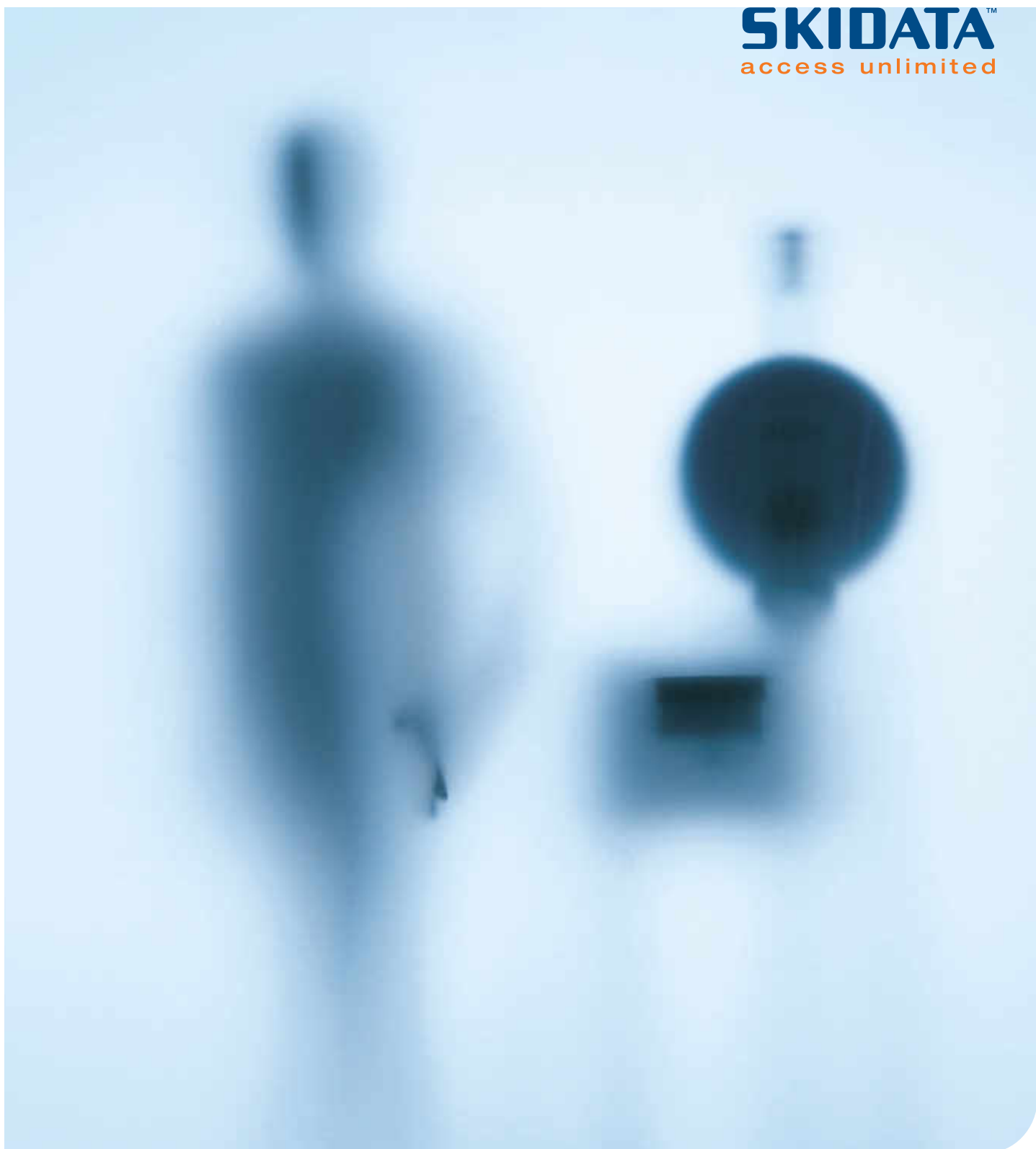




# **AS x70i CF/ISO14+15/V2**

Manual and Installation Instructions

**SKIDATA**<sup>™</sup>  
access unlimited



Version December 2005

AS x70i CF/ISO14+15/V2  
**Installation and Maintenance Instructions**

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**Please Note**

During the compilation of this Technical Documentation , great care has been taken to ensure the accuracy of the information contained in it. However, despite our constant effort to ensure the highest degree of accuracy and comprehensiveness possible, the information provided cannot be guaranteed to be absolutely error-free.

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**Declaration of Conformity**

The Reader AS x70i CF/ISO14+15/V2 has been developed, designed and manufactured in accordance with the following EU directive:

- R&TTE 1999/5/EC



**FCC 15.19**

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

**FCC 15.21**

**IMPORTANT:** Any changes to or modifications of AS x70i CF/ISO14+15/V2 unless expressly approved by SKIDATA AG, may void the user's authority to operate this device.

# 1

## **Main Table of Contents**

Version 1.2  
2 Pages  
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# 2

## **Introduction, Safety Requirements, Electromagnetic Compatibility (EMC)**

Version 1.1  
10 Pages  
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## 2.2 Typographical Conventions and Notation

Text passages which are of particular importance are highlighted by a different layout and special symbols.

### 2.2.1 Text

- Step-by-step instructions and listed items are printed in the form of bulleted lists . . .
- . . . just like this one.

Important hints and notes are printed in a box. Text passages like this usually caution the user against potential technical damage or health hazards. Boxed messages may also contain special instructions.

### 2.2.2 Symbols

The following symbols are used throughout this document:



Warning against personal injury or technical damage.



Information regarding the appropriate use of a device, or important hints, explanations, etc.

## 2.3 Safety Instructions

All components of Access Control System have been subjected to a series of safety tests. Any remaining dangers that may exist are pointed out during system training courses as well as in the user documentation and this installation guide.

### 2.3.1 General Safety Instructions and Warnings

- System devices may be used exclusively for their intended purpose, as specified by the manufacturer.
- Unauthorised modifications of the devices as well as the use of replacement parts and/or add-on devices not approved by the manufacturer may increase the risk of electric shock or cause other serious bodily harm and will void the manufacturer's warranty.
- The set up, installation, maintenance and configuration of the devices is limited to certified electricians with special training in accident prevention.
- The executive or commissioned technician, or the project manager, is responsible for ensuring that the devices are installed and configured in compliance with local technical requirements as well as other applicable local rules and regulations. This applies particularly to cable dimensions, protection against risks, earth connection, deactivation, disconnection, insulation testing, and over current protection.

#### 2.3.1.1 Notes concerning wearers of medical devices and implants

SKIDATA™ devices are CE certified and therefore comply with all applicable health and safety guidelines.

Like all handsfree scanners and contactless RF devices (e.g., ski lift access control devices), SKIDATA™ handsfree products used for contactless processing (reading and coding) of chip-based data carriers inevitably generate an electromagnetic field in close proximity to the antenna. To ensure the greatest possible safety for wearers of medical implants (e.g., pacemakers), RF-based SKIDATA™ devices were therefore subjected to further tests by a nationally accredited testing body in consultation with practicing cardiologists.

The test results indicate that SKIDATA™ devices, when used as directed, are perfectly safe for pace-maker wearers passing a handsfree ski lift access gate (note that this does not necessarily apply to devices by other manufacturers). However, to safeguard the health of those concerned (e.g., pace-maker wearers) and to comply with statutory warning obligations, people wearing medical devices (e.g. pacemakers) should be required to adhere to

the general recommendations for the use of electromagnetic devices in addition to the following guidelines:

- Persons affected by these guidelines (e.g., pacemaker wearers) are not allowed to place keycards or other contactless (electronic) access control data carriers next to the implant when passing an access device.
- When passing through an access gate, a minimum distance of between 20 and 30 cm should be kept between the antenna and the implant (to ensure this minimum distance, the use of a Swatch Access watch or Gore [s-key] gloves is recommended).
- Wearers of medical implants such as pacemakers should avoid leaning against an antenna unit.
- For wearers of medical implants such as pacemakers, the time of exposure to the RF scanning signal should be as short as possible when passing through the gate at normal pace; when queue-ing, they should stand at an appropriate distance from RF-based devices.
- Persons experiencing problems such as dizziness or nausea when passing an antenna should leave the scanning range of the device immediately.

Antennas must bear a warning label (shown in Fig. 1 below), which must be readily visible to wearers of medical devices. In addition, a warning sign with the above-mentioned safety guidelines should be placed at every point of initial access (e.g., cash desks).

Also, lift staff should receive appropriate instructions to be able to provide information and assistance if and when required.

Fig. 1:  
Warning label



### 2.3.1.2 Danger of injury by rotating parts

Operators should be aware of the danger of bruising by the rotating worm drive inside Turnstile DKZ x70 i and the ticket transport rollers inside Coding unit.



**DANGER OF INJURY** – Never touch these parts while the unit is in operation.

The AS x70i CF/ISO14+15/V2 is subject to be installed on top of a DKZ x70 i Turnstile or other turnstile.

