Foreword

Dear Customer,

We thank you for choosing our "Secarex AC 15" cutting centre!

We wish you every success!

Yours,
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We are always happy to answer any technical questions regarding our entire range of products.
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1 Notes on the documentation

1.1 CE label
Rittal GmbH hereby confirms that the Secarex AC 15 cutting centre is compliant with the EC Machine Directive 2006/42/EC. An appropriate declaration of conformity has been issued.

1.2 Storing the documents
These operating instructions, together with all applicable documents, are integral components of the product. They must be issued to everyone who works with the machine and must always be available and on hand for the operating and maintenance personnel.

1.3 Symbols used in these operating instructions
The following symbols are used in this documentation:

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>!</td>
<td>Danger! Hazardous situation which will result in death or serious injury if the instructions are not followed.</td>
</tr>
<tr>
<td>!</td>
<td>Warning! Hazardous situation which may lead to death or serious injury if the instructions are not followed.</td>
</tr>
<tr>
<td>!</td>
<td>Caution! Hazardous situation which may lead to (minor) injuries if the instructions are not followed.</td>
</tr>
<tr>
<td></td>
<td>Note: Identification of situations that can lead to material damage.</td>
</tr>
</tbody>
</table>

This symbol indicates an *action point* and shows that you should perform an operation or procedure.

1.4 Associated documents
In addition to the provided operating instructions, the documentation folder with the operating instructions of the deployed components belongs to the complete documentation of the Secarex AC 15.
2 Safety instructions

2.1 General safety instructions

Please observe the following general safety instructions for the installation and operation of the Secarex AC 15:

– Other than these general safety instructions, ensure you also observe the specific safety instructions when performing the tasks described in the following chapters.
– The Secarex AC 15 is conceived as a single workplace; only one person can operate the machine.
– Please observe the valid regulations for electrical installation in the country in which the Secarex AC 15 is installed and operated, and the national regulations for accident prevention. Please also observe any internal company regulations, such as work, operating and safety regulations.
– Use only original Rittal products or products recommended by Rittal in conjunction with the Secarex AC 15.
– Do not make any changes to the Secarex AC 15 not described in these or the associated operating instructions.
– The operational safety of the Secarex AC 15 is guaranteed only when used properly for the intended purpose. The technical specifications and limit values stated must not be exceeded under any circumstances.
– Operating the system in direct contact with water, aggressive materials or in-flammable gases and vapours is prohibited.
– Anyone involved with the operation or maintenance of the Secarex AC 15 must have read and understood the complete operating instructions.
– The switch-off procedures specified in the operating instructions must be observed.
– Any operation that impairs the safety of the operator or the Secarex AC 15 is prohibited.
– All unauthorised changes and modifications that can affect the safety of the operator or the Secarex AC 15 are prohibited.
– Changes made to the controller by the customer are permitted only with the consent of Rittal. Unauthorised changes void the warranty.
– No project documents may be forwarded to third-parties.
– Media must be supplied (e.g. compressed-air supply) in accordance with the information provided in these operating instructions.

2.2 Responsibilities of the operating company

– The company operating the Secarex AC 15 is responsible for always operating it in good technical state.
– The company operating the Secarex AC 15 is recommended to obtain a written confirmation from all operating personnel that they have read and understood the complete operating instructions.
– The operating company is required to inform all operating personnel concerning danger sources that can result from working with the Secarex AC 15.
– The operating company is responsible for prohibiting unauthorised personnel from having access to the Secarex AC 15. This may include the creation of a permanent access restriction.

The operating company is also obliged to create operating instructions that are available at the workplace. These operating instructions should be oriented on the worker protection laws and must contain at least the following passages:

– Work on electrical equipment may be undertaken only by qualified electricians.
– Prior to any work being performed on the electrical equipment of the Secarex AC 15, the master switch must be switched off by the professionally competent supervisor and be protected with a lock from being switched on again. The key is removed and retained by the supervisor.
2 Safety instructions

– After completion of the work and before switching on again, the responsible supervisor ensures that this is possible without endangering personnel and equipment. Prior to switching on, a timely and clear warning must be issued to all involved persons.
– Operation of the Secarex AC 15 is permitted only when the personnel uses the prescribed personal protective equipment. In particular, this also applies to maintenance and repair work.

2.3 Operating and specialist personnel
Although the Secarex AC 15 is a state-of-the-art machine that is safe to operate, it can be a source of danger if it is operated incorrectly by untrained personnel or used for a purpose for which it is not intended.
– The assembly, installation and commissioning of the Secarex AC 15 may be performed only by Rittal or by specialist personnel commissioned by Rittal.
– The Secarex AC 15 may be operated and maintained only by properly trained specialists.
– The operating personnel is informed in the regular training courses on the necessity of wearing the personal protective equipment. They are also informed that working without protective equipment can lead to serious and permanent injuries or illness.
– The assignment of access authorisations for installation, commissioning, operation and repair work must clearly be defined and followed to avoid any ambiguity relating to competence. Basic prerequisite for operating personnel is expertise and experience with modern personal computers and the associated operating system.
– The operating company and all operating personnel are obliged to ensure tidiness and cleanliness at the workplace, in the working environment and the neighbouring access areas.

2.4 Personal protective equipment
The operating and maintenance personnel must always wear personal protective equipment when working on the Secarex AC 15. The personal protective equipment comprises of at least the following components:
– Safety work shoes: for all work on the machine.
– Hearing protectors: when cutting workpieces on the machine.
– Strong gloves: for maintenance work in the area of the duct tool, in particular when the housing is removed.

2.5 Residual risks for use of the Secarex AC 15
After initiation of the cutting movement, the duct tool travels with two-hand operation. Injuries can result from intervention in the cutting area of the duct tool.
■ Ensure that two persons are never working on the machine (see section 3.2 "Proper use, foreseeable misuse").
When cutting wiring ducts, injuries can result from flying offcuts when the blade meets the teeth of the wiring duct.
■ Look through the viewing window to ensure that the wiring duct is aligned correctly and the cut is always made between two teeth (see section 6.3.4 "Machining (operation)").
When traversing the stop, there is the risk of jamming between the workpiece and the stop, between the tool and the stop, as well as between the support surface and the stop.
■ Ensure that two persons are never working on the machine (see section 3.2 "Proper use, foreseeable misuse").
■ To prevent a possible jamming, remove any workpieces from the support before traversing the stop.
■ Never perform any actions in the stop area while it is traversing.
2 Safety instructions

When performing maintenance work, in particular in the area of the duct tool with removed housing, there is the risk of being crushed or cut at the blade.

■ Always wear your personal protective equipment for all work performed in the area of the duct tool (see section 2.4 "Personal protective equipment").
3 Product description

3.1 Functional description and components

3.1.1 Identification
The type plate of the Secarex AC 15 is located at the rear of the operating panel (fig. 1, item 1).

3.1.2 Function
The Secarex AC 15 is a cutting centre for the (semi-automatic) shortening of wiring ducts, cable duct covers and support rails. For this purpose, two tools and an appropriate stop are mounted on the work table.

3.1.3 Components

Fig. 1: Secarex AC 15 front view

Key
1 Operating panel
2 Label printer (optional)
3 Automatic length stop
4 Support for shortened workpieces
5 Operator console (fig. 3)
6 Cutting area (fig. 2)
7 "Controller On/Off" key
8 Adjustable feet
9 Master switch
10 Duct support
11 Support rails support
3.1.4 Control components

In addition to the “master switch” (item 9) and “On/Off key” (item 7) control components shown in fig. 1 as well as the operating panel (item 1) and the label printer (item 2), the operator console used to initiate the cutting action for the wiring ducts, cable duct covers and support rails is located at the front centre of the machine.
3 Product description

Fig. 3: Control components on the operator console

Key
1 Two-hand keys, "Two-hand duct 1" (left) and "Two-hand duct 2" (right)
2 "Cut rails" key
3 EMERGENCY STOP key
4 "Start next" key

Note: For simplification, the operating instructions use the term "two-hand duct" for both keys. This relates to the two above-mentioned two-hand keys left and right on the operator console.

