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

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 21 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

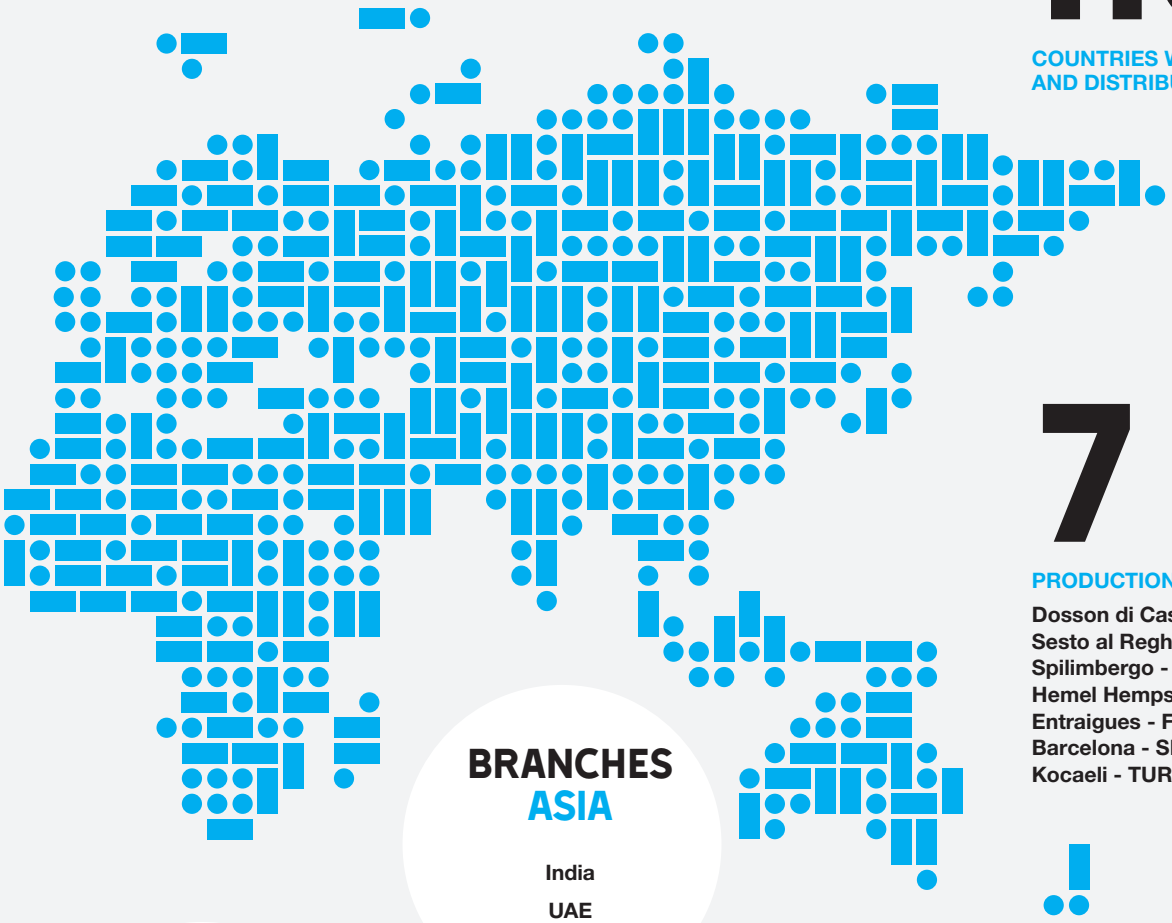
1700
EMPLOYEES AROUND THE WORLD

CAME

CAME HQ
Treviso, ITALY

BRANCHES EUROPE

Italy
Belgium
Croatia
France
Germany
Ireland
Netherlands
Poland
Portugal
Russia
Spain
The United Kingdom
Turkey



BRANCHES ASIA

India

UAE

BRANCHES AFRICA

South Africa

6
R&D CENTERS

21
COUNTRIES WITH DIRECT BRANCHES

118
COUNTRIES WITH PARTNERS AND DISTRIBUTORS

7
PRODUCTION PLANTS

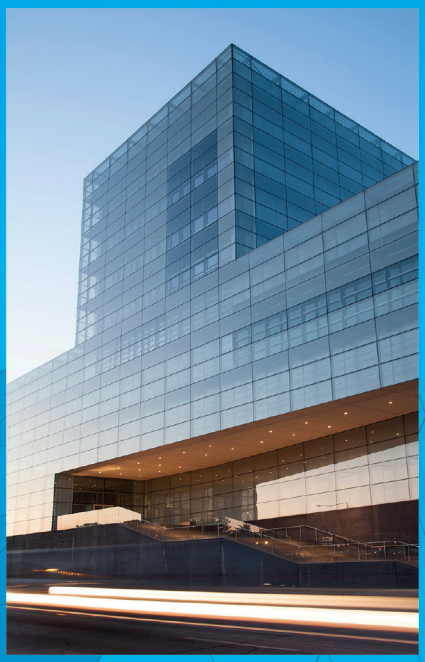
Dosson di Casier - ITALY
Sesto al Reghena - ITALY
Spilimbergo - ITALY
Hemel Hempstead - UK
Entraigues - FRANCE
Barcelona - SPAIN
Kocaeli - TURKEY

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.

CAME.COM

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


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

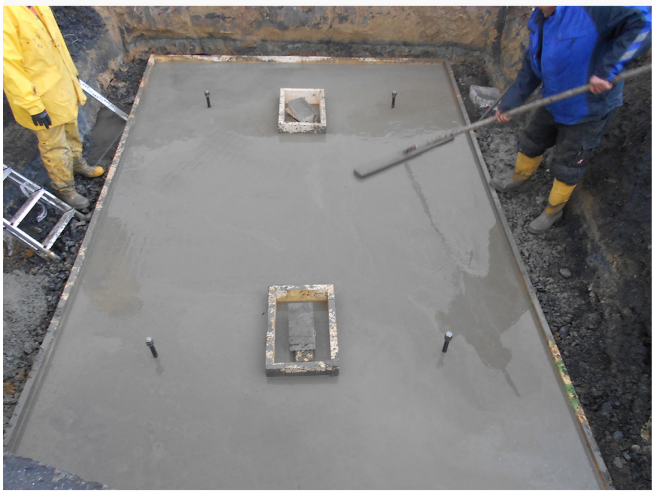
CAME ÖZAK

Özak becomes part of **CAME.**

PRODUCT INDEX

CAME ÖZAK


DUR
STOP
MEYER




CTS

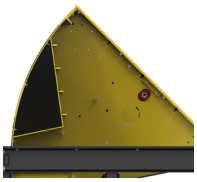

ÖZAK
NR-D
Systeme GmbH


NR-D
Systeme GmbH
CTS
ÖZAK
TURNIKE-TURNSTILE

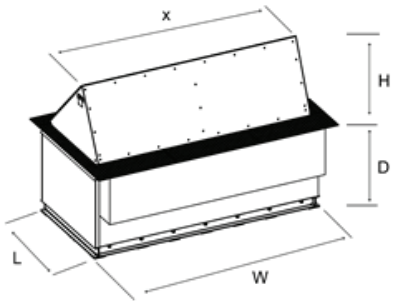
HRB ROAD BLOCKER
(Heavy Duty Model)

CRASH CERTIFIED TESTED

M50 P1 (K12)
ASTM F2656-07



Power	Standard 380V AC 3-Phase 50/60 Hz, 3,3 - 7,5 KvA motor (varies depending on blocker size). Opt. 220V, 110V 1-Phase 50/60 Hz (for some models/sizes only), optionally 24V DC for emergency situations in case of power failure.
Control Pack	24V DC powered and PLC control unit is placed in power unit cabinet. Solenoids 24V DC (Ops.12V DC / 220V AC).
Speed	Standard Operation ~2,5 - 6 sec. (ascend/descend) depending on unit dimensions. Emergency raise up (upwards) by optional hydraulic accumulator ~1,5 sec. and may vary depending on unit dimensions.
IP Rating	IP 55 - Hydraulic Power Unit, IP 67 - Electronics (optional), protection with housing/box, IP 68 - Hydraulic Piston
Crash / Impact Rating	M50 P1 (K-12) crash tested and certified (HRB 30 R 90) according to ASTM 2656-07, Designed and produced to withstand H30.



			Raising Height 65 - 50 cm	Raising Height 90 - 70 cm
Product Code	**Blocker Unit Width (X)**	**Nr. of Pistons**	**Dimensions (LxWxD)**	**Dimensions (LxWxD)**
HRB 10R_ _	1000	1	1275 x 1170 x 975	1481 x 1170 x 1270
HRB 15R_ _	1500	1	1275 x 1670 x 975	1481 x 1670 x 1270
HRB 20R_ _	2000	1	1275 x 2170 x 975	1481 x 2170 x 1270
HRB 25R_ _	2500	1	1275 x 2670 x 975	1481 x 2670 x 1270
HRB 30R_ _	3000	1	1275 x 3170 x 975	1481 x 3170 x 1270
HRB 35R_ _	3500	1	1275 x 3670 x 975	1481 x 3670 x 1270
HRB 35R_ _	3500	2	1275 x 3670 x 975	1481 x 3670 x 1270
HRB 40R_ _	4000	1	1275 x 4170 x 975	1481 x 4170 x 1270
HRB 40R_ _	4000	2	1275 x 4170 x 975	1481 x 4170 x 1270
HRB 45R_ _	4500	2	1275 x 4670 x 975	1481 x 4670 x 1270
HRB 50R_ _	5000	2	1275 x 5170 x 975	1481 x 5170 x 1270
HRB 55R_ _	5500	2	1275 x 5670 x 975	1481 x 5670 x 1270
HRB 60R_ _	6000	2	1275 x 6170 x 975	1481 x 6170 x 1270
HRB 65R_ _	6500	2	1275 x 6670 x 975	1481 x 6670 x 1270

Battery Back-up for Power-off Situation	Battery unit with capacity of min. 100 movements (50 deploy + 50 retract) when fully charged is optionally available.
Axle Load Resistance	50T
Hydraulic Cylinder Unit	Heavy duty, dust sealed electrostatic powder coated hydraulic cylinder. Models between 1- 4 meter widths contain a single piston. (Double piston versions are optionally available for models with 3,5 & 4 meter widths). Models between 4,5 - 6,5 meter widths contain double pistons. Cylinder unit features a safety valve against leakage and hose failure.
Hydraulic Power Unit	Strengthened industrial pump, 40-120 lt oil tank capacity with magnetic metal collector and particle filter. Built-in oil level and oil temperature sensor with low oil level warning. 70-100 Bar pressure; maximum running pressure is 150 Bar. 10 mt R2 (double wire braided mesh) reinforced hydraulic hose.

System

Down, Up, Emergency and external sensor inputs/outputs (e.g. Loop Detector, Beam Detector, Signalization, Remote Control, etc.).
System alerts with an audio signal during lowering and raising operation.
A loud siren output in case of alarm or emergency.
Can be lowered or raised automatically in case of emergency (User's preference).
Can be lowered and raised manually in case of power failure or during the maintenance service with manual pump and manual valve feature. Automatic raise up mode deploys (optionally with synchronized 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

Power Unit

Motor, hydraulic pump and solenoid valves are contained in an easily accessible hot-dip-galvanized and electrostatic powder painted cabinet with a built-in lock lid. (Opt. Stainless Steel Cabinet)
Cabinet Dimensions: 1000 mm x 570 mm x 1200 mm (W x L x H).

Blocker Cabinet (underground unit)

All parts are colored with industrial paint with two components.
U-shaped profile structure for maximum strength.
The blocker and cabinet are designed so that no vehicle crashing effect can displace it after embedded or installed in to the ground.

Blocker Unit (impact blocking unit)

All parts are colored with industrial paint with two components.
Hot dip galvanised vehicle pass through surface (top plates).
The construction is aesthetically and functionally completed with reflecting strips and warning signs.
The hinge system is specially designed to have a flattened surface level with the top plate so that vehicles can pass over smoothly and quietly. The blocker unit is made of a reinforced construction strengthened by 6mm thick special design, V-formed, vertical solid steel panels distanced between 350-550mm along the blocker width and assembled together with the main chassis for evenly distributed impact absorption. All vertical impact absorption panels have special shape and contain hook type holders (patent pending 2015/12506) for high impact resistance and are installed with equal distance to each other and supported by 4 pieces of 30x10mm solid steel beams to further strengthen the construction.

