

# Product datasheet

## Dock equipment

### ASSA ABLOY DE6190AR Automatic Restraint

**ASSA ABLOY**  
Entrance Systems

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# 1. Description

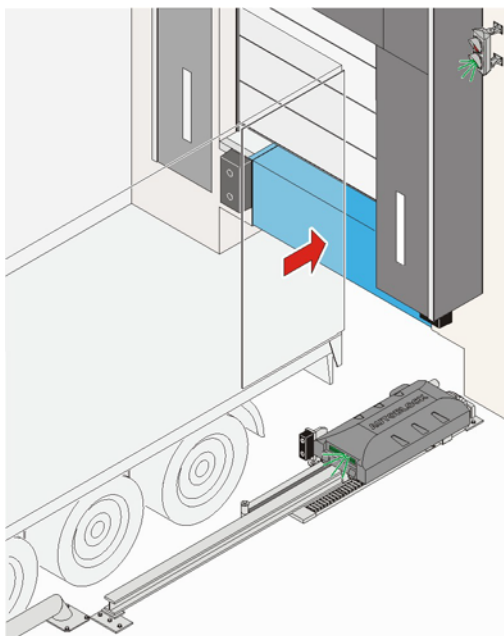
The ASSA ABLOY DE6190AR automatic restraint is a hydraulic wheel restraint system that helps to prevent accidents and injuries at the loading bay. During the loading operation there is a risk that the trailer can roll away unintentionally from the dock due to the impact from the forklift truck traffic, a problem known as vehicle creep. Another ever-present danger is premature drive-off, when a truck leaves too early due to misunderstanding, incorrect instruction or a lack of communication with the driver. For both risks the ASSA ABLOY DE6190AR automatic restraint is the ideal solution. During the dock-in procedure the ASSA ABLOY DE6190AR automatic restraint acts as a parking guide for the reversing truck. This reduces the possibility of damage to the truck, dock shelter, dock leveler or the building. When the truck is in the right position at the dock, the hydraulic wheel restraint system is activated by an impulse push button on the control box, which is located inside the building. The rear wheel is detected and secured automatically by the restraining arm. The outstanding feature of the ASSA ABLOY DE6190AR automatic restraint is the constant restraining force from the hydraulic system that provides a reliable and safe restraint function during the loading operations.

## 1.1 Mode of operation

### 1. Ready for use condition

Outside traffic light is green; the truck can reverse backwards to the loading bay.

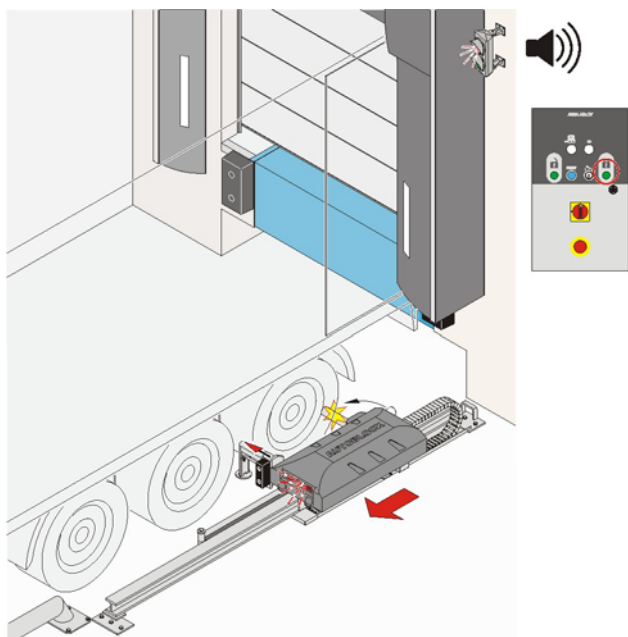
The loading operation cannot be started. The sectional door or the dock leveler is blocked for use.



