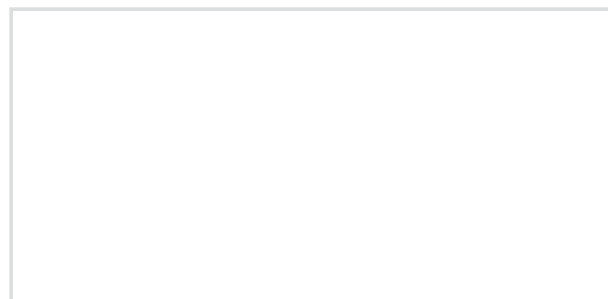




FAAC



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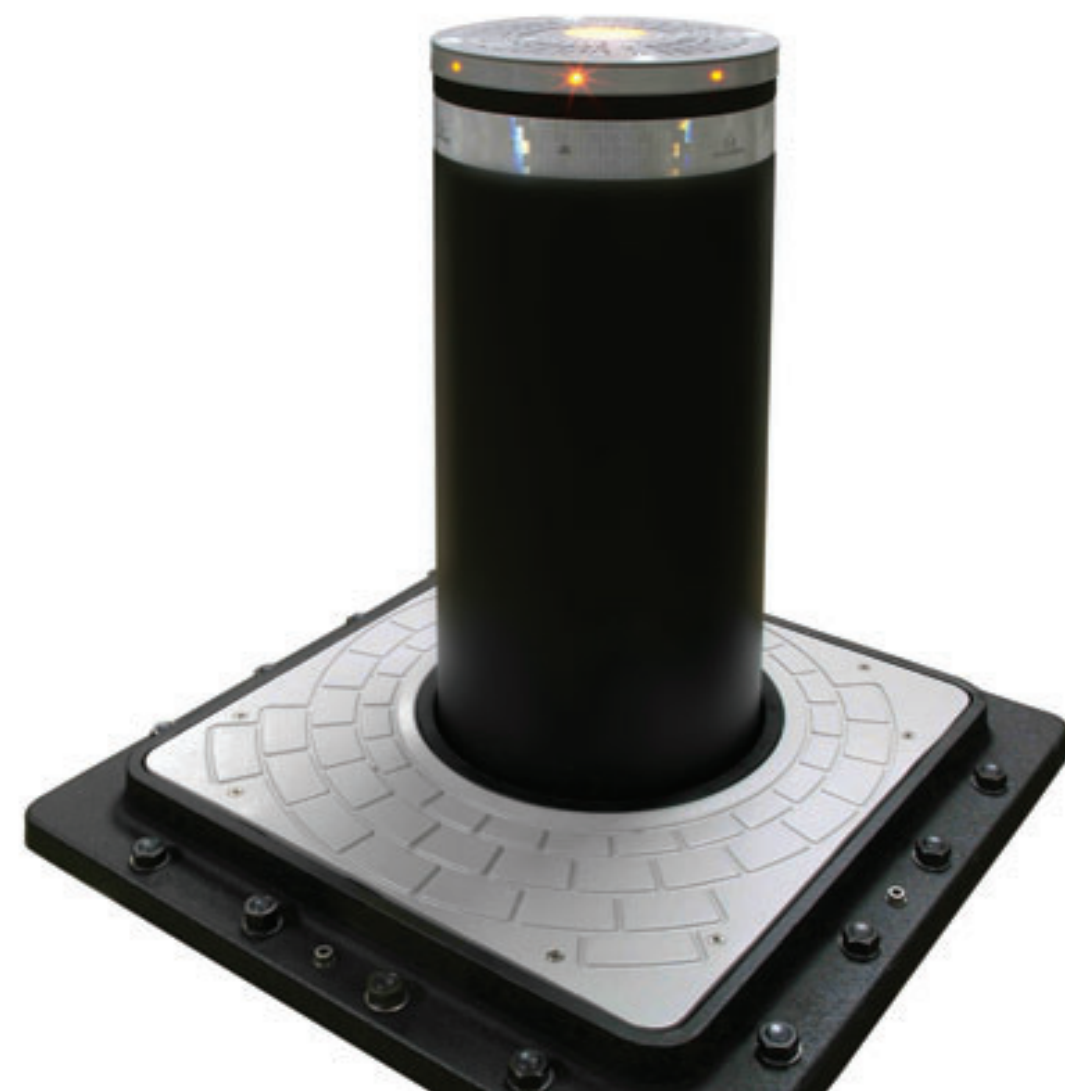


