



PRODUCT DATASHEET
I-18P OVERHEAD SECTIONAL
DOOR

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Technical Overview

Features

Max size:	Width 8000 mm Height 6000 mm (larger sizes on request) Size limited by door weight
Panel thickness:	82 mm
Panel material:	Microrilled steel
Filling:	CFC-free polyurethane (PUR), flame retardant DIN 4102-B2 / EN13501-1-B-S2,d0
Weight	Steel: 15 kg/m ²
Color outside:	13 standard RAL colors
Color inside:	RAL 9002
Track types:	Standard: SL Optional: HL, VL, LL, HHL
Windows:	Optional: FARP, FPRA or FARS
Passdoor:	Not possible in the I-18P
Electrical operation:	Optional: Automated operation, Access control, Safety functions

Performance

Opening/closing speed:	IDO7: 0.25 m/s IDO7 HD: 0.18 m/s IDO7 2H: opening 0.5 m/s, closing 0.25 m/s
Life time expectations:	Door: 200000 door cycles or 10 years, when service/replacement program has been performed Springs: 20000 door cycles
Resistance to wind load, EN12424	Class 3 (\leq 4250 mm DLW) (Higher classes on request)
Thermal transmittance, EN12428	0,46 W/(m ² K) Steel door, full panel (Door size 5000 x 5000 mm) Thermal calculations on exact door sizes and configurations are available on request
Resistance to Water penetration, EN12425	Class 3
Air permeability, EN12426	Class 3
Acoustic insulation, EN ISO 10140-2	R _w - 24 dB

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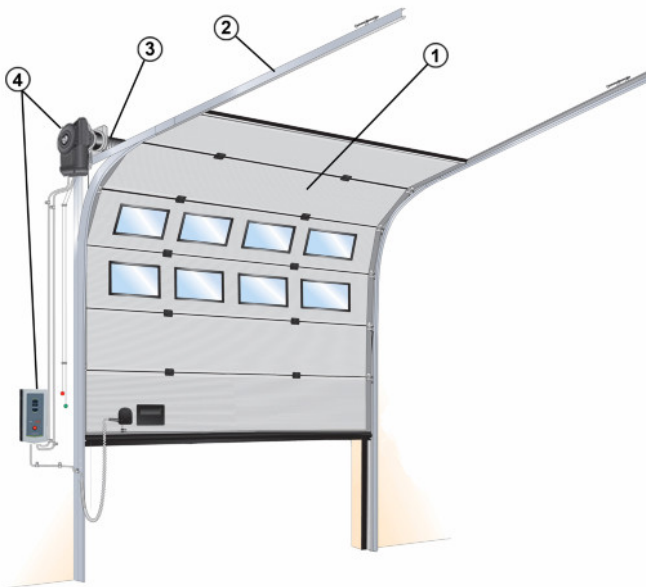
1 Description

1.1 General

The Dynaco I-18P overhead sectional door, with its modern and clean design, is one of the best insulated overhead sectional doors on the market.

With a panel thickness of 82 mm, the Dynaco I-18P overhead sectional door is designed for businesses with frequently used doors that need an excellent temperature control.

The Dynaco I-18P 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 door has 4 primary parts:

1. Door leaf
2. Track set
3. Balancing system
4. Operating system

1.2 Dimensions

1.2.1 Daylight width and daylight height

The standard Dynaco I-18P overhead sectional door is delivered in the following size range:

	Daylight width	Daylight height
Min.:	1200 mm	2150 mm *
Max.:	8000 mm	6000 mm **

Weight restriction 550 kg.

* SL, LL, HL, HHL: DLH+HL \geq 3000 mm

** VL: limited to 5500 mm

1.2.2 Section sizes

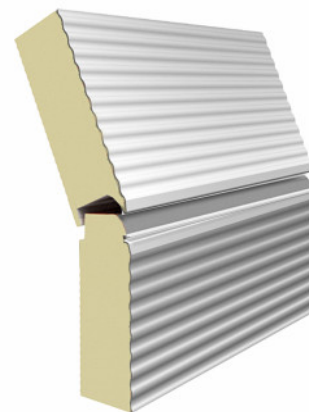
Section height:	545 mm
Top section height:	275 - 820 mm trimcut
Thickness:	82 mm

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

1.3 Door leaf

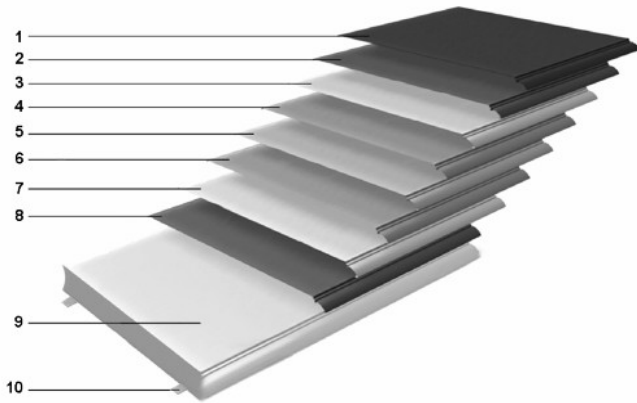
1.3.1 Construction

The Dynaco I-18P 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 highly insulated panels designed without thermal bridges for optimal insulation. The panels are filled with CFC-free polyurethane (PUR) foam.



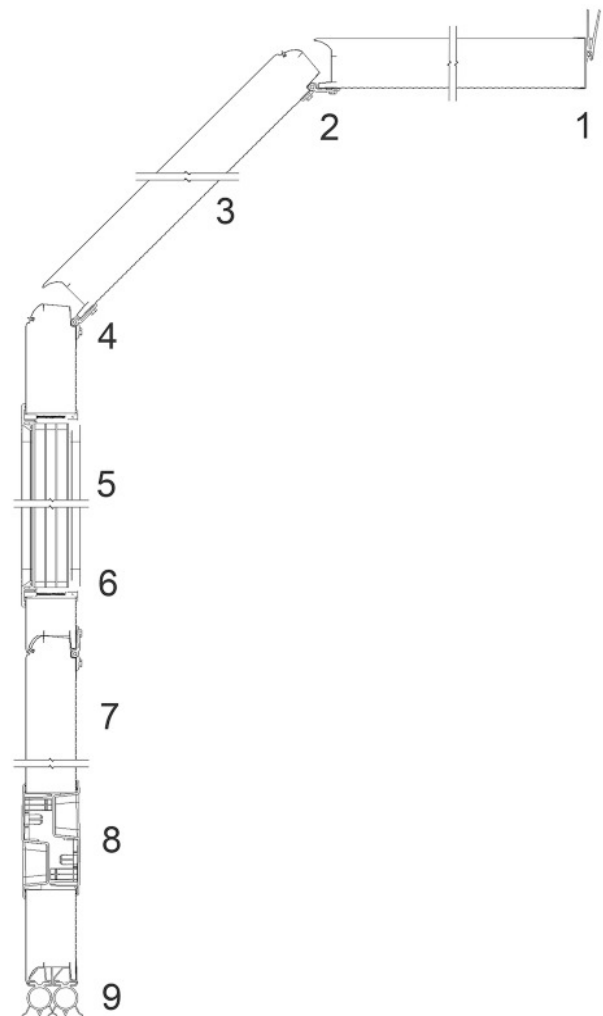
1.3.2 Material

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



1. Polyester coating
2. Primer
3. Chromate layer
4. Zinc based metallic coating
5. Steel sheet
6. Zinc based metallic coating
7. Chromate layer
8. Primer
9. CFC-free polyurethane (PUR) foam, Flame retardant DIN 4102-B2 / EN 13501-1-B-S2,d0
10. Reinforcement strips

1.3.3 Vertical cross-section















1. Double top seal
2. Section joint with seals
3. Inner and outer sheet
4. Internal steel reinforcement, to provide strong fixing points
5. Window (optional)
6. High impact polystyrene or aluminium window frame
7. Insulation (CFC-free polyurethane (PUR))
8. Step/lift handle
9. Double bottom seal

1.3.4 Colors

The RAL-colors are as close as possible to the official RAL HR collection. Max. deviation is 1,0 DE (RAL 7016 excluded).

