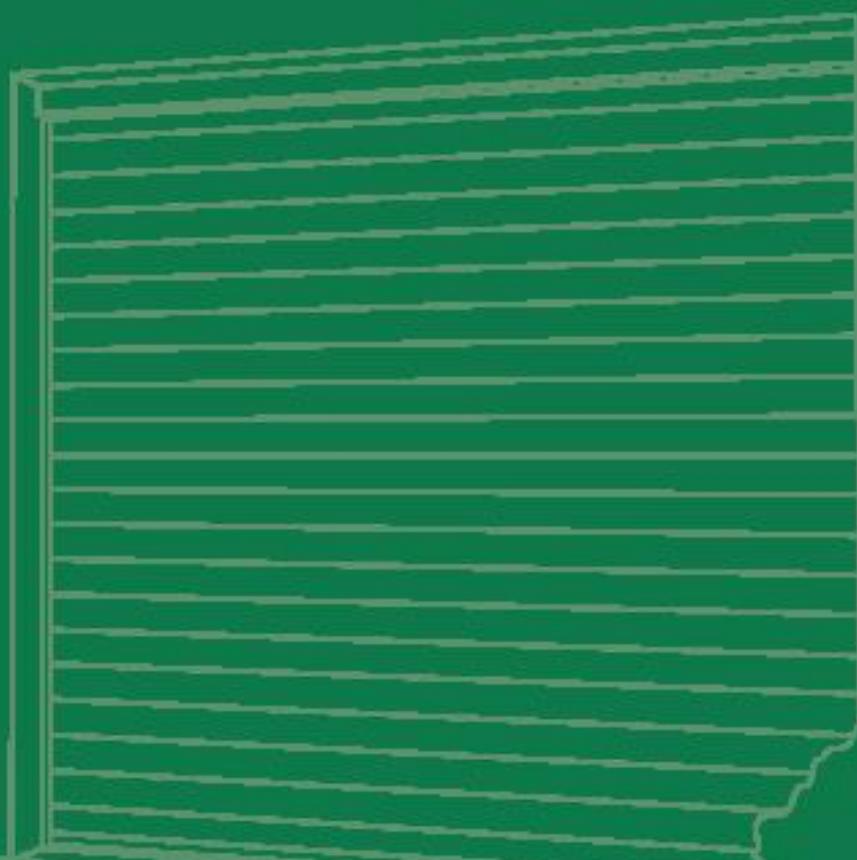




**USER MANUAL**

# **Industrial Door**



## Foreword

This user manual is intended for everyone who works with the following overhead doors:

*NS / HS / VS / LPS / VS-DOC / HS-DOC / NSK / HSK / VSK*

(Or a combination of these types of doors)

This user manual is intended for authorised and technically competent people (see “Glossary of terms”)

This user manual forms part of the technical construction file as intended in the Machine Directive.

Attention is given in this user manual to the safety, operation, cleaning, maintenance and disposal of overhead doors.

You will find in this user manual a number of notes that are shown as follows:



**Tip:**

Suggestions / recommendations of how to carry out certain tasks in an easier manner



**Danger:**

You can injure yourself or others or damage the product



**Note:**

Draws your attention to possible problems



**Caution:**

The product can be damaged

# Table of Contents

<b>FOREWORD</b> .....	<b>1</b>
<b>EC DECLARATION CONFORMITY</b> .....	<b>3</b>
<b>1.1 INTENDED USE</b> .....	4
<b>1.2 UNINTENDED USE</b> .....	4
<b>1.3 OPERATING CONDITIONS</b> .....	4
<b>1.4 OPERATING PRINCIPLE</b> .....	5
<i>1.4.1 Manual operation</i> .....	5
<i>1.4.2 Manually operated using a chain hoist</i> .....	5
<i>1.4.3 Electric drive</i> .....	5
<i>1.4.4 Operating unit</i> .....	5
<b>2. SAFETY</b> .....	<b>6</b>
<b>2.1 SAFETY RISKS</b> .....	6
<b>2.2 SAFETY PROVISIONS</b> .....	7
<b>2.3 SAFETY MEASURES</b> .....	9
<b>3. EXPLANATION OF SYMBOLS</b> .....	<b>10</b>
<b>4. LIFE AND FAULTS</b> .....	<b>11</b>
<b>5. INSPECTION, MAINTENANCE AND DISPOSAL</b> .....	<b>12</b>
<b>5.1 GENERAL</b> .....	12
<b>5.2 SPARE PARTS</b> .....	14
<b>5.3 DISPOSAL</b> .....	14
<b>GLOSSARY OF TERMS</b> .....	<b>15</b>

# EC Declaration Conformity



## EU Declaration of Conformity

As per EN 13241-1 Doors - Product Standard - Annex ZA

Manufacturer: ConDoor Industrial Doors BV  
Handelsweg 31  
3899 AA ZEEWOLDE  
The Netherlands

Certify that:

### INDUSTRIAL DOORS:

#### Hardware systems:

NS / HS / VS / LPS / VS-DOC / HS-DOC / NSK / HSK / VSK.