CE

FAAC

FAAC CITY MOBILE SOLUTIONS FOR:

- ACCESS CONTROL
- CITY TRAFFIC
- SAFETY FOR VALUABLES
- PROTECTION OF SENSITIVE AREAS



FAAC CITY

mobile solutions for controlling accesses, city traffic, safety of valuables, and protection of sensitive areas.

FAAC City is a metal cylinder, with ultra high resistance to impact and weather. It has a piston mechanism enabling movement by command. It is housed inside a compartment in the road paving, and discourages traffic and/or parking.

FAAC City offers help and is an intelligent solution as an alternative to fixed stations, railings, barriers, chains and the like. It provides the possibility of regulating entry and/or exit of vehicles in certain zones and prevents illegal parking.

The bollard therefore has many different uses: it delineates pedestrian islands in the busiest periods or permanently, it allows entry and/or exit to and from given zones only for authorised persons (shopkeepers, residents, hotel guests, customers of garages, taxis and chauffeur driven cars, owners of car parking facilities), it delimits car parks, squares and pavements, it can be used as an anti-theft device for specially valuable vehicles, it protects sensitive areas, such as Ministries, embassies, and banks.

The main application sectors of the FAAC City concealed traffic bollard are:

CITY TRAFFIC



PROTECTION OF SENSITIVE AREAS



ACCESS CONTROL



SAFETY FOR VALUABLES



VARIOUS USE REQUIREMENTS

FAAC CITY AUTOMATIC

Recommended for areas of frequent, necessary transits every day. Thanks to Smart cards, remote-controls or hourly programming, the cylinder descends and rises automatically.

FAAC CITY SEMIAUTOMATIC

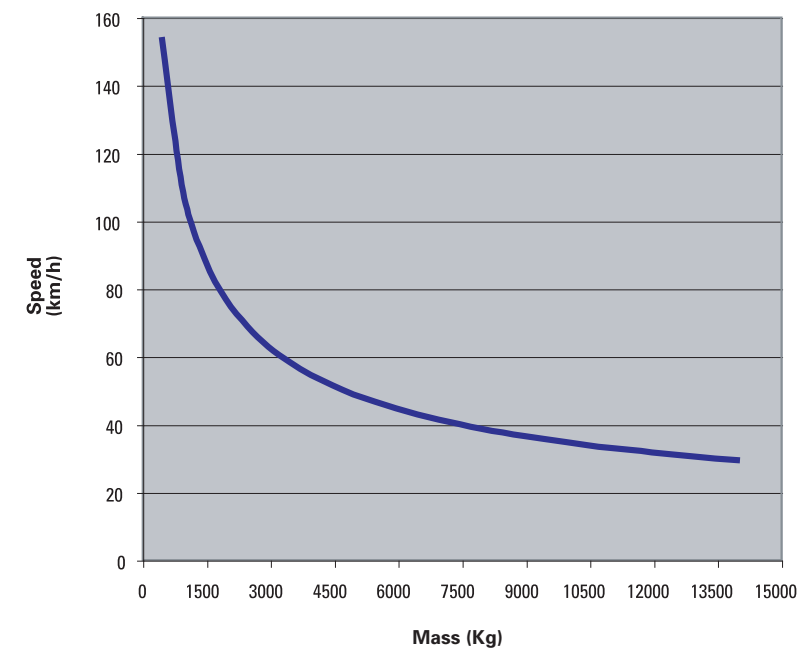
Recommended in areas with limited accesses through time, or combined with the automatic model. It solves parking or transit problems, at a reasonable price and without electricity. It is activated by a key, with slight pressure. It automatically rises and locks.

