

Product datasheet

Dock equipment

ASSA ABLOY DE6290AR automatic restraint

ASSA ABLOY
Entrance Systems

Experience a safer
and more open world



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1 Description

The ASSA ABLOY DE6290AR 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 DE6290AR automatic restraint is the ideal solution.

During the dock-in procedure the ASSA ABLOY DE6290AR 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.

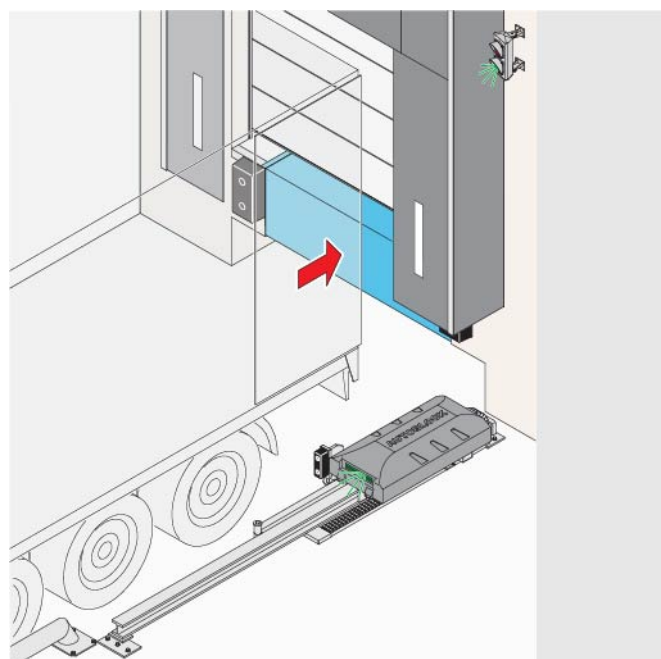
1.1 Mode of operation

The ASSA ABLOY DE6290AR automatic restraint is suitable for a wide range of different trucks. To ensure the smooth use and avoid interruptions, it is crucial to check carefully the truck specifications as outlined in chapter 2 of this document. This is the responsibility of the truck driver and the restraint system operator.

1. Ready for use condition

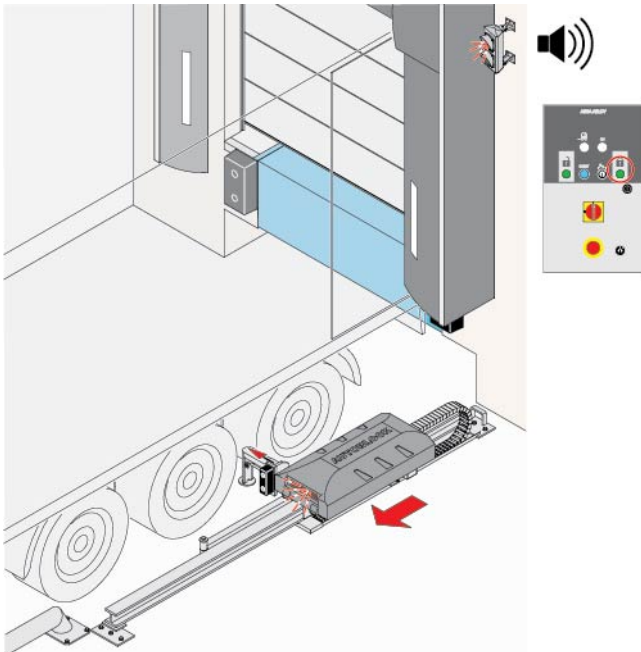
Outside traffic light is green; the truck can reverse backwards to the loading bay.

