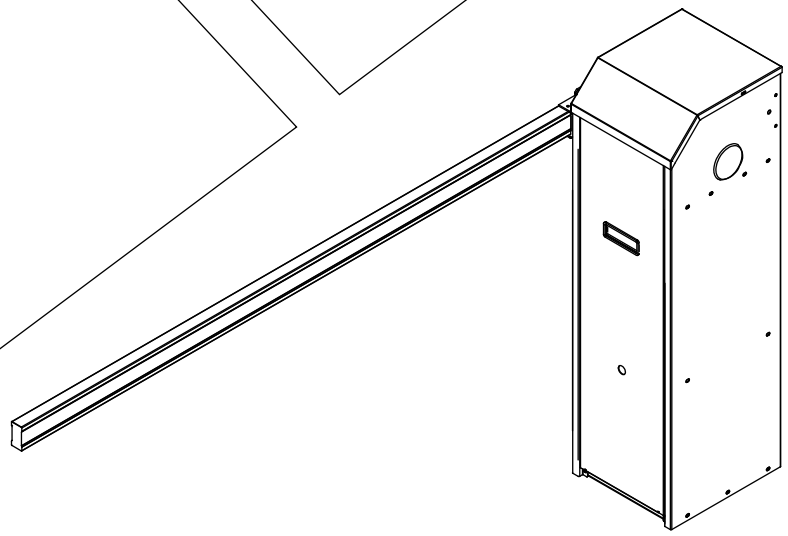
# BARRIER
## JETFLEX BRUSHLESS

Technical Manual



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**WARNING:**
Do not use the device without referring to this manual first.

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# CONTENTS



# INSTALLATION SITE

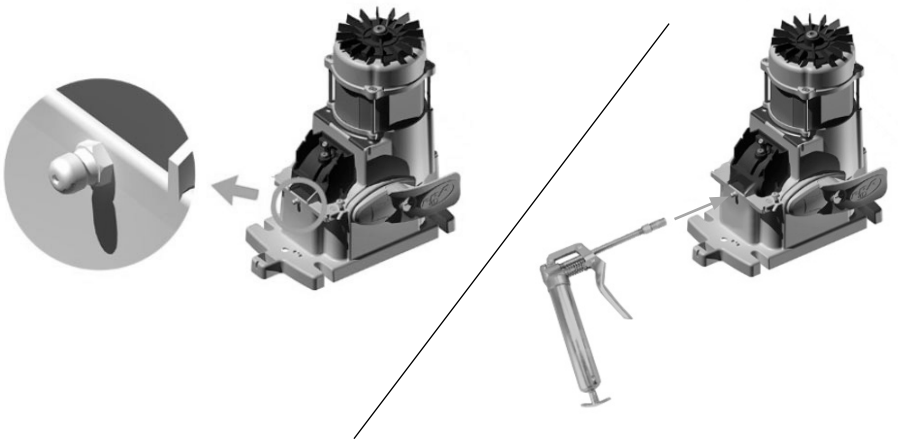
The driveway where the automatic barrier (boom gate) will be installed must be previously analyzed, by checking the entire infrastructure of the place, the floor conditions, the electrical network, the width of the passage span, the height of the clearance (if any), the flow of vehicles and the need to use optional accessories.
That done, the equipment that best fits the needs of the location should be chosen.

**NOTE:** In driveways with low ceilings, the use of folding beams is generally recommended. In this case, one must consult with the factory so that it can provide one with the appropriate size beam for installing it on the specific location.

**IMPORTANT**
One must check if there are any obstacles that may interfere with the complete opening and closing of the beam. In this case, the installation of the equipment will be impaired, making it necessary to repair the infrastructure of the site. Carefully choose the model of the automatic barrier according to its technical features and the location where it will be installed. Observe the need for optional accessories. Calculate the flow of vehicles on site.

**NOTE:** If the floor does not meet the previous specifications, a concrete plinth (foundation) must be provided for anchoring the cubicle, attending to the dimensions its base. Generally, the concrete plinth should be 100 mm (~4 in) high above the floor level.