3.1.5 Safety and warning components
The following safety equipment provides protection against personal injury and material damage:

Master switch
Activating the red-yellow master switch mounted on the front door of the switch cabinet integrated in the Secarex AC 15 switches the power supply to the Secarex AC 15 on or off (fig. 1, item 5). The sockets for the operating panel and the printer are always energised independent of the master switch position.

EMERGENCY STOP key
Activating the red EMERGENCY STOP key installed on the operator console interrupts the power supply for all outputs (fig. 3, item 3). The operating panel and the graphical user interface remain switched on.

Two-hand operation
Wiring ducts and cable duct covers are cut by activating the two "Two-hand duct" start keys simultaneously (fig. 3, item 1).

Warning signs on the Secarex AC 15
The following warning signs are provided on the Secarex AC 15:
- "Ear muffs" mandatory sign on the operating panel
- "Risk of jamming" warning sign at the automatic length stop
- "Grease gun" symbol on the service flap for lubricating the track tool
- "Warning of a dangerous electrical voltage" warning sign on the enclosure door as well as inside the enclosure on the permanently energised sockets.
3 Product description

3.2 Proper use, foreseeable misuse
The Secarex AC 15 is a cutting centre for the (semi-automatic) cutting of wiring ducts, cable duct covers and support rails.

The wiring ducts and the associated cable duct covers must be manufactured from soft non-reinforced plastic. The wall thickness as well as the depth and height must not exceed the values specified in the technical specifications.

The support rails must be made of (galvanised) steel, copper or aluminium. Only those types named in the technical specifications may be cut with Secarex AC 15.

The Secarex AC 15 is conceived as a single workplace. In particular, it is also forbidden for more than one operating person to work on the Secarex AC 15.

The Secarex AC 15 is state-of-the-art and has been built according to recognised safety regulations. Nevertheless, improper use can pose a threat to the life and limb of the user or third-parties, or result in possible damage to the machine and other property.

As such, the Secarex AC 15 must only be used as intended and while in a perfect technical condition! Any malfunctions that impair safety must be rectified immediately!

Proper use also includes the observance of the provided documentation and compliance with the inspection and maintenance conditions.

Rittal GmbH is not liable for any damage which may result from failure to comply with the provided documentation. The same applies to failure to comply with the valid documentation for any accessories used (see section 1.4 "Associated documents").

Improper use may cause hazards. A foreseeable misuse of the Secarex AC 15 is the operation of the machine under the following conditions:
- Machining of support rails with the tool for wiring ducts or cable duct covers.
- In an imperfect state (with obvious faults or severe contaminations).
- With removed protective covers.
- Unauthorised in service operation.
- In an explosive environment.
- Outside the specified environmental conditions.
- After unauthorised changes or revisions to the machine.
- Non-observance of the safety instructions and the operating notes.
- When using non-approved materials, operating supplies or accessories.
- Non-observance of the worker protection and accident prevention regulations.
- Non-observance of the appropriate legal regulations.
- Non-observance of the permitted restrictions and limits, in particular exceeding the maximum dimensions of the machined workpieces.

Furthermore, an improper use can include:
- Use of impermissible tools.
- Improper operation.
- Improper rectification of malfunctions.
- Use of accessories not approved by Rittal GmbH.
3 Product description

3.3 Standing area of the user

Fig. 4: Standing area of the user

Key
B  Standing area for operation
W  Standing area for maintenance

For operation, the operating personnel stands only in front of the machine, where all control components are also located. For maintenance work, the maintenance personnel also stands behind the machine, where, for example, the linear guide of the feed is located.

3.4 Scope of supply

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Secarex AC 15 cutting centre</td>
</tr>
<tr>
<td>1</td>
<td>Document folder, including the operating instructions</td>
</tr>
<tr>
<td>1</td>
<td>Label printer (optional)</td>
</tr>
</tbody>
</table>

Tab. 1: Scope of supply
4 Transport and handling

4.1 Delivery
The Secarex AC 15 is delivered in one packaging unit.

- Check the packaging carefully for signs of damage.
  Any packaging damage may be the cause of a subsequent functional failure.

  ![Warning!](image)
  Injury due to falling suspended loads!
  For inadequately secured suspended loads, incorrectly placed hoisting gear or unfavourable centre of gravity there is the danger of injury due to falling loads.
  Ensure that no persons are standing under or near a suspended load!

Note:
After unpacking, the packaging materials must be disposed of in an environmentally friendly way. They consist of the following materials:
Wood, polyethylene film (PE film), cardboard, plastic (straps).

- Check the Secarex AC 15 for any damage that may have occurred during transport.

  Note:
  Damage and other faults, e.g. incomplete delivery, should be reported immediately, in writing, to the shipping company and to Rittal GmbH.

- Please check the scope of supply for completeness (see section 3.4 “Scope of supply”).

4.2 Transport

- Even after delivery, transport the Secarex AC 15 on the wooden frame or in the packaging to the vicinity of the final installation site.
- To do this, lift the Secarex AC 15 with a fork lift from the front or rear centred under the wooden frame.
- Alternatively, lift the Secarex AC 15 with two hoist trolleys also under the wooden frame.
  Whereby, one hoist trolley grips from the left under the wooden frame and the other one from the right.
- When using two hoist trolleys, to prevent the machine from falling, ensure the synchronous movement of both hoist trolleys.
- Ensure that at no time, even briefly, are any persons standing under a suspended load.
5 Installation and commissioning

5.1 Safety instructions

Warning!
The complete installation and commissioning of the system may be performed only by Rittal or by specialist personnel commissioned by Rittal.

Warning!
Work on electrical systems or equipment may be performed only by an electrician or by trained personnel under the guidance and supervision of an electrician. All work must be performed in accordance with electrical engineering regulations.

The Secarex AC 15 may be connected only after the aforementioned personnel have read this information!

Use only insulated tools.

Follow the connection regulations of the appropriate electrical power company.

The Secarex AC 15 is not de-energised until all of the voltage sources have been disconnected!

Please observe the valid regulations for electrical installation in the country in which the Secarex AC 15 is installed and operated, and the national regulations for accident prevention.

Please also observe any internal company regulations, such as work, operating and safety regulations.

5.2 Installation site requirements

When choosing the installation site for the Secarex AC 15, please observe the following notes:

– The chosen installation site must provide adequate space for the Secarex AC 15 (see section 10 “Appendix”).
– In addition, a clearance of at least 1000 mm should be provided at both sides and in front of the Secarex AC 15 to allow the handling with the wiring ducts, cable duct covers and support rails.
– Furthermore, access from the rear must be provided for maintenance work. If necessary, it must be possible to pull the machine forwards if it is located directly against a wall.
– The installation site must be free from excessive dirt and moisture.
– The ambient temperature must lie within the limit values indicated in the technical specifications.
– The mains connection data as contained in the connection diagram for the Secarex AC 15 or in the technical specifications must be guaranteed.

Electromagnetic interference
– Interfering electrical installations (high frequency) must be prevented.
5 Installation and commissioning

Location of the connection points
The connection points for supplying the Secarex AC 15 with the required media are located at the front of the machine behind the access doors of the enclosure or the pneumatic cabinet. The supply cables can be introduced into the machine from below:
- Front left in the enclosure: Mains voltage
- Front right in the pneumatic cabinet: Compressed air

5.3 Installation procedure
The Secarex AC 15 is delivered completely installed. An installation of the machine components is not required.