### 2.3.2 Safety Instructions – Turnstile DKZ x70 i

The DKZ x70 i Turnstile unit is a machine as defined by EU Directive '89/392/EEG Machinery'. This Directive sets forth the safety requirements to be met by both the manufacturer and the operator of the turnstile unit.

Turnstile DKZ x70 i has been designed and manufactured in accordance with the most advanced technological standards and in full compliance with acknowledged technical rules and regulations. However, the possibility of impairment to material assets or injury to users or operators cannot be ruled out completely. Remaining dangers are pointed out in this manual as well as during system training courses.

The turnstile unit may be used only

- for its intended purpose (see below)
- if it is operationally safe

Any faults which might impair the operating safety of the unit must be removed without delay.

- To ensure a safe and fault-free operation of the DKZ x70 i Turnstile, operators must be familiar with the basic instructions and regulations regarding operating safety.
- These instructions, particularly the safety instructions, must be followed by all operators responsible for maintaining and configuring the unit.
- Applicable local rules and regulations for accident prevention must be adhered to at all times.

#### 2.3.2.1 Operating Hazards of Turnstile x70 i

- There is a theoretical risk of small children being hit in the back of the head by the automatically controlled turnstile bars. This danger can be virtually eliminated by deactivating automatic turnstile control (i.e., by disabling the turnstile drum actuator). This can be done by a member of the service or operating staff.

Automatic control of the turnstile bars facilitates the process of passing through the gate, as it requires no force on the part of the user.

Note that the auto-control function cannot be deactivated in turnstile model DKZ x70 i S1 with single turnstile arm. Gates with this turnstile must therefore be properly secured to minimise the danger of injury to small children. Appropriate safety measures include, for example, warnings directed at supervising adults (pictograms, multi-lingual warning notices, etc.) and similar measures.



### 2.3.2.2 Safety Precautions during Maintenance

**Caution:** Danger of injury to fingers by rotating worm drive when gear housing is open.

- To avoid injury, turn off the turnstile unit during maintenance or avoid reaching into the gear casing while the turnstile bars are in motion.
- Whenever maintenance work is performed on the turnstile unit, the access area must be properly cordoned off.

### 2.3.2.3 Obligation of the operator to meet safety requirements

According to EU Directive '89/392/EWG Machinery' the car park operator is under obligation

- to provide adequate means for securing the danger area around the turnstile unit and to caution against remaining safety hazards;
- to restrict handling of the turnstile unit to authorised personnel who have been properly instructed in the operation of the turnstile and who have been advised of possible dangers in training courses provided by SKIDATA™ and the study of the safety regulations and instructions contained in this documentation;
- to ensure safety around the access area;
- to ensure that the required system maintenance tasks are carried out regularly.

### 2.3.2.4 Safety and Warning Devices

- The protection and warning devices to be installed around the danger area of the turnstile are to be kept in sound condition.
- Warning signs and information posters are to be kept in readable condition.

### 2.3.2.5 Training of Operating Personnel

- Configuration and maintenance of the DKZ x70 i Turnstile Unit is restricted to personnel with proper training and experience.

### 2.3.2.6 Appropriate Use

The DKZ x70 i Turnstile Unit is intended exclusively for controlling passage through personnel access and exit points.

The unit can be operated either manually or automatically in combination with a control device for verifying access authorisations. Skiers may pass through a Turnstile x70 i gate with their skis on. At cableway lift facilities, skiers may carry their skis through the gate.

Any other use of the turnstile gate is considered as being inappropriate. SKIDATA™ AG will under no circumstances assume liability for any damage arising from such inappropriate use of the turnstile unit.

### 2.3.2.7 Warranty and Liability

In the event of damage to person or property, all warranty and liability claims shall be excluded, should this damage be attributable to one or more of the following:

- Inappropriate use of the DKZ x70 i Turnstile Unit
- Improper installation of the turnstile or any part thereof
- inadequate or missing warning facilities and/or safety devices inside the danger area around the DKZ x70 i Turnstile Unit
- Irregular or insufficient maintenance
- Use of material not approved by SKIDATA™
- Insufficient structural renovation
- Insufficient training of operating personnel
- Unauthorised constructional or technical modifications of the DKZ x70 i Turnstile Unit, particularly modifications of the turnstile drum or its support fixture
- Disaster situations brought about by impact of foreign bodies or acts of God.

## 2.4 Electromagnetic Compatibility (EMC)

All integral devices of Access Control System have been developed, designed and manufactured in full compliance with EU Directive 89/336/EEG 'Electromagnetic Compatibility'.

Compliance with EMC directives must be maintained by ensuring that

- specified maximum lengths of network links are not exceeded
- network connections are properly installed and maintained
- network hubs and line terminals are properly connected
- network cable screens are properly installed and maintained
- all system devices and facility installations subject to EMC regulations are inspected regularly and repaired if required.
- In addition, it is recommended to connect each Access Gate to the potential equalisation panel by way of a 16 mm<sup>2</sup> earth lead.

## 2.5 ESD Protection guidelines

The Reader is equipped with several control boards. To protect their electronic assemblies against electrostatic discharges, the circuit boards should be stored and transported only in antistatic protective bags. Defective components should also be kept in ESD protective bags.

Note that repair work on the Reader may only be carried out at special workspaces equipped with a conductive potential compensating mat and statically conductive, potential-compensating flooring. Persons handling electronic reader components must wear anti-static shoes. Also, the workspace must be free from high-impedance materials (e.g. styrofoam packaging).

Before unpacking the electronic components you should touch the ESD protective bag and an earthed object (e.g. metal casing) at the same time to discharge any static electricity.

Also, before handing an electronic component to another person you should touch this person to eliminate static charges.

When performing on-site maintenance or repair work, the use of a portable earthed ESD protection mat is recommended.



# 3 Maintenance

Version 1.0  
22 Pages  
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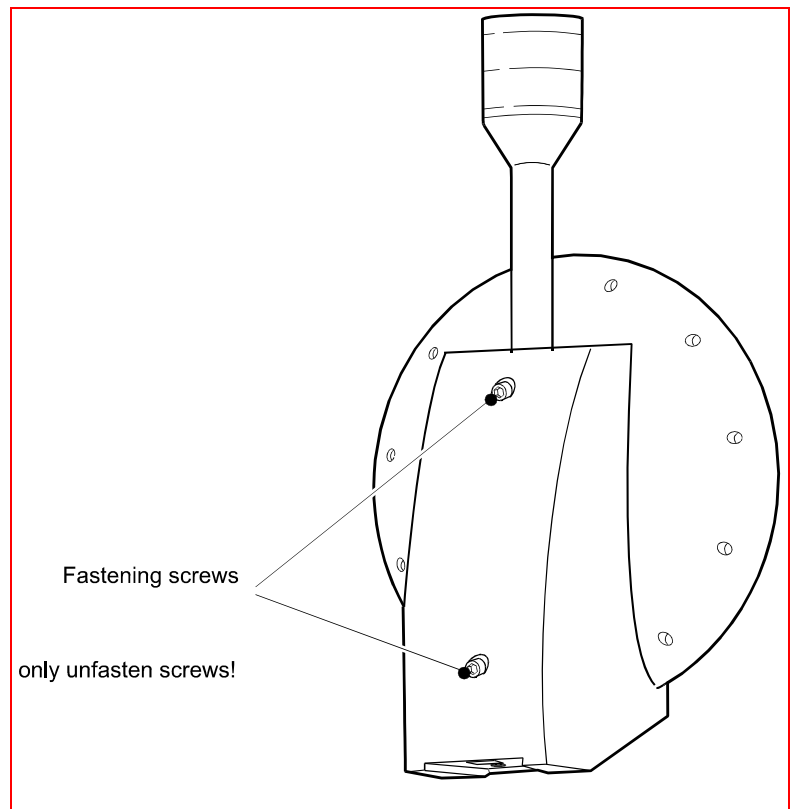
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## 3.2 Opening the Reader