Impact Absorbing Panel Quantity												
Blocker Size	**1 m**	**1,5 m**	**2 m**	**2,5 m**	**3 m**	**3,5 m**	**4 m**	**4,5 m**	**5 m**	**5,5 m**	**6 m**	**6,5 m**
Single Piston	4	4	6	6	8	8	10					
Double Piston						10	12	12	12	15	18	18

To stop severe impact loads there is an additional 6mm (optionally 10mm) thick sheet metal attached to the vertical impact absorption panels.
At the frontal crash-facing section, there is replaceable 3mm thick steel sheet with rounded form to handle light impacts.
Resistance of crash surface consisting of 6mm+3mm sheet metal is equal to resistance of a 74mm thick sheet metal due to it's construction structured with vertical solid panels and 30x10mm solid bars behind.
Top panel where the vehicle pass over is made of 10/11mm thick non-slip surface steel hot-dip galvanised before paint.
The system moves up and down with 50mm diameter stainless steel hinges (example: 3 meter blocker contains 7 pieces of 50mm diameter stainless steel hinges).
Blocker unit raises 45° angle from the ground level and equipped with built in indicators on side and front panels.
A top lid is provided for easy access for service and maintenance on the top plate.

Control System

Manuel Control Button Unit:
Provided with an IP67 CRM yellow box including 3 switches for downwards, upwards, stop (optional emergency operation), can stop the blocker motion with the command/signal coming from detector, equipped with built-in LED visual indications and 10 mt cable.

Compatibility with Access Control Systems:
Compatible with any access control system (by third parties).

Optional Unit:
With the optional model "RB CONT.UNIT.V.001" users can monitor the diagnostic functions, can be accessed through LAN, RS485 protocols. System is provided inside a metal cabinet that also indudes the other functional switches like downward, upward,stop, emergency operations.
With the built in 124x68 LCD screen, all status of the operation and system diagnostic can be monitored through messaging functions like oil status, loop or beam detectors status, water level inside the cabinet, blocker position according to user preference, any .bmp files can be displayed.
The system is driven by the PLC.

Optional Features and Accessories

Traffic lights (red-green), Traffic light Pole, Loop Detector (double/single contact), Beam Detector,220V, 110V motor, 24V DC for emergency situations in case of power failure, Remote Control (receiver and transmitter are 3 channels), UPS, Photocell Sensor (receiver+ transmitter with 50cm height pole), RB CONT. UNIT.V.001 Control Unit, Intercom, External Buttons, Emergency Submersible Pump, Hydraulic Accumulator for emergency fast raise up (1 piston or 2 pistons systems), Surface Frame (sizes: from 250mm to 1000mm), Oil Cooler, Oil Heater, Heater for electronic components, hot-dip galvanization for cabinet, blocker and impact surface units, double effect hydraulic unit, double speed hydraulic unit, ground mounting plate, powered audio signal (siren), PLC diagnostic monitor, IP67 box (for PLC, SMPS, connectors etc inside power unit).

Installation

Easy Installation with C30 grade concrete and steel rebar reinforcement.

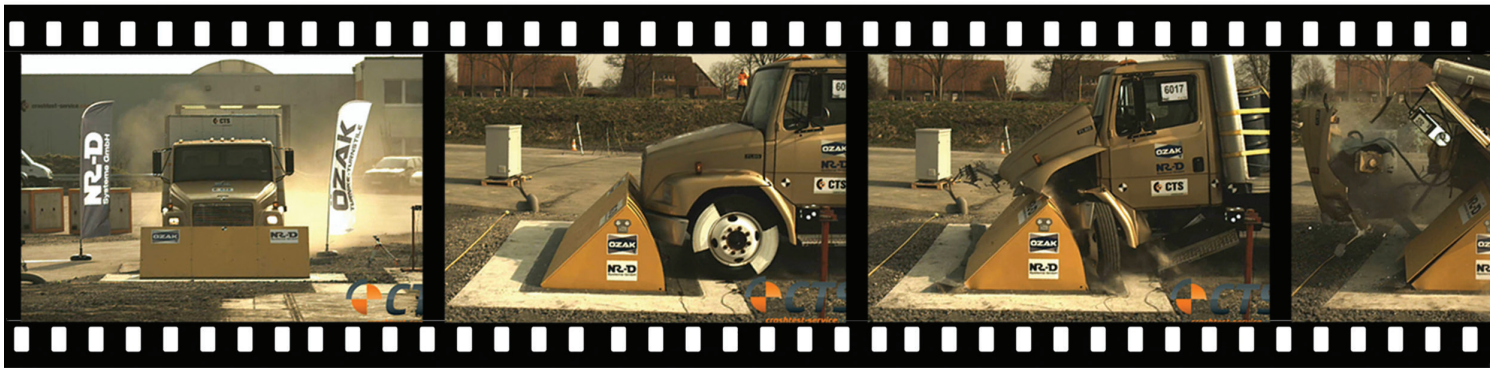
CRASH CERTIFIED TESTED

M50 P1 (K12)
ASTM F2656-07

for crash test video

Max P1 Limit

Maximum Pene

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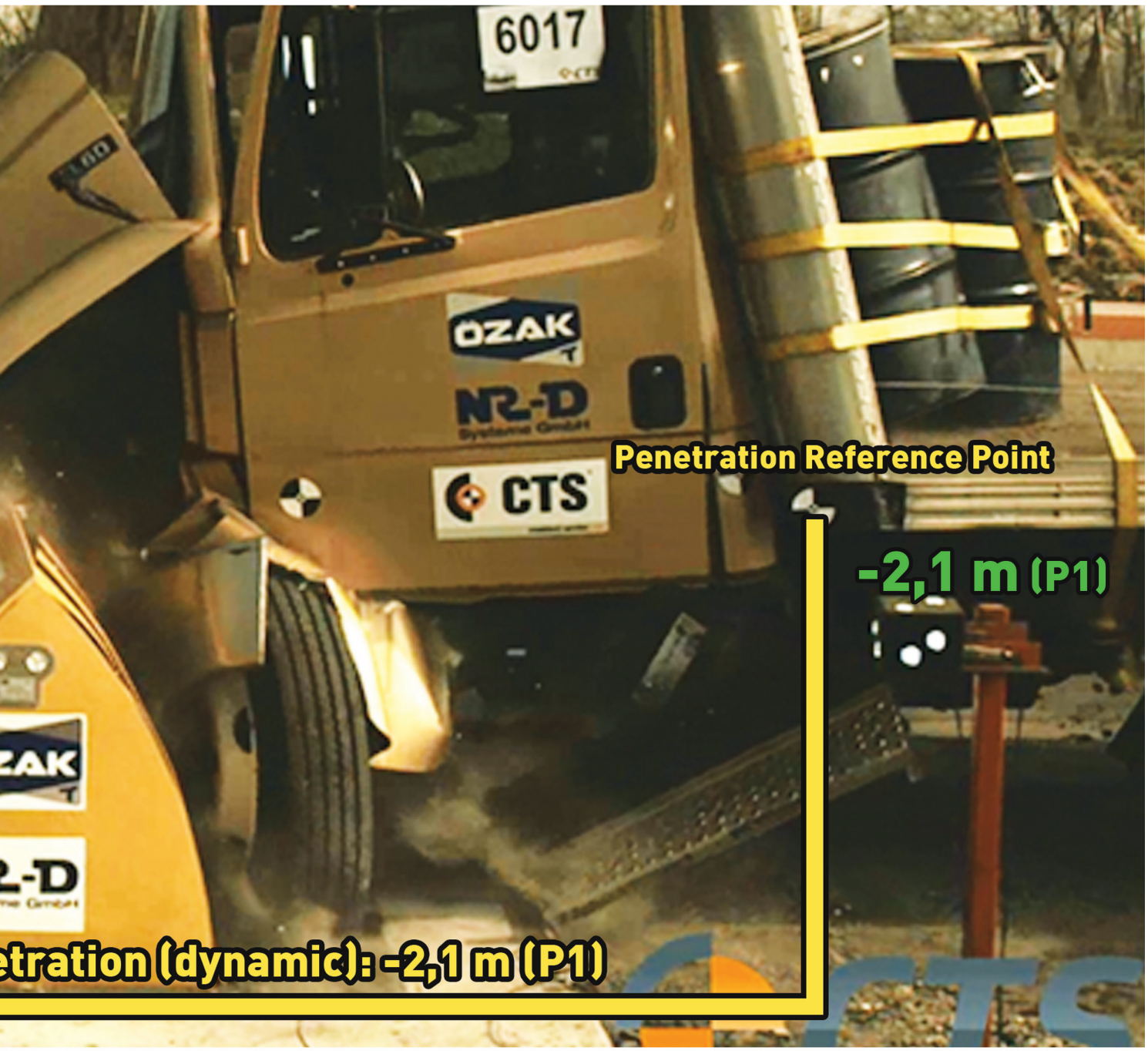
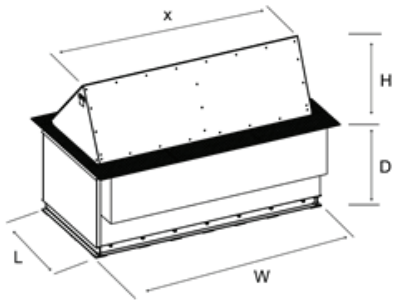
NR-D
CTS


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


OZAK
NR-D

RRB ROAD BLOCKER
(Reinforced Model)

Power	Standard 380V AC 3-Phase 50/60 Hz, 3,3 - 5,5 KvA motor (varies depending on blocker size). Opt. 220V, 110V 1-Phase 50/60 Hz (for some models/sizes only), optionally 24V DC for emergency situations in case of power failure.
Control Pack	24V DC powered and PLC control unit is placed in power unit cabinet. Solenoids 24V DC (Ops.12V DC / 220V AC)
Speed	Standard Operation ~4 - 6 sec. (ascend/descend) (opt. 2,5 - 4 sec.) depending on unit dimensions. Emergency raise up (upwards) by optional hydraulic accumulator ~1,5 sec. and may vary depending on unit dimensions.
IP Rating	IP 55 - Hydraulic Power Unit, IP 67 - Electronics (optional), protection with housing/box, IP 68 - Hydraulic Piston
Crash / Impact Rating	Designed and produced to withstand M40 (K-8).



			Raising Height 65 - 50 cm	Raising Height 90 - 70 cm
Product Code	Blocker Unit Width (X)	Nr. of Pistons	Dimensions (LxWxD)	Dimensions (LxWxD)
RRB 10F_ _	1000	1	1275 x 1170 x 975	1481 x 1170 x 1270
RRB 15F_ _	1500	1	1275 x 1670 x 975	1481 x 1670 x 1270
RRB 20F_ _	2000	1	1275 x 2170 x 975	1481 x 2170 x 1270
RRB 25F_ _	2500	1	1275 x 2670 x 975	1481 x 2670 x 1270
RRB 30F_ _	3000	1	1275 x 3170 x 975	1481 x 3170 x 1270
RRB 35F_ _	3500	1	1275 x 3670 x 975	1481 x 3670 x 1270
RRB 35F_ _	3500	2	1275 x 3670 x 975	1481 x 3670 x 1270
RRB 40F_ _	4000	1	1275 x 4170 x 975	1481 x 4170 x 1270
RRB 40F_ _	4000	2	1275 x 4170 x 975	1481 x 4170 x 1270
RRB 45F_ _	4500	2	1275 x 4670 x 975	1481 x 4670 x 1270
RRB 50F_ _	5000	2	1275 x 5170 x 975	1481 x 5170 x 1270
RRB 55F_ _	5500	2	1275 x 5670 x 975	1481 x 5670 x 1270
RRB 60F_ _	6000	2	1275 x 6170 x 975	1481 x 6170 x 1270
RRB 65F_ _	6500	2	1275 x 6670 x 975	1481 x 6670 x 1270

Battery Back-up for Power-off Situation	Battery unit with capacity of min.100 movements (50 deploy + 50 retract) when fully charged is optionally available.
Axle Load Resistance	50T
Hydraulic Cylinder Unit	Heavy duty, dust sealed electrostatic powder coated hydraulic cylinder. Models between 1- 4 meter widths contain a single piston. (Double piston versions are optionally available for models with 3,5 & 4 meter widths). Models with 4,5 - 6,5 meter widths contain double pistons. Cylinder unit features a safety valve against leakage and hose failure.
Hydraulic Power Unit	Strengthened industrial pump, 40-120 lt oil tank capacity with magnetic metal collector and particle filter. Built-in oil level and temperature indicator, 70-80 Bar pressure; maximum running pressure is 120 Bar 10 mt R2 (double wire braided mesh) reinforced hydraulic hose.

