

SPECIFICATIONS

<i>Bollard</i>	TALOS
<i>Models</i>	9450 – 9460 – 9470 – 9480 9450/HRC – 9460/HRC – 9470/HRC – 9480/HRC
<i>Manufacturer</i>	MECCANICA FADINI s.n.c. Via Mantova 177/A 37053 Cerea VR

Registered in Verona N. VR091-20417
R.E.A. N. 108834 – A/EXP VR003776
P.IVA – VAT/ID IT00658500236



1 DESCRIPTION OF THE BOLLARD

- 1.1 Oil-hydraulic bollard for transit control fitted with a post, fully retractable under road level, and an oil-hydraulic motor-pump.
- 1.2 scope of applications: residential, commercial, industrial and traffic control.
Frequency of use: very heavy duty.
- 1.3 The bollard includes a post (cylinder) rising at various heights from ground level (500 - 600 – 700 – 800 mm), diameter 275 mm, thickness 4 mm.
The post can be made of Fe 360 steel, the surface of which is cataphoresis treated and coated with polyester powder, or brushed stainless steel either AISI 304 or AISI 316.
An HRC option (High Resistance Cylinder) available, the post (when in UP position) keeps 40 cm (constraint) inside the housing against the 20 cm of the standard version, ensuring in this way a greater resistance to impact and crash.
- 1.4 The foundation casing is made of treated steel, hot dip galvanized, with holes in the base for water drainage and inlet of a possible submersed water pump.
The structure of the inner assembly of the bollard is electrolytically galvanized.
Two magnetic limit switches are incorporated: one for post in raised position and one for post in lowered position.
All the inner electrical connections (oil-hydraulic motor-pump, limit switches, LEDs and possible accessories) are factory pre-wired in a watertight junction box fitted with a quick disconnection connector for the power supply cable.
The protection grade of the connector fitted to the junction box is IP 66.
Available, on request, even in IP 67 and explosion-proof.

2 OIL-HYDRAULIC MOTOR-PUMP

The unit consists of an oil-hydraulic pump operated by an electric motor (230 Vac).
Protection grade IP 67.
Designed to incorporate complementary accessories such as a solenoid valve and an obstacle detector (pressure switch).
It is positioned in the upper part of the foundation casing, to the opposite side of the post, providing easy access to it once the rectangular cover plate is removed.
High pressure tubes (300 bars) connect the oil-hydraulic motor-pump to the actuator.

3 SAFETY STANDARD FEATURES

- 3.1 The post of the bollard is well visible in any climate conditions, being fitted with an approved, 80 mm back-reflecting band sticker and 9 LEDs flashing all around the top.
- 3.2 The post head is completed with a rubber edge providing protection in case of accidental impacts with pedestrians, etc.

- 3.3 Anti-scratching design of the post, as diameters of the top (head) and cylinder are different in size.
- 3.4 A spanner, having a universal, triangular socket at the end, is supplied with the bollard and allows for the system to be released and manually operated, and the post lowered to ground level.

4 IMPACT RESISTANCE

The bollards can be divided into two classes as far as impact (no deformation occurs) and crash resistance rates are concerned, depending on the post constraint : 20 cm in the standard versions or 40 cm in the HRC versions:

- | | | |
|-----|---|-----------|
| 4.1 | impact resistance (without deformation) | 52.000 J |
| | crash resistance | 320.000 J |
| 4.2 | <u>HRC models</u> | |
| | impact resistance (without deformation) | 70.000 J |
| | crash resistance | 420.000 J |

5 SPEED OF OPERATIONS

In conditions of standard service:

- | | |
|----------------|---------|
| lowering speed | 25 cm/s |
| rising speed | 23 cm/s |

6 WORKING TEMPERATURE

The bollards are designed to work in the following environmental conditions:

- 6.1 working temperature: - 20°C + 80°C
- 6.2 working temperature with heating device fitted (optional): - 40°C + 80°C

7 CONTROL BOARD

It is a printed circuit control board powered with 230 Vac voltage, external to the bollard and housed in a plastic box made of polycarbonate. It can control up to 4 bollards.

