Bluhm Weber Group

Weber
LABELING & CODING SOLUTIONS

Installation, Starting, Operation and Maintenance

Legi-Air 4050E

Article number of documentation 22800998

22800998

Table of Contents

1. General Information

Overview

Congratulations! You have purchased a high-quality Printer-Applicator. Our concern is to make sure that you profit from this system to your entire satisfaction over many years. In order to ensure this, we strongly recommend you to let our experienced specialists perform the installation (hints s. page **40**). Please contact our Service-Hotline (s. page **8**).

Limitation of Liability

All pieces of information and notes of this manual have been arranged in consideration of applicable standards and regulations, state-of-the-art technology as well as our cognition and experiences over many years.

The manufacturer assumes no liability for damages caused by:

- Non-observance of this manual
- Non-observance of the intended use
- Use of unqualified personnel
- Manipulations at the system
- Use of spare parts that are not approved by the manufacturer

The obligations of the supply contract the General Trading Conditions as well as the terms of delivery of the manufacturer and the valid legal regulations at the moment of conclusion of a contract generally apply. Technical changes within the scope of improvement and development are subject to change without notice.

Warranty Conditions

The warranty conditions are conform to the valid General Trading Conditions of Weber Marking Systems GmbH at the moment of purchase.

Copyright Protection

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Purpose and Scope of this Manual

The Manual is designed to become acquainted with the system and to be able to use the system according to its specifications.

It provides important remarks for the user to operate the system secure and appropriate. Its consideration assists to avoid dangers, to reduce repair costs and down times and to increase the reliability and the durability of the system.

The Manual is valid for the system described in the title with noted serial number.

The Manual has to be available every time at installation site of the system and has to be read and applied by personnel performing work at the system.

Misprints, errors and state-of-the-art technology changes are subject to change without notice. Figures may be stated without protection device for clarification.

Hints for Use of this Manual

Detailed explanations are offered below of the conventions for the text and illustrations which are used in this service manual.

● Buttons and switches that need to be pressed are placed in brackets.

   Ex.: Press the [Start] button to accept the changes...

● Procedures that need to be performed in a fixed sequence have to be numbered.

Step	Procedure
1	Pull the power plug.

● Special information is in bold and/or has a gray background.

   This is an example of special information!

● All figures (Fig.) are numbered sequentially for each chapter. This means that the reference "**Fig. 2-1**" corresponds to the first figure in Chapter 2.

● Illustrations are frequently shown with only the essential information and may therefore deviate from the original. Illustrations are therefore shown without covers or protection device for the sake of clarity.

● Some illustrations only show **one** version (for example, only the right-handed or left-handed version or only [System1]…), especially when the information is transferable to other versions.

● Messages that are shown in a *²display, appear in a box:

```
AP4050.0              01234
WAIT LABEL               01
```

*² only if system has the appropriate feature

Service-Hotline

The technical service hotline is available 24 hours a day, Monday through Friday. In emergencies, parts may be shipped as late as approximately 10:00 p.m**.**

Tel :	**+49 (0)2224 - 7708 - 440**
Fax :	**+49 (0)2224 - 7708 - 21**
E-Mail :	**hotline-ed@bluhmsysteme.com**

If failures at the labeling system occur, you should be prepared with following information when being asked on the phone:

● Detailed error description.

● All information on the name plate of the labeler.

● When did the error occur for the first time?

  • After loading new label material/ribbon?

  • After changes in the setup of the labeler?

● All information about the PLC signals in case of a failure of a print-apply cycle.

Prior to call our hotline service, please have a look at the manual (chapter "Troubleshooting'') for potential references to eliminate the error.

Our main effort is to keep the service hotline always possibly free for urgent cases. However, we beg your pardon that our hotline also refers to written information provided in this manual.

Explanation of Technical Terms

Technical Term	Explanation
Adhesive Strings	Leaked adhesive at the label edge may adhere the label at the label liner. The printed label adheres to the liner and can thus not be fed to the Tamp.
Air Assist	A stream of air pushing against the bottom of the Tamp/blow box during label feed until label is fixed by vacuum.
Air Assist Tube	The air assist tube directs air assist by one or more drillings to the bottom side of the label. It is mounted in the section of the peeler bar and can be adjusted.
Air Blast	The streams of air effusing from the Tamp drill holes during labeling in order to blow the label by air pressure onto the product (blow box by tube nozzles).
Application Mode	see explanations: Tamp On, Tamp Blow, Blow On.
Applicator	Description for label applicator respectively mimic that moves the Tamp.
Applying Cycle	An entire working sequence of the labeler ((e.g. print label if applicable), peeling off the label and feeding the label to the applicator up to product labeling).
Bad Tag	A "Bad Tag" is a defective transponder of an RFID label. This tag could not be read and/or written.
Blow-On	A contact free application mode in which the Tamp takes the printed label by a stationary vacuum grid and applies with air pressure without moving the Tamp.
Configuration Mode	Mode, where parameters for applicator configuration can be changed by display.
Contrast	Difference in the brightness of light and dark sections of a print.
Conveying System	Complete unit consisting of conveyor belt and controller.
Conveyor Belt	Assembly line for product transport.
CS	Abbreviation for conveying system (s. a.).
Cycle	Sequence of a labeling procedure, from product detection to product labeling until the Tamp arrives in home position.
Default	See factory setting.
DIP Switches	DIP is the abbreviation for „Dual In-line Package".DIP switches are tiny switches with 4 to 8 pins. With these pins the inverter state can be changed (open/closed) by a sharp object (e.g. pencil). The applicator configuration is determined by the switch position.
Dancer Arm	Arm, tensing the label web via spring tension.
Display	Display providing information on status for the user.
Edge Detection	The edge (front or back) of a product or label that will cause the detector to send a detection signal.

Technical Term	Explanation
Factory Setting	Comprises all basic adjustments of the system after manufacturing which may differ from the condition after a system setup. Software parameters are reset by a reset to the factory setting (default values) and formerly adjusted values are lost.
Feed (Label Feed)	The key [Feed] serves for transportation of a label.
Home Position	Basic or home position of the Tamp at the peeler bar.
Home-Position-Sensor	Sensor for detection of home position when the Tamp is in home position.
Hotline	Customer support for a fast diagnosis by phone.
Label Applicator	Unit for applying labels.
Label Feed	Feeding of a label. By pressing the [Feed] key of the print engine, the drive motor is activated and transport of the label web is started (dancer arm loosens the unwinder brake band). The fed label is printed on within the print engine and peeled off at the peeler bar.
Label Gap	Gap between two labels on the label web. The gap is identified by a sensor on the applicator.
Label Gap Sensor	See label sensor.
Label Liner	Siliconized liner paper that the labels are affixed to before they are applied to the product.
Label Out	An optical sensor (reflective light sensor) for identifying the end of the label.
Label Sensor	An optical sensor for identifying the label gap.
Label Size	Shows the label format width x length (in feed direction of the label) in mm (millimeter).
Labeler	Applicator system to apply labels automatically.
Labeling operation	Normal operating conditions. The labeler is ready to print and apply labels.
Leading Edge	The front edge of the product/label that triggers the label application (see also edge detection).
LED	Light Emitting Diode.
Low Label Warning	An optical sensor (reflective light sensor) for identifying a preset minimum of the (adjusted) label roll diameter for a warning.
Maintenance Unit (FR-Group)	Unit contains: Air pressure regulator manometer for displaying the air pressure value (in bar) Fast Closing Valve Water separator for draining the possible present perspiration water manually
Mandrel	A driven axis with a device for fixing the label web. The mandrel serves for unwinding the label web.

Technical Term	Explanation
Manometer	See maintenance unit.
Peeler Bar	Metal edge of the applicator for peeling off the label. If the labeler has also a print engine, the peeler bar is located beneath the print head.
Photocell	Product sensor. The sensor identifies the product and activates the trigger signals. See trigger.
PLC	Programmable logic controller.
Pneumatic	Uses compressed air as energy source to create movements and currents.
Poti / Potentiometer	Changeable resistance (regulator) for analog regulation of adjustments at the labeler (e.g. time performance of the Tamp movement depending on the rotational position of the potentiometer).
Printhead	Printhead of print engine. Tiny heating elements (dots) in the printhead create warmth and transfer it using the ribbon to a print media (thermal transfer) or using a color change in print media (thermal direct).
Product-Sensor (Product Detector)	A sensor for detection of the product. Mostly, optical sensors are used (photocells, light barriers or reflective sensors)
PSI	The American measure of air pressure (Pounds per Square Inch Gauge). 1 bar = 14.7 PSI.
Product Delay	An adjustable delay time from detection of product until start of the applying cycle.
Re- and Unwinder	See re- resp. unwinder.
Rear Edge	See Trailing Edge.
Reset	Command for resetting software systems on default. Usually activated by a certain key combination.
Rewinder	Roll holder (normally for 3 inch cardboard cores) for rewinding the label web. The rewinder winds up the web coming from the print engine. It is triggered by a dancer arm (see dancer arm). Rewinders are powered by a motor.
RFID	This abbreviation stands for Radio Frequency IDentification (Data readout via radio frequency). This technology is used for marking in order to trace products by Smart labels (ref. RFID Label).
Stroke	Distance which the retracted Tamp covers towards the product.
Tamp	A mechanical device that receives a label and moves the label to a position where it is applied to a product.
Tamp Pad	Drilled plate of the Tamp on which the peeled off label is transferred.
Tamp-Blow	Contact free application mode where the Tamp takes the printed label by vacuum, feeds it to the product and blows it on the product.
Tamp Movement Time	Duration of the Tamp movement (extension and retraction) at labeling cycle.

Technical Term	Explanation
Tamp-On	Application mode where the Tamp takes on the label by a vacuum, feeding it and pressing it onto the product.
Thermal Element	See printhead.
Trailing Edge	The rear end of a product which is used for activating the application (s.a. edge detection).
Transponder	The transponder is part of a RFID label and is called Tag. It consists of a micro chip with an antenna. This chip is able to store data via radio frequency read and depending on its construction can be written on. The antennae of the transponders are used as a transmitting as well as a receiving aerial. Simultaneously it provides the required energy for the chip by transforming energy of the emitted electric field from the Reader into current power.
Trigger-Signal	Signal of a sensor or a PLC, activating the application cycle.
Unwinder	Roll or paper holders for rewinding or unwinding the print medium (normally for 3 inch cardboard cores). The unwinder enables a smooth-running unwinding without shock of the label roll and is controlled by a roller brake (see also dancer arm). Rewinder and unwinder can also be powered by motors.
VAC	Volts AC (Alternating Current). Also designated as ~
Vacuum Generator (Venturi)	Unit using air pressure for creating a vacuum.
Variable Stroke Sensor	A proximity sensor mounted on the Tamp for identifying the product. On identifying the product the label is either blown on or peeled off.
VDC	Volts DC (Direct Current).
Void-Signal	Name for printer signal that is sent to the labeler when a Bad Tag was detected.
Water Separator	See maintenance unit.
Web	Label web consisting of a siliconized liner and adhering labels.

2.   Safety Regulations

Behavior in Case of an Emergency

The operating personnel have to be familiar with the operation and the location of safety-, accident notification-, first aid- and rescue devices.

What to do in Case of an Emergency?

● If persons or parts of the body or items are jammed in swing parts of the labeler, separate the labeler immediately from air pressure and power supply.

● Initiate immediately all required emergency measures for injured persons. Observe valid safety regulations in any case in order to avoid further damages to persons.

● Call medical attendance for injured persons.

● Eliminate all accident causes.

General Safety Regulations

Safety regulations provide information in written and symbol form in order to warn you against dangers and to instruct you to avoid any damage to persons or to properties.

Safety regulations are started by signal words indicating the level of danger.

Safety regulations may be placed directly at the labeler or in documents about this labeler.

Explanation of Degrees of Danger

⚠ **DANGER**	This symbol indicates a hazardous situation which, if not avoided, will result in death or serious injury. All safety regulations have to be observed to avoid any damage to persons.
⚠ **WARNING**	This symbol indicates a hazardous situation which, if not avoided, could result in death or serious injury. All safety regulations have to be observed to avoid any damage to persons.
⚠ **CAUTION**	This symbol indicates a hazardous situation which, if not avoided, may result in minor or moderate injury. All safety regulations have to be observed to avoid any damage to persons.
NOTICE	This symbol indicates a hazardous situation which, if not avoided, may result in damage to properties. All safety regulations have to be observed to avoid any damage to properties.

Intended Use

The working reliability of the labeler is ensured only with intended use.

An Intended Use applies, if …

- the labeler is used exclusively for automatic labeling of moved respectively stopped products.
- maintenance is only carried out after stopping the labeler.
- the labeler is only used in the EU.
- the labeler is used with specified products as well as specified labels. Products and labels have to meet all *documented specifications agreed upon between manufacturer and customer.

* "documented specifications" are normally laid down in the LSS (Labeling Systems Survey) and handed out to the customer with the confirmation of order.

- the labeler is operating in explosion-proof environments (not intended for explosion-risk areas) !
- the labeler does not come in direct contact with food products.
- the labeler is not operating outdoors.
- the labeler is used with an additional pneumatic shutter at the aperture for the Tamp when operating in a wet environment.
- the labeler has additional air conditioning features in the stainless steel cabinet for use in an aggressive air environment (e.g. salted air).
- the labeler has additional air conditioning features in the stainless steel cabinet for use in a dusty environment with unadjusted particles.
- the labeler is used exclusively for industrial purposes.
- all working conditions and instructions, prescribed in this manual, will be observed.
- failures at the labeler affecting the safety have to be reported and immediately resolved by trained and briefed personnel.
- maintenance is kept and performed correctly.
- the labeler is used exclusively under faultless conditions.
- safety equipment are not by-passed or abrogated.
- arbitrary changes at the machine are omitted.
- the labeler is used or operated by adequate personnel, refer to "Authorized Personnel" (s. page **19**). These persons must have read and have to be familiar with the content of the manual.

Handling the labeling system without considering one of these points is not for the intended purpose and can cause serious damages to persons or properties.

Reasonably Foreseeable Misuse

Another use as fixed in the „Intended Use" or even more applies as not intended!

For damages caused by not intended use:

- the operator bears the complete responsibility,
- the manufacturer assumes no liability.

If you do not use the system according to the regulations, risks may occur!

Not intended uses are e.g.:

- operation in exposable atmosphere
- the labeler comes in contact with food …

Retrofitting and Changes at the Labeling System

Unauthorized retrofitting and changes at the system lead to an immediate expiration of liability and warranty covered so far by the manufacturer! This is also valid for interventions and program changes at programmable control systems as well as program changes at control units as far as they are not described in this Manual.

The electromagnetic performance of the system can be affected by amendments or changes of any kind.

Do not arrange any changes or amendments at the systems without consultation and written approval of the manufacturer.

Sources of Danger at Labeler
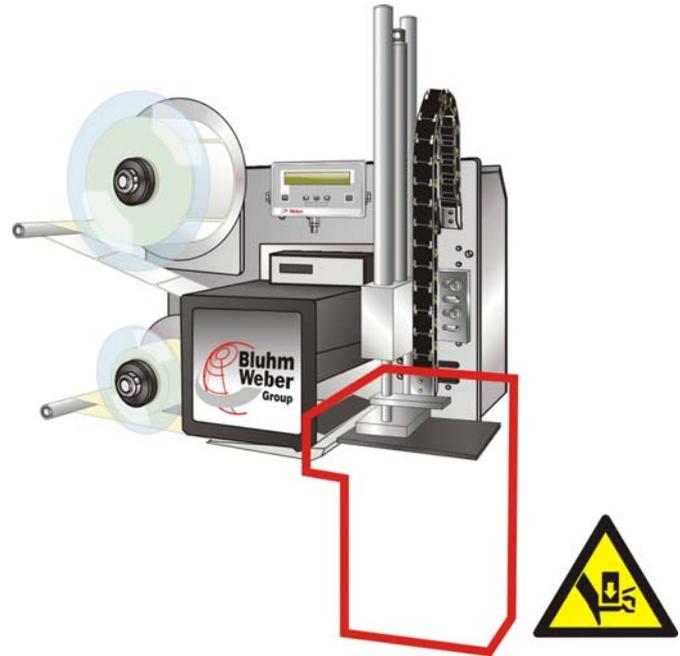
Fig. 2-1: Sources of Danger at Labeler

The arising forces at the Tamp at Legi-Air 4050E with addition **CC** (s. name plate) are limited to 50 Newton for both movements of the stroke, which may be potential risks of injury to persons classified as low (usually reversible). Therefore additional protection measures (e.g. safety guards, protective cabinet…) are not required. The limitation of the Tamp force to 50 Newton is realized by flow control valves of the internal pneumatic circuit.

A manipulation of the regulator valves may lead to the removal of the conformity with regard to the CE-Declaration.

Fig. 2-2: Warning Labels in System

A change of the regulator valve adjustment may only be carried out by authorized personnel.

In case of tamp force of more than 50N, further protection measures are required (see above).