Faac City 275K

Impact resistance 16,000 Joules

Impact resistance means that, at a given threshold, and with this energy value, the impact of an object, neither disables the concealed bollard nor damages the manoeuvring mechanisms nor parts of the structure, but the **concealed bollard continues to operate and the safety devices are guaranteed.**

FAAC CITY 275/K
Impact resistance 16,000 Joules



CALCULATOR	E=mv ² /2
Mass	0 kg
Speed	0 m/s
Speed	0 km/h
Energy	0 Joules

Mass-Speed with energy of 16000 J		
Mass	Speed (km/h)	Speed (m/s)
500	152,74	42,43
1000	108,00	30,00
1500	88,18	24,49
2000	76,37	21,21
2500	68,31	18,97
3000	62,35	17,32
3500	57,73	16,04
4000	54,00	15,00
4500	50,91	14,14
5000	48,30	13,42
5500	46,05	12,79
6000	44,09	12,25
6500	42,36	11,77
7000	40,82	11,34
7500	39,44	10,95
8000	38,18	10,61
8500	37,04	10,29
9000	36,00	10,00
9500	35,04	9,73
10000	34,15	9,49
10500	33,33	9,26
11000	32,56	9,05
11500	31,85	8,85
12000	31,18	8,66
12500	30,55	8,49
13000	29,95	8,32
13500	29,39	8,16
14000	28,86	8,02

K12			
M[Kg]	V ² /2 [Km/h]	V ² /2 [m/s]	E [J]
6.800	80	22	1.679.012
6.100	84	23	1.660.556
5.400	90	25	1.687.500

K8			
M[Kg]	V ² /2 [Km/h]	V ² /2 [m/s]	E [J]
6.800	64	18	1.074.568
6.100	68	19	1.088.210
5.400	72	20	1.080.000

$E=mv^2/2$ m en kg V en m/s

m/s	miles/hour	km/h	pounds	2206	2757	3309	4412	5515	15000
			kg	1000	1250	1500	2000	2500	6800
2,78		10	$E=mv^2$	3858	4823	5787	7716	9645	26235
3,33		12		5556	6944	8333	11111	13889	37778
5,56		20		15432	19290	23148	30864	38580	104938
8,33		30		34722	43403	52083	69444	86806	236111
11,11		40		61728	77160	92593	123457	154321	419753
13,41	30	48		89892	112365	134838	179783	224729	611264 K4
17,88	40	64		159807	199759	239711	319615	399519	1086691 K8
22,35	50	80		249699	312124	374549	499398	624248	1697954 K12

1 Miles = 1.60900 Kilometers 1 Kilometers = 0.62140 Miles 1 Meters = 3.28100 Feet

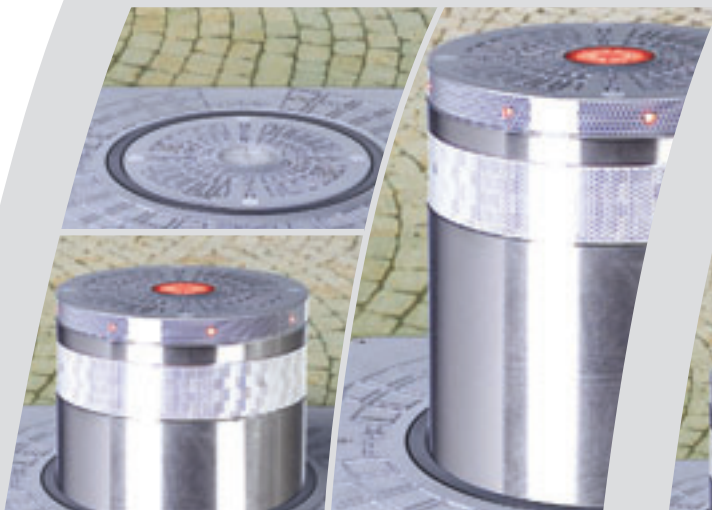
The concealed bollard guarantees free pedestrian flow but manages vehicle traffic or limited parking, with the following advantages:

- > Does not disfigure the characteristics of the environment because it is a mobile, concealed element with minimum environmental impact
- > Ensures greater protection of pedestrian areas in the old town centre
- > Allows access to authorised vehicles only
- > Reduces and optimises the use of human resources in access control activities
- > Customisable colour selection for blending in with the urban context
- > Operation can be highlighted by buzzer or indicator light, according to position
- > A large range of accessories is available
- > Its function is to deter



