

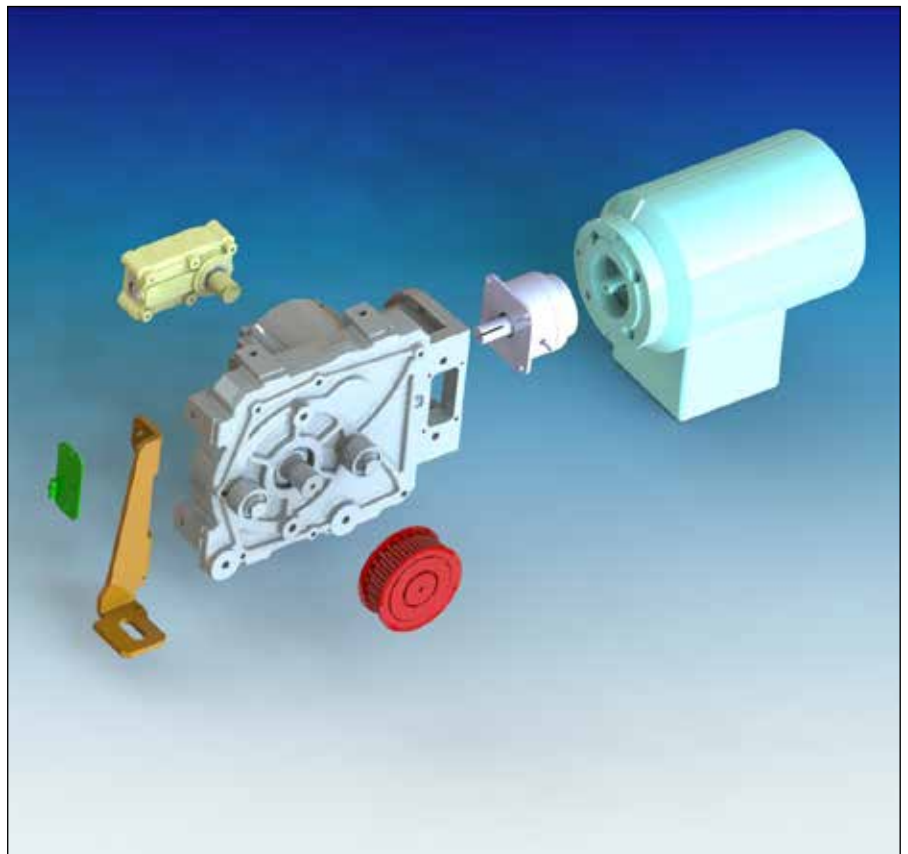
## DICTAMAT MultiMove

### The Machinery Directive Compliant Drive Concept

The new operating system DICTAMAT **MultiMove** revolutionizes the door industry. It newly defines user-friendliness and conformity to standards!

- The modular structure offers **extremely high flexibility** and adaptability to customers' requirements.
- The door can be moved manually also during a power failure due to the **absolutely smooth-running gearbox**, no need for an expensive electromagnetic clutch.
- For more safety: **integrated recognition of obstacles with power interruption** also with AC motors.
- **Complies with the demands of the Machinery Directive 2006/42/EG.**

The Machinery Directive imposes a very high responsibility on the "manufacturer of the machine door" i.e. the company who installs an operator on a door. The drive system DICTAMAT *MultiMove* is adjusted already in factory to the respective data of the door. This way the requested stopping distances etc. are met without needing time consuming adjusting on site. This also considerably reduces the laborious approval tests to get the declaration of conformity.



### System Components

<b>Gearbox</b>	worm gear with best smooth-running qualities, divers, multi-stage gear ratios possible
<b>Motors</b>	very different motors, DC as well as AC
<b>Power transmission</b>	toothed belt, chain, rack, operating arms for hinged doors/gates etc.
<b>Other components</b>	encoder, dampers for fire protection, hold-open, fixing and mounting accessories etc.
<b>Control system</b>	modular structure with logic unit as basic module, other modules for different motors, fire protection, emergency power supply, special functions etc.



## DICTAMAT MultiMove Flexible, Customer-Oriented, Powerful

Decennies of experience with drive technology and in particular with solving special customer requirements influenced the development of the new drive concept DICTAMAT MultiMove. The aim was to offer our customers a drive system which leaves nothing to be desired:

This includes also that the drive concept DICTAMAT MultiMove **meets** the partly extremely high demands of the **Machinery Directive 2006/42/EG**. This facilitates our customers who by mounting a door operator on a door turn it into a "machine", a setting up with the prescribed tests with the least possible effort.

### What Moves MultiMove?

The heart of the **DICTAMAT MultiMove** door operators is the **gearbox**. It is extremely smooth-running. And nevertheless meets the demands of the EN 12453 regarding the very short stopping distances in case of a power cut, thanks to the - in this scope of application - novel **capacitor principle**.

This means for the user: **without current doors and gates can easily be moved, without** needing an **expensive additional electromagnetic clutch** or having to manually uncouple the door and later to couple it back again.

The gearbox concept allows thanks to its inner modular structure very different, also multi-stage transmissions, all using the same casing. Therefore, an optimum solution for the most different requirements can always be designed – and with standard components! The decisive advantage: Often it is possible to use a less strong motor which consumes less energy because the modular gearbox makes the optimum use of the motor power.

Furthermore, the gearbox can be combined with any type of **motor**: DC, AC, everything is possible.

Same as the optimised capability the **safety** of the door user, the protection of man and material, is of highest priority to the DICTAMAT MultiMove system:

- A very easy setting up with **automatised teach-in run** nearly eliminates any errors during setting-up and adjusting.
- Intelligent detection of obstacles with **power interruption for AC and DC door operators**.
- **Short stopping distances complying with the standards.**

The **position control** is usually realized by an encoder with very high resolution which allows the exact positioning of the door even with long travels.

The **power** can be **transmitted** either by toothed belt, chain, rack or in case of hinged doors e.g. an operating arm etc.

All operators of the DICTAMAT MultiMove series are controlled by an also **modular structured control system** which can be adapted in an optimum way to the respective application.

The control system is based on an uniform logic unit which is suitable for all operators. All the other criteria as DC or AC motor, fire protection, emergency power supply, special functions are realized by additional modules which can freely be combined with the basic module. Each control system is configured in production for the respective door operator so that the "machine door" meets the demands of the Machinery Directive already to a large extent and when setting up the installation only little adjusting work is left. Therefore, adjusting doesn't take a lot of time and the **costs for mounting and setting up are drastically reduced**.