System

Down, Up, Emergency and external sensor inputs/outputs (e.g. Loop Detector, Beam Detector, Signalization, Remote Control, etc.).
System alerts with an audio signal during lowering and raising operation.
A loud siren output in case of alarm or emergency.
Can be lowered or raised automatically in case of emergency (User's preference).
Can be lowered and raised manually in case of power failure or during the maintenance service with manual pump and manual valve feature. Automatic raise up mode deploys (optionally with synchronized 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

Power Unit

Motor, hydraulic pump and solenoid valves are contained in an easily accessible hot-dip-galvanized and electrostatic powder painted cabinet with a built-in lock lid. (Opt. Stainless Steel Cabinet)
Cabinet Dimensions: 1000 mm x 570 mm x 1200 mm (W x L x H).

Blocker Cabinet (underground unit)

All parts are colored with industrial paint with two components.
U-shaped profile structure for maximum strength.
The blocker and cabinet are designed so that no vehicle crashing effect can displace it after embedded or installed in to the ground.

Blocker Cabinet (underground unit)

All parts are colored with industrial paint with two components.
Hot dip galvanised vehicle pass through surface (top plates).
The construction is aesthetically and functionally completed with reflecting strips and warning signs.
The hinge system is specially designed to have a flattened surface level with the top plate so that vehicles can pass over smoothly and quietly. The blocker unit is made of a reinforced construction strengthened by 6mm thick special design, vertical solid steel panels distanced between 350-550mm along the blocker width and assembled together with the main chassis for evenly distributed impact absorption. All vertical impact absorption panels have special shape and contain hook type holders (patent pending 2015/12506) for high impact resistance and are installed with equal distance to each other and supported by 4 pieces of 30x10mm solid steel beams to further strengthen the construction.

Impact Absorbing Panel Quantity												
Blocker Size	**1 m**	**1,5 m**	**2 m**	**2,5 m**	**3 m**	**3,5 m**	**4 m**	**4,5 m**	**5 m**	**5,5 m**	**6 m**	**6,5 m**
Single Piston	4	4	6	6	8	8	10					
Double Piston						10	12	12	12	15	18	18

To stop severe impact loads there is an additional 6mm thick sheet metal attached to the vertical impact absorption panels.
Top panel where the vehicle pass over is made of 8/9mm thick non-slip surface steel hot-dip galvanised before paint.
The system moves up and down with 50mm diameter stainless steel hinges (example: 3 meter blocker contains 7 pieces of 50mm diameter stainless steel hinges).
Blocker unit raises 45° angle from the ground level and can be equipped with equipped with optional flashing light indicators on side and front panels.
A top lid is provided for easy access for service and maintenance on the top plate.

Control System

Manuel Control Button Unit:
Provided with an IP67 CRM yellow box including 3 switches for downwards, upwards, stop (optional emergency operation), can stop the blocker motion with the command/signal coming from detector, equipped with built-in LED visual indications.

Compatibility with Access Control Systems:
Compatible with any access control system (by third parties).

Optional Unit:
With the optional model "RB CONT.UNIT.V.001" users can monitor the diagnostic functions, can be accessed through LAN, RS485 protocols. System is provided inside a metal cabinet that also indudes the other functional switches like downward, upward,stop, emergency operations.
With the built in 124x68 LCD screen, all status of the operation and system diagnostic can be monitored through messaging functions like oil status, loop or beam detectors status, water level inside the cabinet, blocker position according to user preference, any .bmp files can be displayed. The system is driven by the PLC.

Optional Features and Accessories

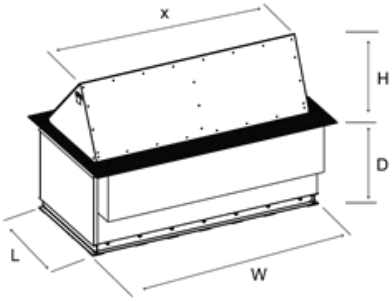
Traffic lights (red-green), Traffic light Pole, Loop Detector (double/single contact), Beam Detector, 220V, 110V motor, 24V DC for emergency situations in case of power failure, Remote Control (receiver and transmitter are 3 channels), UPS, Photocell Sensor (receiver+ transmitter with 50cm height pole), RB CONT. UNIT.V.001 Control Unit, Intercom, External Buttons, Emergency Submersible Pump, Hydraulic Accumulator for emergency fast raise up (1 piston or 2 pistons systems), Surface Frame (sizes: from 250mm to 1000mm), Oil Cooler, Oil Heater, Heater for electronic components, hot-dip galvanization for cabinet, blocker and impact surface units, double effect hydraulic unit, double speed hydraulic unit, ground mounting plate, powered audio signal (siren), PLC diagnostic monitor, flashing light indicators, round shaped front panel, oil level sensor, optional speed, IP67 box (for PLC, SMPS, connectors etc inside power unit).

Installation

Easy Installation with C30 grade concrete and steel rebar reinforcement.

RB ROAD BLOCKER
(Residential Model)

Power	Standard 380V AC 3-Phase 50/60 Hz, 3,3 - 5,5 KvA motor (varies depending on blocker size). Opt. 220V, 110V 1-Phase 50/60 Hz (for some models/sizes only), optionally 24V DC for emergency situations in case of power failure.
Control Pack	24V DC powered and PLC control unit is placed in power unit cabinet. Solenoids 24V DC (Ops.12V DC / 220V AC)
Speed	Standard Operation ~4 - 6 sec. (ascend/descend) (opt. 2,5 - 4 sec.) depending on unit dimensions. Emergency raise up (upwards) by optional hydraulic accumulator ~1,5 sec. and may vary depending on unit dimensions.
IP Rating	IP 55 - Hydraulic Power Unit, IP 67 - Electronics (optional), protection with housing/box, IP 68 - Hydraulic Piston
Crash / Impact Rating	Designed and produced to withstand M30 (K-4).



			Raising Height 65 - 50 cm	Raising Height 90 - 70 cm
Product Code	Blocker Unit Width (X)	Nr. of Pistons	Dimensions (LxWxD)	Dimensions (LxWxD)
RB 10F_ _	1000	1	1275 x 1170 x 975	1481 x 1170 x 1270
RB 15F_ _	1500	1	1275 x 1670 x 975	1481 x 1670 x 1270
RB 20F_ _	2000	1	1275 x 2170 x 975	1481 x 2170 x 1270
RB 25F_ _	2500	1	1275 x 2670 x 975	1481 x 2670 x 1270
RB 30F_ _	3000	1	1275 x 3170 x 975	1481 x 3170 x 1270
RB 35F_ _	3500	1	1275 x 3670 x 975	1481 x 3670 x 1270
RB 35F_ _	3500	2	1275 x 3670 x 975	1481 x 3670 x 1270
RB 40F_ _	4000	1	1275 x 4170 x 975	1481 x 4170 x 1270
RB 40F_ _	4000	2	1275 x 4170 x 975	1481 x 4170 x 1270
RB 45F_ _	4500	2	1275 x 4670 x 975	1481 x 4670 x 1270
RB 50F_ _	5000	2	1275 x 5170 x 975	1481 x 5170 x 1270
RB 55F_ _	5500	2	1275 x 5670 x 975	1481 x 5670 x 1270
RB 60F_ _	6000	2	1275 x 6170 x 975	1481 x 6170 x 1270
RB 65F_ _	6500	2	1275 x 6670 x 975	1481 x 6670 x 1270

Battery Back-up for Power-off Situation	Battery unit with capacity of min. 100 movements (50 deploy + 50 retract) when fully charged is optionally available.
Axle Load Resistance	40T
Hydraulic Cylinder Unit	Heavy duty, dust sealed electrostatic powder coated hydraulic cylinder. Models between 1- 4 meter widths contain a single piston. (Double piston versions are optionally available for models with 4 meter widths). Models between 4,5 - 6,5 meter widths contain double pistons. Cylinder unit features a safety valve against leakage and hose failure.
Hydraulic Power Unit	Strengthened industrial pump, 40-120 lt oil tank capacity with magnetic metal collector and particle filter, Built-in oil level and temperature indicator, 70-80 Bar pressure; maximum running pressure is 120 Bar 10 mt R2 (double wire braided mesh) reinforced hydraulic hose.

System	Down, Up, Emergency and external sensor inputs/outputs (e.g. Loop Detector, Beam Detector, Signalization, Remote Control, etc.). System alerts with an audio signal during lowering and raising operation. A loud siren output in case of alarm or emergency. Can be lowered or raised automatically in case of emergency (User's preference). Can be lowered and raised manually in case of power failure or during the maintenance service with manual pump and manual valve feature. Automatic raise up mode deploys (optionally with synchronized 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
Power Unit	Motor, hydraulic pump and solenoid valves are contained in an easily accessible hot-dip-galvanized and electrostatic powder painted cabinet with a built-in lock lid. (Opt. Stainless Steel Cabinet) Cabinet Dimensions: 1000 x 570 x 1200 mm (W x L x H).
Blocker Cabinet (underground unit)	All parts are colored with industrial paint with two components. U-shaped profile structure for maximum strength. The blocker and cabinet are designed so that no vehicle crashing effect can displace it after embedded or installed in to the ground.
Blocker Unit (impact blocking unit)	All parts are colored with industrial paint with two components. Hot dip galvanised vehicle pass through surface (top plates). The construction is aesthetically and functionally completed with reflecting strips and warning signs. The hinge system is specially designed to have a flattened surface level with the top plate so that vehicles can pass over smoothly and quietly. Top panel where the vehicle pass over is made of 8/9mm thick non-slip surface steel hot-dip galvanised before paint. The system moves up and down with 50mm diameter stainless steel hinges (example: 3 meter blocker contains 7 pieces of 50mm diameter stainless steel hinges). Blocker unit raises 45° angle from the ground level and can be equipped with equipped with optional flashing light indicators on side and front panels. A top lid is provided for easy access for service and maintenance on the top plate.
Control System	**Manuel Control Button Unit:** Provided with an IP67 CRM yellow box including 3 switches for downwards, upwards, stop (optional emergency operation), can stop the blocker motion with the command/signal coming from detector, equipped with built-in LED visual indications. **Compatibility with Access Control Systems:** Compatible with any access control system (by third parties). **Optional Unit:** With the optional model "RB CONT.UNIT.V.001" users can monitor the diagnostic functions, can be accessed through LAN, RS485 protocols. System is provided inside a metal cabinet that also indudes the other functional switches like downward, upward,stop, emergency operations. With the built in 124x68 LCD screen, all status of the operation and system diagnostic can be monitored through messaging functions like oil status, loop or beam detectors status, water level inside the cabinet, blocker position according to user preference, any .bmp files can be displayed. The system is driven by the PLC.
Optional Features and Accessories	Traffic lights (red-green), Traffic light Pole, Loop Detector (double/single contact), Beam Detector, 220V, 110V motor, 24V DC for emergency situations in case of power failure, Remote Control (receiver and transmitter are 3 channels), UPS, Photocell Sensor (receiver+ transmitter with 50cm height pole), RB CONT. UNIT.V.001 Control Unit, Intercom, External Buttons, Emergency Submersible Pump, Hydraulic Accumulator for emergency fast raise up (1 piston or 2 pistons systems), Surface Frame (sizes: from 250mm to 1000mm), Oil Cooler, Oil Heater, Heater for electronic components, hot-dip galvanization for cabinet, blocker and impact surface units, double effect hydraulic unit, double speed hydraulic unit, ground mounting plate, powered audio signal (siren), PLC diagnostic monitor, flashing light indicators, round shaped front panel, oil level sensor, optional speed, IP67 box (for PLC, SMPS, connectors etc inside power unit).
Installation	Easy Installation with C30 grade concrete and steel rebar reinforcement.


STOP
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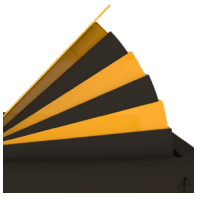
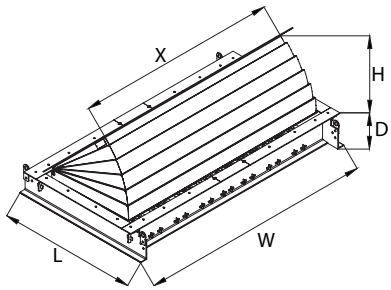
HRB ROAD BLOCKER
(Heavy Duty - Shallow Mount Model)



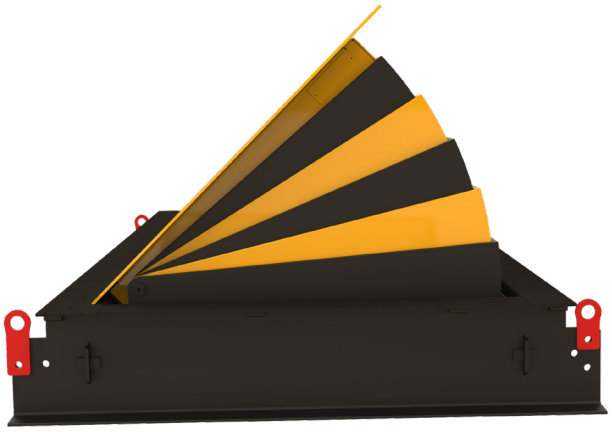
Power	Standard 380V AC 3-Phase 50/60 Hz, 3,3 - 7,5 KvA motor (varies depending on blocker size). Opt. 220V, 110V 1-Phase 50/60 Hz (for some models/sizes only), optionally 24V DC for emergency situations in case of power failure.
Control Pack	24V DC powered and PLC control unit is placed in power unit cabinet. Solenoids 24V DC (Ops.12V DC / 220V AC)
Speed	Standard Operation ~2,5 - 6 sec. (ascend/descend) depending on unit dimensions. Emergency raise up (upwards) by optional hydraulic accumulator ~1,5 sec. and may vary depending on unit dimensions.
IP Rating	IP 55 - Hydraulic Power Unit, IP 67 - Electronics (optional), protection with housing/box, IP 68 - Hydraulic Piston
Crash / Impact Rating	Designed and produced to withstand impacts at M50 (K-12).



