MAG® | Ensuring Your Peace of Mind.

BARRIER GATE

Frequently Asked Question

(BR600T SERIES)

Version 4

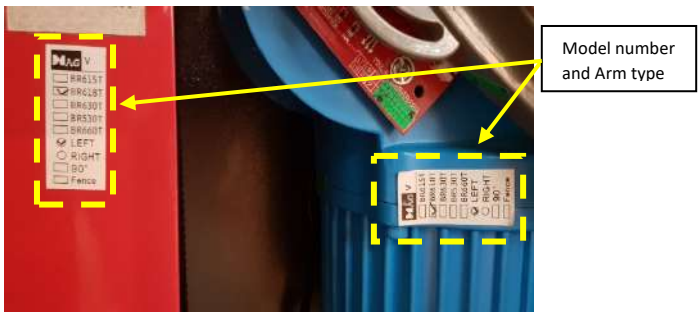
Frequently Asked Question (FAQ) for BR600T barrier gate.

1. What is the correct counterweight spring for each model?

The spring has to have sufficient tension that can counter the weight of the arm. This helps to achieve smooth motion and no shaking at the end of opening or closing. Different models have different maximum arm lengths. The arm might be cut short to the actual lane width at the site. Different arm length has a different weight and thus requiring different spring tension.

Model No	Feature		
	Open /close speed	Max arm length & type	Arm swing out
BR618T	1.8 sec	4m straight	Yes
BR630T	3.0 sec	4.5m straight	Yes
BR660T	6.0 sec	6m straight	No
BR660TFE	6.0 sec	4.5m fence	No
BR630T90	3.0 sec	4m folding	No

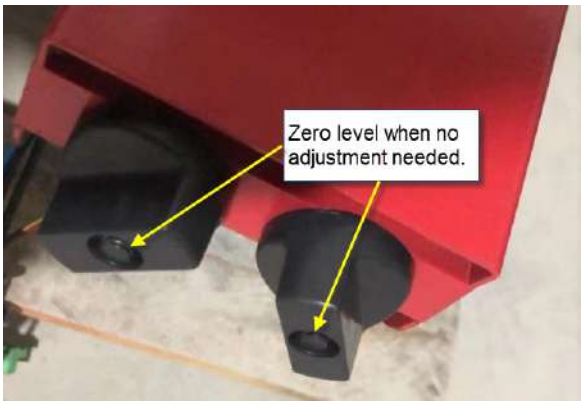
(barrier gate arm length with model number)



(Model number and specs sticker location)

Different spring is required for different arm length (effective 1st June 2021) as per the following table:

Features / Model	Arm length (Meter)	Green Spring (4.0 mmØ)	Red Spring (4.5 mmØ)	Blue/Yellow Spring (5.5 mmØ)
BR618T - 1.8 sec	3 to 4	2		
BR630T - 3 sec	3 to 4	2		
BR630T - 3 sec	3.8 to 4.5	1	1	
BR630T_90 - 3 sec	4		2	
BR660T - 6 sec	4.5 to 6		1	1
BR660T_FE - 6 sec	4.5			2



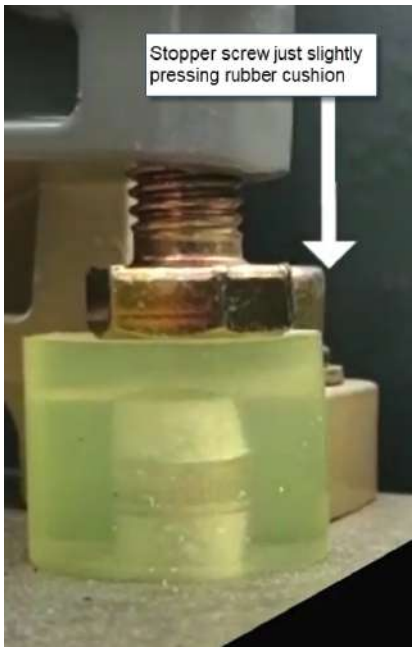
In standard configuration, most of the time you do not need to further tighten the spring. Minor adjustments might be needed to compensate for tension fluctuation due to manufacturing tolerance.

