

KTC 2

Revolving door  
Comfortline

Maintenance guide

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**"Translation of the original operating instructions"**

Maintenance       Safety check

### 1. System data

Building		Year of production	
Type		Commissioning on	
Order No.			
Manufacturer			
Serial No.			
Used measuring equipment (manufacturer/type)			

### General information

The system has to be serviced once a year in order to ensure its proper and reliable function and to provide a good maintenance status for many years.  
On the next few pages you will find in detail what has to be inspected.



The system has to be de-energised (disconnected from power supply) before performing any kind of work on the operator.

### 2. Point of inspection "drive unit"

Adjust the system to AUTOMATIC mode and check if the door runs properly and if you hear any indefinable operating noise caused by the motor or similar. Try to localise the reason for the noise if applicable.

Activate the pushbutton for the Emergency Stop function and remove the lower ceiling until you have proper access to the drive and control unit.

	OK	not OK	replaced
Indefinable noise at drive motor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check drive units for leaks. In case you find any leaks, replace the complete drive unit.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Replace track rollers (Ø 100 mm) every 600,000 revolutions (N 50-0042)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Replace track rollers (Ø 160 mm) every 600,000 revolutions (S 410-001 + N 10-0116; see appendix "A").	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Perform visual inspection of drive pulleys (Ø 160 mm), and replace as required (wear limit: Ø 158 mm). (If you replace the pulleys, fasten them with a torque of 16 Nm!)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check the slide bearing (main bearing above the collector). The yellow collar must be around 1.7 mm strong.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check all screw connections	<input type="checkbox"/>		

### 3. Point of inspection "operating modes/safety equipment"

Put the system into operation and switch it on.

Check the following functions as indicated in the operating instructions.

	OK	not OK
<b>Function programs for revolving door:</b>		
• "Lock" (locked position)	<input type="checkbox"/>	<input type="checkbox"/>
• "AUTOMATIC 1"	<input type="checkbox"/>	<input type="checkbox"/>
• "AUTOMATIC 2"	<input type="checkbox"/>	<input type="checkbox"/>
• "Summer configuration"	<input type="checkbox"/>	<input type="checkbox"/>
<b>Function programs for sliding door</b>		
• "OFF"	<input type="checkbox"/>	<input type="checkbox"/>
• "PERMANENT OPEN"	<input type="checkbox"/>	<input type="checkbox"/>
• "PARTIAL OPEN"	<input type="checkbox"/>	<input type="checkbox"/>
• "EXIT ONLY"	<input type="checkbox"/>	<input type="checkbox"/>
<b>Pushbuttons for Emergency Stop function</b>		
• Inside	<input type="checkbox"/>	<input type="checkbox"/>
• Outside	<input type="checkbox"/>	<input type="checkbox"/>
<b>Motion detectors</b>		
• Inside	<input type="checkbox"/>	<input type="checkbox"/>
• Outside	<input type="checkbox"/>	<input type="checkbox"/>
<b>Disabled access pushbutton</b>		
• Inside	<input type="checkbox"/>	<input type="checkbox"/>
• Outside	<input type="checkbox"/>	<input type="checkbox"/>
<b>Safety contact strip at post (electrical and mechanical)</b>		
• Safety contact strip "inside of post"	<input type="checkbox"/>	<input type="checkbox"/>
• Safety contact strip "outside of post"	<input type="checkbox"/>	<input type="checkbox"/>
<b>Canopy-integrated sensors</b>		
IRIS ON: the system has to recognise the test bodies in accordance with DIN 18650. It must not be possible to touch the area behind the safety contact strip.		
• Inside	<input type="checkbox"/>	<input type="checkbox"/>
• Outside	<input type="checkbox"/>	<input type="checkbox"/>
<b>Revolving safety contact strips (electrical and mechanical)</b>		
• Safety contact strip at "night shield 1"	<input type="checkbox"/>	<input type="checkbox"/>
• Safety contact strip at "night shield 2"	<input type="checkbox"/>	<input type="checkbox"/>
• Safety contact strip at "showcase 1"	<input type="checkbox"/>	<input type="checkbox"/>
• Safety contact strip at "showcase 2"	<input type="checkbox"/>	<input type="checkbox"/>
<b>Limit switch at wing</b>		
• Deflection device 1	<input type="checkbox"/>	<input type="checkbox"/>
• Deflection device 2	<input type="checkbox"/>	<input type="checkbox"/>
• Showcase 1	<input type="checkbox"/>	<input type="checkbox"/>
• Showcase 2	<input type="checkbox"/>	<input type="checkbox"/>
<b>Light barriers at wing</b>		
• Door panel 1	<input type="checkbox"/>	<input type="checkbox"/>
• Door panel 2	<input type="checkbox"/>	<input type="checkbox"/>
<b>4SAFE/AIR16</b>		
(Adjust the detection range of the sensor so that the door panels only hit the test body at "disabled speed" (low speed, especially for disabled users.)		
• Door panel 1	<input type="checkbox"/>	<input type="checkbox"/>
• Door panel 2	<input type="checkbox"/>	<input type="checkbox"/>
• Showcase/night shield 1	<input type="checkbox"/>	<input type="checkbox"/>
• Showcase/night shield 2	<input type="checkbox"/>	<input type="checkbox"/>
• Pre-detection sensor 1	<input type="checkbox"/>	<input type="checkbox"/>
• Pre-detection sensor 2	<input type="checkbox"/>	<input type="checkbox"/>
<b>Lights</b>	<input type="checkbox"/>	<input type="checkbox"/>

