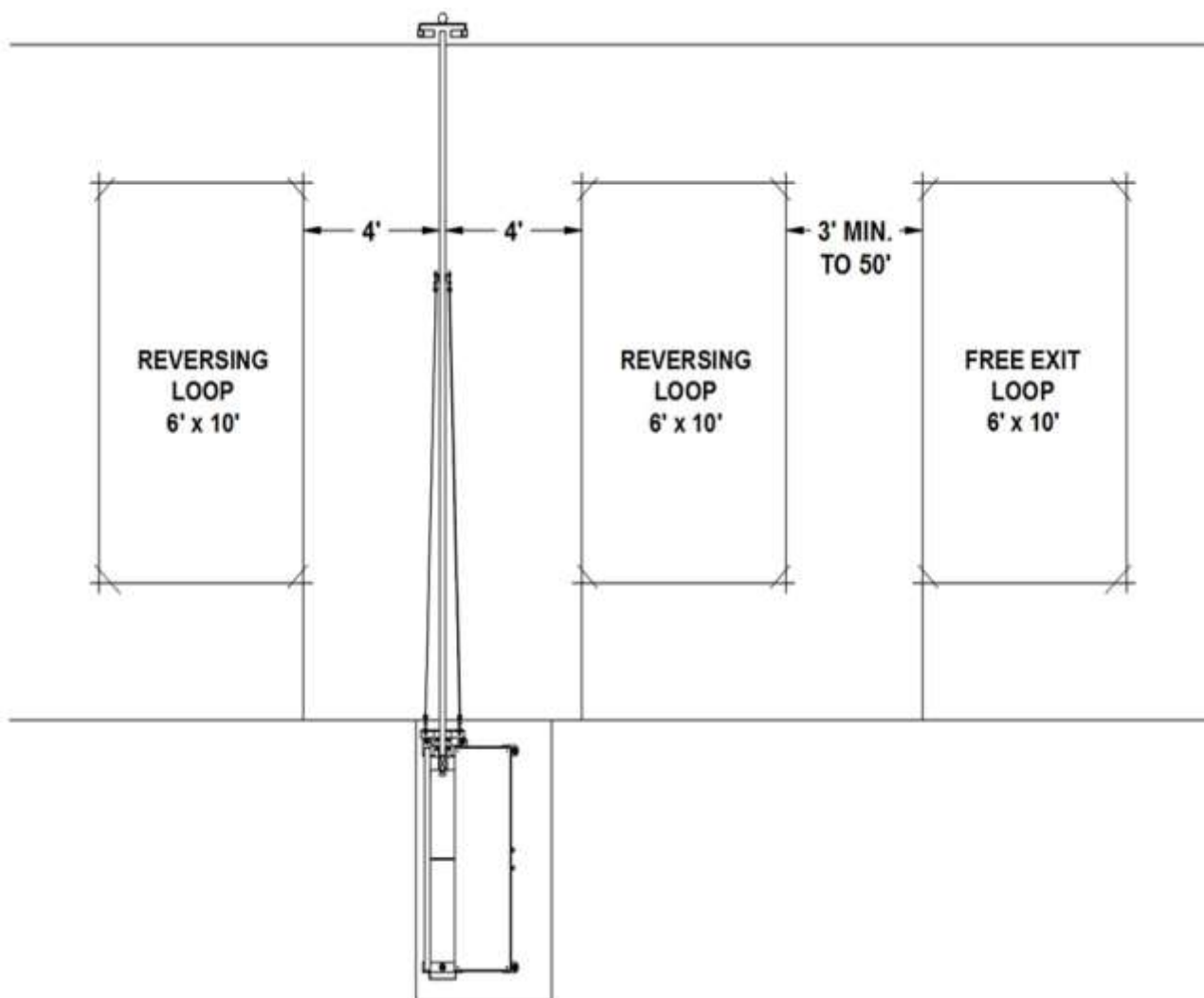
1. Full Pad, Minimum depth of 36" or below *local* frost line
2. 10"-12" thick pad with five (5) 12" dia. x 36" deep holes or below *local* frost line

Vehicle Loop Installation and Performance

Ground vehicle sensing loops are very common to gate sites. They are used for the detection of vehicles which then triggers the gate to do a specific action. Proper installation and placement is critical. If you purchased Pre-formed Loops carefully follow the enclosed installation instructions and use the diagram below for the proper placement of the ground loops. If you are constructing the loops on-site, be certain to use D.O.T. approved materials and methods.

Test the function of the loops thoroughly by using vehicles once installed to verify correct operation.

Figure 2.4



PREPARATIONS PRIOR TO INSTALLATION

RECOMMENDED TOOLS AND EQUIPMENT

Lifting Strap	Multi-Meter (DCV & AMPS)
Hammer & Level	Hammer Drill, 1/2 & 5/8 Bits
Grease Gun, Lithium Grease	Tape Measure
Screwdriver Sets (Flat & Phillips)	1/2" Drive Socket Set: 1/2", 9/16", 3/4", 15/16", 1-1/8"
Electrical Tape	Open End Wrenches: 1/2" 9/16", 3/4", 15/16", 1-5/16"
Wire Cutters/Strippers	Misc. Electrical Connectors
Chalk Line	Batteries (2) 12 VDC Group 24 Deep cycle marine

NOTE: Refer to manufacturer's instructions of Accessory Equipment for correct wire size and type.

RECEIVING & UNLOADING INSTRUCTIONS

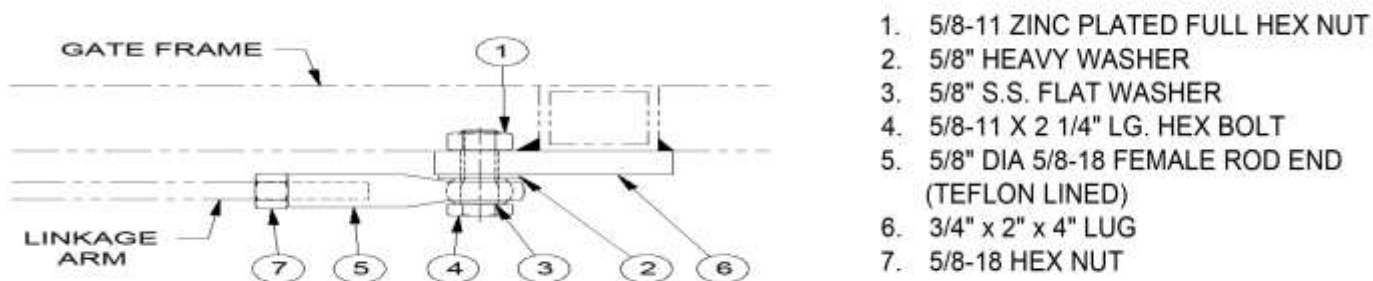
Unloading & Unpacking - Gate weight per foot varies with gate style & height and are approximate. Operator weighs 1,150 lbs., steel gates are 24 lbs. per foot and aluminum gates weigh 19 lbs. per foot.

1. Have adequate equipment ready to unload your Gate and Operator safely. Utilize a Liftgate service when available from the LTL carrier.
2. Before removing your Gate and Operator from the truck, inspect it for any visible damage and make sure the Gate Box was shipped upright. **(DO NOT DROP EITHER GATE OR OPERATOR BOX)**. Photograph and retain if damaged as well.
3. After uncrating your Operator, locate and remove the door lock keys attached to the Transport/Maintenance (T/M) Safety Pin. **DO NOT REMOVE T/M PIN. ONLY REMOVE HAIR PIN RETAINER TO REMOVE THE KEYS THEN REPLACE HAIRPIN. (See Figure 2.3)**
4. Any transmitter, antenna, or other ordered accessories will be boxed inside your operator cabinet.
5. Unpack gate panel crating very carefully.

Attaching Gate Panel/Drop Arm to the Operator

1. Position Gate on Operator Arm.
2. Use (1) SS 3/4"-10 x 4 1/2" (STEEL GATE) or (1) SS 3/4"-10 x 5" (ALUMINUM GATE) Bolt for the top connection. Use four (4) SS 1/2 x 1-1/2" Bolts for the bottom connection.
3. Insert the top bolt first and then the bottom four (4) bolts finger tight. Be certain gate is properly aligned before tightening. Tighten bottom bolts first, then tighten top bolt.
4. Locate the linkage hardware package and assemble to the Figure 3.1 below. You may have to push down on the gate to insert the Linkage Bolt.

Figure 3.1



Lifting Gate Panel/Drop Arm & Operator Assembly

To lift Gate & Operator use a lifting strap. The strap should be secured around Operator Arm and T/M Safety Pin or the top rail of the gate near the operator arm. See Figure 3.2 & 3.3

Figure 3.2



Figure 3.3



NOTE: It is recommended to attach Gate to Operator Arm **before** lifting (for better balance), but it is not mandatory. If using a Forklift to position Operator Only, lift from sides only! **Do not try to lift gate and operator together from the side.**

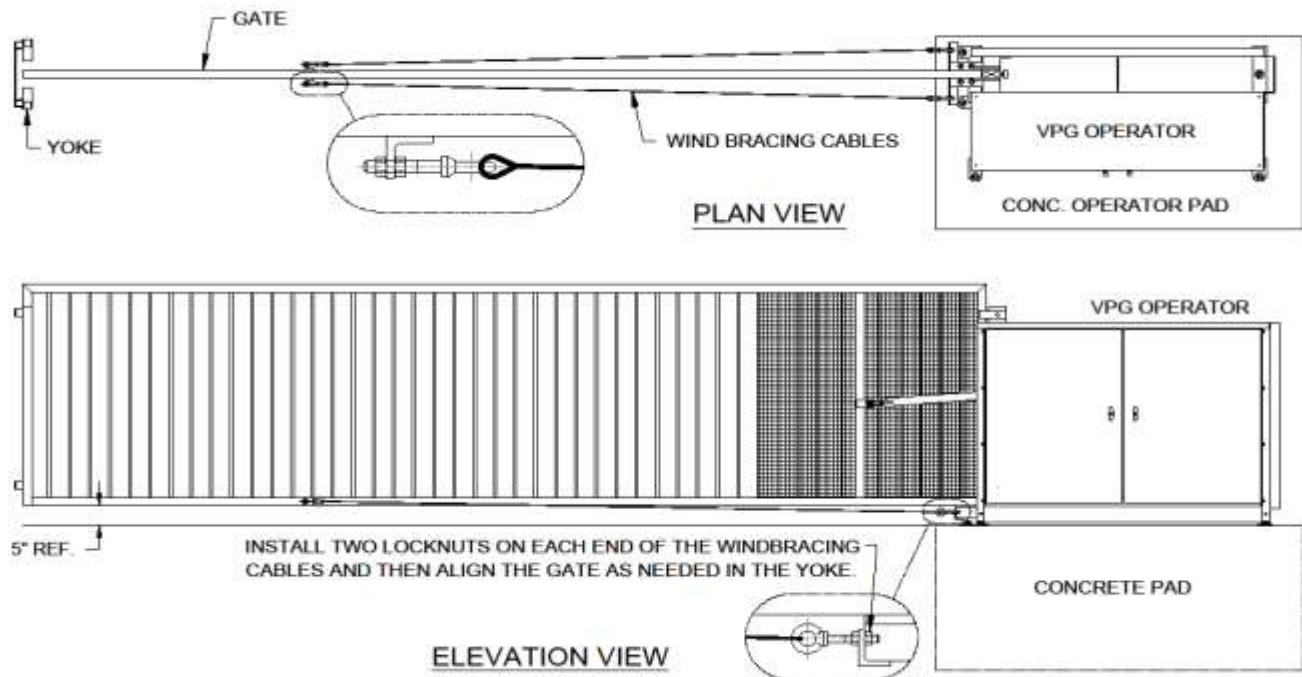
Positioning Gate Panel/Drop Arm & Operator

Refer to the site drawing for your specific order as there may be details unique to the installation.