Pre-coated range:

	RAL 1021
	RAL 3000
	RAL 5010
	RAL 6005
	RAL 7016
	RAL 7021
	RAL 7024
	RAL 8017
	RAL 9002
	RAL 9005
	RAL 9006
	RAL 9007
	RAL 9010

1.3.4.1 Pre-coated colors

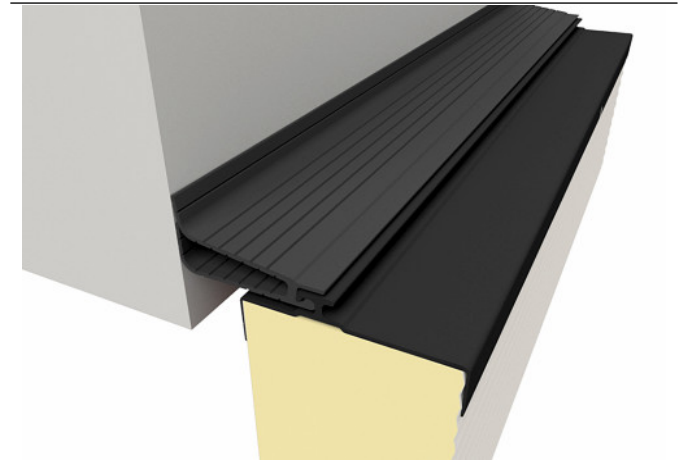
- Outside color: The steel panel is available in the 13 standard RAL colors
- Inside color: RAL 9002 - Grey white.

1.3.5 Seals

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

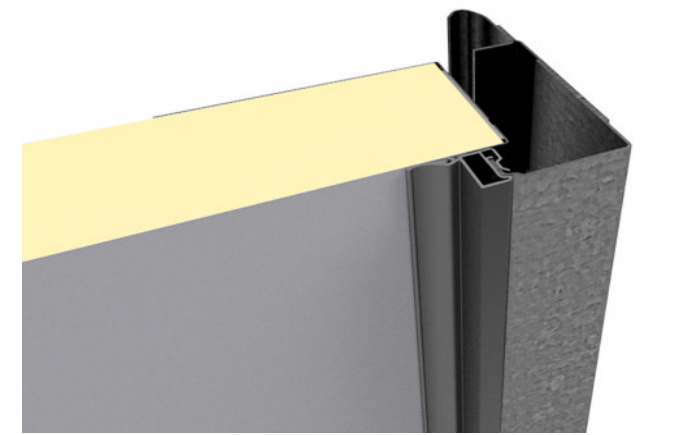
1.3.5.1 Top seal

Installed on the top panel to seal the gap between the panel and the wall. The double lip EPDM rubber top seal is mounted in an ABS adapter profile for optimal insulation and tightness.



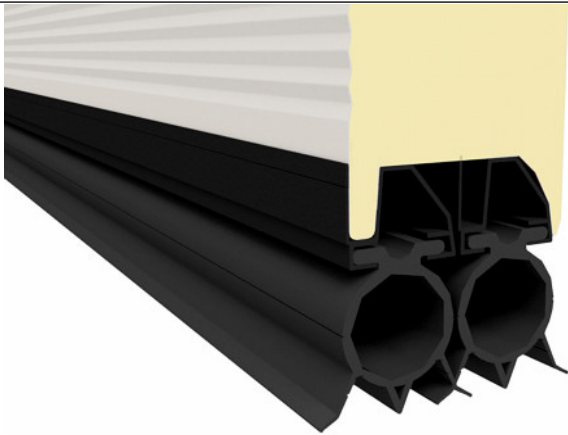
1.3.5.2 Side seal

Installed on the track set to close the gap between the tracks and the door leaf. The double lip side seal design with insulation chambers ensures an optimal insulation and sealing.



1.3.5.3 Bottom seal

Installed on the bottom edge of the bottom panel, to act as a barrier as well as a shock absorber. The flexible EPDM rubber material and the O-shape provides continuous pressure on the floor, ensuring maximum sealing. The double bottom seal is mounted in an ABS adapter for optimal insulation and reduced risk of condensation.



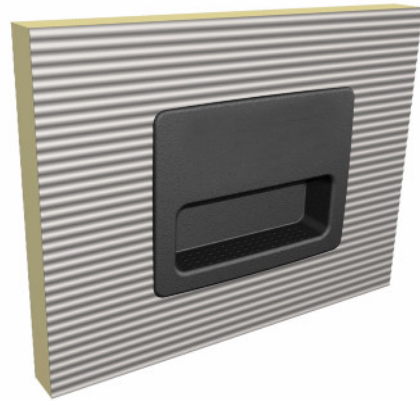
1.3.6 Wind reinforcement truss

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. The truss is sloped to prevent objects being placed on it which could fall when the door opens. Nice plastic endcaps prevent dust being collected in the truss.



1.3.7 Handle

For manual operation, every Dynaco I-18P overhead sectional door is provided with a solid, easy to grip and step-on handle.



1.3.8 Lock bolt

A standard Dynaco I-18P 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 has a hole in the latch, to allow the use of a 12mm padlock.

The Lock bolt is not visible from the outside.



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 moves the door up or down.

1.4.1 Safety devices

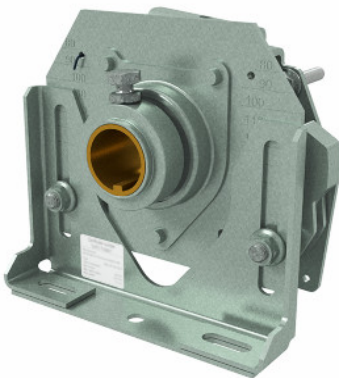
The balancing system supports heavy forces. In case of a spring or cable break, its counterforce is lost. The door is therefore equipped with two safety devices that can block downward door movement:

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

1.4.1.1 Spring break device

The Spring Break Device is delivered with all Dynaco I-18P overhead sectional doors.

In the event of a spring break, the sudden drop force activates the Spring Break Device. 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 an optional safety device. In the event of a cable failure the door leaf will be blocked in less than 300 mm to avoid damage.



1.5 Track sets

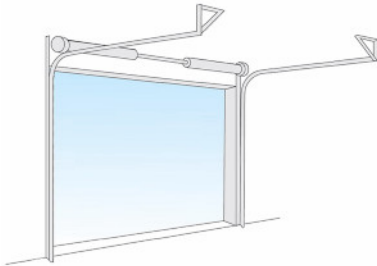
1.5.1 General

The track set supports the door leaf on its rollers and guides it upwards. The selection of the appropriate track set is based on various factors:

- Available head room
- Door height
- Type of vehicles
- Presence of roof obstructions, pipes and overhead crane beams.

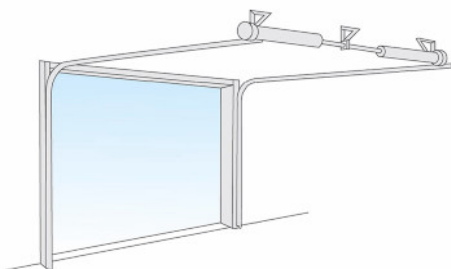
The track sets below cover most applications. Other applications are available on request.

1.5.2 SL - Standard Lift



- Building type: Most standard industrial buildings.
 - Benefits: Optimal design for common buildings.
- The Standard Lift track set, with the spring package just above the door, is the most common solution

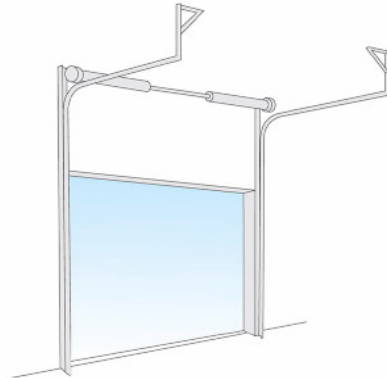
1.5.3 LL - Low Lift



- Building type: Low ceilings.
- Benefits: Achieve maximum daylight height with minimum head room.

Same as standard lift, but with the spring package at the end of the horizontal tracks.

