**Eagle Automation Systems Ltd**

Focused on Protection and Security

# GUIDE TO HIGH SECURITY PRODUCTS AND PROTECTING CROWDED SPACES

Made in the UK,
exported globally.

# PROTECTING PUBLIC SPACES AND CRITICAL INFRASTRUCTURE

**Eagle Automation design, manufacture and supply a wide range of PAS68 & IWA14-1 tested gates, bollards and blockers. To compliment this Eagle also manufacture a comprehensive range of LPS1175 and CPNI rated turnstiles.**

Eagle Automation Systems Ltd was established in 1988 and is one of the leading gate automation and security companies in the United Kingdom. Our mission is to provide a single source for all clients HVM and LPS1175 requirements.

All of our automated gates and vehicle barriers are secure before impact (SBI) meaning that we have designed systems that are locked down before a collision and do not rely on vehicle energy to catch the gate or barrier.

Eagle has over 40 employees with eighteen dedicated to the service and maintenance of gates and barriers. As a result of continued investment in staff, IT systems and training Eagle have a structured maintenance department offering 24/7 cover over a thousand contracted sites across the UK.

**Our mission is to provide the industry with a single source for PAS68, IWA14-1 and LPS1175 rated products by building on the skills and expertise of our employees and by empowering them to carry out their tasks. By focusing and acting on our customers' needs and requirements and expanding our products and services within the industry.**

# CONTENTS

# STANDARDS EXPLAINED

## PAS68:2013

PAS68 is the best known Publicly Available Specification (PAS) for vehicle security barriers (VSB). In recent years it has been the UK's standard and the security industry's benchmark for HVM (Hostile Vehicle Mitigation) equipment. It is the specification against which perimeter security equipment is tested as part of the ongoing research to prevent VBIED (Vehicle Born Improvised Explosive Device) attacks. To be used in conjunction with PAS69:2013 (guidance for the selection, installation and use of vehicle security barriers).

## IWA14-1:2013

International Workshop Agreement. A global standard prepared in conjunction with CPNI/BSI and with input from US Department of State. IWA14-1 combines and updates elements from PAS68, PAS69, ASTM F2656 and CWA16221. IWA14-1 specifies the essential impact performance requirement for a (VSB) and a tested method for rating its performance, when subject to a single impact by a test vehicle not being driven by a human being. To be used in conjunction with IWA14-2:2013 (guidance for the selection, installation and use of vehicle security barriers).

Example IWA14-1 classification:

V/7200(N2A)/80/90:1.0

V - Tested using the vehicle impact method

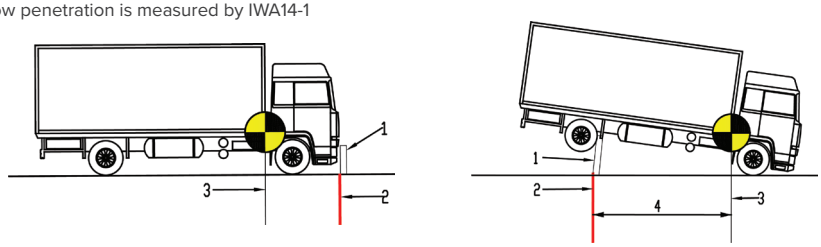
7200(N2A) - Tested with an impact from a 7,200kg N2A class vehicle

80 - Impact speed of 80kph (50mph)

90 - Impacted at 90 degrees to the front face of the VSB

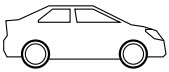
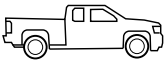
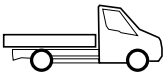
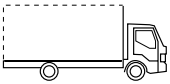
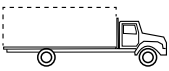
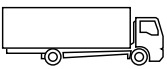
1.0 - Where the vehicle reference point penetrated 1.0 meters beyond the original position of the front face of the equipment.