			Raising Height (H) 90 cm
Product Code	**Blocker Unit Width (X)**	**Nr. of Pistons**	**Dimensions (LxWxD)**
HRB 10P_ _ SRF	1000	1	2025 x 1455 x 390
HRB 15P_ _ SRF	1500	1	2025 x 1955 x 390
HRB 20P_ _ SRF	2000	1	2025 x 2455 x 390
HRB 25P_ _ SRF	2500	1	2025 x 2955 x 390
HRB 30P_ _ SRF	3000	1	2025 x 3455 x 390
HRB 35P_ _ SRF	3500	1	2025 x 3955 x 390
HRB 35P_ _ SRF	3500	2	2025 x 3955 x 390
HRB 40P_ _ SRF	4000	2	2025 x 4445 x 390
HRB 45P_ _ SRF	4500	2	2025 x 4955 x 390
HRB 50P_ _ SRF	5000	2	2025 x 5455 x 390
HRB 55P_ _ SRF	5500	2	2025 x 5955 x 390
HRB 60P_ _ SRF	6000	2	2025 x 6455 x 390
HRB 65P_ _ SRF	6500	2	2025 x 6955 x 390

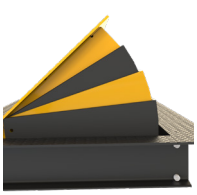
Battery Back-up for Power-off Situation	Battery unit with capacity of min. 100 movements (50 deploy + 50 retract) when fully charged is optionally available.
Axle Load Resistance	50T
Hydraulic Cylinder Unit	Heavy duty, dust sealed electrostatic powder coated 50 mm hydraulic cylinder. Models between 1- 3 meter widths contain a single piston. (Double piston version is optionally available for model with 3,5 meter width). Models between 4,0 - 6,5 meter widths contain double pistons. Cylinder unit features a safety valve against leakage and hose failure.
Hydraulic Power Unit	Strengthened industrial pump, 60 lt oil tank capacity with magnetic metal collector and particle filter. Built-in oil level sensor and oil temperature indicator. 70-100 bar pressure; maximum running pressure is 150 bar. 10 mt R2 (double wire braided mesh) reinforced hydraulic hose.

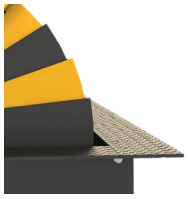
System	Down, Up, Emergency and external sensor inputs/outputs (e.g. Loop Detector, Beam Detector, Signalization, Remote Control, etc.). System alerts with an audio signal during lowering and raising operation. A loud siren output in case of alarm or emergency. Can be lowered or raised automatically in case of emergency (User's preference). Can be lowered and raised manually in case of power failure or during the maintenance service with manual pump and manual valve feature. Automatic raise up mode deploys (optionally with synchronized 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.
Power Unit	Motor, hydraulic pump and solenoid valves are contained in an easily accessible hot-dip-galvanized and electrostatic powder painted cabinet with a built-in lock lid. (Opt. Stainless Steel Cabinet)
Blocker Cabinet (underground unit)	All parts are colored with industrial paint with two components. U-shaped profile structure for maximum strength to withstand impacts at M50 (K12) level. The blocker and cabinet are designed so that no vehicle crashing effect can displace it after embedded or installed in to the ground.
Blocker Unit (impact blocking unit)	All parts are colored with industrial paint with two components. Hot dip galvanised vehicle pass through surface (top plates). The hinge system is specially designed to have a flattened surface level with the top plate so that vehicles can pass over smoothly and quietly. Top panel where the vehicle pass over is made of 10/11mm thick non-slip surface steel hot-dip galvanised before paint. The system moves up and down with 50mm diameter stainless steel hinges (example: 3 meter blocker contains 7 pieces of 50mm diameter stainless steel hinges). Blocker unit raises 45° angle from the ground level. A top lid is provided for easy access for service and maintenance on the top plate. Accordion type panel closure on front is optionally available.
Control System	**Manuel Control Button Unit:** Provided with an IP67 CRM yellow box including 3 switches for downwards, upwards, stop (optional emergency operation), can stop the blocker motion with the command/signal coming from detector, equipped with built-in LED visual indications and 10 mt cable. **Compatibility with Access Control Systems:** Compatible with any access control system (by third parties). **Optional Unit:** With the optional model "RB CONT.UNIT.V.001" users can monitor the diagnostic functions, can be accessed through LAN, RS485 protocols. System is provided inside a metal cabinet that also indudes the other functional switches like downward, upward,stop, emergency operations. With the built in 124x68 LCD screen, all status of the operation and system diagnostic can be monitored through messaging functions like oil status, loop or beam detectors status, water level inside the cabinet, blocker position according to user preference, any .bmp files can be displayed. The system is driven by the PLC.
Optional Features and Accessories	Traffic lights (red-green), Traffic light Pole, Loop Detector (double/single contact), Beam Detector, 220V, 110V motor, 24V DC for emergency situations in case of power failure, Remote Control (receiver and transmitter are 3 channels), UPS, Photocell Sensor (receiver+ transmitter with 50cm height pole), RB CONT. UNIT.V.001 Control Unit, Intercom, External Buttons, Hydraulic Accumulator for emergency fast raise up (1 piston or 2 pistons systems), Surface Frame (sizes: from 250mm to 1000mm), Oil Cooler, Oil Heater, Heater for electronic components, hot-dip galvanization for cabinet, blocker and impact surface units, double effect hydraulic unit, double speed hydraulic unit, powered audio signal (siren), PLC diagnostic monitor, IP67 box (for PLC, SMPS, connectors etc inside power unit), LED indicator on front, accordion type front closure.
Installation	Easy Installation with C30 grade concrete and steel rebar reinforcement. Ground leveling and preparation works shall be done before concrete pouring. Allowable bearing value of the ground shall be minimum 1/2 kg/cm^2.



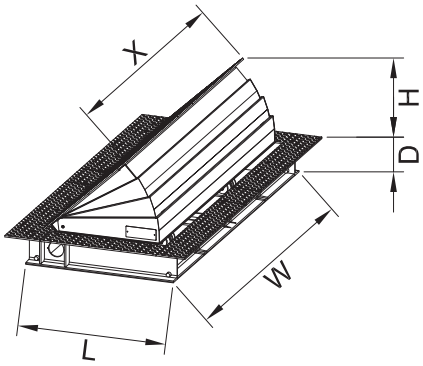
*Design and specifications are subject to change without notice.

RB ROAD BLOCKER
(Residential - Shallow Mount Model)





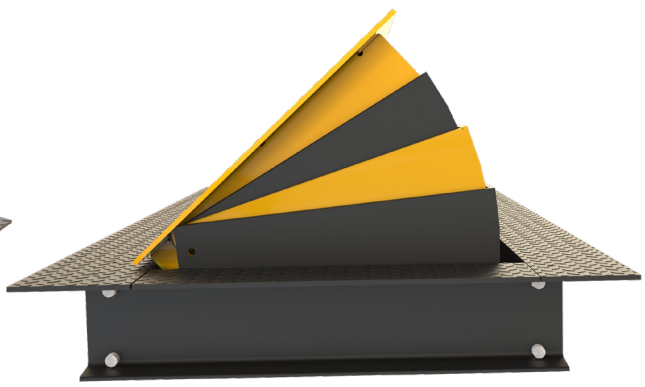
Power	Standard 380V AC 3-Phase 50/60 Hz, 3,3 - 5,5 KvA motor (varies depending on blocker size). Opt. 220V, 110V 1-Phase 50/60 Hz (for some models/sizes only), optionally 24V DC for emergency situations in case of power failure.
Control Pack	24V DC powered and PLC control unit is placed in power unit cabinet. Solenoids 24V DC (Ops.12V DC / 220V AC)
Speed	Standard Operation ~2,5 - 6 sec. (ascend/descend) depending on unit dimensions. Emergency raise up (upwards) by optional hydraulic accumulator ~1,5 sec. and may vary depending on unit dimensions.
IP Rating	IP 55 - Hydraulic Power Unit, IP 67 - Electronics (optional), protection with housing/box, IP 68 - Hydraulic Piston
Crash / Impact Rating	Designed and produced to withstand impacts at M30 (K-4).



			Raising Height 65 - 50 cm	Raising Height 90 - 70 cm
Product Code	Blocker Unit Width (X)	Nr. of Pistons	Dimensions (LxWxD)	Dimensions (LxWxD)
RB 10P_ _ SRF	1000	1	1342 x 1440 x 210	2665 x 1440 x 210
RB 15P_ _ SRF	1500	1	1342 x 1910 x 210	2665 x 1910 x 210
RB 20P_ _ SRF	2000	1	1342 x 2440 x 210	2665 x 2440 x 210
RB 25P_ _ SRF	2500	1	1342 x 2910 x 210	2665 x 2910 x 210
RB 30P_ _ SRF	3000	1	1342 x 3440 x 210	2665 x 3440 x 210
RB 35P_ _ SRF	3500	1	1342 x 3910 x 210	2665 x 3910 x 210
RB 35P_ _ SRF	3500	2	1342 x 3910 x 210	2665 x 3910 x 210
RB 40P_ _ SRF	4000	1	1342 x 4440 x 210	2665 x 4440 x 210
RB 40P_ _ SRF	4000	2	1342 x 4440 x 210	2665 x 4440 x 210
RB 45P_ _ SRF	4500	2	1342 x 4910 x 210	2665 x 4910 x 210
RB 50P_ _ SRF	5000	2	1342 x 5440 x 210	2665 x 5440 x 210
RB 55P_ _ SRF	5500	2	1342 x 5910 x 210	2665 x 5910 x 210
RB 60P_ _ SRF	6000	2	1342 x 6440 x 210	2665 x 6440 x 210
RB 65P_ _ SRF	6500	2	1342 x 6910 x 210	2665 x 6910 x 210

Battery Back-up for Power-off Situation	Battery unit with capacity of min. 100 movements (50 deploy + 50 retract) when fully charged is optionally available.
Axle Load Resistance	50T
Hydraulic Cylinder Unit	Heavy duty, dust sealed electrostatic powder coated 50 mm hydraulic cylinder. Models between 1- 4 meter widths contain a single piston. (Double piston versions are optionally available for models 3,5 & 4 meter widths). Models between 4,5 - 6,5 meter widths contain double pistons. Cylinder unit features a safety valve against leakage and hose failure.
Hydraulic Power Unit	Strengthened industrial pump, 60 lt oil tank capacity with magnetic metal collector and particle filter. Built-in oil level and oil temperature indicator. 70-80 Bar pressure; maximum running pressure is 120 Bar. 10 mt R2 (double wire braided mesh) reinforced hydraulic hose.