Furthermore, this control system offers the **possibility to later upgrade the performance and function** - without having to replace the complete control system.

**The new DICTAMAT MultiMove** drive concept offers **optimum solutions for very differing applications**, assures a **simple, uncomplicated mounting and setting up** and for many years an operation without problems and disturbances.



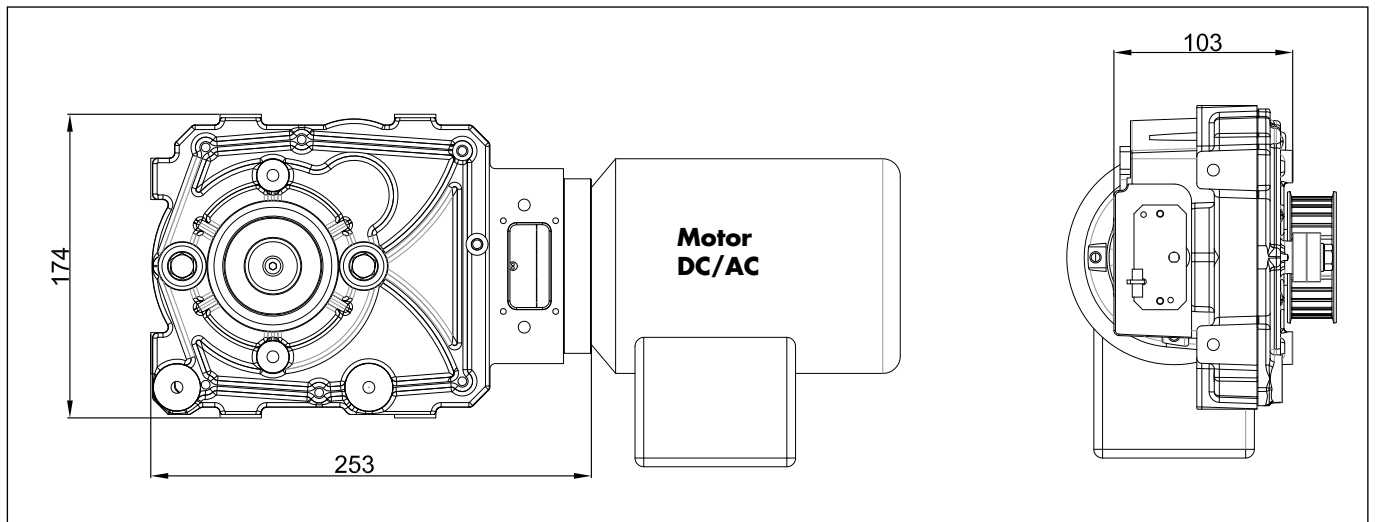
### DICTAMAT MultiMove - One Gearbox for All

The gearbox constitutes the heart of the **DICTAMAT MultiMove** drive system. It features **extremely smooth-running** qualities, i.e. in case of a power cut the doors/gates can manually be moved without having to uncouple the door operator. This also represents the indispensable condition for using this system on fire doors. According to the directives effective in Germany, in case of alarm these doors have to be closed mechanically.

### DICTAMAT MultiMove Gearbox

The DICTAMAT *MultiMove* gearbox is designed as a worm gear transmission with the possibility of multiple ratio. It consists of a casing from cast aluminium which can contain different reduction stages.

Beside its flexibility the smooth-running properties are its main feature. This also produces a very high degree of efficiency, i.e. the gearbox transmits the motor force without significant losses. Therefore already low motor power will produce high driving forces.



### Technical Data

Type of gearbox	worm gear transmission
Gear ratio "i"	20, 27, other transmissions possible on request
Ease of running	example: door weight 800 kg force for moving without operator: 60 N force for moving with operator gearbox i = 20: 80 N force for moving with operator gearbox i = 27: 110 N
Material casing	cast aluminium
Possible motors	DC, AC
Fire protection	during mechanical closing adjustable and controlled closing speed by mounted radial damper LD
Brake	electromagnetic brake, easy-running without current; in case of power cut short-term power supply by capacitor package
Other modules	driving wheel for toothed belt, chain, rack etc.; encoder for position control, hold-open system and speed regulator for fire protection



## DICTAMAT MultiMove - The System

The modular drive system DICTAMAT *MultiMove* is made up of the respective door or gate operator and the corresponding control system.

Therefore, for an easier identification, the door operators and control systems of the system were assigned a part of the system name:

- Door operator DICTAMAT *Move*
- Control system *Multi Control*

## Structure of the Name of the DICTAMAT Move Door Operators

Basically there exist four different versions of the door operators:

- **DICTAMAT Move:** Operators which provide a motor-driven opening and closing of the door/window (**bidirectional door operators**).
- **DICTAMAT MoveF:** Operators which **only open** the door/window. Closing is effected by e.g. a counterweight or a spring. In particular in Germany this is prescribed for fire doors. Therefore an "F" (fire protection) is added to the name of this execution.  
Note: If the respective country allows closing by emergency power, it is also possible to use bidirectional door operators on fire doors/gates.
- **DICTAMAT Move H:** Door operators for **rotary motions** (hinged doors, hinged gates, hinged windows etc.)
- **DICTAMAT Move C:** all **customized special solutions**.

### Other details of the name structure:

Voltage	AC or DC
Electrical power	e.g. 90 W, 0.37 kW
Power transmission	e.g. toothed belt (Z), chain (K), etc. operating arm (H) for hinged doors and gates
Dimensioning of the gearbox	With the same motor can be chosen either the model with higher speed (V+) or higher power (P+).
Example:	DICTAMAT <i>Move</i> DC 90 Z V+ Bidirectional door operator with direct current motor ( <b>DC</b> ) with <b>90 W</b> , power transmission by toothed belt ( <b>Z</b> ), max. 0.37 m/s ( <b>V+</b> ), power on the belt max. 400 N (see next page)

## Structure of the Name of the Control Systems *Multi Control*

The control systems of the DICTAMAT *MultiMove* system have a modular structure. Basically there are **three different versions** (independent of the used motor and whether it is a bidirectional or fire protection model):

- **Multi Control Economy:** Model with basic functions
- **Multi Control Comfort:** Model with comfort functions
- **Multi Control Custom:** Model with customized functions that have to be determined in every individual case

### Other details of the name structure:

Addition for special functions	F (fire protection), N (emergency power)
Voltage	AC or DC
Example:	<i>Multi Control</i> Comfort N DC Comfortable control system for <b>DC</b> motor, with emergency power function including battery pack



### DICTAMAT Move - Summary Operators for Sliding Motions, Bidirectional

On the following pages you will find the **Standard models** of the DICTAMAT Move door operators for **bidirectional sliding motions**. By default they use a revolving toothed belt for power transmission. However, it is also possible to use a chain etc.