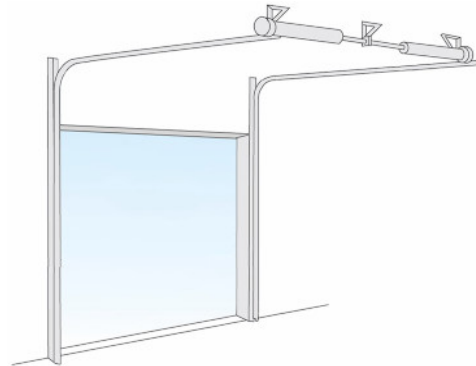
1.5.4 HL - High Lift



- Building type: High ceilings. On the High Lift track set the spring package is placed high above the door.
- Benefits: This track type allows high vehicles to cross along the door opening without obstructions of the horizontal tracks.

This track type is used when the space above the door is considerable, and is needed for work and traffic, e.g.: high vehicles.

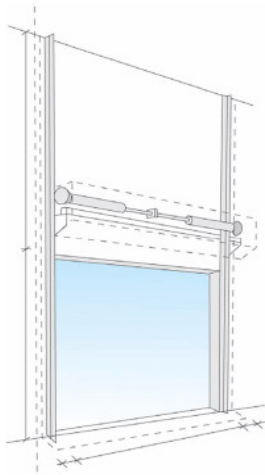
1.5.5 HHL - High lift with spring package at the end of the horizontal track



- Building type: High ceilings. Used when space between ceiling and lower edge of horizontal track is limited.
- Benefits: Achieve maximum highlift with minimum head room.

High lift hardware with the spring package placed in the end of the horizontal track.

1.5.6 VL - Vertical Lift

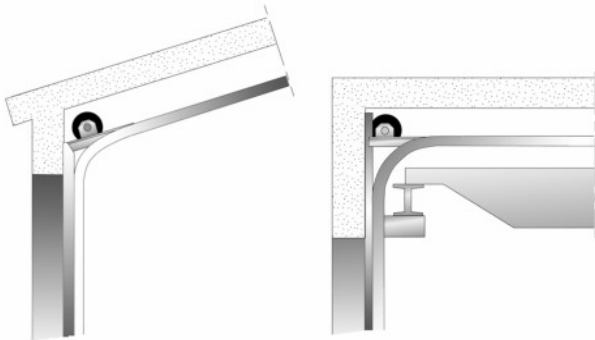


- Building type: Very high ceiling and high working space requirements.
- Benefits: Allows high vehicles to cross along the door opening without any obstructions.

If the space between the daylight height and the roof is sufficient, with this track type, the door can be opened vertically.

1.5.7 Special track sets

The Dynaco I-18P overhead sectional door track set can be custom designed to make the door fit in places that seem quite impossible. Our door technicians can solve installation problems where the door must share space with ventilation systems, crane beams, etc. For example:



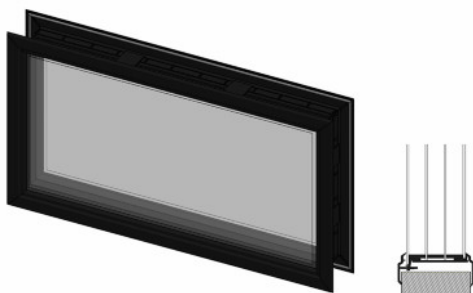
2 Available Options

2.1 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 in the center of a section.

*The bottom section cannot be glazed.

2.1.1 FARP



- Four layer Acrylic Rectangular Pane, in high impact Polystyreen frame
- Light opening: 602 x 292 mm
- Window frame: Black

2.1.2 FPRA

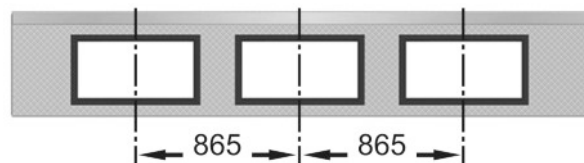


- Four Polycarbonate Rectangular Aluminum, four layer (6+2,5+2,5+6 mm) in aluminum frame
- Light opening: 578,5 x 268,5 mm
- Burglar Resistance Class 2

2.1.3 FARS



- Four Acrylic Rectangular Small, four layer (2,5+2,5+2,5+2,5 mm) in aluminum frame
- Light opening: 578,5 x 146,5 mm
- Burglar Resistance Class 2



2.1.4 Protective grating

To discourage burglars to use the windows as a way in, protective window grating can be installed on the inside of the door. Standard delivery is dull black. Other colors available on request. The protective window grating measures 750 mm width. The height depends on the height of the section.



2.1.5 Number of windows

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

Windows

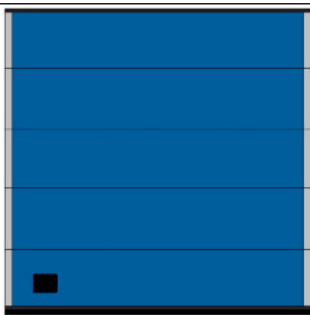
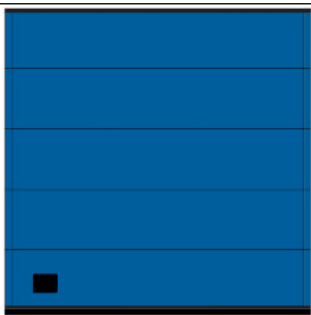
No. of windows	Daylight width
1	2050 - 2134 mm
2	2135 - 2999 mm
3	3000 - 3864 mm
4	3865 - 4729 mm
5	4730 - 5594 mm
6	5595 - 6459 mm
7	6460 - 7324 mm
8	7325 - 8000 mm

Optional: One window in the center of a section.

2.2 Optional colors

Factory painting

The door leaf can be factory painted in any RAL and NCS color plus some metallic colors, outside only*. The painting can be applied to only the panel or to the complete door leaf.

Panel only	Complete
	

* Other colors available on request

2.3 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.



2.4 Anti corrosive hardware

For use under harsh conditions the Dynaco I-18P overhead sectional door can be fitted with a set of anti corrosive hardware. There are 3 sets available to cope with the different demands.

Set Corrosive C

Roller brackets	Stainless steel
Rollers	Stainless steel
Clamp	Stainless steel
Hinges, Joining plate	Plastic
Screws	Anti-corrosion treated
Door cables 3-5 mm	Stainless steel

Set Corrosive A

All options in Set Corrosive C plus:

End caps	Powder coated
Top section brackets	Powder coated
Trusses	Powder coated
Track set	Powder coated
Screw/bolt set	Anti-corrosion treated

Set Corrosive Z

Springs 95mm or 152mm Zinc electroplated

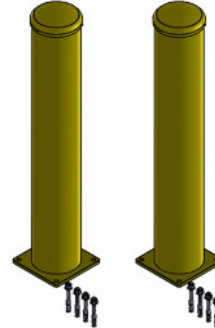
The anti corrosive hardware sets are available for the track types SL, HL, HHL, LL and VLB.

VLA and VLT are available in set C only .

The max. doorweight for anti corrosive hardware is 410 kg and the max. daylight width is 8000mm.

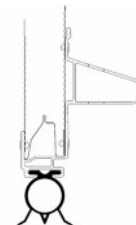
2.5 Collision protection

2.5.1 Track protection kit



The track protection kit is designed to protect the tracks being accidentally hit by vehicles. The kit includes two bollards and fasteners. The bollards are powder coated with a UV protective paint and the top can be removed to fill the bollard with sand or concrete. The bollards are 1000 mm high with a diameter and thickness of 159×3 mm and the plate is 200 mm square. The distance between (any part of) the door and the bollards should be at least 500 mm to prevent people from getting stuck between the bollards and the door.

2.5.2 Reinforced bottom profile



A special aluminium bottom profile with an integrated reinforcement is available if extra collision protection is needed.

3 Operating system

3.1 Types of operation

The Dynaco I-18P overhead sectional door can be opened and closed manually. They are also prepared for electrical operation. Electrically operated doors can be controlled by hand or be fully automatic. Traffic frequency, climate requirements and the weight of the door play a key role in choosing the optimal control system.

3.2 Pull-down rope

The Dynaco I-18P overhead sectional door can be operated manually with a pull-down rope. The pull-down rope is directly connected to the door leaf.

3.3 Chain hoist

For heavier doors, a chain hoist allows easier door operation.