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

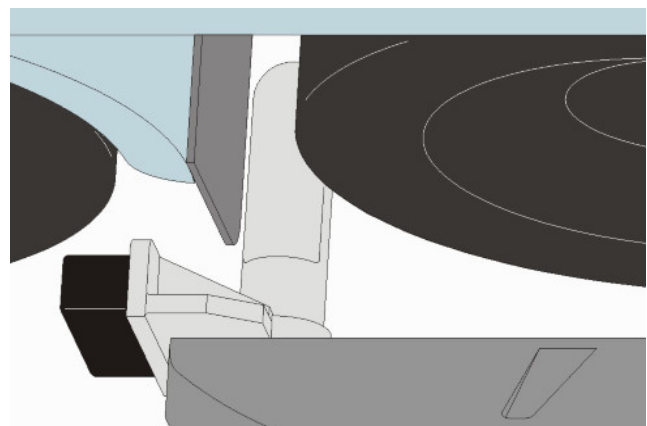
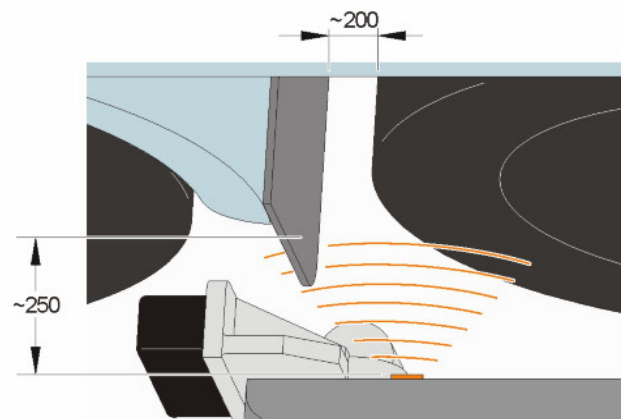


2. Activate restraint

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.



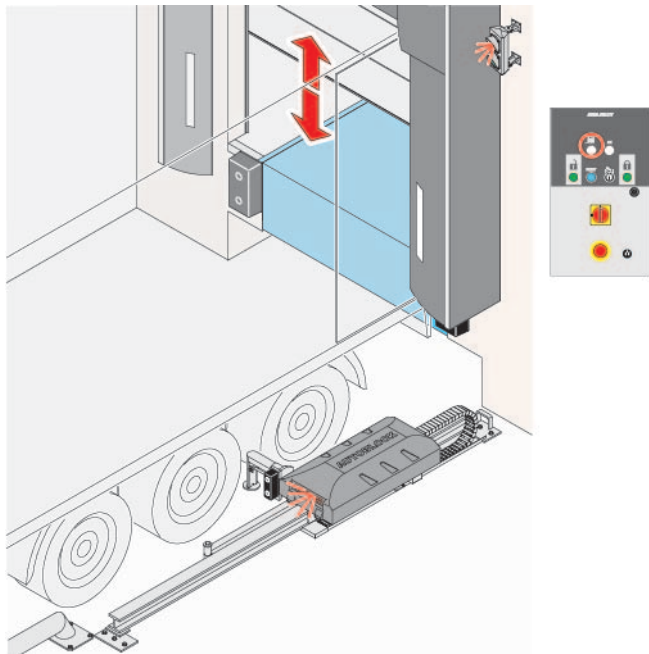
When the wheel sensor detects the rear truck wheel, the carriage moves towards the wheel. When the mud flap sensor detects the wheel from the front and senses that there is no obstacle, the blocking arm extends just in front of the wheel. Then the outside traffic light switches to red and the inside 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 trucks with rigid and low hanging mud flaps when parked in the loading bay.



Mud flap sensor

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

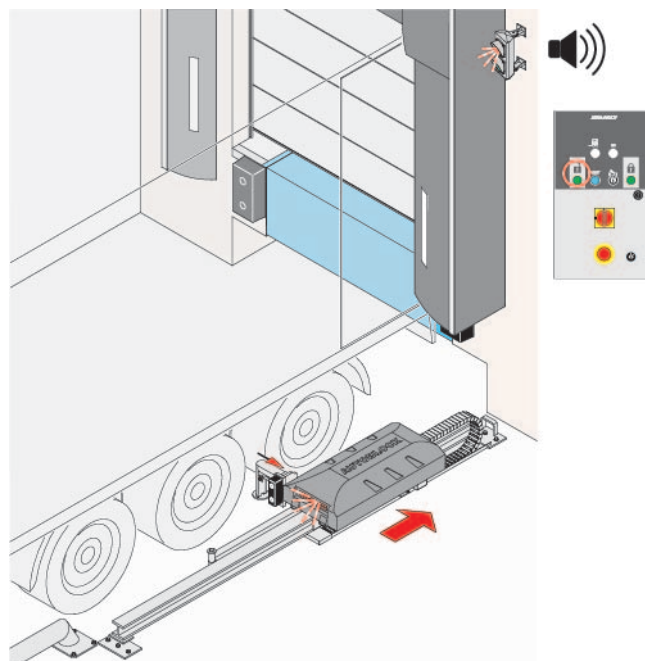
When the dock leveler is back to parking position and the door is closed, the release of the restraint system is activated by an impulse push button on the control box.