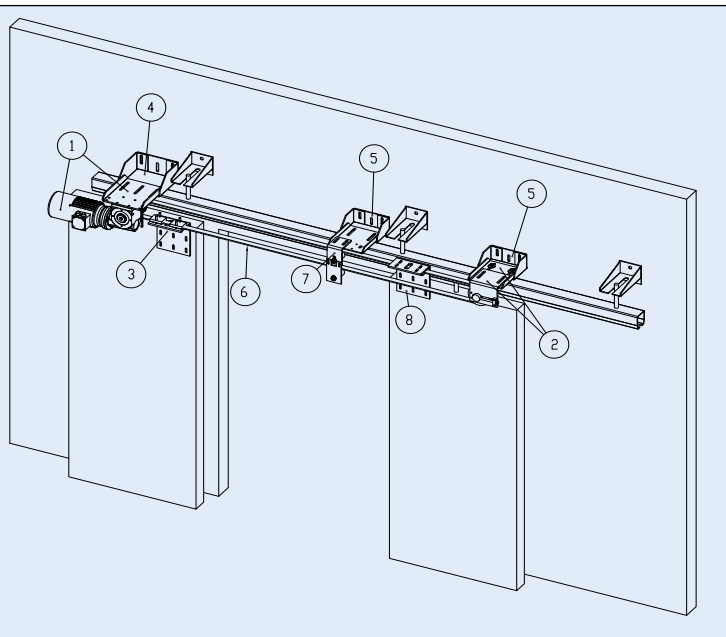
The values given in the following table are just for orientation. To meet the demands of the Machinery Directive you should always take advantage of our advisory service and get a detailed offer of the appropriate solution for your application.

### Technical Data

Name of DICTAMAT Move	DC 90 Z V+	DC 90 Z P+	DC 200 Z P+	AC 0.18 Z V+	AC 0.18 Z P+	AC 0.37 Z P+
Motor / Gear ratio / Driving wheel	motor DC 90 W, i = 20, Z28	motor DC 90 W, i = 27, Z28	motor DC 200 W, i = 27, Z28	motor AC 0.18 kW, i = 20, Z28	motor AC 0.18 kW, i = 27, Z28	motor AC 0.37 kW, i = 27, Z36
Nominal revolutions/min	1987	1987	2083	1350	1350	1390
(Starting and) / nominal current A	4.72	4.72	11.05	1/0.6	1/0.6	1.8/1.0
Turning moment on the output shaft Nm	8.8	11.9	24.8	25.2	34.0	69.0
Power rating W	92	92	200	180	180	370
Max. starting power on the belt N	400	600	1000	800	1000	1400
Rated speed m/sec	0.37	0.27	0.29	0.25	0.19	0.27

### Components

- ① Door operator with U-bracket (standard)
- ② Idler pulley with U-bracket (standard)
- ③ Belt fixing device (standard)
- ④ Wall bracket for door operator (optional)
- ⑤ Wall bracket (optional)
- ⑥ Toothed belt (to be ordered separately in the required length and size)
- ⑦ Supporting roller with U-bracket (optional)
- ⑧ Belt fixing device for second door leaf (optional)



### Components Included DICTAMAT Move Z bidirectional

- Motor with gearbox and mounting U-bracket, 2 m of connection cable to control system, driving wheel for toothed belt of 20 or 30 mm width, protective guard
- Idler pulley for toothed belt with integrated tensioning device and U-bracket
- Belt fixing device with clamping plate for toothed belt



**DICTAMAT Move**  
**Dimensions of DICTAMAT Move DC Z (bidirectional)**

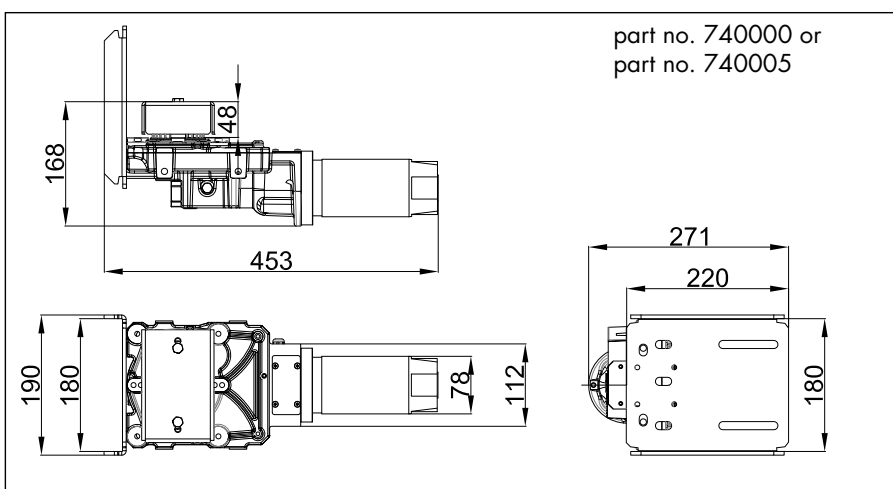
In the following you will find the dimensions of the standard DC models (bidirectional) for toothed belt. By default, the driving wheel is designed for toothed belt of 20 or 30 mm width. Which toothed belt to choose depends on the dimensions of the door, the speed and the working load.

The dimensions of the accessories included in the delivery can be found on page 04.018.00, those of the optional accessories beginning on page 04.019.00.

