



Retractable Bollards

Leda is recognised as Australia's market leader in retractable bollards, with a comprehensive range catering for vehicular access control and security applications. Retractable bollards hold distinct advantages over boom gates and other forms of vehicular access control as they provide much higher impact ratings and are pedestrian friendly.

There are two application-based product lines:

Slimline Range (Hostile Vehicle Mitigation) and **Advantage Range** (Vehicular Access Control).

Each offers a range of diameters in both mild steel (galvanised or electrostatically powder coated) and stainless steel models.

Retractable bollards can be operated 3 ways:

- Manually – by lifting handle
- Semi-automatic – gas strut power assisted or power drill (to drive up and down)
- Automatic – pneumatically or hydraulically powered.

Hostile Vehicle Mitigation (HVM)

Act as a security barrier to forced access by unauthorised, illegal or hostile vehicles.

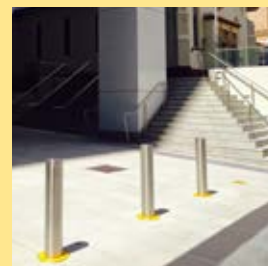
- Government & public buildings
- Hotels & high-profile buildings
- Military installations
- Government utilities and key infrastructure
- Embassies & consulates



Vehicular Access Control (VAC)

To restrict unauthorised access to defined areas.

- Busways
- Access checkpoints, staff carparks
- Shopping centres



> Leda has prepared impact ratings for all security bollards.

Refer to the table on p73 for an overview of the relative strengths of all Leda security bollards.

Hostile Vehicle Mitigation (HVM)

Operation Options

Manual

- Economical access control solution for low-level security applications
- Operates with a lifting handle



Semi Automatic

– Gas Strut

- Gas strut enables the bollard to rise under its own stored power, making it ideal where there are weight or OH&S lifting concerns
- Locks using Leda's unique patented locking system



Power Drill

Assist

- Bollard can be wound up or down using a centrally located threaded bar



Automatic – Pneumatic / Hydraulic

- Various control and operating options
- Quick raising and lowering speeds
- Reaches full 900mm extension in under 3 seconds
- Designed for continual operation (100% duty cycle)

Automatic Operation

Power Requirements

240V AC, 10A, or 3-phase 415V.

To protect against power outages, high security installations may require connection to an uninterrupted power supply (UPS).

Controller

The Programmable Control Board (PCB) or Programmable Logical Controller (PLC), located in the control cabinet, is essential for all functions and allows the flexibility to customise bollard operational requirements to suit each installation.

Operation functions can be interfaced with the building management or access control system.

Control Cabinets can be located internally in a secure room or externally in a secure weather-resistant enclosure.

Air Compressors

The size of the air compressor (to suit from 1 and up to 6 bollards) is determined once the air usage is calculated, and is dependant upon:

1. The number of bollards
2. Airline distance
3. Frequency of operation.

Refer Table below.

In certain applications, where the compressor cannot be located close enough to the bollards, it may be necessary to install an air reservoir. 3-phase silent compressors are also available as an option.

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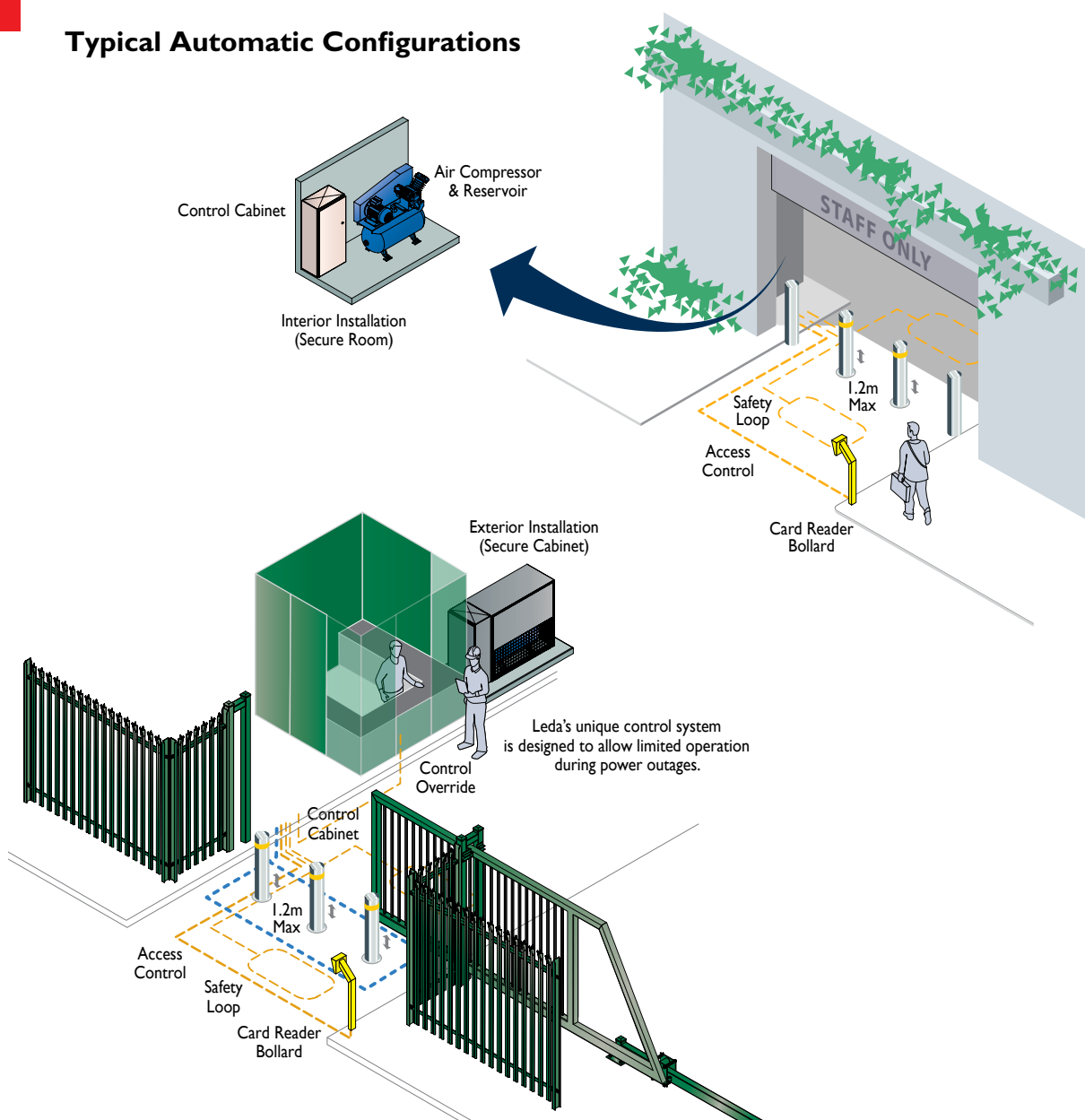
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Typical Automatic Configurations



Additional Options

- Control cabinets – wall / floor mounted
- PE beams – automatic detection
- Traffic lights – for busy access points
- Safety loops – prevent accidental extension. (Override function is recommended for security applications.)
- Access control options
 - push button (guardhouse)
 - swipe card (car parks)
 - remote control (garages)
- Locks – pneumatic bollards
- Sump pumps – for areas with poor drainage. Standard 24V marine pump.



