



Crawford 542D Overhead sectional door

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Technical facts

Features

Max size: (W x H)*	3000 x 3350 mm
Panel thickness:	42 mm
Panel material:	Microrilled steel or aluminium
Filling:	CFC-free polyurethane
Weight:	Steel: 13 kg/m ² Alu: 10 kg/m ²
Colour outside:	9 Standard RAL colours
Colour inside:	RAL 9002
Track types:	Standard: VLA
Windows:	Optional: DARP, DAOP
Electrical operation:	Standard: CDMB direct belt drive

Performance

Opening/closing speed:	Open: >0,21 m/s Close: >0,14 m/s
Life time expectations:	Door: 100.000 door cycles Springs: 20.000 door cycles
Resistance to Wind load, EN12424	Class 3 (\leq 4250 mm DLW)*
Thermal transmittance, EN12428	0,96 W/(m ² .k) Steel door (Door surface 5.000 x 5.000 mm, for smaller doors it can differ) 1,14 W/(m ² .k) Alu door (Door surface 5.000 x 5.000 mm, for smaller doors it can differ)
Resistance to Water penetration, EN12425	Class 3
Air permeability, EN12426	Class 2
Acoustic insulation, EN ISO 717-1	R=23dB

* Higher wind load classification on request

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1. Description

1.1 General

The Crawford 542D overhead sectional door is one of the most stable and well-insulated overhead doors on the market.

It is an overhead sectional door, especially designed as basic door for docking bays. The simple maintenance free design and the perfect combination with a leveller makes it the ideal docking entrance solution.

The door is made of insulated panels that provide minimal thermal transmittance, which reduces energy cost.

The Crawford 542D overhead sectional door has been designed to meet all operational and safety requirements in the European Directives and the standards issued by the European Standardization Committee, CEN.



The 542D overhead sectional door has 4 primary parts:

- 1) Door leaf
- 2) Track set
- 3) Balancing system
- 4) Operating system

1.1.1 Standard

Although every Crawford door is custom built, the Crawford 542D overhead sectional door is supplied with the following specifications as standard:

Door leaf:	Insulated steel or aluminium panel
Locks:	Lock bolt with lock hole protection
Colours:	9 RAL colours, pre-coated
Track type:	VLA: Vertical Lift
Operation:	Electrical with direct drive CDMB and step/lifting handle
Safety:	SBD: Spring Break Device CBD: Cable Break Device

1.1.2 Options

Crawford provides a wide range of options and accessories to customise the Crawford 542D overhead sectional door to any customer's needs.

Top panel:	Up to 900 mm
Panel windows:	DARP: Double glazed Acrylic Rectangular Pane DAOP: Double glazed Acrylic Oval Pane
Framed section:	242 door section
Locks:	Cylinder lock
Colours:	Factory painting - complete or panel only
Ventilation:	Ventilators

1.2 Door leaf

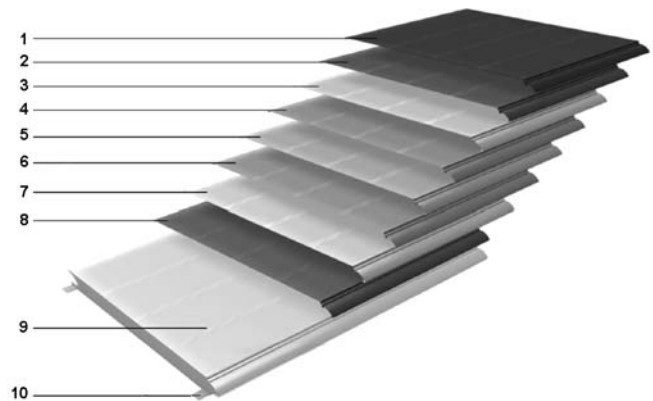
1.2.1 Construction

The Crawford 542D overhead sectional door leaf has horizontal sections, connected together with hinges. The outer hinges of each section have rollers that run in the tracks. The horizontal sections are insulated panels, filled with water blown CFC-free polyurethane.