5.4 Installation of the machine

Warning!
Injury due to falling suspended loads!
For inadequately secured suspended loads, incorrectly placed hoisting gear or unfavourable centre of gravity, there is the danger of injury due to falling loads.
Ensure that no persons are standing under or near a suspended load!

Note:
There is danger of damaging the machine at the left and right-hand sides when lifting the Secarex AC 15.
Install the machine only as described in the following section.

For the actual installation, the machine must be lifted off the wooden frame on which it is placed for transport.
- Loosen the straps used to secure the machine to the wooden frame.
- Move a fork lift from the front or rear centred between the machine frame and the wooden frame.
- Lift the machine and then lower it slowly and carefully from the wooden frame.
- Place the machine at its final installation location.
- Align the machine using the adjustment feet (fig. 1, item 8) horizontally in all directions.

Note:
For short distances, e.g. when moving within a company site, the machine can also be transported using two hoist trolleys. Whereby, one hoist trolley grips from the left under the wooden frame and the other hoist trolley from the right.

5.5 Connecting the compressed-air supply
The pneumatic cabinet contains a compressed-air maintenance unit to which the compressed-air supply can be connected for driving the cutting tools.
- Open the door of the pneumatic cabinet and move the gland plate (sliding panel) so that you can introduce the pneumatic hose of the compressed-air unit.
5 Installation and commissioning

Fig. 5: Sliding panel on the base of the pneumatic cabinet

Key
1 Pneumatic hose
2 Opening for introducing the hose
3 Clamping claw
4 Sliding panel

Connect the connection hose from the in-house compressed-air supply to the input of the compressed-air maintenance unit.

Fig. 6: Pneumatic cabinet

Key
1 Compressed-air maintenance unit
2 Compressed-air supply hose
3 Cutting tool drive
4 Tie-rod
5 Support rod
5 Installation and commissioning

- Set a pressure of 6 bar at the control valve.
- Close the door of the pneumatic cabinet or connect the voltage supply.

5.6 Connecting the mains power supply
The enclosure contains the connection point for the mains power supply in a separate connection box. The connection box is located on the left-hand side panel of the enclosure; the connection point is marked with "X01".
- First open the door of the pneumatic cabinet if it is not already open.
- Then release the internal latch of the left-hand enclosure door and also open this door.
- Move a gland plate (sliding panel) in the enclosure so you can introduce the connection cable as well as any required network cable (see section 5.7 "Network connection").
- To seal the cable entry between the gland plates, attach the supplied elastic clamp strip.
- Connect the in-house mains power supply with a connection cable to the connection point in the connection box.
- Observe the circuit diagram that accompanies the machine as well as the connection data (see section 8 "Technical specifications").
- Close the enclosure door and lock it inside, then also close the door of the pneumatic cabinet.

5.7 Network connection
The Secarex application on the operating panel requires a network connection to the control unit in the enclosure (PLC). For this purpose, a network cable (at least Cat5e or higher) is connected to the PLC in the enclosure as well as via the supplied USB / network adaptor on the operating panel. A fixed IP address for the LAN connection must be specified on the operating panel because otherwise the software cannot communicate with the PLC. The IP address is 172.16.5.100.
- The default address of the PLC is 172.16.5.66.
To access a database with machining data present in the network, an appropriate network connection must also be established to the company network. This connection can be made in three ways.
Connection via WLAN
By default, the connection to the company network is made via the WLAN present in the operating panel.

Fig. 7: Connection via WLAN

Key
1 Company network
2 WLAN
3 Network cable (at least Cat5e)
4 PLC network connection
5 USB / network adaptor
6 Operating panel

- Ensure that the "Wireless network connection" entry is shown above the "LAN connection" entry in the advanced adaptor settings and so receives a higher priority.

If this is not the case, communication with the company network is not possible.

- If necessary, move the "Wireless network connection" entry to the first position with the arrow keys at the right-hand side in the dialogue.

Fig. 8: Advanced settings

Key
1 Wireless network connection
2 LAN connection
3 Arrow keys
5 Installation and commissioning

Connection via LAN with two IP addresses
Alternatively, the LAN connection can also be assigned two IP addresses. For this solution, a small switch is required to distribute the network signal to the PLC and within the company network. This switch, however, is not included in the Secarex AC 15 scope of supply.

Fig. 9: Connection via LAN

Key
1 Company network
2 Network cable (at least Cat5e)
3 Additional network switch (not included in the scope of supply)
4 PLC network connection
5 USB / network adaptor
6 Operating panel

- Enter in the properties of the IPv4 protocol, initially a fixed IP address located within your company network.
- Also enter the associated subnet mask and the IP address of the standard gateway for your company network.
- Then enter in the advanced settings, the above-mentioned IP address for communication with the PLC.
5 Installation and commissioning

Fig. 10: Advanced TCP/IP settings

Key
1 IP address in the company network (example)
2 IP address for communication with the PLC
3 IP address of the standard gateway
4 Subnet mask

Connection via LAN and adaptation of the IP addresses
Alternatively, the IP address of the PLC can also be converted to a free IP address in the company network.

Note:
Rittal does not recommend this solution because it can cause address conflicts.

5.8 Connecting the label printer (optional)
If the machine is equipped (subsequently) with a label printer, it must be connected to the operating panel.

Connect the label printer to a free USB connection on the operating panel.

Activate the label printer in the Secarex software when an appropriate label should be printed for each workpiece (see section 6.5.3 "Software").

5.9 Switching on the machine
Always proceed in the following sequence when switching on the Secarex AC 15:

Ensure that no workpieces are present on the machine.

Unlock the EMERGENCY STOP key of the Secarex AC 15 at the front on the operating console.

Turn the master switch on the enclosure of the Secarex AC 15 from the “OFF/0” position (horizontal) clockwise to the “ON/I” position (vertical).

Press the “Controller On/Off” key at the right-hand side next to the master switch to start the PLC.

The key illuminates green continuously.

Switch on the operating panel separately at the upper right-hand housing edge.

Start the Secarex application by clicking the appropriate icon on the desktop of the operating panel.
5.10 Switching off the machine
Always proceed in the following sequence when switching off the Secarex AC 15:
- Ensure that no workpieces are present on the machine and that all running machining operations have completed or terminated completely.
- Terminate the Secarex application and shutdown the Windows operating system. The operating panel then switches itself off automatically.
- Press the "Controller On/Off" key at the right-hand side next to the master switch. The key no longer illuminates.
- Turn the master switch on the enclosure of the Secarex AC 15 from the "ON/I" position (vertical) counter-clockwise to the "OFF/0" position (horizontal).

Note:
Before switching the machine off, ensure that the operating panel has shutdown completely and has been switched off. If the operating panel remains switched on, communications problems occur between the Secarex software and the PLC when the machine is switched on again.
6 Working with the machine

6.1 General information
The Secarex AC 15 is equipped with an operating panel. All inputs are made directly on the screen without using the keyboard or mouse. For safety reasons, only the actual shortening of the workpieces is made using one or two keys on the operating console of the machine.

To perform the waste optimisation, the following steps are also performed in addition to the actual shortening.

– **First cut**: With the first cut, an appropriate alignment to the hole pattern of the wiring duct or the support rail is specified for the start of each new raw part as well as for all following cuts made to this workpiece. Whereby, the distance from the duct start is matched to the first hole at the hole pattern of the Perforex machine. The first cut is a free cut. The operator positions the first cut.

  To position the first cut for **support rails**, a label that marks the contact point is located in the area of the support for support rails on the desktop.

