

SECTIONAL DOORS DOORHAN AND THEIR ADVANTAGES



Sectional doors DoorHan are developed in Russia and passed through a test run at the French test operations center CSTB of leaf resistance to wind pressure, air tightness of seals, mechanism and safety devices reliability. According to results of the tests, DoorHan was granted the right to mark its sectional doors with CE sign, which means complete correspondence with quality and safety classification of the EU.

Aside from that, DoorHan sectional doors correspond to even more strict Russian rules and regulations (GOST 31174-2003), which confirms their high reliability and unmatched quality.

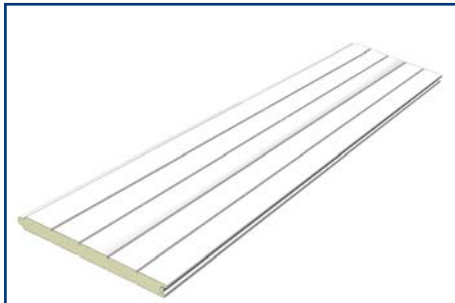
DoorHan is the only enterprise in Europe to produce a complete range of constitutive elements for sectional doors. Constitutive elements are made of materials of the leading European suppliers, which products' quality is recognized in the worldwide market.

Design features of DoorHan sectional doors

The sandwich panels

DoorHan Company produces the following types of "sandwich"-panels:

- standard panels



- panels with fingers protection



- cassette panels



The panel's surface can have 3 varieties:

- flush
- stucco
- woodgrain

The "stucco" surface is the most practical. Its major advantage is scrapes and strokes resistance, as well as absence of stains after rain.

Face and internal surfaces of DoorHan panels are covered with protective facer with a logo, which is removed after installation. The logo presence doesn't allow to leave the facer on the panels after installation. Other producers cover with facer only the face surface of panels, which considerably raises the risk of its blemish from the inner side during transportation and installation.

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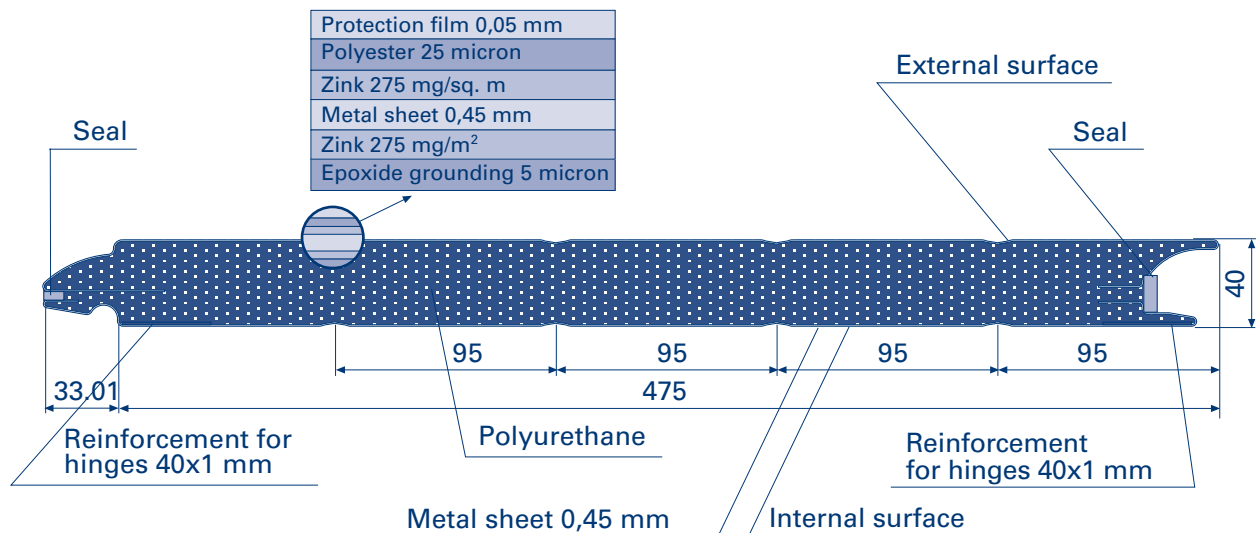
The panels have wide colour scale, which is 8 sole-coloured colours, and 6 colours of wood imitation. Polymeric coating of the panels provides for the high corrosion endurance and longevity. In addition, it is possible to paint the panels any colour from the RAL card.



