

DOOR & GATE OPERATORS

DICTATOR



DOOR & GATE OPERATORS COMPLIANCE WITH STANDARDS

TABLE OF CONTENTS

1. DICTATOR SERVICE FOR DOOR & GATE OPERATORS	3
2. RELEVANT STANDARDS FOR AUTOMATED DOORS	4
3. DEFINITION "DOOR" ACCORDING TO EN 13241-1	5
4. SAFETY REQUIREMENT FOR DOORS WITH OPERATORS	6
5. APPROACHES	7
6. CONFORMITY OF THE ENTIRE DOOR SYSTEM	8
7. THE EG MACHINERY DIRECTIVE 2006/42/EG	9
■ APPLYING THE MACHINERY DIRECTIVE? WHY?	
■ WHO IS A MANUFACTURER IN TERMS OF THE MACHINERY DIRECTIVE?	
■ WHAT DOES THE MACHINERY DIRECTIVE MEAN FOR MANUFACTURERS OF AUTOMATED SLIDING DOORS/GATES?	
■ CONCRETE REQUIREMENTS FOR THE MANUFACTURER?	

LECTOR – YOUR PARTNER FOR DOOR OPERATORS

The importance of the Machinery Directive is often still underestimated.

LECTOR not only works out the suitable automation solution for your door together with you, but also guides you on the way from an incomplete to a complete machine. Already in the preliminary stages, special attention is paid to ensuring that the selection of the right operator and its customization to the door/gate creates the basis for a directive-compliant system.

- Personal & individual advice – by telephone and on site
- Planning, design and manufacture also of special systems
- Support with questions during installation, commissioning and acceptance
- Assistance with maintenance and repair work

Do you have any questions about our door operators or would you like some expert advice?

Contact us - we will be glad to help you!



Just fill out our questionnaire.
We will find a fitting
automation solution
for your requirements



**Individual
advice**

A key service
always included
with our products



**Many years
of experience**

in developing
solutions for
doors and gates



**Custom solutions
are our "standard"**

Individual and complex
system solutions,
no matter whether for
small or large projects