Above, use of traffic light bollards at a busy access point and left, exterior cabinet with compressor and logical controller.

Retractable bollards normally require a 1.5 to 1.6m deep excavation. Security applications require that the bollards be installed in a continuous concrete strip footing. Leda engineers can assist in the structural design of appropriate footings.



- For security applications, the footings need to be specified to meet the impact resistance and performance required by the bollards.
- Leda's engineering division can assist through all phases to ensure that security specifications are complied with.
- Leda's electrical engineers will also prepare specifications regarding the control, UPS back-up and surge protection for the installation.

Drainage

Retractable bollards normally operate in what can be best described as a hostile environment. Water can accumulate and unless removed can lead to higher maintenance costs and reduced service life of the installation.



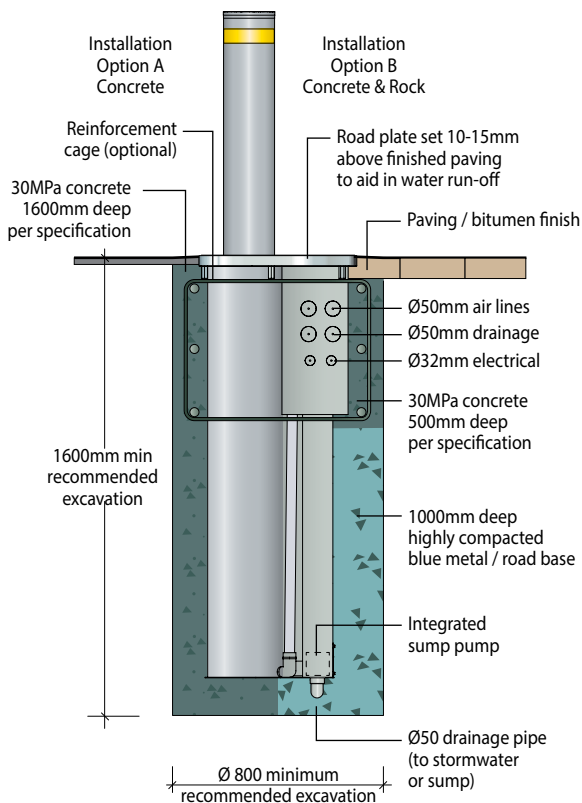
Leda's engineers have developed drainage systems that can be integrated into the installation to provide the necessary protection against flooding or water accumulation.

Maintenance

Retractable bollards are installed inground in hostile environments and require service and maintenance on a regular basis. Leda preventative maintenance programs are recommended for all Leda retractable bollards. A suitable program can be tailored to suit the site.

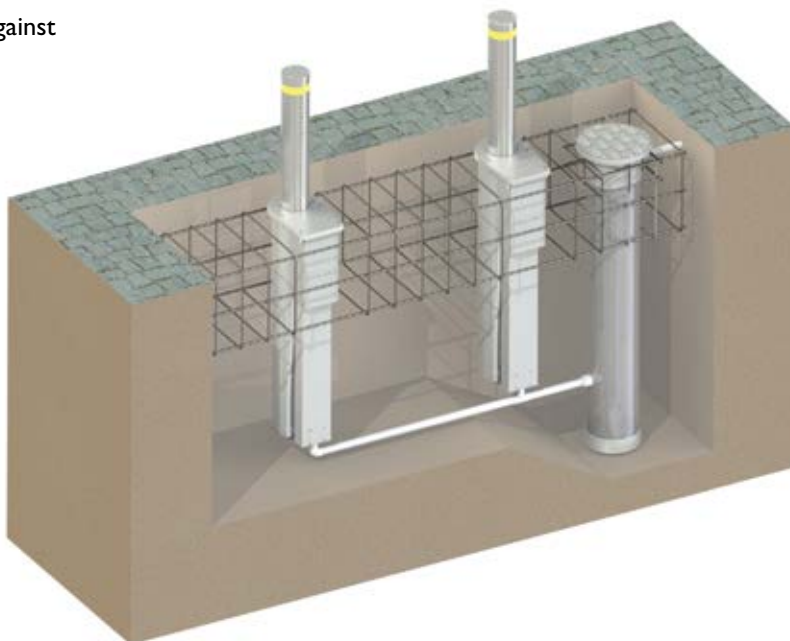
Typical Installation

Showing recommended excavation



Typical Drainage Arrangement

Showing drainage pipes and sump





Technical assistance

Leda boasts unrivalled service, advice and technical support and can assist in the installation process by:

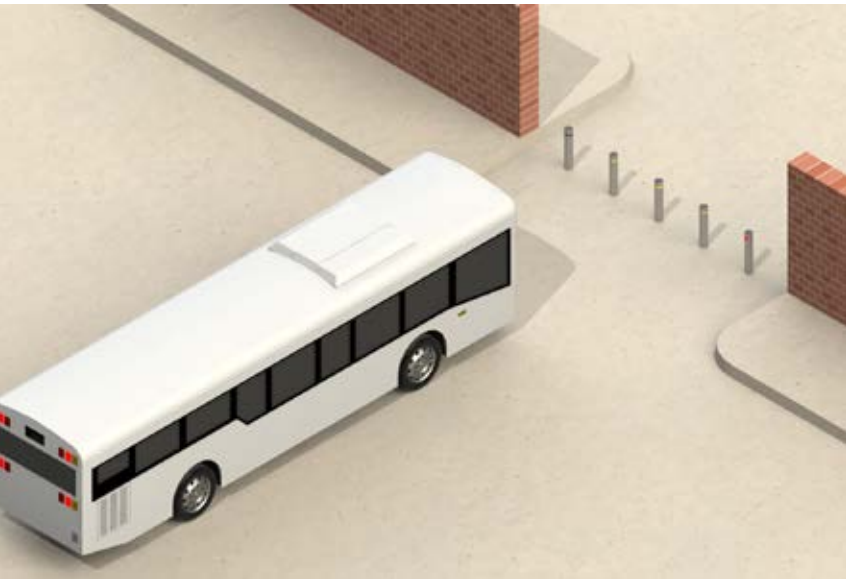
- 1. **Providing installation manuals** to allow installation by third parties.
- 2. **Project managing** the civil works and electrical installation to system commissioning.
- 3. **Carrying out complete installation** from design to commissioning.