1.2.2 Material

The surface of the door leaf panels is characterized by the microrilled steel or aluminium sheet. The door leaf panels (steel pre-coated) fulfill outdoor corrosion resistance category RC3 according to EN 10169.



- 1 Polyester coating
- 2) Primer
- 3) Chromate layer
- 4) Zinc and Aluminium coating*
- 5) Steel or Aluminium sheet
- 6) Zinc and Aluminium coating*
- 7) Chromate layer
- 8) Primer
- 9) CFC-free polyurethane (water blown)
- 10) Reinforcement strips










*Steel door leaf only. The aluminium door leaf is not coated.



1.2.3 Colors

The RAL-colors are as close as possible to the official RAL HR collection. Max. deviation is 1,0 ΔE

Pre-coated range:

	RAL 1021
	RAL 3002
	RAL 5010
	RAL 6005
	RAL 7016
	RAL 9002
	RAL 9006
	RAL 9007
	RAL 9010

1.2.3.1 Pre-coated colors

Steel

- Outside color: The steel panel is available in the 9 standard colors.
- Inside color: RAL 9002 - Grey white.

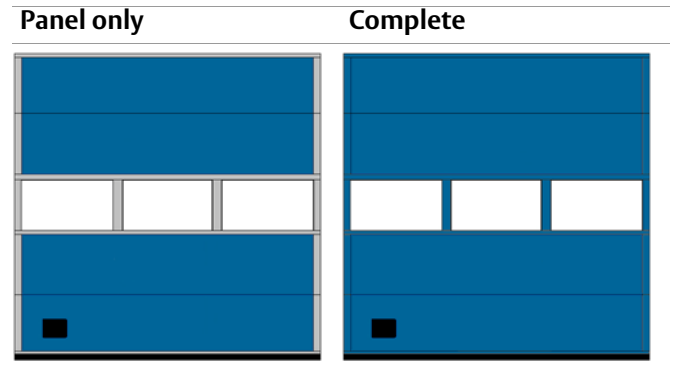
Aluminium

- Outside colour: The aluminium panel is available in 2 standard colors: RAL 5010 - Gentian blue, RAL 9010 - Pure white.
- Inside color: Clear polyester.

1.2.3.2 Optional colours *

Factory painting

The door leaf can be factory painted in any RAL and NCS colour plus some metallic colours, outside only. The painting can be applied to only the panel or to the complete door leaf, including frames and strips.



* Other colors available on request

1.2.4 Seals

The door is equipped with well designed sealings on all sides which gives the door its excellent sealing abilities.

1.2.4.1 Top seal

Installed on the top panel, to seal the gap between the panel and the wall. The flexible rubber material provides continuous pressure on the top wall, ensuring maximum sealing.



1.2.4.3 Bottom seal

Installed on the bottom edge of the bottom panel, to act as a barrier as well as a shock absorber. The flexible rubber material and the V-shape provides continuous pressure on the floor, ensuring maximum sealing.



1.2.4.2 Side seal

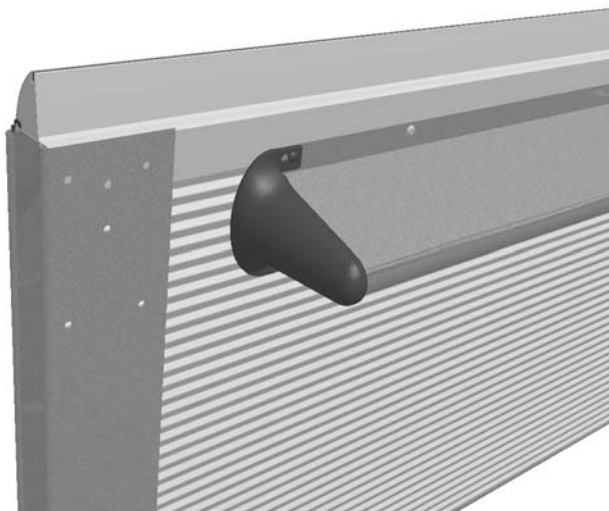
Installed on the track set to close the gap between the tracks and the door leaf. The flexible rubber material provides continuous pressure on the door leaf, while dodging irregularities, ensuring maximum sealing.





