Automatic Label Feeder

ALF19 Series

Operating Instructions

Document number 80018-AA

Version 0.1

ALF19 Series

ALF19-21

Manufacturer

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Contents

1 About these operating instructions

1.1 General information about these operating instructions

These operating instructions contain important information about the Automatic Label Feeder of the ALF19 series (hereinafter referred to as the label feeder) and its handling.
They are aimed at the operator and people who work on and with the label feeder.
These operating instructions are part of the label feeder and must be kept in the immediate vicinity of the device.
They must always be accessible to personnel.

Read these operating instructions carefully.
This is the only way to ensure safe use and a long service life of the label feeder.
Before you start work, read the Safety chapter first! 10

The Glossary 8 explains the technical terms used in these operating instructions.
The List of abbreviations 7 lists the abbreviations used in these operating instructions.

If you have any questions after reading the operating instructions, please contact us:

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We always welcome suggestions and comments on these operating instructions.

Please send your feedback to the following email address: info@amsde.com.

1.2 Design of the operating instructions

Presentation	Meaning
• Text	Unsorted listing
▷ Text	Handling instructions
▶ Text	Result of an instruction or an event.
❶ Text	Caption
Safety first! 10 	Link to another chapter or section of these operating instructions.
Bold type	Highlights individual terms in the text.
Italics	Highlight menu levels or entries in the text.
→	Menu navigation

1.3 List of abbreviations

Abbreviation	Term
ALF	Automatic Label Feeder
SIO	Serial input output

1.4 Glossary

Term	Definition
Acc1	Parameter in the submenu that defines the acceleration of the label transport.
Acc2	Parameter in the submenu that defines the acceleration of the winder.
Automatic Label Feeder	Device for precise label transport to the pick-up position in a pick-and-place machine.
Cur1	Parameter in the submenu that defines the amperage for the conveyor motor.
Cur2	Parameter in the submenu that defines the amperage for the winding motor.
Dec1	Parameter in the submenu that defines the deceleration of the label transport.
Dec2	Parameter in the submenu that defines the deceleration of the winder.
Gap	Parameter in the main menu that defines the maximum feed rate of the label carrier if there is no label on the label carrier.
Label	Parameter in the main menu that describes the length of the label.
Last line from the counter menu	The version of the software on the TFT board is displayed in the last line.
Pulse	Parameter in the submenu that defines the pulse length of the sensor.

Term	Definition
Roll	Parameter in the submenu that defines the overrun of the winding motor.
Scan	Parameter in the submenu that indicates the sensor query time after the start of the pulse.
Serial input output	A method of data communication between devices, usually between computers and peripheral devices, in which the individual data bits are transmitted sequentially.
Speed	Parameter in the main menu that specifies the conveyor speed.
Speed 2	Parameter in the submenu that defines the winding speed of the empty label cylinder.
Step	Parameter in the submenu that defines the length of the manual feed of the label carrier when the pull button is pressed briefly.
Time	Parameter in the main menu that defines the waiting time after picking up a label until the next label is transported.
Width	Parameter in the submenu that defines the sampling rate of the sensor.
Counter	The number of labels conveyed, the operating hours, the conveying length and the revolutions of the winder are displayed here. The version of the motor board of the Alf19 is displayed in the last line.

2 Safety first

2.1 Safe product

The label feeder is a modern industrial device that was developed and produced in accordance with EN 12198-2, EN ISO 12100-1 and EN ISO 13849-1 as well as the Machinery Directive 2014/35/EC. It corresponds to the current state of the art and the safety requirements.

2.2 Intended use

The label feeder is used to transport labels to the pick-up position in a pick-and-place machine.
Any use beyond the intended use is considered improper.

2.3 Operator responsibility

The operator is responsible for the following measures:

▷Ensuring compliance with the local safety, accident prevention and environmental protection regulations as well as other relevant regulations.

▷Making sure that the personnel are adequately qualified.

▷Making sure that the operating instructions are read and understood by the personnel before starting work

.

We recommend having the confirmation form 60 signed by every employee who works with or on the label feeder .

2.4 Presentation of warning notices and other information

Action-related warnings

Warning notices are placed in front of instructions and warn of possible personal injury.

Caution

Type and source of the hazard.

Failure to observe this warning
can lead to minor to moderate injury!

▷Measure to avoid the damage.

Warning of property damage

In addition to the warning notices, notes are also used to warn of possible damage to property.

ATTENTION

Type and source of the hazard.

Failure to observe this warning
can lead to minor to moderate injury!

▷Measure to avoid the damage.

General notes

General notes containing important information are also used.

Note
• This note contains important information.

Tools or aids	
• Tool or aid	

2.5 Personnel requirement

The operating instructions are meant for the operator and all persons entrusted with work on or with the label feeder.

The assembly of the label feeder on the machine adapter must be carried out by maintenance personnel and without voltage.
The operation and adjustment of the label feeder can also be carried out after brief instruction by inexperienced users.

Apart from the steps listed in these operating instructions, no maintenance work whatsoever is to be carried out on the label feeder.
If, contrary to expectations, there should be a malfunction on a label feeder, we will carry out the service in the shortest possible time.

Caution

Danger from the use of insufficiently trained or unauthorised personnel.

A lack of personnel qualifications
can lead to minor injuries and property damage!

▷Only work on and with the Label Feeder
if you have been commissioned and instructed in the work.

▷Make sure that you have been instructed in the handling and operation of the respective pick-and-place machine when you upgrade
it with the label feeder.

In principle, only people who can be expected to work reliably are allowed to work on and with the label feeder.
The ability to react must not be impaired by drugs, alcohol or medication.
The assigned personnel must have read the operating instructions.

2.6 General safety information

Note
• Failure to observe the general safety instructions can result in personal injury and property damage! • In addition, non-observance of the safety instructions leads to exclusion of liability and expiry of warranty claims!

▷ Read the operating instructions and make sure that you understand them.

▷ Use the label feeder only in accordance with its intended use.

▷ Observe the instructions and warnings in the respective chapters.

▷ Comply with the requirements for the installation site. 30

▷ Provide a power supply according to the information in the technical data 56.

▷ Use the tools specified at the beginning of the respective chapter for repair and maintenance work

.

▷ Only work with or on the label feeder if you are authorised by the operator and appropriately qualified for the respective work.

▷ Only operate the label feeder when it is in perfect and fully functional condition.

▷ Do not make any technical changes to the label feeder (except for changes authorised by us).

3 The label feeder at a glance

3.1 Scope of delivery

Scope of delivery (standard)

- 1 label feeder of the ALF19 series
- 1 pair of tweezers
- 1 original operating instructions (German)
- 1 translation of the original operating instructions

Accessories (optional)

- 1 plug power supply unit (24V, 1.6A) with X connection plugs (US, UK, EU).
- 1 power supply adapter if necessary
- 1 basic adaptation is suitable for testing the function of the Alf 19 series
- 1 ALF-19 dummy is suitable for testing the machine adapter

3.2 Short description of the device

Label Feeder

The label feeder is used in the automatic assembly.
The labelling of the circuit boards is used for the traceability of the assembly.

The label feeder automatically separates labels from the label carrier and makes them available in a precisely predefined position for automatic pick-up by the pick-and-place machine.
Automatic pick-up takes place after the sensor in the label storage mat has signalled readiness for pick-up.

The firmware offers different modes that can be set via the control panel of the label feeder.
For more information on the different modes and on the control panel, refer to the section Menu structure and Settings 24 or The control panel 22.

The ALF19 series currently includes the model: **ALF19-21**.

Firmware

The firmware of the label feeder enables the setting of various parameters, which can be set via the control unit, the machine adapter.

The standard settings of the parameters are designed for the use of labels with a length in the transport direction of approx. 10 mm.
Changing the parameters enables flexible use of labels of other lengths.

In addition, setting the parameters helps to eliminate any difficulties that may arise in the case of labels not intended for automatic conveyance.

Further information can be found in the section Setting examples 41.