System	Down, Up, Emergency and external sensor inputs/outputs (e.g. Loop Detector, Beam Detector, Signalization, Remote Control, etc.). System alerts with an audio signal during lowering and raising operation. A loud siren output in case of alarm or emergency. Can be lowered or raised automatically in case of emergency (User's preference). Can be lowered and raised manually in case of power failure or during the maintenance service with manual pump and manual valve feature. Automatic raise up mode deploys (optionally with synchronized 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.
Power Unit	Motor, hydraulic pump and solenoid valves are contained in an easily accessible hot-dip-galvanized and electrostatic powder painted cabinet with a built-in lock lid. (Opt. Stainless Steel Cabinet)
Blocker Cabinet (underground unit)	All parts are colored with industrial paint with two components. U-shaped profile structure for maximum strength. The blocker and cabinet are designed so that no vehicle crashing effect can displace it after embedded or installed in to the ground.
Blocker Unit (impact blocking unit)	All parts are colored with industrial paint with two components. Hot dip galvanised vehicle pass through surface (top plates). The hinge system is specially designed to have a flattened surface level with the top plate so that vehicles can pass over smoothly and quietly. Top panel where the vehicle pass over is made of 8/9mm thick non-slip surface steel hot-dip galvanised before paint. The system moves up and down with 50mm diameter stainless steel hinges (example: 3 meter blocker contains 7 pieces of 50mm diameter stainless steel hinges). Blocker unit raises 45° angle from the ground level. A top lid is provided for easy access for service and maintenance on the top plate. Accordion type panel closure on front is optionally available.
Control System	**Manuel Control Button Unit:** Provided with an IP67 CRM yellow box including 3 switches for downwards, upwards, stop (optional emergency operation), can stop the blocker motion with the command/signal coming from detector, equipped with built-in LED visual indications and 10 mt cable. **Compatibility with Access Control Systems:** Compatible with any access control system (by third parties). **Optional Unit:** With the optional model "RB CONT.UNIT.V.001" users can monitor the diagnostic functions, can be accessed through LAN, RS485 protocols. System is provided inside a metal cabinet that also indudes the other functional switches like downward, upward,stop, emergency operations. With the built in 124x68 LCD screen, all status of the operation and system diagnostic can be monitored through messaging functions like oil status, loop or beam detectors status, water level inside the cabinet, blocker position according to user preference, any .bmp files can be displayed. The system is driven by the PLC.
Optional Features and Accessories	Traffic lights (red-green), Traffic light Pole, Loop Detector (double/single contact), Beam Detector, 220V, 110V motor, 24V DC for emergency situations in case of power failure, Remote Control (receiver and transmitter are 3 channels), UPS, Photocell Sensor (receiver+ transmitter with 50cm height pole), RB CONT. UNIT.V.001 Control Unit, Intercom, External Buttons, Hydraulic Accumulator for emergency fast raise up (1 piston or 2 pistons systems), Surface Frame (sizes: from 250mm to 1000mm), Oil Cooler, Oil Heater, Heater for electronic components, hot-dip galvanization for cabinet, blocker and impact surface units, double effect hydraulic unit, double speed hydraulic unit, powered audio signal (siren), PLC diagnostic monitor, IP67 box (for PLC, SMPS, connectors etc inside power unit), LED indicator on front, oil level sensor, accordion type front closure.
Installation	Easy Installation with C30 grade concrete and steel rebar reinforcement. Ground leveling and preparation works shall be done before concrete pouring. Allowable bearing value of the ground shall be minimum 1/2 kg/cm^2.

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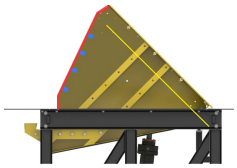
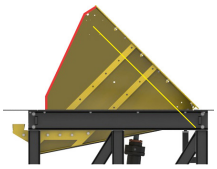
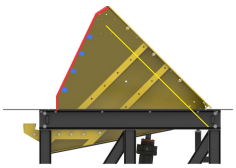
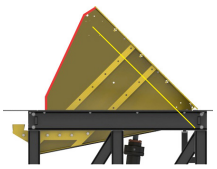
ROAD BLOCKERS

General Technical Specifications (embedded series)

	HRB (Heavy Duty Road Blocker)	RRB (Reinforced Road Blocker)	RB (Residential Type Road Blocker)
			
Standard Features and Built-in Properties			
Axle Load	50 T.	50 T.	40 T.
Panel Thicknesses	Solid 6 mm (at every 35-55 cm)	Solid 6 mm (at every 35-55 cm)	Solid 4 mm panels
Flashing Light	Standard	Optional	Optional
Round Front Panel	Standard	Optional	Optional
Top Plate	10/11 mm	8/9 mm	8/9 mm
Oil Level Sensor	Standard	Optional	Optional
Impact Resistance (Crash Test)	M50 P1 (K-12) tested & certified (HRB 30 R 90). Designed and produced to withstand H30.	Designed and produced to withstand M40 (K-8).	Designed and produced to withstand M30 (K-4).
Front Panel Thickness	30+6 (opt. 10)+3mm	30+6mm	4 (mm)
Speed	2,5 / 6 sn	4 / 6 sn (Opt. 2,5 / 4 sn)	4 / 6 sn (Opt. 2,5 / 4 sn)
380V 3-Phase AC.			
IP 67 manual control button unit 3 functions.			
Emergency button.			
Down/descend button (manual) in case of power off or maintenance.			
PLC control unit.			
24 V DC control.			
24 V DC solenoids.			
Automatic/manual programmable access authorisation.			
Outputs (siren, light, beam, flashes).			
Movement buzzer.			
Special design hinge structure spread on the total width of the blocker without gap.			
Unladen piston connection at top and bottom positions of the blocker enabling free-standing of the piston			
Galvanised sheet metal main body side covers.			
Hot dip galvanized vehicle pass through surface (top plates)			
60 lt oil tank.			
IP 55 - Hydraulic Power Unit, IP 58 - Blocker Cabinet (underground unit), IP 68 - Hydraulic Piston			
Solid impact absorbtion panels.			
Maximum reinforced static construction cabin.			
Service access lid (screwed).			
Reinforced industrial paint with two components in yellow and black colors.			
High visibility with yellow and black diagonal stripes on impact surface.			
Reflective marking.			
Hose for Hydraulic Oil (10mt)			
25 cc hand pump (manual).			
Oil level and temperature indicator.			
Protective valve for oil hose.			
Oil tank with particule filter.			
Oil tank with magnetic metal collector.			
Hot dip galvanised power & control unit cabin			
-5°C / +55°C (Opt. -30°C / +70°C)			
Ground mounting apparatus.			
Easy installation.			

*Design and specifications are subject to change without notice.

	HRB (Heavy Duty Road Blocker)	RRB (Reinforced Road Blocker)	RB (Residential Type Road Blocker)
			

Optional Features
PLC diagnostic monitor (LAN).
Hot dip galvanisation both for cabinet and blocker unit
Hot dip galvanisation for impact surface
Double effect hydraulic movement.
Double speed.
Optional speeds for RRB and RB.
Accumulator for emergency fast raise up (app.1,5sn speed).
Traffic lights (red-green).
Traffic lights (red-green), dia:100mm or 200mm
Loop dedector.
Beam dedector.
Photocell.
Remote control (wireless).
Rain water drainage pump (emergency submersible pump).
Rounded front panel (recommended for residential use for safety).
Ground mounting plate.
Oil level sensor.
1 phase 220 V AC or 24 V DC Motor.
UPS.
Oil cooler.
Oil heater.
Component heater.
IP 67 control box (for PLC, SMPS, connectors, circuit breakers, loop detector (if any), relays) .
Surface frames in optional sizes (25cm to 100cm).
Audio Signal (Siren, powered).

*Design and specifications are subject to change without notice.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NATPET
National Company for Petrochemical Industries
ناتبت
الشركة الوطنية للصناعات البتروكيماوية


DİKKAT !
İYER İNMEDEN
EÇMEYİNİZ.

CAME ÖZAK

M40 Installation

CRASH
CERTIFIED
TESTED

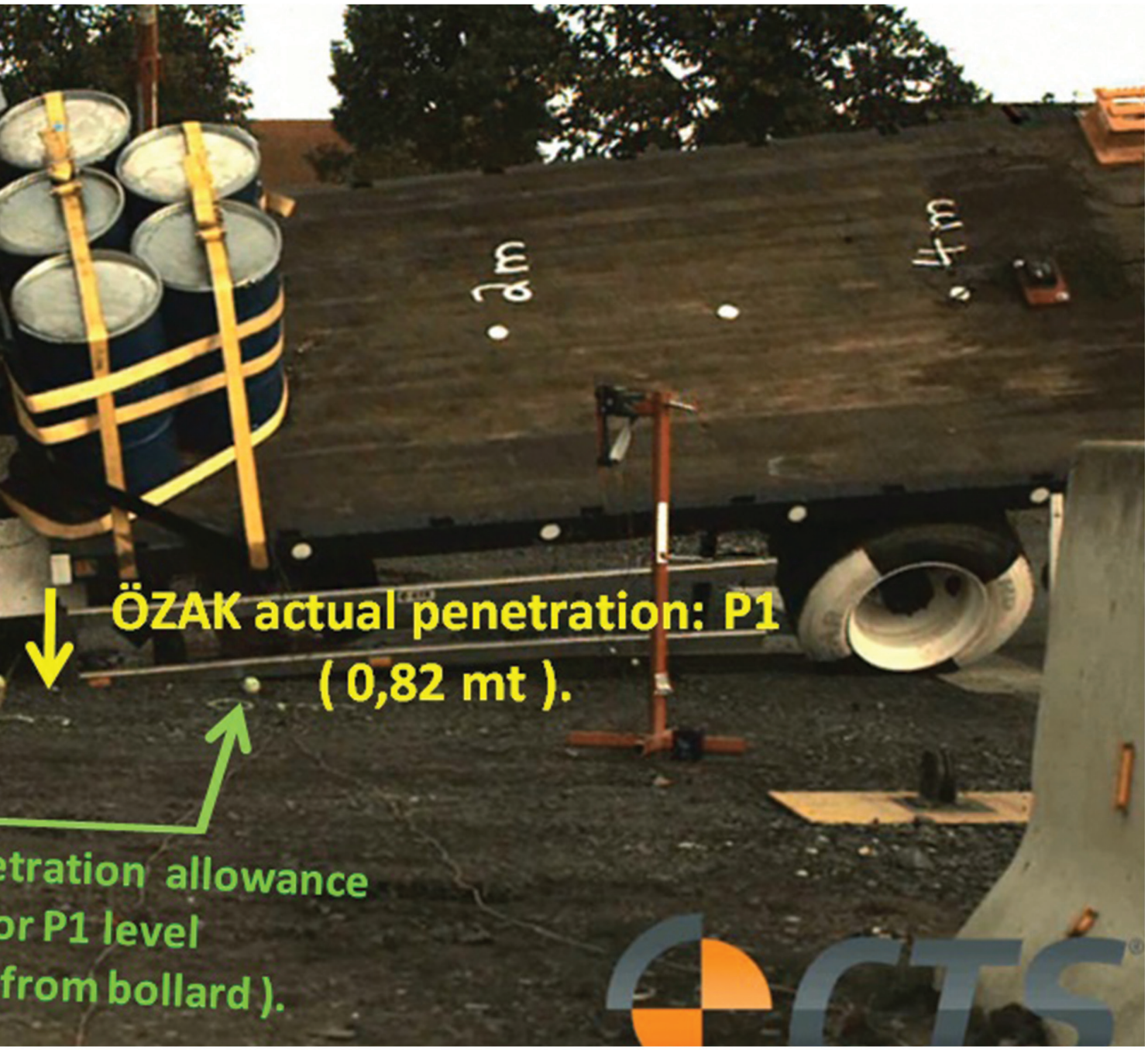
M40 (K8)

ASTM 2656-07

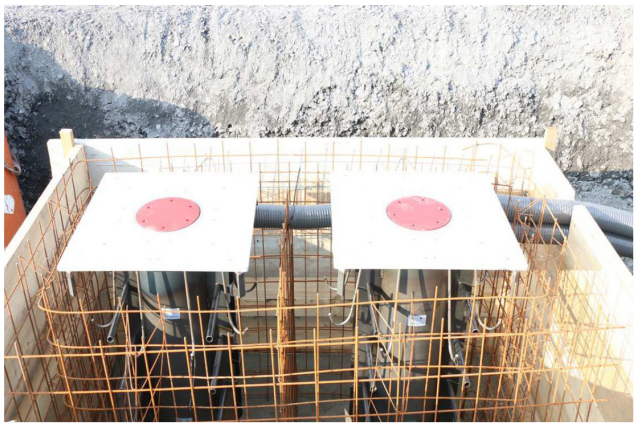
for crash
test video

max. pene
fo
(1 mt


ÖZAK
NR-D
Systeme GmbH
CTS


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


ÖZAK
NR-D
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

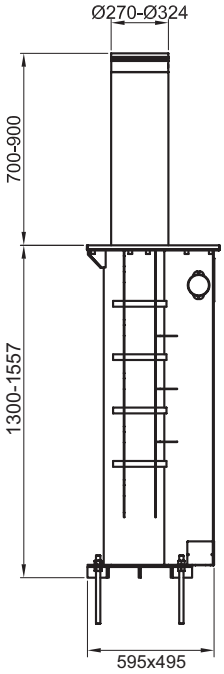
HBD BOLLARD
(Heavy Duty Model)