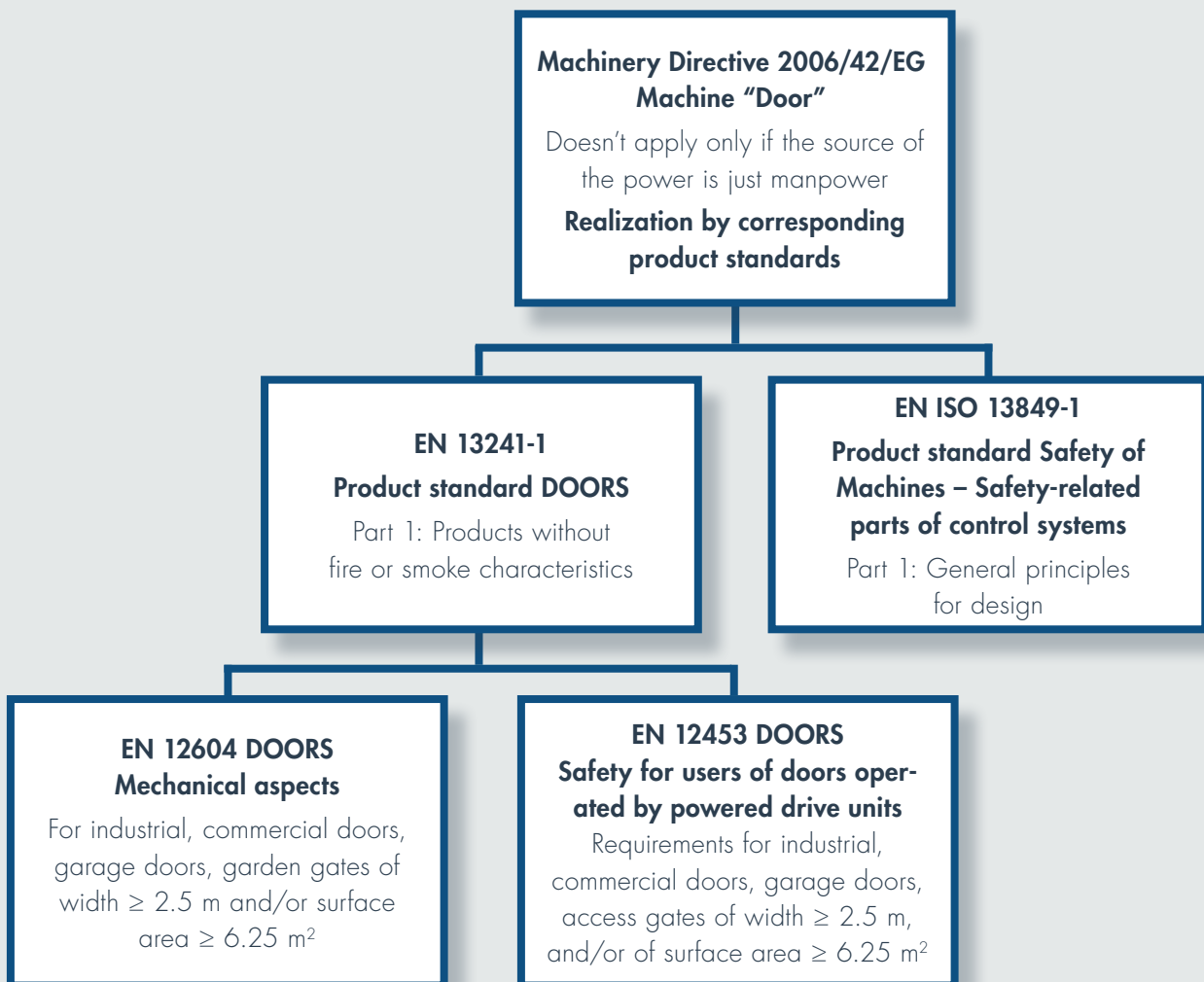
**As partner
by your side**

We support you
from initial planning
to post-purchase

RELEVANT STANDARDS FOR AUTOMATED DOORS

The Machinery Directive 2006/42/EG and the related standards extremely affect doors and gates. As soon as a door is equipped with an door operator, it becomes a “machine”. It is mandatory that the automated door complies with the Machinery Directive.

The “manufacturer” of the machine, i.e. the company who mounts the operator on the door, is obliged to issue a CE declaration of conformity for the “machine door”. For this reason it is very important that the used door operators comply with the demands of the Machinery Directive respectively facilitate its compliance.



"DOOR" DEFINITION ACCORDING TO EN 13241

The standard EN 13241 applies to doors intended to be used by people in access areas and whose main purpose is to allow for a safe access of goods and vehicles being accompanied or conducted by people in industrial, commercial or living areas.

To the following doors/gates the standards of EN 13241 do not apply:

- Horizontally motor-driven doors in accordance with EN 16361 that are primarily intended for pedestrian use
- Doors for pedestrians moved horizontally by hand with a surface area of less than 6.25 m²
- Doors used mainly for animals
- Vehicle doors, textile theatre curtains
- Etc



KEY SAFETY REQUIREMENTS FOR DOORS WITH OPERATORS

The standard EN 12453 defines the specifications of power driven doors, its main intention being the general increase of safety. It focuses on the following four points.

PREVENTING HAZARDS

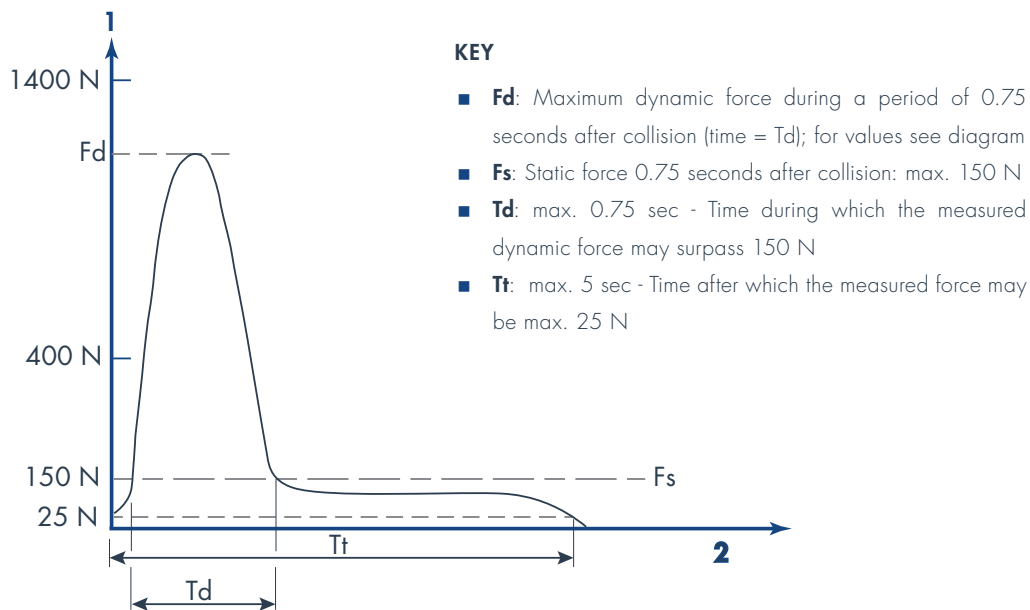
e.g. of squeezing, shearing, feeding and collision) by the automatized door