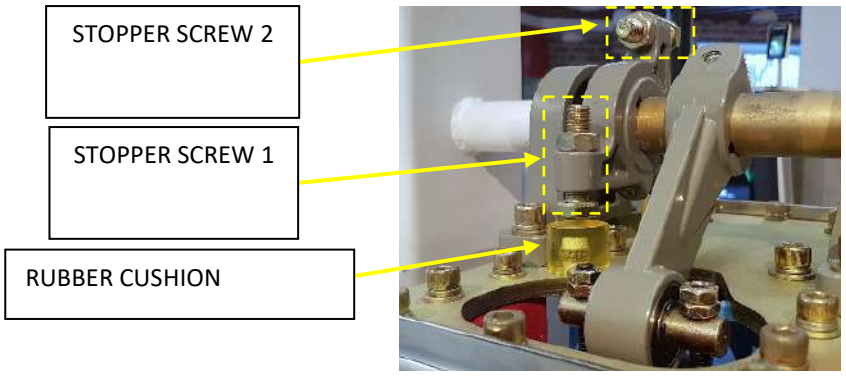
For the arm's length of 1m to 1.5 (typical motorcycle lane), you can just release all the spring. Meaning no spring tension is required for such a short arm.

2. Why is the barrier gate arm shaking at end of opening or closing?

If the correct counterweight spring has been used corresponding to the arm length, the arm shaking is due to the movement momentum. There is 1 rubber cushion at each endpoint of opening or closing to absorb all the momentum force that caused the arm to shake.

2.1 Please adjust the stopper screw to slightly press onto the rubber cushion until the arm is not shaking at the end of opening or closing. The stopper screw should press down as minimum as possible just enough to achieve no arm shaking.



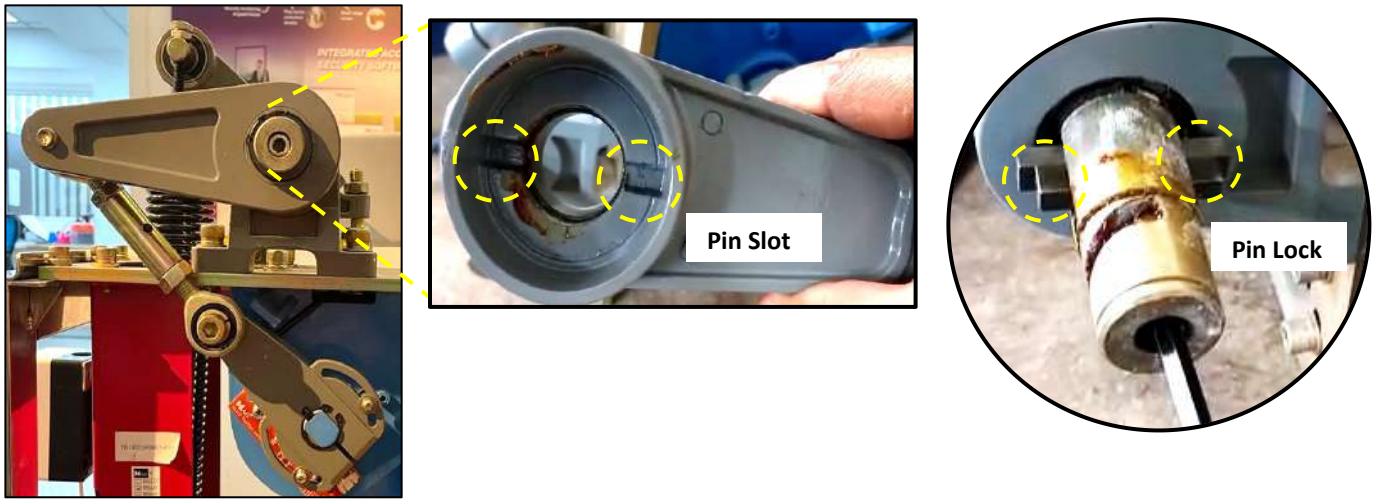


2.2 Do not adjust the stopper screws to press excessively onto the rubber cushion. This will reduce the lifetime of the rubber cushion. It will be troublesome if you need to keep on replacing the new rubber cushion at the site.

2.3 Each same type of spring has a 5% tolerance of tension due to the manufacturing process. This tolerance fluctuation can be offset by slightly tighten the spring if the arm still not perfectly no shaking.