Connections between the bollard and the control box can be made by using two types of cables: either a multipole cable type FG 70R 12x1,5 mm² or type FG 70R 16x1,5 mm².

8 ACCESSORIES

The bollards can be supplied along with supplementary accessories, that are pre-assembled and pre-wired to the incorporated junction box.

- 8.1 24 Vdc solenoid valve: allows for the post to lower in case of electric power failure or disconnection.
- 8.2 Obstacle detector (pressure switch): the post is prevented from rising in case an obstacle is standing on it, or travel direction is reversed and post lowers flat to ground level in case obstruction occurs during rising phase.
- 8.3 Beeper: intermittent acoustic signal during rising and lowering movements of the post.
- 8.4 24 Vdc heater: a device used to warm the bollard internally when the external temperature goes below 5°C.
- 8.5 Magnetic loop detector for metallic masses.
- 8.6 Post colour options (RAL range).

TECHNICAL DATA

TALOS Models	9450	9460	9470	9480
Actuator type	Oil-hydraulic	Oil-hydraulic	Oil-hydraulic	Oil-hydraulic
Post height from ground [mm]	500	600	700	800
Post thickness [mm]	4	4	4	4
Post diameter [mm]	275	275	275	275
Post constraint [mm]	200 HRC model - 400	200 HRC model - 400	200 HRC model - 400	200 HRC model - 400
Post materials	Fe 360 steel AISI 304 SS steel AISI 316 SS steel	Fe 360 steel AISI 304 SS steel AISI 316 SS steel	Fe 360 steel AISI 304 SS steel AISI 316 SS steel	Fe 360 steel AISI 304 SS steel AISI 316 SS steel
Post finish	- Polyester powder coating RAL 1028 - brushed SS steel	- Polyester powder coating RAL 1028 - brushed SS steel	- Polyester powder coating RAL 1028 - brushed SS steel	- Polyester powder coating RAL 1028 - brushed SS steel
Post head material	Cataphoresis treated aluminium	Cataphoresis treated aluminium	Cataphoresis treated aluminium	Cataphoresis treated aluminium
Rising time	~2,14 s	~2,57 s	~3,00 s	~3,42 s
Lowering time	~2,00 s	~2,40 s	~2,80 s	~3,20 s
Manual release device	YES	YES	YES	YES
Emergency lowering device (solenoid valve)	YES (optional)	YES (optional)	YES (optional)	YES (optional)
Acoustic signalling device	YES (optional)	YES (optional)	YES (optional)	YES (optional)
Obstacle detecting device in rising phase (pressure switch)	YES (optional)	YES (optional)	YES (optional)	YES (optional)
Rubber edge	YES	YES	YES	YES
Voltage supply	230 Vac – 50 Hz	230 Vac – 50 Hz	230 Vac – 50 Hz	230 Vac – 50 Hz
Max. absorbed power [W]	1.100	1.100	1.100	1.100
Protection grade	IP 67	IP 67	IP 67	IP 67
Frequency of use	Very heavy duty	Very heavy duty	Very heavy duty	Very heavy duty
Back-reflecting sticker height [mm]	80	80	80	80
Back-reflecting sticker colour	Gray / red	Gray / red	Gray / red	Gray / red
Environment working temperature	- 20°C + 80°C	- 20°C + 80°C	- 20°C + 80°C	- 20°C + 80°C
Environment working temperature with the heating device	- 40°C + 80°C	- 40°C + 80°C	- 40°C + 80°C	- 40°C + 80°C
Impact resistance (without deformation) [J]	52.000 HRC model – 70.000	52.000 HRC model – 70.000	52.000 HRC model – 70.000	52.000 HRC model – 70.000
Crash resistance [J]	320.000 HRC model – 420.000	320.000 HRC model – 420.000	320.000 HRC model – 420.000	320.000 HRC model – 420.000
Maximum static load [kg]	20.000	20.000	20.000	20.000
Casing dimensions LxWxH [mm]	570 x 575 x 1.010 570 x 575 x 810	570 x 575 x 1.010	570 x 575 x 1.010	570 x 575 x 1.210