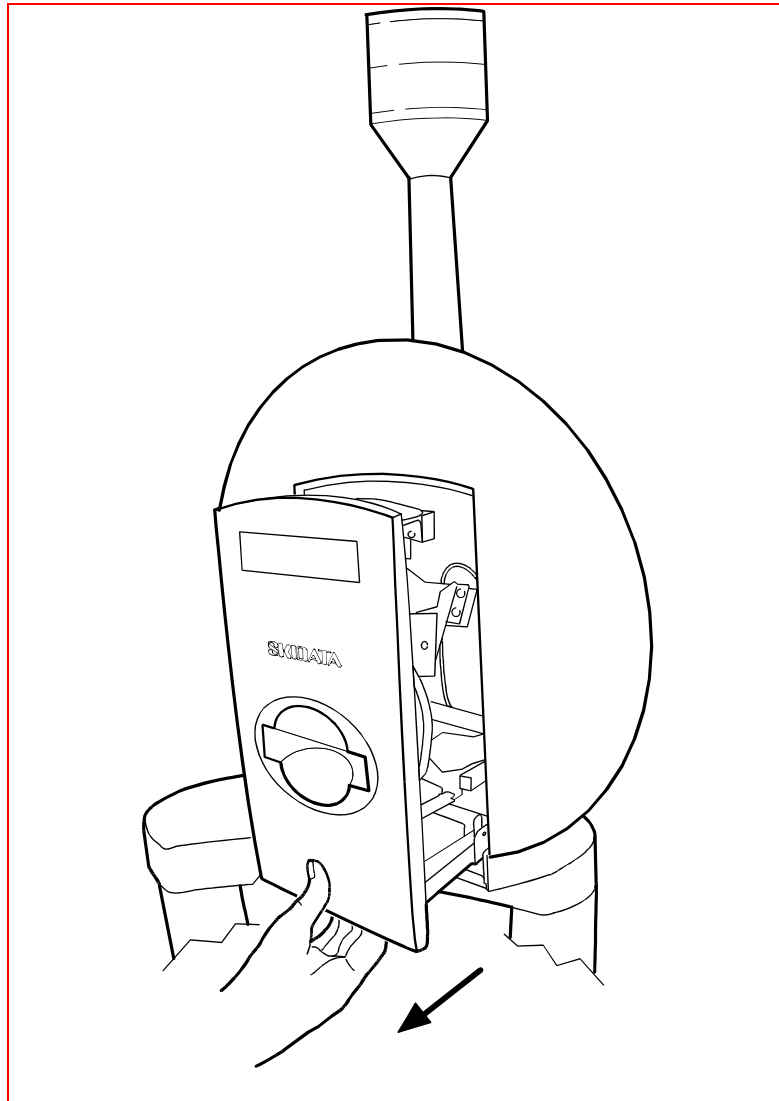
- Unfasten the two fastening screws (M5x20, use No. 4 Allen wrench) on the rear of the reader.

Fig. 1  
Reader AS x70i Cx/V2:  
Fastening screws



- Pull out the front panel as far as it will go

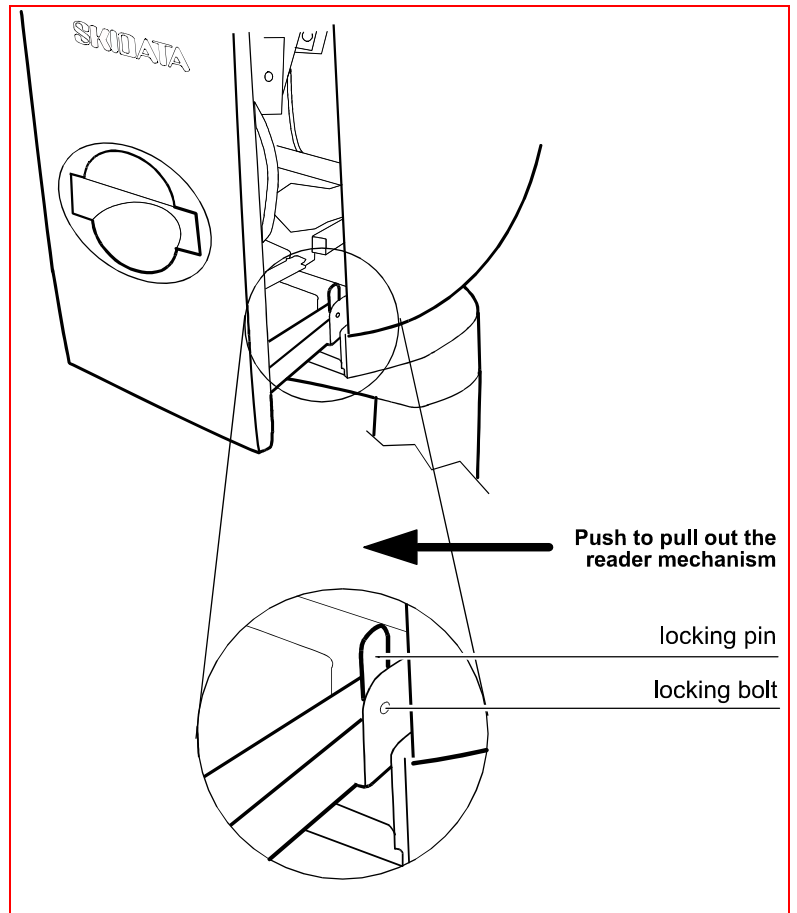
Fig. 2  
Reader- pull out



#### Taking the reader assembly out of the reader enclosure

- Open the reader and disconnect the cables leading inside the enclosure (power supply and Ethernet cables).
- Press the locking lever inwards, as shown in Fig. 3.
- Pull out the reader assembly.

Fig. 3  
Locking pin



#### Reinstalling the reader mechanism assembly

- Place the support rails of the reader mechanism assembly in the guiding bracket.
- Reconnect all cables, making sure that all cable feeds are inside the housing and none of the cables are pinched.
- Press the locking pin inwards and push the reader assembly into the enclosure as far as it will go.
- Finally, re-fasten the locking screws.

### 3.3 Reader cable connections

Fig. 4: Reader housing – cable connections

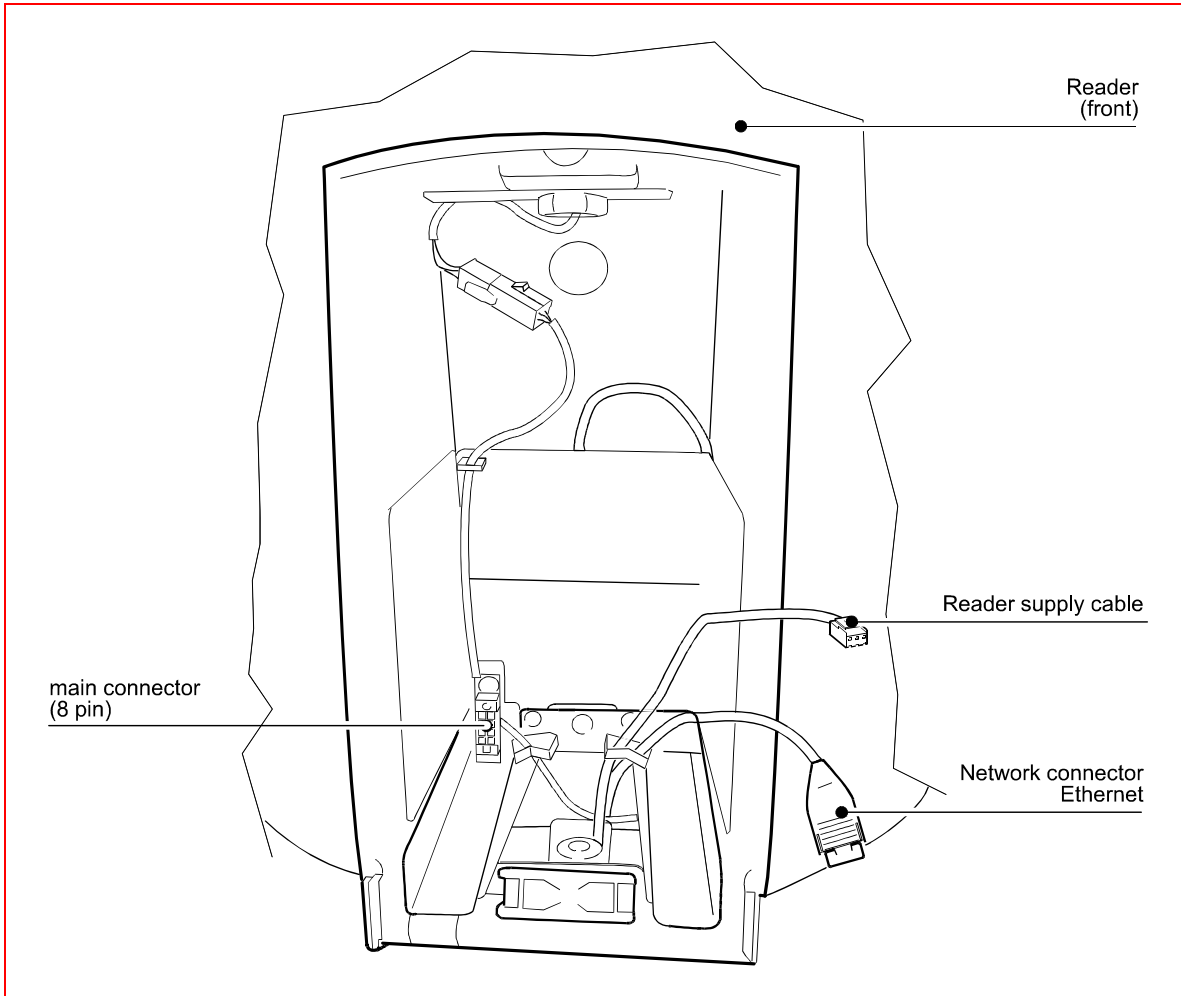
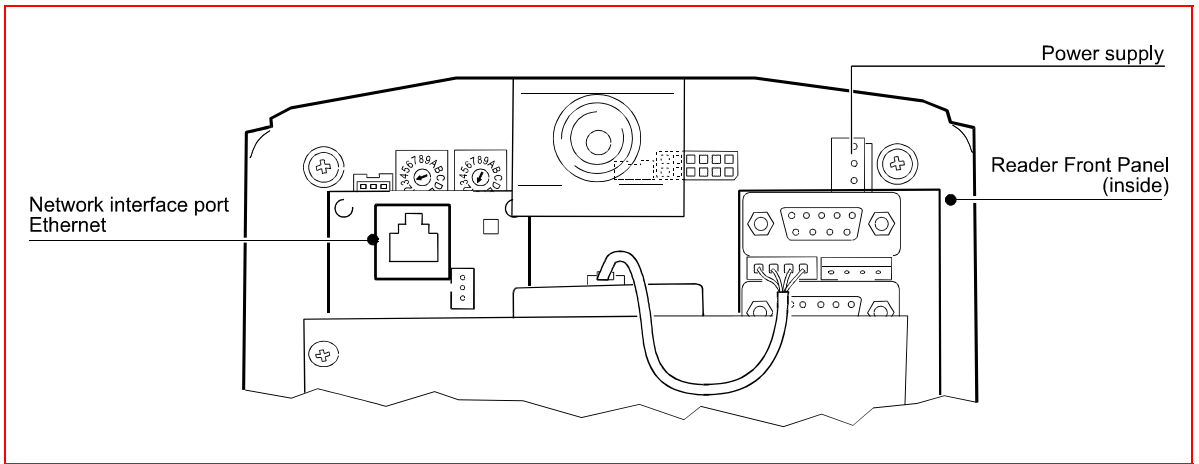


