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Computer Solutions for the Car Care Industry

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**Product: SKIDATA Gate (GT01000)**

This document applies sites using a SKIDATA gate.

***Installing a SKIDATA Gate to Control One-Way Traffic:***

- This document describes how to install a standalone SKIDATA gate to control one-way traffic. In this configuration, the gate will only open when traffic enters on the side determined to be the entrance.
- The SKIDATA gate can be used as an entrance gate to control traffic or it can be used as an exit gate to prevent non-customers from using services such as free vacuums.
- **Skill Level B: This document contains information that requires ADVANCED CUSTOMER SKILL. Do NOT run this without assistance from DRB Systems, Inc. Support. This document can be sent to anyone outside DRB Systems, Inc.**

***Summary:***

1. Install conduit.
2. Construct the concrete base.
3. Access the ground flange and transformer.
4. Wire the gate power.
5. Install the Open Loop.
6. Install the Gate Loop.
7. Verify the loop detector settings.
8. Test the gate using the key switch.
9. Instructions for Dual exit gate installation.

***Notes:***

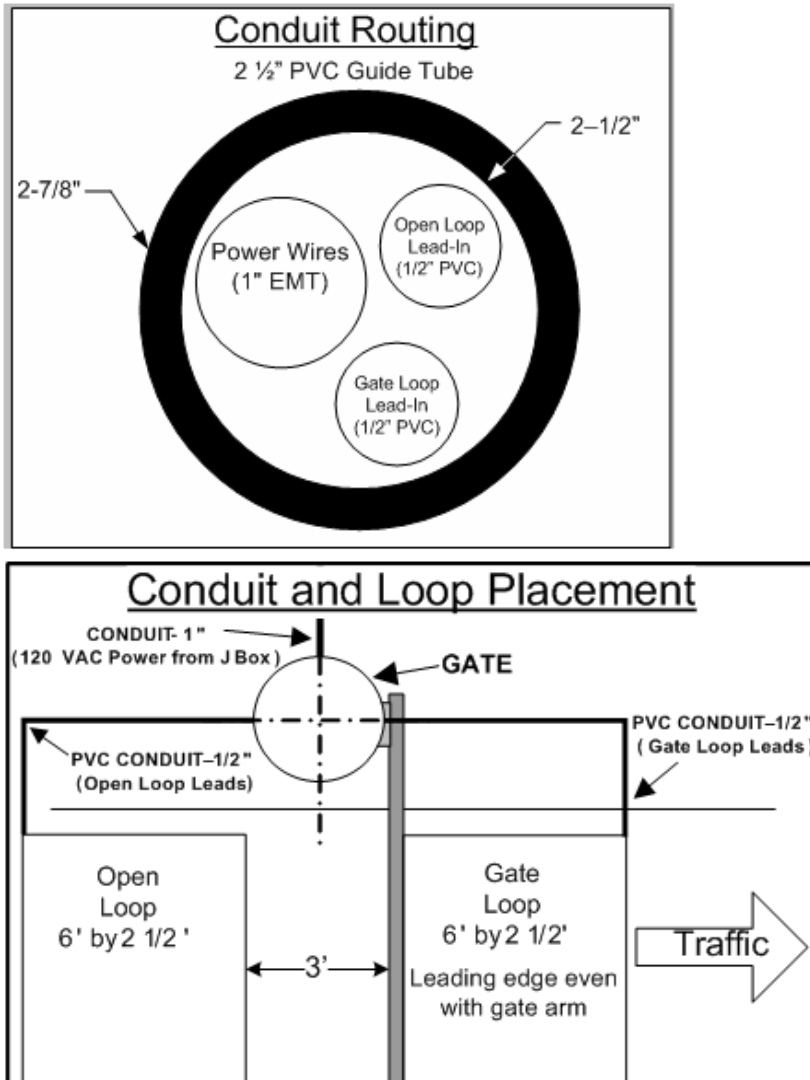
- When installing a standalone gate, an Open Loop and Gate Loop are required to open and close the gate.
- Bulk 16 AWG XLPE loop wire is also available from Newark.
  - [www.newark.com](http://www.newark.com); 1-800-9275; Belden part #35616.
- Always follow national and local electrical codes when installing the gate.
- DRB Systems does **NOT** recommend installing dual arm exit gates on a single exit lane (gate arms facing each other). In this configuration, one gate is mounted at 180 degrees from the manufacturer's intended orientation. This means the gate arm will not break-away as designed if it is struck by a car, causing potential damage to the gate and car.
- A preferred and safer method involves using a center island to create two narrow exit lanes, with both gates installed in the standard orientation, and individual Open Loops and Gate Loops for each.