3. Why the arm is still shaking despite the correct counterweight spring and stopper screw level?

The barrier gate might have been enduring this shaking due to improper spring calibration since the first day of installation, after changing a new arm of different lengths or adding heavy signage. Re-calibrating the arm now is already too late as the continuous long-term shaking has caused irreversible mechanical wear.



3.1 Dismantle the drive crank and visually check the arm lock slot inside the drive crank.

3.2 The ***pin lock*** mechanism and ***pin slot*** will be subjected to the worst mechanical wear. The arm will shake at the end of opening and closing when the pin lock no longer perfectly fits into the pin slot tightly.

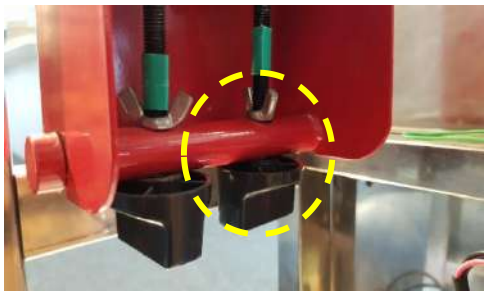
3.3 Depending on how long the entire mechanism is subjected to the arm shaking, another mechanism might also suffer mechanical wear that can contribute to arm shaking. We advise replacing sending the machine back to us for diagnosis and repair. Charges might apply as this is not considered a manufacturing defect.

4. Why barrier arm auto-reverse or stop halfway?

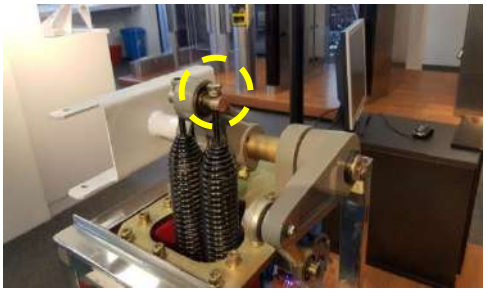
Our barrier gate controller will auto-reverse the arm at any point of the trajectory if detect a high current here the arm has sufficiently big difficulty to continue closing. It could be due to the spring pulling too hard or blocked by an obstacle at the lane.

4.1 If the barrier arm is cut shorter than the initially calibrated arm length, please re-calibrate the counterweight spring tension base on the model as per FAQ 1. The spring tension needs to be calibrated again if the arm length changed.

4.2 In some situations where the arm length is cut too short beyond the minimum tension of the dual spring installed. If this is the case, 1 of the counterweight spring needs to be removed by fully **unscrew the spring pin below** and **remove 2 nuts that hold the spring to balance the crank on top**. After that adjust the tension of the remaining single spring accordingly.



(Remove spring pin)

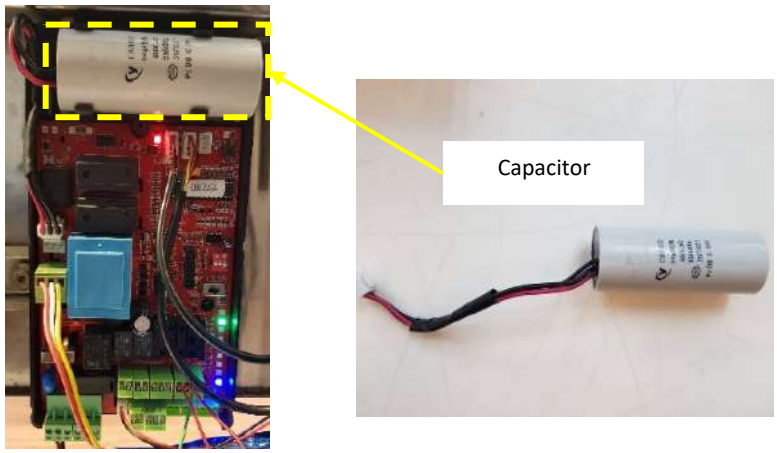


(Remove 2 nut that hold the spring)

4.3 The next potential fault is the big capacitor connected to the controller. A weak capacitor will cause the arm to stop halfway or the arm auto reversed after reaching the end of opening/closing. Please follow FAQ 7 to replace the capacitor.