STOPPING THE DOOR WITHIN THE FOLLOWING DISTANCES

- Door opened 500 mm at the most: slowing-down path ≤ 50 mm
- Door opened more than 500 mm: slowing-down path ≤ 100 mm

LIMITATION OF FORCE

The force developing when the door hits a person, has to be reduced within a certain time to a not dangerous dimension (see diagram).



Maximum dynamic force (**Fd**) allowed between both closing edges:

Opening width	50 - 500 mm	> 500 mm
	400 N	1400 N

SINGLE ERROR SAFETY/REDUNDANCY

In case an error occurs in one of the elements of the installation which could cause a dangerous situation, the control system has to recognize this and to shut down the complete system. The fault has to be remedied before the door may be power operated again.

APPROACHES

DANGER PREVENTION

Depending on the chosen/allowed mode of operation different minimum protections of the door are necessary.

Possible operation modes:

Dead man operation

- Handling only by instructed persons
- When moving the door it has to be possible to oversee the complete area

Impulse/Automatic operation

Alternative 1

- Safeguarding by safety distances at the secondary closing edges.
- Protection of the main closing edge (obligatory) and of those secondary closing edges where safety distances cannot be observed by restricting forces (see 3/b).
- Safety installation according to EN 954-1 respectively the subsequent standard EN 13849-1.
- Additional safety devices in certain dangerous areas

Alternative 2

- Use of safety devices preventing anybody to get in the range of the moving door.



To meet the requirements of the standard EN 12453 to increase safety several measurements are combined.

The safety installations used have to comply with much higher standards as well as the construction of the door drives has to be improved accordingly.

With regard to the safety devices the EN 12453 still refers to the old standard EN 954-1. In the meantime the EN 954-1 has been replaced by the standard EN 13849-1. However, the standard EN 12453 has not been changed!

Application Door operation mode	Domestic sector only instructed users - Type 1	Public sector only instructed users - Type 2	Public sector no user restriction - Type 3
Dead man operation (only when door can be seen)	A	B	not allowed
Impulse operation with sight of the door	C or E	C or E	C + D or E
Impulse operation without sight of the door	C or E	C + D or E	C + D or E
Automatic operation	C + D or E	C + D or E	C + D or E

KEY

- **A** not holding button
- **B** not holding key switch
- **C** Safety device according to EN 954-1, category 2, 3 or 4
- **D** Safety device (no special requirements)
- **E** Safety device preventing anybody to get in the range of the moving door (e.g. a light curtain in a sufficient distance to the door)

RESTRICTION OF THE SLOWING-DOWN PATH AND THE MAXIMUM FORCE

DICTATOR door operators according to EN 12453 are designed in a way to stop the doors also without current within the required distances of 100 or 50 mm. The DICTAMAT Move operator assure this by using the - in this scope of application - completely novel capacitor technique. Even in case of a power cut the operators are absolutely smooth-running.

Other operating systems usually have to use an electromagnetic clutch or a mechanical cranking device to allow moving the door manually during a power failure.



According to the Machinery Directive door and operator together form the „machine door“. This means that for the whole installation a declaration of conformity has to be handed in.