***Detailed Information:***

1. Install conduit.
  - a. A 1" metal conduit should be used to bring 120 VAC power into the gate. **Note:** The gate is

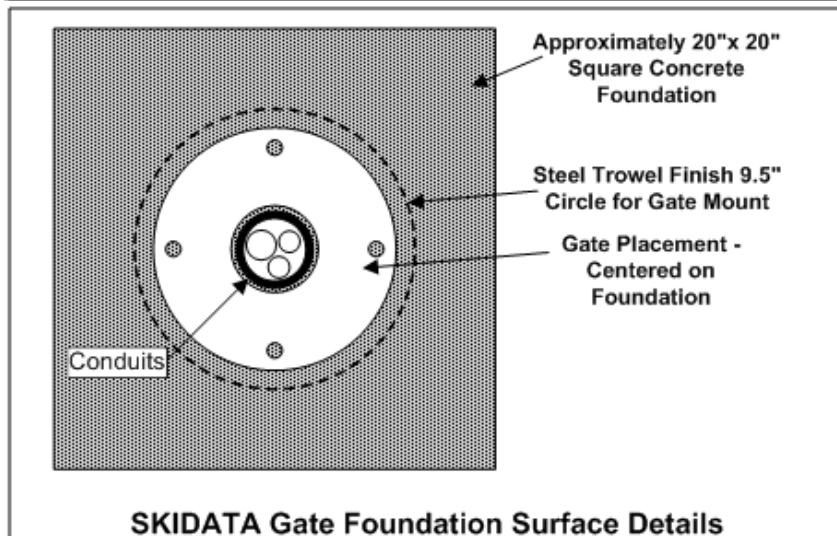
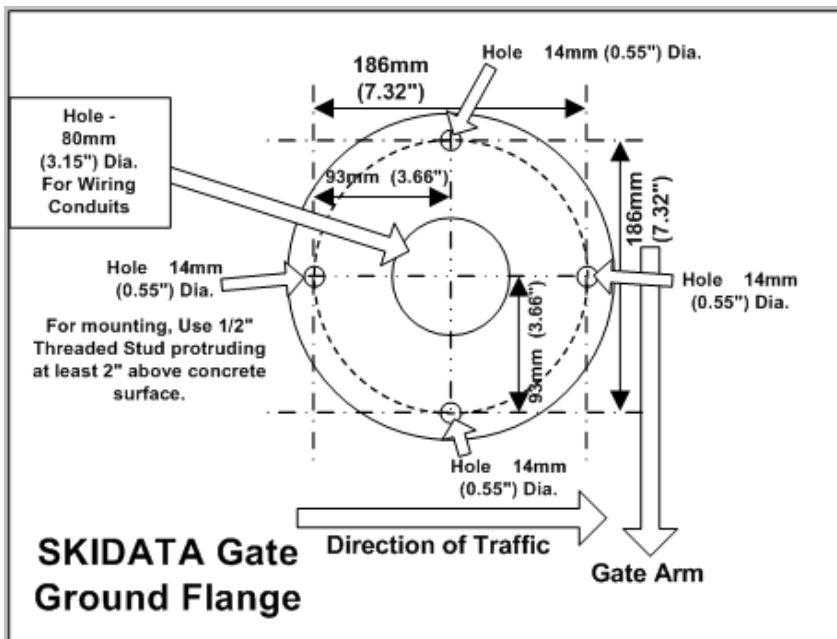
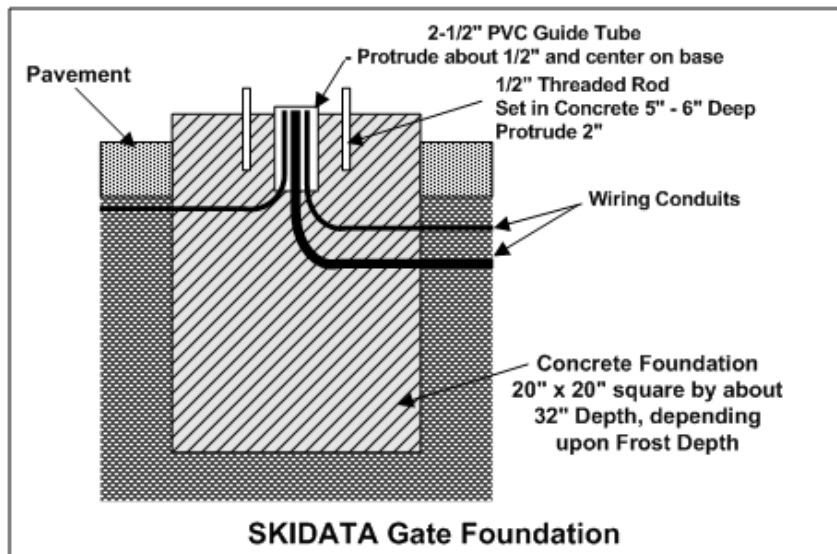
rated for 3.7 amps. A dedicated power circuit is recommended for each gate (and may also be required by local code) so that power can be removed if service is required. This conduit should be positioned far enough away from the Open Loop and Gate Loop to prevent electromagnetic interference (minimum 12").