	(optional)			
Pit dimensions LxWxH [mm]	1.000 x 900 x 1.200	1.000 x 900 x 1.400	1.000 x 900 x 1.400	1.000 x 900 x 1.500
Connection cable [mm ²]	FG 70R 12x1,5 FG 70R 16x1,5	FG 70R 12x1,5 FG 70R 16x1,5	FG 70R 12x1,5 FG 70R 16x1,5	FG 70R 12x1,5 FG 70R 16x1,5
Max. length of connection cable [m]	50	50	50	50
Complete weight [kg]	196		218	

SPECIFICATIONS

Bollard TALOS
Models 9651 – 9661 – 9671 – 9681
9651/HRC – 9661/HRC – 9671/HRC – 9681/HRC

Manufacturer MECCANICA FADINI s.n.c.
Via Mantova 177/A
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1 DESCRIPTION OF THE BOLLARD

- 1.1 Oil-hydraulic bollard for transit control fitted with a post, fully retractable under road level, and an oil-hydraulic motor-pump.
- 1.2 scope of applications: residential, commercial, industrial and traffic control.
Frequency of use: very heavy duty.
- 1.3 The bollard includes a post (cylinder) rising at various heights from ground level (500 - 600 – 700 – 800 mm), diameter 275 mm, thickness 12 mm.
The post is made of Fe 360 steel, the surface of which is cathoresis treated and coated with polyester powder.
An HRC option available, the post (when in UP position) keeps 40 cm (constraint) inside the housing against the 20 cm of the standard version, ensuring in this way a greater resistance to impact and crash.
- 1.4 The foundation casing is made of treated steel, hot dip galvanized, with holes in the base for water drainage and inlet of a possible submersed water pump.
The structure of the inner assembly of the bollard is electrolytically galvanized.
Two magnetic limit switches are incorporated: one for post in raised position and one for post in lowered position.
All the inner electrical connections (oil-hydraulic motor-pump, limit switches, LEDs and possible accessories) are factory pre-wired in a watertight junction box fitted with a quick disconnection connector for the power supply cable.
The protection grade of the connector fitted to the junction box is IP 66.
Available, on request, even in IP 67 and explosion-proof.

2 OIL-HYDRAULIC MOTOR-PUMP

The unit consists of an oil-hydraulic pump operated by an electric motor (230 Vac).
Protection grade IP 67.
Designed to incorporate complementary accessories such as a solenoid valve and an obstacle detector (pressure switch).
It is positioned in the upper part of the foundation casing, to the opposite side of the post, providing easy access to it once the rectangular cover plate is removed.
High pressure tubes (300 bars) connect the oil-hydraulic motor-pump to the actuator.

3 SAFETY STANDARD FEATURES

- 3.1 The post of the bollard is well visible in any climate conditions, being fitted with an approved, 80 mm back-reflecting band sticker and 9 LEDs flashing all around the top.
- 3.2 The post head is completed with a rubber edge providing protection in case of accidental impacts with pedestrians, etc.

- 3.3 Anti-scratching design of the post, as diameters of the top (head) and cylinder are different in size.
- 3.4 A spanner, having a universal, triangular socket at the end, is supplied with the bollard and allows for the system to be released and manually operated, and the post lowered to ground level.

4 IMPACT RESISTANCE

The bollards can be divided into two classes as far as impact (no deformation occurs) and crash resistance rates are concerned, depending on the post constraint : 20 cm in the standard versions or 40 cm in the HRC versions:

- | | | |
|-----|---|-----------|
| 4.1 | impact resistance (without deformation) | 60.000 J |
| | crash resistance | 450.000 J |
| | | |
| 4.2 | <u>HRC models</u> | |
| | impact resistance (without deformation) | 90.000 J |
| | crash resistance | 550.000 J |

5 SPEED OF OPERATIONS

In conditions of standard service:

- | | |
|----------------|---------|
| lowering speed | 23 cm/s |
| rising speed | 18 cm/s |

6 WORKING TEMPERATURE

The bollards are designed to work in the following environmental conditions:

- 6.1 working temperature: - 20°C + 80°C
- 6.2 working temperature with heating device fitted (optional): - 40°C + 80°C

7 CONTROL BOARD

It is a printed circuit control board powered with 230 Vac voltage, external to the bollard and housed in a plastic box made of polycarbonate. It can control up to 4 bollards.