5. What is the problem symptom if the capacitor is faulty?

As with any electronic component, it is natural that the capacitor will degrade over time. The purpose of the capacitor is to provide a sufficient initial charge to move our Bluespeed AC motor.



(capacitor location on barrier controller)

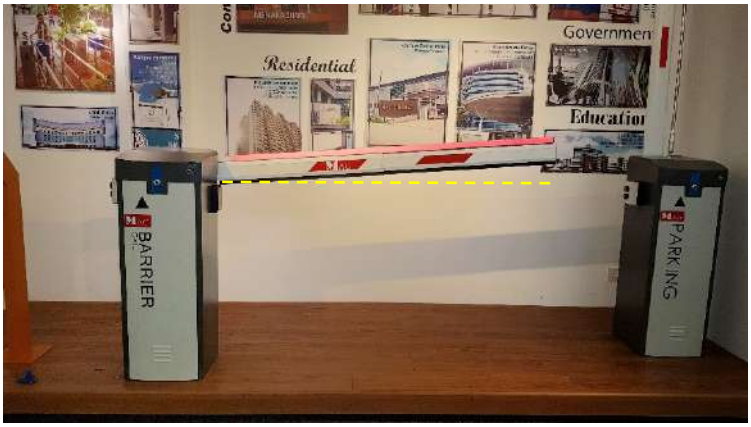
5.1 If the capacitor is a malfunction, the barrier arm will not move at all while fan still running. We can identify the fan operation by hearing airflow noise when it turns on.

5.2 If the capacitor is weak, the barrier arm will stop or auto-reverse at any point of the movement intermittently.

5.3 Try to replace with another capacitor from the adjacent barrier gate to verify if the arm has resumed normal operation. You can purchase the original MAG capacitor from us to replace at the site to ensure the correct operation of the barrier gate.

6. Why barrier gate arm is not in a perfectly horizontal position when close DOWN?

After fully closed, the arm seemed to be tilted slightly up or dropped slightly down instead of a perfect horizontal straight line. The main reason for this issue is either the proximity limit sensor is incorrect or the drive shaft position needs adjustment.



(barrier gate arm not fully closed)

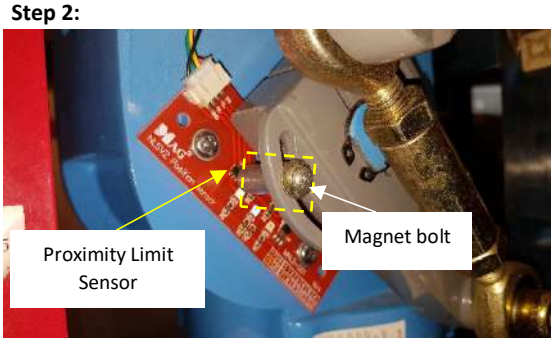
6.1 An electronic proximity sensor is used to determine the stop position of the arm. The arm could stop earlier or later depending on the position of the magnet bolt. Check the magnet bolt position on the electronic proximity sensor is in the correct position.

Refer to the picture step by step below:

Step 1:

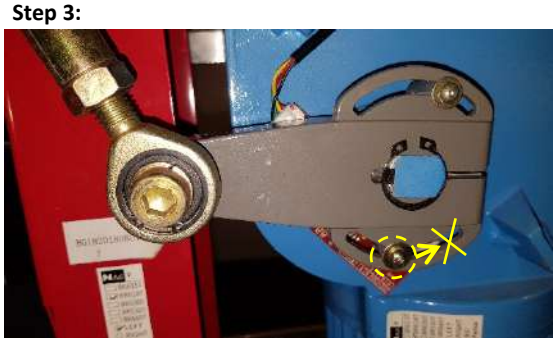
- Open barrier panel cover and look for the **electronic limit switch. On the side of AC Motor, behind to initiative crank.**

Step 2:



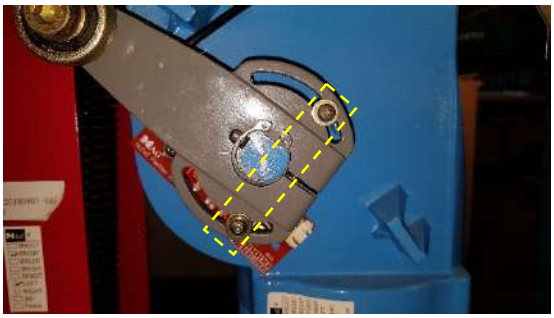
- The barrier arm will stop at a certain position when the ***magnet bolt*** is aligned with ***the proximity limit sensor.*** If your magnet bolt sensor is aligned with the proximity limit sensor too early before the arm can fully close down, that is why your arm will not horizontal when down.