- b. Two ½" PVC conduits should be used for the Open Loop and Gate Loop lead-ins.
- c. All conduits should be routed into a 2 ½" PVC guide tube that will protrude up into the gate ground flange. This guide tube ensures that all conduits will fit in the 3.15" ground flange hole easily.



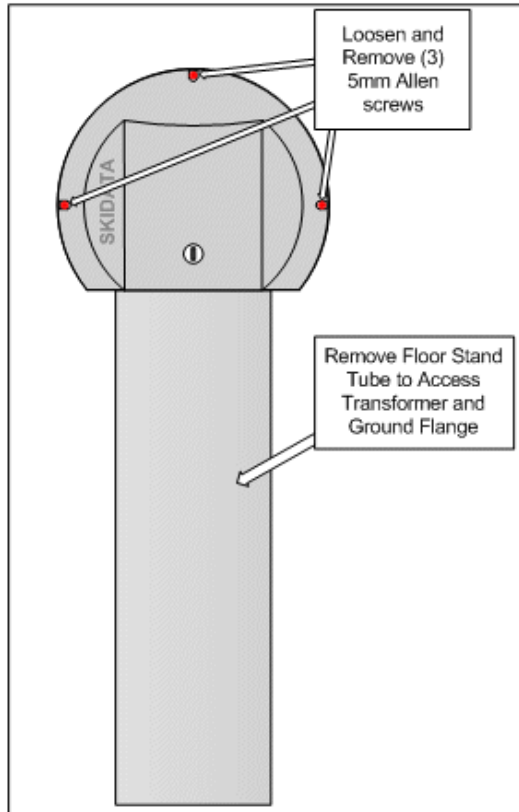
## 2. Construct concrete base.

- a. The ground flange of the gate should be anchored to a trowel-finished concrete foundation. The foundation should be at least 20" square and approximately 32" deep, depending on the frost line depth.
- b. Threaded rod (1/2") should be set in the concrete at a depth of 5"-6" with a minimum of 2" protruding above the surface, to secure the ground flange.