**NOTE:** This product is manufactured with the 'M6' straight grease fitting that makes it easy to grease the internal crown, as the gearmotor does not need to be disassembled for maintenance to be carried out, providing installers with quickness and convenience.



**Site preparation:**

1. 1. Pass a 3/4" pipe through the concrete floor/plinth from the center of the plinth to the circuit breaker panel at the site, from where the equipment's electrical supply will come out.
2. Provide the routing of the power cables and pushbuttons through this piping to the place where the equipment will be operated. Refer to the table on the next page for choosing the proper cable, according to the NBR 5410 standard (in Brazil).

| Motor power supply | Cable type and gauge |
|---|---|
| 110V | One 2-way x 2.50²mm AWG cable |
| 220V | One 2-way x 2.50²mm AWG cable |



**NOTE:** If accessories are used, provide the pipes and cables as needed. Provide a grounding rod that will be fixed close to the automatic barrier cubicle.

## GENERAL FEATURES

- 'Universal' cubicle - the beam can be installed on either side of the cubicle
- Release system for manual unlocking (up to 4.5m - 14.8 ft)
- Electronic control board with a variable frequency drive
- Mechanical stopper with height adjustment
- System actuation through a gearmotor, pulleys and belts
- Galvanized steel cubicle with anticorrosive treatment and electrostatic painting that ensure great resistance against weather conditions
- Limit switch system with encoder
- Electronic brake
- It allows the installation of several accessories (inductive loop, visual exit annunciator, photocell, pushbutton etc.).

**NOTE:** This product requires installation by an authorized and qualified PPA professional.

## TECHNICAL SPECIFICATIONS

'Barrier Brushless' Automatic barrier (Straight beam)

| Beam length | Cycles / hour | (Adjustable) Opening speed | (Adjustable) closing speed | Absorbed power | Input Voltage |
|---|---|---|---|---|---|
| 2.5 to 3m (8.3 to 9.9 ft) | (600) Heavy-duty | 1 sec. | 1.5 sec. | 1 HP | 127 / 220V |
| 3.5 to 4.5m (11.5 to 14.8 ft) | (300) Heavy-duty | 2.5 sec. | 3 sec. | 1 HP | 127 / 220V |
| 5 to 6m (16.5 to 19.7 ft) | (100) Heavy-duty | 6 sec. | 8 sec. | 1 HP | 127 / 220V |

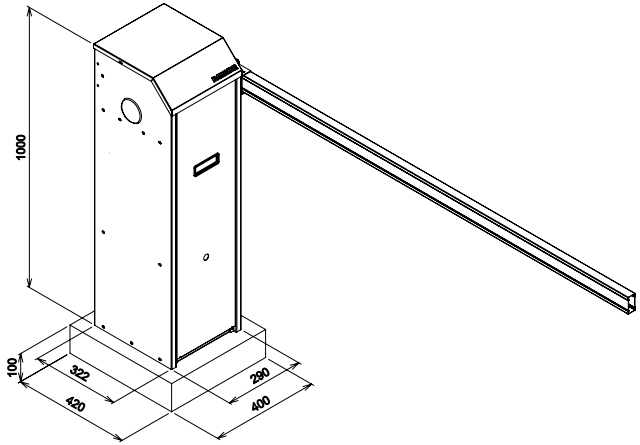
'Barrier Brushless' Automatic barrier (Straight PVC beam)

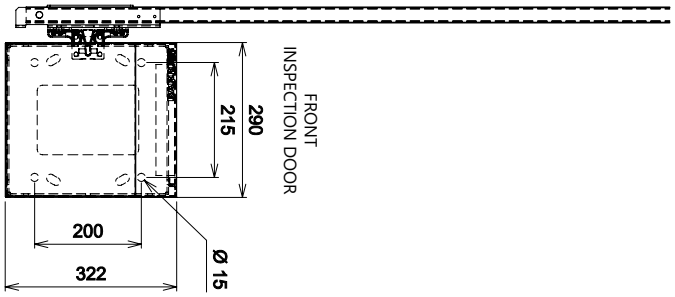
| Beam length | Cycles / hour | (Adjustable) Opening speed | (Adjustable) closing speed | Absorbed power | Input Voltage |
|---|---|---|---|---|---|
| 2.5 to 3m (8.3 to 9.9 ft) | (600) Heavyduty | 1 sec. | 1.5 sec. | 1 HP | 127 / 220V |

