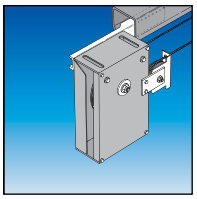
# Fire Door Operators

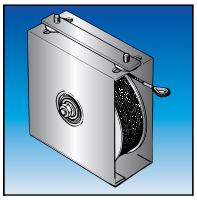












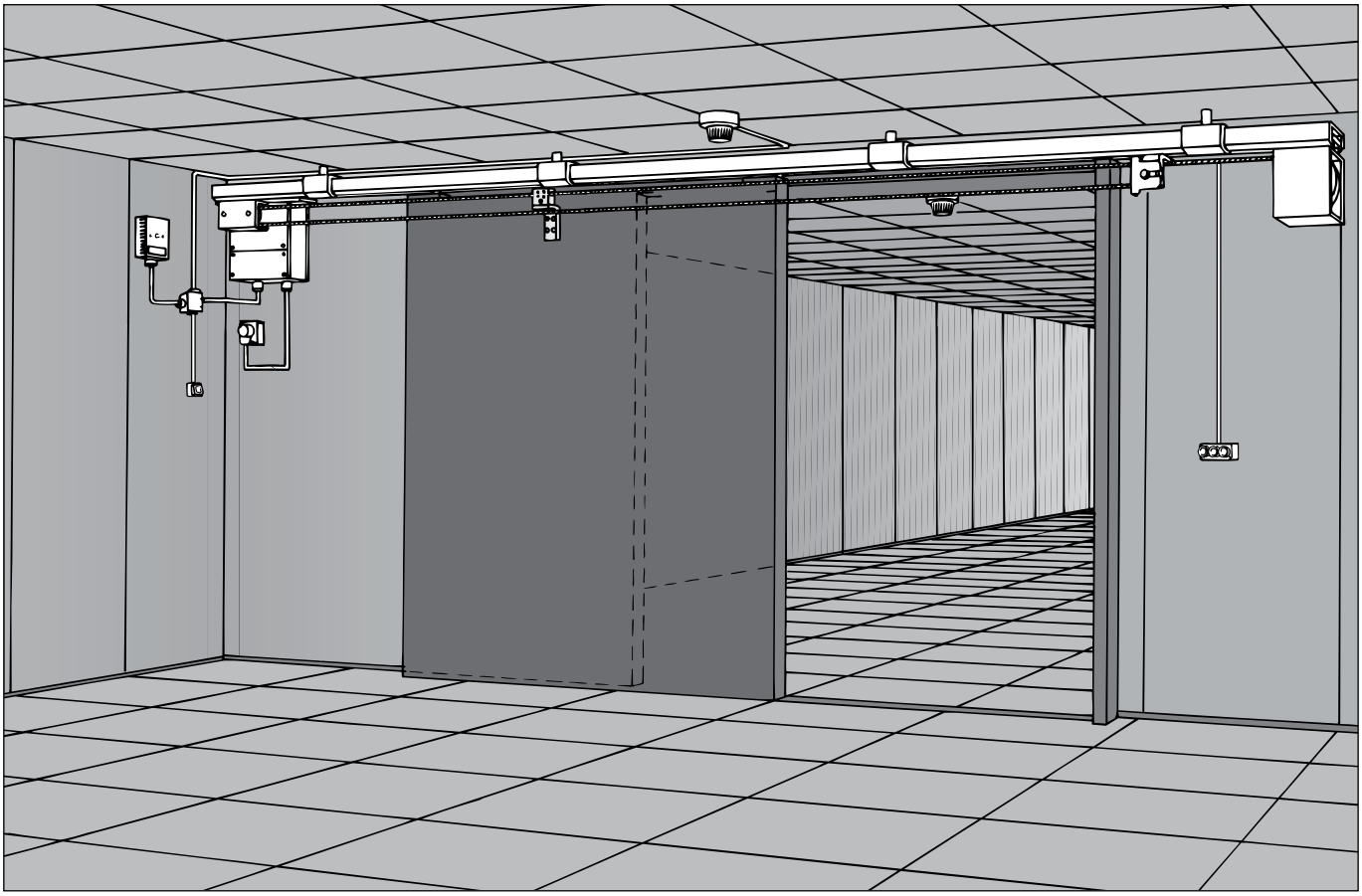


## Components of a Hold-Open System for Sliding Doors

DICTATOR products help you to automate fire protection sliding doors. They guarantee the door to be safely closed in the event of fire. The door closing speed is mechanically controlled over the whole distance, thus avoiding damage and injury. The doors are reliably closed by a counterweight or a spring rope pulley, even without current.

DICTAMAT drive units allow you to move also heavy fire sliding doors without difficulty. There is a large variety of drive units and control systems available to cover different requirements ranging from the simple and economic type to a micro-processor control system which enables fire protection doors to open at high speed and offers smooth acceleration and deceleration, partial opening for personnel access and much more.

In the event of alarm from either the DICTATOR RM 2000/RM 3000+ smoke detectors or the hand release switch, the door is closed mechanically by a counterweight or a spring. During closing the speed is controlled at all times by either an adjustable magnetic brake system or a radial damper. Additionally hydraulic final dampers cushion the door just before reaching the closed position.



**State January 2016**



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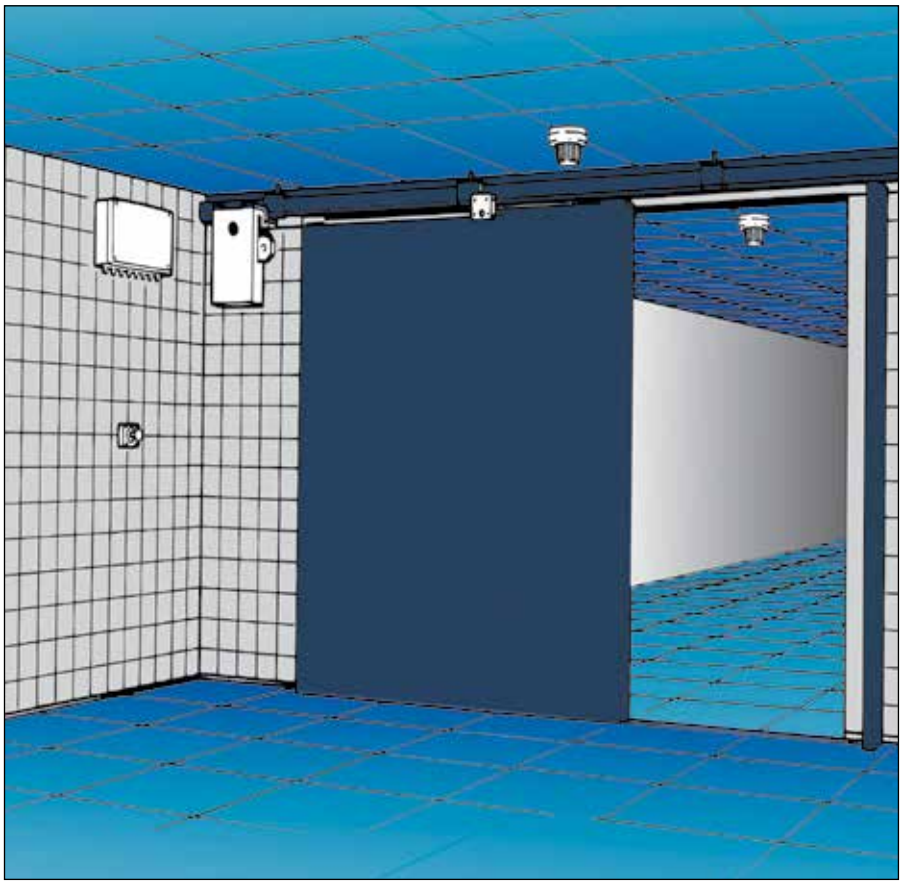
# DICTATOR Fire Door Operators

## for Sliding and Hinged Doors

**Fire door operators** have to ensure the closing of doors and gates in case of fire alarm, even if the power supply fails. Therefore in Germany a **mechanical closing device** is obligatory. In some other countries you may use an emergency power supply, but have to provide a self-supervision of the emergency battery pack. Otherwise they might be empty when needed and the door would stay open.

**DICTATOR offers**

- partial or complete **automation** of fire doors (depending on the frequency of operation, requirements and budget).
- a large and flexible **standard programme** of **modular** components, also suitable for special applications.
- **customized solutions** (e.g. door goes around a bend, very large door/gate, hazardous area, overhead doors).
- **easier and faster installation** because of the use of **CAD drawings** (e.g. if very little space is available, the exact position of the operator on the door is given in the drawing.).
- detailed **advice**, **installation** (if required), **bringing into service**, **maintenance**, **service** and **training**.



## Technical Data

| |
|---|
| DC door operators with integrated encoder |
| DC door operators with separate limit switches |
| Threephase-current motors with separate limit switches |
| Closing with counterweight provided on site |
| Closing with integrated closing spring |
| Semi-automatic operators to close sliding fire doors |

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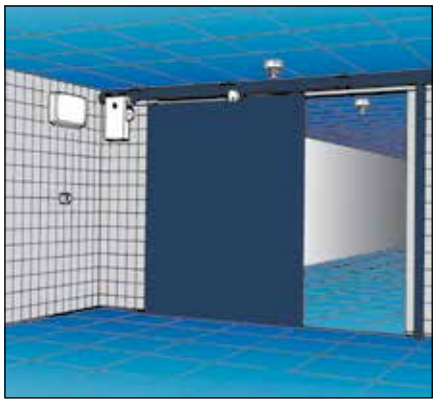
## 1. Fully Automatic Operators for Sliding Fire Doors

## DICTATOR Fire Door Operators - Summary

| | Motor | | Closing | | | Width of door | | | Force to open the door / Weight of door (max.)** | | | Approval |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Counter-weight | Spring ro-pe pulley | Battery back-up | up to 6.5 m | up to 7 m | unlimited* | till 300 N 700 kg** | till 600 N 1300 kg** | ≥ 600 N >1300 kg** | in Germany with control system |
| **Fully-automatic sliding door operators** | Voltage | | | | | | | | | | | |
| DICTAMAT 8000-**21** ZLM | 48 VDC | | | x (inte-grated) | | x | | | | x door1000kg | | Square 800 |
| DICTAMAT 7000-**21** ZEM | 48 VDC | | x | | | | | x | | x | | Square 800 |
| DICTAMAT 7000-**21** ZLM | 48 VDC | | x | | | | x | | | x | | |
| DICTAMAT 3700-**21** ZEM | 24 VDC | | x | | | | | x | x | | | Square 800 |
| DICTAMAT 3700-**21** ZEM | 24 VDC | | | x (sep.) | | x | | | x | | | |
| DICTAMAT 3700-**21** ZLM | 24 VDC | | x | | | | x | | x | | | |
| | | | x | | | | | | | | | |
| DICTAMAT 700 (S) also explosion-proof | 230/400 VAC | | x | | | | | x | | | 800 N door1800kg | E8 with frequency-converter + AR20 |
| | | | | x (sep.) | | x | | | | | | |
| **Customised operators:** | | | | | | | | | | | | |
| Three-phase current till 0.75 kW | | AC | x | | | | | x | | | x | E8 with frequency converter + AR20 |
| Direct current | | DC | x | | | | | x | | x | | |

**Legend:**
Z = toothed belt
E = position control with separate limit switches
L = position control with integrated encoder
M = integrated magnet
**21** = Modular system DC-21
**max. door weight depends on its smooth running



## DICTATOR Fire Door Operators - Summary, cont.

DICTATOR offers a variety of either fully or semi-automatic standard door operators for fire protection doors. In addition we design and develop customised drive units, e.g. for very large doors, for door and window installations with little space left for the drive unit or for overhead fire protection doors, **explosion-proof door operators** and so on.

The force of the motor is transmitted either by a toothed belt (Z) or a chain (K). The revolving toothed belt/chain permits even to move **doors with two leaves with one door drive and one control system** only.

All door operators and control systems mentioned in the tables are explained in detail on the following pages.

### 1. Fully-Automatic Sliding Fire Door Operators - cont.

The fully-automatic DICTATOR door operators DICTAMAT are used on **doors**, that are **frequently opened and closed**. These doors can be integrated without any problem in the course of manufacture, e.g. as separation to the clean area or to sparsley heated areas, when fork lift trucks run frequently between the different areas.

The fully-automatic DICTATOR door operators DICTAMAT are available for different doors sizes, with integrated position control (encoder) or separate limit switches, closing either with an integrated spring or a counter weight provided on site.

The **direct current (DC) door operators** of the **series DC-21** are designed as a *modular system*. They all feature one central module: the gear module on which the different DC motors are flanged. The driving wheel is determined by the form of power transmission: either toothed belt or chain. Furthermore the position control system can be added to the central module.

This *modular system* offers several important advantages:

- *Individual combination of the modules* permits at a very high extent to *match the door operators to the requirements of the different doors - even on site* (our service team can e.g. increase the force of the door drive by adding a further gear box).
- The modular system *simplifies installation, service and maintenance*, as each module can be exchanged without any problem.
- *Short lead times* even for door operators having to be assembled especially.
- All door operators of the modular system are similar and therefore *fast and easy to understand and to handle*, even when using different types of the modular system.

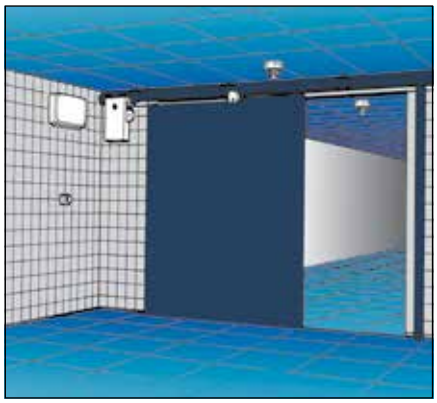
The summary on the previous page should help you to select the right door operator for your application. Or you simply ask our advice!

### 2. Semi-Automatic Sliding Fire Door Operators

| | **Closing** | | **Width of the door** | | |
|---|---|---|---|---|---|
| **Semi-automatic sliding door operators** | Counter-weight | Closing spring | up to 6.5 m | up to 8 m | un-limited* |
| DICTAMAT 650 | | x (integrated) | x | | |
| DICTAMAT 560 | | x (separately) | x | | |
| DICTAMAT 570 | x | | | | x |

The semi-automatic DICTATOR door operators are designed for doors that are **rarely opened** and then normally **stay open**. They keep the door open in every position. In case of alarm or after a closing command the counter weight or the spring rope pulley will close the door. The closing speed is controlled by the adjustable magnetic brake of the door operator.
All semi-automatic DICTAMAT operators are approved in Germany for the use on fire sliding doors.

*All drive units operating with rope are delivered with a steel rope of 25 m. If this should not be enough (column "width of door": unlimited), please order a longer rope.



## DICTATOR Fire Door Operators - Summary, cont.

DICTATOR provides operators not only for fire protection sliding doors. We also offer solutions for hinged doors, even for special applications as fire protection doors in explosive sectors. Or for very large and heavy hinged doors. For these you would need an individual approval of the responsible authorities.

Information on our DICTAMAT 306 we will send you on demand.

### 3. Operators for Hinged Fire Protection Doors

| | Open | Close | Width of door | Opening angle max. | Approval in Germany |
|---|---|---|---|---|---|
| **Automatic hinged door operators** | motor | integrated closing spring | | | |
| DICTAMAT 204B | x | x | max. 1,4 m | 110° | Z-6.5-1944 |
| DICTAMAT 306 | x | x | max. 1,5 m | 180° | individual approval |



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# Fire Protection Sliding Door Operators Series DC-21

The door operator series DC-21 with DC-motors has a **completely modular structure.** Along with door operators for the industrial and commercial sector it includes with the types DICTAMAT 8000-21, 7000-21 and 3700-21 door operators especially for fire protection doors. They open the door with motor and close them either by the integrated spring or by a counterweight provided by the customer. This series has been **tested and approved** for the use on fire protection doors.

Your advantages:

- **High performance** at **small dimensions.**
- **Reduction of the installation work to a minimum:** No separate limit switches are required for the version with integrated encoder..
- **Modular system** permits **modification** by our service team to another DC-21 door operator, even on site.
- **Installation, handling** and **connection** of all DC-21 door drives are **similar.**
- Modular system **facilitates maintenance** and **service.**

## Selection Criteria

- For doors from 1 to 7 m (with encoder); otherwise unlimited distance
- Motor force in opening direction from 300 N to 1000 N
- For doors up to max. 1300 kg (doors must run smoothly)
- For up to 300 cycles per day
- Position control: integrated encoder; with doors > 7 m: separate limit switches
- Closing with integrated/separate spring or counterweight provided by the customer
- Operating options with SQUARE 800 control system: Open, Stop, Close, partial opening, automatic closing, relay contact (function to be adjusted by customer)

CE

## Summary

The door operator "family" is structured completely modular. All system components can be combined differently. For fire protection doors three series have been developed: DICTAMAT 8000-21, DICTAMAT 7000-21 and DICTAMAT 3700-21.

The types mentioned below are the ones most frequently used, but it is no problem to assemble other versions.

All series use the same control system.

## Technical Data

| ***DICTAMAT Type*** | ***8000-21*** | ***7000-21*** | | ***3700-21*** | |
|---|---|---|---|---|---|
| | | ***Normal*** | ***with add. gear box*** | ***Normal*** | ***with add. gear box*** |
| Motor rating | 157 W | 157 W | | 40 W | |
| Opening force of the motor | 600 N | 600 N | 1000 N | 300 N | 500 N |
| Closing force | 160 N (spring) | | | | |
| Opening speed adjustable | 0.10 - 0.18 m/s | 0.10 - 0.18 m/s | | 0.10 - 0.25 m/s | |
| Closing speed adjustable | 0.08 - 0.2 m/s | | | | |
| Voltage from control system | 48 VDC | 48 VDC | | 24 VDC | |
| Nominal current from control system | 7 A | 7 A | | 2 A | |
| Driving torque (at drive shaft) | 20 Nm | 20 Nm | 34 Nm | 10 Nm | 17 Nm |
| Duty cycle | 40 % ED | | | | |
| IP rating | IP 44 | | | | |
| Weight (without accessories) | 19 kg | 10 kg | 12 kg | 10 kg | 12 kg |
| Doors (running smoothly) up to | 1000 kg | 1000 kg | 1300 kg | 700 kg | 1000 kg |
| Distance with encoder / Limit switches | 6,5 m | encoder: 7 m / limit switches: unlimited | | | |
| Cycles per day | 200 | 300 | | 100 | |

## Options

**- Position Control**:
The position of the door can be determined either by an integrated encoder ("**L**") or by separate limit switches ("**E**"). Of these you need three pieces, one each for the positions closed, creep speed open and open. The integrated encoder reduces the assembly effort considerably.

Door operators with integrated encoder can be used for door widths of 7 meters maximum. Otherwise the positioning will become too imprecise.

**- Power Transmission**
Door operators with integrated encoder always use toothed belt ("**Z**") for the power transmission as only this allows an exact positioning. The operator and the accessories have to be configured according to the type of power transmission.

**- Additional Gear Box**
The additional gear box permits to increase the force of the door operator by the factor 1.7, the capacity of the motor staying the same. Simultaneously the maximum opening and closing speed is reduced by the same factor (in comparison to the normal version).



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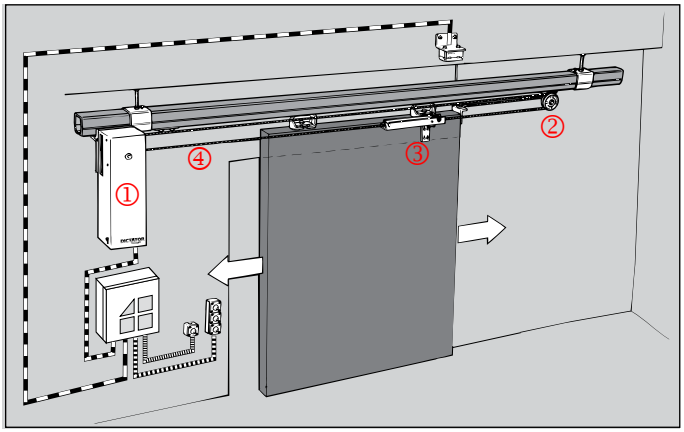
## Components

The DC-21 fire door operators open sliding doors by motor. The integrated magnet allows to keep the door in every position. The closing impulse is given either by a push button, the automatic closing or a smoke alarm. The closing is effected mechanically by an integrated or separate closing spring or a counter weight. This ensures that the door is always securely closed, even in the case of a power failure. As the power is transmitted by a revolving toothed belt, also **sliding doors with two leaves** can be powered by one operator and one control system. For the second leaf you only need an additional fixing bracket (dimensioned drawing on page 05.016.00).

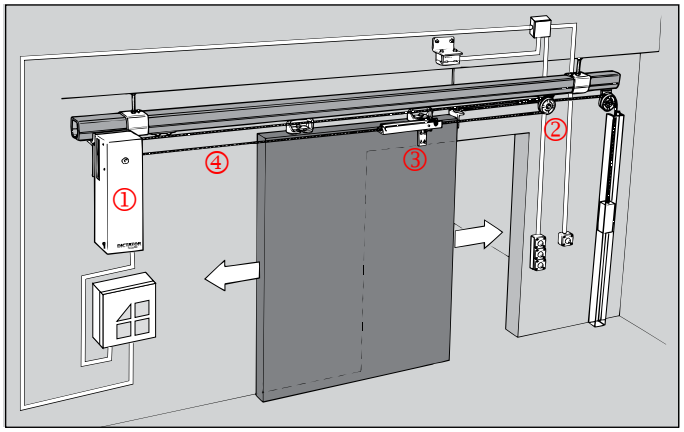
## Doors up to 6.5 m Width

**DICTAMAT 8000-21 ZL**
with integrated closing spring and encoder for position control



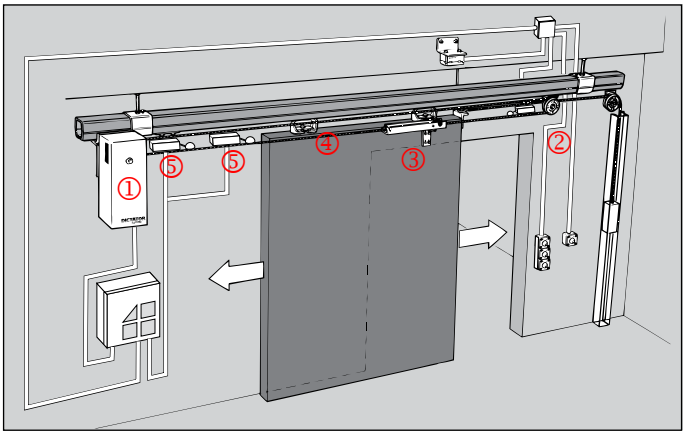

## Doors up to 7 m Width

**DICTAMAT 7000-21 ZLM or DICTAMAT 3700-21 ZLM**
with integrated encoder for position control




## Doors Wider than 7 m

**DICTAMAT 7000-21 ZEM or DICTAMAT 3700-21 ZEM**
with separate limit switches for position control




**Legend**

① Door operator with mounting plate
② Idler pulley with fixing bracket
③ Fixing bracket
④ Toothed belt
⑤ Limit switch

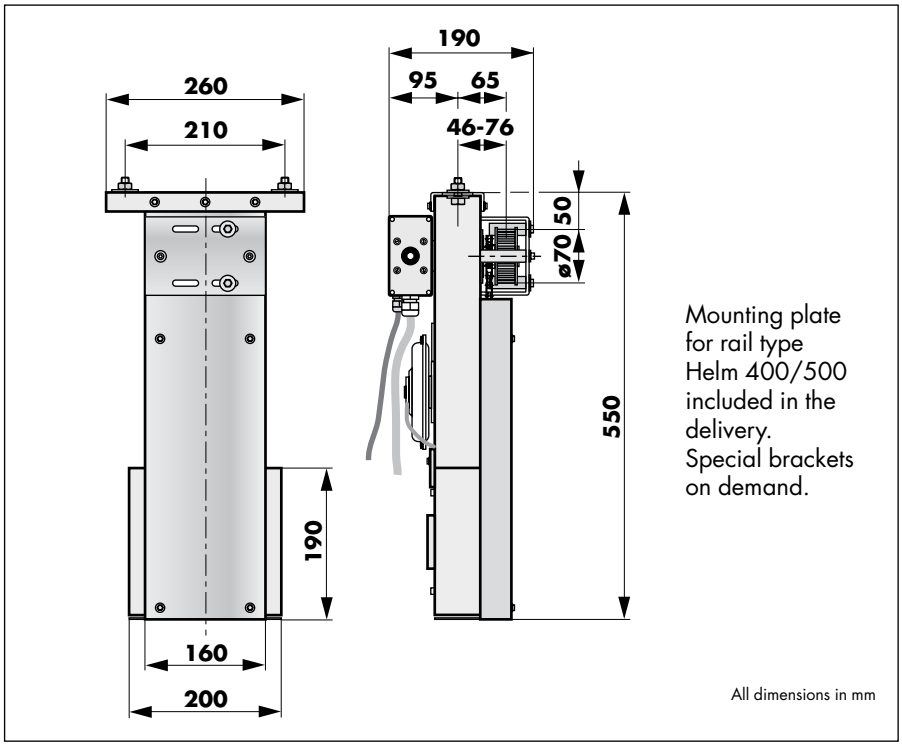
## DICTAMAT 8000-21

The DICTAMAT 8000-21 ZLM door operator combines all fire protection features in one device: opening by motor, position control by integrated encoder, keeping the door in any position by the integrated hold-open system, closing by integrated spring, closing speed controlled by integrated magnetic brake.

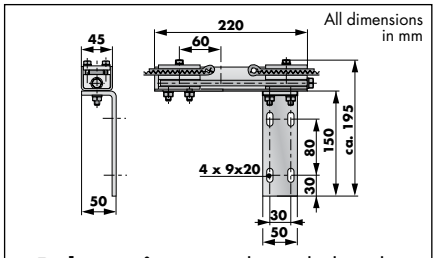
Due to its small and compact design it requires very little space in depth. It is installed directly below the rail, so that no space is necessary between the rear end of the door and the wall.

The toothed belt for power transmission is not included in the delivery as the required length differs almost always.

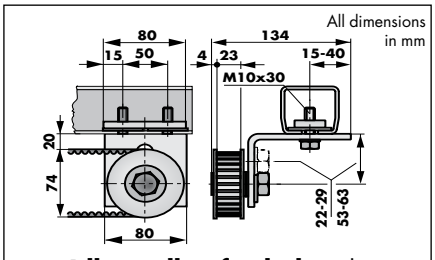
## Dimensions DICTAMAT 8000-21 ZLM




## Dimensions Idler Pulley, Belt Tensioner




**Belt tensioner** with angle bracket




**Idler pulley for belt** with bracket for mounting to the rail

## Components Included DICTAMAT 8000-21 ZLM

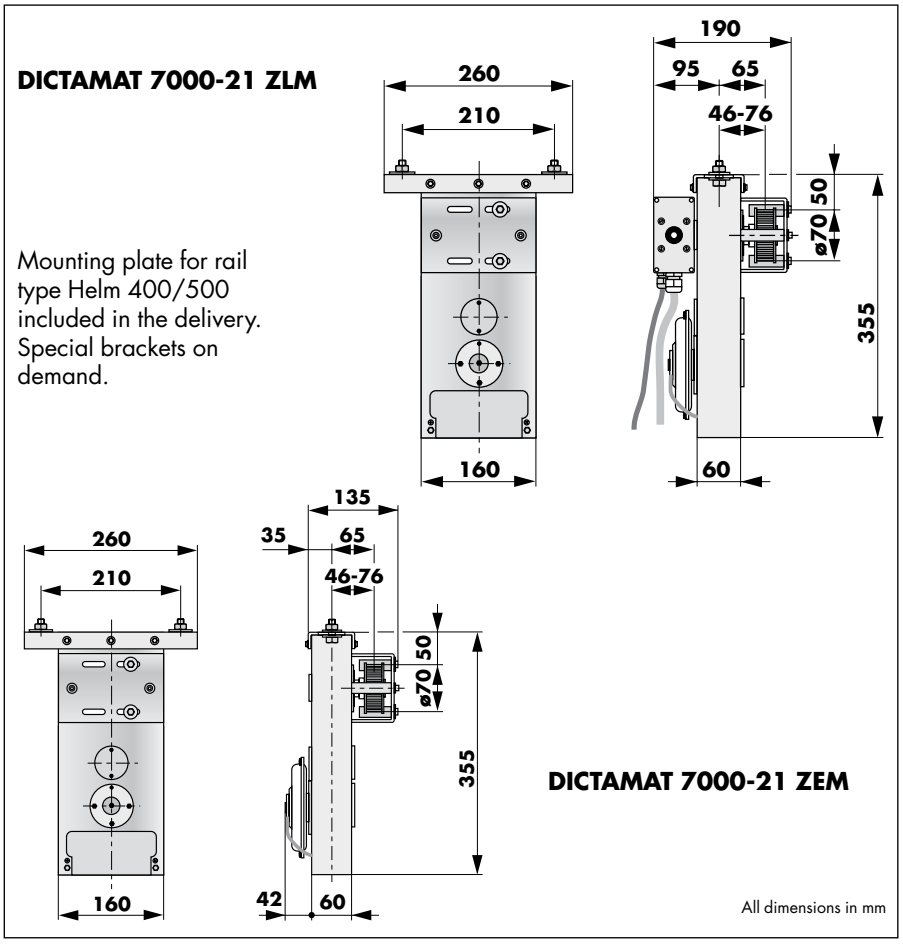
- Door operator: gear module with 48 VDC disc-armature motor, driving wheel for toothed belt, encoder, magnet, damping module, 160 N closing spring
  2.5 m connecting cable to the control system, mounting plate
- Idler pulley with angle bracket for mounting to the rail
- Belt tensioner with angle bracket for fixing to the door

## DICTAMAT 7000-21

The DICTAMAT 7000-21 door operator is used especially to automate doors which already dispose of a counter weight or which are wider than 6.5 meters. There exist two types: with integrated encoder for position control of doors up to 7 m width or without encoder for doors wider than 7 m. Here the position control is effected by separate limit switches. Same as the DICTATMAT 8000-21 it requires very little space in depth. It can be installed directly below the rail, so that no space is necessary between the rear end of the door and the wall.

The toothed belt for power transmission is not included in the delivery as the required length differs almost always.

## Dimensions DICTAMAT 7000-21




## Components Included DICTAMAT 7000-21 ZLM

- Door operator: gear module with 48 VDC disc-armature motor, driving wheel for toothed belt, encoder, magnet, damping module, 2.5 m connecting cable to the control system, mounting plate
- Idler pulley with angle bracket for mounting to the rail*
- Belt tensioner with angle bracket for fixing to the door*

## Components Included DICTAMAT 7000-21 ZEM

- Door operator: gear module with 48 VDC disc-armature motor, driving wheel for belt, magnet, damping module, 2.5 m connecting cable to the control system, mounting plate
- Idler pulley with angle bracket for mounting to the rail*
- Belt tensioner with angle bracket for fixing to the door*

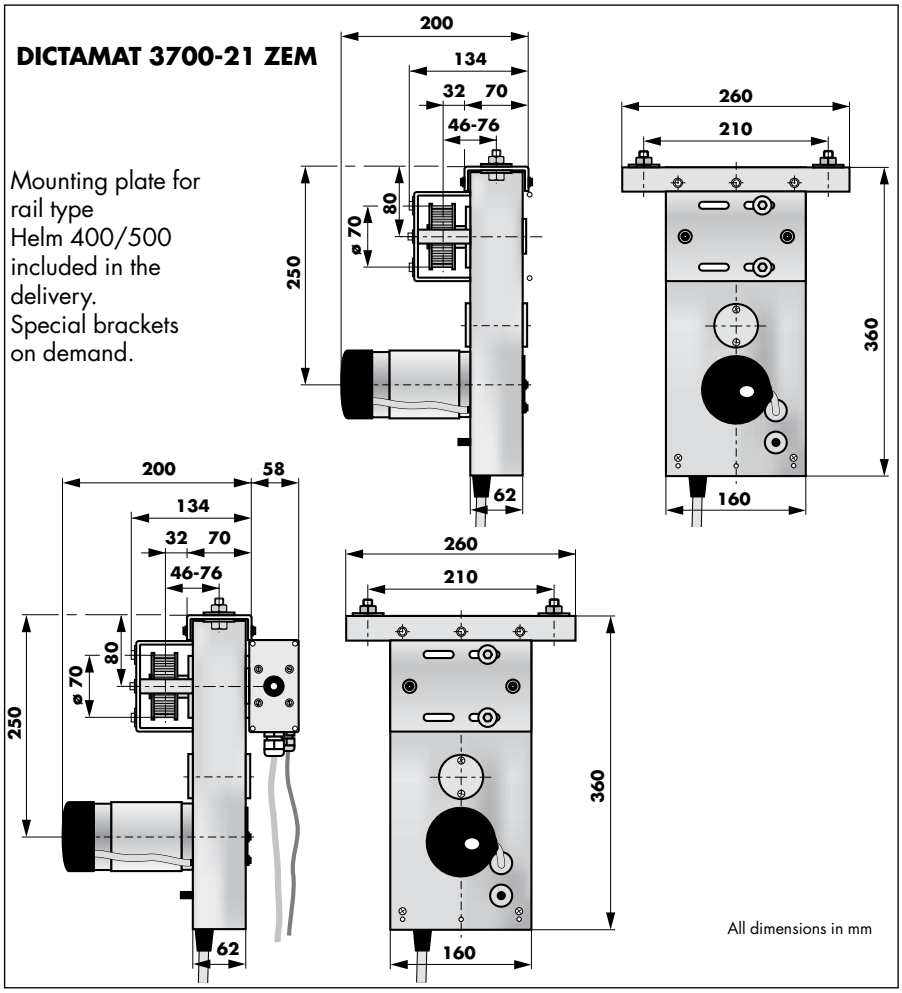
*Dimensioned drawings on page 05.014.00

## DICTAMAT 3700-21

The DICTAMAT 3700-21 door operator is a slightly weaker version of the DICTAMAT 7000-21. It is also available in two versions: with integrated encoder for the position control of doors up to 7 m width or without encoder for e.g. doors wider than 7 m (separate limit switches). Because of the protruding 24 VDC motor the DICTAMAT 3700-21 needs some more space in depth.