#### 2A. Activate the restraint system (standard)

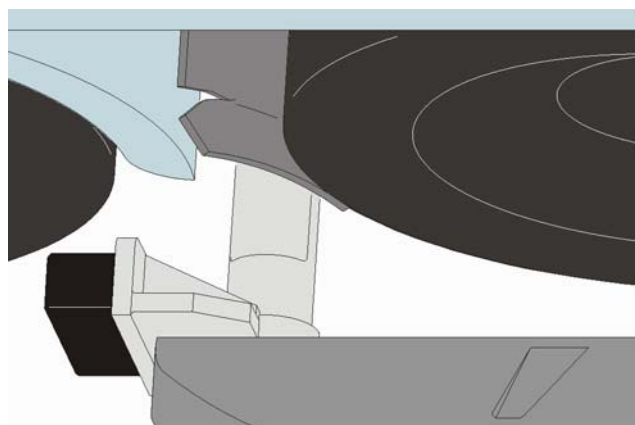
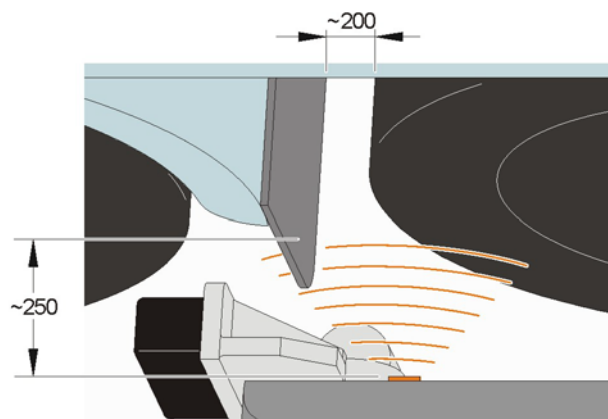
When the truck is in place, the restraint system is activated by an impulse push button on the control box. When activated a beeper alarm sounds and the outside traffic light switches from green to flashing red to indicate the movement of the restraint system.

When the detection arm contacts the rear truck wheel, the blocking arm extends up to 250 mm in front of the wheel, the carriage moves towards the wheel and blocks the truck with pressure towards the building. Then the outside traffic light switches to red and the inside indication lamp on the control box turns green. The sectional door or the dock leveler is released for use.



#### 2B. Activate the restraint system (optional with mud flap sensor)

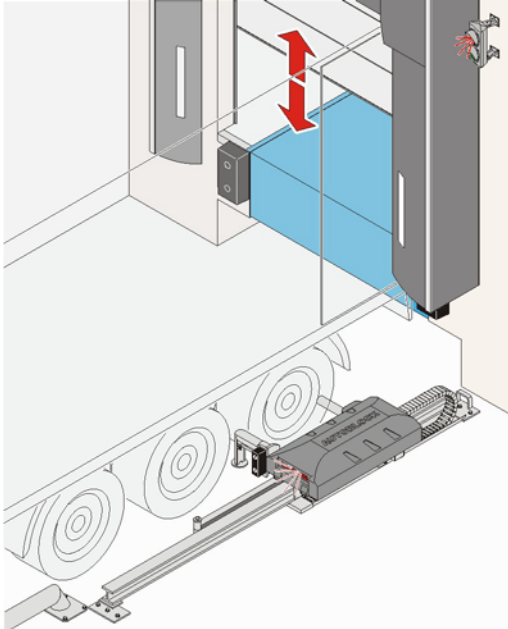
When the truck is in place, the restraint system is activated by an impulse push button on the control box. When activated a beeper alarm sounds and the outside traffic light switches from green to flashing red to indicate the movement of the restraint system. When the detection arm contacts the rear truck wheel, the carriage moves towards the wheel. When the mud flap sensor detects the wheel from the front and senses that there is no obstacle, the blocking arm extends just in front of the wheel. Then the outside traffic light switches to red and the inside indication lamp on the control box turns green. The sectional door or the dock leveler is released for use. If there is an obstacle, the blocking arm will not extend but the machine will run back to the parking position. The benefit of the sensor is to avoid damages to the truck, especially to the rigid parts of the mud flaps.