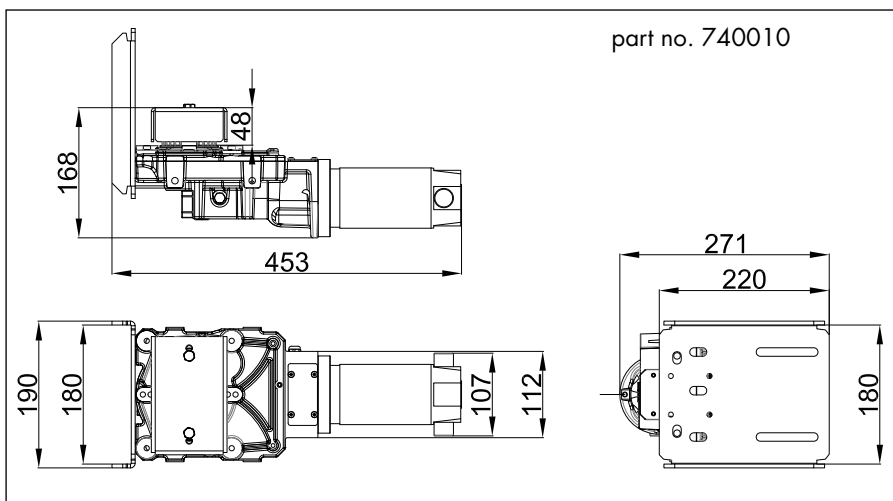
**DICTAMAT Move DC Z**



**Dimensions**  
**DICTAMAT Move DC 90 Z**



**Dimensions**  
**DICTAMAT Move**  
**DC 200 Z**





## DICTAMAT Move Dimensions of DICTAMAT Move AC Z (bidirectional)

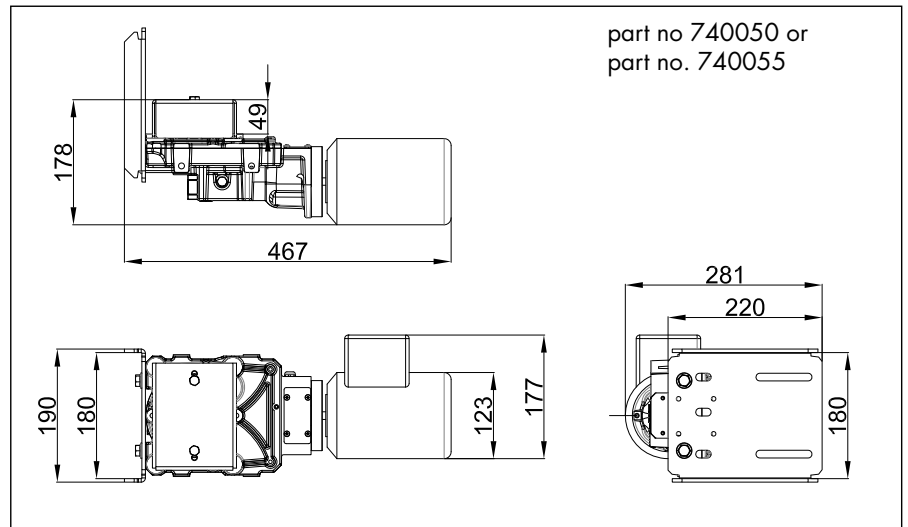
In the following you will find the dimensions of the standard AC models (bidirectional) for toothed belt. By default, the driving wheel is designed for toothed belt of 20 or 30 mm width. Which toothed belt to choose depends on the dimensions of the door, the speed and the working load.

The dimensions of the accessories included in the delivery can be found on page 04.018.00, those of the optional accessories beginning on page 04.019.00.

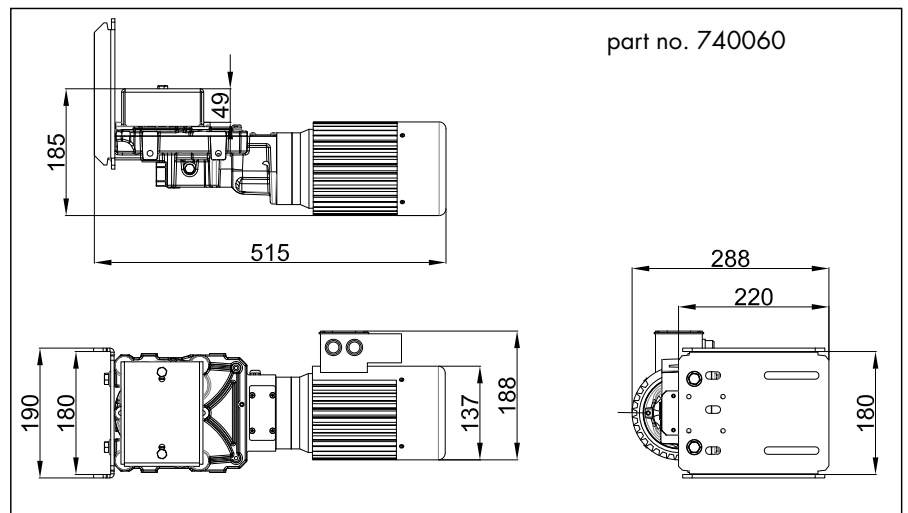
### DICTAMAT Move AC Z



#### Dimensions DICTAMAT Move AC 0.18 Z



#### Dimensions DICTAMAT Move AC 0.37 Z





## DICTAMAT Move Dimensions of Standard Accessories

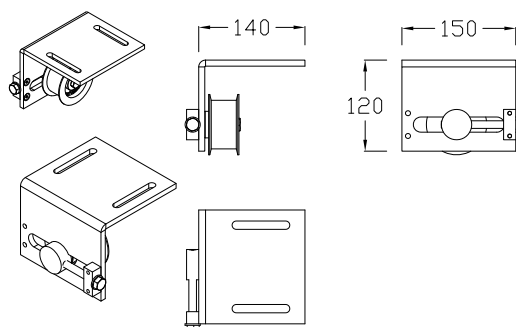
By default, the door operator DICTAMAT Move includes an idler pulley and a belt fixing device for toothed belt.

Of the idler pulley exist two versions:

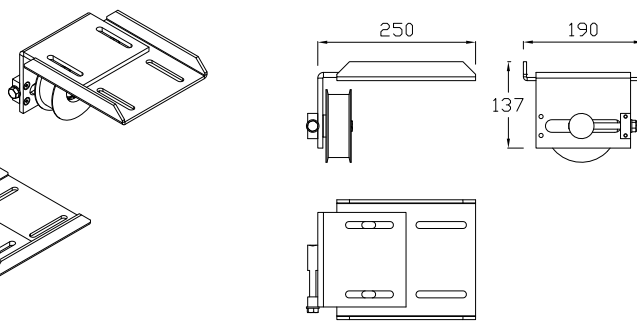
- for DICTAMAT Move DC Z and DICTAMAT Move AC 0.18 Z
- for DICTAMAT Move AC 0.37 Z

### Dimensions Idler Pulley with Tensioning Device for Toothed Belt

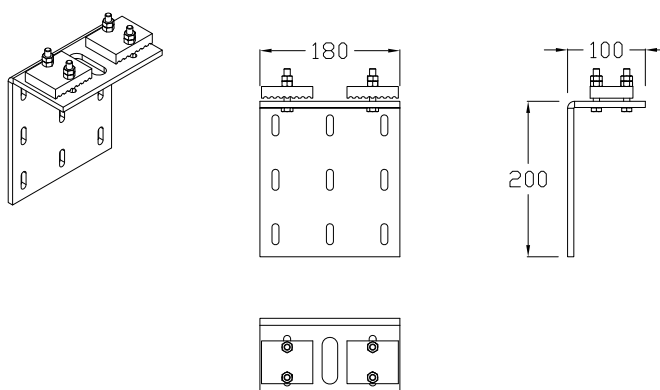
Idler pulley Ø 64 for  
DICTAMAT Move DC Z and  
DICTAMAT Move AC 0.18 Z  
part no. 790600\*



