

INDUSTRIAL GROUP





CRASH TESTED HRR-HS-CT SERIES ROAD BLOCKER

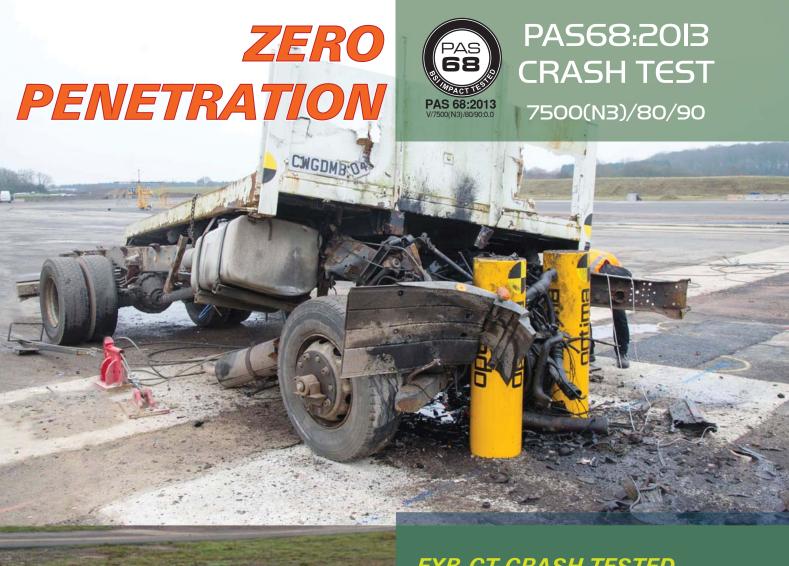
Road blockers are one of the best solutions to minimize the destruction of the suicide truck bombings. The truck full of explosives is stopped right at the entrance of the site, therefore the explosion harm is kept far away from the human. At this point, the question is whether the road blocker will resist the impact, if it does, what is the penetration in meters and does it still keep on working as there may be a follow-on another suicide bomb truck.

Optima Engineering realized this crash test on 20 December 2013 in a certified laboratory in England. The result is full success. A truck weighing 7600kg, N3 type, moving 80.8 km per hour speed, crashed with 90 degrees to Optima road blocker and the vehicle is fully destroyed. The blocker was still functioning after the impact, therefore, ready to stop the follow-on second suicide bomb truck. The penetration is -1.36meters (minus one point thirtysix) which means the vehicle was stopped 1.36mt before the blocker.

Consequently, with this crash test, Optima Engineering proved that the blockers manufactured meet what they are designed for, i.e., stops (even 1.36mt before) a truck weighing 7600kg and moving 80.8 km/hr and keep on functioning even after the impact. Optima blockers successfully awarded PAS68:2010 P1 grade with the details V/7500N3/80/90:0.0/6.15

CRASH TEST PAS68:2010





FXB-CT CRASH TESTED FIXED BOLLARDS

OPTIMA crash tested fixed bollards are designed for high security army, industrial, governmental and commercial buildings, sites, complexes etc. If there is a threat of vehicle attack, crash tested fix bollards are one of the best and most secure solutions. Even though the attack is from high tonnage vehicles with high speeds, it is not possible for the vehicle to keep on moving forward anymore beyond the bollards.

Optima FXB-CT Crash Tested Fixed Bollards are designed for PAS68:2013 crash rating. Actual crash test is realized in 19 December 2016. Optima bollard is tested by a N3 type truck weighing 7500 kg and travelling at a speed of 80km/hr

Optima crash tested bollard destroyed the vehicle and it was still functioning after the impact. Therefore Optima crash tested bollards successfully achieved and certified PAS 68:2013 V/7500[N3]/80/90 zero penetration (This means that M50-P1 "zero penetration" according to American standard).



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BOLLARD CRASH TEST PAS68:2013

ASTM F2656-15 CRASH TESTED HRB-PROTECTOR SERIES RISING BOLLARD

OPTIMA crash tested HRB-Protector series rising bollards are especially designed for entrances that have very high security requirements to keep vehicle access under control. In addition to the control of vehicle access in high security applications, if there is a threat of vehicle attack from high tonnage vehicles with high speeds, it is not possible for the vehicle to keep on moving forward anymore beyond the bollards as crash tested bollard destroy the vehicle completely.

OPTIMA crash tested HRB-Protector series rising bollards are designed for ASTM F2656-15 crash rating. Actual test was fully successful and the product is certified according to ASTM F2656-15 (grade P1, zero penetration).