For all doors produced after May 1st, 2005 the manufacturer has to provide the CE sign. In case a door is automated, a CE declaration of conformity has to be handed in also for the whole installation. Depending on whether there exists already an initial test for this unity or whether it has been upgraded, after automating the door there have to be effected several additional tests on site.

SINGLE ERROR SAFETY / REDUNDANCY

The self-supervision of the control system guarantees that the failure of a component will not result in a dangerous situation. If the control system identifies a mistake, it automatically shuts itself down. Further automatic handling of the gate is not possible. Likewise the safety installations have to be largely self-supervising.

CONFORMITY OF THE ENTIRE DOOR SYSTEM

According to the Machinery Directive has to be issued a declaration of conformity for the automated door confirming that the whole system complies with the relevant standards. Mainly, there exist three different situations:

Case 1: In the simplest case the door (produced after May 1st, 2005) has already been type-tested together with the control unit. Here issuing a declaration of conformity will be relatively easy.

Case 2: In case the DICTATOR door operator is retrofit to a door for which together with the door operator exists no type-test, there are two possibilities:

- If for the door itself already exists a conformity declaration (door complies with EN 13241-1 and EN 12604), the complete installation has to be tested thoroughly according to EN 12445. These tests also include the door where has to be verified especially if it will withstand the higher strain of automatisisation. Having passed all tests successfully the declaration of conformity will be issued.
- In case of a door having been installed before May 1st, 2005 and not having a CE label firstly you

have to verify if the gate meets the requirements of the standards EN 13241-1 and EN 12604. This should normally be executed by door experts. Following this the tests as described above have to be passed.

Case 3: A door where only an already existing door operator is exchanged will be subject to preservation of the status quo. A declaration of conformity has not to be issued.

IMPORTANT: All relevant documents concerning the conformity have to be kept for ten years (where the declaration of conformity has been issued). The operating company has to be instructed thoroughly in using the „machine door“. Regular maintenance of the complete door system is stipulated by law.

EC MACHINERY DIRECTIVE 2006/42/EC IMPACT – QUESTIONS & ANSWERS

APPLYING THE MACHINERY DIRECTIVE? WHY?

- The Machinery Directive has legal force.
- Market surveillance controls more and more often if the directive is observed.
- Not observing the directives can have consequences, e.g.:
 - , Prohibition of sale of the product line.
 - , Complaints of users/customers.
 - , Cost-intensive subsequent improvements
 - , Violation of safety and health demands
 - , Criminal penalties in case of personal injuries

WHO IS A MANUFACTURER IN TERMS OF THE MACHINERY DIRECTIVE?

Manufacturer is who:

- produces machines for his own use
- assembles machines or parts of machines (e.g. the door manufacturer or the company who upgrades a door with an operator => door + operator + control system = machine door).
- imports machines
- essentially modifies machines by adding components or retrofitting them

WHAT DOES THE MACHINERY DIRECTIVE MEAN FOR MANUFACTURERS OF AUTOMATED SLIDING DOORS/GATES?

- In terms of the directive a sliding door with a door operator is a machine
- The door operator and control system on their own are an incomplete machine
- The manufacturer of a machine is responsible for the conformity to the directives
- Therefore, these manufacturers are obliged to observe regulated conditions during setting up

CONCRETE REQUIREMENTS FOR THE MANUFACTURER?

- The demands of Annex I of the Machinery Directive have to be met (risk evaluation)
- Technical documents (Annex VII) have to be made available
- Operating instruction has to be provided
- Conformity evaluation procedure according to article 12 has to be carried out
- An EC declaration of conformity according to Annex II has to be issued and enclosed with the "machine door"
- The installation has to be labeled with the CE marking according to article 16

DICTATOR – The Driving Force in Motion Control

ABOUT DICTATOR

DICTATOR is a worldwide group with its main focus of operation in Europe. The headquarters is located in Neusäß near Augsburg. Our products are manufactured in our own production facilities in Europe. This ensures the highest quality and allows us to provide custom solutions for every customer requirement at short notice.

HEADQUARTERS

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86356 Neusäß
Germany

PRODUCT RANGE

- Lift & Lift Equipment
- Door Closing Solutions
- Hydraulic Dampers
- Door & Gate Operators
- Fire Door Operators
- Fire Door Control Solutions
- Gas Springs
- Door Interlock Systems



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