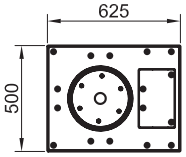
CRASH CERTIFIED TESTED

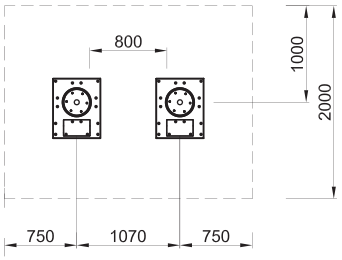
M50 (K12)
M40 (K8)
ASTM F2656-07

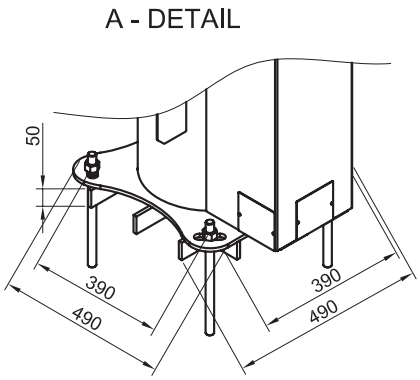


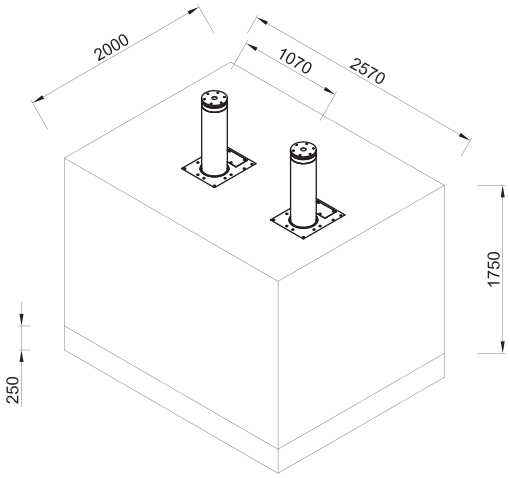
Dimensions (mm)











Technical Features

Power	Standard 380V AC 3-Phase 50/60 Hz, 2,2-5,5 kW motor (depending on the number of bollards in the set to be fed). Opt. 220V, 110V 1-Phase 50/60 Hz (for some models/sizes only), optionally 24V DC for emergency situations in case of power failure.
Control Pack	24V DC powered and PLC control unit is placed in power unit cabinet. Solenoids 24V DC (Ops.12V DC / 220V AC)
Speed	Standard Operation ~2.5 - 5 sec. (ascend/descend) (depending on the number of bollards in the set to be fed). Emergency raise up (upwards) by optional hydraulic accumulator ~1,5 sec.
IP Rating	IP 55 - Hydraulic Power Unit, IP 67 - Electronics (optional), protection with housing/box, IP 68 - Hydraulic Piston
Crash / Impact Rating	M50 (K-12) & M40 (K-8) crash tested and certified according to ASTM 2656-07 (HBD 275 H 90 only).
Axe Load Resistance	70T

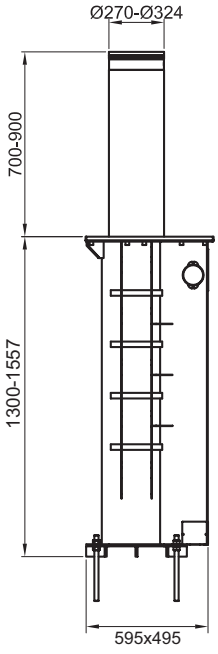
*Design and specifications are subject to change without notice.

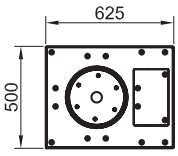
Hydraulic Cylinder Unit	Heavy duty, double acting, electrostatic powder coated, dust sealed hydraulic cylinder.
Hydraulic Power Unit	Strengthened industrial pump, 30-150 lt (depending on the number of bollards in the set to be fed) oil tank capacity with magnetic metal collector and particle filter. Built-in oil level and oil temperature indicators and oil level sensor with low oil level warning. 20-120 Bar (depending on the number of bollards in the set to be fed) pressure (max. 160 bar); 10mt R2 (double wire braided mesh) reinforced hydraulic hose. Interconnecting hoses for multiple bollard installations will be supplied.
System	Down, Up, Emergency and external sensor inputs/outputs (e.g. Loop Detector, Beam Detector, Signalization, Remote Control, etc.). System alerts with an audio signal during lowering and raising operation. A loud siren output in case of alarm or emergency. Can be lowered or raised automatically in case of emergency (user's preference, optional at no cost), programmed to stop as standard. Can be lowered and raised manually in case of power failure or during the maintenance service with manual pump and manual discharge feature. Automatic raise up mode deploys (optionally with synchronized loop detector) the bollard after the vehicle has passed over.
Power Unit	Motor, hydraulic pump and solenoid valves are contained in an easily accessible hot-dip-galvanized and electrostatic powder painted cabinet with a built-in lock lid. (Opt. Stainless Steel Cabinet) Cabinet Dimensions: 1000 x 570 x 1200mm (W x L x H).
Underground Structure	**Bollard Anchorage Casing:** Ø338 / 420 mm steel casing hot dip galvanized and structured for maximum strength. Casing is designed so that no vehicle crashing effect can displace it after embedded or installed into the ground. Ground assembly is supported with bars. Hydraulic hose and cable entry openings enabling to use both of the directions as per hyraulic power unit position and site conditons. Designed for easy access to hydraulic hose and cable connections. Ground mounting plate with installation holes for bolt type easy ground fixing. Includes cut-out for connection of submersible pump for rainwater drainage. **Main Housing:** Ø324 / 406 mm hot dip galvanised steel, structured to provide main housing for the bollard cylinder. Bollard cylinder pivoted with and moves through replaceable 5 rails (inner railing) made of special non-metal and positioned with equal distances from eachother for maximum rigidity and minimum material fraction. Contains the hydraulic cylinder lower connection. Thanks to the bollard anchorage casing, the main housing can be easily replaceable together with the bollard cylinder in case of a damage in any kind.
Above Ground Structure	**Bollard Cylinder (impact blocking unit):** Ø270 and 324 mm hot-dip galvanised steel pipe with 10 mm wall thickness and eccentrically 65-90 mm solid steel (providing higher resistance compared to pipes with 40 mm wall thickness) and composite infilled impact surface , colored with electrostatic powder coating in RAL9006 as standard (other RAL colors are optionally available). Demountable bollard top plate made of aluminium with 360° visible red flashing LED indicators. Furnished with red, white or yellow reflecting strips compliant to "E" standard. Special star-formed, vertical 10 mm solid steel infills for evenly distributed impact absorption. Bollard cylinder pivoted with and moves through replaceable 5 rails (outer railing) made of special non-metal and positioned with equal distances from eachother for maximum rigidity and minimum material fraction. Contains the hydraulic cylinder upper connection. **Road Surface Plate:** 15 mm steel hot-dip galvanised, colored with elctrostatic powder coating in RAL9006 (other RAL colors are optionally available). Easy disassembly by its bolt type connection. Dust sealant / wiper seal.
Battery Back-up for Power-off Situation	Contains battery unit with capacity of 60-100 movements at full charge (deploy/retract) is optionally available (minimum number of movements change according to the number of bollards in the system).
Control System	**Manual Control Button Unit:** Provided with an IP67 CRM yellow box and 10mt cable including 3 switches for downwards, upwards, stop (optional emergency operation), equipped with built-in LED visual indications. **Compatibility with Access Control Systems:** Compatible with any access control system (by third parties).
Optional Features and Accessories	Traffic Lights (red-green), Traffic Light Pole, Loop Detector (double/single antenna), Beam Detector, 220V, 110V motor, 24V DC for emergency situations in case of power failure, Remote Control (receiver and transmitter are 3 channels), UPS, Photocell Sensor (receiver+ transmitter with 50cm height pole), RB CONT. UNIT.V.001 Control Unit, Intercom, External Buttons, Emergency Submersible Pump, Hydraulic Accumulator for Emergency Fast Raise-up, Oil Cooler, Oil Heater, Heater for Electronic Components, Powered Audio Signal (siren),PLC Diagnostic Monitor, IP67 box (for PLC, SMPS, connectors etc inside power unit).
Installation	Easy Installation with C30 grade concrete and steel rebar reinforcement. Possible to install multiple units. In case of multiple unit installation, 1200mm gap between the bollards is recommended for M40 certified installations. For M50 certified installations; minimum 2 bollards shall be installed keeping the gap between bollards at 800 mm.

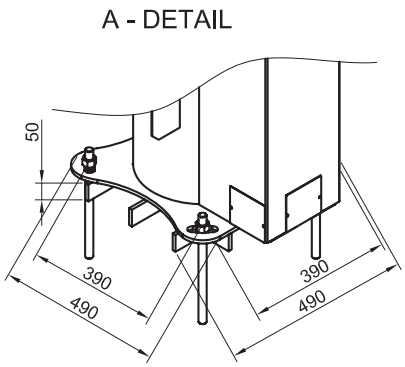
*Design and specifications are subject to change without notice.

RBD BOLLARD
(Reinforced Model)

Dimensions (mm)







Technical Features

Power	Standard 380V AC 3-Phase 50/60 Hz, 2,2-5,5 kW motor (depending on the number of bollards in the set to be fed). Opt. 220V, 110V 1-Phase 50/60 Hz (for some models/sizes only), optionally 24V DC for emergency situations in case of power failure.
Control Pack	24V DC powered and PLC control unit is placed in power unit cabinet. Solenoids 24V DC (Ops.12V DC / 220V AC)
Speed	Standard Operation ~2.5 -5 sec. (ascend/descend) (depending on the number of bollards in the set to be fed). Emergency raise up (upwards) by optional hydraulic accumulator ~1,5 sec.
IP Rating	IP 55 - Hydraulic Power Unit, IP 67 - Electronics (optional), protection with housing/box, IP 68 - Hydraulic Piston
Crash / Impact Rating	Designed and produced to stop a vehicle weighing 6800 kg and travelling with 30 miles/hour according to ASTM 2656-07 standard at M30 (K-4) level.
Axle Load Resistance	50T

