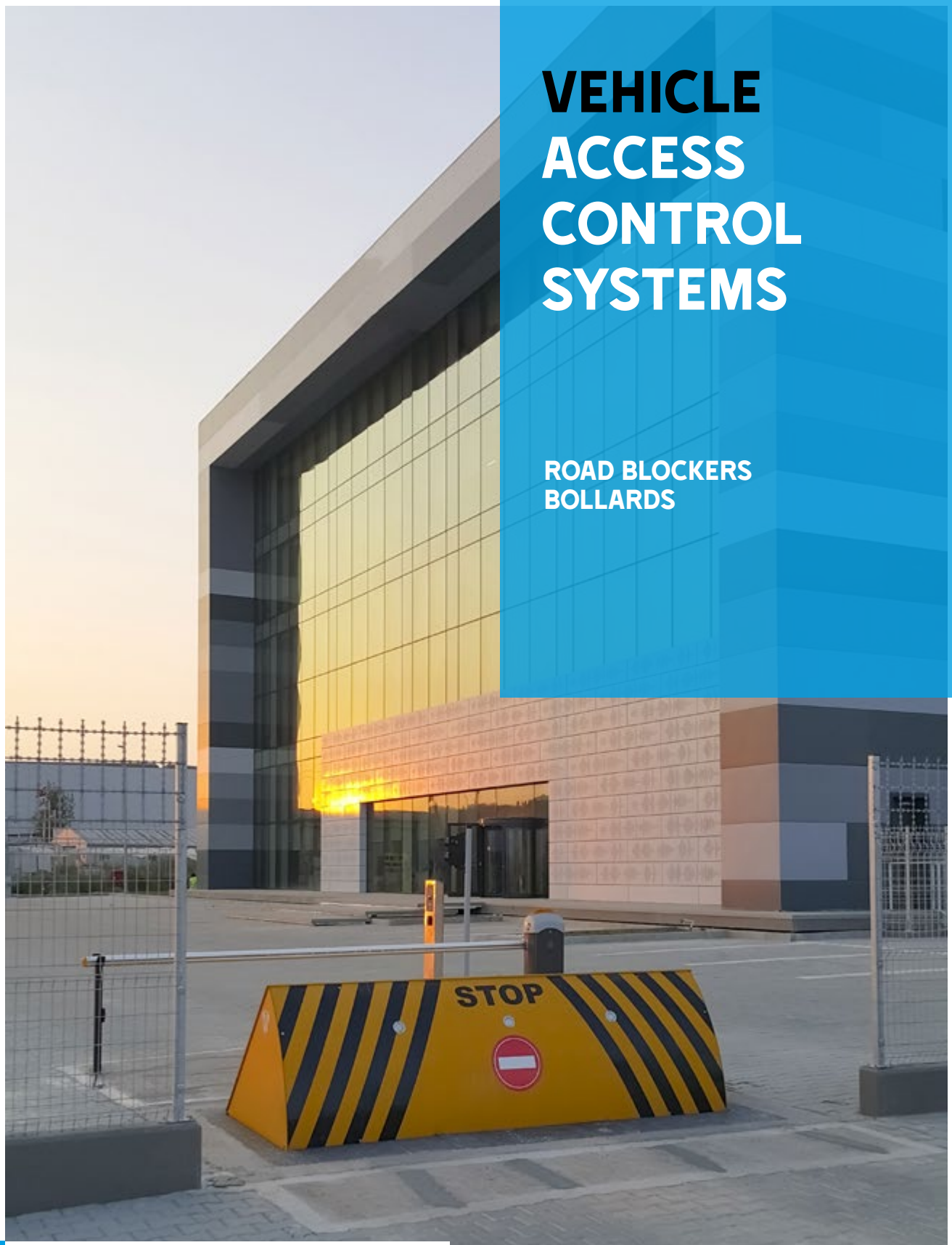
VEHICLE ACCESS CONTROL SYSTEMS

ROAD BLOCKERS
BOLLARDS



CAME ÖZAK

CAME.COM

VEHICLE ACCESS CONTROL SYSTEMS

ROAD BLOCKERS

BOLLARDS

WE SPEAK ABOUT QUALITY LIVING, IN ALL OF THE WORLD'S LANGUAGES.

CAME has nourished people's needs for over 60 years by using technology as a key to a quality life. All our projects and ideas drive our innovation and focus to make people's lives as comfortable as possible. This is where our company's skills and experience come into play. We know how to blend the functionality and design that drives our excellent performance.

It's about knowing that you can count on professionals able to shape our innovations into solutions. It's about customizing proposals for automation and integrating them with the cutting -edge of connectivity and mobile technology. CAME and partners strive together to satisfy our ever-more-demanding and culturally diverse customer-base, with its varying needs for transforming their living space into much more intelligent, and safer homes.

CAME

ALWAYS ONE STEP AHEAD

We are a leading brand in the design of integrated solutions for automation, video door entry, access control and public and private parking facilities. Over time, the group has incorporated highly specialised companies, which have allowed us to broaden our horizons and provide cutting-edge solutions for the residential, business and urban sectors, including home automation, temperature control, road barriers, high security bollards, sectional garage doors and industrial doors.
Today, we have a single, unique vision which makes us an innovative and reliable technological partner.

CAME BPT

CAME PARKARE

CAME URBACO

CAME GO

CAME ÖZAK

CAME BTECH

OUR WORLDWIDE NETWORK

We have a worldwide network.
From our Treviso Headquarters - the heart of the Group - we coordinate 7 production plants and 6 R&D centres. We sit across the market thanks to branches in 20 countries, and operate in 118 countries through our business partners and distributors.

The complexity involved in living spaces and in mobility flows require ever greater protection and security, plus enhanced reactive capacity and greater know-how that embrace an integrated and global vision of the world.
We are the technology partner for those projects that require integrated systems for improving the quality of our living space - whether private or public.

Our products are made for controlling homes, managing urban venues and workplaces, of any kind,anywhere in the world.
Our Group shares common goals, which go beyond single specializations. Thanks to the synergies among all our divisions and brands, we share an operating approach that enriches our diversity.

BRANCHES
NORTH AND LATIN AMERICAS

Brazil
Chile
Mexico
Perù
USA

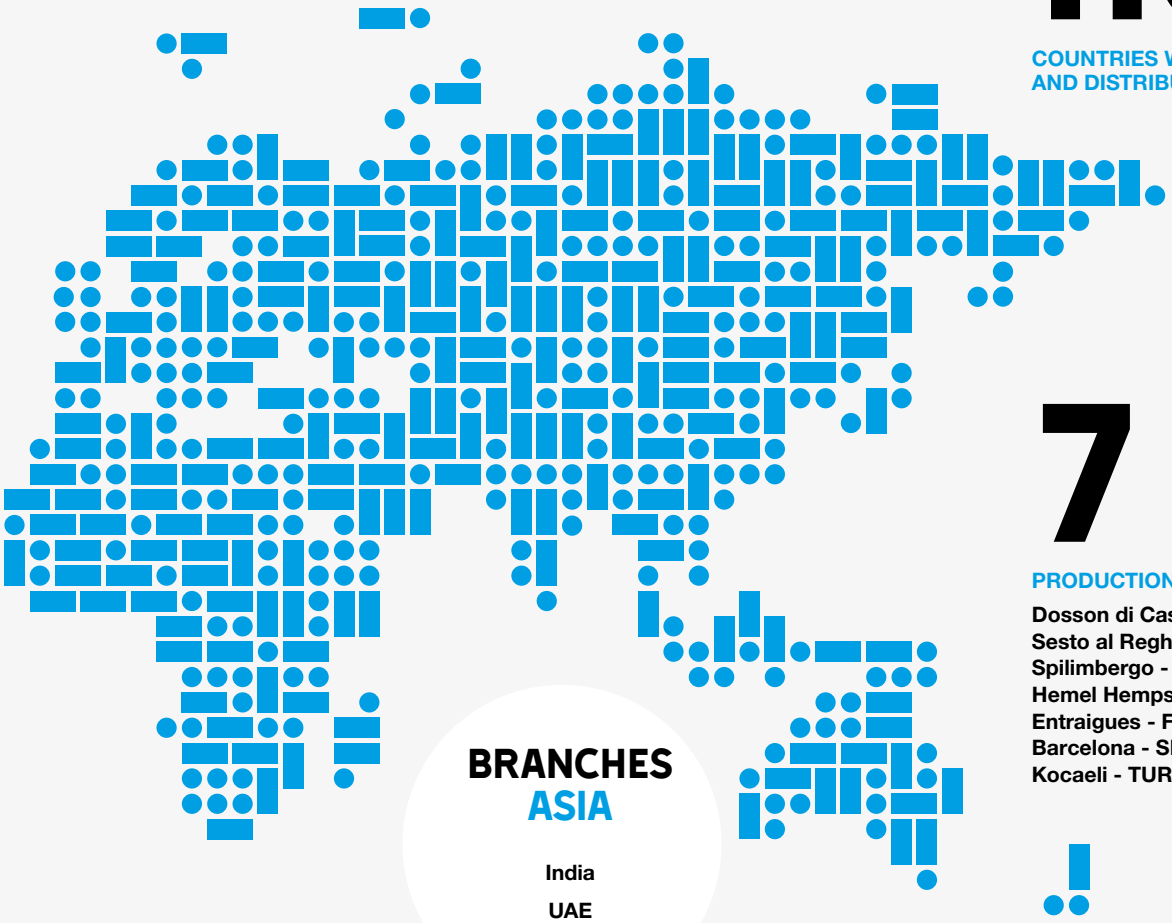
1700
EMPLOYEES AROUND THE WORLD

CAME

CAME HQ
Treviso, ITALY

BRANCHES EUROPE

Italy
Belgium
Croatia
France
Germany
Ireland
Netherlands
Poland
Portugal
Russia
Spain
UK
Turkey



BRANCHES ASIA

India
UAE

6
R&D CENTERS

20
COUNTRIES WITH DIRECT BRANCHES

118
COUNTRIES WITH PARTNERS AND DISTRIBUTORS

7
PRODUCTION PLANTS

Dosson di Casier - ITALY
Sesto al Reghena - ITALY
Spilimbergo - ITALY
Hemel Hempstead - UK
Entraigues - FRANCE
Barcelona - SPAIN
Kocaeli - TURKEY

480
WORLDWIDE DISTRIBUTORS AND PARTNERS

CAME.COM

RESIDENTIAL SOLUTIONS

BUSINESS SOLUTIONS

URBAN SOLUTIONS

RESIDENTIAL SOLUTIONS
We have gone beyond the simple idea of Home Automation, and taken the concept full circle. Now every device is fully integrated and connected into a system that improves people's lives. Today, we believe automation is at the heart of everything: to handle the entrances and blinds, to control awnings and shutters, plus video intercom-entry systems, CCTV, and, burglar alarms.

BUSINESS SOLUTIONS
For every public venue, our offer provides the most sophisticated systems for controlling accesses and the most evolved solutions for burglar systems, video-intercom entry panels and barriers for parking facilities. Small and large companies, commercial enterprises, large buildings: CAME-branded Building-Automation operators provide control and safety in both small and large working environments.

URBAN SOLUTIONS
Our offer is geared to meet the different automation needs for urban planning and architectural scenarios. CAME solutions are engineered for managing safety and control in large works and for contributing to the planning of urban spaces so as to make them "Safe and Smart", as called for in today's fast-paced, metropolitan centres.

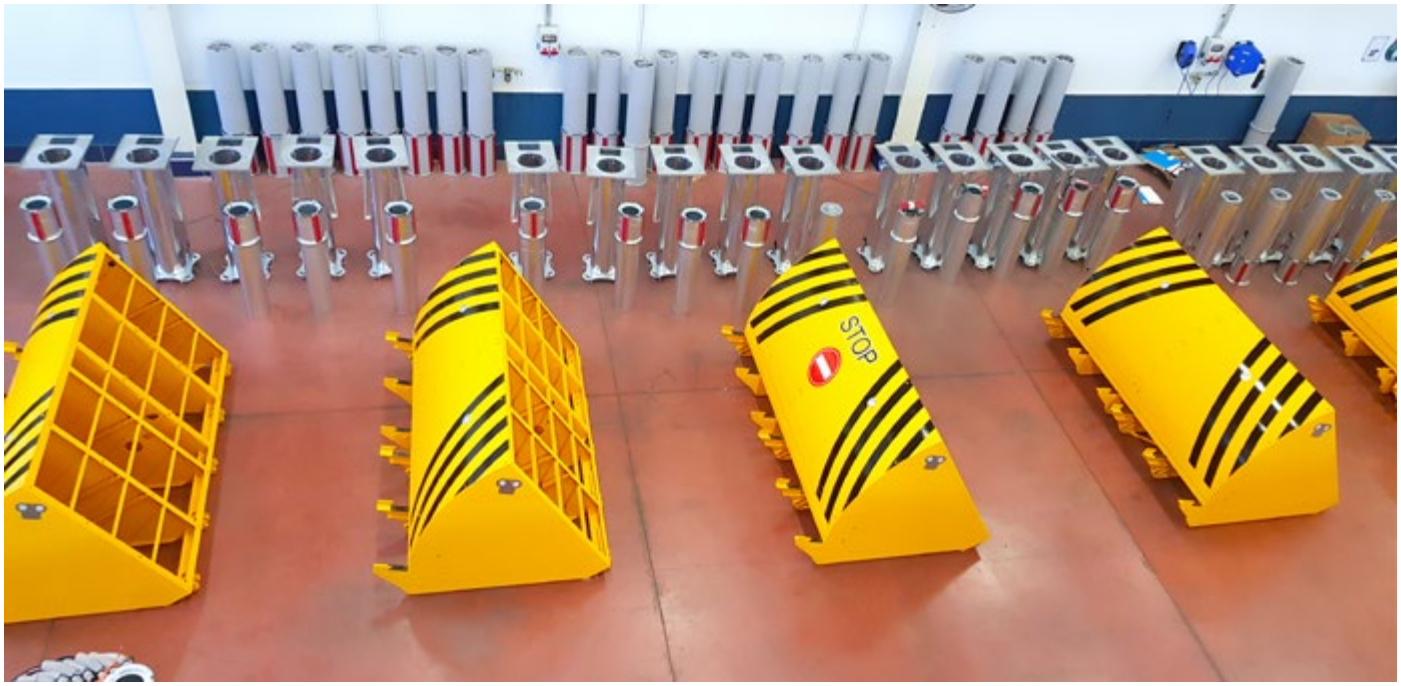
EXTENSIVE SOLUTIONS OVER 40 YEARS FOR SECURITY AND WELL-BEING OF THE PEOPLE AROUND THE GLOBE.

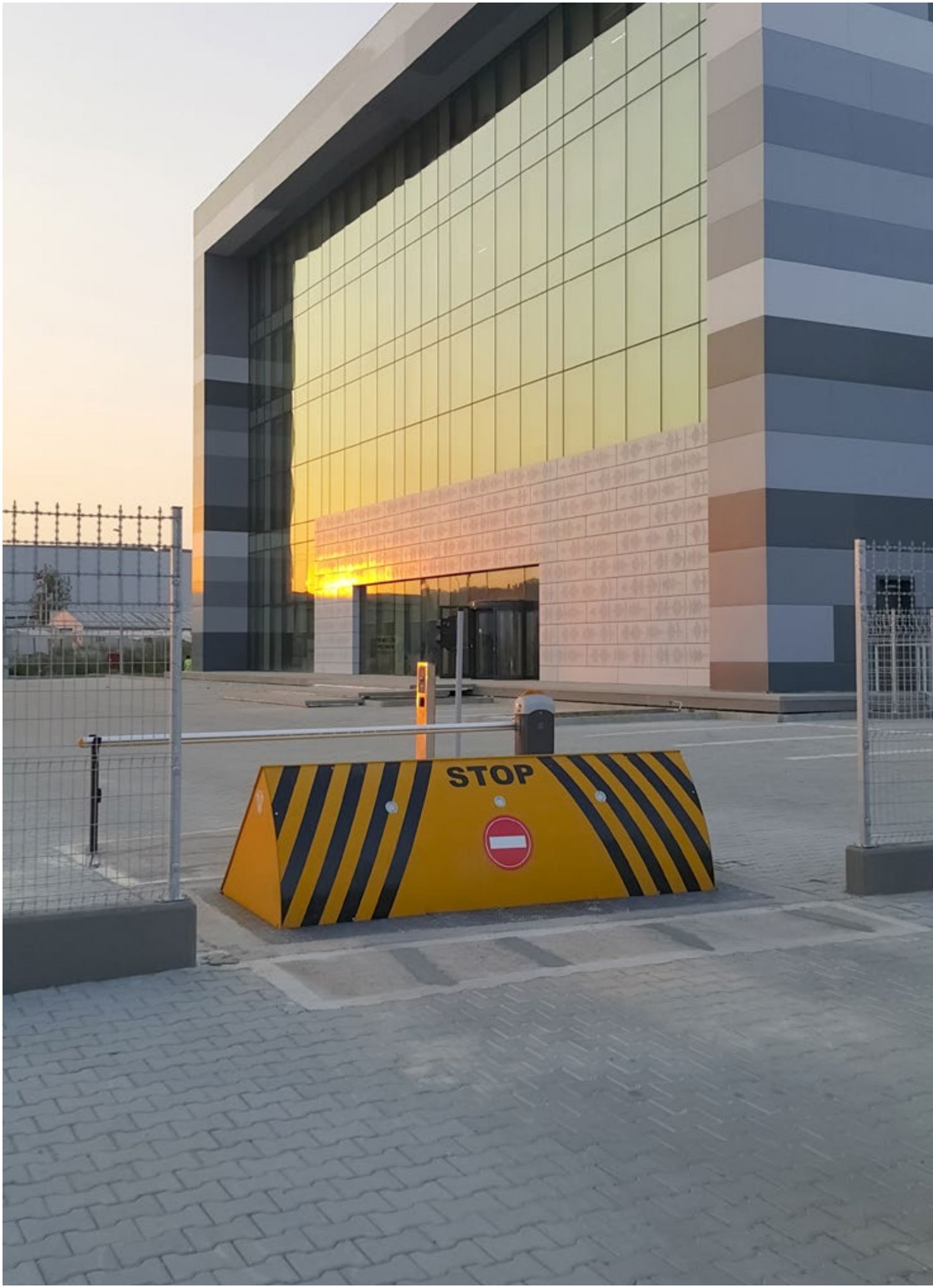
CAME ÖZAK, a global player, has incorporated one of the widest range of products offering solutions in pedestrian and vehicle access control fields. We owe our success to our talented designers and engineers along with our flexible manufacturing processes.

Understanding needs of the people, thus providing customised solutions tailored to expectations has made our offering a choice for numerous residential, governmental, urban and sports facilities. Our fully integratable, user friendly and high performance solutions are available with our solution partners all over the world.

CAME ÖZAK

VIEWS FROM OUR FACILITY




STOP

TIMELINE

1976

Foundation

Ozak was founded by Ozalp Family.

1989

First Turnstile

Started to produce **turnstiles and gates.**

2006

Increase in Production

Reached **1.000 units** per year.

2008

Facility Expansion

Production facilities reached **2.700 m²** from **500 m²**.

2009

New Segment

Launched **Road Blocker** & **Bollards** products.

2010

Facility Expansion

Production facilities reached **3.600 m²** from **2.700 m²**.

2012

Growth in Export Markets

Export sales reached **more than 50%** of turnover.

NR-D Systeme GmbH was founded in Germany.

2013

Increase in Production

Reached **5.000 units** per year.

2018

Facility Expansion

Production facilities reached **33.700 m²** of which **21.000 m²** is covered area.

2019

CAME ÖZAK

Özak becomes part of **CAME.**

PRODUCT INDEX

ROAD BLOCKERS

CAME ÖZAK


قف
STOP


NATPET
National Company for Petrochemical Industries
ناتبت
الشركة الوطنية للصناعات البتروكيماوية


قف
STOP


CTS


ÖZAK
NR-D

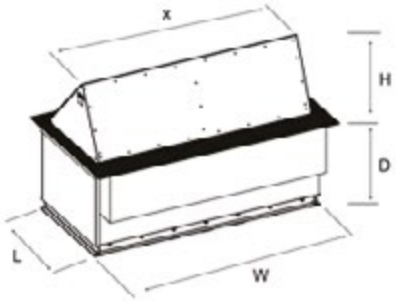

NR-D
ÖZAK

HRB ROAD BLOCKER
(Anti-terror / Heavy Duty Model)

Power	Standard 380V AC 3-Phase 50/60 Hz, 2,2 - 11 kW motor (varies depending on blocker size). Operating with 24V DC in case of power failure is optionally available.
Control Pack	24V DC powered PLC control unit is placed in power unit cabinet. 24V DC (opt.12V DC / 220V AC) solenoids.
Speed	Standard operation ~3 - 5 sec. (ascend/descend) depending on road blocker dimensions. Fast raise up (EFO, by optional hydraulic accumulator) ~1 - 1,5 sec. and may differ depending on road blocker dimensions for road blockers wider than 4,0 m.
IP Rating	IP55 - Hydraulic Power Unit IP67 - Electronics Control Unit with IP67 housing/box protection (optional) IP68 - Hydraulic Piston
Operating Temperature	-5°C / +55°C (opt. -30°C / +70°C)
Crash / Impact Rating	Crash tested and certified according to IWA 14-1:2013 Road Blocker V/7200[N3C]/80, PAS68:2013 Road Blocker V/7500[N3]/80, and ASTM F2656-20 C750/7200 standards **(HRB 30 R 110).** Crash tested and certified according to ASTM F2656-07 at M50 P1 (K-12) level **(HRB 30 R 90)** also designed and produced to withstand impacts mentioned below:

Standard	Vehicle Type	Weight	Speed
PAS 68	N3	7500 kg	80 km/h (50 mph)
IWA 14-1	N3C	7200 kg	80 km/h (50 mph)

(Please contact for applicable product dimensions)



			Raising Height 600 mm	Raising Height 900 mm
Product Code	**Blocker Unit Width (X)**	**Nr. of Pistons**	**Dimensions (LxWxD)**	**Dimensions (LxWxD)**
HRB 10R_ _	1000	1	1255 x 1170 x 975	1665 x 1170 x 1270
HRB 15R_ _	1500	1	1255 x 1670 x 975	1665 x 1670 x 1270
HRB 20R_ _	2000	1	1255 x 2170 x 975	1665 x 2170 x 1270
HRB 25R_ _	2500	1	1255 x 2670 x 975	1665 x 2670 x 1270
HRB 30R_ _	3000	1	1255 x 3170 x 975	1665 x 3170 x 1270
HRB 35R_ _	3500	1	1255 x 3670 x 975	1665 x 3670 x 1270
HRB 35R_ _	3500	2	1255 x 3670 x 975	1665 x 3670 x 1270
HRB 40R_ _	4000	1	1255 x 4170 x 975	1665 x 4170 x 1270
HRB 40R_ _	4000	2	1255 x 4170 x 975	1665 x 4170 x 1270
HRB 45R_ _	4500	2	1255 x 4670 x 975	1665 x 4670 x 1270
HRB 50R_ _	5000	2	1255 x 5170 x 975	1665 x 5170 x 1270
HRB 55R_ _	5500	2	1255 x 5670 x 975	1665 x 5670 x 1270
HRB 60R_ _	6000	2	1255 x 6170 x 975	1665 x 6170 x 1270

* Different raising heights are optionally available.