Whatever the option, Leda has the technical expertise.

How many bollards?

Leda recommends bollards been spaced at a maximum 1.2 metre centres, and that active vehicle lanes have a minimum of 2 bollards per lane to assist larger vehicles transiting the area and reduce the possibility of accidental damage. Locking and removable bollards could be considered for bollards on the extremity to allow better access for wider vehicles. For busy access points, fixed bollards can be fitted with optional traffic lights.

With branches in all major capital cities in Australia, Leda has technicians who quickly respond to call-outs, as well as ensuring bollards are fully maintained and remain in good working order.



All Other Vehicles Access

Recommended maximum width of 4.8m for access points, allowing large vehicle access



Cars Only Access

Recommended maximum width of 3.6m

Products

For over 15 years Leda has been manufacturing and installing high security retractable bollards to protect many of Australia's high profile sites.

All levels of Australian government – federal, state and local – have turned to Leda for assistance in developing high security protection and hostile vehicle mitigation for infrastructure and public buildings.

Leda high security retractable bollards are the only Australian manufactured units to offer the high impact resistance needed in most anti-terrorist applications. Leda's extensive retractable bollard range is available as either engineered solutions or PAS 68 Certified products.

As the most experienced company in Australia installing high security physical security and with the largest range of equipment, Leda is well-positioned to assist in installing the appropriate deterrent for your site.



Slimline Series Hostile Vehicle Mitigation (HVM)

- Manual or automatic operation
- Medium to high security applications
- Impact tested and rated
- Designed to physically stop vehicles
- Taller, stronger and quicker operation
- Continuity of design with fixed and lighting bollards from Leda's stainless steel Slimline range.



Manual
Lifting Handle

Material C250LO steel pipe, steel lid / surround
Grade 304 stainless steel pipe, cast stainless steel lid / surround
Finish Galvanised or electrostatically powder coated
Linished or electro-polished

Typical 80NB stainless steel illustrated

Leda's bollard lifters are recommended where bollard weight exceeds OH&S lifting weight regulations. Refer Accessories section.

Features

- Economical manual operation
- Patented locking system (Bollard locks in raised position)
- Retracts flush with pavement

80NB
88.9mm OD
wall thickness varies

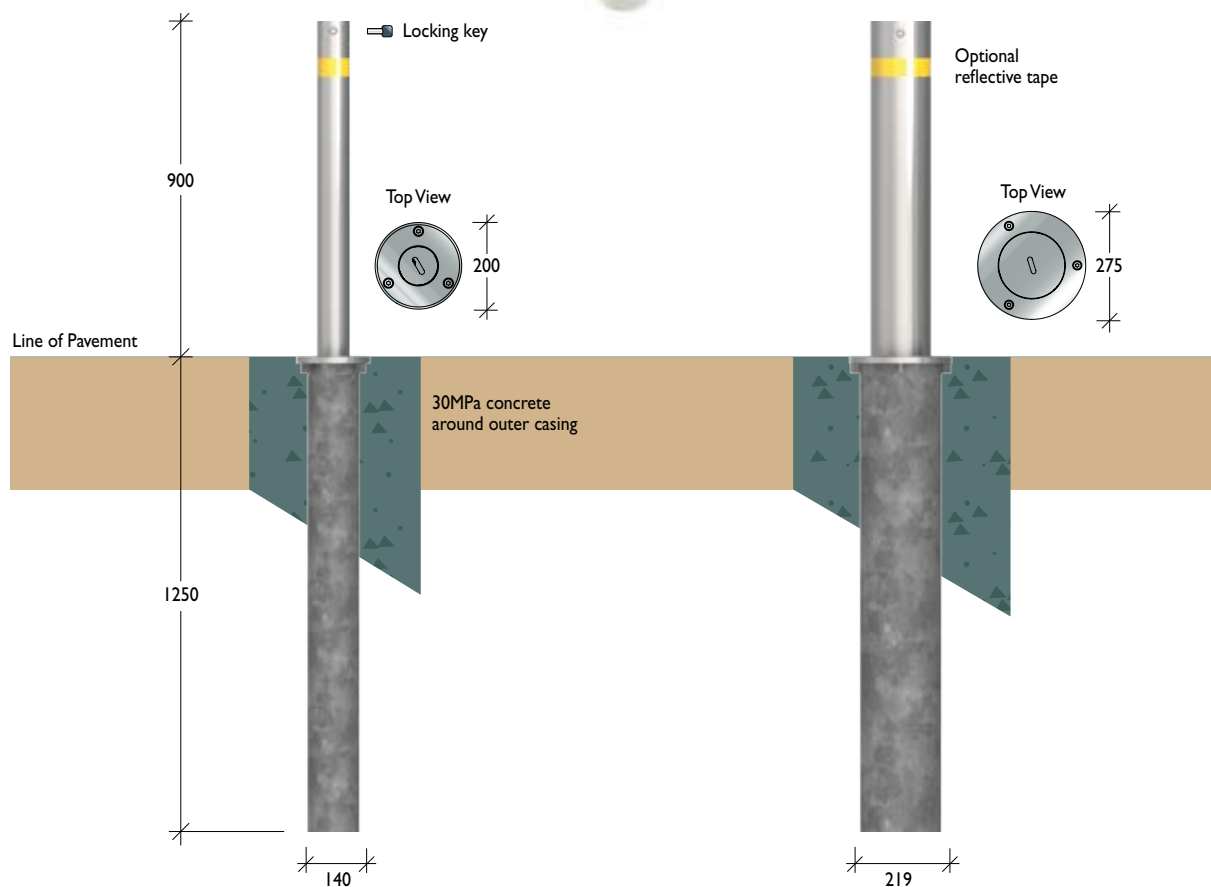
Mild Steel (Galvanised)
MRB90 A (4.00mm wall) I
MRB90 B (5.90mm wall) I

Stainless Steel
SMRB90 A (3.05mm wall) I
SMRB90 B (5.49mm wall) I
SMRB90 C (7.62mm wall) I