The toothed belt for the type DICTAMAT 3700-21 Z has to be ordered separately.

## Dimensions DICTAMAT 3700-21




## Components Included DICTAMAT 3700-21 ZEM

- Door operator: gear module with 24 VDC motor, driving wheel for toothed belt, magnet, damping module, 2.5 m connecting cable to control system, mounting plate
- Idler pulley with angle bracket for mounting to the rail*
- Belt tensioner with angle bracket for fixing to the door*

## Components Included DICTAMAT 3700-21 ZLM

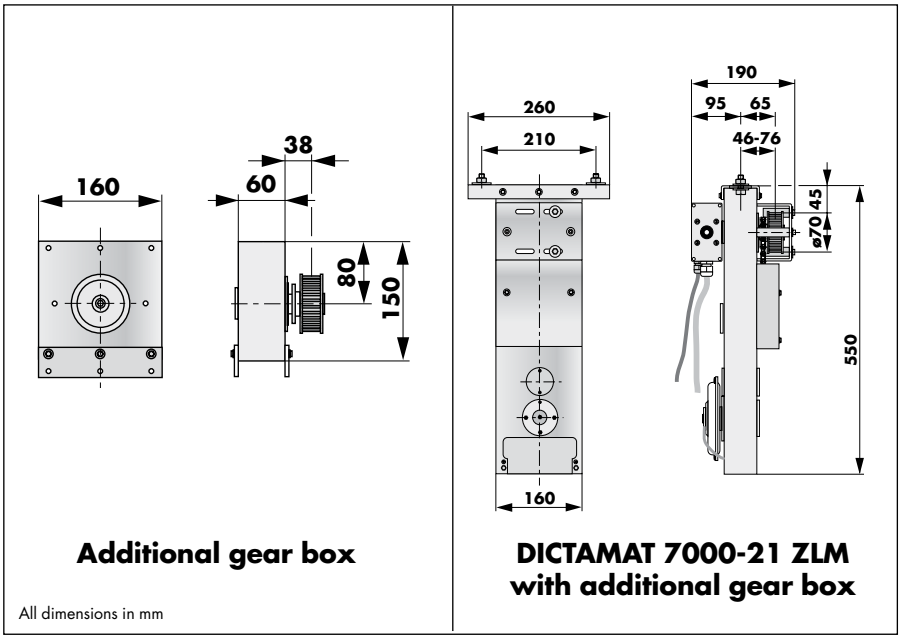
- Door operator: gear module with 24 VDC motor, driving wheel for toothed belt, encoder, magnet, damping module, 2.5 m connecting cable to control system, mounting plate
- Idler pulley with angle bracket for mounting to the rail*
- Belt tensioner with angle bracket for fixing to the door*

*Dimensioned drawings on page 05.014.00

## Additional Gear Box for DICTAMAT DC-21

DICTATOR has developed for the door operators of the DC-21 system an absolute novelty: the gear box for retrofitting. It enables our service to subsequently increase the force of the door operator by the factor 1.7, even on site. It is not necessary to buy a new operator. The opening and closing speed is reduced by the same factor. We also furnish a special version to increase the speed while reducing the force. The additional gear box can be used for all door operators of the DC-21 system except the DICTAMAT 8000-21. Here the force of the integrated spring would not be sufficient to guarantee the closing of the door.

## Dimensions Additional Gear Box




**Additional gear box**

**DICTAMAT 7000-21 ZLM with additional gear box**

All dimensions in mm

The DICTATOR additional gear box is put on top of the basic module of the door operator and fixed with two lateral connection plates. The driving wheel of the operator is taken off and the small chain wheel placed there instead. This chain wheel is connected by a chain with the chain wheel on the additional gear box. Afterwards the cover is remounted.

The additional gear box should always be used in combination with a toothed belt to guarantee the augmentation of the force by the factor 1.7 after the retrofitting. Only a toothed belt can provide an absolutely friction-locked connection between door and operator. In case the installed door operator is a **version with rope**, it has to be **converted to one with toothed belt**. For very heavy doors a version with chain is required. Please ask our technical department.

## Components Included

- Additional gear box with lateral connection plates
- Big chain wheel with driving wheel for toothed belt, small chain wheel
- Chain
- Cover from aluminium

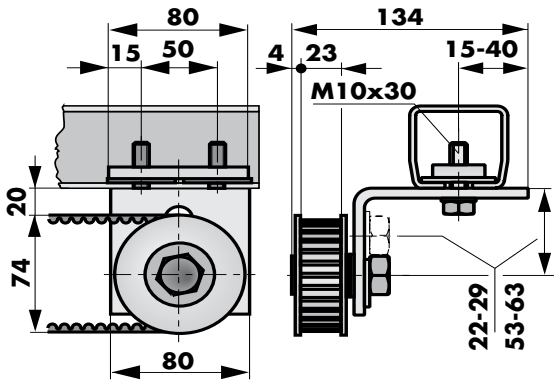
## Accessories for DC-21 Door Operators: Idler Pulley, Belt Tensioner, Toothed Belt

The DICTAMAT DC-21 door operators use either revolving toothed belt or chain to transmit the force to the door. For this purpose an idler pulley has to be fixed to the opposite end of the rail. To fix the toothed belt or chain to the door and to tension it simultaneously you use the belt or chain tensioner. The arrangement of these parts on the door is shown on page 05.009.00. Normally they are included in the delivery.

The revolving toothed belt permits also to operate **two-leafed sliding doors with one operator and one control system**. The toothed belt is not included in the delivery as the required length always differs. Please order it along with the door drive and determine its length with the rule of thumb: length of the toothed belt = 4 x width of the door).

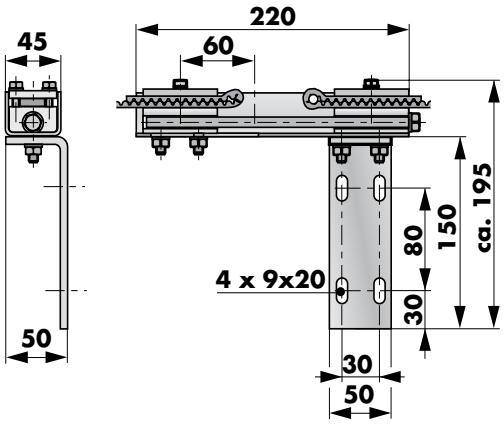
## Idler Pulley

All dimensions in mm



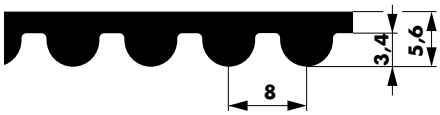

**Idler pulley for toothed belt with mounting bracket** (710492)

## Tensioner for Toothed Belt or Chain with Bracket for Fixing to the Door




**Toothed belt tensioner with bracket** (710497) (Drawing for chain on demand)

## Toothed Belt HTD



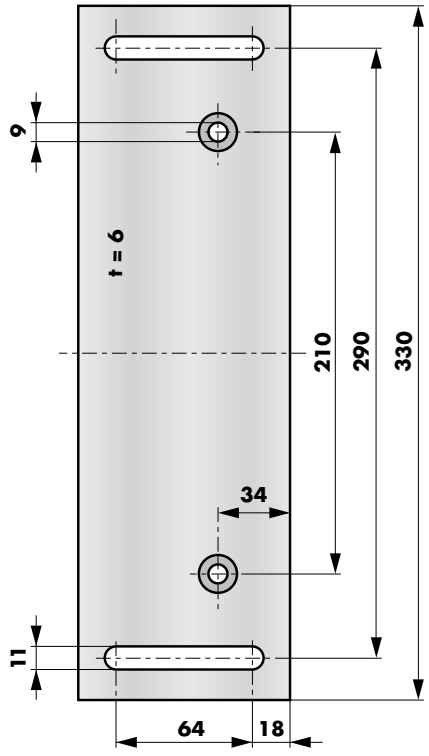

| | | |
|---|---|---|
| Material | PU (polyurethane) | |
| Tensile material | steel cord | |
| Operating temperature | -30° to +80 °C | |
| Resistant against | UV, ozone, oil und grease | |
| Tension load: | toothed belt HTD 8M, width 20 mm | 2680 N |

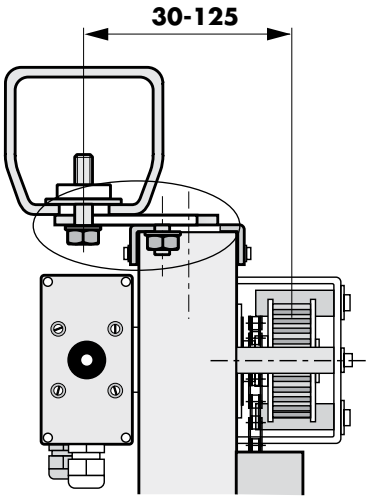
## Accessories for DC-21 Door Operators: Mounting Plates

The DC-21 door operators normally are installed directly below the rail. If the rail is very close to the wall, the distance between rail and wall might be too small for the DC-21 operators with integrated position control. In this case the set of distance plates for the mounting bracket of the door operator and the belt tensioner represents a fast and simple solution. The plates are simply inserted into the existing brackets. This permits to install the door operator up to 85 mm in front of the rail. The mounting bracket of the idler pulley is already provided with such an adjustment possibility.

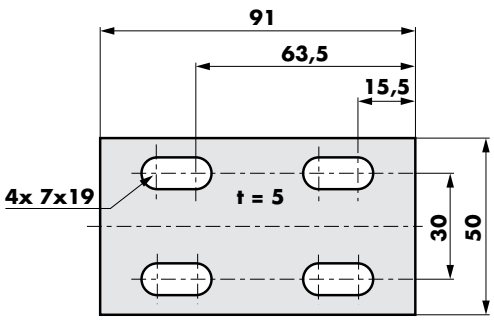
## Set of Distance Plates for the Installation of DC-21 Door Operators in Front of the Rail

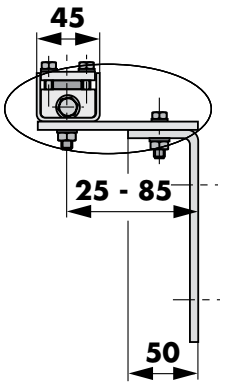
All dimensions in mm




**Distance plate for DC-21door operators for installation in front of the rail** (785975)



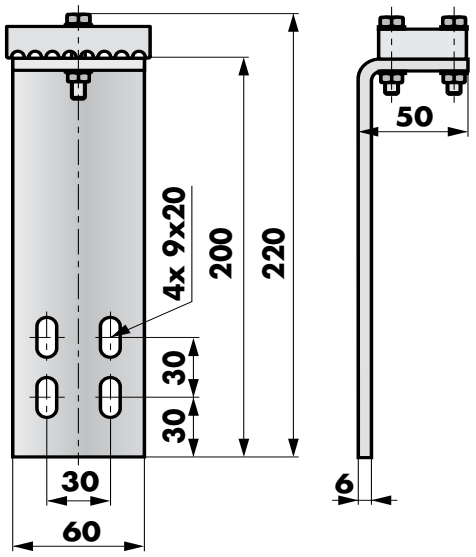

**Distance plate for the belt tensioner** (785975)

## Accessories for DC-21 Door Operators: Additional Fixing Device for Two-Leaf Sliding Doors, Supporting Roller

The revolving belt even permits to operate sliding doors with two leaves with a single door operator and control system. You just need an additional fixing device for the second leaf, that is fixed to the revolving belt, too.

In case of sliding doors wider than 6 m, an additional supporting roller for the toothed belt/chain should be provided every 3 - 5 m. They prevent the sagging of the toothed belt/chain as this would increase the strain on them and thus reduce their life time. This supporting roller can be used for toothed belt or chain.

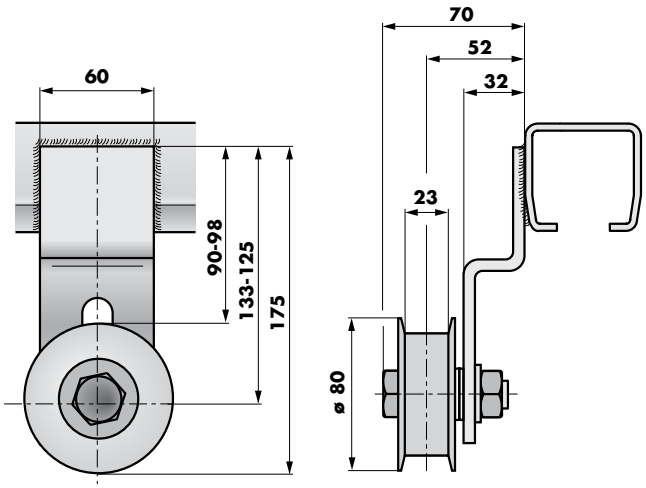
### Additional Fixing Device for Two-Leaf Doors




**Type for toothed belt**
(710495)

All dimensions in mm

### Supporting Roller for Toothed Belt/Chain




**Supporting roller**
(785960)

## Order Information

Below you will find the part numbers of the most common door operator types. Of course there are available other versions.

All parts included in the delivery are mentioned on the pages 05.010.00 to 05.012.00. The meaning of the letters is given at the bottom of this page.

Along with the door operators we have listed the necessary accessories as control system and toothed belt and the possibly necessary installation accessories. Information on operating and safety devices starts on page 05.071.00.

## Order Information Door Operator

| | |
|---|---|
| DICTAMAT 8000-21 Z**L**M | part no. 785800 |
| DICTAMAT 7000-21 Z**L**M | part no. 785700 |
| DICTAMAT 7000-21 Z**L**M, with additional gear box | part no. 785700**A** |
| DICTAMAT 7000-21 Z**E** | part no. 785702 |
| DICTAMAT 7000-21 Z**E**M, with additional gear box | part no. 785702**A** |
| DICTAMAT 3700-21 Z**L**M | part no. 785370 |
| DICTAMAT 3700-21 Z**L**M, with additional gear box | part no. 785370**A** |
| DICTAMAT 3700-21 Z**E**M | part no. 785372 |

## Order Information Necessary Accessories

| | |
|---|---|
| Control system SQUARE 800 | part no. 706080 |
| Control system E8 (without approval in Germany) | part no. 730111 |
| Toothed belt HTD8, 20 mm wide (pls. indicate length needed) | part no. 710490 |
| Release button "Close Fire Protection Door" | part no. 040005 |
| Button RESET ** | part no. 700112 |

## Order Information Additional Accessories

| | | |
|---|---|---|
| Final switch (break contact NC) | | part no. 700156 |
| Toothed belt fixing device for two-leaf sliding doors | | part no. 710495 |
| Supporting roller for belt/chain | | part no. 785960 |
| et of distance plates for DC-21 operators | | part no. 785975 |
| Additional gear box for DICTAMAT series DC-21 | | part no. 785900 |
| Operating and safety equipment | beginning on | page 05.071.00 |
| Smoke detector DICTATOR RM 2000 | | part no. 040500SET |
| Idler pulley for toothed belt* | | part no. 710492 |
| Idler pulley for chain* | | part no. 785972 |
| Tensioner for toothed belt* | | part no. 710497 |
| Tensioner for chain (1/2" and 3/16")* | | part no. 710497K |

**Legend:**

| | |
|---|---|
| Z | Power transmission by toothed belt |
| E | Position control by separate limit switch |
| L | Position control by integrated encoder |
| * | Normally included in the delivery |
| ** | IMPORTANT: After an alarm there has to be made a RESET. |

# DICTAMAT 700
# Fire Protection Door Operator
## Opening Motor, Hold Open System and Damping

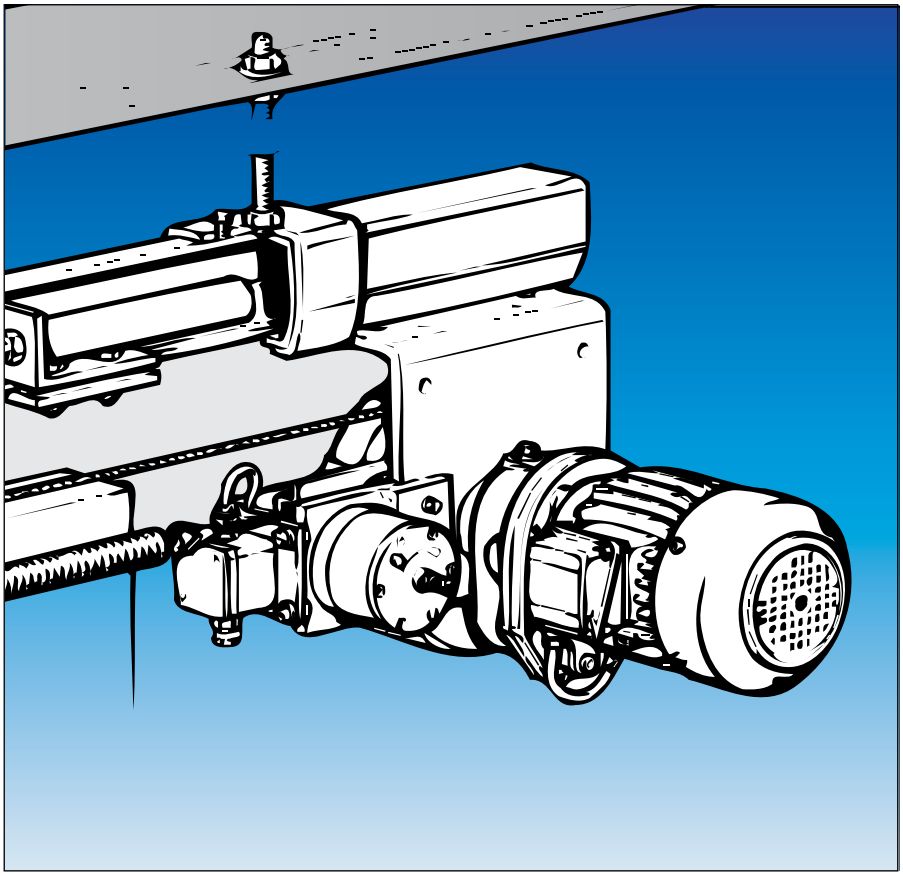
The DICTAMAT 700 door operator **automatically opens** fire protection doors with one or two leaves and also serves as hold open system.

The **powerful threephase current motor** pulls the door open. So even heavy doors with counter weight can be equipped with this operator. The force is transmitted to the door by a ø 4 mm **steel rope**.

In the event of alarm the smoke detector interrupts the power supply to the **electromagnet** and the door closes automatically. The **magnetic brake system** controls the closing speed over the complete distance.

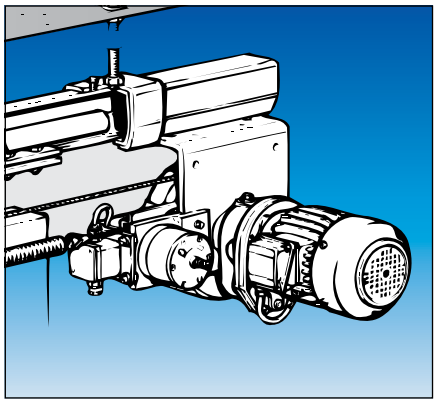
The DICTAMAT 700 door operator, as described on the following pages, has been **tested** and approved for the use on fire protection doors by the National Material Testing Office in Dortmund/Germany (MPA-NRW).

For large and heavy doors the DICTAMAT 700 is also available with a **stronger motor** and chain transmission. Furthermore a special **explosion-proof** execution is available. Please ask for more information and detailed advice.



## Selection Criteria

- For doors with unlimited operating distance
- Motor pulling force in opening direction: max. 800 N
- For doors up to max. 1800 kg
- Closing by counter weight provided on site
- For up to 200 cycles per day
- Position control: separate limit switches
- Operating options with E8 control system and frequency converter: OPEN, STOP, CLOSE, automatic closing, relay contact



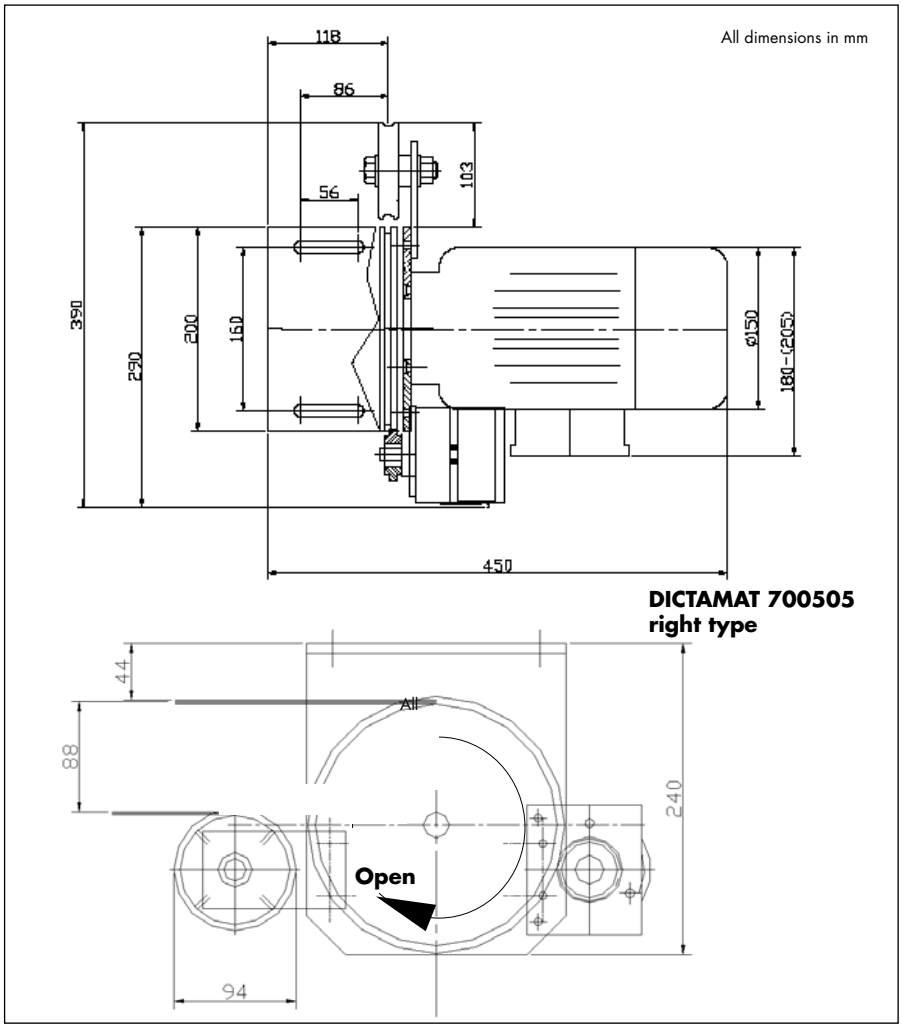
## Dimensions, Components Included

The door operator is fixed by its mounting bracket from below directly to the rail (near the end).

The following diagram shows the door operator with part no. 700505. The left type 700501 is exactly mirror-inverted.

When installing the operator on heavy doors we generally recommend to mount it at the end of the rail where the door is in the closed position.

## Dimensions DICTAMAT 700

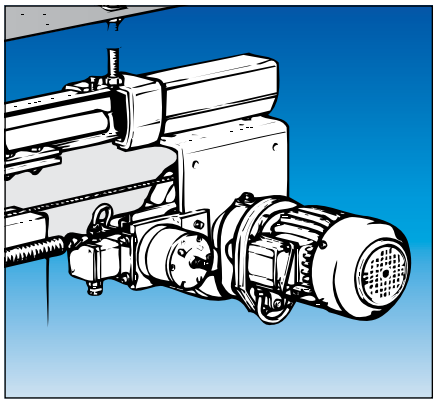



## Dimensions Accessories

The drawings of the accessories (rope tensioner, idler pulley and additional rope fixing device for doors with two leaves) you will find on the pages 05.014.00 and 05.016.00. For the dimensions and technical data of the other components (dampers, push buttons, safety and operating elements, smoke detectors) please see the chapters Damping Engineering, Door & Gate Operators and Fire Door Control Solutions of this catalogue.

## Components Included

| |
|---|
| Door operator (three-phase current motor, electromagnet, magnetic brake system) |
| Mounting bracket with threaded counter plate for fixing to the rail |
| 25 m steel rope ø 4 mm with rope tensioner, compensation spring and fixing bracket |
| Idler pulley with mounting bracket for fixing directly to the rail |



## Technical Data, Control System

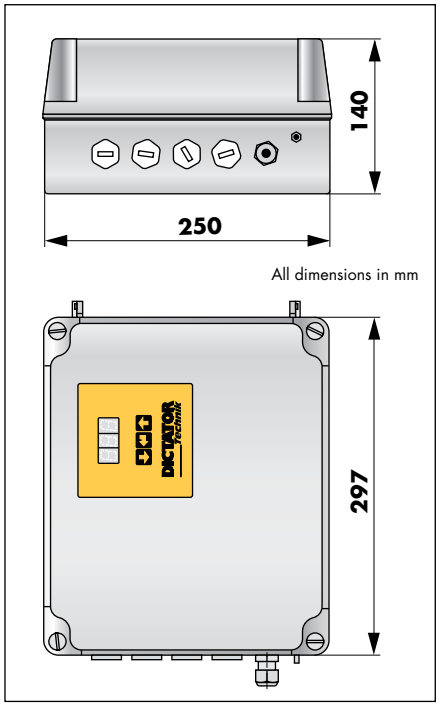
The DICTAMAT 700 door operator can be mounted with its angle bracket to any commercial rail. The electromagnet keeps the door open in the desired position until its power supply from the control system is interrupted by an alarm from a smoke detector or a hand release switch. When installing the explosion-proof model, the ex-magnet is installed separately at the end of the door. Please use a push-to-lock key (part no. 700132) to make sure the door closes completely if the alarm is set off by a hand switch. The door operator is supplied ready to install, including idler pulley, rope, rope tensioner and fixing bracket. The electrical wiring should only be carried out by a professional.

## Technical Data DICTAMAT 700

| | |
|---|---|
| Opening force of the motor | 800 N |
| Opening speed | about 0.2 m/s (at 50 Hz) |
| Closing speed | adjustable between 0.08 - 0.2 m/s** |
| Voltage / Nominal current | 230/400 V / 1.33/0.75 A |
| Motor rating | 0.18 kW |
| Driving torque | 70 Nm |
| Duty cycle | 50 % ED |
| IP rating | IP 00 /IP 54 on demand |
| Weight (without accessories) | 23 kg |

** The closing speed is adjusted directly at the door operator. It is controlled by the magnetic brake system until reaching the final position.

## E8 Control System with Separate Frequency Converter




The DICTAMAT 700 is operated with the E8 control system with frequency converter. Detailed information is to be found starting on page 05.027.00. In Germany you have additionally to use the approved AR 20 cutoff relay, which in case of an alarm cuts off the power supply of the operator to ensure the closing of the door.

The following functions are possible:

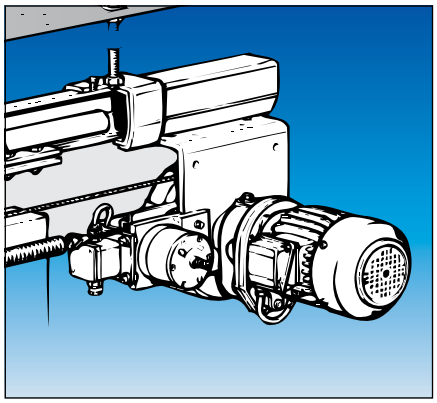
- Deadman OPEN, CLOSE: Door opens/closes as long as the switch is pressed. The deadman function can be adjusted separately for OPEN and CLOSE.
- Impulse OPEN: Door opens completely after pressing the switch shortly or actuating a pull switch.
- Impulse CLOSE: Door closes completely after pressing the switch shortly.
- Alternating impulse OPEN / CLOSE: After each impulse the door moves to the opposite final position.
- STOP: Door stops as soon as the STOP switch is pressed.
- Automatic closing: After reaching the position OPEN the door closes automatically after a time pre-set between 1 and 180 seconds.

**Further adjustment possibilities:**

- Safety equipment
- Function relay contact (e.g. for the connection of a sirene, warning flashligt etc.)
- Operation characteristics of the motor: Distance for the crawling speed before the final position OPEN, crawling speed OPEN

**Functions in case of alarm:**

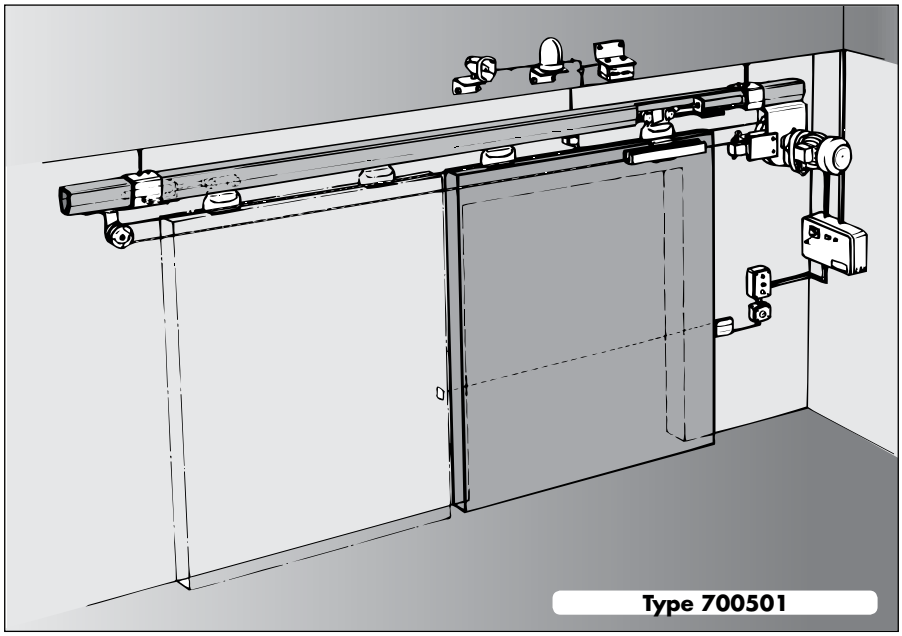
- Normal operating functions: deactivated
- Closing: In case of an alarm the closing command has priority.
- Safety equipment SHE: It is adjustable, whether in case of an alarm no safety equipment is active or whether the door stops as long as the safety equipment is actuated and then continues to close.



## Functioning, Accessories, Order Information

The 400 V **three-phase motor** opens the door either in deadman operation or on impulse. The **electromagnet** keeps the door open until its power supply is interrupted by a **smoke detector** or a hand release switch. The door then automatically closes by a **counter weight**. The closing speed is controlled by the **magnetic brake system**. The motor force is transmitted by a **steel rope** fixed to the door with a special fixing bracket which also tensions and secures the rope. The **idler pulley** is also fixed to the rail.

## Diagram of a Sliding Fire Door with DICTAMAT 700




Fire protection sliding door with a **DICTAMAT 700**

If the DICTAMAT 700 is used in combination with the E8 control system with frequency converter, we recommend to install 3 limit switches, one each for the positions CLOSED, Crawling Speed OPEN, OPEN.

## Order Information Door Operators

| | |
|---|---|
| DICTAMAT 700 (installation at right end of rail) | part no. 700501 |
| DICTAMAT 700 (installation at left end of rail) | part no. 700505 |

## Order Information Required Accessories

| | |
|---|---|
| E8 control system with | part no. 730111 |
| Frequency converter (in a separate casing) | part no. 730114 |
| AR 20 cutoff relay | part no. 040582 |
| Limit switch (break contact) | part no. 700156 |

## Order Information Further Accessories

| | |
|---|---|
| DICTATOR RM 2000 / RM 3000+ smoke detector | see Fire Door Control Solutions |
| Additional fixing bracket for doors with two leaves | part no. 700476 |
| Free-running system (door catch and special rope tensioner) | on request |
| EDHa / EDHM hydraulic dampers | beginning page 05.065.00 |
| Operating and safety equipment | beginning page 05.071.00 |

# SQUARE 800 Control System

## Microprocessor Control System for DC Fire Door Operators

The control system SQUARE 800 has been developed **for DC fire door operators**.

It has a very user friendly structure.

The **programming and all adjustments** are carried out by means of membrane keys on the lid of the **closed casing**. This assures a high safety standard.

Thanks to the 2 lines of the display showing in full text exactly the actual step of programming, adjusting becomes very easy. The display with membrance keys also can be used to recall diagnose information.

The desired operating functions can easily be programmed on site by means of the membrane keyboard.

The menu-guided adjustment program (5 **different languages** available) in a LCD-display with 2 lines makes programming very simple. The adjusted values are protected by an individually chosen **password.**

## Summary

| | |
|---|---|
| Types of control systems | Fire protection with DC-motor: SQUARE 800 |
| Motors to be connected | 24/48 VDC, max. 300 W |
| Certified with the operators | DICTAMAT 8000-21, DICTAMAT 7000-21, DICTAMAT 3700-21 |
| Approval | Z-6.5-1707 with the above mentioned door operators |

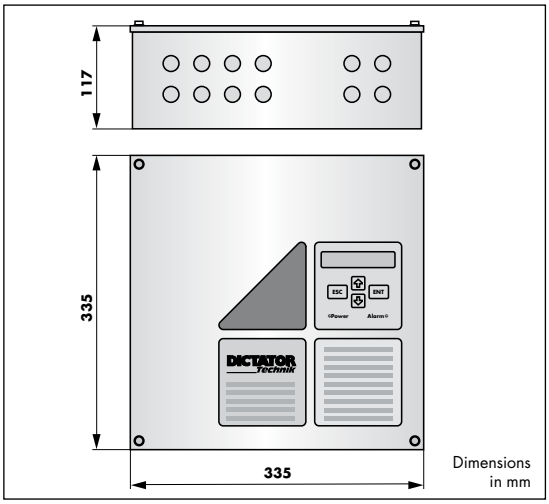
CE

## Dimensions, Installation

The casing of the Square control systems has been designed to meet two important requirements: the **exterior dimensions** have to be as **small** as possible, so that the control system can be installed without problems even when there is limited space available. The **interior** of the casing however has to offer **sufficient space** to house - if necessary - additional devices such as batteries or control systems for contact switches. This **saves** the cost of additional casings, their installation and connection.