The thickness of DoorHan “sandwich”-panels completely corresponds to the Russian GOST 311742003 and European standard NF EN 13241-1, and constitutes 40 mm.

The energoflex material is used as a precompressor at DoorHan panels joints. Its basis is a high-pressure polyethylene, which gives energoflex good flexibility and high endurance against hostile environments influences (including considerable temperature differences, which is characteristic to Russia). Energoflex is not absorbent as compared to the polyurethane concentrators of European producers.

ALL PANELS MEET EUROPEAN STANDART NF EN 12424



GENERAL CHARACTERISTICS OF PANELS

Characteristic	Value
Factor of sound insulation, dB	24 (DIN 52210)
Thermal conductivity, Wt/m°C	0,38
Fire resistance	B2 (DIN4102)
Wind resistance	2 (EN 12424)

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Along the edging, at the inner side, DoorHan “sandwich”-panels have specific steel zinc-plated strengthening for hinges, which guarantees over-stability of the hinges and side support brackets.

Panel construction allows to tie self-cutters of the face and inner plane sheets, which prevents their tearing apart from one another.



All DoorHan panels are produced with high-technology Italian equipment, and pass 100% quality control, which eliminates spoilage.

Due to the engineering distinctions of “sandwich”-panels, the maximum width/height of opening for sectional doors installation is up to 8m!

Sectional doors DoorHan passed through a test run at the French test operations center CSTB, and were granted:

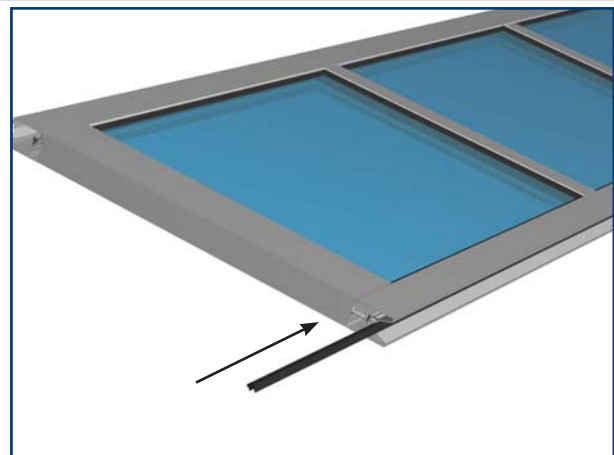
- resistance to wind pressure 5th safety class (wind speed 200 km/h)
- resistance to air passage 2nd safety class (air-pressure 50 Pa)
- water resistance 1st safety class (water pressure 30 Pa)

Panoramic panels

Panoramic panels DoorHan is a high-technology construction, which includes advanced materials. Double glass pane of panoramic panels represents two layers of polycarbonate 3mm thick in aluminium shape.

The frame of panoramic double glass pane consists of extrude (pressed) aluminium shapes, painted with powdery enamel, which makes this construction stable at most against corrosion. Panoramic panels design includes firm pre-compressors, made of thermoplastic elastomer, which provides for excellent heat and noise insulation.

Accurate section connection and firm seals around the perimeter provides for preservation of microclimate at the premises.



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In addition to the common panoramic panels, DoorHan produces translucent panels with solid glass cover. For the panels glass covering modern German high-technology materials is used: shatterproof polycarbonate and comb organic glass (4 types).