150NB
168.3mm OD
wall thickness varies

Mild Steel (Galvanised)
MRB150A (4.88mm wall) I
MRB150B (7.11mm wall) I

Stainless Steel
SMRB150 A (3.40mm wall) I
SMRB150 B (7.11mm wall) I



Semi Automatic

Gas Strut Assisted Power Drill Assisted

Material ERW steel linepipe, steel lid / surround
Grade 304 stainless steel pipe, cast stainless steel lid / surround

Finish Galvanised or electrostatically powder coated
Linished or electro-polished

Typical 150NB
stainless steel illustrated

Features

- I50GS – Gas strut enables bollard to rise under its own stored power
- I50P – Power drill drives bollard up and down
- Patented locking system (Bollard locks in raised position)
- Retracts flush with pavement
- Chequer plate (non slip) lid and surround

Pavement level

Gas Strut Assisted
I50NB (168.3mm OD)
wall thickness varies

Mild Steel (Galvanised)

MRBI50GS A (4.80mm wall)

MRBI50GS B (7.11mm wall)

MRBI50GS C (10.97mm wall)

Stainless Steel

SMRBI50GS A (3.40mm wall)

SMRBI50GS B (7.11mm wall)

SMRBI50GS C (10.49mm wall)

Power Drill Assisted

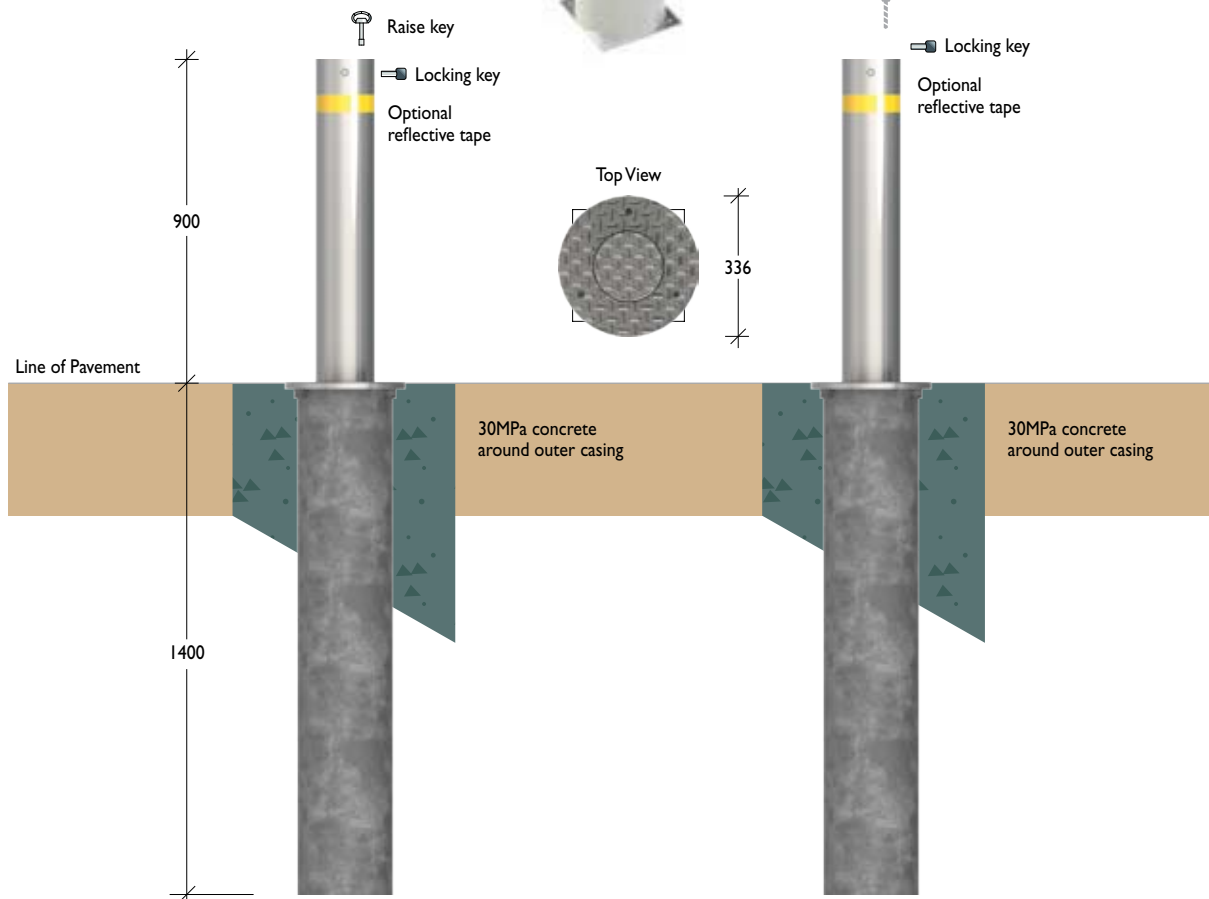
80NB (88.9mm OD) x 4.00mm wall

Mild Steel (Galvanised)

MRB80P (80NB (88.9mm OD) x 4.00mm wall)

Stainless Steel

SMRB80P (80NB (88.9mm OD) x 4.00mm wall)



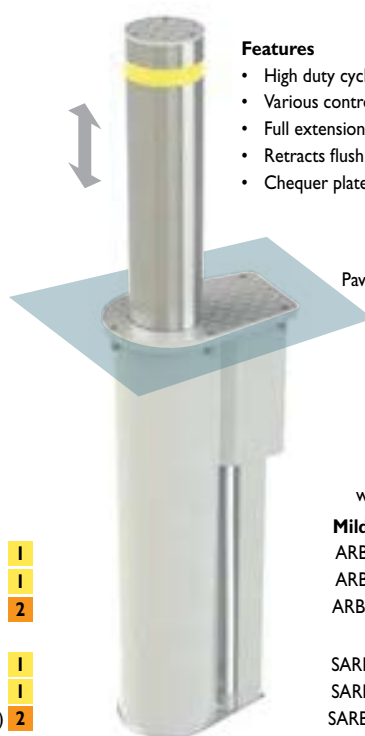
Automatic

Pneumatic

Material ERW steel linepipe, steel lid / surround
Grade 304 stainless steel pipe, cast stainless steel lid / surround

Finish Galvanised or electrostatically powder coated
Linished or electro-polished

Typical 200NB
stainless steel illustrated



Features

- High duty cycle (100%)
- Various control options
- Full extension in under 3 seconds
- Retracts flush with pavement
- Chequer plate (non-slip) lid and surround

Pavement level

150NB

168.3mm OD
wall thickness varies

Mild Steel (Galvanised)