Machine adapter

Machine adapters take into account the special mechanical dimensions of the different pick-and-place machines and, if necessary, contain electronic assemblies for

communication with the pick-and-place machines. In addition, they have an active pull-out of the empty label carrier (some with active rewinding for easy disposal) and a pulley for feeding the label carrier or a suspension for label rolls.

Machine adapters can be ordered separately from the label feeders for all common pick-and-place machines. The currently available machine adapters are listed in the section Machine adapters table 59 .

Note
• Machine adapters vary depending on the application. On request, we support their development or take over the development or production.

Labels

The label feeders of the ALF19 series transport labels from 3 x 3 mm to 19 x 21 mm.
The labels can be made of different materials such as paper or polyamide.
They can be made of non-transparent, semi-transparent or fully transparent material.

3.3 Views

3.3.1 Label Feeder

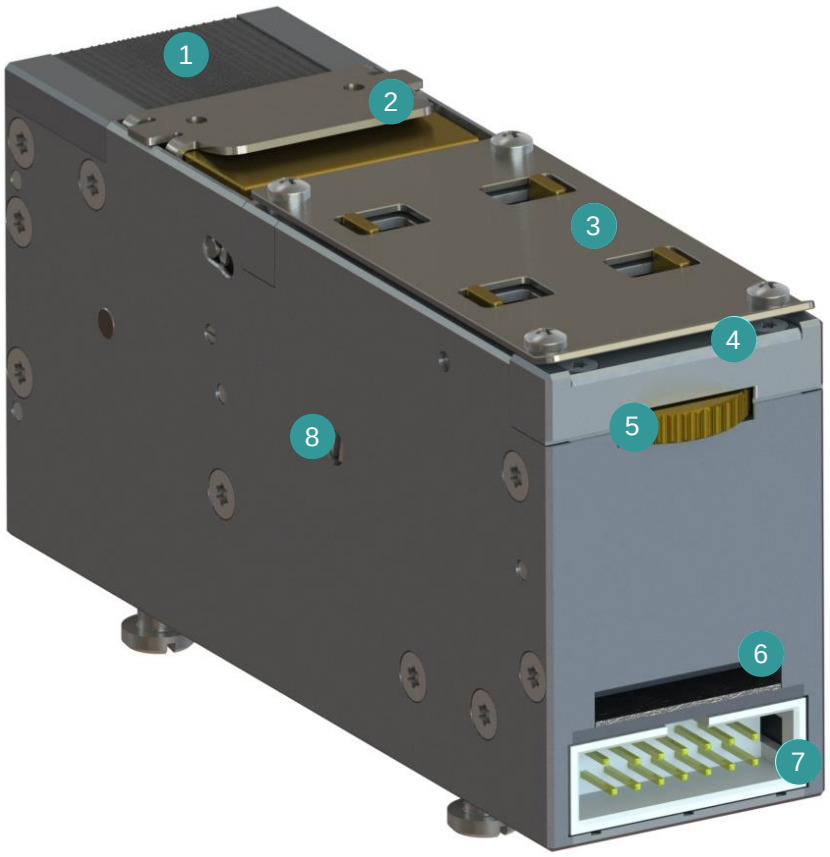


Fig. 1 Components of the label feeder

1 Label rubber holder

2 Bracket clamp

3 Width adjustment

4 Feed opening

5 Adjusting wheel for width adjustment

6 Output opening

7 Stepper motor board interface connection

8 Screw for manual label carrier transport

Functions of the controls and components

Control element Components	Function

Feed opening / Output opening	Input or output for the label carrier.
Label carrier guide (stepless)	Device for guiding the label carrier.
Label carrier pressure roller	Device for pressing the labels onto the label conveyor belts.
Screw for manual label carrier transport	Device for manual transport of the label carrier in the event of a paper jam.
Connection of signal interface and power supply	Plug connection between the label feeder and the machine adapter.
Label rubber holder	Is the holder for the processed labels.
Adjusting wheel for width adjustment	Adjusting wheel to continuously adjust the width of the label carrier.
Bracket clamp	Device for implementing the label carrier.

3.3.2 Machine adapter

Example: Siemens Siplace B30

Fig. 2 Siemens Siplace B30 machine adapter

1 Label feeder
2 Machine adapter
3 Dancer arm
4 Winder
5 Control element

Machine adapter of the Siplace X/E series

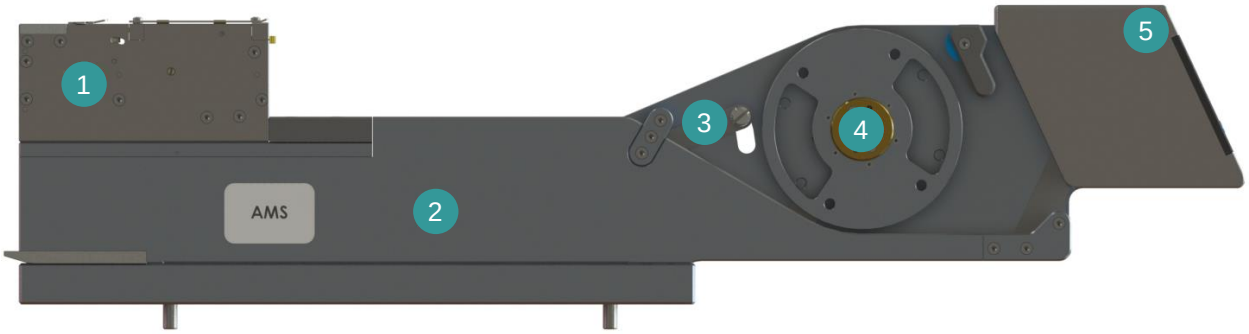


Fig. 3 Machine adapter for Siplace X/E series

1 Label feeder
2 Machine adapter
3 Dancer arm
4 Winder
5 Control element

3.4 The control panel

Control panel view

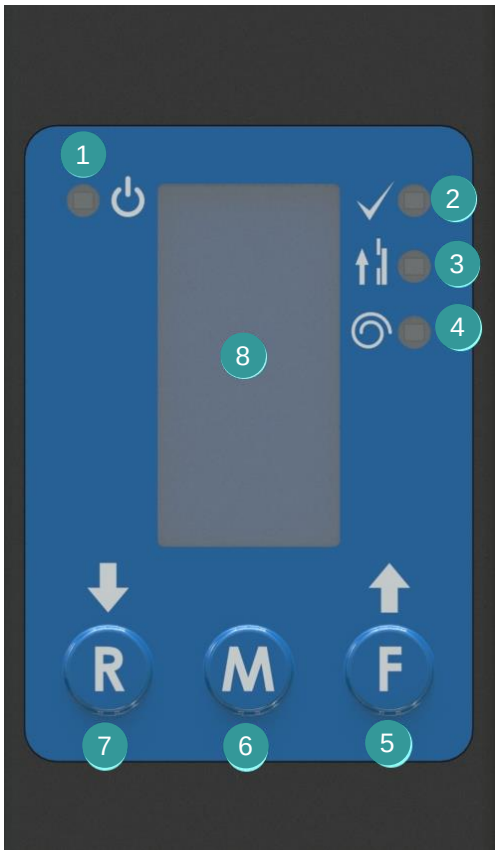


Fig. 4 Control panel

1 Power LED
2 Label LED
3 Feeder motor LED
4 Winding/unwinding motor LED
6 F / Up button
5 M / Menu button
7 R / Down button
8 TFT display

The control panel has a **colour LCD display**,
four **status LEDs** and three buttons.
(R / Down button, M / Mode button and F / Up button).
Use these buttons to navigate the menu structure.

Representation of the operating states in label mode

Operating state	Power LED	Label LED	Feeder motor LED	Winding/unwinding motor LED
The Alf19 was switched on.	lights continuously	-	-	-
A label was positioned on the pick-up position of the shelf.	-	lights continuously	-	-
The label is conveyed to the pick-up position on the shelf and liner material is wound up or conveyed away.	-	-	lights continuously	lights continuously
Reserved for error messages	-	-	-	flashes

3.5 Menu structure and settings

Note
• The following description refers to firmware versions from V0.1.1.