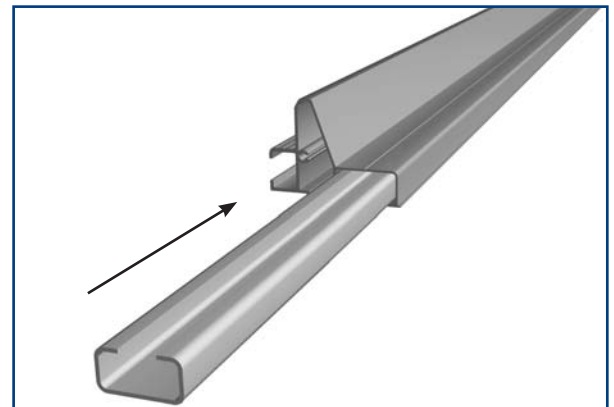
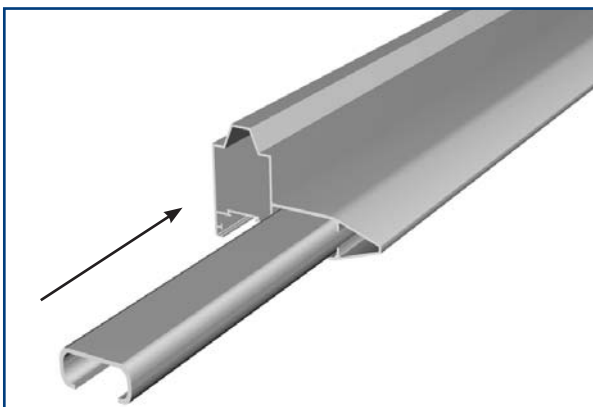
Due to its unique properties, polycarbonate represents a light material, which is highly transparent and steady towards disturbing factors, including adverse weather conditions (even hail), and is fire resistant and convenient during installation. DoorHan translucent panels with shatterproof polycarbonate are 200 times as durable as the glass!



DoorHan translucent panels are produced in accordance with standards and pass through the necessary control according to the developed and acting quality control system, and their design completely corresponds with the European standard EN13241-1.

Translucent panels provide for natural lighting of your premises, inclusive of ultraviolet light resistance.

Specially developed aluminium shapes system with reinforcing elements, as well as the unique technology of the panels assembling allow to produce panoramic doors up to 6m wide, and up to 8m height.



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Add-in windows

In order to provide for natural lighting of the garage, there is a range of special windows.

Acrylic double-glass windows are built into the technical doors leaf and the pass door. The windows improve illumination of the premise and change the doors design. For glass cover is used shatterproof acrylic transparent glass.



Windows for panels with cassette design and decorative cross or diamond insertion, made of golden metal casement, perfectly allow daylight through, and also emphasize your elegant and individual style. For external glazing there used shatterproof acrylic transparent glass. For internal glazing - shatterproof acrylic glass with "ice crystal" tracery.



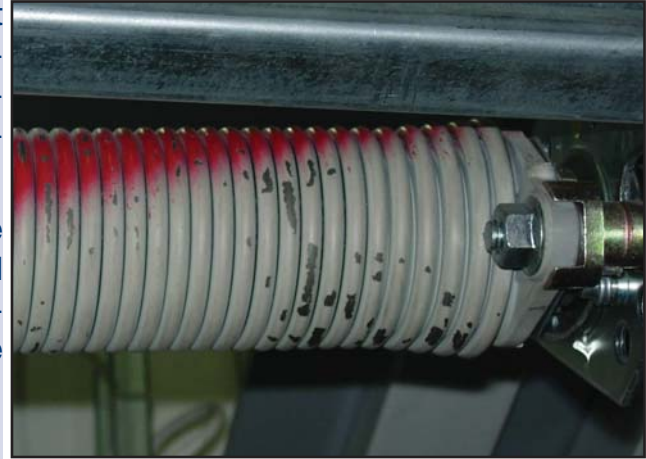
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Configuration distinctions of garage and industrial sectional doors

DoorHan sectional doors, as well as the leaf, are almost stable. This is due to the fact, that DoorHan doors steel constitutive elements, including shapes, hinges, brackets, fasteners and torsional springs are zinc-plated. Zinc layer thickness constitutes 18mkm minimum.