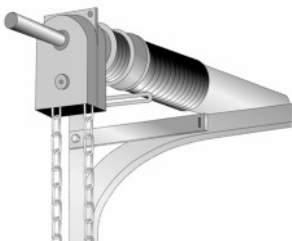
There are three types of chain hoist:

D-hoist:



- D-hoist: Non-g geared chain transmission directly connected to the shaft. Recommended for doors up to 250 kg (For hexagonal shaft only).

T-hoist:



- T-hoist: Geared (ratio 1:4) chain transmission directly connected to the shaft. Recommended for doors up to 250 kg (For all shaft types).

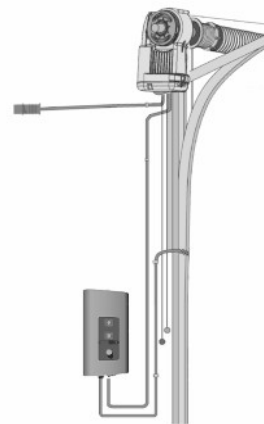
U-hoist:



- U-hoist: Geared (ratio 1:3) indirect chain transmission. Recommended for doors of 250 up to 400 kg (For all shaft types).

3.4 Electrical operation

The Dynaco I-18P overhead sectional door can be supplied or upgraded with an electrical operating system (mandatory if door weight > 400 kg). Electrical operation gives access to the full program of Access and Automation functions, that can fulfill many operational needs, related to traffic type and frequency, door weight and temperature control.



3.5 IDO7 Operator - C700 Door control system

The IDO7 operator is a combination of the IDO7 operator and a C700 Door control system. The regular IDO7 model is available for doors up to 400 kg. The IDO7 HD model is available for doors up to 800 kg. The double speed IDO7 2H model is available for doors up to 250 kg.

3.5.1 IDO7 Operator

One main part of the system is the operator: an electric motor which drives the balancing shaft with the cable drums and torsion springs. It can be retrofitted to an already installed door. The IDO7 operator is mounted directly on the balancing shaft and does not require any special wall reinforcement (except IDO7 HD).

With a built-in frequency converter the IDO7 operator has a soft start and soft stop. Smoothly accelerating and decelerating at the end positions reduces the wear and tear and noise level of the door. To comply with regulations a safety stop will give a hard stop.

Key features:

- Smooth and silent
- Soft start and stop
- Fits all track types and shafts
- Life time: 84000 - 300000 door cycles (depending on weight and temp.) e.g.:
 - Temp. 0 °C - +40 °C/weight 250 kg = 300000 cycles
 - Temp. -20 °C - +60 °C/weight 400 kg = 84000 cycles



3.5.2 C700 Door control system

The C700 Door control system is one of the most advanced control units that is prepared for one or more physical upgrades from the entire range of automation systems. An automation system allows door operation by sensors or remote control.

This control unit contains a 3-digit diagnostics display that allows efficient troubleshooting and displays the number of door cycles. Together with the service indicator, this extra feature allows advanced maintenance planning to users where the door is an essential element of internal logistics.



3.5.3 Electrical preparations


The manually operated door needs no electrical supply.

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

	IDO7	IDO7 HD	IDO7 2H
Voltage supply: +/- 10%	230V AC 1-phase 50/60Hz	230V AC 1-phase 50/60Hz	230V AC 1-phase 50/60Hz
Power:	0,37 kW	0,6 kW	0,37 kW
Degree of protection:	IP65, with connector IP44	IP65, with connector IP44	IP65, with connector IP44
Allowed door weight, max.:	400 kg	800 kg	250 kg
Temperature working range:	-20 °C to +55 °C*	-20 °C to +55 °C*	-20 °C to +55 °C*
Operating factor:	ED = 30% S3 10 min. intermittent	ED = 30% S3 10 min. intermittent	ED = 30% S3 10 min. intermittent
Mounting preparations:	-	When installing on the wall, an extra attachment angle is required with > 500N per fixation point.	

* At low temperatures the first few cycles may be run with reduced speed to prolong the operator's lifetime. Can be equipped with a heater for a working range down to -30°C.

3.5.4 C700 Door control systems - Selection guidelines

Functions included	C700
	
Open (by impulse)	<input checked="" type="checkbox"/>
Open (hold to run)	<input type="checkbox"/>
Stop	<input checked="" type="checkbox"/>
Close (by impulse)	<input checked="" type="checkbox"/>
Close (hold to run)	<input type="checkbox"/>
Reduced opening	<input checked="" type="checkbox"/>
Safety edge	<input checked="" type="checkbox"/>
Open function	<input checked="" type="checkbox"/>
One button function	<input checked="" type="checkbox"/>
Display (diagnostics)	<input checked="" type="checkbox"/>
Service indicator	<input checked="" type="checkbox"/>

Standard Option / Available


3.5.5 C700 Door control systems - Selection guidelines for automation

The "Automation D-kits" are packages of common combinations. These kits can also be supplemented by "additions to D-kits".

Automation D-kits	D1	D2	D3	D4	D5	D6
Interlocking	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Magnetic loop		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
Traffic lights - Green + Red					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Warning lights - Red	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		
Additions to D-kits						
Warning lights - Green	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Traffic lights - Green + Red	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Relay box	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Radar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Standard Option / Available

The following options can be individually selected to add functionality to the control unit.

Functions optional	C700
	
Complete kits	
Automation D-kits	<input type="checkbox"/>
Basic control functions	
Interlocking	<input type="checkbox"/>
External control functions	
External pushb. box	<input type="checkbox"/>
Pull-rope switch	<input type="checkbox"/>
Remote control open/stop/close	<input type="checkbox"/>
Remote control 1-button function	<input type="checkbox"/>
Automatic control functions	
Automatic closing	<input type="checkbox"/>
Photocell open door	<input type="checkbox"/>
Safety functions	
Safety photocell (1 or 2)	<input type="checkbox"/>
French safety logic	<input type="checkbox"/>
Additional functions	
UPS Battery backup	<input type="checkbox"/>
Relay box	<input type="checkbox"/>

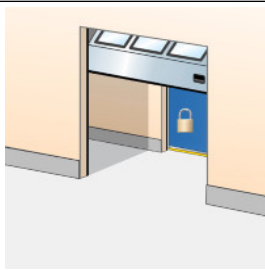
■ Standard □ Option / Available

3.6 Access and automation

Dynaco offers a wide range of functions that allows advanced opening and safety control. Please refer to the specification sheet of the control units to see which functions apply to which models.

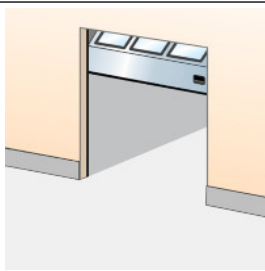
3.6.1 Basic control functions

3.6.1.1 Interlocking



Developed for climate control or safety; If door A is open, door B cannot be opened. If door B is open, door A cannot be opened. An interlocked door can remember an up-command, if selected via a micro switch.

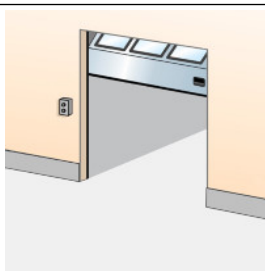
3.6.1.2 Reduced opening



When it is unnecessary or undesirable to fully open a door, an additional switch can be used to open the door to a pre-programmed reduced opening position.

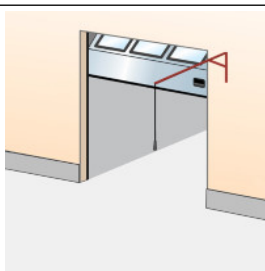
3.6.2 External control functions

3.6.2.1 External push button box



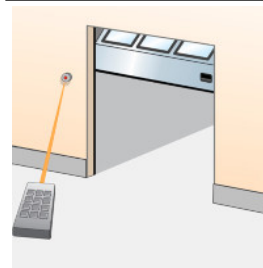
An extra control box is installed outside the building or inside close to the door if the main control unit needs to be installed away from the door opening. Installed on the inside or outside wall beside the door.

3.6.2.2 Pull-rope switch



A pull-rope switch above the door opening can be operated from e.g. a forklift truck. Pulling the rope opens a closed door or closes an opened door. Installed on the inside construction above the door.