## Dimensions SQUARE

On one side of the casing there are marked holes for 6 Pg11 and 6 Pg13 screw cable inlets. The wiring is further simplified by the square casing, as the cable inlets can be positioned towards the side that is best for the connection. The **lid of the casing can be placed on the casing in all directions**. This way the cables can be introduced into the casing either from the right, the left, from the top or the bottom.




## Installation Electrical Connection of the Door Operators

The installation of the control system is very easy, as the **electronics** are fixed **on a board that can be removed** completely from the casing. Also the lid of the casing can be taken off completely, as the flat cable connection to the display in the lid just has to be unplugged. The now very light casing can be fixed to the wall without the danger of damaging the electronics by chance with e.g. the screw driver.

The control system should be placed not farther than 30 m from the door operator. Normally a maximum distance of 2.5 meters is recommended as all DC-21 operators are supplied with a 2.5 m connection cable to the control system.

Operator, operating elements, smoke detectors and safety equipment are connected to the **removable binders**. The **assignment** of the binders of the SQUARE 800 and the other SQUAREs is almost **identical**. The blocks of binders are coded and therefore cannot be plugged into a wrong position.

## Programming and Adjusting

All **programming and adjusting** of the SQUARE 800 is carried out via the membrane keys with display.

The menu navigation with full text display indicates all necessary steps in a way easily to be understood. Thereby the SQUARE 800 contributes to a fast and trouble-free mounting.

## Basic Adjustments

The menu-guided adjustment facility renders the programming and adjustment to the requirements of each door very easy. The two-line LCD display always shows which parameter is presently adjusted and what value has been chosen. When starting the control system for the first time the display asks which **language** is requested for the programming. You can choose between German, English, French, Italian and Spanish. In case several errors have occured during programming the **default configuration** of the control system can be **restored**. After having finished the programming the adjusted values can be protected from unauthorised interference with an individually chosen **password.**

## Operating Options
## Safety Features
## Relay Contact

- *Deadman or Impulse Function (full travel)* for the push buttons OPEN and CLOSE (separately adjustable)
- *Alternating Impulse OPEN/CLOSE*
- *Partial Opening*: The door opens only partially after pressing a separate push button (additional OPEN-position; important feature to **save energy** when the door e.g. shuts off warehouses from heated rooms).
- *STOP*
- *Automatic Closing:* As soon as the position OPEN has been reached the door closes automatically after a pre-set time adjusted in the control system (1 to 999 secs.).
- *Safety Equipment:* In response to a safety device different functions can be chosen: temporary STOP or a permanent STOP in closing direction, door opening for 2 secs, complete Opening; in case of a defective safety device this can be bypassed by choosing an emergency operation mode (deadman operation).
  In the event of a *smoke alarm* the closing has *priority* over safety devices (according to the regulations of the German Institut für Bautechnik).
- *Relay Contact:* to actuate e.g. a siren or a warning flash light

## Motor Parameters

In order to optimally adjust the door operator to the requirements of the door, the parameters of the motor can be set in the control system. Amongst them are:

- *Motor Rating* (adjustment to the connected motor)
- *Opening Speed* (Closing speed adjusted directly at the operator)
- *Crawling Speed* before the final position OPEN (Speed is reduced before reaching the final position rendering separate final dampers superfluous.)
- *Soft Start:* Depending on the weight and the more or less smooth running of the door you can adjust, whether the door accelerates slower or faster.
- *Quick Stop:* upon actuation of the safety device

## Encoder

If the SQUARE control system is connected to a door operator with integrated position control, all final positions are adjusted in the control system. When the control system is put into operation for the first time, the control system will ask **automatically to move the door to the final positions and to memorise these positions**.

## Diagnostic Function

All SQUARE control systems are provided with a **diagnostic function** and also can display the statistical values (e.g. operating hours, total cycles...), that will help the DICTATOR service team to solve problems - even by telephone.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## Technical Data, Order Information

DICTATOR provides the SQUARE 800 control systems for the fire protection door operators with direct current (DC) motors.

## Technical Data

| | |
|---|---|
| Voltage | 230 VAC, 50 Hz |
| Power consumption | max. 1.5 A |
| Output voltage (secondary) | 24 VDC |
| Power supply (secondary) | max. 1020 mA |
| Output voltage to motor | 48 VDC |
| Motor rating | max. 300 W |
| Dimensions | H x W x D = 335 x 335 x 117 mm |
| IP rating | IP 54 |

## Order Information

| | |
|---|---|
| SQUARE 800 control system | part no. 706080 |

## Components Included

Control system in casing IP 54 with membrane keys and LCD display

## Application Range SQUARE 800

The SQUARE 800 control system is provided for **fire protection sliding door operators** with a **direct current (DC) motor.** Apart from the door drives of the modular system DC-21 other 24 or 48 VDC motors can also be operated with this control system as the motor parameters are adjusted in the control system.

| | |
|---|---|
| DICTAMAT 8000-21 | from page 05.010.00 |
| DICTAMAT 7000-21 | from page 05.011.00 |
| DICTAMAT 3700-21 | from page 05.012.00 |
| Customized door operators 24 VDC, 48 VDC | on demand |



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# E8 Control System

## For Fire Protection Door Operators

For DC door operators DICTATOR offers the **E** control systems as an **economic** alternative to the SQUARE control systems.

The control system allows either for **dead-man or impulse operation**.

Most parameters can be adjusted using the **membrane keys** on the lid of the casing. These membrane keys replace traditional potentiometers. In order to carry out the adjustments the lid of the casing has no longer to be removed, which is an important contribution to increase the safety and reduce the danger of accidents.

The function of the potential-free relay contact is adjusted in the control system: passing on the information of the door when it is open, when closed, when it is moving or when it is either open or closed.

The binders can be removed for an easy connection.

The control systems can be used both for 24 VDC and 48 VDC door operators, with separate frequency converter also for 230/400 VAC three-phase current operators.


## Summary

| | |
|---|---|
| Types of control systems | Fire protection with DC motor: E8 |
| | Sliding doors with DC motor: E82 |
| Motors to be connected | 24/48 VDC, max. 300 W |
| | 230/400 VAC (with additional frequency converter) |

CE

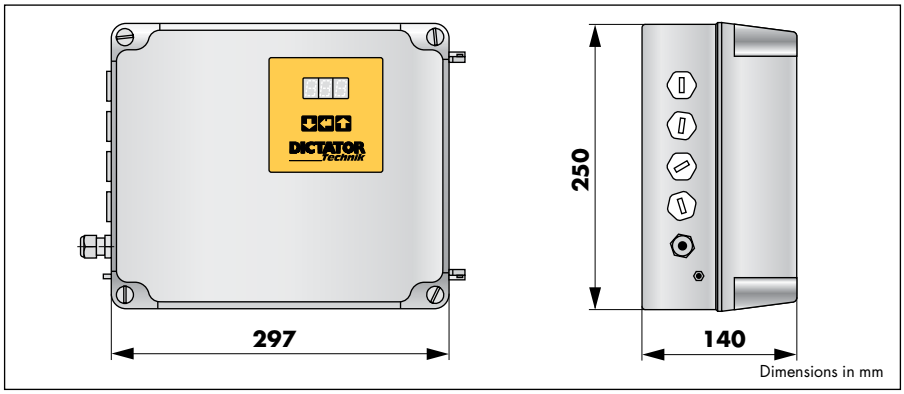
## Dimensions, Installation

The E8 control system comes in an IP 56 plastic casing. The high IP rating of the casing permits its installation also in humid surroundings.

Due to its reduced exterior dimensions the E8 control system can be installed even when little space is available.

The E8 control system is also available in a special execution with integrated or separate battery back-up. The battery provides the power supply for the smoke detectors, the integrated magnet and the safety equipment. The door stays open even during a power failure. In the event of a fire alarm the door closes immediately. During closing the safety equipment has priority, that means whenever the safety equipment responds the door stops. It resumes closing as soon as the obstacle has disappeared.

## Dimensions E8

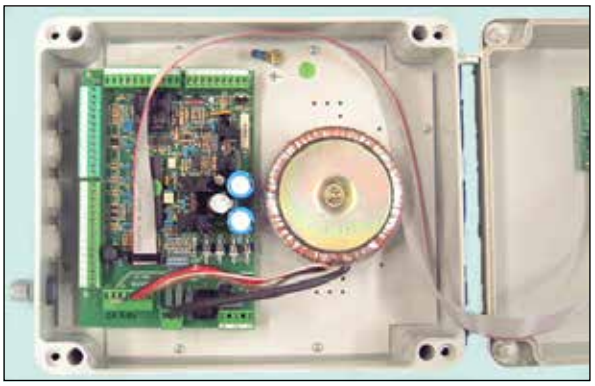



On the left side of the casing there are provided 5 cable inlets. The inlet for the mains cable is already equipped with a Pg screw cable inlet. The remaining four cable inlets have a diameter of 20 mm and are intended for Pg 13.5 screw cable inlets. Make sure you always use screw cable inlets with pull relief.

## Installation
## Electrical Connection of the Door Operators

The control system should not be placed farther than 30 m from the door operator. Normally a 2.5 m distance is recommended as all DC-21 operators are supplied with a 2.5 m connection cable to the control system.

Door operator, operating elements, smoke detectors and safety equipment are connected to the **removable binders**. All blocks consist of a different number of binders and, therefore, cannot be plugged into a wrong position.



## Programming and Adjusting

All type "E" control systems have a very similar design. The **programming and adjusting** is therefore **almost the same**. This saves you to master a lot of different control systems.

DICTATOR presents a new, **complete product line** consisting of the E control systems and the system 21 door operators. One of the main objectives of the research work has been to develop a line that can be **mastered fast and easily**, that at the same time offers the **most modern technics** and **high operating comfort** and that permits **flexible solutions** for customer requirements.

## Basic Adjustments

The different parameters are adjusted with the membrane keys and the display on the lid of the casing. The Enter key permits to switch from one parameter to the next one. With help of the arrow keys the values are either increased or reduced.

## Operating Options
## Safety Features
## Relay Contact

- *OPEN, CLOSE: Deadman or Impulse Function* (adjustable with a DIP-switch)
- *STOP 1:* operating in opening and closing direction
- *STOP 2:* operating only in closing direction
  There are two adjustment possibilities in the event of a fire alarm: priority of the safety equipment or priority of the smoke alarm (parameter P-3).
- *Safety Equipment (STOP 3):* operating only in closing direction. The following functions can be adjusted:
  - temporary STOP or
  - STOP and then the door opens completely (parameter P-A).
  There are two adjustment possibilities in the event of a fire alarm: priority of the safety equipment or priority of the smoke alarm (parameter P-3).
  The safety equipment is switched off as soon as the door has reached the position CLOSED.
- *Automatic Closing:* as soon as the position OPEN has been reached the door closes automatically after a pre-set time (1 to 180 sec.) (parameter P-5).
- *Blocking of the Door in the Closed Position* (parameter P-4)
  When using a separate limit switch for the position "Door Closed" the door can be blocked in the closed position with the magnet integrated in the door drive. The blocking force in case of a door drive operating with steel rope is about 50 kg, with toothed belt about 80 kg.
- *Relay Contact* to actuate warning or signalling devices (function adjustable with 5 DIP switches): contact closed when door is open, when door is closed, when door is moving or when door is closed and open.

## Motor Parameters

In order to **optimally adjust** the door operator to the requirements of the door, several parameters of the motor can be set in the E8 control system, such as:

- *Opening Speed* (The closing speed is adjusted directly at the operator.)
- *Crawling Speed* before the final position OPEN (Speed is reduced before reaching the final position rendering separate final dampers superfluous.)

## Encoder

The parameter P-b is used to choose the type of position control: either with separate limit switches or using the integrated encoder of the door operator (if equipped with this type of position control). In the latter case the positions are adjusted in the control system. When starting the control system for the first time the control system automatically switches to dead man operation. Only when all positions have been entered it will automatically return to the adjusted impulse function.

## Diagnostic Function

All E control systems are provided with a **diagnostic function** that will help the DICTATOR service team to solve problems - even by telephone.

## Technical Data, Order Information

For the control of fire protection door operators DICTATOR provides the E8 control system. It is designed for DC motors. But with a separate frequency converter it also can be used for threephase current fire protection door operators.

In Germany you may use the E8 control system only together with the AR 20 cutoff relay (approval no. Z6.5-1335), which in case of an alarm cuts completely off the power supply of the control system and thus ensures the closing of the door.

## Technical Data

| | |
|---|---|
| Voltage | 230 VAC, 50/60 Hz +/-10 % |
| Power consumption | max. 250 W, 10 A |
| Output voltage (secondary) | 24 VDC |
| Power supply (secondary) | max. 400 mA |
| Output voltage to motor | 24 or 48 VDC |
| Motor rating | max. 5 A (120 W) |
| Dimensions | HxWxD = 297 x 250 x 140 mm |
| Potential-free relay contact / Capacity | max. 30 VAC / 60 VDC, 10 A |
| Operating temperature | 0 - 40 °C, 20 - 70 % of humidity |
| IP rating | IP 56 / 2 |
| Overvoltage rating / Insulation | II / class I |

## Order Information

| | |
|---|---|
| E8 control system | part no. 730111 |
| Frequency converter for E8 control system | part no. 730114 |
| AR 20 cutoff relay | part no. 040582 |
| UPS power supply for E8 control system (separately) | on demand |

## Components Included

Control system in casing IP 56 with membrane keys and display

## Application Range E8 Control System

The E8 control system is intended for door operators with 24 or 48 V **direct current (DC) motors** for **fire protection sliding doors**.

| | |
|---|---|
| DICTAMAT 8000-21 door operator | from page 05.010.00 |
| DICTAMAT 7000-21 door operator | from page 05.011.00 |
| DICTAMAT 3700-21 door operator | from page 05.012.00 |
| Customised door operators 24 VDC, 48 VDC | on demand |

Together with the separate frequency converter it can be used for **fire protection sliding door operators** with 230/400 VAC **three-phase current motor** (DICTAMAT 700, page 05.019.00).

# DC Door Drives for Hinged Doors

## DICTAMAT 204B for Fire Protection Doors

The DICTAMAT 204B is an electro-mechanical door operator with a microprocessor control system for hinged fire protection doors. It is ideally suited to make doors operable also for disabled persons. The integrated spring assures the reliable closing of the door even in case of an alarm and a power failure.

Its major advantages:

- Adjustable spring force (door closer forces EN 4 - EN 6)
- Very low noise level
- Control panel with LCD-display and menu-control for the adjustment of a large variety of additional functions
- Compact design, reduced height

The standard execution of the door operator has a stainless steel cover.

The DICTAMAT 204B has been tested and approved as a door operator in hold-open systems for fire protection doors in combination with the DICTATOR RM 2000 smoke detector (German approval no. Z-6.5-1944).

## Selection Criteria

| | |
|---|---|
| • Width of door leaf | max. 1.4 m (at a door weight of 100 kg ) |
| • Door weight | depending on door width, see diagram on the following page |
| • Motor force | 50 Nm |
| • Suitable | for continuous operation |
| • Opening angle | adjustable between 70° and 115° |
| • Position control | automatic learning of the positions |
| • Motor without current | easy to move, operates like normal door closer |
| • Basic functions | OPEN, automatic closing, reverse function; further functions adjustable with a separate BDE-D control panel |

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## Applications, Dimensions

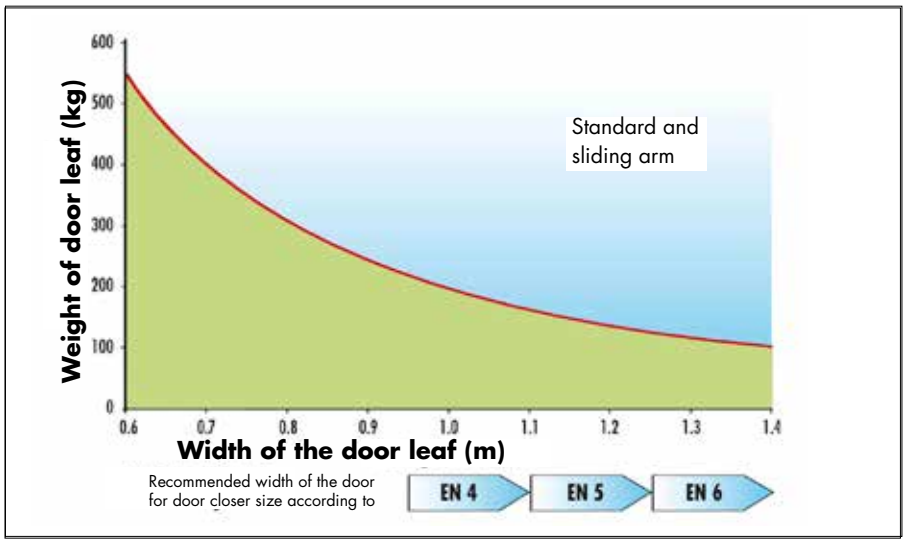
The diagram below indicates the maximum door weight - depending on the width of the door - up to which the DICTAMAT 204B door operator can be used

There are 2 different sets of arms available for the DICTAMAT 204B: standard and sliding arm. The choice of the arm depends among others on the mounting situation.

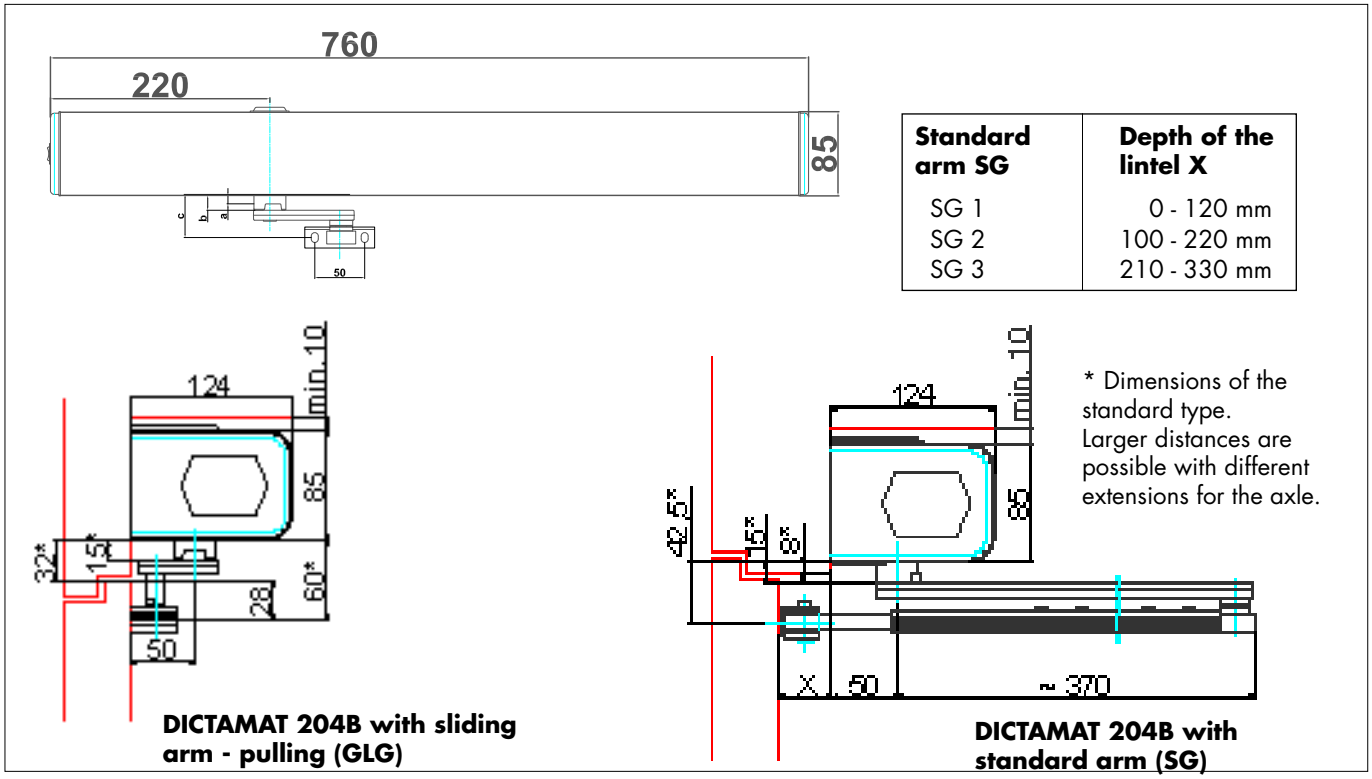
Ex factory the DICTAMAT 204B is set for a sliding arm (pull-type). If the DICTAMAT 204B is to be used with the standard arm, this has to be programmed with the BDE-D control panel.

The DICTAMAT 204B has to be mounted to the lintel. An installation on the door is not permissible.

## Application




## Dimensions




| Standard arm SG | Depth of the lintel X |
|---|---|
| SG 1 | 0 - 120 mm |
| SG 2 | 100 - 220 mm |
| SG 3 | 210 - 330 mm |

* Dimensions of the standard type. Larger distances are possible with different extensions for the axle.

## Technical Data / Operating Functions

The DICTAMAT 204B door operator offers basic operating functions that can be adjusted with switches integrated into the lateral part of the casing.

By using the separate, electronic BDE-D control panel additional functions can be activated and adjusted.

The door positions OPEN and CLOSED are automatically set during a calibration run. Separate limit switches are not required. A further adjustment is possible with the BDE-D control unit.

In case of alarm the power supply of the door operator is interrupted and the integrated spring automatically closes the door.

## Technical Data DICTAMAT 204B

| | |
|---|---|
| Force of the motor | driving torque max. 50 Nm |
| Closing force spring (force according to EN) | EN 4 to EN 6, adjustable |
| Opening speed | adjustable from 3 to 20 sec./ 90° (16) |
| Closing speed | adjustable from 5 to 20 sec./ 90° (7) |
| Opening angle | 70 - 115° |
| Hold-open time | adjustable between 0 and 60 sec. (2) |
| Voltage / Nominal current | 230 VAC, 50/60 Hz |
| Output voltage/Power supply (secondary) | 24 VDC / max. 1 A |
| Motor rating | 67 W (standby: consumption 13 W) |
| Duty cycle | 100 % ED |
| IP rating | IP 40 / max. 85 % rel. humidity, no bedewing |
| Noise level | max. 18 db |
| Operating temperature | -15° to +50 °C |
| Weight (without accessories) | 12 kg |

(The values in brackets represent the standard values set in production.)

## Basic Operating Functions

The following basic functions are adjusted directly on the DICTAMAT 204B door operator:

- Automatic: An OPEN command opens the door; automatic closing after the preset time (standard time 2 seconds).
- Continuously open: Door opens automatically and stays in the OPEN position (e.g. for airing).
- Manual operation: Door operator works just like a normal door closer, manual opening, closing by integrated spring.

For the OPEN command there are various possibilites: motion detector, push button, remote control etc. They must be equipped with a potential-free contact (NO).

## BDE-D Control Panel

The external electronic control unit BDE-D is required for the adjustments and the starting of the DICTAMAT 204B. It also allows the adjustment of further operating functions. The following options can be programmed with a **mobile BDE-D unit**:

- Adjustment of the opening and closing speed, the hold-open time, the reverse level, the closing force and the opening angle
- Push-and-Go: Actuation of the operator by pushing the door lightly (response after 0,5 - 1°); door closes after the pre-set time. No operating equipment necessary.
- One-way/night operation: Door only opens from inside (to leave the building).
- Locking of the door: connection possibility for an electric door lock (24 VDC)
- Different levels of manual operation (e.g.: door normally opened by hand; using a remote control the door opens automatically)
- Doors with two leaves: closing sequence control

## Fire Protection Components

It has to be assured that fire protection doors always close immediately in case of fire. In combination with the DICTAMAT 204B door operator the DICTATOR RM 2000 smoke detector is used. As to the required number of smoke detectors please follow the recommendations of the Deutsches Institut für Bautechnik (see chapter Fire Door Control Solutions for further information). For a manual release of the fire protection door an additional hand release switch "CLOSE DOOR" is required.

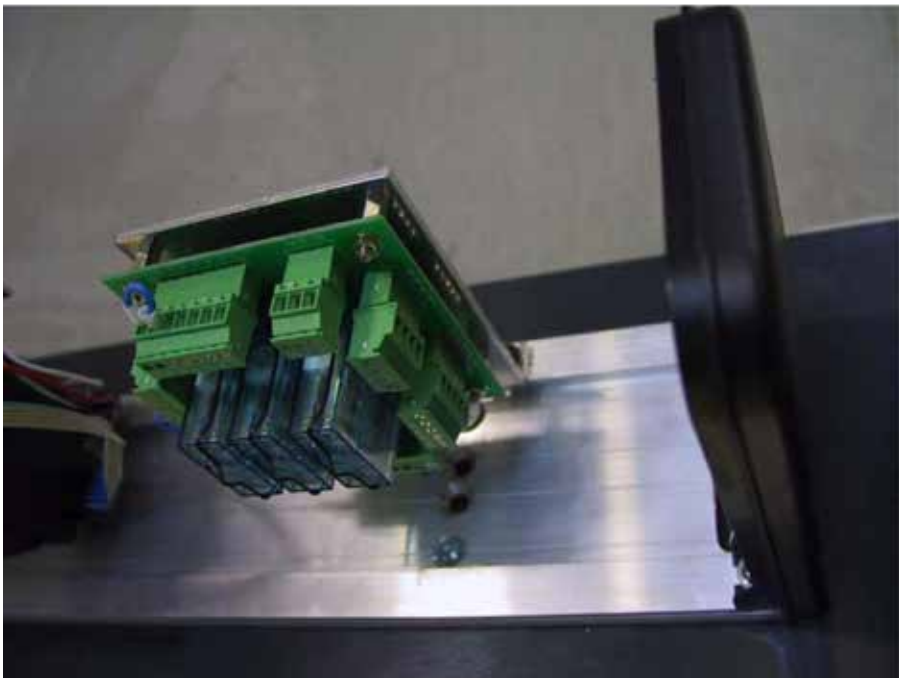
In case of doors with two leaves the SR 2000 door sequence selector is also necessary.

## Fire Protection Module

The DICTAMAT 204B is based on the DICTAMAT 204, to which the fire protection module is added. All fire protection components such as the RM 2000 smoke detector, an electro lock, the hand release switch "CLOSE DOOR", the RESET push button and in case of doors with two leaves the closing sequence selector (if being with an integrated magnet) are connected to this module.

The RESET button is required to restore the door operator after an alarm to normal operation.

The wiring diagram is to be found on the following page.



## Electro Lock, Door Opener

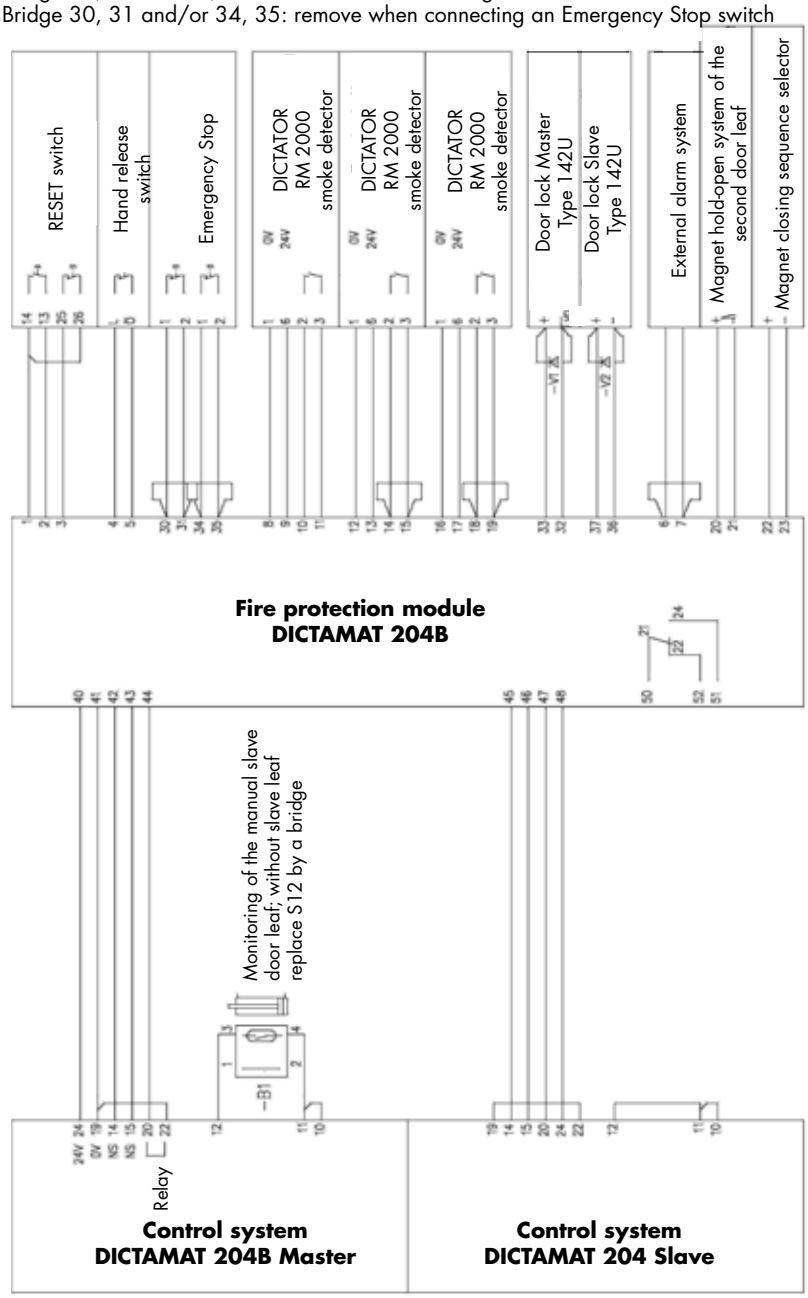
In addition to the smoke detectors a tested and for the door in question approved **door lock** has to be used in order to lock the door in its closed position. The door is locked without current, i.e. in case of an alarm the door stays safely closed and cannot be opened by the fire. When an OPEN impulse is given, the electro lock releases the door and the door can be opened by the door operator without any problem.

When ordering the door lock, please indicate whether it is for a right or left handed door (right handed door: part no. 710279**R**; left-handed door: part no. 710279**L**).

## **Fire Protection Components** - cont.

## Wiring Diagram of the Fire Protection Module

Bridge 6, 7: remove when connecting an external alarm system
Bridge 14, 15 and 18, 19: remove when connecting 3 smoke detectors
Bridge 30, 31 and/or 34, 35: remove when connecting an Emergency Stop switch



## DICTAMAT 204B
## For Single and Double-Leaved Hinged Doors

The DICTAMAT 204B is also used on doors with two leaves. In this case both door operators have to be connected with a CAN isolator. The opening and closing speed as well as the hold-open time are identical for both door operators; whereas the opening angle and the response levels can be set differently on both operators. Furthermore it can be chosen whether just one or generally both door leaves open on an OPEN impulse.

For fire protection doors with two leaves an approved mechanical closing sequence selector has to be installed.

To adjust the correct function of the door operators a mobile BDE-D unit is required.

## Safety

The integrated overload detection of the DICTAMAT 204 assures a maximum of safety both for people and objects. Any obstacle within the door range is detected immediately. When opening the door operator stops and the next opening movement is done at creep rate. When closing the door operator reverses and opens again. The response level of the overload detection can be adjusted on site with the help of the BDE-D control unit.

It may be advisable to add further safety elements.

## Components Included DICTAMAT 204

| |
|---|
| Door operator with 24 VDC motor and closing spring |
| Control system, fire protection module |

The following components are not included in the delivery: arms and the BDE-D control panel. They have to be ordered separately as well as operating and safety elements.

## Order Information

| | |
|---|---|
| DICTAMAT 204B for standard and sliding arm (pulling) | part no. 710105 |

## Accessories Required

| | |
|---|---|
| Standard arm SG 1, depth of lintel 0 to 120 mm | part no. 710115 |
| Standard arm SG 2, depth of lintel 100 - 220 mm | part no. 710116 |
| Standard arm SG 3, depth of lintel 210 - 330 mm | part no. 710117 |
| Sliding arm GLG | part no. 710118 |
| RESET push button | part no. 710113 |

## Further Accessories

| | |
|---|---|
| BDE-D control unit, for surface installation | part no. 710119 |
| BDE-D control unit, for flush mounting | part no. 710121 |
| CAN isolator, for doors with two leaves | part no. 710123 |
| Extension for standard arm 65 (see page 05.032.00: *+ 45 mm) | part no. 710126 |
| Extension for standard arm 80 (see page 05.032.00: *+ 60 mm) | part no. 710127 |
| Electro lock 142U (indicate whether right- or left-handed door R/L) | part no. 710279 |
| RM 2000 smoke detector with base | part no. 040500Set |
| Hand release switch "CLOSE DOOR" | part no. 040005 |
| Radar motion detector "Eagle One" | part no. 700389 |

| | |
|---|---|
| Finger guard blind (L = 1.95 m) | part no. 710132 |

Safety contact switch 4 Safe in different lengths**

**See information on the safety and operating elements in the chapter Door & Gate Operators, page 04.049.00.

# DICTAMAT 650
# Sliding Door Operator
## Hold-Open, Damping and Closing System

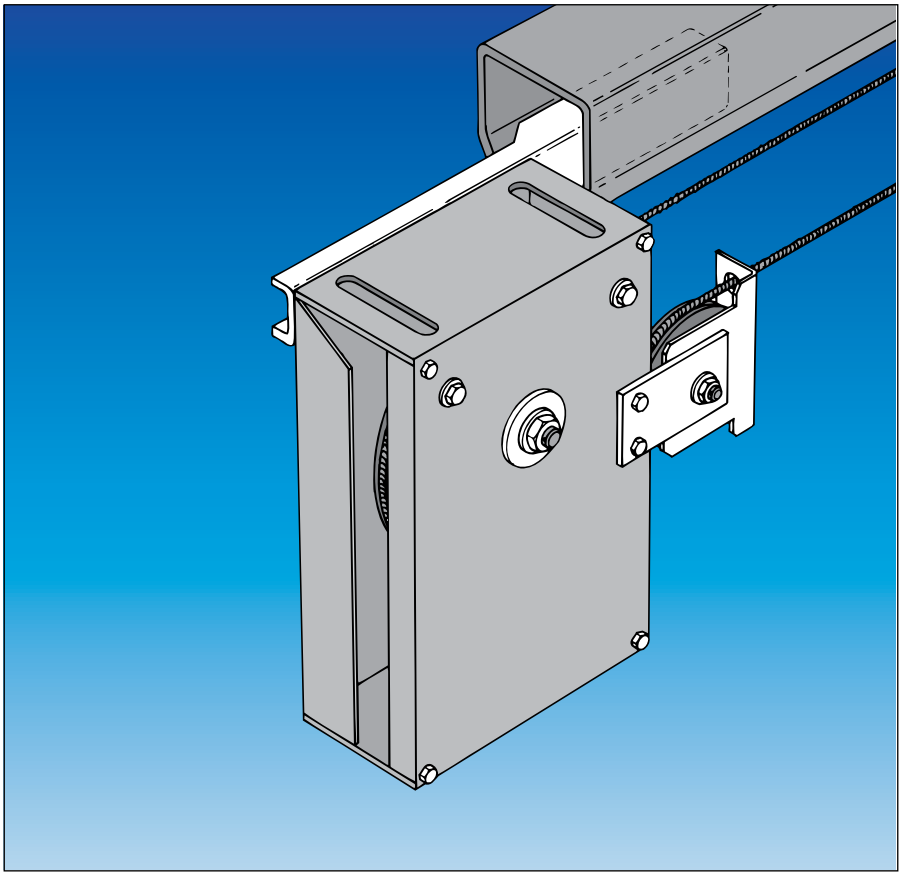
The DICTAMAT 650 door operator is designed for fire protection sliding doors with one or two leaves and a door width of up to 6.5 m.