#### In combination with doortypes:

A40 / A80 / AR2 / AS40 / S40 / S80 / ST3 / DL / HL / Top-Line / WL.

Satisfies all the relevant requirements of the:

- Construction Products Directive (89/106/EC);
- Machinery Directive (2006/42/EC);
- Low Voltage Electrical Equipment Directive (2006/95/EC);
- Electromagnetic Compatibility (EMC) Directive (2004/108/EC).

The following harmonised standard has been applied:

- EN 13241-1 Doors - Product Standard.

Compliance has been checked by the following notified body:

SP Technical Research Institute of Sweden  
Notified Body 0402  
Brinellgatan 4  
SE - 50462 Borås

Kees-Jan Honig  
Managing Director

Zeewolde, 17-02-2011

# 1. Introduction

## 1.1 Intended use

The overhead door is intended to close an opening in a building that is intended to provide access to people or vehicles. It is not allowed to use the overhead door for other purposes. Before carrying out work on the overhead door, read this user manual thoroughly. The supplier is not responsible for any damage resulting from incorrect use of the door.

## 1.2 Unintended use

The following should be strongly advised against:

- Hoisting and/or lifting objects, animals and/or people using the door mechanism
- Clamping or pressing using the door mechanism
- Changing the door or parts of it
- Increasing or reducing the speed of movement of electrically operated doors

## 1.3 Operating conditions

The door should not be used in temperatures lower than  $-30^{\circ}\text{C}$  and higher than  $+60^{\circ}\text{C}$ .

The door can be safely operated up to a wind speed of 32 m/s (10 Beaufort).

The door has a water tightness rating of IP65 (this means that the door is splash proof).



**Tip:**

Lightly grease the rubbers with vaseline to prevent the door freezing to the frame in freezing conditions



**Tip:**

Grease the nylon ball bearing roller, hinges and springs to reduce the noise of the door



**Danger:**

Corrosive and aggressive environments: acid and/or caustic conditions can have a major influence on safe operation. This should be taken into account very seriously.

## 1.4 Operating principle

To move and at the same time counter-balance the weight of the door, a torsion-spring counter-balance system is fitted. There are various types of drive for the overhead doors. These are:

- Manual operation
- Manually operated using a chain hoist
- Electric drive

### 1.4.1 Manual operation

An overhead door can be operated using a handgrip or a rope. If the door is moved upwards using a handgrip or a rope, the tension in the hoisting cables is reduced. The overhead shaft, which is fitted with a torsion spring, rolls up and the door moves upwards (at the extreme limit the door hits the spring bumpers). If the door is moved downwards using a handgrip or a rope the door is closed.

### 1.4.2 Manually operated using a chain hoist

An overhead door can be operated using a chain hoist. By pulling the chain, that is connected through an assembly of gears to the shaft, the door moves upwards or downwards. If the chain is no longer pulled, the door will stop moving. This applies to both the upward and downward movement. The chain has to be held in the hand when opening or closing the door, if you do not hold the chain the cables can get off the cable drums.

### 1.4.3 Electric drive

An operating unit is used to start an electric motor. The motor drives the overhead shaft. This rolls up or unrolls the hoisting cables, which raises or lowers the door leaf.

### 1.4.4 Operating unit

The operating unit is only used if the door is electrically operated.

The up button should be pressed once to open the door. The door then moves automatically upwards until it is completely open.

The door stops immediately if this stop button is pressed. This applies if the door is moving either upwards or downwards. If a dead man's switch is fitted, this button is not used.

The down button should be pressed once to close the door. The door then moves automatically downwards until it is completely closed.

If the door is fitted with a dead man's switch, the button should be kept pressed in to close the door. The door stops moving if the button is released.



**Danger:** The operating unit may only be opened by a technically competent person.

## 2. Safety

### 2.1 Safety risks



**Danger:** There is a risk of crushing and pinching when the door is moving.



**Danger:** There is electrical power to the operating unit, which means that there is a danger of electrocution. Therefore only technically competent people are allowed to work on the electrical installation.