ASTM F2656-I5 CRASH TEST

7500(N3)/80/90

ZERO PENETRATION





The test which is actualized in England in 2013, is done by a truck which weighs 7500 kg, travelling at a speed of 82.6 km/hr speed. The vehicle is completely destroyed and immobilized. Naturally, the engine was not running after impact. The bollard was still functioning after the test, therefore a following vehicle could not be able to pass. After the test, there was 0 (zero) degree "foundation rotation". If Optima crash tested fixed bollards are placed side by side with 1.2 mt outer surface distance, a full protection of the site is definitely guaranteed. Beside being that strong, Optima bollards already have an aesthetical appearance with many color options.



BOLLARD





CRASH TESTED HRB-HS-CT SERIES RETRACTABLE BOLLARD

Optima manufactures various types of bollards including hydraulic retractable and fixed ones. Optima hydraulic retractable bollards are designed to protect the perimeters of any industrial, civil, army etc. building or site. Optima crash tested hydraulic retractable bollards are tested to PAS68:2010 standards and achieved a full success at this test. The test is done by two bollards placed 1.2mt away.

The test which is actualized in England in 18 December 2013, is done by a truck which weighs 7500 kg, travelling at a speed of 80 km/hr speed. The vehicle is completely destroyed and immobilized. Naturally, the engine was not running after impact. The bollard was still functioning after the test, therefore a following vehicle could not be able to pass. After the test, there was 0 (zero) degree "foundation rotation". Besides being that strong, Optima bollards already have an aesthetical appearance with many color options.

Consequently, Optima hydraulic retractable bollards successfully awarded PAS68:2010 classification with the details V/7500N3/80/90:3.5/22.8.



PAS68:2010 CRASH TEST 7500(N3)/80/90



CRASH TEST PAS68:2010



ZERO PENETRATION

IWA 14-1:2013 CRASH TESTED CANTILEVER SLIDING GATE

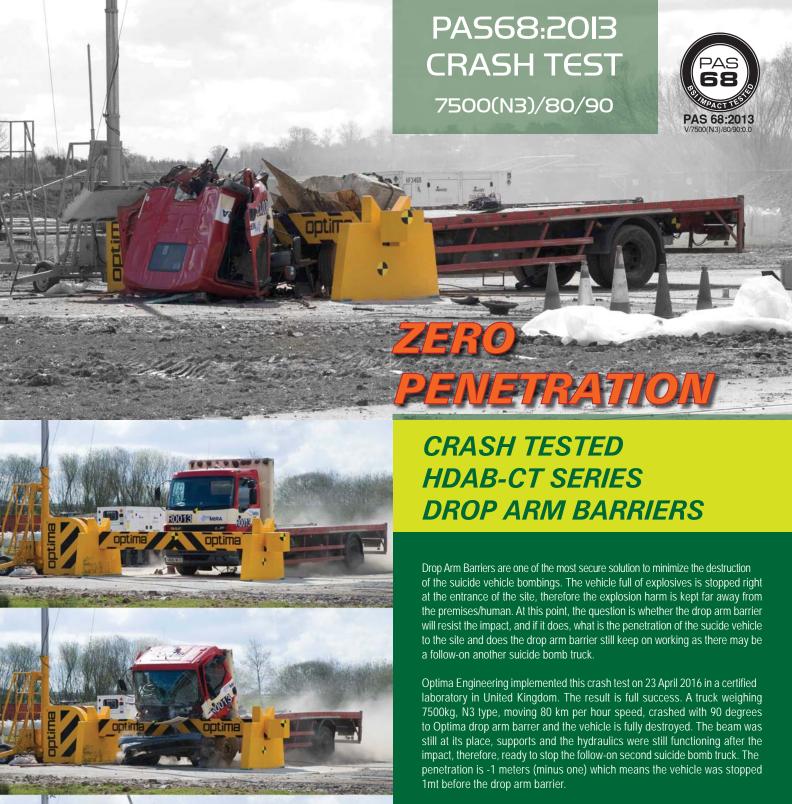
Optima SG-CT series crash tested automatic cantilever sliding gates are designed for high traffic military, commercial and industrial applications. This product is crash tested on 22 June 2016 and successfully achieved a performance classification of IWA14-1:2013 Gate V/7200(N3C)/80/90:0.0. Crash tested cantilever sliding gate height is 2.5m and the gate has 4,5m opening width. OPTIMA designs and manufactures gates up to 3m heights. There is not a standard length for cantilever gates but gates up to 12m have already been designed and manufactured. As the gate is cantilever, there is not a track on the road surface which slows down the traffic flow. Similarly there are no wheels under the cantilever door. All the gate is covered by galvanised sheet metal. There are adjustable mechanisms which keep the door vertical and in line. Also these adjustable mechanisms reduce noise and vibration during operation. This sophisticated design enables the complete system move smoothly and exactly vertical. Buttresses are fixed to the ground by steel anchors. Both crash tested cantilever sliding gates and the buttresses are sand blasted, primer coated and then painted to yellow with black stripes. There is a "STOP" sign in the middle of the gate.