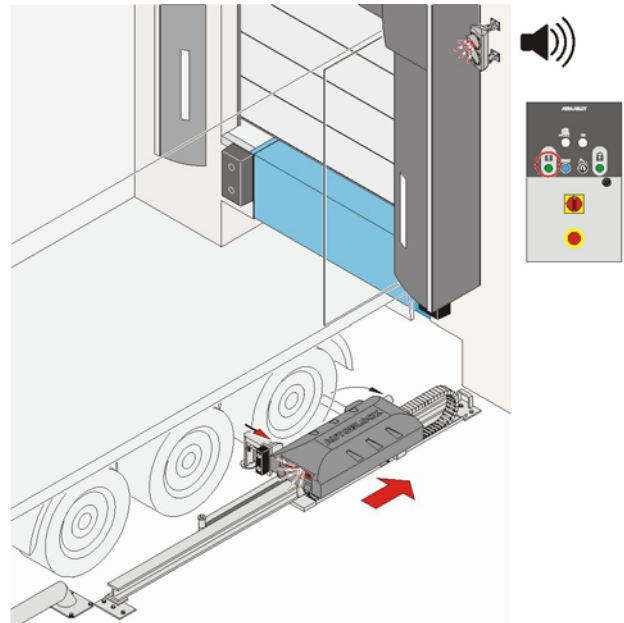
### 3. Loading operation

Now the loading operation can begin. The sectional door can be opened, and the dock leveler can be connected to the truck.



### 4. Release the restraint system

When the dock leveler is back to parking position and the door is closed, the release of the restraint system is activated by an impulse push button on the control box. When activated a beeper alarm sounds and the outside traffic light switches from red to flashing red to indicate the movement of the restraint system. When the restraint system is back to its parking position the outside traffic light switches to green. Now the truck can leave and the restraint system is ready for use for the next truck. The blocking arm can be released manually in case of an interruption to the power supply



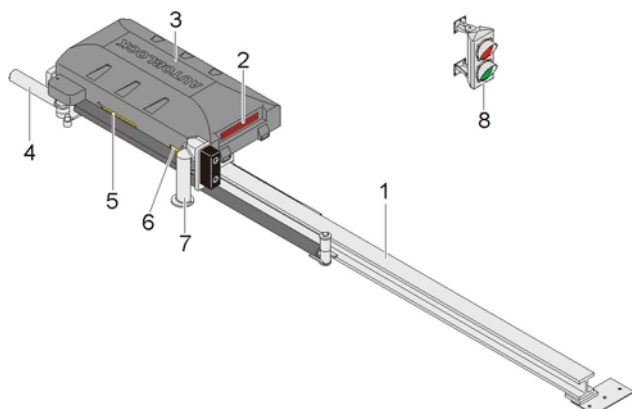
#### Attention:

Before activating the restraint system, the operator must be sure that the truck is correctly positioned against the buffers.

#### Remark:

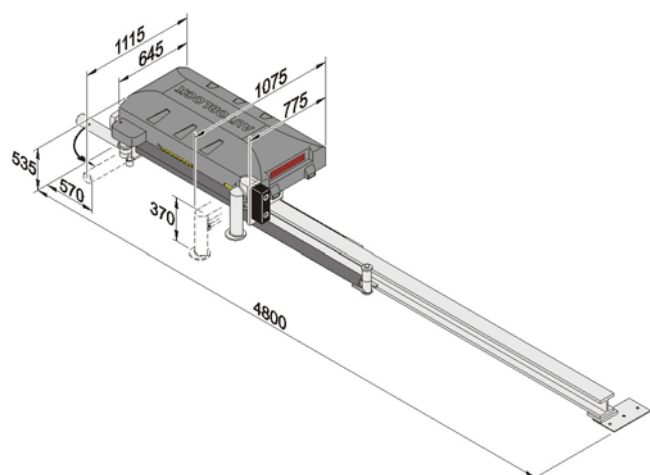
the restraint system is activated without a vehicle in place, it will automatically move back to its parking position.