Fig. 5: Reader mechanism assembly – Important cable connections



## 3.4 Maintenance

### 3.4.1 Required Tools

Small screwdriver  
No. 5 Allen key



**CAUTION:** Always disconnect the device from the mains when performing maintenance tasks to avoid electric shock.

If the reader is installed outdoors, you should protect it against weather influences such as rain or snow before performing any maintenance tasks.



**Important note:** When installing plug-on modules, always make sure that none of the pins are bent or broken off.



**Important note:** When performing maintenance work on the reader assembly, always make sure that the LEDs of the barcode scanner are aligned correctly, as they tend to bend easily.

### 3.4.2 Cleaning the barcode scanner

#### 3.4.2.1 General

Dirt accumulating on the optical system of the reader may cause a reduction in recognition rate and ticket reading speed. This can be prevented by cleaning the lenses of the barcode scanner at regular intervals (at least once every four weeks; more frequently if the device is exposed to conditions that cause heavy soiling). The lenses must also be cleaned in case of reading errors.

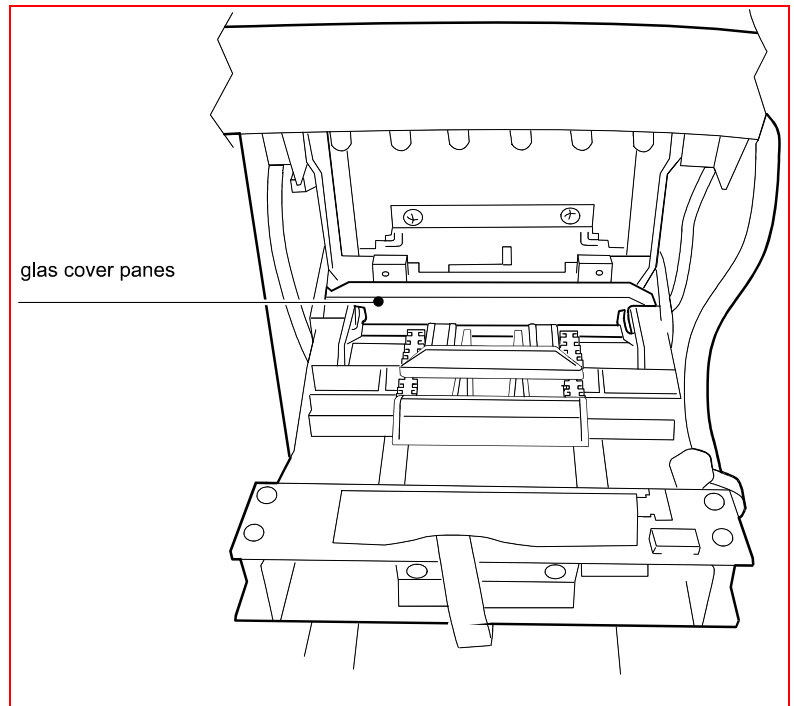
Note that the barcode scanner module of the Compact Reader cannot be deinstalled.

#### 3.4.2.2 Cleaning the glass cover panes (Reader AS x70i Cx/V2)

- Using a lint-free cloth (fleece fabric) moistened with cleaning alcohol, wipe all glass surfaces until clean.



Fig. 6  
Cleaning the glass cover panes



### 3.4.3 Replacing the LEDs of the status indicator light

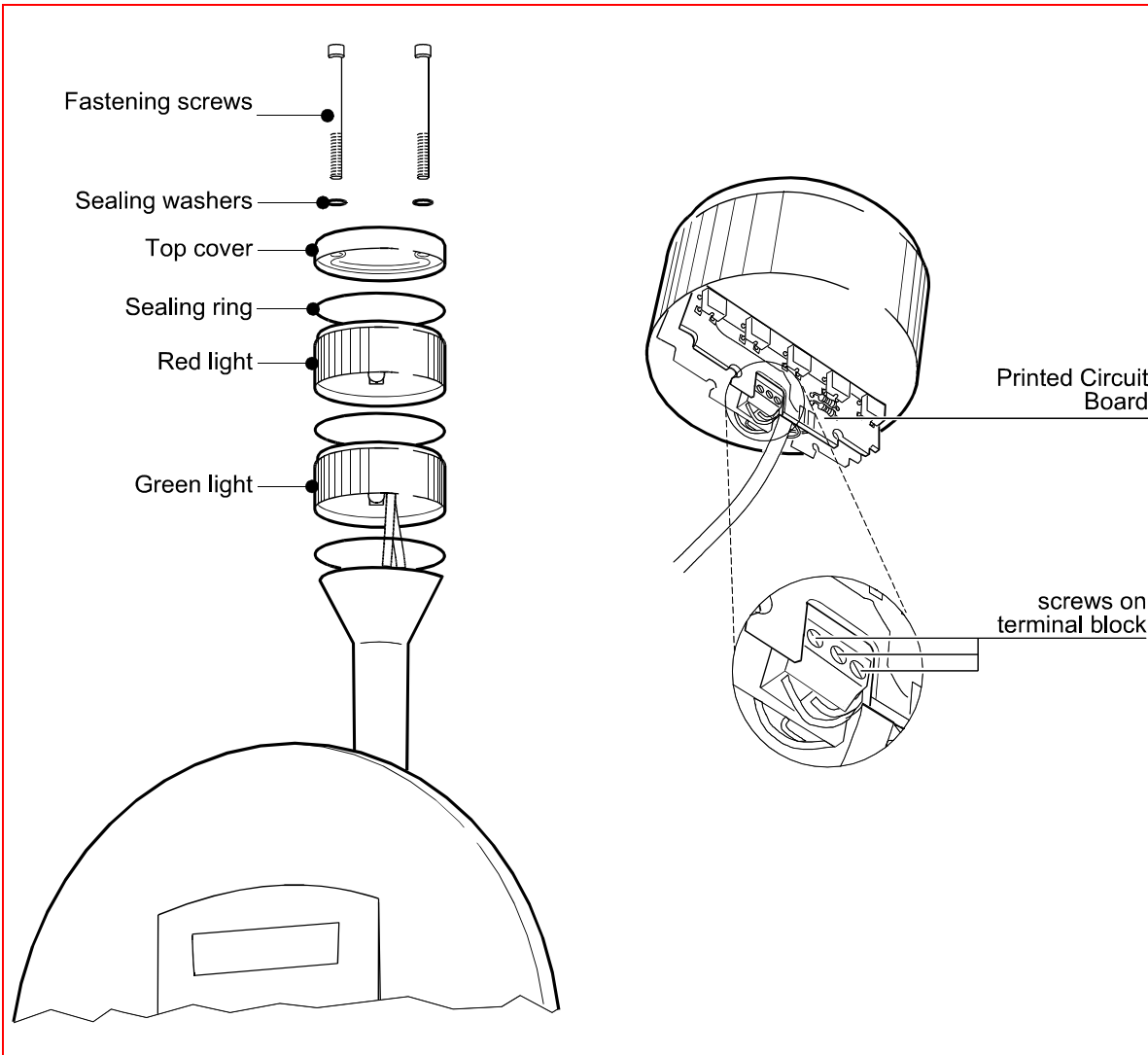
- Remove the two locking screws (M6x90, no. 5 hexagon socket) on top of the traffic (status indicator) light and disassemble the light.
- Loosen the two screws of the terminal block.
- Replace one or both of the PCBs on which the LEDs reside.
- After re-installing the PCB, reconnect the wires to the terminal block.