  The first cut for **wiring ducts** is positioned by looking through the viewing window in the safety fence of the tools.

– **Intermediate cut**: If several cuts are made from a single raw part, the alignment to the hole pattern of the wiring duct is repeated for every cut. Unlike the first cut, the intermediate cut is calculated automatically by the Secarex software and prepositioned appropriately by the machine.

6.2 Structure of the Secarex software

6.2.1 Basic operation
All inputs for working with the Secarex software are made directly on the operating panel. If numbers or alphabetic characters must be entered for the operating steps, the keyboard from which the input is made is displayed on the operating panel.

6.2.2 Structure of the Secarex software
The Secarex software is divided into various areas for each associated topic.

– **Production**: Machining operations are prepared and executed here. This area is selected automatically after starting the machine (see section 6.3 “Production”).

– **Configuration**: Settings made after or during the commissioning of the machine are normally made here (see section 6.5 “Configuration”).

– **Service**: The basic settings of the machine can be viewed here. Changes to the values may be made only by Rittal service personnel (see section 6.7 “Service”).

6.2.3 Layout of the screens
The individual screens, independent of the associated selected area (see section 6.2.2 “Structure of the Secarex software”), always have the same layout.
The currently logged in user as well as the current date and time are displayed in the header line of each screen. The following buttons are also displayed in the header line (from left to right):

- User: Call the user administration (see section 6.6 "User administration").
- Configuration: Call the configuration pages (see section 6.5 "Configuration").
- Service: Call the service page for the Rittal service personnel (see section 6.7 "Service").
- Information: Call the version information of the Secarex software.
- Logout: Log out the user currently logged in.

Various tabs are displayed under the header line. Related information within an area is also grouped on these tabs.

The actual information is grouped in the main area of the screen. For example, projects can be selected for machining and workpieces can be deleted from the production list.

Buttons for performing the actions on the current screens are located at the lower screen edge.

### 6.2.4 Login and logout

The following screen is displayed after starting the Secarex AC 15 as well as after logging out from the Secarex software. If this screen page appears, automatic login is not activated for any user (see section 6.6 "User administration").
6 Working with the machine

Fig. 12: Login and logout

Key
1  “Off” button
2  Keyboard
3  Input fields for user name and password
4  Switch language for the Secarex software
5  “Login” button

Note:
You will be informed during the machine commissioning of the currently valid user for the administration (see section 6.6 "User administration").

Enter the name of the desired user and the associated password in the appropriate fields.
Select the desired language for the Secarex software.
Press the "Login" button to start the actual Secarex software.
The Secarex software is started and the "Production" area displayed.
Alternatively, press the "Off" button at the top left on the screen to end the Secarex software.
This screen is also displayed after logout from the Secarex software. The "Password" field, however, is empty.

6.3 Production
6.3.1 General information

Note:
The "Production" area is displayed automatically as start page after the login. If a different area is selected in the Secarex software, such as "Configuration", pressing the "Production" button returns to the "Production" area.

The actual machining is prepared and started in the "Production" area. To do this, a connection is normally established to the database of the "Workshop programming" program in which the projects to be machined on the Secarex AC 15 have been created previously (see section 6.5.3 "Software"). If no connection to this database exists, alternatively, a production list can also be created externally and imported into the Secarex software (see section 6.4 "Working with CSV files").
The sequence for machining in semiautomatic operation is divided into the following sections:
– Create a production list with the workpieces to be machined
6 Working with the machine

- Group the raw parts based on the bill of materials
- Actual machining of the workpieces

6.3.2 Creating a production list

The production list for a machining operation is created on the "Preparation" tab in the "Production" area. If a connection exists to the database of the "Workshop programming" program, all projects that can be machined on the Secarex AC 15 are displayed in the left-hand subarea of this tab.

Note:
Before preparing a production list, the above-mentioned database should first be updated before being used. Only then are all projects of the current data pool displayed in the Secarex software.

Deleting the complete production list

If necessary, first press the "New" button if workpieces are displayed already in the right-hand "Production list" area of the screen.

The complete production list is deleted and you can start a new project.

Fig. 13: "Preparation" tab – Projects

Key
1 Filter fields for the displayed projects
2 Name of the associated project
3 Button for displaying the main programs
4 Main programs of the selected project
5 Properties of the selected project or main program
6 Transfer the complete project to the production list
7 Transfer the associated main program to the production list

Filtering the project list

If the list of the displayed projects is very long, filter fields can be used to restrict the list of the displayed projects.

The following filter criteria are available:
- Project name
- Customer name
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- Program name
  ■ Enter in the field with which you want to restrict the list of displayed projects (e.g. "Projects").
  A keyboard is displayed.
  ■ Begin with the input of the desired term.
  The list of the displayed projects changes in accordance with the entered search term.

Note:
The filter fields do not differentiate between uppercase and lowercase. This means, the "SECAREX" project is also found when you enter "Se" in the associated filter field.

Transferring a project to the production list
You can now transfer the workpieces of the complete project (including all main programs) to the production list.
■ Press the ">>" button behind the project name.
  All workpieces from the complete project are transferred to the production list.

Transferring a main program to the production list
Alternatively, you can also transfer only the workpieces of individual main programs to the production list.
■ Press the "->" button in front of the project name.
  The list of main programs contained in the project is displayed.
■ Press the ">>" button behind the name of the desired main program.
  All workpieces from this main program are transferred to the production list.

Note:
Pressing a ">>" button returns the workpieces to the production list. You can also group the workpieces of several main programs in a production list.

The following information for the individual workpieces is displayed in the production list:
- Project name
- Program name
- Workpiece name
- Id of the workpiece within the main program
- Set length of the workpiece after the machining
- "<<" button to perform a single production
- Workpiece status (e.g. "Being machined" or "Miscut") as symbols
### Filtering the production list

If the list of the displayed workpieces is very long, like the project list, filter fields can be used to restrict this list. The following filter criteria are available:

- Project name
- Program name
- Workpiece name
- Workpiece length

Enter in the field with which you want to restrict the list of displayed workpieces (e.g. "Program name"). A keyboard is displayed. Begin with the input of the desired term. The list of the displayed workpieces changes in accordance with the entered search term.

Note:
The filter fields do not differentiate between uppercase and lowercase. This means, the "SECAREX 1" program is also found when you enter "Se" in the associated filter field.

The filter fields in the production list allow the number of displayed workpieces to be reduced accordingly. This does not affect the actual machining.

**Deleting individual workpieces from the production list**

Finally, you can remove individual workpieces from the production list.

- Select successively the desired components by activating the checkbox in front of the associated component.
- Press the "Delete" button to delete the marked components from the production list.

If you want to delete very many workpieces and leave only a few in the production list, proceed as follows:
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- Activate the checkbox in the header line of the production list to (initially) select all workpieces.
- Reactivate the checkbox of those workpieces that should not be deleted from the production list. The marking will be removed.
- Press the "Delete" button again to delete the marked components from the production list.

Performing individual machining
You can directly machine individual workpieces. However, no waste optimisation is performed for individual machining.
- Press the "<>" button in the "EF" column of the workpiece that you want to machine.

The "Operation" tab is displayed for performing the actual machining (see section 6.3.4 "Machining (operation)").

Note:
After completion of the single production, the "Preparation" tab can be selected to return to the production list.

6.3.3 Viewing the bill of materials
The Secarex software can create a bill of materials for the workpieces listed in the production list. As part of the waste optimisation, identical raw parts are grouped, irrespective of the main program or project in which they are used.

This bill of materials is displayed on the "Bill of materials" tab in the "Production" area.