1.2.5 Wind reinforcement truss

Wider door panels and panels with windows are reinforced with metal profiles that act as trusses. These trusses reduce bending of the panel caused by wind loads or when the door leaf is in the horizontal position and is bending under its own weight.



1.2.6 Handle

For manual operation, every Crawford 542D overhead sectional door is provided with a solid, easy to grip and step-on handle, finished with the Crawford logo.



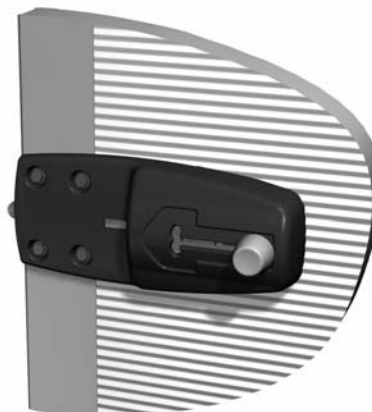
1.2.7 Locks

1.2.7.1 Lock bolt

A standard Crawford 542D overhead sectional door is equipped with a Lock bolt.

The Lock bolt locks the door from the inside, without the use of a key.

The Lock bolt is not visible from the outside.



1.2.7.2 Cylinder lock

The Cylinder lock is a key operated lock which offers extra security. The lock is installed on the inside and can be unlocked with a key and turning the handle. Access to the Cylinder lock is possible from either only the inside, or both the inside and the outside.



1.2.8 Windows

The door sections can be glazed with windows*. The number of windows per section is directly related to the daylight width. Optionally, one single window can be placed on the outer left or right side, in the third section.

*The bottom section cannot be glazed.

1.2.8.1 DARP



- Double Acrylic (3 + 2 mm) Rectangular, in Plastic frame
- Light opening: 604 x 292 mm
- Window frame: Black

1.2.8.2 DAOP



- DAOP: Double Acrylic (3 + 2 mm) Oval, in Plastic frame
- Light opening: 610 x 292 mm
- Window frame: Black

1.2.8.3 Frame section

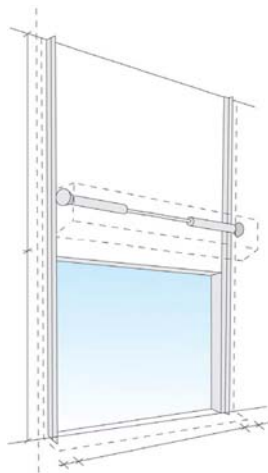
The Crawford 542D overhead sectional door can be fitted with a Crawford 242 frame section. The height of this section is 600mm. Please refer to Crawford 242 documentation for details.





1.3 Track sets

1.3.1 Vertical lift



- Building type: Very high ceiling and high working space requirements.
- Benefits: The door moves straight up without any obstructions inside the building.

Sufficient space between the daylight height and the roof is required for this track type.

1.4 Balancing system

The balancing system balances the door by applying a force nearly equal to the weight of the door leaf. This allows the door leaf to be moved up and down manually, and to stay open in any position.

The system is installed on the top or the end of the track set and works as follows: Two torsion springs are installed on a shaft above the door opening. This shaft has a cable drum on each end from which door cables run to the bottom corners of the door leaf. Turning the shaft lifts the door up or down.