When used with OPTIMA ESGO 4000, sliding gates with a weight up to 5000kg can be operated. With the help of the advanced electronics any type of speed control like slow start, fast linear motion and slow stop, can be achieved. This facility brings increased vehicle passing capacity without losing any degree of security.



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SLIDING GATE
CRASH TEST IWA14-1:2013



Consequently, with this crash test, OPTIMA drop arm barriers is classified as PAS 68:2013 Rising Gate V/7500[N3]/80/90:0.0/2.1 and it is proven that it stops (even 1mt before) a truck weighing 7500kg and moving 80 km/hr and keep on functioning even after the impact.

DROP ARM BARRIERS CRASH TEST PAS68:2013



Roadblockers and bollards are all designed for gates or entrances of buildings/campuses or sites. However, this is a case where the entire perimeter except the gates, is assumed to be safe enough. Suicide bombing vehicle attacks may also come from any possible place from the perimeter except the gates. As long as the suicide bombing truck is able to find any kind of runway to speed up, inner part of the site is under threat. The only solution to overcome this threat is having an OPTIMA PAS68:2013 Anti-Vehicle Crash Tested Fencing System.

The main components of the fencing system are static bollards and tensioned steel ropes running on top of all the bollards. Diameter of the bollards is 325mm and the height above the ground is 1200mm. On the outer side of the bollards (threat side) near the top, there is a flat metal part. This part is designed to gain the maximum amount of inertia to resist the impact load on the fencing. The material of both the bollards and the flat metal are high strength special type steel. Bollards are also buried under the ground level and they are connected to each other using sophisticated engineering methods which guarantees %100 safety. There are 4 lines of high strength steel ropes on outer top side of the bollards for extra safety.

Civil works for the OPTIMA AVF SERIES ANTI-VEHICLE FENCING SYSTEM is very easy and economic. There is no need for special drilling equipments or time consuming form and rebar placing.

Optima Engineering realized the crash test of Optima Anti-Vehicle Fencing System to BSI PAS68:2013 on 21 December 2015, in U.K. The test is a full success. The truck moving 80km/hr. with a weight of 7500kg/hr. is fully destroyed. No follow-on second truck can pass either. Therefore, with this crash test, Optima Anti-Vehicle Fencing System is awarded PAS68:2013 crash rating and classified as PAS 68:2013 Fence V/7500[N3]/80/90:0.0/15.6



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FENCE CRASH TEST PAS68:2013



SECURITY SYSTEMS Fencing Systems

• AVF Series Crash Tested Anti-Vehicle Fencing Systems



AVF Series Crash Tested Anti-Vehicle Fencing Systems

Fencing Systems

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Optima Engineering, with its 15 years experience in crash tested high security systems, designs, manufactures and installs high security, crash tested, heavy duty fencing systems. Optima Anti-Vehicle Fencing (AVF) series products are suitable for borders, army, industrial (all kinds of industries like oil, chemical etc.), governmental (palaces, offices, ministries, stadiums, etc.) and commercial buildings. As proved by the PAS 68:2013 Fence V/7500[N3]/80/90:0.0/15.6 crash test, Optima AVF Series crash tested fences guarantee a %100 percent safety for any kind of suicide vehicle bombing attempts.





