

# Service & Maintenance Manual

## AUTOMATED BI-FOLD DOORS (FOUR-FOLD DOORS)

AFTS40  
AFTS60

---

**Headquarters**  
**BATOR Industrietore AG**  
Hofmattstrasse 14  
CH-3360 Herzogenbuchsee  
Tel. +41 (0)62 956 12 12  
Fax +41 (0)62 956 12 13

bator@bator.com  
www.bator.ch

**Branch (France)**  
**BATOR Portes Industrielles SARL**  
6, rue Icare  
F-67960 Entzheim

bator@bator.com  
www.bator.fr

**Headquarters North America**  
Bator North America, LLC  
125 South Elm Street, Ste. 405  
Greensboro, NC 27401  
Mobile 336.508.3662  
Fax 336.907.2287

usa@bator.com  
www.batorusa.com

---

## AUTOMATED BI-FOLDING DOORS

Type AFTS40  
Type AFTS60

---

Table of Content	page
<b>Introduction</b>	3
<b>Drawings</b>	
• Door	4
• Wicked door with door closer	5
• Wicked door with opening limiter	6
<b>Instruction Manual</b>	7-12
• Door / Closure	
• Control Unit	
• Types of automation / Types of control	
• Control Pad / Safety features	
• Motor systems / Emergency release	
<b>Service</b>	13-16
• Door system	
• Control Unit	
• Motor system	
• Maintenance Cycle	
<b>Cleaning</b>	17
• Door system	
• Motor system	
• Control Unit	
<b>Field service</b>	18



INDUSTRIAL DOORS

## Introduction

---

Dear Client,

Thank you for your confidence in BATOR doors.

For more than 60 years BATOR GROUP has designed, developed, produced and installed folding, sliding, and telescopic doors & closures while providing full service and maintenance.

Post install service & maintenance is critical to the vitality of the assembly. As part of the process of closing out the installation of these assemblies this Service & Maintenance Manual is being provided to support the ongoing operations, service & maintenance. Additionally, please understand that BATOR guarantees the ongoing availability of all replacement parts for the life-span of the assembly.

BATOR can provide service response & replacement parts worldwide through a network of distribution hubs and certified technical staff with as little as a 24-hour response time. Please contact our **Service Hot-line at 888.510.BATOR (2286)**.

This assembly is a technical piece of equipment and requires periodic maintenance executed by a trained specialist.

**Headquarters**  
**BATOR Industrietore AG**  
Hofmattstrasse 14  
CH-3360 Herzogenbuchsee  
Tel. +41 (0)62 956 12 12  
Fax +41 (0)62 956 12 13

bator@bator.com  
www.bator.ch

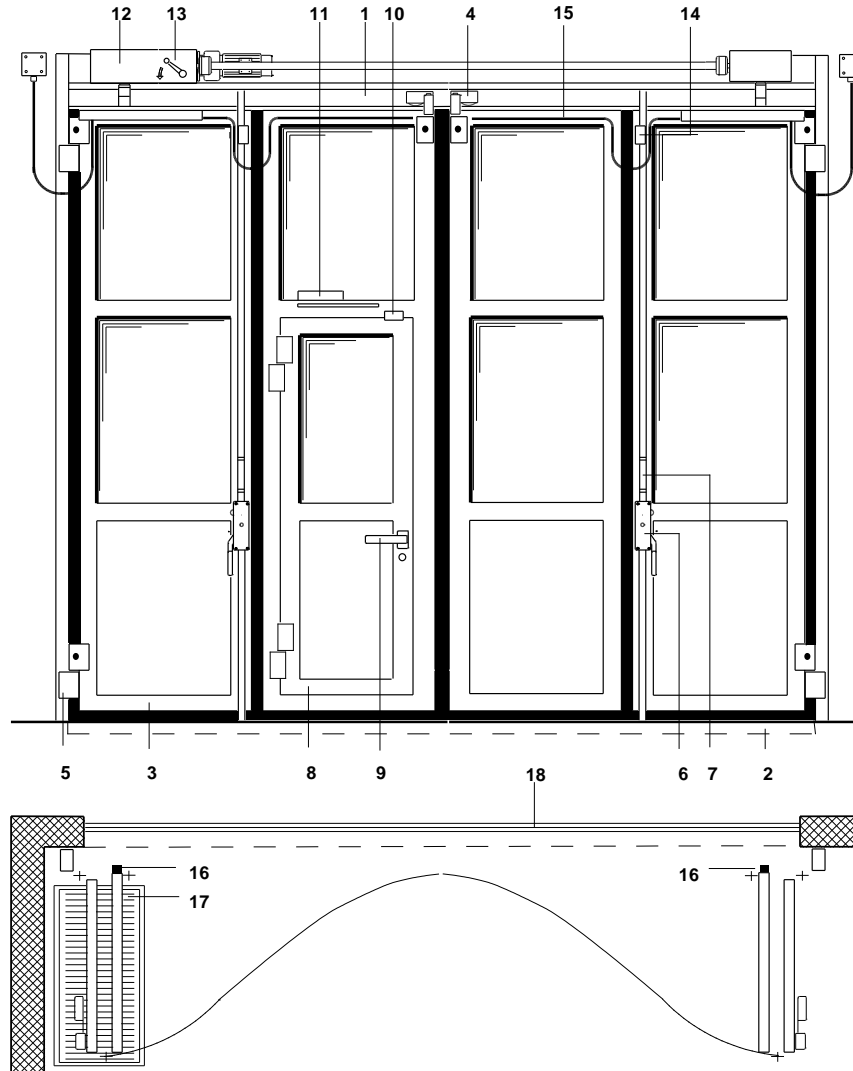
**Branch (France)**  
**BATOR Portes Industrielles SARL**  
6, rue Icare  
F-67960 Entzheim