ARB150 A (4.80mm wall) **1**

ARB150 B (7.11mm wall) **1**

ARB150 C (10.97mm wall) **2**

Stainless Steel

SARB150 A (3.40mm wall) **1**

SARB150 B (7.11mm wall) **1**

SARB150 C (10.49mm wall) **2**

200NB

219.0mm OD
wall thickness varies

Mild Steel (Galvanised)

ARB200 A (4.80mm wall) **2**

ARB200 B (8.00mm wall) **2**

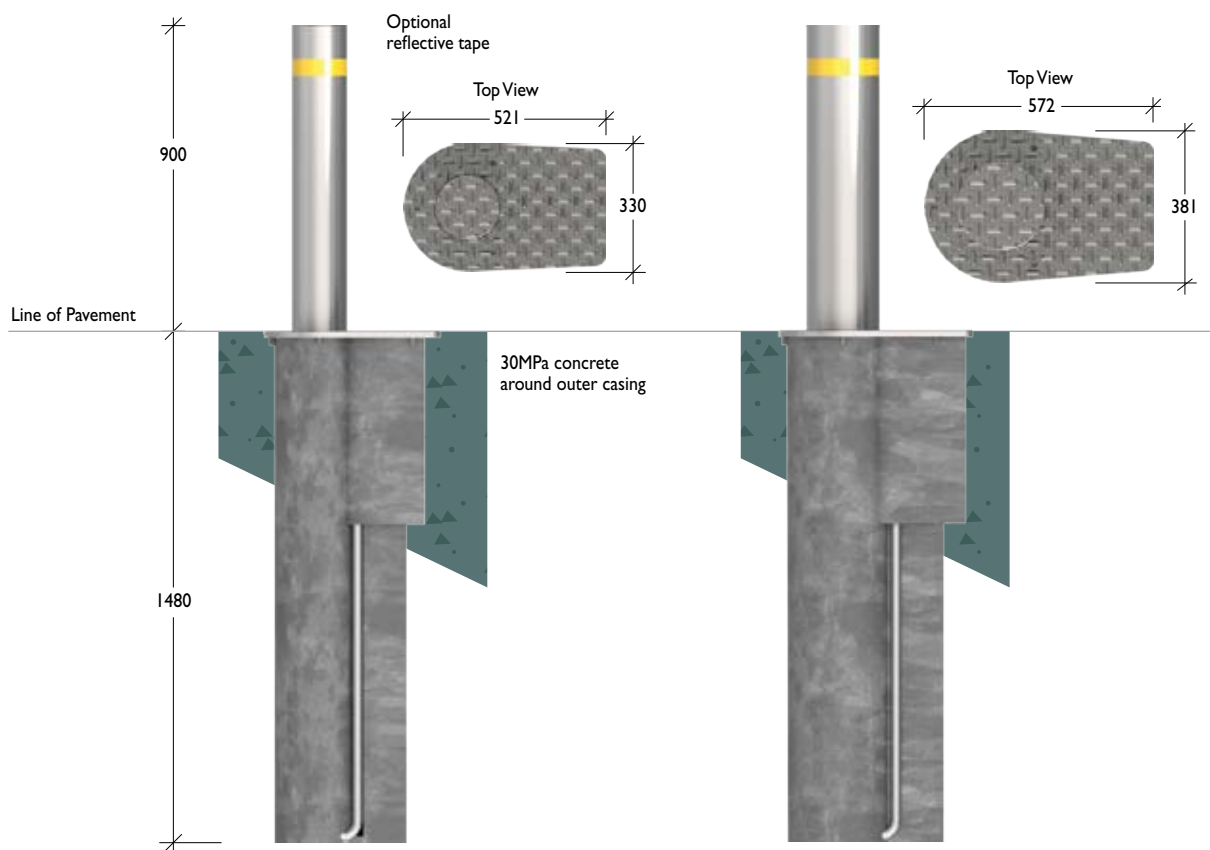
ARB200 C (12.50mm wall) **3**

Stainless Steel

SARB200 A (3.76mm wall) **2**

SARB200 B (8.18mm wall) **2**

SARB200 C (12.70mm wall) **3**





Vehicular Access Control (VAC)

Often referred to as the Advantage range, VAC retractable bollards while designed to operate continually, are not designed to physically 'stop' a vehicle. The bollards are not engineered to provide specific impact resistance and are constructed from lighter and more cost-effective materials.

It is stressed, that while VAC retractable bollards are a more economical option, they still provide excellent operating performance and functionality.

The VAC range is available in:

- Manual
- Semi-automatic – gas strut assisted
- Automatic – Pneumatic and hydraulically powered

All models have 900mm extension.



100NB
Diameter



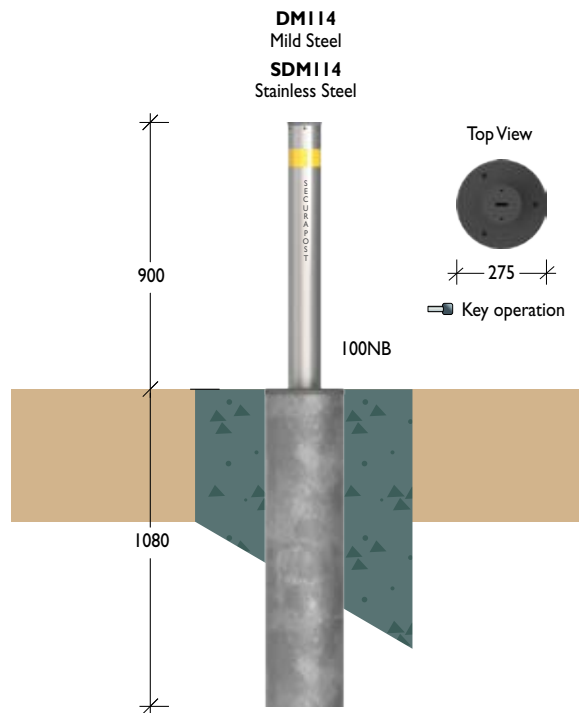
150NB
Diameter



200NB
Diameter

Manual

Material	100NB (Ø114) x 3.0mm Pipe
Finish	Mild steel Powdercoated in a range of colours Stainless steel Linished



Installation

Leda boasts unrivalled service, advice and technical support and can assist in the installation process by:

1. Providing installation manuals and instructions to allow installation by third parties.
2. Project manage the civil works and electrical installation to system commissioning.
3. Carry out complete installation from design to commissioning.