1.4.1 Safety devices

The balancing system supports heavy forces. In case of a spring or cable break, its counterforce is lost. The door is therefore equipped with two safety devices that can block downward door movement:

- Spring Break Device (standard)
- Cable Break Device (standard)

1.4.1.1 Spring break device (SBD)

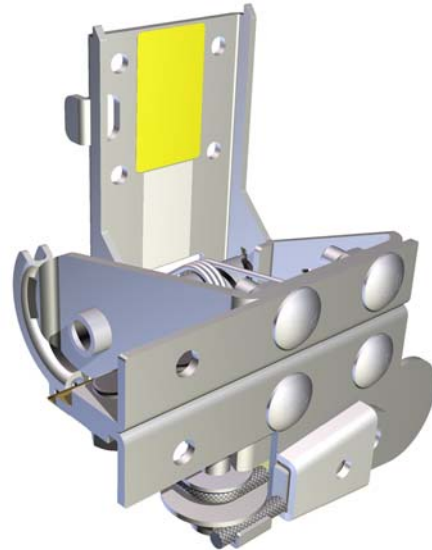
The Spring Break Device (SBD) is delivered with all Crawford 542D overhead sectional doors.

In the event of a spring break, the sudden drop force activates the Spring Break Device (SBD). The shaft will be locked in less than 300mm of door movement.



1.4.1.2 Cable break device (CBD)

The Cable Break Device (CBD) is a standard safety device.





1.5 Operating system

1.5.1 Type of operation

A Crawford 542D overhead sectional door is always electrically operated. If needed the door can be opened and closed manually. Electrically operated doors can be controlled by hand or be fully automatic.

1.5.2 CDMB Operator

The main part of the system is the CDMB operator, an electric motor that drives the door blade directly with a toothed belt.

Key features:

- Smooth and silent direct drive
- Soft start and stop
- Compact design
- Life time: >25.000 door cycles (with normal regular maintenance)



1.5.3 Door control systems

Push button

The standard control of the 542D is a simple impulse push button.

950 D series control system

The 950 D series control system is the most advanced control unit to control the dock door, dock leveller and dock shelter. With one single control unit the loading bay equipment works perfectly together.



2. Specifications

2.1 Dimensions

2.1.1 Daylight width and daylight height

The standard Crawford 542D overhead sectional door is delivered in the following size range:

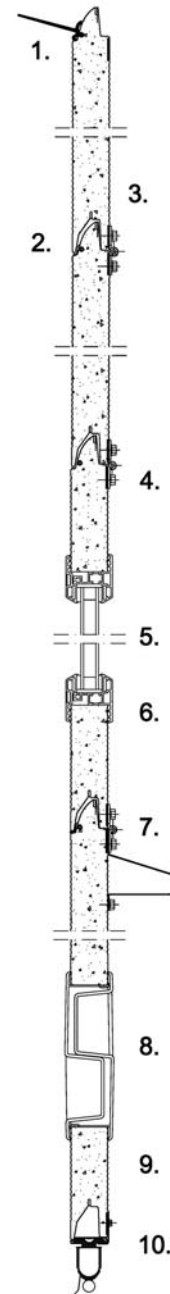
	Daylight width	Daylight height
Min.:	2050 mm	2150 mm
Max.:	3000 mm	3350 mm

2.1.2 Section sizes

Section height:	600 mm
Top section height:	300-900 mm trimcut
Thickness:	42 mm

The door leaf height is achieved by trimcutting the top section.

2.1.3 Vertical cross-section



- 1 Top seal
- 2) Section joint with finger pinch protection and seals
- 3) Inner and outer sheet
- 4) Internal steel reinforcement, to provide positive fixing points
- 5) Window (optional)
- 6) High impact polystyrene frame
- 7) Panel truss - wind reinforcement (if necessary)
- 8) Step/lift handle
- 9) Insulation (CFC-free / water blown)
- 10) Bottom seal



2.2 Windows

2.3 Number of windows

For windows the daylight width is divided into a fixed grid. The number of windows depends on the daylight width of the door.

542D Windows

Daylight width	No. of windows
2050 - 2134 mm	1
2135 - 2999 mm	2
3000 mm	3

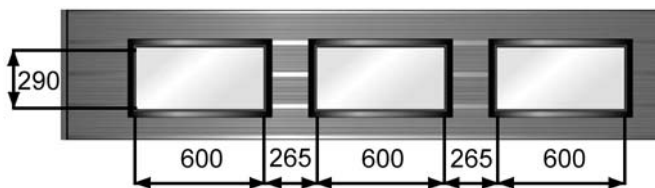
Optional: One window in the outer left or right side of section 3 only.