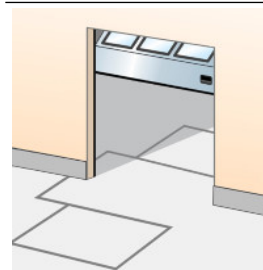
3.6.2.3 Remote control



A hand-held radio transmitter allows door operation from a vehicle or any position within 50-100 meters from the receiver and aerial at the door. For closing, the door can be provided with a photocell beam. Receiver installed in control unit, antenna installed on the wall beside the door.

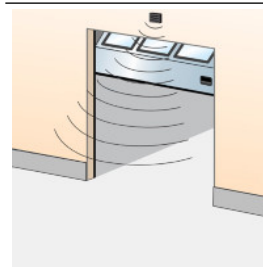
3.6.3 Automatic control functions

3.6.3.1 Magnetic loop



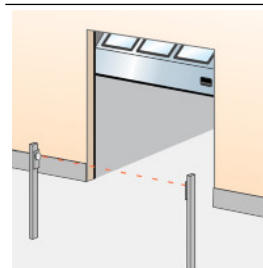
A sensor in the floor detects a metal object (usually forklift trucks, pallet trucks) and opens the door automatically. This is an ideal solution for frequent vehicle traffic. Installed on the outside, inside or both sides of the door in the floor.

3.6.3.2 Radar



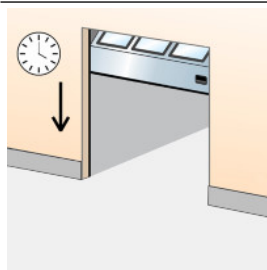
An infrared sensor above the door detects an object (person, vehicle) within a specified distance from the door and opens the door automatically. This is an ideal solution for frequent vehicle or personal traffic. Often combined with automatic closing. Installed on the inside or outside wall above the door.

3.6.3.3 Photocell open door



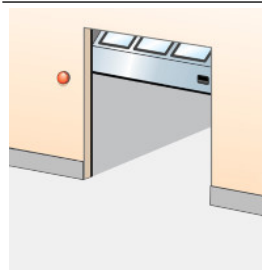
A set of photocells on pillars, on each side of the door. When a person or vehicle passes between the photocells, the beam is interrupted and the door opens. Photocells installed on pillars, away from the door.

3.6.3.4 Automatic closing



A programmable timer that closes the door after a specified time, counted from either the fully open position and/or from passing through the photocell beam.
Adjustable micro switches in control unit.

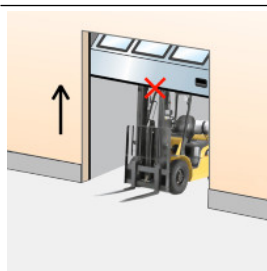
3.6.4.4 Warning lights - Red



Two red warning lights giving information on the current door behaviour. Flashing light before or during door movement.
Optional: Continuous light before and during door movement.
Installed on the inside and outside wall beside the door.

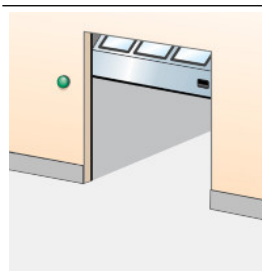
3.6.4 Safety functions

3.6.4.1 Safety edge



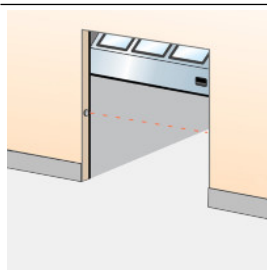
As a standard, all doors that have the impulse-close function or any form of automated closing, are equipped with a safety edge. The pneumatic sensor in the bottom seal detects any obstruction under a closing door and reverses the door.
Installed in the bottom seal.

3.6.4.5 Warning lights - Green



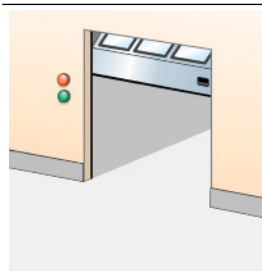
One or two green warning lights indicating the open position of the door by continuous light signal.
Installed on the inside and/or outside wall beside the door.

3.6.4.2 Safety photocells 1-channel



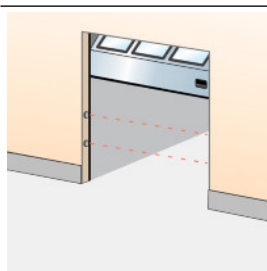
A set of a photocell transmitter and receiver is installed in the door opening. If the photocell beam is interrupted during closing, the door will stop and reverse to the fully open position.
Installed in the door opening.

3.6.4.6 Traffic lights - Red & Green



If traffic through a door needs to be directed; two red and two green traffic lights can be installed to indicate traffic direction. From the side where a vehicle is first detected to approach the door, the green traffic light comes on. The opposing side shows a red traffic light. Traffic from this direction must give way to the other.
Usually installed in e.g. parking garages.
Installed on the inside and outside wall beside the door.

3.6.4.3 Safety photocells 2-channel



Two sets of photocell transmitter and receiver are installed in the door opening. If one or both photocell beams are interrupted during closing, the door will stop and reverse to the fully open position.
Installed in the door opening.

3.6.5 Additional functions

3.6.5.1 UPS battery backup



When mains failure cannot be permitted or an increased risk of mains failure is predicted, the UPS battery backup system can be installed to store enough energy for 5 door cycles. Installed on the inside wall beside the door.

3.6.5.2 Relay box



A sealed connection box makes it possible to safely connect external high-voltage equipment.

4 CEN Performance

4.1 Lifetime expectation

Door: 200000 door cycles or 10 years, when service/replacement program has been performed
Springs: 20000 door cycles

4.2 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

4.3 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

4.4 Air permeability

EN12426	
Test result	Class 3
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

4.5 Thermal transmittance

EN12428

Thermal transmittance 0,46 W/(m²K) Steel door, full panel

(Door surface 5000 mm x 5000 mm)

4.6 Acoustic insulation

ISO 10140-2

Steel

Acoustic insulation* R_w - 24 dB

*For test door size DLW x DLH 4000 x 2500 mm no windows.

4.7 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

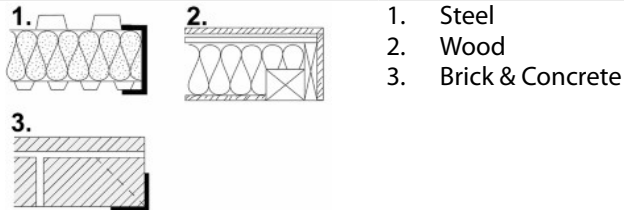
The crushing force is the force needed for the safety edge to be activated. The maximum force allowed, according to EN12453 safety in use of power operated doors is 400 N within a maximum period of time of 0.75s. With standard light curtain there is no crushing force.

5 Building and space requirements

5.1 Building preparations

5.1.1 Installation preparations

The Dynaco I-18P overhead sectional door is shipped in parts and installed on-site. All necessary installation material is included. For every track type Dynaco offers specific installation kits to position the door in the building facade.



5.2 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.