Menu structure

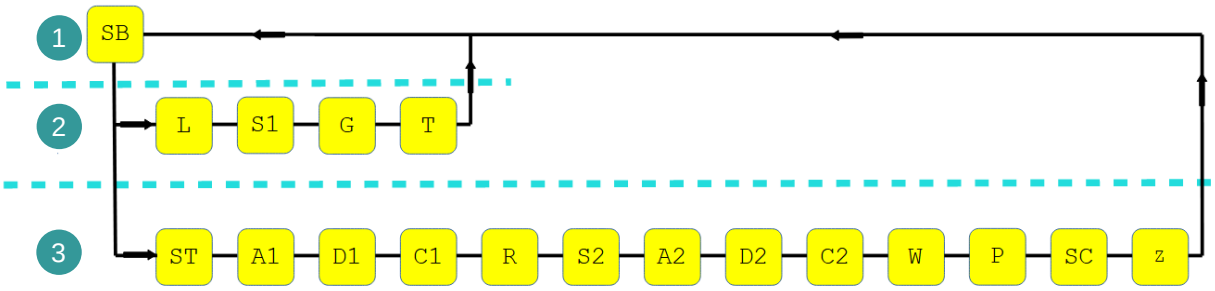


Fig. 5 Menu structure

1 Start screen

2 Main menu

3 Submenu

Navigating the menu structure

Menu level	Button	Action	Result
Start screen			Main screen with the logo and the display of the firmware version of the machine adapter.
Main menu	Mode button	Press briefly.	Circular change in the main menu. (SB → L → S → G → T → SB)
Submenu	Mode button	Press for longer than 1s.	Change from the main menu to the submenu.
Counter menu	Mode button	Press longer than 3s.	Change from the main menu to the submenu under Counter.
Submenu	Mode button	Press briefly.	Circular change in the submenu. (SB→S1→A1→D1→C1→R→S2→A2→ D2→ C2→W→P→SC→Z→SB)

The start screen is displayed for 1 minute and is then automatically switched to standby mode.

You can read about the special cases of the settings in the section Setting examples 41.

Main menu

Symbol	Mode	Description of the mode	Value range
L	Label mode	Defines the adjustable value of the feed after the sensor detects the leading edge of the label.	0.5 – 20.0 mm Factory setting 10.0 mm
S1	Speed mode	The transport speed is adjustable. The maximum speed depends, among other things, on the label material as well as the size and weight of the label roll.	10 – 200 mm/s Factory setting 50 mm/s
G	Gap	Defines the maximum length of the feed of the label carrier after the label has been picked up. This parameter prevents the label carrier from being drawn in unnecessarily if labels are missing or not recognised.	5 – 999 mm Factory setting 50 mm
T	Time	Defines the delay time for label conveyance after a label has been picked up from the pick-and-place machine or the conveyance button has been pressed.	0.1 – 1 sec. Factory setting 0.1 sec.

Submenu

Symbol	Parameter	Description of the parameter	Value range
ST	Step	This parameter defines the conveying length of the label carrier per button press (**F button**).	3.0 – 30.0 mm Factory setting 10.0 mm
A1	Acc1	This parameter defines the acceleration of the conveyor motor.	0.1 – 5.0 m/s² Factory setting 1.0 m/s²
D1	Dec1	This parameter defines the braking of the conveyor motor.	1.0 – 99.9 m/s² Factory setting 10.0
C1	Cur1	This parameter defines the maximum amperage of the conveyor motor. The factory setting defines the value for continuous operation.	0.1– 1.00 A Factory setting 0.76 A.
R	Roll	This parameter defines the follow-up time of the winding motor.	0.1 – 5.0 revolutions Factory setting 1.0 rpm Revolution
S2	Speed 2	This parameter defines the maximum speed of the winding motor.	1 – 100 rpm Factory setting 30 rpm
A2	Acc2	This parameter defines the acceleration of the winding motor.	0.1 – 5.0 rps² Factory setting 1.0 rps²
D2	Dec2	This parameter defines the deceleration of the winding motor.	1–20 rps² Factory setting 10 rps²

Symbol	Parameter	Description of the parameter	Value range

C2	Cur2	This parameter defines the maximum amperage of the winding motor.	0.10 – 0.40 A Factory setting 0.30 A
W	Width	This parameter defines the sampling rate of the sensor.	25 –200 µs Factory setting 112 µs
P	Pulse	This parameter defines the pulse length of the sensor.	5.0 – 20.0 µs Factory setting 10,0 µs
SC	Scan	This parameter defines the query time of the sensor after the start of the pulse.	5.0 –20.0 µs Factory setting 15.0 µs
Z	Counter	The number of labels conveyed, the operating hours, the conveying length and the revolutions of the winder are displayed here. The software version of the ALF19's motor board is displayed in the last line	-

Saving changed values

Note

- The parameters are transferred to the boards as soon as you exit the menu item These parameters are only activated by changing from the submenu to the main menu.
  This includes the waiting time of 1 minute, where the control unit then switches to standby mode, as well as switching the mains voltage off and on.

Menu	Action
Main menu	Press the Mode button.
Submenu	Press the Mode button for longer than 1s.

Resetting parameters to factory settings

Action	Result	Red status LED
Press the Down button and the Up button at the same time.	The current parameter is reset to the factory setting.	-
-	Resetting all parameters to the factory setting is not possible.	-

Note

- When replacing the label feeder, all parameters must be set again.

4 Preparing the label feeder for operation

4.1 Requirements for the installation site

- The label feeder is designed exclusively for indoor use.
- For optimal operation, the maximum permissible ambient temperature is 30°C.
- For optimal operation, the maximum permissible relative humidity is 60%.

4.2 Unpacking the label feeder

Tools or aids	
• Cutter	
• Scissors	

ATTENTION

Damage to the packaging due to improper transport.

Improper transport **can damage the packaging and thus also the label feeder!**

▷ Before unpacking, examine the entire packaging for any transport damage.
Only when the packaging is undamaged can you start unpacking.

▷ If you find any damage to the packaging, notify the carrier and us immediately.

▷Take the label feeder and other accessories out of the packaging.

Note
• We recommend keeping the original packaging in its original condition for any possible future shipping.

ATTENTION

Incomplete delivery.

The label feeder is only fully functional with all components.
Operating an incomplete label feeder
can impair functionality!

▷ Check that the delivery is complete.
▷ If the delivery is incomplete, please contact us immediately.

▶The label feeder is unpacked and ready for assembly.

4.3 Power supply

The label feeder is supplied with power via three alternative options:

- The power supply line connects the label feeder directly to the internal power supply of the pick-and-place machine via the machine adapter.
  This allows the device to be connected directly to the pick-and-place machine.
- A plug-in power supply unit with the associated adapter can optionally be used as an external power source.
  The power supply units have connector plugs for EN, UK and US connections.
- There are machine adapters that only need to be connected with the help of a host feeder or relevant components from the pick-and-place machine.

4.4 Mounting the label feeder on the machine adapter

Note

- No tools are required to attach the Alf19 label feeder.
- The label feeders of the ALF19 series are compatible with several pick-and-place machines from different manufacturers.
  The section Machine adapter table 59 shows which machine adapter is compatible with which pick-and-place machine.