**Danger:** Switch off the mains power when work is carried out on the door control system.



**Danger:** The door may only be operated by authorised persons. This is because of the parts (torsion-spring counter-balance system) that are subjected to high forces.



**Danger:** The door may only be operated if there is no one present in the danger zone (approximately 1 meter from the door).



**Danger:** If the door operates in a different way to that described in this user manual, contact the supplier as quickly as possible.



**Danger:** If the operation of the door is disrupted by defective parts, poorly readable (or missing) pictograms or a bad state of repair, contact the supplier as quickly as possible.



**Danger:** Ensure that during operation the door does not become trapped between the guide rollers and the rail. Always use the handgrip/foot pedal, rope or the chain.



**Danger:** Installation, disposal, maintenance and repairs may only be carried out by technically competent persons.



**Danger:** Corrosive and aggressive environments: acid and/or caustic conditions can have a major influence on safe operation. This should be seriously taken into account.



**Caution:** The door should be fully open if a vehicle is to pass through it.

## 2.2 Safety provisions

Every manually operated overhead door that is installed must be fitted with a certified spring break safety device. This spring break safety device ensures that the door is stopped from moving if the torsion spring breaks. For electrically operated overhead doors the spring break safety device is integrated in the motor. If a motor is fitted with a manual release, an extra spring break safety device must be fitted.



Every overhead door is fitted with two steel cables that are wound onto drums. These cables must be wound around the drums at least  $\frac{1}{2}$  for safety reasons (safety windings). This protects the cable attachment point to the drum from wear.

Every electrically operated door must also be fitted with a slack cable safety device. This ensures that if the cables go slack, for whatever reason, the motor is switched off. This prevents uncontrolled movement of the door.

Every electrically operated door must also be fitted with a safety edge. This safety edge consists of a contact strip on the bottom of the door that sends a signal to the control unit when pressed. The control unit sends a signal to the motor that causes it to immediately switch off. The door can be moved again by using the operating buttons (up and down buttons). A door fitted with a safety edge must have an emergency stop fitted to the control unit. If the overhead door is operated by a dead man's switch, a safety edge is unnecessary and therefore not compulsory.

If a pass door is fitted in an electrically operated door, a contact switch must be fitted to this pass door. This switch ensures that the door cannot be electrically opened if the pass door is open.

On the request of the customer, the following safety provisions can be fitted to a door:

- Cable break safety device
- Safety glass
- Laminated glass
- Pass-through safety device
- Sliding bolt micro switch
- Motor (including emergency stop switch)

### **Cable break safety device**

The *cable break safety device* is fitted to a door to ensure that if the cable breaks, the door does not drop. If a cable breaks, then a mechanism ensures that the tilting mechanism clamps to the rails. This prevents the door falling more than 300 mm.



### **Safety glass**

An overhead door that is fitted with safety glass instead of another type of glass prevents injury if the glass breaks. The glass breaks into small pieces so that injuries from falling splinters are minimal.

### **Laminated glass**

An overhead door that is fitted with laminated glass instead of another type of glass prevents injury if the glass breaks. The broken glass remains attached to the plastic laminate.

### **Pass-through safety device**

An overhead door that is electrically operated can be fitted with a pass-through safety device. This pass-through safety device consists of a box that emits an infra red beam. If the door is moving and this beam is interrupted, the door immediately stops moving. If the beam is interrupted, the door cannot be set in motion.

### **Sliding bolt (fitted with a contact switch)**

If an overhead door is electrically operated and is fitted with a sliding bolt, a contact switch is fitted to the bolt. This switch ensures that the door cannot be electrically opened if the door is bolted.

### **Motor**

An overhead door that is electrically operated also has the motor itself as a safety device. If a spring breaks, the motor ensures that the door does not make any uncontrolled movement. When operating with an emergency stop function, the door is stopped because the motor is switched off. In this case the motor serves as a safety device.

### **2.3 Safety measures**

Bear in mind the following safety measures:

- ✓ Before carrying out work on the overhead door, read this user manual thoroughly. The supplier is not responsible for any damage resulting from incorrect use of the door.
- ✓ It is forbidden to remove guards, safety devices, pictograms and marks or to amend the construction.
- ✓ Repairs and maintenance may only be carried out by technically competent people, because the counter-balance system with the springs is subject to high forces.
- ✓ The owner of the door remains responsible for its use, also when the door is used by a third party, unless agreed otherwise.
- ✓ The door should be made inoperable if it becomes damaged and/or defective. The door may only be brought into use again once the damage and/or defect have/has been corrected.
- ✓ The door may only be operated by an authorised person.