To ensure proper water tightness, replace the gaskets on the locking screws with O-rings.

**SKIDATA O-Rings** – Article Code: AS 350 ZA, No. 535200020

- Ensure that the PCB plate(s) sit firmly in the lamp socket.
- When reassembling the device, ensure that the gaskets are firmly in place.
- Be careful not to fasten the locking screws too tightly.

Fig. 7 Reader V2: Replacing PCBs with LEDs



Connection plan

Fig. 8 Connections

1		
○	○	○
green	brown	white

**legend:**  
 green ... green lamp  
 brown ... 24 V  
 green ... red lamp

### 3.4.4 Adjusting the ticket stopper

- Arrange the position of the reader assembly as illustrated below.
- Push the two locking pins outwards (e.g., by using a screwdriver; see illustrations below).

Fig. 9 Adjusting the ticket stopper

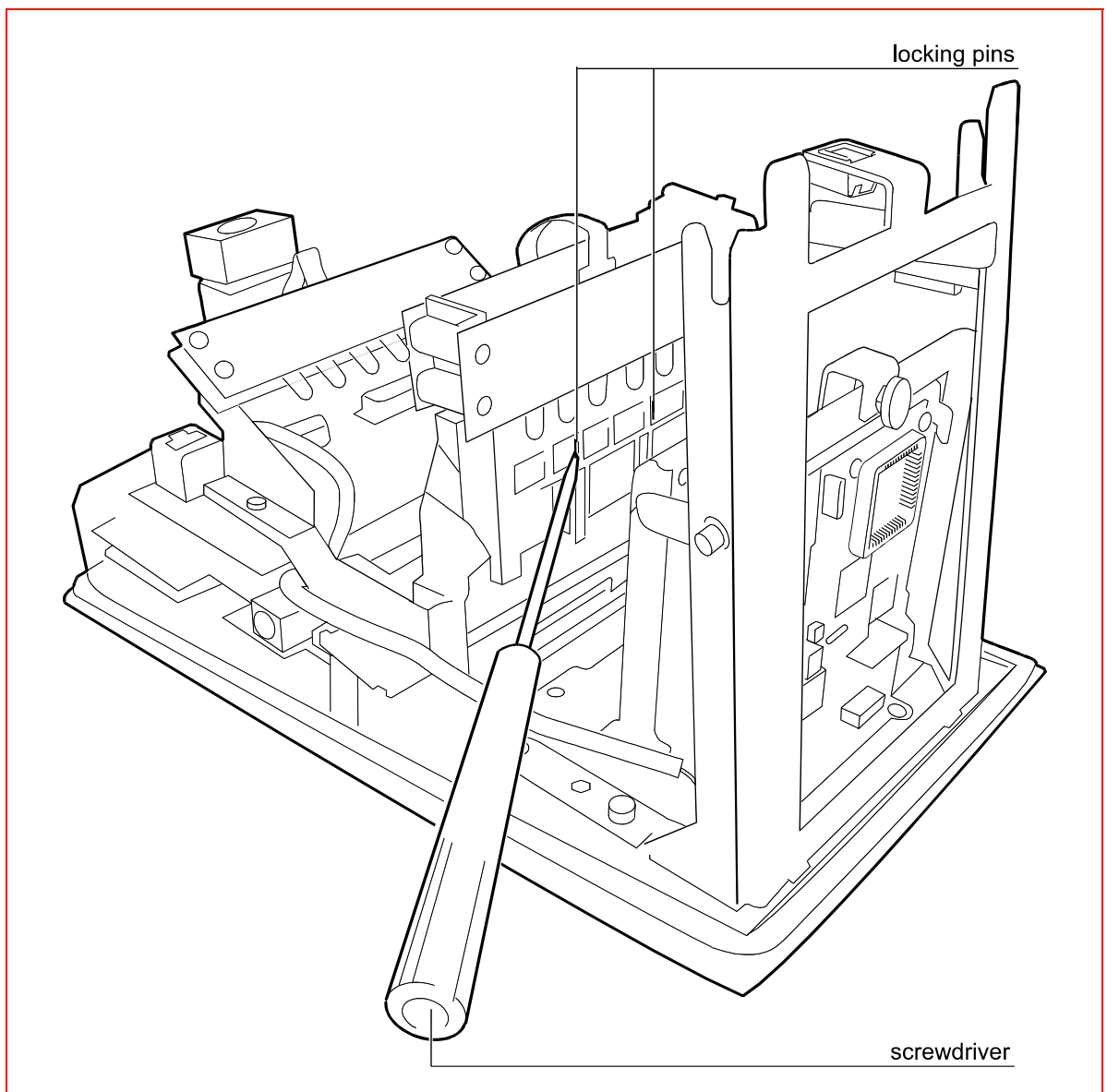
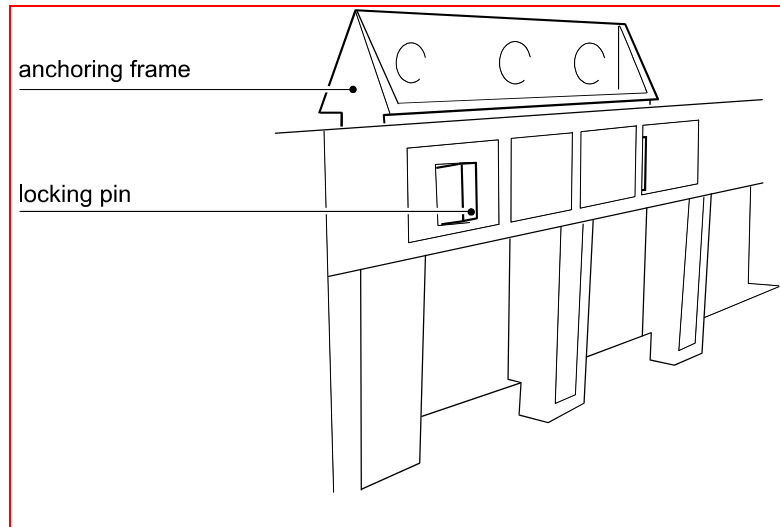
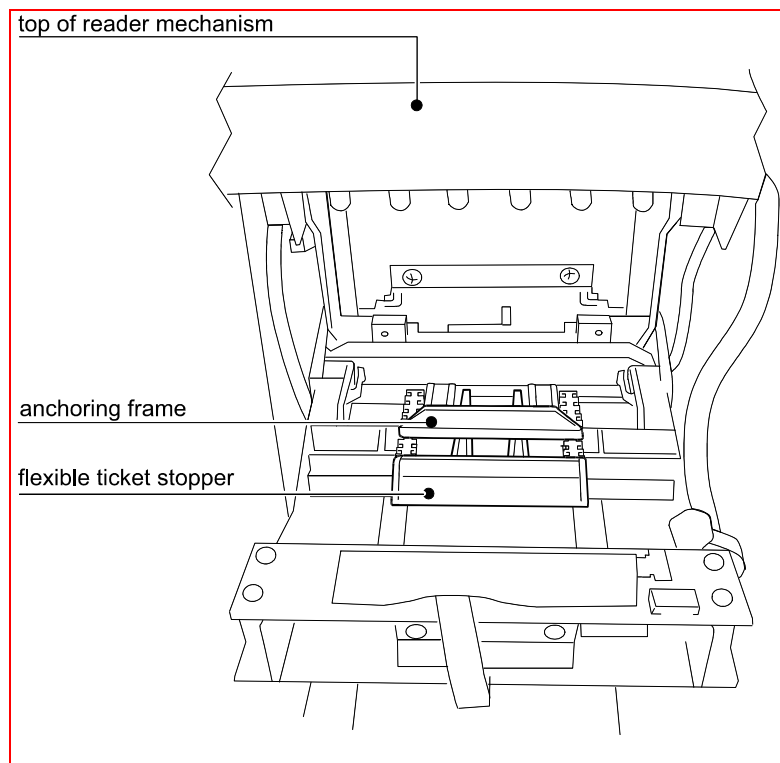