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



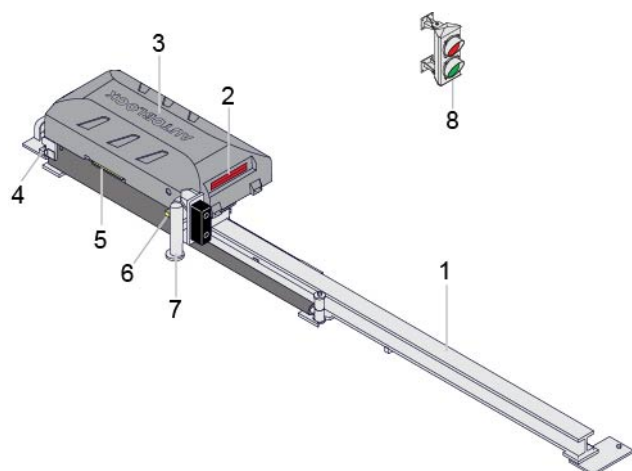
Attention:

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

Remark:

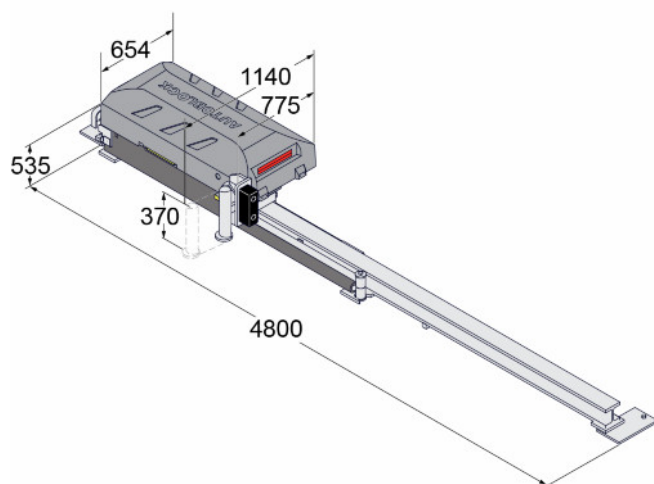
The restraint system is activated without a vehicle in place, it will automatically move back to its parking position.

1.2 Overview

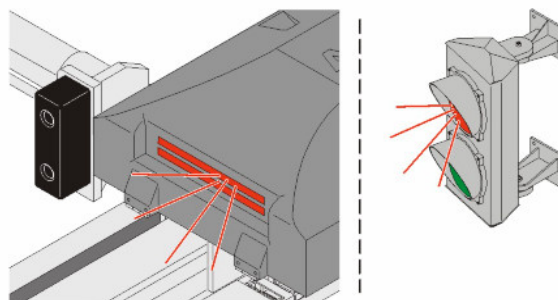
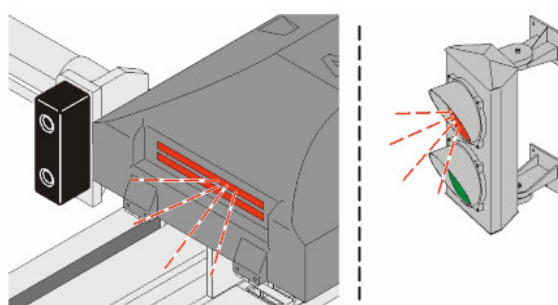
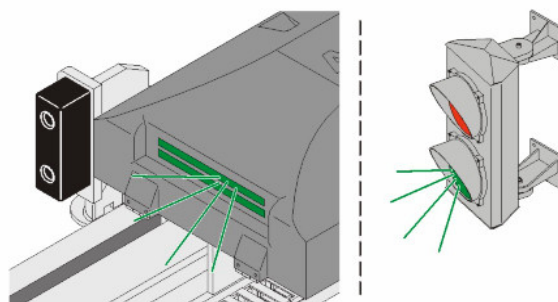


1. Guide rail
2. Integrated traffic light
3. Carriage
4. Wheel detection sensor
5. Outside LED light
6. Mud flap sensor
7. Blocking arm
8. Additional outside traffic light