The DICTAMAT 650 is a compact unit which provides an economic alternative for holding open and automatically close fire protection doors.

The adjustable closing speed is controlled by the magnetic brake system.

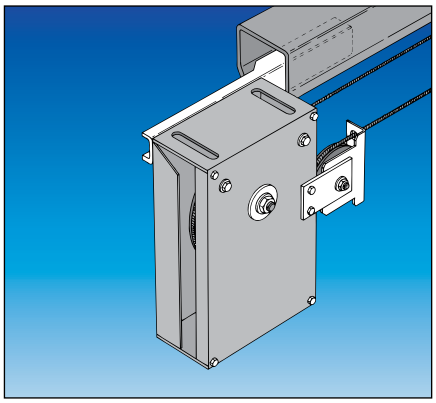
The closing spring force is transmitted to the door by a special steel drive rope which makes sure the spring tension remains constant, even after frequent use.

The DICTAMAT 650 door operator has been tested as a hold-open, damping and closing device by the National Material Testing Office in Dortmund, Germany and has been approved by the German Institute of Building and Construction Engineering in Berlin (approval no. Z-6.5-1903). Its quality is continuously controlled and monitored (contract no. Do.15.4).



## Technical Data

| | |
|---|---|
| • Suitable for sliding doors of | max. 6.5 m door width |
| • Closing force | max.160 N (special model also 320 N) |
| • Adjustable closing speed | 0.08 to 0.2 m/s (magnetic brake system) |
| • Holding force of magnet | approx. 300 N |
| • Power consumption | 24 VDC / 2.2 W / 92 mA |
| • Controled by | smoke detector, emergency switch, relay |
| • Weight | 18 kg |



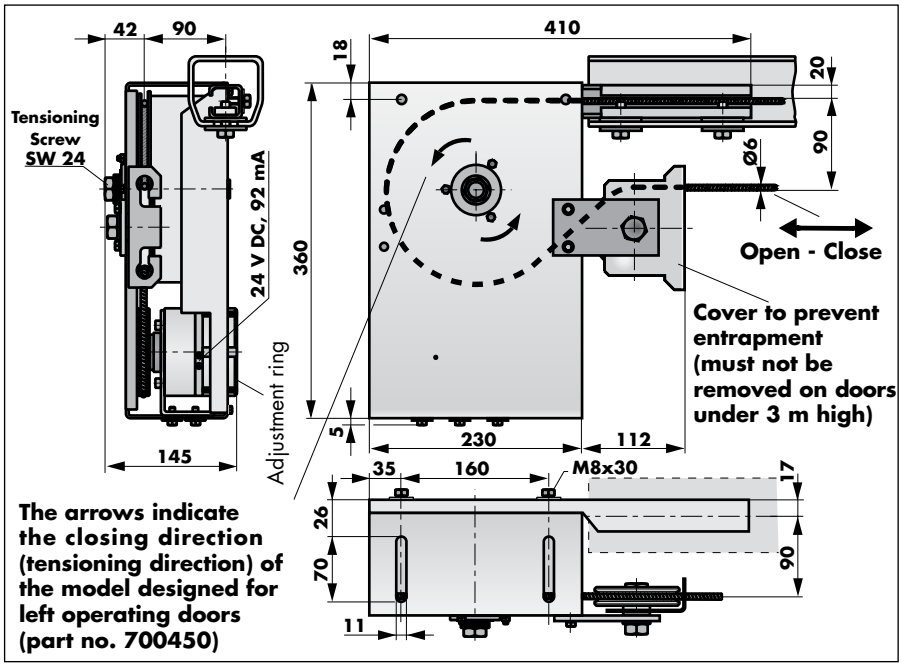
## Dimensions

The door operator is always fixed with its bracket for plug-in mounting at the end of the rail. Please make sure sufficient space is available (min. 430 mm).

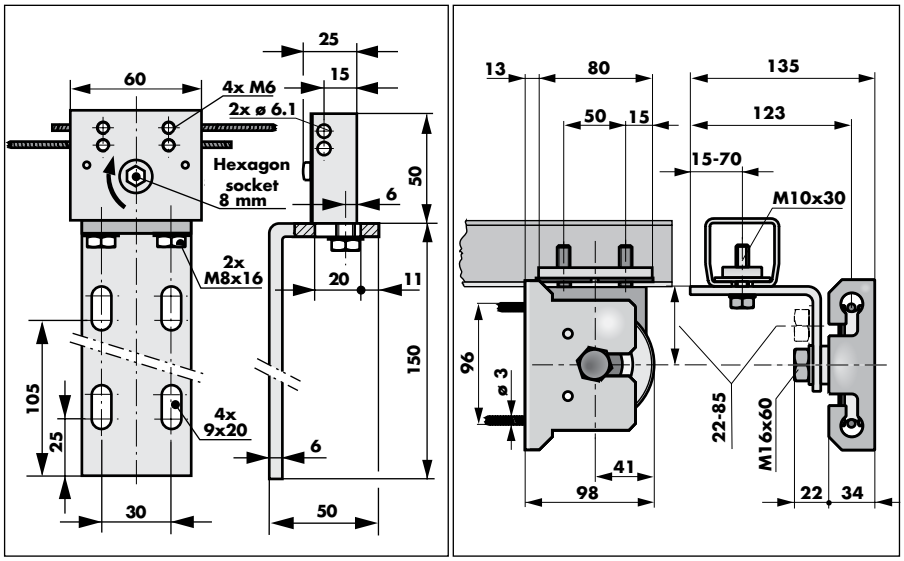
The bracket for plug-in mounting also allows for installation in other positions below the rail. Please ask for a special drawing, if you require such an installation.

The following drawing shows the drive unit mounted on the left end of the rail. If you need to mount it at the right end, remove the bracket and the plastic guide roller and fix them to the left side of the casing. For heavy doors, we generally recommend you mount the DICTAMAT 650 at the end of the rail where the door is in the closed position.

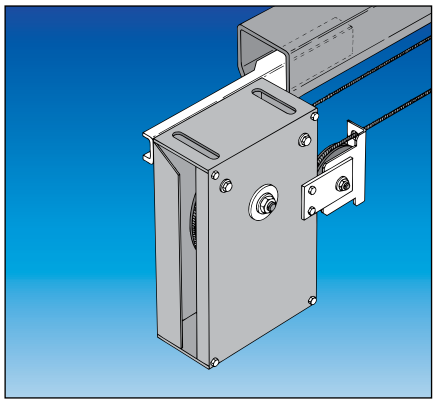
### Drive Unit with Bracket for Plug-in Mounting on Rail




### Rope Tensioner with Fixing Bracket and Idler Pulley with Bracket




Drawings of the accessories for doors with two leaves or for doors with free-running function are available on request. The dimensions of the other components (final dampers, smoke detector, hand release switch) can be found in other chapters of our catalogue.



# DICTAMAT 650

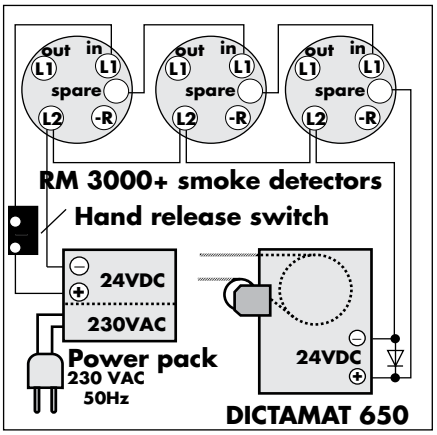
**Economic Operator for Closing Fire Protection Sliding Doors**

Due to its compact design the DICTAMAT 650 is very easy to install. The door is kept open in the desired position by the integrated electromagnet until the 24 VDC power supply is interrupted by a smoke detector or a hand switch. To make sure the door closes completely in case of an alarm you should use a cutoff relay with alarm and reset key or a push-to-lock key (part no. 700132).

When the spring closes the door the closing speed is controlled by the magnetic brake system.

## Electrical Connection

After the door operator has been installed the integrated electromagnet of the operator and the hand release switch need to be connected to the RM 3000+ smoke detectors (see diagram).



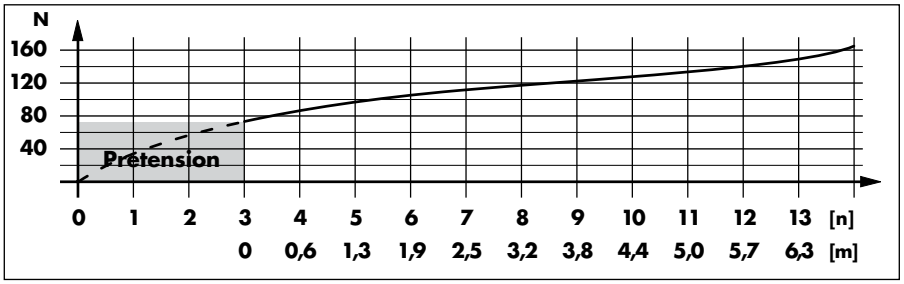

## Mounting the Rope Tensioner with Fixing Bracket

Once the motor and idler pulley are in place, the rope tensioner with its fixing bracket needs to be fixed to the door. Make sure the rope runs exactly parallel to the rail. It is fixed with its lower part to the rope tensioner. Make sure that the opening direction of the operator corresponds to that of the door. It is also possible to use the DICTAMAT 650 for the opposite opening direction by connecting the upper half of the rope to the rope tensioner.

## Mounting the Steel Rope

We recommend you put the rope in place when the door is completely closed. Once all components have been properly aligned to the rail and fixed the rope needs to be tensioned. To make sure the force of the spring is sufficient to close the door completely, open the door slightly. The closing force is increased by turning the tensioning screw in the direction indicated by the arrow. Turning in the opposite direction will reduce the force.

## Force of Closing Spring

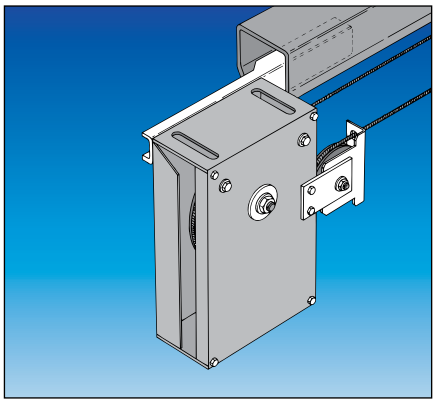



## Adjustment

Move the door to the OPEN position and adjust the closing speed while the door is closing. This is achieved by lifting the locking spring and turning the adjustment ring (see diagram on preceding page). Turning it clockwise will reduce the closing speed. Please observe the relevant safety regulations of your country.

**The force acting on an obstacle may not exceed 150 N.**

This can be achieved by a slower closing speed and by installing additional dampers in the final positions (e.g. DICTATOR EDH). If the operating equipment is mounted at less than 3 m height, the covers on the drive unit pulley and the idler pulley may not be removed to avoid trapped fingers in the workings of the equipment.

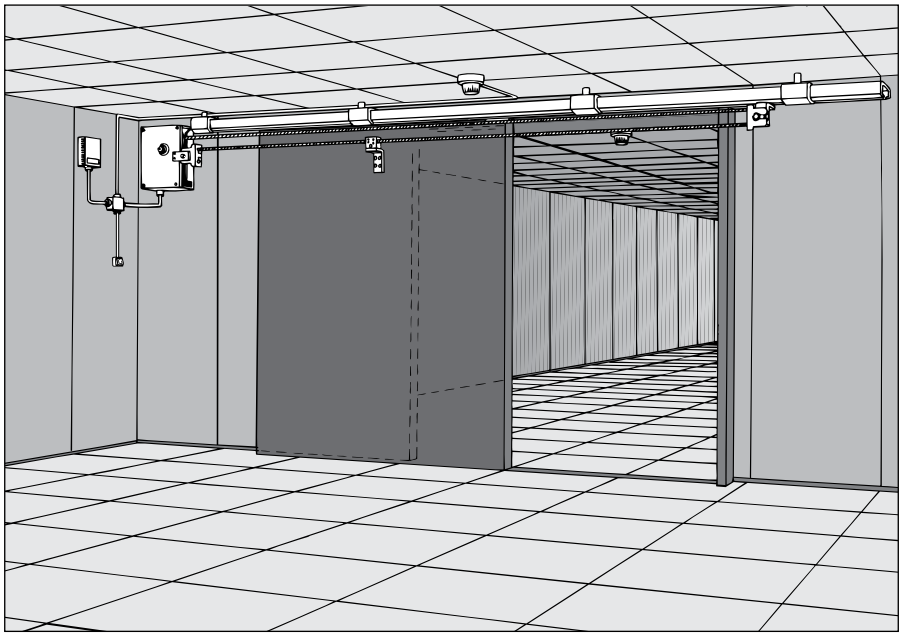


# DICTAMAT 650

**For Fire Protection Doors with One or Two Leaves**

Once the door has been opened by hand the DICTAMAT 650 electromagnetic hold-open system keeps the door open in the desired position until the power supply is interrupted by a smoke detector or a hand release switch (relay with release and reset key or push-to-lock switch). The integrated spring then automatically closes the door. The closing speed is controlled by the adjustable magnetic brake system. The force is transmitted to the door by a special steel drive rope which is fixed to the door with the rope fixing bracket which also tensions and secures the rope. The idler pulley is also fixed to the rail. The operator is supplied ready to install, including bracket for plug-in mounting in the rail.

## Mounting and Operation



The operator hold-open system is connected to the power pack and the smoke detectors so that its 24 VDC power supply is interrupted in the event of an alarm.

## Order Information

| | |
|---|---|
| DICTAMAT 650 (160 N) for left operating doors | part no. 700450 |
| DICTAMAT 650 (160 N) for right operating doors | part no. 700451 |
| DICTAMAT 650 with 320 N spring | on request |

## Components Included

| |
|---|
| Operator (with integrated closing spring, magnetic brake system and electromagnet) |
| Bracket for plug-in mounting in rail |
| 25 m steel drive rope with rope tensioner and fixing bracket |
| Idler pulley with bracket for mounting to rail |

## Accessories

| | |
|---|---|
| Additional rope fixing bracket for doors with two leaves | part no. 780990 |
| Free-movement system (door catch and special rope tensioner) | see special leaflet |
| EDHa / EDHM hydraulic dampers (only CLOSED position) | from page 05.065.00 |
| Power pack E 450, 0.45 A/24 VDC | part no. 040545 |
| "CLOSE" operating elements (dead man operation) | from page 05.071.00 |
| RM 2000/3000+ smoke detector, hand release switch, RESET switch: see Fire Door Control Solutions | |

# Hold-Open and Closing System

## DICTAMAT 560/570 for Fire Protection Sliding Doors

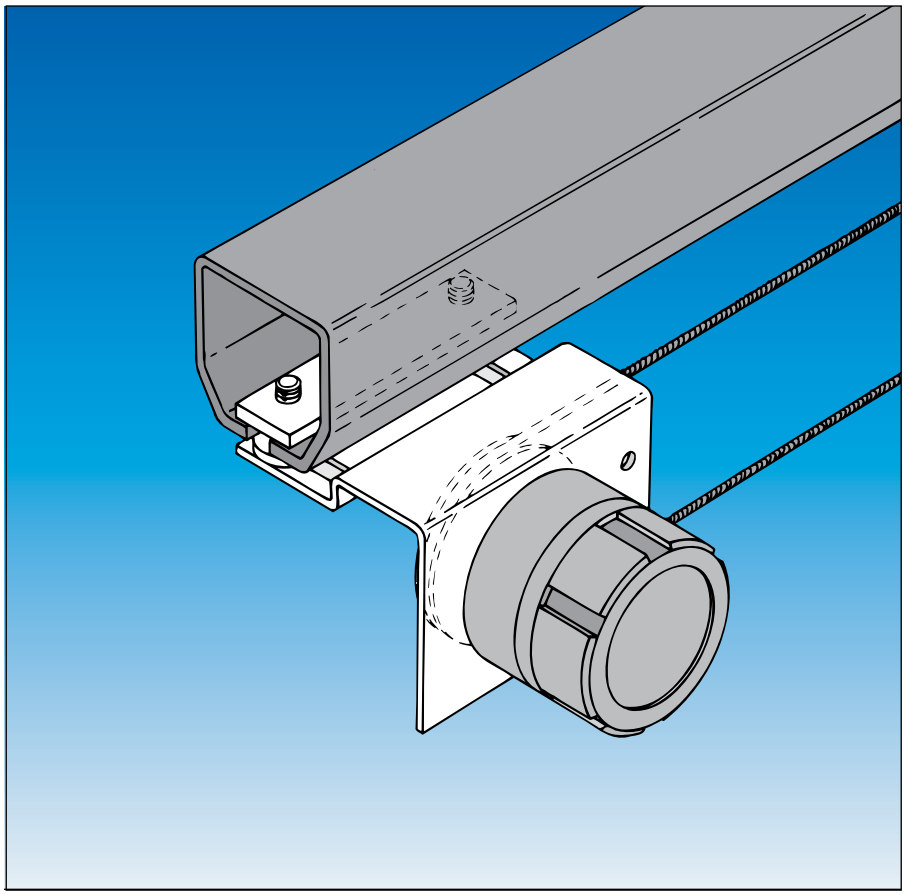
DICTATOR DICTAMAT 560 and DICTAMAT 570 door operators keep fire protection sliding doors open and close them automatically.

An electromagnetic hold-open system keeps the door in the desired position with help of a revolving steel rope until the power supply is interrupted by a smoke detector or a hand release switch (with relay) or an emergency switch.

The closing speed is controlled by the integrated magnetic brake system.

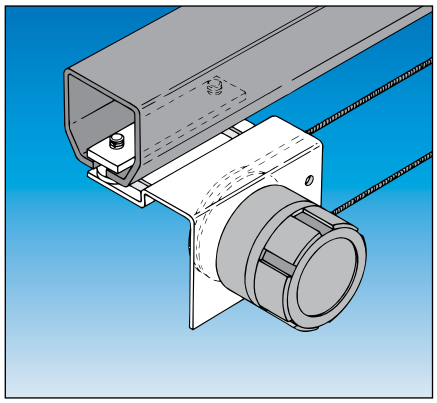
The door can be closed automatically by a separately installed DICTATOR spring rope pulley or a counter weight.

The DICTAMAT 560 and DICTAMAT 570 components have been tested for use on fire protection sliding doors by the National Material Testing Office in Dortmund, Germany. Independant quality control of the product performance is monitored through the same Institute (contract no. Do.15.4).



## Technical Data

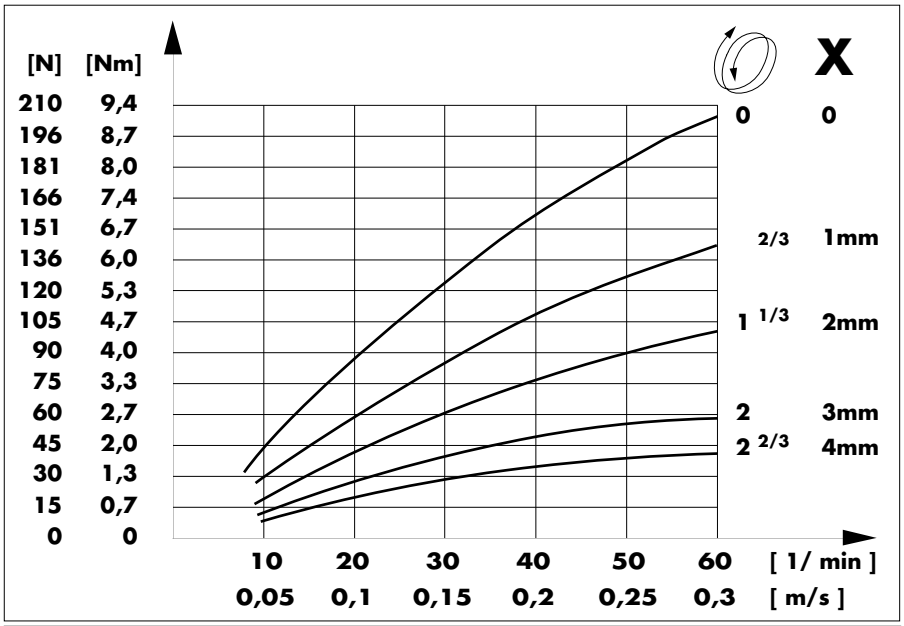
- Electromagnet to hold door open in desired position (24 VDC / 92 mA)
- Revolving steel rope, easy to install and fail-safe
- Adjustable closing speed (0.08 to 0.2 m/sec)
- Wear-proof and frictionless magnetic brake system, approx. 300 N holding force
- Mounting bracket for easy installation on rail
- Small size allows for installation in front of the door
- 160 N and 320 N spring rope pulleys available (6.5 m working distance)



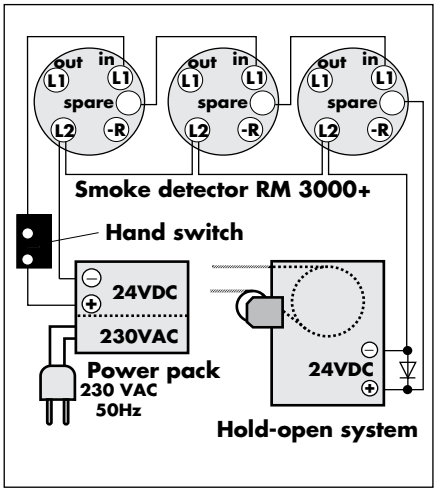
## Braking Moment

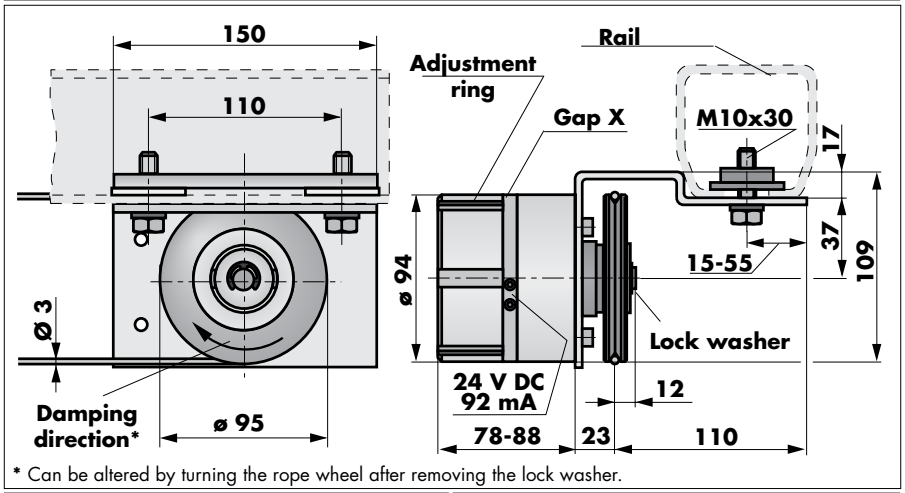
## Damping Characteristics and Dimensions

The damping force can be adjusted by turning the adjustment ring. Turning it clockwise will reduce gap X, thus increasing the damping force. Force [N] and speed [m/s] are only valid in connection with the Ø 95 drive wheel.



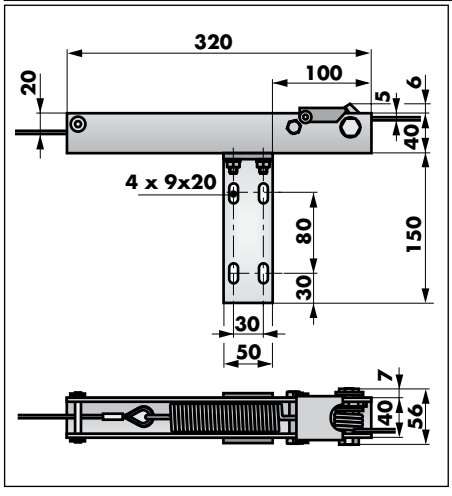

## Hold-Open and Damping System

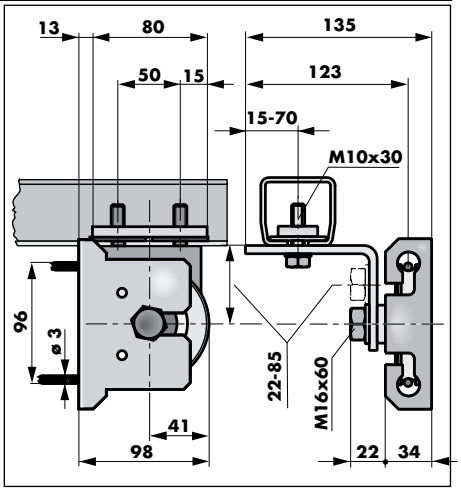


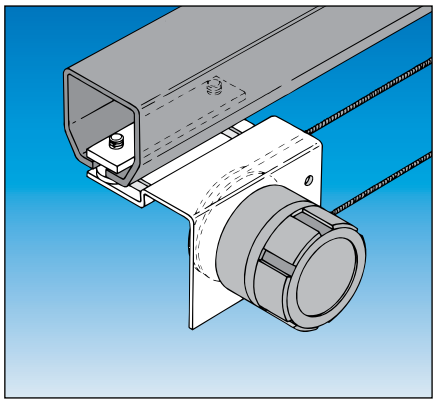




* Can be altered by turning the rope wheel after removing the lock washer.

## Rope Tensioner with Fixing Bracket and Idler Pulley with Mounting Bracket





## DICTAMAT 560

**With Spring Rope Pulley for Sliding Fire Doors up to 6.5 m Width**

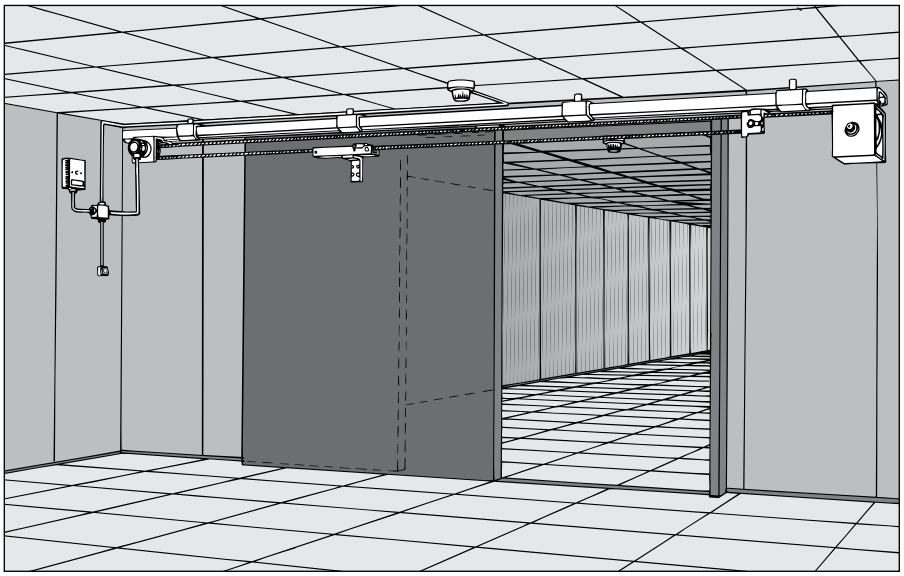
The DICTAMAT 560 door operator provides a hold-open and closing system for fire protection sliding doors. The integrated adjustable magnetic brake system controls the closing speed of the door and keeps it constant. A steel rope provides the connection between the hold-open system and the door.

The DICTAMAT 560 closes the door with a spring rope pulley that can be supplied with 160 N or 320 N force. A power diagram and dimensions can be found on page 05.048.00.

## Functioning

The door is opened by hand (the magnetic brake system has a free-wheel in the opening direction) and is kept open in the desired position by the hold-open system.

Please see the diagram on the preceding page for the electrical wiring (24 VDC). The spring rope pulley automatically closes the door when the power supply is interrupted by a smoke detector or manually by a release and Reset switch or an alarm switch (part no. 700132).



## Order Information

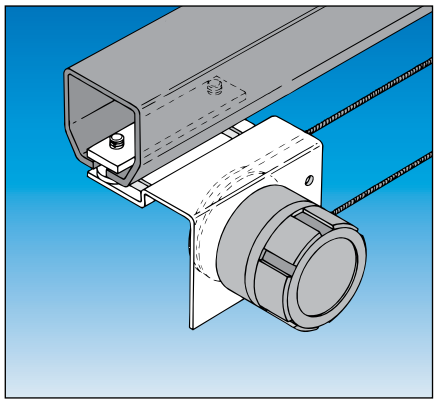
| | |
|---|---|
| DICTAMAT 560 with 160 N spring rope pulley | part no. 700301 |
| DICTAMAT 560 with 320 N spring rope pulley | part no. 700311 |

## Components Included

| |
|---|
| Hold-open and damping system (electromagnet, magnetic brake system) |
| Mounting bracket for fixing of operator on rail |
| 25 m steel rope with cable eye stiffener, 2 rope clamps and tensioner |
| Idler pulley with mounting bracket for fixing on rail |
| Spring rope pulley (160 N or 320 N) with bracket and 10 m steel rope |

## Accessories

| | |
|---|---|
| Hand release switch "Close fire protection door" | part no. 700132 |
| Cutoff relay, alarm and RESET switch | see Fire Door Control Solutions |
| Power pack E 450, 0.45 A / 24 VDC | part no. 040545 |
| DICTATOR RM 2000/RM 3000+ smoke detectors with base | see Fire Door Control Solutions |
| DICTATOR EDH final dampers | from page 05.065.00 |
| Free-running system (door catch and special rope tensioner) | see special leaflet |



## DICTAMAT 570

**For Fire Protection Sliding Doors with Counter Weight**

The DICTAMAT 570 door operator provides a hold-open system for fire protection sliding doors. The integrated adjustable magnetic brake system controls the closing speed of the door and keeps it constant.

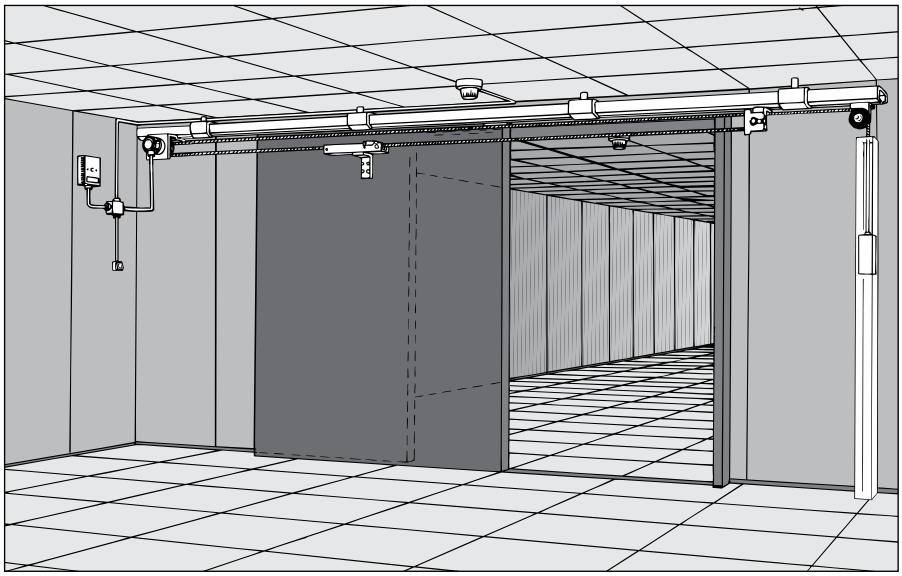
A revolving steel rope provides the connection between hold-open system and the door.

Please see diagram on page 05.042.00 for the electrical wiring (24 VDC).

## Functioning

The door is opened by hand (the magnetic brake system has a free-wheel in the opening direction) and is kept open in the desired position by the hold-open system.

The counter weight automatically closes the door when the power supply is interrupted by a smoke detector or a hand release switch (cutoff relay and reset switch or alarm switch part no. 700132).