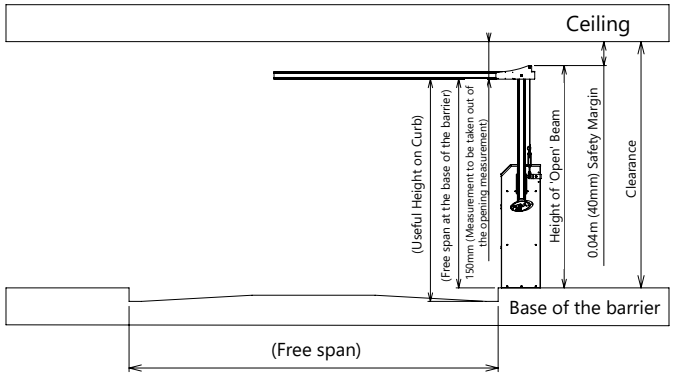
'Barrier Brushless' Automatic barrier (Folding aluminum beam)

| Beam length | Cycles / hour | (Adjustable) Opening speed | (Adjustable) closing speed | Absorbed power | Input Voltage |
|---|---|---|---|---|---|
| 2.5 to 3m (8.3 to 9.9 ft) | (200) Heavyduty | 1.5 sec. | 2 sec. | 1 HP | 127 / 220V |
| 3.5 to 4.5m (11.5 to 14.8 ft) | (150) Heavyduty | 3 sec. | 4 sec. | 1 HP | 127 / 220V |
| 5 to 6m (16.5 to 19.7 ft) | (80) Heavy-duty | 6 sec. | 8 sec. | 1 HP | 127 / 220V |