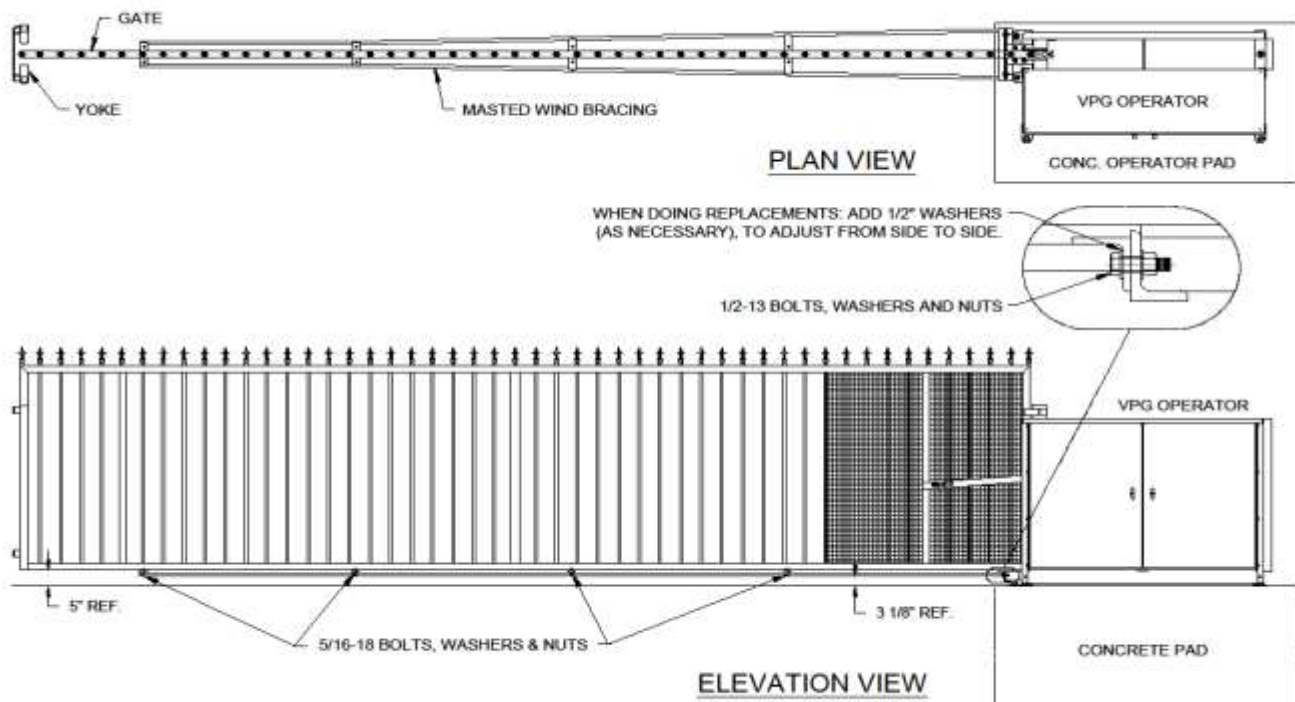
1. Place Gate & Operator Assembly on pad (**refer to DWG. 102C-L or -R**) so the end of the Gate is centered over the Yoke pad or intended yoke position for the site (for yoke styles mounted to posts, buildings, etc.). Allow a mini. three inches (3") from edge of pad to bolt holes to prevent concrete damage.
2. Position and align Pad Yoke and center under gate.
3. Secure **Operator** with (1) 5/8" dia. Wedge Bolt in rear; stop and check alignment on pad as well as gate panel/Drop Arm alignment before installing remaining anchor bolts.
4. Install remaining four (4) 5 1/2" x 5/8" dia. Concrete Anchor Bolts provided, (**level Gate Panel/Drop Arm and Operator on pad**, if necessary).
5. Secure Yoke with four (4) 1/2" dia. Anchor bolts (provided). If installing a Ground Yoke, allow a minimum space of two inches (2") between bottom of Gate and Yoke.

Installing Other Components

Cable Wind Bracing

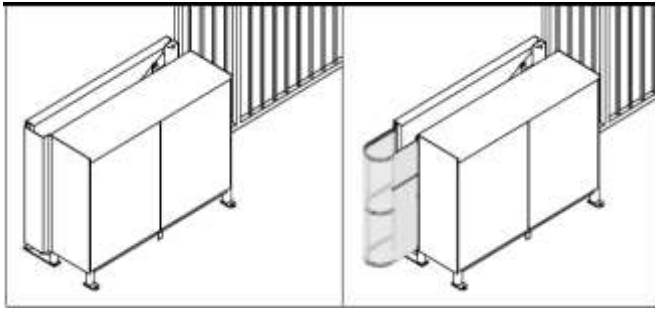


Masted Wind Bracing

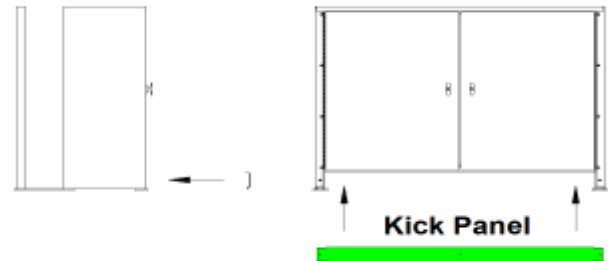


Installing Other Components

GATE GUARD



KICK PANEL: Attach the Kick Panel to the door side of the operator using the 3 # 12 x 3/4 TEK screws. See **green** example Kick Plate below.



NOTE: The area behind the operator is an entrapment zone. The installer must prevent or protect pedestrian access to this area by at least one or more of the following:

- Install factory supplied Gate Guard (shown above)
- Site installed fencing (shown below)
- Utilize Recommended Entrapment Protection Devices

Entrapment Zones (RED shaded areas)

WARNING!

THIS PAGE ILLUSTRATES THE MINIMUM KNOWN ENTRAPMENT ZONES. ANY OTHER ENTRAPMENT ZONES MUST BE MITIGATED BY THE INSTALLER IN ACCORDANCE WITH UL 325 & ASTM F2200 TO REDUCE THE RISK OF PROPERTY DAMAGE, INJURY OR DEATH. THE INSTALLER MUST REDUCE PUBLIC EXPOSURE TO POTENTIAL HAZARDS.

Fencing

Gate in closed position

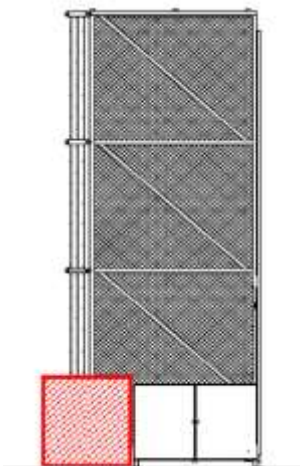
Fencing

Fencing as an option to restrict pedestrian access in this area.



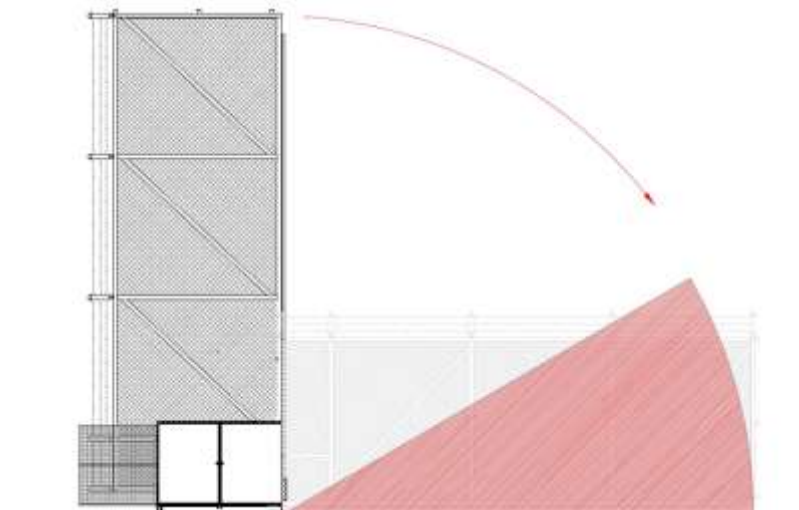
Opening Entrapment Zones

Gate in "OPEN" position below (shaded area) requires installer to install one of the following: Fencing, installation of provided gate guard, or B1 entrapment protection devices. It is the installer's responsibility to assess and evaluate the entrapment area for additional protection.



Closing Entrapment Zone

Below illustrates the minimum known entrapment zone when gate is closing. Installation of an approved B1 non-contact sensor (Photo Beam) is shown in **RED** including beam path.

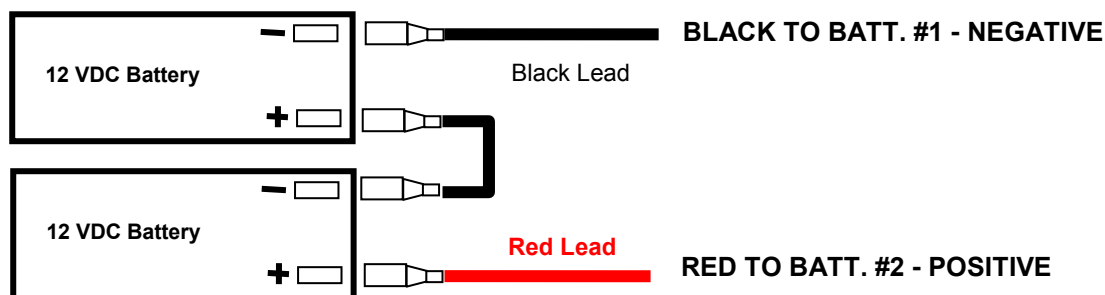


Connecting the Batteries

1. Connecting Batteries - Required

- A. Install two (2) Group 24 12 VDC Batteries (**not provided**) on the battery shelf. AutoGate recommends Group 24, 100 Amp hour deep cycle marine starting batteries for extended battery back up. At a minimum use two (2) 7AH batteries for battery back up. See drawing below for proper battery and jumper hook up. **BATTERIES MUST REST IN A LEVEL POSTION ON THE BATTERY TRAY TO AVOID ACID LEAKING FROM BATTERIES.**
- B. Install Jumper Wire (provided) from **Battery #1 - POSITIVE** to **Battery #2 - NEGATIVE** (See Below).
- C. Locate **RED** and **BLACK** Power Wires and connect:

NOTE: Battery back up duration will depend on the size of batteries, number of accessories and open/close cycles while being powered by the batteries.