## 1.2 Overview

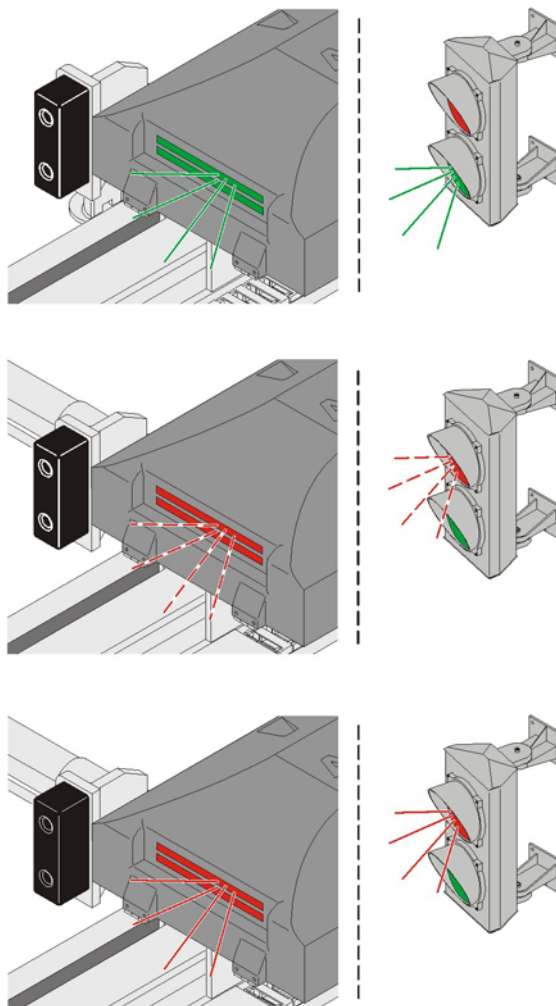


- 1) Guide rail
- 2) Integrated traffic light
- 3) Carriage
- 4) Detection arm
- 5) Outside LED light
- 6) Mud flap sensor (option)
- 7) Blocking arm
- 8) Additional outside traffic light

### 1.2.1 Dimensions

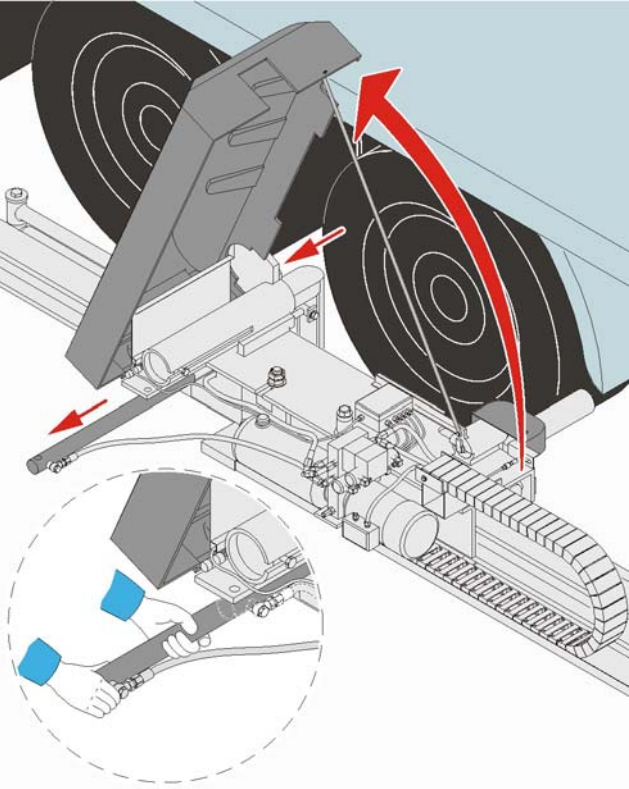


### 1.2.2 Overview of parts



1.2.3 Manual release of the blocking arm

In case of interruption in the power supply, it is possible to release the blocking arm manually to allow the truck to drive off.



1.3 Standard

Restraint force	200kN
Standard Cable length	Motor cable 15 m Sectional door sensor cable 2,5 m Dock leveler sensor cable 15,0 m
Traffic light	Integrated on the carriage
Interlocking	Sensor for sectional door Sensor for dock leveler
Outside LED light	Has a brightness sensor and lights up when it is dark.
Override key switch	Disconnects the interlocking functions.
Winter mode switch	The hydraulic unit will run in a closed circuit for one minute, every four hours.