Connections between the bollard and the control box can be made by using two types of cables: either a multipole cable type FG 70R 12x1,5 mm² or type FG 70R 16x1,5 mm².

8 ACCESSORIES

The bollards can be supplied along with supplementary accessories, that are pre-assembled and pre-wired to the incorporated junction box.

- 8.1 24 Vdc solenoid valve: allows for the post to lower in case of electric power failure or disconnection.
- 8.2 Obstacle detector (pressure switch): the post is prevented from rising in case an obstacle is standing on it, or travel direction is reversed and post lowers flat to ground level in case obstruction occurs during rising phase.
- 8.3 Beeper: intermittent acoustic signal during rising and lowering movements of the post.
- 8.4 24 Vdc heater: a device used to warm the bollard inside when the external temperature goes below 5°C.
- 8.5 Magnetic loop detector for metallic masses.
- 8.6 Post colour options (RAL range).

TECHNICAL DATA

TALOS models	9651	9661	9671	9681
Actuator type	Oil-hydraulic	Oil-hydraulic	Oil-hydraulic	Oil-hydraulic
Post height from ground [mm]	500	600	700	800
Post thickness [mm]	12	12	12	12
Post diameter [mm]	275	275	275	275
Post constraint [mm]	200 HRC model - 400	200 HRC model - 400	200 HRC model - 400	200 HRC model - 400
Post material	Fe 360 steel	Fe 360 steel	Fe 360 steel	Fe 360 steel
Post finish	Polyester powder coating RAL 7016	-Polyester powder coating RAL 7016	Polyester powder coating RAL 7016	Polyester powder coating RAL 7016
Post head material type	Cataphoresis treated aluminium	Cataphoresis treated aluminium	Cataphoresis treated aluminium	Cataphoresis treated aluminium
Rising time	~2,80 s	~3,40 s	~4,00 s	~4,50 s
Lowering time	~2,14 s	~2,57 s	~3,00 s	~3,42 s
Manual release device	YES	YES	YES	YES
Emergency lowering device (solenoid valve)	YES (optional)	YES (optional)	YES (optional)	YES (optional)
Acoustic signalling device	YES (optional)	YES (optional)	YES (optional)	YES (optional)
Obstacle detecting device in rising phase (pressure switch)	YES (optional)	YES (optional)	YES (optional)	YES (optional)
Rubber edge	YES	YES	YES	YES
Voltage supply	230 Vac – 50 Hz	230 Vac – 50 Hz	230 Vac – 50 Hz	230 Vac – 50 Hz
Max. absorbed power [W]	1.100	1.100	1.100	1.100
Protection grade	IP 67	IP 67	IP 67	IP 67
Frequency of use	Very heavy duty	Very heavy duty	Very heavy duty	Very heavy duty
Back-reflecting sticker height [mm]	80	80	80	80
Back-reflecting sticker colour	Gray / red	Gray / red	Gray / red	Gray / red
Environment working temperature	- 20°C + 80°C	- 20°C + 80°C	- 20°C + 80°C	- 20°C + 80°C
Environment working temperature with the heating device	- 40°C + 80°C	- 40°C + 80°C	- 40°C + 80°C	- 40°C + 80°C
Impact resistance (without deformation) [J]	60.000 HRC model - 90.000	60.000 HRC model - 90.000	60.000 HRC model - 90.000	60.000 HRC model - 90.000
Crash resistance [J]	450.000 HRC model - 550.000	450.000 HRC model - 550.000	450.000 HRC model - 550.000	450.000 HRC model - 550.000
Maximum static load [kg]	20.000	20.000	20.000	20.000