Labeler without limiting the tamp force to 50N (Legi-Air 4050E-NC…)

Following labelers without limitation of the tamp force to 50N, require additional safe guards for safe operation according to Machinery Directive:

- Legi-Air 4050E -NC- LN (Linear Stroke)
- Legi-Air 4050E -NC- RO90 (90° Rotating Tamp)
- Legi-Air 4050E -NC- SW90 (90° Swing Tamp)
- Legi-Air 4050E -NC- TP (Tandem Pusher)
- Legi-Air 4050E -NC- XRA (Belt Applicator)
- Legi-Air 4050E -NC- TW (Twisting Tamp)

By canceling the limited maximum force to 50 Newton safe operation of above listed labelers is only permitted by an additional safe guard including the compressed air switch off (see page 21).

Warnings on the labeler

Special hazards arising from the labeler are identified with yellow stickers. The pictograms indicate hazards:

	General hazards
	Life-threatening hazard
	Crushing hazard
	Entanglement hazard
	Danger due to hot surface
	Danger due to strong light radiation
	Refer to instruction manual

Safety instructions

⚠ WARNING   **Danger caused by direct or indirect contact with live parts.**

⚡ DANGER TO LIFE!
Contact of persons with parts that became live by faults.

– Work on electrical switch cabinet and electrical equipment may only be carried out by electricians.
– The electrical equipment of the labeler has to be checked regularly (see chapter "Maintenance").
– Remove loose connections and damaged cables immediately.
– Keep the switch cabinet always locked.
– Before performing any work on electrical equipment, switch the miniature circuit breaker to position "0" and secure it against unintended restarting. If possible, separate from power source.

⚠ CAUTION   **Danger caused by highly combustible label material.**

🔥 FIRE DANGER!
Printmedia as ribbon and labels are highly combustible. Risk of injury from fire and smoke.

– Keep clear from naked flame und source of ignition.

⚠ CAUTION   **Danger caused by actively triggered movements.**

⚠ DANGER OF BEING CRUSHED!
The movements of the Tamp are driven by a linear pneumatic cylinder.

– Keep away from the applicator.

⚠ CAUTION   **Danger of drawing in by rotating elements.**

⚠ DANGER OF DRAWING IN!
Rotating elements at the labeler, rewinder (stepping motor drive) and label feed in print engine (stepping motor drive).

– Do not grip in, at or between the moving parts.

⚠ CAUTION   **Danger caused by residual energy in pneumatic components.**

⚠ RISK OF INJURY!
Flogging air pressure tubes, derailing parts or uncontrolled moving parts may cause injuries.

– Before connecting the air pressure, check all pneumatic connections if they are fixed and fix them if applicable.
– The pneumatic system that should be maintained has to be bled before the pneumatic components are dismantled.

⚠ CAUTION   **Health Hazard due to inappropriate handling of lubricants and detergents !**

⚠ HEALTH HAZARD!
For used lubricants and detergents, the valid information of the safety data sheets of the manufacturers and the valid safety- and disposal regulations have to be observed and followed for each product.

⚠ CAUTION   **Risk of stumbling due to connecting lines.**

⚠ RISK OF INJURY!
Connecting lines for power, air pressure and data and signal lines may generate sources of stumbling and may lead to considerable injuries.

– Non tension connecting lines to system and pass it that no places of danger do arise

⚠️ **CAUTION**   **Risk of injury at angles and edges.**

⚠️ RISK OF INJURY!

Sharp angles and edges may cause grazing and gashes at the skin. Keep the working place always clean.

– If work is performed close to sharp angles and edges, proceed cautious. Remove parts that are not required.

– In case of doubt wear safety gloves.

Remaining Risks

The labeler is constructed for a safe operation. Hazards that are not preventable due to construction purposes are limited as far as possible by protection devices. A certain amount of risk is always existent! The knowledge about the remaining risks assists you to arrange your work safer and to avoid incidents. In order to avoid the dangers, please observe additionally the particular security advice in the single chapters.

Disposal

RoHS

This labeler complies with the RoHS EU-Regulation 2002/95/EG with observance of the fixed using prohibitions and avoiding pollutants.

Authorized Personnel

Authorized persons according to this manual are following persons:

Operators are persons who …

- have been instructed to the use of the labeling system.
- have completed the minimum age permitted by law.
- Have read and understood this manual.

Operators are allowed …

- To start or stop the labeling operation.
- To replace label rolls.
- To arrange daily accumulating cleaning works at the labeling system according to the chapter maintenance.

Qualified personnel are operators who…

- Have terminated a professional technical training (Electrician, Mechanist).
- Have terminated a training at the Bluhm- Weber-Group successfully.

Qualified personnel are allowed…

- To arrange repair- and maintenance works at the labeling station and its components according to their professional qualification.

Personal Protective Equipment

Wear following protective equipment when performing work at the labeler:

SAFETY SHOES

Wear for protection against falling off parts and slipping.

PROTECTIVE CLOTHING

Are tight-fitting clothes with low tensile strength, with tight sleeve and without distant parts.

Wear a hairnet if applicable
Do not wear jewelry or wrist watchs

PROTECTIVE GOGGLES

For protection against splashs of detergents and flying parts

SAFETY GLOVES

For protection against sharp-edged items

Personal Protective Equipment for following tasks.	Protective Clothing	Safety Shoes	Safety Gloves	Protective Goggles
System Transport.	x	x	x	
Setting up and connecting of the System.	x	x		
Maintenance Work.	x	x		x
	The documentation of the manufacturer of the single system components has to be observed!			

Protection Devices

Separative and non-separative protection device

Labelers without limitation of the Tamp force to 50 Newton (s. page 16) require for operating an additional protection device (compare the supplied Assembly Instruction). Only by using an additional protection measure, the Legi-Air 4050E HS (with High-Speed-Applicator) will be a "complete machine" according to machinery directive 2006/42/EG.

If such a labeler is installed in a not-safeguarded area, additional protection measures are required to prevent reaching upper limbs from dangerous areas. If the protective measure not supplied its design is the responsibility of the operator or user.

Example of an access protection measure (s. Fig. 2-3) according to the EN ISO 13857. For the conceptual design of the protection measure, the elements of Safety of Machinery 2006/42/EC are to consider.
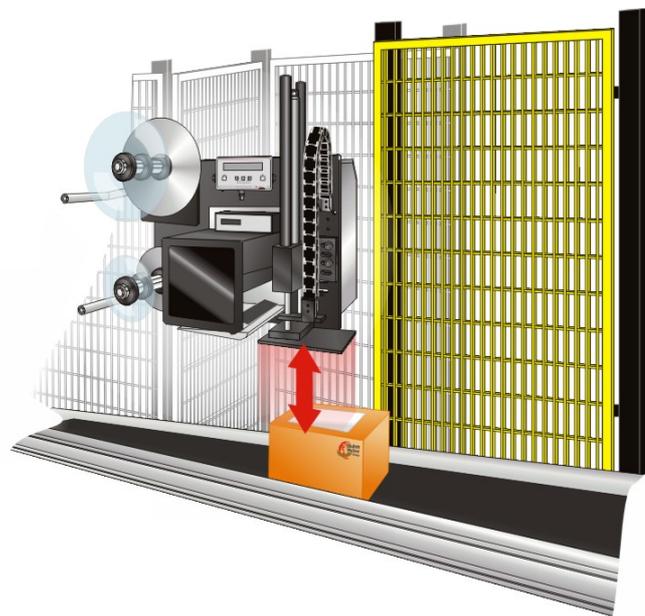
Fig. 2-3: Example of a Safety Guarding

System Cover

The fixed and screwed system covers protect the user against mechanical hazards.

Emergency Stop Function (only Legi-Air 4050E-NC)

Labelers (with addition „NC", ref. page 16) without limitation of the Tamp force to 50N (s. page 16) require as to the pneumatic powered movements and the resulting powers an additional safety measure and a safety circuit for switching off the air pressure.

An integrated emergency stop relay (safety level 2-3, according to DIN EN ISO 13850) is connected with the safety door switch (s. Fig. 2-4, 2) of the cabinet door. A relay contact for scanning the operating status (s. air pressure monitor) can be used by the customer.

Switching Off the Air Pressure

For switching on and off the air pressure supply, the Legi-Air 4050E (with addition NC) without limitation of the tamp force to 50N provides a remote pushbutton box (s. Fig. 2-5). It is located outside of the dangerous area (e.g. outside at safety guard). The access door of the protection device is controlled by a safety door switch (s. Fig. 2-4).
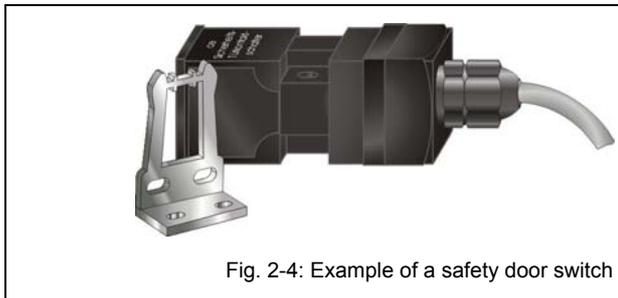
Fig. 2-4: Example of a safety door switch
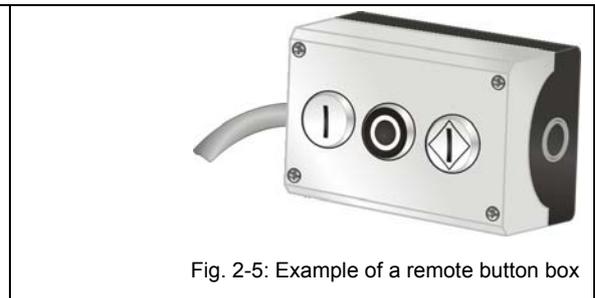
Fig. 2-5: Example of a remote button box

	[Airpressure OFF]-button
	[Airpressure ON]-button
	[Start]-button

Function of Switching Off the Air Pressure

If the door of the protective cabinet is opened or if the air pressure supply descends under a required value or if the red [air pressure "OFF"]-switch of the remote button box is pushed, the internal emergency stop relay switches off the valve for the air pressure supply and bleeds the systems. The labeler changes to failure "Emergency Stop", is immediately without power and pressure and thus not able to work (s. b. air pressure monitor).

Switching On the Air Pressure

In order to switch the air pressure on with the green [air pressure "ON"] –switch with the remote button box, following conditions have to be fulfilled:

- Door of the cabinet is closed (safety door switch)
- Required air pressure supply is available (min/max values can be adjusted by Display).
- The labeler is switched on.
- The black [Start] key of the remote button box was pushed once.

This reliably prevents the compressed air from switching on uncontrolled and automatically after a general failure of the air pressure or after opening the door of the cabinet.

Air Pressure Monitor

For observance of the operating status a potential-free relais output is available (X5: clamp K11, K12) which is closed at active air pressure. A detailed diagram can be found in spare part documentation.

Working Places Operator Personnel

The labeler is an automated working print- and apply system and does not require interventions during the labeling operation.

For labeler without limitation of the tamp force to 50N it is valid additionally:

When the labeling system is operating without any malfunction, the operator may only be in the safe area, that is, the area covered by the protective measures.

Only one person is permitted to replace the labels and coloured ribbon when the labeling system has stopped operation.

After troubleshooting and/or restarting the labeling station, the operator must immediately leave the hazardous area and has to stay in the area designated by the safety measures.

The operator side is generall the system's front side (ref. Fig. 4-1 page 27 resp. Fig. 4-2 page 28).

3.   Technical Specifications

The technical specifications restrict only to values that are identical for all systems of the Legi-Air 4050E. Please pay attention to customer-specific values that can be found in the previously supplied approval drawing.

Additional or deviating information on the name plate of the labeler have always to be involved and observed with priority.

Dimensions (HxWxD in mm)	585 x 825 x 550
Weight	appr. 75kg (without label roll)
Power Connection:	90-263 VAC / 50-60Hz (1~)
Power Consumption:	max. 580 W (incl. print engine)
Environmental Temperature:	10- 35 ° C
Protection Class	IP20
Environmental Conditions:	20-90 % relative air humidity (non condensing)
Air Pressure Connection:	6 - 7 bar (according to DIN ISO 8573-1)
	Air Pressure Quality according to DIN EN ISO 8573-1 **- Residual Oil Content (Quality Class 5)** = 25 mg/m³ **- Residual Dust (Quality Class 3)** = 5µm ; 5 mg/m³ **- Residual Water (Quality Class 4)** = 6 g/m³ ; +3 °C
Maximum Air Pressure Consumption	Up to 200 Nl/min (under extreme conditions) (0,3 - 3 liter per applying cycle)

Information on Further Dimensions

Maximum Usable Stroke Length	100 mm (up to optional 453 mm)
Tamp (W x H):	max. 160 x 210 mm
Label Size:	max. 160 x 210 mm / min. 10 x 5 mm
Label Roll, Outside Diameter:	Ø =**300** mm (corresponds to 450 rm) core = 76 mm (3 ")

Performance Data

Application Rate	Up to 150 labels/min. (depending on label size, stroke length…)
Applying Distance	0 - 50 mm (depending on label size)
Application Accuracy	+/- 0,8 mm , with an applying distance less than 50% of the smallest label side

Information on Operation

LCDisplay (Background Lighting)	2 lines with 20 digits each 5 keys ([START], [STOP], [Enter], [>] and [<])
Button Box (only Legi-Air 4050E NC)	3 buttons [Airpressure ON], [Airpressure OFF], [Start]

Noise Level

The measurings in a distance of 1 meter to system surface and 1,60 meter above the floor provided following noise levels:

A- Sound Pressure Level	72 dB
C- Sound Pressure Level	80 dB

Information on Compatible Print Engine Types

Possible print engine types that can be built in the Legi-Air 4050E:

Manufacturer	Description / Print Width/ Print Resolution
Avery	DPM 4 / 106 mm 300 dpi
	DPM 5 / 127 mm 300 dpi
	DPM 6 / 160 mm 300 dpi
CAB	PX4 / 104 resp. 105,6 mm 200 / 300 / 600 dpi
	PX5 / 104 resp. 108,4 mm 200 / 300 dpi
	PX6 / 168 resp. 162 mm 200 / 300 dpi
Sato	8485Se / 112 mm 200 dpi
	8490 Se / 112 mm 300 dpi
	8485Se / 152 mm 200 dpi
Zebra	ZE 500 / 104 mm 200 / 300 dpi
	ZE 500 / 168 mm 200 / 300 dpi
	110 Pax / 104 mm 200 / 300 / 600 dpi
	170 Pax / 168 mm 200 / 300 / 600 dpi

4.   Description of the Labeler

Function and Application Field of the Labeler

Areas of application

The Legi-Air 4050E is used to label products automatically. The label contains customized data (for instance: barcodes EAN128, date, time/date, logo…), which is printed topically by an integrated printing engine.

Labeling positions

The labeling can be arranged at all sides (frontside and backside only with optional rotating Tamp) depending on machine attitude onto the product without stopping the product.

Printing of the labels

The Legi-Air 4050E can be operated in combination with different print engines. In the chapter "Specifications" you will find an overview of all possible combinations. For used print engine, the manual (Quick-Reference Guide) is enclosed in the scope of supply.

RFID

RFID-Ready means that in combination with an RFID-print engine, the Legi-Air 4050E can be used to label products with RFID-labels. The RFID-option is completed by the installation of an optional unit for rejecting the bad RFID labels (Reject-Unit). It comprises a modification of the internal print engine wiring for use of the extended functions.