### 3. Explanation of symbols

The following symbols/pictograms are displayed on the door:

Symbol/pictogram	Position	Description
 <p data-bbox="209 658 515 689">Danger of crushing</p>	<p data-bbox="560 434 986 506">On the inside of the bottom panel</p>	<p data-bbox="1015 434 1422 577">When shutting the door, people can be crushed between the door and the floor</p>
 <p data-bbox="209 954 515 990">Danger of pinching</p>	<p data-bbox="568 734 978 842">On the overhead door and the rails on both sides at eye height.</p>	<p data-bbox="1015 734 1430 842">Danger of pinching by the movement of the guide rollers in the rails.</p>
 <p data-bbox="264 1294 456 1328">CE marking</p>	<p data-bbox="632 1070 914 1106">On the type plate.</p>	<p data-bbox="1015 1034 1457 1214">Declaration of conformity. This indicates that the door satisfies the requirements specified by the machine directive.</p>

## 4. Life and faults

The parts of the overhead door are designed for 15,000 up and down movements. The life of the door, if used normally is  $\pm 10$  years.

### Faults:

<b>Fault</b>	<b>Possible cause</b>	<b>Measure to take</b>
The door drops or rises slightly after the door is stopped.	Spring tension is incorrect	Consult the supplier
The safety edge starts operating in warm weather.	The pressure is raised in the bottom rubber	Consult the supplier
The door makes a lot of noise when moving up and down.	The guide rollers are running dry	Grease the guide rollers. (see 5.1)
The door does not react when the buttons are pressed.	Problem in the electrical supply	Switch off all equipment that uses electricity and consult the supplier
The door stops moving immediately after it has been started	Fault in the safety edge or the slack cable safety device	Consult the supplier
The door hangs at an angle	The adjustable clutch or the cable drum has rotated	Consult the supplier

## 5. Inspection, maintenance and disposal

### 5.1 General

An overhead door should be maintained and checked regularly to ensure its safe operation and use. This is described in the EN-norms.

#### GENERAL:

- 1 Torsion springs, brackets and other components that are attached to the springs and cables, are under extreme tension. If not handled properly, injuries or damage can occur!  
**So, these components must only be worked on by qualified overhead door mechanics!**
- 2 Broken or worn components should only be replaced by qualified overhead door mechanics.
- 3 When checking the door, always switch off the electricity supply. Ensure that it is cannot be switched on without your knowledge.

#### REGULAR MAINTENANCE:

##### After installation:

- |   |          |
|---|----------|
| 1. Grease running part of the tracks        | MECHANIC |
| 2. Grease the bearings of the rollers       | MECHANIC |
| 3. Grease the shafts of the rollers         | MECHANIC |
| 4. Grease the bearings of the shaft         | MECHANIC |
| 5. Grease the hinge pins                    | MECHANIC |
| 6. Grease the lock                          | MECHANIC |
| 7. Protect the panels with car wax          | USER     |
| 8. Grease the rubbers lightly with Vaseline | USER     |

##### After 3 months:

- |  |          |
|--|----------|
| 1. Complete visual inspection                  | MECHANIC |
| 2. Check balancing system and adjust if needed | MECHANIC |

##### Every 6 months:

- |   |      |
|---|------|
| 1. Check side seals for damage or wear                          | USER |
| 2. Check top seal for damage or wear                            | USER |
| 3. Check bottom seal for damage or wear                         | USER |
| 4. Grease all the points mentioned above                        | USER |
| 5. Clean the panels   | USER |
| 6. Clean the windows (only wash with water, do not use a cloth) | USER |
| 7. Remove dirt and rubbish from in, on or around the door       | USER |

##### Every 12 months (or after every 7500 cycles):

- |   |          |
|---|----------|
| 1. Check or test the attachment of the springs to the fittings    | MECHANIC |
| 2. Check the balance of the door and adjust if needed             | MECHANIC |
| 3. Check the cables for damage or play                            | MECHANIC |
| 4. Check the cable connection points on drums and bottom bracket  | MECHANIC |
| 5. Check the roller for wear and clearance                        | MECHANIC |
| 6. Check the hinges for breaks or wear                            | MECHANIC |
| 7. Check the panels for damage, wear or rust                      | MECHANIC |
| 8. Check the spring break device following instructions in manual | MECHANIC |