Example: Siemens Siplace B30 machine adapter

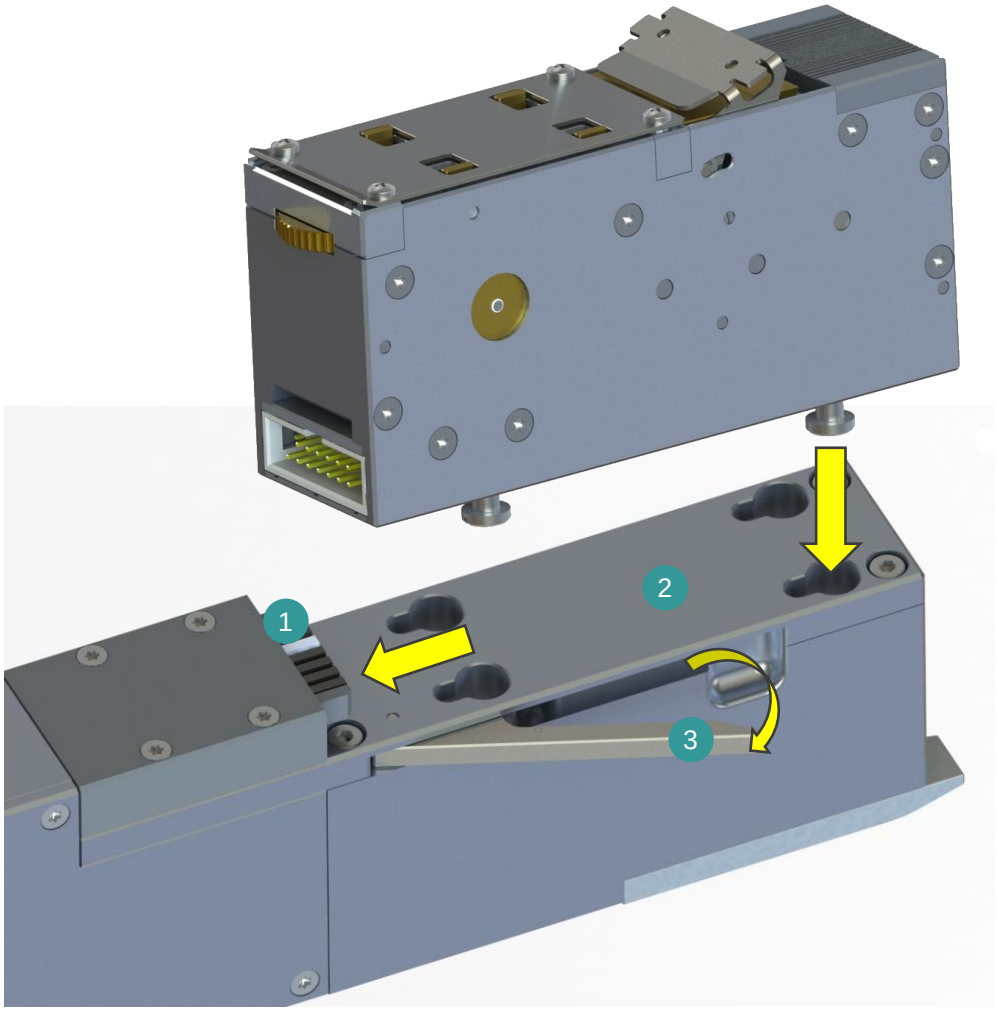


Fig. 6 Siemens Siplace B30 machine adapter

1 Adapter board

2 Clamping plate

3 Locking lever

Note

• The following instructions apply to all machine adapters.

▷ The locking lever (3) is pulled out on the side and held in place.
Take the label feeder and position it in the recesses provided in the clamping plate (2).
Now push the label feeder into the adapter board (1) so that it connects flush with the motor board.
Now let go of the locking lever (3) and check that the label feeder is firmly seated and that the locking lever (3) is flush.

▶ The label feeder is mounted on the machine adapter.

▷ Insert the machine adapter with the mounted label feeder like other component feeders in a magazine or in the pick-and-place machine.

Note

• The assembly of the label feeder including the machine adapter depends on the series.

• Depending on the model of the pick-and-place machine used, the label feeder is connected to the power supply in different ways.

Pick-and-place machine	Power supply

Pick-and-place machines without internal power supply	▷ Connect the machine adapter to the optional plug-in power supply and connect it to the 110V / 240V mains.
Pick-and-place machines with internal power supply	▷ Connect the machine adapter to the power supply of the pick-and-place machine using the connection cable.
Pick-and-place machine (and machine adapter) with electrical feeder contacts	▶ The electrical feeder contacts connect automatically when the machine adapter is inserted into the pick-and-place machine. The power supply is now established.

▶ The mounted label feeder is ready for threading the label carrier.

4.5 Threading the label carrier

Tools or aids

• Stamp tweezers Item number: 19509685	 *Fig. 7 Stamp tweezers*

ATTENTION

Damage to the label feeder due to unsuitable tools.

If you use tools with pointed or sharp edges to manually remove labels from the label rubber holder or from the label feeder, **the label feeder can be damaged!**

▷ Always use the stamp tweezers provided to manually remove labels.

ATTENTION

Paper jam due to incompletely threaded label carrier.

If you thread the label carrier incompletely into the label feeder,
this can lead to a paper jam!

▷ Always pull the label carrier completely through the label feeder.

▷ Place the label roll on the label roll suspension or place the label roll in a magazine of the pick-and-place machine provided for this purpose.
In this case, the label roll suspension serves as a pulley for the label carrier.

▶ You can start threading the label carrier.

▷ Turn the adjusting wheel (1) for the width adjustment to move the centring strips (4) to the outermost edge of the guide slots.

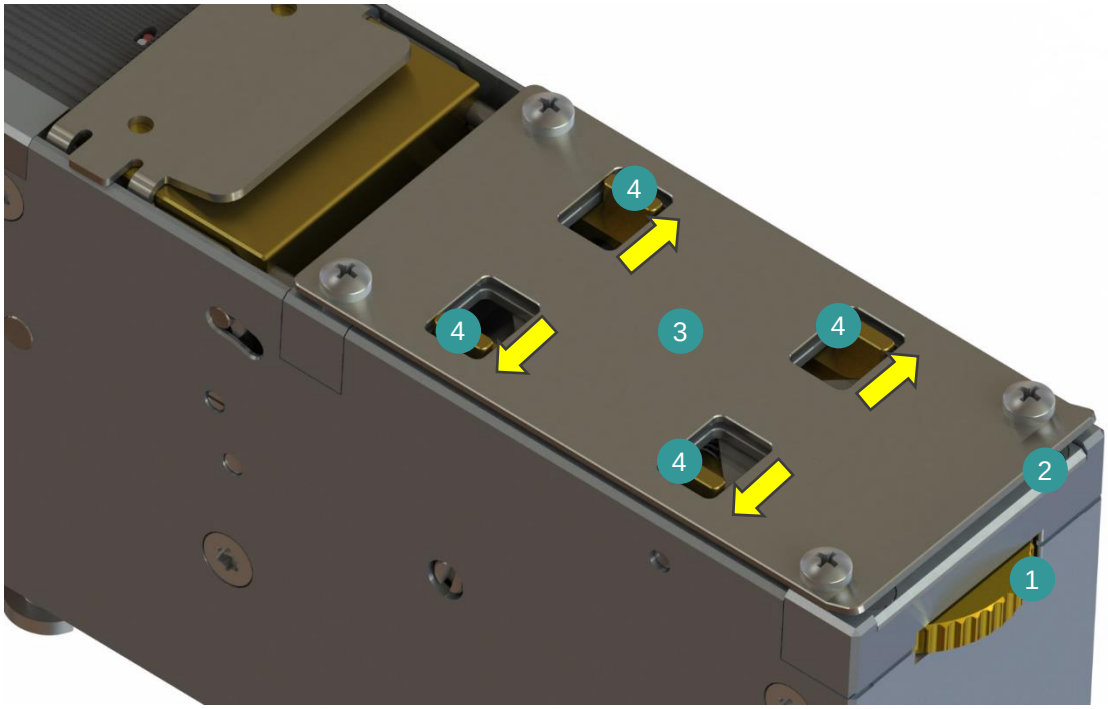


Fig. 8 Move the centring bars

1 Adjusting wheel for width adjustment

2 Feed opening

3 Width adjustment

4 Centring strips

ATTENTION

Impairment of the label feeder due to labels peeling off.

If labels get inside the label feeder while the label carrier is being threaded, **the detached labels can stick to the transport mechanism and cause malfunctions!**

▷ Before threading the label carrier, remove the labels from the first 10 cm.

▷ Alternatively, you can stick a piece of label backing without labels of the same length to the label roll.