How penetration is measured by IWA14-1




1 = Product under test, 2 = VSB datum line
3 = Vehicle datum point, 4 = Vehicle penetration distance

# IWA14-1 TEST VEHICLES

| Type of test vehicle | Vehicle classification and description | Vehicle mass (kg) | Illustration | Energy (kJ) (speed mph) |
|---|---|---|---|---|
| Car | M1 | 1500 |  | 237 kJ (40 mph) |
| 4x4 crew cab pick-up | N1G | 2200 |  | 348 kJ (40 mph) |
| Flat bed | N1 Single cab | 3500 |  | 553 kJ (40 mph) |
| Day cab vehicle | N2A 7,200kg 2-axle rigid (flat bed, open curtain side or rigid box) | 7200 |  | 1138 kJ (40 mph) |
| Day cab vehicle | N2B 7,200kg 2-axle rigid (flat bed, open curtain side or rigid box) | 7200 |  | 1138 kJ (40 mph) |
| Day cab vehicle | N3C 7,200kg 2-axle rigid (flat bed, open curtain side or rigid box) | 7200 |  | 1778 kJ (50 mph) |

# STANDARDS EXPLAINED

## DOS

The original American Department of State (DOS) Ratings utilised a truck with a gross vehicle weight of 15,000lb (6,800kg).

## ASTM F2656

American Society for Testing Materials (ASTM) developed on the DOS rating system expanding the test to cover different vehicle types, weight and speeds similar to IWA14-1 and PAS68. Replaces SD/STD2.01 Rev A, US Department of State (DOS) Standard. K ratings no longer exist replaced by vehicle categories C,P,M,H

Example DOS and ASTM comparison

| Test Vehicle Weight | Nominal Impact Speed | DOS Designation | ASTM Designation |
|---|---|---|---|
| 15,000lb (6800kg) | 50mph (80 kph) | K12 | M50 |
| 15,000lb (6800kg) | 40mph (64 kph) | K8 | M40 |
| 15,000lb (6800kg) | 30mph (48 kph) | K4 | M30 |

## VAW

A CPNI private test standard that involves a vehicle as a attack weapon (VAW). Involves slow speed encroachment, nudging, repetitive ramming and low speed impact.

## PAS170-1:2017

Low speed impact testing utilising a purpose designed trolley (2500kg). Product impact tested at 10mph (16kph) and 20mph (32kph). Impact Trolley IT/2500/32/90:1.0 where anything with a penetration distance of 2.0m or less is given a rating.

## The Loss Prevention Certification Board (LPCB)

LPS1175 (Loss Prevention Standard) covers the broadest scope of physical security products and services of any publicly available standard in the world. The standard comprises a number of security ratings with test requirements of ascending intensity A1 (SR1), B3 (SR2), C5 (SR3), etc. These are measured in terms of attack tools and time available to the attacker, and enables specifiers to select products according to the risks that they and their property face.

## Secured by Design (SBD)

Secured by Design (SBD) is the UK Police flagship initiative supporting the principals of “designing out crime” by means of effective crime prevention. Products that are awarded SBD approved status have passed a thorough, strict, and independent testing programme.

# PAS68 & IWA14-1 GATES

## PAS68 Bi-Folding Speed Gate - EAG01040/50

**The RAPIDE PAS68 bi-folding gate has been successfully tested at 40mph and 50mph with a 7.5T (N2 and N3) vehicle respectively.**

Our arrestor system produced the lowest penetration classification in its class. With shallow foundation and extremely low penetration, both products provide a superb solution for hostile vehicle mitigation.

### Model: EAG01040

Crash Tested to 7.5T (N2) @ 40mph (64kph)

PAS68:2010 V/7500(N2)/64/90:0.8/0.0

### Model: EAG01050

Crash Tested to 7.5T (N3) @ 50mph (80kph)

PAS68:2010 V/7500(N3)/80/90:0.7/0.0

### Key Features

Shallow foundation 330mm (plus surface finish)