#### 4. Point of inspection "braking distances"

##### Test 1:

Position the test body (see DIN 18650 "reference body CC"; picture C.7) onto the floor. While the test body is located in the middle of the section (at half- the door radius), the profile must not run into the test body.

##### Test 2:

Hold or fix the test body (see DIN 18650 "reference body CD"; picture C.7) at a height of 1,200 mm above FFL at the glazing of the drum wall. The safety contact strip must not touch the test body during the test cycle.

#### 5. Point of inspection "options"

	OK	not OK
• Night-/Bank Function	<input type="checkbox"/>	<input type="checkbox"/>
• Detectors (in winter configuration)	<input type="checkbox"/>	<input type="checkbox"/>
• Electromechanical locking device	<input type="checkbox"/>	<input type="checkbox"/>

#### 6. Point of inspection "drive unit"



	Desired value	Actual value
• Supply voltage X100 (L, N)	230 V AC $\pm$ 10 %	.....V AC
• Control unit voltage X101 (+24 V DC, 0 V) (22 - 26 V DC)		.....V AC

#### 7. Point of inspection "collector"

	OK	not OK
• See appendix "B" for detailed maintenance instructions for the collector	<input type="checkbox"/>	<input type="checkbox"/>
• Collector properly fixed?	<input type="checkbox"/>	<input type="checkbox"/>

#### 8. Read-out of maintenance parameters

##### List

Parameter designation, text on Palm	Symbol	Description	Unit	Range
?		Number of revolutions	1000	5-digit, i. e. 100 million
?		Number of electric brake activations	1	8-digit, i. e. 100 million

1st Press and hold the "+" and "-" keys simultaneously for three seconds while you are in the **parameter selection menu**.

- A minus will appear on the display.

2nd Release the keys.

- The symbol for the first maintenance parameter will appear on the display.

3rd Select the maintenance parameter with the aid of the "+" and the "-" keys.

- Press the "Select" key several times to have the current value indicated digit by digit.

4th It is required to press the "Select" key twice for each digit.

- When you press the "Select" key for the first time, the number of the current digit is indicated.