Idler pulley Ø 100  
for DICTAMAT Move AC 0.37 Z  
part no. 790601\*



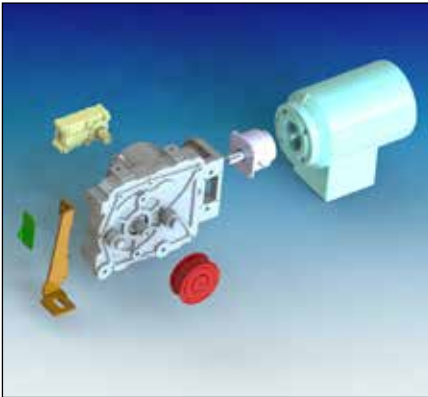
### Dimensions Belt Fixing Device



part no. 790620\*

\*The part numbers are given only in case spare parts are needed. Idler pulley and belt fixing device are included in the delivery of a door operator and have not to be ordered separately!



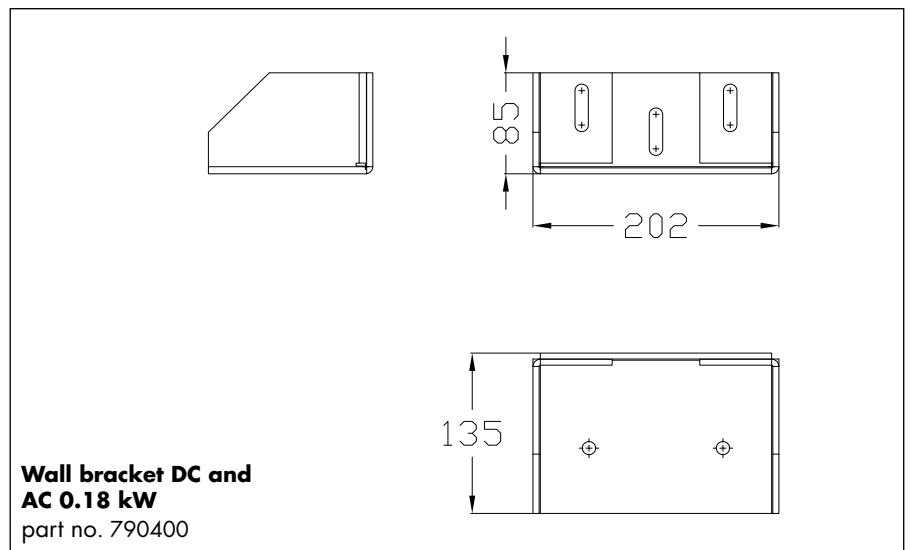
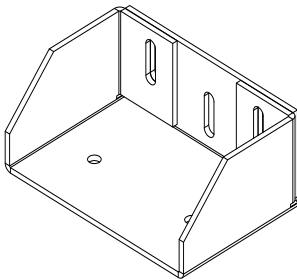


## DICTAMAT Move Dimensions of Optional Accessories

For reasons of stability door operators for heavy doors are usually fixed to the wall. For this purpose special wall brackets are available which are designed especially to match the U-brackets of the operators and to withstand the high forces in case the brake springs into action.

The wall must be sturdy enough to absorb the pull and shear forces. Furthermore special dowels for dynamic loads have to be used.

### Wall Bracket DC and AC 0.18 kW

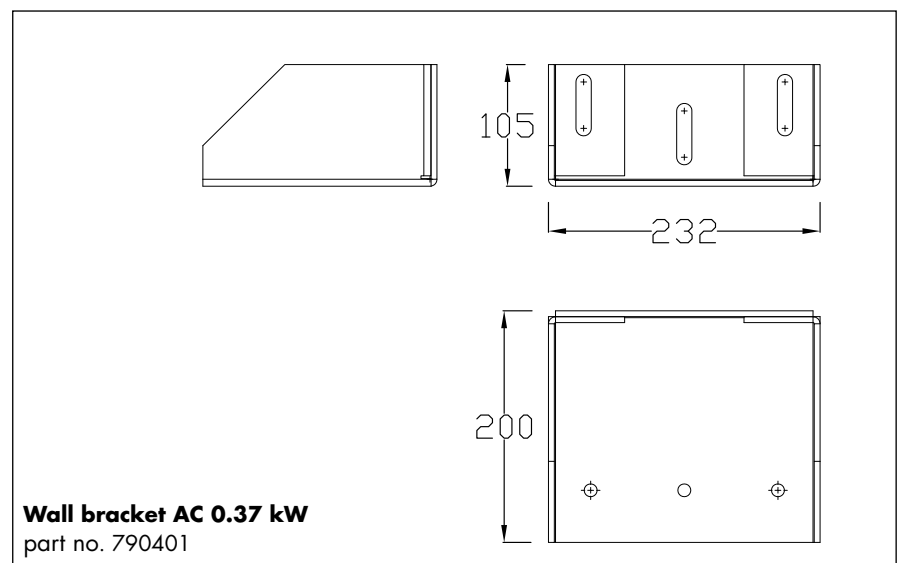
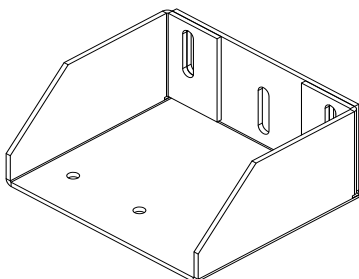


**Wall bracket DC and AC 0.18 kW**  
part no. 790400

#### Range of application of wall bracket DC and AC 0.18 kW:

- DICTAMAT Move DC door operator and DICTAMAT Move AC 0.18 door operator
- Idler pulley with tensioning device for DICTAMAT Move DC and AC 0.18
- Idler pulley with tensioning device for DICTAMAT Move AC 0.37 Z
- Supporting roller for DICTAMAT Move Z