Axle Load Resistance	50 t
Hydraulic Cylinder Unit	Dust sealed hydraulic cylinder, developed for heavy duty use. 1 - 4 m wide models contain single piston (opt. 3,5 and 4 m wide models contain double pistons). 4,5 - 6,0 m wide models contain double pistons. Contains safety valve for hose bursts.

Hydraulic Power Unit and Cabinet

Strengthened industrial hydraulic pump.
40 - 120 lt capacity oil tank with magnetic metal collector and suction filter.
Built-in oil level indicator and sensor, oil temperature indicator and audio alarm feature for low oil level.
Standard 70 - 150 bar pressure (max. 180 bar).
10 m R2 type (double wire braided mesh) reinforced hydraulic hose.

Motor, hydraulic pump and solenoid valves are placed in an easily accessible hot-dip-galvanized and electrostatic powder coated steel cabinet with a built-in lock lid (opt. stainless steel cabinet).

Cabinet Type	Width (mm)	Length (mm)	Height (mm)
Cabinet 1	940	570	970
Cabinet 2	1040	590	1285
Cabinet 3	1243	840	1285

*Suitable cabinet type is selected according to the preferred product configuration.

System

Down, up, stop, emergency inputs and external sensor inputs/outputs (e.g. loop detector, safety sensor, traffic light, remote control, etc.).
System alerts with an audio signal during lowering and raising operation. A loud siren alert in case of alarm or emergency.
System stops in case of emergency as per default set-up and possible to be lowered or raised automatically (user's preference).
Can be lowered and raised manually in case of power failure or during maintenance with manual pump and manual valve feature.
Automatic raise up mode deploys (available with optional loop detector) the road blocker after the vehicle has passed over.
Sensor controlled stopping both at the top and bottom positions of the blocker unit.
Free standing piston connection structure that does not put any load on the piston during vehicle passage and in case of an impact.
Safety devices (if any, such as; safety sensor, loop detector, etc) are enabled in case fast raise up (EFO, optional) feature is activated and they can be optionally disabled.

Blocker Unit (Underground Unit)

All parts are coloured with industrial paint with two components over anticorrosive primer application.
Body is structured and strengthened with U-shaped beams. Contains galvanised steel sleeve around main chassis.
Product is designed that no vehicle crashing effect can displace it after embedded or installed in to the ground.

Blocker Unit (Impact Blocking Unit)

Top plates (vehicle pass through surface) are hot dip galvanised and electrostatic powder coated.
All other parts are coloured with industrial paint with two components over anticorrosive primer application.
Moving parts are colored with RAL 1003 yellow (impact surface yellow-black) and fixed road surface plates in RAL 9005 black. In addition, the impact surface is finished with reflective signs and warnings.
Bulge free hidden hinge structure below the ground level allows vehicles to pass over smoothly and quietly.
Impact blocking unit is made of special, reinforced, 6 mm thick, solid V-formed vertical impact load distributing panel construction assembled to the main chassis with 350 - 550 mm distance from each other. Each impact load distributing panel is supported with 4 pieces of 30 x 10 mm solid steel bars placed with equal distance from each other so that a strong steel construction has been designed.
Impacts are absorbed and blocked by impact load distributing panels together with 10 mm thick steel bars attached to their V-formed front sides and specially formed hook type holders.
Frontal crash-facing section is furnished with a replaceable 3mm thick round formed steel sheet to handle light impacts.
Resistance of 10 mm + 3 mm thick impact surfaces are increased with the constructive structure by vertical solid panels behind and the 30 x 10 mm solid steel bars.
Top panels where the vehicles pass over are made of 10 / 11 mm thick hot-dip galvanized steel with non-skid surface.
The system moves up and down as a block through Ø50 mm stainless steel hinges of which quantity varies according to blocker width (a 3 m wide blocker contains 7 pieces of hinges).
Impact blocker unit raises with 45° angle from the ground level and equipped with flashing indicators on side and front panels. A top lid integration is available for easy access to interior units for service and maintenance purposes.

Control System

3 buttons for up, down and stop operations and 1 button for emergency stop are contained in an IP67 box (optionally, 1 button for EFO-fast raise up).
System stops its movement with the command from safety sensor (opt.) and loop detectors (opt.).
Contains built-in LED indicators and 10 m cable.
The system works with PLC as standard.
Status of safety sensors (if any) and loop detectors (if any), position and movement of the blocker and low oil level situation of the system can be monitored with optional PLC with diagnostic display.
Compatible with any access control system (by third parties).

Power-off Situation

Road Blocker remains in its position in case of power-off. Optionally; can be lowered or raised and lowered by battery pack with 24V DC motor. Battery pack provides min.100 movements (50 deploy + 50 retract) when fully charged.

Optional Features and Accessories

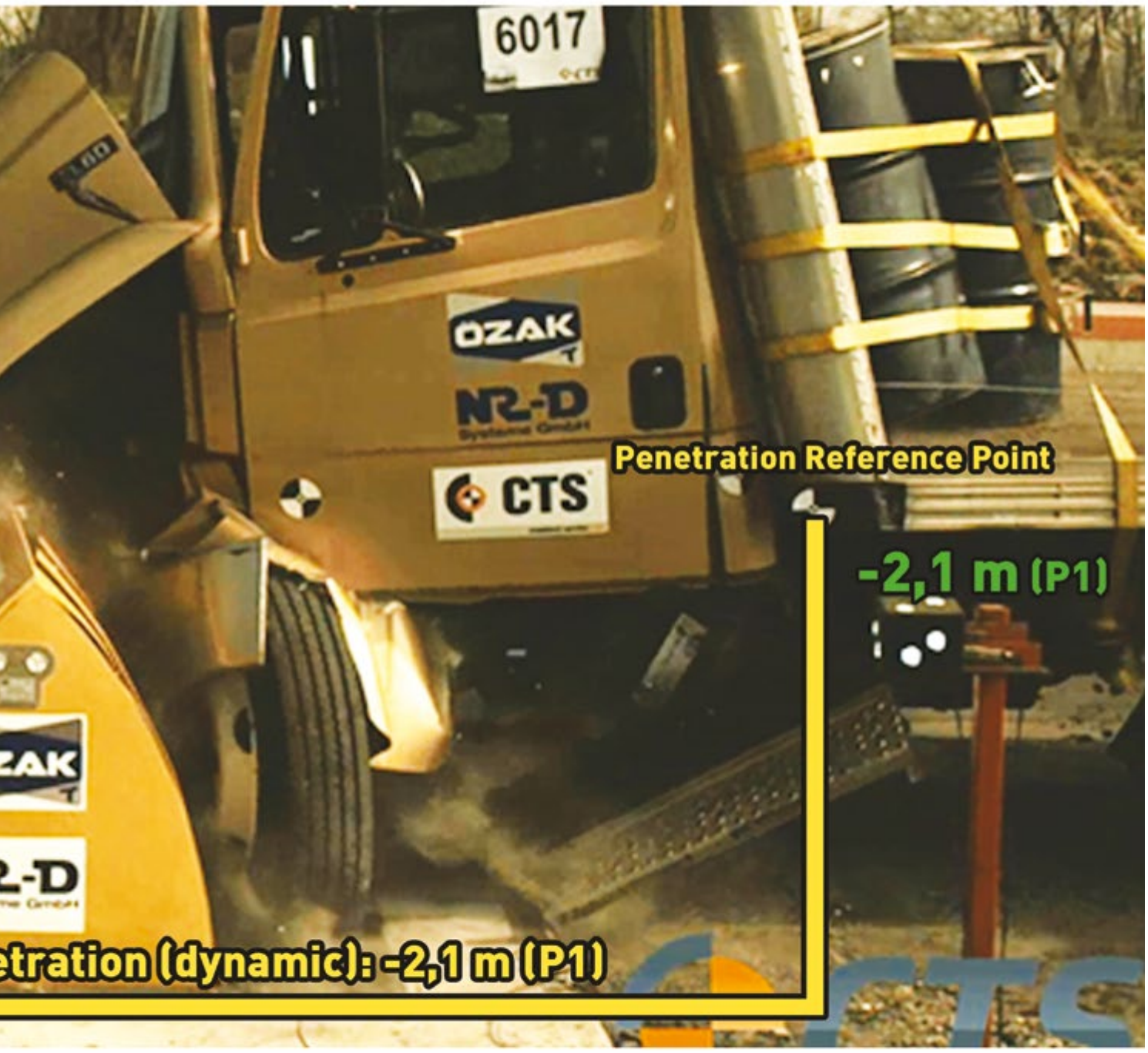
Hydraulic accumulator for EFO-fast raise up (1 piston or 2 pistons systems), 24V DC motor in case of power failure (50 deploy + 50 retract), oil heater (for oil tank), oil cooler, heater for electronic components, submersible pump, traffic light (Ø200/300 mm, red-green LED, electrostatic powder coated over 304 grade stainless steel body), traffic light pole (electrostatic powder coated over hot dip galvanised steel), loop detector (double contact), safety sensors (with 50 cm height poles), IP67 box (for PLC, SMPS, connectors etc inside power unit), wireless remote control (receiver and transmitter), external buttons, hot dip galvanization, double effect hydraulic unit, double speed hydraulic unit, PLC with diagnostic display, different product dimensions.

Installation

Installation with C30 grade concrete and steel rebar reinforcement. Ground levelling and preparation works shall be carried on before pouring the concrete. Allowable bearing value of the ground shall be minimum 1/2 kg/cm^2, if not, works shall be carried on to fulfil.
Installation shall be done according to the manufacturer's instructions.

*Design and specifications are subject to change without notice.


CRASH
CERTIFIED
TESTED
M50 P1 (K12)
ASTM F2656-07
for crash
test video
Max P1 Limit
Maximum Pene


6017
OZAK
NR-D
CTS
Penetration Reference Point
-2,1 m (P1)
etration (dynamic): -2,1 m (P1)


قف
STOP

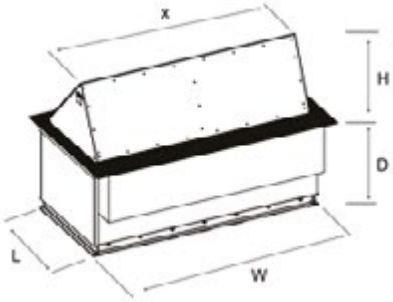

قف
STOP

RRB ROAD BLOCKER
(Reinforced Model)

Power	Standard 380V AC 3-Phase 50/60 Hz, 2,2 - 11 kW motor (varies depending on blocker size). Operating with 24V DC in case of power failure is optionally available.
Control Pack	24V DC powered PLC control unit is placed in power unit cabinet. 24V DC (opt.12V DC / 220V AC) solenoids.
Speed	Standard operation ~3 - 5 sec. (ascend/descend) depending on road blocker dimensions. Fast raise up (EFO, by optional hydraulic accumulator) ~1 - 1,5 sec. and may differ depending on road blocker dimensions for road blockers wider than 4,0 m.
IP Rating	IP55 - Hydraulic Power Unit IP67 - Electronics Control Unit with IP67 housing/box protection (optional) IP68 - Hydraulic Piston
Operating Temperature	-5°C / +55°C (opt. -30°C / +70°C)
Crash / Impact Rating	Designed and produced to withstand impacts mentioned below:

Standard	Vehicle Type	Weight	Speed
ASTM F2656	M, C7 (K-8)	6800, 7200 kg	64 km/h (40 mph)
PAS 68	N2, N3	7500 kg	64 km/h (40 mph)
IWA 14-1	N2A, N2B, N3C	7200 kg	64 km/h (40 mph)

(Please contact for applicable product dimensions.)



			Raising Height 600 mm	Raising Height 900 mm
Product Code	**Blocker Unit Width (X)**	**Nr. of Pistons**	**Dimensions (LxWxD)**	**Dimensions (LxWxD)**
RRB 10F_ _	1000	1	1255 x 1170 x 975	1665 x 1170 x 1270
RRB 15F_ _	1500	1	1255 x 1670 x 975	1665 x 1670 x 1270
RRB 20F_ _	2000	1	1255 x 2170 x 975	1665 x 2170 x 1270
RRB 25F_ _	2500	1	1255 x 2670 x 975	1665 x 2670 x 1270
RRB 30F_ _	3000	1	1255 x 3170 x 975	1665 x 3170 x 1270
RRB 35F_ _	3500	1	1255 x 3670 x 975	1665 x 3670 x 1270
RRB 35F_ _	3500	2	1255 x 3670 x 975	1665 x 3670 x 1270
RRB 40F_ _	4000	1	1255 x 4170 x 975	1665 x 4170 x 1270
RRB 40F_ _	4000	2	1255 x 4170 x 975	1665 x 4170 x 1270
RRB 45F_ _	4500	2	1255 x 4670 x 975	1665 x 4670 x 1270
RRB 50F_ _	5000	2	1255 x 5170 x 975	1665 x 5170 x 1270
RRB 55F_ _	5500	2	1255 x 5670 x 975	1665 x 5670 x 1270
RRB 60F_ _	6000	2	1255 x 6170 x 975	1665 x 6170 x 1270

* Different raising heights are optionally available.

Axle Load Resistance	50 t
Hydraulic Cylinder Unit	Dust sealed hydraulic cylinder, developed for heavy duty use. 1 - 4 m wide models contain single piston (opt. 3,5 and 4 m wide models contain double pistons). 4,5 - 6,0 m wide models contain double pistons. Contains safety valve for hose bursts.

Hydraulic Power Unit and Cabinet

Strengthened industrial hydraulic pump.
40 - 120 lt capacity oil tank with magnetic metal collector and suction filter.
Built-in oil level and oil temperature indicator.
Standard 70 - 150 bar pressure (max. 180 bar).
10 m R2 type (double wire braided mesh) reinforced hydraulic hose.

Motor, hydraulic pump and solenoid valves are placed in an easily accessible hot-dip-galvanized and electrostatic powder coated steel cabinet with a built-in lock lid (opt. stainless steel cabinet).

Cabinet Type	Width (mm)	Length (mm)	Height (mm)
Cabinet 1	940	570	970
Cabinet 2	1040	590	1285
Cabinet 3	1243	840	1285

*Suitable cabinet type is selected according to the preferred product configuration.

System

Down, up, stop, emergency inputs and external sensor inputs/outputs (e.g. loop detector, safety sensor, traffic light, remote control, etc.).
System alerts with an audio signal during lowering and raising operation. A loud siren alert in case of alarm or emergency.
System stops in case of emergency as per default set-up and possible to be lowered or raised automatically (user's preference).
Can be lowered and raised manually in case of power failure or during maintenance with manual pump and manual valve feature.
Automatic raise up mode deploys (available with optional loop detector) the road blocker after the vehicle has passed over.
Sensor controlled stopping both at the top and bottom positions of the blocker unit.
Free standing piston connection structure that does not put any load on the piston during vehicle passage and in case of an impact.
Safety devices (if any, such as; safety sensor, loop detector, etc) are enabled in case fast raise up (EFO, optional) feature is activated and they can be optionally disabled.

Blocker Unit (Underground Unit)

All parts are coloured with industrial paint with two components over anticorrosive primer application.
Body is structured and strengthened with U-shaped beams. Contains galvanised steel sleeve around main chassis.
Product is designed that no vehicle crashing effect can displace it after embedded or installed in to the ground.

Blocker Unit (Impact Blocking Unit)

Top plates (vehicle pass through surface) are hot dip galvanised and electrostatic powder coated.
All other parts are coloured with industrial paint with two components over anticorrosive primer application.
Moving parts are colored with RAL 1003 yellow (impact surface yellow-black) and fixed road surface plates in RAL 9005 black. In addition, the impact surface is finished with reflective signs and warnings.
Bulge free hidden hinge structure below the ground level allows vehicles to pass over smoothly and quietly.
Impact blocking unit is made of special, reinforced, 6 mm thick vertical impact load distributing panel construction assembled to the main chassis with 350 - 550 mm distance from each other. Each impact load distributing panel is supported with 4 pieces of 30 x 10 mm solid steel bars placed with equal distance from each other so that a strong steel construction has been designed.
Impacts are absorbed and blocked by impact load distributing panels together with 6 mm thick steel bars attached to their front sides and specially formed hook type holders.
Top panels where the vehicles pass over are made of 8 / 9 mm thick hot-dip galvanized steel with non-skid surface.
The system moves up and down as a block through Ø50 mm stainless steel hinges of which quantity varies according to blocker width (a 3 m wide blocker contains 7 pieces of hinges).
Impact blocker unit raises with 45° angle from the ground level and equipped with optional flashing indicators on the front panel.
A top lid integration is available for easy access to interior units for service and maintenance purposes.

Control System

3 buttons for up, down and stop operations and 1 button for emergency stop are contained in an IP67 box (optionally, 1 button for EFO-fast raise up).
System stops its movement with the command from safety sensor (opt.) and loop detectors (opt.).
Contains built-in LED indicators and 10 m cable.
The system works with PLC as standard.
Status of safety sensors (if any) and loop detectors (if any), position and movement of the blocker and low oil level situation of the system can be monitored with optional PLC with diagnostic display.
Compatible with any access control system (by third parties).

Power-off Situation

Road Blocker remains in its position in case of power-off. Optionally; can be lowered or raised and lowered by battery pack with 24V DC motor. Battery pack provides min.100 movements (50 deploy + 50 retract) when fully charged.

Optional Features and Accessories

Hydraulic accumulator for EFO-fast raise up (1 piston or 2 pistons systems), 24V DC motor in case of power failure (50 deploy + 50 retract), oil heater (for oil tank), oil cooler, heater for electronic components, submersible pump, traffic light (Ø200/300 mm, red-green LED, electrostatic powder coated over 304 grade stainless steel body), traffic light pole (electrostatic powder coated over hot dip galvanised steel), loop detector (double contact), safety sensors (with 50 cm height poles), IP67 box (for PLC, SMPS, connectors etc inside power unit), wireless remote control (receiver and transmitter), external buttons, hot dip galvanization, double effect hydraulic unit, double speed hydraulic unit, PLC with diagnostic display, front flashing indicators, oil level sensor, different product dimensions.

Installation

Installation with C30 grade concrete and steel rebar reinforcement. Ground levelling and preparation works shall be carried on before pouring the concrete. Allowable bearing value of the ground shall be minimum 1/2 kg/cm^2, if not, works shall be carried on to fulfil.
Installation shall be done according to the manufacturer's instructions.


UDH
T.C.
DUR
DUR

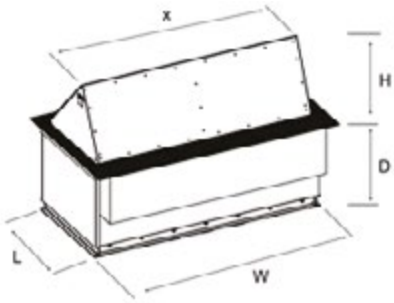

DUR
DUR

RB ROAD BLOCKER
(Access Control Model)

Power	Standard 380V AC 3-Phase 50/60 Hz, 2,2 - 11 kW motor (varies depending on blocker size). Operating with 24V DC in case of power failure is optionally available.
Control Pack	24V DC powered PLC control unit is placed in power unit cabinet. 24V DC (opt.12V DC / 220V AC) solenoids.
Speed	Standard operation ~3 - 5 sec. (ascend/descend) depending on road blocker dimensions. Fast raise up (EFO, by optional hydraulic accumulator) ~1 - 1,5 sec. and may differ depending on road blocker dimensions for road blockers wider than 4,0 m.
IP Rating	IP55 - Hydraulic Power Unit IP67 - Electronics Control Unit with IP67 housing/box protection (optional) IP68 - Hydraulic Piston
Operating Temperature	-5°C / +55°C (opt. -30°C / +70°C)
Crash / Impact Rating	Designed and produced to withstand impacts mentioned below:

Standard	Vehicle Type	Weight	Speed
ASTM F2656	M, C7 (K-4)	6800, 7200 kg	48 km/h (30 mph)
PAS 68	N2, N3	7500 kg	48 km/h (30 mph)
IWA 14-1	N2A, N2B, N3C	7200 kg	48 km/h (30 mph)

(Please contact for applicable product dimensions.)