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Quantity</th>
<th>Type</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>4261267</td>
<td>3</td>
<td>Kanal</td>
<td>Kabelkanal 100 mm x 100 mm</td>
</tr>
<tr>
<td>4261267</td>
<td>2</td>
<td>Deckel</td>
<td>Kabelkanal 100 mm x 100 mm</td>
</tr>
<tr>
<td>1982341</td>
<td>1</td>
<td>Hutschiene</td>
<td>Hutschiene 35 mm x 7,5 mm mit Gewinde M5</td>
</tr>
</tbody>
</table>

Fig. 15: "Bill of materials" tab

Key
1. Model number of the wiring duct
2. Associated cable duct cover (with prefixed "@")

For wiring ducts and support rails, the model number as stored for the associated workpiece is displayed in the first column. For cable duct covers, an "@" is prefixed to the model number of the associated wiring duct.

Note:
No adapting cuts (first cut or intermediate cuts) are required for cable duct covers because no hole pattern needs to be considered. For this reason, it is possible that a different number of wiring ducts and the associated cable duct covers is required.

- Provide near the Secarex AC 15 all raw parts required for the machining based on the bill of materials. This allows you to machine the complete production list within a short time.

6.3.4 Machining (operation)
Select the "Operation" tab to start the actual machining. The operating steps to be performed by the operating personnel are displayed on the screen.
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Note:
The machining of a wiring duct is now described as example. The operating steps to be performed are displayed on the screen in plain language.

Caution!
Danger of jamming at the automatic length stop!
To prevent a possible jamming, remove any workpieces from the support before traversing the stop.

Starting the machining

- Select the "Operation" tab to perform the actual machining.

Homing

After the (first) start of the machine, the feed axis must first be homed. The "Axis not homed, initiate homing with Start" message is displayed.

- Press the "Start continue" key on the operating console.

The feed axis is homed and the automatic length stop remains at the initial position.

Note:
As alternative to the "Start continue" key, every confirmation can also be made with the "Continue" button on the operating panel. This means, the "Continue" button on the operating panel can also be pressed as alternative everywhere where pressing the "Start continue" key is mentioned in the operating instructions.

Performing the first cut

The machining data for the first workpiece is displayed on the operating panel. The "Waiting for confirmation of the machining data with Start" message is displayed.

- First check the data for the first workpiece.

Key:
1 Progress display
2 "Continue" button
3 "Operation" tab
4 Production list
5 "Defect" button
6 Working with the machine

- Ensure that the replaceable fastener for the wiring ducts and cable duct covers is inserted in the correct alignment. If necessary, lift the fastener and replace it turned through 180° for ducts deeper than 100 mm.

Fig. 17: Alignment of a cable duct

Key

1. Viewing window
2. Interface on the cable duct
3. Counter blade
4. Fastener for wiring ducts and cable duct covers

- Press the "Start continue" key on the operating console when you want to machine the first workpiece from the displayed production list.

The "Insert a new cable duct, perform first cut with TWO-HAND OPERATION" message is displayed.

To correctly align the wiring duct, the operator can look through the viewing window in the hood. The interface is located parallel to the position of the counter blade.

- Feed the workpiece specified in the display to the cutting area from the left-hand side.

- Align the workpiece so that
  - it lies at the rear stop in the cutting area,
  - the cutting edge is aligned correctly in accordance with the hole pattern,
  - the cut is made between two teeth of the wiring duct.

- Press concurrently the two "Two-hand duct" keys left and right on the operating console. Directly before cutting, the automatic length stop is raised slightly from the workpiece.

The first cut on the workpiece is performed.

The "Remove workpiece, position with Start" message is displayed.

Creating the first workpiece in accordance with the production list

- Remove the workpiece separated by the first cut.

- Press the "Start continue" key, the automatic length stop travels to the required length of the workpiece.

The "Insert cable duct, cut with TWO-HAND OPERATION" message is displayed.
Move the wiring duct from the left to the automatic length stop.

Look from the front through the viewing window in the hood to ensure that the wiring duct is aligned correctly and the cut is always made between two teeth.

Check with the laser pointer that the wiring duct is aligned correctly and the cut is always made between two teeth.

If necessary, correct the position of the wiring duct by (slightly) retracting back from the automatic length stop.

Press concurrently the two “Two-hand duct” keys left and right on the operating console.

The cut is performed. If the label printer is activated, an appropriate label will be printed with all required information.

Remove the workpiece and attach the label.

The “Remove workpiece, position to the intermediate cut with Start” message is displayed.

Performing the intermediate cut

Press the “Start continue” key.

The automatic length stop travels to the calculated value with which the desired alignment of the cut edge is established to the hole pattern.

The “Insert cable duct, cut with TWO-HAND OPERATION” message is displayed.

Look from the front through the viewing window in the hood to ensure that the wiring duct is aligned correctly and the cut is always made between two teeth.

If necessary, correct the position of the wiring duct by (slightly) retracting back from the length stop.

Press concurrently the two “Two-hand duct” keys left and right on the operating console.

The intermediate cut is performed and the “Waiting for confirmation of the machining data with Start” message is displayed.

Further machining of workpieces

Hereafter, the instructions and operating steps are repeated until the complete production list has been processed. The progress of the complete machining is displayed above the production list.

Note:
The waste optimisation normally results in a (small) deviation between the required set length of the workpiece and the actual length.

Caution!
Risk of injury caused by flying fragments!
If the blade meets the teeth of the wiring duct, there is a risk of injury to the operator caused by flying fragments. There is also a risk of damage to the blade and the complete machine.

Caution!
Risk of injury caused by flying fragments!
If the blade meets the teeth of the wiring duct, there is a risk of injury to the operator caused by flying fragments. There is also a risk of damage to the blade and the complete machine.
If the remainder does not suffice for the following machining of a workpiece, the operator will be requested to perform a material replacement. In this case, a first cut is required initially again; the Secarex software issues an appropriate message.

Note:
With a switch to the "Preparation" tab, the operator can at anytime see the machining progress based on the production list. Previously machined workpieces are marked.

**Deviations for cable duct covers and support rails**
The machining of cable duct covers and support rails involves the following deviations from the above-mentioned processing sequence.
- **Cable duct covers:** No adapting cuts (first cut or intermediate cuts) are required for cable duct covers because no hole pattern needs to be considered.
- **Support rails:** Due to the templates and the encapsulation of the tool, there is no risk of the operator being cut when shortening support rails. Consequently, the cutting operation for support rails is not initiated with the two "two-hand duct" keys, but rather with the "Cut rail" key (one-hand operation). Also ensure that the attachments on the supports for the support rails are placed or removed as appropriate, depending on the support rail type.

![Fig. 18: Attachment for supports](image)

**Key**
1. Attachment
2. Standard support

**Aligning a support rail for the first cut**
The encapsulation of the track tool means no viewing window can be used to check the cutting point on the workpiece. Proceed as follows to correctly align the support rails for the first cut:

- Place the support rail on the label so it points exactly to a possible separation point (appropriate for the hole pattern, normally centred between two elongated holes).
## 6.3.5 Cancelling and resuming a machining operation

A machining operation can be cancelled at anytime. The calculated data for the waste optimisation, however, is lost.

- Press the “Cancel” button.

The following message window is displayed.

!!! Info

Confirm the prompt with "Yes" if you want to cancel the machining.
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Resuming the machining
To resume the project, we recommend the following procedure:

- Switch to the “Preparation” tab (see section 6.3.2 “Creating a production list”).
- Delete the previously machined workpieces from the production list.
  You can recognise such workpieces by the marking in the “Status” column.
- As alternative, you can create a complete production list for this project.
- Group (again) the required workpieces based on the details on the “Bill of materials” tab.
- Start the machining of the remaining workpieces on the “Operation” tab.