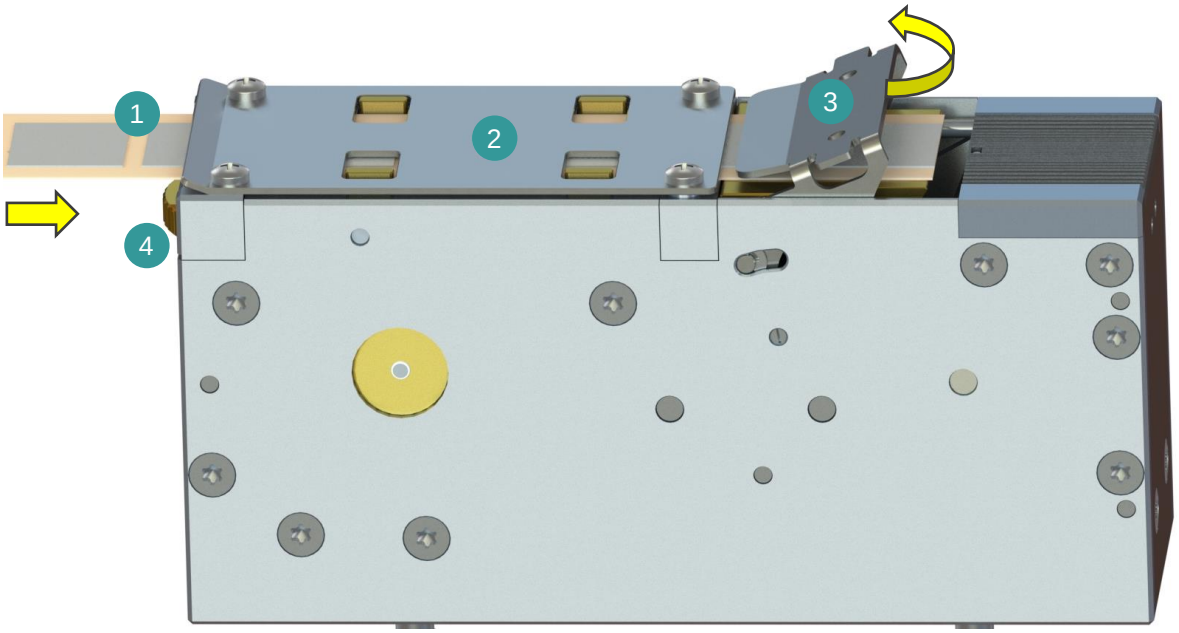


Fig. 9 Insert the label carrier

1 Label carrier

2 Width adjustment

3 Bracket clamp

4 Width adjustment wheel

▷ Open the bracket clamp (3).

▷ Take the end of the label carrier and guide it into the feed opening (1).

▷ Push the label carrier further through the width adjustment (2) until it emerges again behind the bracket clamp (3).

▷ Pull the label carrier approx. 10 cm further out of the label feeder.

▷ The width adjustment (2) is set to the width of the label carrier by turning the adjusting wheel (4).

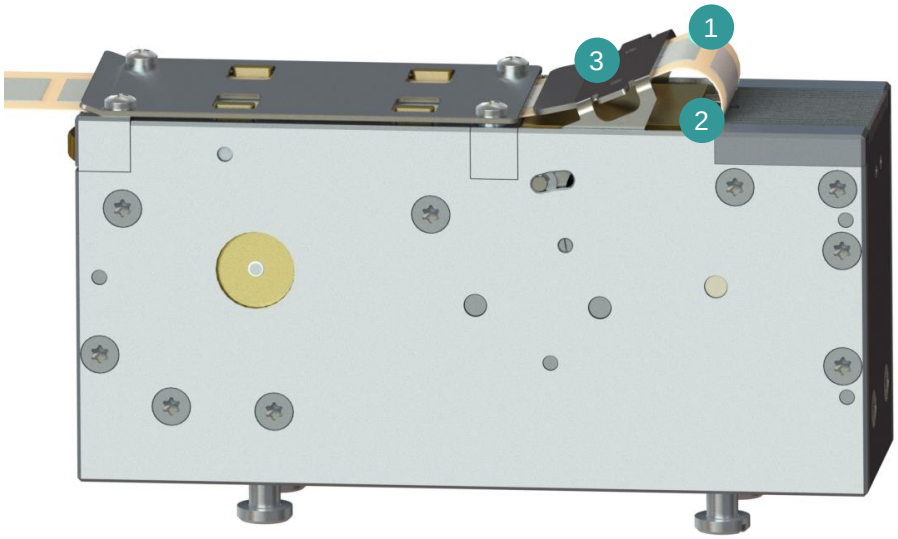


Fig. 10 Insert the label carrier into the label carrier guide

1 Label carrier

2 Transport axis opening

3 Bracket clamp

▷ Take the end of the label carrier (1) and insert it through the open bracket clamp (3) into the transport axis opening (2).
Please close the clamp (3) and use the "*F button*" on the control panel to convey the empty label carrier tape approx. 10 cm further out of the label feeder. See Fig. 11

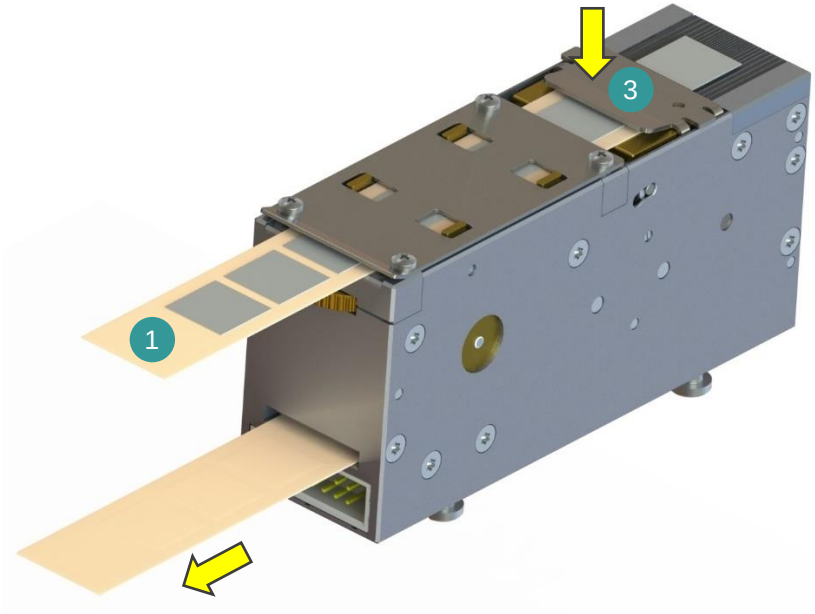


Fig. 11 Running the label carrier

Note

• Additional handling instructions when using a **machine adapter** which is equipped with a winding or unwinding for the empty label carrier

▷ Feed the label carrier through the label feeder until it reaches the end of the rewinding or unwinding.

▷ Secure the end of the label carrier in the empty roll only when rewinding.

▷ Proceed with the instructions below.

▶ The label carrier is fully inserted into the label feeder.

▷ Press the **Mode button** once to go to *Label mode L*.

▶ The label feeder is in *Label mode L* and ready for setting or programming.

4.6 Setting examples

Label 9 mm (or shorter)

The factory setting *L* 10.0 can cause problems for labels no longer than 9 mm in the transport direction.

With the factory setting *L* 10.0, labels with a length of 9 mm (or shorter) are transported with their rear edge beyond the centre of the sensor and are drawn into the label feeder.
Under certain circumstances, the label is now not recognised or picked up in the pick-up position, so that another label is transported.

To avoid this problem, we recommend setting a shorter feed after reaching the pick-up position of the label in the transport direction (e.g. 8 mm).

▷ Press the Mode button once.

▶ You are in the start screen

▷ Press the Mode button again.

▶ You are in *label mode L*. The current setting for *L* is displayed (factory setting 10.0 or customer setting).

▷ Press the **Down button** until the display shows the value 8.0.

▶ The *parameter L* was changed from 10 mm to 8 mm.
This change still has to be saved and activated (**note box**).
After the front edge transported over the sensor has been detected, the label is transported a further 8 mm and then positioned.
Its rear area is then approx. 1 mm above the label carrier sensor. The identification and pick-up of the label is thus reliably ensured.

Labels longer than 10 mm

The factory setting *L* 10.0 can cause problems for labels significantly longer than 10 mm in the transport direction.