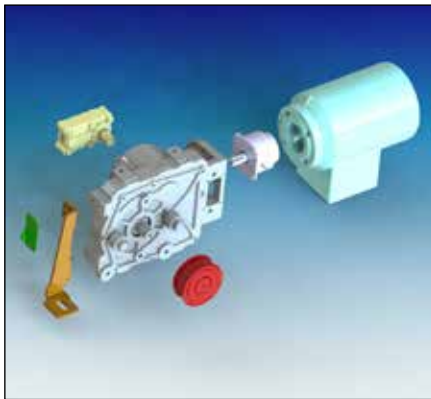
### Wall Bracket 0.37 kW



**Wall bracket AC 0.37 kW**  
part no. 790401

#### Range of application of wall bracket 0.37 kW:

- DICTAMAT Move AC 0.37 door operator



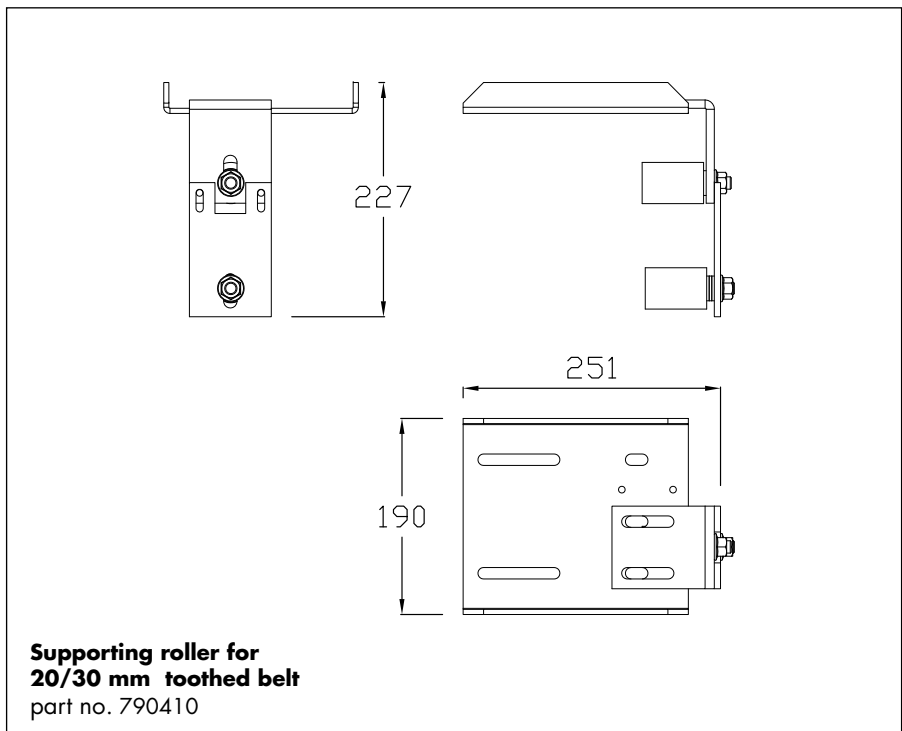
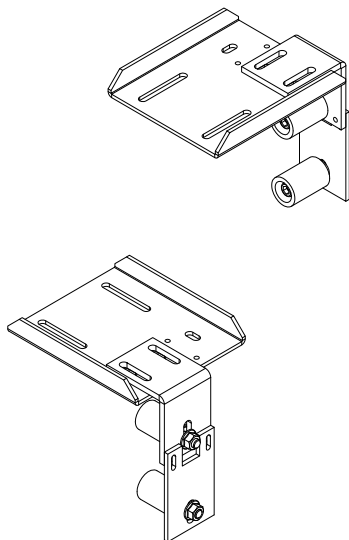
**DICTAMAT Move  
Dimensions of Optional Accessories - cont.**

The supporting roller as well as the belt fixing device for the second door leaf are the same for all DICTAMAT Move Z door operators.

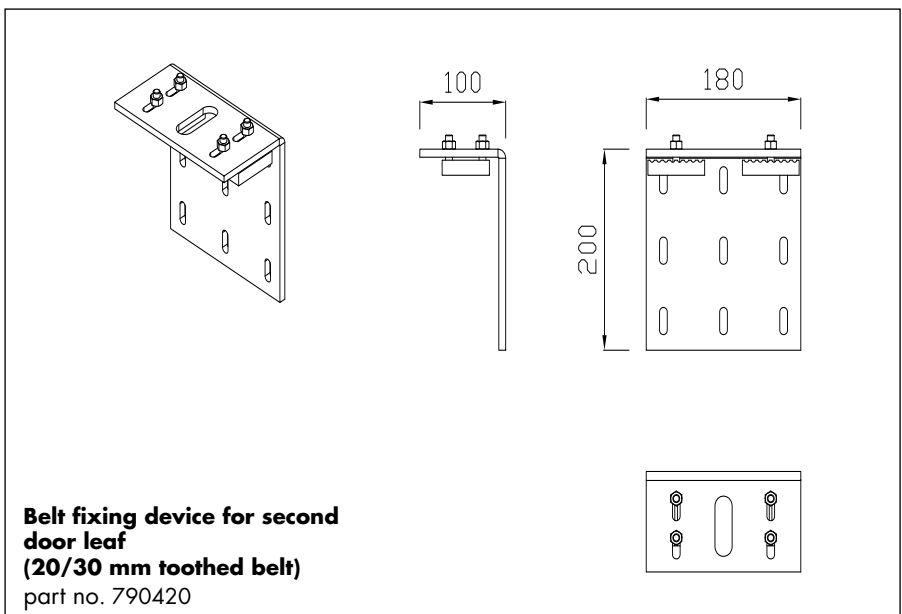
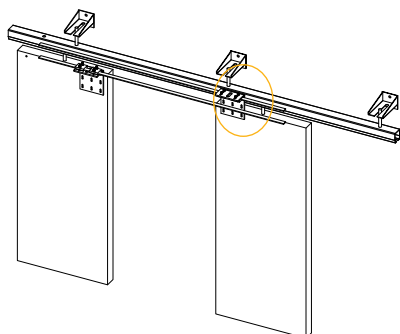
**Supporting rollers prevent the sagging of the toothed belt.** They have to be used whenever the toothed belt would run unsupported for more than four meters. The rollers are generally furnished together with an U-bracket. An additional wall bracket is available (see previous page).

In case of **double-leaf doors** an additional belt fixing device is required. To this device is always fixed the upper part of the belt.