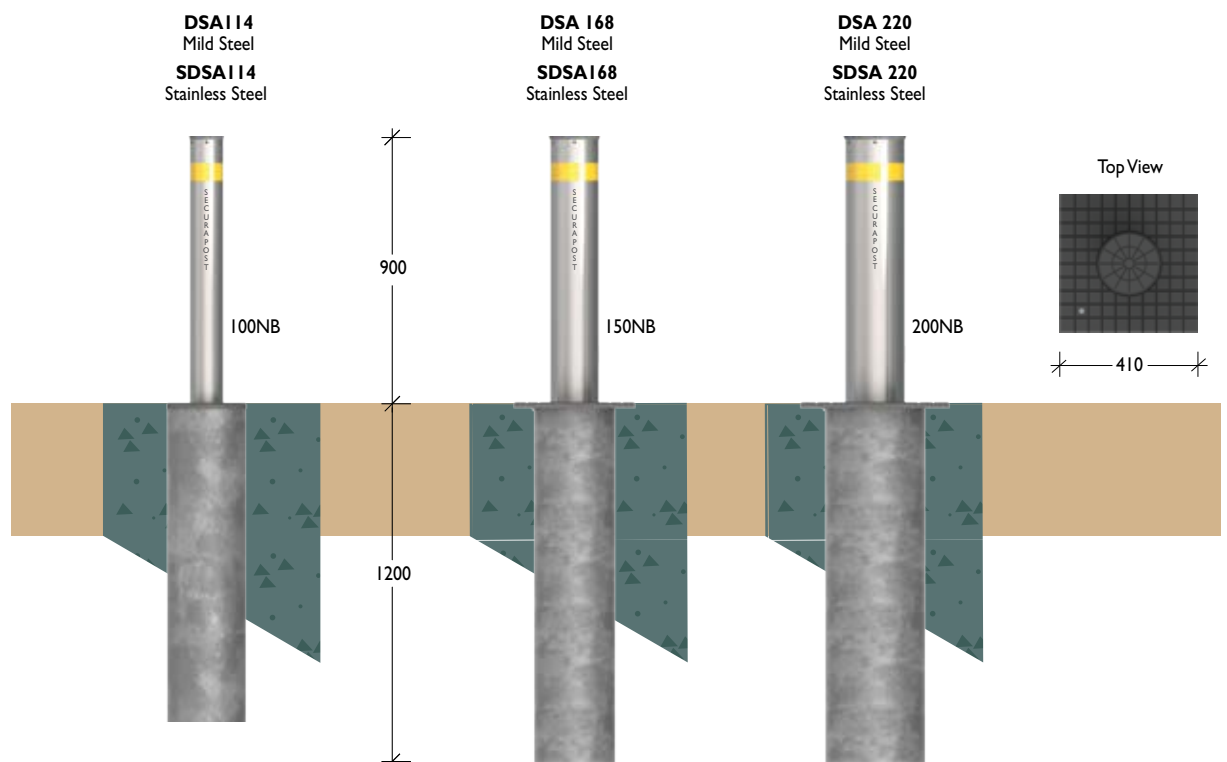
Whatever the option, Leda has the expertise.

Maintenance

Leda preventative maintenance programs are recommended for all Leda retractable bollards.

Semi Automatic

Material	100NB x 6.0mm Pipe / Ø114 x 5.0mm Grade 304 stainless steel pipe 150NB x 7.0mm Pipe / Ø168 x 6.0mm Grade 304 stainless steel pipe 200NB x 6.0mm Pipe / Ø220 x 5.0mm Grade 304 stainless steel pipe
Finish	Mild steel Powdercoated in a range of colours Stainless steel Linished

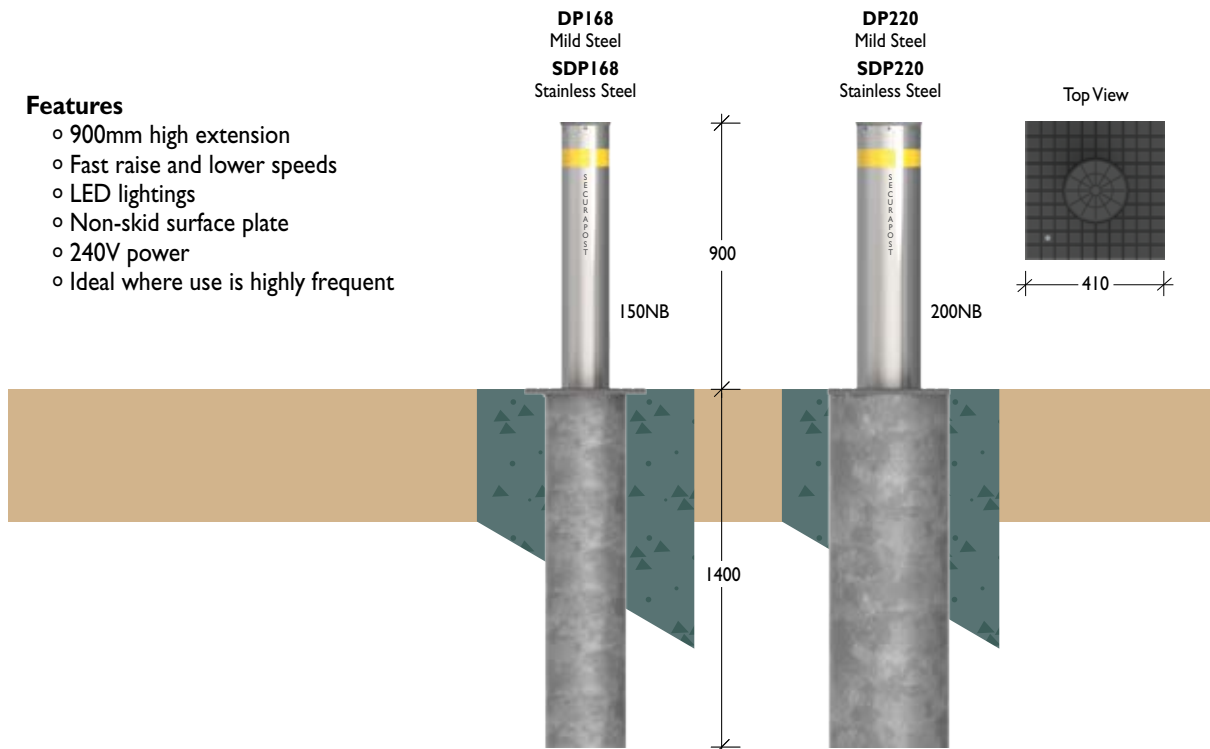


Automatic Pneumatic

Material Ø168 x 6.0mm Pipe / Ø168 x 5.0mm Grade 304 stainless steel pipe
Ø220 x 7.0mm Pipe / Ø220 x 6.0mm Grade 304 stainless steel pipe

