

# TMT Boxer 24v slider motor installation notes from EasyGate

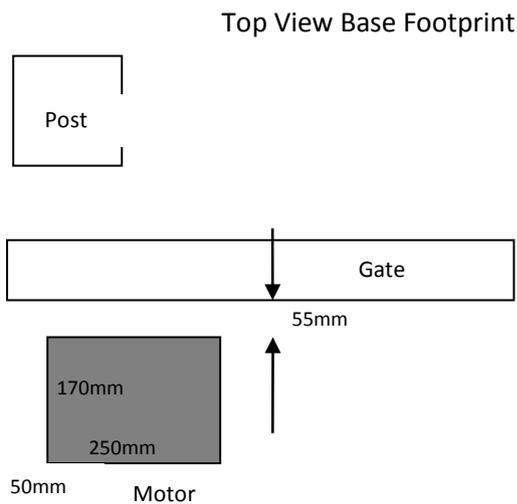
## Install “Physical Gate Stops”

Physical Gate Stops **MUST** be installed at each end of your gate. If the Limit Switch on the boxer motor fails to stop a gate cycle, the Gate Stops will prevent gate falling off the guide rollers and causing possible injury or damage.

## Installing Motor

### **Preparation of the Concrete Ground Surface (Base) for Motor Mounting.**

Make sure that the ground surface for the motor installation is solid and levelled. A good Base is paramount to the proper operation of the auto gate system. If installing cables place these 300mm from your wall/post and approx. 220mm in from the corner of the wall/post. The motor mounting plate is 170mm deep x 250mm wide. Position the motor mounting plate (side nearest the gate) approx. 150-160mm from the wall/post and approx. 50mm in from your post driveway corner point.



Cables from the Control Panel to the Motor can be pre-embedded in the Base should concealed wiring be preferred.

Prepare for motor cable 2 core x 1.5mm or 2.5mm from the transformer. For option devices such as wired keypad, infer-red beams, loop detectors etc. network cable, or Cat-5 or cat.6.

NOTE: You may need to raise the motor to allow the gear rack to fasten properly to your gate bottom rail so check this first by placing a gear rack on top of the sprocket alongside the gate and

allow for the fastener thickness after installation. Open/close the gate as the gate may have a bend in it.

There are 3 typical ways to fasten the motor to your concrete.

Option 1: If your gate is manufactured with 100 x 50 mm rectangular bottom rail such as the EasyGate low profile model and sits about 40mm off the ground, you can bolt the motor directly to the concrete without the need for motor plate risers.

Hint: Option 2 and 3 are good for rising the motor to allow cables to be installed freely under the motor so you do not need to be too accurate with your cable location.

Option 2: If your EasyGate is fitted with the standard wheel that rises the gate to approx. 50mm from the ground you can use the (optional) 25mm high spacers available from EasyGate to lift the motor. Position these under the left and right sides of the motor.



Option 3: If your gate is above 50mm off the ground you can use the mounting plate supplied with the Boxer motor and 4 threaded rods in each corner to act as pylons. The rods have anchor pins that are drilled and hammered/pressed into your concrete pad. Thread the rod into the anchors and place a nut on each rod to the desired height. Place the mounting plate on next, followed by the motor, washers and fasten together with 4 more nuts.

#### **Installing the gear rack to the gate:**

For your gate to function smoothly you will need to install the gear rack correctly. The outcome is to have a 2mm gap between your sprocket and the valley of the gear rack throughout the length of the gate. Temporarily raise the motor by another 2mm using bolt-washer spacers under the motor mounting bolts. **Remove** once all the gear rack is installed and motor secured to the ground plate)

Release the auto gate to emergency release so that the gear wheel rotates freely for the alignment and installation of the gear-rack.