bator@bator.com  
www.bator.fr

**Headquarters North America**  
Bator North America, LLC  
125 South Elm Street, Ste. 405  
Greensboro, NC 27401  
Mobile 336.508.3662  
Fax 336.907.2287

usa@bator.com  
www.batorusa.com

## AUTOMATED BI-FOLD DOOR



- |   |                        |    |                          |    |                                  |
|---|------------------------|----|--------------------------|----|----------------------------------|
| 1 | Upper track            | 7  | Operating handle         | 13 | Emergency release                |
| 2 | Lower track (optional) | 8  | Wicker door              | 14 | End-switch of lock bar           |
| 3 | Door element           | 9  | Door handle              | 15 | Flexible conduit                 |
| 4 | Carriage               | 10 | Reed contact wicker door | 16 | Main safety edge (contact strip) |
| 5 | Hinge                  | 11 | Door closer              | 17 | Contact mat                      |
| 6 | Door fastener          | 12 | Motor system             | 18 | Light barrier (electric eye)     |

**Headquarters**  
**BATOR Industriertore AG**  
 Hofmattstrasse 14  
 CH-3360 Herzogenbuchsee  
 Tel. +41 (0)62 956 12 12  
 Fax +41 (0)62 956 12 13

bator@bator.com  
 www.bator.ch

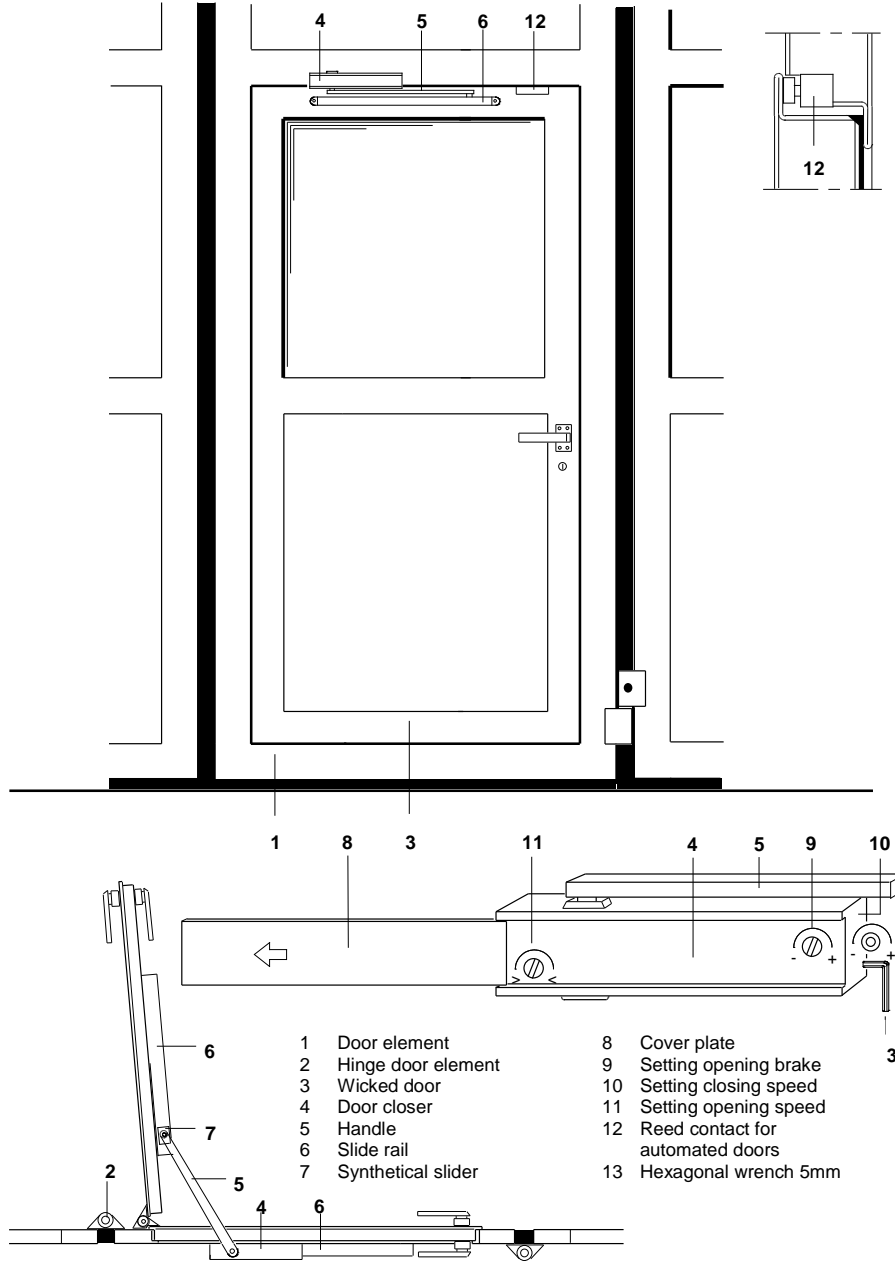
**Branch (France)**  
**BATOR Portes Industrielles SARL**  
 6, rue Icare  
 F-67960 Entzheim

bator@bator.com  
 www.bator.fr

**Headquarters North America**  
**Bator North America, LLC**  
 125 South Elm Street, Ste. 405  
 Greensboro, NC 27401  
 Mobile 336.508.3662  
 Fax 336.907.2287

usa@bator.com  
 www.batorusa.com

## Wicked door closer



**Headquarters**  
**BATOR Industriertore AG**  
 Hofmattstrasse 14  
 CH-3360 Herzogenbuchsee  
 Tel. +41 (0)62 956 12 12  
 Fax +41 (0)62 956 12 13