			Raising Height 600 mm	Raising Height 900 mm
Product Code	Blocker Unit Width (X)	Nr. of Pistons	Dimensions (LxWxD)	Dimensions (LxWxD)
RB 10F_ _	1000	1	1250 x 1160 x 975	1660 x 1160 x 1270
RB 15F_ _	1500	1	1250 x 1660 x 975	1660 x 1660 x 1270
RB 20F_ _	2000	1	1250 x 2160 x 975	1660 x 2160 x 1270
RB 25F_ _	2500	1	1250 x 2660 x 975	1660 x 2660 x 1270
RB 30F_ _	3000	1	1250 x 3160 x 975	1660 x 3160 x 1270
RB 35F_ _	3500	1	1250 x 3660 x 975	1660 x 3660 x 1270
RB 35F_ _	3500	2	1250 x 3660 x 975	1660 x 3660 x 1270
RB 40F_ _	4000	1	1250 x 4160 x 975	1660 x 4160 x 1270
RB 40F_ _	4000	2	1250 x 4160 x 975	1660 x 4160 x 1270
RB 45F_ _	4500	2	1250 x 4660 x 975	1660 x 4660 x 1270
RB 50F_ _	5000	2	1250 x 5160 x 975	1660 x 5160 x 1270
RB 55F_ _	5500	2	1250 x 5660 x 975	1660 x 5660 x 1270
RB 60F_ _	6000	2	1250 x 6160 x 975	1660 x 6160 x 1270

* Different raising heights are optionally available.

Axle Load Resistance	40 t
Hydraulic Cylinder Unit	Dust sealed hydraulic cylinder, developed for heavy duty use. 1 - 4 m wide models contain single piston (opt. 3,5 and 4 m wide models contain double pistons). 4,5 - 6,0 m wide models contain double pistons. Contains safety valve for hose bursts.

Hydraulic Power Unit and Cabinet

Strengthened industrial hydraulic pump.
40 - 120 lt capacity oil tank with magnetic metal collector and suction filter.
Built-in oil level and oil temperature indicator.
Standard 70 - 150 bar pressure (max. 180 bar).
10 m R2 type (double wire braided mesh) reinforced hydraulic hose.

Motor, hydraulic pump and solenoid valves are placed in an easily accessible hot-dip-galvanized and electrostatic powder coated steel cabinet with a built-in lock lid (opt. stainless steel cabinet).

Cabinet Type	Width (mm)	Length (mm)	Height (mm)
Cabinet 1	940	570	970
Cabinet 2	1040	590	1285
Cabinet 3	1243	840	1285

* Suitable cabinet type is selected according to the preferred product configuration.

System

Down, up, stop, emergency inputs and external sensor inputs/outputs (e.g. loop detector, safety sensor, traffic light, remote control, etc.).
System alerts with an audio signal during lowering and raising operation. A loud siren alert in case of alarm or emergency.
System stops in case of emergency as per default set-up and possible to be lowered or raised automatically (user's preference).
Can be lowered and raised manually in case of power failure or during maintenance with manual pump and manual valve feature.
Automatic raise up mode deploys (available with optional loop detector) the road blocker after the vehicle has passed over.
Sensor controlled stopping both at the top and bottom positions of the blocker unit.
Free standing piston connection structure that does not put any load on the piston during vehicle passage and in case of an impact.
Safety devices (if any, such as; safety sensor, loop detector, etc) are enabled in case fast raise up (EFO, optional) feature is activated and they can be optionally disabled.

Blocker Unit (Underground Unit)

All parts are coloured with industrial paint with two components over anticorrosive primer application.
Body is structured and strengthened with U-shaped beams. Contains galvanised steel sleeve around main chassis.
Product is designed that no vehicle crashing effect can displace it after embedded or installed in to the ground.

Blocker Unit (Impact Blocking Unit)

Top plates (vehicle pass through surface) are hot dip galvanised and electrostatic powder coated.
All other parts are coloured with industrial paint with two components over anticorrosive primer application.
Moving parts are colored with RAL 1003 yellow (impact surface yellow-black) and fixed road surface plates in RAL 9005 black. In addition, the impact surface is finished with reflective signs and warnings.
Bulge free hidden hinge structure below the ground level allows vehicles to pass over smoothly and quietly.
Impact blocking unit is made of special, reinforced, 4 mm thick vertical impact load distributing panel construction assembled to the main chassis with 350 - 550 mm distance from each other. Impacts are absorbed and blocked by impact load distributing panels together with 4 mm thick steel sheet attached to their front sides and specially formed hook type holders.
Top panels where the vehicles pass over are made of 8 / 9 mm thick hot-dip galvanized steel with non-skid surface.
The system moves up and down as a block through Ø50 mm stainless steel hinges of which quantity varies according to blocker width (a 3 m wide blocker contains 7 pieces of hinges).
Impact blocker unit raises with 45° angle from the ground level and equipped with optional flashing indicators on the front panel.
A top lid integration is available for easy access to interior units for service and maintenance purposes.

Control System

3 buttons for up, down and stop operations and 1 button for emergency stop are contained in an IP67 box (optionally, 1 button for EFO-fast raise up).
System stops its movement with the command from safety sensor (opt.) and loop detectors (opt.).
Contains built-in LED indicators and 10 m cable.
The system works with PLC as standard.
Status of safety sensors (if any) and loop detectors (if any), position and movement of the blocker and low oil level situation of the system can be monitored with optional PLC with diagnostic display.
Compatible with any access control system (by third parties).

Power-off Situation

Road Blocker remains in its position in case of power-off. Optionally; can be lowered or raised and lowered by battery pack with 24V DC motor. Battery pack provides min.100 movements (50 deploy + 50 retract) when fully charged.

Optional Features and Accessories

Hydraulic accumulator for EFO-fast raise up (1 piston or 2 pistons systems), 24V DC motor in case of power failure (50 deploy + 50 retract), oil heater (for oil tank), oil cooler, heater for electronic components, submersible pump, traffic light (Ø200/300 mm, red-green LED, electrostatic powder coated over 304 grade stainless steel body), traffic light pole (electrostatic powder coated over hot dip galvanised steel), loop detector (double contact), safety sensors (with 50 cm height poles), IP67 box (for PLC, SMPS, connectors etc inside power unit), wireless remote control (receiver and transmitter), external buttons, hot dip galvanization, double effect hydraulic unit, double speed hydraulic unit, PLC with diagnostic display, front flashing indicators, oil level sensor, different product dimensions.

Installation

Installation with C30 grade concrete and steel rebar reinforcement. Ground levelling and preparation works shall be carried on before pouring the concrete. Allowable bearing value of the ground shall be minimum 1/2 kg/cm^2, if not, works shall be carried on to fulfil. Installation shall be done according to the manufacturer's instructions.


STOP


STOP

General Technical Specifications
(Deep Mounted Series)

	HRB (Anti-Terror / Heavy Duty Model)	RRB (Reinforced Model)	RB (Access Control Model)
			

General Specifications

Crash/Impact Rating	Crash tested and certified according to IWA 14-1:2013 Road Blocker V/7200[N3C]/80, PAS68:2013 Road Blocker V/7500[N3]/80, and ASTM F2656-20 C750/7200 P1 standards **(HRB 30 R 110).** Crash tested and certified according to ASTM F2656-07 at M50 (K-12) level also designed and produced to withstand impacts according to PAS68[N3]/80 and IWA 14-1[N3C]/80 levels **(HRB 30 R 90).**	Designed and produced to withstand impacts according to ASTM F2656 M, C7 (K-8), PAS68[N2 N3]/64 and IWA 14-1[N2A/N2B/N3C]/64 levels.	Designed and produced to withstand impacts according to ASTM F2656 M, C7 (K-4), PAS68[N2 N3]/48 and IWA 14-1[N2A/N2B/N3C]/48 levels.
Axle Load Resistance	50 t	50 t	40 t
Impact Surface Thickness	10 mm (+3 mm front Panel)	6 mm	4 mm
Front Panel	Round (replaceable, 3 mm)	_	_
Top Plate Thickness	10/11 mm	8 / 9 mm	8 / 9 mm
Vertical Impact Absorbing Panel Thickness	Solid 6 mm	Solid 6 mm	Solid 4 mm
Flashing Indicator (Front)	Standard	Optional	Optional
Flashing Indicator (Side)	Standard	-	-
Oil Level Sensor	Standard	Optional	Optional

380V AC 3-phase, 50/60 Hz, 2,2 - 11 kW

PLC control unit.

24V DC control system.

24V DC solenoids.

~3 - 5 sec. raising speed (~1 - 1,5 sec. EFO with optional hydraulic accumulator, and may differ depending on road blocker dimensions for road blockers wider than 4,0 m).

IP55 - Hydraulic Power Unit, IP67 - Electronics Control Unit with IP67 housing/box protection (optional), IP68 - Hydraulic Piston.

-5°C / +55°C (opt. -30°C / +70°C) operating temperature.

Safety valve for hose bursts.

10 m R2 type (double wire braided mesh) hydraulic hose.

40 - 120 lt capacity oil tank with magnetic metal collector and suction filter.

Oil level and temperature indicator.

Electrostatic powder coated over hot dip galvanised steel (opt. stainless steel) hydraulic power unit (HPU) cabinet.

External inputs/outputs (e.g. loop detector, safety sensor, traffic light, remote control, etc.).

Audio signal during lowering and raising operation.

Automatic / manual programmable passage authorisation (with optional loop detector).

Manual raising hand pump / Manual lowering valve.

Galvanized steel sleeve around main chassis (underground unit).

Special design hinge system spread on overall width.

Top plates (vehicle pass through surface) are hot dip galvanised and electrostatic powder coated anti skid steel. All other parts are coloured with industrial paint with two components over anticorrosive primer application.

High resistant construction by welded, bolted and wedge type connection structure.

Free standing piston connection structure avoiding load on the piston during vehicle passage and in case of an impact.

IP 67 manual control button unit with 3 functions.

Emergency stop button.

High visibility with yellow and black diagonal stripes on impact surface.

Reflective marking.

Easy installation with installation apparatus.

Optional Features and Accessories

Hydraulic accumulator for EFO-fast raise up (1 piston or 2 pistons systems), 24V DC motor in case of power failure (50 deploy + 50 retract), oil heater (for oil tank), oil cooler, heater for electronic components, submersible pump, traffic light (Ø200/300 mm, red-green LED, electrostatic powder coated over 304 grade stainless steel body), traffic light pole (electrostatic powder coated over hot dip galvanised steel), loop detector (double contact), safety sensors (with 50 cm height poles), IP67 box (for PLC, SMPS, connectors etc. inside power unit), wireless remote control (receiver and transmitter), external buttons, hot dip galvanization, double effect hydraulic unit, double speed hydraulic unit, PLC with diagnostic display, front flashing indicators, oil level sensor, different product dimensions, stainless steel HPU cabinet.


DUR
STOP


STOP


DUR
STOP

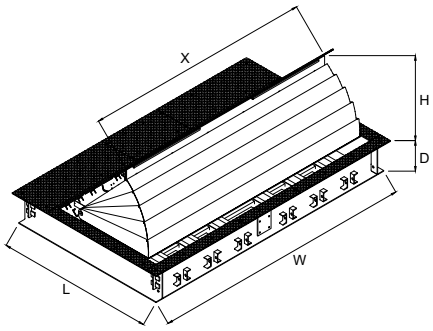
ROAD BLOCKERS

SHALLOW MOUNT SERIES

CAME ÖZAK

HRB SHLW ROAD BLOCKER
(Anti-terror / Heavy Duty - Shallow Mount Model)

Power	Standard 380V AC 3-Phase 50/60 Hz, 2,2 - 11 kW motor (varies depending on blocker size). Operating with 24V DC in case of power failure is optionally available.
Control Pack	24V DC powered PLC control unit is placed in power unit cabinet. 24V DC (opt.12V DC / 220V AC) solenoids.
Speed	Standard operation ~3 - 5 sec. (ascend/descend) depending on road blocker dimensions. Fast raise up (EFO, by optional hydraulic accumulator) ~1 - 1,5 sec. and may differ depending on road blocker dimensions for road blockers wider than 4,0 m.
IP Rating	IP55 - Hydraulic Power Unit IP67 - Electronics Control Unit with IP67 housing/box protection (optional) IP68 - Hydraulic Piston
Operating Temperature	-5°C / +55°C (opt. -30°C / +70°C)
Crash / Impact Rating	Crash tested and certified according to: IWA 14-1:2013 Road Blocker V/7200[N3C]/80, PAS68:2013 Road Blocker V/7500[N3]/80, and ASTM F2656-18 C750/7200 standards (HRB 30 P 90 SHLW model).



Mounting Depth 400 mm			Raising Height (H) 900 mm
Product Code	**Blocker Unit Width - mm (X)**	**Nr. of Pistons**	**Dimensions - mm (LxWxD)**
HRB 10P 90 SHLW	1000	1	2200 x 1450 x 400
HRB 15P 90 SHLW	1500	1	2200 x 1950 x 400
HRB 20P 90 SHLW	2000	1	2200 x 2450 x 400
HRB 25P 90 SHLW	2500	1	2200 x 2950 x 400
HRB 30P 90 SHLW	3000	1	2200 x 3450 x 400
HRB 35P 90 SHLW	3500	2	2200 x 3950 x 400
HRB 40P 90 SHLW	4000	2	2200 x 4450 x 400
HRB 45P 90 SHLW	4500	2	2200 x 4950 x 400
HRB 50P 90 SHLW	5000	2	2200 x 5450 x 400
HRB 55P 90 SHLW	5500	2	2200 x 5950 x 400
HRB 60P 90 SHLW	6000	2	2200 x 6450 x 400

* Different raising heights are optionally available.

Axle Load Resistance	50 t
Hydraulic Cylinder Unit	Dust sealed hydraulic cylinder, developed for heavy duty use. 1 - 3 m wide models contain single piston. 3,5 - 6,0 m wide models contain double pistons. Contains safety valve for hose bursts.
Hydraulic Power Unit and Cabinet	Strengthened industrial hydraulic pump. 40 - 120 lt capacity oil tank with magnetic metal collector and suction filter. Built-in oil level indicator and sensor, oil temperature indicator and audio alarm feature for low oil level. Standard 70 - 150 bar pressure (max. 180 bar). 10 m R2 type (double wire braided mesh) reinforced hydraulic hose.

Motor, hydraulic pump and solenoid valves are placed in an easily accessible hot-dip-galvanized and electrostatic powder coated steel cabinet with a built-in lock lid (opt. stainless steel cabinet).

Cabinet Type	Width (mm)	Length (mm)	Height (mm)
Cabinet 1	940	570	970
Cabinet 2	1040	590	1285
Cabinet 3	1243	840	1285

*Suitable cabinet type is selected according to the preferred product configuration.

System

Down, up, stop, emergency inputs and external sensor inputs/outputs (e.g. loop detector, safety sensor, traffic light, remote control, etc.).
System alerts with an audio signal during lowering and raising operation. A loud siren alert in case of alarm or emergency.
System stops in case of emergency as per default set-up and possible to be lowered or raised automatically (user's preference).
Can be lowered and raised manually in case of power failure or during maintenance with manual pump and manual valve feature.
Automatic raise up mode deploys (available with optional loop detector) the road blocker after the vehicle has passed over.
Sensor controlled stopping both at the top and bottom positions of the blocker unit.
Free standing piston connection structure that does not put any load on the piston during vehicle passage and in case of an impact.
Safety devices (if any, such as; safety sensor, loop detector, etc) are enabled in case fast raise up (EFO, optional) feature is activated and they can be optionally disabled.

Blocker Unit (Underground Unit)

All parts are coloured with industrial paint with two components over anticorrosive primer application.
Body is structured and strengthened with U-shaped beams.
Product is designed that no vehicle crashing effect can displace it after embedded or installed in to the ground.

Blocker Unit (Impact Blocking Unit)

Top plates (vehicle pass through surface) are hot dip galvanised and electrostatic powder coated.
All other parts are coloured with industrial paint with two components over anticorrosive primer application.
Moving parts are colored with RAL 1003 yellow (impact surface yellow-black) and fixed road surface plates in RAL 9005 black. In addition, the impact surface is finished with reflective signs and warnings.
Bulge free hidden hinge structure below the ground level allows vehicles to pass over smoothly and quietly.
Top panels where the vehicles pass over are made of 10 / 11 mm thick hot-dip galvanized steel with non-skid surface.
The system moves up and down as a block through Ø60 mm stainless steel hinges of which quantity varies according to blocker width (a 3 m wide blocker contains 8 pieces of hinges).
Impact blocker unit raises with 45° angle from the ground level.
Impact blocking unit and the underground unit are connected with 6 sets (in 3 m long road blocker, varies according to road blocker width) of linkages in 2 pairs of 15mm each fastened together by stainless steel shafts of 40 mm diameter.
When the blocker is in the raised position, impacts are distributed to the linkages and also it is designed so that the vertical impact power distribution panels are designed to absorb the impact by transmitting the impact energy to the ground.
The 10 mm thick impact surface strength is increased by the impact power distribution panels and the U-shaped beams connecting these panels together behind it.
Front and side faces of the blocker unit are covered with decorative telescopic front panels (opt.).
A top lid integration is available for easy access to interior units for service and maintenance purposes.

Control System

3 buttons for up, down and stop operations and 1 button for emergency stop are contained in an IP67 box (optionally, 1 button for EFO-fast raise up).
System stops its movement with the command from safety sensor (opt.) and loop detectors (opt.).
Contains built-in LED indicators and 10 m cable.
The system works with PLC as standard.
Status of safety sensors (if any) and loop detectors (if any), position and movement of the blocker and low oil level situation of the system can be monitored with optional PLC with diagnostic display.
Compatible with any access control system (by third parties).

Power-off Situation

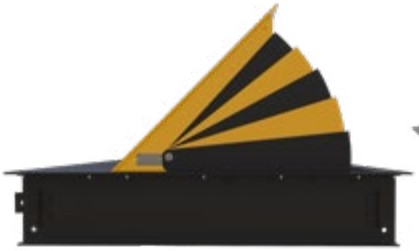
Road Blocker remains in its position in case of power-off. Optionally; can be lowered or raised and lowered by battery pack with 24V DC motor. Battery pack provides min.100 movements (50 deploy + 50 retract) when fully charged.

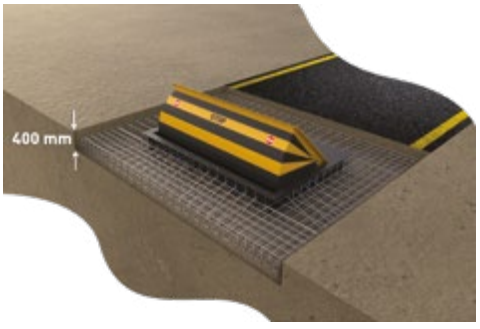
Optional Features and Accessories

Telescopic front panels, hydraulic accumulator for EFO-fast raise up (1 piston or 2 pistons systems), 24V DC motor in case of power failure (50 deploy + 50 retract), oil heater (for oil tank), oil cooler, heater for electronic components, submersible pump, traffic light (Ø200/300 mm, red-green LED, electrostatic powder coated over 304 grade stainless steel body), traffic light pole (electrostatic powder coated over hot dip galvanised steel), loop detector (double contact), safety sensors (with 50 cm height poles), IP67 box (for PLC, SMPS, connectors etc inside power unit), wireless remote control (receiver and transmitter), external buttons, hot dip galvanization, double effect hydraulic unit, double speed hydraulic unit, PLC with diagnostic display, front flashing indicators, different product dimensions.

Installation

Installation with C30 grade concrete and steel rebar reinforcement. Ground levelling and preparation works shall be carried on before pouring the concrete. Allowable bearing value of the ground shall be minimum 1/2 kg/cm^2, if not, works shall be carried on to fulfil. Installation shall be done according to the manufacturer's instructions.





*Design and specifications are subject to change without notice.