With the factory setting *L* 10.0, labels with a length of significantly more than 10 mm are not completely transported with their rear edge under the bracket clamp of the label feeder.
Under certain circumstances, the label is now not recognised or picked up in the pick-up position because it cannot be ensured that the label can be completely detached from the label carrier.

To avoid this problem, we recommend, e.g. for a 15 mm long label a feed of a minimum of 12 mm / a maximum of approx. 14.5 mm.

▷ Press the Mode button once.

▶ You are in the start screen

▷ Press the Mode button again.

▶ You are in *label mode L.* The current setting for *L* is displayed (factory setting 10.0 or customer setting).

▷ Press the **Up button** until the display shows the value 12.0 or 14.5.

▶ The *parameter L* was changed from 10 mm to 12.0 mm / 14.5 mm.
This change still has to be saved and activated (**note box**).
After the front edge transported over the sensor has been detected, the label is transported a further 12 mm or 14.5 mm and then positioned.
Its rear area is then approx. 1 mm above the label carrier.
The identification and pick-up of the label is thus reliably ensured.

▷ Press the **Mode button** once to return to the start screen to save the changed value.

Realisation of higher clock cycles or higher pick-up rates

A number of specific parameters can be set in order to achieve a high pick-up rate for assembly machines with a high pick-up rate - e.g. when using turret heads:

• The parameter *T* determines the waiting time after a label has been picked up until the next label is transported. This waiting time is shortened by reducing this parameter.

.

▷ Press the **Mode button** once.

▶ You are in the start screen

▷ Press the **Mode button** five times until you see the parameter Time *T* in the main menu.

▶ You are in the main menu parameter *T.* The current setting for *T* is displayed (factory setting 100 or customer setting).

▷ Press the **Down button** repeatedly until the value 50 is shown in the display.

▶ The parameter *T* was changed from 100 ms to 50 ms. The waiting time after picking up a label until the next label is transported has been halved.

▷ Press the **Mode button once** to return to the start screen to save the changed value.

• The parameter *S1* determines the transport speed after picking up a label. Increasing this parameter increases the transport speed.

▷ Press the **Mode button** once.

▶ You are in the start screen

▷ Press the **Mode button** twice until you see the parameter Speed *S1* in the main menu.

▶ You are in the *S1 speed mode*. The current setting for *S1* is displayed (factory setting 80 or customer setting).

▷ Press the **Up button** repeatedly until the value 200 is shown in the display.

▶ The parameter *S1* was changed from 80 mm/s to 200 mm/s.
The transport speed increases from 80 mm/s to 200 mm/s.

▷ Press the **Mode button** three times to return to the start screen to save the changed value.

Note

• Excessively fast label transport can lead to problems when the labels peel off. If the adhesion to the label carrier is too strong, the speed must be reduced. Which label material this is the case for cannot be defined in advance and must be discovered experimentally. The label feeder's firmware offers effective options for responding to such difficulties and ensuring a reliable transport process.

• The parameter *Acc1* determines the acceleration of the label transport up to the speed set with the parameter *S1* .

▷ Press the **Mode button** once.

▶ You are in the start screen

▷ Press the **Mode button** for longer than 2 s.

▶ You are in the submenu Parameter *ST*. The current setting for *ST* is displayed (factory setting 10.0 or customer setting).

▷ Press the **Mode button** once.

▶ You are in the submenu Parameter *A1*. The current setting for *A1* is displayed (factory setting 1.0 or customer setting).

▷ Press the **Up button** repeatedly until the value 2 is shown on the display.

▶ The parameter *A1* was changed from 0.80 m/s² to 2.00 m/s².
The acceleration of the label transport increases to 2 m/s².

▷ Press the **Mode button** twelve times to return to the start screen in order to save the changed value.

• The parameter *D1* determines the deceleration of the label transport from the speed set with the parameter *S1* to a standstill.

▷ Press the **Mode button** once.

▶ You are in the start screen

▷ Press the **Mode button** for longer than 2 s.

▶ You are in the submenu Parameter *ST*. The current setting for *ST* is displayed (factory setting 10.0 or customer setting).

▷ Press the **Mode button** twice.

▶ You are in the *submenu* Parameter *D1*. The current setting for *D1* is displayed (factory setting 100 or customer setting).

▷ Press the **Down button** repeatedly until the value 50 is shown in the display.

▶ The parameter *D1* was changed from 100 m/s² to 50 m/s². The deceleration of the label transport is reduced to 50 m/s².

▷ Press the **Mode button** eleven times to return to the start screen to save the changed value.

5 The label feeder in operation

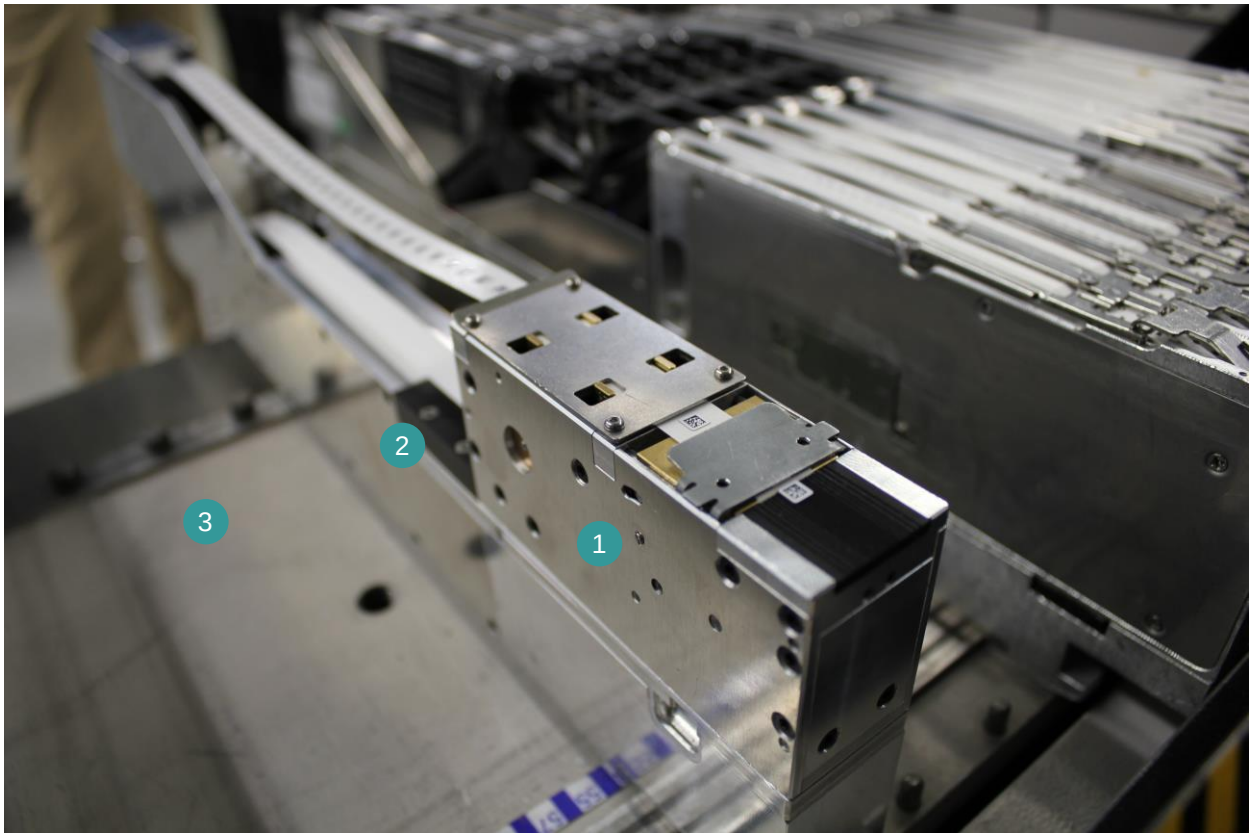


Fig. 12 The Label Feeder in operation

1 Label feeder

2 Machine adapter

3 Pick-and-place machine

ATTENTION

Impairment of the functionality of the label feeder or damage to the label feeder due to non-compliance with the required operating conditions.