9. Check the manual operation of the door	MECHANIC
10. Check cable pulleys for wear	MECHANIC
11. Check panel sealing for wear	MECHANIC
12. Check functioning of the cable break device	MECHANIC
13. Check position of cable break device hinge pin	MECHANIC
14. Check bolt and screw connections of spring break device	MECHANIC
15. Check connections of the pawl wheel	MECHANIC
16. Check side seals for damage or wear	MECHANIC
17. Check bottom seal for damage or wear	MECHANIC
18. Check top seal for damage or wear	MECHANIC
19. Check functioning of cable tension set	MECHANIC
20. Grease the springs	MECHANIC
21. Grease bearings of rollers	MECHANIC
22. Grease running parts of the tracks	MECHANIC
23. Grease the shaft bearings	MECHANIC

**After two years (or after every 15000 cycles):**

1. Grease all the points mentioned above	MECHANIC
2. Check or test the attachment of the springs to the fittings	MECHANIC
3. Check the balance of the door and adjust if needed	MECHANIC
4. Check the cables for damage or wear	MECHANIC
5. Check the cable connection points on drums and bottom bracket	MECHANIC
6. Check the roller for wear and clearance	MECHANIC
7. Check the hinges for breaks or wear	MECHANIC
8. Check the panels for damage, wear or rust	MECHANIC
9. Check the spring break device following instructions in manual	MECHANIC
10. Check the manual operation of the door	MECHANIC
11. Check side seals for damage or wear	MECHANIC
12. Check top seal for damage or wear	MECHANIC
13. Check bottom seal for damage or wear	MECHANIC
14. Check the shaft for wear or damage	MECHANIC
15. Check the bottom bracket for wear or damage	MECHANIC
16. Check the connection of the drum to the shaft (keys!)	MECHANIC
17. Check and re-tighten the bolt of the coupling	MECHANIC
18. Check the connections of the track system	MECHANIC
19. Check the attachment of the door to the lintel and ceiling	MECHANIC
20. Grease the springs	MECHANIC
21. Check bolt and screw connections of spring break device	MECHANIC
22. Check connections of the pawl wheel	MECHANIC
23. Check the functioning of the cable tension set	MECHANIC
24. Grease springs	MECHANIC
25. Grease bearings of rollers	MECHANIC
26. Grease running parts of the tracks	MECHANIC
27. Grease the bearings of the shafts	MECHANIC
28. Grease the hinge pins	MECHANIC
29. Grease the lock	MECHANIC
30. Grease the shafts of the rollers A0	MECHANIC

### **After spring break:**

- ✓ Replace springs and spring break device
- ✓ Check the shaft for damage and replace if necessary

**NB! Do not touch any connection or part of the door after a spring break. Wait until qualified mechanics arrive at the scene!**

### **After cable break:**

- ✓ Replace cable together with the connections
- ✓ Replace cable break device
- ✓ Check tracks and service or replace

**NB! Do not touch any connection or part of the door after a cable break. Wait until qualified mechanics arrive at the scene!**

### **For greasing use :**

PTFE or SAE20

### **For cleaning use :**

Soft soap with water. Do not use aggressive soap or a cloth.



#### **Note:**

- ✓ The rubbers of the door may only be greased with vaseline if it is certain that the electrical power to the door has been switched off and has been secured against being switched on.
- ✓ The guide rollers may only be greased with ball bearing grease if it is certain that the electrical power to the door has been switched off and has been secured against being switched on.

## **5.2 Spare parts**

Parts can be ordered from the supplier who supplied the overhead door. It is of great importance that only original replacement parts are used and that they are fitted by technically competent people.

## **5.3 Disposal**

When the door is at the end of its working life and it is decided that it should be replaced or removed, this should be carried out by a technically competent person.

Metal and plastic should be sent separately to a waste processing company.

The motor can contains oil. This falls under Small-scale Chemical Waste.



**Note:** Consult the supplier in every case

## **Glossary of terms**

### ***Authorised person:***

An authorised person is someone who has carefully read this manual and is at least 16 years old. Moreover, this person must have sufficient skills to be able to operate an overhead door.

### ***Technically competent person:***

A technically competent person is someone who has sufficient technical knowledge to carry out activities on an overhead door. This person is aware of the dangers that can occur.

### ***Door leaf:***

A door leaf is the total of horizontally connected panels used to shut off and give access to an area. For the ST, PL these panels are made of 2 steel sheets separated by insulation material. For the ALU these panels are made of 2 aluminium sheets separated by insulation material. For the AR these panels are made of aluminium profile that form a frame that can be fitted with glass.

### ***Overhead door:***

An overhead door consists of a door leaf that closes off an opening in a building. This door leaf consists of horizontally connected panels.  
An overhead door is opened vertically.

### ***Spring bumper:***

A spring bumper is a block of rubber that is mounted at the end of the horizontal rails. This spring bumper restrains the overhead door when it is opened to the maximum.