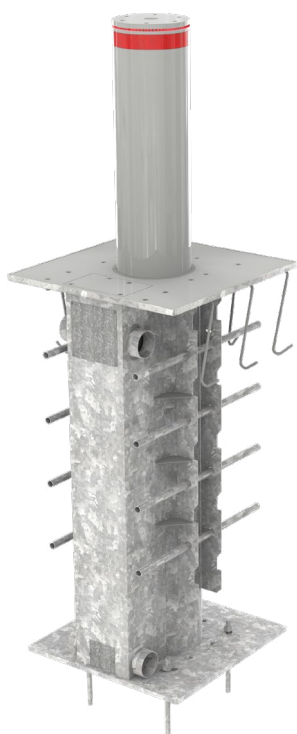


# HBD/12 BOLLARD

(Anti-terror / Heavy Duty - Retractable Model)

**CAME**  **ÖZAK**

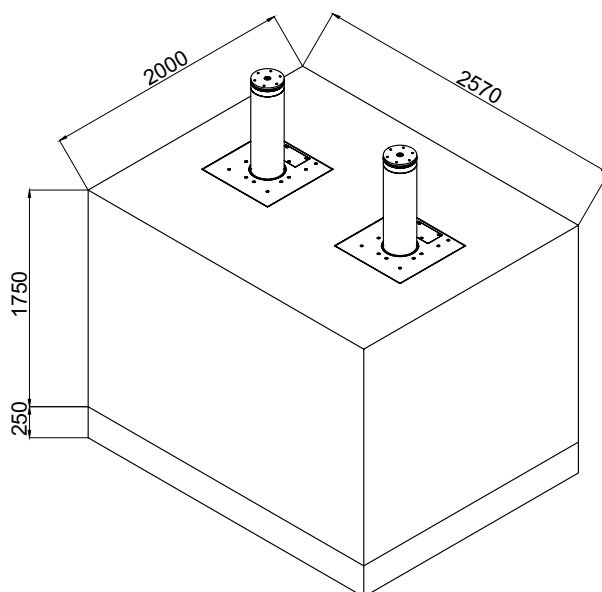
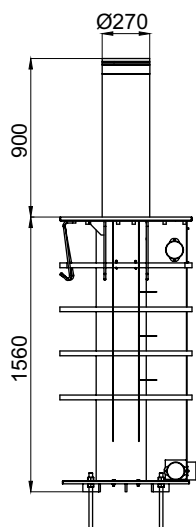
**TECHNICAL SPECIFICATIONS**



**M50 (K-12)**  
**ASTM F2656-07**



## Dimensions (mm)



\* Different raising heights are optionally available.

## Technical Features

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

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### Crash / Impact Rating

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

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

(Please contact for applicable product dimensions)

### Axle Load Resistance

70 t

### Hydraulic Cylinder Unit

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

### Hydraulic Power Unit and Cabinet:

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



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

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

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

### System

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

### Bollard Unit

#### (Underground Unit)

#### Bollard Anchorage Casing:

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

#### Bollard Main Housing:

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

### Bollard Unit

#### (Impact Blocking Unit)

#### Bollard Cylinder (Crash Unit):


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

#### Road Surface Plate:

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

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