CRASH
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TESTED
IWA 14-1:2013 7200[N3C]/80
PAS68:2013 7500[N3]/80
ASTM F2656-18 C750/7200
Penetration Reference Poi
for crash
test video
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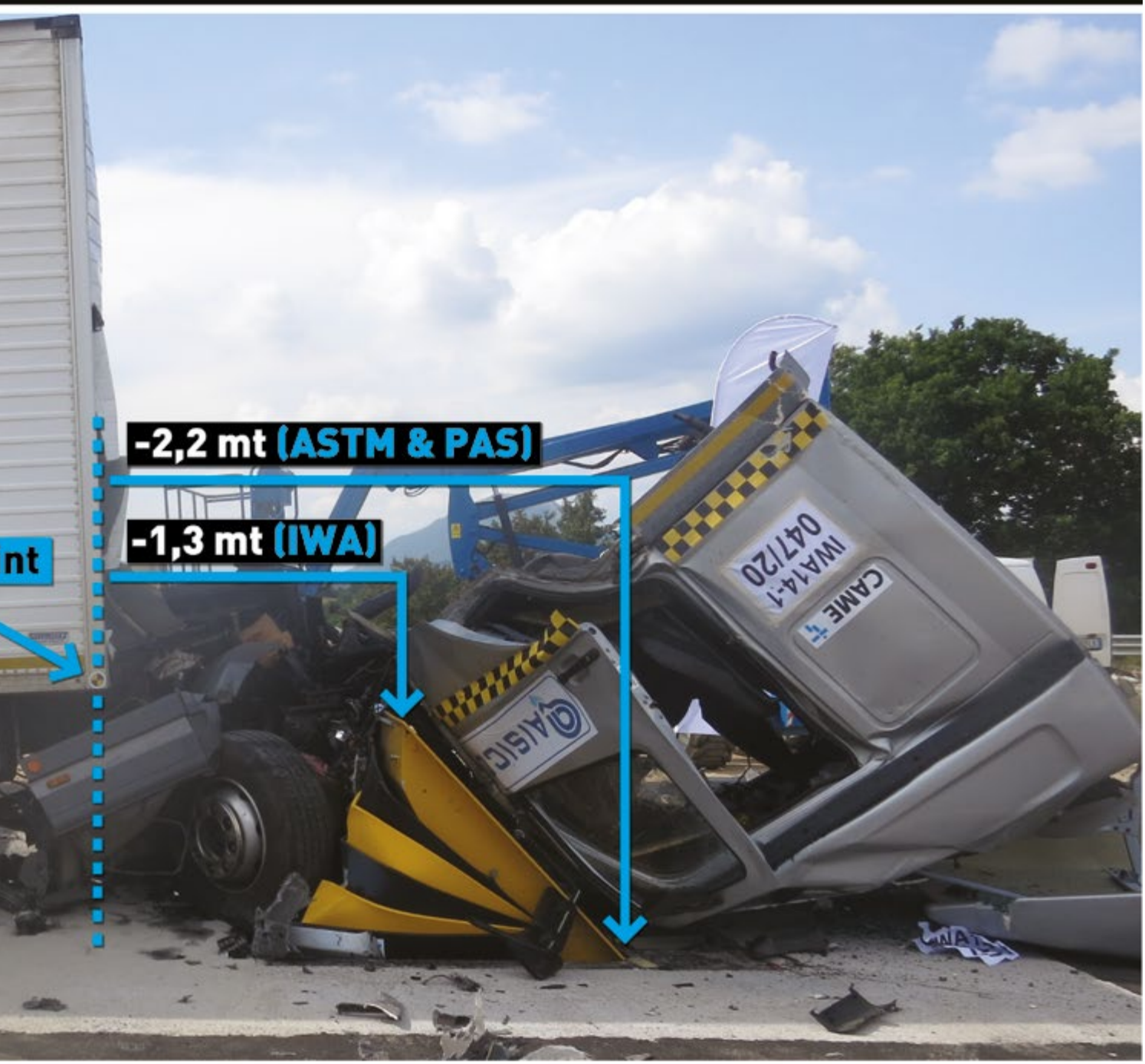
-2,2 mt (ASTM & PAS)
-1,3 mt (IWA)
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IWA14-1
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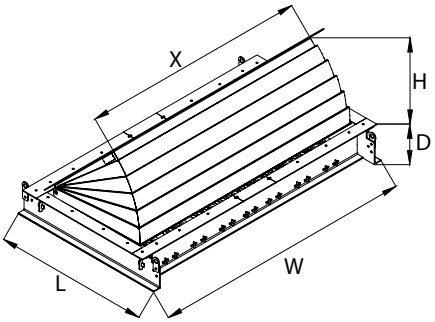
CAME

RRB SHLW ROAD BLOCKER
(Reinforced - Shallow Mount Model)

Power	Standard 380V AC 3-Phase 50/60 Hz, 2,2 - 11 kW motor (varies depending on blocker size). Operating with 24V DC in case of power failure is optionally available.
Control Pack	24V DC powered PLC control unit is placed in power unit cabinet. 24V DC (opt.12V DC / 220V AC) solenoids.
Speed	Standard operation ~3 - 5 sec. (ascend/descend) depending on road blocker dimensions. Fast raise up (EFO, by optional hydraulic accumulator) ~1 - 1,5 sec. and may differ depending on road blocker dimensions for road blockers wider than 4,0 m.
IP Rating	IP55 - Hydraulic Power Unit IP67 - Electronics Control Unit with IP67 housing/box protection (optional) IP68 - Hydraulic Piston
Operating Temperature	-5°C / +55°C (opt. -30°C / +70°C)
Crash / Impact Rating	Designed and produced to withstand impacts mentioned below:

Standard	Vehicle Type	Weight	Speed
ASTM F2656	M, C7 (K-8)	6800, 7200 kg	64 km/h (40 mph)
PAS 68	N2, N3	7500 kg	64 km/h (40 mph)
IWA 14-1	N2A, N2B, N3C	7200 kg	64 km/h (40 mph)

(Please contact for applicable product dimensions)



Mounting Depth 390 mm			Raising Height 900 mm
Product Code	**Blocker Unit Width - mm (X)**	**Nr. of Pistons**	**Dimensions - mm (LxWxD)**
RRB 10P 90 SHLW	1000	1	2000 x 1455 x 390
RRB 15P 90 SHLW	1500	1	2000 x 1955 x 390
RRB 20P 90 SHLW	2000	1	2000 x 2455 x 390
RRB 25P 90 SHLW	2500	1	2000 x 2955 x 390
RRB 30P 90 SHLW	3000	1	2000 x 3455 x 390
RRB 35P 90 SHLW	3500	2	2000 x 3955 x 390
RRB 40P 90 SHLW	4000	2	2000 x 4455 x 390
RRB 45P 90 SHLW	4500	2	2000 x 4955 x 390
RRB 50P 90 SHLW	5000	2	2000 x 5455 x 390
RRB 55P 90 SHLW	5500	2	2000 x 5955 x 390
RRB 60P 90 SHLW	6000	2	2000 x 6455 x 390

* Different raising heights are optionally available.

Axle Load Resistance	50 t
Hydraulic Cylinder Unit	Dust sealed hydraulic cylinder, developed for heavy duty use. 1 - 3 m wide models contain single piston. 3,5 - 6,0 m wide models contain double pistons. Contains safety valve for hose bursts.
Hydraulic Power Unit and Cabinet	Strengthened industrial hydraulic pump. 40 - 120 lt capacity oil tank with magnetic metal collector and suction filter. Built-in oil level and oil temperature indicator. Standard 70 - 150 bar pressure (max. 180 bar). 10 m R2 type (double wire braided mesh) reinforced hydraulic hose.

Motor, hydraulic pump and solenoid valves are placed in an easily accessible hot-dip-galvanized and electrostatic powder coated steel cabinet with a built-in lock lid (opt. stainless steel cabinet).

Cabinet Type	Width (mm)	Length (mm)	Height (mm)
Cabinet 1	940	570	970
Cabinet 2	1040	590	1285
Cabinet 3	1243	840	1285

*Suitable cabinet type is selected according to the preferred product configuration.

System

Down, up, stop, emergency inputs and external sensor inputs/outputs (e.g. loop detector, safety sensor, traffic light, remote control, etc.).
System alerts with an audio signal during lowering and raising operation. A loud siren alert in case of alarm or emergency.
System stops in case of emergency as per default set-up and possible to be lowered or raised automatically (user's preference).
Can be lowered and raised manually in case of power failure or during maintenance with manual pump and manual valve feature.
Automatic raise up mode deploys (available with optional loop detector) the road blocker after the vehicle has passed over.
Sensor controlled stopping both at the top and bottom positions of the blocker unit.
Free standing piston connection structure that does not put any load on the piston during vehicle passage and in case of an impact.
Safety devices (if any, such as; safety sensor, loop detector, etc) are enabled in case fast raise up (EFO, optional) feature is activated and they can be optionally disabled.

Blocker Unit (Underground Unit)

All parts are coloured with industrial paint with two components over anticorrosive primer application.
Body is structured and strengthened with U-shaped beams.
Product is designed that no vehicle crashing effect can displace it after embedded or installed in to the ground.

Blocker Unit (Impact Blocking Unit)

Top plates (vehicle pass through surface) are hot dip galvanised and electrostatic powder coated.
All other parts are coloured with industrial paint with two components over anticorrosive primer application.
Moving parts are colored with RAL 1003 yellow (impact surface yellow-black) and fixed road surface plates in RAL 9005 black. In addition, the impact surface is finished with reflective signs and warnings.
Bulge free hidden hinge structure below the ground level allows vehicles to pass over smoothly and quietly.
Top panels where the vehicles pass over are made of 8 / 9 mm thick hot-dip galvanized steel with non-skid surface.
The system moves up and down as a block through Ø50 mm stainless steel hinges of which quantity varies according to blocker width (a 3 m wide blocker contains 6 pieces of hinges).
Impact blocker unit raises with 45° angle from the ground level.
Impact blocking unit and the underground unit are connected with 6 sets (in 3 m long road blocker, varies according to road blocker width) of linkages in 2 pairs of 15 mm each fastened together by stainless steel shafts of 30 mm diameter.
When the blocker is in the raised position, impacts are distributed to the linkages and also it is designed so that the vertical impact power distribution panels are designed to absorb the impact by transmitting the impact energy to the ground.
6+5 mm thick impact surface strength is increased by the impact power distribution panels and the U-shaped beams connecting these panels together behind it.
Front and side faces of the blocker unit are covered with decorative telescopic front panels (opt.).
A top lid integration is available for easy access to interior units for service and maintenance purposes.

Control System

3 buttons for up, down and stop operations and 1 button for emergency stop are contained in an IP67 box (optionally, 1 button for EFO-fast raise up).
System stops its movement with the command from safety sensor (opt.) and loop detectors (opt.).
Contains built-in LED indicators and 10 m cable.
The system works with PLC as standard.
Status of safety sensors (if any) and loop detectors (if any), position and movement of the blocker and low oil level situation of the system can be monitored with optional PLC with diagnostic display.
Compatible with any access control system (by third parties).

Power-off Situation

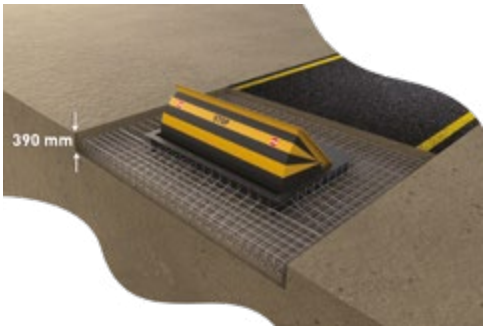
Road Blocker remains in its position in case of power-off. Optionally; can be lowered or raised and lowered by battery pack with 24V DC motor. Battery pack provides min.100 movements (50 deploy + 50 retract) when fully charged.

Optional Features and Accessories

Telescopic front panels, hydraulic accumulator for EFO-fast raise up (1 piston or 2 pistons systems), 24V DC motor in case of power failure (50 deploy + 50 retract), oil heater (for oil tank), oil cooler, heater for electronic components, submersible pump, traffic light (Ø200/300 mm, red-green LED, electrostatic powder coated over 304 grade stainless steel body), traffic light pole (electrostatic powder coated over hot dip galvanised steel), loop detector (double contact), safety sensors (with 50 cm height poles), IP67 box (for PLC, SMPS, connectors etc inside power unit), wireless remote control (receiver and transmitter), external buttons, hot dip galvanization, double effect hydraulic unit, double speed hydraulic unit, PLC with diagnostic display, front flashing indicators, oil level sensor, different product dimensions.

Installation

Installation with C35 grade concrete and steel rebar reinforcement. Ground levelling and preparation works shall be carried on before pouring the concrete. Allowable bearing value of the ground shall be minimum 1/2 kg/cm^2, if not, works shall be carried on to fulfil.
Installation shall be done according to the manufacturer's instructions.



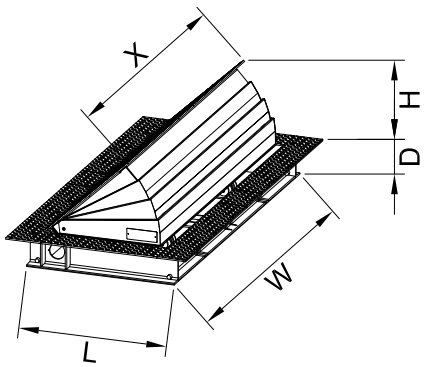

STOP

RB SHLW ROAD BLOCKER
(Access Control - Shallow Mount Model)

Power	Standard 380V AC 3-Phase 50/60 Hz, 2,2 - 11 kW motor (varies depending on blocker size). Operating with 24V DC in case of power failure is optionally available.
Control Pack	24V DC powered PLC control unit is placed in power unit cabinet. 24V DC (opt.12V DC / 220V AC) solenoids.
Speed	Standard operation ~3 - 5 sec. (ascend/descend) depending on road blocker dimensions. Fast raise up (EFO, by optional hydraulic accumulator) ~1 - 1,5 sec. and may differ depending on road blocker dimensions for road blockers wider than 4,0 m.
IP Rating	IP55 - Hydraulic Power Unit IP67 - Electronics Control Unit with IP67 housing/box protection (optional) IP68 - Hydraulic Piston
Operating Temperature	5°C / +55°C (opt. -30°C / +70°C)
Crash / Impact Rating	Designed and produced to withstand impacts mentioned below:

Standard	Vehicle Type	Weight	Speed
ASTM F2656	M, C7 (K-4)	6800, 7200 kg	48 km/h (30 mph)
PAS 68	N2, N3	7500 kg	48 km/h (30 mph)
IWA 14-1	N2A, N2B, N3C	7200 kg	48 km/h (30 mph)

(Please contact for applicable product dimensions)



Mounting Depth 290 mm			Raising Height 900 mm
Product Code	**Blocker Unit Width (X)**	**Nr. of Pistons**	**Dimensions (LxWxD)**
RB 10P 90 SHLW	1000	1	2000 x 1565 x 290
RB 15P 90 SHLW	1500	1	2000 x 2065 x 290
RB 20P 90 SHLW	2000	1	2000 x 2565 x 290
RB 25P 90 SHLW	2500	1	2000 x 3065 x 290
RB 30P 90 SHLW	3000	1	2000 x 3565 x 290
RB 35P 90 SHLW	3500	2	2000 x 4065 x 290
RB 40P 90 SHLW	4000	2	2000 x 4565 x 290
RB 45P 90 SHLW	4500	2	2000 x 5065 x 290
RB 50P 90 SHLW	5000	2	2000 x 5565 x 290
RB 55P 90 SHLW	5500	2	2000 x 6065 x 290
RB 60P 90 SHLW	6000	2	2000 x 6565 x 290

* Different raising heights are optionally available.

Axle Load Resistance	40 t
Hydraulic Cylinder Unit	Dust sealed hydraulic cylinder, developed for heavy duty use. 1 - 3 m wide models contain single piston. 3,5 - 6,0 m wide models contain double pistons. Contains safety valve for hose bursts.
Hydraulic Power Unit and Cabinet	Strengthened industrial hydraulic pump. 40 - 120 lt capacity oil tank with magnetic metal collector and suction filter. Built-in oil level and oil temperature indicator. Standard 70 - 150 bar pressure (max. 180 bar). 10 m R2 type (double wire braided mesh) reinforced hydraulic hose.

Motor, hydraulic pump and solenoid valves are placed in an easily accessible hot-dip-galvanized and electrostatic powder coated steel cabinet with a built-in lock lid (opt. stainless steel cabinet).

Cabinet Type	Width (mm)	Length (mm)	Height (mm)
Cabinet 1	940	570	970
Cabinet 2	1040	590	1285
Cabinet 3	1243	840	1285

*Suitable cabinet type is selected according to the preferred product configuration.

System

Down, up, stop, emergency inputs and external sensor inputs/outputs (e.g. loop detector, safety sensor, traffic light, remote control, etc.).
System alerts with an audio signal during lowering and raising operation. A loud siren alert in case of alarm or emergency.
System stops in case of emergency as per default set-up and possible to be lowered or raised automatically (user's preference).
Can be lowered and raised manually in case of power failure or during maintenance with manual pump and manual valve feature.
Automatic raise up mode deploys (available with optional loop detector) the road blocker after the vehicle has passed over.
Sensor controlled stopping both at the top and bottom positions of the blocker unit.
Free standing piston connection structure that does not put any load on the piston during vehicle passage and in case of an impact.
Safety devices (if any, such as; safety sensor, loop detector, etc) are enabled in case fast raise up (EFO, optional) feature is activated and they can be optionally disabled.

Blocker Unit (Underground Unit)

All parts are coloured with industrial paint with two components over anticorrosive primer application.
Body is structured and strengthened with U-shaped beams.
Product is designed that no vehicle crashing effect can displace it after embedded or installed in to the ground.

Blocker Unit (Impact Blocking Unit)

Top plates (vehicle pass through surface) are hot dip galvanised and electrostatic powder coated.
All other parts are coloured with industrial paint with two components over anticorrosive primer application.
Moving parts are colored with RAL 1003 yellow (impact surface yellow-black) and fixed road surface plates in RAL 9005 black. In addition, the impact surface is finished with reflective signs and warnings.
Bulge free hidden hinge structure below the ground level allows vehicles to pass over smoothly and quietly.
Top panels where the vehicles pass over are made of 8 / 9 mm thick hot-dip galvanized steel with non-skid surface.
The system moves up and down as a block through Ø50 mm stainless steel hinges of which quantity varies according to blocker width (a 3 m wide blocker contains 6 pieces of hinges).
Impact blocker unit raises with 45° angle from the ground level.
Impact blocking unit and the underground unit are connected with 6 sets (in 3 m long road blocker, varies according to road blocker width) of linkages in 2 pairs of 15 mm each fastened together by stainless steel shafts of 30 mm diameter.
Impact surface is made of 6 mm thick interlocking U-shaped beams structure and vertical impact power distribution U-shaped beams connected to them.
Front and side faces of the blocker unit are covered with decorative telescopic front panels (opt.).
A top lid integration is available for easy access to interior units for service and maintenance purposes.

Control System

3 buttons for up, down and stop operations and 1 button for emergency stop are contained in an IP67 box (optionally, 1 button for EFO-fast raise up).
System stops its movement with the command from safety sensor (opt.) and loop detectors (opt.).
Contains built-in LED indicators and 10 m cable.
The system works with PLC as standard.
Status of safety sensors (if any) and loop detectors (if any), position and movement of the blocker and low oil level situation of the system can be monitored with optional PLC with diagnostic display.
Compatible with any access control system (by third parties).

Power-off Situation

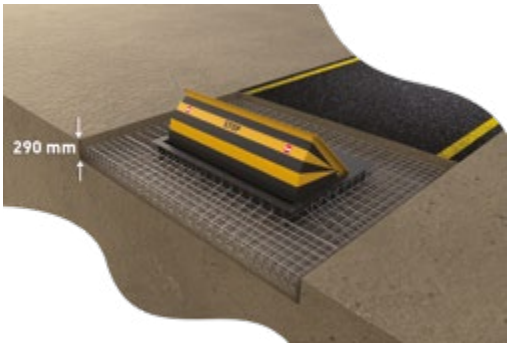
Road Blocker remains in its position in case of power-off. Optionally; can be lowered or raised and lowered by battery pack with 24V DC motor. Battery pack provides min.100 movements (50 deploy + 50 retract) when fully charged.

Optional Features and Accessories

Telescopic front panels, hydraulic accumulator for EFO-fast raise up (1 piston or 2 pistons systems), 24V DC motor in case of power failure (50 deploy + 50 retract), oil heater (for oil tank), oil cooler, heater for electronic components, submersible pump, traffic light (Ø200/300 mm, red-green LED, electrostatic powder coated over 304 grade stainless steel body), traffic light pole (electrostatic powder coated over hot dip galvanised steel), loop detector (double contact), safety sensors (with 50 cm height poles), IP67 box (for PLC, SMPS, connectors etc inside power unit), wireless remote control (receiver and transmitter), external buttons, hot dip galvanization, double effect hydraulic unit, double speed hydraulic unit, PLC with diagnostic display, front flashing indicators, oil level sensor, different product dimensions.

Installation

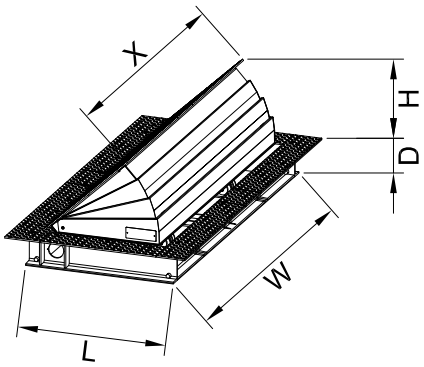
Installation with C35 grade concrete and steel rebar reinforcement. Ground levelling and preparation works shall be carried on before pouring the concrete. Allowable bearing value of the ground shall be minimum 1/2 kg/cm^2, if not, works shall be carried on to fulfil. Installation shall be done according to the manufacturer's instructions.



*Design and specifications are subject to change without notice.