1.4 Options

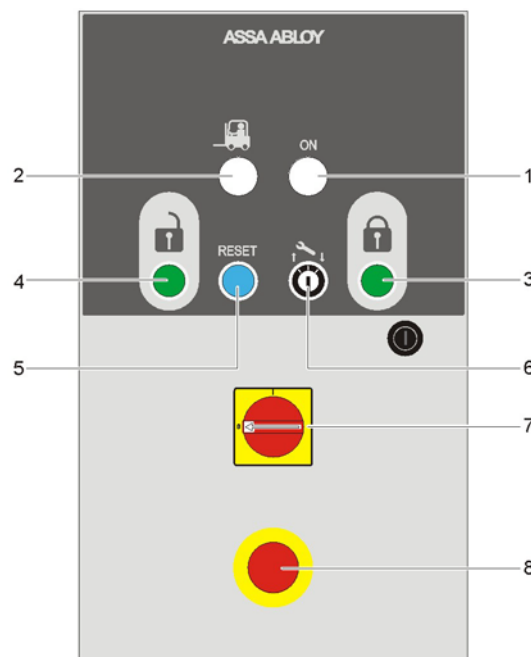
Traffic light	Additional outside with 12,0 m cable
Interlocking	Sensor for truck detection (Dock-IN sensor)
Mud flap sensor	Sensor to avoid that the blocking arm damages the truck's mud flaps
Equipment	Parking guides cast in concrete installation Parking guides bolted installation



## 1.5 Interlocking functions

- The sensor for the door of the loading bay ensures that the restraint system can only be activated when the door is closed. In a standard loading process the door is closed when the loading operation has finished. Then this interlocking function prevents the restraint system from being removed too early, so the truck cannot drive off too early thereby avoiding possible dangerous situations for the forklift truck drivers. This loading process is standard in many industries and can be installed either with the dock leveler behind the door or outside in a loadhouse.
- The sensor for the dock leveler also ensures that the restraint system can only be activated when the door and the dock leveler are closed. In a loading process divided into sequences according to when the goods are ready from production, the door of the loading bay is closed between the sequences while the dock leveler stays connected to the truck. Then this interlocking function prevents the restraint system from being removed too early, so the truck cannot drive off too early thereby avoiding possible dangerous situations for the forklift truck drivers. This loading process is used by some manufacturing companies, and can be installed with the dock leveler outside in a loadhouse.
- The sensor for the truck detection also ensures that the restraint system can only be activated when the truck is in place. This interlocking function prevents the restraint system from moving unintentionally before the truck has arrived in the correct position in front of the loading bay thereby avoiding possible dangerous situations for the people outside in the driving area of the trucks.

## 1.6 Control Box

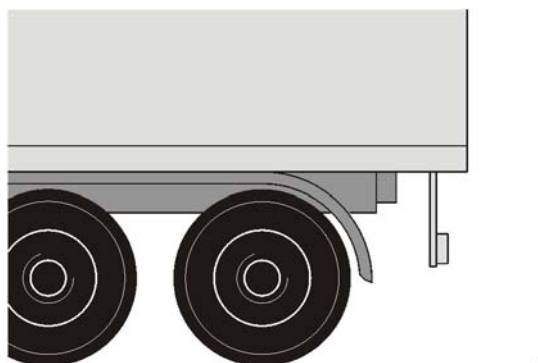


- 1) Signal white to indicate power ON.
- 2) Signal green to indicate leveler or sectional door is released (the truck is docked and blocked).
- 3) Push button to activate the restraint system to move forward and block the truck. The push button lamp is green when the restraint system is ready for use or when the optional truck detection sensor is activated.
- 4) Push button to release the restraint system to move back to the parking position.
- 5) Push button to RESET the restraint system. Signal blue to indicate an error in the system or when emergency push button has been activated.
- 6) Key switch for maintenance.
- 7) Mains Switch.
- 8) Emergency stop push button.