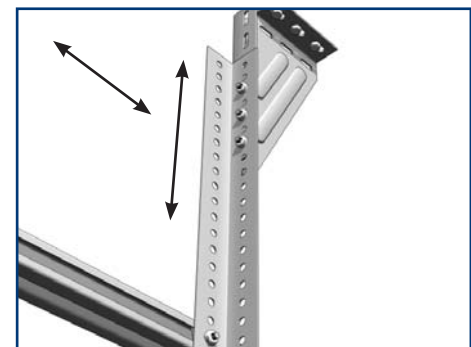
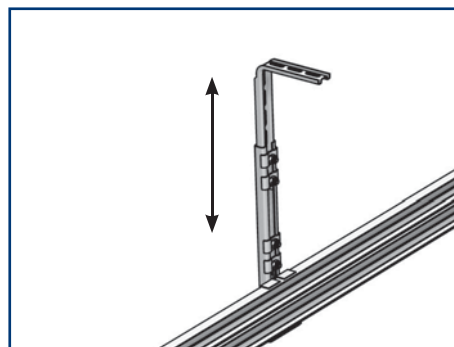
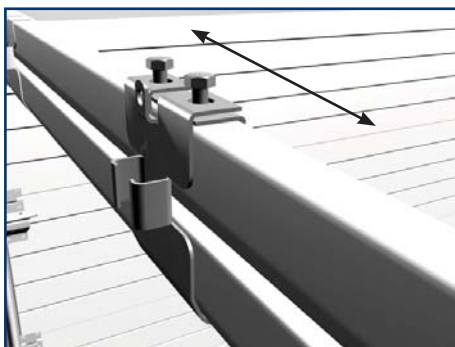
A number of other producers just paint their constitutive elements, which is not processable. For instance, torsional springs painting can lead to shearing of paint within process, and, as a consequence, to rust and its fall out (the wire bursts).



spared paint from a spring

Metal tracks thickness is at least 1.5mm (garage doors), and 2mm, which provides for stability of the doors mechanism towards high stressing? A part of the doors mechanism elements is made of aluminium, covered with powdery enamel.

Special weather seals are installed over the whole perimeter of sectional doors: upper, lower and side. The weather seals are made of superior material – thermoplastic elastomer, which in contrast to common rubber, is heavy-duty and durability, and it does not lose its flexibility within temperature range from -45 °C to +70 °C.



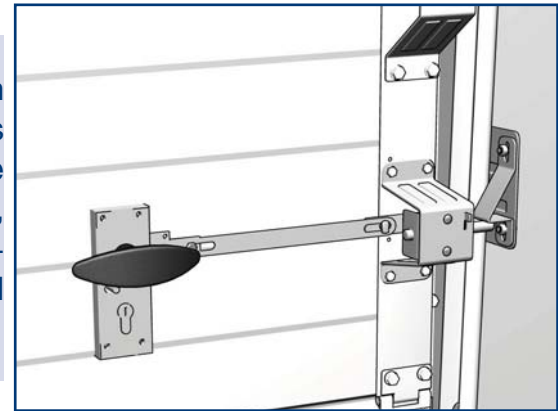
DoorHan company has developed a unique braking system of horizontal bearings to the ceiling. Special brackets provide not only for high setup stiffness and reliability, but also allow to span the bearings to the ceiling at any point (depending on the premise's design features).

DoorHan company has an ad hoc approach to sure safety and protection of the customer's property, to which special attention is paid. That is why for safe locking if doors specially developed locks are used.

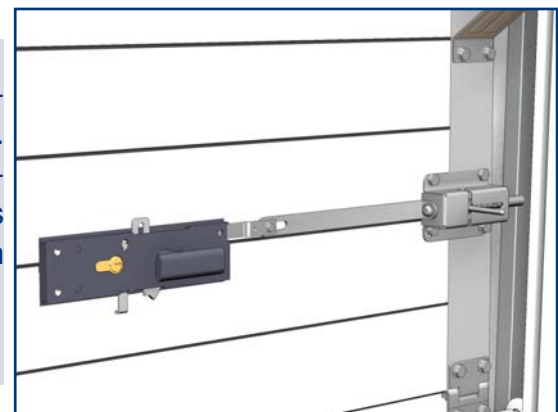
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Garage sectional doors are equipped with a special lock with automated locking system, which automatically locks the doors after their closing? Hence, the customer doesn't need to make additional efforts and spare time for locking his doors. In addition, there's a possibility of connection a tripper of overhead electric actuator, which makes it more all-purpose, and expands its functional capabilities.