TRB ROAD BLOCKER
(Traffic Regulation - Shallow Mount Model)

Power	Standard 380V AC 3-Phase 50/60 Hz, 2,2 - 11 kW motor (varies depending on blocker size). Operating with 24V DC in case of power failure is optionally available.
Control Pack	24V DC powered PLC control unit is placed in power unit cabinet. 24V DC (opt.12V DC / 220V AC) solenoids.
Speed	Standard operation ~3 - 5 sec. (ascend/descend) depending on road blocker dimensions. Fast raise up (EFO, by optional hydraulic accumulator) ~1 - 1,5 sec. and may differ depending on road blocker dimensions for road blockers wider than 4,0 m.
IP Rating	IP55 - Hydraulic Power Unit IP67 - Electronics Control Unit with IP67 housing/box protection (optional) IP68 - Hydraulic Piston
Operating Temperature	-5°C / +55°C (opt. -30°C / +70°C)
Crash / Impact Rating	-



Mounting Depth 210 mm			Raising Height 500 mm	Raising Height 600 mm
Product Code	**Blocker Unit Width (X)**	**Nr. of Pistons**	**Dimensions (LxWxD)**	**Dimensions (LxWxD)**
TRB 10P_ _ SHLW	1000	1	980 x 1210 x 210	1142 x 1240 x 210
TRB 15P_ _ SHLW	1500	1	980 x 1710 x 210	1142 x 1740 x 210
TRB 20P_ _ SHLW	2000	1	980 x 2210 x 210	1142 x 2240 x 210
TRB 25P_ _ SHLW	2500	1	980 x 2710 x 210	1142 x 2740 x 210
TRB 30P_ _ SHLW	3000	1	980 x 3210 x 210	1142 x 3240 x 210
TRB 35P_ _ SHLW	3500	2	980 x 3710 x 210	1142 x 3740 x 210
TRB 40P_ _ SHLW	4000	2	980 x 4210 x 210	1142 x 4240 x 210
TRB 45P_ _ SHLW	4500	2	980 x 4710 x 210	1142 x 4740 x 210
TRB 50P_ _ SHLW	5000	2	980 x 5210 x 210	1142 x 5240 x 210
TRB 55P_ _ SHLW	5500	2	980 x 5710 x 210	1142 x 5740 x 210
TRB 60P_ _ SHLW	6000	2	980 x 6210 x 210	1142 x 6240 x 210

* Different raising heights are optionally available.

Axle Load Resistance	40 t
Hydraulic Cylinder Unit	Dust sealed hydraulic cylinder, developed for heavy duty use. 1 - 3 m wide models contain single piston. 3,5 - 6,0 m wide models contain double pistons. Contains safety valve for hose bursts.
Hydraulic Power Unit and Cabinet	Strengthened industrial hydraulic pump. 40 - 120 lt capacity oil tank with magnetic metal collector and suction filter. Built-in oil level and oil temperature indicator. Standard 70 - 150 bar pressure (max. 180 bar). 10 m R2 type (double wire braided mesh) reinforced hydraulic hose.

Motor, hydraulic pump and solenoid valves are placed in an easily accessible hot-dip-galvanized and electrostatic powder coated steel cabinet with a built-in lock lid (opt. stainless steel cabinet).

Cabinet Type	Width (mm)	Length (mm)	Height (mm)
Cabinet 1	940	570	970
Cabinet 2	1040	590	1285
Cabinet 3	1243	840	1285

*Suitable cabinet type is selected according to the preferred product configuration.

System

Down, up, stop, emergency inputs and external sensor inputs/outputs (e.g. loop detector, safety sensor, traffic light, remote control, etc.).
System alerts with an audio signal during lowering and raising operation. A loud siren alert in case of alarm or emergency.
System stops in case of emergency as per default set-up and possible to be lowered or raised automatically (user's preference).
Can be lowered and raised manually in case of power failure or during maintenance with manual pump (opt.) and manual valve feature.
Automatic raise up mode deploys (available with optional loop detector) the road blocker after the vehicle has passed over.
Sensor controlled stopping both at the top and bottom positions of the blocker unit.
Free standing piston connection structure that does not put any load on the piston during vehicle passage and in case of an impact.
Safety devices (if any, such as; safety sensor, loop detector, etc) are enabled in case fast raise up (EFO, optional) feature is activated and they can be optionally disabled.

Blocker Unit (Underground Unit)

All parts are coloured with industrial paint with two components over anticorrosive primer application.
Body is structured and strengthened with U-shaped beams.
Product is designed that no vehicle crashing effect can displace it after embedded or installed in to the ground.

Blocker Unit (Impact Blocking Unit)

Top plates (vehicle pass through surface) are hot dip galvanised and electrostatic powder coated.
All other parts are coloured with industrial paint with two components over anticorrosive primer application.
Moving parts are colored with RAL 1003 yellow (impact surface yellow-black) and fixed road surface plates in RAL 9005 black. In addition, the impact surface is finished with reflective signs and warnings.
Bulge free hidden hinge structure below the ground level allows vehicles to pass over smoothly and quietly.
Top panels where the vehicles pass over are made of 8 / 9 mm thick hot-dip galvanized steel with non-skid surface.
The system moves up and down as a block through Ø50 mm stainless steel hinges of which quantity varies according to blocker width (a 3 m wide blocker contains 6 pieces of hinges).
Impact blocker unit raises with 45° angle from the ground level.
Impact blocking unit and the underground unit are connected with 6 sets (in 3 m long road blocker, varies according to road blocker width) of linkages in 2 pairs of 10 mm each fastened together by stainless steel shafts of 30 mm diameter.
Front and side faces of the blocker unit are covered with decorative telescopic front panels (opt.).
A top lid integration is available for easy access to interior units for service and maintenance purposes.

Control System

3 buttons for up, down and stop operations and 1 button for emergency stop are contained in an IP67 box (optionally, 1 button for EFO-fast raise up).
System stops its movement with the command from safety sensor (opt.) and loop detectors (opt.).
Contains built-in LED indicators and 10 m cable.
The system works with PLC as standard.
Status of safety sensors (if any) and loop detectors (if any), position and movement of the blocker and low oil level situation of the system can be monitored with optional PLC with diagnostic display.
Compatible with any access control system (by third parties).

Power-off Situation

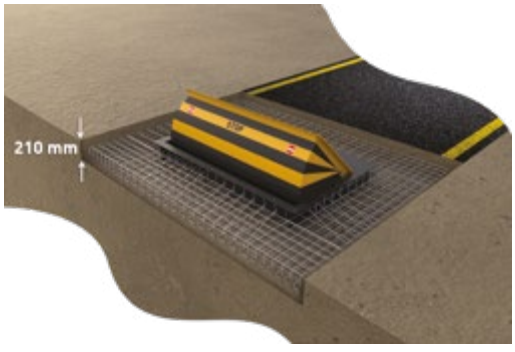
Road Blocker remains in its position in case of power-off. Optionally; can be lowered or raised and lowered by battery pack with 24V DC motor. Battery pack provides min.100 movements (50 deploy + 50 retract) when fully charged.

Optional Features and Accessories

Telescopic front panels, hydraulic accumulator for EFO-fast raise up (1 piston or 2 pistons systems), hand pump for manual raising, 24V DC motor in case of power failure (50 deploy + 50 retract), oil heater (for oil tank), oil cooler, heater for electronic components, submersible pump, traffic light (Ø200/300 mm, red-green LED, electrostatic powder coated over 304 grade stainless steel body), traffic light pole (electrostatic powder coated over hot dip galvanised steel), loop detector (double contact), safety sensors (with 50 cm height poles), IP67 box (for PLC, SMPS, connectors etc inside power unit), wireless remote control (receiver and transmitter), external buttons, hot dip galvanization, double effect hydraulic unit, double speed hydraulic unit, PLC with diagnostic display, front flashing indicators, oil level sensor, ramp, different product dimensions.

Installation

Installation with C35 grade concrete and steel rebar reinforcement. Ground levelling and preparation works shall be carried on before pouring the concrete. Allowable bearing value of the ground shall be minimum 1/2 kg/cm^2, if not, works shall be carried on to fulfil. Installation shall be done according to the manufacturer's instructions.



*Design and specifications are subject to change without notice.

General Technical Specifications
(Shallow Mounted)

	HRB Anti-Terror / Heavy Duty Model	RRB (Reinforced Model)	RB (Access Control Model)	TRB (Traffic Regulation Model)
				

General Specifications

Mounting Depth	400 mm	390 mm	290 mm	210 mm
Crash/Impact Rating	Crash tested and certified according to IWA 14-1:2013 Road Blocker/ V/7200[N3C]/80, PAS68:2013 Road Blocker V/7500[N3]/80, and ASTM F2656-18 C750/7200 P1 (K-12) standards (HRB 30 P 90 SHLW).	Designed and produced to withstand impacts according to ASTM F2656 M, C7 (K-8), PAS68[N2 N3]/64 and IWA 14-1[N2A/N2B/N3C]/64 levels.	Designed and produced to withstand impacts according to ASTM F2656 M, C7 (K-4), PAS68[N2 N3]/48 and IWA 14-1[N2A/N2B/N3C]/48 levels.	-
Axle Load Resistance	50 t	50 t	40 t	40 t
Impact Surface Thickness	10 mm	6+5 mm	6 mm	5 mm
Top Plate Thickness	10 / 11 mm	8 / 9 mm	8 / 9 mm	8 / 9 mm
Vertical Impact Absorbers	8 mm solid panels	6 mm U beams	6 mm U beams	5 mm U beams
Oil Level Sensor	Standard	Optional	Optional	Optional
Hand Pump for Manual Raising	Standard	Standard	Standard	Optional
Installation	Installation with C30 grade concrete and steel rebars.	Installation with C35 grade concrete and steel rebars.	Installation with C35 grade concrete and steel rebars.	Installation with C35 grade concrete and steel rebars.
380V AC 3-phase, 50/60 Hz, 2,2 - 11 kW				
PLC control unit.				
24V DC control system.				
24V DC solenoids.				
~3 - 5 sec. raising speed (~1 - 1,5 sec. EFO with optional hydraulic accumulator, and may differ depending on road blocker dimensions for road blockers wider than 4,0 m).				
IP55 - Hydraulic Power Unit, IP67 - Electronics Control Unit with IP67 housing/box protection (optional), IP68 - Hydraulic Piston.				
-5°C / +55°C (opt. -30°C / +70°C) operating temperature.				
Safety valve for hose bursts.				
10 m R2 type (double wire braided mesh) hydraulic hose.				
40 - 120 lt capacity oil tank with magnetic metal collector and suction filter.				
Oil level and temperature indicator.				
Electrostatic powder coated over hot dip galvanised steel (opt. stainless steel) hydraulic power unit (HPU) cabinet				
External inputs/outputs (e.g. loop detector, safety sensor, traffic light, remote control, etc.).				
Audio signal during lowering and raising operation.				
Automatic / manual programmable passage authorisation (with optional loop detector).				
Manual lowering valve.				
Special design hinge system spread on overall width.				
Top plates (vehicle pass through surface) are hot dip galvanised and electrostatic powder coated anti skid steel. All other parts are coloured with industrial paint with two components.				
High resistant construction by welded, bolted and wedge type connection structure.				
Free standing piston connection structure avoiding load on the piston during vehicle passage and in case of an impact.				
IP 67 manual control button unit with 3 functions.				
Emergency stop button.				
Reflective marking.				
Thanks to shallow installation depth no changes required in the existing underground infrastructure.				

Optional Features and Accessories

Telescopic front panels, hydraulic accumulator for EFO-fast raise up (1 piston or 2 pistons systems), 24V DC motor in case of power failure (50 deploy + 50 retract), oil heater (for oil tank), oil cooler, heater for electronic components, submersible pump, traffic light (Ø200/300 mm, red-green LED, electrostatic powder coated over 304 grade stainless steel body), traffic light pole (electrostatic powder coated over hot dip galvanised steel), loop detector (double contact), safety sensors (with 50 cm height poles), IP67 box (for PLC, SMPS, connectors etc inside power unit), wireless remote control (receiver and transmitter), external buttons, hot dip galvanization, double effect hydraulic unit, double speed hydraulic unit, PLC with diagnostic display, front flashing indicators, oil level sensor, ramp, different product dimensions.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EÇMEYİNİZ.

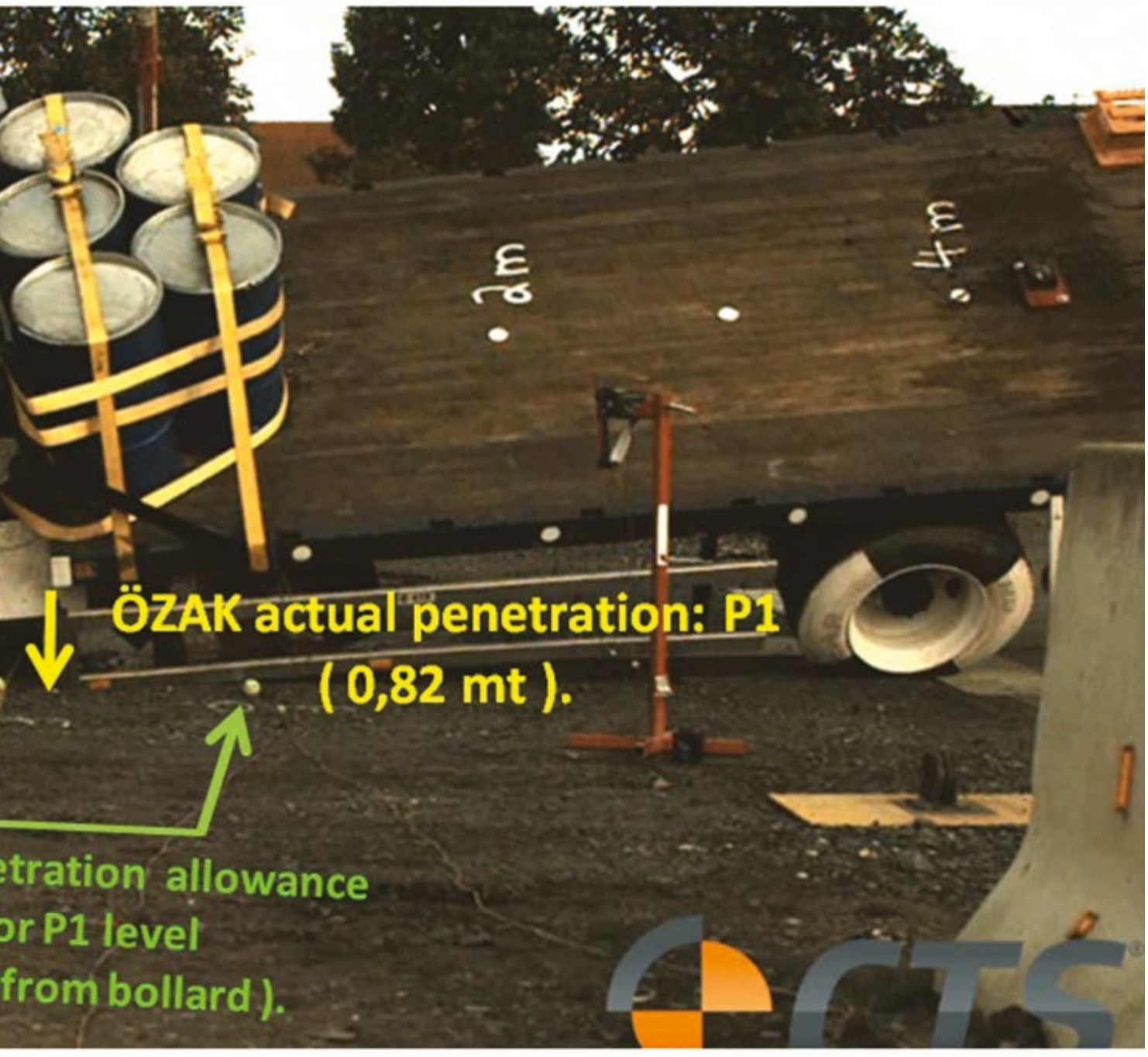
BOLLARDS

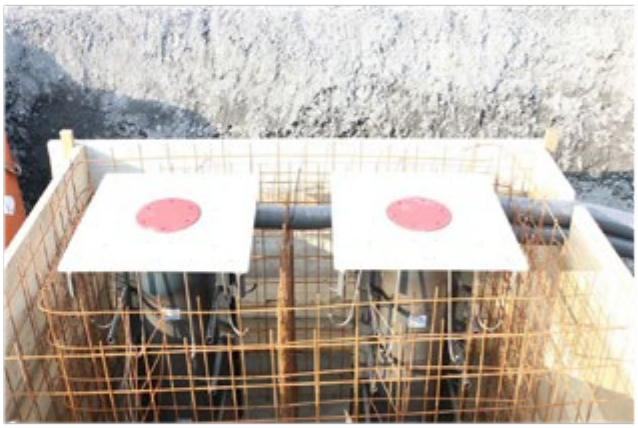
CAME ÖZAK

M40 Installation


CRASH
CERTIFIED
TESTED
M40 (K8)
ASTM 2656-07
for crash
test video
max. pene
(1 mt


OZAK
NR-D
CTS


ÖZAK actual penetration: P1
(0,82 mt).
etration allowance
or P1 level
from bollard).
CTS



M50 Installation


t = 9.340 s


t = 9.520 s


t = 9.920 s
CRASH
CERTIFIED
TESTED
M50 (K12)
ASTM 2656-07

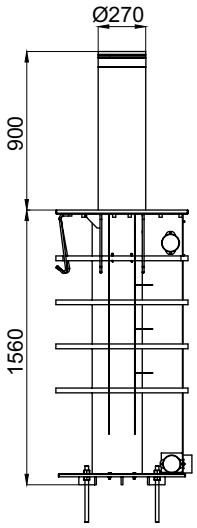

CTS
crashtest-service.com

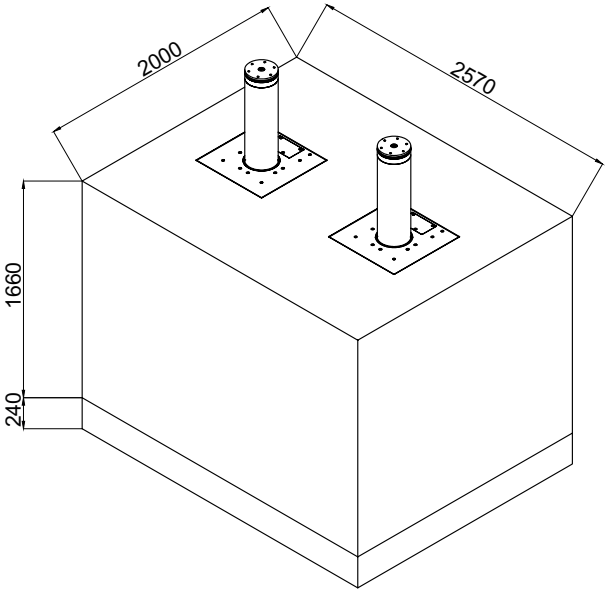

CTS
crashtest-service.com

HBD/12 BOLLARD
(Anti-terror / Heavy Duty - Retractable Model)

CRASH CERTIFIED TESTED
M50 (K-12)
ASTM F2656-07

Dimensions (mm)





* Different raising heights are optionally available.

Technical Features

Power	Standard 380V AC 3-Phase 50/60 Hz, 1,1 - 11 kW motor (varies depending on the number of bollards in the set to be fed and the accessories to be included). Operating with 24V DC in case of power failure is optionally available.
Control Pack	24V DC powered PLC control unit is placed in power unit cabinet. 24V DC (opt.12V DC / 220V AC) solenoids.
Speed	Standard operation ~2,5 - 5 sec. (ascend/descend) depending on the number of bollards in the set to be fed. Fast raise up (EFO, by optional hydraulic accumulator) ~1 - 1,5 sec. and may differ depending on the number of bollards in the set and the raising height.
IP Rating	IP55 - Hydraulic Power Unit IP67 - Electronics Control Unit with IP67 housing/box protection (optional) IP68 - Hydraulic Piston
Operating Temperature	-5°C / +55°C (opt. -30°C / +70°C)

Crash / Impact Rating

Crash tested and certified according to ASTM F2656-07 at M50 (K-12) level (HBD 275 H 90). In addition, designed and produced to withstand impacts mentioned below:

Standard	Vehicle Type	Weight	Speed
PAS 68	N3	7500 kg	80 km/h (50 mph)
IWA 14-1	N3C	7200 kg	80 km/h (50 mph)

(Please contact for applicable product dimensions)

Axle Load Resistance

70 t

Hydraulic Cylinder Unit

Dust sealed, double effect hydraulic cylinder, developed for heavy duty use.

Hydraulic Power Unit and Cabinet:

Strengthened industrial hydraulic pump.
40 - 120 lt (depending on the number of bollards to be fed and the raising height) capacity oil tank with magnetic metal collector and suction filter.
Built-in oil level indicator and sensor, oil temperature indicator and audio alarm feature for low oil level.
Standard 60 - 120 bar pressure (depending on the number of bollards to be fed, max. 160 bar,).
10 m R2 type (double wire braided mesh) reinforced hydraulic hose.
Interconnecting hoses in case of installations of multiple bollard posts.

Motor, hydraulic pump and solenoid valves are placed in an easily accessible hot-dip-galvanized and electrostatic powder coated steel cabinet with a built-in lock lid (opt. stainless steel cabinet).

Cabinet Type	Width (mm)	Length (mm)	Height (mm)
Cabinet 1	940	570	970
Cabinet 2	1040	590	1285
Cabinet 3	1243	840	1285

*Suitable cabinet type is selected according to the preferred product configuration.

System

Down, up, stop, emergency inputs and external sensor inputs/outputs (e.g. loop detector, safety sensor, traffic light, remote control, etc.).
System alerts with an audio signal during lowering and raising operation. A loud siren alert in case of alarm or emergency.
System stops in case of emergency as per default set-up and possible to be lowered or raised automatically (user's preference).
Can be lowered and raised manually in case of power failure or during maintenance with manual pump and manual valve feature.
Automatic raise up mode deploys (available with optional loop detector) the bollard after the vehicle has passed over.
Contains IP67 magnetic sensor for barrier position and traffic signalisation.
Free standing piston connection structure that does not put any load on the piston during vehicle passage.
Equipped with absorbing spring system for bumping at top point.
Safety devices (if any, such as; safety sensor, loop detector, etc) are enabled in case fast raise up (EFO, optional) feature is activated and they can be optionally disabled.