Fig. 10  
Ticket stopper –  
detail



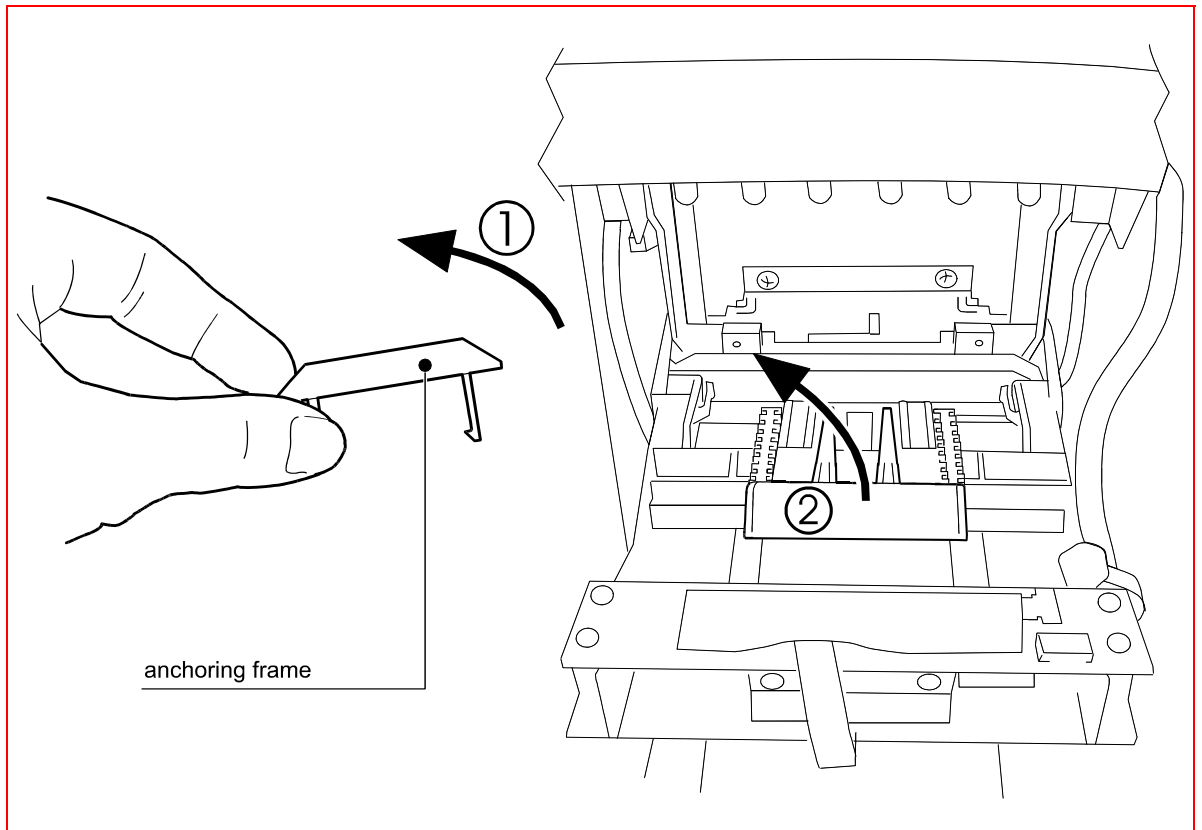
- Position the reader assembly as illustrated below.

Fig. 11  
Ticket stopper –  
holding frame



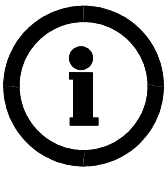
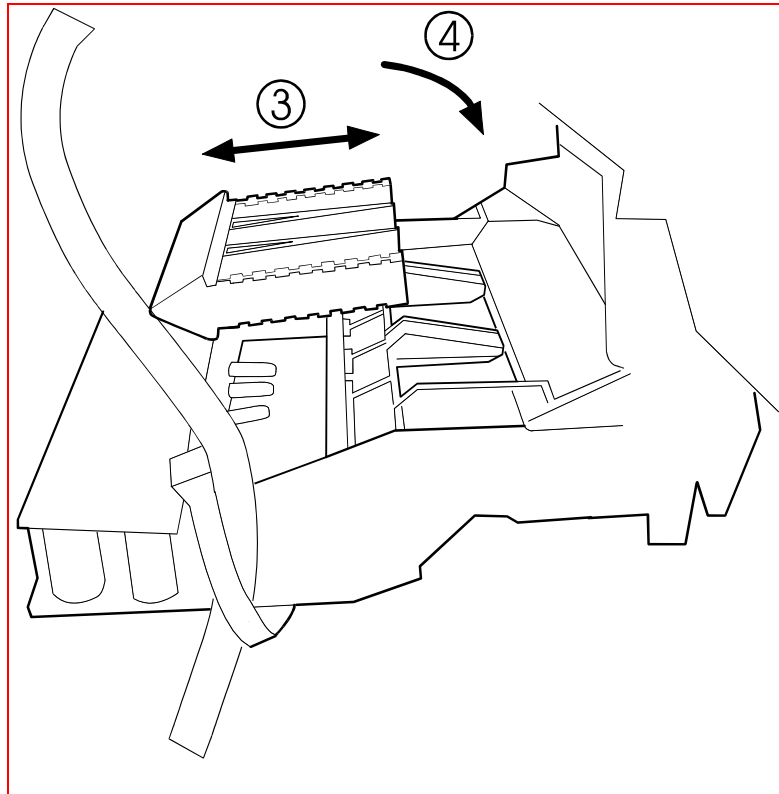
- Take off the anchoring frame of the ticket stopper (1).
- Take off the flexible ticket stopper (2).
- Re-attach the flexible ticket stopper as required for the desired stopping distance (3).
- Re-attach the anchoring frame of the ticket stopper (4).

Fig. 12 anchoring frame



The ticket stopper can be adjusted by modifying the position of the flexible ticket stopper. When the stopper is set to the desired distance, reinsert the Flexible Ticket Stopper and push it in. Finally, fix this position by re-attaching the anchoring frame.

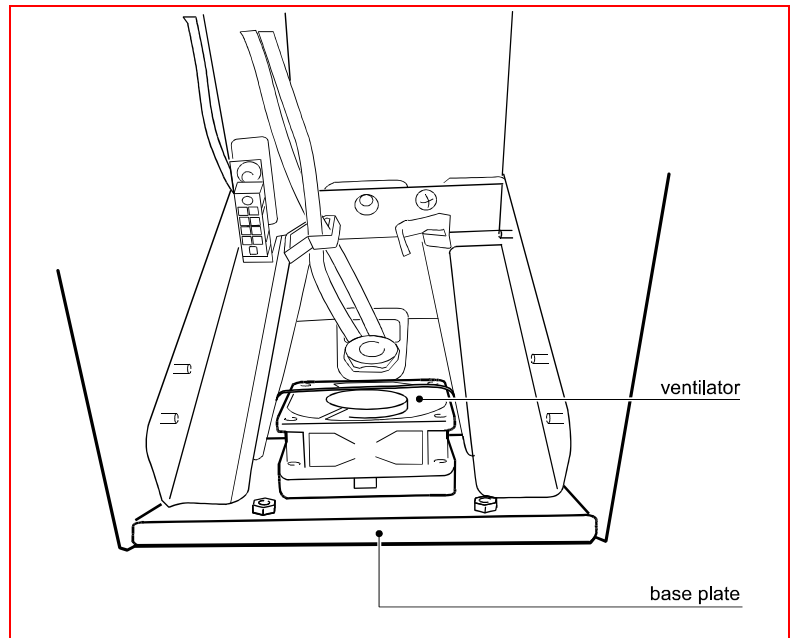
Fig. 13  
Setting the flexible ticket  
stopping distance



**Note:** The Flexile Ticket Stopper has two sides with different step widths (ticket stopping widths). On the standard side, the stopper can be adjusted in 4 mm increments. To fine-tune the distance in 2 mm increments, turn the Flexible Ticket Stopper **180 degrees** (this is the recommended configuration).