Step 3:



- If the magnet bold position same as the diagram, please loosen up the screw using ellen key 2.5mm. Move the magnet bolt closer to the marking as in the diagram.

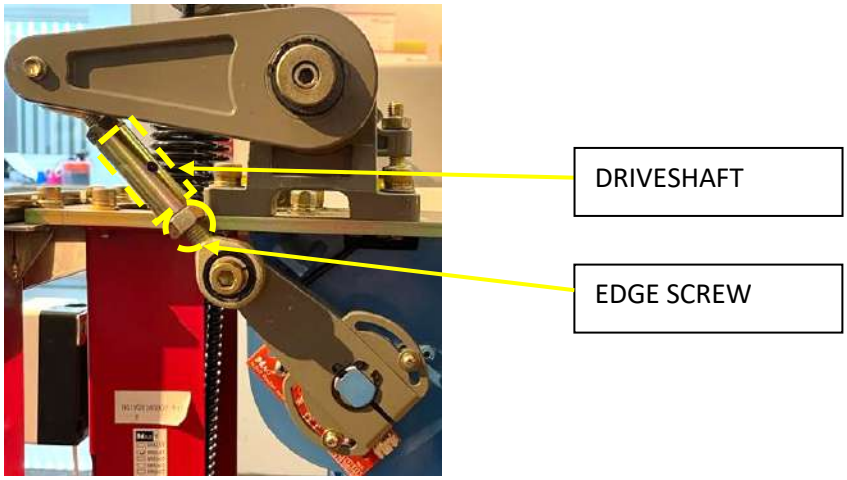
Final Step:



- Please make sure the magnet bold position same as the diagram.

6.2 In some sites where the road might be slanted, the arm might still not in a horizontal position after adjusting the electronic limit switch. If this is the case, then please adjust the driveshaft.

6.2.1 Turn the edge screw anti-clockwise to loosen the driveshaft for adjustment.
6.2.2 If the arm above the horizontal line, turn the driveshaft clockwise to lower down the arm.
6.2.3 If the arm below the horizontal line, turn the driveshaft anti-clockwise the rise up the arm.
6.2.4 Tighten back the edge screw to make sure the driveshaft won't move while the barrier operates.

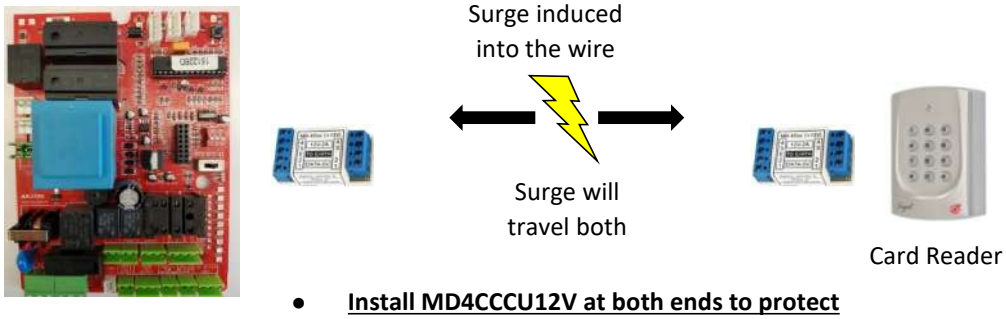


7. Why the arm does not move after pressing the push button (Up/Down) or flashing card on the reader?

Up/Down/Stop LED on controller board will light up to confirm the signal is well received. A few possibilities are depending on the response of the push-button input LED on the control board.

7.1 If all LEDs on the control board light up constantly without blinking after restarting the board by turning it off and on again, it means the board could be corrupted due to lightning surge or power surge. Please send the board back to us for further diagnosis and repair attempts.