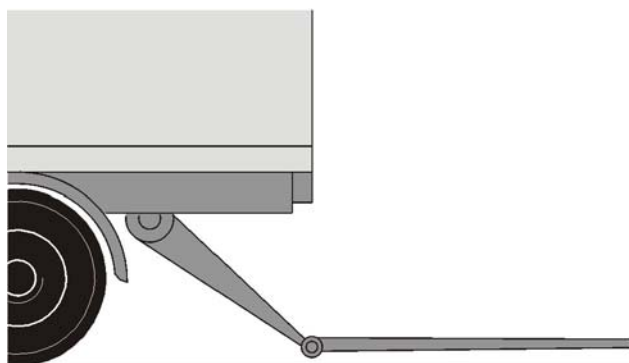
## 2. Truck Specifications

The ASSA ABLOY DE6190AR automatic restraint can be used for a large proportion of vehicles with or without tail lift. Trailers with one axle, two axles or three axles, as well as most smaller vehicles down to 3,5 ton.

Truck without tail lift

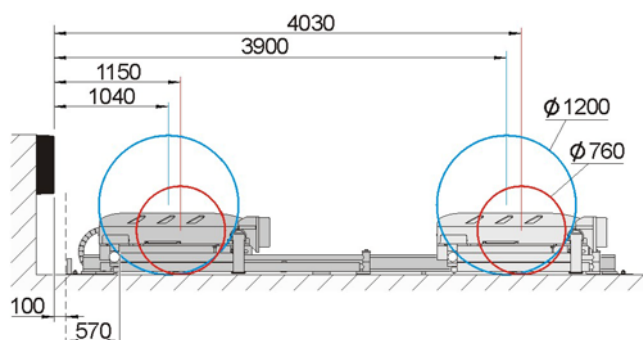


Truck with tail lift



### 2.1 Working range of the restraint system

The working range defines the trucks suitable that can be secured by the ASSA ABLOY DE6190AR automatic restraint.



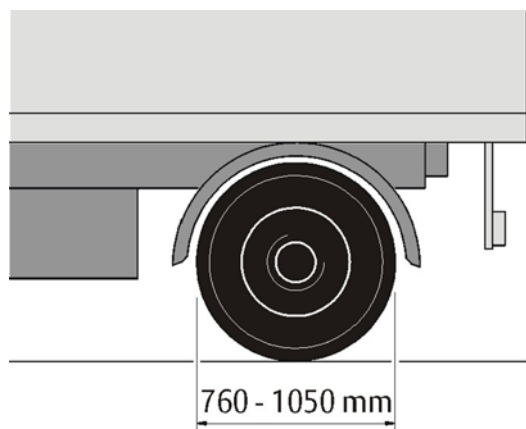
The rear position of the ASSA ABLOY DE6190AR automatic restraint is 100 mm in front of the buffer to allow the operation of trucks with tail lifts. In this position, the distance from the buffer to the rear wheel must be min. 670 mm (570 mm from the wheel detection arm plus 100 mm from the buffer).

The working range of the system depends on the size of the wheel set of the trucks.

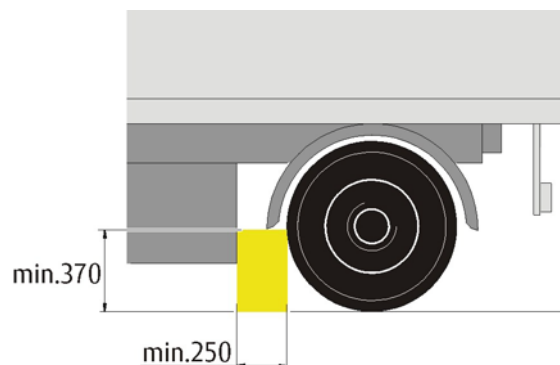
Wheel set diameter	Min. distance to buffer from the center of the wheel	Max. distance to buffer from the center of the wheel	Working range
760 mm	1.150 mm	4.030 mm	2.880
1.200 mm	1.040 mm	3.900 mm	2.860

## 2.2 Dimensions of suitable wheels

Dimensions of suitable wheels  
Diameter between 760 and 1.200 mm



Free space in front of the wheel  
(for the blocking arm)