242 Windows

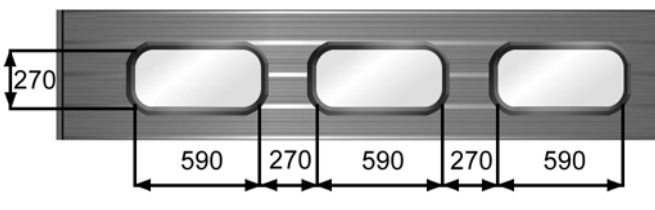
Daylight width	No. of windows
2050 - 3000 mm	2

2.4 Windows

DARP



DAOP



3. CEN Performance

The following tests have been carried out by SP in Borås, Sweden and IFT in Rosenheim, Germany.

3.1 Lifetime expectation

- 100.000 door cycles or 10 years (in a normal industrial environment)
- Springs: 20.000 door cycles

3.2 Resistance to windload

EN12424

Test result Class 3

Class	Pressure Pa (N/m ²)	Specification
0	-	No performance determined
1	300	
2	450	
3	700	
4	1000	
5	> 1000	Exceptional : Agreement between manufacturer and supplier

Door size 4000 x 3450 mm

3.3 Resistance to water penetration

EN12425

Test result Class 3

Class	Pressure Pa (N/m ²)	Specification
0	-	No performance determined
1	30	Waterspray for 15 minutes
2	50	Waterspray for 20 minutes
3	> 50	Exceptional : Agreement between manufacturer and supplier

* Danish Technological Institute (ref. 23413221, dated 24/09/2002)

3.4 Air permeability

EN12426

Test result Class 2 (6,6 m³/m²/h)

Class	Air permeability dp at a pressure of 50 Pa (m ³ /m ² /h)
0	-
1	24
2	12
3	6
4	3
5	1,5
6	Exceptional : Agreement between manufacturer and supplier



3.5 Thermal transmittance

EN12428	Steel	Aluminium
Thermal transmittance *	0,96 W/(m ² .k)	1,14 W/(m ² .k)

* Door surface 5.000 x 5.000 mm (for other sizes it can differ)

3.6 Operating forces and safe openings

EN12453 & EN12604	Crushing force N	Crushing force N	Crushing force N
Opening gap mm	200 mm from lateral border right from outside	In the middle of the door opening	200 mm from lateral border left from outside
50 mm	passed	passed	passed
300 mm	passed	passed	passed

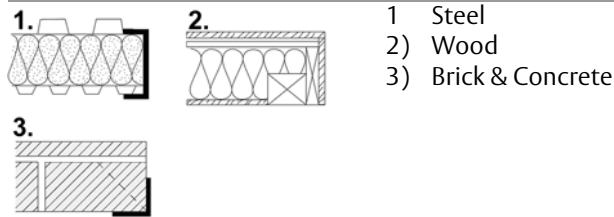
The crushing force is the force needed for the safety edge to be activated. The maximum force allowed, according to EN12453 safety in use of power operated doors is 400 N within a maximum period of time of 0.75s.

4. Building and space requirements

4.1 Building preparations

4.1.1 Installation preparations

The Crawford 542D overhead sectional door is shipped in parts and installed on-site. All necessary installation material is included. For every track type Crawford offers specific installation kits to position the door in the building facade.