WARNING!

TO REDUCE THE RISK OF ELECTRICAL SHOCK, THIS EQUIPMENT HAS A GFCI TYPE OUTLET. THIS OUTLET WILL ONLY ACCEPT A GROUNDING TYPE PLUG. IF THE PLUG DOES NOT FIT IN THE OUTLET, CONTACT A QUALIFIED ELECTRICIAN TO INSTALL THE PROPER OUTLET. DO NOT CHANGE THE PLUG IN ANY WAY.

Section #4 AC POWER CONNECTION

Connecting AC Power

1. Be certain Main Power Switch is OFF.
2. Wire incoming AC power to the 4 x 4 Box provided and turn on the breaker from your AC Source.
3. Turn Main Power Switch on at the Power Box.

NOTE: The A/C Power must be connected by a qualified, licensed Electrician, according to the [National Electric Code](#), and follow all State and Local codes. Refer to electrical block diagram Fig 4.1 on [Page 21](#) for additional information.

Power Box



A/C ELECTRICAL SUPPLY

MINIMAL REQUIREMENTS:

120 VAC, 15AMP CIRCUIT

**FOR CLASS 1 APPLICATIONS YOU
MAY NOT EXCEED 15 AMPS**

The APeX[®] power box turns the main power ON and Off to the APeX control board. A convenience outlet is provided for service tools and should **NOT** be utilized for appliances. Also located on the box is a five (5) amp slow blow fuse which provides protection for the transformer.

WARNING!

ADDITIONAL 120 VAC SURGE PROTECTION IS RECOMMENDED BUT NOT REQUIRED. SURGE UNIT **MUST** BE GROUNDED TO A TRUE EARTH GROUND.

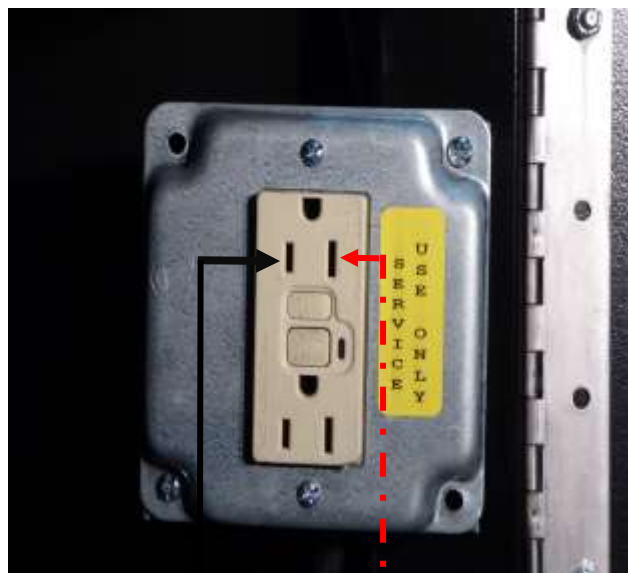
AC OUTLETS ARE **HOT** AT ALL TIMES. OUTLETS ARE FOR SERVICE USE ONLY.

OPERATOR **MUST** BE GROUNDED TO TRUE EARTH GROUND LUG LOCATED ON FRAME

Pre-Mounted 120VAC Electrical Outlet

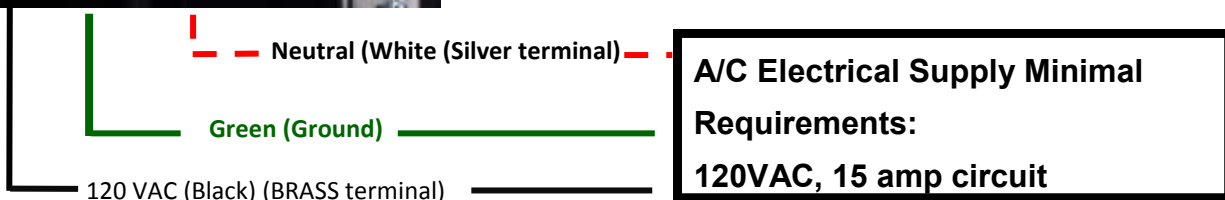
Located below battery shelf

Figure 4.1



Warning!

***AC Outlets are HOT at all times.
Outlets are for service use only.***



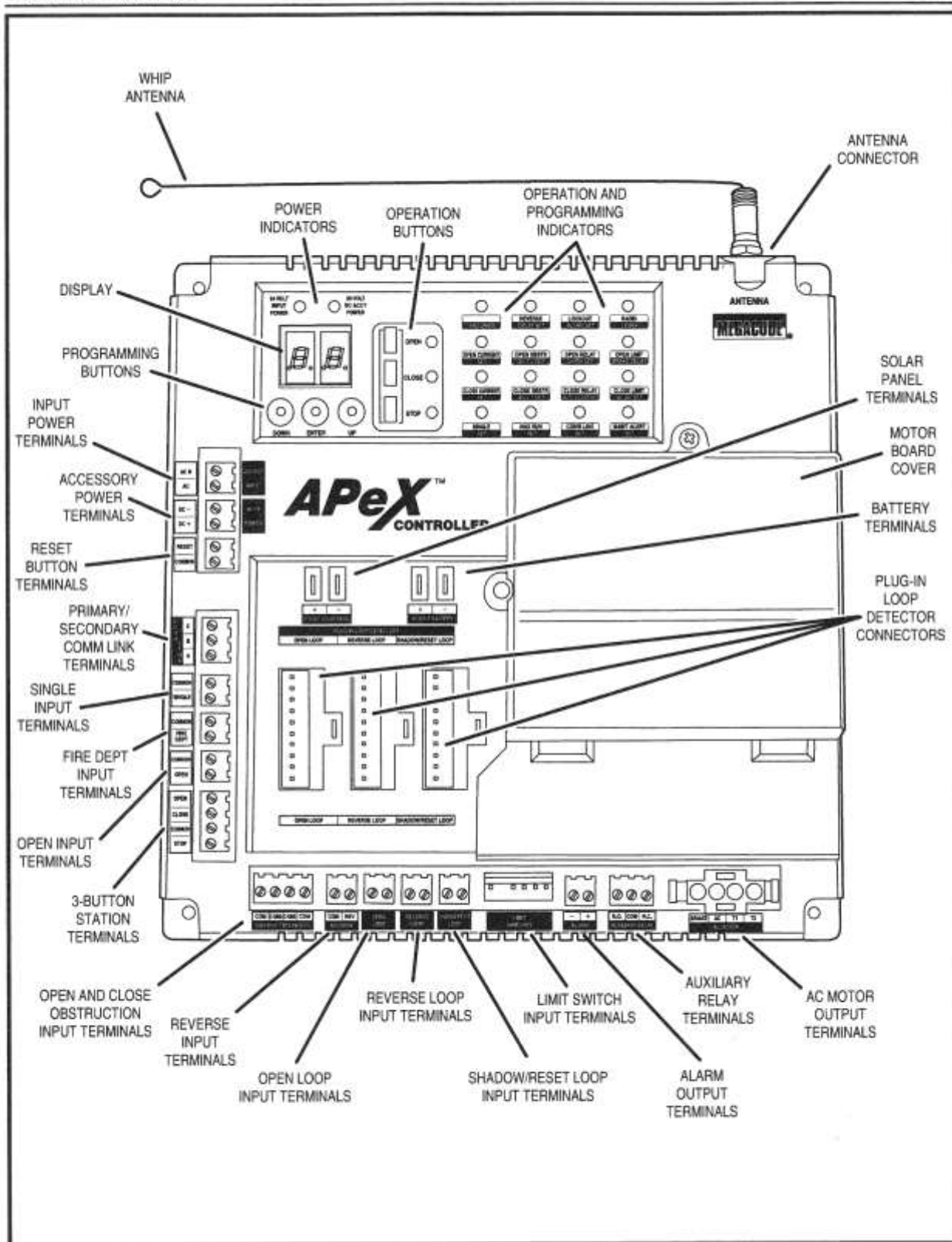
INITIAL TESTING OF YOUR VPG SYSTEM

NOTICE! THIS SYSTEM REQUIRES ONE OR MORE APPROVED EXTERNAL ENTRAPMENT PROTECTION DEVICES INSTALLED PRIOR TO ANY TESTING!

1. Turn off all power to the operator.
2. Locate the desired external entrapment devices and wire them to the control board as instructed on Page 25-29.
3. Once all intended devices are installed and wired, return power to the operator.
4. Test the operator using the open, close, stop buttons located on the control board.
5. Test each entrapment device for proper function per this manual and the manufacture's instructions.
6. Read the next several pages for programming, accessory wiring and set-up options.






























Section #5 APeX II

Controller Features



INDICATOR DEFINITION		INDICATOR WHEN LIT DURING	INDICATOR WHEN LIT
OPERATION	PROGRAMMING	NORMAL OPERATION	DURING PROGRAMMING
24 VOLT INPUT POWER		LOW VOLTAGE AC POWER IS PRESENT	
24 VOLT DC ACC. POWER		LOW VOLTAGE DC POWER IS PRESENT	
OPEN		OPEN SIGNAL PRESENT FROM THE INTERNAL RECEIVER OR AN EXTERNAL DEVICE CONNECTED TO THE OPEN INPUT TERMINAL	
CLOSE		CLOSE SIGNAL IS PRESENT FROM A DEVICE CONNECTED TO THE CLOSE TERMINAL	
STOP		STOP INPUT TERMINAL IS OPEN AND NOT CONNECTED TO COMMON	
PROGRAM			CONTROLLER IN PROGRAMMING MODE
REVERSE	DELAY SET	SIGNAL FROM REVERSING DEVICE IS PRESENT	SET REVERSE DELAY TIME
LOCKOUT	ALARM SET	CONTROLS AND OPERATOR ARE LOCKED OUT BECAUSE OF EXISTING TROUBLE CONDITION	SET RUN ALARM AND PRE-START ALARM
RADIO	LEARN	BUILT-IN RECEIVER IS DETECTING A RADIO SIGNAL FROM A REMOTE CONTROL	TRANSMITTERS CAN BE ENTERED INTO MEMORY (UP TO 40 TRANSMITTERS)
OPEN CURRENT	SET	MOTOR CURRENT HAS EXCEEDED THE OPEN CURRENT SETTING WHILE OPENING	SET MAXIMUM OPEN CURRENT
OPEN OBSTRUCTION	MGT 2 SET	OPEN OBSTRUCTION TERMINAL; CONNECTED TO COMMON BY BEAM OR SAFETY EDGE, OR SIGNAL FROM MGT OBSTACLE TRANSMITTER	SET MGT #2 FUNCTION
OPEN ELAY	LH/RH/SET	OPEN RELAY IS ACTIVATED	SET LEFT-HAND OPERATION
OPEN LIMIT	BRAKE DELAY	OPEN LIMIT SWITC IS ACTIVATED	
CLOSE CURRENT	SET	MOTOR CURRENT HAS EXCEEDED THE CLOSE CURRENT SETTING WHILE CLOSING	SET MAXIMUM CLOSE CURRENT
CLOSE OBSTRUCTION	MGT 1 SET	CLOSE OBSTRUCTION TERMINAL; CONNECTED TO COMMON BY BEAM OR SAFETY EDGE, OR SIGNAL FROM MGT OBSTACLE TRANSMITTER	SET MGT.#1 FUNCTIO
CLOSE RELAY	AUTO CLOSE SET	CLOSE RELAY IS ACTIVATED	SET AUTO CLOSE TIME
CLOSE LIMIT	AC DC SET	CLOSE LIMIT SWITCH IS ACTIVATED	SET MOTOR TYPE
SINGLE	SET	SINGLE TERMINAL CONNECTED TO COMMON BY AN EXTERNAL PUSHBUTTON OR RADIO	SET SINGLE BUTTON INPUT FUNCTION
MAX RUN	SET	MXIMUM RUN TIMER HAS BEEN EXCEEDED	SET MAXIMUM RUN TIME
COMM LINK	SET	DUAL OPERATION CONNECTED DETECTION BLINKS IF CONNECTION HAS FAILED	
MAINT. ALERT	SET	MAINTENANCE IS REQUIRED ON OPERATOR	SET MAINTENANCE ALERT CYCLE COUNT