Complete Overview Legi-Air 4050E

Figure: Legi-Air 4050E in Righthand Version (RH)
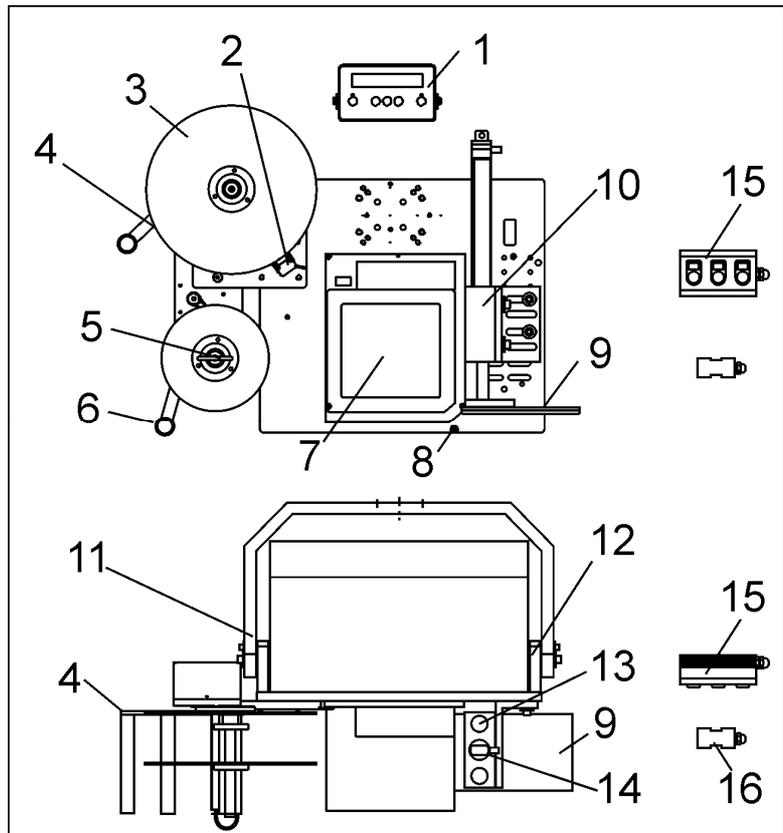
Fig. 4-1: Legi-Air 4050E RH in Side View and Top View

No.	Description
1	OPERATOR PANEL
2	LOW LABEL SENSOR (OPTIONAL)
3	UNWINDER DISC
4	DANCER ARM (UNWINDER)
5	REWINDER MANDREL
6	DANCER ARM (REWINDER)
7	PRINT ENGINE
8	AIR ASSIST
9	TAMP PAD
10	LINEAR THRUSTER
11	U-ARM (OPTIONAL)
12	SIDE HINGE (OPTIONAL)
13	PROTECTIVE TUBE FOR GUIDING RODS
14	CYLINDER
15	REMOTE BUTTON BOX (LA4050E NC ONLY, WITHOUT LIMITATION OF THE TAMP FORCE)
16	SAFETY DOOR SWITCH (LA4050E NC ONLY, WITHOUT LIMITATION OF THE TAMP FORCE)

Figure: Legi-Air 4050E in Lefthand Version (LH)
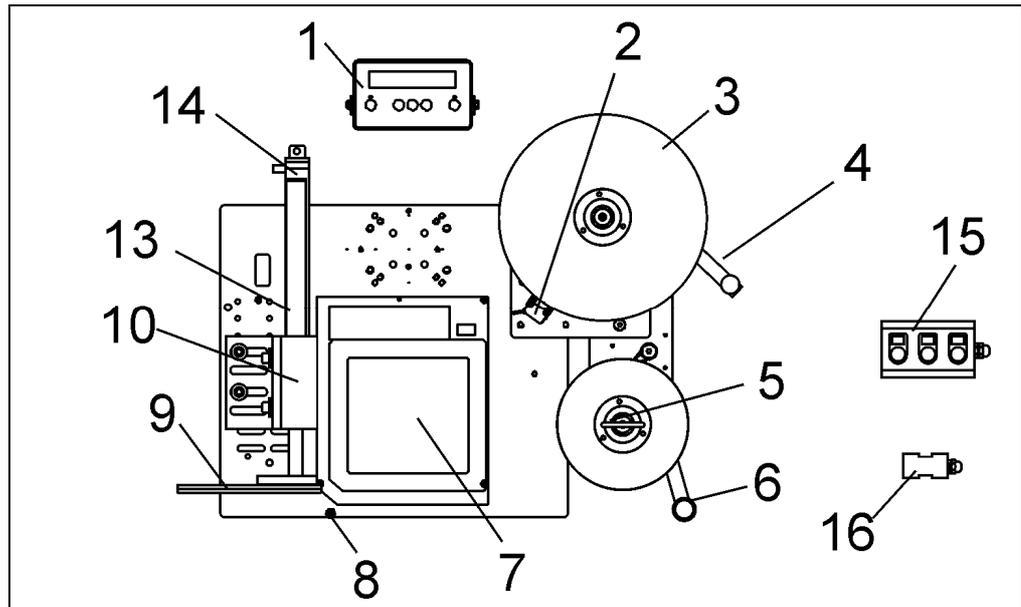
Fig. 4-2: Legi-Air 4050E LH in Front View

No.	Description
1	OPERATOR PANEL
2	LOW LABEL SENSOR (OPTIONAL)
3	UNWINDER DISC
4	DANCER ARM (UNWINDER)
5	REWINDER MANDREL
6	DANCER ARM (REWINDER)
7	PRINT ENGINE
8	AIR ASSIST
9	TAMP PAD
10	LINERAR THRUSTER
13	PROTECTIVE TUBE FOR GUIDING RODS
14	CYLINDER
15	REMOTE BUTTON BOX (LA4050E NC ONLY, WITHOUT LIMITATION OF THE TAMP FORCE)
16	SAFETY DOOR SWITCH (LA4050E NC ONLY, WITHOUT LIMITATION OF THE TAMP FORCE)

Figure: Legi-Air 4050E Side View (LH/RH)
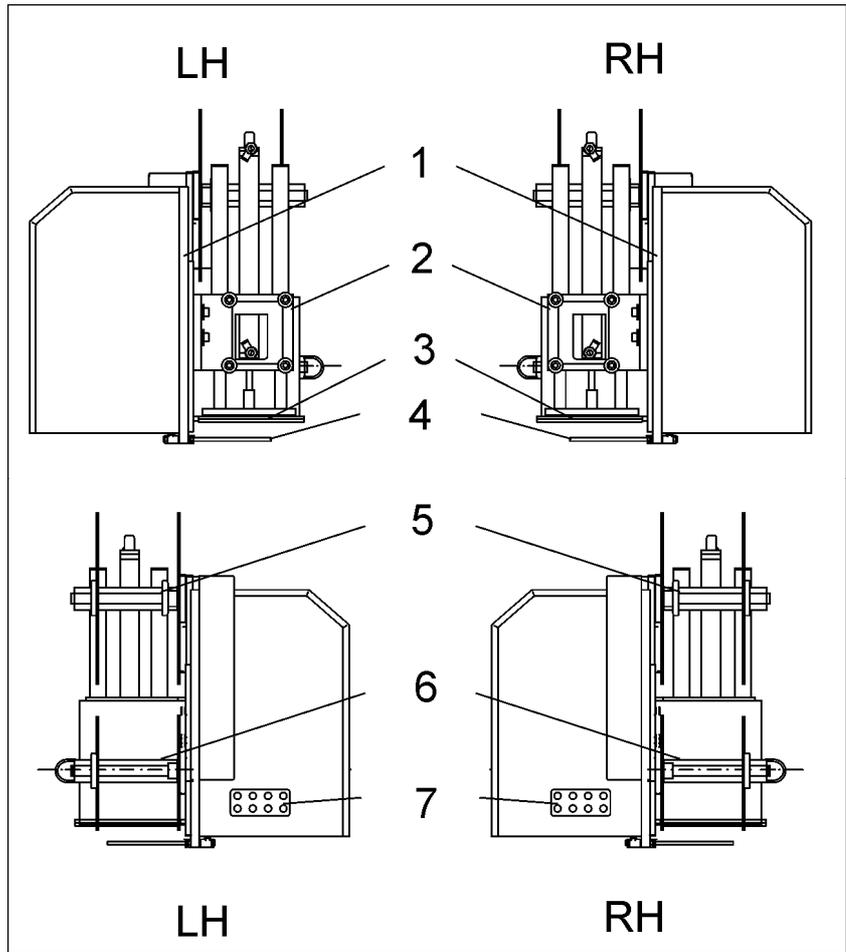
Fig. 4-3: Legi-Air 4050E LH and RH in Side Views

No.	Description
1	BASE PLATE OF THE APPLICATOR
2	LINEAR THRUSTER (APPLICATOR)
3	TAMP PAD
4	AIR ASSIST TUBE
5	UNWINDER
6	REWINDER
7	CABLE FEEDTHROUGH (CONNECTION SIDE)

Figure: Legi-Air 4050E Rear Side (RH / LH)
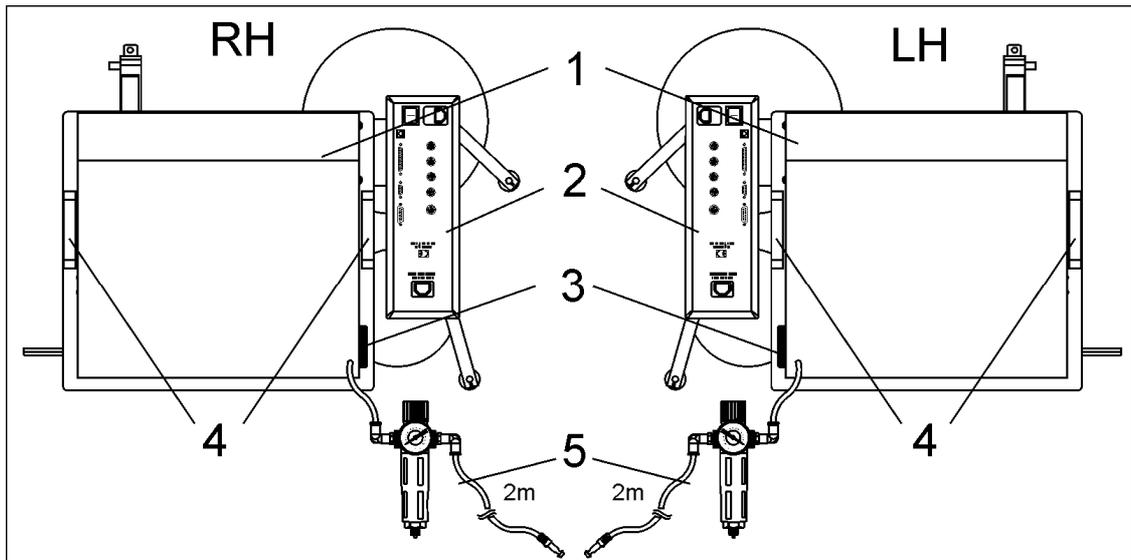
Fig. 4-4: Legi-Air 4050E (RH/LH) Rear Side

No.	Description
1	APPLICATOR CONNECTION PLUG
2	APPLICATOR CONNECTIONS (SENSORS, POWER…)
3	CABLE FEEDTHROUGH (PRINTER DATA CABLE, APPLICATOR CABLE…)
4	HINGE ADAPTIONS (OPTIONAL)
5	AIR PRESSURE CONNECTION (KS4-CK) + WATER SEPARATOR

Figure: Legi-Air 4050E (TOP)

Two further configurations of the labeler describe the Legi-Air 4050E TOP, where the re-/unwinder group is located above the print engine. This option is often used when the are confined space conditions due to its low system width.
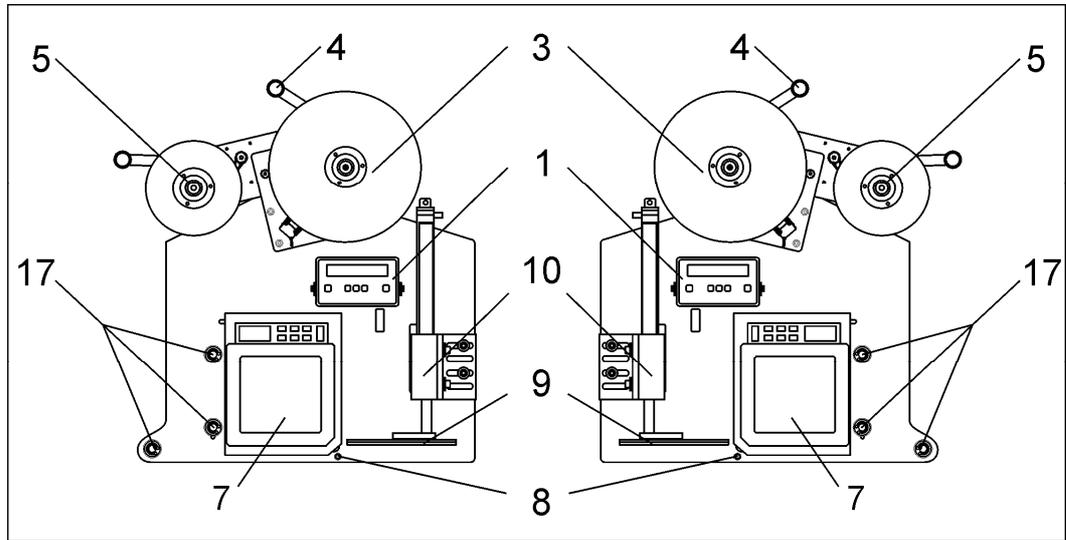
Fig. 4-5: Legi-Air 4050E TOP (RH/LH)

No.	Description
1	OPERATOR PANEL
3	UNWIND DISC
4	DANCER ARM (UNWINDER)
5	REWINDER MANDREL
7	PRINT ENGINE
8	AIR ASSIST
9	TAMP PLATE
10	LINEAR THRUSTER
17	DEFLECTION ROLLER
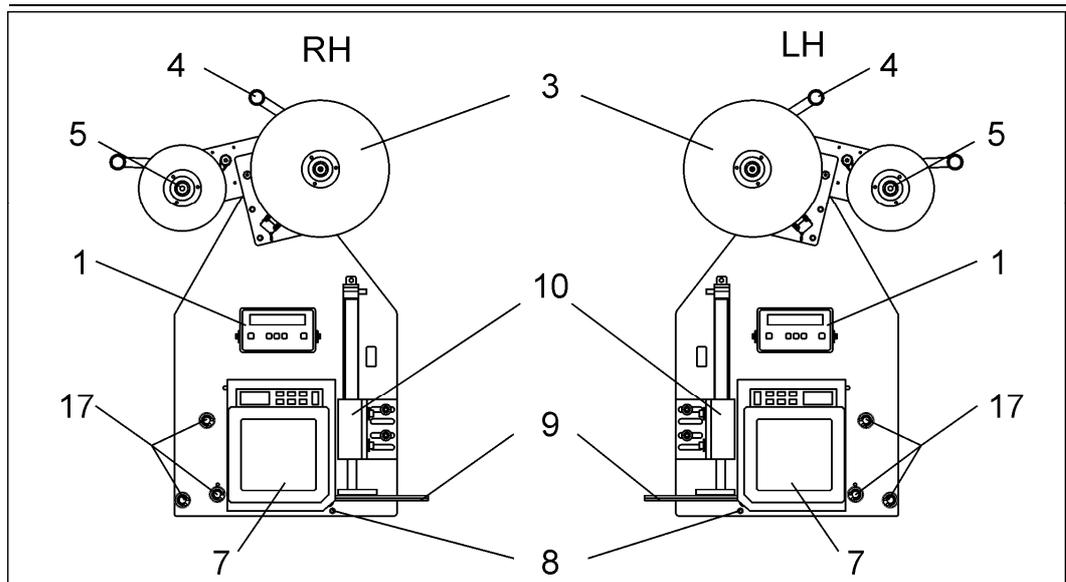
Fig. 4-6: Legi-Air 4050E TOP (RH/LH)

Figure: Legi-Air 4050E RFID with Reject-Unit (Option)

The presented RH-version shows the Reject-Unit in rest position. The Legi-Air 4050E LH shows the Reject-Unit in action, i. e. the Reject-Plate was swung by 90° in order to take over a defect RFID-label.
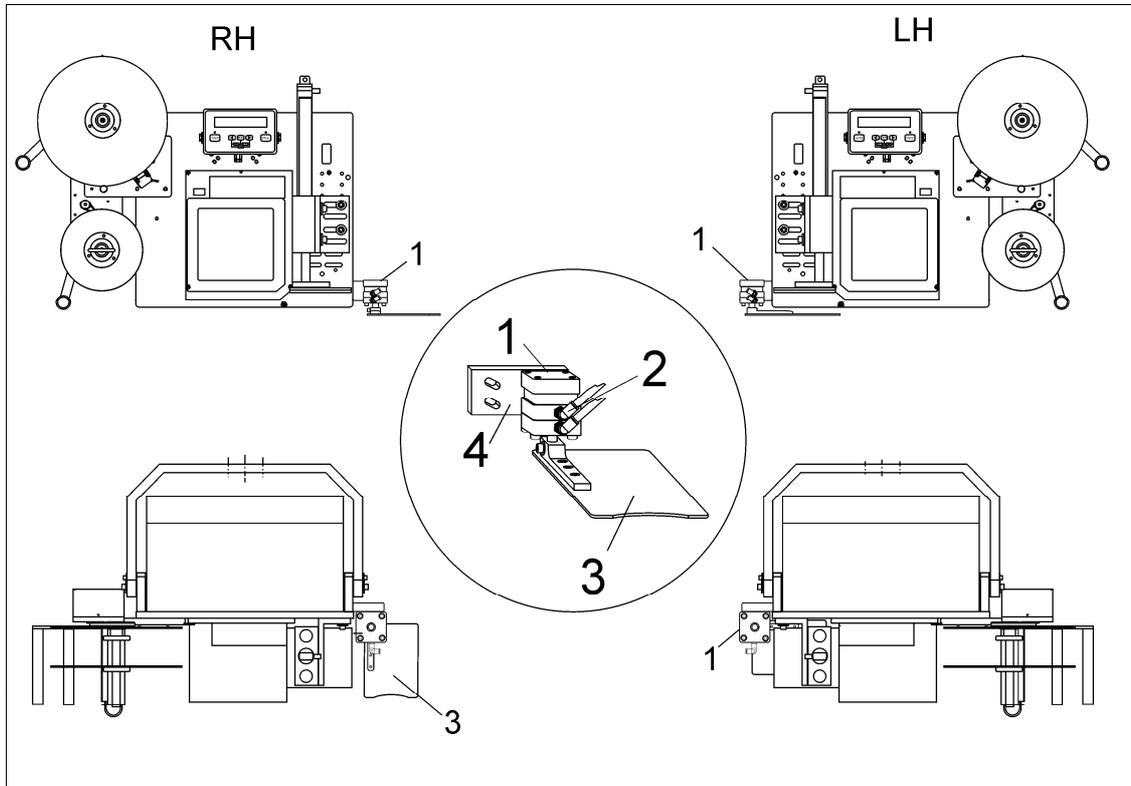
Fig. 4-7: Legi-Air 4050E (RH/LH) RFID

No.	Description
1	ROTATING CYLINDER
2	AIR PRESSURE CONNECTIONS
3	REJECT PLATE
4	BRACKET

Application Modes

The Legi-Air 4050E applies the labels onto stopped or moved products. Therefore several application procedures (modes) are possible and can be configured by the Display.