Eagle fibre technology

Trackless

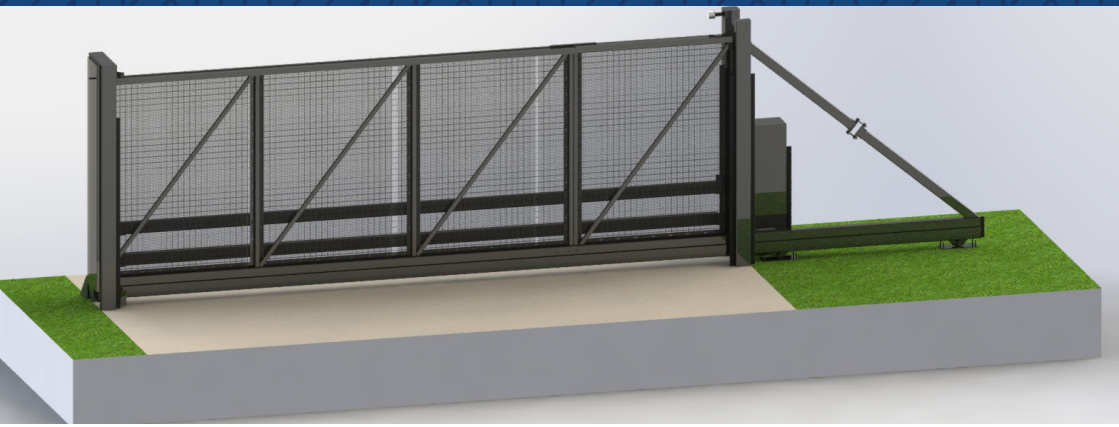
Smooth and quiet

Opening and closing in approximately 8-9 seconds, add 3 seconds for locking pin

Power 240v 16 amp

Galvanised and powder coated

# PAS68 & IWA14-1 GATES



## PAS68 Sliding Gate - EAG02040/50

### The INTERROGATOR PAS68 cantilever sliding gate has been successfully tested at 40mph and 50mph with a 7.5T (N2 and N3) vehicle respectively.

Eagle continue to lead the field with their innovative arrestor system. At 8m opening it is the widest cantilever gate tested with the N3 vehicle at 50mph whilst producing only 1.6m of dynamic penetration.

**Model: EAG02040**

Crash Tested to 7.5T (N2) @ 40mph (64kph)

PAS68:2010 V/7500(N2)/64/90:5.6/10.1

**Model: EAG02050**

Crash Tested to 7.5T (N3) @ 50mph (80kph)

PAS68:2010 V/7500(N3)/80/90:1.6/5.4

**Key Features**

Shallow foundation 330mm (plus surface finish)

Eagle fibre technology

Tested at 8m clear opening

Smooth and quiet

Standard operating speed 150-200mm/sec

Heavy duty cantilever rolling gear

High quality bearings and rollers

Power 240v 16 amp

Galvanised and powder coated

# PAS68 & IWA14-1 GATES

## PAS68 Swing Gate - EAG03040

**The CHALLENGER PAS68 swing gate is available as a manual double leaf swing gate with opening of up to 8.0m or automated single leaf gate swing with opening of up to 6.0m.**

Gate Tested on 7.5T(N2) vehicle at 40mph (64kph). 8.0m clear opening x 2.4m high. Only 1.1m of penetration and zero debris.

### Model: EAG03040

Crash tested to 7.5T (N2) vehicle @ 40mph (64kph)

PAS68:2010 V/7500(N2)/64/90:1.1/0.0

### Key Features

Shallow foundation 330mm (plus surface finish)

Eagle fibre technology

Opening and closing time 25-35 seconds

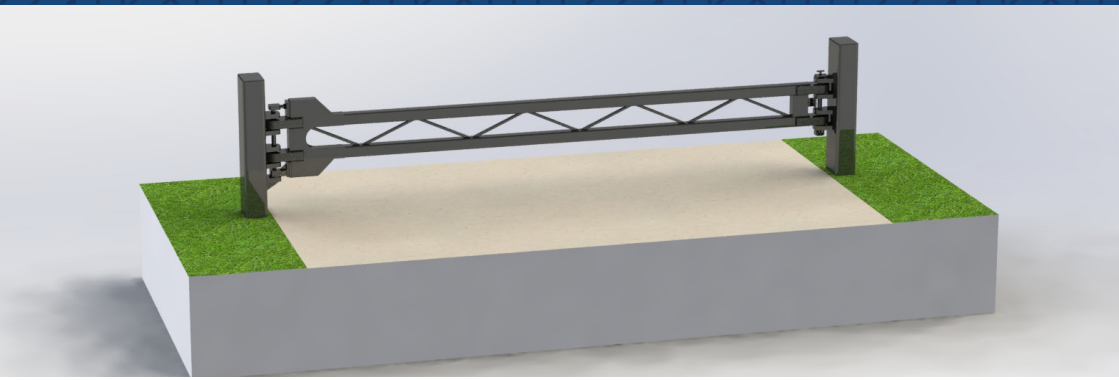
Galvanised and powder coated

Smooth and quiet operation

Low maintenance with few moving parts

Power 240v 16 amp

# PAS68 & IWA14-1 GATES



## IWA14-1 Lockdown - EAG04040

**The IWA14-1 LOCKDOWN gate is specifically designed as a manual gate for openings up to 8m. The gate can be constructed in sections, allowing the system to be easily shipped and built on site. Tested on 7.5T (N2) at 40mph (64kph) and 1.5T (M1) at 50mph (80kph).**