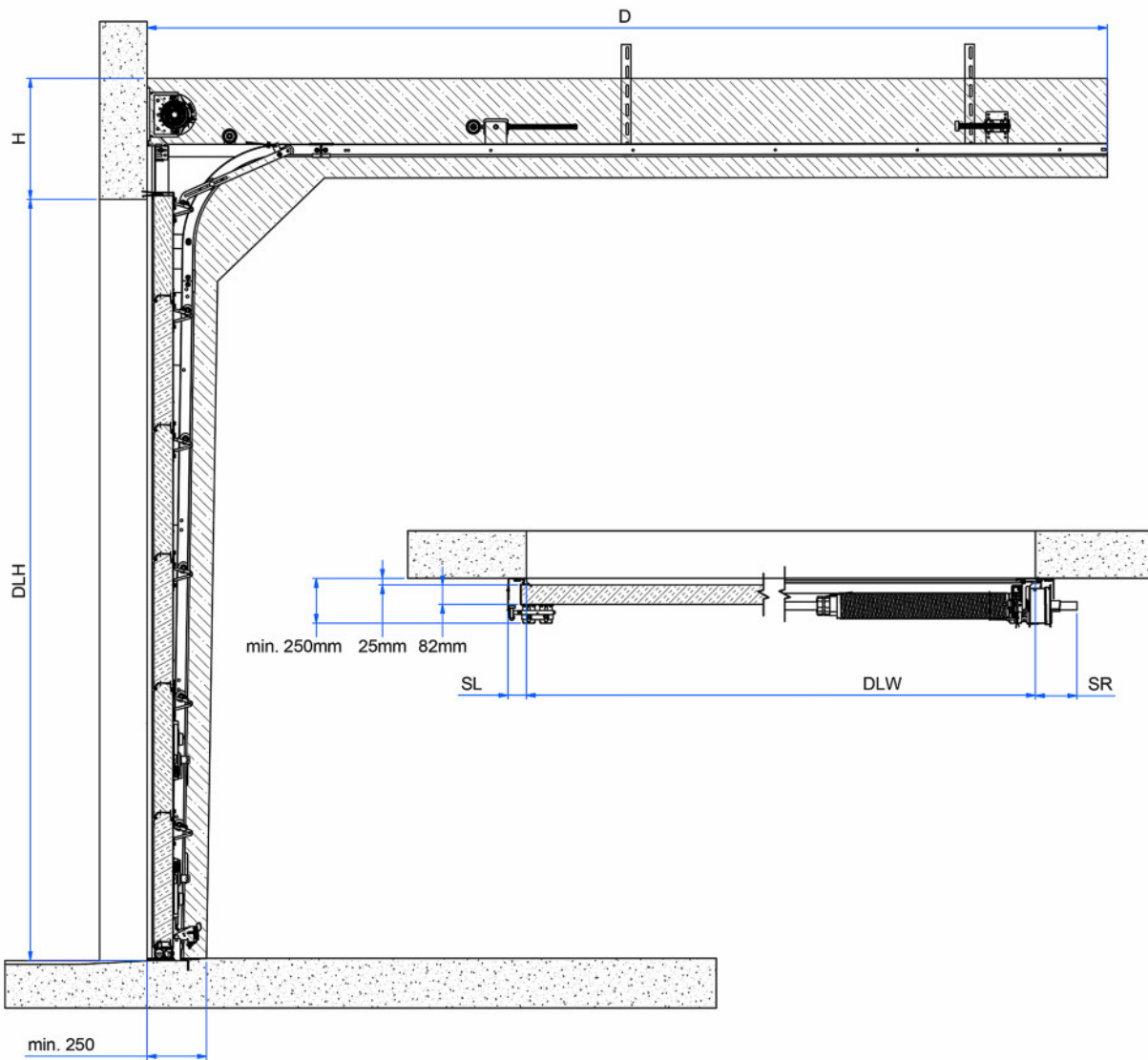
The grey marked area in the illustrations shows the free space required by door movement. Extra space requirements for electrically operated doors are stated in the operator specifications.

5.2.1 Space requirements SL

DLW	≤ 8000 mm
DLH	≤ 6000 mm
h	485 mm (if DLH ≤ 4500 mm) 510 mm (if DLH > 4500 mm) 575 mm (operator center)
SL/SR**	132 mm Manual, 212 mm Hoist-T, 278 mm Hoist-U, 270 mm Operator, 310 mm Operator+Hoist
D	DLH + 850 mm

** SL/SR at the beam + 48 mm in case of an outer support bearing.

Side and top view

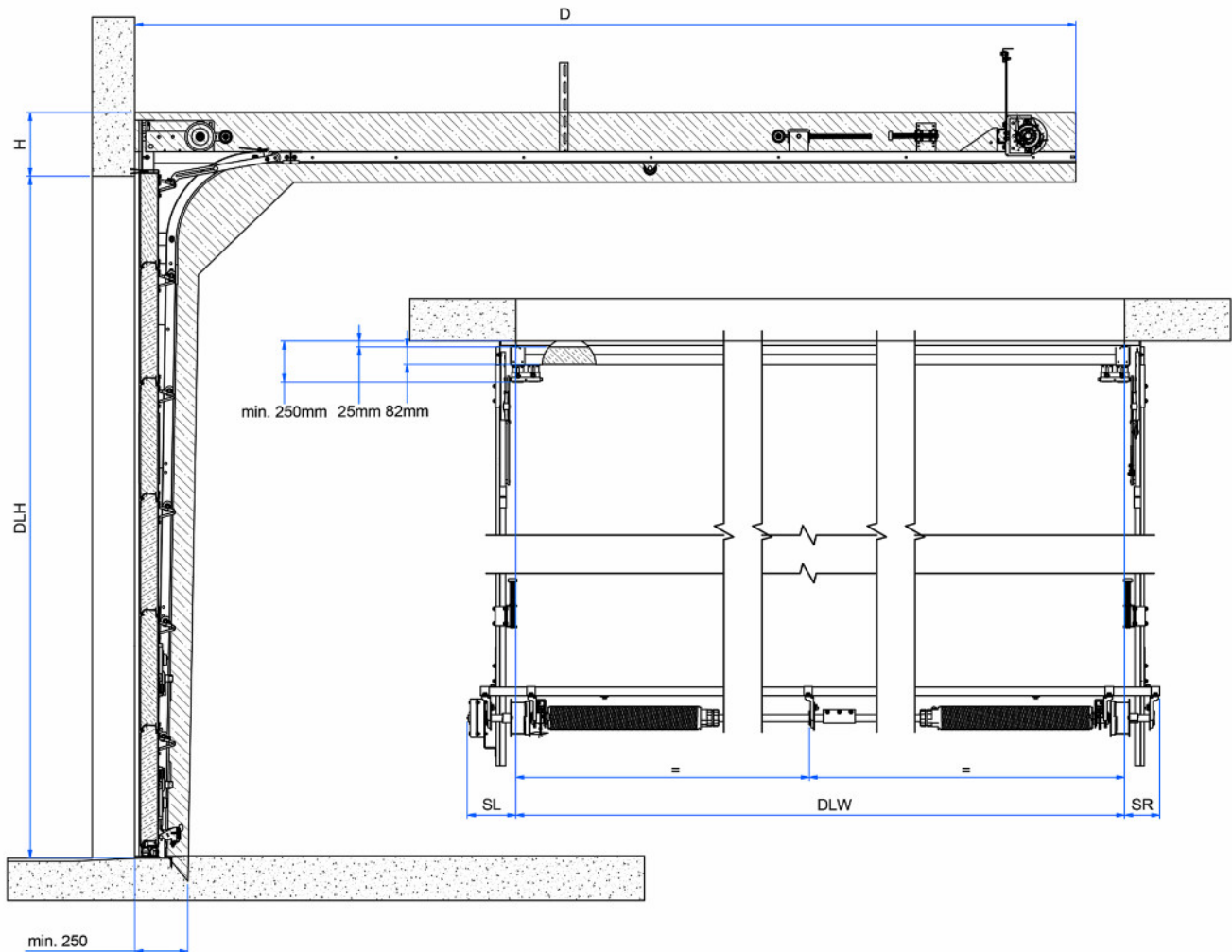


5.2.2 Space requirements LL

DLW	≤ 8000 mm
DLH	≤ 6000 mm
h	305 mm (if ≤ 250 kg) 340 mm (if > 250 kg)
SL/SR**	132 mm Manual, 228 mm Hoist-T, 278 mm Hoist-U, 304 mm Operator, 344 mm Operator+Hoist
D	DLH + 1220 mm (manual) DLH + 1360 mm (operator)