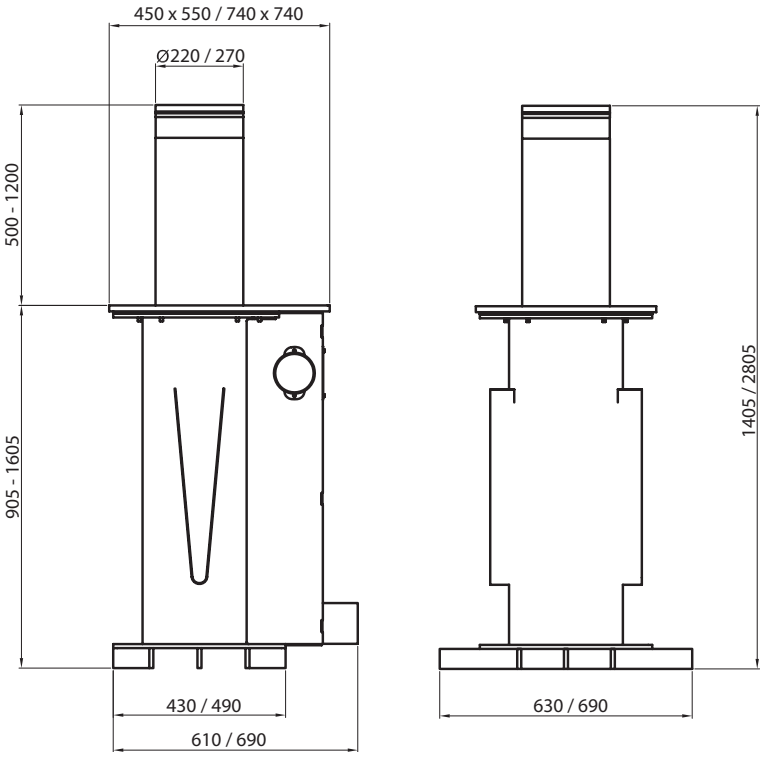
Hydraulic Cylinder Unit	Heavy duty, double acting electrostatic powder coated, dust sealed hydraulic cylinder.
Hydraulic Power Unit	Strengthened industrial pump, 30-150 lt (depending on the number of bollards in the set to be fed) oil tank capacity with magnetic metal collector and particle filter. Built-in oil level and oil temperature indicators with low oil level warning. 20-120 Bar (depending on the number of bollards in the set to be fed) pressure (max. 160 bar); 10mt R2 (double wire braided mesh) reinforced hydraulic hose. Interconnecting hoses for multiple bollard installations will be supplied.
System	Down, Up, Emergency and external sensor inputs/outputs (e.g. Loop Detector, Beam Detector, Signalization, Remote Control, etc.). System alerts with an audio signal during lowering and raising operation. A loud siren output in case of alarm or emergency. Can be lowered or raised automatically in case of emergency (user's preference, optional at no cost), programmed to stop as standard. Can be lowered and raised manually in case of power failure or during the maintenance service with manual pump and manual discharge feature. Automatic raise up mode deploys (optionally with synchronized loop detector) the bollard after the vehicle has passed over.
Power Unit	Motor, hydraulic pump and solenoid valves are contained in an easily accessible hot-dip-galvanized and electrostatic powder painted cabinet with a built-in lock lid. (Opt. Stainless Steel Cabinet) Cabinet Dimensions: 1000 mm x 570 mm x 1200 mm (W x L x H).
Underground Structure	**Bollard Anchorage Casing:** Ø338 / 420 mm steel casing hot dip galvanized and structured for maximum strength. Casing is designed so that no vehicle crashing effect can displace it after embedded installed into the ground. Ground assembly is supported with bars. Hydraulic hose and cable entry openings enabling to use both of the directions as per hyraulic power unit position and site conditons. Designed for easy access to hydraulic hose and cable connections. Ground mounting plate with installation holes for bolt type easy ground fixing. Includes cut-out for connection of submersible pump for rainwater drainage. **Main Housing:** Ø324 / 406 mm hot dip galvanised steel, structured to provide main housing for the bollard cylinder. Bollard cylinder pivoted with and moves through replaceable 5 rails (inner railing) made of special non-metal and positioned with equal distances from eachother for maximum rigidity and minimum material fraction. Contains the hydraulic cylinder lower connection. Thanks to the bollard anchorage casing, the main housing can be easily replaceable together with the bollard cylinder in case of a damage in any kind.
Above Ground Structure	**Bollard Cylinder (impact blocking unit) :** Ø270 and 324 mm hot-dip galvanised steel with 10mm wall thickness and eccentrically 65-90 mm solid steel (providing higher resistance compared to pipes with 27 mm wall thickness) and composite infilled impact surface , colored with electrostatic powder coating in RAL9006 as standard (other RAL colors are optionally available). Demountable bollard top plate made of aluminium with 360° visible red flashing LED indicators. Furnished with red, white or yellow reflecting strips compliant to "E" standard. Special star-formed, vertical 5 mm solid steel infills for evenly distributed impact absorption. Bollard cylinder pivoted with and moves through replaceable 5 rails (outer railing) made of special non-metal and positioned with equal distances from eachother for maximum rigidity and minimum material fraction. Contains the hydraulic cylinder upper connection. **Road Surface Plate:** 15 mm steel hot-dip galvanised, colored with elctrostatic powder coating in RAL9006 (other RAL colors are optionally available). Easy disassembly by its bolt type connection. Dust sealant / wiper seal.
Battery Back-up for Power-off Situation	Contains battery unit with capacity of 60-100 movements at full charge (deploy/retract) is optionally available (minimum number of movements change according to the number of bollards in the system).
Control System	**Manual Control Button Unit:** Provided with an IP67 CRM yellow box and 10mt cable including 3 switches for downwards, upwards, stop (optional emergency operation), equipped with built-in LED visual indications. **Compatibility with Access Control Systems:** Compatible with any access control system (by third parties).
Optional Features and Accessories	Traffic Lights (red-green), Traffic Light Pole, Loop Detector (double/single antenna), Beam Detector, 220V, 110V motor, 24V DC for emergency situations in case of power failure, Remote Control (receiver and transmitter are 3 channels), UPS, Photocell Sensor (receiver+ transmitter with 50cm height pole), RB CONT. UNIT.V.001 Control Unit, Intercom, External Buttons, Emergency Submersible Pump, Hydraulic Accumulator for Emergency Fast Raise-up, Oil Cooler, Oil Heater, Heater for Electronic Components, Powered Audio Signal (siren), PLC Diagnostic Monitor, IP67 box (for PLC, SMPS, connectors etc inside power unit), oil level sensor.
Installation	Easy Installation with C30 grade concrete and steel rebar reinforcement. Possible to install multiple units. In case of multiple unit installation, 1200mm gap between the bollards is recommended.


DİKKAT !
BARİYER İNMEDEN
GEÇMEYİNİZ.


A Blok
Genel Evrak
D Blok

TBD BOLLARD
(Traffic Control Model)

Dimensions (mm)



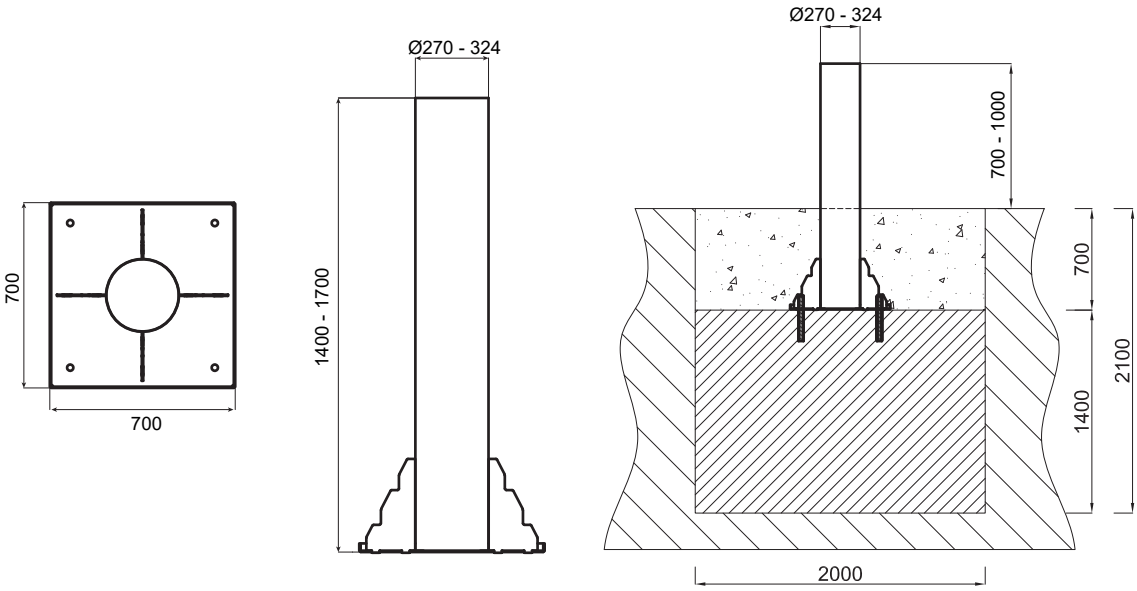
Technical Features

Power	Standard 380V AC 3-Phase 50/60 Hz, 2,2-5,5 kW motor (depending on the number of bollards in the set to be fed). Opt. 220V, 110V 1-Phase 50/60 Hz (for some models/sizes only), optionally 24V DC for emergency situations in case of power failure.
Control Pack	24V DC powered and PLC control unit placed in power unit cabinet. Solenoids 24V DC (Ops.12V DC / 220V AC)
Speed	Standard Operation ~1,8 - 4 sec. (ascend/descend) (depending on the number of bollards in the set to be fed). Emergency raise up (upwards) by optional hydraulic accumulator ~1,5 sec.
IP Rating	IP 55 - Hydraulic Power Unit, IP 67 - Electronics (optional), protection with housing/box, IP 68 - Hydraulic Piston

Crash / Impact Rating	-
Axle Load Resistance	50T
Hydraulic Cylinder Unit	Heavy duty, double acting electrostatic powder coated, dust sealed hydraulic cylinder.
Hydraulic Power Unit	Strengthened industrial pump, 30-150 lt (depending on the number of bollards in the set to be fed) oil tank capacity with magnetic metal collector and particle filter. Built-in oil level and oil temperature indicators with low oil level warning. 20-120 Bar (depending on the number of bollards in the set to be fed) pressure (max. 160 bar); 10mt R2 (double wire braided mesh) reinforced hydraulic hose. Interconnecting hoses for multiple bollard installations will be supplied.
System	Down, Up, Emergency and external sensor inputs/outputs (e.g. Loop Detector, Beam Detector, Signalization, Remote Control, etc.). System alerts with an audio signal during lowering and raising operation. A loud siren output in case of alarm or emergency Can be lowered or raised automatically in case of emergency (user's preference, optional at no cost), programmed to stop as standard. Can be lowered and raised manually in case of power failure or during the maintenance service with manual pump and manual discharge feature. Automatic raise up mode deploys (optionally with synchronized loop detector) the bollard after the vehicle has passed over.
Power Unit	Motor, hydraulic pump and solenoid valves are contained in an easily accessible hot-dip-galvanized and electrostatic powder painted cabinet with a built-in lock lid. (Opt. Stainless Steel Cabinet) Cabinet Dimensions: 1000 mm x 570 mm x 1200 mm (W x L x H).
Underground Structure	**Bollard Anchorage Casing:** Ø284 / 338 mm steel casing hot dip galvanized and structured for maximum strength. Casing is designed so that no vehicle crashing effect can displace it after embedded or installed into the ground. Hydraulic hose and cable entry openings enabling to use either of the three directions as per hyraulic power unit position and site conditons. Designed for easy access to hydraulic hose and cable connections. Ground mounting plate with installation holes for bolt type easy ground fixing. Includes cut-out for connection of submersible pump for rainwater drainage. **Main Housing:** Ø273 / 324 mm hot dip galvanised steel, structured to provide main housing for the bollard cylinder. Bollard cylinder pivoted with and moves through replaceable 5 rails (inner railing) made of special non-metal and positioned with equal distances from eachother for maximum rigidity and minimum material fraction. Contains the hydraulic cylinder lower connection. Thanks to the bollard anchorage casing, the main housing can be easily replaceable together with the bollard cylinder in case of a damage in any kind.
Above Ground Structure	**Bollard Cylinder (impact blocking unit) :** Ø220 / 270 mm stainless steel sleeve on hot-dip galvanised steel with 5 mm wall thickness. Demountable bollard top plate made of aluminium with 360° visible red flashing LED indicators. Furnished with red, white or yellow reflecting strips compliant to "E" standard. Bollard cylinder pivoted with and moves through replaceable 5 rails (outer railing) made of special non-metal and positioned with equal distances from eachother for maximum rigidity and minimum material fraction. Contains the hydraulic cylinder upper connection. **Road Surface Plate:** 15 mm steel hot-dip galvanised, colored with elctrostatic powder coating in (other RAL colors are optionally available). Easy disassembly by its bolt type connection. Dust sealant / wiper seal.
Battery Back-up for Power-off Situation	Contains battery unit with capacity of 60-100 movements at full charge (deploy/retract) is optionally available (minimum number of movements change according to the number of bollards in the system).
Control System	**Manual Control Button Unit:** Provided with an IP67 CRM yellow box and 10mt cable including 3 switches for downwards, upwards, stop (optional emergency operation), equipped with built-in LED visual indications. **Compatibility with Access Control Systems:** Compatible with any access control system (by third parties).
Optional Features and Accessories	Traffic Lights (red-green), Traffic Light Pole, Loop Detector (double/single antenna), Beam Detector, 220V, 110V motor, 24V DC for emergency situations in case of power failure, Remote Control (receiver and transmitter are 3 channels), UPS, Photocell Sensor (receiver+ transmitter with 50cm height pole), RB CONT. UNIT.V.001 Control Unit, Intercom, External Buttons, Emergency Submersible Pump, Hydraulic Accumulator for Emergency Fast Raise-up, Oil Cooler, Oil Heater, Heater for Electronic Components, Powered Audio Signal (siren), PLC Diagnostic Monitor, IP67 box (for PLC, SMPS, connectors etc inside power unit), oil level sensor.
Installation	Easy Installation with C30 grade concrete and steel rebar reinforcement. Possible to install multiple units. In case of multiple unit installation, 1200mm gap between the bollards is recommended.

HBD BOLLARD
(Heavy Duty - Fixed Model)

Dimensions (mm)

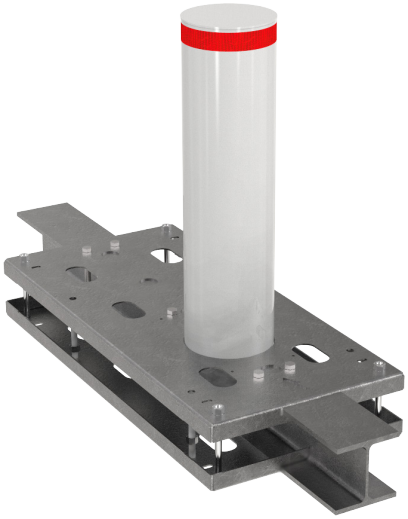


Technical Features

Bollard Type	Anti-terror/high security, fixed/static type.
Impact Resistance	Crash tested and certified according to ASTM 2656-15 M50 (K-12) standard (HBD 275 S 100 model only).
Underground Structure	**Bollard Anchorage** High resistant bollard anchorage, containing 700 x 700 mm anchorage plate with 4 vertical anchorage supports welded to the bollard cylinder (impact blocking unit) and having 4 stud bolts/nuts for easy leveling. Bollard anchorage is strengthened and designed so that no vehicle crashing effect can displace it after installed into the ground.
Above Ground Structure	**Bollard Cylinder (impact blocking unit)** 700 - 1000 mm high from the ground, Ø270 and 324mm hot-dip galvanised steel, colored with electrostatic powder coating in RAL9006 as standard (other RAL colors are optionally available). Furnished with red, white or yellow reflecting strips compliant to “E” standard.
Optional Features and Accessories	Demountable bollard top plate with 360° visible red flashing LED indicators, stainless steel bollard post sleeve, different color options, different product dimensions.
Installation	With 4 bolts for easy leveling and using C30 grade concrete and steel rebar reinforcement. Ground leveling and preparation works shall be done before concrete pouring. Allowable bearing value of the ground shall be minimum 1/2 kg/cm^2 .