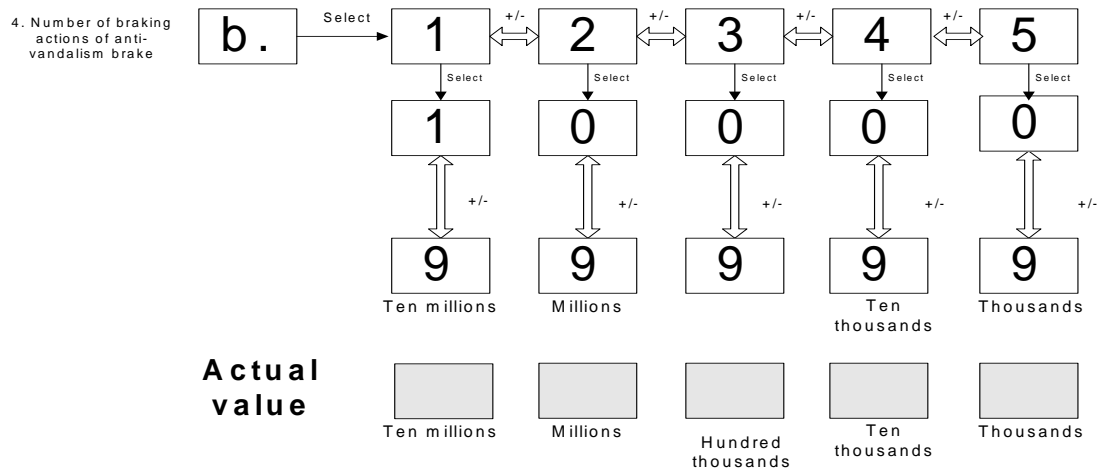
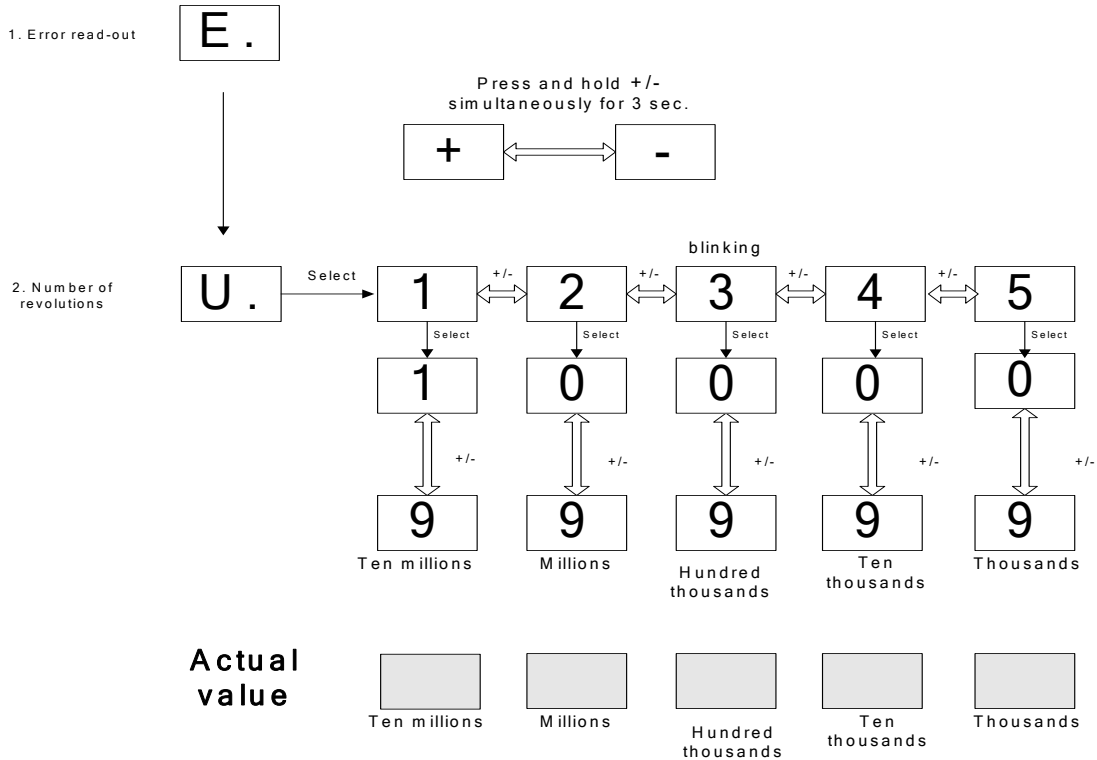
The value is adjustable via the "+" and the "-" keys.