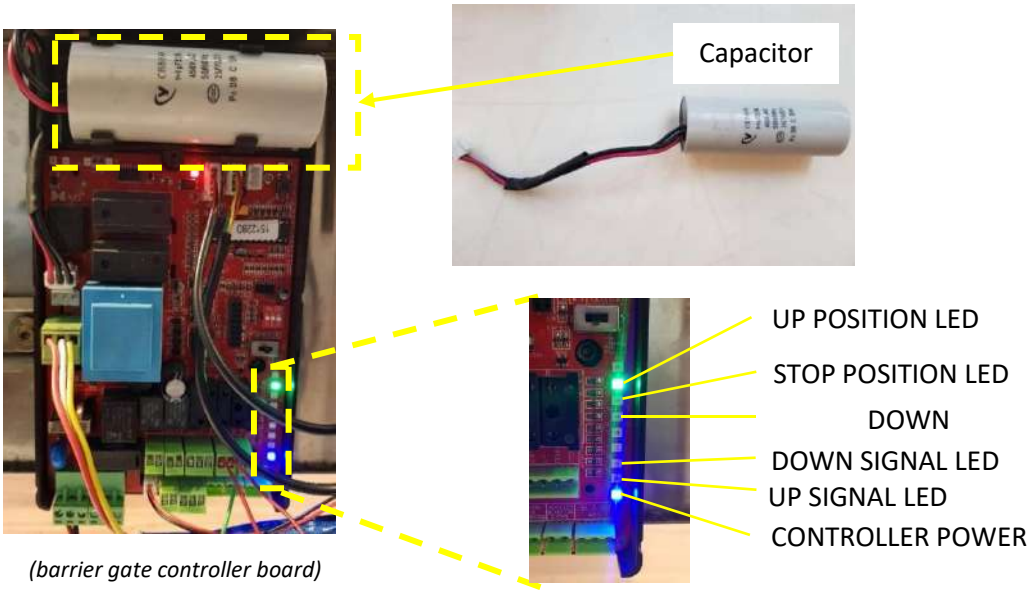
7.2 We recommend you install a surge protector or isolator at UP, DOWN, STOP, COM input on the control board to avoid being damaged by surge. Refer to the diagram below.



- **<u>Install MD4CCCU12V at both ends to protect reader and controller board.</u>**

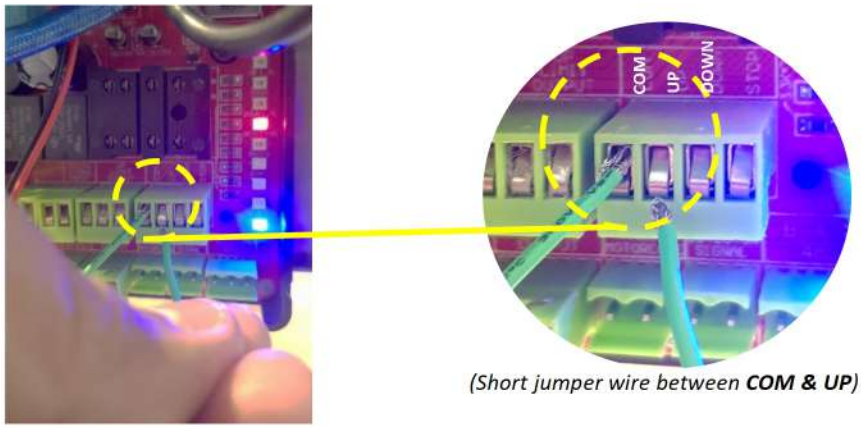
7.3 If the all up/down/stop LED on the control board does NOT light up corresponding to the push-button pressed or flashcard at the reader, it means the signal is NOT well received. Please check if the Up/Down/ STOP/COM wiring from the push button to the barrier controller board is broken.

7.4 If all up/down/stop LED on the control board light up correctly corresponding to the push-button pressed and AC motor fan triggered to start running, it means the board well received the push button's signal. The most likely cause for the arm not moving is the total malfunction capacitor. Please follow FAQ 7 to replace it.



(barrier gate controller board)

7.5 If the problem persists after replacing the capacitor, then try manually triggering the OPEN or CLOSE signal on the control board by a short wire. If the arm still not moving, please kindly replace the control board. If the arm is moving, then please check for possible defective push buttons or defective relay output at the access controller.