bator@bator.com  
 www.bator.ch

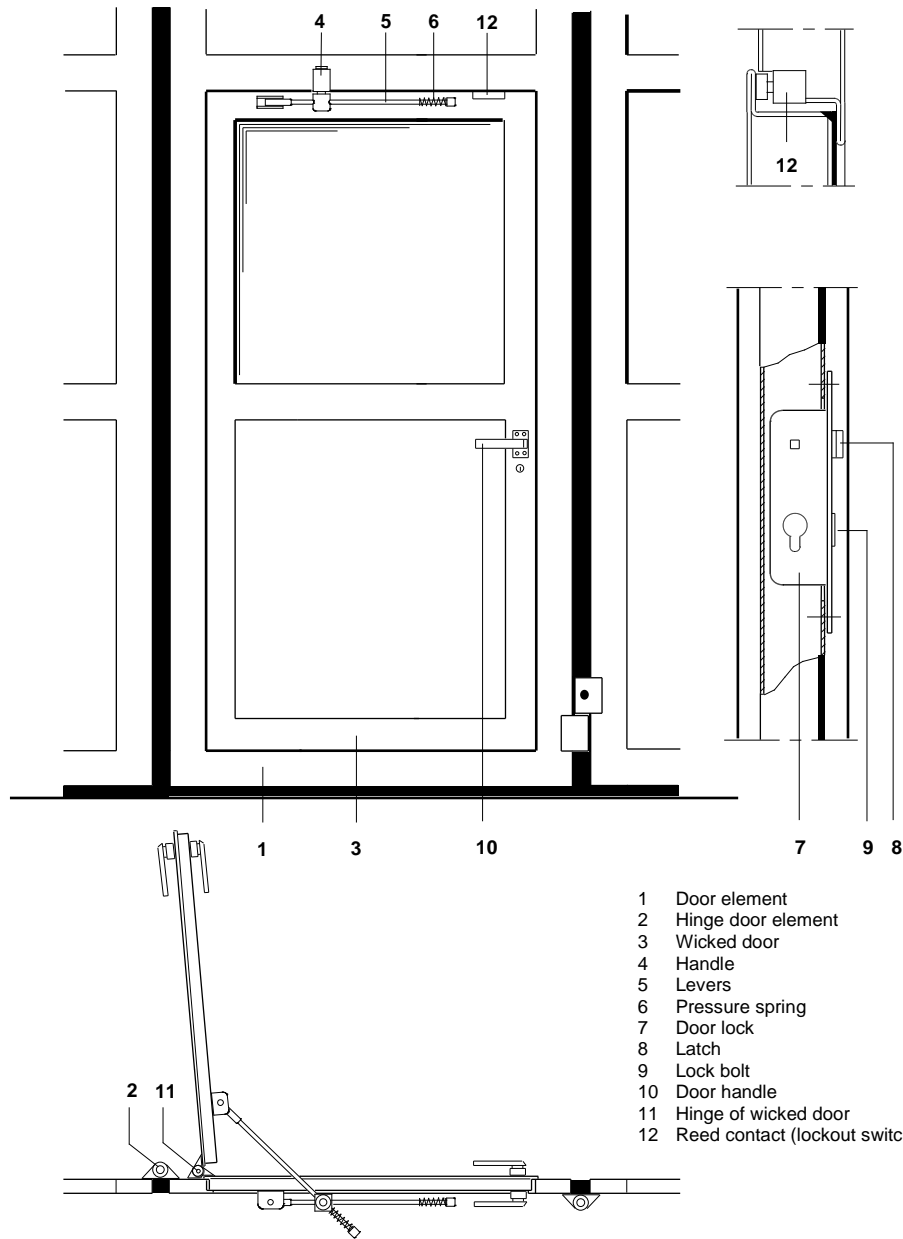
**Branch (France)**  
**BATOR Portes Industrielles SARL**  
 6, rue Icare  
 F-67960 Entzheim

bator@bator.com  
 www.bator.fr

**Headquarters North America**  
 Bator North America, LLC  
 125 South Elm Street, Ste. 405  
 Greensboro, NC 27401  
 Mobile 336.508.3662  
 Fax 336.907.2287

usa@bator.com  
 www.batorusa.com

## Opening limiter for wicked door



- 1 Door element
- 2 Hinge door element
- 3 Wicked door
- 4 Handle
- 5 Levers
- 6 Pressure spring
- 7 Door lock
- 8 Latch
- 9 Lock bolt
- 10 Door handle
- 11 Hinge of wicket door
- 12 Reed contact (lockout switch)

**Headquarters**  
**BATOR Industrietore AG**  
 Hofmattstrasse 14  
 CH-3360 Herzogenbuchsee  
 Tel. +41 (0)62 956 12 12  
 Fax +41 (0)62 956 12 13

bator@bator.com  
 www.bator.ch

**Branch (France)**  
**BATOR Portes Industrielles SARL**  
 6, rue Icare  
 F-67960 Entzheim

bator@bator.com  
 www.bator.fr

**Headquarters North America**  
 Bator North America, LLC  
 125 South Elm Street, Ste. 405  
 Greensboro, NC 27401  
 Mobile 336.508.3662  
 Fax 336.907.2287

usa@bator.com  
 www.batorusa.com

## Instruction Manual

### Automated Bi-fold door

Check if operating radius of the door is free of any obstacle.

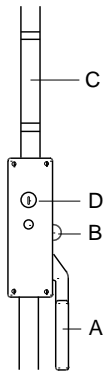
Open door cremone lock and activate the control unit by turning main switch to position "ON" (A ; page 6).

Wait a few seconds for starting the control unit. Push "Open" button on the control pad.



**Attention: The travel path of the assembly is dangerous. Please be sure to keep the travel path clear of objects. Alterations to the doors travel path can result in jamming. It is important to maintain a safe distance during the operation of the assembly.**

### Door Fastener (5)



#### Door fastener without cylinder

Open of the door fastener, press down and hold the wiper (B), and swinging handle upward (A).

