

## Technical Specification

### 10604

## Trackless Bi-Folding Speed Gate (Chain folding mechanism)



The 10604 trackless bi-folding speed-gate (Patents Pending) consists of a post onto which a bi-folding leaf is hingedly attached. Unlike most bi-folding gate systems this does not require a track either in the ground or overhead to fold the leaf in half but uses a folding system housed inside a casing on top of the post hung leaf.

### Product Overview

The post hung section of the bi-fold leaf is driven by a unique innovation consisting of a torque motor driving a crank arm through 270 degrees giving good mechanical advantage. The 270 degree drive mechanism together with an electro magnetic brake locks the gate in both open and closed positions. The folding mechanism transfers rotation from the post-hung leaf to the leaf hung leaf at a ratio of 2:1. The sinusoidal action of the drive allows the gate to operate in both a smooth yet fast action closing in 6 seconds (or 8 seconds in particular windy locations where a more powerful drive is used)

The gate leaf sections are fully welded assemblies. The leaf frames are normally constructed of 60x60 RHS steel sections in-filled with closely spaced 30 x 30 RHS vertical bars with a maximum gap of 100mm between. To reduce climb-over possibilities cross bars are not included below 3 metres high.

Typically a gate can consist of either a single unit of one post supporting one bi-folding leaf spanning up to 3.5 metres. The leading edge and roller is received into a post on the other side of the roadway.

On wider openings typically up to 7metres span then a pair of opposite handed units (a bi-parting pair) needs to be used. In the centre of the roadway a receptor plate will be required to receive the leading edge rollers when the gate reaches the fully closed position.

The operation of the torque drive motor is controlled by a Programmable Logic Controller (PLC) based unit located within the associated control cabinet.

### Dimensions

<b>Single unit:</b>	Maximum width: 3.5 m between motor post and receptor post. Height Typically: 2.4m but can be higher with slight reductions to the maximum width.
<b>Bi-parting pair:</b>	Maximum width: 7.0 m between motor posts. Height Typically: 2.4 m but can be higher with slight reductions to the maximum width.

1. For bi-parting pairs the roadway needs to be level within 65mm between the posts or made-up to level on the installation.
2. Typically the road receptor plate protrudes 50mm from the road surface but where the road is not level between posts then the receptor will protrude more.

## 10604 Series | Speed Gate

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## Safety

- The bi-folding method of gate operation requires considerably less power to operate than conventional swing gates and also has less wind effect. This combined with the 270 degree drive results in a relatively lower powered and thus safer drive.
- All gate systems come complete with a through photo beam system between posts. Additional photobeams can be added for extra protection.
- The leading edges of the leaves are fitted with electrical rubber safe edges which if in contact with an obstruction will stop the operation of the gate.
- It is recommended that all installation include vehicle detection loop systems.
- Traffic signals are also recommended to control traffic and reduce tail-gating possibilities.

## Construction

POSTS:	200mm x 200mm RHS.
LEAFS:	60mmx60mm RHS .
INFILL:	30mmx30mm RHS @ 100 mm maximum spacing between bars.
BASES PLATES:	20mm thick configured to suit various types of installations.
HINGES:	25mm dia stainless steel pins, DU self lubricating plain bearings, and ball thrust bearings with stainless steel covers.
DRIVE:	80w torque motor with electromagnetic braking driving through a 270 degree system (Patent Pending)
LEAF FOLDING:	Duplex chain system configured to a 2:1 ratio mounted on the post hung leaf (Patent Pending)



## Controls

- Controls are Programmable Logic Controller (PLC) based and therefore are very flexible and can be configured to suit customer's requirements.
- Optional features can include conventional push button station or Human-machine interface (HMI) terminals.
- Single or multiple control positions and all forms of access control can be utilised.

## Installation

Generally there are two fixing methods either "surface-fix" or "sub-fix".

**Surface-fix** is for existing surfaces usually within a building or where it is difficult to provide sunken foundations. Simply the base plates are bolted directly to a suitable concrete surface using chemical anchors bolts. Base-plates can be angled to suit ramp gradients. On larger gates it is sometimes found necessary to cleat to the structure of the building or design bracing to increase rigidity.

## Options

- Serrated edges can be added to the top surface of the gate for extra security.

## Electrical

Supply 240volt 50Hz single phase 10 amp is the preferred supply but other voltages can be accommodated.

## Finishing

Grit blast to SA2.5, hot zinc metal spray to 50 micron, pre-heat and etch, polyester powder-coat to 50 micron minimum. Colours: most standard RAL colours are available normally to 30% gloss. Other colours on request.

**Sub-fix** is usual for perimeter applications whereby foundation blocks typically 900mm deep are cast to a required size and to a level usually 400mm below the finished road level, service ducts are also provided at this level. This is known as the "first pour". The gates are then bolted down to these, levelled and ducts connected. Once the whole system has been proved, checked for level and operation then the "second pour" is applied to the finished level less any finishing surface. This method is usually self standing.

- Angled base-plates to suit ramp gradients.
- Traffic signals
- Beacons sounders etc.
- Individual leaf control
- Non standard infill sheet, mesh etc.