Bollard Unit (Underground Unit)

Bollard Anchorage Casing:
Ø338 mm hot dip galvanised steel, designed so that no vehicle crashing effect can displace it after embedded into the ground.
Left and right hydraulic hose and cable entry openings use both directions as per HPU position and site conditions.
Contains connection for rainwater drainage.
Easy installation with ground mounting plate by bolting to the base foundation. Easy access to hydraulic hose and cables is provided.

Bollard Main Housing:
Ø324 mm hot dip galvanised steel structured to provide main housing for the bollard cylinder.
Bollard cylinder is pivoted with and moves through 5 rails (inner railing) placed on the main housing with equal distances from each other for maximum rigidity and minimum material fraction.
Contains the hydraulic cylinder lower connection.

Bollard Unit (Impact Blocking Unit)

Bollard Cylinder (Crash Unit):
Ø270 mm crash surface made of hot-dip galvanised steel pipe with 10 mm wall thickness electrostatic powder coated in RAL9006 as standard (other RAL colors or 304 - 316 grade stainless steel sleeve are optionally available) and infilled with eccentrically 65 - 90 mm thick solid steel and composite material.
Special star-formed, 10 mm solid steel bar infilled inner structure for impact absorption distributed evenly to the whole body.
Demountable, RAL 9006 electrostatic powder coated aluminium bollard top lid with 360° visible red flashing LED indicators.
Furnished with red (opt. white or yellow) reflecting strips.
Bollard cylinder pivoted with and moves through replaceable 5 special non-metal rails (outer railing) positioned with equal distances from each other for maximum rigidity and minimum material fraction.
Contains the hydraulic cylinder upper connection.
Thanks to the bollard anchorage casing, bollard cylinder is designed to be replaced together with the main housing in case of a crash damage.

Road Surface Plate:
15 mm steel, hot-dip galvanised and electrostatic powder coated in RAL9006 (other RAL colors are optionally available). Easy disassembly by its bolt type connection.
Also contains the dust sealant / wiper seal.

HBD/12 BOLLARD (Anti-terror / Heavy Duty - Retractable Model)

Control System	3 buttons for up, down and stop operations and 1 button for emergency stop are contained in an IP67 box (optionally, 1 button for EFO-fast raise up). Contains built-in LED indicators and 10 m cable. System stops its movement with the command from safety sensor (opt.) and loop detectors (opt.). The system works with PLC as standard. Status of safety sensors (if any) and loop detectors (if any), position and movement of the blocker and low oil level situation of the system can be monitored with optional PLC with diagnostic display. Compatible with any access control system (by third parties).
Power-off Situation	Bollard remains in its position in case of power-off. Optionally; can be lowered or raised and lowered by battery pack with 24V DC motor. Battery pack provides min.60-100 movements when fully charged (minimum number of movements vary depending on the number of bollards in the set to be fed).
Optional Features and Accessories	Hydraulic accumulator for EFO-fast raise up, 24V DC motor in case of power failure (min. 60 - 100 movements), oil heater (for oil tank), oil cooler, heater for electronic components, submersible pump, traffic light (Ø200/300 mm, red-green LED, electrostatic powder coated over 304 grade stainless steel body), traffic light pole (electrostatic powder coated over hot dip galvanised steel), loop detector (double contact), safety sensors (with 50 cm height poles), IP67 box (for PLC, SMPS, connectors etc inside power unit), wireless remote control (receiver and transmitter), external buttons, PLC with diagnostic display, different product dimensions, 304 - 316 grade stainless steel sleeve.
Installation	Installation with C30 grade concrete and steel rebar reinforcement. Ground levelling and preparation works shall be carried on before pouring the concrete. Allowable bearing value of the ground shall be minimum 1/2 kg/cm^2, if not, works shall be carried on to fulfil. Installation shall be done according to the manufacturer's instructions. Possible to install multiple bollard posts controlled by a single hydraulic power unit (HPU). Minimum 2 bollard posts shall be installed for M50 certificate compliance.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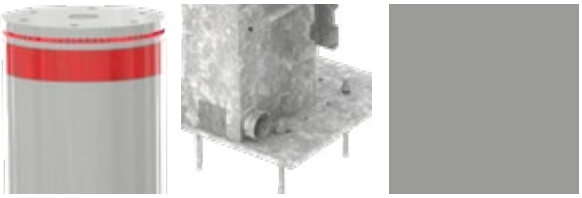
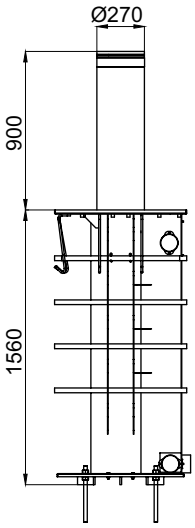
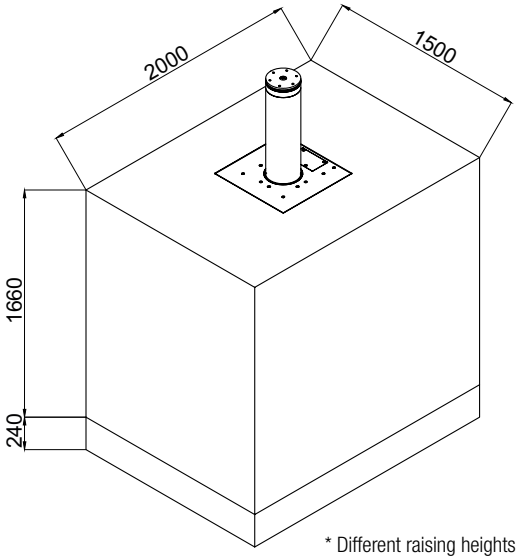
HBD/8 BOLLARD
(Anti-terror / Heavy Duty - Retractable Model



Dimensions (mm)





* Different raising heights are optionally available.

Technical Features

Power	Standard 380V AC 3-Phase 50/60 Hz, 1,1 - 11 kW motor (varies depending on the number of bollards in the set to be fed and the accessories to be included). Operating with 24V DC in case of power failure is optionally available.
Control Pack	24V DC powered PLC control unit is placed in power unit cabinet. 24V DC (opt.12V DC / 220V AC) solenoids.
Speed	Standard operation ~2,5 - 5 sec. (ascend/descend) depending on the number of bollards in the set to be fed. Fast raise up (EFO, by optional hydraulic accumulator) ~1 - 1,5 sec. and may differ depending on the number of bollards in the set and the raising height.
IP Rating	IP55 - Hydraulic Power Unit IP67 - Electronics Control Unit with IP67 housing/box protection (optional) IP68 - Hydraulic Piston
Operating Temperature	-5°C / +55°C (opt. -30°C / +70°C)

Crash / Impact Rating

Crash tested and certified according to ASTM F2656-07 at M40 (K-8) level (HBD 275 H 90). In addition, designed and produced to withstand impacts mentioned below:

Standard	Vehicle Type	Weight	Speed
PAS 68	N3	7500 kg	64 km/h (40 mph)
IWA 14-1	N3C	7200 kg	64 km/h (40 mph)

(Please contact for applicable product dimensions).

Axle Load Resistance

70 t

Hydraulic Cylinder Unit

Dust sealed, double effect hydraulic cylinder, developed for heavy duty use.

Hydraulic Power Unit and Cabinet:

Strengthened industrial hydraulic pump.
40 – 120 lt (depending on the number of bollards to be fed and the raising height) capacity oil tank with magnetic metal collector and suction filter.
Built-in oil level indicator and sensor, oil temperature indicator and audio alarm feature for low oil level.
Standard 60 - 120 bar pressure (depending on the number of bollards to be fed, max. 160 bar,).
10 m R2 type (double wire braided mesh) reinforced hydraulic hose.
Interconnecting hoses in case of installations of multiple bollard posts.

Motor, hydraulic pump and solenoid valves are placed in an easily accessible hot-dip-galvanized and electrostatic powder coated steel cabinet with a built-in lock lid (opt. stainless steel cabinet).

Cabinet Type	Width (mm)	Length (mm)	Height (mm)
Cabinet 1	940	570	970
Cabinet 2	1040	590	1285
Cabinet 3	1243	840	1285

* Suitable cabinet type is selected according to the preferred product configuration.

System

Down, up, stop, emergency inputs and external sensor inputs/outputs (e.g. loop detector, safety sensor, traffic light, remote control, etc.).
System alerts with an audio signal during lowering and raising operation. A loud siren alert in case of alarm or emergency.
System stops in case of emergency as per default set-up and possible to be lowered or raised automatically (user's preference).
Can be lowered and raised manually in case of power failure or during maintenance with manual pump and manual valve feature.
Automatic raise up mode deploys (available with optional loop detector) the bollard after the vehicle has passed over.
Contains IP67 magnetic sensor for barrier position and traffic signalisation.
Free standing piston connection structure that does not put any load on the piston during vehicle passage.
Equipped with absorbing spring system for bumping at top point.
Safety devices (if any, such as; safety sensor, loop detector, etc) are enabled in case fast raise up (EFO, optional) feature is activated and they can be optionally disabled.

Bollard Unit (Underground Unit)

Bollard Anchorage Casing:
Ø338 mm hot dip galvanised steel, designed so that no vehicle crashing effect can displace it after embedded into the ground.
Left and right hydraulic hose and cable entry openings to use both directions as per HPU position and site conditions.
Contains connection for rainwater drainage.
Easy installation with ground mounting plate by bolting to the base foundation. Easy access to hydraulic hose and cables is provided.

Bollard Main Housing:
Ø324 mm hot dip galvanised steel structured to provide main housing for the bollard cylinder.
Bollard cylinder is pivoted with and moves through 5 rails (inner railing) placed on the main housing with equal distances from each other for maximum rigidity and minimum material fraction.
Contains the hydraulic cylinder lower connection.

Bollard Unit (Impact Blocking Unit)

Bollard Cylinder (Crash Unit):
Ø270 mm crash surface made of hot-dip galvanised steel pipe with 10 mm wall thickness electrostatic powder coated in RAL9006 as standard (other RAL colors or 304 - 316 grade stainless steel sleeve are optionally available) and infilled with eccentrically 65 - 90 mm thick solid steel and composite material.
Special star-formed, 10 mm solid steel bar infilled inner structure for impact absorption distributed evenly to the whole body.
Demountable, RAL 9006 electrostatic powder coated aluminium bollard top lid with 360° visible red flashing LED indicators.
Furnished with red (opt. white or yellow) reflecting strips.
Bollard cylinder pivoted with and moves through replaceable 5 special non-metal rails (outer railing) positioned with equal distances from each other for maximum rigidity and minimum material fraction.
Contains the hydraulic cylinder upper connection.
Thanks to the bollard anchorage casing, bollard cylinder is designed to be replaced together with the main housing in case of a crash damage.

Road Surface Plate:
15 mm steel, hot-dip galvanised and electrostatic powder coated in RAL9006 (other RAL colors are optionally available). Easy disassembly by its bolt type connection.
Also contains the dust sealant / wiper seal.

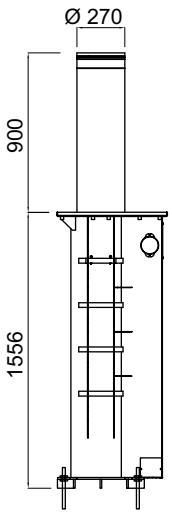
HBD/8 BOLLARD (Anti-terror / Heavy Duty - Retractable Model)

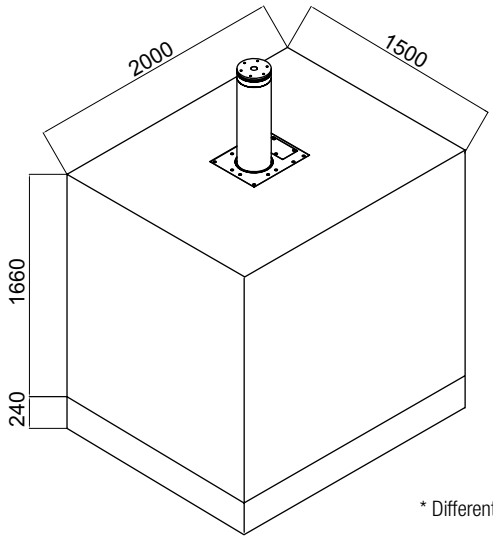
Control System	3 buttons for up, down and stop operations and 1 button for emergency stop are contained in an IP67 box (optionally, 1 button for EFO-fast raise up). Contains built-in LED indicators and 10 m cable. System stops its movement with the command from safety sensor (opt.) and loop detectors (opt.). The system works with PLC as standard. Status of safety sensors (if any) and loop detectors (if any), position and movement of the blocker and low oil level situation of the system can be monitored with optional PLC with diagnostic display. Compatible with any access control system (by third parties).
Power-off Situation	Bollard remains in its position in case of power-off. Optionally; can be lowered or raised and lowered by battery pack with 24V DC motor. Battery pack provides min.60-100 movements when fully charged (minimum number of movements vary depending on the number of bollards in the set to be fed).
Optional Features and Accessories	Hydraulic accumulator for EFO-fast raise up, 24V DC motor in case of power failure (min. 60 - 100 movements), oil heater (for oil tank), oil cooler, heater for electronic components, submersible pump, traffic light (Ø200/300 mm, red-green LED, electrostatic powder coated over 304 grade stainless steel body), traffic light pole (electrostatic powder coated over hot dip galvanised steel), loop detector (double contact), safety sensors (with 50 cm height poles), IP67 box (for PLC, SMPS, connectors etc inside power unit), wireless remote control (receiver and transmitter), external buttons, PLC with diagnostic display, different product dimensions, 304 - 316 grade stainless steel sleeve.
Installation	Installation with C30 grade concrete and steel rebar reinforcement. Ground levelling and preparation works shall be carried on before pouring the concrete. Allowable bearing value of the ground shall be minimum 1/2 kg/cm^2, if not, works shall be carried on to fulfil. Installation shall be done according to the manufacturer's instructions. Possible to install multiple bollard posts controlled by a single hydraulic power unit (HPU). 1200 mm gap between bollard posts in multiple unit installations is recommended.


TEKFEN TOWER

RBD/4 BOLLARD
(Reinforced - Retractable Model)

Dimensions (mm)





* Different raising heights are optionally available.

Technical Features

Power	Standard 380V AC 3-Phase 50/60 Hz, 1,1 - 11 kW motor (varies depending on the number of bollards in the set to be fed and the accessories to be included). Operating with 24V DC in case of power failure is optionally available.
Control Pack	24V DC powered PLC control unit is placed in power unit cabinet. 24V DC (opt.12V DC / 220V AC) solenoids.
Speed	Standard operation ~2,5 - 5 sec. (ascend/descend) depending on the number of bollards in the set to be fed. Fast raise up (EFO, by optional hydraulic accumulator) ~1 - 1,5 sec. and may differ depending on the number of bollards in the set and the raising height.
IP Rating	IP55 - Hydraulic Power Unit IP67 - Electronics Control Unit with IP67 housing/box protection (optional) IP68 - Hydraulic Piston
Operating Temperature	-5°C / +55°C (opt. -30°C / +70°C)

Crash / Impact Rating

Designed and produced to withstand impacts mentioned below:

Standard	Vehicle Type	Weight	Speed
ASTM F2656	M, C7 (K-4)	6800, 7200 kg	48 km/h (30 mph)
PAS 68	N3	7500 kg	48 km/h (30 mph)
IWA 14-1	N3C	7200 kg	48 km/h (30 mph)

Please contact for applicable product dimensions.

Axle Load Resistance

50 t

Hydraulic Cylinder Unit

Dust sealed, double effect hydraulic cylinder, developed for heavy duty use.

Hydraulic Power Unit and Cabinet

Strengthened industrial hydraulic pump.
40 – 120 lt (depending on the number of bollards to be fed and the raising height) capacity oil tank with magnetic metal collector and suction filter.
Built-in oil level and oil temperature indicator.
Standard 60 - 120 bar pressure (depending on the number of bollards to be fed, max. 160 bar,).
10 m R2 type (double wire braided mesh) reinforced hydraulic hose.
Interconnecting hoses in case of installations of multiple bollard posts.

Motor, hydraulic pump and solenoid valves are placed in an easily accessible hot-dip-galvanized and electrostatic powder coated steel cabinet with a built-in lock lid (opt. stainless steel cabinet).

Cabinet Type	Width (mm)	Length (mm)	Height (mm)
Cabinet 1	940	570	970
Cabinet 2	1040	590	1285
Cabinet 3	1243	840	1285

* Suitable cabinet type is selected according to the preferred product configuration.

System

Down, up, stop, emergency inputs and external sensor inputs/outputs (e.g. loop detector, safety sensor, traffic light, remote control, etc.).
System alerts with an audio signal during lowering and raising operation. A loud siren alert in case of alarm or emergency.
System stops in case of emergency as per default set-up and possible to be lowered or raised automatically (user's preference).
Can be lowered and raised manually in case of power failure or during maintenance with manual pump and manual valve feature.
Automatic raise up mode deploys (available with optional loop detector) the bollard after the vehicle has passed over.
Contains IP67 magnetic sensor for barrier position and traffic signalisation.
Free standing piston connection structure that does not put any load on the piston during vehicle passage.
Equipped with absorbing spring system for bumping at top point.
Safety devices (if any, such as; safety sensor, loop detector, etc) are enabled in case fast raise up (EFO, optional) feature is activated and they can be optionally disabled.

Bollard Unit (Underground Unit)

Bollard Anchorage Casing:
Ø338 mm hot dip galvanised steel, designed so that no vehicle crashing effect can displace it after embedded into the ground.
Left and right hydraulic hose and cable entry openings to use both directions as per HPU position and site conditions.
Contains connection for rainwater drainage.
Easy installation with ground mounting plate by bolting to the base foundation. Easy access to hydraulic hose and cables is provided.

Bollard Main Housing:
Ø324 mm hot dip galvanised steel structured to provide main housing for the bollard cylinder.
Bollard cylinder is pivoted with and moves through 5 rails (inner railing) placed on the main housing with equal distances from each other for maximum rigidity and minimum material fraction.
Contains the hydraulic cylinder lower connection.

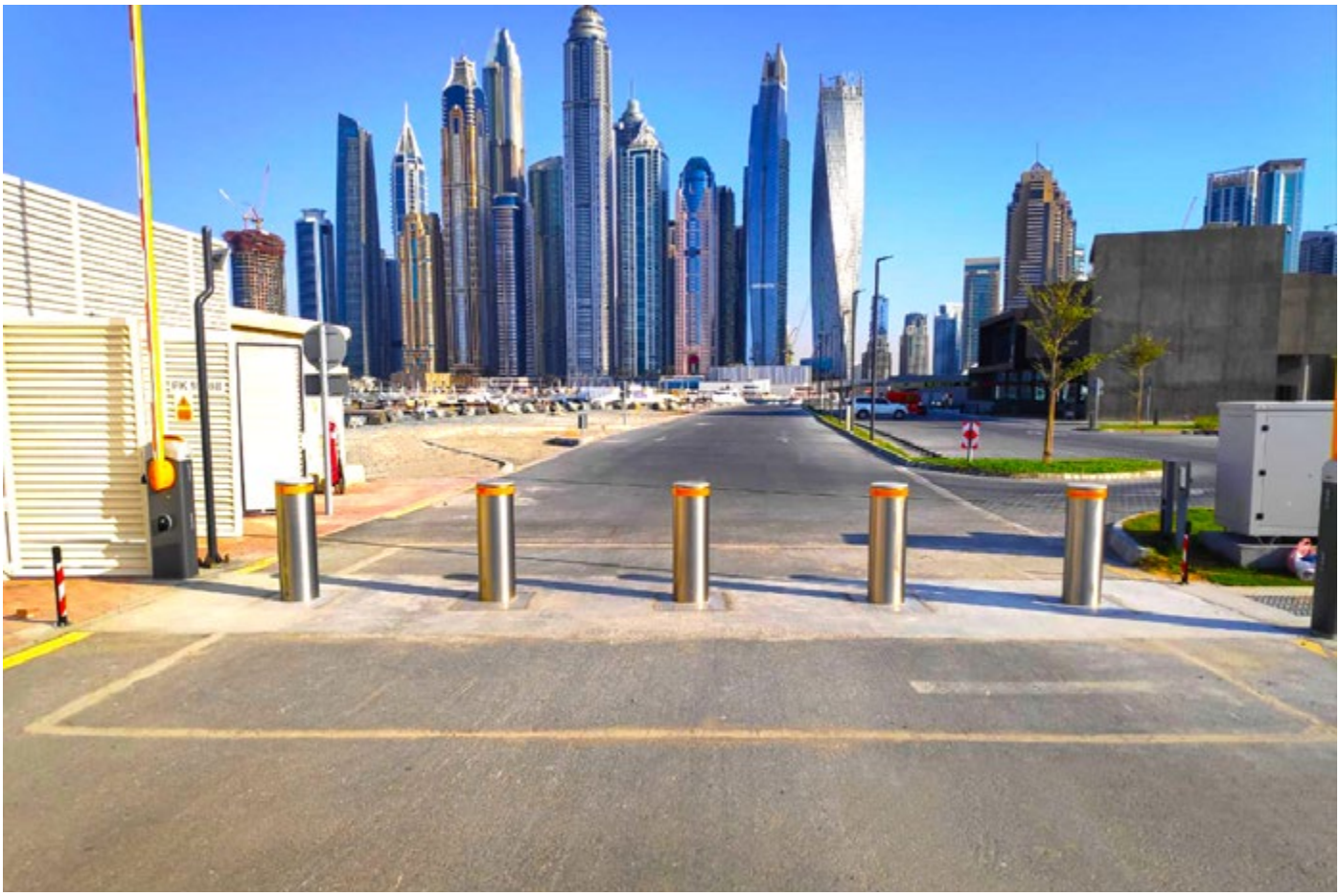
Bollard Unit (Impact Blocking Unit)

Bollard Cylinder (Crash Unit):
Ø270 mm crash surface made of hot-dip galvanised steel pipe with 8 mm wall thickness electrostatic powder coated in RAL9006 as standard (other RAL colors or 304 - 316 grade stainless steel sleeve are optionally available) and infilled with eccentrically 65 - 90 mm thick solid steel.
Special star-formed, 5 mm solid steel bar infilled inner structure for impact absorption distributed evenly to the whole body.
Demountable, RAL 9006 electrostatic powder coated aluminium bollard top lid with 360° visible red flashing LED indicators.
Furnished with red (opt. white or yellow) reflecting strips.
Bollard cylinder pivoted with and moves through replaceable 5 special non-metal rails (outer railing) positioned with equal distances from each other for maximum rigidity and minimum material fraction.
Contains the hydraulic cylinder upper connection.
Thanks to the bollard anchorage casing, bollard cylinder is designed to be replaced together with the main housing in case of a crash damage.