APEX FUNCTION DISPLAY INDICATIONS

 "RL" LEFT OR RIGHT HAND OPERATION			
 "PM" SINGLE OR DUAL GATE	 "SB" SINGLE BUTTON INUT SETUP	 "LP" LOW POWER MODE	 "MO" MOTOR TYPE SELECTION
 "AC" AUTO CLOSE TIMER	 "SM" STAGGER MODE	 "FS" POWER FAILURE MODE	 "RA" RADIO ENABLE
 "RP" RUN ALARM PRE-START ALARM	 "ST" STAGGER TIME	 "SS" SOFT ATART/STOP DURATION	 "TL" LEARN TRANSMITTERS
 "OC" MAXIMUM OPEN CURRENT	 "AR" AUXILIARY RELAY MODE	 "CT" RESET CYCLE CURRENT	 "TD" DELETE TRANSMITTERS
 "CC" MAXIMUM CLOSE CURRENT	 "RD" REVERSE DELAY TIME	 "MA" MAINTENANCE ALERT TRIGGER	 "ML" LEARN MGT TRANSMITTERS
 "AD" ADVANCED PROGRAMMING	 "CP" CONSTANT PRESSURE MODE	 "MT" MID-TRAVEL STOP POSITION	 "MD" ERASE MGT TRANSMITTERS
 "RT" MAXIMUM RUN TIMER	 "SP" SHADOW LOOK OPEN INHIBIT	 "AT" ANTI-TAILGATE ENABLE	 "CL" RESET TO FACTORY DEFAULTS

APeX II FACTORY SETTINGS

Refer to this setting sheet in the event you need to factory reset your APeX II Control board.

RL-RH (Righthand)/LH (Lefthand)

PM-59

AC-06

RP-OF

OC-10

CC-10

AD-ON

RT-25

SB-00

AR-OF (Unless using a Strobe then ST)

RD-01

6d-NOT USED

CP-OF

SP-OF

LP-OF

FS-SA (May not show yet)

SS-3 (May not show yet)

CT-NOT USED

MA-NOT USED

MT-OF

AT-OF

RA-OF

MO-d2 (May not show yet)

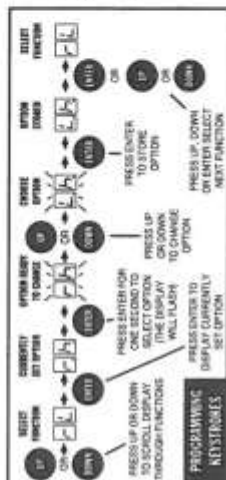
CL-NOT USED (go back to FS & SS

Test Operator

For more detailed instructions and servicing issues refer to our website: (www.autogate.com) or (www.nortekcontrol.com/literature.php)



PRESS UP & DOWN BUTTONS FOR 1-SECOND TO ENTER PROGRAMMING



APEX FUNCTION DISPLAY INDICATIONS

ML	Low Power Mode	LP	Low Power Mode
FS	Power Failure Mode	FS	Power Failure Mode
AC	Auto Close	AC	Auto Close
AL	Run Alarm	AL	Run Alarm
OC	Maximum Open Current	OC	Maximum Open Current
CC	Maximum Close Current	CC	Maximum Close Current
AD	Advanced Programming	AD	Advanced Programming
RT	Maximum Run Time	RT	Maximum Run Time
SB	Single Button Input Setup	SB	Single Button Input Setup
SM	Stagger Mode	SM	Stagger Mode
ST	Stagger Time	ST	Stagger Time
AR	Auxiliary Relay Mode	AR	Auxiliary Relay Mode
TD	Reverse Delay Time	TD	Reverse Delay Time
BD	Brake Delay Time	BD	Brake Delay Time
CP	Constant Pressure Mode	CP	Constant Pressure Mode
SP	Shadow Loop Open Prevention	SP	Shadow Loop Open Prevention
TL	Learn Transmitters	TL	Learn Transmitters
MT	Mid-Travel Stop Position	MT	Mid-Travel Stop Position
AT	Anti-Tailgate Enable	AT	Anti-Tailgate Enable
RA	Radio Enable	RA	Radio Enable
TL	Learn Transmitters	TL	Learn Transmitters
TD	Delete Transmitters	TD	Delete Transmitters
ML	Learn Mid Transmitters	ML	Learn Mid Transmitters
MD	Erase Mid Transmitters	MD	Erase Mid Transmitters
MO	Motor Type Selection	MO	Motor Type Selection
CL	Reset to Factory Defaults	CL	Reset to Factory Defaults

FUNCTION **CT***

PRESS ENTER TO START THE CYCLE COUNT DISPLAY

IT INPUT THE DISPLAY

EXAMPLE: ABOVE SHOWN 1600 CYCLES

NOTE: PRESS ENTER FOR 2 SECONDS WHILE THIS SET FUNCTION IS DISPLAYED TO RESET THE CYCLE COUNT TO ZERO

RESET CYCLE COUNT

FUNCTION **TO***

ANTI-TAILGATE FUNCTION DISABLED

ANTI-TAILGATE FUNCTION ENABLED

PRESS UP OR DOWN TO CYCLE THROUGH OPTIONS

PRESS ENTER TO SELECT AN OPTION

ANTI-TAILGATE

FUNCTION **NA***

INTERNAL RADIO RECEIVER DISABLED

INTERNAL RADIO RECEIVER ENABLED

PRESS UP OR DOWN TO CYCLE THROUGH OPTIONS

PRESS ENTER TO SELECT AN OPTION

RADIO ENABLE

FUNCTION **ML***

PRESS ENTER TO LEARN MID TRANSMITTERS

THE DISPLAY WILL SHOW "ML" FOR 16 SECONDS WHILE THE CONTROLLER IS READY TO LEARN A NEW TRANSMITTER

ACTIVATE THE SET TRANSMITTER. THE DISPLAY WILL SHOW "ML" FOR 16 SECONDS WHILE THE CONTROLLER IS READY TO LEARN A NEW TRANSMITTER

PRESS UP OR DOWN TO SELECT THE SET FUNCTION

PRESS ENTER TO ACCEPT THE SELECTION

THE DISPLAY WILL SHOW "ML" FOR 16 SECONDS WHILE THE CONTROLLER IS READY TO LEARN A NEW TRANSMITTER

LEARN MID TRANSMITTERS

FUNCTION **CL***

WHILE "CL" IS DISPLAYED, PRESS ENTER

ALL PROGRAMMED DATA WILL BE CLEARED AND THE FACTORY DEFAULTS WILL BE STORED IN MEMORY

NOTE: THIS FUNCTION WILL NOT ERASE TRANSMITTERS, CURRENT SENSE VALUES, OR MOTOR TYPE

RESET TO FACTORY DEFAULTS

FUNCTION **MA***

DISABLES THE MAINTENANCE ALERT FUNCTION

SETS THIS MAINTENANCE ALERT TRIGGER FOR 1, 10, 100, OR 25 THOUSAND CYCLES

RESETS THE MAINTENANCE ALERT TRIGGER AND SETS THE MAINTENANCE ALERT COUNT TO ZERO

MAINTENANCE ALERT TRIGGER

FUNCTION **MT***

MID-TRAVEL STOP POSITION

SET LENGTH OF STOPPING TIME FROM 1 TO 10 SECONDS

PRESS UP OR DOWN TO CYCLE THROUGH OPTIONS

PRESS ENTER TO SELECT AN OPTION

MID-TRAVEL STOP POSITION

FUNCTION **TL***

LEARN TRANSMITTERS

PRESS ENTER FOR EACH TRANSMITTER (UP TO 48 TRANSMITTERS TOTAL)

THE DISPLAY WILL SHOW "TL" FOR 16 SECONDS WHILE THE CONTROLLER IS READY TO LEARN A NEW TRANSMITTER

ACTIVATE THE TRANSMITTER

THE DISPLAY WILL SHOW "TL" FOR 16 SECONDS WHILE THE CONTROLLER IS READY TO LEARN A NEW TRANSMITTER

LEARN TRANSMITTERS

FUNCTION **MD***

ERASE MID TRANSMITTERS

THE DISPLAY WILL SHOW "MD" FOR 16 SECONDS WHILE THE CONTROLLER IS READY TO ERASE ALL MID TRANSMITTERS

PRESS ENTER TO ERASE ALL MID TRANSMITTERS

THE DISPLAY WILL SHOW "MD" FOR 16 SECONDS WHILE THE CONTROLLER IS READY TO ERASE ALL MID TRANSMITTERS

ERASE MID TRANSMITTERS

Linear
Building On Innovation

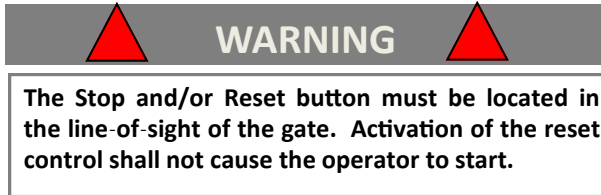
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(760) 438-7000 - Toll Free FAX (800) 468-1340
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Error Indications

During abnormal operation, the Controller's displays and beeper will indicate the error that has occurred.

Entrapment

If an entrapment condition occurs detected by two (2) repeated open or close obstruction triggers, the Controller will lock the operator out. The beeper will sound constantly and the gate will not open. To reset the Controller press the **STOP** button or the **RESET** button on the operator's cover.