AUTOMATIC

SEMI-AUTOMATIC



Faac City 220 Automatic

The FAAC City 220 Automatic concealed traffic bollard, is the version built for residential use, when a limited number of daily transits (about 60 manoeuvres/day) are expected. It can be activated automatically by commands given by authorised persons (cards, remote-controls, etc.) or by automatic commands operating at set times (hourly programmer). The device has double effect pneumatic activation, with an external drive station.



DESCRIPTION Available versions

FAAC CITY 220 H600 Painted steel, automatic
(cylinder in Fe37 steel,
standard painted RAL7021 dark grey metallised)

FAAC CITY 220 H600 Painted steel, automatic
(cylinder in AISI 304 stainless steel,
standard painted RAL7021 dark grey metallised)

FAAC CITY 220 H600 Stainless steel, satin finish, automatic
(cylinder in satin finish AISI 304 stainless steel)



TECHNICAL SPECIFICATIONS

220 H600

Drive	Pneumatic with external station with compressed air
Cylinder stroke	600 mm
Cylinder diameter	220 mm
Cylinder thickness	4 mm
Cylinder surface treatment	Painted steel - Painted stainless steel - Satin finish stainless steel
Cylinder top part (head)	Anticorodal case hardened non-slip aluminium
Head surface treatment	Polyester powder paint, light grey RAL 9006
Flashing light built into the head	Stainless steel version: standard - steel version: not available
Reflecting strip	Standard height 55 mm
Descent time	4 sec.
Rise time	10 sec.
Protection class	IP 67
Impact resistance	5,000 Joule
Break-in resistance	60,000 Joule
Dimensions of pit to be walled in	330 x 330 x 850 mm
Length of connecting line	10 mt

TECHNICAL SPECIFICATIONS

DRIVE CONTROL STATION

Pneumatic unit	32 lt/min
Power supply	230 Vac + 6% - 10% 50 Hz
Absorption when compressor operating	180W
Work frequency	Manoeuvres/day: 60 +/-20%
Protection class	IP 55
Manual lowering operation	yes - by pneumatic tap in the control station



ACCESSORIES FOR AUTOMATIC VERSION

- Drive management external station FAAC CITY 220 H600 for 1 concealed bollard (400x400x200mm)
- Drive management external station FAAC CITY 220 H600 for 2 concealed bollards (500x400x200mm)
- Pit cover for FAAC CITY 220
- Pit for 220 concealed bollard complete with counter-frame

Faac City 220 Semiautomatic

This type of concealed bollard should preferably be used when accesses are limited, or are combined with the automatic version. It solves transit and/or parking problems, at a reasonable cost, without the need for electrical energy; in fact, thanks to the single-effect gas actuator, lifting occurs automatically with a key, whereas lowering is achieved by slight foot pressure on the head of the concealed bollard.

DESCRIPTION Available versions

FAAC CITY 220 H600 Painted steel semiautomatic
(cylinder in Fe37 steel, standard painted dark grey RAL7021 metallised)
FAAC CITY 220 H600 Painted stainless steel semiautomatic
(cylinder in AISI 304 stainless steel, standard painted dark grey RAL7021 metallised)
FAAC CITY 220 H600 Satin finish stainless steel semiautomatic
(cylinder in AISI 304 stainless steel, satin finish)

TECHNICAL SPECIFICATIONS

220 H600

Drive	Single effect gas actuator
Lifting	Key release for automatic lifting, with single effect nitrogen actuator
Lowering	Key release for lowering, with pressure on top of cylinder
Cylinder stroke	600 mm
Cylinder diameter	220 mm
Cylinder thickness	4 mm
Cylinder surface treatment	Painted steel, Painted stainless steel, Satin finish stainless steel
Cylinder top part (head)	Anticorodal case hardened non-slip aluminium
Head surface treatment	Polyester powder paint, light grey RAL 9006
Reflecting strip	Standard height 55 mm
Protection class	IP 67
Impact resistance	5,000 Joule
Break-in resistance	60,000 Joule
Dimensions of pit to be walled in	330 x 330 x 850 mm



ACCESSORIES FOR SEMIAUTOMATIC VERSION

Pit cover for FAAC CITY 220

Pit for 220 concealed bollard complete with counter-frame

Faac City 220 Fixed

The FAAC City Fixed traffic bollard is suitable for mixed installations, where other automatic and/or semiautomatic concealed bollards are present. This makes it possible not to alter the overall architectural appearance.