#### Door fastener with half cylinder interior side

Open half cylinder (D) with corresponding key and swinging handle upward (A)

#### Door fastener with double cylinder type BATOR

Open double cylinder ( D ) from interior or exterior side with the corresponding key and swinging handle upward (A)

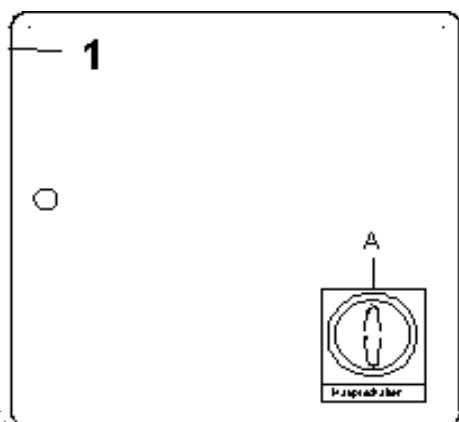


On top of the bar lock control the incorporated contact switch /(14) S - 3. If the bar lock is in closed position, the control unit will be deactivated.



**Do not manoeuver the door by holding the handle (A). Instead, for manual operation use the handle integrated in the bar lock (C). Before manually operation, ensure the motor system is properly dis-engaged.**

## Control Unit



**1 = Door Control Unit**

Programmable logic control

**A = Main Switch**

Lockable in position "OFF" with a padlock



In case of interruption turn the main switch (A) in "OFF" position. Wait 10 seconds and turn the main switch (A) to "ON" position. The interruption gets acknowledged by sending a "OPEN" impulse (e.g. open button at the button pad).



## Types of control modes for industrial doors

### Semi-automated control mode

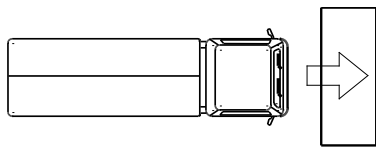
- 1 **Control by impulse OPEN – STOP - CLOSE**   
triple button control pad
- 2 **Step by step control OPEN – CLOSE**   
single button on control pad
- 3 **Impulse step by step control OPEN – STOP - CLOSE**   
single button control pad  
Impulse “OPEN”, consecutive impulse “STOP”, followed by consecutive impulse “CLOSE”

### Fully automatic control mode

- 4 **Door “OPEN” by different control elements**  
Automatic closing of the door controlled by adjustable time units.  
Safety control of the automatic closing by a light barrier (electric eye) (17, page 3) in door jambs, with reverse function during closing sequence the door.  
In the fully closed position the light barrier (electric eye) is switched-off.  
The closing process can be influenced by actuation of one of the control elements or the light barrier.

### Standard elements

- 1 Push button(s)
- 2 Key switch
- 3 Pull switch
- 4 Keypad
- 5 ID-card reader
- 6 Presence detector (radar)
- 7 Inductive loop



The inductive loop integrated in the finished floor generates a high-frequency oscillating circuit. The BATOR detector is self-regulating. By driving over the inductive loop with a vehicle (metal) a switch command is released.  
The switch command remains as long the inductive loop is engaged.



**If control unit is powered-off at some point (nights, weekends, etc.), the inductive loop must be free of any vehicle when turning the control unit back on. Otherwise, automated calibration will not properly configure and result in malfunction.**

### 8 Touch-sensitive treshold

**Headquarters**  
BATOR Industrietore AG  
Hofmattstrasse 14  
CH-3360 Herzogenbuchsee  
Tel. +41 (0)62 956 12 12  
Fax +41 (0)62 956 12 13

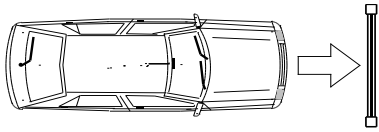
bator@bator.com  
www.bator.ch

**Branch (France)**  
BATOR Portes Industrielles SARL  
6, rue Icare  
F-67960 Entzheim

bator@bator.com  
www.bator.fr

**Headquarters North America**  
Bator North America, LLC  
125 South Elm Street, Ste. 405  
Greensboro, NC 27401  
Mobile 336.508.3662  
Fax 336.907.2287

usa@bator.com  
www.batorusa.com



The touch-sensitive threshold, which is flush with the floor, is made of a special rubber profile. When driving over with a vehicle it generates a compressional wave that is recognized by a manometric switch. At permanent pressure on the threshold, the switch command does not remain.

## 9 Radio remote control



Radio control with a frequency of 433 MHz codable over pins with 1024 possibilities; or digital systems with infinite possibilities are available. Range 90 - 150 ft. (30 - 50m) depending on the local conditions and the current capacity of the batteries of the hand-held transmitter.