Road Surface Plate:
15 mm steel, hot-dip galvanised and electrostatic powder coated in RAL9006 (other RAL colors are optionally available). Easy disassembly by its bolt type connection.
Also contains the dust sealant / wiper seal.

RBD/4 BOLLARD (Reinforced - Retractable Model)

Control System	3 buttons for up, down and stop operations and 1 button for emergency stop are contained in an IP67 box (optionally, 1 button for EFO-fast raise up). Contains built-in LED indicators and 10 m cable. System stops its movement with the command from safety sensor (opt.) and loop detectors (opt.). The system works with PLC as standard. Status of safety sensors (if any) and loop detectors (if any), position and movement of the blocker and low oil level situation of the system can be monitored with optional PLC with diagnostic display. Compatible with any access control system (by third parties).
Power-off Situation	Bollard remains in its position in case of power-off. Optionally; can be lowered or raised and lowered by battery pack with 24V DC motor. Battery pack provides min.60-100 movements when fully charged (minimum number of movements vary depending on the number of bollards in the set to be fed).
Optional Features and Accessories	Hydraulic accumulator for EFO-fast raise up, 24V DC motor in case of power failure (min. 60 - 100 movements), oil heater (for oil tank), oil cooler, heater for electronic components, submersible pump, traffic light (Ø200/300 mm, red-green LED, electrostatic powder coated over 304 grade stainless steel body), traffic light pole (electrostatic powder coated over hot dip galvanised steel), loop detector (double contact), safety sensors (with 50 cm height poles), IP67 box (for PLC, SMPS, connectors etc inside power unit), wireless remote control (receiver and transmitter), external buttons, PLC with diagnostic display, oil level sensor, different product dimensions, 304 - 316 grade stainless steel sleeve.
Installation	Installation with C30 grade concrete and steel rebar reinforcement. Ground levelling and preparation works shall be carried on before pouring the concrete. Allowable bearing value of the ground shall be minimum 1/2 kg/cm^2, if not, works shall be carried on to fulfil. Installation shall be done according to the manufacturer's instructions. Possible to install multiple bollard posts controlled by a single hydraulic power unit (HPU). 1200 mm gap between bollard posts in multiple unit installations is recommended.

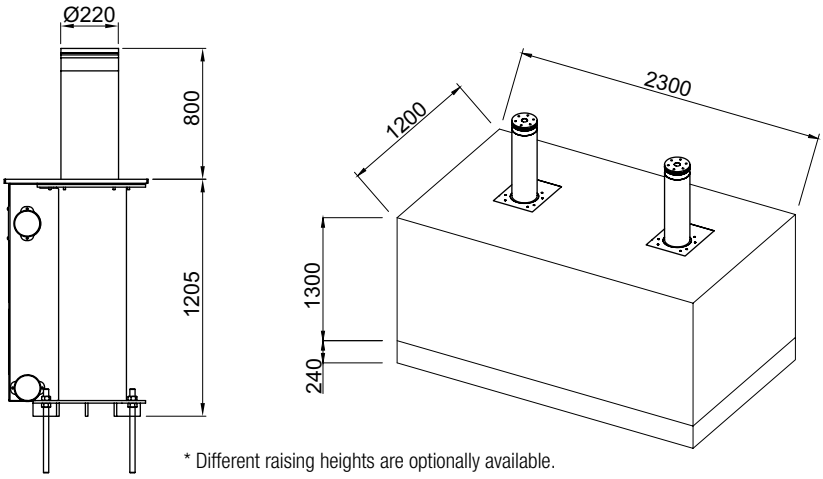



MERAM
BELEDİYESİ


DUR
STOP

TBD BOLLARD
(Traffic Regulation - Retractable Model)

Dimensions (mm)



* Different raising heights are optionally available.

Technical Features

Power	Standard 380V AC 3-Phase 50/60 Hz, 1,1 - 11 kW motor (varies depending on the number of bollards in the set to be fed and the accessories to be included). Operating with 24V DC in case of power failure is optionally available
Control Pack	24V DC powered ÖZAK PLC control unit is placed in power unit cabinet. 24V DC (opt.12V DC / 220V AC) solenoids
Speed	Standard operation ~2,5 - 6 sec. (ascend/descend) depending on the number of bollards in the set to be fed. Fast raise up (EFO, by optional hydraulic accumulator) ~1 - 1,5 sec. and may differ depending on the number of bollards in the set and the raising height.
IP Rating	IP55 - Hydraulic Power Unit IP67 - Electronics Control Unit with IP67 housing/box protection (optional) IP68 - Hydraulic Piston
Operating Temperature	-5°C / +55°C (opt. -30°C / +70°C)
Crash / Impact Rating	-
Axle Load Resistance	40 t
Hydraulic Cylinder Unit	Dust sealed, double effect hydraulic cylinder, developed for heavy duty use.
Hydraulic Power Unit and Cabinet	Strengthened industrial hydraulic pump. 40 – 120 lt (depending on the number of bollards to be fed and the raising height) capacity oil tank with magnetic metal collector and suction filter. Built-in oil level and oil temperature indicator. Standard 55 - 120 bar pressure (depending on the number of bollards to be fed, max. 160 bar,).

10 m R2 type (double wire braided mesh) reinforced hydraulic hose.
Interconnecting hoses in case of installations of multiple bollard posts.

Motor, hydraulic pump and solenoid valves are placed in an easily accessible hot-dip-galvanized and electrostatic powder coated steel cabinet with a built-in lock lid (opt. stainless steel cabinet).

Cabinet Type	Width (mm)	Length (mm)	Height (mm)
Cabinet 1	940	570	970
Cabinet 2	1040	590	1285
Cabinet 3	1243	840	1285

* Suitable cabinet type is selected according to the preferred product configuration.

System

Down, up, stop, emergency inputs and external sensor inputs/outputs (e.g. loop detector, safety sensor, traffic light, remote control, etc.).
System alerts with an audio signal during lowering and raising operation. A loud siren alert in case of alarm or emergency.
System stops in case of emergency as per default set-up and possible to be lowered or raised automatically (user's preference).
Can be lowered and raised manually in case of power failure or during maintenance with manual pump (opt.) and manual valve feature.
Automatic raise up mode deploys (available with optional loop detector) the bollard after the vehicle has passed over.
Contains IP67 magnetic sensor for barrier position and traffic signalisation.
Free standing piston connection structure that does not put any load on the piston during vehicle passage.
Safety devices (if any, such as; safety sensor, loop detector, etc) are enabled in case fast raise up (EFO, optional) feature is activated and they can be optionally disabled.

Bollard Unit (Underground Unit)

Bollard Anchorage Casing:
Ø267 mm hot dip galvanised steel, designed so that no vehicle crashing effect can displace it after embedded into the ground.
Left and right hydraulic hose and cable entry openings to use both directions as per HPU position and site conditions.
Contains connection for rainwater drainage.
Easy installation with ground mounting plate by bolting to the base foundation. Easy access to hydraulic hose and cables is provided.

Bollard cylinder is pivoted with and moves through 3 rails (inner railing) placed on the anchorage casing with equal distances from each other for maximum rigidity and minimum material fraction.
Contains the hydraulic cylinder lower connection.

Bollard Unit (Impact Blocking Unit)

Bollard Cylinder (Crash Unit):
Ø220 mm crash surface made stainless steel sleeve on of hot-dip galvanised steel pipe with 6 mm wall thickness.
Demountable, RAL 9006 electrostatic powder coated aluminium bollard top lid with 360° visible red flashing LED indicators.
Furnished with red (opt. white or yellow) reflecting strips.
Bollard cylinder is pivoted with and moves through 3 rails (outer railing) placed on the anchorage casing with equal distances from each other for maximum rigidity and minimum material fraction.
Contains the hydraulic cylinder upper connection.
Bollard cylinder is designed to be replaced in case of a crash damage.

Road Surface Plate:
15 mm steel, hot-dip galvanised and electrostatic powder coated in RAL9006 (other RAL colors are optionally available). Easy disassembly by its bolt type connection.
Also contains the dust sealant / wiper seal.

Control System

3 buttons for up, down and stop operations and 1 button for emergency stop are contained in an IP67 box (optionally, 1 button for EFO-fast raise up).
Contains built-in LED indicators and 10 m cable.
System stops its movement with the command from safety sensor (opt.) and loop detectors (opt.).
The system works with ÖZAK PLC as standard.
Compatible with any access control system (by third parties).

Power-off Situation

Bollard remains in its position in case of power-off. Optionally; can be lowered or raised and lowered by battery pack with 24V DC motor. Battery pack provides min.60-100 movements when fully charged (minimum number of movements vary depending on the number of bollards in the set to be fed).

Optional Features and Accessories

Hydraulic accumulator for EFO-fast raise up, hand pump for manual raising, 24V DC motor in case of power failure (min. 60 – 100 movements), oil heater (for oil tank), oil cooler, heater for electronic components, submersible pump, traffic light (Ø200/300 mm, red-green LED, electrostatic powder coated over 304 grade stainless steel body), traffic light pole (electrostatic powder coated over hot dip galvanised steel), loop detector (double contact), safety sensors (with 50 cm height poles), IP67 box (for ÖZAK PLC, SMPS, connectors etc inside power unit), wireless remote control (receiver and transmitter), external buttons, oil level sensor, different product dimensions.

Installation

Installation with C30 grade concrete and steel rebar reinforcement. Ground levelling and preparation works shall be carried on before pouring the concrete. Allowable bearing value of the ground shall be minimum 1/2 kg/cm^2, if not, works shall be carried on to fulfil. Installation shall be done according to the manufacturer's instructions. Possible to install multiple bollard posts controlled by a single hydraulic power unit (HPU).


DUR

General Technical Specifications

	HBD (Anti-Terror / Heavy Duty Model)	RBD (Reinforced Model)	TBD (Traffic Regulation Model)
			

General Specifications

Crash/Impact Rating	Crash tested and certified according to ASTM F2656-07 at M50 (K-12) and M40 (K-8) levels (HBD 275 H 90) and also designed and produced to withstand impacts according to PAS68[N2/N3]/80 and 64 km/h and IWA 14-1[N2A/N2B/N3C]/80 and 64 km/h levels.	Designed and produced to withstand impacts according to ASTM F2656 M30, C730 (K-4), PAS68[N2/N3]/48 and IWA 14-1[N2A/N2B/N3C]/48 levels.	-
Axle Load Resistance	70 t	50 t	40 t
Crash Unit Wall Thickness	10 mm + 65/90 mm eccentric special star formed solid panels of 10 mm thickness and composite filling.	8 mm + 65/90 mm eccentric special star formed solid panels of 5 mm thickness.	6 mm
Impact Surface Specification	Electrostatic powder coated over hot dip galvanisation.	Electrostatic powder coated over hot dip galvanisation.	Stainless steel sleeve.
Ground Mounting Support Rods	Standard	Standard	-
Oil Level Sensor	Standard	Optional	Optional
Hand Pump for Manual Raising	Standard	Standard	Optional
Speed	2,5 - 5 sec.	2,5 - 5 sec.	2,5 - 6 sec.
Control System	PLC control unit.	PLC control unit.	ÖZAK PLC control unit.
380V AC 3-phase, 50/60 Hz, 1,1 - 11 kW			
24V DC control system.			
24V DC solenoids.			
~1 - 1,5 sec. fast raising-EFO with optional hydraulic accumulator, and may differ depending on the number of bollards in the set and the raising height.			
IP55 - Hydraulic Power Unit, IP67 - Electronics Control Unit with IP67 housing/box protection (optional), IP68 - Hydraulic Piston.			
-5°C / +55°C (opt. -30°C / +70°C) operating temperature.			
10 m R2 type (double wire braided mesh) hydraulic hose.			
40 - 120 lt capacity oil tank with magnetic metal collector and suction filter.			
Oil level and temperature indicator.			
Electrostatic powder coated over hot dip galvanised steel (opt. stainless steel) hydraulic power unit (HPU) cabinet			
External inputs/outputs (e.g. loop detector, safety sensor, traffic light, remote control, etc.).			
IP67 magnetic sensor for barrier position and traffic signalisation.			
Audio signal during lowering and raising operation.			
Automatic / manual programmable passage authorisation (with optional loop detector).			
Manual lowering valve.			
Hot dip galvanised steel main body.			
25 mm aluminium top lid.			
Free standing piston connection structure avoiding load on the piston during vehicle passage.			
IP 67 manual control button unit with 3 functions.			
Emergency stop button.			
360° visible red flashing LED indicators			
Red (opt. white or yellow) reflecting strips.			
Interconnecting hoses in case of installations of multiple bollard posts.			
Easy installation with installation apparatus.			

Optional Features and Accessories

Hydraulic accumulator for EFO-fast raise up, Hand pump for manual raising, 24V DC motor in case of power failure (minimum 60 - 100 movements), oil heater (for oil tank), oil cooler, heater for electronic components, submersible pump, traffic light (Ø200/300 mm, red-green LED, electrostatic powder coated over 304 grade stainless steel body), traffic light pole (electrostatic powder coated over hot dip galvanised steel), loop detector (double contact), safety sensors (with 50 cm height poles), IP67 box (for PLC, SMPS, connectors etc. inside power unit), wireless remote control (receiver and transmitter), external buttons, PLC with diagnostic display, oil level sensor, different product dimensions, 304 - 316 grade stainless steel sleeve.

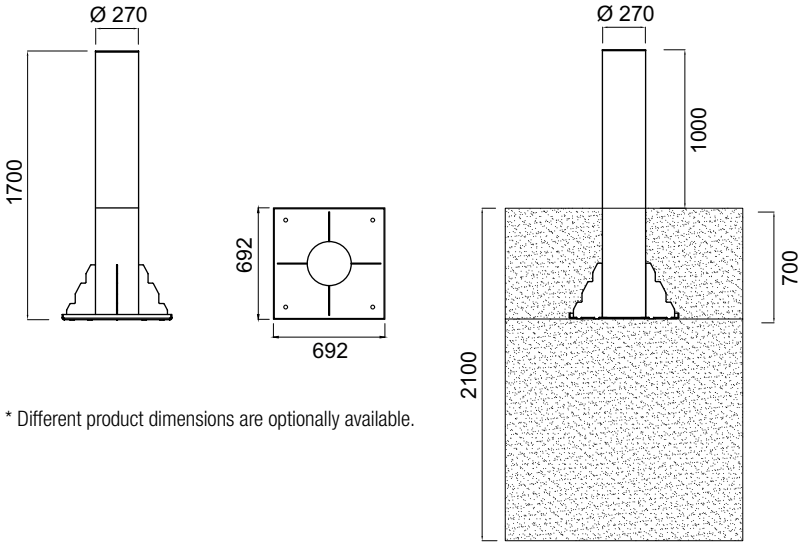
*Design and specifications are subject to change without notice.

BOLLARDS

CAME ÖZAK

HBD/12 BOLLARD
(Anti-terror / Heavy Duty - Fixed Model)

Dimensions (mm)



* Different product dimensions are optionally available.

Technical Features

Crash / Impact Rating

Crash tested and certified according to ASTM F2656-15 at M50 (K-12) level (HBD 275 S 100) also designed and produced to withstand impacts mentioned below:

Standard	Vehicle Type	Weight	Speed
PAS 68	N3	7500 kg	80 km/h (50 mph)
IWA 14-1	N3C	7200 kg	80 km/h (50 mph)

(Please contact for applicable product dimensions.)

Bollard Structure

Ø270 mm, solid steel and composite filled, 10 mm thick hot dip galvanised steel pipe, electrostatic powder coated in RAL9006 (optionally in other RAL colors) impact surface.
Special star-formed, 10 mm solid steel bar infilled inner structure for impact absorption distributed evenly to the whole body.
Furnished with red (opt. white or yellow) reflecting strips.
Includes 4 adjustment bolts for easy leveling, with an anchor plate of 692x692 mm welded to the impact pipe and 4 vertical anchor supports welded around the impact pipe.
Designed so that no vehicle crashing effect can displace it after embedded into the ground.

Optional Features and Accessories

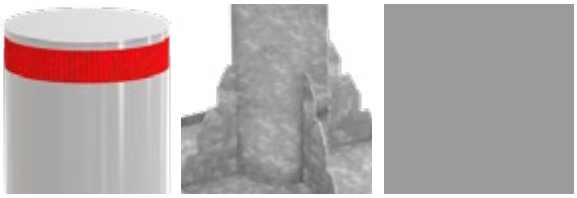
Removable structure (designed and produced to withstand impacts at ASTM F2656-15 M50 (K-12), PAS 68 [N3]/80 and IWA 14-1 [N3C]/80 levels), demountable aluminium (electrostatic powder coated in body color or 304/316 grade stainless steel) bollard top lid with 360° visible red flashing LED indicators, stainless steel sleeve (304/316 grade), different colors, different product dimensions.

Installation

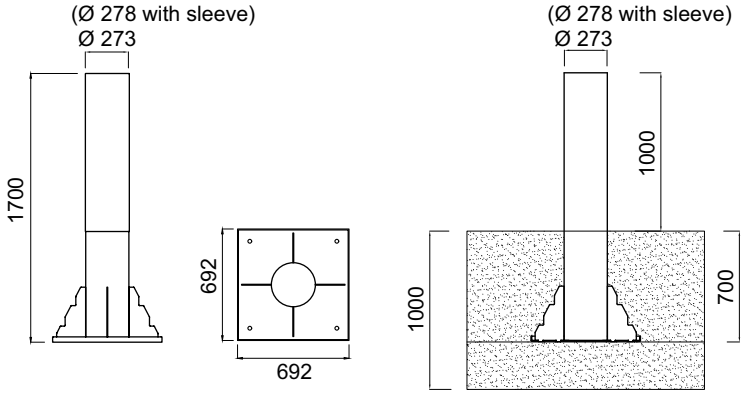
Easy levelling with 4 bolts and installation with C30 grade concrete and steel rebar reinforcement. Ground levelling and preparation works shall be carried on before pouring the concrete. Allowable bearing value of the ground shall be minimum 1/2 kg/cm^2, if not, works shall be carried on to fulfil. Installation shall be done according to the manufacturer's instructions.

HBD/8 BOLLARD
(Anti-terror / Heavy Duty - Fixed Model)

CAME ÖZAK



Dimensions (mm)



* Different product dimensions are optionally available.

Technical Features

Crash / Impact Rating

Designed and produced to withstand impacts mentioned below:

Standard	Vehicle Type	Weight	Speed
ASTM F2656	M, C7, (K-8)	7200 kg	64 km/h (40 mph)
PAS 68	N2, N3	7500 kg	64 km/h (40 mph)
IWA 14-1	N2A, N2B, N3C	7200 kg	64 km/h (40 mph)

(Please contact for applicable product dimensions.)

Bollard Structure

Ø273 mm (Ø278 mm with sleeve) solid steel and composite infilled, 10 mm thick hot dip galvanised solid steel pipe, electrostatic powder coated in RAL9006 (optionally in other RAL colors) impact surface.
Special triangular-formed, 10 mm solid steel bar infilled inner structure for impact absorption distributed evenly to the whole body.
Furnished with red (opt. white or yellow) reflecting strips.
Includes 4 adjustment bolts for easy leveling, with an anchor plate of 692x692 mm welded to the impact pipe and 4 vertical anchor supports welded around the impact pipe.
Designed so that no vehicle crashing effect can displace it after embedded into the ground.

Optional Features and Accessories

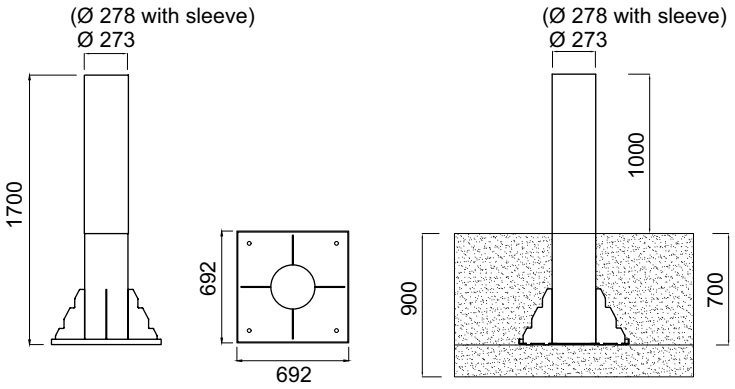
Removable structue (designed and produced to withstand impacts at ASTM F2656 M40 (K-8), PAS 68 [N2/N3]/64 and IWA 14-1 [N2A/N2B/N3C]/64 levels), demountable aluminium (electrostatic powder coated in body color or 304/316 grade stainless steel) bollard top lid with 360° visible red flashing LED indicators, stainless steel sleeve (304/316 grade), different colors, different product dimensions.