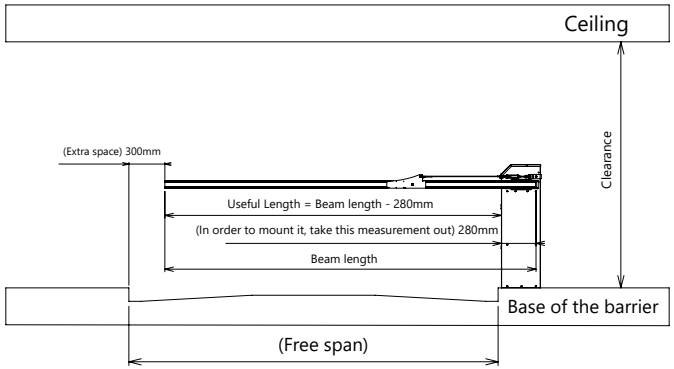
# EQUIPMENT DIMENSIONS



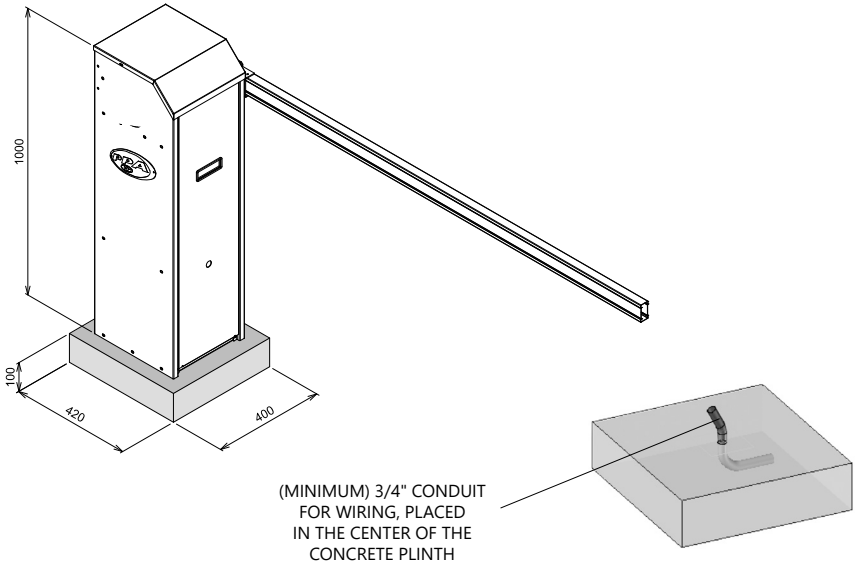






# CONSTRUCTION OF THE BASE FOR ANCHORING THE CUBICLE

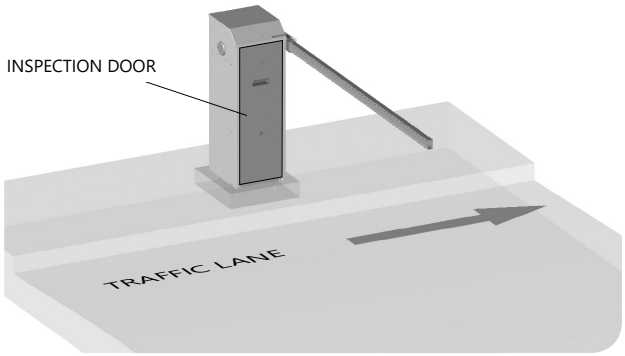
Build a concrete plinth, so that the highlighted orientation (Ex: “400” - 'Barrier' Automatic Barrier) is located towards the curb (street, traffic lane), following the suggested dimensions.



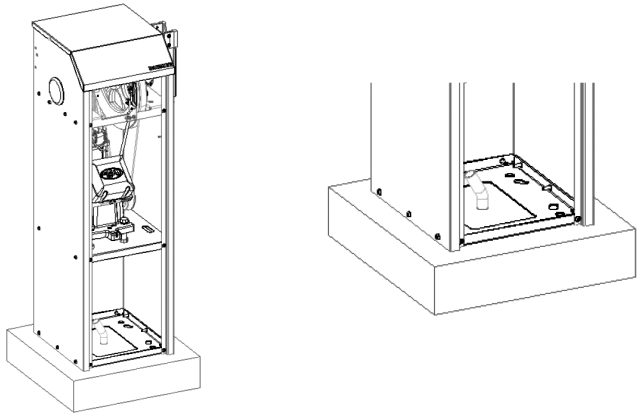

**Note:** Measurements in millimeters. It is very important that the concrete plinth is level; this provides the product with a better performance/operation.

# INSTALLING THE AUTOMATIC BARRIER

1. When anchoring the cubicle, note that its inspection door must face the side of the track or traffic lane.




2. Position / align the cubicle on the concrete plinth and mark the places where the holes will be drilled, so that the front of the automatic barrier (inspection door side) is located towards the curb (street, traffic lane).



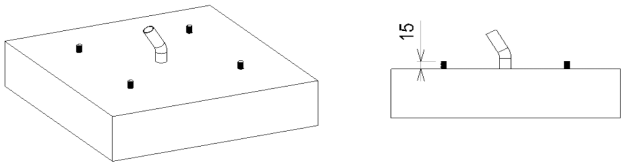
3. Remove the cubicle from the plinth and drill the holes in the previously marked locations.

**Note:** Drill 04 holes with a Ø10mm drill and at least 80mm (3.2 in) deep.

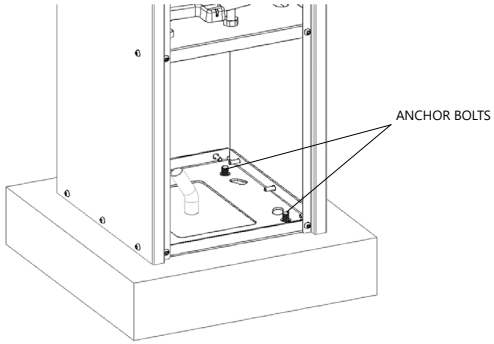
4. Insert the anchor bolts into the holes in the concrete plinth, as indicated below.