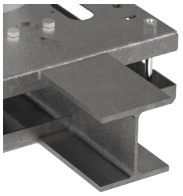
HBD BOLLARD
(Heavy Duty - Fixed - Shallow Mount) Model

CAME ÖZAK

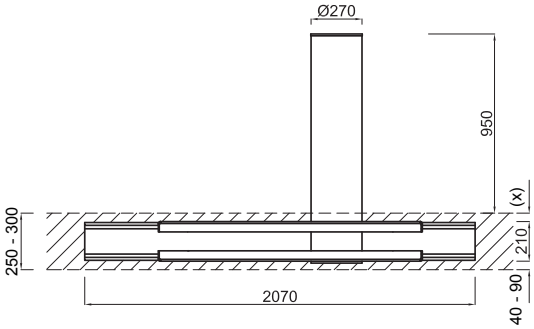


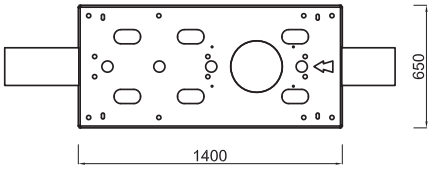
CRASH CERTIFIED TESTED

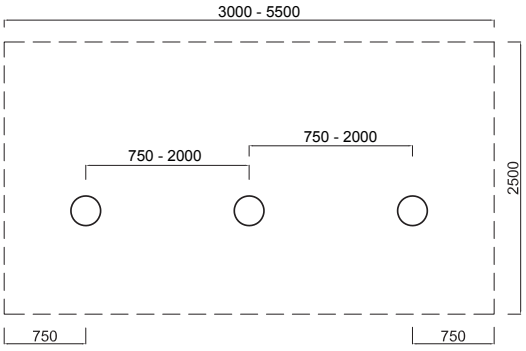
PAS 68 (N3)
IWA 14 (N3C)
ASTM 2656 (C740)

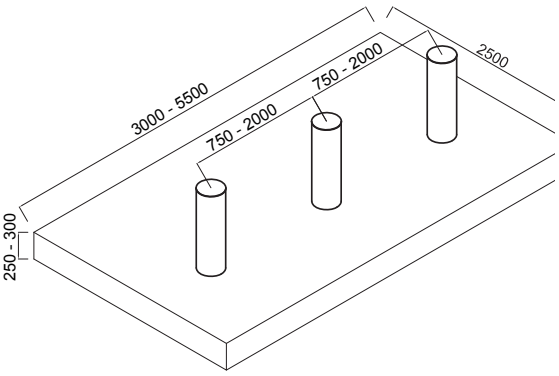


Dimensions (mm)









Technical Features

Bollard Type	Anti-terror/high security, shallow mount type (bollard underground anchorage height of 210mm only).
Impact Resistance	Crash tested and certified according to; IWA 14-1:2013 Fixed Bollard V/7200[N3C]/64 PAS68:2013 Fixed Bollard V/7500[N3]/64 ASTM 2656-18 C740/7200 standards (HBD 275 S 95/8 SRF model).
Underground Structure	**Bollard Anchorage** High resistant bollard anchorage with 2 anchorage plates having gaps for easy and overall penetration of the concrete, strengthened with 200mm thick “HEB” beams on impact direction and having 4 stud bolts/nut for easy levelling. Providing shallow mounting with bollard underground anchorage height of 210mm only. Underground element connections are extra strengthened by fastening wedge type, 10.9 grade bolted and welded together at the same time. Bollard post is hot-dip galvanised, strengthened and designed so that no vehicle crashing effect can be displace it after installed into the ground.
Above Ground Structure	**Bollard Cylinder (impact blocking unit)** 950mm high from the ground, Ø270 mm hot-dip galvanized steel in RAL9006 color as standard (other RAL colors optionally available). Furnished with red, white or yellow reflecting strips compliant to “E” standard.
Optional Features and Accessories	Demountable bollard top plate with 360° visible red flashing LED indicators, stainless steel bollard post sleeve, different color options, different product dimensions.
Installation	With 4 bolts for easy leveling and gaps for easy and overall penetration of the concrete easy installation using C30 grade concrete and steel rebar reinforcement. Ground leveling and preparation works shall be done before concrete pouring. Allowable bearing value of the ground shall be minimum 1/2 kg/cm^2 .

*Design and specifications are subject to change without notice.

FIXED BOLLARD

Technical Features

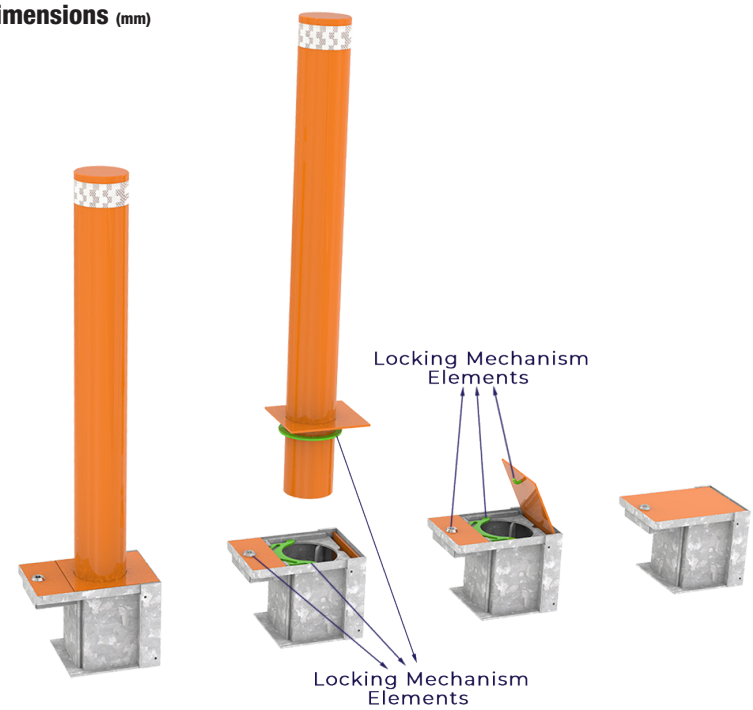
Operation	Fixed, non-retractable
Diameter	220mm - 324mm (other diameters available optionally)
Height (Above Ground)	500-1200mm (other heights available optionally)
Installation	Ground embedding, easy fixed.
Options and Accessories	Different material and colour options, 360° visible LED indicator.

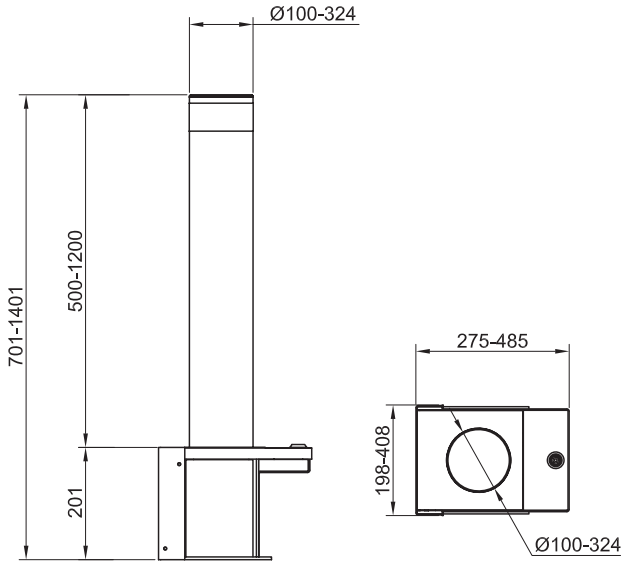
***Shape and sizes are for reference only. Fixed bollards can be produced identically with your retractable bollard or are available in any other specific shape and dimension.**

REMOVABLE BOLLARD

CAME ÖZAK

Dimensions (mm)





Technical Features

Bollard Type	Removable, traffic control type
Underground Structure	Hot-dip galvanised steel in reinforced structure.
Above Ground Structure	Hot-dip galvanised and electrostatic powder coated in RAL colors steel (opt. 304 grade stainless steel) bollard body and lockable road level lid. 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. Furnished with red, White or yellow reflecting strips compliant to “E” standard.
Locking Mechanism	Hot-dip galvanised steel, special design sliding type locking mechanism. It is impossible to unlock the locking mechanism without its own key. Locking mechanism fastens the bollard body when it is in use and the road level lid when the bollard body is not in use.
Optional Features and Accessories	360º visible red flashing indicators, different product dimensions and various material options.
Installation	Easy installation, leveling with 4 bolts and using steel rebars and concrete.

Fixed bollard versions also identical with removable bollards are available upon request.

*Design and specifications are subject to change without notice.

BOLLARDS

General Technical Specifications (hydraulic series)

	HBD (Heavy Duty Bollard)	RBD (Reinforced Bollard)	TBD (Traffic Bollard)
			

Standard Features and Built-in Properties			
Axle Load	70 T.	50 T.	50 T.
Wall Thickness	10 mm + 65/90 mm special star formed solid beams of 10 mm thickness (providing higher resistance compared to pipes with 40 mm wall thickness)	10 mm + 65/90 mm special star formed solid beams of 5 mm thickness (providing higher resistance compared to pipes with 27 mm wall thickness)	5 mm
Oil Level Sensor (PLC)	Standard	Optional	Optional
Impact Resistance Crash Test	M50 (K 12) & M40 (K 8) tested&certified (HBD 275 H 90).	Designed and produced to withstand M30 (K4)	-
Ground Assembly Supporting Bars	Standard	Standard	V form
Finish	Electrostatic powder coated.	Electrostatic powder coated.	Stainless steel sleeve.
Speed	2.5 - 5 sec. (single unit installation)	2.5 - 5 sec. (single unit installation)	1,8 - 4 sec. (single unit installation)
380V 3-Phase AC.			
IP 67 manual control button unit 3 functions.			
Emergency button.			
Down/descend valve (manual) in case of power off or maintenance			
Double acting hydraulic movement.			
PLC control unit.			
24 V DC control.			
24 V DC solenoids.			
Automatic/manual programmable access authorisation.			
Outputs (siren, light, beam, flashes).			
Movement buzzer.			
Hot dip galvanised steel main body.			
Easy accesibility for servicing.			
Aluminium top plate with 25mm thickness.			
360 °C with high visibility flashing LED's in red.			
Reflecting strips compliant to "E" standard, red/white/yellow colors.			
Hose for Hydraulic Oil (10mt)			
Hoses for Hydraulic Oil (for interconnection in case of multiple installations).			
25 cc hand pump (manual).			
Oil level and temperature indicator.			
45 / 60 lt oil tank capacity (depending on the number of bollards in case of multiple installations).			
Oil tank with particule filter.			
Oil tank with magnetic metal collector.			
Hot dip galvanised power & control unit cabin.			
-5°C / +55°C (Opt. -30°C / +70°C)			
Easy installation.			
IP 55 - Hydraulic Power Unit, IP 58 - Underground Structure, IP 68 - Hydraulic Piston			

	HBD (Heavy Duty Bollard)	RBD (Reinforced Bollard)	TBD (Traffic Bollard)
			

Optional Features
PLC diagnostic monitor (LAN).
Accumulator for emergency fast raise up (app.1,5sn speed).
Traffic lights (red-green), dia:100mm or 200mm
Traffic light pole.
Loop dedector.
Beam dedector.
Photocell.
Remote control (wireless).
Rain water drainage pump (emergency submersible pump).
Oil level sensor.
1 phase 220 V AC or 24 V DC Motor.
UPS.
Oil cooler.
Oil heater.
Component heater.
IP 67 control box (for PLC, SMPS, connectors, circuit breakers, loop detector (if any), relays) .
Different materials and colors.
Audio Signal (Siren, powered).


ROTOKOL OTOLARI
HARİÇ

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