- As soon as you have activated the "Select" key for the second time or after 3 seconds, the value of the current digit is indicated.

- After you have reached the last digit, the system automatically returns to the maintenance parameter selection.

- Whenever no key has been activated for 20 seconds, the current symbol will disappear and be replaced by a dot.

To get back to the maintenance parameter selection, simply press the "Select" key within the next 20 seconds. If you do not activate the key again within the above-mentioned period of time, you will automatically get back to the **parameter selection**.



**Reset of maintenance parameters**

Press and hold the "+" and "Select" key simultaneously for three seconds while you are in the parameter selection.

The display shows a and goes out as soon as you release the keys.

**9. Point of inspection "visual inspection"**

- Is the revolving door damaged or are there any other malfunctions?  Yes  No
- Have all cables been properly laid?  OK  not OK
- Is the clearance between the bottom edge of wing and the floor < 8 mm?  OK  not OK
- All safety-relevant screw connections properly fixed?  OK  not OK
- Floor mats properly fixed (by others)?  Yes  No

**10.**

**Final steps**

- Mount all parts of the ceiling that have been removed during the inspection  OK
  - Replace defective lamps  OK
  - Check if all brush seals are clean  OK  not OK
  - Check floor mat for proper position and cleanness  OK  not OK
  - Check upper ceiling for leaks  OK  not OK
- OK requested
- Complete documentation at hand? If not, please contact KT (inspection book, connection diagram, operating instructions) not OK  OK
  - System, types, labels  OK  not OK
  - Maintenance properly entered in inspection book?  Yes  No
  - Check-up successful, system properly put into operation?  Yes  No

**11. Remarks**

<b>1</b>	
<b>2</b>	

Date	Inspector's signature	Customer's signature

Inspection report handed over to customer?  Yes  No

Test badge fixed?  Yes  No

Next inspection due on:

Month			Year		
1	2	3	10	11	12
4	5	6	13	14	15
7	8	9	16	17	18
10	11	12	19	20	21

### Appendix "A", replacement of track roller S 410-001


The track rollers are fixed to the bracket with the N 10-0116 countersunk screw (hexagon socket) and Loctite.

Position the hexagon wrench properly before you relax the screw!