Surface Mount Hydraulic Roadblockers



Hydraulic Rising Roadblockers



Mobile Hydraulic Roadblockers



Pneumatic Rising Roadblockers



Shallow Mount Hydraulic Roadblockers

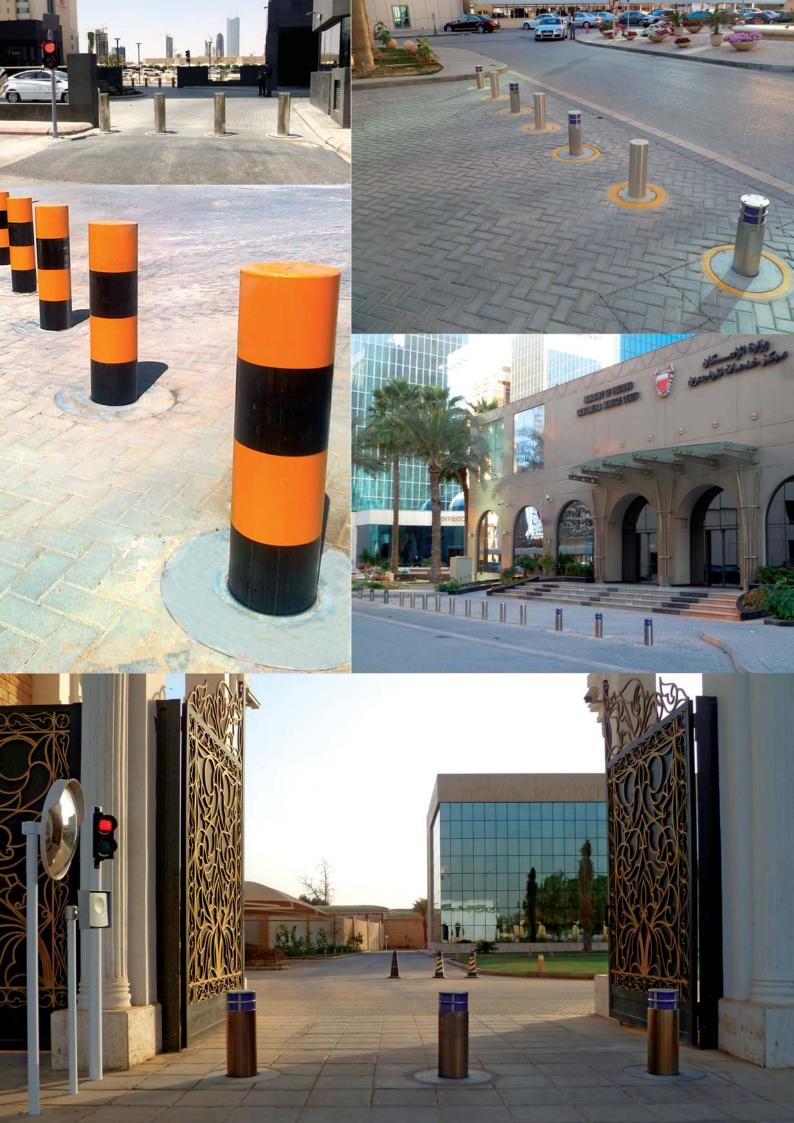
SECURITY SYSTEMS Road Blockers

- Hydraulic Rising Roadblockers
- Surface Mount Hydraulic Roadblockers
- Shallow Mount Hydraulic Roadblockers
- Mobile Hydraulic Roadblockers
- Pneumatic Rising Roadblockers

Road Blockers

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Road blockers are designed especially for entrance points which have a threat of vehicle attack or for the ones that have high security requirements. If there is a threat of vehicle attack in addition to the control of vehicle access in high security applications, hydraulic road blockers are the unique solution and the most secure systems. Even though the attack is from high tonnage vehicles with high speeds, it's not possible for the vehicle to keep on moving because of the damage given to front, wheels and the bottom of the vehicle. Optima road blockers are designed to K12 & PAS68:2010 standards. Finite element model analyses are available upon request. Drive unit is electro-hydraulic, but in case of power failure road blocker can be lowered or lifted manually with the help of hand pump. Typical raise/lower time is 3 seconds. In case of emergency, raise/lower time can be as low as 1.5 seconds. With the help of PLC (programmable logic control), raise/lower function can be achieved by every kind of card readers, biometric readers like fingerprint or hand shape, radio control, on/off key switch etc. Besides, safety accessories like photocells, inductive loop detectors, flashing lights or red/green traffic lights can be integrated to the system very easily. Typical weight of a road blocker is 2-2.5 tons (depending on road blocker type).