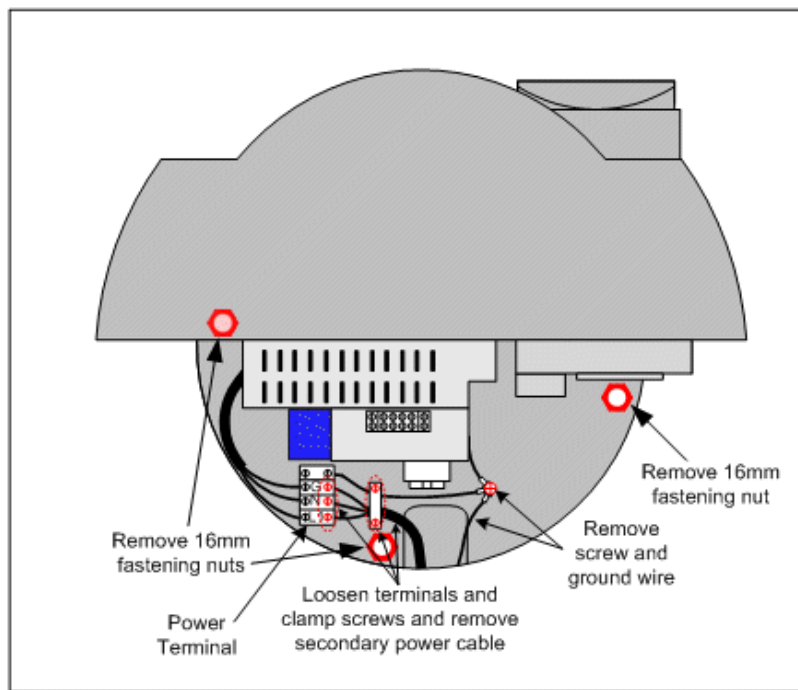


3. Access the ground flange and transformer.

- a. Before you mount and wire the gate, you must remove the drive unit base plate and stand tube to access the ground flange and transformer.
- b. Remove the three 5mm Allen fastening screws from the gate cover then disconnect the key switch wiring harness. Set the gate cover aside.



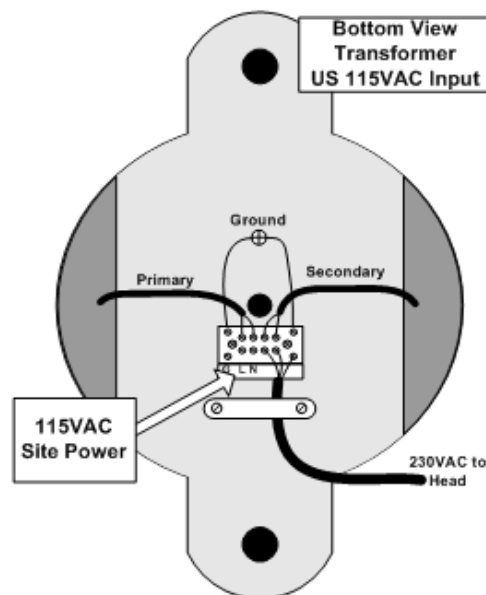
- c. Disconnect the L1, N, and G wires of the secondary power cable from the right-hand side of the power terminal.
- d. Loosen and remove the clamp securing the secondary power cable.
- e. Remove the screw securing the ground wire that connects the drive unit base plate and ground flange.
- f. Remove three 16mm fastening nuts from the top side of the drive unit base plate, carefully lift it off the floor stand tube, and set it aside.



g. Slide the floor stand tube off of the threaded tension rods and set aside.

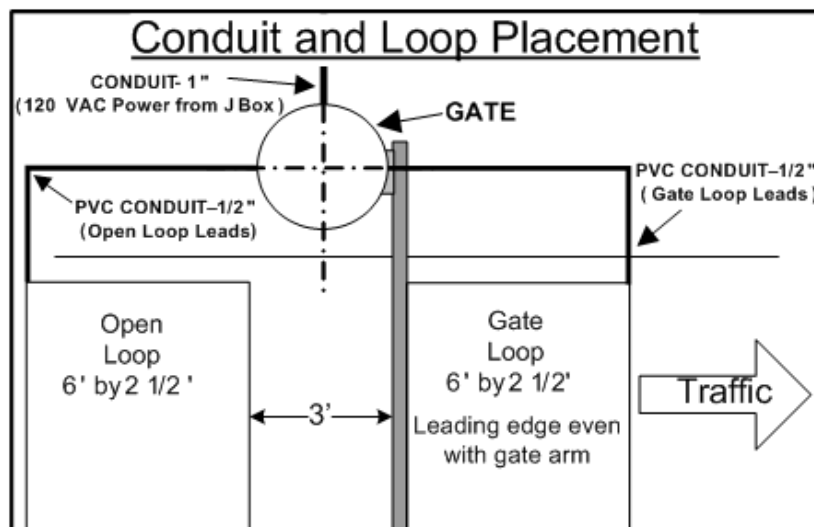
4. Wire the gate power.