**Supporting Roller for  
20/30 mm Toothed Belt**



**Belt Fixing Device for  
Second Leaf with Double-  
Leaf Doors (20/30 mm  
Toothed Belt)**



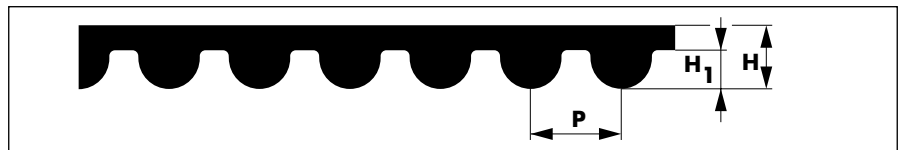


## DICTAMAT Move Dimensions of Optional Accessories - cont.

With the DICTAMAT Move door operators, by default, the power is transmitted by toothed belt. Depending on the size, weight and speed of the door is used a toothed belt of 20 or 30 mm width.

With customized models the power can also be transmitted e.g. by chain. Usually then a chain 1/2 x 3/16" is used.

### Toothed Belt



Type Toothed belt	HTD 8M
<b>P</b>	8 mm
<b>H</b>	5.6 mm
<b>H<sub>1</sub></b>	3.4 mm

Material	PU (Polyurethan)		
Tensile material	steel cord		
Operating temperature	-30° to +80 °C		
Resistant against	UV, ozone, oil und grease		
Tension load	- HTD 8M toothed belt, 20 mm wide	2680 N	part no. 710490
	- HTD 8M toothed belt, 30 mm wide	4030 N	part no. 710491



## DICTAMAT MultiMove - Multi Control Control System

The control system of the DICTAMAT MultiMove drive system is composed of modules - same as the operators. The basic module is a logic unit with uniform hardware for all operators (including fire protection). This logic unit is upgraded by modules corresponding to the application, the used motor, the desired functions etc.

Always with the same operation and unchanging dimensions of the casing the control system offers the user an extremely wide range of functions. Usually there can be realized **later modifications** even **without having to replace the control system**.

## Multi Control Control Systems

When developing the control system *Multi Control* of the DICTAMAT MultiMove drive system we paid highest attention to reduce the mounting and programming work on site as much as possible and to considerably facilitate meeting the demands of the Machinery Directive.

The **control systems** are, as far as possible, **adapted to the respective applications already in production**. Furthermore, the control system nearly automatically "learns" the **final positions, the required stopping distances etc. during the programmed teach-in run** on site. If at all, only some small adjustments will be needed.

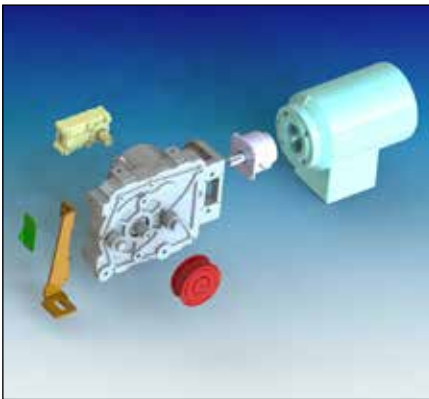
The *Multi Control control system* meets the high safety demands of the EN 13241 part 1 and subordinated ones like the EN 12453. One of them being that the door stops after an extremely short distance when recognising an obstacle. In case of a power cut when the door is moving the **short-term power supply of the electromagnetic brake** is backed up by supervised **capacitors**. As an additional safety feature all DICTAMAT MultiMove control systems are equipped with an **integrated load breaking** which functions as well with **DC** as with **AC** operators.

## Summary of Performance

Motors that can be connected	230/400 VAC (three-phase) up to 0.37 kW or 24 VDC up to 240 W
Position control	encoder (accuracy of positioning about 1 mm)
Motor control	integrated frequency converter for 230/400 VAC-motors or DC controller
Password protection	for security relevant adjustments
Operation modes	dead man, impulsion, automatic operation can be chosen, emergency service with defect safety installation. Fire protection with mechanical closing or with emergency power supply
Inputs	10 inputs, configuration depending on control system
Outputs	10 outputs 24 V, configuration depending on controller
Standards	mainly EN 13241-1, EN 12453, EN 13849-1

## Technical Data

Rated voltage	230 VAC, 50 - 60 Hz
Power consumption	max. 10 A
Output voltage secondary	24 VDC
Total load secondary	max. 1 A per output, total max. 2 A
Rating emergency power	24 V, 7 Ah
Output voltage motor	230/400 VAC (three-phase) or 24 VDC
Motor rating	max. 0.37 kW AC / 240 W DC
IP rating	IP 54
Dimensions	607 x 133.5 x 190 mm (w x h x d)
Recommended fuse protection	B16 A

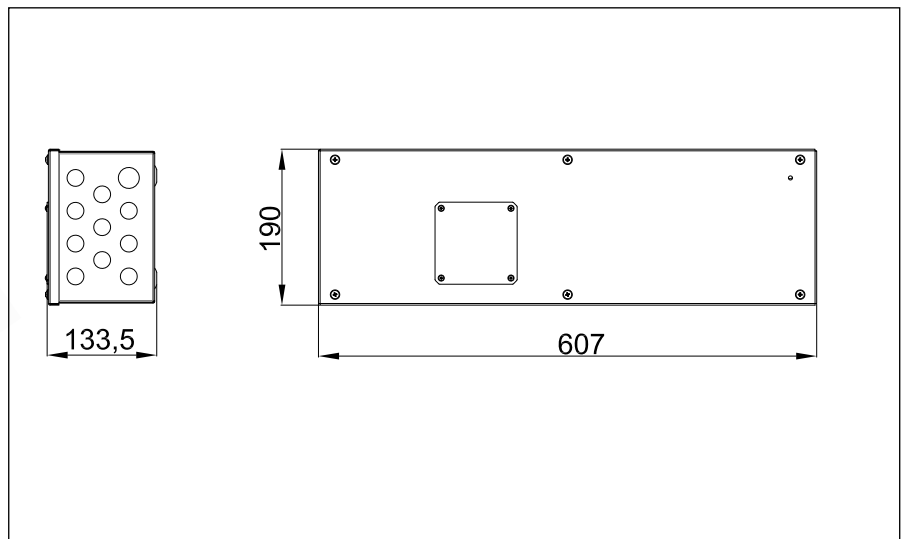
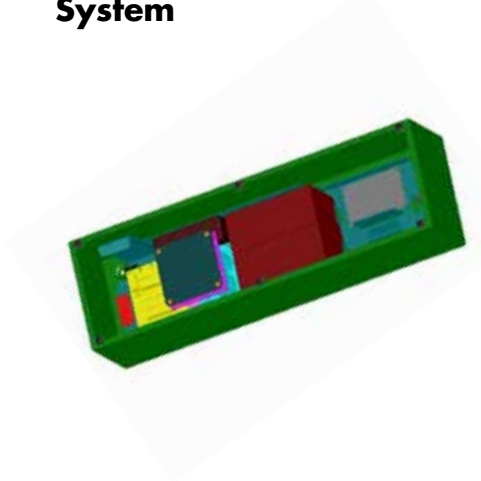


## Multi Control Control System - Dimensions, Structure

The DICTAMAT *Multi Control* control system has a modular structure. Depending on the door operator and the desired functions the corresponding modules are combined and programmed.