4.1.2 Electrical preparations

For an electrically operated door, the following environment criteria and electrical supplies are required for the operator to function properly:

	CDMB
Voltage supply: +/- 10%	230V AC 1-phase 50/60Hz
Power:	0,17 kW (CEE plug)
Degree of protection:	IP20
Allowed door weight, max.:	165 kg
Temperature working range:	-20 °C to +55 °C*
Operating factor:	Max. nr. of duty cycles per hour at rated load: 20 Max. nr. of duty cycles without break at rated load: 8

*) Normal opening speed in a temperature down to -8°C. In the temperature range -8 °C to -20 °C the opening speed is reduced during the first cycle to prolong the operator's lifetime. An optional heating element is available for a working range down to -30 °C

4.2 Space requirements

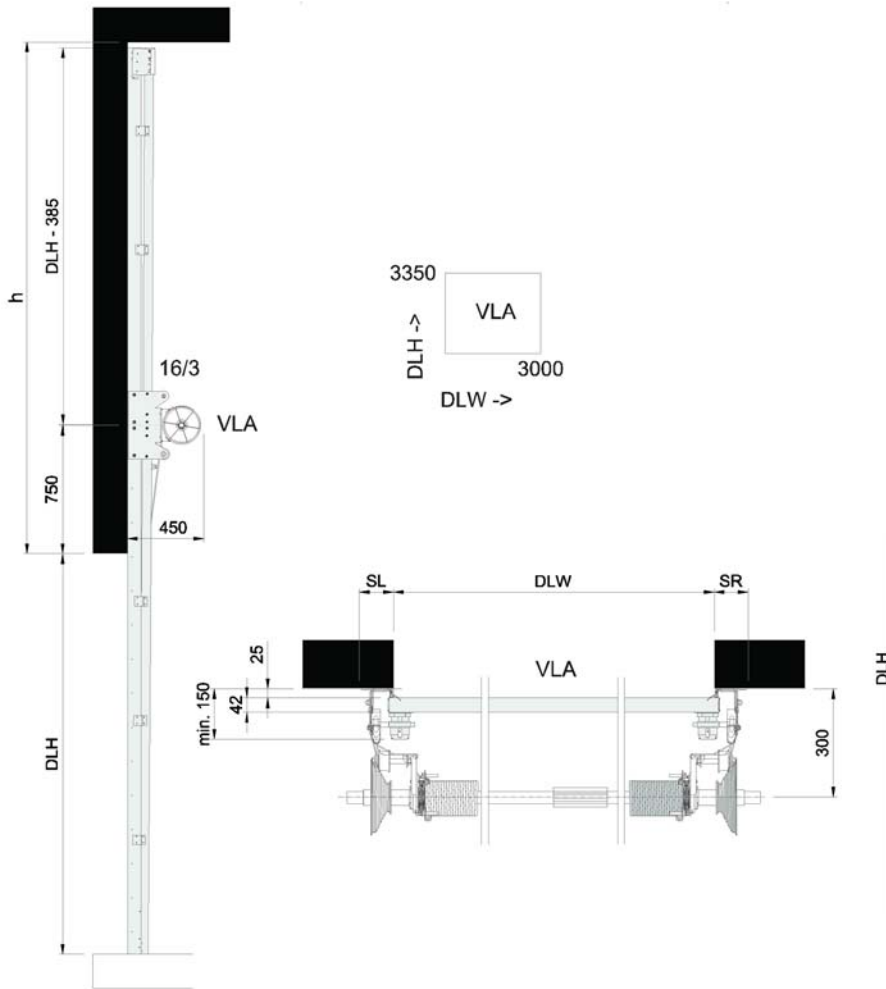
DLH	= Daylight Height	The height of the clear opening
DLW	= Daylight Width	The width of the clear opening
D	= Depth	The space between the inner side of the wall and the end of the horizontal track construction
h	= Excess height	The extra space required above the daylight height.
SL	= Side space Left	The space required for tracks beside the daylight width.
SR	= Side space Right	The space required for tracks beside the daylight width.

The grey marked area in the illustrations shows the free space required by door movement. Extra space requirements for electrically operated doors are stated in the operator specifications.