## Order Information

| | |
|---|---|
| DICTAMAT 570 (with magnetic brake) | part no. 700351 |

## Components Included

| |
|---|
| Hold-open and damping system (electromagnet, magnetic brake system) |
| Mounting bracket for fixing operator on rail |
| 25 m steel rope with cable eye stiffener, 2 rope clamps and tensioner |
| Idler pulley with mounting bracket for fixing on the rail |

## Accessories

| | |
|---|---|
| Hand release switch "Close fire protection door" | part no. 700132 |
| Cutoff relay, alarm and RESET switch | see Fire Door Control Solutions |
| Power pack E 450, 0.45 A / 24VDC | part no. 040545 |
| DICTATOR RM 2000/RM 3000+ smoke detectors with base | see Fire Door Control Solutions |
| DICTATOR EDH final dampers | from page 05.065.00 |
| Free-running system (door catch and special rope tensioner) | see special leaflet |

# DICTAMAT 500

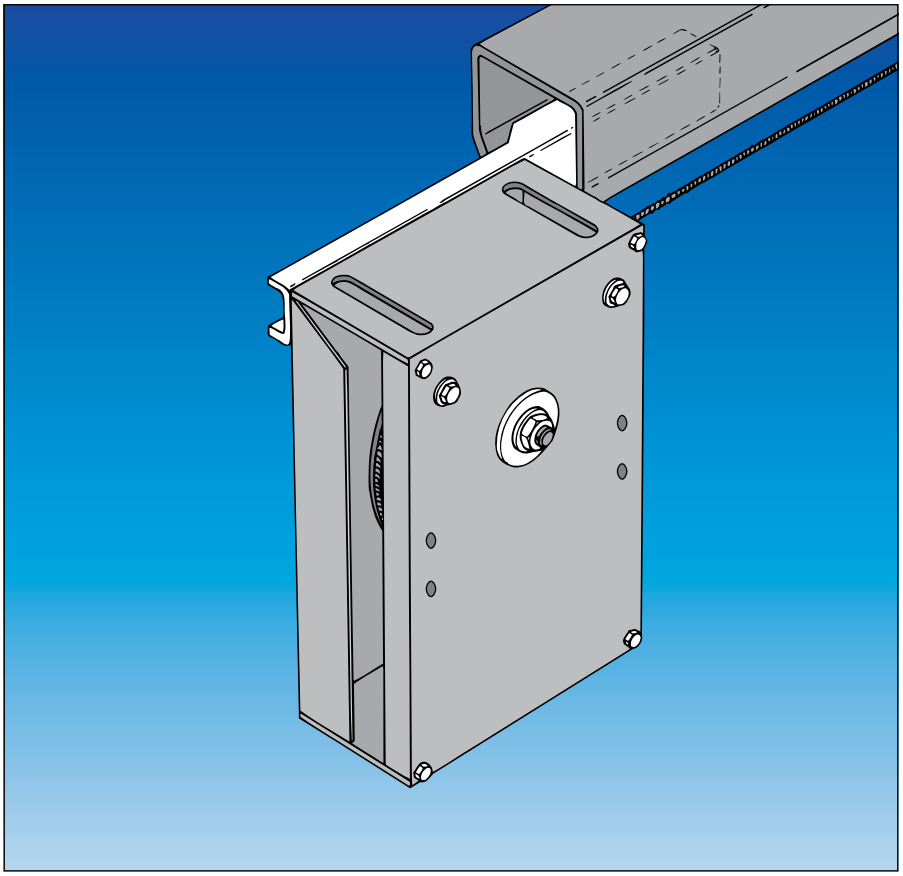
## Closing System for Fire Protection Sliding Doors in Hazardous Areas with Closing Speed Control

The **DICTAMAT 500** door operator closes fire protection sliding doors up to 6.5 m door width with the integrated spring. It can also be used in hazardous areas (max. closing force in this case 160 N), as the door is held in the opened position by a separate magnet.

The DICTAMAT 500 is a **compact unit** of both closing spring and radial damper. This facilitates the installation.

The steel rope of the DICTAMAT 500 is fixed directly to the closing edge of the door. When opening the door the spring is tensioned. As soon as the door is released or the magnet in the opened position is switched off (e.g. by a smoke detector) the **spring closes the door**. The **adjustable closing speed** is controlled by the integrated radial damper.

The components of the DICTAMAT 500 have been tested. Their **quality** is **continuously controlled** by the National Material Testing Office in Dortmund, Germany (MPA-NRW) (contract no. Do.15.1/Do.15.4).



## Selection Criteria

| | |
|---|---|
| • Suitable for sliding doors of | max. 6.5 m door width |
| • Closing force | 160 N |
| | 320 N (not for hazardous areas) |
| • For doors of max. | 400 kg: 160 N / 800 kg: 320 N (not hazard. areas) |
| • Closing by integrated spring, manual opening | |
| • Adjustable closing speed | between 0.08 - 0.2 m/s |
| • Weight | with 160 N spring: 16 kg |
| | with 320 N spring: 22 kg |

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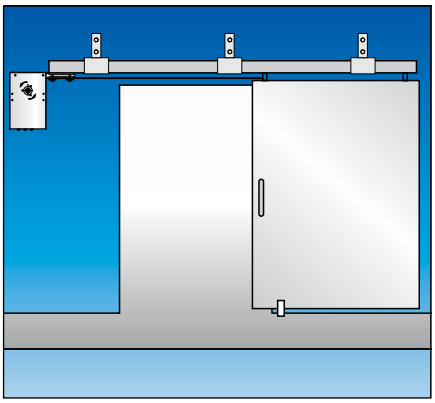
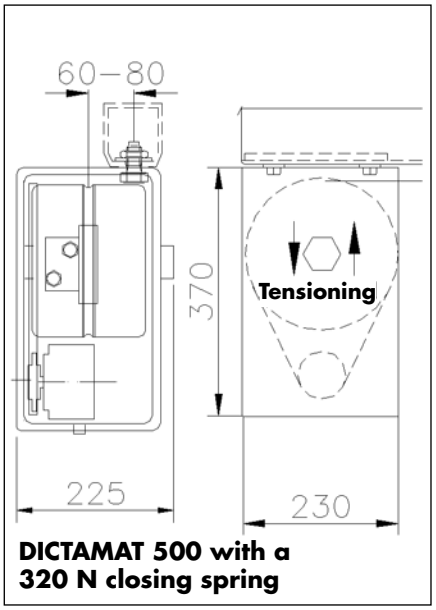


## Dimensions, Order Information

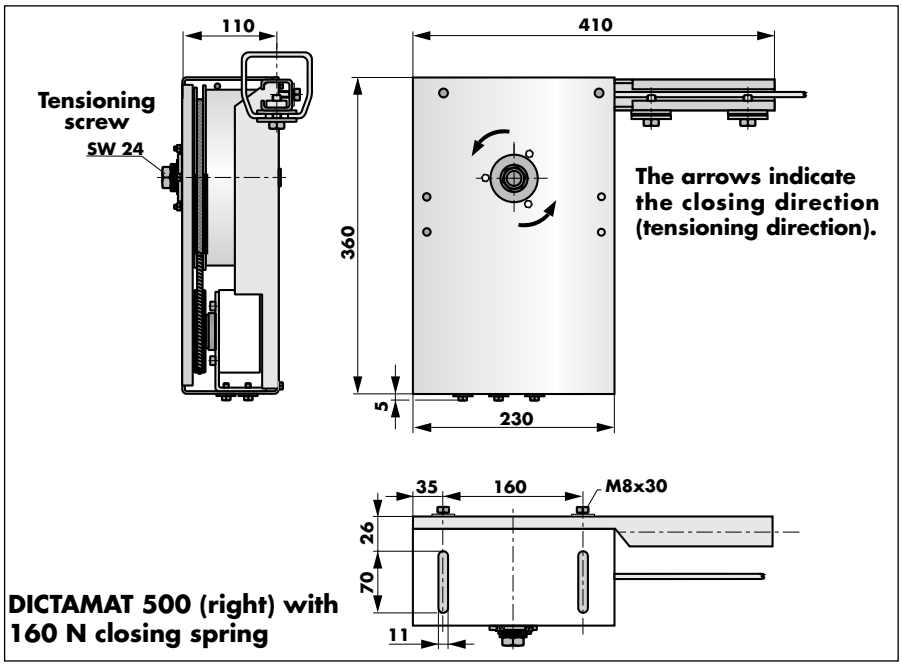
The DICTAMAT 500 is always mounted at that end of the rail where the door is in the closed position. The 160 N type is normally fixed with its bracket for plug-in mounting laterally at the end of the rail. Please make sure sufficient space is available (min. 430 mm). If this space is not available, the DICTAMAT 500 with 160 N is mounted as the 320 N type directly below the rail, using a counter plate. The following drawing shows the drive unit mounted on the left end of the rail.

The closing speed is adjusted directly at the radial damper integrated in the DICTAMAT 500. **Important**: The force acting on an obstacle may **not exceed 150 N.**

## Dimensions

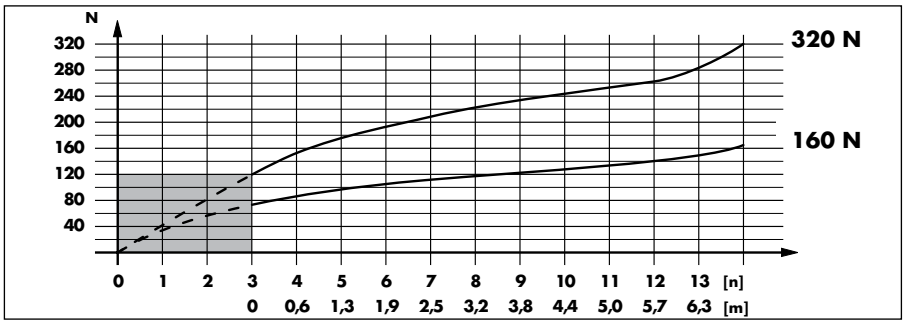



**DICTAMAT 500 with a 320 N closing spring**




**DICTAMAT 500 (right) with 160 N closing spring**

## Force of the Closing Spring




## Components Included

Operator (with integrated closing spring and radial damper), rope ø 3 mm (10 or 25 m)

Bracket for plug-in mounting in rail and threaded counter plate

## Order Information

| | |
|---|---|
| DICTAMAT 500, 160 N, 10 m rope, left | part no. 700040 |
| DICTAMAT 500, 160 N, 10 m rope, right | part no. 700041 |
| DICTAMAT 500, 320 N, 10 m rope, left | part no. 700042 |
| DICTAMAT 500, 320 N, 10 m rope, right | part no. 700043 |
| DICTAMAT 500, 160 N, 25 m rope, left | part no. 700044 |
| DICTAMAT 500, 160 N, 25 m rope, right | part no. 700045 |
| DICTAMAT 500, 320 N, 25 m rope, left | part no. 700046 |
| DICTAMAT 500, 320 N, 25 m rope, right | part no. 700047 |

# Spring Rope Pulley

## With Safety Clutch and Free Wheel

DICTATOR spring rope pulleys are intended for closing fire protection sliding doors.

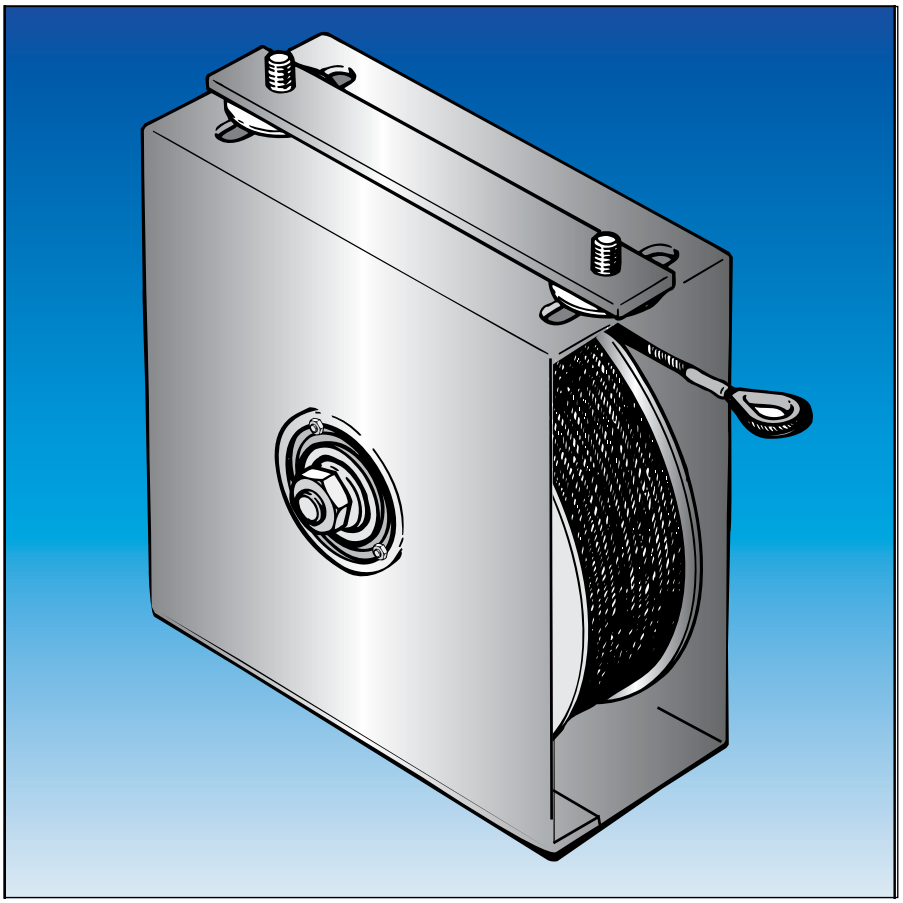
They are easily mounted to most commercial rails.

It is much easier and less time-consuming to install a spring rope pulley than a counter weight.

The free wheel and safety clutch facilitate the pretensioning of the spring rope pulley even when mounted.

We recommend to use a DICTATOR radial damper or one of our final dampers in combination with the spring rope pulley - depending on the size of the door. You will find detailed information on our dampers on the following pages and in the chapter Damping Engineering of our DICTATOR catalogue.

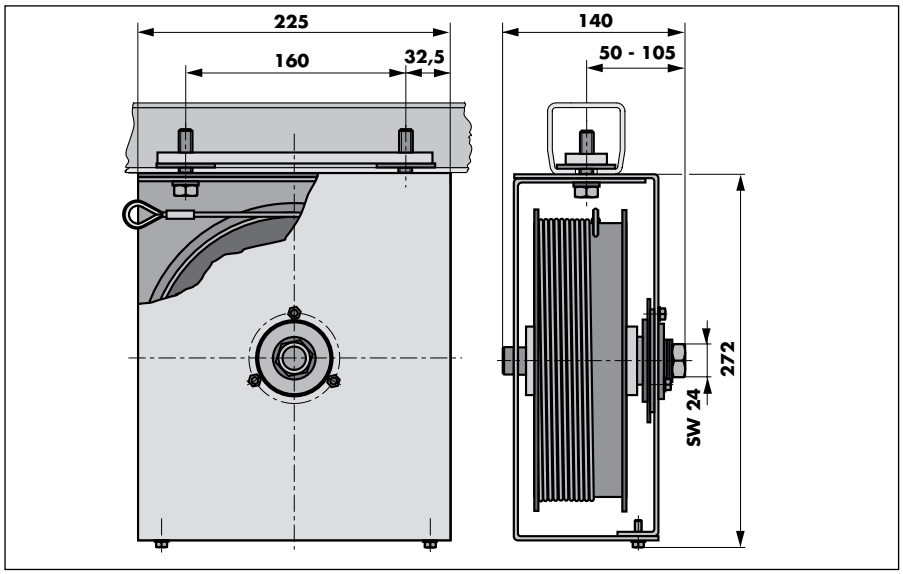
The 160 N and 320 N DICTATOR spring rope pulleys have been tested as closing devices for fire protection sliding doors by the National Material Testing Office in Dortmund, Germany (MPA-NRW). The permanent quality control of the product performance is monitored by the same institute (contract no. Do.15.4).



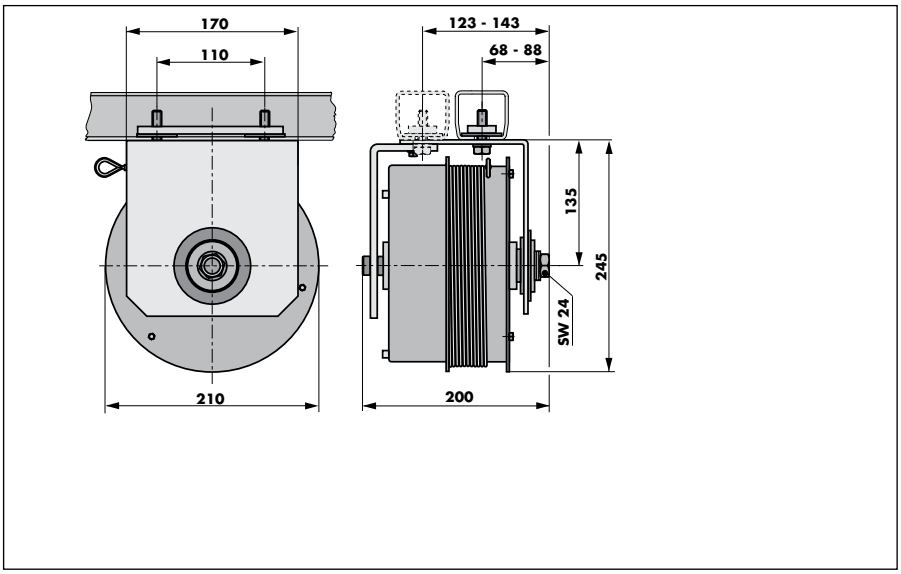
## Technical Data

| | | |
|---|---|---|
| Material | | steel |
| Finish: | 160 N type | powder coated (RAL 7036) |
| | 320 N type | zinc-plated |
| Spring force | | 160 N or 320 N |
| Working distance | | 6.5 m |
| Steel rope | | 10 m; Ø 3 mm |

## 160 N Spring Rope Pulley




## 320 N Spring Rope Pulley




## Power/Distance Diagram

(Closing force measured on rope with 3 revolutions for pretension)


## Order Information

| | |
|---|---|
| Spring rope pulley (160 N) | part no. 070060 |
| Spring rope pulley (320 N) | part no. 070065 |

# Radial Dampers

## For Sliding Fire Doors

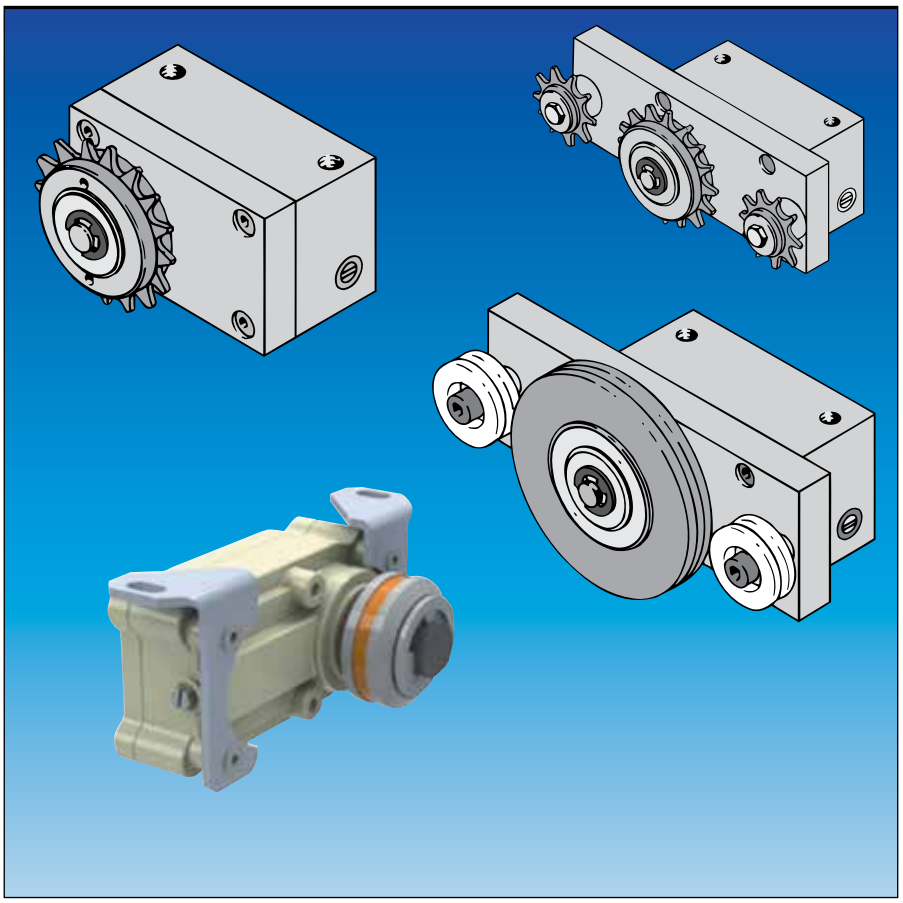
DICTATOR radial dampers control and limit the closing speed of sliding fire doors over the complete operating distance.

All sliding doors closing on their own have to be equipped with such dampers, as without them the life of the door construction will be reduced and the high mass forces during closing result in accident risks.

The hydraulic damping is continuously adjustable. All DICTATOR radial dampers are provided with a free wheel in one direction, so opening the door needs no higher force.

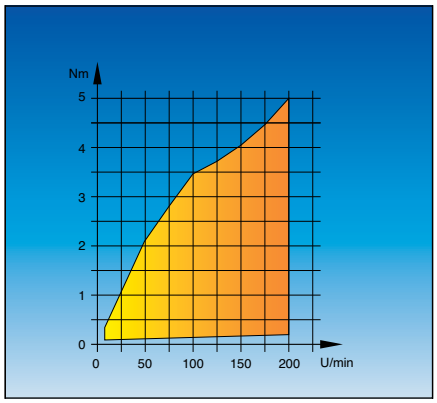
All models with a toothed wheel are designed for use with 1/2x1/8" chains.

DICTATOR radial dampers have officially been tested and approved for their use on fire doors.



## Overview

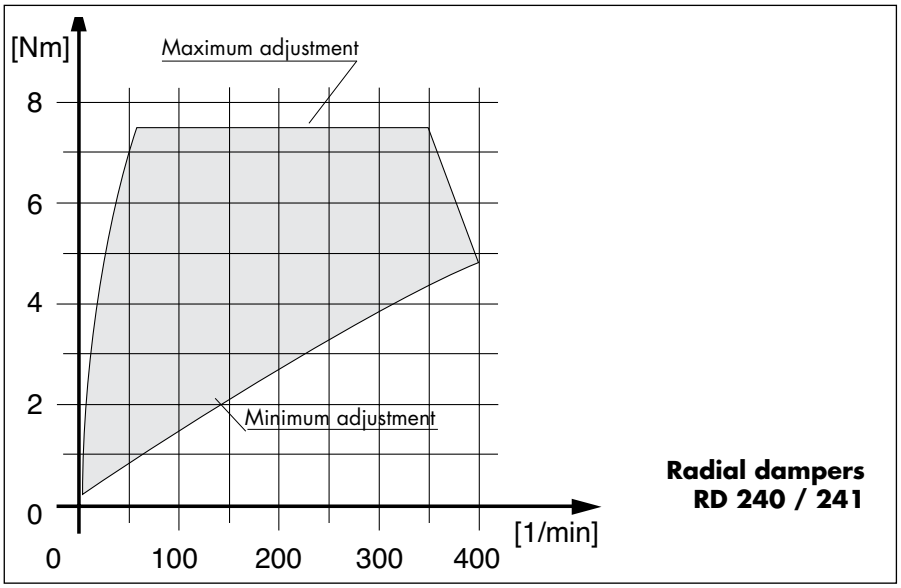
| | |
|---|---|
| Radial dampers<br>RD 240/241 | max. pivot moment 8 Nm<br>sliding doors up to 400 kg / 1000 kg<br>AbP P-120001298 |
| Radial dampers LD 50 | max. pivot moment 2 Nm, sliding doors up to 300 kg<br>PfB Rosenheim |
| Radial dampers LD 100 | max. pivot moment 5 Nm<br>sliding doors up to 400 kg / 600 kg<br>PfB Rosenheim |
| Damping by | rope, chain (tensioned or revolving), toothed belt<br>More models on demand |




## Damping Forces of the Different Series

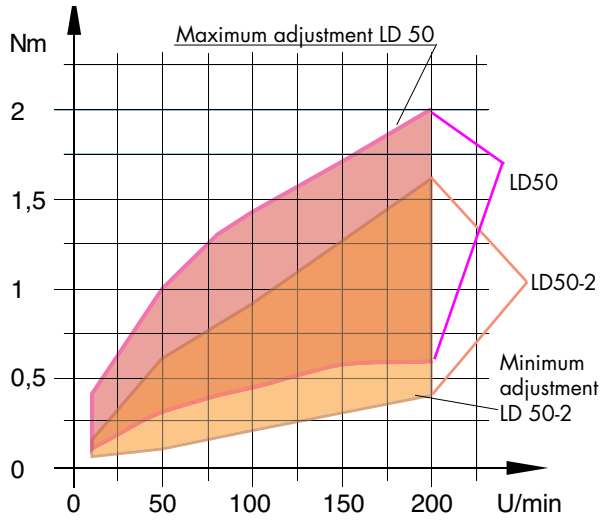
The diagrams printed below show the damping power of the RD 240/241, LD 50 and LD 100 radial dampers. But we gladly will assist you in choosing the radial damper appropriate for your application.

## Damping Diagram RD 240 / 241 Series

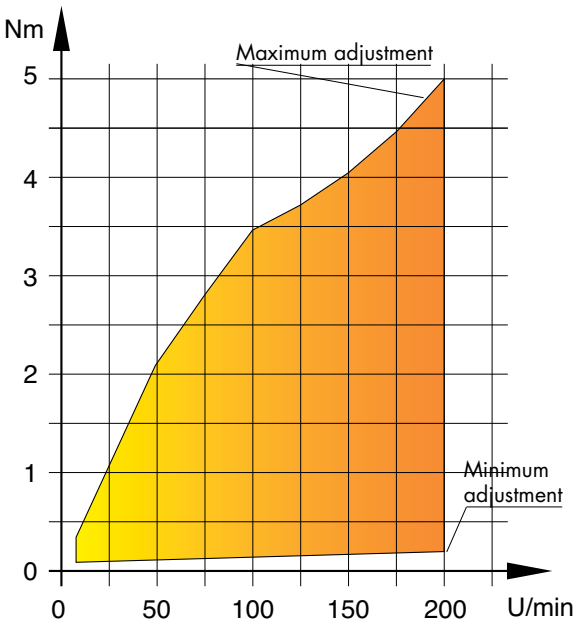



**Radial dampers RD 240 / 241**

## Damping Diagrams LD 50 / LD 100 Series




**Radial dampers LD 50**




**Radial dampers LD 100**

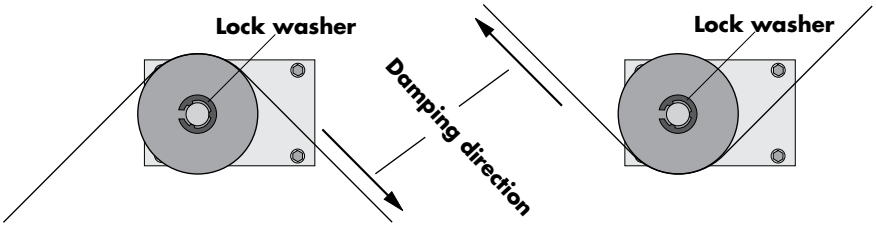
## Basic Radial Damper Model with Toothed Wheel

**For Continuous Damping with a Revolving Chain**

DICTATOR radial dampers provide continuous damping over unlimited distances. Although designed for sliding doors, they are also used on a variety of other applications (e.g. roller conveyors, chain hoists).

RD 240000 and RD 240017 radial dampers dampen by means of a revolving chain which runs around the toothed wheel (at least one quarter of the wheel should be in constant contact with the chain).

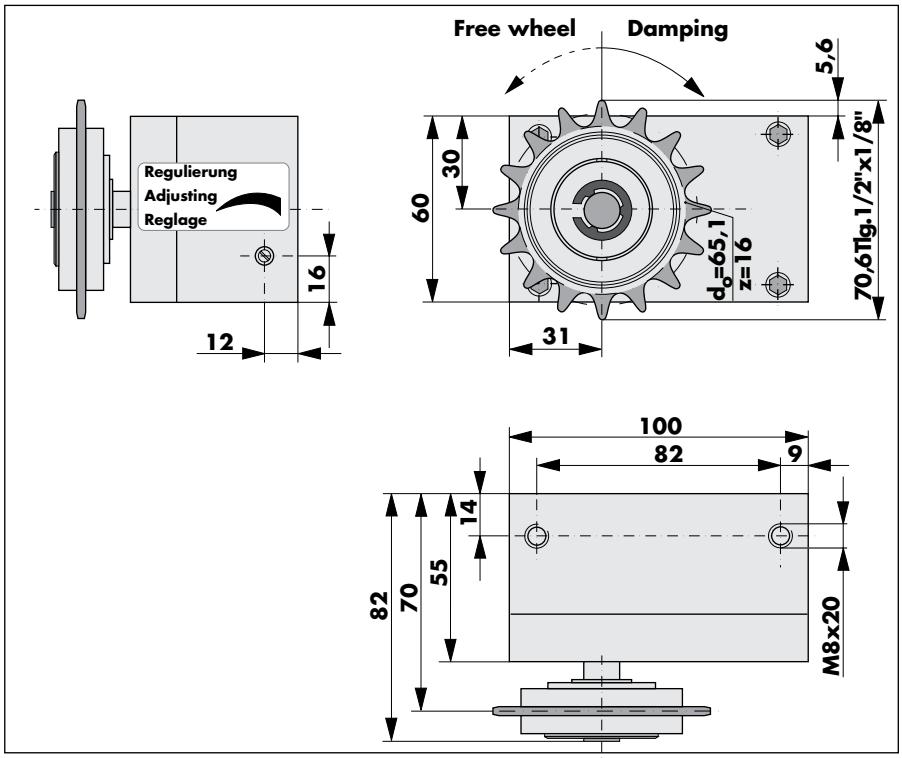
## Installation and Operating Instructions




The diagram below shows the default damping direction of the wheel. The direction of damping depends on the direction the chain is run around the wheel. (Please see diagram above). If necessary, you can change the damping direction by removing the lock washer, taking off the wheel and replacing it on the axle the other way round. Make sure you put the lock washer on again.

By the adjustment screw you can adjust the damping force continuously. An internal thermostatic valve ensures that the closing speed remains the same under changing temperatures (-15° to +70 °C).

## Dimensions




## Order Information

| | |
|---|---|
| RD 240000 radial damper, normal damping | part no. 240000 |
| RD 240017 radial damper, soft damping | part no. 240017 |
| Chain wheel | part no. 785972 |
| Chain tensioner | part no. 710497 |
| Chain (per meter) | part no. 220006 |
| Chain joint | part no. 220007 |

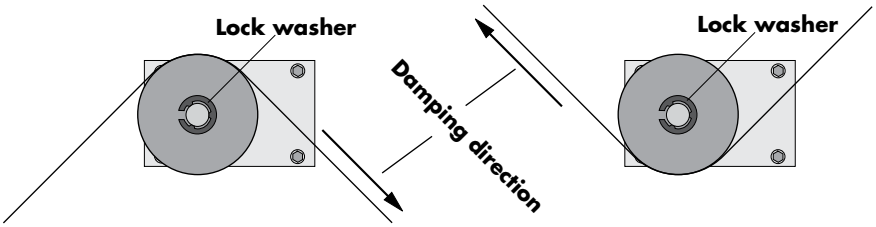
## Basic Radial Damper Model with Rope Pulley

**For Continuous Damping with Rope**

DICTATOR radial dampers provide continuous damping over unlimited distances. Although designed for sliding doors, they are also used on a variety of other applications (e.g. roller conveyors, chain hoists).

RD 240011 and RD 240013 radial dampers dampen by means of a revolving steel rope (ø 3 mm) which runs around the pulley. Make sure that the rope is properly aligned on the wheel and correctly tensioned (e.g. with a DICTATOR rope tensioner).

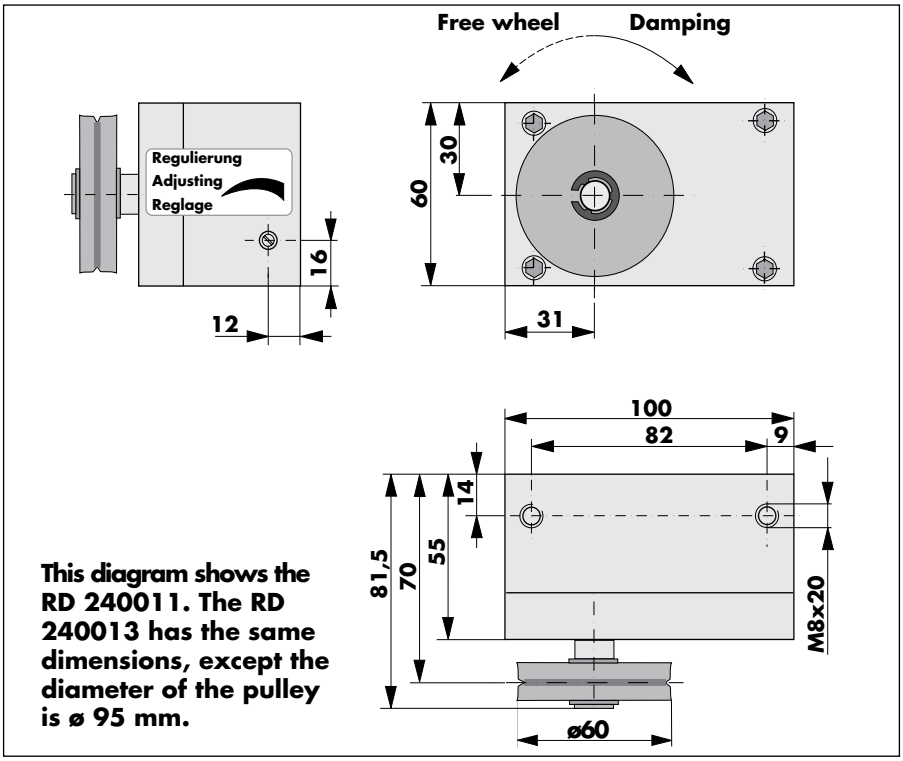
## Mounting and Operating Instructions




The diagram below shows the default damping direction of the pulley. The direction of damping depends on the direction the rope is run around the pulley. (Please see diagram above). If necessary, you can change the damping direction by removing the lock washer, taking off the pulley and replacing it on the axle the other way round. Make sure you put the lock washer on again.

By the adjustment screw you can adjust the damping force continuously. An internal thermostatic valve ensures that the closing speed remains the same under changing temperatures (-15° to +70 °C).