Cancelling the machining in an emergency situation
In the event of an emergency situation, the program sequence and the machining can be stopped immediately by pressing the EMERGENCY STOP key on the operating console.

- Press the EMERGENCY STOP key on the operating console.
  The program is cancelled and all movements are stopped immediately.

Restoring operability
After pressing the EMERGENCY STOP key, operability can be restored as follows.

- Pull out the EMERGENCY STOP key.
- Press the “Controller On” key next to the master switch to confirm the emergency off message and to restore the control power.
- Press the “Reset Error” button on the operating panel to confirm all pending error messages.

6.3.6 Manual operation
In manual operation, workpieces can be shortened without waste optimisation for a specified value.

![Manual operation tab diagram](image)

**Key**

1. Stylised support rail
2. “Arrow” button for track tool (activated here)
3. Stylised wiring duct
4. “Arrow” button for duct tool
5. “Continue” button
6. “Set Length” button for track tool (activated here)
7. “Actual position of the automatic length stop” display for track tool
8. “Cancel” button

- Select the “Manual operation” tab.
- Press the “Arrow” button in front of the stylised workpiece to select the track tool or duct tool.
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The arrow is shown green, and the input field for the set length of the workpiece as well as the display of the actual position of the automatic length stop are displayed behind the workpiece.

- Enter the desired length of the workpiece in the "Set length" input field for the previously selected tool.
- Press the "Continue" button to confirm your input.
- The automatic length stop travels to the required position.
- Press the two "Two-hand duct" keys if you have preselected the cutting of a wiring duct or a cable duct cover, or alternatively the "Cut rail" key if you have preselected the cutting of a support rail.

6.4 Working with CSV files

6.4.1 General information
If the "Workshop programming" program is not available, you cannot establish any connection to a database that contains the orders (see section 6.5.3 "Software"). In this case, it is possible to create a production list as a CSV file.

6.4.2 Structure of the CSV file
This type of production list is a simple text file that contains the following information items each separated by commas:
- **Name**: Workpiece name (mandatory).
- **AbstandZaehne**: Separation of the teeth for wiring ducts. The value is used for the waste optimisation (mandatory).
- **ArticleId**: Model number. The value is displayed in the bill of materials (mandatory).
- **ProgrammId**: Number of the program. The value is displayed in the "Id" column in the production list (optional).
- **ArticleType**: Workpiece type. One of the values "duct", "top-hat rail", "CProfile" or "cover" must be present (mandatory).
- **Length**: Set length of the workpiece (mandatory).
- **Kommentar**: Any comment (optional).
- **MinEndAbstand**: The minimum distance of the last hole to the end of the workpiece. The value is used for the waste optimisation (mandatory).
- **PosX**: The distance of the first hole to the start of the workpiece. The value is used for the waste optimisation (mandatory).
- **ProgramName**: Name of the main program. The value displayed in the "Program" column in the production list (optional).
- **ProjectName**: Name of the associated project. The value displayed in the "Project" column in the production list (optional).
- **Raster**: Distance between the holes. The value is used for the waste optimisation (mandatory).
- **RohteilLaenge**: The length of the raw part. The value is used for the waste optimisation (mandatory).
- **Breite**: The width of the workpiece to be produced.
- **Anzahl**: The number of this workpiece to be produced.

The above-mentioned identifiers shown bold must be added to the first line of the CSV file. The data for the individual workpieces is listed in the following lines. Such a complete file is shown below.
6.4.3 Importing a CSV file

The production list must be imported into the Secarex software.

- Press the "Import" button on the "Preparation" tab.
- A dialogue for selecting a CSV file opens.
- Select the desired file and press the "Open" button to confirm your selection.
- A window opens with the information that the current production list will be deleted during the import.

Conﬁrm the prompt with "Yes" to import the list or "No" to cancel the import. If the import was performed successfully, the appropriate "Import successful" message is displayed.

Fig. 22: CSV file in a text editor

Alternatively, you can request an Excel file from Rittal in which you can enter the required data. This file includes a macro with which you can create the CSV file automatically.
6 Working with the machine

If the data could not be imported, the appropriate "Import failed" message with a possible fault cause is displayed. In the following screenshot, for example, the "AbstandZaehne" (Teeth distance) column contains invalid data.

![Error message when the import is cancelled](image)

**6.5 Configuration**

**6.5.1 General information**
Advanced settings for the Secarex software can be performed on the tabs in the "Configuration" screen. These are normally one-off settings made after commissioning the machine.

- Always save all changes made on the "Configuration" screen by pressing the "Save" button.
- Only then are your changes saved in the Secarex software.

**6.5.2 Machine**
Various basic settings for the Secarex can be made on the "Machine* tab.

**Cover Correction**

!["Machine" tab – "Cover Correction" settings](image)

The cover correction allows the cover for the wiring ducts always to be cut longer by a specific amount.

- Enter in the "Cover correction" field, the desired dimension in millimetres by which a cover should be cut longer than the associated wiring duct.
- Whereby, this is a global specification for all covers.
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**Horn**

If a material change is required on the Secarex, an audio warning signal can be issued. If no associated sound file is stored, no audio warning signal is issued.

- If required, select an appropriate sound file in wav format.

**Machine Number**

The number of the Secarex machine is entered on the "MachineNumber" tab.

- If required, enter an arbitrary machine number for the unique machine identification.

**6.5.3 Software**

The settings for connecting the Secarex software to the workshop programming database as well as the settings for the label printer are made on the "Software" tab.
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Database

- If you use the workshop programming database, enter the path for the database as well as the user and the associated password.
- If the database is not stored directly on the Secarex machine, but rather on a database server in the network, enter here the IP address or the host name of this computer. Note that in this case, the drive letter in the path to the database from the viewpoint of the computer on which the database server runs, and not a network drive, is entered.
- Press the "Save" button.

The connection to the database is then tested automatically. If no connection can be established using the data specified on the screen, an appropriate message will be issued.

Label

- Enable or disable the label printer.
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6.6 User administration

Various users with different names, roles and passwords can be created on the "User administration" screen.

Note:
To access the user administration, the currently logged-in user must have been assigned the "Administrator" or "Service" user role.

Press the "User" button.
The following screen is displayed.

![User administration screen]

All currently created users with their associated user role are displayed. You can also specify here which user with the "Operator" role is logged in automatically. In this case, after starting the Secarex software, the login screen does not appear, but rather the "Production" area directly.

Activate the symbol in the "Autologin" column for the desired user.
The symbol is greyed-out when the automatic login is deactivated; the symbol is shown black when the automatic login is activated.

6.6.1 Creating a user

Press the "New" button on the "User administration" screen.
The following screen is displayed.

![Create user screen]

Complete all fields shown here.
- **User**: The name of the user who then logs in to the Secarex software.
- **Password**: The password that the user must enter for the login. Other than the Password field must not be empty, no further restrictions are placed on the password. The password must be repeated in the second Password field.
6 Working with the machine

– **Role:** Three user roles are possible: Administrator, Service and Operator. Users with the Operator user role do not have any access to the "User administration" and "Service" screens.

  - Press the "OK" button to confirm your inputs.
  - The "User administration" screen opens again; the newly-created user is displayed accordingly in the list.
  - Alternatively, press the "Cancel" button to exit the "Create user" screen.
The inputs are then discarded and no new user is created.

### 6.6.2 Changing the password

  - Select on the "User administration" screen the user name whose associated password should be changed.
  - Press the "Change Password" button.
  - The following screen is displayed.

  ![Change Password Screen](image)

  - Enter the new password in the "Password" field.
  - Re-enter the password in the second password field.
  - Press the "OK" button to confirm your inputs.
  - The "User administration" screen opens again; the password of the user has been changed accordingly.
  - Alternatively, press the "Cancel" button to exit the "Create user" screen.
  - In this case, the current password of the user is retained.