If you operate the label feeder under incorrect operating conditions,
it will suffer impaired functionality and may be damaged!

▷ Ensure a precisely centred feed of the label material into the label feeder at all times.

▷ When starting the assembly, make sure that the label feeder is functioning correctly. During each transport step, empty label carriers should emerge from the output opening.

▷ Observe the requirements for ambient temperature and humidity during operation so that labels and label carriers do not peel off or deform.

▷ Avoid paper jams by preventing labels from getting inside the label feeder.

▷ Make sure that the empty label carrier at the output opening cannot hit any obstacles when it emerges.

▷ Perform visual inspections at regular intervals during operation.

5.1 Troubleshooting

Tools or aids	
• Slotted screwdriver 3 mm	 *Fig. 13 Slotted screwdriver*
• Stamp tweezers Item number: 19509685	 *Fig. 14 Stamp tweezers*

Paper jam

ATTENTION

Damage to the label feeder due to unsuitable tools.

If you use tools with pointed or sharp edges when manually removing labels from the label carrier or from the label feeder,
the label conveyor belts can be damaged!

▷ Always use stamp tweezers to manually remove labels..

If there is a paper jam at the label feeder, the label feeder automatically stops the label transport. Follow these steps to clear the jam:

▷ Take the label feeder out of the pick-and-place machine.

▷ Slightly lift the locking flap.

▷ Use the screwdriver to turn the screw for manual label carrier transport clockwise while at the same time carefully pulling the label carrier back through the feed opening.

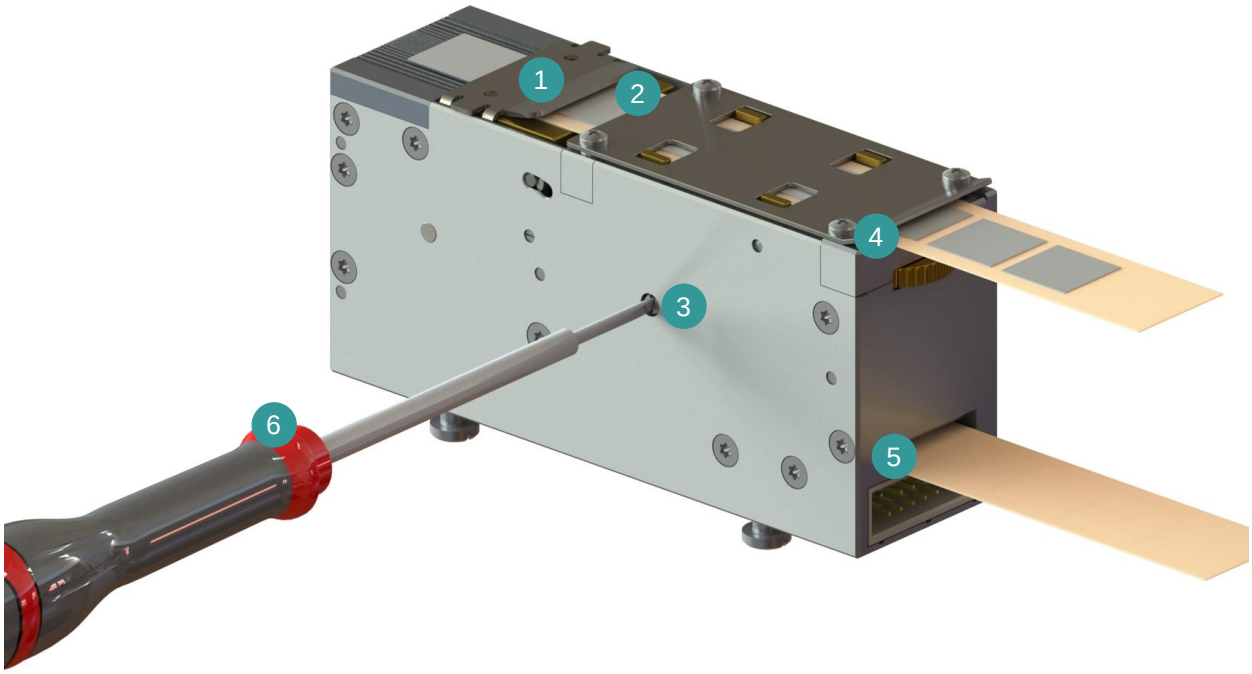


Fig. 15 Transporting the label carrier manually

3 Bracket clamp
2 Label carrier
3 Screw for manual label carrier transport
4 Feed opening
5 Output opening
6 Screwdriver

Incorrect alignment of labels on the label conveyor belts

The label feeder has a precise label carrier guide. Any inaccuracies in the positioning of the labels are automatically compensated.

If this is not the case, proceed as follows:

▷ Check all components that come into contact with the label carrier or the labels to ensure that they are perfectly clean. For example, watch out for glue and scraps of paper.

▷ Check that the label carrier is precisely centred. To do this, read the section Threading the label carrier 36 .

▷ Check the setting of the parameters. For more information, read the section Menu structure and settings 24 .

Labels are not picked up

The parameters may need to be changed. You can read about the special case factory setting ***L* 4.0, labels 9 mm (or shorter)** in the section Setting examples 41.

Labels deform or detach from the label carrier

Note
• We recommend only using labels that have been approved by us.

Deforming or peeling labels can indicate excessive ambient temperature or humidity.

▷Make sure that the requirements for the installation site are complied with. Information on ambient temperature and humidity can be found in the section Requirements for the installation site 30.

6 Maintaining the label feeder

Tools or aids	
• Stamp tweezers Item number: 19509685	 *Fig. 16 Stamp tweezers*

Caution

Injury from moving parts.

If you press the **pull button** with the flap open,
your fingers can get between the rotating transport rollers and be injured!

▷ Only press the **pull button** when the flap is closed.

▷ If it is necessary for maintenance purposes to press the **pull button** with the cover open, be careful of your fingers and keep them away from the transport rollers.

ATTENTION

Damage to the label feeder due to unsuitable tools.

If you use tools with pointed or sharp edges when manually removing labels from the label carrier or from the label feeder, **the label conveyor belts can be damaged!**

▷ Always use stamp tweezers to manually remove labels.

7 Packing the label feeder

Note
• We recommend using the original packaging. If this is no longer available, you can order suitable packaging material from us.

Customer's own packaging material

▷ Make sure that the label feeder and the accessories cannot slip in the packaging.

▷ Provide adequate padding.

8 Proper disposal

Disposing of packaging

The packaging of the label feeder is made of recyclable material.

▷ Dispose of the packaging in accordance with local environmental protection regulations if it is no longer required for future transport.

Disposing of the label feeder

The label feeder is made of recyclable material. At the end of its useful life, it must be properly disposed of or the raw materials must be recycled.

▷ At the end of its useful life, feed the label feeder or its components into the recycling loop.

▷ In doing so, comply with the applicable local regulations for environmental protection.

Note

• If you have any questions about proper disposal, please call us **(+49 461 903 980)** or send us an email: info@amsde.com.