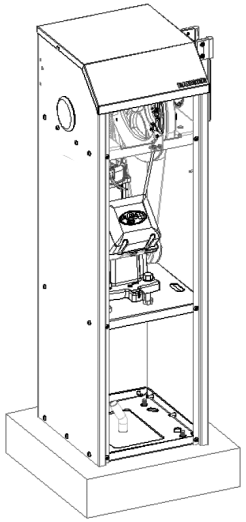
**Note:** The anchor bolts must not be inserted completely, they must remain about 15mm (0.6 in) out of the concrete plinth.



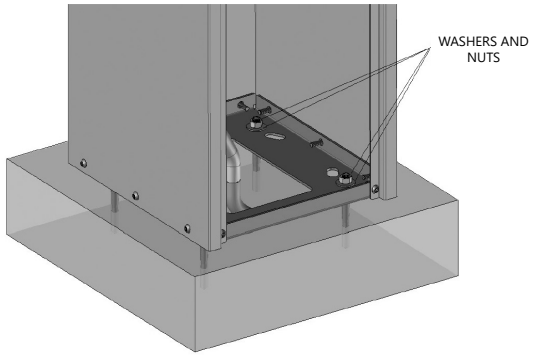

5. Position the cubicle on the concrete plinth, fitting the holes of the cubicle in the anchor bolts.



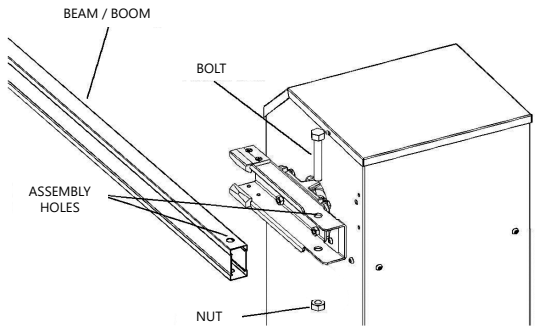

6. Check the cubicle alignment again. If necessary, move it in a circular manner as desired.



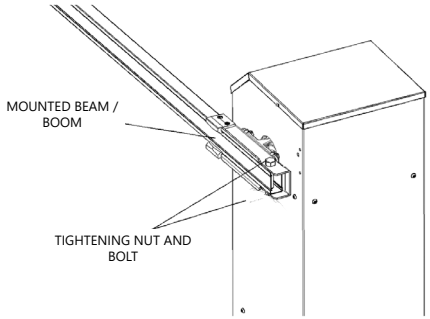
7. Insert the washers and nuts for the definitive mounting of the cubicle.




8. Insert the beam / boom into the housing of the fixing set, aligning the mounting holes.




9. Once in position, tighten the nut and the bolt.

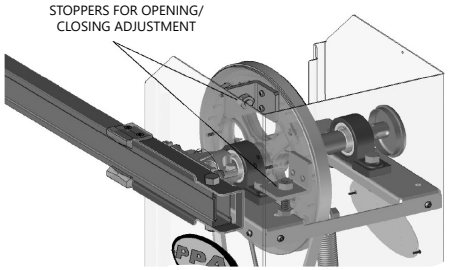




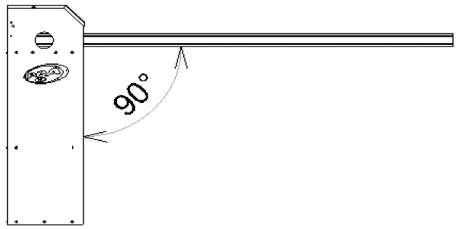

10. Power / energize the barrier according to the voltage of the purchased product (127V or 220V).

**Note:** Use 2.50mm$^2$ cables. Use a dedicated circuit breaker, i.e., a circuit breaker to which only the barrier will be connected.