*(Short jumper wire between **COM & UP**)*

8. Why barrier arm does not close down after the vehicle completely passed through the loop coil?

This is caused by the access controller relay still holding the trigger signal even though the car has completely passed through the loop coil. The arm will not descend despite receiving the valid signal from the loop detector if our barrier controller keeps receiving a continuous UP dry contact signal from the access controller.

You will get the same problem if you keep on pressing the push button until the car has completely passed through the loop coil. Typically a car will need 4 sec to completely pass through the loop coil from the moment user flashed the card at the access controller.

8.1 Please set your access controller relay release time to 1 second.

8.2 If you are using a Soyal controller reader:

(Example for AR721H) this will be the command to enter on the numeric keypad:

i. Enter Program Mode:***123456#**

ii. Set Relay Trigger Time:**02*001#**

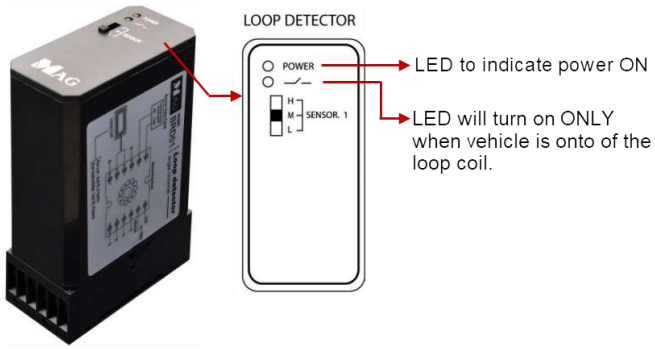
iii. Exit Program Mode: ***#**

9. Why the barrier arm close earlier before the vehicle completely passes through the loop coil?

The main reason for this issue is because the loop detector sends a signal to the barrier board without detecting any vehicle. This is either caused by the loop coil not installed properly (loop coil damaged and cause interference to loop detector) or the loop detector is faulty. The Loop coil installed underneath the ground is subject to damaging weather conditioning.

9.1 Please check **the loop detector LED**, during standby mode, if there is no car on top of the Loop coil, the **Red LED with light up** for power. When the car is on top of the loop coil, the **Green LED will light up.** After the vehicle has completely passed through the loop coil the **Green LED will turn off** and the barrier arm will be closed.

9.2 The **Green LED** will keep light up when a vehicle passing through the loop coil. If the loop detector LED response differently than described here, then the loop detector is faulty.



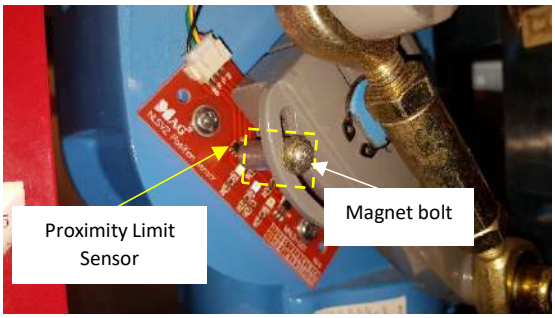
9.3 For more info on loop detector and loop coil wiring diagram you can refer to our quick guide:

https://magnet.com.my/wp-content/uploads/download-center/MAG_BRD01_Loop-DetectorBlack_Quick-Guide_V2.pdf

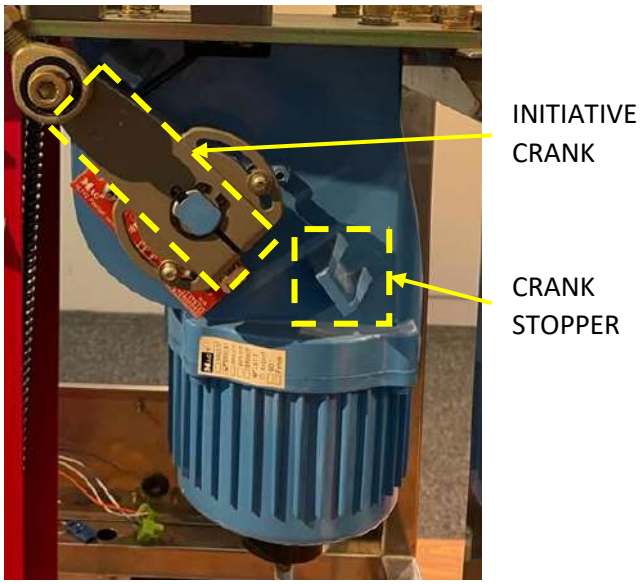
9.4 If all LEDs respond correctly as described here, then most likely it is the loop coil problem. Please change the loop coil or upgrade the BRD02 - Traffic Detector. BRD02 does not require any loop coil and uses radar technology to achieve more reliable detection that is not affecting by rough weather conditioning.