## 2.3 Unsuitable trucks



## 3. Technical Specifications

### Electric

Power supply	380 V Tri+Terre
Power	7 Amps
Control	24 V DC
MOELLER automaton	EASY 721-DC-TC
Stabilized power supply	24 V DC protected (fuses not needed)
Withdrawable relays	YES – Facilitates maintenance
Cabling with connectors	YES – Facilitates maintenance
Door position sensor	YES (serial) – Reflex Sick sensor (interlocking ED 6059)
Dock position sensor	YES (serial) – Reflex Sick sensor (interlocking ED 6059)
"NO" contact motorized door blockage	YES (serial) – Feedback to terminal block (interlocking ED 6059)
"NO" contact hydraulic dock blockage	YES (serial) – Feedback to terminal block (interlocking ED 6059)
Blocking arm position sensor	Inductive sensor with control indicator light NBN8-12GM50-E2-V1
Wheel detection sensor	Inductive sensor with control indicator light NBN8-12GM50-E2-V1
Automatic safety lighting	YES (serial) – 2 LED lights 4 W with adjustable dusk light
Signalization LED lights	YES (serial) – Red and green LED strips on the carriage
Interior indicator light LED signalization	YES (serial)
Beeper alarm	YES (serial) - Adjustable
Maintenance contact key	YES (serial) with control indicator light
Summer/winter function	YES (serial)
Automatic return function (if there is no vehicle)	YES (serial) – Avoids wrong maneuvers from blocking the dock
Releasing security in case the vehicle is not braked	YES (serial) – Very important if the dock is on a slant

The inductive sensors only work in attendance of a metallic mass, so they are insensitive to other materials, including snow, rain, etc. (protection rating IP 65)

### Hydraulic

Hydraulic unit	Motor 1.1 Kw TX 905-1500 rpm 220/380 Tri, adjusted at 60 bars
Hydraulic pump	9,8 cc MHYDE 3434 tank 12 liters
Solenoid valves and coils with control indicator LED lights	2 solenoid valves NG6 VNK 4 coils 24 Volts DC 2 anti-reverse steered in A-B 22S6-50 NG6 VNK
Plugs	Sets in 3/8
Hoses	SAE 100 3/8 service pressure 330 bars
Oil	95% biodegradable - BESLUX HIDRO-BAT 32

### Dimensions

Overall length, width, and height of the restraint system	4800 mm x 775 mm x 535 mm
Weight	800 kg
Wheel blockage height	370 mm

## 4. Service you can rely on



### Gold

#### The ultimate protection

With full coverage, Gold Service enables you to plan and budget your expenses annually.

- Spare parts for emergency calls
- Labor and travel costs for emergency calls
- Replacement of components according to preventive maintenance schedule and to fulfill legislative and safety requirements



### Silver

#### Added advantages

With cover for all service calls during business hours, Silver Service offers you peace of mind.

- Labor and travel costs for emergency calls
- Preventive maintenance



### Bronze

#### Scheduled Service

With scheduled on site visits, Bronze Service means you know that your doors and docking systems will be regularly serviced and inspected.

- Preventive maintenance

#### Included in all packages

1-4 scheduled maintenance visits per year	24/7 priority service hotline and fast response	Safety, compliance and quality control checks	Documentation reports provided on site
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#### Expert service you can rely on

A healthy business enjoys a steady flow of goods, services and people through its entrances every day. But heavy traffic puts entrances under pressure as every component works to keep them running.

ASSA ABLOY Entrance Systems offer the industry's most complete, flexible service solutions. Because even something as robust and well-engineered as an ASSA ABLOY door or docking system needs to be serviced to stay in great working order.

#### Pro-active care packages

An ASSA ABLOY service agreement gives you service you can rely on. We have specialized local service technicians on call to take care of your service needs. Equipped with a wide range of spare parts and expertise, to keep your industrial doors and docking systems running.

With an ASSA ABLOY service agreement you can ensure reliable, safe and sustainable operations at every entrance under your agreement, including doors and docking systems, independent of brand.

#### ASSA ABLOY e-maintenance™ (optional add-on)

For an online overview of your entrance systems and history, add ASSA ABLOY e-maintenance™ to your service package for:

- Easy access to real-time data on all your doors
- Planning, order and service information
- Overview that helps you control lifecycle costs



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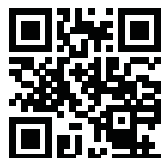


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Entrance Systems

ASSA ABLOY Entrance Systems provides solutions for efficient and safe flow of goods and people. Our offering includes a wide range of automated pedestrian, industrial and residential doors, loading dock equipment and services.

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