Hydraulic Rising Bollards



Pneumatic Rising Bollards



Removable Road Bollards



Crash Tested Fixed Bollards



Chain & Flanged Fixed Bollards



Fix Bollards



Automatic Bollards



Semi-Automatic Bollards



Triangular Flanged Fixed Bollards

SECURITY SYSTEMS Bollards

- Hydraulic Rising Bollards
- Pneumatic Rising Bollards
- Removable Road Bollards
- Crash Tested Fixed Bollards
- Fix Bollards
- Automatic Bollards
- Semi-Automatic Bollards
- Chain & Flanged Fixed Bollards
- Triangular Flanged Fixed Bollards

Bollards

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Optima rising bollards are designed for high security vehicle entrances, army, industrial, governmental and commercial buildings or streets which are closed to vehicle traffic between certain hours of the day. Both "High Security" and "Commercial" type Optima Rising Bollards have the same strength, whereas "Commercial" bollards are shorter than the "High Security" ones. The thickness of the bollard, the underground construction, the self-lubricating sealing and guide ring made of special plastic types, hydraulic piston, flange thicknesses and diameters, hydraulic connections, installation and drainage procedures etc. are all the same. Optima hydraulic and pneumatic rising bollards are designed to K12 & PAS68:2010 standards. Finite element analysis can be supplied upon request. Typical raise/lower time is 3 seconds but it is possible to design the system to raise/lower in 1.5 seconds. . With the help of PLC (programmable logic control), raise/lower function can be achieved by every kind of card readers, biometric readers like fingerprint or hand shape, radio control, on/off key switch etc.





Hydraulic Drop Arm Barriers (Crash Tested)





Hydraulic Arm Barriers

Electromechanical Barriers



Manual Drop Arm Barriers (Crash Rated)





Chain Barriers





Manual Personal Parking Barrier

Automatic Personal Parking Barrier

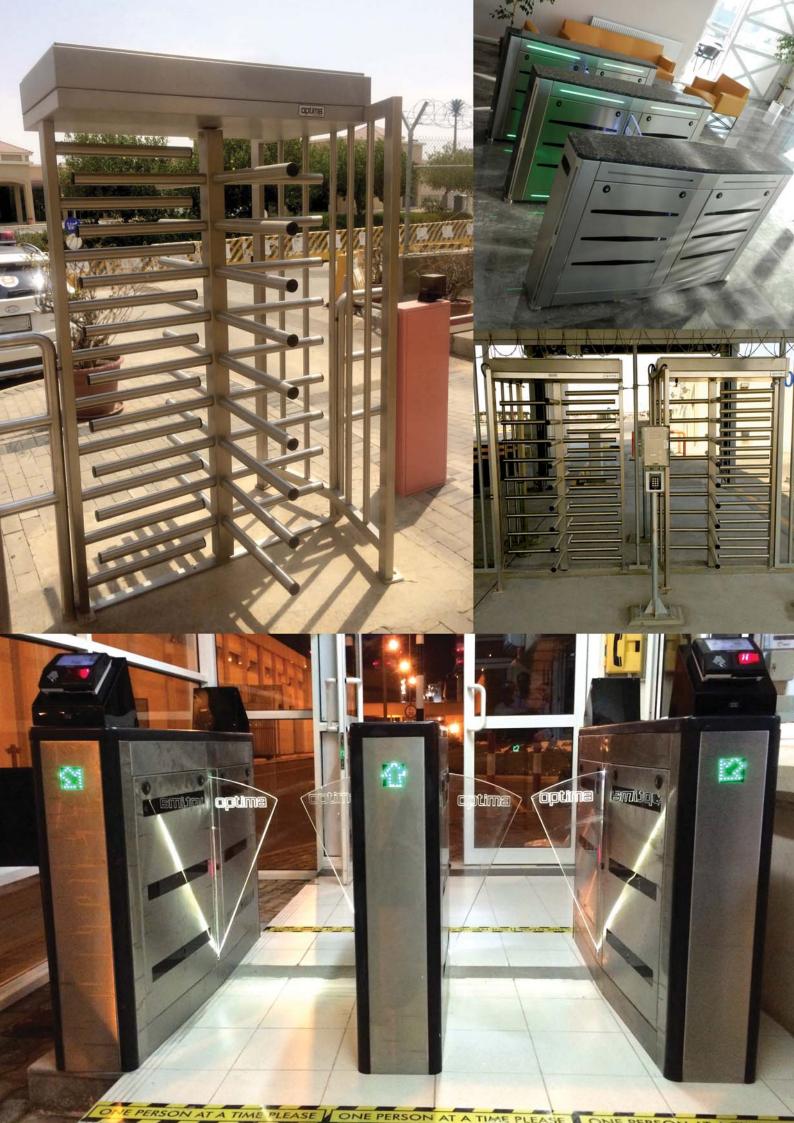
SECURITY SYSTEMS Barriers

- Hydraulic Arm Barriers
- Hydraulic Drop Arm Barriers (Crash Tested)
- Manual Drop Arm Barriers (Crash Rated)
- Electromechanical Barriers
- Manual Barriers
- Chain Barriers
- Manual Personal Parking Barrier
- Automatic Personal Parking Barrier

Barriers

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Optima designs and manufactures various types of barriers. HDAB series hydraulic drop arm barriers are hydraulically driven and strongest barriers of the line. HAB series hydraulic arm barriers are high security arm barriers, still with steel arms. B Series arm barriers are designed for the controlled flow of traffic, especially for the parking places. All Optima barriers as PLC controlled and at the same time Frequency Controller is used in all B series barriers.