### Key Features

Tested with foundation depth of 250mm and 420mm

Tested to 8m opening

Removable posts

Various fretwork designs to suit surroundings

Available in stainless steel

Galvanised and powder coated

**Model: EAG04040**

Crash tested to 7.5T (N2A) @ 40mph (64kph) IWA 14-1:2013 V/7200(N2A)/64/90:0.9

Crash tested to 1.5T (M1) @ 50mph (80kph) IWA 14-1:2013 V/1500(M1)/80/90:1

# PAS68 & IWA14-1 GATES

## IWA14-1 Westminster Lockdown

**The IWA14-1 WESTMINSTER LOCKDOWN gate (model EAG04040W) is specifically designed as a manual gate to meet the specific architectural requirements blending in with sites of particular historical importance and heritage.**

The Lockdown has undergone rigorous testing to meet not only specific CPNI requirements but meet the standards of IWA14-1. Fully removable posts mean it can be permanently or temporarily deployed.

### Key Features

Shallow, mid and full-depth foundations

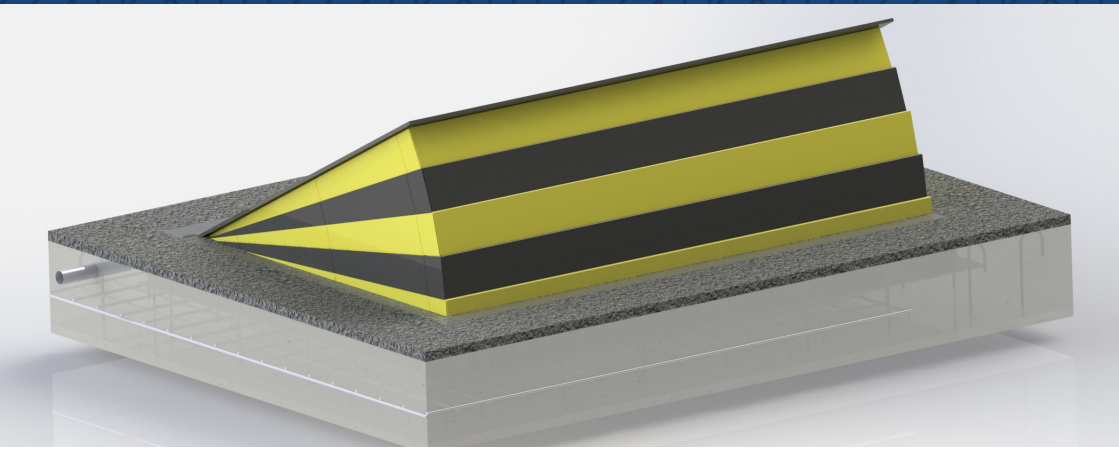
Tested to 8m opening

Removable posts

Historic England approved fretwork designs

Deployed throughout historic locations

# PAS68 BLOCKERS



## PAS68 Shallow and Surface Mount Road Blockers - EAG50000

### Titan Shallow Mount Blocker. Tested with a 7.5 T (N3) vehicle at 50mph (80kph) as a true surface mount blocker and also available as a shallow mount blocker.

**Model: EAG05050**

Crash Tested to 7.5T (N3) @ 50 mph (80kph)

PAS68 2010 V/7500(N3)/80/90:7.34/26.4

### Key Features

Tested at 3m wide

Gaps 10mm max

Manufactured from heavy duty steel sections fully welded

Surface mounting substantially reduces installation time

Designed for axle weights in excess of 12 tonne

2m Foundation 3.0m x 3.2m x 0.47m

3m Foundation 4.0m x 3.2m x 0.47m

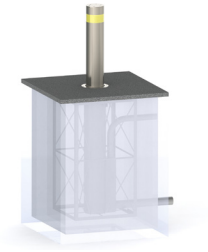
Raise speed: approx. 6-8 seconds, 1-2 seconds with optional EFO