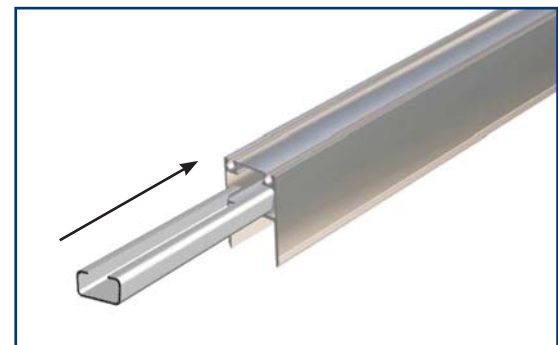


Industrial sectional doors are equipped with customized technical lock. The dead bolt is heavy-duty, and secures from break-in. In addition, this lock has a special lockout mechanism, which prevents it from accidental closing of the dead bolt, which eliminates the possible breakage of the lock itself, as well as automation in case of using electric actuator.



In order to heighten the durability of sectional doors, their reliability, and prolongation of operating life, a special configuration is used:

The lower aluminium section of technical sectional doors is strengthened with a steel section to let produce doors with bigger overall dimensions (up to 8m width), and add more fixity to the door leaf.



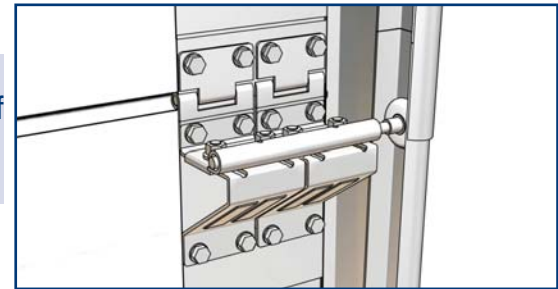
If the door leaf's width is more than 4500m, a steel "omega"-section is used to eliminate whipping of the panels during doors opening.



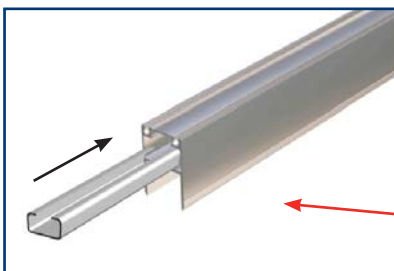
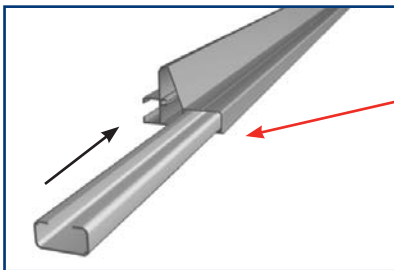
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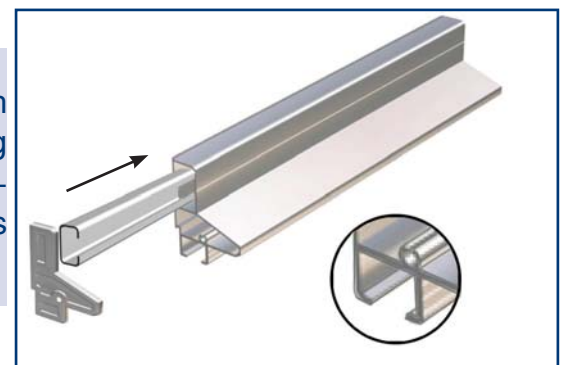
Double side supports are used for technical sectional doors, if the load to one side support exceeds 35 kg.



Due to the recent developments and modernization of built-in pass door in sectional doors DoorHan there appeared considerable increase of opening width (up to 6 meters!), and pass door rapids decreased to 75 mm!