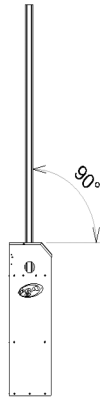
11. Check / define the alignment of the bean (opening and closing). Use mechanical stoppers for this purpose, moving them as needed.




12. The automatic barrier will be in good working closing condition, when the beam / boom is in the condition shown in the image below.




13. The automatic barrier will be in good working opening condition, when the beam / boom is in the condition shown in the image below.

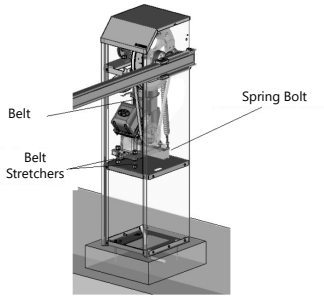


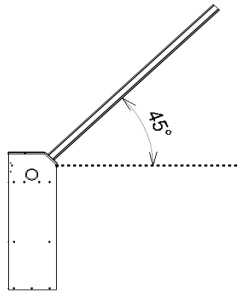

**Note:** It is not necessary to balance the beam again, as it leaves the factory balanced. However, if necessary, follow the instructions below.

## BALANCING THE BEAM AND CHECKING THE BELT

1. Remove the gearmotor from the cubicle, leaving the belt free. Check if the beam remains at a position around 45°. Otherwise, the adjustment will be made through the spring bolt, either loosening or tightening it until the ideal adjustment is reached.
2. Once this is done, place the gearmotor and the belt again. Check if it is properly stretched and ready for operation. With your thumb, apply an even pressure on the belt. If it does not bend, it is properly stretched. If the belt is loose, adjust it using the belt tensioning bolts, using a wrench according to the respective nut.



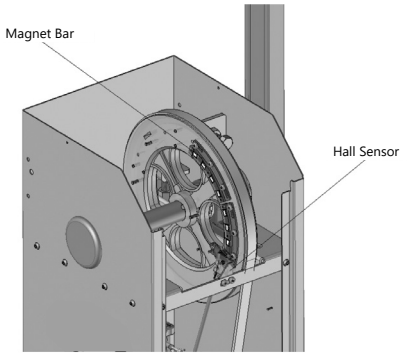



## ADJUSTING THE MAGNET BARS

With the beam properly balanced, and with its opening and closing 'mechanical stoppers' adjusted, check if it is necessary to adjust the magnet bars.

1. Keep the beam in the 'open' position (90°).
2. Adjust the magnet bar so that the last magnet is in front of the Sensor Hall (Encoder) and tighten the fixing bolts.




**Note:** Perform the same procedure with the beam in the 'closed' position (0°).
The automatic barrier is ready to operate. Turn on the circuit breaker, press the '+' button on the electronic control board and the barrier will function.

**Note:** In the first activation, the beam will move slowly in an opening and closing movement, as it will be reading the path. Right after the reading is done, its operation is right, and the automatic barrier starts to operate at the factory default speed. For more accurate adjustments, refer to the Electronic Control Board options.

## OPERATION

The operation of the automatic barrier is performed by a microcontrolled Electronic Control Board, activated via remote control or any other device that provides an NO (Normally Open) contact.

## TRIFLEX CONNECT BRUSHLESS' ELECTRONIC' CONTROL BOARD

The Electronic Control Board operates with a Variable frequency drive, whose function is to start the three-phase induction motor from a single-phase AC network and a logic controller to perform the Variable frequency drive operations. For more information, refer to the 'TRIFLEX CONNECT BRUSHLESS' control board's manual.

## ENCODER SYSTEM ('REED DIGITAL')

The beam position is monitored by an Encoder. Also called the Digital Signal Angular Positioning Transducer System, it is used to precisely control and monitor the movements of the gearmotor.
Therefore, there is the possibility of storing, in the memory, certain positions of the barrier and then allowing the Electronic Control Board to control the opening and closing. This is achieved by means of sensors that inform the direction of travel and the position of the bean during operation.
So, it is a device responsible for the reading, memorization, and accuracy of a beam's path.