COMM LINK Connection Failure

In dual gate installations, if there is a connection failure between the two operators, the COMM LINK indicator will blink once a second. During this condition, the gate will not operator, except if triggered by the FIRE DEPT input, which functions normally.

MGT Obstacle Transmitter Trouble

If any MGT transmitters are used with the operator. Their supervision feature will alert the controller if there is any trouble with the transmitter. MGT transmitters send hourly status reports and will send low battery reports when the transmitter has a low battery. The MGT transmitters also have a tamper detection switch that will trigger when their case is opened.

When the Controller detects a low transmitter battery, a tamper signal, or missing transmitter status reports, the gate will still operate normally, but the beeper will change as follows:

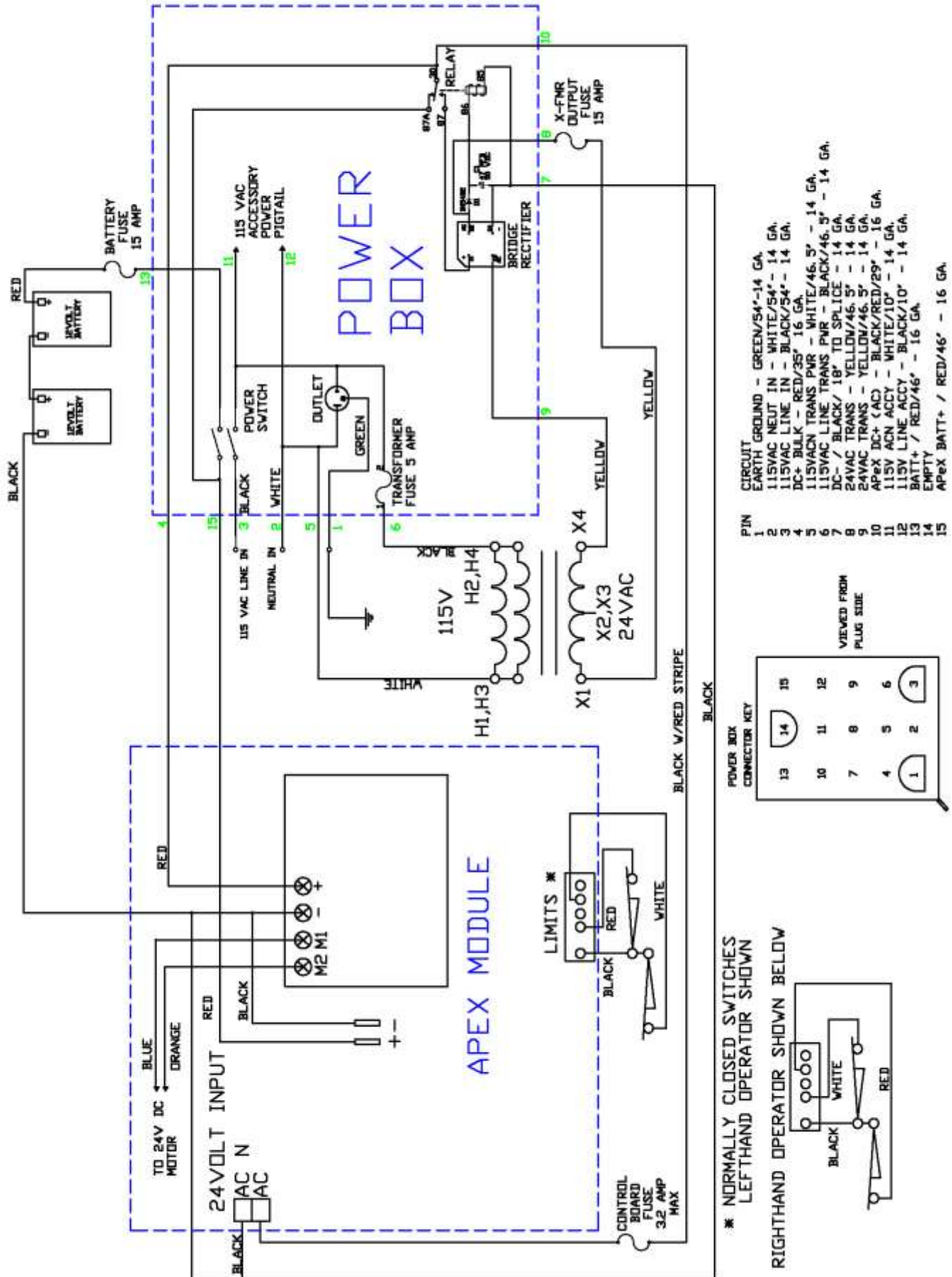
- The pre-start alarm will be twice as fast.
- The run alarm will beep twice as fast and continue for five (5) minutes after the gate stops.
- The gate should "chirp" every five (5) seconds when the gate is idle.

Correct the trouble close the case, replace the battery, or replace transmitter to clear the obstacle transmitter trouble indications.

MAXIMUM RUN TIME EXCEEDED

If the **Maximum Run Time** is exceeded, the Controller stops the operator the same as if double obstacle has occurred in an entrapment condition. The entrapment alarm sounds constantly, and is cleared by pressing the **STOP** button or the **RESET** button on the cover. After the **STOP** and **RESET** button is pressed, because the **Maximum Run Timer** has been exceeded, the sounder will be beep every five (5) seconds. The next operation of the gate will clear the indication.

CONTROLLER ERROR CAUSES AND INDICATIONS		
ERROR CASUE	ERROR INDICATION	HOW TO CLEAR
TWO SAFETY REVER-SALS (ON SINGLE GATE OR ON EITHER DUAL GATE)	En 00, CONTINOUS ALARM BEEPER, GATE DISABLED	PRESS STOP BUTTON
MAXIMUM RUN TIMER EXCEEDED ON OPENING	En 01, AND MAX RUN LED, CONTINOUS ALARM BEEPER, GATE DISA-BLED	PRESS STOP BUTTON, CLEARS CONTINOUS ALARM, THE DOUBLE BEEP EVERY FIVE (5) SECONDS UNTIL NEXT OPERATION
MAXIMUM RUN TIMER EXCEEDED ON OPENING	En 02, AND MAX RUN LED, CONTINOUS ALARM BEEPER, GATE DISA-BLED	PRESS STOP BUTTON, CLEARS CONTINOUS ALARM, THE DOUBLE BEEP EVERY FIVE (5) SECONDS UNTIL NEXT OPERATION
COMM LINK FAILURE	En 03, AND COMM LINK LED, CONTINOUS ALARM BEEPER FOR 1 MI-NUTE, GATE DISA-BLED (EXCEPT FOR FIRE DEPT. INPUT)	PRESS STOP BUTTON CLEARS CONTINOUS ALARM
GATE FULL OPEN RESULTING FROM FIRE DEPT. INPUT	En 04, GATE DISABLED	PRESS STOP BUTTON
FAIL SAFE OR FAIL SECURE BECAUSE OF BATTERY VOLTAGE DROPS BELOW 21.6 VDC DUE TO AC POWER LOSS	En 05, GATE DISABLED	BATTERY VOLTAGE MUST RISE ABOVE 24VDC
OTHER CONTROLLER IN ENTRAPEMENT (DUAL GATE)	En 06, GATE DISABLED	CLEAR ENTRAPEMENT ON OTHER (PRESS STOP)
LOW AC VOLTAGE AT CONTROLLER	En 07, GATE DISABLED	RESTORE AC POWER TO NORMAL LEVEL
INPUT TRIGGERED DURING ENTRAPE-MENT LOCKOUT	En 08, GATE DISABLED	PRESS STOP BUTTON
COMPATIBILITY ROBLEM	En 09, GATE DISABLED	UPDATE FIRMWARE AND RESET BOTH PAIRED CONTROLLERS
EEPROM PROBLEM	En 10, GATE DISABLED	TRY RESET, CALL TECH SUPPORT
DC MOTOR MISMATCH	En 11, GATE DISABLED	REPROGRAM MOTOR TYPE OR CHANGE DC MOTOR BOARD, NEXT GATE MOVEMENT WILL RETRY DC MOTOR CHECK
MOTOR FAILURE (NOTE: WIRING MORE THAN A HALF AMP OF ACCESSOIRES OFF BOARD CAN ALSO CASUE EN12)	En 12, GATE DISABLED	REPLACE MOTOR (CHECK ACCESSORY DRAW OFF CONTROL-LER BOARD)
AC POWERLOSS IN OPEN OR CLOSE IM-MEDIATE POWER FAIL MODE	En 13	REAPPLY AC POWER
MAXIMUM RUN TIM-ER EXCEEDED AFTER AC POWER LOSS	En 14	BATTERY VOLTAGE MUST RISE ABOVE 24 VOLTS
MGT SUPERVISORY CONDITION(TAMPER, LOW BATTERY, MISS-ING HOURLY STATUS)	FAST BEEPS DURING PRESTART, FAST BEEP RUN ALARM, CHIRP EVERY FIVE (5) SECONDS AT IDLE	CLEARS WHEN MGT CONDITION CLEARS



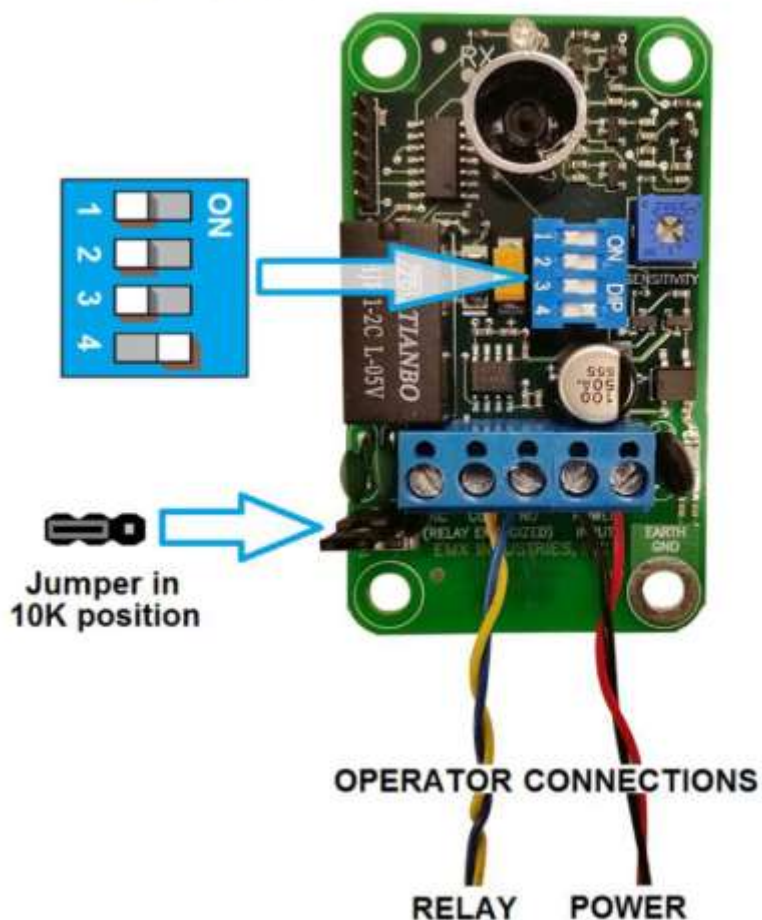
EMX IRB-MON

1. Connect power wires from APeX II Controller ACCY Power terminals to the EMX IRD-MON Power terminals. Polarity is not an issue.