1.2.1 Dimensions

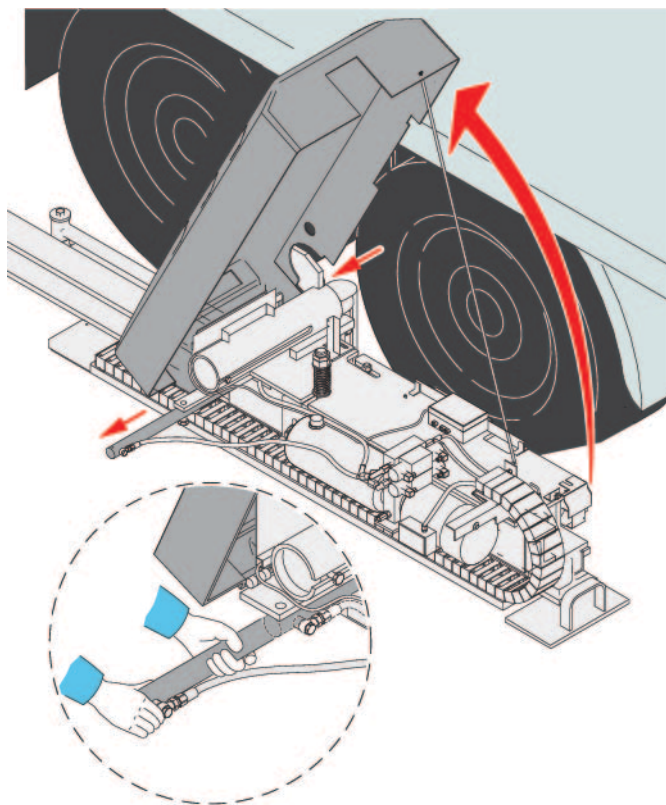


1.2.2 Overview of parts



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
Traffic light	Integrated on the carriage
Wheel detection sensor	Sensor to detect the rear truck wheel
Mud flap sensor	Sensor to avoid the blocking arm damaging the truck's rigid and low hanging mud flaps
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.
Fixation	Driving surface of concrete

1.4 Options

Traffic light	Additional outside with 12,0 m cable Additional inside with 5,0 m cable
Interlocking	Sensor for truck detection (Dock-IN sensor) Sensor for sectional door with cable 2,5 m Sensor for dock leveler with cable 15,0 m Cable 1,5 m for the connection into the 950D control box Blocking arm sensor
Equipment	Parking guides cast in concrete installation Parking guides bolted installation
Camera and screen	Screen on the control box showing live recording of the restraint system working area
Swap body function	Additional switch on the control box for the swap body function
Fixation	Driving surface of asphalt

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.

Remark: When the door and the dock leveler are equipped with the 950D control box type DLA or DLSA, then the two sensors for the interlocking of the door and the dock leveler can be replaced by a direct cable connection.

1.6 Blocking arm sensor

The optional blocking arm sensor ensures that the door and dock leveler can only be operated when the blocking arm is fully extended. This additional interlocking function increases the safety

1.7 Swap body function



Position 0 = standard truck

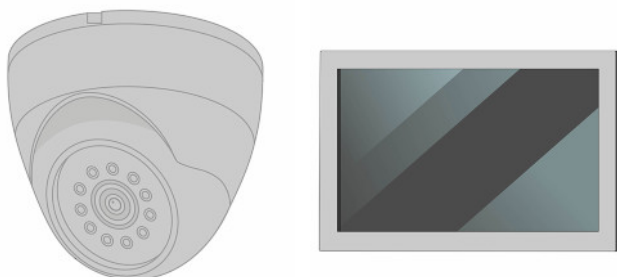


Position 1 = swap body

With the swap body function option, there is an additional switch on the control box.