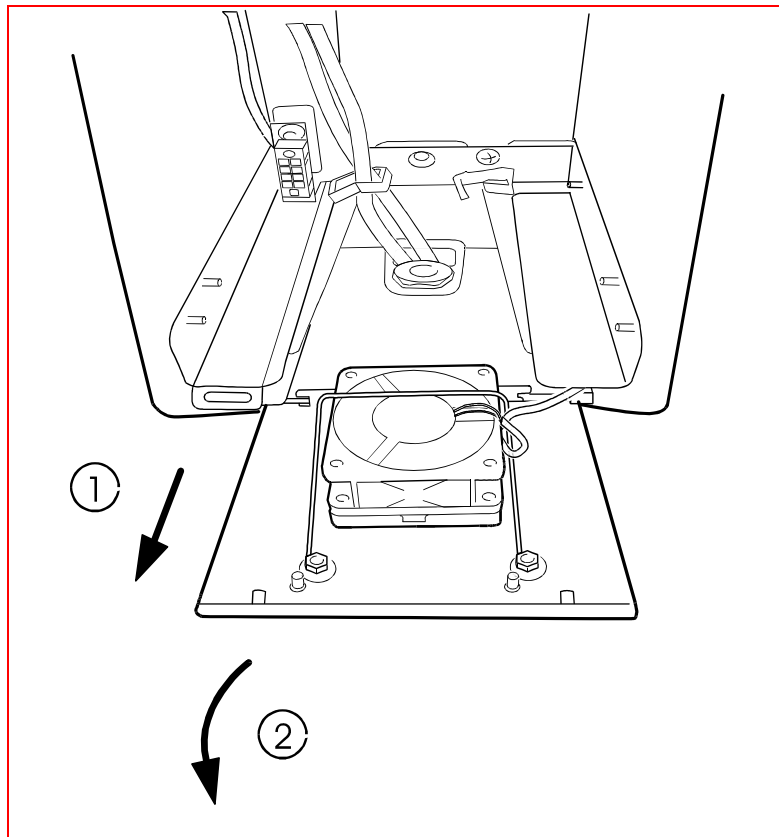
### 3.4.5 Detaching the ventilator

Fig. 14  
Ventilator on base plate



- Pull out the base plate with attached ventilator assembly (1).
- Tilt the base plate downwards (2).

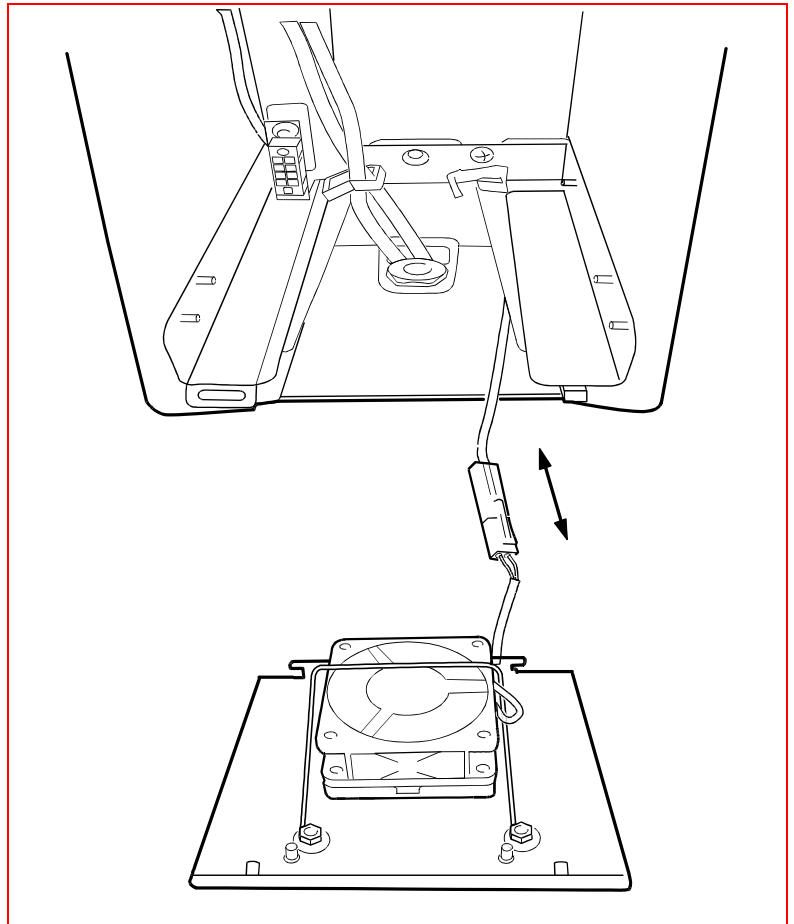
Fig. 15  
Removing the base plate



- Unplug the connector.



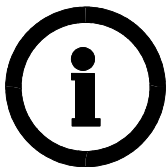
Fig. 16  
Unplugging the connector



### 3.4.6 Cleaning the ventilator

- Lift up the tension spring (1)
- Remove the ventilator.
- Replace the ventilator filter.

Re-install the ventilator by following the same steps in reverse order.



**Important Note:** Ensure that the ventilator is re-installed correctly, i.e., with the cable outlet facing upwards. Otherwise the direction of the air flow is reversed and the cooling effect is lost.

- Re-attach the ventilator connector.

Fig. 17  
Ventilator on base plate

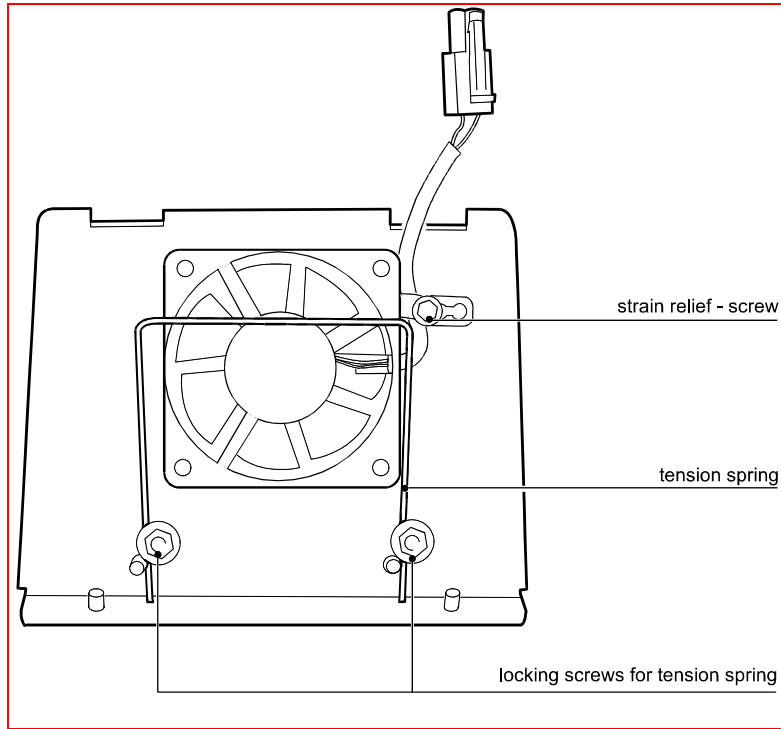


Fig. 18  
Removing the ventilator

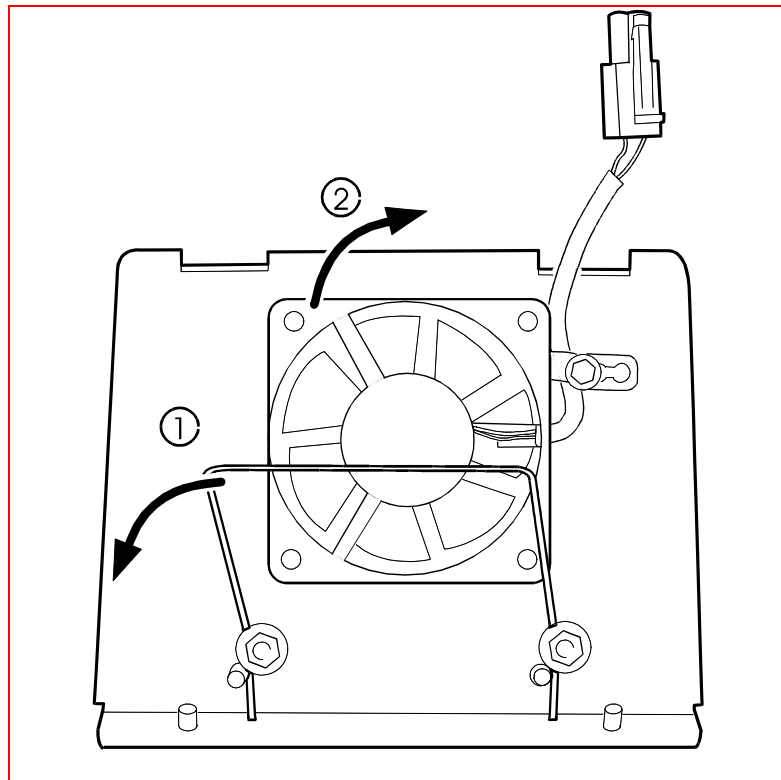
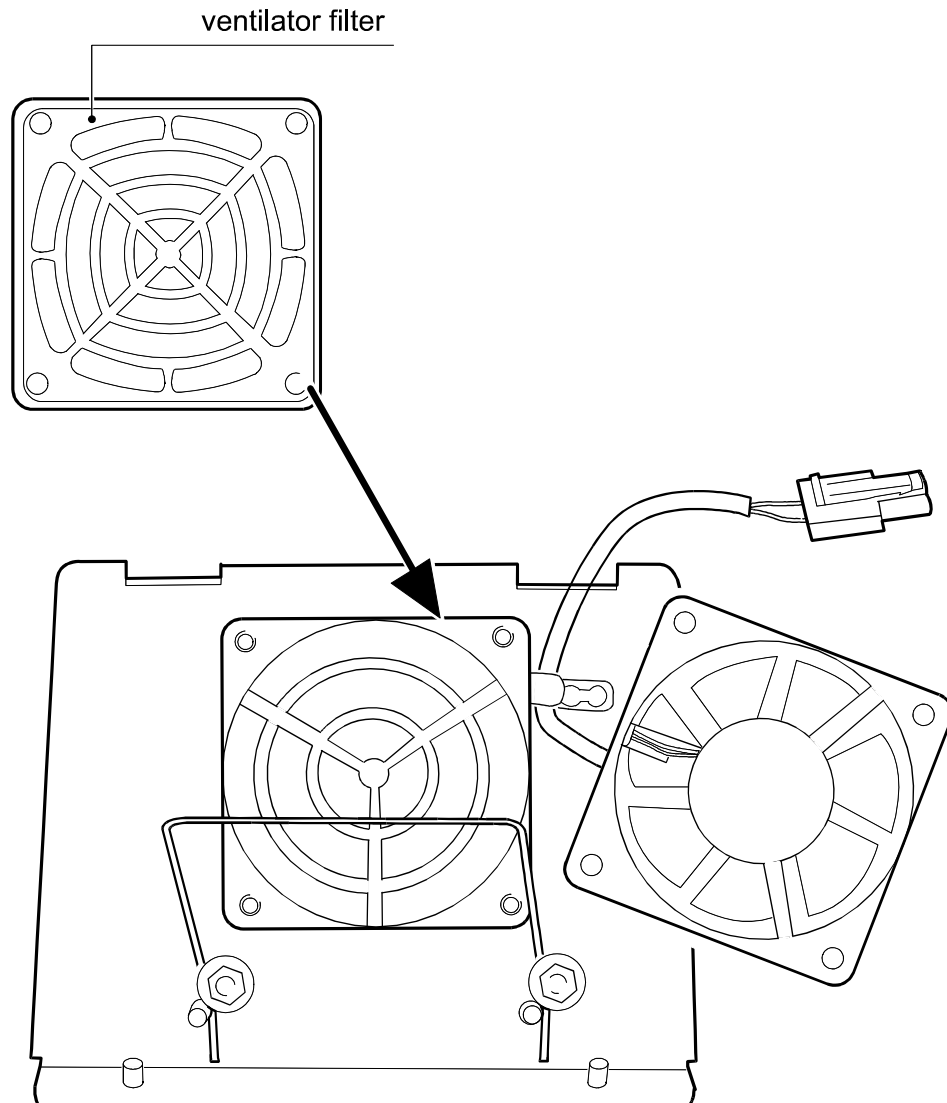