## Dimensions




**This diagram shows the RD 240011. The RD 240013 has the same dimensions, except the diameter of the pulley is ø 95 mm.**

## Order Information

| | |
|---|---|
| Radial damper with Ø 60 rope pulley | part no. 240011 |
| Radial damper with Ø 95 rope pulley | part no. 240013 |
| Pulley for rope | part no. 700530 |
| 25 m steel rope (Ø 3 mm) | part no. 700155 |
| Rope tensioner with fixing bracket | part no. 700478 |



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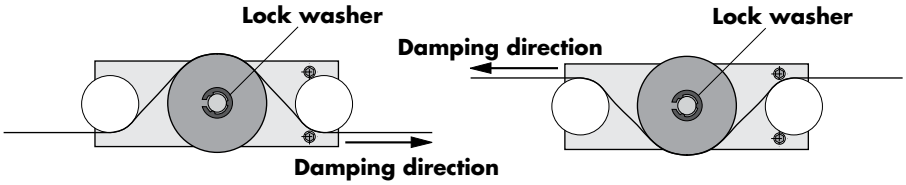
## RD 240001 Radial Damper

**For Continuous Damping with Tensioned Chain**

DICTATOR radial dampers provide continuous damping over unlimited distances. Although designed for sliding doors, they are also used on a variety of other applications (e.g. roller conveyors, chain hoists etc).

The RD 240001 radial damper dampens by means of a tensioned chain which is run around the three toothed wheels.

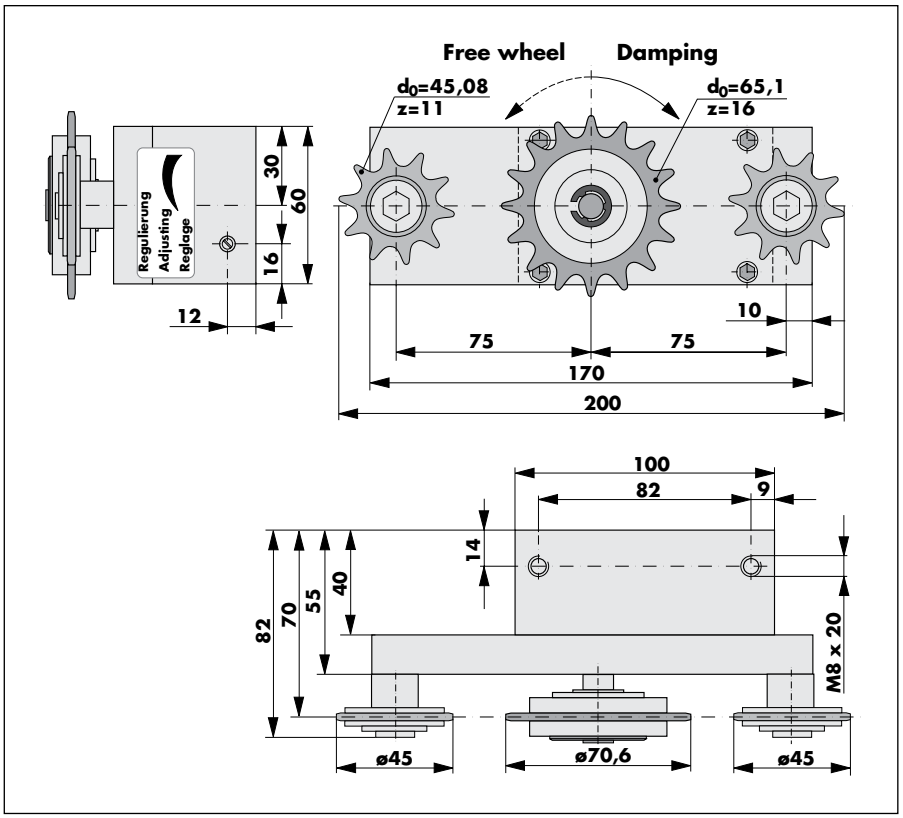
## Mounting and Operating Instructions




The diagram below shows the default damping direction of the wheel. The direction of damping depends on the direction the chain is run around the wheels. (Please see diagram above). If necessary you can change the damping direction by removing the lock washer, taking off the wheel and replacing it on the axle the other way round. Make sure you put the lock washer on again.

By the adjustment screw you can adjust the damping force continuously. An internal thermostatic valve ensures that the closing speed remains the same under changing temperatures (-15° to +70 °C).

## Dimensions




## Order Information

| | |
|---|---|
| Radial damper for tensioned chain | part no. 240001 |
| Chain (per meter) | part no. 220006 |
| Chain tensioner (complete set) | part no. 220005 |

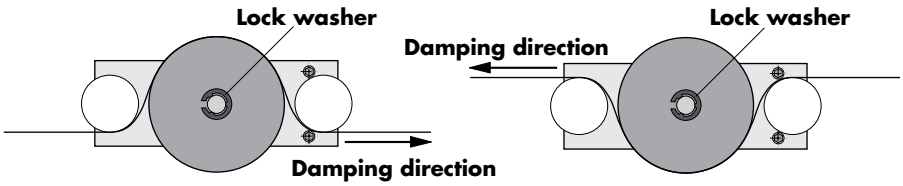
## RD 240003 and RD 240012 Radial Dampers

**For Continuous Damping with Tensioned Rope**

DICTATOR radial dampers provide continuous damping over unlimited distances. Although designed for sliding doors, they are also used on a variety of other applications (e.g. roller conveyors, chain hoists etc).

RD 240003 and RD 240012 radial damper dampen by means of a tensioned rope which is run around the three pulleys.

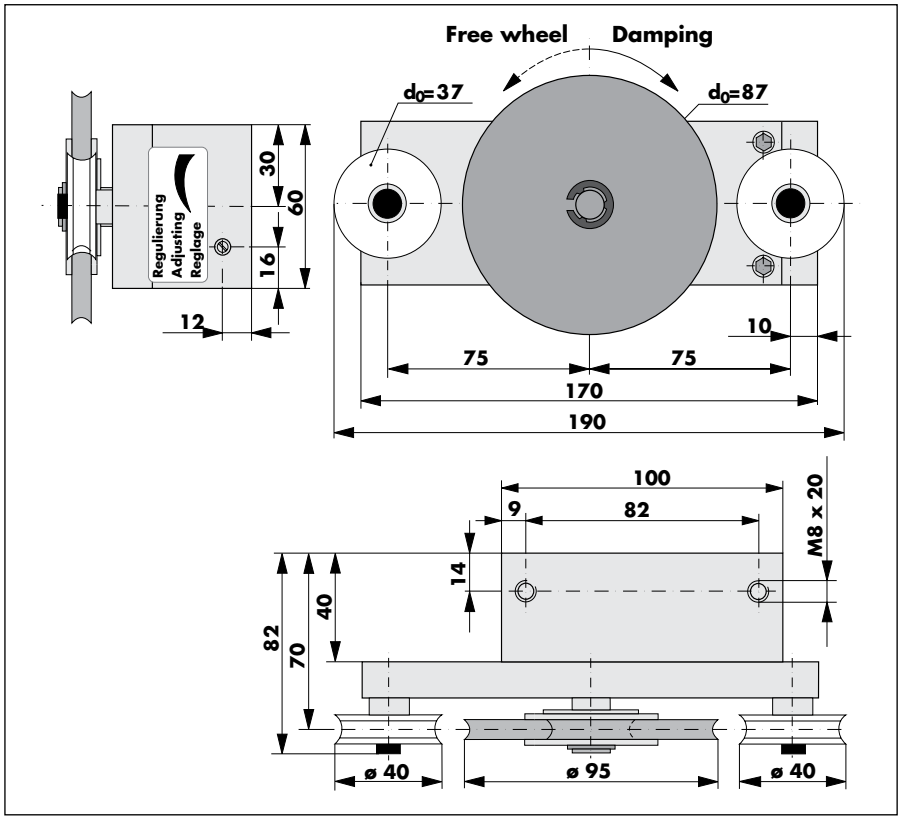
## Mounting and Operating Instructions




The diagram below shows the default damping direction of the pulley. The direction of damping depends on the direction the rope is run around the pulleys. (Please see diagram above). If necessary you can change the damping direction by removing the lock washer, taking off the centre pulley and replacing it on the axle the other way round. Make sure you put the lock washer on again.

By the adjustment screw you can adjust the damping force continuously. An internal thermostatic valve ensures that the closing speed remains the same under changing temperatures (-15° to +70 °C).

## Dimensions




## Order Information

| | |
|---|---|
| Radial damper for tensioned rope, normal damping | part no. 240003 |
| Radial damper for tensioned rope, soft damping | part no. 240012 |
| Steel rope (length 25 m) | part no. 700155 |
| Rope tensioner (complete set) | part no. 220005S |



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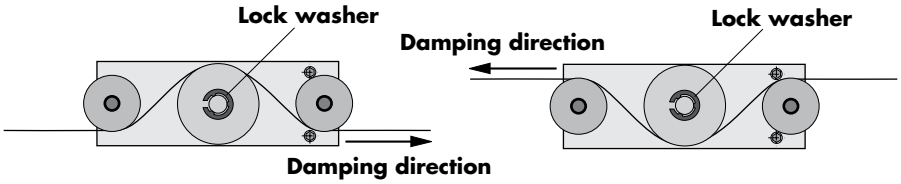
## RD 240004 Radial Damper

**For Continuous Damping with Tensioned Rope**

DICTATOR radial dampers provide continuous damping over unlimited distances. Although designed for sliding doors, they are also used on a variety of other applications (e.g. roller conveyors, chain hoists etc).

The RD 240004 radial damper dampens by means of a tensioned rope which is run around the three pulleys.

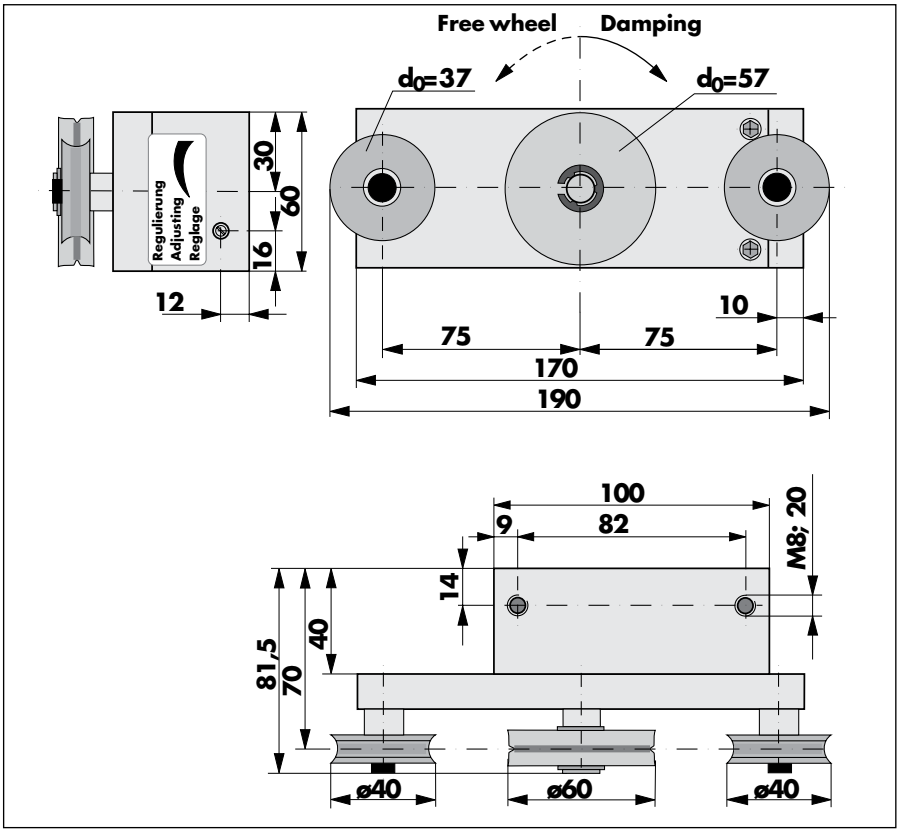
## Mounting and Operating Instructions




The diagram below shows the default damping direction of the pulley.The direction of damping depends on the direction the rope is run around the pulleys. (Please see diagram above). If necessary you can change the damping direction by removing the lock washer, taking off the centre pulley and replacing it on the axle the other way round. Make sure you put the lock washer on again.

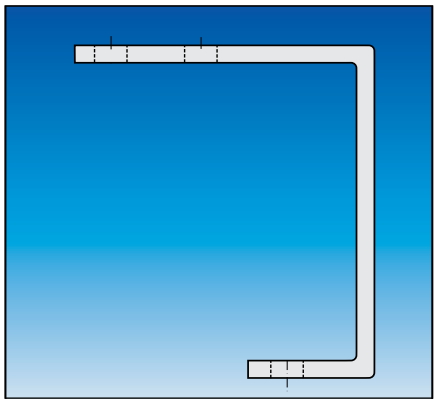
By the adjustment screw you can adjust the damping force continuously. An internal thermostatic valve ensures that the closing speed remains the same under changing temperatures (-15° to +70 °C).

## Dimensions




## Order Information

| | |
|---|---|
| Radial damper for tensioned rope | part no. 240004 |
| Steel rope (25 m long) | part no. 700155 |
| Rope tensioner (complete set) | part no. 220005S |



## Bracket 240020 for the RD 240/241 Series

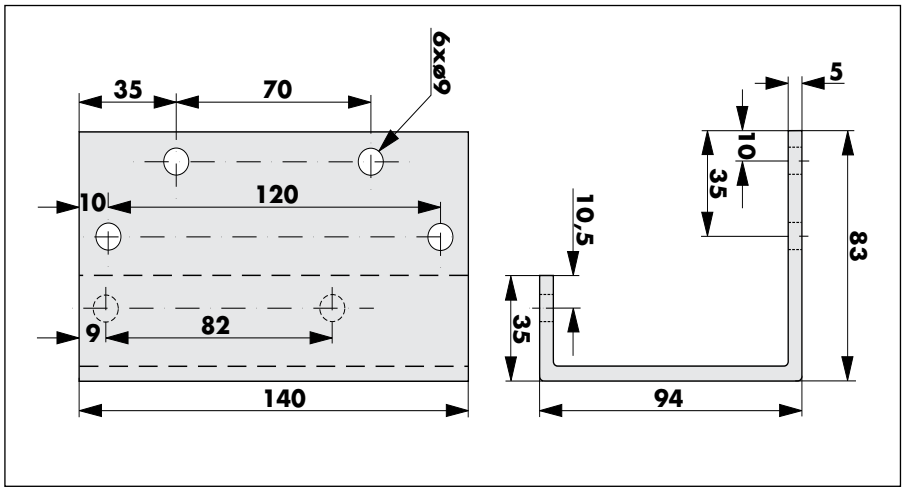
The bracket, part no. 240020, is designed to easily and reliably mount radial dampers of the RD 240/241 series to the door leaf, walls or solid beams that must not be punctured.

The DICTATOR RD 240/241 radial dampers are fixed either directly or to the bracket with their two M8 pocket hole threads (20 mm deep).

The bracket is by default zinc-plated.

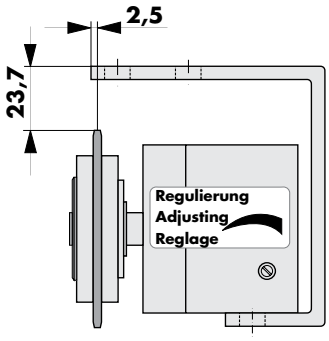
Other brackets can be manufactured to suit your requirements.

## Dimensions Bracket

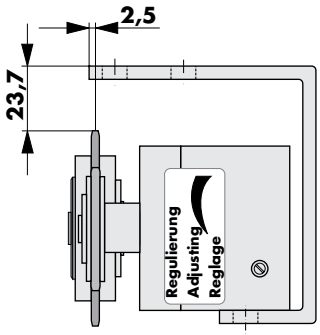



## Dimensions Bracket with RD 240/241 Radial Dampers

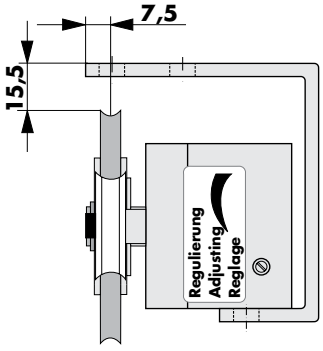
**RD 240000**




**RD 240001**




**RD 240003**

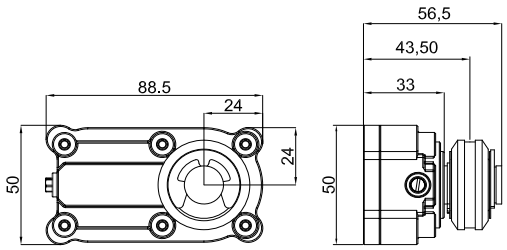


## Radial Damper LD 50 Basic Unit with Rope Pulley

**With or without fixing accessories**

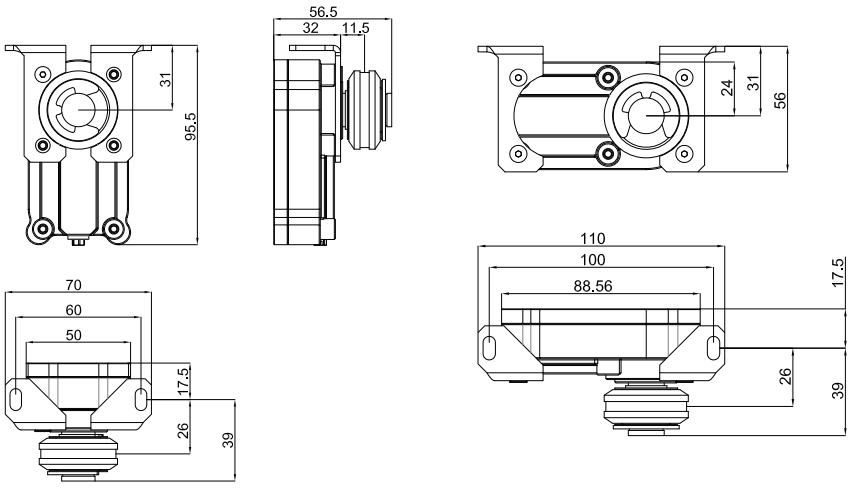
The basic unit of the LD 50 radial damper is designed for damping with rope. The standard rope pulley has a diameter of 45 (40) mm. In total the LD radial damper has 6 mounting holes with a diameter of 2.9 mm for individual fixing. The mounting bracket set allows to easily fix the LD 50 radial damper in an either horizontal or vertical position. Additionally are available an adaptor bracket and plate (see next page).

## Dimensions LD 50 Basic Unit




**Radial damper LD 50, without mounting bracket**

## Dimensions LD 50 with Mounting Bracket Set




**Radial damper LD 50, with mounting bracket set, in vertical position**

**Radial damper LD 50, with mounting bracket set, in horizontal position**

## Components Included

Radial damper LD 50 with rope pulley Ø 45 (40) in aluminium with Vulkollan insert, with free wheel, casing in plastics, with or without mounting bracket set

## Order Information

| | |
|---|---|
| LD 50, plastics, without mounting bracket | part no. 244041 |
| LD 50, plastics, with zinc-plated mounting bracket set | part no. 244040 |
| LD 50, plastics, with AISI 304 mounting bracket set | part no. 244042 |
| LD 50-2, plastics, without mounting bracket | part no. 244049 |
| LD 50-2, plastics, with zinc-plated mounting bracket set | part no. 244047 |
| LD 50-2, plastics, with AISI 304 mounting bracket set | part no. 244048 |

## Radial Damper LD 100 with Rope Pulley Ø 65

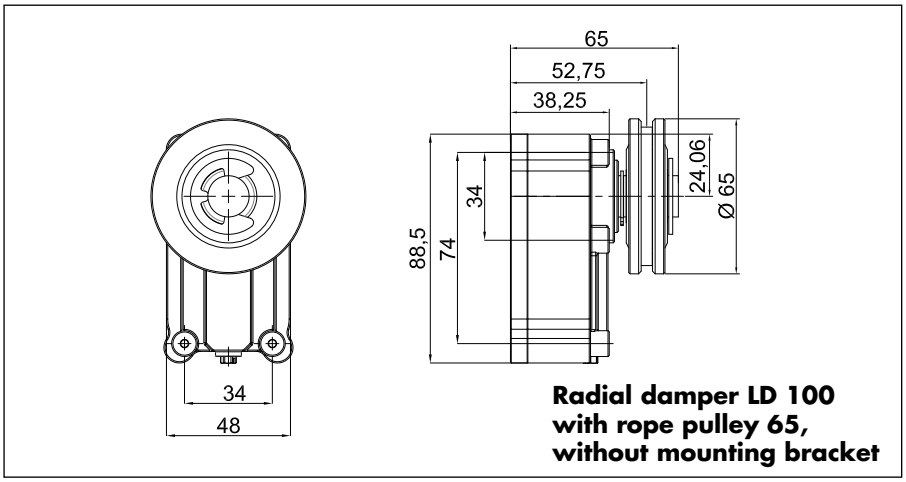
**For horizontal or vertical mounting**

The radial damper LD 100 with rope pulley Ø 65 uses a revolving rope of Ø 3 mm to transmit the damping. The LD 100 with rope pulley Ø 65 is available with or without mounting bracket set.

The rope pulley of the standard model has a free wheel, i.e. it dampens only in one direction.

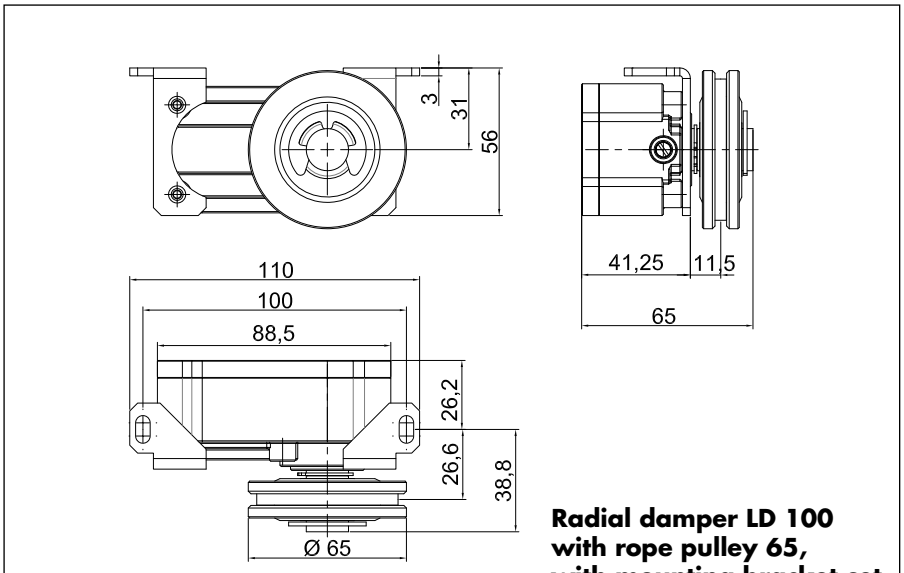
When mounting the damper, please make sure the rope enlaces about 150° of the rope pulley to achieve an optimum damping.

## Dimensions LD 100 Basic Unit




**Radial damper LD 100 with rope pulley 65, without mounting bracket**

## Dimensions LD 100 with Mounting Bracket Set




**Radial damper LD 100 with rope pulley 65, with mounting bracket set**

## Components Included

Radial damper LD 100 with rope pulley Ø 65 in aluminium with Vulkollan insert, with free wheel, casing in plastics, with or without zinc-plated mounting bracket set

## Order Information

| | |
|---|---|
| LD 100, rope pulley Ø 65, without mounting bracket | part no. 244141 |
| LD 100, rope pulley Ø 65, zinc-plated mounting bracket | part no. 244101 |

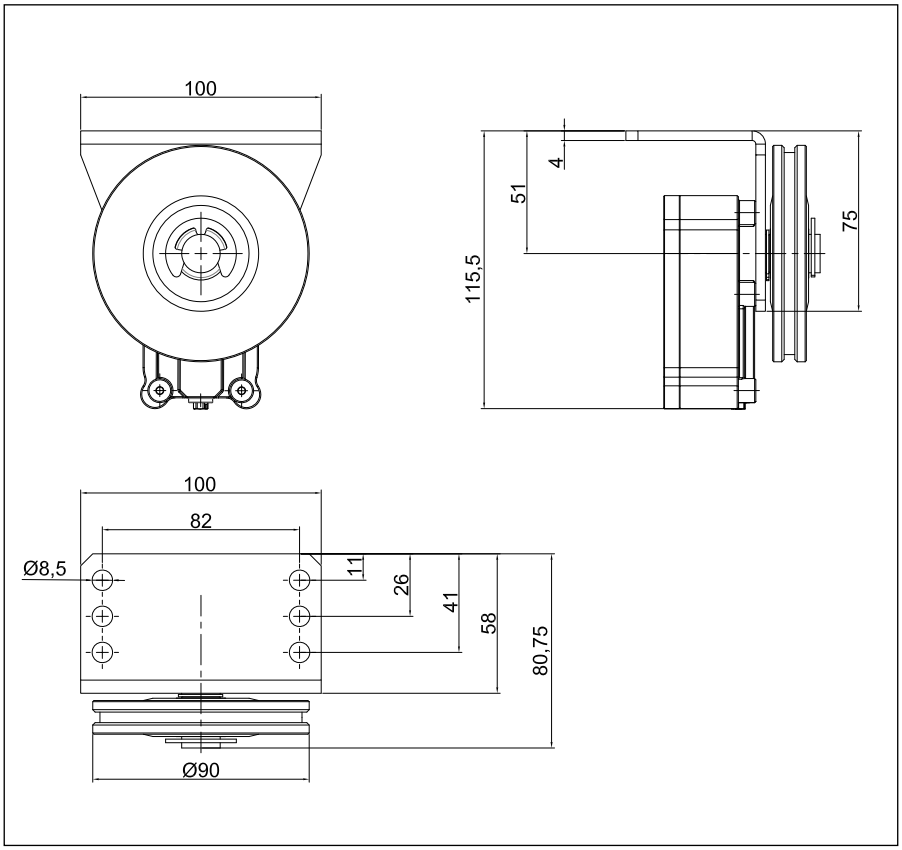
## Radial Damper LD 100 with Rope Pulley Ø 90

**With zinc-plated mounting bracket with 6 holes**

The radial damper LD 100 with rope pulley Ø 90 uses a revolving rope of Ø 3 mm to transmit the damping. When the rope distances are longer, it is preferable to use this model as due to the larger diameter of the rope pulley the rope has longer contact with the pulley and therefore offers a more secure rope guiding. To achieve an optimum damping the rope should enlace the rope pulley about 150°.

The rope pulley of the standard model has a free wheel, i.e. it dampens only in one direction.

## Dimensions




Normally the LD 100 with rope pulley Ø 90 is supplied with a zinc-plated mounting bracket. It has 6 borings to allow adapting the mounting position to the local situation.

## Components Included Standard

Radial damper LD 100 with rope pulley Ø 90 in aluminium with Vulkollan insert, with free wheel, casing in plastics, zinc-plated mounting bracket with 6 fixing holes

## Order Information

| | |
|---|---|
| LD 100, rope pulley Ø 90, without mounting bracket | part no. 244142 |
| LD 100, rope pulley Ø 90, zinc-plated mounting bracket | part no. 244102 |
| Idler pulley for rope | part no. 700530 |
| 25 m rope Ø 3 mm | part no. 700155 |
| Rope tensioner with door actuator | part no. 700478 |

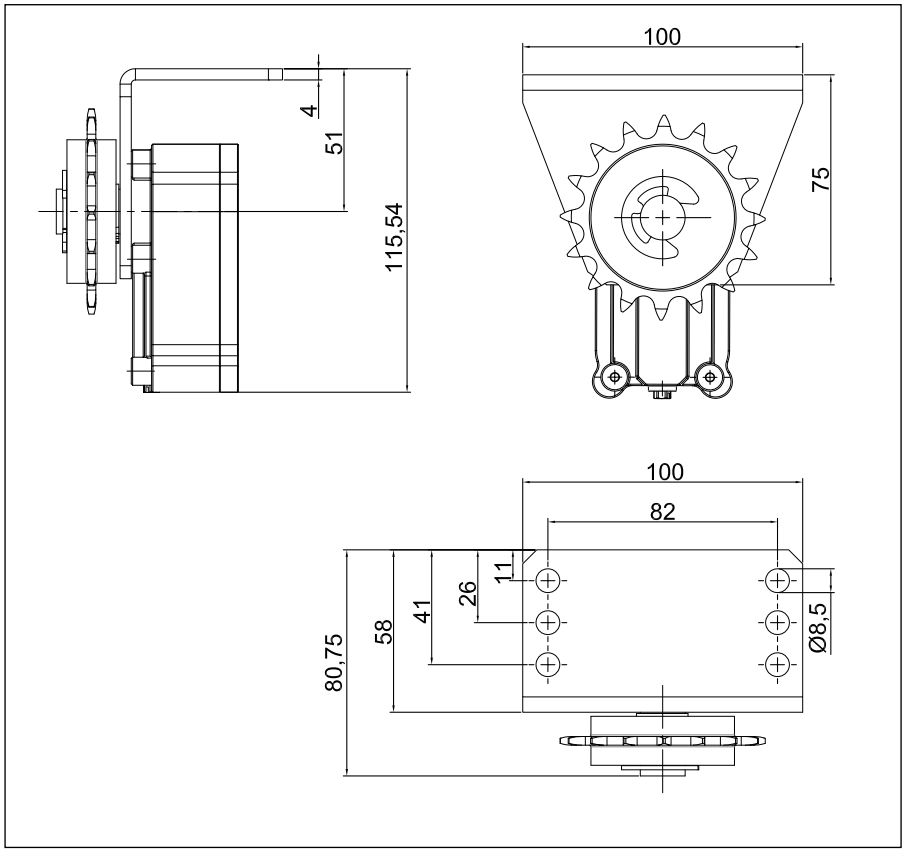
## Radial Damper LD 100 with Chain Wheel Z16, 1/2x1/8"

**With zinc-plated mounting bracket with 6 holes**

The radial damper LD 100 with chain wheel uses a revolving chain 1/2 x 1/8" to transmit the damping. This provides an absolutely non-positive connection to the device to be dampened (door). To achieve an optimum damping it is important that as many chain links as possible engage with the chain wheel.

The chain wheel of the standard model has a free wheel, i.e. it dampens only in one direction.

## Dimensions



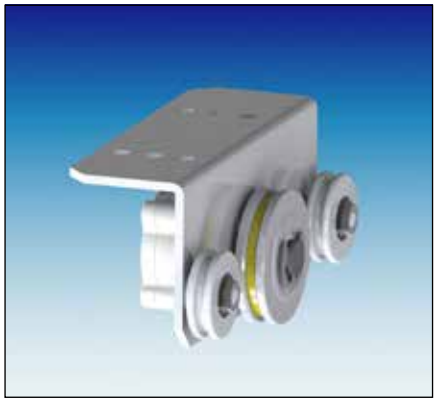

Normally the LD 100 with chain wheel is supplied with a zinc-plated mounting bracket. It has 6 holes to allow adapting the mounting position to the local situation.

## Components Included Standard

Radial damper LD 100 with chain wheel Z16, 1/2 x 1/8", with free wheel, casing in plastics, zinc-plated mounting bracket with 6 fixing holes

## Order Information

| | |
|---|---|
| LD 100, chain wheel Z16, without mounting bracket | part no. 244143 |
| LD 100, chain wheel Z16, zinc-plated mounting bracket | part no. 244103 |
| Chain 1/2 x 1/8", piece of 5 m length | part no. 220006 |
| Chain lock | part no. 220007 |
| Idler pulley for chain 1/2 x 1/8" | part no. 700497 |



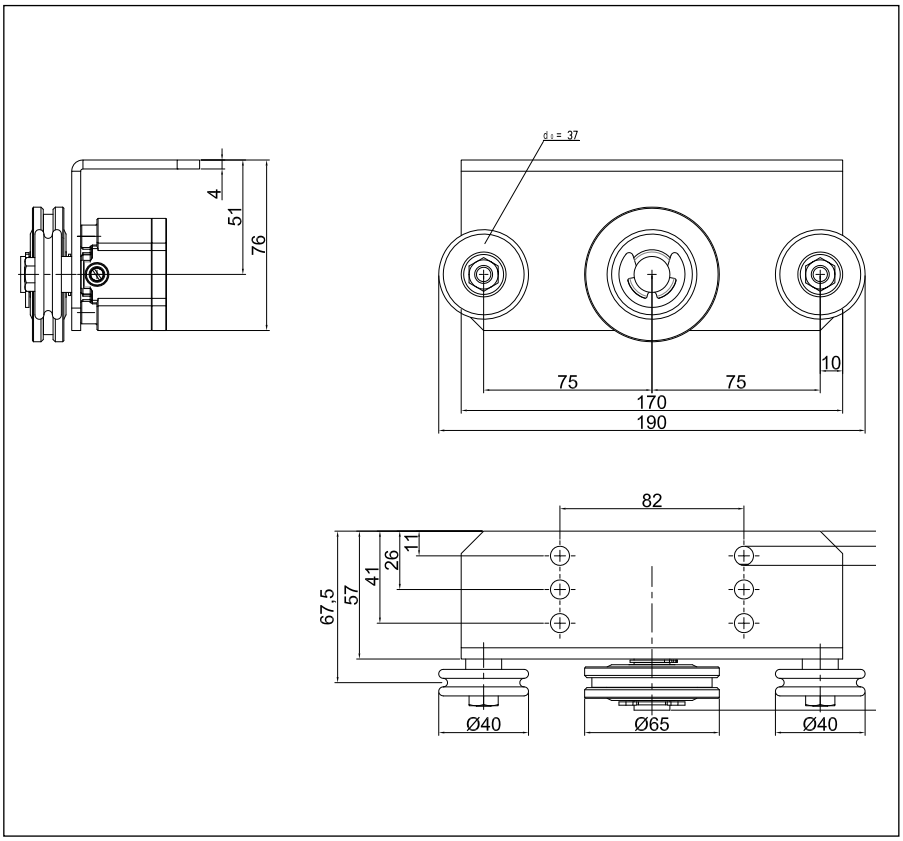
## Radial Damper LD 100 with Rope Pulley Ø 65,

**two small rope pulleys Ø 40 and wide mounting bracket**

The radial damper LD 100 with rope pulley Ø 65 and two additional guiding pulleys Ø 40 damps by means of a tensioned rope Ø 3 mm. The rope is guided via the two guiding pulleys around the central rope pulley of the lamellar radial damper. This ensures an optimum damping.