DESCRIPTION Available versions

- FAAC CITY 220 H600 Painted steel fixed
(cylinder in Fe37 steel, standard painted dark grey RAL7021 metallised)
- FAAC CITY 220 H600 Painted stainless steel fixed
(cylinder in AISI 304 stainless steel, standard painted dark grey RAL7021 metallised)
- FAAC CITY 220 H600 Satin finish stainless steel fixed
(cylinder in AISI 304 stainless steel, satin finish)

TECHNICAL SPECIFICATIONS

220 H600

Cylinder Height	800 mm - 600 mm off ground and 200 mm to wall in (with wall anchors standard supply)
Cylinder diameter	220 mm
Cylinder thickness	4 mm
Cylinder surface treatment	Painted steel, Painted stainless steel, Satin finish stainless steel
Cylinder top part (head)	Anticorodal case hardened from non-slip aluminium
Head surface treatment	Polyester powder paint, light grey RAL 9006
Reflecting strip	Standard height 55 mm
Impact resistance	5,000 Joule
Break-in resistance	60,000 Joule



ACCESSORIES FOR FIXED VERSION

Crown for FAAC City 220 Fixed

Faac City 275 Automatic

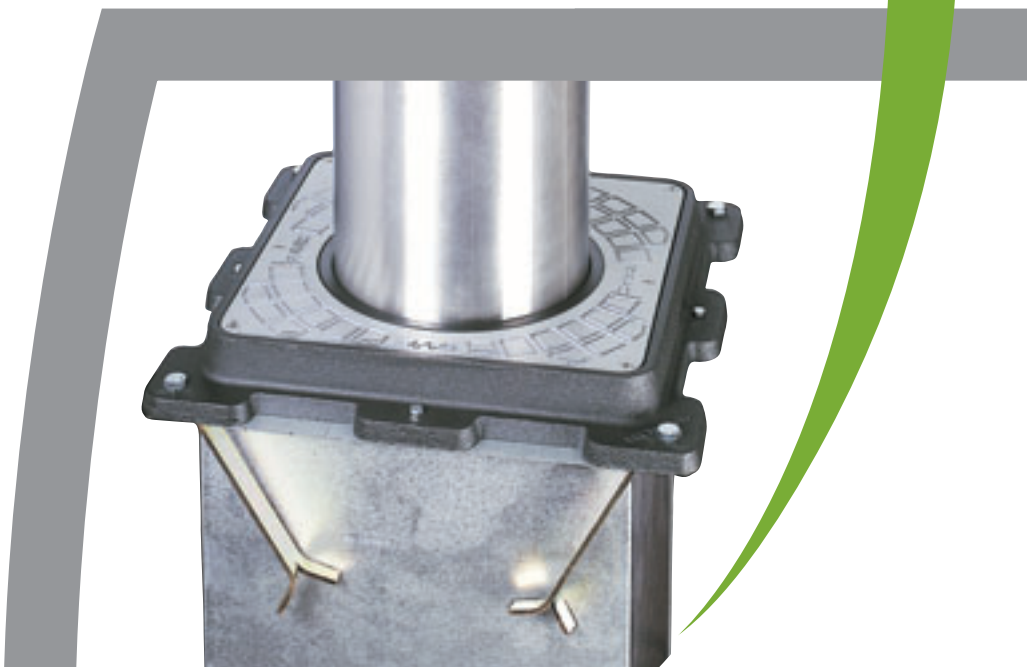
The FAAC City Automatic concealed traffic bollard is advisable when many transits per day are expected. It can be activated automatically by commands given by authorised persons (cards, remote-controls, etc.) or by automatic commands operating at set times (hourly programmer). The device has double effect hydraulic activation, with a drive station.