4.2.1 Space requirements VL

DLW	≤ 3000 mm
DLH	≤ 3350 mm
h	DLH + 400 mm
SL/SR	100 mm
D	VLA = 450 mm



4.2.2 Space requirements Door operators

4.2.2.1 CDMB Installation locations

Location of CDMB operator



CDMB Space requirements

Location	Extra space requirements (mm).*
	Side room
1 Left/right	200

* Space required in addition to the normal space requirements.

5. Service

Preventive Maintenance Program and Modernization Services

As your entrances are part of your business flow, there's every reason to keep them working well. ASSA ABLOY Entrance Systems offers you a maintenance and modernization expertise to rely on. Our Maintenance Programs and Modernization Services are backed by a extensive expertise for all types of industrial door and docking systems, independent of brand. At your disposal is a team of dedicated expert technicians, proven through decades of maintenance, service and satisfied customers.

Preventive Maintenance Programs

Minimizing lost time, lost energy and unexpected hassle is our team's constant objective. Our service organization can support you 24/7 in maintaining all industrial door and docking systems, independent of brand. If you want to be one step ahead of break-downs, explore our portfolio of Pro-Active Care plans. Naturally, we also offer entrance upgrades to suit your specific wishes and business needs.

Pro-Active Care - Maintenance plans to fit your business

Regular maintenance can extend the lifetime of your equipment and help prevent unexpected problems. Our technician arrives on-site equipped with the knowledge and tools to service all automatic entrances, independent of brand.

- **Pro-Active Bronze**

The base on which all Pro-Active Plans are built provides the security of knowing that your equipment is regularly inspected and certified for safety, as well as performing optimally. It includes a number of planned on-site visits depending on your needs. Any unplanned service calls required during the term of the contract (including labor, travel and parts) are billed at special Pro-Active Care prices.

- **Pro-Active Silver**

This plan provides all the benefits of Pro-Active Bronze with the added advantage of labor and travel being included for service calls during regular business hours. The only additional charge would be for any parts that may be needed throughout the term of the contract.

- **Pro-Active Gold**

This plan provides the ultimate protection for your automatic entrance investment. It includes all the benefits of Pro-Active Silver, plus replacement of any parts required during an unplanned repair or planned maintenance visit. Pro-Active Gold is an excellent way to budget your automatic door expenses annually.

- **Pro-Active Tailor-Flex**

Our most flexible maintenance and service offering. The Pro-Active Care plan is designed by you, our customer. The plan allows you to balance your maintenance expenses against your real-world budget and presents the option to add or delete a number of maintenance elements to suit your budget goals, while meeting your overall performance and safety needs.

Modernization

Your entrances are a long-term investment, from which you always want the best. Products develop over time, so do regulations and your business. Let us help you increase energy savings and meet today's standards. We provide advice and modernization kits for outdated installations, ensuring your investment meet requirements and performs optimally for many more years to come.

Re-Active Service		Pro-Active Care				
		Pro-Active Bronze	Pro-Active Silver	Pro-Active Gold	Pro-Active Tailor Flex	
		○	○	○	●	Other customized requests such as Response Time, Performance InfoPack and Advanced User Training
		○	○	●	○	Replacement of worn parts according to preventive Consumable Exchange Program
		○	○	●	○	Replacement of spare parts on breakdowns
		○	●	●	○	Travel and labor for additional call-out visits
		●	●	●	●	Preventive maintenance visits 1-4 times per year
		●	●	●	●	Travel and labor for preventive maintenance visits
		●	●	●	●	Response time and priority on call-outs <24h
		●	●	●	●	Preventive planned maintenance that meets the most demanding standards in the market
	●	●	●	●	●	Safety and quality checks according to applicable regulations and norms. Documentation of test results provided
●	●	●	●	●	●	Documentation of equipment status, assessment and service provided, all generated on site
●	●	●	●	●	●	Highly trained professional technicians with extensive knowledge, state-of-the-art tools and the right spare parts*
●	●	●	●	●	●	Dedicated Professional Customer Care Hotline

● = Included as standard
○ = Available at special prices
* Well-stocked service vehicles with genuine and new spare parts

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