### 6.6.3 Changing the user role

  - Select on the "User administration" screen the user name whose user role should be changed.
  - Press the "Change Role" button.
  - The following screen is displayed.

  ![Change Role Screen](image)

  - Select in the list the new user role for the selected user.
  - Press the "OK" button to confirm your inputs.
  - The "User administration" screen opens again; the changed user role is displayed accordingly in the list.
  - Alternatively, press the "Cancel" button to exit the "Create user" screen.
  - In this case, the current user role of the user is retained.
6.7 Service
The basic settings of the machine are displayed on the "Service" screen. Only Rittal service personnel can make changes to these values.

- Press the "Service" button.
An information window with the version number of the installed software version is also displayed on this screen.
- Press the "Info" button.
- Have this information available when support is requested from the Rittal Service.
7 Maintenance

7.1 Safety instructions concerning maintenance work

- There is the general danger that improperly performed repairs, maintenance and adjustment work can endanger persons and/or Secarex AC 15 components. Consequently, the maintenance work listed in this section may be performed only by qualified specialists (see section 2.3 "Operating and specialist personnel").
- More extensive maintenance work not described in these instructions may not be performed by the operating company.
- The personnel for the maintenance work wears the required personal safety equipment (see section 2.4 "Personal protective equipment").
- For all maintenance work performed on the Secarex AC 15, the master switch must be switched off by the professionally competent supervisor and secured against being switched on again.
- The employee responsible for the work carries the key with him/her.
- A sign is attached to the master switch: "Do not switch on! Work being performed in the danger zone!".
- The sign also specifies who initiated the shutdown and who may revoke the shutdown again.
- After completion of the work and before switching the power on again, the responsible supervisor ensures that this is possible without endangering persons or equipment. Before switching on, a timely and unambiguous warning must be issued to all involved persons.
- Some safety devices must be removed so that maintenance work can be performed by the operating company. After completion of the maintenance work, the safety devices must be reinstalled and checked.

7.2 Overall maintenance plan

An overall maintenance plan sorted according to the intervals of the individual maintenance work is listed below.

<table>
<thead>
<tr>
<th>Maintenance work</th>
<th>Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check compressed-air maintenance unit</td>
<td>Daily or as required (see section 7.3.1 &quot;Compressed-air maintenance unit&quot;)</td>
</tr>
<tr>
<td>Check the linear unit of the feed</td>
<td>Daily or as required (see section 7.3.2 &quot;Linear unit of the feed&quot;)</td>
</tr>
<tr>
<td>Check the cutting tools</td>
<td>Daily or as required (see section 7.3.3 &quot;Cutting tools&quot;)</td>
</tr>
<tr>
<td>Check the safety devices</td>
<td>Daily (see section 7.3.3 &quot;Cutting tools&quot;)</td>
</tr>
<tr>
<td>Clean the linear guides</td>
<td>Daily or as required (see section 7.4.2 &quot;Linear guides&quot;)</td>
</tr>
<tr>
<td>Clean the viewing window</td>
<td>Daily or as required (see section 7.4.5 &quot;Viewing window&quot;)</td>
</tr>
<tr>
<td>Clean the machine</td>
<td>Weekly or as required (see section 7.4.1 &quot;Complete machine&quot;)</td>
</tr>
<tr>
<td>Clean the sinter filter of the compressed-air maintenance unit</td>
<td>Weekly or as required (see section 7.4.1 &quot;Complete machine&quot;)</td>
</tr>
<tr>
<td>Clean the cutting tools, including the guides</td>
<td>Monthly or as required (see section 7.4.3 &quot;Cutting tools, including the guides&quot;)</td>
</tr>
</tbody>
</table>

Tab. 2: Overall maintenance plan
7 Maintenance

7.3 Tests

7.3.1 Compressed-air maintenance unit
- Check the pressure set at the compressed-air maintenance unit (see section 5.5 “Connecting the compressed-air supply”).
- If necessary, discharge any accumulated condensate from the condensate separator.

7.3.2 Linear unit of the feed
- Visually inspect the linear unit of the feed.
  The automatic length stop must travel uniformly and jerk-free.
- By visually inspecting the automatic length stop through the cut-out, check that no dust or particles have accumulated there.
- If necessary, clean the linear unit (see section 7.4.2 “Linear guides”).
- If necessary, check the toothed belt pretension on the drive (see section 7.3.5 “Toothed belt pretension”).
- If necessary, relubricate the linear unit (see section 7.5.1 “Linear guides”).

7.3.3 Cutting tools
- Ensure that the safety fence of the two tools is mounted.
- Check the cut edges of the wiring ducts, cable duct covers and support rails. The cut edges must be straight and burr-free.
- If this is not the case: Inspect the cutting tools for damage and replace the duct tool if necessary (see section 7.6.1 “Duct tool”).

7.3.4 Electrical system

- Have a qualified electrician check and document the continuity of the PE conductor system and the insulation resistance of live conductors in accordance with DIN EN 60204-1.

---

### Table 2: Overall maintenance plan

<table>
<thead>
<tr>
<th>Maintenance work</th>
<th>Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lubricate the track tool</td>
<td>Monthly or as required (see section 7.5.2 “Track tool”)</td>
</tr>
<tr>
<td>Lubricate the linear guides</td>
<td>Every two months (see section 7.5.1 “Linear guides”)</td>
</tr>
<tr>
<td>Lubricate the duct tool and guides</td>
<td>Every two months (see section 7.5.3 “Duct tool, including the guides”)</td>
</tr>
<tr>
<td>Lubricate the track tool</td>
<td>Every four months (see section 7.5.2 “Track tool”)</td>
</tr>
<tr>
<td>Check the electrical system</td>
<td>Annually or according to country-specific regulations (see section 7.3.4 “Electrical system”)</td>
</tr>
<tr>
<td>Replace the duct tool/counter blade</td>
<td>As required (see section 7.6.1 “Duct tool”)</td>
</tr>
<tr>
<td>Check the toothed belt pretension</td>
<td>As required (see section 7.3.5 “Toothed belt pretension”)</td>
</tr>
</tbody>
</table>

---

**Warning!**
Work on electrical systems or equipment may be performed only by an electrician or by trained personnel under the guidance and supervision of an electrician. All work must be performed in accordance with electrical engineering regulations.

---
7 Maintenance

- Also observe any additional valid stationary directives and regulations.
- In the event of a repair or change of a part: Have the affected part rechecked before the machine is switched on.

### 7.3.5 Toothed belt pretension

If the automatic length stop does not travel uniformly and jerk-free, the toothed belt pretension may be too low.

- Loosen and remove the four SW 4 fastening screws of the rear service cover above the toothed belt.

![Fig. 35: Toothed belt service cover](image)

**Key**

1. Service cover
2. Fastening screws (4x)
3. Rear

- Remove the service cover upwards.

![Fig. 36: Toothed belt](image)

**Key**

1. Toothed belt
2. Idler pulley
7.4 Cleaning

Note:
When performing the individual work tasks, also observe the accompanying documents of the associated components.

7.4.1 Complete machine
The complete machine, in particular, the table and the operating panel, must be cleaned of machining residues and other contaminations regularly and when required.

Caution!
Unintentional incorrect inputs on the operating panel can, for example, cause sudden and unwanted traversal of the automatic length stop. Consequently, clean the operating panel only when the machine is switched off.

Note:
Never use aggressive cleaning substances or abrasives for cleaning the operating panel, because they can attack the surface of the operating panel.