Due to application of new specialized aluminium sections with enforced armoured insertions, in addition to the doors opening width increase, it became possible to exclude steel “omega”-sections, which resulted in more attractive look to the doors, as well as ergonomic styling.



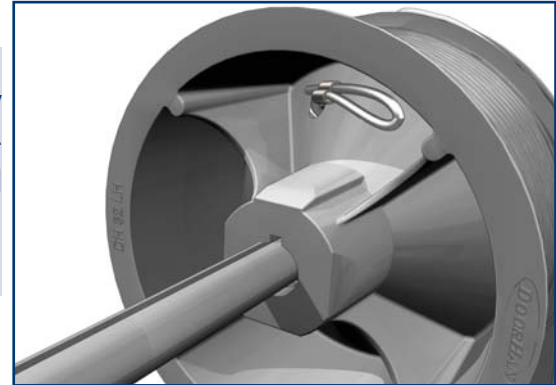
The built-in pass door includes door closer on a sliding bar. The bar itself is a component part of the enforcing aluminium section, which is installed during preliminary assembling of the shield. Thus, it became possible to save much time for installation of the door closer during installation.

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DoorHan sectional doors construction allows to perform tension adjustment for cables in different ways, which makes the torsion mechanism and doors adjusting convenient and fast.

Owing to modernization of drums there appeared a possibility to perform convenient and fast adjusting of the cables tension using special control sleeves, which makes the adjusting easier and shortens the installation time.



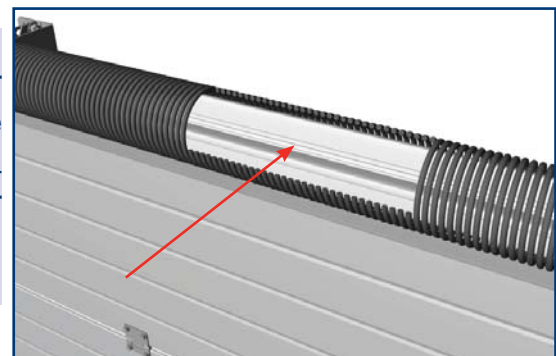
The specially developed bottom corner brackets with cablecottering also allow performing a smooth adjustment of cables tension without blocking the torsion mechanism, which shortens time for the door leaf regulation several times. In addition, to bind the cables to such brackets, it is not necessary to use additional thimbles and crimp barrels.



Due to the above mentioned adjustment tools, it is no longer necessary to cut the shaft, while releasing it, and to bind it with an adjusting socket, which makes the torsion mechanism much easier, increases its endurance, and shortens time for the doors installation and adjustment.

The torsion mechanism springs, used in technical sectional doors, have considerable margin of safety, and apt for 100.000 cycles of opening/shutting.

Also, DoorHan company has developed plastic insertions for torsion springs. Application of such insertion allows to eliminate springs whipping, preserve equal distance between two coils of a spring, and, as a consequence, to eliminate additional losses for frictions between the coils.

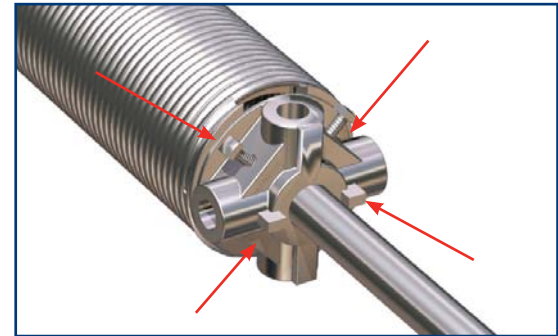


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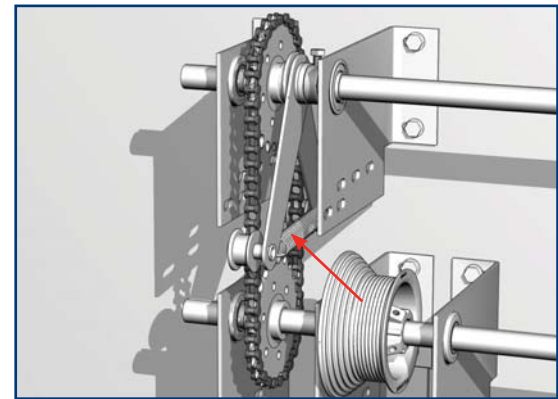


Thus, it became possible to reduce factors, which introduce an error into torsion mechanism process, to the minimum level, and to make spring processing ideal, as well as to produce more accurate and smooth adjustment of torsion mechanism according to the engineering design.