2. Connect relay wires from EMX IRD-MON N.O. & COM terminals to the APeX II C-OBS & COM (Obstruction Inputs).

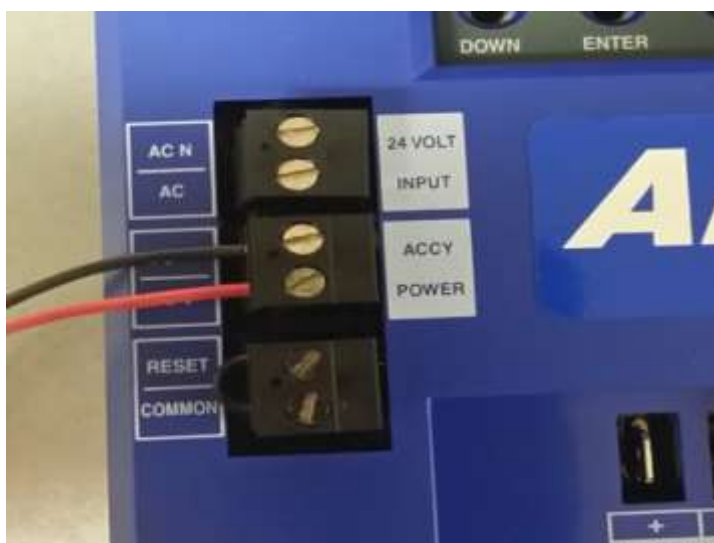
3. Make sure the pin jumpers are in the correct positions and the #4 DIP Switch is in the ON position with #1 thru #3 switches in the OFF position

IRB-MON set-up for relay operation, 10K resistive termination



APEX BEAM ACCESSORY CONNECTIONS

POWER



SIGNAL



EMX IRB-RET

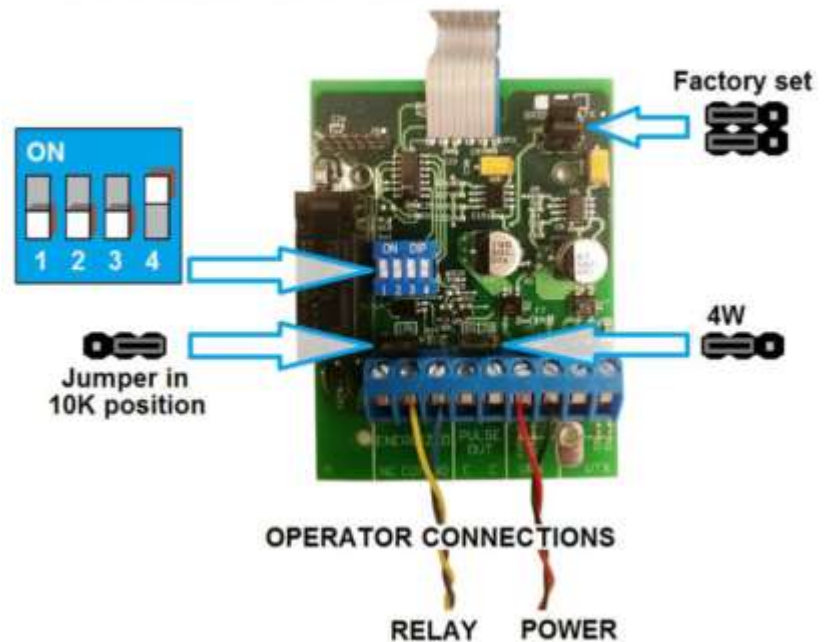
Refer to Figure 5.1

1. Connect power wires from APeX II Controller ACCY Power terminals to the EMX IRD-RET VRX Power terminals. Polarity is not an issue.

2. Connect relay wires from EMX IRD-RET N.O. & COM terminals to the APeX II C-OBS & COM (Obstruction Inputs).

3. Make sure the pin jumpers are in the correct positions and the #4 DIP Switch is in the ON position with #1 thru #3 switches in the OFF position.

**IRB-RET set-up for relay operation,
10K resistive termination**



Miller Edge Prime-Guard-Rely

Refer to Figure 5.1

1. Connect power wires from APeX II Controller ACCY Power terminals to the ME PG-RX-R Power terminals. Polarity is not an issue.

2. Connect relay wires from Miller Edge PG-RX receiver N.O./10K & COM terminals to the APeX II C-OBS & COM (Obstruction Inputs).

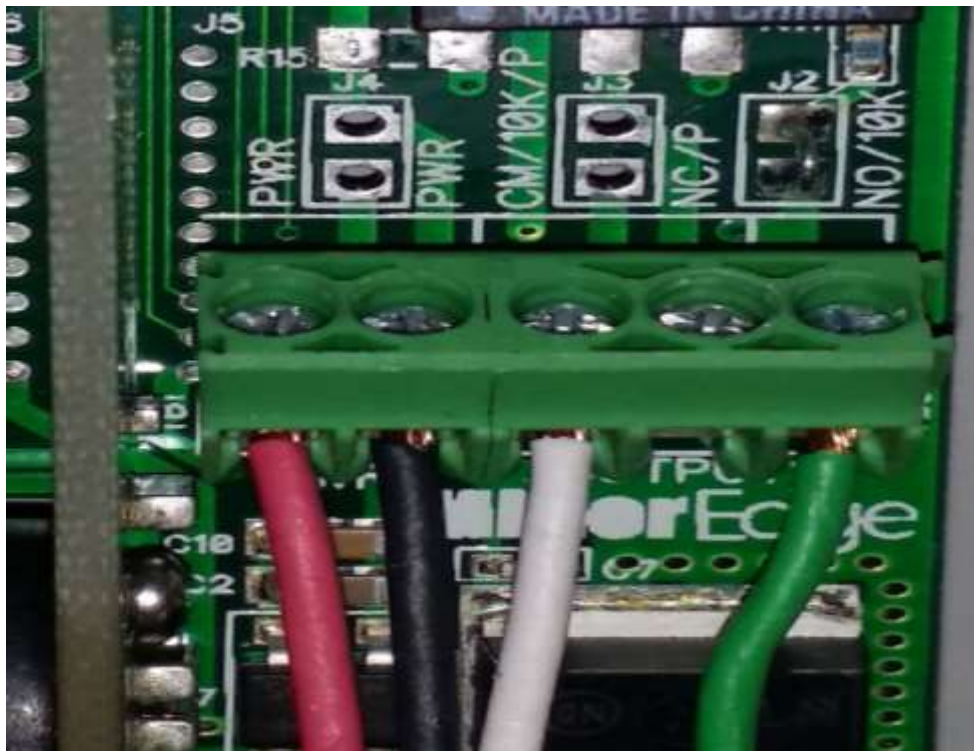
3. Connect power wires from the APeX ACCY terminals to the Miller Edge PG-RX transmitter power terminals. Again, polarity is not an issue.



Miller Edge Reflecti-Guard-Relay

Refer to Figure 5.1

1. Connect power wires from APeX II Controller ACCY Power terminals to the ME RG-R Power terminals. Polarity is not an issue.
2. Connect relay wires from Miller Edge RG-R N.O./10K & COM terminals to the APeX II C-OBS & COM (Obstruction Inputs).
3. Align reflector per instructions by Miller Edge



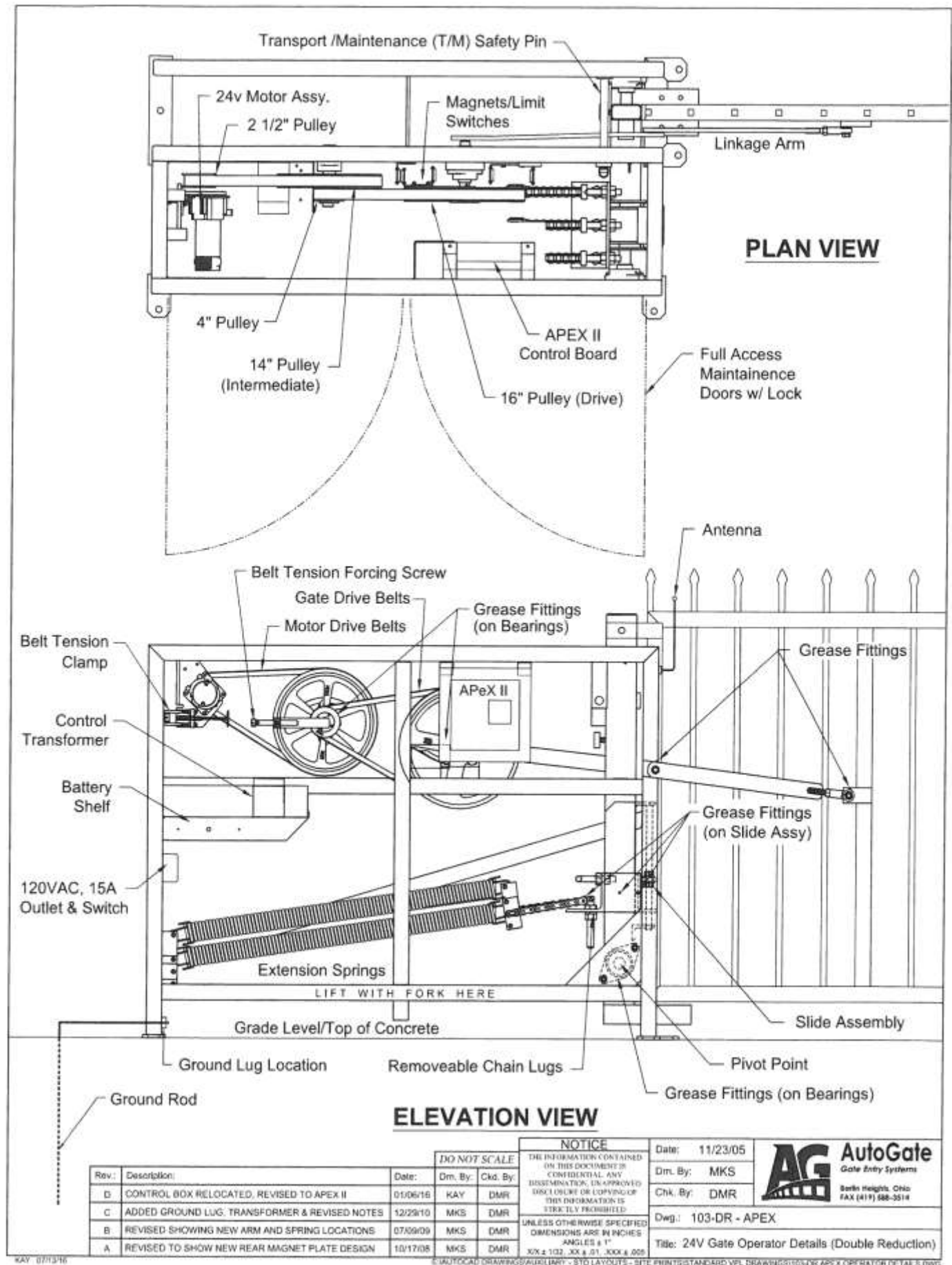
MAINTENANCE

The basic electrical and mechanical systems require only minimum routine maintenance. The following items should be checked and serviced periodically depending on amount of use.