# PAS68 AUTOMATIC BOLLARDS

## PAS68 Static Bollards EAG06000 Range

### Model: EAG060-30A

Impact tested as a single bollard. Zero penetration. Supplied with integral re-bar



Crash tested to 7.5T (N2) vehicle at 30mph (48kph)

PAS68:2010 V7500(N2)48/90:0/0

Impact tested as a single bollard

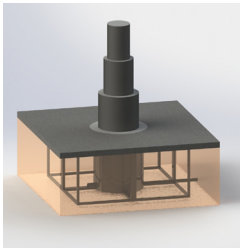
Diameter: 219mm

Height: 1000mm above FFL

Finish: Galvanised and powder coated. Optional Stainless Steel

Foundation: 1.2m x 1.2m x 1.7m

Raise speed: 6-8 seconds standard, 1-2 seconds with optional EFO



### Model: EAG060-30AT

The world's shallowest foundation telescopic rising bollard tested with the 7.5T (N2) vehicle at 48kph (30mph). This has a foundation depth of just 500mm. Supplied with integral re-bar.

Crash tested to 7.5T (N2) vehicle at 30mph (48kph)

PAS68: 2010 V7500(N2)48/90:0/0

Impact tested as a single bollard

Height: 900mm above FFL

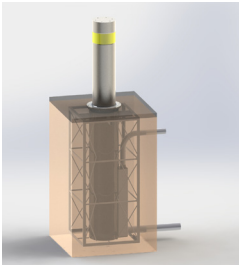
Finish: Tufftride and hard top paint

Foundation: 1.7m x 1.7m x 0.5m

Raise speed: 8-10 seconds standard, 2-4 seconds with optional EFO

### Model: EAG060-50A

A high impact rated bollard tested with the 7.5T (N3) vehicle at 50mph (80kph). Supplied with integral re-bar.



Crash tested to 7.5T (N3) vehicle at 50mph (80kph)

PAS68:2010 7500(N3)80/90:5.9/7.0

Impact tested as a single bollard

Diameter: 323mm

Height: 1200mm above FFL

Finish: Galvanised and powder coated. Optional Stainless Steel

Foundation: 1.2m x 1.2m x 2.0m

Raise speed: 6-8 seconds standard, 1-2 seconds with optional EFO

# PAS68 STATIC BOLLARDS

## PAS68 Static Bollards EAG07000 Range

**Eagle Automation has a comprehensive range of PAS68 tested static bollards including the worlds first surface mount bollard, ultra-shallow foundation bollards, a shallow foundation single unit bollard and mid depth foundation bollards.**

Eagle also offer a range of different diameters with many of our bollards having removable options and stainless steel sleeves.

### Model: EAG070-30ST

Crash tested to 7.5T (N2) vehicle at 30mph (48kph)

PAS68:2010 V/7500(N2)/48/90:0/0

Diameter: 193mm and 219mm

Foundation depth: 600mm

Tested as array of three

### Model: No: EAG070-40ST

Crash tested to 7.5T (N2) vehicle at 40mph (64kph).

PAS68:2010 V/7500(N2)/64/90:0/23.8

Diameter: 219mm and 273mm

Foundation depth: 750mm

Tested as array of three

### Model: No: EAG070-50ST

Crash tested to 7.5T (N2 &N3) vehicle at 50mph (80kph).

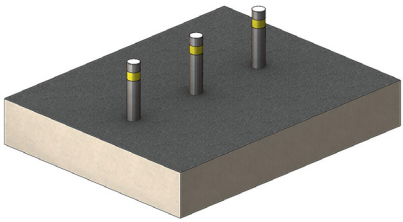
PAS68:2010 V/7500(N2)/80/90:1.0/21.2

PAS68:2010 V/7500(N3)/80/90:10.6/11.1

Diameter: 273mm

Foundation depth: 750mm

Tested as array of three



# PAS68 STATIC BOLLARDS

### Model: EAG070-30SM

The world's first surface mounted bolt down bollard tested with the 7.5T (N2) vehicle at 30mph (48kph).