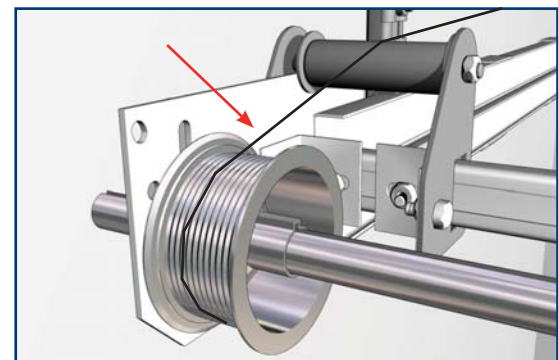
The plugs for DoorHan torsional springs have 4 holes for binding to the axle, which allows to perform adjustment with 1/4 turnover precision!



In case of twin-shaft torsion mechanism system of sectional doors a special device is used for chain pull, which is meant for elimination of chain sagging between the two shafts? This mechanism provides for dependable operation of chain belt, and, as a consequence, of the whole sectional doors construction.



For the low headroom with drums rear there was developed a construction of torsion system, in which the cables are inside the bearings, which absolutely corresponds with the European safety requirements.



For bigger industrial sectional doors, the 1,25 inch shaft is used, which provides for more and reliability of the torsion mechanisms, as well as extends its operating life.



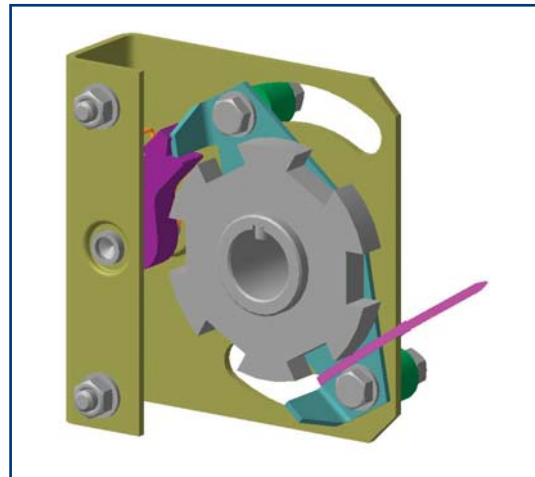
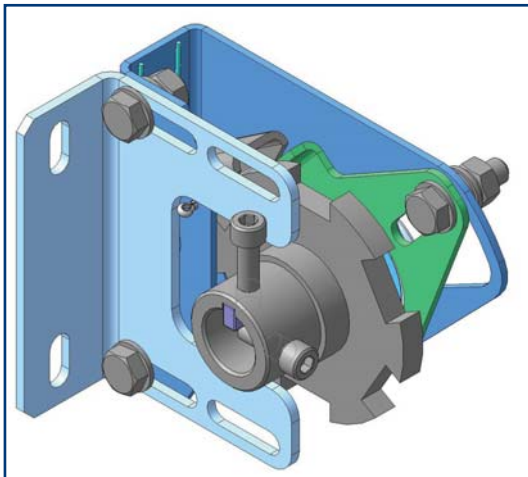
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DoorHan company pays special attention to safety of the doors, which is confirmed by European tests and certificates.