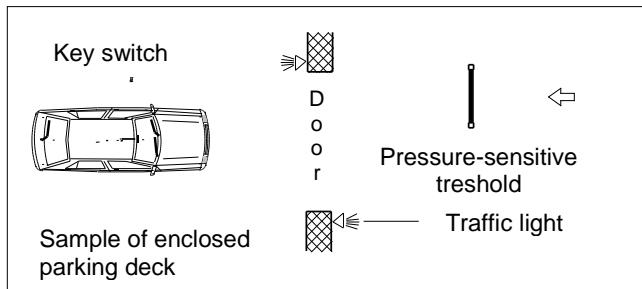


For an optimal signal transmission, push button at the hand-held transmitter for 1 to 2 seconds. At noticeable decrease of the range, replace the batteries.



**The temperature range of the hand-held transmitter is 14° F up to 131° F (-10° C up to +55° C). Protect the hand-held transmitter from moisture and heat (dashboard!).**

## Signalizations



10 Traffic light "RED – RED". Standard condition "DARK". With the actuation of a control device the opposite side (exterior / interior) switches to "RED".



11 Traffic light "RED / GREEN – RED / GREEN". Standard condition of both sides is "GREEN". With the actuation of a control device the opposite (exterior / interior) switches to "RED".



## 12 Signalizations during door movements

The movement of the door "Open and Close" is optically signalized.

The closing movement of the door is pre-signalized at an adjustable time.

## Safety and Protection measures

### Main safety edge (16)

At activation of the integrated contact strip in the main safety edge (16; page 3), the door movement will be immediate reversed to "OPEN".

The break ramp (A; page 9) is according to the international norms extremely steep. In the closed position of the door the main safety edge is automatically deactivated.



This particular programming is defined that during three interruptions of the main safety edge without being in fully closed position the control unit stops the door in "ERROR" mode. The control unit has to be switched to the "OFF" position and after 10 seconds back to the "ON" position.

### Secondary safety edge



Depending on the situation a secondary safety edge might be necessary. At activating the secondary safety edge (e.g. on the wall etc.) during opening movement of the door stops the door immediately and the control unit falls into the "ERROR" mode. The control unit has to be switched to the "OFF" position and after 10 seconds to be switched back to the "ON" position. This function is only activated during the opening movement.

### Contact mat (17)



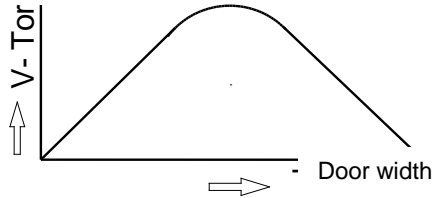
In case less than the distance between door in open position and the wall is less than 1-1/2 ft. a contact mat integrated in the finished floor is protecting pedestrians to get squeezed. The contact mat is a safety device and switches off the door when it gets activated during opening movement. For reset, the control unit has to be switched to the "OFF" position and after 10 seconds to be switched back to the "ON" position.

### Reed contact of the wicker door (10 / 14)



The contact switch (10; page 3) controls the wicker door during door movements and stops the door immediately, should the wicker door get opened. The control unit falls into "ERROR" mode. For reset, the control unit has to be switched to the "OFF" position and after 10 seconds to be switched back to the "ON" position.

## Electromechanical Sinus door drive (13)



Power transmission from driving system to the door via lever.

The lever system starts slow and accelerates during the opening / closing movement. The speed decreases gradually before the end of the movement to avoid abrupt stop.

The closed door is locked automatically by the system.

## Motor protection

An integrated program limits the running time of the motor, which protects the motor in case of an unexpected blockage or defective end switch. The control unit falls into "ERROR" mode and switches off the motor. For reset, the control unit has to be switched to the "OFF" position and after 10 seconds to be switched back to the "ON" position.

## Emergency release (13)



To ensure assembly remains in "manual mode" after activating emergency release (13), the main switch at control unit (A; page 6) needs to be switched off and secured with a padlock.

## Use of the emergency release (13)

### BATOR Electromechanical sinus motor system

- 1 Use of a ladder
- 2 Use of a rod release (optional / provided by BATOR) for disengaging the motor
- 3 Use of override toggle switch (red handle pressure / tension cable) at man's height

### BATOR Hydro-Pneumatic drive system

- 1 Pressure relief (red handle pressure / tension cable at man's height) releasing pressure valve

## Wicked door (7) □

The integrated wicked door (3; page 4 and 5) is designed for pedestrian use or as an emergency exit. Due to technical reasons, the wicked door cannot be opened beyond 95°. As an alternative to the automatic door closer BATOR provides opening limiter.

