



## Hydraulic Rising Bollards



### General Description

Optima hydraulic retractable bollards are designed for high security vehicle entrances, military, 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 Hydraulic 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. There is also BSI PAS68 (DOS K12) Crash Rated model available. Finite element computer impact analysis can be provided upon request. Typical raise/lower time is 3-4 seconds but it is possible to design the system to raise/lower in 1.5 seconds in emergency fast mode (optional).

### STEEL CONSTRUCTION

Raising section of the standard bollard diameter is 20-25 cm. Standard raise height is 80 cm. Road surface area is covered by a hot dip galvanized steel flange. In lowered position bollard withstand 22 tons of vehicle axle load. All the machine elements forming the bollards are corrosion resistant. Therefore formation of rust is prevented. Carbon steel bollard core surrounded by 3mm thick AISI 304 grade Stainless Steel sleeve which has vertical satin finish.

### HYDRAULIC POWER UNIT AND CONTROL ELECTRONICS

All the hydraulic components are tested at 250 bars although normal operating pressure is around 75-100 bars. Manual hand pump is standard in HRB series, therefore in case of power failure it is possible to raise and lower the bollards by manual hand pump. Coolers or heaters are can be integrated to the hydraulic power unit in extreme weather conditions (optional). Control electronics utilized in hydraulic rising bollard is by means of PLC. Two push buttons operator keyboards with emergency stop are standard; one desktop, other being integrated in the hydraulic power unit . AC Electric motor is driven by a contactor and protected by a thermic breaker. The low current voltage required by the system is supplied by a switch mode power supply. There is a fuse for every component in the system. All the cables running in the system are colour coded and numbered to ease tracking. A LED strip light on the top of the bollards in charge during operation.

## ENVIRONMENTAL CONDITIONS AND POWER REQUIREMENT

Between -20°C and +65°C, %95 non condensing humidity, 3 phase 380V 50/60Hz

(Optional\*: 3 phase 220V, 50/60Hz; Optional\*\*: Cooler and heater systems available for extreme weather conditions.)

## OPTIONAL ACCESSORIES

1. Red and green traffic lights ( 200mm dia., power LED ) with steel mounting pole.
2. Radio control (RF) receiver, transmitter and antenna
3. Safety photocells with mounting stand and sunshade.
4. Inductive vehicle loop detector
5. Submersible Drainage Pump
6. Access Card Reader System
7. Hydraulic accumulator for emergency fast facility and in case of power failure.
8. Uninterrupted Power Supply (UPS)
9. DC motor,pump and dry batteries in case of power failure
10. Different color options.

## MODELS:

RAISE HEIGHT: From 400mm to 1200mm (Standard height: 800mm)

MATERIAL: Core : Carbon steel tube, Sleeve : AISI 304 grade Stainless Steel ( 316 grade optional )

Bollard Groups: From 1 bollard to 12 bollards per hydraulic power unit