RAG100 Series Motorized Swing Gate

F100 Series Turnstiles



HG100 Series Hidden Speed Gate



C100 Series Turnstiles



F100C Series Turnstiles



F100D Series Turnstiles





F100G Series Turnstiles



M100 Series Motorized Swing Gate



V200 Series Turnstiles

V400 Series Turnstiles



V200D Series Turnstiles







HH100 Series Turnstiles



SWG Series Manual Swing Gates



V100WM Series Turnstiles



V100 Series Turnstiles



V100D Series Turnstiles

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SECURITY SYSTEMS Turnstiles

- C100 Series Turnstiles
- F100 Series Turnstiles
- F100C Series Turnstiles
- F100D Series Turnstiles
- F100G Series Turnstiles
- F100SDR Series Automatic Revolving Door
- HH100 Series Turnstiles
- HG100 Series Hidden Speed Gate
- M100 Series Motorized Swing Gate
- RAG100 Series Motorized Swing Gate
- SWG Series Manual Swing Gate
- V100 Series Tripod Turnstiles
- V100D Series Tripod Turnstiles
- V100 Wall Mount Series Tripod Turnstiles
- V200 Series Tripod Turnstiles
- V200D Series Tripod Turnstiles
- V300 Series Tripod Turnstiles
- V400 Series Tripod Turnstiles

<u>Turnstiles</u>

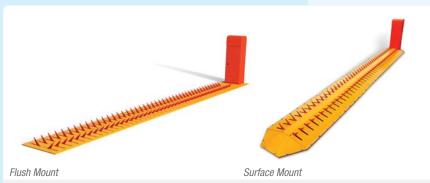
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Optima designs and manufactures various types of Full-Height and Half-Height Turnstiles. F100 Series Full-Height Turnstiles are the unique solution for unmanned entrances with high level of security requirements. V Series turnstiles are designed for the applications where the primary concern is narrow space and most economical solution. Only one person is permitted to pass on each turn of turnstile. All Turnstiles are controlled by PLC.





Hydraulic Tyre Killers



Electromechanical Tyre Killers



Electromechanical Tyre Killers With Arm Barriers



Surface Mount Type Mechanical Tyre Killers



Flush Mount Type Mechanical Tyre Killers

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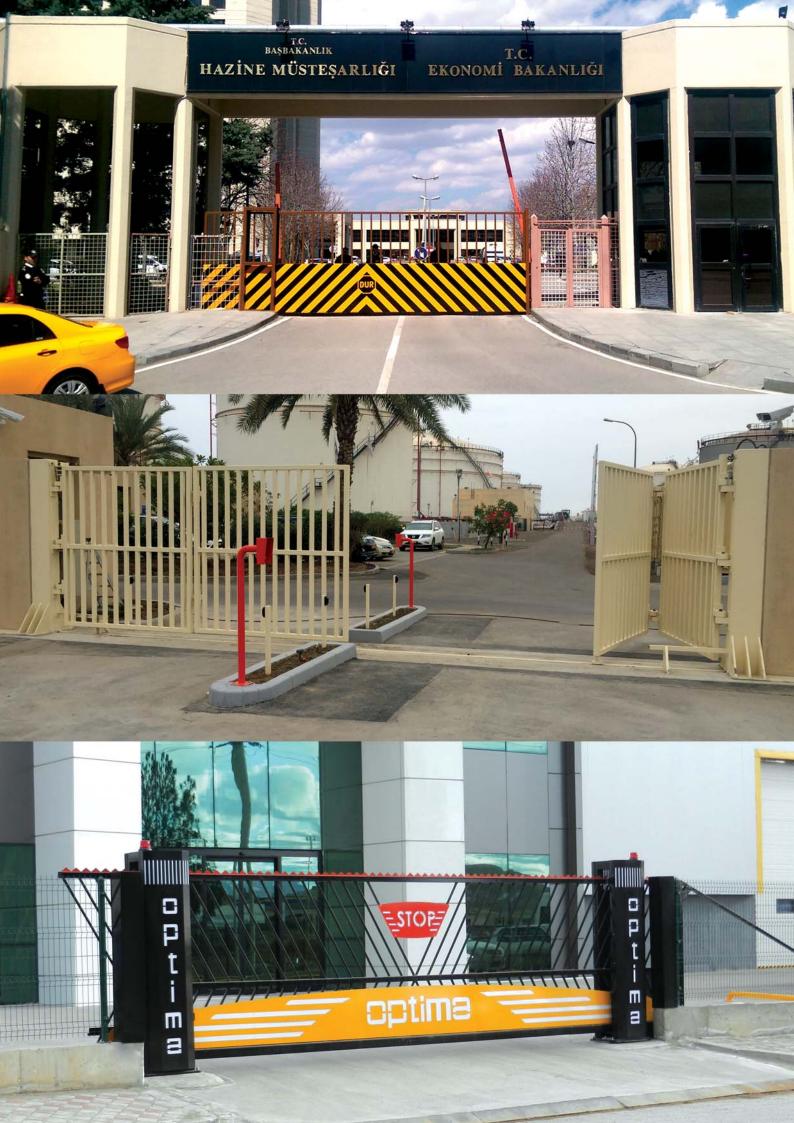
SECURITY SYSTEMS Tyre Killers