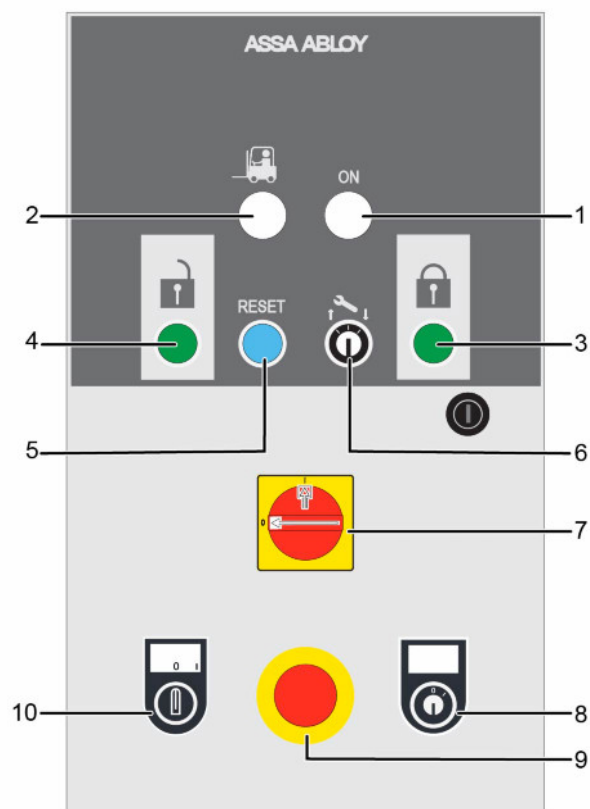
When switching to 1, the restraint system moves forward to the end and the blocking arm extends, thus preventing the swap body from being moved away accidentally by the shunter vehicle. When switching back to 0, the restraint system moves back to its parking position and is ready for the standard truck function. This easy-to-operate option is a flexible and efficient two-in-one solution as the restraint system can be used for both swap bodies and standard trucks.

1.8 Camera and screen



The outside camera mounted next to the loading bay records the restraint system working area, and that is displayed on the control box screen. To increase comfort and safety, the operator inside the building gets a clear view of the situation on the outside before he activates the machine.

1.9 Control Box



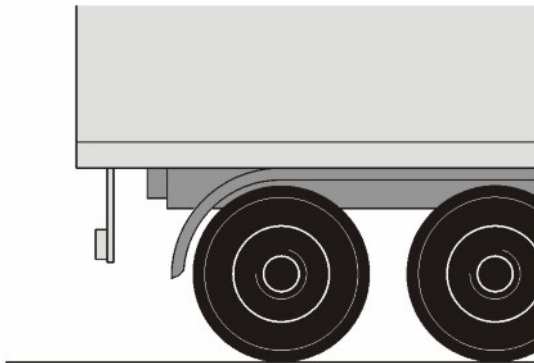
Dimensions: HxWxD 500x300x220 mm

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. Key switch to override out of service.
9. Emergency stop push button.
10. Swap body function switch (optional)

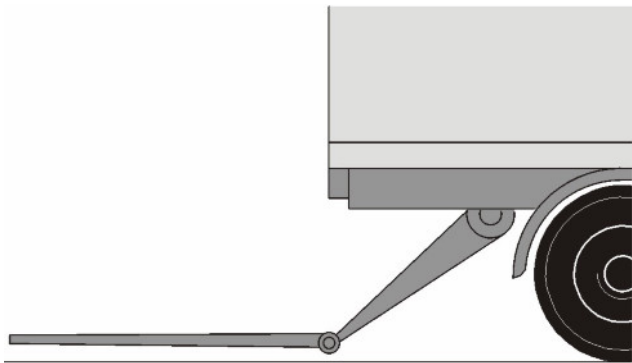
2 Truck Specifications

The ASSA ABLOY DE6290AR 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

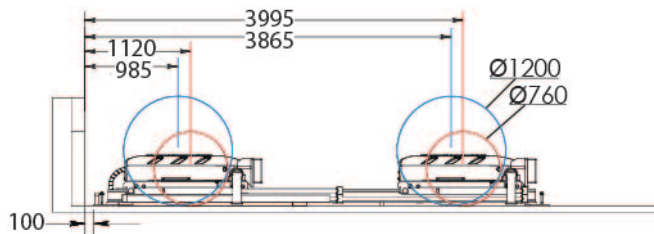


Truck with rear wheels far to the back. (The min. distance to the buffer (see [2.1. Working range of the restraint system](#) page 11) is not applicable for this kind of truck as the restraint will automatically move to the position indicated below.)



2.1 Working range of the restraint system

The working range defines the trucks suitable that can be secured by the ASSA ABLOY DE6290AR automatic restraint.