Features

- 900mm high extension
- Fast raise and lower speeds
- LED lightings
- Non-skid surface plate
- 240V power
- Ideal where use is highly frequent

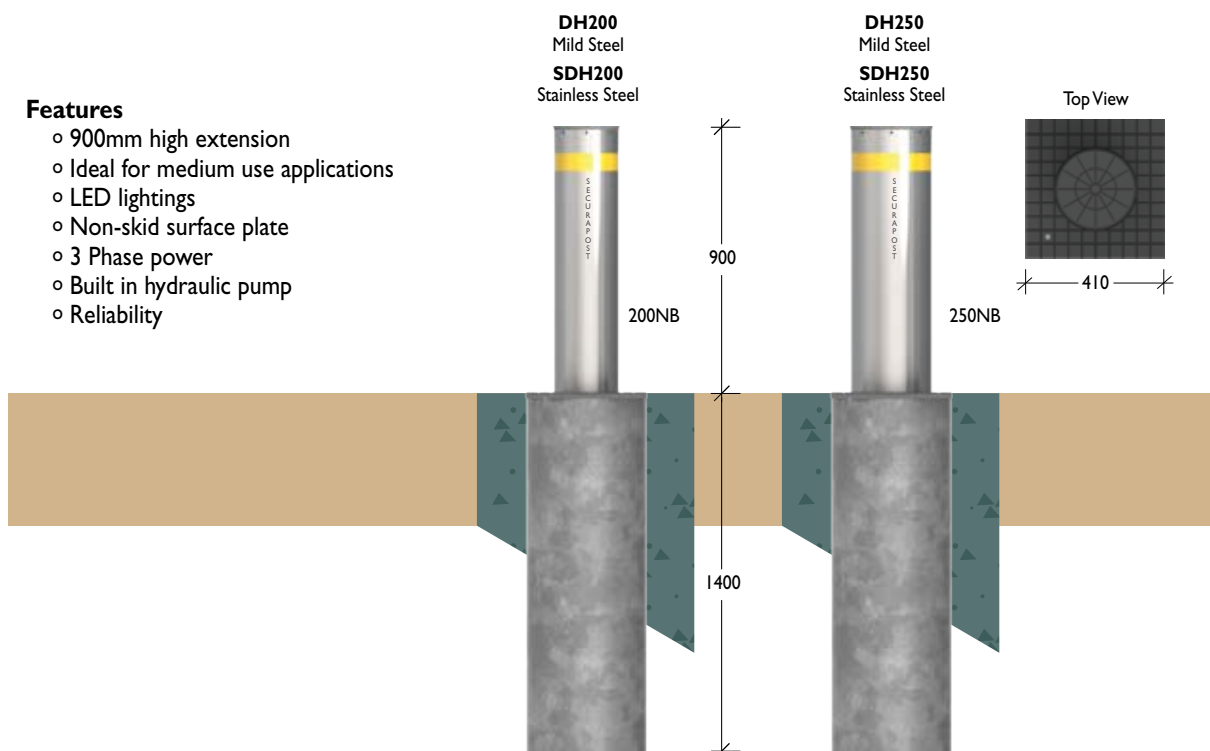


Hydraulic

Material 200NB (220) x 7.0mm Pipe / 200NB (220) x 6.0mm Grade 304 stainless steel pipe
250NB (275) x 7.0mm Pipe / 250NB (275) x 6.0mm Grade 304 stainless steel pipe

Features

- 900mm high extension
- Ideal for medium use applications
- LED lightings
- Non-skid surface plate
- 3 Phase power
- Built in hydraulic pump
- Reliability



ERB

Electro Mechanical

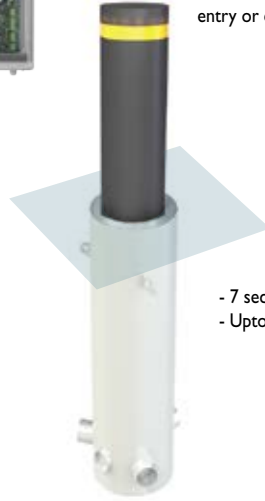
Material Ø200 x 8mm wall Steel or Stainless steel
Ø254 x 10mm wall Steel or Stainless steel
Finish Powder coated or Electropolished

Note wall mounted control panels

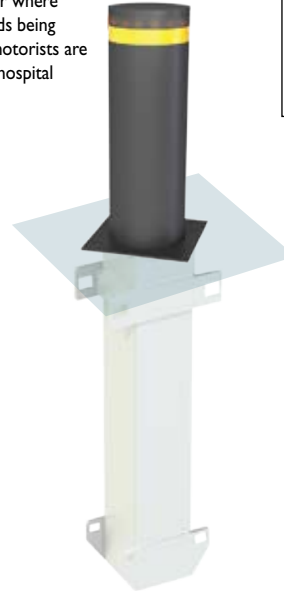


Saves Space
Plug and play

Helps minimise accidental damage with vehicular impacts.
Ideal for use in high traffic areas or where there is a high likelihood of bollards being impacted by vehicles. ie. Where motorists are unfamiliar with the location, as in hospital entry or car parks.