Tamp-Blow-Mode

The printed label is extended before application on a vacuum Tamp to product proximity and it is then blown off onto the product.

The Tamp-Blow-Mode is often used as the products need to be labeled contactless and it thus presents a low-wear working method.

Tamp-On-Mode

In difference to Tamp-Blow-Mode, the product is touched during labeling. The label is pushed onto the stopped product by the vacuum Tamp. This mode requires a change of the applicator configuration and resp. an adjustment of the labeling position.

Blow-On-Mode

The printed label is taken by the vacuum on the Tamp and blown on the product without any movement of the stroke.

This application mode is not usable for all applications. Therefore, the Bluhm Weber Group offers tests under original conditions.

Management of Printing Data

Printing data sent to the labeler have to be available in different versions depending on requirement.

Batch Operation (Batch Processing)

Herewith a print order for a larger number of identical labels is fowarded to the print engine. All products receive labels with identical printing data.

On-Demand Operation (Single Processing)

Synchronized with the transportation of the products, the Legi-Air 4050E receives a data file of **one** label before the product arrives. If the product should receive a labeling on two sides (special applicator required), the second label is generated automatically by the Reprint-Function of the printer. The advantage is that there is no difference between a two-side labeling and a simple labeling (front- or side labeling) from the point of print data editing. At a two-side labeling you can thus avoid effectively that one product receives two labels with different printing data by fault.

A wrongly transmitted print order or a data file that should not be used after a failure can be deleted by a software command. This deletion command has to be sent before the transmission of the next order by the data interface.

5.   Transport

Delivery

If the labeler is delivered by a carrier, check the packaging for damages. If anything is peculiar, we kindly ask you to claim at the carrier and mark it on the delivery note.

Scope of Delivery

The scope of delivery of the Legi-Air 4050E depends on the ordered options and the customer's application. Please control the scope of delivery when receiving the systems on the basis of the delivery note.

Transport and Unpackaging

Safety Regulations

⚠ WARNING   **Danger due to lifted weight.**

Crashing weights may result in severe injuries or even in death.

– Do not move beneath the lifted weight. The weight may not be banked.
– The position of the center of gravity has to be observed during transport of the system.

⚠ WARNING   **Danger due to tensioned straps.**

Straps are tensioned and may lash back uncontrolled when it is cut through and may cause severe injuries.

– Wear protective goggles and protective gloves.
– Stand laterally outside of the dangerous area.

⚠ CAUTION   **Hazard from falling parts.**

Wear protective footwear.

NOTICE   Remove the packaging material and the transport securing devices only at the site of use, and transport the labeler in its original packaging to the labeling site. If the labeler is not secured, it can tip over easily when transported.

Requirements
- The labeler is unpacked in delivery condition (differences are possible), i.e.:
  - It stands on a pallet
  - It is stretched in

- (only with protective cabinet) it is secured with additional straps and is resp. screwed together to the pallet with its rubber feet

Required Resources

- Suitable means of transport (fork lift or pallet truck with a payload of at least 300kg).
- When using a fork lift, drive slow.
- (Only with protective cabinet) For unloading the system from pallet, a double hand fork lift truck or pallet jack or…
- 2-3 persons, who have to wear safety shoes.
- Stable support for the labeler (without protective cabinet)

Only Legi-Air 4050E with protective cabinet

- (Safety-) steel band scissors for removal of the straps.
- Screw wrench for transportation safety device.
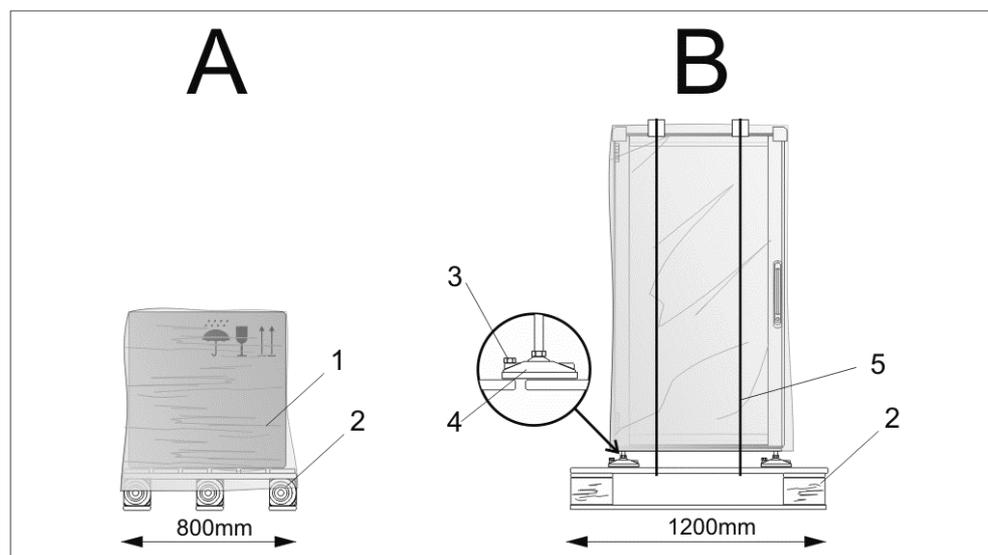
Fig. 5-1: Legi-Air 4050E Packaging Examples

Pos.	Description
A	PACKAGING EXAMPLE: LEGI-AIR 4050E
B	PACKAGING EXAMPLE: LEGI-AIR 4050E WITH PROTECTIVE CABINET
1	STRETCH FOIL
2	PALLET
3	TRANSPORTATION SAFETY DEVICE SCREW
4	RUBBER FEET
5	BARREL HOOP

Instruction

Please transport the labeler to the installation site as follows

Step	Procedure
1…	Transport the labeler to its installation site (within a radius of 3m). The exact positioning will be arranged during installation by a technician of the Bluhm Weber Group.

Step	Procedure
⚠ CAUTION	Straps are tensioned and may lash back uncontrolled when it is cut through and may cause severe injuries.
2	Remove foil packaging and straps (if available). Legi-Air 4050E without protective cabinet, go on with **Step 5**
3	Remove all transportation safety device screws, if available, from rubber feet (s. **Fig. 5-2**).
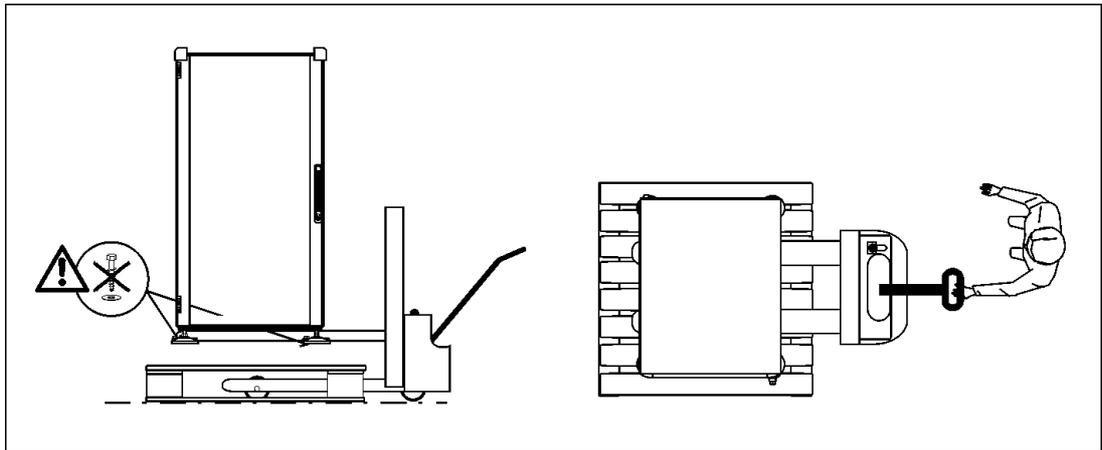
Fig. 5-2: Lift a Legi-Air 4050E with Protective Cabinet from Pallet

4	Lift the labeler with a double hand fork lift truck resp. fork lift truck in shown way from the pallet (s. **Fig. 5-2**). OR Move the labeler from pallet piece by piece diagonally by three persons. Go on with **Step 7**
5	Open the carton and remove the packing material and enclosed material
6	Lift the system with at least two persons at the base plate about positions 1 and 2 (s. **Fig. 5-3**) out of the packaging and move it with the backside to a stable support. Systems with optional stand mounting can be touched there additionally.
	1 + 2 = Base Plate (Tapping-Position) 3 = U-Arm-Screws 4 = Screws for Hinge Adaption
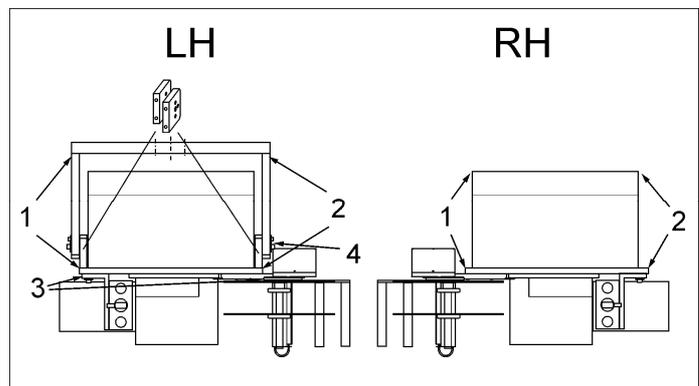
Fig. 5-3: Lefthand Legi-Air 4050E LH and Righthand Legi-Air 4050E RH

7	Remove all transportation safety devices (marked red tie wraps) to install the system.

Storage Conditions

The environmental conditions for storage of the labeler relate to them of the normal operation. Details see chapter "Technical Data".

Instruction

Please store the labeler safely as follows

Step	Procedure
1	Label material and *²ribbon have to be removed from system.
2	Fix the labeler on pallet(s) and transport the system to its storage place, consider for protection and transport the remarks from above-mentioned section "Transport and Unpackaging".
3	For dust protection, cover the labeler with a cotton cloth or a paper towel. In order to avoid condensate formation, foils may not be used.
4	Before restarting the system, a check of the labeler is required.

*² only if system is equipped accordingly

6.   Installation and Initial Operation

Safety instructions

⚠ WARNING   **Hazard from direct or indirect contact with voltage-conditioning parts.**

⚡ DANGER TO LIFE!

When individuals touch parts that conduct electricity arising from malfunctions

– Only electricians may work on the switch cabinet and electrical equipment.
– Regularly check the electrical equipment of the labeler (see the chapter: "Maintenance").
– Immediately take care of loose connections and damaged cables.
– Always keep the switch cabinet locked.
– Before working on electrical equipment, switch the miniature circuit breaker to "0" position and secure it against being accidentally turned on. If possible, disconnect the power.

⚠ CAUTION   **Hazard from easily flammable label material.**

🔥 FIRE HAZARD!

The film and labels are easily flammable. Potential injury from fire and smoke.

– Keep away from sources of ignition and open fire

⚠ CAUTION   **Hazards from actively controlled movements.**

RISK OF INJURY FROM CRUSHING!

The rotary movement of the applicator is driven by a pneumatic cylinder.

– Maintain a distance from the applicator.

⚠ CAUTION   **Danger of being pulled in by rotating elements.**

DANGER OF BEING PULLED IN!

Rotating elements on the labeler.

Backing rewinder (driven by a stepper motor) and the label feed on the labeler or in the print module (driven by stepper motor).

– Do not stick anything in, on or between the moving parts

⚠ CAUTION   **Hazard from residual force in pneumatic components.**

⚠ RISK OF INJURY!

Whipping compressed air hoses, thrown parts or uncontrolled moving parts can cause injury.

– Before connecting the compressed air, check to ensure that all pneumatic connections are correctly seated and secure if necessary.
– The pneumatic system awaiting maintenance must be bled before any of the pneumatic components can be removed.

⚠ CAUTION   **Danger to health from the improper use of lubricants and cleaners.**

⚠ HEALTH HAZARD!

– The instructions in the manufacturer's current safety data sheets for the specific lubricants and cleaners that are used must be observed along with the applicable safety and disposal regulations.

⚠ CAUTION   **Tripping hazard from connecting lines.**

⚠ RISK OF INJURY!

Connecting lines for power, compressed air and computer and signal lines can pose a tripping hazard, causing serious injury.

– Release the tension of connecting lines to the system and run them so that they do not pose a hazard.

⚠ CAUTION   **Danger of injury from corners and edges.**

⚠ RISK OF INJURY!

Scrapes and cuts can result from sharp edges and pointed corners. Always keep the work area clean.

– Observe caution when working close to sharp edges and pointed corners. Remove unnecessary objects.
– In case of doubt, wear protective gloves.

Installation

Only an optimally aligned installation of the system can ensure a continuous operation with a low rate of failures and a minimum wear. For an optimized installation of the system, fine tunings adapted to environmental conditions are essential. For the fine tunings, a complex expert knowledge is required basing on experience with labeling technique.

The complexity of a wear-optimized installation requires a high measure of specialized knowledge and experience, which cannot be obtained completely by reading this manual.

Therefore the installation of the labeler must be made by a technician from the **Bluhm Weber Group** or examined by a final inspection. Damage or damages based on an incorrect installation, represent no case of warranty.

Requirements to the Site of Installation

● Closed and clean room.

● Level surface, solid floor, unevennesses must not exceed 5 mm if stands from Bluhm Weber Group are used.

● Floor with adequate carrying capacity: 1500 kg/m².

● Low vibration environment.

● Adequate illuminating: 500 Lx.

● No direct irradiation from sun light or heaters.

● The machine must not operate in areas with electrostatic or magnetic fields. This can result in malfunctions of the controller.

● Correct air and power supply according to the chapter "Technical Data"

Placing the Labeler

● The labeler may not contact the product with retracted Tamp (in home position at the peeler bar).

● The swung-out resp. extended Tamp should be parallel to the product surface and depending on Application Mode (s. page 33) if applicable without touching it (distance 10-50 mm).

● The installation position has to ensure sufficient access for users and service technicians. Particular for disconnecting the mains power, the mains-switch/-cable must be accessible freely at all times.

● Observe that all mounting parts are fixed sufficiently.

● Consider all points of the "Intended Use" in the chapter safety regulations.

Positioning of the Labeler

Systems for fixing at Stands of the Bluhm Weber Group!

If the system is fixed at a Stand of the Bluhm Weber Group, will you please follow the instructions of enclosed Stand documentation.

Requirements

● The labeler is completely mounted (in protective cabinet or at Stand > s. advice above).

● The labeler is available unpacked and prepared at the installation site (s. "Transport and Unpackaging").

● Connections for air pressure and power according to "Technical Data" are installed close to the labelling site (max. 1,50 m away).

● Footprint is fix, horizontal and flat.

Required Resources

● Screw wrench (for adjustment of rubber feet)

● Air lever

Instruction

Please position the labeler as follows.

Step	Procedure
1	Roll the labeler to the labeling site. Move labelers without rolls to installation site piece by piece diagonally. Consider all points for "Placing the Labeler" on page **40**.
2	Adjust the labeler with an air lever by the adjustable feet horizontally (If the labeler has rollers, please arrest the handbrake).
3	Consider when positioning the labeler that the applicator (extended Tamp) may come close to the product up to 10-50 mm but it may not touch the product.

Connecting the Labeler

The labeler requires electrical power and air pressure to perform its function. Please find all details in the chapter „Technical Data".

Overview of the Connections at the Labeler

The connections of the labeler are at the re-/unwinder cover at the rear side of the labeler in the area of the label re- and unwinder. Please find the explanation of the single connections that are shown in Fig. 6-1 as follows.
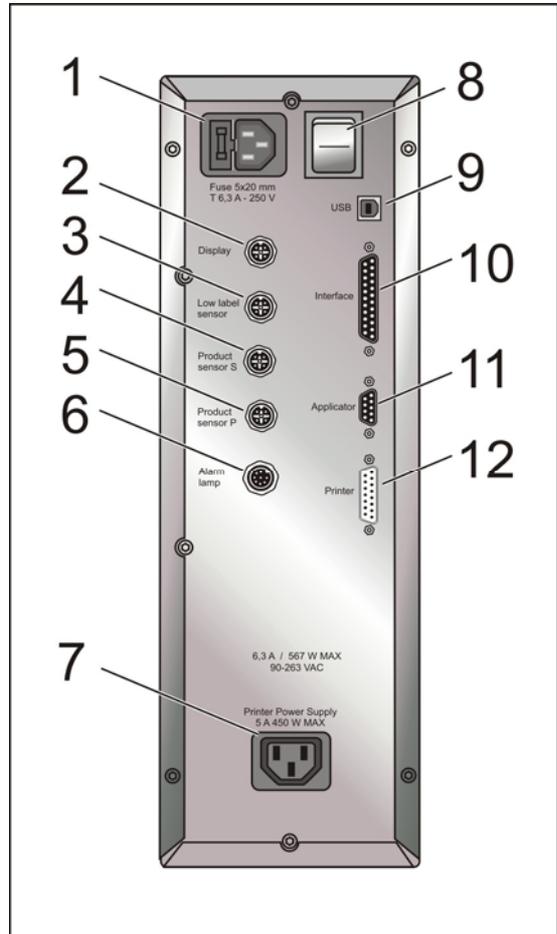
Fig. 6-1:Electrical Connections at the Re-/Unwinder Cover at the Rear Side

No.	Description
1	IEC625-CONNECTION WITH FUSE
2	DISPLAY
3	LOW LABEL SENSOR
4	SECONDARY PRODUCT SENSOR
5	PRIMARY PRODUCT SENSOR
6	ALARM LAMP
7	IEC625-CONNECTION FOR PRINT ENGINE
8	NET SWITCH (POWER ON/OFF)
9	USB
10	SIGNAL
11	APPLICATOR
12	PRINT ENGINE INTERFACE

Connection to Supply Voltage

Requirements

- Power supply according to "Technical Data" is installed close (max. 1,5 m away) to the labeling site
- Power switch is OFF (in "0"-position)
- Power voltage cable and net connection cable (s. "System Options")

Instruction

The labeler is connected to supply voltage as follows.