10. What happens when the electronic limit switch is faulty?

The electronic limit switch is a sensor to determine the barrier arm open Up or closing Down end position. The electronic limit switch can be damaged by the metal bolt if it is not tightened properly. It might scratch or hit the proximity limit sensor.



(Electronic limit switch)

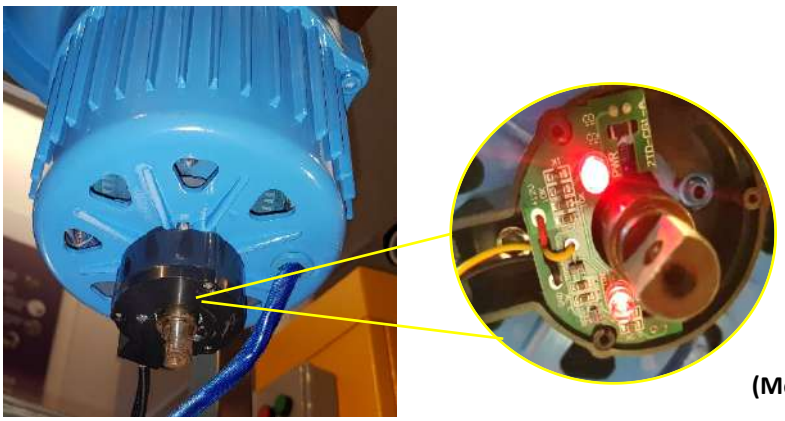


10.1 If the electronic limit switches faulty when the barrier arm is close down, you can hear the drive crank hit the crank stopper beside AC Motor and the barrier arm will automatically reverse open.

10.2 Make sure that the drive crank **does not hit** the crank stopper when the arm is trying to close. If not, the arm will **reverse open.** The reason the arm will automatically reverse open is that the motor counter sensor detects an abnormality in the motor motion so it triggers the auto-reverse function.

11. Why is the barrier arm auto-reverse function not working?

The main reason for this issue is either the barrier controller damaged by a power surge, defective motor counter sensor, or loose cable connection between these 2 items.



(Motor Counter Sensor)

11.1 By visual, if the LED on the motor counter sensor not blinking or light up then the motor counter sensor is faulty.

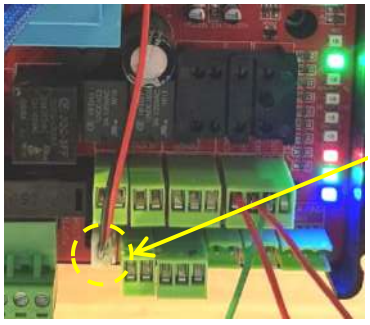
11.2 If the motor counter is working fine, please replace the controller board.

12. Why arm does not open, open halfway or does not close intermittently?

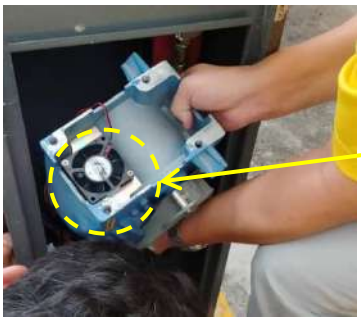
It seemed like the barrier gate has gone crazy. The problem symptom is not consistent where it is showing different problems at different times. The main reason for this issue due to AC Motor internal fan faulty. A faulty fan consumes an extraordinarily high electric current causing insufficient power onto the controller board causing unpredictable symptoms.

12.1 If the barrier gate can resume normal function after disconnecting the fan, please replace the AC motor fan.

12.2 AC Motor fan is located on top of the AC Motor. You need to dismantle the motor to replace it.



AC Motor Fan Connector



AC Motor Fan Location