DESCRIPTION Available versions

FAAC CITY 275 H600 automatic
(cylinder in Fe37 steel, 6 mm thickness, standard painted dark grey RAL7021 metallised)

FAAC CITY 275 H800 automatic
(cylinder in Fe37 steel, 6 mm thickness, standard painted dark grey RAL7021 metallised)



TECHNICAL SPECIFICATIONS

275 H600

275 H800

Drive	Hydraulic	
Cylinder stroke	600 mm	800 mm
Cylinder diameter	275 mm	
Cylinder material and thickness	Fe37 steel - thickness 6 mm	
Cylinder surface treatment	Polyester powder paint, dark grey RAL 7021	
Cylinder top part (head)	Anticorodal case hardened aluminium	
Head surface treatment	Polyester powder paint, light grey RAL 9006	
Descent time	About 5 sec	About 7 sec
Rise time	About 5 sec	About 7 sec
Hydraulic pump	Power supply 230 Vac +6% - 10% 50 Hz	
Absorption	220 W	
Protection class	IP 67	
Work frequency	Heavy duty (10,000 manoeuvres per day)	
Reflecting strip	Standard height 55 mm	
Manual lowering operation	YES (*)	
Impact resistance	15,000 Joule	
Break-in resistance	120,000 Joule	
Dimensions of pit to be walled in	560x560x1020 mm	560x560x1220 mm
Standard length with connected cable	10 mt	10 mt

(*) The raised position is guaranteed, even in the absence of power, by the hydraulic block integrated in the control unit



ACCESSORIES FOR AUTOMATIC VERSION

Flashing light (9 lights) for FAAC CITY
Reinforced cylinder for FAAC CITY 275 H600 (thickness 10 mm, for H600 version only)
Cylinder for FAAC CITY 275 H600 AISI304 STAINLESS STEEL
Cylinder for FAAC CITY 275 H800 AISI304 STAINLESS STEEL
Satin finish for STAINLESS STEEL FAAC CITY cylinder
Automatic emergency release FAAC CITY to lower in the event of a power cut
Drive reporting buzzer for FAAC CITY
RAL paint on request (not available for cylinder in satin finish stainless steel)
Pit heater for FAAC CITY 275
Pit cover for FAAC CITY 275
Electronic control unit FAAC CITY
SLAVE module for controlling FAAC CITY
Extension cable for connection of FAAC CITY (max 30 m)
Reflecting film on entire cylinder FAAC CITY
Pit for 275 H600 concealed bollard complete with counter-frame
Pit for 275 H800 concealed bollard complete with counter-frame

Faac City 275 Semiautomatic

This type of concealed bollard should preferably be used when accesses are limited, or are combined with the automatic version. It solves transit and/or parking problems, at a reasonable cost, without the need for electrical energy; in fact, thanks to the single-effect gas actuator, lifting occurs automatically with a key, whereas lowering is achieved by slight foot pressure on the head of the concealed bollard.

DESCRIPTION Available versions

FAAC CITY 275 H600 semi-automatic
(cylinder in Fe37 steel, 6 mm thickness, standard painted dark grey RAL7021 metallised)

TECHNICAL SPECIFICATIONS

275 H600

Drive	Single effect gas actuator
Lifting	Key release for automatic lifting, with single effect nitrogen actuator
Lowering	Key release for lowering, with pressure on top of cylinder
Cylinder stroke	600 mm
Cylinder diameter	275 mm
Cylinder material and thickness	Fe37 steel- thickness 6 mm
Cylinder surface treatment	Polyester powder paint dark grey RAL 7021 metallised
Cylinder top part (head)	Anticorodal case hardened aluminium
Head surface treatment	Polyester powder paint, light grey RAL 9006
Reflecting strip	Standard height 55 mm
Impact resistance	15,000 Joule
Break-in resistance	120,000 Joule
Dimensions of pit to be walled in	560x560x1020 mm



ACCESSORIES FOR SEMIAUTOMATIC VERSION

- Cylinder FAAC CITY 275 H600 STAINLESS STEEL AISI304 semi-automatic
- Satin finish for STAINLESS STEEL FAAC CITY cylinder
- RAL paint on request
- Pit for 275 H600 concealed bollard complete with counter-frame

Faac City 275 Fixed

The FAAC City Fixed traffic bollard is suitable for mixed installations, where other automatic and/or semiautomatic concealed bollards are present. This makes it possible not to alter the overall architectural appearance.