- a. Each gate is rated for 3.7 amps at 115 VAC and may require a dedicated circuit, depending on local code requirements. The 115 VAC site power must be wired into the bottom of the transformer, which is mounted inside the floor stand tube of the gate. This transformer steps the voltage up to 230 VAC European power, as required by the gate motor and electronics.
- b. Connect the green wire to the terminal marked G, the black wire to the terminal marked L, and the white wire to the terminal marked N.

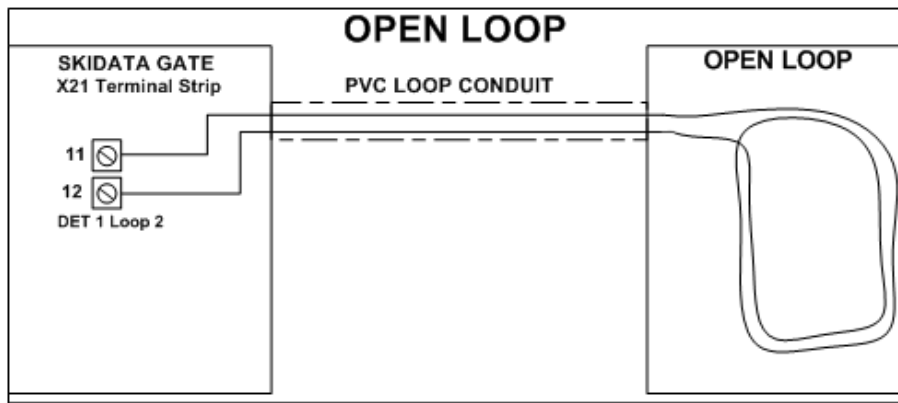


5. Install the Open Loop.

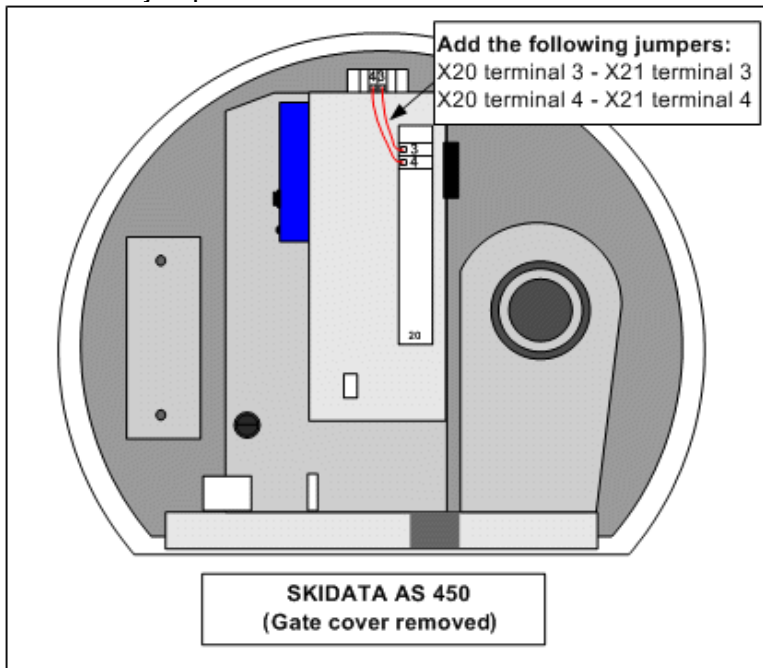
- a. An Open Loop should be placed in the pavement, with the trailing edge 3 feet in front of the gate. This loop is used to detect the presence of a vehicle and open the gate.