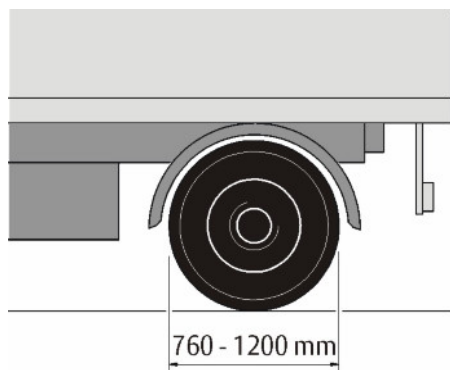


The working range of the system depends on the size of the wheel set of the trucks.

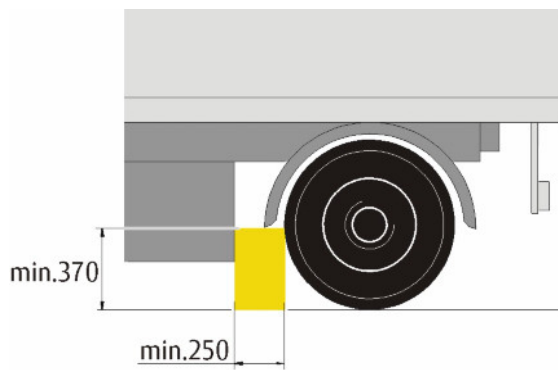
Wheel set diameter	Min. distance to buffer from the center of the wheel	Max. distance to buffer from the center of the wheel	Working range
760 mm	1120 mm	3995 mm	2875 mm
1200 mm	985 mm	3865 mm	2880 mm

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	10 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
Camera	1/3 MP CMOS Color Full HD sensor 3.6 mm lens (viewing angle up to 75°) 18 LED night vision up to 20-25 meters Suitable for outdoor or indoor use (-10°C to +50°C) Max humidity 95% Anti-vandal metal model Night vision up to 20-25 m 12 V DC supply.
Screen	7" IPS-LCD LED Backlight Input voltage DC 9-33V 5.6 W (on), 0.4 W (standby) Power supply 9-33 V DC Power adapter (included) AC100-240V, 50/60Hz , Output: 12V-2A ED 100% Max 85% Humidity -20°C to +60°C

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 tailored to your needs

Designing and fitting your automatic restraint is just the beginning. The most meaningful relationships are the ones built to last. We stay by your side long after installation, with service agreements specifically designed to ensure your ASSA ABLOY DE6290AR delivers the expected performance you deserve.

To choose the best service agreement for you, we first determine what your priorities are for your automatic restraint. Just preventive maintenance, or the opportunity to fully optimize its performance? Together, we can tailor your own service agreement to suit you.

Whatever agreement you choose, one thing is certain – you will always be in good hands and completely taken care of, anytime, anywhere.



With ASSA ABLOY Maintain you can focus on your core business. We provide preventive maintenance and safety check ups so that your entrance solution always lives up to the latest safety requirements, local regulations and operational guidelines.

You can also choose to have access to our digital connected solutions, which allow you to proactively monitor and control the automatic restraint and its maintenance requirements.

You can see the status, health and service needs of your ASSA ABLOY DE6290AR- all in real-time. You can also remotely monitor its performance and get personalized notifications of errors and alerts.



With ASSA ABLOY Optimize, we take full care and responsibility of the equipment, so you will never have to worry about your automatic restraint.

In addition to the preventive maintenance and safety check-ups offered by ASSA ABLOY Maintain, we also cover all repairs and parts*, ensuring stable maintenance costs and simplified admin.

It also includes digital solutions that allow us to safely and securely monitor your automatic restraint and act on the real-time data with planned maintenance or repairs before they become disruptive emergency repairs.

This data also enable us to pinpoint any errors and contact you for remote troubleshooting. If we can avoid sending out a technician, it is cost and time efficient for both parties, and it also helps reduce our carbon footprint.

In cases where we cannot remote troubleshoot, we ensure fast response, sending one of our experienced technicians with the right tools, resources and parts to fix the specific problem - potentially first time.

** excluding cases of misuse or collision*

For all your service needs, use our dedicated 24/7 service hotline. From there we can tailor your own service agreement together.

Learn more about ASSA ABLOY Entrance Systems at www.assaabloyentrance.com.

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The ASSA ABLOY Group is the global leader in access solutions.
Every day, we help billions of people to experience a more open world.

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, perimeter fencing and service.

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