The center rope pulley of the standard model has a free wheel. The way of guiding the rope around the pulleys determines the direction of damping. It is of course possible to take off the center rope pulley, turn it around and fix it again on the axle.

## Dimensions



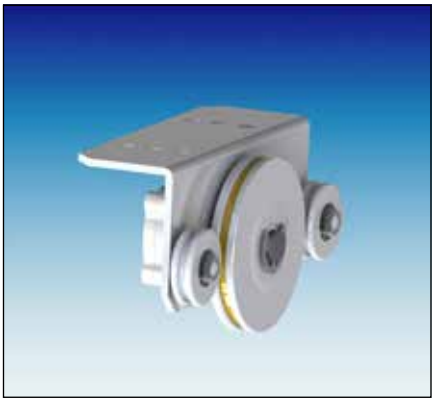

The lamellar radial damper LD 100 with rope pulley Ø 65 and two guiding pulleys is always supplied with mounting bracket. The bracket has 6 holes to allow adapting the mounting position to the local situation.

## Components Included Standard

Radial damper LD 100 with rope pulley Ø 65 in aluminium with Vulkollan insert and 2 guiding pulleys Ø 40, with free wheel, casing in plastics, zinc-plated mounting bracket with 6 fixing holes

## Order Information

| | |
|---|---|
| Radial damper LD 100, rope pulley Ø 65, 2 guiding pulleys Ø 40, zinc-plated mounting bracket | part no. 244121 |
| 25 m of steel rope Ø 3 mm | part no. 700155 |



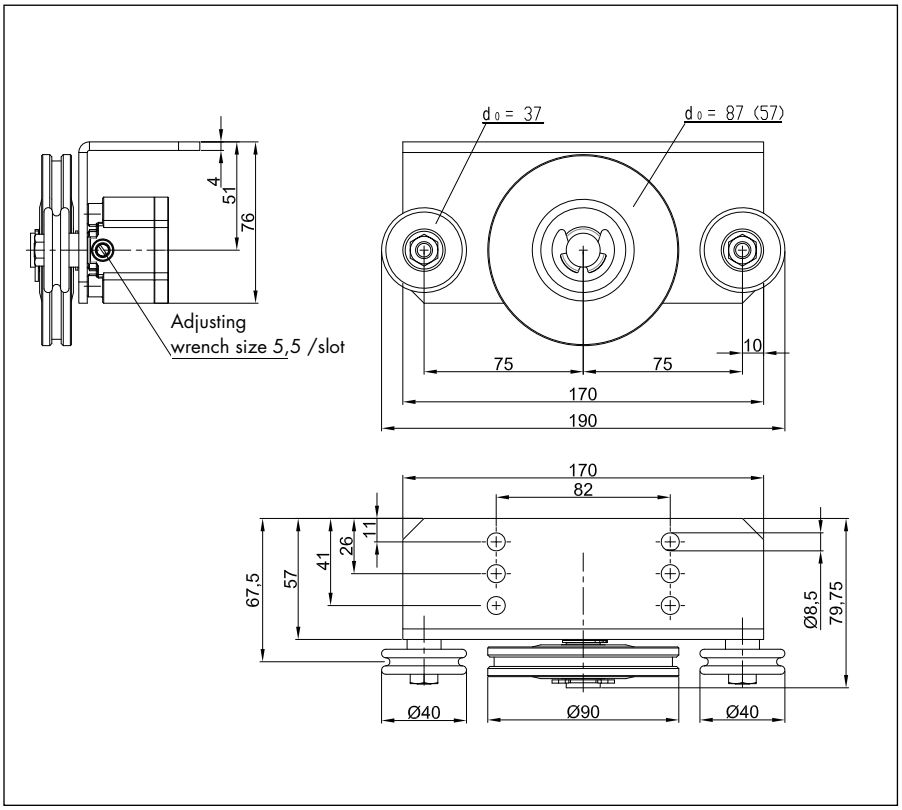
## Radial Damper LD 100 with Rope Pulley Ø 90,

**two small rope pulleys Ø 40 and wide mounting bracket**

The radial damper LD 100 with rope pulley Ø 90 and two additional guiding pulleys Ø 40 damps by means of a tensioned rope Ø 3 mm. When there are higher loads, you should use this model as due to the larger diameter of the rope pulley the rope has longer contact with the pulley and therefore offers a more secure rope guiding.

The center rope pulley of the standard model has a free wheel. The way of guiding the rope around the pulleys determines the direction of damping. It is of course possible to take off the center rope pulley, turn it around and fix it again on the axle.

## Dimensions



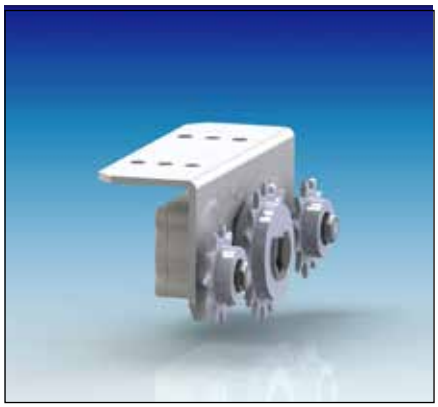

The lamellar radial damper LD 100 with rope pulley Ø 90 and two guiding pulleys is always supplied with mounting bracket. The bracket has 6 holes to allow adapting the mounting position to the local situation.

## Components Included

Radial damper LD 100 with rope pulley Ø 90 in aluminium with Vulkollan insert, with free wheel, 2 small rope pulleys in plastics Ø 40, casing in plastics, zinc-plated mounting bracket with 6 fixing holes

## Order Information

| | |
|---|---|
| LD 100, rope pulley Ø 90, 2 guiding pulleys Ø 40, zinc-plated mounting bracket | part no. 244144 |
| 25 m of steel rope Ø 3 mm | part no. 700155 |



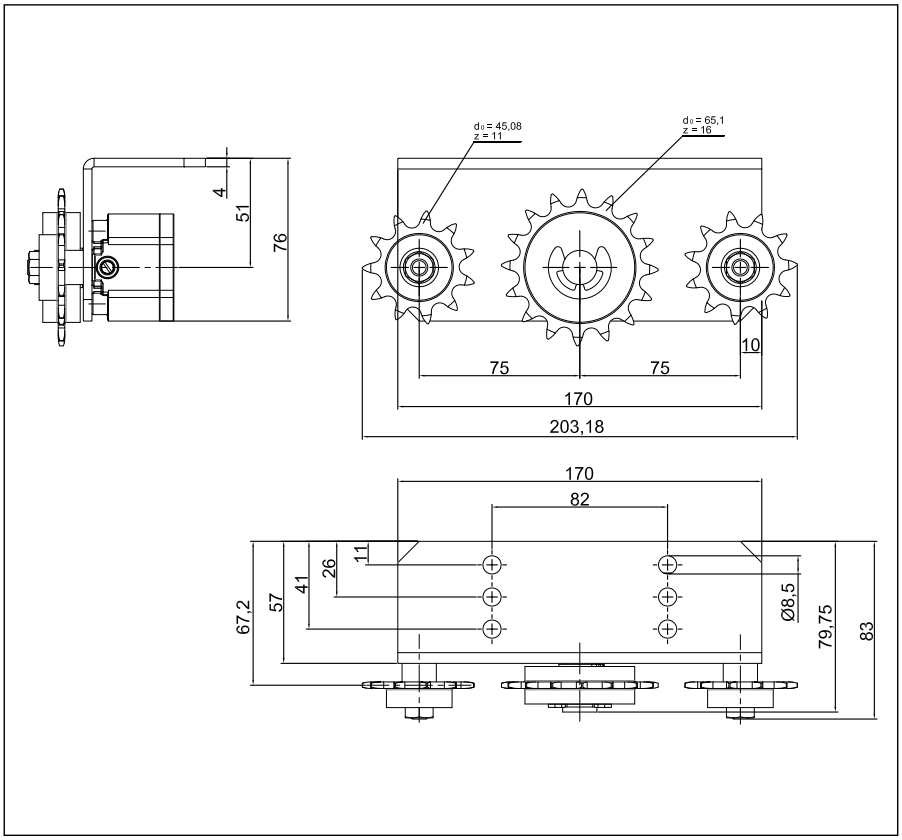
## Radial Damper LD 100 with Chain Wheel Z16,

**two small chain wheels and wide mounting bracket**

The radial damper LD 100 with chain wheel Z16 and two additional guiding wheels Z11 damps by means of a tensioned chain 1/2 x 1/8". This model should always be used in case of high loads as it assures an absolutely non-positive connection between radial damper and the device to be dampened.

As by default the chain wheel Z16 has a free wheel, it dampens only in one direction. The way of guiding the chain around the wheels determines the direction of damping. It is of course possible to take off the center chain wheel, turn it around and fix it again on the axle.

## Dimensions




The lamellar radial damper LD 100 with chain wheel Z16 and two guiding chain wheels is always supplied with mounting bracket. The bracket has 6 holes to allow adapting the mounting position to the local situation.

## Components Included

Radial damper LD 100 with chain wheel Z16, with free wheel, 2 small chain wheels Z11, casing in plastics, zinc-plated mounting bracket

## Order Information

| | |
|---|---|
| LD 100, chain wheel Z16, 2 chain wheels Z11, zinc-plated mounting bracket | part no. 244145 |
| Chain 1/2 x 1/8", piece of 5 m length | part no. 220006 |
| Chain lock | part no. 220007 |

## Radial Dampers LD 50 and LD 100

**Mounting and operation instructions**

The DICTATOR LD radial dampers control the speed of movements over unlimited distances. The damping force and therewith the speed can continuously be adjusted and adapted exactly to the requirements.

The mounting depends on the model. Below you will find the most important instructions for the different types of the LD series.

Information about more mounting accessories can be found in the Damping Engineering catalogue or we will send it to you on request.

## Damping Adjustment

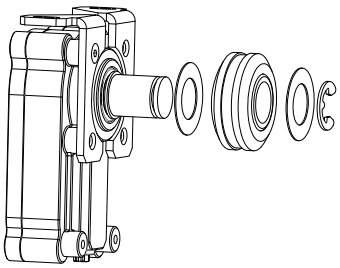
The lateral adjusting screw allows to continuously adjust the damping force to the requirements.

The more you tighten the adjusting screw (turn it clockwise) the higher becomes the damping force. Turning it anticlockwise will reduce the damping force.

**Adjusting screw**

## Mounting of Rope Pulley/Chain Wheel

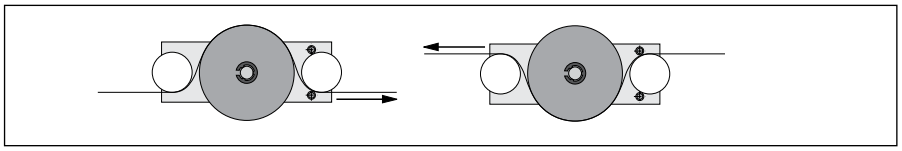
All models with only one damping wheel (rope pulley, chain wheel) are delivered with the wheel not being mounted. By default the rope pulley as well as the chain wheel have a free wheel, i.e. they damp only in one direction. Depending on the mounting and the desired damping direction you put the wheel on the axle and secure it.



## Determining the Damping Direction of Models with 2 Guiding Pulleys

The damping direction of the models with two guiding pulleys is determined by the way the rope or chain is guided around the wheels, see the following illustration.

.



But you also can change the damping direction by taking off the center pulley, turning it around and fixing it again on the axle.



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# DICTATOR Final Dampers

## For Fire Protection Sliding Doors

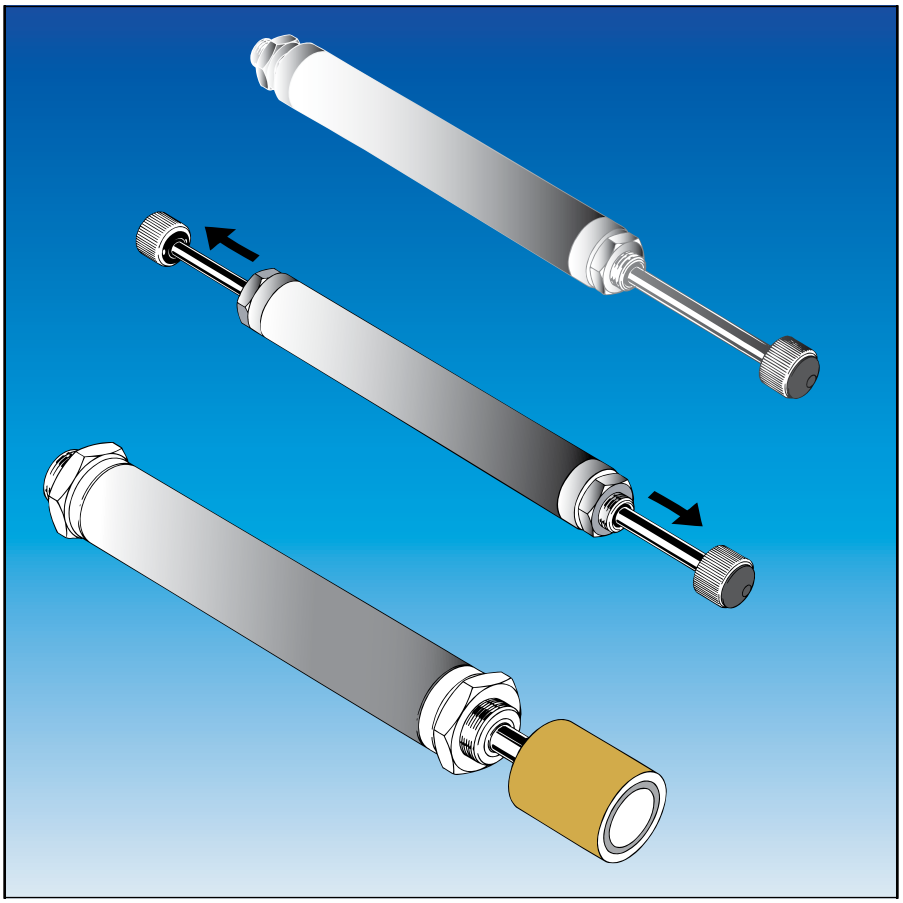
DICTATOR final dampers provide reliable final damping for fire protection sliding doors.

The DICTATOR dampers have officially been tested for the use on fire protection sliding doors and they are subject to an independant quality control by the MPA-NRW.

The force of the damping can continuously be varied by turning the completely extended piston rod. Thus the dampers can be adjusted to match the requirements of different doors. The comparatively long stroke ensures high safety as the door moves into the final position at a very slow speed.

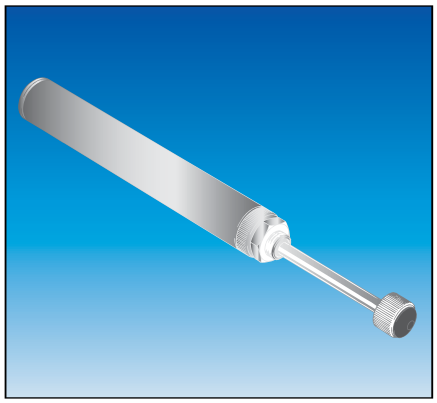
Most dampers have an integrated spring which returns the piston rod to the extended position. We recommend the EDHM model for lightweight doors as it has a zero return force. A permanent magnet fixed to the piston rod pulls the rod out again as soon as the door moves away from the damper. Dampers with a piston rod returned by a magnet instead of a spring ensure that very smooth-running doors are not pushed open again when in the final position.

Besides the EDH dampers with one piston rod we also produce a model ZDH with a piston rod on both sides.



## Technical Data

| | |
|---|---|
| Diameter of piston rod | 10, 12 mm |
| Diameter of cylinder | 28, 35 mm |
| Material piston rod | steel, hard chromed |
| Material cylinder | steel tube, zinc-plated |
| Strokes | 50, 75, 90, 100, 200 mm |
| Damping forces | till 4400 N |
| Operating temperature | 0 °C to +50 °C |



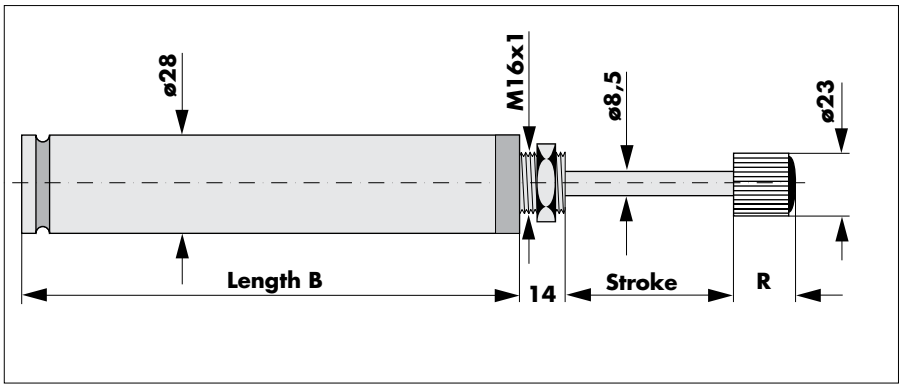
## EDH 28 Final Damper with Single Thread

Fix the damper with its nut and thread. Please make sure the impact direction is exactly parallel to the axis of the damper. A special fixing block is available as an extra accessory.

The damper is adjusted by turning the completely extended piston rod. The door should be slowed down gently, making sure it closes completely.

For heavier doors we recommend the EDH 35 damper with threads on both ends of the cylinder.

## Dimensions



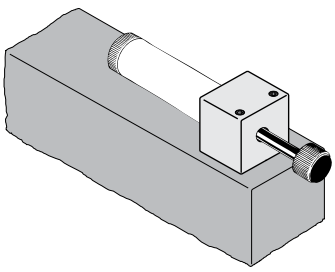

## Technical Data and Order Information

**EDH 28 with single thread**

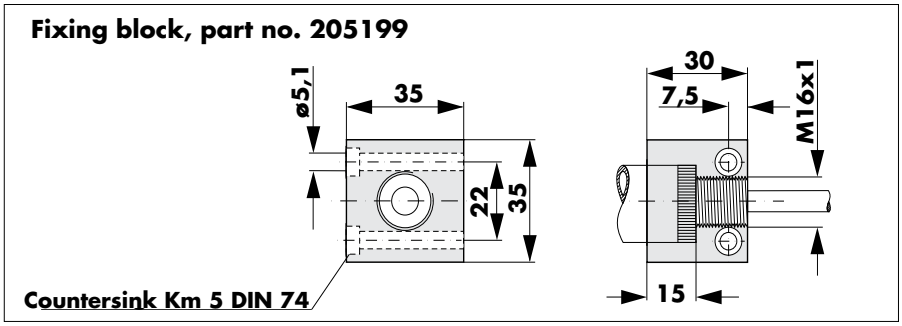
| Part no. | Stroke [mm] | Door weight max. [kg] | Impact mass max. [N] | Returning force max. [N] | Length B [mm] | Buffer R [mm] |
|---|---|---|---|---|---|---|
| 200206 | 100 | 3000 | 3100 | 30 | 257 | 25 |
| 200209 | 75 | 3000 | 3100 | 30 | 185 | 25 |

**Advice:** In the chapter Damping Engineering of our DICTATOR catalogue you will find dampers with needle adjustment. The damping of these can be adjusted by a screw located in the piston rod.

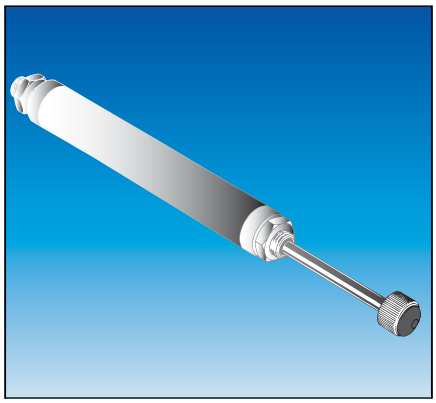
## Accessories



**Fixing block, part no. 205199**




| | |
|---|---|
| Fixing block | part no. 205199 |
| Fixing angle (see next page) | part no. 700159 |

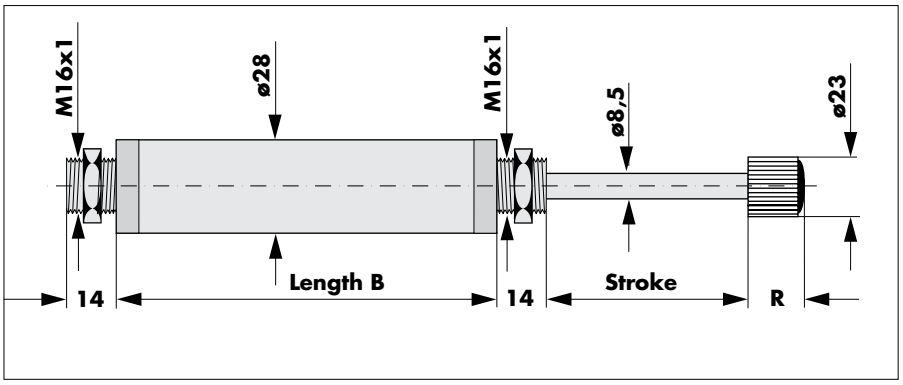


## EDH 28 Final Damper with Thread on Both Ends of the Cylinder

The damper is fixed with both the nuts and threads. Please make sure the impact direction is exactly parallel to the axis of the damper. The additional thread at the end of the cylinder ensures a secure fixing even for heavier doors.

The damper is adjusted by turning the completely extended piston rod. The door should be slowed down gently, making sure it closes completely.

## Dimensions



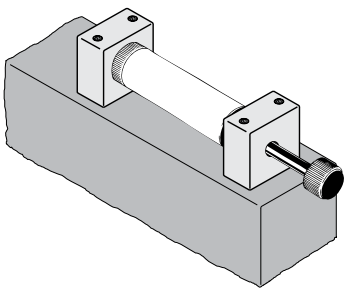

## Technical Data and Order Information

**EDH 28 with threads on both ends of the cylinder**

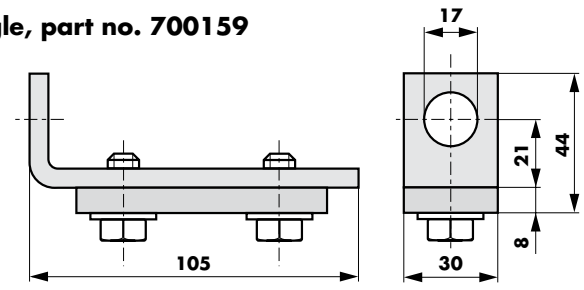
| Part no. | Stroke [mm] | Door weight max. [kg] | Impact mass max. [N] | Returning force max. [N] | Length B [mm] | Buffer R [mm] |
|---|---|---|---|---|---|---|
| 200207 | 90 | 3000 | 3100 | 30 | 220 | 25 |

**Advice:** In the chapter Damping Engineering of our DICTATOR catalogue you will find dampers with needle adjustment. The damping of these can be adjusted by a screw located in the piston rod.

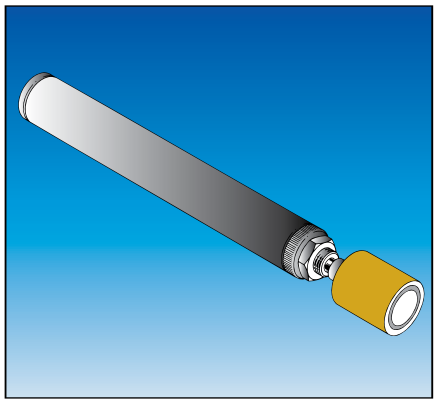
## Accessories



**Fixing angle, part no. 700159**




| | |
|---|---|
| Fixing block (see last page) | part no. 205199 |
| Fixing angle | part no. 700159 |

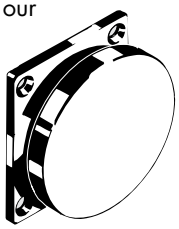


## EDHM 28 Final Damper
## Piston Rod Returned by Magnet

The EDH 28 final damper with magnet is particularly recommended for lightweight sliding doors as it has a zero return force. When the door opens the magnet pulls the piston rod back to the extended position.

The damping force is adjusted by turning the completely extended piston rod. The door should be slowed down gently, making sure it closes completely.

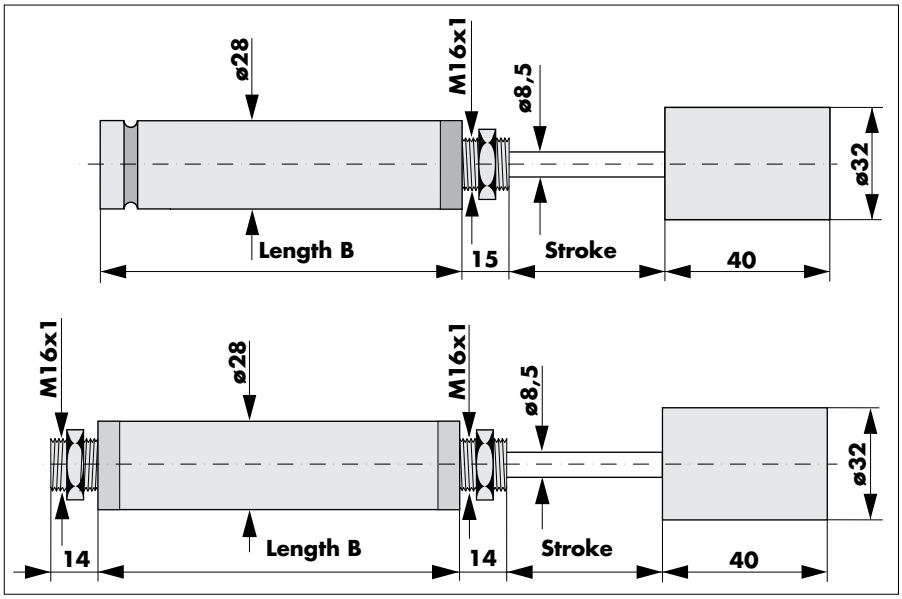
As a counterpart of the magnet, please provide a flat iron or use our AP GD 50 G 16 counter plate (part no. 040025, see chapter Fire Door Control Solutions) when installing the damper.



The damper is fixed with the nut and thread. Please make sure the impact direction is exactly parallel to the axis of the damper. Please use the EDHM damper with two threads on heavier doors.

Fixing blocks are available as extra accessories (please see diagrams on preceding pages).

## Dimensions




## Technical Data and Order Information

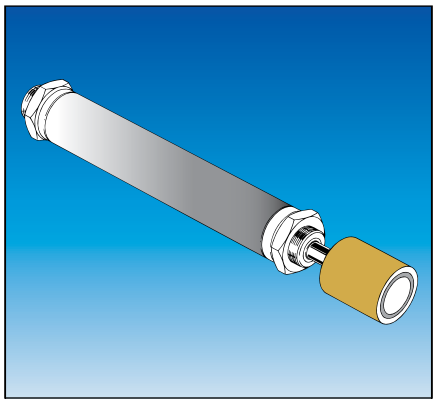
**EDHM 28 with one thread and magnet**

| Part no. | Stroke [mm] | Door weight max. [kg] | Impact mass max. [N] | Returning force max. [N] | Length B [mm] | Magnet |
|---|---|---|---|---|---|---|
| 203150 | 50 | 3000 | 5200 | 0 | 130 | ø 32 |

**EDHM 28 with threads on both ends of the cylinder and with magnet**

| | | | | | | |
|---|---|---|---|---|---|---|
| 203015 | 120 | 3000 | 2600 | 0 | 220 | ø 32 |

**Advice:** To help you select the appropriate damper, formulae and examples for calculating the required damping force can be found in the chapter Damping Engineering.



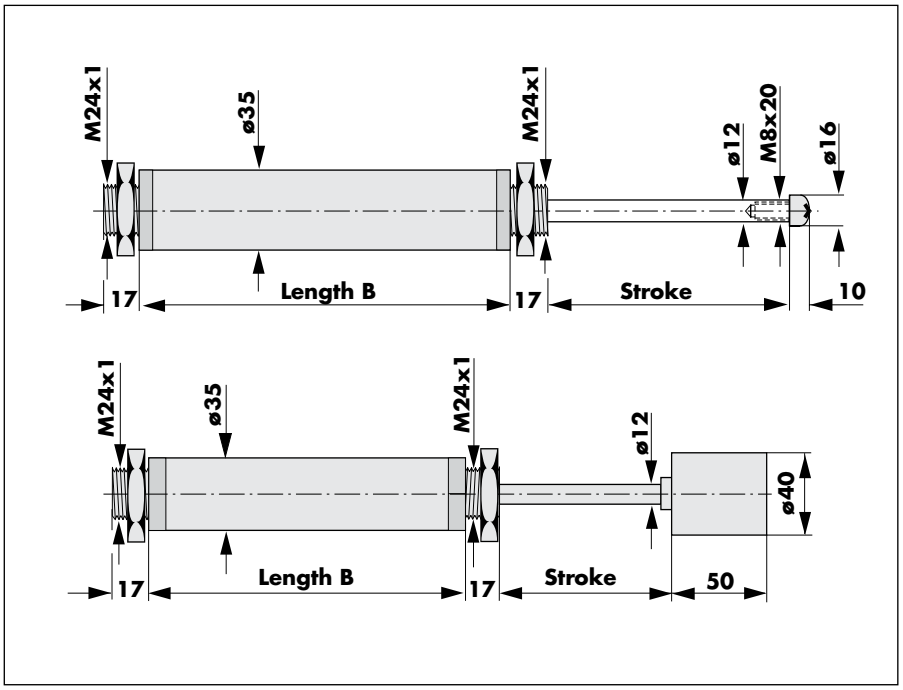
## EDH 35 Final Damper with Magnet or Returning Mechanism

The EDH 35 final damper with magnet or integrated returning mechanism is designed especially for sliding doors. The type EDHM with magnet disposes of no integrated return spring thus ensuring also smoothly running lightweight sliding doors to stay completely closed. When opening the door the magnet pulls the piston rod back to the extended position.

When installing the damper please provide as a counterpart of the damper a flat iron or use our AP GD 50 G 16 counter plate (part no. 040025, see chapter Fire Door Control Solutions).

The damper is fixed with the nuts and threads. Please make sure the impact direction is exactly parallel to the axis of the damper, otherwise it can become damaged.

## Dimensions




## Technical Data and Order Information

**EDH 35 with threads on both ends of the cylinder**

| Part no. | Stroke [mm] | Door weight max. [kg] | Impact mass max. [N] | Returning force max. [N] | Length B [mm] | Magnet |
|---|---|---|---|---|---|---|
| 203115* | 200 | 6000 | 4400 | 30 | 330 | - |

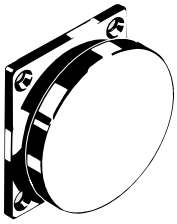
* Damper had the expired German certificate no.130119826. It is replaced by the EDHM35, part no. 200600.

**EDH 35 with threads on both ends of the cylinder and with magnet**

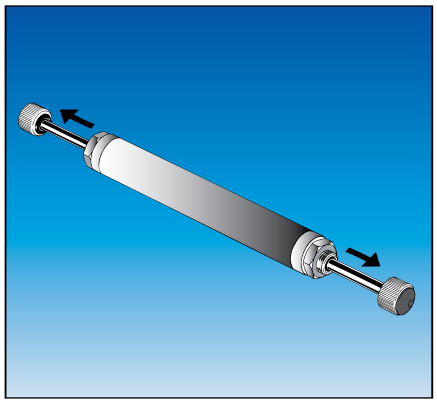
| | | | | | | |
|---|---|---|---|---|---|---|
| 200600** | 200 | 6000 | 4400 | 0 | 330 | ø 40 |

** Number of German surveillance contract: DO 18.3

## Accessories



| | |
|---|---|
| Counter plate AP GD 50 G 16 | part no. 040025 |
| Buffers to screw on (only for type 203115) | see chapter Damping Engineering |

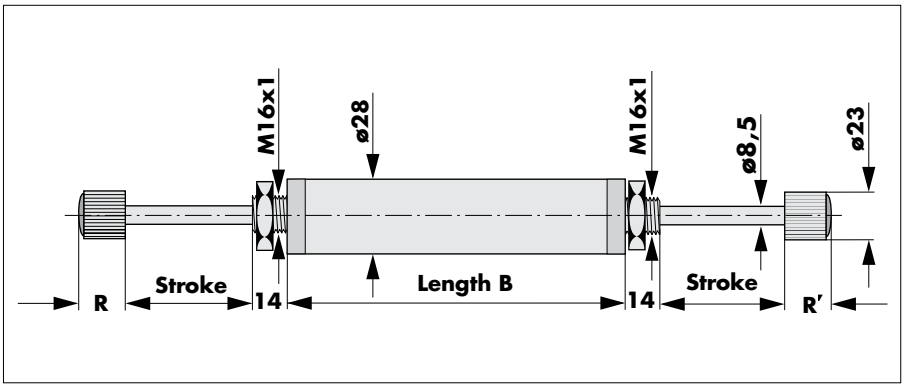


## ZDH 28 Bi-Directional Final Damper

The damper is fixed with the nuts and threads. Please make sure the impact direction is exactly parallel to the axis of the damper. We provide a fixing block as accessory.

The damper is adjusted on both sides separately by turning the completely extended piston rod. The door should be slowed down gently, making sure it closes completely.