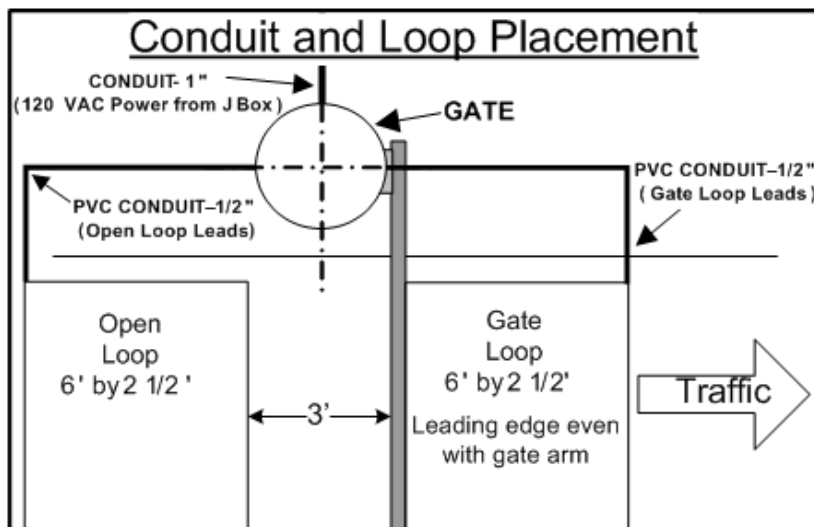
- b. Loop wire specifications. (See the “Notes” section for loop supplier information.)
  - i. The loop wire should be 16 - 18 gauge stranded tinned copper wire with cross-linked polyethylene (XLPE) insulation rated for 600V. This wire has many superior characteristics that are needed in loop detector applications:
    - The large wire gage keeps the serial resistance of the loop low.
    - The wire is flexible enough to bend to follow the saw cut, minimizing insulation damage.
    - The XLPE insulation has excellent moisture and solvent resistance, and ages well.
  - ii. Do not use general-purpose building wire, which was designed for conduit applications. It often has a very thin sheathing of nylon, which protects it from moisture, but it is easily damaged during wire installation in the saw cut.
  - iii. Keep AC power at least 12” away from the loop. The loop wire must not be subjected to electrical noise. AC power running under the loop can cause false detection. The loop detector detects changes in electrical currents as if they were cars.
  - iv. Sealant: Use a commercial loop sealant designed for traffic loops. Paving sealers, tar and other products may work for a short time, but weather thermal cycles and vehicle pressure always cause problems over time.
- c. The loop should be approximately 2.5' long by 6' wide. The Open Loop and Gate Loop should be 3 feet apart. The loop wire should make 4-5 turns around the pavement saw cut, to provide the correct inductance needed for detecting automobiles.
- d. The loop leads come into the gate and connect to X21 terminals 11 and 12. **Note:** Ensure that the loop leads (wire length between the loop and the gate) are twisted 6 turns per foot to minimize interference and false detection.



- e. Connect a jumper wire between X20 terminal 3 and X21 terminal 3.
- f. Connect a jumper wire between X20 terminal 4 and X21 terminal 4.



6. Install the Gate Loop.
  - a. A Gate Loop should be placed in the pavement below the gate. This loop is used to close the gate after the vehicle is a safe distance past the gate arm.
  - b. Repeat steps 5.b. and 5.c. to install the Gate Loop.

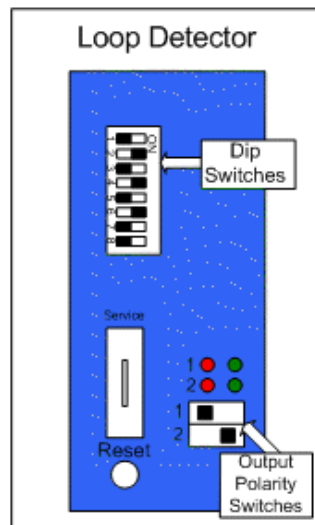


- c. The loop leads come into the gate and connect to X21 terminals 9 and 10. **Note:** Ensure that the loop leads (wire length between the loop and the gate) are twisted 6 turns per foot to minimize interference and false detection.
7. Verify the loop detector settings.
  - a. FEIG loop detector.
    - i. Ensure that the FEIG loop detector switches are set to the following default positions:

FEIG VEK M2E-2-A LOOP DETECTOR DIP Switch Settings		
DIP Switch	Function	Default Setting
1	Channel 1 Sensitivity	OFF
2	Channel 1 Sensitivity	ON
3	Channel 2 Sensitivity	OFF
4	Channel 2 Sensitivity	ON
5	Frequency	OFF (Default)
6	Closure timeout 5 minutes vs. continuous	ON (Continuous)
7	Direction of travel sensing (With switch 8 in pulse mode)	OFF (Not active)
8	Pulse vs. Continuous closure	OFF (Continuous)

- ii. In addition, there are two small switches located below the channel activity LED indicators that set the output polarity of each of the two channels. Channel 1 is set to the left (open on detection), and Channel 2 is set to the right (closed on detection).



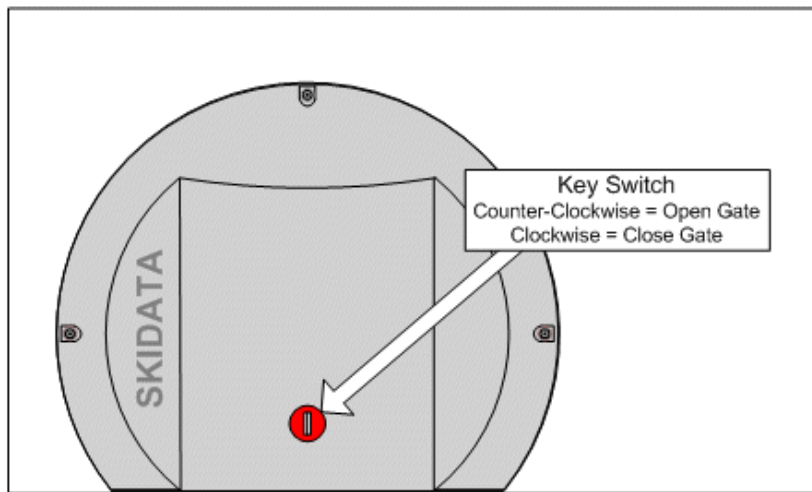


- b. Reno loop detector.
  - i. Ensure that the Reno loop detector switches are set to the following default positions:

Reno AX2-8-1C (NC/NO) Loop Detector DIP Switch Settings		
DIP Switch	Function	Default Setting
1	Frequency	OFF
2		OFF
3	Pulse/Presence	OFF
4	Sensitivity Boost	ON
5	Sensitivity	ON
6		OFF