- Switch off the machine completely at the master switch.
- Sweep or vacuum the table.
- Clean the operating panel with a soft cloth.
- Check that the labels on the machine are complete and easy to read (see section 3.1.5 “Safety and warning components”). Replace any damaged labels without delay.

7.4.2 Linear guides
The linear guides of the automatic length stop must be cleaned of dust and particles regularly and when required.

- If during the visual inspection (see section 7.3.2 “Linear unit of the feed”) you determine that contaminations are present on the shafts or on the toothed belt: Loosen the fastening screws of the rear linear guide service cover and remove it upwards.
- To prevent damage to the linear guides, remove any contaminations on them without delay.
- If necessary, apply grease to the guides (see section 7.5.1 “Linear guides”).
- Finally, replace the service cover and secure it on the desktop.
7.4.3 Cutting tools, including the guides

Loosen and remove each of the two SW 4 fastening screws at the front and rear on the safety fence.

Remove the safety fence upwards.

Loosen and remove the four SW 4 fastening screws of the counter blade service cover.

Open the door of the pneumatic cabinet and press the service cover slightly upwards so it can be removed easier.

---

**Fig. 37: Safety fence of the tools**

**Key**

1 Safety fence
2 “Rear” fastening screw (2x)
3 Counter blade service cover fastening screw (4x)
4 Counter blade service cover
5 “Front” fastening screw (2x)

---

**Fig. 38: Tools**

**Key**

1 Track tool
2 Duct tool guides
3 Duct tool counter blade
4 Duct tool
7.3 Cleaning

- Clean the area below the counter blade service cover of any dust and particles.
- Clean the guides and contact surfaces of the cutting tools.
- If necessary, apply oil or grease to the cutting tools (see sections 7.5.2 "Track tool" and 7.5.3 "Duct tool, including the guides").
- Finally, reattach the safety fence.

7.4 Compressed-air maintenance unit

- Check the sinter filter for contaminations.
- Clean the sinter filter or replace it with a new compatible one.

7.5 Lubrication

7.5.1 Linear guides

The linear guides are lubricated using a grease gun at the greasing nipples located on the face side of the shaft slides. The lubrication is performed in regular intervals or when the visual inspection reveals imperfections in the lubricating film or contaminations on the steel shafts.

- First clean the shafts, the toothed belt and the greasing nipple (see section 7.4.2 "Linear guides").
- Place the grease gun on the clean greasing nipple and press in one shot of lubricant.
- Move the shaft slides backwards and forwards several times to distribute the applied lubricant.
- Reapply lubricant until the required quantity of lubricant is present.
- Use the following grease (or a comparable product) for lubrication:
  - Sodium-saponified grease GP00/00F-20 according to DIN 51 502
  - Required grease quantity: 1 cm³

7.5.2 Track tool

Unlike the duct tool, the track tool must be greased rather than being oiled.

- Open the service flap upwards in the area of the track tool.
- Clean the greasing nipple.
7 Maintenance

Fig. 39: Service flap

Key
1 Service flap
2 Safety fence

- Place the grease gun on the clean greasing nipple and press in one shot of lubricant.
- Move the tool upwards and downwards several times to distribute the applied lubricant.
- Reapply lubricant until the required quantity of lubricant is present.
- Use the following grease (or a comparable product) for lubrication:
  - Sodium-saponified grease GP00/00F-20 according to DIN 51 502
- Close the service flap again.

7.5.3 Duct tool, including the guides
- First remove the safety fence from the tools (see section 7.4.3 "Cutting tools, including the guides").
- Lubricate all moving parts and sliding surfaces of the duct tool.
- Use the following oil (or a comparable product) for lubrication:
  - MoSb penetrating oil (Caramba)
- Reattach the safety fence.

7.6 Replacement

Note:
When performing the individual work tasks, also observe the accompanying documents of the associated components.

7.6.1 Duct tool

Caution! Risk of being cut by the duct tool!
Always wear your personal protective equipment when replacing the duct tool (see section 2.4 "Personal protective equipment").

The duct tool can be replaced if necessary.
- First remove the safety fence from the tools (see section 7.4.3 "Cutting tools, including the guides").
- Loosen the three fastening screws of the duct tool and remove the tool carefully from the holder.
Place a new, comparable tool on the holder and fasten it with the three fastening screws.
Reattach the safety fence. The counter blade of the duct tool can also be replaced if necessary.
First remove the counter blade service cover (see section 7.4.3 "Cutting tools, including the guides").
Loosen both fastening screws of the counter blade and remove it from the machine.
Install a new, identical counter blade in the machine and fasten it with the two fastening screws.
Reattach the counter blade service cover.

7.6.2 Track tool
Contact Rittal Service if you need to replace the track tool.
## Technical specifications

<table>
<thead>
<tr>
<th>Technical specifications</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Designation</td>
<td>Rittal Secarex AC 15 cutting centre</td>
</tr>
<tr>
<td><strong>Dimensions and weight</strong></td>
<td></td>
</tr>
<tr>
<td>Dimensions (width x height x depth) [mm]</td>
<td>4010 x 1610 x 875</td>
</tr>
<tr>
<td>Weight</td>
<td>approx. 300 kg</td>
</tr>
<tr>
<td><strong>Electrical connection</strong></td>
<td></td>
</tr>
<tr>
<td>Voltage</td>
<td>1~/N/PE 230 V, 50 Hz</td>
</tr>
<tr>
<td>Connection power</td>
<td>1.5 kW</td>
</tr>
<tr>
<td>Supply cable cross-section</td>
<td>3 x 1.5 mm²</td>
</tr>
<tr>
<td>Pre-fuse</td>
<td>16 A</td>
</tr>
<tr>
<td><strong>Wiring ducts and cable duct covers maximum dimensions</strong></td>
<td></td>
</tr>
<tr>
<td>Height [mm]</td>
<td>100</td>
</tr>
<tr>
<td>Depth [mm]</td>
<td>15…125</td>
</tr>
<tr>
<td>Wall thickness [mm]</td>
<td>2.5</td>
</tr>
<tr>
<td><strong>Support rail types</strong></td>
<td></td>
</tr>
</tbody>
</table>
| Types                    | – Rittal C rails 30/15 (according to EN 60 715)  
– NS 35/7.5 (according to EN 60 715)  
– NS 35/15 (similar to EN 60 715)  
– NS 15 (according to EN 60 715)  
– NLS-CU 3/10 |
| **Compressed-air supply** |  |
| Compressed air [bar]     | 6…8 |
| **Other information**    |  |
| Sound pressure level (depends on the workpiece) (open air above reflective flooring, distance 1 m) | max. 79 dB(A) (L_{Peak} max. 115 dB(A)) |
| Operating temperature range [°C] | +5…+35 |
| Operating humidity range | 20%…80% relative humidity, non-condensing |
| Storage temperature range [°C] | -40…+70 |
| Colour                   | RAL 9003, RAL 4010 and RAL 7016 |

Tab. 3: Secarex AC 15 technical specifications
9 Decommissioning and disposal

9.1 Decommissioning
In the event of long- or medium-term interruptions, the Secarex AC 15 must be protected with the following measures:
1. Lock the master switch
2. End the visualisation and shutdown the operating system at the operating panel
3. Shut off the compressed-air supply
4. Attach a warning label to the master switch

9.2 Disposal
Although no special measures must be adopted concerning the Secarex AC 15 disposal, you must observe the following instructions:
- Only trained personnel may disassemble the Secarex AC 15.
- If necessary, contact Rittal GmbH concerning the disposal.
The Secarex AC 15 contains parts that must be treated as hazardous waste, for example, electrical circuit boards, cables, various plastic parts and paint coatings.
- Consequently, observe all the usual country laws and regulations for waste disposal!
- Commission a registered disposal company with the proper disposal and re-use.
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