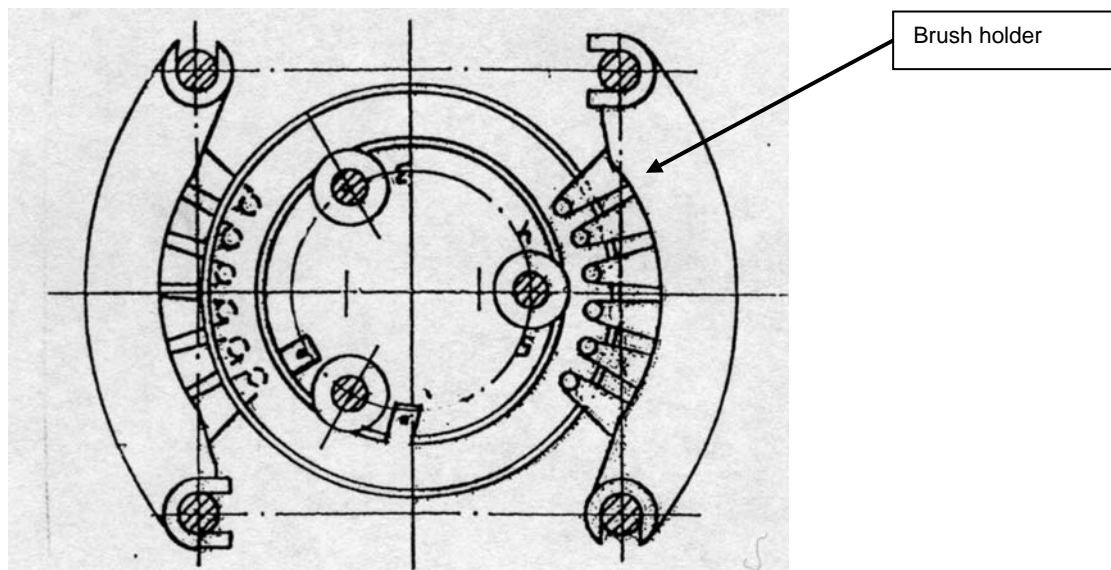
Screw down (25 Nm) the new track roller with the aid of the enclosed new countersunk screw and Loctite.

**Hint:** Use a hot air gun (approx. 80 °C) to relax the countersunk screw.


### Appendix "B", maintenance of collector

 Ensure that the system is properly de-energised (disconnected from power supply) before you perform any kind of maintenance work!

If a collector is defective, the whole collector must be replaced.



The complete collector including brush holder and insulating material have to be dry and free of dust and grease. Remove dust thoroughly with a brush or compressed air. Replace the brush holders and the collector if they are damaged or corroded.

 Never put grease or oil on the hinges of the brush holders or the surface of the collector.



## Appendix "C", table with revolutions per minute for KTC; KTV-A

Door Ø (mm)	Positioning speed 200 mm/second		Low speed for disabled users 350 mm/second	
	sec./revolutions	revolutions/min.	sec./revolutions	revolutions/min.
3600	57.0	1.1	32.0	1.9
4200	66.0	0.9	38.0	1.6
4800	75.0	0.8	43.0	1.4
5400	85.0	0.7	48.0	1.3

Door Ø (mm)	Walking speed 600 mm/second		Max. walking speed 750 mm/second	
	sec./revolutions	revolutions/min.	sec./revolutions	revolutions/min.
3600	19.0	3.2	15.0	4.0
4200	22.0	2.7	18.0	3.3
4800	25.0	2.4	20.0	3.0
5400	28.0	2.1	23.0	2.6

Speed in mm/sec. was measured at the outer edge of the wing.

## Principles for the inspection of power-operated windows, doors and gates

Safety-related requirements to power-operated windows, doors and gates are stipulated in the "guidelines for power-operated windows, doors and gated (ZH 1/494). These guidelines complement §§9, 10 and 11 of the "German health and safety at work act" as well as §§28 and 29 of the "general regulations for the prevention of industrial accidents" (VBG 1).

According to article 5 of the above-mentioned guidelines, power-operated windows, doors and gates have to be inspected before the first commissioning and depending on requirements, however, at least once a year, by a properly qualified technician. This inspection is not the same as the maintenance.

People are regarded as qualified to perform the inspection if their training and experience provides sufficient knowledge with regard to power-operated windows, doors and gates and they are firm with all relevant national health and safety regulations, guidelines and general technical rules such as the rules of the German Association for Electrical, Electronic & Information Technologies, DIN standards (or similar country-specific rules) so that they can properly assess the operational safety of power-operated windows, doors and gates. Properly qualified people are for example specially trained staff of the manufacturer or supplier, very experienced specialists of the facility operator or other people with similar expertise.

The technical experts have to perform their assessment objectively with regard to the health and safety of the users and must not be influenced by any other circumstances such as economic aspects.



Door Control



Automatic



Glass Fittings and  
Accessoires



Security/Time and  
Access (STA)



Movable Walls