- Rail door closer with self-closing function (page 4)
- Opening limiter, system BATOR with integrated end-cushioning (damper)

## Maintenance

### Automatic folding doors

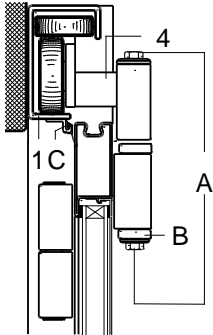


**For safety, during service or maintenance work, make sure position the main switch at control unit (A; page 6) in the “OFF” position with a padlock. This is especially crucial during work requiring a ladder or scaffold; to avoid accidental operation (by others) of the assembly during work period.**

### Door main frame (1)

Check all fastener, screws, weld seams, connection points of door frame to the structure.

### Upper track system



- Upper track (1; page 3) to be inspected for any wear. Clean surface with brush and damp rag.
- Roller assembly (4; page 3) needs to be inspected for wear by moving manually and slowly the door.
- Steering roller (6; page 3): check body and rollers for wear
- Suspension, door element / roller screw (A) connection, stud screw, tightness of the screw. If required, retighten screws.
- Condition check of thrust bearings
- Check upper rubber profile (C) and clean with glycerin or mild agent

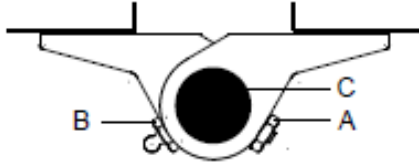
### Lower track (2; optional)

Cleaning of the lower track (if any).

### Bottom roller (7)

Bottom rollers to be checked on wearing and functionality.

## Hinges (5)



- Stud bolt with locking nut (A) for fixing the pin.
- Check of screw, pin and its fixing
- Grease fitting (B) for greasing the pin using grease press
- Check condition of thrust bearings
- Check presence of plastic plug on top of each hinge

## Door lock (8)

- Function test of the entire locking system
- Cleaning and greasing of all mechanical parts



## Wicket door (3)



Wicket door (3; page 4 and 5)

- Lubricating of the hinges using grease press
- Check of rubber seal; cleaning with glycerin or mild agent
- Check of catch lock (7, page 5), function check of falling latch (8, page 5) as well as lock bolt (9, page 5), treatment with spray.
- Verification of door handle (10, page 5)

## Door closer (10 / 4)



Door closer (4-13, page 4)

- Verification and adjustments of opening break (9), closing force (10), and opening angle (11)
- For modifications shifting cover plate (8)
- Recalibration according information page 4
- Spray treatment of sliding track (6)



The opening break and the closing force can be different during summer and winter period due to the oil viscosity.

## Opening limiter (4)



Opening limiter (4, page 5)

- Check of condition and function
- Spray treatment of levers (5)
- Lubrication of pins (4, page 5)

## Rubber sealing profiles

- Check condition of vertical rubber profiles.
- Control nylon brushes of wearing and seal; if required, adjust the brushes.

## Products



Universal grease, for example Motorex 190 EP or equivalent.  
Teflon spray or equivalent.

## Control unit

### Control unit (1)

- Verification of closure of control unit box (1; page 6)
- Function check of impulse button(s), if installed
- Control of all electrical connections (fastener)

## Control elements

- Verification of components of control unit and signalization (1-12; page 7 and 8) and all corresponding signal evaluators. If required, perform adjustments.

## End switches

- End switches for controlling the movement of the door, bar lock switch (14, page 3), and reed contact of the wicker door (12; page 4 and 5), electrical conduits, check fasteners and positions.

## Flexible conduits (15)

Check condition of cables and connections as well as the function of strain relief

## Safety and protection elements (16 / 17)

- Check condition of fixing screws of motor (16, page 3)
- Check condition of main and secondary safety edges (if required)
- Check functionality of both elements
- Check function of light barrier in door jambs (17; page 3)
- Verification and testing of motor protection measures (time)



## Motor Sinus / Hydro-pneumatic

- Condition of fixing screws of motor system
- Verification of transmission axe (Sinus), chain system and cylinder and tanks (Hydro-pneumatic)
- Check the de-coupling of motor system
- Verification of the cabling and fixing of the cables
- Check for any unexpected noises.