9 Annex

9.1 Declaration of conformity

EU - Declaration of Conformity

Manufacturer / authorised representative:

Company: AMS Software & Elektronik GmbH
Street: Lise-Meitner-Straße 9
Town: 24941 Flensburg
Country: Germany

Product: Label Feeder, ALF19

The above mentioned device meets the requirements of the guidelines below:

- Machinery Directive 2006/42/EG
- Low Voltage Directive 2014/35/EU
- EMC Directive 2014/30/EU
- RoHS Directive 2011/65/EU incl. 2015/863/EU

and the following standards:

- EN 60204-1:2018; EN ISO 12100:2010; EN 13849-1:2015; EN 13857:2008
- EN 61000-6-4:2007; EN 61000-6-2:2005; EN 61000-4-2…-6:2014-08; EN 55032:2016-02
- EN IEC 63000:2018 Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

Flensburg, 27. August 2020

Ivan Bajic, CEO

UKCA - Declaration of Conformity

Manufacturer / authorised representative:

Company: AMS Software & Elektronik GmbH
Street: Lise-Meitner-Straße 9
Town: 24941 Flensburg
Country: Germany

Product: Label Feeder, ALF19

The above mentioned device meets the requirements of the guidelines below:

- Supply of Machinery (Safety) Regulations 2008
- Electrical Equipment (Safety) Regulations 2016
- Electromagnetic Compatibility Regulations 2016
- The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012

and the following standards:

- EN 60204-1:2018; EN ISO 12100:2010; EN 13849-1:2015; EN 13857:2008
- EN 61000-6-4:2007; EN 61000-6-2:2005; EN 61000-4-2...-6:2014-08; EN 55032:2016-02
- EN IEC 63000:2018 Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

CE CE mark was first affixed to the product in 2020

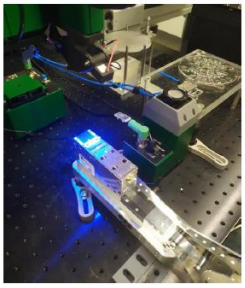
Flensburg, 07. January 2021

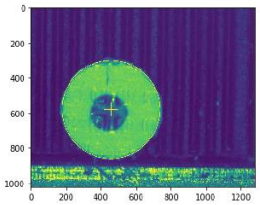
Ivan Bajic, CEO

9.2 Repeatability test by the Fraunhofer Institute

Process

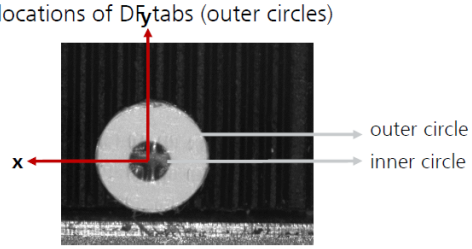
- Fix the label feeder
- Take an image
- Remove the label with tweezers
- Take an image after new feeding
- Repeat 10 more times
- Detect outer circles in images
- Save center location
- Compare results by evaluating the difference between centers of outer circles for different tabs





Task and Aim

- Task:
  - Feed the DF tabs by using the feeder and take an image at each step
  - Analyze the images
- Aim:
  - Evaluate the accuracy of feeder movement by comparing the center locations of DF tabs (outer circles)



DF Tab

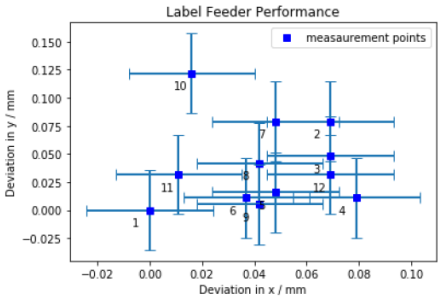
Accuracy of Feeder Movement

Tab	diff in x** [mm]	diff in y** [mm]
1	0,000	0,000
2	0,069	0,079
3	0,069	0,048
4	0,079	0,011
5	0,048	0,016
6	0,037	0,011
7	0,048	0,079
8	0,042	0,042
9	0,042	0,005
10	0,016	0,122
11	0,011	0,032
12	0,069	0,032

**the values are absolute values

Deviations (first tab accepted as origin)

- In x: (**0.048±0.007**) mm
- In y: (**0.043±0.011**) mm



Deviations are quite small compared to the old label feeder (≈0.4 mm)

9.3 Technical data

Label Feeder	Unit	ALF19-21
Dimensions (W / D / H)	mm	100 x 30 x 50
Weight	g	370
Power supply	VDC / A	24 / 1.66
Ambient temperature	°C	15 - 30
Pick-up position height	mm	47
Transport speed < 0.30 s / label (6.35 x 6.35 mm)	mm / s	10 - 200

Label carriers and labels	Unit	ALF19-21
Label carrier width (min./max.)	mm	8 / 21
Max. Label carrier max. thickness	g / m2	140
Label width (min./max.)	mm	3 / 21
Label height (min./max.)	mm	3 / 19

Label positioning accuracy	Value
In the direction of transport	0.5 mm
At right angles to the direction of transport	Depending on the manual setting of the guide blocks

Mechanical dimensions

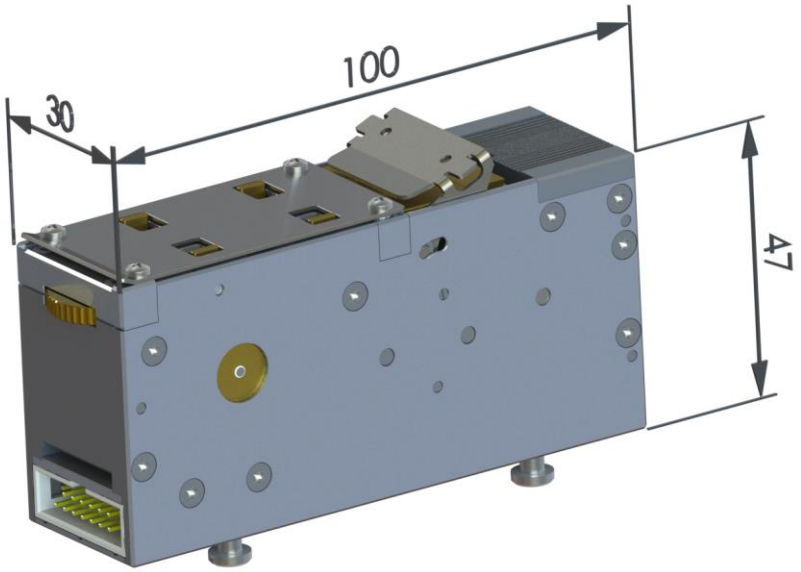


Fig. 17 Mechanical dimensions ALF19-21

9.4 Spare parts list

The spare parts list is available on request.

If you need spare parts, please give us a call **(+49 461 903 980)**
or send us an email :info@amsde.com.

9.5 Machine adapter table

Manufacturer Pick-and-place machine	Series / type	Item number			Required machine software
		Feeder	Adapter	Special accessories	
Basic adaptation without feeder	-	-	19710515	19710550	-
FUJI	AIMEX	49270-xx	19710351-xx	-	-
FUJI	AIMEX 2	49270-xx	19710351-xx	-	-
FUJI	AIMEX 2S	49270-xx	19710351-xx	-	-
FUJI	NXT 1	49270-xx	19710351-xx	-	-
FUJI	NXT 2	49270-xx	19710351-xx		
FUJI	NXT 3	49270-xx	19710351-xx	-	-
Juki	FX-3 Speed Placer	49270-xx	19710352-xx	-	-
Juki	FX-3R / FX-3RA	49270-xx	19710352-xx	-	-
Juki	JM-10 Multitask Platform	49270-xx	19710352-xx	-	-
Juki	JM-20 Multitask Platform	49270-xx	19710352-xx	-	-
Juki	JX-100LED Compact Placer	49270-xx	19710352-xx	-	-
Juki	JX-300LED Compact Placer	49270-xx	19710352-xx	-	-

Manufacturer Pick-and-place machine	Series / type	Item number			Required machine software
		Feeder	Adapter	Special accessories	
Juki	KE-2070 Speed Placer	49270-xx	19710352-xx	-	-
Juki	KE-2080 Flex Placer	49270-xx	19710352-xx	-	-
Juki	KE-3010 Speed Placer	49270-xx	19710352-xx	-	-
Juki	KE-3020 Flex Placer	49270-xx	19710352-xx	-	-
Siplace	ASM D	49270-xx	19710350-xx	47869	-
Siplace	ASM F	49270-xx	19710350-xx	47869	-
Siplace	ASM HF	49270-xx	19710350-xx	47869	-
Siplace	ASM S	49270-xx	19710350-xx	47869	-
Siplace	ASM SX	49270-xx	19710356-xx	47869	-
Siplace	ASM X	49270-xx	19710356-xx	47869	-
Siplace	ASM D1i	49270-xx	19710356-xx	47869	-
Panasonic	-	49270-xx	19710353-xx	45574 & 19710341	

9.6 Confirmation form

The operating instructions contain important information about the label feeders of the ALF19 series and their handling.

I hereby confirm that I have read all the chapters of the operating instructions and have taken note of all safety and warning notices.

Last and first name	Position in company	Date and signature

10 Index

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