** SL/SR at the beam + 48 mm in case of an outer support bearing.

Side and top view



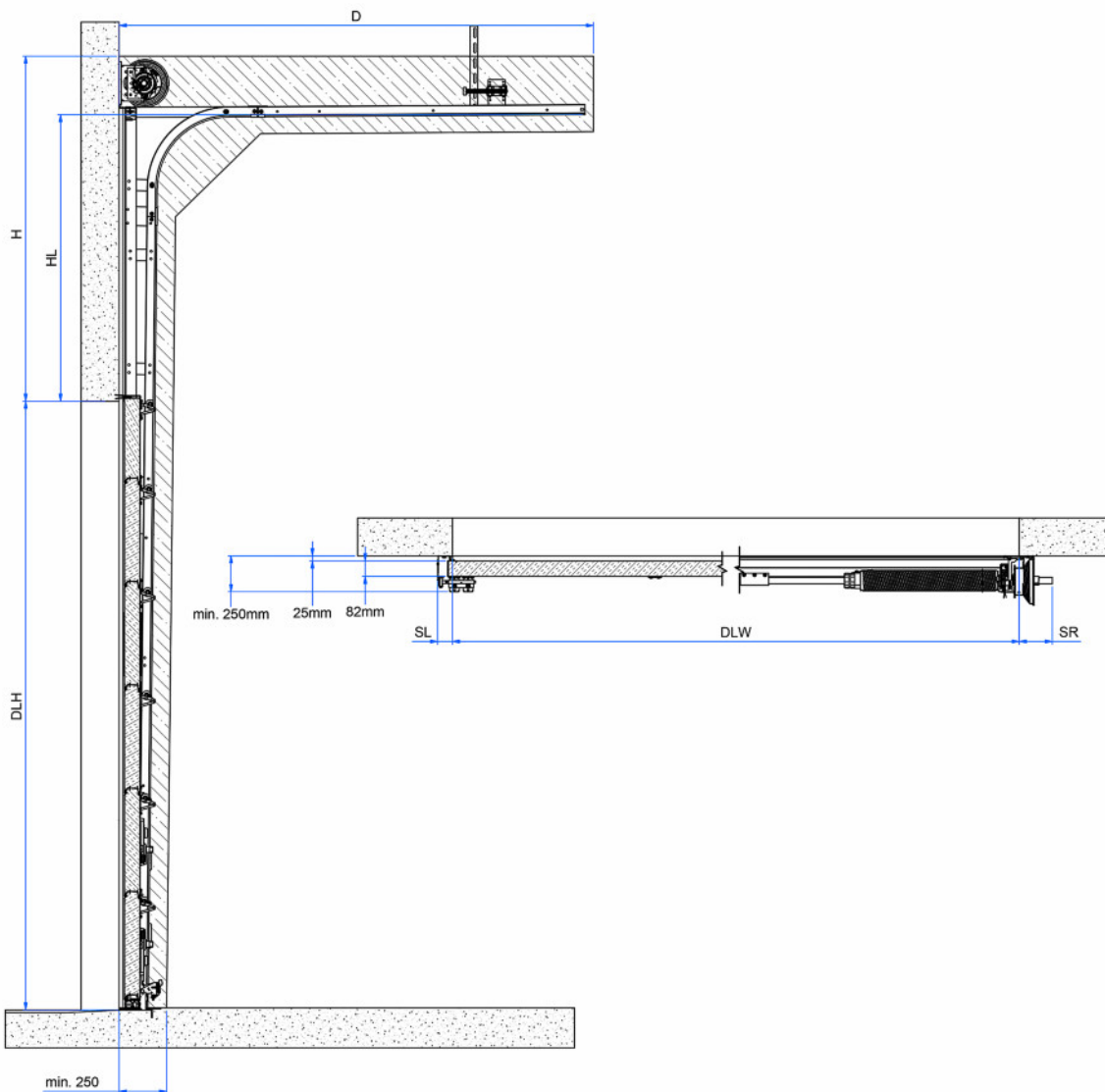
5.2.3 Space requirements HL

DLW*	≤ 8000 mm
DLH	≤ 6000 mm
h	HL + 370 mm HL + 400 mm (with center operator) HL + 320 mm (if mounted as VLT with beam, HL > 3321 mm)
SL/SR**	132 mm Manual, 212 mm Hoist-T, 278 mm Hoist-U, 270 mm Operator, 310 mm Operator+Hoist
D	DLH - HL + 990 mm

* We would advise the following doors to be installed on a frame, equipped with an A-65 top seal.

- Doors DLW > 6050 mm
 - Doors DLW ≥ 4050 mm with a dark outside colour, frequently exposed to solar heat.
- ** SL/SR at the beam + 48 mm in case of an outer support bearing.

Side and top view



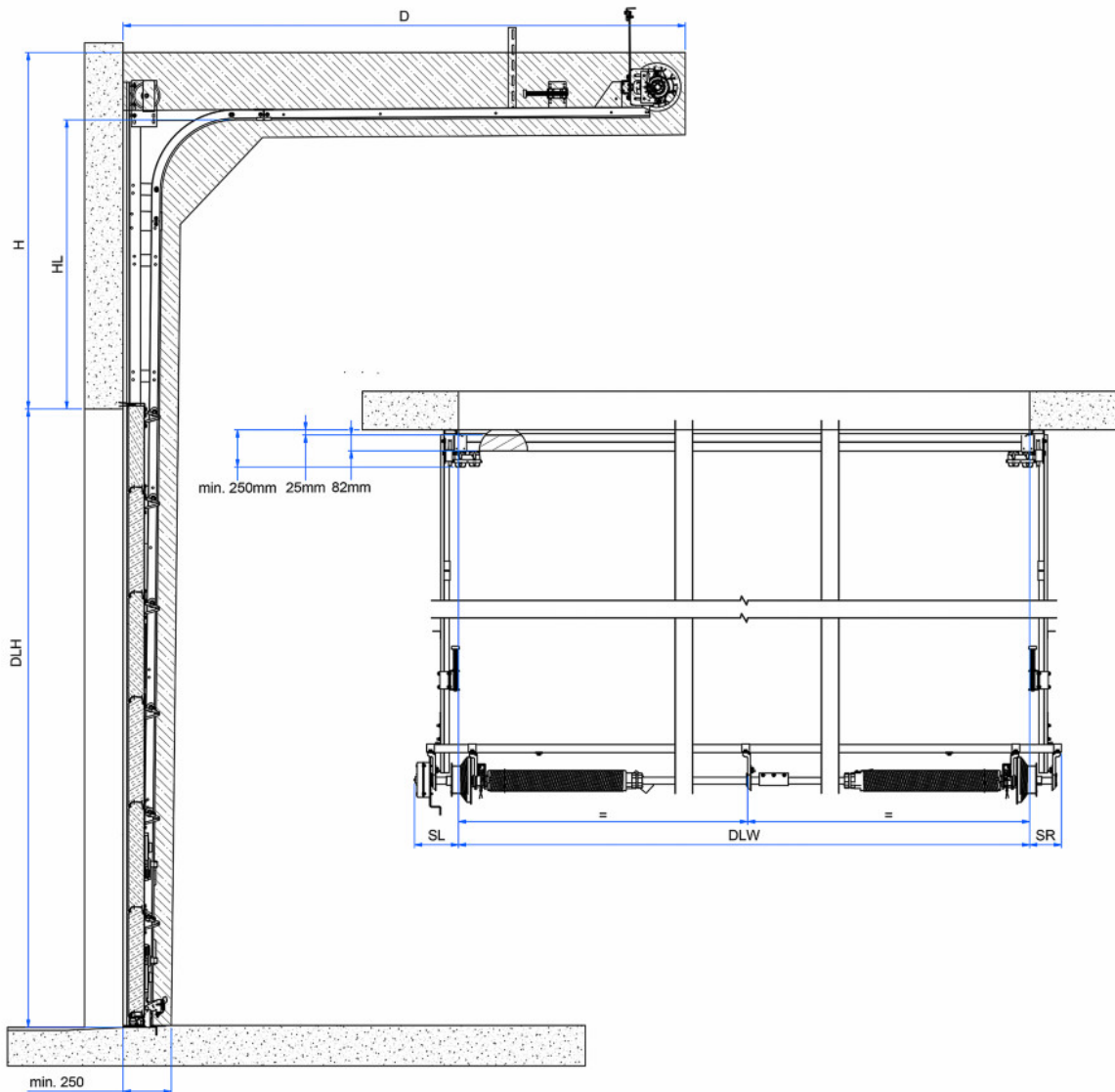
5.2.4 Space requirements HHL

DLW*	≤ 8000 mm
DLH	≤ 6000 mm
h	HL + 285 mm
SL/SR**	132 mm Manual, 228 mm Hoist-T, 278 mm Hoist-U, 304 mm Operator, 344 mm Operator+Hoist
D	DLH - HL + 1220 mm (manual) DLH - HL + 1350 mm (operator)

* We would advise the following doors to be installed on a frame, equipped with an A-65 top seal.