Step	Procedure
1	Plug the power voltage cable that is not yet connected to the IEC625 – connection of the system.
2	Connect the print engine by the net connection cable with the labeler (Pos. 7 ref. Fig. 6-1 page 42).
3	Connect the power voltage cable with the 230 Volt supply voltage.
⚠ CAUTION	**Danger of feeding at the label liner rewinder!** After switching on, the rewinder is activated for a few seconds. - Keep distance!

Connection to Air Pressure

For localization of the air pressure connection, please see Fig. 4-4 on page 30.

Requirements

- Air pressure supply (KS4-CK-6 connection coupling) according to "Technical Data" is in max. 1,5 m distance of the labeling site.
- Air pressure connection with KS4-CK-6 coupling jack, pneumatic tube (s. "Options")
- Filter-Regulator-Manometer-Combination is in upright position (drain valve at bottom side).

Instruction

The labeler is connected to air pressure as follows. Instructions refer to Fig. 6-1

Step	Procedure
1	Ascertain that the slide valve is in OFF position (ref. Fig. 6-2 >> slide below = ON position !!).
2	Connect the labeler with the maintenance unit by the connection (4) with the supplied pneumatic tube. Control the connection if it is fixed (the tube may not be peeled off).
3	Connect the coupling jack (3) with the connection coupling of the air pressure supply.
4	For switching on the air pressure, pull the slide in ON position (above). If adjustments of the air pressure should be necessary, please see Steps 5-7.
5	Pull out the button (1) of the regulator.
6	Adjust the air pressure to required value (standard value 5 bar). Push therefore the button counter clockwise (direction of arrow "+") to increase the input pressure or push the button clockwise (direction of arrow "-") to decrease the input pressure.
7	Push down the button (1) of the regulator for interlock.
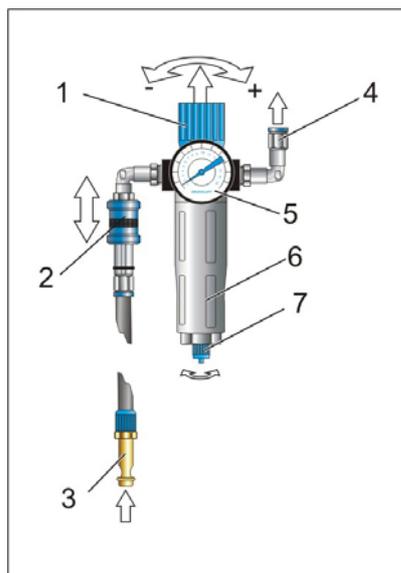
No.	Description
1	REGULATOR BUTTON
2	SLIDE VALVE (IN ON-POSITION)
3	COUPLING PLUG
4	CONNECTION FITTING (TO LABELER)
5	AIR PRESSURE MANOMETER
6	COLLECTION BOWL
7	DRAIN VALVE

Fig. 6-1: Filter-Regulator-Manometer-Combination

Connection and Positioning of the Product Sensor

NOTICE	The product sensor inputs are parallel with the trigger inputs of the I/O interface (e.g. coming from the conveying system) connected and may not be used together with it.

NOTICE	For connection of sensors that are not included in the scope of supply, an extensive expert knowledge is required and this may only be arranged by qualified personnel.

In order to trigger a labeling cycle, a trigger signal is forwarded from a product sensor (option) or a potentialfree contact of the conveying system (CS) to the labeler (ref. page **48**). To trigger printing procedure, applicator movement or blow-off procedure separately, several signals and thus sensors or signals of the CS are required.

The M12-industry-connection jacks are at the rear side of the re-/unwinder cover. They are marked with "Product Sensor P" (primary) and "Product Sensor S" (secondary). Both sensor inputs may be configured by the Display.

The mounting of the sensor and the reflectors (if available) has to allow a subsequent change of the position.

Requirements

● No product transportation
● Sample product
● Power supply is OFF (in "0"-position)

Instruction

Please position the product sensor as follows.

Step	Procedure
1	Connect the sensor/s to labeler (plug on and screw together).
2	Place the product so that the extending Tamp would apply the label to desired position onto the product.
3	Place now the product sensor to the front resp. rear angle of the product Labeling without Product Stop The Tamp extension time has to be calculated also for the sensor position, whereby the light barrier (in running direction) has to be positioned in advance.
4	If the labeling cycle is triggered separately, the second sensor has to be positioned early in advance that time passes until the product reaches the next sensor that is sufficiently for the cycle to be triggered (e.g. printing).

"Display" – Connection

This connector is one of five industrial standard connectors (M12, female) located on the Re-/Unwinder cover at the system's rear (ref. Fig. 6-1 page 42) The "Display" jack is provided to connect the Display only. An optional cable set (5 m) enables to change installation position of the display.

"Low Label Sensor" - Connection

The connection (ref. Fig. 6-1 page 42) with description "Low label sensor" belongs to the option "Low Label Warning". If this option is connected, it is ready for use. If this option is not installed a terminating plug (s. Spare Part Manual) should be connected at "Low label sensor" connection.

Low Label Warning (Low Label)
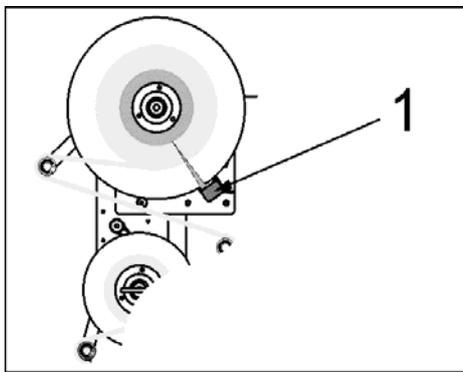
Fig. 6-2: Sensor for Low Label Warning (Option)

By means of the reflective sensor (s. Fig. 6-2) the label roll is scanned. A signal is fowarded (s. a.), if the label roll under-runs a diameter of 98mm (+/- 3mm).
In connection with the 3-colored alarm option the signal is shown by the yellow lamp. Additionally the signal is provided isolated for evaluation of the customer at the I/O signal interface (s. page 48).

"USB" -Interface

The Legi-Air 4050E provides an USB interface (ref. Fig. 6-1 page 42) that enables an upload of the Firmware (comparable with an operating system) of the applicator controller. Therefore, amongst the firmware-file a particular program is required.

A backup feature via USB is already available to archive the individual menu settings.

Applicator" -Connection

The 9-pin female connector located at the re-/unwinder cover's rear (ref. Fig. 6-1 page 42) serves for connection of the applicator (Tamp unit). It provides power and communication lines of the slave module to control the pneumatics and measuring systems.

"Alarm Lamp" -Connection

NOTICE	Use only the original alarm lamp with LED-technique (Part No. 22700995). The power input of all externally connected 24 VDC components (Alarm lamp, sensors, applicators...) adds to a total current that may not exceed the value of 100 mA. At overcharge an overheat control switches off CPU and auxiliary power as long as the temperature is not decreased to a safe range.
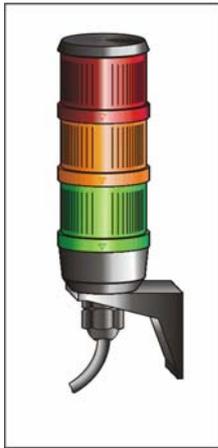
Fig. 6-3: Alarm lamp

For connection (ref. Fig. 6-1 page 42) of an optional alarm lamp nothing else beside the light is required.
Please note the warnings with the appropriate meanings as follows.

Lamp	Description
Green	appears when the machine is in operating mode(READY-Signal is true)
Yellow	appears when "Low Label" or "Low Ribbon" is detected
Red	appears when the machine is in error condition (READY-Signal is false). Possible causes: Label as well as Ribbon End or Machine Fault.

"Printer" -Connection

The labeler is connected with the digital in-/output interface of the print engine by this connection (ref. Fig. 6-1 page 42) Depending on print module type (s. "Technical Data") a specific adaption cable is used.

Print Engine-Setup (Printer)

The print engine is configured for use in the labeler before delivery. Setup details are documented in a system checklist and are a part of the supplied documentation folder.

Information on handling for the used print engine are to be found in the user manual which is also included in the scope of supply.

"Interface" (I/O-User Interface)

This I/O interface (with description Interface ref. Fig. 6-1 page 42) is used to build a safe connection between the conveyor PLC and the labeler. The jack is implemented as a 25-pin female socket and can be connected directly or by using a Spring-Type Terminal Box.

Please find as follows a brief summary of all technical specifications of the I/O signal interface as well as explanations of the functions and remarks for the assignment plans.

Inputs (I):	Outputs (O):
Optocoupler bipolar (any polarity)	Photo-MOS Semiconductor Relais, bipolar (any polarity)
Change-Over-Relais (ALARM/READY)	N.O. / N.C. / COM
Galvanically separated	Shutter, unipolar
Input Power 20 up to 30 VDC	Capacity: I_{max} = 200 mA, Switching Voltage U_{max} = 40 VDC
Signal inversion for choice ("active high" or "active low" by Display)	Galvanically separated

(I) INPUT;   (O) OUTPUT
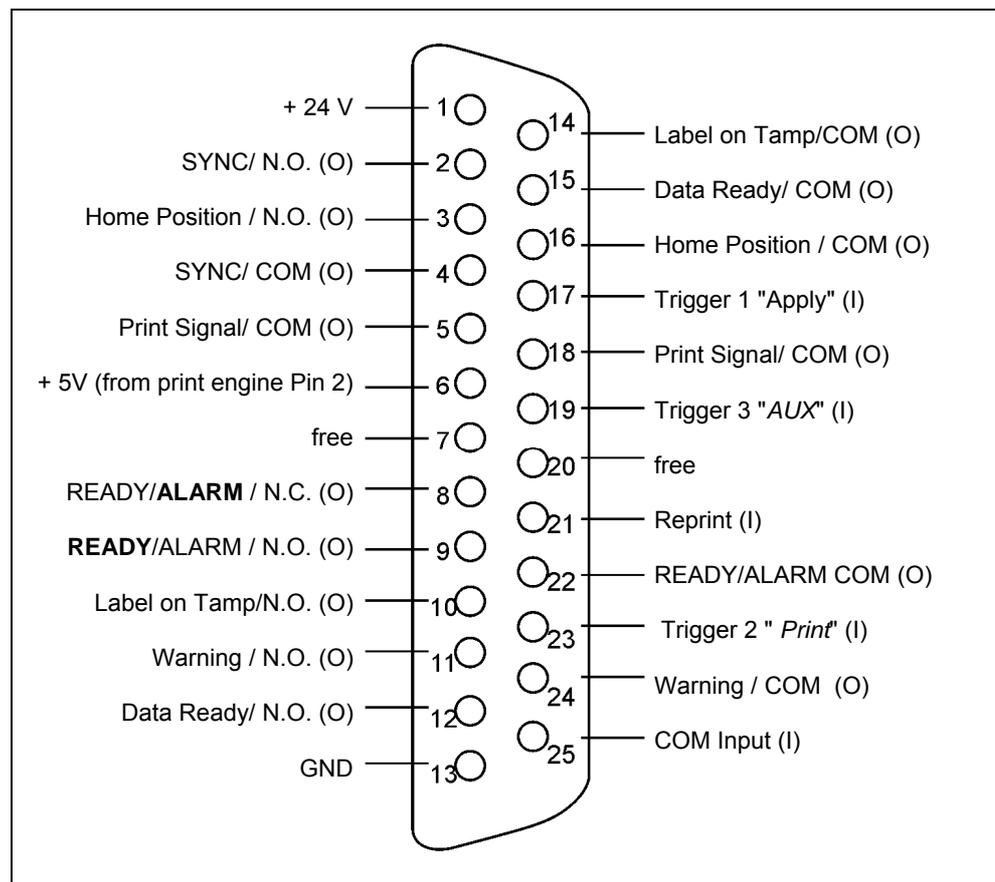
Fig. 6-4: I/O- Signal Interface (female / view from outside)

Inputs	Function
+24V / GND	For transmitter supply the system-specific 24VDC-power at Pin 1, 13 is available. Capacity: **max. 200 mA** (with overcurrent protection)
5V	Internal auxiliary power of pin 2 of the 15 pin. Sub-D-connection of the print engine
Trigger 1 "Apply"	Triggering of application procedure according to configuration. Per Display any trigger input (ref. pages **66**, **69** and **72**) can be allocated.
Trigger 2 "Print"	Triggering of printing procedure according to configuration. Per Display any trigger input (ref. pages **66**, **69** and **72**) can be allocated.
Trigger 3	Triggering of a function configured by Display.
Reprint	The recently printed label can be reprinted with this signal without requiring a new print order (data) (only with print engines from PAX II and Sato Se)

Connection Examples:

Customer's Side passive, switches 24V from Legi-Air 4050E
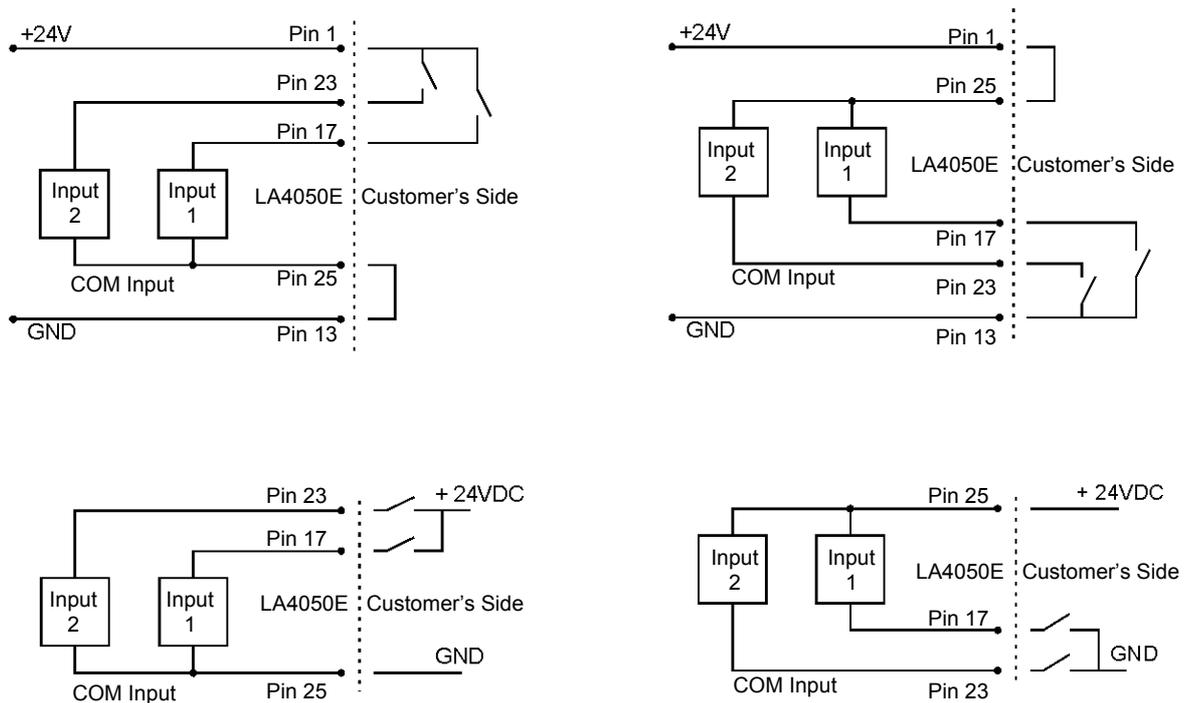
Fig. 6-5: Connection Examples for separate resp. common Triggering Print and Apply

Outputs	Function
READY / ALARM	General failure: output of READY/ALARM-Relais. The signal is active (READY = N.O.; ALARM = N.C.), if following points are fulfilled Operating state of the printer, independent from possible existing print jobs. Printer is not in Stop status (PAX). Labels and Ribbon are available. Operating pressure is in defined print range. Labeler is available to label (not in stand-by, no error message)
Home Position	Signal active if the Tamp is in home position. (The system has to be switched on therefore)
Print Signal	Signal active during printing (during label feed).
Pre-Warning	Signal active, at low ribbon warning of the printer and additionally as an option at low label warning (low label sensor required).
Label on Tamp	Inspection of availability of a label at Tamp pad (per underpressure measuring). The signal is active if the label lies on Tamp. It is evaluated by the Legi-Air 4050E and generates a malfunction message if a fault occurs.
SYNC	The SYNC-output can be configured by a Display and forwards a pulse after or during the labeling cycle.
Data Ready	Signal is forwarded by Pin 14 of the 15 pin. Sub-D-Connection of the print engine and signalizes stand-by for printing after the required printing data have been transmitted completely.