Installation

Easy levelling with 4 bolts and installation with C30 grade concrete and steel rebar reinforcement. Ground levelling and preparation works shall be carried on before pouring the concrete. Allowable bearing value of the ground shall be minimum 1/2 kg/cm^2, if not, works shall be carried on to fulfil. Installation shall be done according to the manufacturer's instructions.

RBD/4 BOLLARD
(Reinforced - Fixed Model)

Dimensions (mm)



* Different product dimensions are optionally available.

Technical Features

Crash / Impact Rating

Designed and produced to withstand impacts mentioned below:

Standard	Vehicle Type	Weight	Speed
ASTM F2656	M, C7 (K-4)	6800, 7200 kg	48 km/h (30 mph)
PAS 68	N2, N3	7500 kg	48 km/h (30 mph)
IWA 14-1	N2A, N2B, N3C	7200 kg	48 km/h (30 mph)

(Please contact for applicable product dimensions.)

Bollard Structure

Ø273 mm (Ø278 mm with sleeve), 10 mm thick hot dip galvanised solid steel pipe, electrostatic powder coated in RAL9006 (optionally in other RAL colors) impact surface and 10 mm thick impact absorbing panel reinforced interior.
Furnished with red (opt. white or yellow) reflecting strips.
Includes 4 adjustment bolts for easy leveling, with an anchor plate of 692x692 mm welded to the impact pipe and 4 vertical anchor supports welded around the impact pipe.
Designed so that no vehicle crashing effect can displace it after embedded into the ground.

Optional Features and Accessories

Removable structue (designed and produced to withstand impacts at ASTM F2656 M30 (K-4), PAS 68 [N2/N3]/48 and IWA 14-1 [N2A/N2B/N3C]/48 levels), demountable aluminium (electrostatic powder coated in body color or 304/316 grade stainless steel) bollard top lid with 360° visible red flashing LED indicators, stainless steel sleeve (304/316 grade), different colors, different product dimensions.

Installation

Easy levelling with 4 bolts and installation with C30 grade concrete and steel rebar reinforcement. Ground levelling and preparation works shall be carried on before pouring the concrete. Allowable bearing value of the ground shall be minimum 1/2 kg/cm^2, if not, works shall be carried on to fulfil. Installation shall be done according to the manufacturer's instructions.

BOLLARDS

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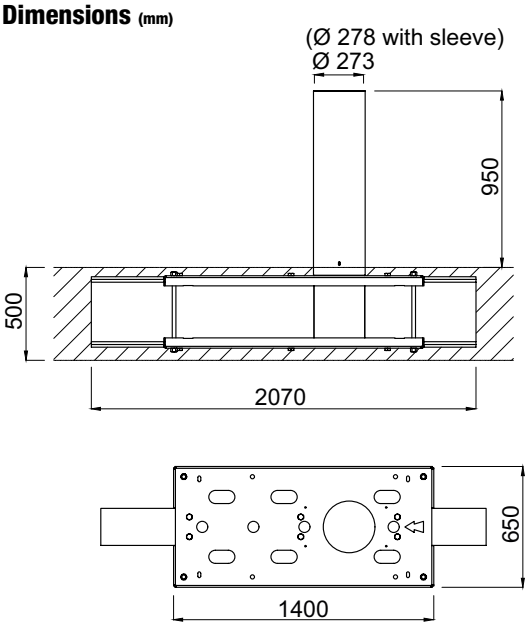
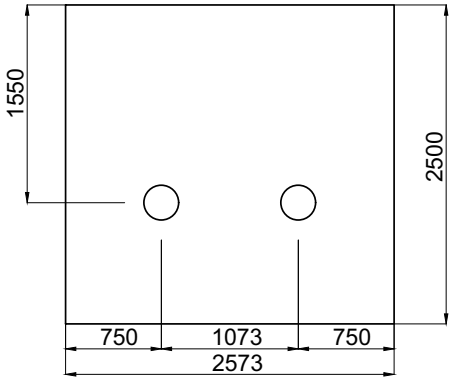
HBD/12 SHLW BOLLARD

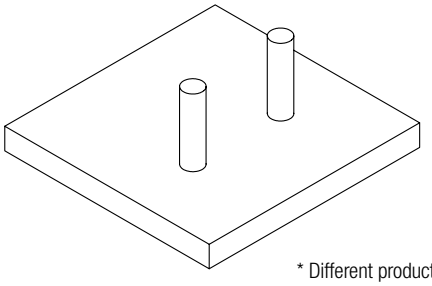
(Anti-terror / Heavy Duty - Fixed - Shallow Mount Model)

CAME ÖZAK

Dimensions (mm)







* Different product dimensions are optionally available.

Technical Features

Crash / Impact Rating

Designed and produced to withstand impacts mentioned below:

Standard	Vehicle Type	Weight	Speed
ASTM F2656	M, C7 (K-12)	6800, 7200 kg	80 km/h (50 mph)
PAS 68	N3	7500 kg	80 km/h (50 mph)
IWA 14-1	N3C	7200 kg	80 km/h (50 mph)

(Please contact for applicable product dimensions.)

Bollard Structure

950 mm high bollard pipe is made of Ø273 mm (Ø278 mm with sleeve), 10 mm thick hot dip galvanised solid steel pipe with a reinforced design.
Special star-formed, 10 mm solid steel bar and composite infilled inner structure for impact absorption distributed evenly to the whole body and increasing resistance.
Impact surface is painted in RAL9006 (optionally in other RAL colors).
Designed so that no vehicle crashing effect can displace it after embedded into the ground.
Furnished with red (opt. white or yellow) reflecting strips.
Bollard contains high resistant anchorage structure through 2 anchor plates with concrete immersion slits at the top and bottom, strengthened with "HEB" beams in the impact direction and adjustment bolts for leveling at 4 areas.
Underground elements are fixed together by wedge type, 10.9 grade bolted and welded connection for utmost resistance reinforcement.

Optional Features and Accessories

Removable structue (designed and produced to withstand impacts at ASTM F2656 M50, C750 (K-12), PAS 68 [N3]/80 and IWA 14-1 [N3C]/80 levels), demountable aluminium (electrostatic powder coated in body color or 304/316 grade stainless steel) bollard top lid with 360° visible red flashing LED indicators, stainless steel sleeve (304/316 grade), different colors, different product dimensions.

Installation

Easy levelling with 4 bolts and installation to 500 mm shallow depth with steel rebar reinforcement and C35 grade concrete through ground mounting plate containing concrete immersion slits. Ground levelling and preparation works shall be carried on before pouring the concrete. Allowable bearing value of the ground shall be minimum 1/2 kg/cm^2, if not, works shall be carried on to fulfil. Installation shall be done according to the manufacturer's instructions. Minimum 2 bollard posts shall be installed for above mentioned crash/impact rating compliance.

HBD/8 SHLW BOLLARD

(Anti-terror / Heavy Duty - Fixed - Shallow Mount Model)

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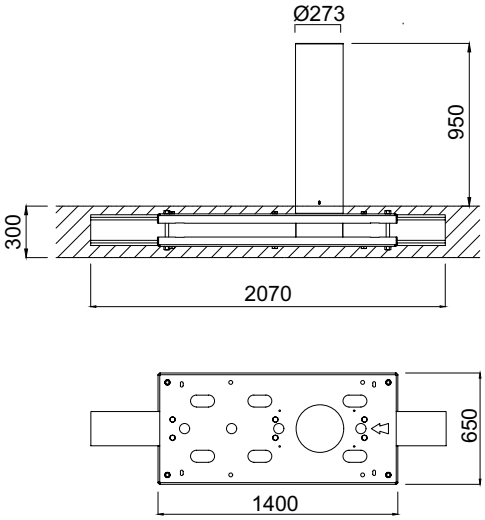
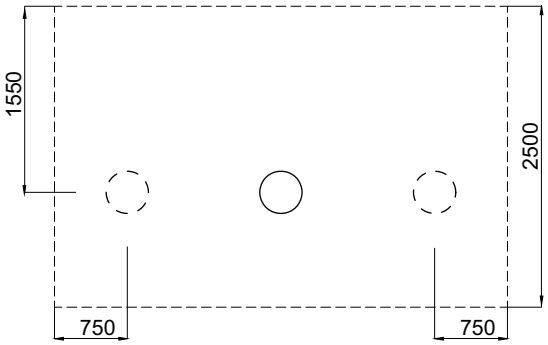
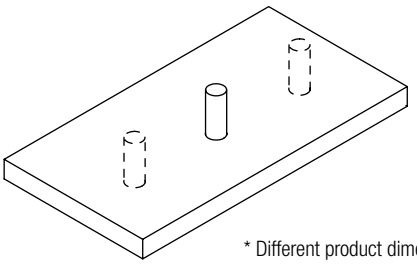
CRASH CERTIFIED TESTED

PAS 68 (N3)
IWA 14 (N3C)
ASTM F2656 (C740)

Dimensions (mm)







* Different product dimensions are optionally available.

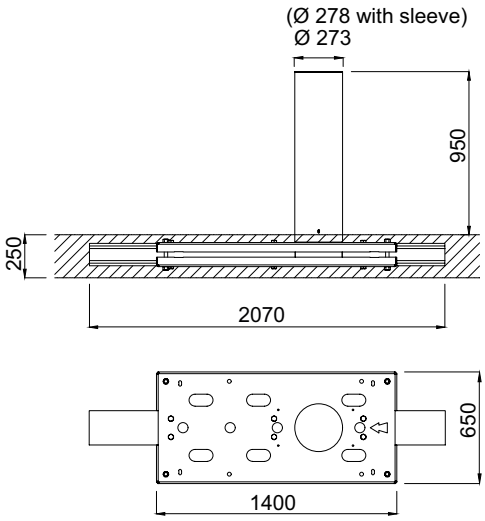
Technical Features

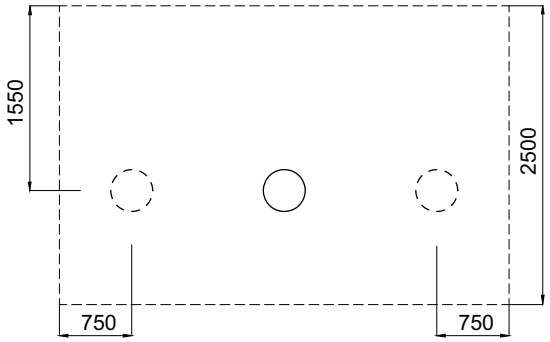
Crash / Impact Rating	Crash tested and certified according to: IWA 14-1:2013 Bollard V/7200[N3C]/64, PAS68:2013 Bollard V/7500[N3]/64, and ASTM F2656-18 C750/7200 standards (HBD 275 S 95/8 SRF model).
Bollard Structure	950 mm high bollard pipe is made of Ø273 mm, 10 mm thick hot dip galvanised solid steel pipe with a reinforced design. Special star-formed, 10 mm solid steel bar and composite infilled inner structure for impact absorption distributed evenly to the whole body and increasing resistance. Impact surface is painted in RAL9006 (optionally in other RAL colors). Designed so that no vehicle crashing effect can displace it after embedded into the ground. Furnished with red (opt. white or yellow) reflecting strips. Bollard contains high resistant anchorage structure through 2 anchor plates with concrete immersion slits at the top and bottom, strengthened with "HEB" beams in the impact direction and adjustment bolts for leveling at 4 areas. Underground elements are fixed together by wedge type, 10.9 grade bolted and welded connection for utmost resistance reinforcement.
Optional Features and Accessories	Removable structue (designed and produced to withstand impacts at ASTM F2656 M40, C740 (K-8), PAS 68 [N3]/64 and IWA 14-1 [N3C]/64 levels), demountable aluminium (electrostatic powder coated in body color or 304/316 grade stainless steel) bollard top lid with 360° visible red flashing LED indicators, stainless steel sleeve (304/316 grade), different colors, different product dimensions.
Installation	Easy levelling with 4 bolts and installation to 300 mm shallow depth with steel rebar reinforcement and C30 grade concrete through ground mounting plate containing concrete immersion slits. Ground levelling and preparation works shall be carried on before pouring the concrete. Allowable bearing value of the ground shall be minimum 1/2 kg/cm^2, if not, works shall be carried on to fulfil. Installation shall be done according to the manufacturer's instructions.

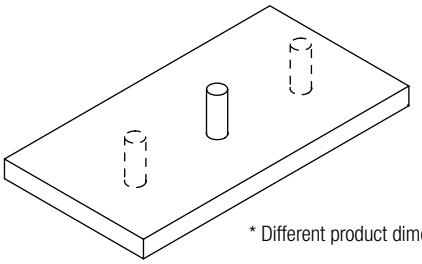
RBD/4 SHLW BOLLARD
(Reinforced - Fixed - Shallow Mount Model)

CAME ÖZAK

Dimensions (mm)







* Different product dimensions are optionally available.

Technical Features

Crash / Impact Rating

Designed and produced to withstand impacts mentioned below:

Standard	Vehicle Type	Weight	Speed
ASTM F2656	M, C7 (K-4)	6800, 7200 kg	48 km/h (30 mph)
PAS 68	N2, N3	7500 kg	48 km/h (30 mph)
IWA 14-1	N2A, N2B, N3C	7200 kg	48 km/h (30 mph)

(Please contact for applicable product dimensions.)

Bollard Structure

950 mm high bollard pipe is made of Ø273 mm (Ø278 mm with sleeve), 10 mm thick hot dip galvanised solid steel pipe with a reinforced design.
10 mm solid steel bar infilled inner structure for impact absorption distributed evenly to the whole body and increasing resistance.
Impact surface is painted in RAL9006 (optionally in other RAL colors).
Designed so that no vehicle crashing effect can displace it after embedded into the ground.
Furnished with red (opt. white or yellow) reflecting strips.
Bollard contains high resistant anchorage structure through 2 anchor plates with concrete immersion slits at the top and bottom, strengthened with "HEB" beams in the impact direction and adjustment bolts for leveling at 4 areas.
Underground elements are fixed together by wedge type, 10.9 grade bolted and welded connection for utmost resistance reinforcement.

Optional Features and Accessories

Removable structue (designed and produced to withstand impacts at ASTM F2656 M30, C730 (K-4), PAS 68 [N3]/48 and IWA 14-1 [N3C]/48 levels), demountable aluminium (electrostatic powder coated in body color or 304/316 grade stainless steel) bollard top lid with 360° visible red flashing LED indicators, stainless steel sleeve (304/316 grade), different colors, different product dimensions.

Installation

Easy levelling with 4 bolts and installation to 250 mm shallow depth with steel rebar reinforcement and C35 grade concrete through ground mounting plate containing concrete immersion slits. Ground levelling and preparation works shall be carried on before pouring the concrete. Allowable bearing value of the ground shall be minimum 1/2 kg/cm^2, if not, works shall be carried on to fulfil. Installation shall be done according to the manufacturer's instructions.

BOLLARDS

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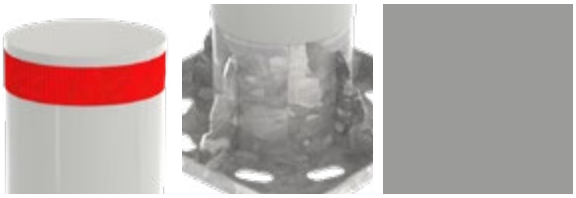
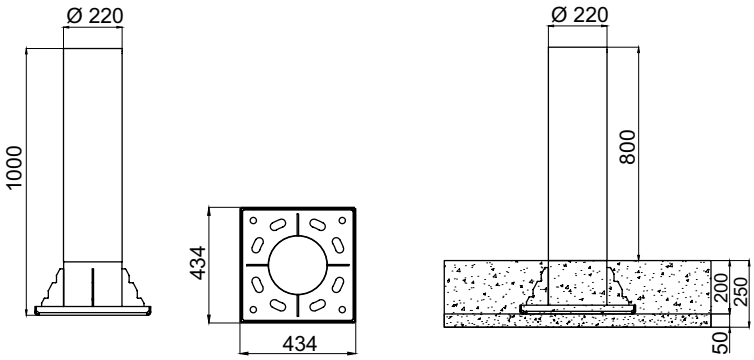
TBD BOLLARD
(Traffic Regulation - Fixed Model)



Dimensions (mm)



* Different product dimensions are optionally available.

Technical Features

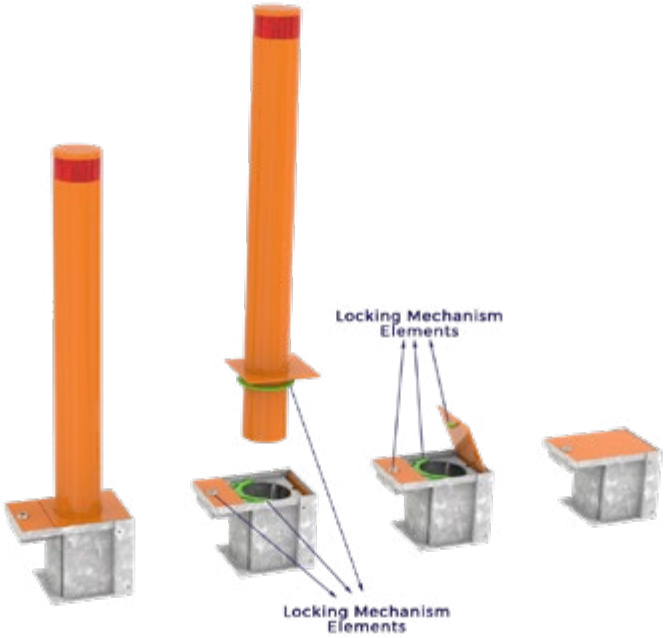
Crash / Impact Rating	-
Bollard Structure	800 mm high bollard pipe is made of Ø220 mm, 6 mm thick hot dip galvanised steel pipe electrostatic powder coated in RAL9006 (optionally in other RAL colors). Furnished with red (opt. white or yellow) reflecting strips.
Optional Features and Accessories	Removable structue, demountable aluminium (electrostatic powder coated in body color or 304/316 grade stainless steel) bollard top lid with 360° visible red flashing LED indicators, stainless steel sleeve (304/316 grade), different colors, different product dimensions.
Installation	Easy levelling with 4 bolts and easy installation with steel rebar reinforcement and C30 grade concrete through ground mounting plate. Ground levelling and preparation works shall be carried on before pouring the concrete. Allowable bearing value of the ground shall be minimum 1/2 kg/cm^2, if not, works shall be carried on to fulfil. Installation shall be done according to the manufacturer's instructions.

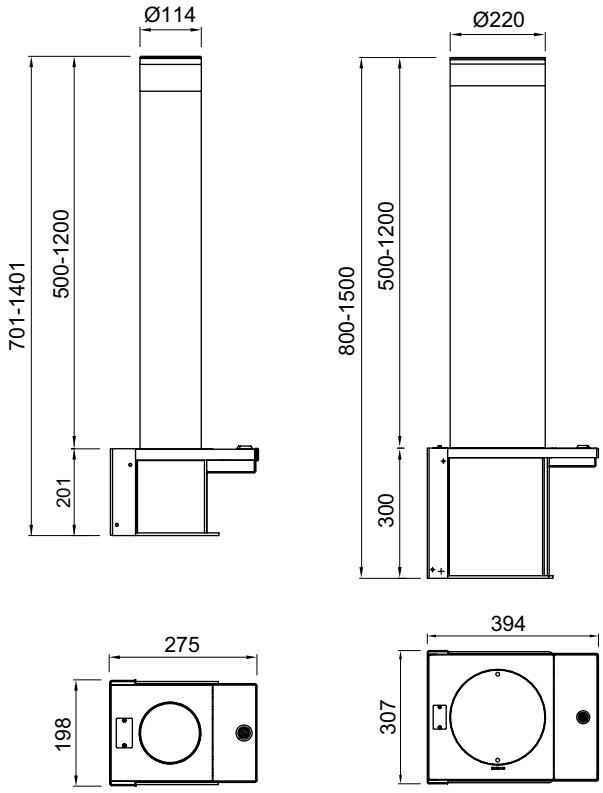
BOLLARDS

REMOVABLE BOLLARDS

CAME ÖZAK

TBD RMB
REMOVABLE BOLLARD





* Different raising heights are optionally available.
* Fixed versions fitting to the removable bollards are also available.

Technical Features

Crash / Impact Rating	-
Bollard Structure	900 mm high bollard pipe is made of Ø114 / 220 mm, 2 mm thick hot dip galvanised steel pipe electrostatic powder coated in RAL9006 (optionally in other RAL colors or 304 grade stainless steel). Furnished with red (opt. white or yellow) reflecting strips. Hot dip galvanised steel underground unit in a reinforced structure contains road level lid (in body color). Road level lid is designed to retract into underground unit when the bollard is in use avoiding risk of getting lost. Road level lid can be closed and locked when the bollard is removed providing a plain road surface.
Locking Mechanism:	Hot dip galvanised, special design in sliding form locking mechanism with special key. Locking mechanism locks the body when the bollard is in use, and locks the road level lid when the bollard is not in use.
Optional Features and Accessories	360° visible red flashing LED indicators, 304 grade stainless steel, different colors, different materials.
Installation	Easy installation with ground mounting plate, C30 grade concrete and steel rebar reinforcement. Ground levelling and preparation works shall be carried on before pouring the concrete. Installation shall be done according to the manufacturer's instructions.


جميرا
في منتجع
جزيرة السعديات
Jumeirah
at SAADIYAT ISLAND
RESORT

CAME ÖZAK

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