Casing dimensions LxWxH [mm]	570 x 575 x 1.010 570 x 575 x 810 (optional)	570 x 575 x 1.010	570 x 575 x 1.010	570 x 575 x 1.210
Pit dimensions LxWxH [mm]	1.000 x 900 x 1.200	1.000 x 900 x 1.400	1.000 x 900 x 1.400	1.000 x 900 x 1.500
Connection cable [mm ²]	FG 70R 12x1,5 FG 70R 16x1,5	FG 70R 12x1,5 FG 70R 16x1,5	FG 70R 12x1,5 FG 70R 16x1,5	FG 70R 12x1,5 FG 70R 16x1,5
Max. length of connection cable [m]	50	50	50	50
Complete weight [kg]	234		252	

SPECIFICATIONS

Bollard TALOS
Model M50
Manufacturer MECCANICA FADINI s.n.c.
Via Mantova 177/A
37053 Cerea VR

Registered in Verona N. VR091-20417
R.E.A. N. 108834 – A/EXP VR003776
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1 APPLICATIONS

- 1.1 Security bollard fitted with a post, that retracts completely flat with the road level, and an incorporated motor-pump. Suitable for heavy duty applications being certified and tested in compliance with ASTM F2656-07 M50 standards (former K12) – “Standard Test Method for Vehicle Crash Testing of Perimeter Barriers”.
- 1.2 This bollard is designed for the protection of special areas, such as: military bases, airports, embassies, consulates, banks, prisons, etc. and all those areas requiring a high level of security and perimeter protection.

2 DESCRIPTION

- 2.1 The bollards is fitted with a post (cylinder) rising 1.000 mm from ground level, diameter 275 mm, thickness 20 mm.
The post of the bollard (when in fully raised position) remains 50 cm (constraint) inside the enclosure and is supported by two reinforcement plates, the thickness of each is 15 and 30 mm.
The post is made of Fe 360 steel, the surface is cathoporesis treated and coated by polyester powder.
- 2.2 The bollard is designed and constructed to be able to stop vehicles weighing 6.800 kg, running at a speed of 75 Km/h and to absorb at least 1.680.000 Joules of energy, in compliance with the ASTM F2656-07 standards.
- 2.3 The entire structure, including the post and the casing (made of hot dip galvanized steel) is designed to be sunk into an iron grid constructed to embed it in the foundation.
It is fitted with two magnetic limit switches: one for the post in raised position and one for the post in lowered position.
The protection grade of the quick disconnection connector fitted to the junction box is IP 66.

3 OIL-HYDRAULIC DRIVE UNIT

- 3.1 The oil-hydraulic drive unit is made up of two pumps, each operated by a 230 Vac electric motor. Protection grade IP 67.
They are located in the upper part of the foundation casing, to the opposite side of the post, and are easy to be accessed once the rectangular cover plate has been removed.
High pressure tubes (300 bars) connect the oil-hydraulic drive unit to the actuator.
- 3.2 In case of power failure, the post is designed to stay in the raised position. To lower it, it is required that the bollard be powered.
The bollard, though, is fitted with a release system, protected under the cover plate, allowing the manual lowering of the post if required.

4 SAFETY STANDARD FEATURES

- 4.1 The post of the bollard is well visible in any climate conditions, being fitted with an approved, 80 mm back-reflecting band sticker and 9 LEDs flashing all around the top.

- 4.2 The post head is completed with a rubber edge providing protection in case of accidental impacts with pedestrians, etc.

5 SPEED OF OPERATIONS

In conditions of standard service:

lowering speed	31 cm/s (~ 3,20 s)
rising speed	25 cm/s (~ 4,00 s)

6 WORKING TEMPERATURE

The bollard is designed to work in the following environmental conditions:

working temperature:	- 20°C + 80°C
working temperature with heating device fitted (optional):	- 40°C + 80°C

7 CONTROL BOARD

It is a printed circuit control board powered with 230 Vac voltage, external to the bollard and housed in a plastic box made of polycarbonate. It can control 1 bollard only. Connections between the bollard and the control box can be made by using a multipole cable type FG 70R 12x1,5 mm².

8 ACCESSORIES

The bollard can be supplied along with supplementary accessories, that are pre-assembled and pre-wired to the incorporated junction box:

- 8.1 24 Vdc heater: a device used to warm the bollard inside when the external temperature goes below 5°C.