Connection Example:
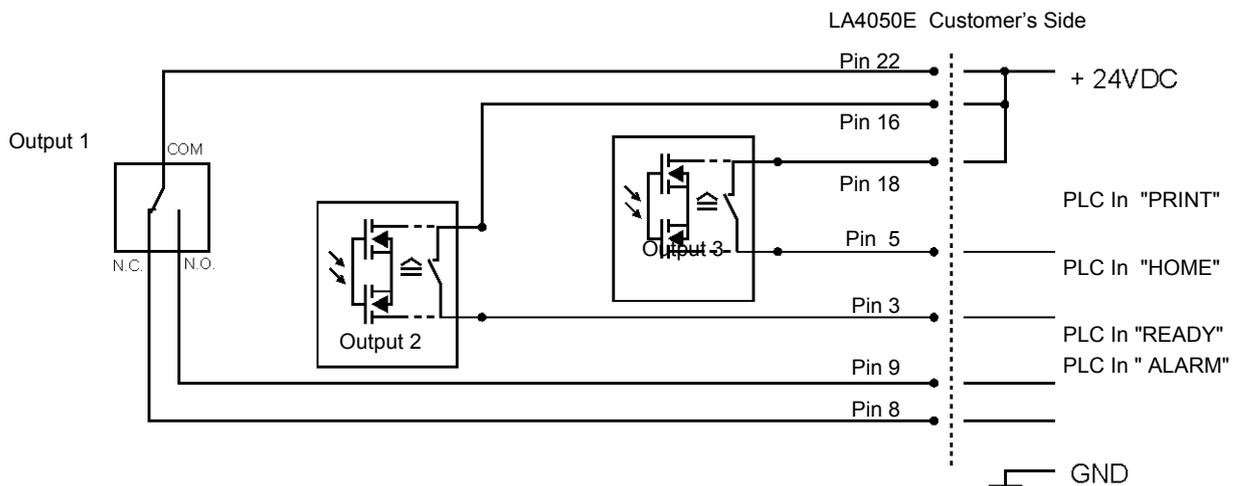
Fig. 6-6: Connection Examples for PLC-Inputs of the Customer

Label and Ribbon Loading

Refer to your specific Print Engine Manual for more information on loading the printer with ribbon (User Manual or Quick Reference Manual).

Ribbon Loading

Requirements

- Suitable ribbon with inside or outside coating (IC / OC) according to printer specification
- Ribbon width complies with or is more than label width

Instruction

The ribbon will be loaded in the print engine as follows.

Step	Procedure
1	Open the print engine cover.
2	Refer to your specific Print Engine Manual for the ribbon loading procedure. You will find a loading diagram for ribbon and paper guiding inside the print engine cover.

Label Loading

Consider Label Roll Execution!

The Legi-Air 4050E only provides (without additional option) the usage of label rolls with outside winding , i.e. with the view on the roll the labels adhering at outside of the label liner (s. **Fig. 6-7**, examples 5 - 8). Only thus the function of the roll brake is ensured.

LW = LABEL WIDTH
BW = BACKING WIDTH
LH = LABEL HEIGHT
DC = DIAMETER CORE
DR = DIAMETER ROLL
 G = GAP
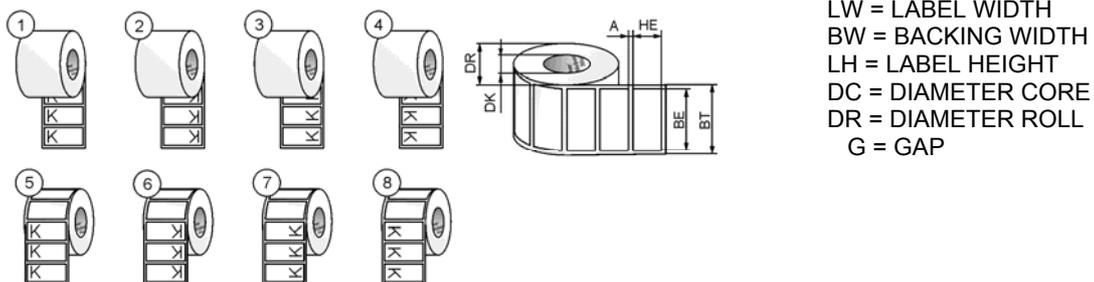
Fig. 6-7: Label Execution

Requirements

- The labels stick at the label roll at the outer side of the label liner (s. **Fig. 6-7**, examples 5 - 8).

Instruction

The labels will be loaded in the labeler as follows.

Step	Procedure
1	Open the cover of the print engine whereby the labeling operation is interrupted (stand-by).
2	Rotate the outer unwind disk to align the set screw with the flat on the unwind mandrel. Remove the outer unwind disk from the unwind mandrel.
3	Load the label roll (with outside winding) onto the adapter ring (round aluminium ring with Ø = 76mm) of the inner unwind disc and up against the inner unwind disc. The label roll must be oriented so that the material passes through the print head with the label side at the top. Put the unwinder disc again to the unwinder axis and lock it by screwing.
4	Remove all labels at the first 90 cm of the label web.
5	Guide the paper within the print engine according the printer manual (normally you will find a label with the loading diagram inside the print engine at the cover). Ensure that the Air-Assist tube is not by mistake wrapped from the label material, instead of the peeler bar.
6	Guide the label material according to the images (**Fig. 6-8** ff) through the machine
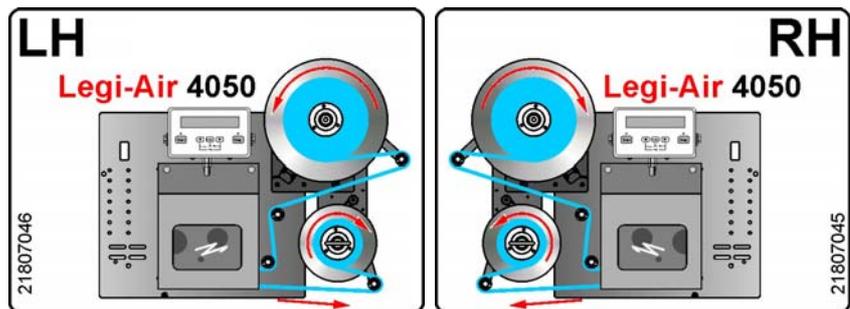
Fig. 6-8: LA 4050-E LH and LA 4050-E RH

Step	Procedure
7	Before the label liner can be fixed at the unwinder, the web only has to be guided through the last free deflection roller of the dancer arm. Put the label web around the rewinder dancer arm on the empty core or directly on the blades of the roll retainer of the Rewinder by means of a clamping bracket.
8	Turn the rewind mandrel until all the slack is removed between the peeler bar and the rewind mandrel. (It's good to have 2-3 wraps to start.).
9	Make sure that the label material moves in a straight line from the inner unwind disc through the printer.

Initial Operation

Safety Regulations

⚠ CAUTION   **Danger caused by actively triggered movements.**

DANGER OF BEING CRUSHED!
The movements of the Tamp are driven by a linear pneumatic cylinder.

– Keep away from the applicator.

Requirements

● Knowledge about product transport
● One or more sample products
● Print media (labels, ribbon if necessary) are loaded correctly (s. page **51**)
● Labeler is connected to power and air pressure
● Print data can be sent to print engine
● Triggering of labeling is possible by product sensor or I/O interface

Instruction

Please put the labeler into operation as follows.

Step	Procedure with Legi-Air 4050E …	
	…with Safety Guardings (NC)	**… without Safety Guardings (CC)**
1	Place product on conveying system	
2	Switch on the labeler at print engine. (see also "Switch labeler on and off" in chapter "Operation").	
3	Leave the danger zone and step behind the safety guardings.	-
4	Close the door of the safety guardins (safety door switch).	-
5	Press the green [Pressure "ON"] button of the remote button box, to switch-on compressed air.	-
⚠ CAUTION	Danger of being crushed in! Keep away from Tamp.	
6	*^{4} Press the black [Start] key of Remote button box, to enable the labeling operation.	*^{4} Press the [Start] key of the Display, to enable the labeling operation.
7	Send print data to printer.	
NOTICE	Depending on adjusted system configuration (s. system check list) the Legi-Air 4050E starts with printing procedure when the data transmission is completed.	
8	Switch on conveying system and add product.	

*^{4} Assuming the boot procedure of the print module is terminated and no further failures exist.

7.   Operation

Operation of the Labeler

Safety Instruction

⚠ CAUTION   **Danger caused by actively triggered movements.**

DANGER OF BEING CRUSHED!
The movements of the Tamp are driven by a linear pneumatic cylinder.

– Keep away from the applicator.

The Legi-Air 4050E is an automatically working labeling system requiring no manual interventions after starting the labeling operation.

Function of the operator buttons of the remote button box (only Legi-Air 4050E-NC)

Labelers (with addition NC) that require for operation an additional safety guard, can be started outside of the dangerous area by the remote button box. The function of the button box was already described on page 22.

Symbol	Function
⬤	[Airpressure OFF]-button Is used to turn off the compressed air.
|	[Airpressure ON]-button Is used to turn on the compressed air.
◇	[Start]-button Is used to start the labeler, same function like [Start]-buton at HMI (s. page 57)

Switching ON and OFF the Labeler

For operation of the Legi-Air 4050E both the power switches of labeler <u>and</u> print engine have to be switched on. The labeler checks the status of the print engine during switching on the supply voltage (by print engine interface). This function enables to switch on and off the labeler by one (preferred by you) power supply. This is particularly advantageous if the access to the labeler is limited in any way.

If you leave the Legi-Air 4050E generally switched on, you are able to switch on and off the labeler together with the power supply of the print engine.

After switching-on the labeler the message "press start" appears on the display in order to ensure (re-)start of the labeling operation after the [Start] key is pressed.

After switching-on the labeler the message "press start" appears on the display so that the labeling operation will be only re-activated after the [Start] key is pressed (for procedure details s. below).

By a certain parameterization (Programming 007) it is possible to initialize an automatic[4] start. That is, after a set waiting period (between 001-254 seconds or directly) the labeler activates <u>independently</u> the labeling operation.

Start Labeling Operation

Requirements
● The initial operation (s. chapter "Installation and Initial Operation") was finalized successfully.
● Labeler is connected with air pressure, power and labels are loaded.

Instruction
Please start the labeling operation as follows.

Step	Procedure with Legi-Air 4050E …	
	…with Safety Guardings (NC)	**… without Safety Guardings (CC)**
1	Switch on the labeler (for details refer to the above section), leave the danger zone and step behind the safety guardings.	Switch on the labeler (for details refer to the above section).
2	Close the door of the safety guardings (safety door switch)	-
3	Press the green [Pressure "ON"] button of the remote button box, to switch-on compressed air. After switching on, the labeler goes into the idle mode and the following text message appears in the display:	After switching on, the labeler goes into the idle mode and the following text message appears in the display:

```
AP4050.XX            7BB0
Press <START>
```

XX stands for the version number of the firmware installed in the controller.

After a few seconds the first line changes and information on system are provided one after another.

4	*[4] Press the black [Start] button of Remote button box, to enable the labeling operation.	*[4] Press the [Start] button of the Display, to enable the labeling operation.

*[4] Assuming the boot procedure of the print module is terminated and no further failures exist.

Stop Labeling Operation

Instruction

Please stop the labeling operation as follows

Step	Procedure with Legi-Air 4050E …	
	…with Safety Guardings (NC)	**… without Safety Guardings (CC)**
1	Pushing of the red [Air Pressure OFF] key stops the labeling operation	Pressing the [Stop] key twice stops the labeling operation
2	Switch off resp. the labeler at the print engine or at the power supply of the labeler (s.a.)	
NOTICE	The Tamp becomes powerless and drops depending on machine attitude by impact of the gravity. Consider the instructions "Put system out of operation" (page **56** ff).	

Put System out of Operation

NOTICE	The label material running around the deflection rollers is curved which can cause problems with the re-operation mode.
	– When turning off the system for several hours, the label web must be removed from the applicator

The label material running around the deflection rollers is curved which can cause problems with the operation mode. This characteristic of the labels as well as the retained curvature depend on the material which can vary significantly between the different print media. The ambient conditions such as high temperatures and humidity enhance this effect.

Similar malfunctions may occur in the area of the printhead due to the high mechanical start print.

Requirements

- Labeling operation is terminated (s. section above)

Instruction

Please put the system out of operation as follow.

Step	Procedure
1	Remove the label material from the labeler.
2	Consider at longer interruptions the instructions for storage (s. page 37).

Operation of the Display

The Display consists of a large LC-Display and 5 keys as well as 2 control LEDs. It comprises a connection cable with a 5-pin M12 industry plug and it is connected at the backside of the labeler with the controller of the applicator (ref. Fig. 6-1 page 42). The installation position can be freely chosen and should, if not above the print engine, be at a well accessible position close to the labeler. The Display is available with different cable lengths.

Fig. 7-1: Display

Functions of the Operator Keys

Start	The [**Start**] key serves for starting the labeler. With pushing the key the labeling operation is activated and an error message (if shown) is confirmed.
Stop	The [**Stop**] key serves for ending the labeling operation. After pushing the key, the labeler changes to "Stand-by". (Only) now it is possible to call up a menu of the controller. Anew pushing of [**Stop**] sets the labeler in idle mode like after switching on. An error message (if shown) is confirmed.
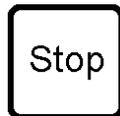
⚠ CAUTION Danger due to Tamp movement! *[5]

If `Programming 007` is set to „automatic start" (value 000 to 254) the Tamp retracts independently to home position after the programmed waiting period
- Keep away from the Tamp

⚠ CAUTION Danger due to Tamp movement!

Also without printed label an application cycle can be triggered by the JOG-Function.
- Keep away from Tamp

Enter	The [**Enter**] key has 3 functions: JOG-function: during labeling operation the Legi-Air 4050E can be triggered by this key. In combination with further keys for calling up menus. In the menus, the [Enter] key serves for changing a parameter or to confirm inputs.
◀ ▶	The keys [◀] / [▶] possess respectively 3 functions: In combination with further keys for calling up menus. For navigation in menus. For changing parameter values ([◀] = decreases/ [▶] = increases). The Autorepeat-function of the keys allows for a fast change of high values if the corresponding key is kept pushed.

Status-LEDs

Above the keys [Start] and [Stop] is respectively an indicator LED. If the green LED flashs above the [Start] key it signalizes that the labeler is ready. The red LED (above [Stop]) shows an interruption of the labeling operation.

Program Menus

NOTICE   The PROGRAMMING MODE may only be operated by trained staff!

Wrong programmings may cause malfunctions!

◄   Enter   ►

Menu ─┘ └─ Conf
└── Prog ──┘
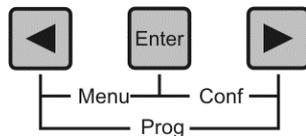
Fig. 7-2: Keys below Display

The Display of the Legi-Air 4050E comprises three menu modes that can be reached and left by key combinations. Push in stand-by-condition the following keys simultaneously to reach the following menu:

[◄] + [Enter] = **FUNCTION-MENU**

[Enter] + [►] = CONFIGURATION-MODE *

[◄] + [►] = **PROGRAMMING-MODE** *

* Password protected

For further explanations, here a display-example:

Firmware-version of the controller	Current configuration data	Labels counter

```
AP4050.XX CFG01 00000
AIR PRESSURE LOW   E05
```

Status line
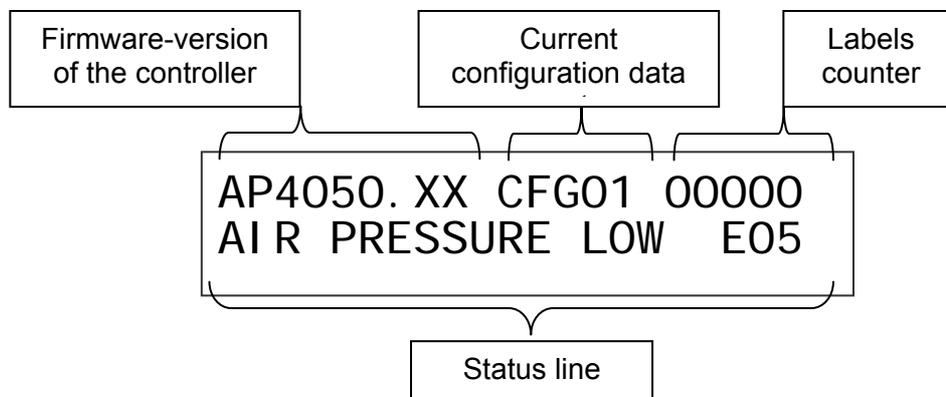
Fig. 7-3: Display Explanation

ERROR ACKNOWLEDGEMENT s. Functions of the Operator Keys [Start]/[Stop] on page **57**.