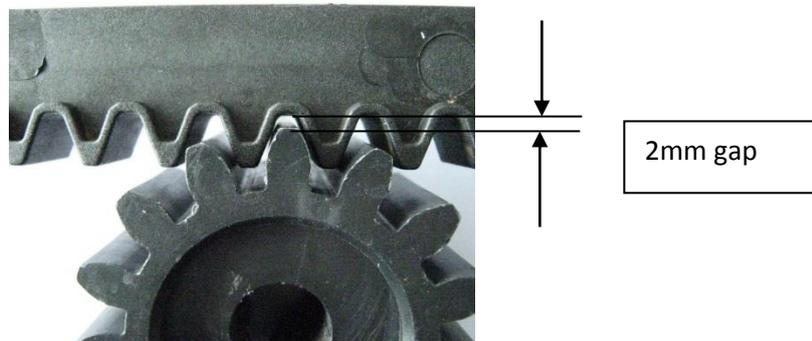
Lay all gear rack (on the ground) along the length of the gate. Check end rack supports for best position of a gear rack lug each side of the sprocket at the fully open/close.

**We strongly Recommend** you leave gear rack over hanging (approx. 100mm) until after you have fitted your "limit cams" and only then cut off any extra with a steel hacksaw as the gear rack has a steel rod inserted in the nylon casting for strength.

Rest the first gear-rack **on the gear wheel**, ensure that the gear rack is level, and secure the gear-rack onto the gate using the fastenings provided. Move the gate 1m and repeat as above until all gear-rack have been installed. Do not fasten where wheels may be contacted as this will increase gate moving resistance dramatically.

**Remove** the Washer / Spacer from the Motor, and the gap of 2mm between the gear wheel and the gear-rack is automatically achieved.

Check to ensure consistent meshing between the gear-rack with the gear wheel over the entire length of the gate. Loosen the screw on the gear-rack to adjust the position of the gear rack if necessary.



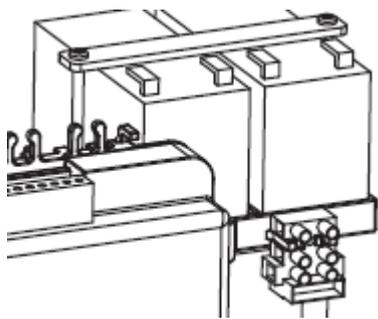
***Important Note: Gear Wheel and Gear Rack life depends almost entirely on their correct meshing.***

### **Install “Limit Cams”**

Limit Cams (2 x silver brackets) **MUST** be installed at each end of your gate Gear Rack. Supplied is a right (SX) and a left (DX) when installed they are designed to trigger the Limit Switch to stop the gate cycle **BEFORE** contact with physical gate stops.

### **Stand-alone Transformer (optional)**

This DIY transformer will reduce the 240v input to a safer 24v output. It can be place at your 240v power plug outlet. From there you can then run (up to about 80m) a low voltage cable length to the Boxer gate automation using a minimum of 1.5mm 2 core cable. It will only have 24v AC running through it. Connect to the blade fuse mounted under the battery box. It will not matter which configuration you connect as it is alternating current (AC).



### **Removing control board plastic protective cover**

Make sure the clutch lever is in the down position. The grey plastic cover that protects the control board can be removed using your left index finger to pull back and away the tab in on the left top corner. The cover is hinged on the right side.

### Tuning remotes

On the control board press the Rf **Learn** button (TOP BUTTON on right) once until the blue LED light shines. On your remote press the top LEFT button once. This is called button A.... Blue light flashes on the control board to confirm tuning of remote.

### Pedestrian mode using your remote

Your control board is pre-set with SW2 (black Switch) to ON. The SW2 is located in the bottom right corner of the control board. The top right button on your remote (button B) activates a pedestrian mode or partial opening cycle. You can only activate the pedestrian mode with your remote. To change button B to Button D on your remote...place switch 5 to OFF. To remove the pedestrian function turn SW2 to OFF and place SW6 white switch #4 and 5 to OFF.