DESCRIPTION Available versions

FAAC CITY 275 H600 Painted steel

(cylinder in Fe37 steel, 6 mm thickness, standard painted dark grey RAL7021 metallised)

FAAC CITY 275 H600 Painted stainless steel

(cylinder in AISI 304 stainless steel, standard painted dark grey RAL7021 metallised)

FAAC CITY 275 H600 satin finish stainless steel

(cylinder in AISI 304 stainless steel, satin finish)

FAAC CITY 275 H800 painted steel

(cylinder in Fe37 steel, standard painted dark grey RAL7021 metallised)

FAAC CITY 275 H800 painted stainless steel

(cylinder in AISI 304 stainless steel, standard painted dark grey RAL7021 metallised)

FAAC CITY 275 H800 satin finish stainless steel

(cylinder in AISI 304 stainless steel, satin finish)

TECHNICAL SPECIFICATIONS

275 H600

275 H800

Cylinder Height	800mm - 600 off ground 200 to be walled in (wall anchors standard)	1000mm - 800 off ground 200 to be walled in (wall anchors standard)
Cylinder diameter	275 mm	
Cylinder thickness	6 mm	
Cylinder surface treatment	Painted steel, Painted stainless steel, Satin finish stainless steel	
Cylinder top part (head)	Anticorodal case hardened non-slip aluminium	
Head surface treatment	Polyester powder paint, light grey RAL 9006	
Impact resistance	15,000 Joule	
Break-in resistance	120,000 Joule	



ACCESSORIES FOR FIXED VERSION

Crown for FAAC City 275 Fixed

Faac City K Antiterrorism Automatic

Available only in the Automatic version, it stands out for its extremely high anti break-in resistance. This traffic bollard was specifically designed to meet increasingly frequent security requirements. Its applications include creating protective barriers or allowing access to particularly sensitive zones such as: Embassies, Consulates, Public Offices, Banks, etc. Impact by a vehicle against the cylinder of the K 275 H700 concealed bollard can produce two types of deformation: elastic and permanent. Elastic deformation: 16,000 Joule. FAAC CITY continues to operate and the safety devices are guaranteed. Permanent deformation: 450,000 Joule (partial or total breakage of the concealed traffic bollard).



DESCRIPTION Available versions

FAAC CITY K 275 H700 automatic
(cylinder in Fe510 steel, 10 mm thickness, standard painted dark grey RAL7021 metallised)



TECHNICAL SPECIFICATIONS

K 275 H700

Drive	Hydraulic
Cylinder stroke	700 mm
Cylinder diameter	275 mm
Cylinder material and thickness	FE510 steel - thickness 10 mm
Cylinder surface treatment	Polyester powder paint dark grey RAL7021 metallised
Cylinder top part (head)	Anticorodal case hardened aluminium
Head surface treatment	Polyester powder paint light grey RAL 9006
Rise/descent time	About 7 sec
Hydraulic pump	Power supply 230 Vac +6% - 10% 50 Hz
Absorption	220 W
Protection class	IP 67
Work frequency	Heavy duty
Reflecting strip	Standard height 55 mm
Hydraulic lock in raised position	The raised position is guarantee even in the event of a power cut, by the hydraulic block in the control unit
Emergency manual operation	Standard - Manual release device in case of trouble or a power cut, accessible by dismantling the top part of the base (maximum anti break-in safety) (*)
Detection of travel-limit position	Two magnetic sensors in open and closed position
Impact resistance	16,000 Joule
Break-in resistance	450,000 Joule
Counter-frame to be walled in	Pearlitic cast iron painted with dark grey polyester powder paint RAL7021 metallised
Pit to be walled in for FAAC CITY K 275 H700	Pit to be walled in complete with reinforcing log, bolts, facilities for draining rain water and input for service line - dimensions 650 x 650 x1200
Standard length with connected cable	10 mt

(*) In case of an electric power cut, lowering can be commanded by a control, using a power pack (not supplied by FAAC) consisting of a 24Vdc feeder and two 1.2 Ah buffer batteries.