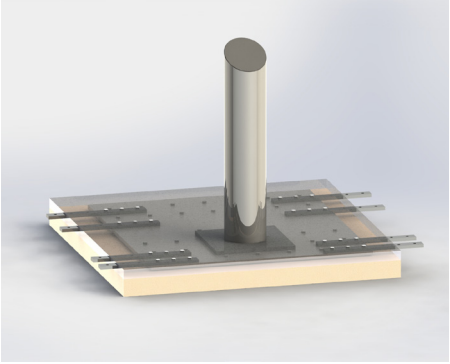
Crash tested to 7.5T (N2) @ 30mph (48kph)

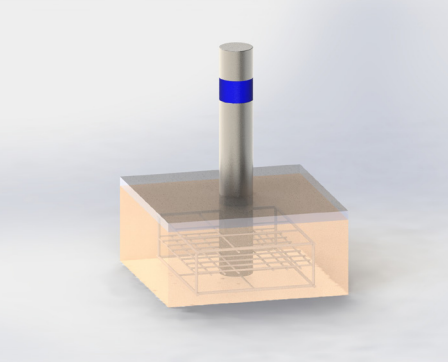
PAS68:2010 V/7500(N2)/48/90:5.5/0.0

Diameter: 219mm

Foundation depth: Surface mount

Tested as an array of three





### Model: EAG070-30SH

This shallow foundation stand alone bollard has been nicknamed "bollard in a box". Tested with the 7.5T (N2) vehicle at 30mph (48kph) Supplied with integral re-bar.

Crash tested to 7.5T (N2) @ 30mph (64kph)

PAS68:2010 V/7500(N2)/48/90:1.1/0.0

Diameter: 219mm

Foundation depth: 400mm

Tested as single bollard

### Model: EAG070-40SH

This is our ultra shallow foundation bollard requiring just 125mm concrete depth. A 219mm or 273mm bollard can be used with this product. It has been tested with the 7.5T (N2) vehicle at 40mph (64kph).

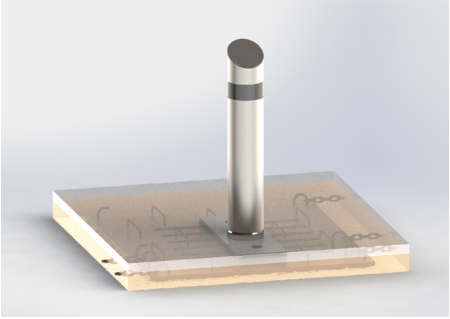
Crash tested to 7.5T (N2) @ 40mph (64kph)

PAS68:2010 V/7500(N2)64/90:4.7/9.2

Diameter: 219mm/273mm

Foundation depth: 125mm

Tested as an array of three



# PAS68 STREET FURNITURE

## PAS68 Street Furniture - EAG08000 Range

**Eagle Automation have a range of PAS68 tested products that support the street furniture scene. Our cycle hoop module is highly versatile and it can be used to create planters, railing systems and other similar products.**

### PAS68 Cycle Hoop
### Model: EAG080-20CR

A zero penetration short height cycle hoop tested with the 3.5T (N1) vehicle at 30mph (48kph)

PAS68:2010 V/3500(N1)/48/15:0.0/0.0

PAS68:2010 V/3500(N1)/48/90:1.5/0.0

Tested at 15 degree and 90 degree impact
Shallow foundation: 250mm

Height above ground: 750mm

Available with gaps between 800mm and 1200mm

Finish: Galvanised and powder coated

### PAS68 Cycle Hoop
### Model: EAG08040CR

A zero penetration cycle hoop tested with the 7.5T (N2) vehicle at 40mph (64kph)

PAS68:2010 V/7500(N2)/64/15:0.0/10.8

PAS68:2010 V/7500(N2)/48/90:1.5/0.0

Tested at 15 degree and 90 degree impact
Shallow foundation: 250mm

Height above ground: 1000mm

Available with gaps between 800mm and 1200mm

Finish: Galvanised and powder coated

# PAS68 STREET FURNITURE

**Another UK first with this tested railing system having many unique features that include removable cross bars. Each upright is supplied as per our world famous 'Bollard in a box' (EAG070-30SH) meaning that no additional re-bar is required.**

### PAS68 Handrail

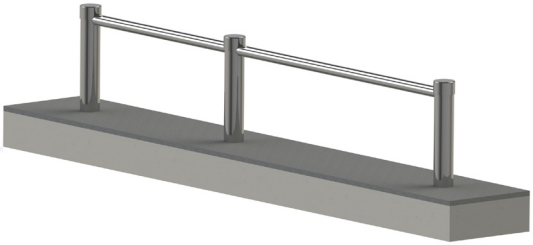
### Model: EAG080-30PR

Crash Tested to 7.5T (N2) at 30mph (48kph)

PAS68:2010 V/7500(N2)/48/90:1.5/0.0

Foundation Depth: 400mm

Spacing: 200mm diameter uprights are set 3 meters apart by 100mm diameter crossbars. Each crossbar is fully independent and can be completely removed within minutes to allow vehicle access.