Indication of Firmware Version

The current firmware version (firmware = operating system) of the controller is displayed. For more information please refer to the Firmware History on page **80**.

Current Configuration Set

The Legi-Air 4050E provides the opportunity to store in memory up to 4 different configuration sets. Each set can be used for an individual parameterization of the labeler (e.g. for different conditions of the production).

Label Counter

The number with 5 digits indicates the number of the completely performed application cycles of one operation phase. The counter is reset to "0000" automatically when switching on the machine. If a negative number with 4 digits is displayed, the counter works in "Countdown" mode.

Status Line

The status line keeps you informed about the current conditions of the labeler and its activities. The information number with 3 digits in the rightmost position provides you with specific information and is described in the Chapter "Troubleshooting".

STAND-BY-Mode

The message "Stand-by" appears after a manual interruption of the operation mode by pressing the [Stop] key. Only from "Emergency Stop" –mode, a menu of the applicator controller can be called up. (The Control LED GREEN is off, the RED one lights.)

(Remark: The "Emergency Stop" mode is comparable with the "Stand-by" mode).

```
 AP4050.XX          7BB0
 STAND-BY
```

FUNCTIONS-MENU

The functions menu is reached by pressing the [◀] and [Enter] key simultaneously, assuming the labeler is in emergency stop condition (see above). This menu contains some basic settings of the labeler with following sub menus:

```
 FUNCTIONS-MENU
 ...
```

```
LABEL COUNTER
RST LABEL COUNTER
DISPLAY SETTINGS
CHANGE LANGUAGE
EVENT COUNTERS
CYCLE SEQUENCE
```

AP4050.XX CFG1 00000
STAND BY

Start

Stop

Enter

AP4050.XX CFG1 00000
SELECT CONFIG: 001

CONFIGURATION 101
PRINT TRIGGER : 000

CONFIGURATION 102
TIMEOUT LABEL: 000

CONFIGURATION 103
VACUUM LEVEL: 000

CONFIGURATION 104
VACUUM TIMEOUT: 000

CONFIGURATION 105
EXTENS. TRIGGER: 000

CONFIGURATION 106
EXTENSION DELAY : 000

CONFIGURATION 107
EXTENSION TIME: 000

CONFIGURATION 108
PROXIMITY T. OUT: 000

CONFIGURATION 109
BLOW-TRIGGER: 000

CONFIGURATION 110
BLOW DELAY: 000

CONFIGURATION 111
BLOW TIME: 000

CONFIGURATION 112
HOME TIMEOUT: 000

CONFIGURATION 113
SYNC-PULSE DELAY 000

CONFIGURATION 114
SYNC-PULSE TIME 000

CONFIGURATION 115
BARCODE RD TIME 000

CONFIGURATION 116
CYCLE OPTIONS: 000

CONFIGURATION
000

CONFIGURATION 1... 000
PASSWORD:

Enter (1x)

FUNCTIONS-MENU
LABEL COUNTER 12345

FUNCTIONS-MENU
RESET LBL COUNTER

FUNCTIONS-MENU
LCD-SETTING

FUNCTIONS-MENU
EVENT-COUNTER

FUNCTIONS-MENU
CYCLE SEQ:

12345

LCD-ESETTING
LANGUAGE SELECTION
LCD-BRIGHTNESS
LCD-CONTRAST

EVENT COUNTER
RE00=12345
E22=12345
EV1=12345678
EV5=12345678

CYCLE SEQ. 2+3
ONLY CYCLE2
ONLY CYCLE 3
NO CYCLE

LABEL COUNTER

This provides the opportunity to set a value in the range of 0 to 9999 for the label counter. If a value above "0000" is entered, the countdown function is activated. That means in normal operating conditions the entered value is decremented. The display shows a minus sign in front, for the remaining application cycles. If "-0000" is reached, the machine automatically stops the execution of labeling.

```
FUNCTIONS-MENU
LABEL COUNTER  01234
```
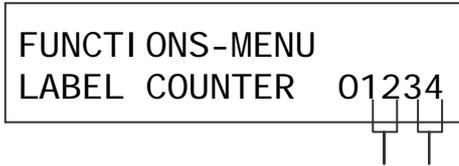
- Press either [◄] or [▶] key* to move to the next parameter.
- Press the [Enter] key to edit the fore digits respectively press [Enter] again to change to the last digits.
- Then press either [◄] or [▶] key* to move to the editing parameter values (corresponding cursor is flashing) in order to increase and/or reduce.
- To exit parameter settings, press the [Start] or [Stop] key.

RESET LABEL COUNTER

This function resets the read value of the label counter.

```
FUNCTIONS-MENU
RESET L.-COUNTER
```
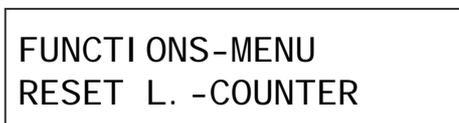
- Press either [◄] or [▶] key* to move to the next parameter.
- Press [Enter] to reset the counter to "00000".
- To exit parameter settings, press the [Start] or [Stop] key.

*auto-repeat function: For quickly make large changes, hold either [◄] or [▶] key.

DISPLAY SETTING

This sub menu covers the display settings. Not only contrast and brightness can be changed but also the menu language. Depending on language package, the following languages are available:

Language package 1 (22800870): English, German, Italian, French, Dutch, Norwegian, Swedish, Turkish

Language package 2 (22800871): English, Greek, Russian, Czech, Latvian, Polish, Spanish, Portuguese

```
FUNCTIONS-MENU
LCD-SETTING
```

- Press either [◀] or [▶] key* to move to the next parameter.
- Press [Enter] to get access to the sub menu "display setting".
- To exit parameter settings, press the [Start] or [Stop] key.

Parameter of DISPLAY SETTING:

- LCD- BRIGHTNESS   >> Brightness of backlight

  Value range is 001-040.

- LCD CONTRAST   >> Contrast setting ranges 001-100

```
LCD-SETTING

CHANGE  LANGUAGE
LCD-BRIGHTNESS:    015
LCD-CONTRAST:      030
```
[◀]
[▶]

- Press either [◀] or [▶] key* to move to the next display setting.
- Press [Enter] to change the requested parameter.
  - At language choice the setting is changed by pressing [Enter] key.
  - In case of values press either [◀] or [▶] key* in order to increase and/or reduce the editing parameter values (corresponding cursor is flashing).
- To confirm your settings, please press [Enter].

*auto-repeat function: For quickly make large changes, hold either [◀] or [▶] key.

EVENT COUNTER

This function allows displaying counters of various types of events that are automatically tracked by the machine during operation and that may be source of useful statistic infmation.

Event	Counter Indications
E00	Number of all stopped application cycles without error.
E01 up to E22	Number of occurred failures of the corresponding error codes (s. page **87** ff).
EV1	*[7] Number of labels printed.
EV2	*[7] Number of extensions of the cylinder.
EV3	*[7] Number of times the blow valve was activated.
EV4	*[7] Number of internal communication errors detected (even if automatically recovered).
EV5	*[7] Maintenance counter increases by 1 after termination of 256 labeling cycles.

*[7] All counter values are stored in non-volatile memory only when the machine passes in stand-by or in error condition. If the machine is systematically switched off while it is in "ready" mode, EV1 to EV5 may not be updated correctly and show significantly lower figures than the topically happened events.

```
FUNCTIONS-MENU
EVENT-COUNTER
```

● Press either the [◀] or [▶] *key to move to the next parameter.
● Press [Enter] in order to display the Event Counters.

```
EVENT-COUNTER

       E00=00000

       E01=00000                5-digit counter,
       .                        maximum value = 65535
       .                        (then restart at 00000)
[◀]    E22=00000
[▶]    EV5=00000

       EV1=00000000
                                8-digit counter
       .                        maximum value: 99999999
                                (then restart at 00000000)
```
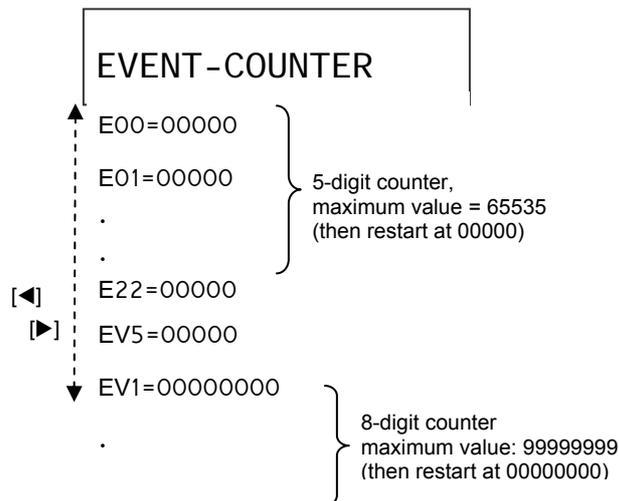
● Press either [◀] or [▶] to display the next Event Counter.
● To exit parameter settings, press the [Start] or [Stop] key.

*auto-repeat function: For quickly make large changes, hold either [◀] or [▶] key.

CYCLE SEQUENCE

This submenu enables the choice of sequences of labeling cycles to apply 2 labels one after another to a product. Requirement therefore is a particular applicator and that the function (programming 046) is activated. Classical application for pallet labeling.

(in standard configuration is valid: cycle 2 = front side labeling // cycle 3 = side labeling. If your system provides the option "External Choice of Cycle Sequence" via Interface Signals, the external choice takes priority over the manual choice)

```
FUNCTIONS-MENU
CYCLE SEQUENCE
```

● Press either [◄] or [►] key* to move to the next parameter.
● Press [Enter] to get to cycle setting.
● To exit parameter settings, press the [Start] or [Stop] key.

Parameter of CYCLE SEQUENCE

```
CYCLE SEQUENCE
```

```
      ▲   CYCLE SEQ: 2+3
      ┆
      ┆   ONLY CYCLE 2
[◄]   ┆
 [►]  ▼   ONLY CYCLE 3

          NO CYCLE
```
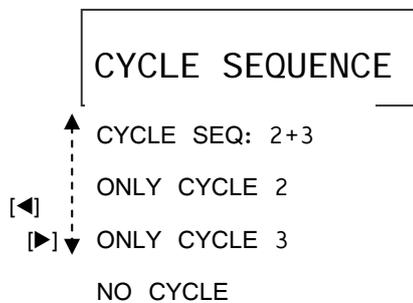
● Press either [◄] or [►] key* in order to change to the next cycle type.
● To confirm your settings, please press [Enter].

* auto-repeat function: For quickly make large changes, hold either [◄] or [►].

CONFIGURATION-Menu

To enter configuration menu press [Enter] and [▶], key simultaneously, if the labeler is in "stand by" operation.

This menu contains parameter settings for the entire configuration of the labeler which defines the print and apply sequence. The Legi-Air 4050E is able to store in memory up to 4 different machine configurations (parameter sets). The first function in the configuration menu allows choosing the desired configuration with the available range is 0 to 3.

Note! On page 78 you have the opportunity to record all your parameters into a list.

SELECT CONFIGURATION

```
AP4050.xx CFG1   01234
SELECT CONFIG.      001
```

● Press either [◀] or [▶] key* to select the desired configuration 0-3 from the 4 possible ones.

● To exit Select Config, press the [Start] (for labeling operation) or [Stop] (for Stand-by) key.

● Press [Enter] in order to move to the selected configuration.

CONFIGURATION Parameters

The display shows in the first line behind "CONFIGURATION" a number with 3 digits (e.g. "101"). The first of the digits (lefthand) indicates the current selected configuration (0-3). The following two digits (01-16) represent consecutive numbering of the 16 configuration parameters.

```
CONFIGURATION     101
...
```

The 2nd line indicates one of following configuration parameter:

PRINT TRIGGER	x01	BLOW-TRIGGER	x09
TIMEOUT LABEL	x02	BLOW DELAY	x10
VACUUM LEVEL	x03	BLOW TIME	x11
VACUUM TIMEOUT	x04	HOME-TIMEOUT	x12
APPLI-TRIGGER	x05	SYNC-PULSE DELAY	x13
EXTENS. DELAY	x06	SYNC-PULSE TIME	x14
EXTENS. TIME	x07	BARCODE RD TIME	x15
PROXIMITY T.OUT	x08	CYCLE-OPTIONS	x16

x = configuration 0…3

PASSWORD: 000

If one configuration parameter is called up with [Enter] in order to change, the machine asks for a PASSWORD to proceed, in order to limit access only to enabled staff. The access code is "123", once correctly entered it remains valid until the machine is switched off or reset by pressing [Stop] key two times.

```
AP4050.xx CFG01 01234
PASSWORD:            000
```

- Press either [◄] or [►] key* in order to increase or reduce the value.
- Press [Enter] to confirm your password input.
- With the valid password you will return to the configuration parameter.
- With the invalid password appears "WRONG PASSWORD   E15" in display.
- To exit parameter settings, press the [Start] or [Stop] key.

* auto-repeat function: For quickly make large changes, hold either [◄] or [►].

PRINT TRIGGER: 001

This parameter defines the start for printing a label. The signal is received by the labeler either directly from the Product Sensor input of the corresponding M12 jack or from the signal interface of its respective spring type (ref. Fig. 3 20, page 41). Both inputs (M12 plug and I/O signal interface) are internally connected in "WIRED OR" configuration so both signals are equal, whereby only one of both may be used for triggering.

Different input configurations are available (edge and level triggering). Highest labeling security is guaranteed by the cycle control check function. The status of the trigger signal is checked in order to ensure that it is inactive when the trigger for continuation of the labeling cycle (in this case for printing) is expected.

If the signal is at this point of time still active (or again active), the labeler changes to failure and allows the detection of possible synchronization problems at critical applications. The following table shows the function of the corresponding parameter value:

Para-meter Value	Function	
00	Prints automatically (if print data available)	
01	Primary Sensor Input / (I/O: Pin 17)	Edge-Triggering (leading edge): Activation at **leading edge**, thus the change from "low" to "high". Only when the display shows "Wait Trigger" a trigger is expected. Otherwise incoming triggers are simply ignored.
02	Secondary Sensor Input /(I/O: Pin 23)	
03	Aux.-Input on I/O Interface: Pin 19	
04	Internal Jumper at the Applicator PCB	

Para- meter Value	Function	
05	Primary Sensor Input / (I/O: Pin 17)	Level-Triggering (leading edge): Activation at **"high" signal**. Cycle repetition as long as the signal stays active (high).
06	Secondary Sensor Input /(I/O: Pin 23)	
07	Aux.-Input on I/O Interface: Pin 19	
08	Internal Jumper at the Applicator PCB	
09	Primary Sensor Input / (I/O: Pin 17)	Edge-Triggering with cycle monitoring (leading edge): Same as Edge-Triggering (**leading Edge**) plus synchronization protection. <u>Issue of monitoring:</u> Signal must be "low" before start of application cycle. Otherwise the Legi-Air 4050 changes into error condition.
10	Secondary Sensor Input /(I/O: Pin 23)	
11	Aux.-Input on I/O Interface: Pin 19	
12	Internal Jumper at the Applicator PCB	
13 - 16	Parameterization not allowed	
17	Primary Sensor Input / (I/O: Pin 17)	Edge-Triggering: Activation at **trailing edge**, thus the change from "high" to "low". Only when the display shows "Wait Trigger" a trigger is expected. Otherwise incoming triggers are simply ignored.
18	Secondary Sensor Input /(I/O: Pin 23)	
19	Aux.-Input on I/O Interface: Pin 19	
20	Internal Jumper at the Applicator PCB	
21	Primary Sensor Input / (I/O: Pin 17)	Level-Triggering: Activation at **"low" signal**. Cycle repetition as long as the signal stays active (low).
22	Secondary Sensor Input /(I/O: Pin 23)	
23	Aux.-Input on I/O Interface: Pin 19	
24	Internal Jumper at the Applicator PCB	
25	Primary Sensor Input / (I/O: Pin 17)	Edge-Triggering with cycle monitoring (trailing edge): Same as Edge-Triggering (**trailing Edge**) plus synchronization protection. <u>Issue of monitoring:</u> Signal must be "high" before start of application cycle. Otherwise the Legi-Air 4050 changes into error condition.
26	Secondary Sensor Input /(I/O: Pin 23)	
27	Aux.-Input on I/O Interface: Pin 19	
28	Internal Jumper at the Applicator PCB	
29 - 32	Parameterization not allowed	

```
CONFIGURATION      x01
PRINT TRIGGER :    001
```

- Press [Enter] to get access to the menu "configuration" (if password is requested please refer to page **66**).
  - Then press either [◄] or [►] key* in order to increase and/or reduce the editing parameter values (valid range is: 000-032).
  - To confirm your settings, please press [Enter].
- Press either [◄] or [►] key* to move to the next configuration parameter.
- To exit configuration settings, press the [Start] or [Stop] key.

  *auto-repeat function: For quickly make large changes, hold either [◄] or [►] key.

LABEL TIMEOUT: 255

Its value determines the remaining time within the print of the label has to be started before the Legi Air 4050E changes to error condition. Decisive for detection is the print signal of the print module. The timeout starts on request of the labeler by (external or automatic) triggering of the print.