- Hydraulic Tyre Killers
- Electromechanical Tyre Killers (Surface & Flush Mount Types)
- Electromechanical Tyre Killers With Arm Barriers (Surface & Flush Mount Types)
- Mechanical Tyre Killers
 (Surface & Flush Mount Types)

Tyre Killers

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Optima Tyre Killers are designed especially for entrance points which have a threat of vehicle attack or for the ones that have high security requirements. If there is a threat of vehicle attack in addition to the control of vehicle access in high security applications, tyre killers are one of the most secure systems. Even though the attack is from high tonnage vehicles with high speeds, it's not possible for the vehicle to keep on moving because of the damage given to tyres and the rim of the vehicle.





SG Series Heavy Duty Sliding Gates



SG-CT Series Crash Rated Sliding Gates



SWG Series Swing Gates



CG Series Heavy Duty Cantilever Gates



FSG Series Folding Speed Gates



Bi_Folding Gates



Pedestrian Security Doors/Gates



ESGO 4000 Heavy Duty Electromechanical Sliding Gate Operators



SWGO-1000 Electro-Hydraulic Swing Gate Operators

SECURITY SYSTEMS Gates & Operators

- SG Series Heavy Duty Sliding Gates
- SG-CT Series Crash Rated Sliding Gates
- CG Series Heavy Duty Cantilever Gates
- SWG Series Swing Gates
- FSG Series Folding Speed Gates
- Bi_Folding Gates
- PSG Pedestrian Security Doors
- ESGO4000 Heavy Duty Electromechanical Sliding Gate Operators
- SWGO-1000 Electro-Hydraulic Swing Gate Operators

Gates & Operators

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SG Series OPTIMA sliding gates, Optima FSG Series Folding Speed Gates, Bullet Proof Sliding Gates and Crash Rated sliding Gates are designed for high security entrance points, military, embassy, commercial and industrial applications. OPTIMA designs and manufactures gates according to client request are designed for high traffic, military, commercial and industrial applications.

Optima electronically sliding gate operators are designed for high traffic, commercial and industrial applications. Sliding Gate operator is suitable for doors which weigh up to 4000 kg. Folding Gate operators are working by electro-hydraulic. The operators are completely heavy duty. Control electronics is microprocessor PLC controlled.

AGH-10T SERIES ARMORED GUARD HOUSES

AGH Series Optima Armored Guard Houses are designed especially for places which have a high threat of terrorist attack, suicide vehicle attack or for the ones that have high security requirements. Optima armored guard house is secure to attacks with machine gun bullet; full metal jacket, pointed bullet, hard core, armor piercer (B7 class). The above class bullets are not able to harm the guards in the Optima Armor Guard House, at all.