## Dimensions



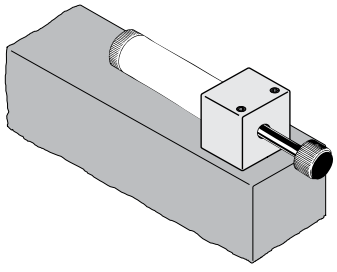

## Technical Data and Order Information

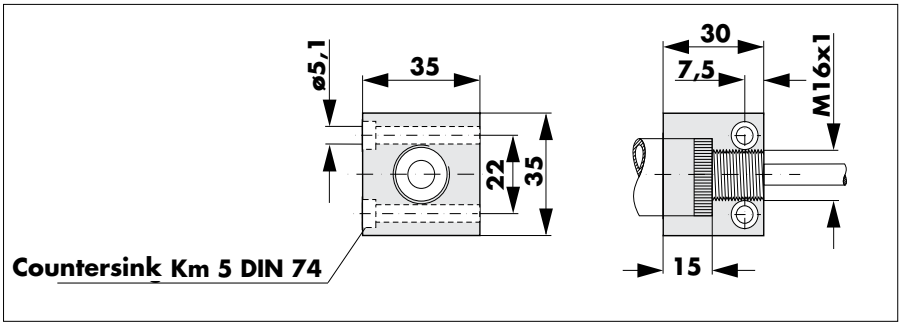
**ZDHa 28 V 90 SP**

| Part no. | Stroke [mm] | Door weight max. [kg] | Impact mass max. [N] | Returning force max. [N] | Length B [mm] | Buffer R [mm] |
|---|---|---|---|---|---|---|
| 210112 | 90 | 1000 | 3100 | 30 | 235 | 25 |

**Advice:** To help you select the appropriate damper, formulae and examples for calculating the required damping force can be found in the chapter Damping Engineering.

## Accessories






Fixing block part no. 205199

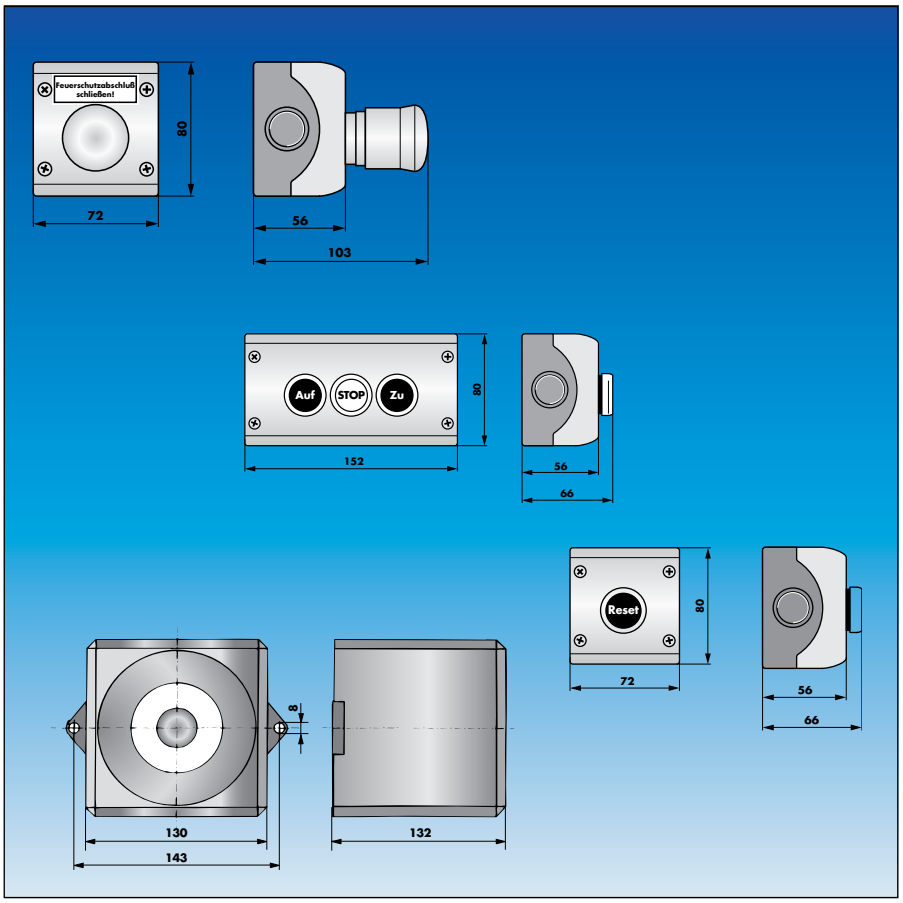
# Safety and Operating Equipment

## for DICTAMAT Door Operators

On the following pages you will find a number of operating and safety equipment to go with the DICTATOR fire protection door operators. In case of special requirements please ask for an offer. When choosing the safety equipment you should observe the requirements of the relevant directives.

Please observe the maximum capacity of the binders in the control system. The power consumption of the connected devices must not exceed this value. An additional power pack should be ordered, if necessary. (Please see the chapter Fire Door Control Solutions in the DICTATOR catalogue).

More safety and operating elements can be found beginning on page 04.049.00 in the chapter Door and Gate Operators of the DICTATOR catalogue.




## Summary

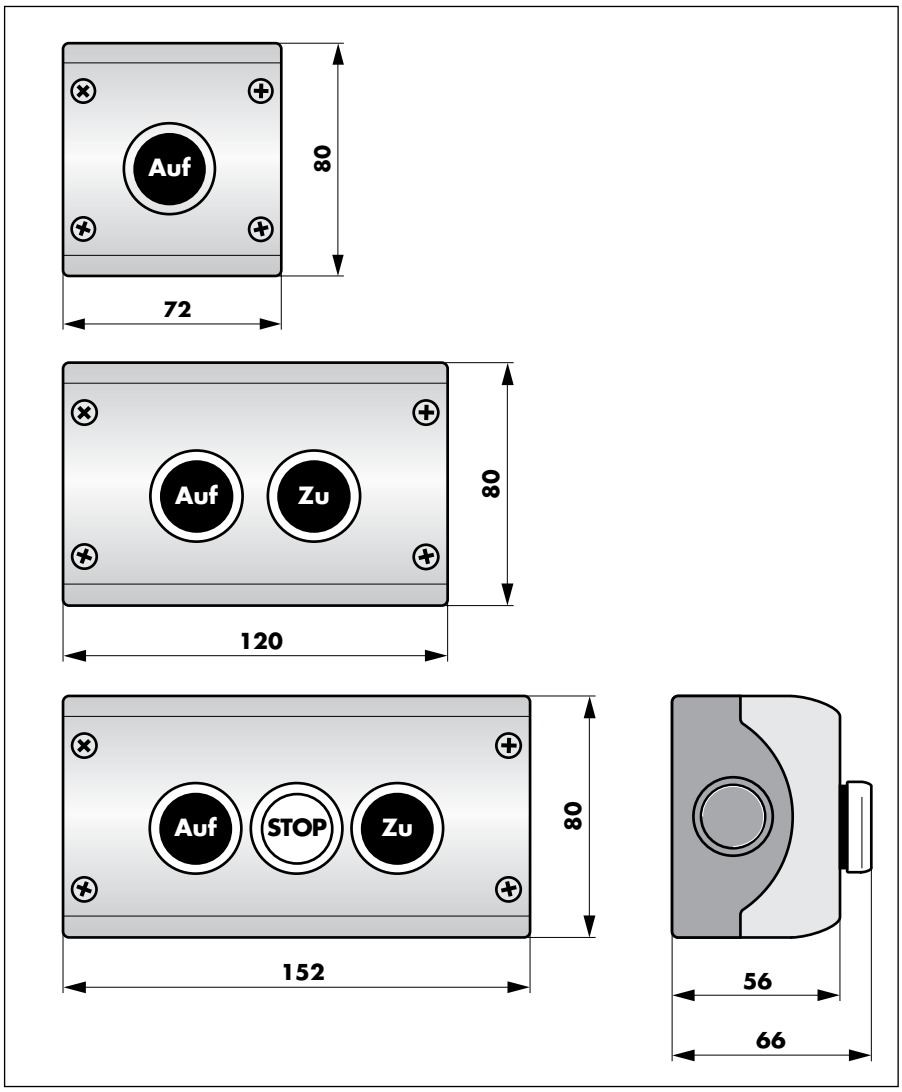
# Push Button Switches

## Functioning

DICTATOR furnishes a range of different push button switches to operate the door drives DICTAMAT. Normally a switch with two or three push buttons is used (OPEN/CLOSE or OPEN/STOP/CLOSE). The hand switches shown on this page are provided with the following **contacts**:

| | |
|---|---|
| OPEN, CLOSE | make contact (NO) |
| STOP | break contact (NC) or make contact (NO) (depending on the type of control system used) |

## Dimensions




## Technical Data

| | |
|---|---|
| IP rating | IP 67 |
| Operating temperature | -25 °C to +70 °C |

## Order Information

| | |
|---|---|
| Push button switch OPEN (make contact, NO) | part no. 700185 |
| Push button switch OPEN - CLOSE, (2 make contacts, NO) | part no. 700117 |
| Push button switch OPEN-STOP-CLOSE (STOP = break contact, NC) | part no. 700142 |
| Push button switch OPEN-STOP-CLOSE (STOP = make contact, NO) | part no. 700147 |



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# Key Switch

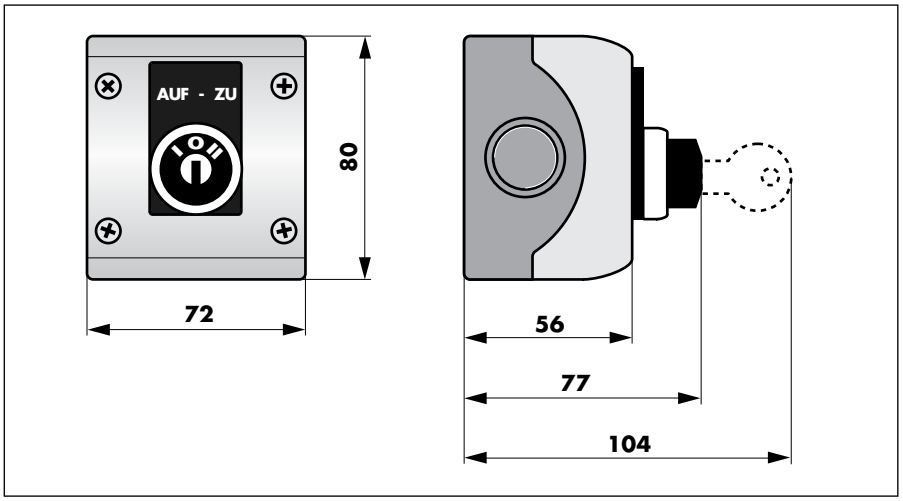
## Functioning

A **key switch** is used whenever the use or the operation of the door is restricted to certain persons. The key switches offer only two operating possibilities: OPEN and CLOSE. Is the key switch part of a locking system the key switches can be furnished with a half cylinder lock, to be replaced with one belonging to the locking system.

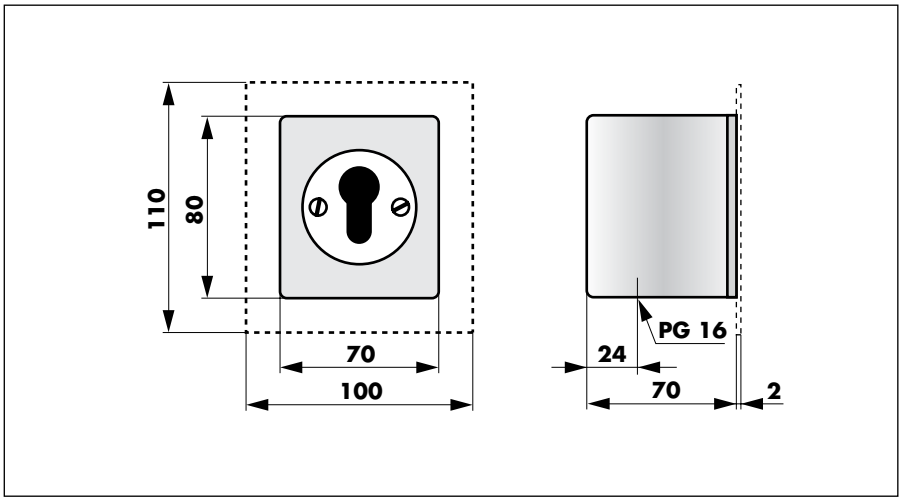
**Contacts**:

| | |
|---|---|
| OPEN, CLOSE | make contact (NO) |

## Dimensions Key Switch




## Dimensions Key Switch for Half Cylinder Locks




## Technical Data

| | |
|---|---|
| IP rating key switch | IP 67 |
| IP rating key switch with half cylinder lock | IP 54 |
| Operating temperature | -25 °C to +70 °C |

## Order Information

| | |
|---|---|
| Key switch OPEN - CLOSE, surface type | part no. 700113 |
| Key switch OPEN - CLOSE with half cylinder lock, surface type | part no. 700114 |
| Key switch OPEN - CLOSE with half cylinder lock, flush mounting | part no. 700115 |

# Large Surface Switch, Pulling Switch

## Functioning

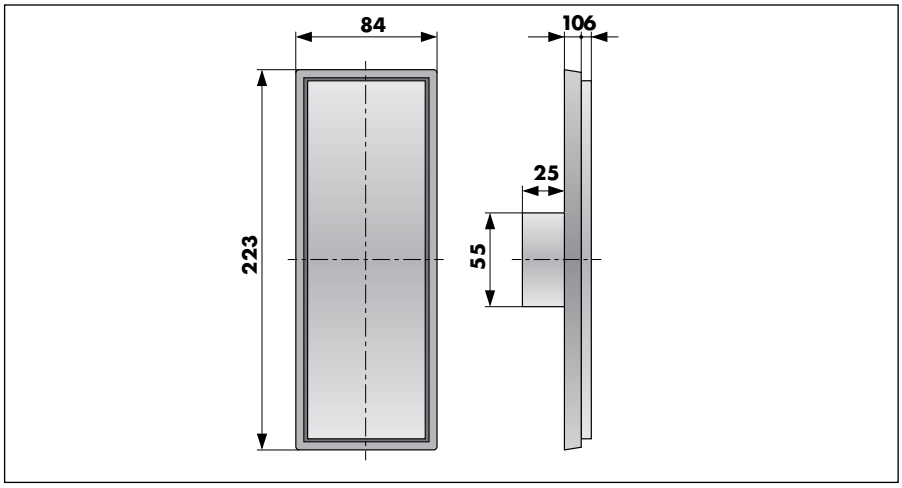
**Large surface switches** are recommended when the persons using the door either do not have empty hands and should be able to operate the switch with their elbow, or to facilitate their use to handicapped persons.

The **pulling switch** is mainly used in combination with the automatic closing when fork lift trucks frequently use the doors.

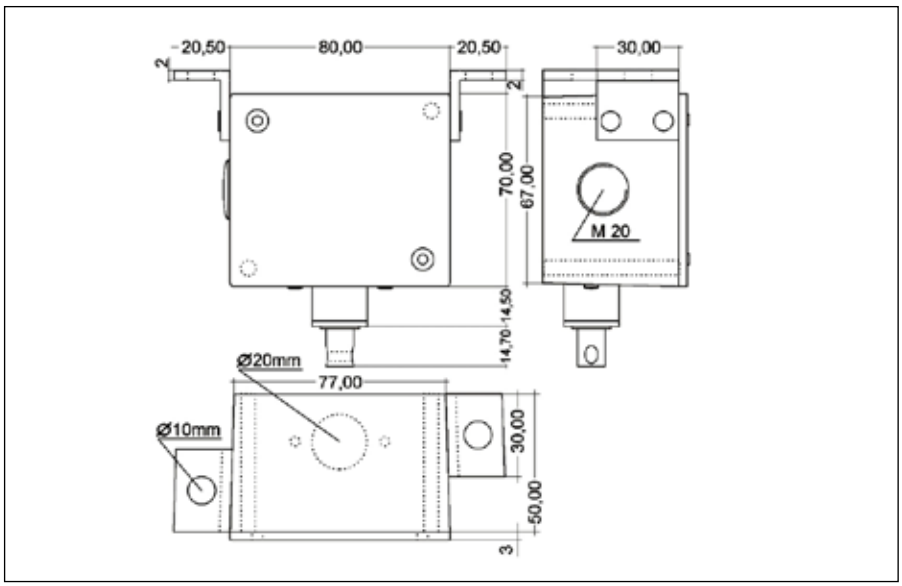
**Contacts**:

Make contact (NO)

## Dimensions Large Surface Switch




## Dimensions Pulling Switch




## Technical Data

| | |
|---|---|
| IP rating large surface switch | IP 30 |
| Operating temperature large surface switch | -20 °C to +50 °C |
| IP rating pulling switch | IP 65 |
| Operating temperature pulling switch | -25 °C to +70 °C |

## Order Information

| | |
|---|---|
| Large surface switch, flush mounting, stainless steel appearance | part no. 700194 |
| Pulling switch (for alternating impulse OPEN-CLOSE) | part no. 700164 |

## Special Operating Elements for Fire Protection Doors

### Functioning

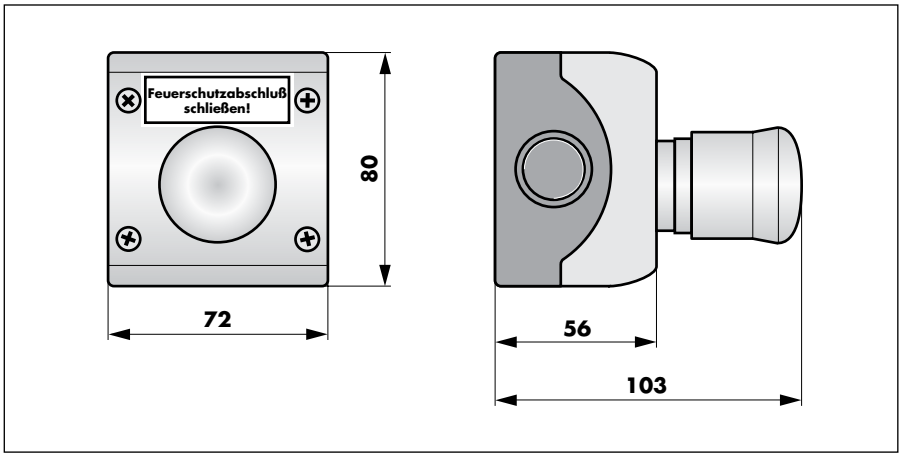
Fire protection doors have to close automatically in case of alarm. The alarm can be triggered by a smoke detector or by a hand release switch. In case of the semi-automatic door operators DICTAMAT 560, 570 and 650 a push-to-lock key is required. For the fully automatic door operators the standard **hand release switch**, part no. 040005 or 040053 (see chapter Fire Door Control Solutions) is sufficient.

After every alarm the control system requires a **RESET** command to resume normal operation.

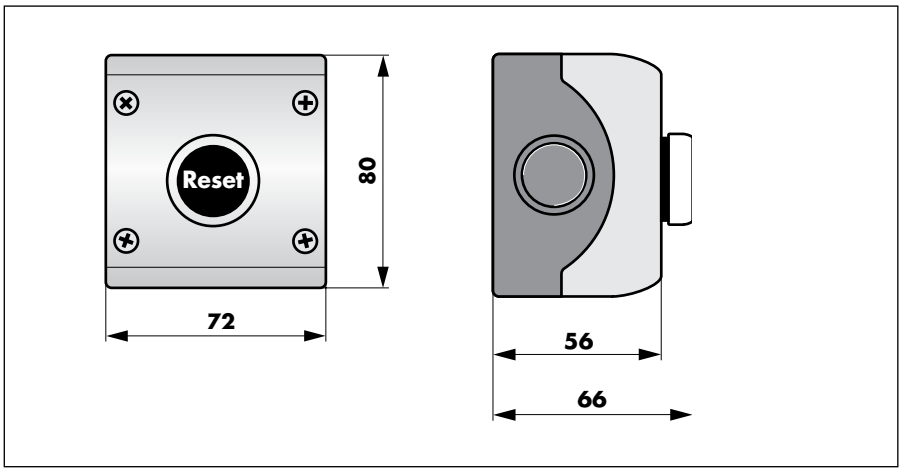
**Contacts**:

| | | | |
|---|---|---|---|
| OPEN | 2 x make contact (NO) | STOP | make contact (NO) |
| CLOSE | break contact (NC) | | |

### Dimensions Push-to-Lock Hand Switch




### Dimensions RESET




### Technical Data

| | |
|---|---|
| IP rating | IP 67 |
| Operating temperature | -25 °C to +70 °C |

### Order Information

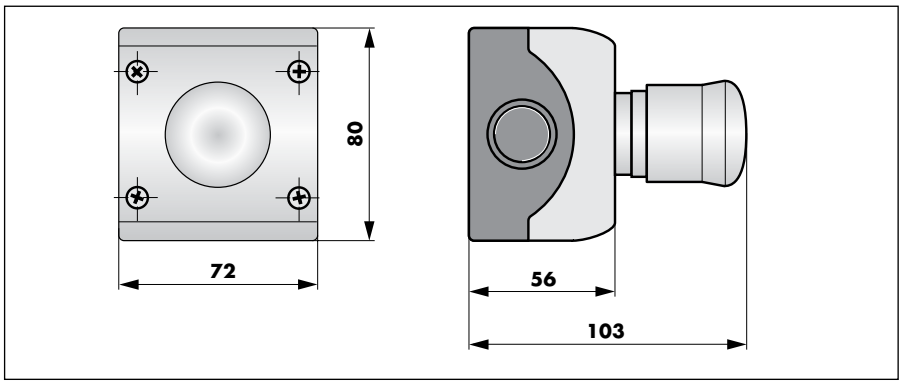
| | |
|---|---|
| Push-to-lock hand release switch (break contact - NC) | part no. 700132 |
| RESET switch (make contact - NO) | part no. 700112 |

# Other Switches: Emergency-STOP, Limit Switch, Main Switch

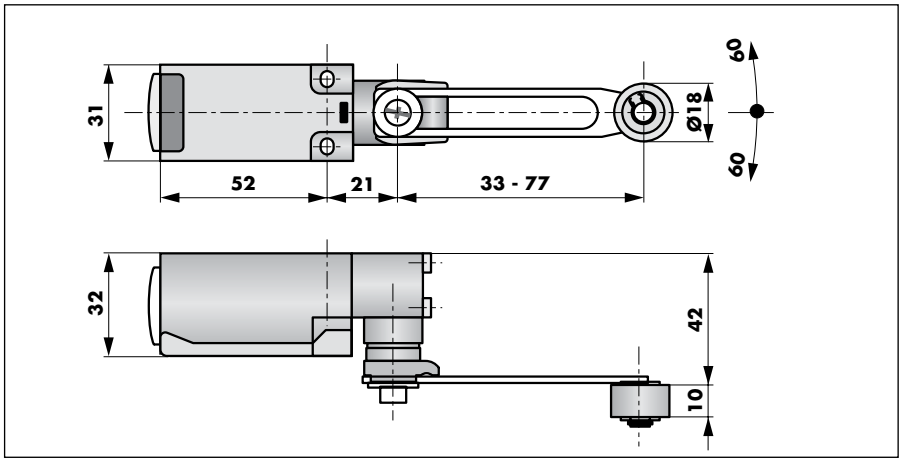
## Functioning

For large sliding doors an **emergency-stop switch** should be provided for safety reasons.
**Limit switches** are necessary for all door operators without integrated position control system.
In order to be able to cut off the power supply completely, a **main switch** should be installed directly in the power supply of the control system.

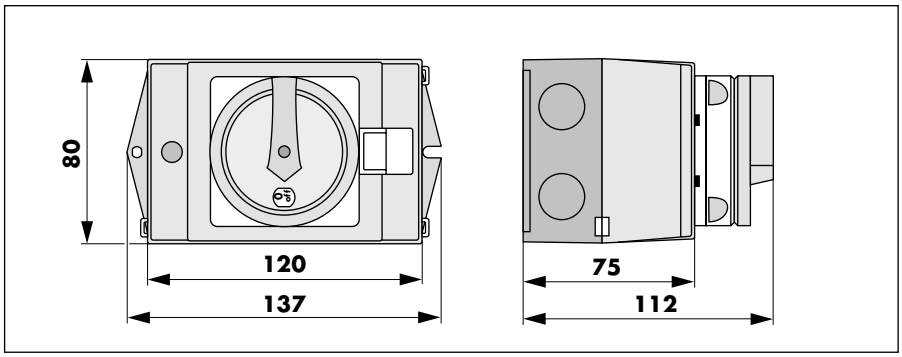
## Dimensions Emergency-STOP Switch




## Dimensions Limit Switch




## Dimensions Main Switch




## Technical Data

| | |
|---|---|
| IP rating | limit switch IP 65 |
| Operating temperature | -25 °C to +70 °C |

## Order Information

| | |
|---|---|
| Emergency-STOP switch (push-to-lock) (break contact - NC) | part no. 700198 |
| Limit switch (break contact - NC) | part no. 700156 |
| Lockable main switch (for padlock) | part no. 700179 |

# DICTATOR Door Operators

## Customised Designs for Fire Protection Doors

DICTATOR offers a wide range of DICTAMAT door operators, from **semi-automatic door operators** (opening by hand, controlled closing by the DICTAMAT door operator) up to the **fully automatic door operator with microprocessor control system** for hinged and sliding doors, and for fire protection doors.

But even this **comprehensive product range** provides not a suitable standard operator for all applications. Often doors, wall and window elements, multimedia facilities not only have to be moved, they also have to conform to aesthetic requirements and architectural considerations.

Many years of experience enable DICTATOR to design and develop bespoke door operators for unusual applications and demanding specifications. Either by modifying a standard unit or by manufacturing a completely **bespoke unit** a suitable operator can be produced using our widely flexible manufacturing facilities.

On the following pages you will find some examples of our **customised designs for fire protection doors**.

## Technical Data

| | |
|---|---|
| Door sizes | 0.5 m - 93 m (largest door at the moment) |
| Moving elements | hinged, folding, sliding, telescopic doors, |
| | windows, wall/façade elements, multi-media facilities |
| Motors | direct current, three-phase current, explosion-proof |
| Control systems | simple electric control systems up to SPS control |
| | systems with frequency converter, also with battery back-up |
| Components included | complete door operator with fixing accessories and |
| | control system (including installation, if necessary) |

## 60 m, 80 m, 93 m Fire Protection Telescopic Sliding Doors

A special design of fire protection telescopic sliding doors has proved to be beneficial on four occasions in Spain. The fire protection doors have been installed in the **Madrid airport** and in shopping centres of the **Corte Inglés** and **Pryca**. The doors are opened in the morning and closed at night. By using these doors it is unnecessary to have fire walls that restrict access during the day. Airport visitors can wander freely through malls and concourses without hindrance from fire walls.

## 93 m Door in the Corte Inglés in Santander/Spain

## Customer's Specification

The sliding fire protection doors open from the centre. Each side of the door consists of **up to six variable span wings**, each with a **width of up to 10 meters**. The whole **door system** extends from **rails on the ceiling**. On the floor there only is an approx. 30x30 mm wide guiding slot for one door wing. The door is opened in the morning and closed in the evening. It is operated by impulse with OPEN/STOP/CLOSE functions. As safety devices a contact edge is connected and a warning siren when the door closes. When the safety device is triggered, the door must stop within 10 cm. In the event of fire the door closes immediately (controlled via a central alarm). However, even **in the event of alarm** the door must stop immediately after a signal from the **safety device**. After the safety device has been **released** the door must continue to **close** by itself (time is adjustable).

## Solution

Each side of the door is moved by a **three-phase motor**. The force is transferred via a **tensioned chain**, guided in special fittings that prevent sagging. Both sides of the **variable span wings are synchronised** with each other. Both motors are managed by an **SPS control system with a frequency converter**. This enables adjusting the functions to correspond to individual customer requirements. Further adjustments which may be required later can without difficulty be realised by the SPS control system.

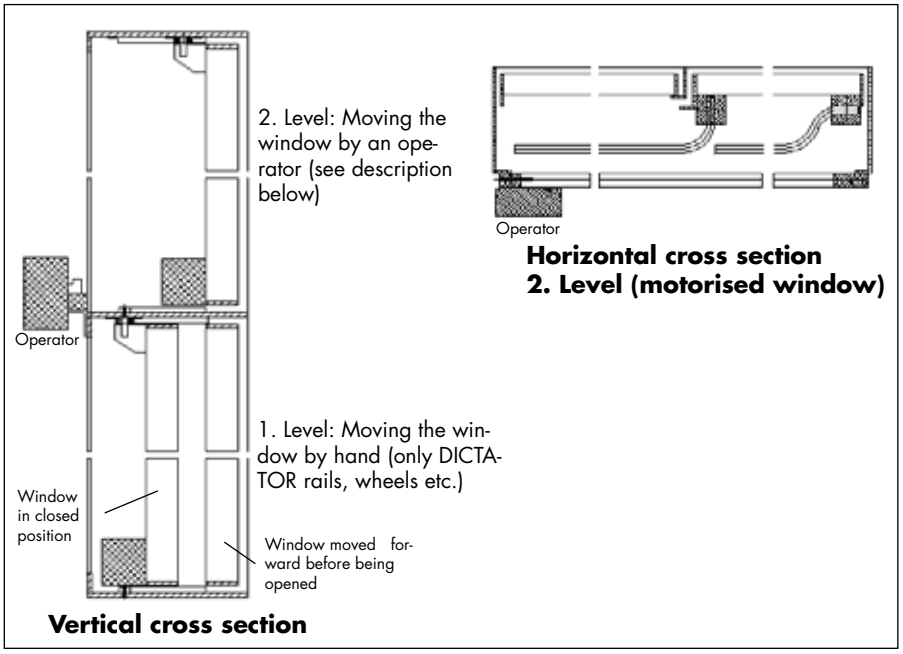
The **fire protection function** is guaranteed by a **battery back-up**. In two of the examples this was set up by the customer and in the other two DICTATOR supplied the battery back-up with the control system.

## Sliding Window Fronts - for Ventilation / Smoke Evacuation

In modern architecture it is often necessary to have sliding window fronts. Sometimes they need to be moved aside for ventilation or smoke extraction, e.g. in the **‚Pinakothek der Moderne' in Munich.**

A frequently occurring problem is the lack of space, which means the drive unit has to be installed outside and therefore must be water-proof. Furthermore the window and façade components usually are very heavy and the drive unit must always function reliably, even during high winds exerting high pressure on the façade.

## Basic Diagram of Motorised Window Construction in the Pinakothek der Moderne in Munich




## Customer's Specification

In the case of the ‚Pinakothek der Moderne' in Munich the sliding windows must be opened for ventilation and during smoke alarm. The **window elements** weigh 400 kg each and must firstly be moved **inwards** (towards the room) and **then to the side**. The windows are track mounted with a high level guide rail. Mechanical locking is not possible, but the window fronts have to remain closed even with **strong winds**. In direct sunlight the windows can quickly become **very hot**.

## Solution

The task was solved with a customized version of our **DICTAMAT 4000** door operator with a 600 N force. The motor is suitable for temperatures up to 120 °C (60 min). The force is transferred by a chain. Electromagnets ensure the windows remain locked in the closed position. The magnet is automatically switched off by the **N5 control system** when the window opens or in the event of fire. In the case of power failure the control system continues to supply electricity to the magnet with a built-in battery back-up.

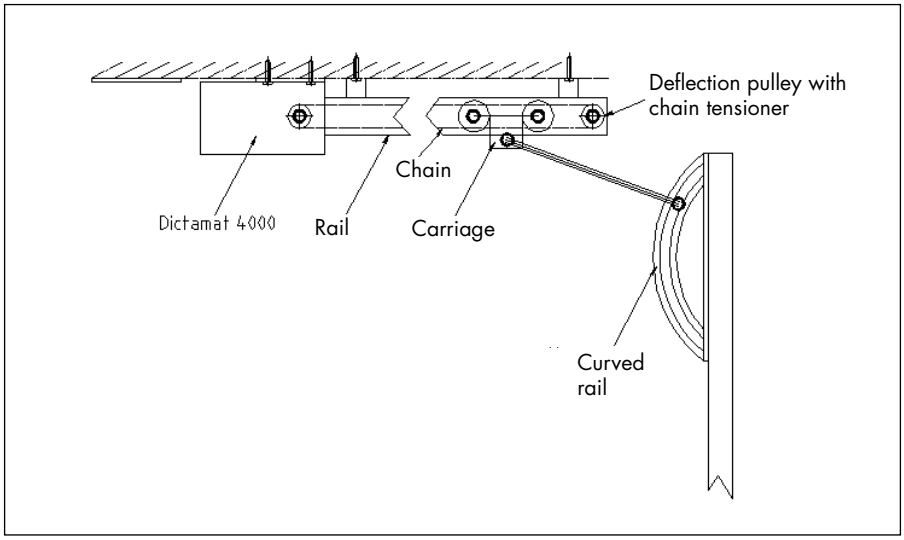
The most difficult problem to overcome was the required mobility of the window and to prevent it becoming stuck after a strong gust of wind. This was solved with a **custom-made track, guide rail, wheel, and flexible window hanger with articulated lever**. These were designed partly in AISI 316.

## Up and Over Fire Protection Doors

Fire protection doors are generally hinged or sliding doors, but due to constructional reasons this is not always possible. If a custom-made door is installed, normal fire protection door operators cannot be used.

As in the case of the extra large sliding doors, DICTATOR can help with a customised design.

## Up and Over Fire Protection Doors in the Federal Office Garage in Vienna




## Customer's Specification

Up and over fire protection doors are much heavier than normal garage doors due to their **fire protection function**. They **weigh between 400 kg** and **700 kg**, consequently the operator initially requires the **threefold force**. This force is considerably reduced as soon as the door is tilted as a sash weight takes over the counter weight demanded by the door.

In the event of fire the doors, which usually remain open at all times, must be closed (connected to a central fire alarm system) and people and vehicles be protected by a light barrier or a contact switch.

## Solution

A **DICTAMAT 4000** door operator with a **specially developed transmission** was installed in a **construction** working with **chain**. To transfer the highest force possible when the door begins to open, a **special construction** was developed including a **guide rail and rail with special carriages**.

The **N4 emergency control system with additional relay** was used. It has a contact which connects to the Central Fire Alarm System. The drive unit closes the door automatically in the event of fire. Fail safe operation is maintained by the built-in **back-up battery** in the event of power failure. On receipt of an alarm signal a relay switches the function of the OPEN switch on the door to an emergency function. This allows the door to be opened briefly (allowing escape) but closes automatically after the pre-set time has elapsed. If the light barrier or contact switch are triggered when the door is closing during fire, the door remains where it is. If the light barrier is released, the door will automatically close by itself after the pre-set time has elapsed.