### PAS68 Planter

### Model: EAG080-30PL

Our cycle hoop module is highly versatile and it can be used to create planters, railing systems and other similar products. Eagle have teamed up with professional horticulturists to create a unique and bespoke range of planters, that can be combined with Eagles crash tested modular system.

# CPNI TURNSTILES

## Wylye Advanced Type 430A-200 Single Full Height Security Turnstile

### CPNI Turnstile

The Wylye Advanced Type 430A-200 single, full height security turnstile has been CPNI tested and approved for UK Government use.

The tool category is for deliberate forced entry of well protected premises using bodily physical force and a wide selection of attack options. The turnstile is deigned to be surface mounted for rapid deployment.


### Key features

Centre for the Protection of National Infrastructure (CPNI) rated product

90 degree locking head mechanism, electrically released in both directions

Status light LED panels to indicate when to proceed

240V AC mains supply 5 amp

Fail secure on power failure

Walkway canopy with down light

Side panels clad in galvanised weld mesh: this is see through for CCTV

Bolts directly onto concrete base

Finish powder coated standard RAL colour

Refer to individual drawings for more information

# LPS1175 TURNSTILES

## LPS1175 Turnstiles

Independently Certified to LPS1175: Issue 8 certificate LPCB ref. 1572

Full Height Single Security Turnstile to A1, B3, C5, D10 (SR1 to SR4 inclusive)

Full Height Double Security Turnstile to A1, B3, C5 (SR1 to SR3 inclusive)

90 degree locking head mechanism, electrically released in both directions

Rotor sensing relays to provide a voltage free contact following the rotation of the rotor in either direction

Status light LED panels to indicate when to proceed

240V AC mains supply 5 amp

LPS 1175: Issue 8
Cert/LPCB ref. 1572

### Specification

Single turnstiles (W 1350mm x D 1330mm)

**A1** 1491-201-S straight bar rotor arms

**A1** 1491-201-H Hooped bar rotor arms

**B3** 1491-202-SF straight bar filled rotor arms

**B3** 1491-202-HF Hooped bar rotor paddles

**C5** 1491-203-SFA Straight Bar filled armour rotor arms

**C5** 1491-203-HFA Hooped Bar filled sheet and armour rotor paddles

**D10** 1491-204-HFA Hooped D Bar filled armour shaped rotor paddles

# COMMERCIAL TURNSTILES

## Turnstile EAG58010

**The Eagle EAG58010 full height turnstile range is a high specification turnstile, suitable for controlling access in environments such as reception areas, health clubs, theme parks, public buildings and stadiums.**


Constructed from mild or stainless steel for long lasting and maintenance free performance, the EAG58010 offers a comprehensive range of basic features to suit individual client requirements, including 90 or 120 rotor assemblies, canopies, down lights and fire alarm activation (to engage free rotation).

Turnstiles can be configured as bi-directional or single direction only. They are available with straight arm as standard or optional trombone arm. The turnstile range is available in single or double according to your requirements.

### Key features

120 degree locking head mechanism, electrically released in both directions

Status light LED panels to indicate when to proceed

240V AC mains supply 2 amp

Fail safe on power failure

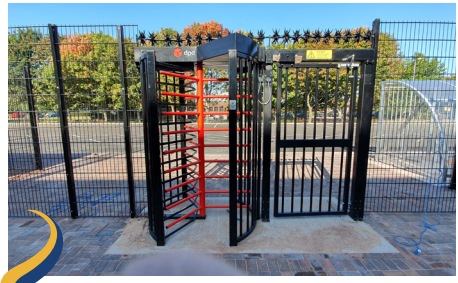
Walkway canopy with down light

Bolts directly onto concrete base

Finish powder coated standard RAL colour

Can be assembled on site, if delivered flat pack

Refer to individual drawings for more information



# COMMERCIAL GATES

## Bi-Folding Speed Gate EAG50010

### Key Features

Trackless design

Heavy duty hydraulic ram with PLC controlled slowdown in both opening and closing movement.