ITEM	RECOMMENDED MAINTENANCE
Grease pivot points on Linkage Assembly (“LUBRIPLATE ‘R’ LOW TEMP” Grease)	10,000 cycles or 6 months
Grease all bearings: (2) Operator Arm, (4) Bullwheel Shafts	10,000 cycles or 6 months
Grease Chain Tension Bolt and Lube Chain & lightly coat springs	10,000 cycles or 6 months
Check belts for wear and tightness. (Belt flex between motor and Intermediate sheaves is 1/2” deflection at 10 lbs. force and between intermediate and final drive sheaves should be tightened to minimal deflection). Belt(s) loose or worn require replacement.	Every 6 months
Check battery water level, use distilled water only (Not required on maintenance-free)	Every 6 months
Clean snow/ice off of gate (Balance correctly, gate will temporarily tolerate an additional 10 lb. of wt.)	As needed
Clean lenses on Photocells or Reflectors	As needed
Lubricate (Graphite Oil) all lock cylinders and mechanisms	Every 6 months
Check and verify proper operation of all entrapment devices.	Every month
Check and verify proper operation of inherent reversing feature.	Every month
Check gate balance	Four months after install, then annually

Touch-Up Paint

For scratches and following minor repairs use Rustoleum® Painters Touch 2x Ultra Cover to match the AutoGate Standard Colors. All colors Gloss Black, Dark Gray, Kona Brown, Hunter Green, & White.



MKS DE115/14

SPRING CHANGING INSTRUCTIONS

ONLY AUTHORIZED PERSONNEL SHOULD PERFORM SPRING CHANGES

TOOLS REQUIRED: 5/16" (Nut Driver), 1/2", 1 1/8", 1 5/16" Open End Wrenches

Step 1) For ease of access, remove the door and end panel nearest the gate.

Step 2) Remove any upper "T" bolts completely

Step 3) Loosen the top adjusting nut of the slide assembly. Thread the nut up to within four inches (4") of the top of slide mechanism.

Step 4) You will now raise the gate. (**DO NOT** release the disengage lever!) Initiate the gate to open, immediately move to the gate and help raise it open, once the slide moves up, hold on the bottom rail of the gate until fully open. The gate may bounce slightly, there will be a loud bang but no damage will occur.

Step 5) Turn Off Power before gate "times out" and tries close. Insert T/M Pin.

Step 6) Using a 1 5/16 wrench, loosen and remove the chain tension bolt with the damaged spring.

Step 7) Replace damaged spring

Step 8) Replace chain tension bolt. **NOTE:** Grease fitting must point up! Tighten bottom nut. **NOTE:** Chain MUST remain level and not twisted once tightened.

Step 9) Remove T/M Pin and Restore power.

Step 10) Lowering the gate. Initiate the gate to close and at the same time, assist the gate down by pulling on the bottom rail of the gate. The slide will move down and another loud bang as the gate is lowered.

Step 11) Turn off power.

Step 12) Thread the slide nut back down to the slide assembly and tighten.

Step 13) Replace the T-Bolts to their original location and tighten.

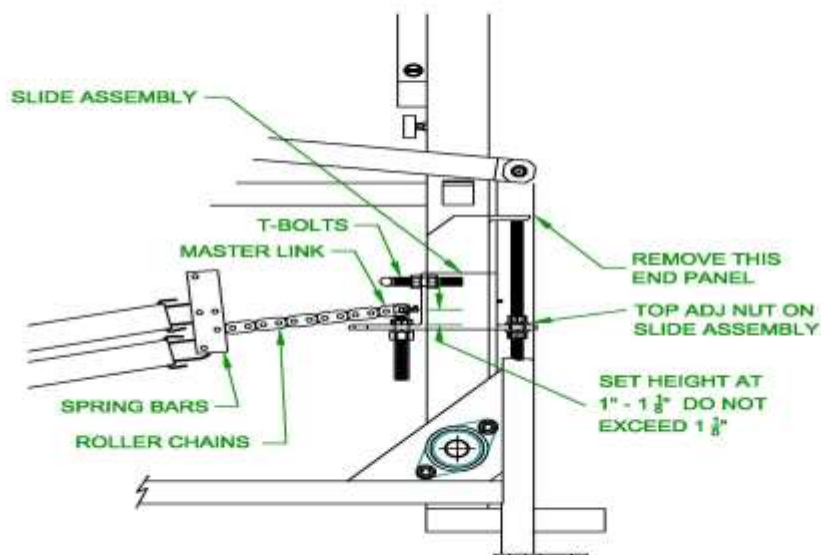
Step 14) Restore power.

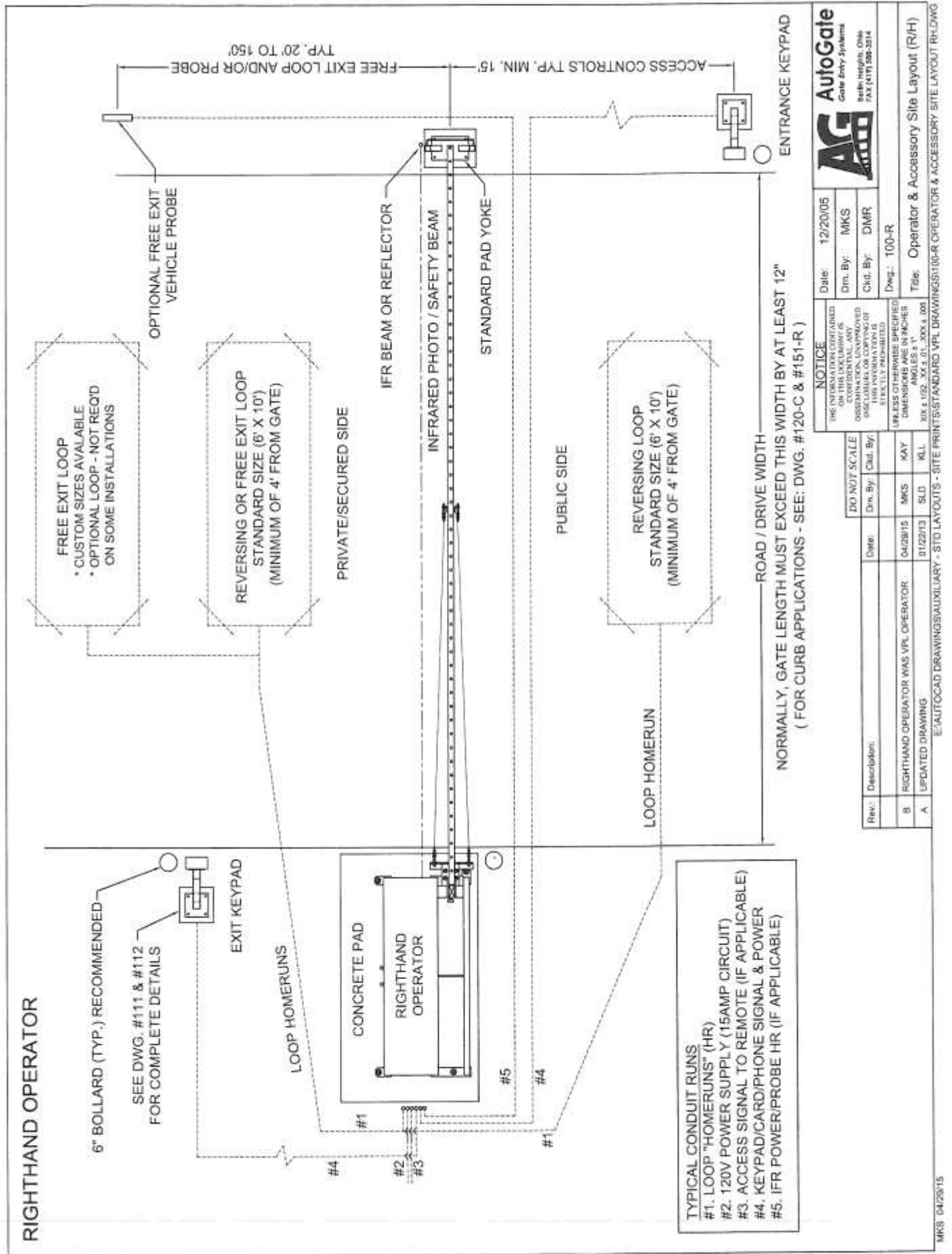
Step 15) Cycle gate.

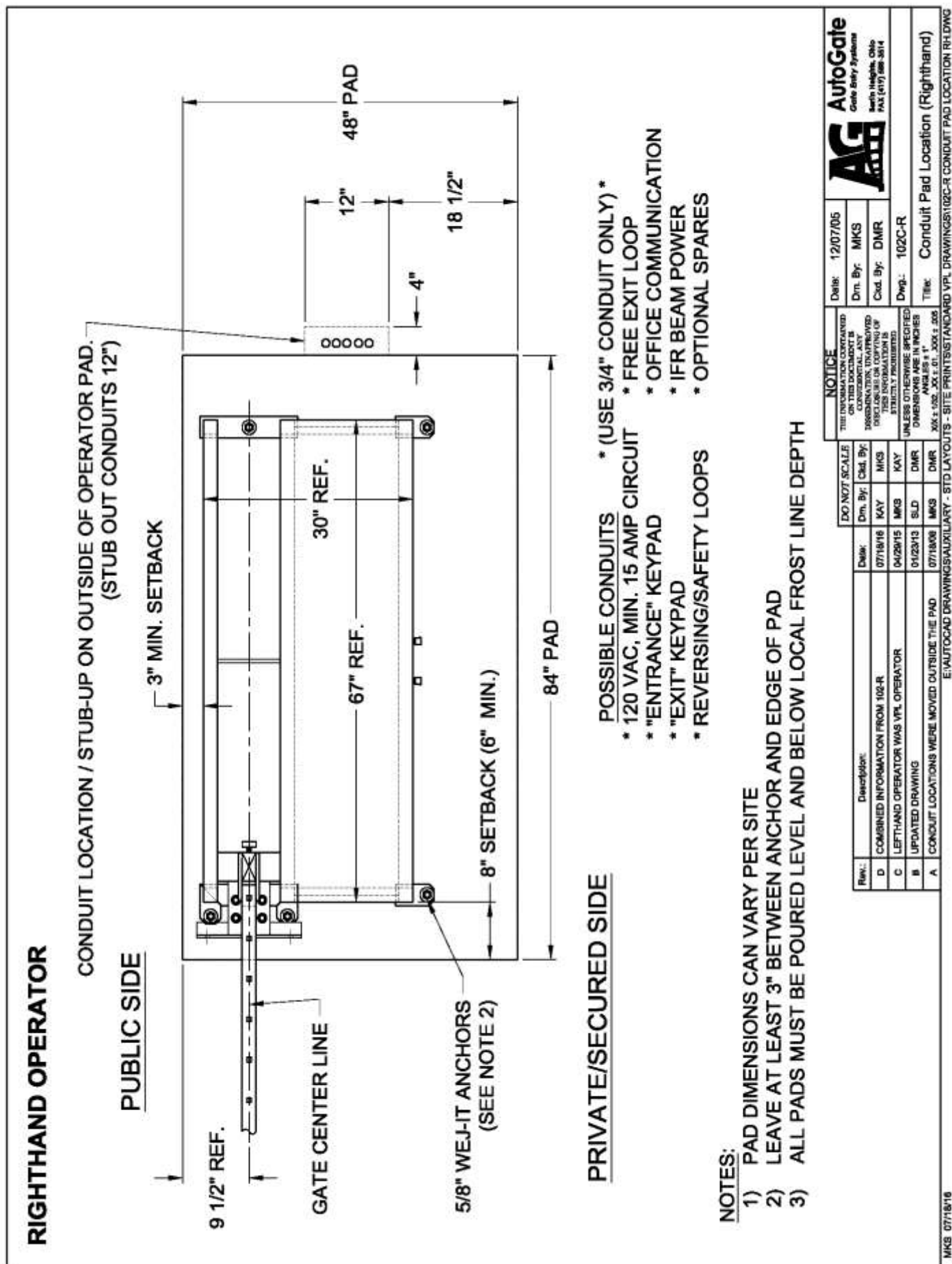
Step 16) Spray all springs with a chain lube to prevent corrosion.