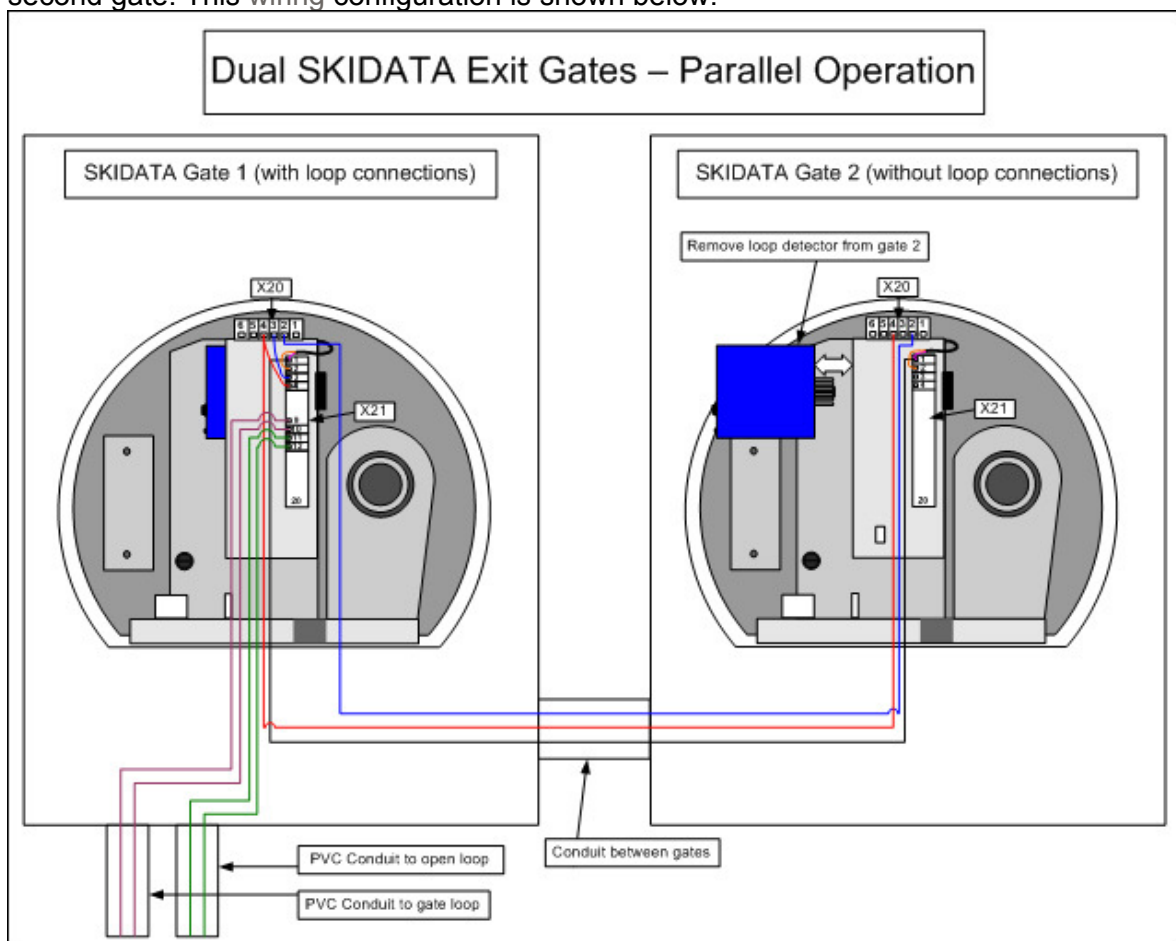
8. Test the gate using the key switch.
  - a. Turn on the power supplying the gate at the source (circuit breaker) and at the internal switch located on the lower-left side of the electronics enclosure.
  - b. Turn the key counter-clockwise and verify that the gate opens.
  - c. Turn the key clockwise and verify that the gate closes. **Note:** The gate will not close if a car is detected by the Gate Loop or if there is a loop problem (i.e., loop failure or loop disconnected).
  - d. Return the key to the vertical position and remove.
 

**Note:** The key switch can also be used to keep the gate in the open or closed position indefinitely, by removing the key in either the clockwise or counterclockwise position.



9. Instructions for Dual exit gate installation.

- a. Installing dual exit lanes using the recommended method of installing a center Island for the second gate would require both Open Loops and Gate (down) Loops for each lane. Refer to instructions in steps 1 through 6 for Conduit and Loop placement along with wiring.
- b. Installing dual exit gates in the non-recommended method using 1 wider single lane with gate arms facing each other requires 1 Gate Open loop and 1 Gate Closed loop. The loops would be wired into 1 gate and then parallel jumper wiring would be required to connect the second gate. This wiring configuration is shown below:



- c. A single exit lane involving two gates installed facing each other may require shortening the two arms in lanes measuring 12 to 19 feet in width. In this case the following instructions

should be used:

- i. Remove the gate arm from the gate, and clamp it to a stable surface for cutting.
- ii. Measure and mark the desired length on the gate arm, referencing from the end towards the gate.
- iii. Remove the plastic cap from the end of the gate arm opposite the gate.
- iv. Use a power tool with a blade designed for cutting fiberglass and cut the gate arm to the desired length.
- v. Remove any burs from the cut edge and re-install the plastic cap on the end of the gate arm.
- vi. Attach the gate arms to the gates.

***Document Information:***

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