Low maintenance with minimal moving parts

Smooth and quiet operation.

PLC design available with frequency invertor speed control

Very secure with opening and closing in approximately 8 seconds

### Design Specification

Opening: Max 10.0m

Posts: 400mm x 200mm

Infill: 25mm x 25mm RHS Nominal at 125mm centres

Hinges: heavy duty with needle roller bearings and thrust bearings

Finish: hot dip galvanised to BS EN ISO 1461 and powder coated to BS EN13438 and BS EN 15773 to a standard RAL

Speed of Operation: approx. 8 seconds

Manual Override: manual opening and lock open in event of power failure

Power Failure: fail secure

Control: Housed in gate posts. No external cabinets

Safety: BS EN 12453:2017

# COMMERCIAL GATES

## Cantilever Sliding Gate EAG53010

### Key Features

Cantilever Design with heavy duty wheels and high quality bearings

Option of tracked version

Industry proven hydraulic or electromechanical drive system

Low maintenance with minimal moving parts

Smooth and quiet operation

PLC design available with frequency invertor speed control

Smooth and quiet operation

Available with mesh infill or cladding

### Design Specification

Opening: Max 12.0m

Speed: 150 to 200mm/sec

Power: 240V 16A supply

Finish: Hot dip galvanised to BS EN ISO 1461 and powder coated to BS EN13438 and BS EN 15773 to a standard RAL

Manual Override: manual opening and lock open in event of power failure

Safety: BS EN 12453:2017

# COMMERCIAL GATES

## Swing Gate EAG53010

### Key Features

Industry proven hydraulic or electromechanical drive systems

Low maintenance with minimal moving parts

Smooth and quiet operation

PLC design available with frequency invertor speed control

Smooth and quiet operation

Available with mesh infill or cladding

### Design Specification

Opening: Max 14m Speed: 25-45 seconds

Available with any mesh infill, or cladding.

Construction: Manufactured from 50mm x 50mm box section with 25mm bars spaced at approx. 100mm intervals

Power: 240V 16A supply

Finish: Hot dip galvanised to BS EN ISO 1461 and powder coated to BS EN13438 and BS EN 15773 to a standard RAL

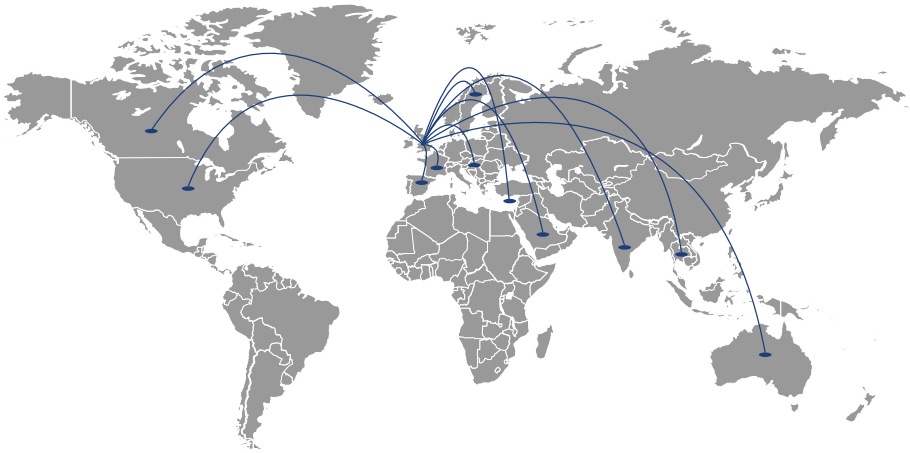
Manual Override: manual opening and lock open in event of power failure

Safety: BS EN 12453:2017

# Eagle Automation Systems Ltd

Focused on Protection and Security

Made in the UK,
exported globally.




**Eagle Automation Systems Ltd**

Head Office Unit 5, New House Farm, Vicarage Lane, North Weald, Essex, CM16 6AP, UK

**+44 (0)1992 524 800**

www.eagleautogate.co.uk

sales@eagleautogate.co.uk