**Headquarters**  
**BATOR Industrietore AG**  
Hofmattstrasse 14  
CH-3360 Herzogenbuchsee  
Tel. +41 (0)62 956 12 12  
Fax +41 (0)62 956 12 13

bator@bator.com  
www.bator.ch

**Branch (France)**  
**BATOR Portes Industrielles SARL**  
6, rue Icare  
F-67960 Entzheim

bator@bator.com  
www.bator.fr

**Headquarters North America**  
Bator North America, LLC  
125 South Elm Street, Ste. 405  
Greensboro, NC 27401  
Mobile 336.508.3662  
Fax 336.907.2287

usa@bator.com  
www.batorusa.com

## Final check-up

- Verification of all safety measurements (e.g. electric eye, safety edges etc.)
- Check for any unknown noises of door and motor system
- Disengage the motor system and open and close manually the door. Check for slacks etc.

## Maintenance Intervals



**BATOR recommends all service & maintenance work to be completed by a certified technician.**

**BATOR recommends an inspection of automated doors two times per year.**

The frequency of the maintenance depends on the operating conditions and service frequency per day. BATOR is pleased to provide you a corresponding maintenance contract.



All modifications, not completed by BATOR, voids manufacturer's warranty.

## Cleaning and Care

### Door construct, manual and automated doors

The cleaning and care of the door serve primarily to preserve the visual appearance and is not part of the functional maintenance.

Do not perform maintenance on direct solar radiation. The surface temperature should not be higher than 77° F (25° C).

The components of the door construct are made of coated steel, safety glass and rubber profiles.

Any cleaning can be accomplished through the use of mild detergents, soap, and water. Finish is similar to that of a car.

Cleaning of embedded lower tracks can be performed with brush and water. Depending on operation conditions, cleaning of the lower track is recommended several times per year.

BATOR recommends treating rubber profiles during winter with glycerin.



It is recommended to coordinate cleaning with the periodical maintenance, since the hinges and the mechanical closure will need to be greased after the cleaning



**Never use cleaning supplies with unknown compound.**

**Headquarters**  
**BATOR Industrietore AG**  
Hofmattstrasse 14  
CH-3360 Herzogenbuchsee  
Tel. +41 (0)62 956 12 12  
Fax +41 (0)62 956 12 13

bator@bator.com  
www.bator.ch

**Branch (France)**  
**BATOR Portes Industrielles SARL**  
6, rue Icare  
F-67960 Entzheim

bator@bator.com  
www.bator.fr

**Headquarters North America**  
Bator North America, LLC  
125 South Elm Street, Ste. 405  
Greensboro, NC 27401  
Mobile 336.508.3662  
Fax 336.907.2287

usa@bator.com  
www.batorusa.com



## Automated doors



**Always position control unit in the “OFF” position and secure with a padlock. Disengage motor from the door with the help of the disengager lever.**

Cleaning of the drive system with water; if required with light alkaline detergents and sponge or rag.



**Never clean the motor system with high pressure water. The components are not designed for pressure cleaning.**

Prior to returning the assembly to service, dry **residual water** from the switches of the bar lock and wicker door (12; page 4 and 5) **with the help of rag and pressured air.**



**The cleaning and care of the door system is not integrated in the maintenance contract of BATOR.**

# **bator**

INDUSTRIAL DOORS

**BATOR FIELD SERVICE**

**BATOR North America LLC.**

# **1-888-510-BATOR**

[info@batorus.com](mailto:info@batorus.com)

[www.batorus.com](http://www.batorus.com)



**Headquarters**  
**BATOR Industrietore AG**  
Hofmattstrasse 14  
CH-3360 Herzogenbuchsee  
Tel. +41 (0)62 956 12 12  
Fax +41 (0)62 956 12 13

[bator@bator.com](mailto:bator@bator.com)  
[www.bator.ch](http://www.bator.ch)

**Branch (France)**  
**BATOR Portes Industrielles SARL**  
6, rue Icare  
F-67960 Entzheim

[bator@bator.com](mailto:bator@bator.com)  
[www.bator.fr](http://www.bator.fr)

**Headquarters North America**  
Bator North America, LLC  
125 South Elm Street, Ste. 405  
Greensboro, NC 27401  
Mobile 336.508.3662  
Fax 336.907.2287

[usa@bator.com](mailto:usa@bator.com)  
[www.batorusa.com](http://www.batorusa.com)

- 18/18 -