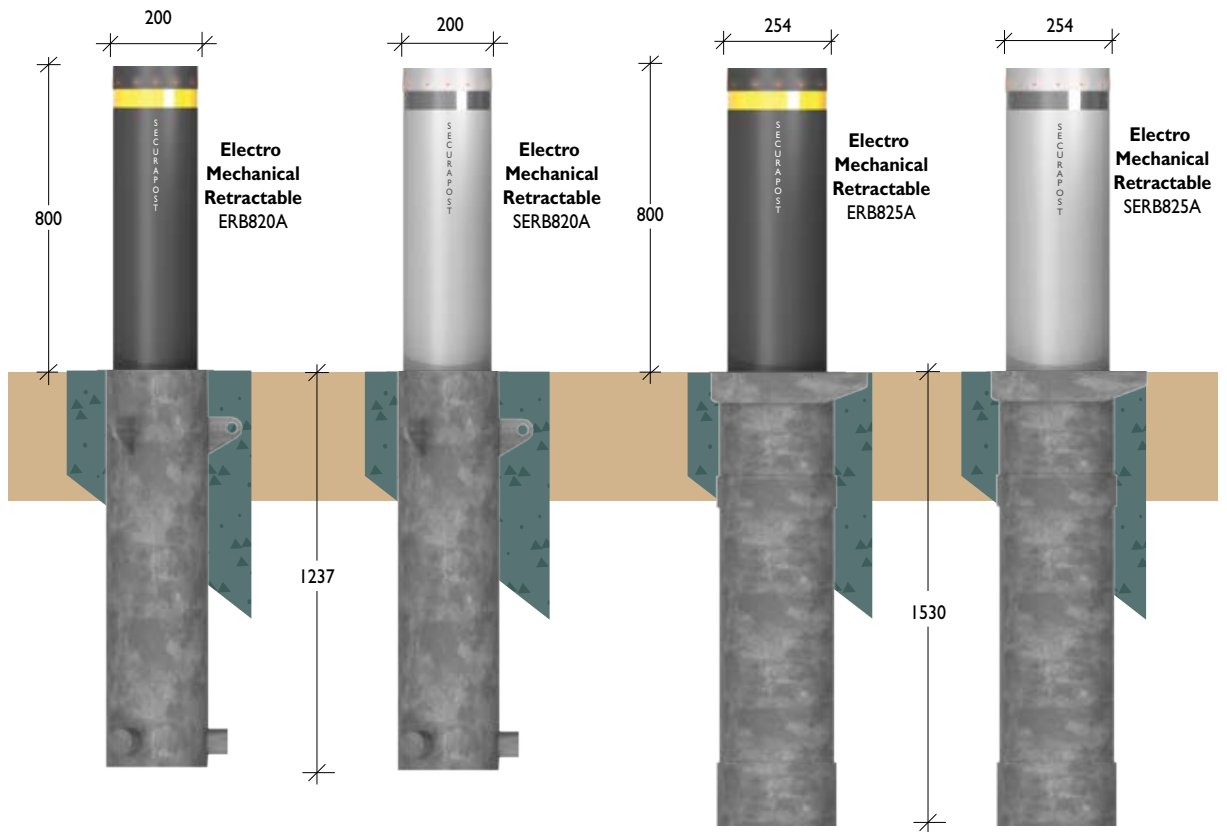
- 7 seconds Rise/Lower
- Upto 1000 cycles per day



- Lights included
- 240V powered IP68 rated
- Motor supply 24Vdc
- 10 seconds Rise/Lower
- Upto 600 cycles per day
- Additional steel cage required for impact rated models
- Fail safe
- Obstacle detection
- Cables with IP69 connection

Options:

- Solar power
- Fail secure with UPS

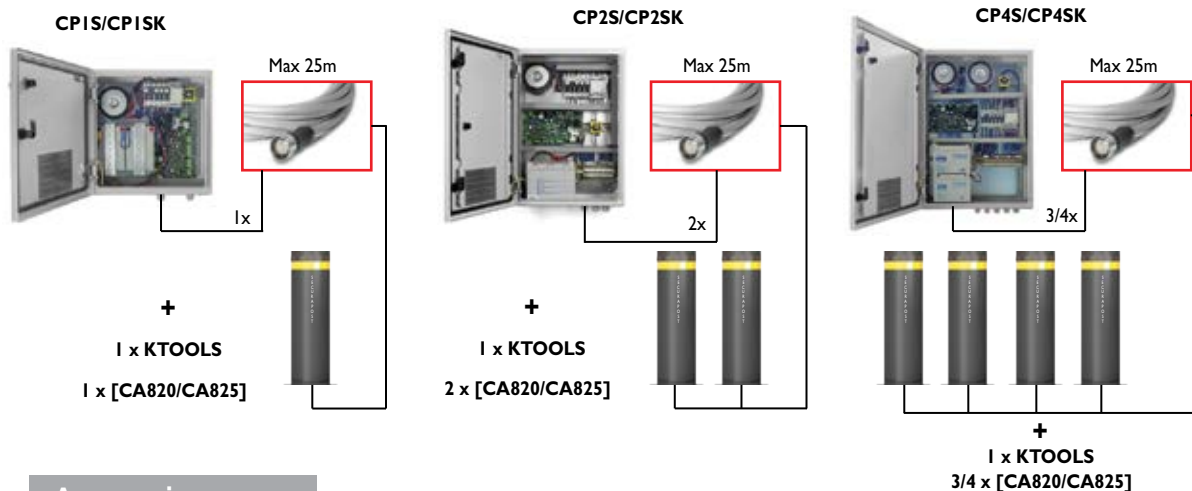


ERB

Electro Mechanical

Features:

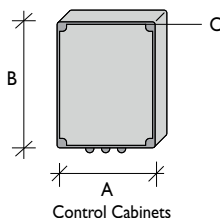
- 230/250 Vac - 50/60 Hz Power supply
- Equipped with command ALL UP / ALL DOWN
- Diagnostic LED
- Connection via TCP/IP LAN
- 6 different configurations for loop detectors
- Prepared for any kind of command



Accessories



Technical Drawing



	ERB820A SERB820A	ERB825A SERB825A	ERB825C SERB825C
Power Supply	230 Vac 50/60Hz	230 Vac 50/60Hz	230 Vac 50/60Hz
Motor Supply	24 Vdc	24 Vdc	24 Vdc
Absorbed Power	90 W	90 W	90 W
Absorbed Current 24Vdc	7 A	8 A	8 A
Standby Consumption	11 W	11 W	11 W
Consumption during Rising	1,4 A	1,4 A	1,4 A
Max working Frequency**	1000 cycles/day	600 cycles/day	600 cycles/day
Protection Level	IP 68	IP 68	IP 68
Operating Temperature	-20°C / +50°C	-20°C / +50°C	-20°C / +50°C
Lubrication	Grease	Grease	Grease
Impact Resistance	11 KJ	18 KJ	---
Breakout Resistance	180 KJ	240 KJ	411 KJ
KG Vehicle-Km/Hour	1.800-55	2.500-55	2.500-65
Raising Time 120mm/s	7"	10"	10"
Lowering Time 120mm/s	5"	9"	9"
Electric Brake	2N	5N	5N
Weight (w/o foundation case)	112/120kg	155/167kg	195/207kg

	A	B	C	IP GRADE
CP1S	30	40	15	IP66
CP2S	50	40	20	IP66
CP4S	60	40	20	IP66
CP1SK*	40	40	20	IP66
CP2SK*	60	40	20	IP66
CP4SK*	70	50	20	IP66

[*] Kit for ERB825C / SERB825C

[**] The maximum frequency of use indicated in the table must be understood as indicative data, referred to a single bollard connected to a control panel, at standard temperature rating (20°C, 50% humidity). In the case of unfavorable conditions the frequency of use has to be reduced.