- 8.2 Post colour options (RAL range).

TECHNICAL DATA

TALOS Model	M50
Actuator type	Oil-hydraulic actuator
Post height from ground [mm]	1.000
Post thickness [mm]	20
Post diameter [mm]	275
Post constraint [mm]	500
Post material	Fe 360 steel
Post finish	Cataphoresis and polyester powder coating RAL 1028
Post head material type	Cataphoresis treated aluminium
Rising time	~ 4,00 s
Lowering time	~ 3,20 s
Manual release device	YES
Rubber edge	YES
Voltage supply	230 Vac – 50 Hz
Max. absorbed power [W]	2.200
Protection grade	IP 67
Frequency of use	Very heavy duty
Back-reflecting sticker height [mm]	80
Back-reflecting sticker colour	Gray / red
Environment working temperature	- 20°C + 80°C
Environment working temperature with heating device	- 40°C + 80°C
Impact resistance (without deformation) [J]	700.000
Crash resistance [J]	2.000.000
Maximum static load [kg]	20.000
Casing dimensions LxWxH [mm]	630 x 780 x 1.620
Pit dimensions LxWxH [mm]	4.000 x 3.000 x 1.800
Connection cable [mm ²]	FG 70R 12x1,5
Max. length of connection cable [m]	20
Complete weight [kg]	770

FOUNDATION

Concrete specifications	A - Class C25/30, 10-30 aggregates and Rck value ≥ 30 N/mm ² , UNI EN 12620 complying installation is recommended 7/8 days from concrete casting
Soil compaction index	90% , "Proctor" optimal curve complying with UNI EN 13286-2:2005
Iron grid	B450C Class (ASTM A615 Grade 60), ribbed bars yield point ≥ 450 MPa and breaking point ≥ 540 MPa

SPECIFICATIONS

Bollard TALOS
Model M50 STEADY

Manufacturer MECCANICA FADINI s.n.c.
Via Mantova 177/A
37053 Cerea VR

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1 APPLICATIONS

- 1.1 Steady security bollard M50 (former K12) - "Standard Test Method for Vehicle Crash Testing of Perimeter Barriers".
- 1.2 This bollard is designed for the protection of special areas, such as: military bases, airports, embassies, consulates, banks, prisons, etc. and all those areas requiring a high level of security and perimeter protection.

2 DESCRIPTION OF THE BOLLARD

- 2.1 The bollard consists of a post (cylinder) standing 1.000 mm from ground level, diameter 275 mm, thickness 20 mm.
The post is made of Fe 360 steel, the surface is cathaphoresis treated and coated by polyester powder.
- 2.2 The bollard is designed and constructed to be able to stop vehicles weighing 6.800 kg, running at a speed of 75 Km/h and to absorb at least 1.680.000 Joules of energy, in compliance with the ASTM F2656-07 standards.
The base of the structure is designed to be sunk into a foundation pit.

3 ACCESSORIES

Kit of 9 LEDs to signal the presence of the post

TECHNICAL DATA

TALOS Model	M50 STEADY
Post height from ground [mm]	1.000
Post thickness [mm]	20
Post diameter [mm]	275
Post material	Fe 360 steel
Post finish	Cataphoresis and polyester powder coating RAL 1028
Post head material type	Cataphoresis treated aluminium
Rubber edge	YES
Back-reflecting sticker height [mm]	80
Back-reflecting sticker colour	Gray / red
Impact resistance (without deformation) [J]	700.000
Crash resistance [J]	2.000.000
Maximum static load [kg]	20.000
Underground structure dimensions LxWxH [mm]	678 x 678 x 800
Pit dimensions LxWxH [mm]	4.000 x 3.000 x 1.100
Complete weight [kg]	300

FOUNDATION

Concrete specifications	A – Class C25/30, 10-30 aggregates and Rck value ≥ 30 N/mm ² , UNI EN 12620 complying
Soil compaction index	90% , “Proctor” optimal curve complying with UNI EN 13286-2:2005
Iron grid	B450C Class (ASTM A615 Grade 60), ribbed bars yield point ≥ 450 MPa and breaking point ≥ 540 MPa