The casing of the control system is the same for all versions.

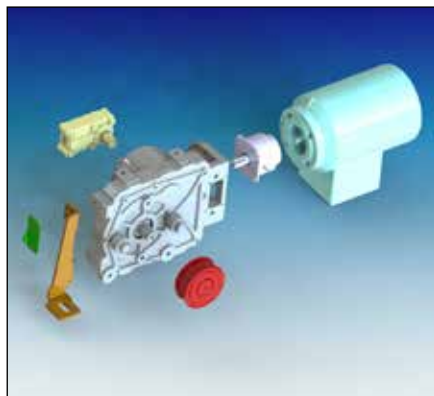
### Dimensions Multi Control Control System



### Structure Multi Control Control System



Casing	powder-coated steel
Display	display with programming and adjusting keys
Logic unit	basic module with uniform programming for all door operators
Connection board	predetermined configuration of clamps with ECONOMY and COMFORT versions, configuration according to customer's specification with CUSTOM version
Power element	DC or AC, depending on the connected door operator (with an AC version the frequency converter is included)
Fire protection module	version for motor-driven opening and mechanical closing
Emergency power module	battery pack with loading unit and surveillance of the state of charge



## DICTAMAT Multi Control Control System - Functions

Basically there exist three different versions of the *Multi Control* control system, each with a different range of functions - see below.

However, it is possible to **upgrade the control functions**, also **subsequently** when the control system is already mounted! You can input the corresponding module simply by using a laptop.

This way the *Multi Control* control system offers the highest possible flexibility and can easily be adapted to changed requirements.

## Features Multi Control

All versions of the *Multi Control* control system offer the following features:

- **Teach-in run:** "Intelligent", software assisted learning of the door parameters.
- **Dynamical run:** The teach-in run is followed by an automated dynamical run. Here the driving system determines during the complete run the running characteristics of the door. These values are the basis on which the control system calculates the necessary values for the acceleration and deceleration of the door taking into account its smooth/rough operation.
- **Intelligent recognition of obstacles:** Based on the values determined during the dynamical run, the control system is able to promptly detect any change of the performance of the door due to an obstacle. In this case the control system triggers an immediate Emergency-STOP followed by a reversion of the door movement.
- **Extensive diagnostic function:** Information retrieval and indication of all operating states and of errors/error indications by a double-spaced full text display.
- **USB interface:** Possibility to connect a computer for changing parameters of the control system on site.
- **EN ISO 13849-1:** *Multi Control* has been designed to use safety systems corresponding to the newest directives.

## Functions of the Different Versions

### **Multi Control ECONOMY**

- Dead-man operation
- Used inputs: Open, Close, Emergency-STOP
- Used outputs: none

### **Multi Control COMFORT**

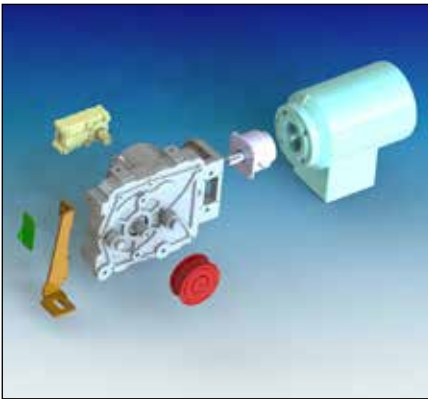
- Impulse operation, automatic closing
- Used inputs: Open, Stop, Close, Emergency-STOP, safety device in opening direction, safety device in closing direction, partial opening for people
- Used outputs: signal final Open position, signal final Closed position, motion warning with optional lead time, signal Emergency-STOP actuated, signal error

### **Multi Control COMFORT emergency power supply**

Same as Multi Control Comfort, however, additionally used output: signal battery low

### **Multi Control CUSTOM**

Completely customized programming and using of the inputs and outputs



### DICTAMAT MultiMove Order Information

Below you will find an overview of the part numbers of the **bidirectional** door operators and control systems of the DICTAMAT *MultiMove* drive system.

In case you need a concrete offer, please contact our technical service. We gladly will provide advice and elaborate a free of charge, detailed offer which takes into consideration your specific requirements and all relevant safety aspects.

### Order Information DICTAMAT MultiMove - bidirectional

Version of the door operator		Appropriate <i>Multi Control</i> control system			
Name	Part no.	ECONOMY	ECONOMY Emergency power	COMFORT	COMFORT Emergency power
DICTAMAT Move DC 90 Z V+	740000	740100	740101	740105	740106
DICTAMAT Move DC 90 Z P+	740005	740100	740101	740105	740106
DICTAMAT Move DC 200 Z P+	740010	740100	740101	740105	740106
DICTAMAT Move AC 0,18 Z V+	740050	740150	–	740155	–
DICTAMAT Move AC 0,18 Z P+	740055	740150	–	740155	–
DICTAMAT Move AC 0,37 Z P+	740060	740150	–	740155	–

For all DICTAMAT Move door operators also the *Multi Control Custom* control system is available. Its configuration is customized and adapted to your requirements.

General information on the DICTAMAT Move operators: beginning on page 04.015.00  
Information on the *Multi Control* control systems: beginning on page 04.022.00

### Standard Components Included DICTAMAT Move Z - bidirectional

- Motor with gearbox and mounting U-bracket, 2 m of connection cable to the control system, driving wheel for 20 or 30 mm toothed belt, protective guard
- Idler pulley for toothed belt with integrated tensioning device and U-bracket
- Belt fixing device with clamp plates for toothed belt

### Order Information DICTAMAT MultiMove - Accessories

Wall bracket for DICTAMAT Move DC and AC 0.18 KW and for idler pulleys and supporting roller	part no. 790400
Wall bracket for DICTAMAT Move AC 0.37 KW	part no. 790401
Supporting roller for 20 and 30 mm toothed belt	part no. 790410
Belt fixing device for toothed belt for second door leaf	part no. 790420
Toothed belt HTD 8M, 20 mm wide (per meter)	part no. 710490
Toothed belt HTD 8M, 30 mm wide (per meter)	part no. 710491

For information on safety and operating equipment see separate pages.