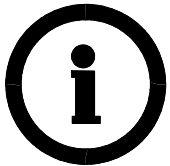
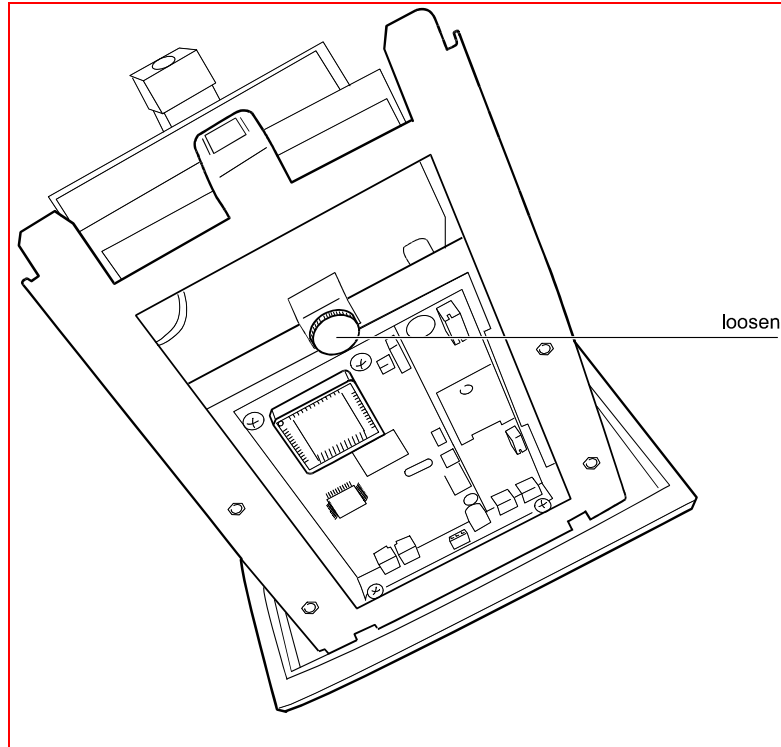
Fig. 19 Replacing the ventilator filter



### 3.4.7 Replacing the ISO 15693 transceiver (BLL) module

- Loosen the locking screw.
- Slide off the transceiver module.
- Install the new module.
- Fasten the locking screw.

Fig. 20  
Modul ISO 15693

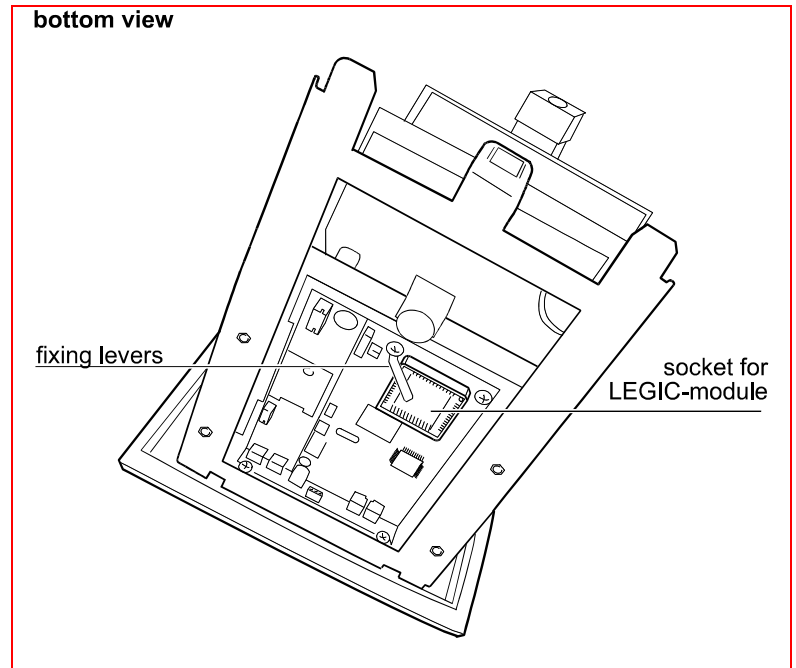


**Important note:** Make sure that the pins are straight.

### 3.4.8 Installing a Legic module

- If necessary, turn the fixing levers sideways.
- Insert the Legic module into the socket.

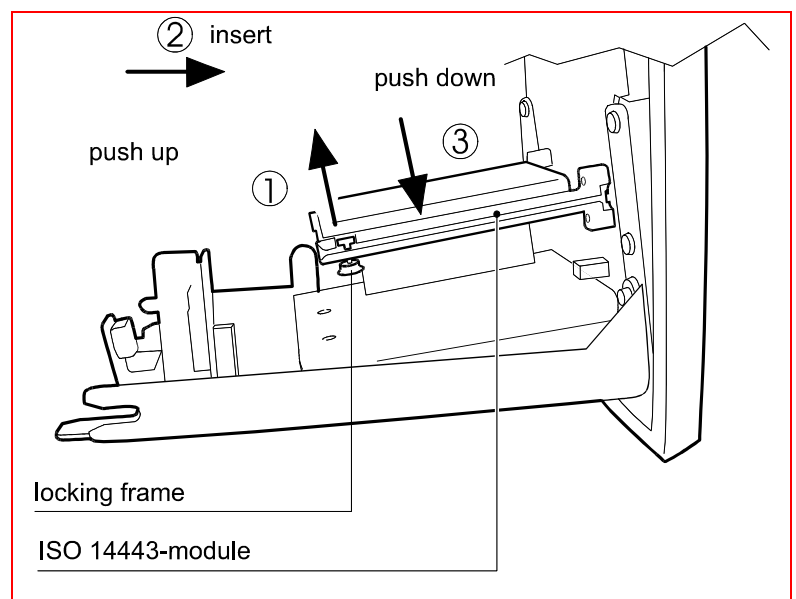
Fig. 21  
Installing a Legic module

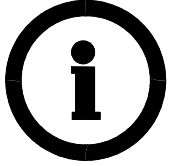


### 3.4.9 Retro-fitting an ISO 14443 "Feig" module

- If necessary, push the locking frame upwards (1).
- Insert the module (2).
- Push the locking frame down (3) to lock the module into place.

Fig. 22  
Retro-fitting an ISO  
14443 module





**Important Note:** When installing the module, make sure that the pins are straight.

To remove the module, follow the same procedure in reverse order.