### Programme Gate "Opening Direction"

There are 2 locations that you can install your gate motor. Right or Left of your driveway (facing your gate from the side the motor will be installed). The Left Side is the most popular with the motor sprocket rotating counter-clockwise opening the gate from right to left. The factory setting is for a Left Side install. "F1-1"

Right Side install has the motor sprocket rotating clockwise opening the gate from left to right. You will need to change the programme "Opening Direction" to "F1-0"

### **Systems Learning**

"Systems learning" will allow the Control board to register your gate factors such as operational resistance, opening/closing cycle times, speed etc.

NOTE: Gate must be closed!

**Warning:** Check that both fully open and full closed "limit cams" are in place on the gear rack and are functioning correctly. Check both fully open and fully closed physical stops are securely in place.

Before starting system learning you must first have a working transmitter. On the control board press the Rf **Learn** button (TOP BUTTON on right) once until the blue LED light shines. On your remote press the top LEFT button once.... Blue light flashes to confirm tuning of remote.

Step 1: Press the "Set" button for 3-5 seconds. (3<sup>RD</sup> BUTTON FROM TOP) You will see the display change to **RUN** then go to **F1**

Step 2: Simultaneously press the "Set" and the "Down" button (4<sup>th</sup> BUTTON FROM TOP) for up to 5 seconds until the LED display shows **LEA**

Step 3: You now have less than 5 seconds to press the left top button of your remote to activate the motor opening cycle and systems learning will commence. LED display shows **ARN**

**Warning:** Gate will start moving so keep clear of moving parts.

Step 4: Gate will commence an open cycle until “Open Cam” contacts with “Limit Switch” and stops the motor. A second or 2 later the gate will start a close cycle until “close cam” contacts “Limit Switch” and stops the motor. “System-Learning” is now complete.

**Test the gate opener is working correctly.**

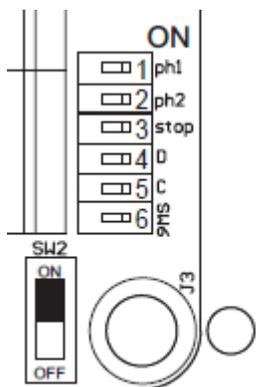
If the gate loads up on your physical stops and stops this will affect the reliability of the gate operation. Adjust the limit cams so the gate just touches the stopper and no more on completion of a cycle. You can now connect optional devices by removing the terminal block (pulls off) first and inserting your wires in the correct location as per the labels. This is so you do not blow the system up accidentally.

**Connecting Exit Button:** Terminal 10 (Pb) and 11 (GRD) to activate open/stop/close

**Connecting Intercom and keypads:** Terminal 10 (Pb) and 11 (GRD) to activate open/stop/close. Terminal 5 (+13.75) is positive 13v and 6 (GRD) is the negative.

**Connecting the IR beams:**

Important Note: Once beams are installed you must also SW6 DIP white switch 1 to OFF (top switch found in the bottom Right corner of the board). You will also need to loop terminal 2 and 5 on the receiver beam. The system is factory set to be used without the beams fitted so there is no need to “loop” terminal 7 (PH1) to ground as this is done electronically. To Install IR Beams you will need power to the IR beams. Terminal 6 (GND) is negative and terminal 9 (PH+) is positive 12-13v DC. Connect the NC of the IR Beam to Terminal 7 (Ph1) and the COM of the IR Beam to terminal 6 (GND).



**Antenna**

The Boxer is fitted with a tuned antenna positioned on top of the control board mounting plate. Be careful not to damage the antenna wire that passes through the control board cover and connects to the terminal block in the bottom right corner of the control board. You can remove the antenna when working on the control board and replace when finished. Position the earth wire to the GRD and the centre core wire to ANT (top connector).

## **Trouble shooting**

### **Control board Locked –up**

If you change the speed of the motor after you have done “Systems Learning” you may find the control board will “lock-up”. You will need to repeat “systems learning”

The replacement FUSE for the stand-alone transformer is 20 amp (20A250V)