- Doors DLW > 6050 mm
 - Doors DLW ≥ 4050 mm with a dark outside colour, frequently exposed to solar heat.
- ** SL/SR at the beam + 48 mm in case of an outer support bearing

Side and top view



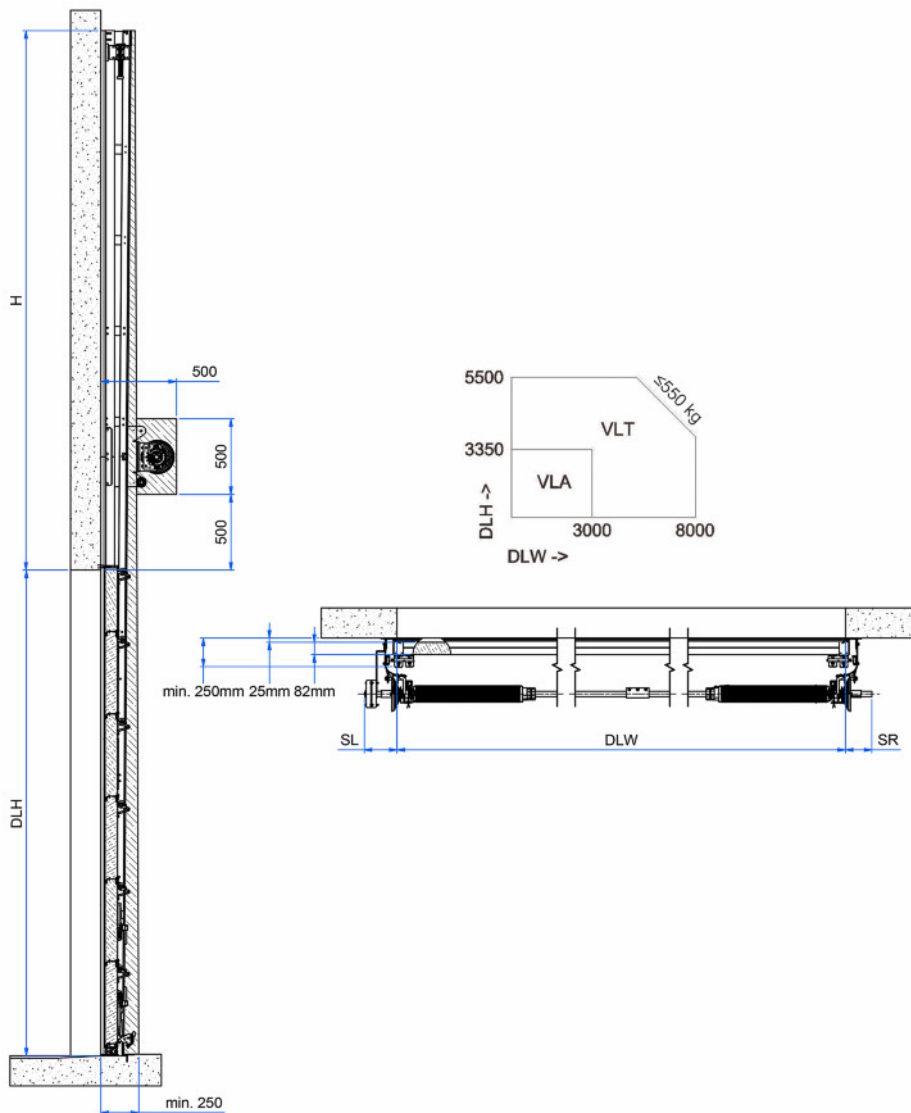
5.2.5 Space requirements VL

DLW	≤ 8000 mm
DLH	≤ 5500 mm
h	DLH + 365 mm
SL/SR	110 mm Manual, 216 mm Hoist-T, 278 mm Hoist-U, 312 mm Operator, 352 mm Operator+Hoist
D	VLA 500 mm VLT 575 mm (manual) VLT 660 mm (operator)

* We would advise the following doors to be installed on a frame, equipped with an A-65 top seal.

- Doors DLW > 6050 mm
 - Doors DLW ≥ 4050 mm with a dark outside colour, frequently exposed to solar heat.
- ** SL/SR at the beam + 48 mm in case of an outer support bearing.

Side and top view



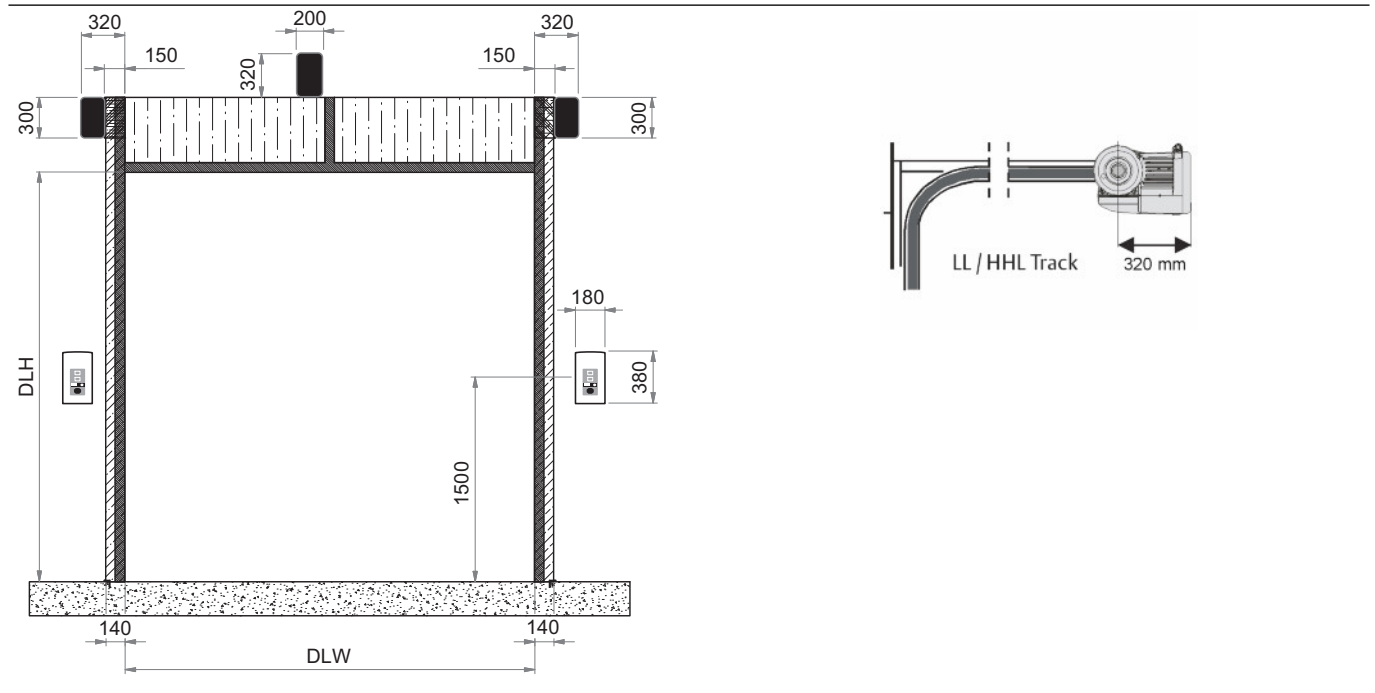
5.2.6 Space requirements Door operators

5.2.6.1 Chain hoist Space requirements

Location	Extra space requirements (mm).		
	D-hoist	T-hoist	U-hoist
Left/right	100	100	200

5.2.6.2 IDO7 (HD / 2H) Installation locations

Location of IDO7 (HD / 2H) operator



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Product datasheet
I-18P Overhead sectional door



Product datasheet
I-18P Overhead sectional door



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About Dynaco

Dynaco is the world leader in high-speed door technology. It offers state of the art solutions for both commercial and industrial applications.

Founded in 1987, Dynaco has acquired an extensive expertise in high performance doors. Yet it continues to invest in order to exceed your expectations of quality and performance. A network of certified and dedicated partners ensures an optimal service to customers all over Europe.

Worldwide, we rely on our license partners in Russia, Japan, Vietnam and Brazil.

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