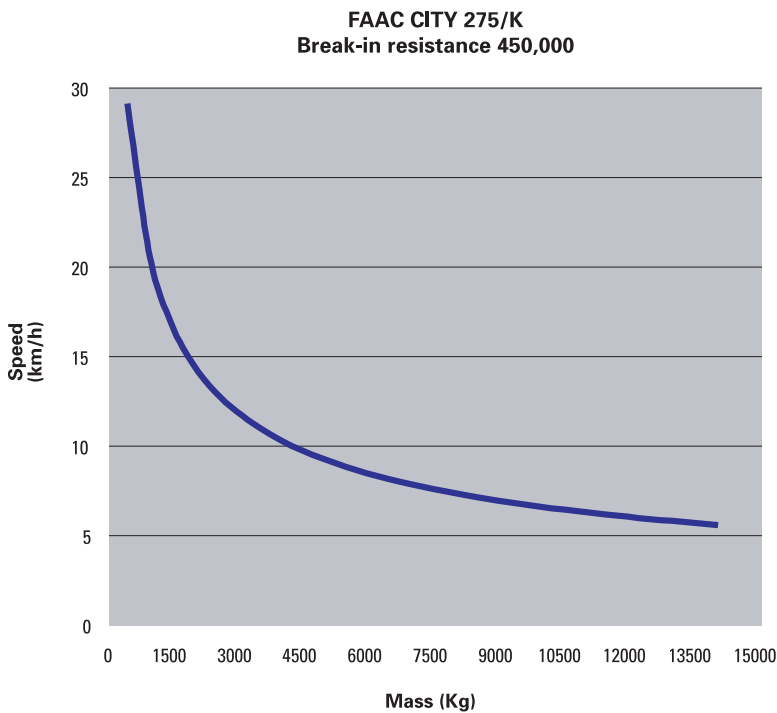
ACCESSORIES FOR AUTOMATIC VERSION

Knurled cylinder for FAAC CITY K
Flashing light (9 lights) for FAAC CITY K
Drive reporting buzzer for FAAC CITY K
RAL paint on request
Pit heater for FAAC CITY 275 K
Pit cover for FAAC CITY 275 K
Electronic control unit FAAC CITY K
SLAVE module for controlling FAAC CITY
Extension cable for connection of FAAC CITY (max 30 m)
Pit for K275 H700 concealed bollard, complete with counter frame and reinforcing log bolts

Faac City 275K

Break-in resistance 450,000 Joules

Resistance to breaking in at a given threshold, means that the impact of a vehicle with this energy value, disables the concealed traffic bollard, entailing permanent damage to the manoeuvring mechanisms and structure but, **the concealed bollard stops the vehicle within one meter of the collision point.**



CALCULATOR		$E=MV^2/2$
Mass	500	kg
Speed	0	m/s
Speed	0	km/h
Energy	0	Joules

Mass-Speed with energy of			16000 J
Mass	Speed (km/h)	Speed (m/s)	
500	28,80	8,00	
1000	20,36	5,66	
1500	16,63	4,62	
2000	14,40	4,00	
2500	12,88	3,58	
3000	11,76	3,27	
3500	10,89	3,02	
4000	10,18	2,83	
4500	9,60	2,67	
5000	9,11	2,53	
5500	8,68	2,41	
6000	8,31	2,31	
6500	7,99	2,22	
7000	7,70	2,14	
7500	7,44	2,07	
8000	7,20	2,00	
8500	6,99	1,94	
9000	6,79	1,89	
9500	6,61	1,84	
10000	6,44	1,79	
10500	6,28	1,75	
11000	6,14	1,71	
11500	6,01	1,67	
12000	5,88	1,63	
12500	5,76	1,60	
13000	5,65	1,57	
13500	5,54	1,54	
14000	5,44	1,51	