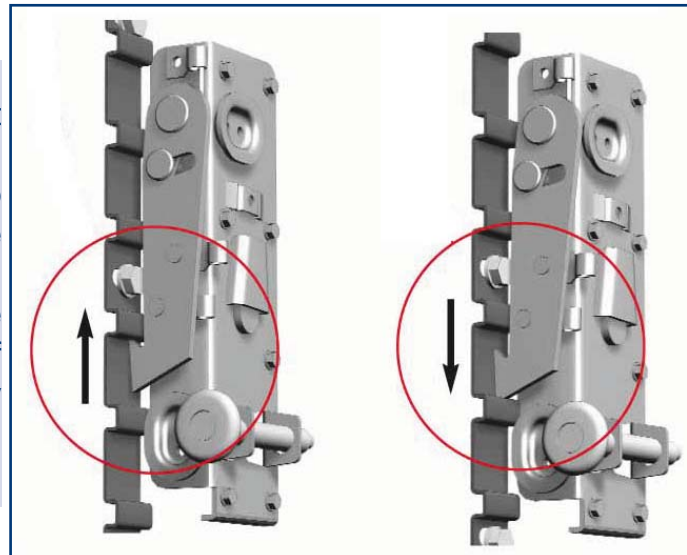
Types of safety devices:

- cable break safety device
- torsion spring safety device
- cable safety device



Sectional doors are equipped with many-level safety system. Standard configuration of industrial doors includes torsion spring safety device.

Cable safety device instantly block the leaf movement in case it breaks. Cable safety device blocks the doors in case it breaks, and the maximum leaf passage is only 3 to 4 cm (European standards allow maximum leaf passage up to 30 cm). These data confirmed by tests of French CSTB laboratory. In addition, this device at the same time protects sectional doors against unauthorized opening of the leaf from outside, which thus eliminates the necessity to use additional locking devices (locks, bolts).



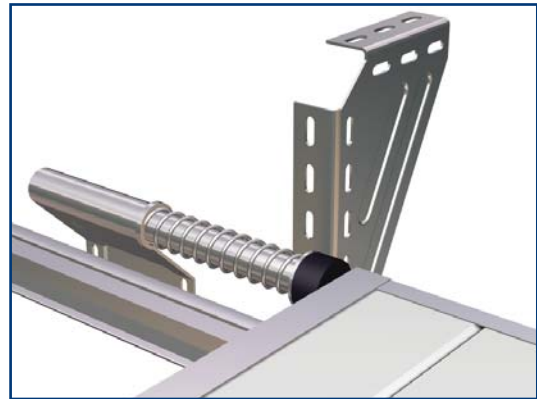
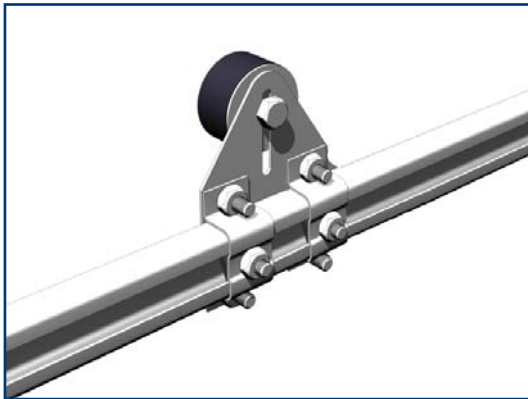
Safety from open

Cable break safety device

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Also sectional doors are equipped with special boundary members, which freeze the doors leaf in end points, and prevent rollers against drop-out from the bearings.



Side caps for DoorHan panels, made of galvanized steel, suit any panel colour, and harmonize with the rest doors configuration and provide for the corrosion endurance, which makes the doors attractive not only from the outside, but also from the inside.

The tracks undergo preliminary assembling on the factory floor and are already assembled for the installation. The assembling is performed by the clench-connection and screw-holt joint, which means high endurance of fixturing points and corrosion endurance.

The packing is technological and modern, and provides for protection against scrapes, strokes, and weather influence during transportation.

While designing the DoorHan sectional doors, the most strict requirements were taken into account, which is confirmed by numerous tests and certificates. DoorHan doors are easy to manage, they are corrosion resistant and do not require special maintenance.

Thereby, today DoorHan sectional doors represent the best choice among doors producers. The sectional doors leaf contain special stickers with safety information during their operation, and technical characteristics. Each doors set contains detailed step-by-step installation and operation instruction.