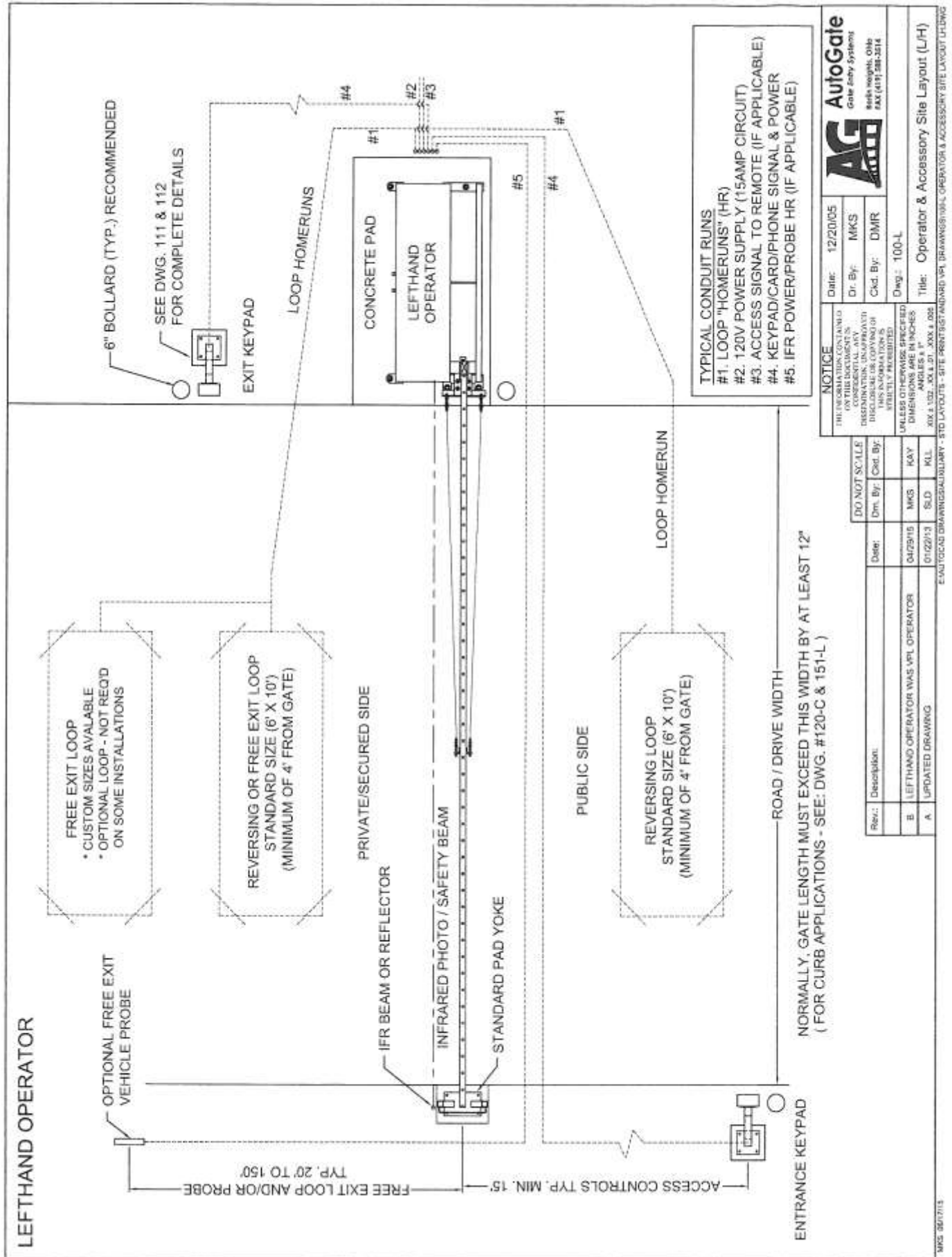
RECOMMENDED: Always check and adjust the balance after any spring change. Refer to balancing instructions at www.AutoGate.com or the instructions on Page 39.

SLIDE ASSEMBLY DETAILS

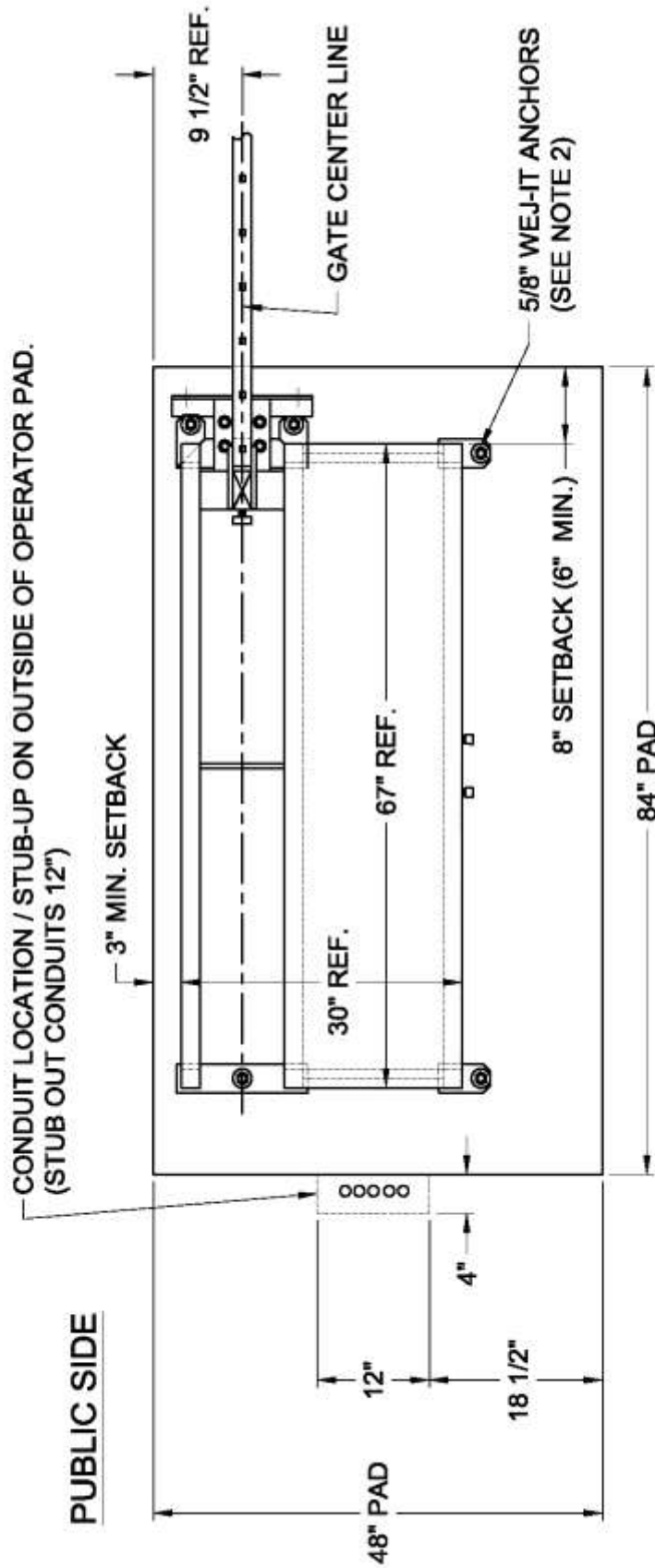








LEFTHAND OPERATOR



PRIVATE/SECURED SIDE

- POSSIBLE CONDUITS * (USE 3/4" CONDUIT ONLY) *
- * 120 VAC, MIN. 15 AMP CIRCUIT
 - * "ENTRANCE" KEYPAD
 - * "EXIT" KEYPAD
 - * REVERSING/SAFETY LOOPS
 - * FREE EXIT LOOP
 - * OFFICE COMMUNICATION
 - * IFR BEAM POWER
 - * OPTIONAL SPARES

NOTES:

- 1) PAD DIMENSIONS CAN VARY PER SITE
- 2) LEAVE AT LEAST 3" BETWEEN ANCHOR AND EDGE OF PAD
- 3) ALL PADS MUST BE POURED LEVEL AND BELOW LOCAL FROST LINE DEPTH

DO NOT SCALE		NOTICE		Date: 12/07/05	
Rev.:	Description:	Dim. By:	Cad. By:	Dim. By:	MKS
D	COMBINED INFORMATION FROM 102-L	KAY	MKS	Ckd. By:	DMR
C	LEFTHAND OPERATOR WAS VPL OPERATOR	04/28/15	MKS	Dwg.:	102C-L
B	UPDATED DRAWING	01/23/13	SLD	Title: Conduit Pad Location (Left Hand)	
A	CONDUIT LOCATIONS WERE MOVED OUTSIDE THE PAD	07/18/08	MKS	AutoGate Gate Entry Systems Austin, Hays, Ohio FAX (419) 944-3014	

MKS 07/18/16

E:\AUTOCAD DRAWINGS\AUXILIARY - STD LAYOUTS - SITE PRINTS\STANDARD VPL DRAWINGS\102C-L CONDUIT PAD LOCATION LHD.DWG