AGH-10T SERIES ARMORED GUARD HOUSES SPECIFICATIONS

- •Both for room and tower, all glasses, sides, floor and top are armored to B7 level. Armor grade B7 is tested and certified by internationally recognized third party laboratories.
- Room Dimensions (without Tower): 236cm height, 225cm width, 285cm length (can be designed and changed upon request).
- Shooting tower rotation is 360°. Rotation is easily done manually by the help of foot-rod mounted on the roof of the room.
- Optional exterior colors.
- Volume of the Room (without Tower): Approximately 10m³.
- Tower Dimensions: 133.5cm height, 121cm width and 128.5cm length.
- Volume of the Tower: Approximately 1m³.
- Tower has a total of three viewing armored-glass windows on three sides (one each on left, front and right).
- One shooting opening on the front side of the tower.
- One spring-actuated foldable chair on tower.
- · Tower cooler fan.
- Flashing light and audible alarm on room's top outside.
- Three outer lamps facing left, front and right sides. They can be directed from inside manually. They can be rotated 360 degrees left to right and +/- 45 degrees up and down.
- Base for wireless communication.
- Room is fully insulated for water, heat transfer and sound.
- Room has 11 armored-glass windows and 11 shooting openings under them. One armored-glass window is on the door. Rest ten windows are facing 5 directions (two by two); left, left-front, front, right-front, right. Two windows on each side is located one under the other, therefore giving the soldier to shoot either standing or crouched.
- One opening for passing documents in and out of the guard house.
- Protection for all openings from inside.



Actual bullet test for glass-B7 protection grade



Actual bullet test for armour steel-B7 protection grade





Barrier Pods



Protection Bar



Speed Bumper



Photocell Mounting Leg



Card Reader Mounting Pedestal



TRLP Traffic Lamp Post



TRL200 Power Led Traffic Light



Flashing Lamp



Submersible Drainage Pump



Remote Control



Safety Photocell



Vehicle Loop Detector

SECURITY SYSTEMS Accessories

- Barrier Pods
- Card Reader Mounting Pedestal
- Flashing Lamp
- Protection Bar
- Photocell Mounting Leg
- Remote Control
- Safety Photocell
- Submersible Drainage Pump
- Speed Bumper
- TRL200 Power Led Traffic Light
- TRLP Traffic Lamp Post
- Vehicle Loop Detector

Accessories

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UNDER VEHICLE INSPECTION SYSTEM

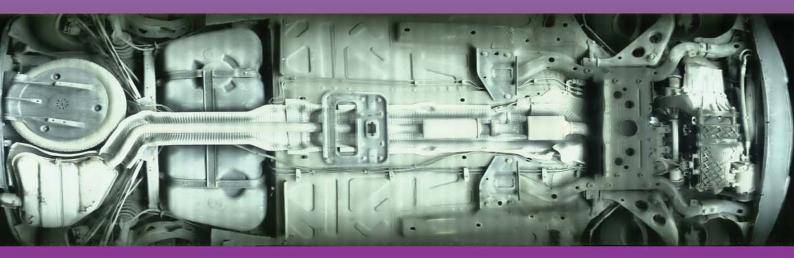
OPTIMA UVIS-100 systems are designed with advanced security technology to scan, inspect and record underside of vehicles. Especially, these systems are used for entrances where there is a threat of suicide vehicle attack with bomb or for the entrances that have very high security requirements like army, industrial, governmental and commercial buildings, sites, complexes etc.

UVIS-100 Under vehicle inspection system provides users needed safe area, thereby capturing and monitoring underside image of the vehicles with high-resolution auto digital line scanning camera.

As well as these, the system specifies suspicious objects after undervehicle scan process and takes them into a frame on the monitoring screen. The system is able to handle any vehicle moving at speeds between 0-40km/hr and can perform hidirectional scanning from both sides.

Thanks to UVI system's advanced electronics; many type of security systems such as, road bollards, road blockers, barriers etc. or plate recognition systems can be integrated to the system very easily. Optima automatic number plate recognation systems (OPTIMA ALPR-100) read and store vehicle number plates with that specific undercarriage image of UVIS system. Therefore, makes possible for the user to search and compare with other images.

User interface of the software is very friendly and useful for operators. Web interface allows to monitor recorded informations from anywhere in the world.





for different types of license plates at several countries. It has suitable modules for highways, mobile operations, parking lots or facility entrances. The system offers a detailed, web-based database search and an alarm system for wanted, seized and stolen vehicles.

OPTIMA ALPR-100 is one of the most user friendly, fast and sophisticated plate recognition systems available.



About Us















Optima Engineering is a company established to supply better and more economical solutions to various engineering requirements.

Although Optima is a relatively young company, it has succeeded to export products and services to 50 countries up to date.

Our aim is to supply high quality products and services, at the most economical basis while caring about environmental issues.

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