A specific cycle option (s. page **75**) allows skipping error E09 if this had to appear when a print request issued to the printer (input signal PRINT) without available print data. For this case a new cycle automatically restarts after the "Label Timeout" has elapsed and waits for the print trigger.

```
CONFIGURATION        x02
TIMEOUT LABEL:       255
```

- Press [Enter] to get access to the menu "configuration" (if password is requested please refer to page **66**).
    - Then press either [◄] or [►] key* in order to increase and/or reduce the editing parameter values (unit = value x 10ms, value = "255" disables the function).
    - To confirm your settings, please press [Enter].
- Press either [◄] or [►] key* to move to the next configuration parameter.
- To exit configuration settings, press the [Start] or [Stop] key.

VACUUM LEVEL: 005

This parameter determines the threshold for label presence detection on Tamp. The high-sensitive detector recognizes least leakages of pressure what results into a practicable range of adjustment of 0-10 units. If the value "003" is entered a sufficient vacuum check is realized. Values beyond, belong to the sensitive or high-sensitive measure range.

```
CONFIGURATION        x03
VACUUM LEVEL:        005
```

- Press [Enter] to get access to the menu "configuration" (if password is requested please refer to page **66**).
    - Then press either [◄] or [►] key* in order to increase and/or reduce the editing parameter values (unit = value x 1/33 bar, value = "0" disables the function).
    - To confirm your settings, please press [Enter].
- Then press either [◄] or [►] key* to move to the next configuration parameter.
- To exit configuration settings, press the [Start] or [Stop] key.

* auto-repeat function: For quickly make large changes, hold either [◄] or [►] key.

VACUUM TIMEOUT: 200

This parameter determines the maximum time delay the Legi-Air 4050E will try to detect label presence on Tamp by sensing the vacuum in the Tamp before generating an error message. This means the achievable vacuum has to be complete within the adjusted time, otherwise an error occurs. Normally the vacuum is controlled <u>after</u> printing procedure. For particular applications, the value can be set to "000" whereby the examination of the vacuum is started together with printing.

```
CONFIGURATION           x04
VACUUM TIMEOUT:        200
```

- Press [Enter] to get access to the menu "configuration" (if password is requested please refer to page **66**).
    - Then press either [◄] or [►] key* in order to increase and/or reduce the editing parameter values (unit = value x 10ms, value = "0"). Sudden examination of vacuum at value = "255" the labeler waits forever until the vacuum is created (200 = 2 seconds = default).
    - To confirm your settings, please press [Enter].
- Then press either [◄] or [►] key* to move to the next configuration parameter.
- To exit configuration settings, press the [Start] or [Stop] key.

<p align="right">* auto-repeat function: For quickly make large changes, hold either [◄] or [►] key.</p>

EXTENS.-TRIGGER : 000

This parameter defines the trigger signal used to activate the Tamp extension. After the label was printed and detected at the Tamp, is the point in the operating cycle that the trigger is expected. The mode in which the signal is processed is comparable to the PRINT TRIGGER, so please refer to the table on page **66**.

Para-meter Value	Function	
00	Applicator extends automatically (without any delay)	
01	Primary Sensor Input / (I/O: Pin 17)	Edge-Triggering (leading edge):
02	Secondary Sensor Input /(I/O: Pin 23)	Activation at **leading edge**, thus the change from "low" to "high". Only when the display shows "Wait Trigger" a trigger is expected. Otherwise incoming triggers are simply ignored.
03	Aux.-Input on I/O Interface: Pin 19	
04	Internal Jumper at the Applicator PCB	
05	Primary Sensor Input / (I/O: Pin 17) . . continuation ref. page 66. .	Level-Triggering (leading edge): Activation at **"high" signal**. Cycle repetition as long as the signal stays active (high).
29 - 32	Parameterization not allowed	

```
CONFIGURATION        x05
EXTENS.-TRIGGER:     000
```

- Press [Enter] to get access to the menu "configuration" (if password is requested please refer to page **66**).
  - Then press either [◄] or [►] key* in order to increase and/or reduce the editing parameter values (valid range is: 000-032).
  - To confirm your settings, please press [Enter].
- Then press either [◄] or [►] key* to move to the next configuration parameter.
- To exit configuration settings, press the [Start] or [Stop] key.

EXTENSION DELAY: 000

This parameter is used to introduce a programmable time delay between the trigger signal and the effective extension of the Tamp. The delay is activated with the external/automatic trigger pulse. The EXTENSION DELAY is ignored if parameter EXTENS. TRIGGER is set to "000" (ref. page **69**).

```
CONFIGURATION        x06
EXTENSION DELAY:     000
```

- Press [Enter] to get access to the menu "configuration" (if password is requested please refer to page **66**).
  - Then press either [◄] or [►] key* in order to increase and/or reduce the editing parameter values (unit = value x 10ms, value "000" = no delay).
  - To confirm your settings, please press [Enter].
- Then press either [◄] or [►] key* to move to the next configuration parameter.
- To exit configuration settings, press the [Start] or [Stop] key.

                    * auto-repeat function: For quickly make large changes, hold either [◄] or [►] key.

EXTENSION TIME: 080

The "EXTENSION TIME" defines the duration of the Tamp extension phase, the time between Tamp movement and start of air blast. If "000" is entered, the labeler is set to the Blow-On Mode so that the label is directly blown onto the product without further applicator movement.

The dimensioning of the time value (unit = value x 10ms) should be matched to the effective time it takes to execute the extension of the complete stroke length.

If the entered EXTENSION TIME is exceeded by another parameter setting then the label will be immediately applied onto the product, unless the labeler waits for a trigger signal (e. g. "BLOW TRIGGER" see page 72 or proximity sensor "variable stroke"). In case of variable stroke option the EXTENSION TIME is usually set to a small value (e.g. "002") to be able to continue with the variable area of the stroke after a constant extension length.

```
CONFIGURATION        x07
EXTENSION TIME:      080
```

- Press [Enter] to get access to the menu "configuration" (if password is requested please refer to page **66**).
  - Press then either [◄] or [►] key* in order to increase and/or reduce the editing parameter values (unit = value x 10ms, value "000" = Blow-On Mode).
  - To confirm your settings, please press [Enter].
- Then press either [◄] or [►] key* to move to the next configuration parameter.
- To exit configuration settings, press the [Start] or [Stop] key.

PROXIMITY TIMEOUT: 000

Any parameter value above "000" activates the "variable stroke" function, assumed the optional proximity sensor is installed at the Tamp plate. The entered value defines the maximum time delay the applicator will wait during Tamp extension, in order to detect the approaching product surface. Otherwise the error message E14 is generated.

The waiting time is shown and decremented.

At a parameter value of "255", the system waits unlimited for the trigger of the proximity sensor (the time is then not displayed).

A specific Cycle Option (s. page **75**) allows to skip the timeout error. For this case the label is blown off and the Legi-Air proceeds with cycle as usual.

```
CONFIGURATION        x08
PROX. T.OUT:         000
```

- Press [Enter] to get access to the menu "configuration" (if password is requested please refer to page **66**).
  - Then press either [◄] or [►] key* in order to increase and/or reduce the editing parameter values (unit = value x 100ms, if variable stroke is not installed the value should be set to "000", at value "255" waits unlimited).
  - To confirm your settings, please press [Enter].
- Then press either [◄] or [►] key* to move to the next configuration parameter.
- To exit configuration settings, press the [Start] or [Stop] key.

                    * auto-repeat function: For quickly make large changes, hold either [◄] or [►] key.

BLOW-TRIGGER: 000

This parameter defines the trigger signal for the label air blast. If "000" is entered the cycle proceeds immediately the blow to apply the label undelayed respectively automatically. Higher values stop the applicator at this point and wait for the predefined trigger signal.

Furthermore the incoming trigger can be used for remote start or remote stop of operation corresponding to the configuration (of "programming").

The mode in which the signal is processed is comparable to the PRINT TRIGGER.

If the variable stroke option is installed at the Legi-Air 4050 E, the value must be set to "000" (default).

Para-meter Value	Function	
00	Automatic blow-off the label	
01 02 03 04	Primary Sensor Input / (I/O: Pin 17) Secondary Sensor Input /(I/O: Pin 23) Aux.-Input on I/O Interface: Pin 19 Internal Jumper at the Applicator PCB	Edge-Triggering (leading edge): Activation at **leading edge**, thus the change from "low" to "high". Only when the display shows "Wait Trigger" a trigger is expected. Otherwise incoming triggers are simply ignored.
05 . . continuation ref. page 66. .	Primary Sensor Input / (I/O: Pin 17)	Level-Triggering (leading edge): Activation at "**high**" signal. Cycle repetition as long as the signal stays active (high).
29 - 32	Parameterization not allowed	

```
CONFIGURATION        x09
BLOW  TRIGGER:       000
```

- Press [Enter] to get access to the menu "configuration" (if password is requested please refer to page **66**).
  - Then press either [◀] or [▶] key* in order to increase and/or reduce the editing parameter values (valid range is: 000-032).
  - To confirm your settings, please press [Enter].
- Then press either [◀] or [▶] key* to move to the next configuration parameter.
- To exit configuration settings, press the [Start] or [Stop] key.

BLOW DELAY: 000

This configuration parameter delays the blow procedure by the entered value. This setting is ignored if the previous parameter "BLOW TRIGGER" is set to "000".

```
CONFIGURATION        x10
BLOW DELAY:          000
```

- Press [Enter] to get access to the menu "configuration" (if password is requested please refer to page **66**).
    - Then press either [◄] or [►] key* in order to increase and/or reduce the editing parameter values (unit = value x 10ms, value "000" = no delay).
    - To confirm your settings, please press [Enter].
- Then press either [◄] or [►] key* to move to the next configuration parameter.
- To exit configuration settings, press the [Start] or [Stop] key.

BLOW TIME: 050

This parameter is used to define the blow time and with it the duration of the solenoid valve activation to blow the label onto the product. Allowed range is 010 to 255 (value x 1 ms).

Lower values allow reducing the cycle time, thus potentially increase the productivity of the machine in high speed applications, but this makes the machine more sensitive to environmental points (temperature, presence of oil in the air supply). Higher values would increase cycle time, not only for the increased pulse length, but mostly because the air tank (inside the Legi-Air 4050 E) discharges more deeply and requires more time to fully recharge and get ready for the next cycle.

```
CONFIGURATION        x11
BLOW TIME:           050
```

- Press [Enter] to get access to the menu "configuration" (if password is requested please refer to page **66**).
    - Then press either [◄] or [►] key* in order to increase and/or reduce the editing parameter values (unit = value x 1ms, value "000" = "Tamp On" mode and no blow activation).
    - To confirm your settings, please press [Enter].
- Then press either [◄] or [►] key* to move to the next configuration parameter.
To exit configuration settings, press the [Start] or [Stop] key.

* auto-repeat function: For quickly make large changes, hold either [◄] or [►] key.

HOME TIMEOUT: 000

This parameter determines the maximum time delay the applicator will wait during Tamp retraction for activation of the home sensor before an error is generated. This applies to the case after the system was switched on and the Tamp could not reach home position because e. g. the air supply is still switched off.

```
CONFIGURATION        x12
HOME  TIMEOUT:        000
```

- Press [Enter] to get access to the menu "configuration" (if password is requested please refer to page **66**).
  - Then press either [◄] or [►] key* in order to increase and/or reduce the editing parameter values (unit = value x 100ms, value "000" = no home position check, value "255" = wait forever for the home signal).
  - To confirm your settings, please press [Enter].
- Then press either [◄] or [►] key* to move to the next configuration parameter.
- To exit configuration settings, press the [Start] or [Stop] key.

SYNC PULSE DELAY: 000

The SYNC signal is available at the I/O Interface (ref. page **48**).

Usually it starts at the end of an operation cycle when the Tamp arrives in home position. Using this parameter delays the pulse start in order to activate for example a downstream Pusher Unit to push on labels. For each unit a delay of 10 ms is introduced (i.e. maximum delay is "255" = 2.55 seconds).

In combination with the SYNC-PULSE TIME = 000 (s. below), the SYNC signal is activated at the set time delay and ends with the arrival of the Tamp in home position (e.g. for use as busy signal = "cycle currently active"). For more information refer to "SYNC-PULSE TIME".

```
CONFIGURATION        x13
SYNC-PULSE  DELAY:    000
```

- Press [Enter] to get access to the menu "configuration" (if password is requested please refer to page **66**).
  - Then press either [◄] or [►] key* in order to increase and/or reduce the editing parameter values (unit = value x 10ms, value "000" = no delay).
  - To confirm your settings, please press [Enter].
- Then press either [◄] or [►] key* to move to the next configuration parameter.
- To exit configuration settings, press the [Start] or [Stop] key.

* auto-repeat function: For quickly make large changes, hold either [◄] or [►] key.

SYNC PULSE TIME :   005

This parameter determines the duration of the SYNC signal available at the I/O Interface (s. page **48**).

Normally the SYNC pulse starts at the end of cycle, when the Tamp is completely retracted to home position. The duration of the pulse corresponds to each entered value x 10 ms.

If the value is set to "000" the SYNC signal is event-controlled. If the SYNC PULSE DELAY is also set to zero, the SYNC signal is activated with the first relevant trigger of a cycle and deactivated as soon the Tamp is retracted to home position (For this case the SYNC output can be used as trigger acknowledge signal).

With SYNC PULSE DELAY greater than zero, the signal is activated after the corresponding set delay time.

The following graphic shows the relationship between SYNC PULSE ... ... DELAY and TIME:
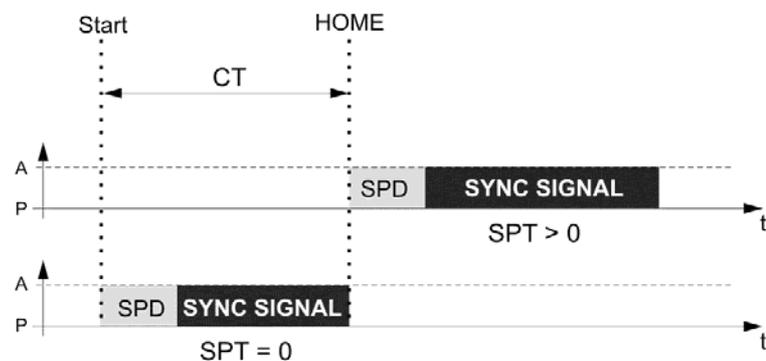
Fig. 7-4: SYNC-Diagramm

Pos.	Description
A	ACTIVE
P	PASSIVE
CT	CYCLE TIME
SPD	SYNC PULSE DELAY
SPT	SYNC PULSE TIME

```
CONFIGURATION        x13
SYNC-PULSE TIME:      005
```

● Press [Enter] to get access to the menu "configuration" (if password is requested please refer to page 66).

   ● Then press either [◀] or [▶] key* in order to increase and/or reduce the editing parameter values (unit = value x 10ms, value "000" = see description above).

   ● To confirm your settings, please press [Enter].

● Then press either [◀] or [▶] key* to move to the next configuration parameter.

● To exit configuration settings, press the [Start] or [Stop] key.

* auto-repeat function: For quickly make large changes, hold either [◀] or [▶] key.

BARCODE RD TIME: 000

If the labeler is equipped with an optional barcode scanner located at the tamp, this parameter is used to set reading time. The duration corresponds to each entered value x 10 ms (i.e. max. "255" = 2.55s). In case of using a gap barcode scanner (which scans the barcode in the gap between printer and tamp, during the printing process) the time must set to "000".

```
CONFIGURATION        x15
BARCODE RD TIME:     000
```

● Press [Enter] to get access to the menu "configuration" (if password is requested please refer to page 66).

    ● Then press either [◄] or [►] key* in order to increase and/or reduce the editing parameter values (unit = value x 10ms).

    ● To confirm your settings, please press [Enter].

● Then press either [◄] or [►] key* to move to the next configuration parameter.

● To exit configuration settings, press the [Start] or [Stop] key.

CYCLE OPTIONS: 000

This parameter is used to select some predefined operating cycle variants. The variants can be combined with each other by means of the arithmetic sum or they can be activated separately:

+1   disables the "variable stroke" feature and generates error if the label is lost during Tamp extension (vacuum loss);

+2   delays Tamp retraction at the end of the blow phase (normally the Tamp retracts at the same time the blow valve is activated);

+4   disables the "variable stroke" feature and ignores vacuum loss during Tamp extension;

+8   enables "corner-wrap" labeling function on machines equipped with the optional 90°-180° swing-arm (option);

+ 16   enables in Tamp-On mode (with blow time = "000", s. page **73**) label presence check (by vacuum) after application (when Tamp retracts);

+32   enables the RFID feature to control the Reject Unit. If this function is used the printer status check must be disabled (Programming 004, value "+016") otherwise the labeler stops with error when a bad-tag is detected;

+64   disables the "label timeout" error (this may be necessary to disable vacuum check to avoid its error);

+128   disables the proximity timeout error.

```
CONFIGURATION        x16
CYCLE OPTION:        OOO
```

● Press [Enter] to get access to the menu "configuration" (if password is requested please refer to page **66**).

● Then press either [◄] or [►] key* in order to increase and/or reduce the editing parameter values (value: "000" = no operating cycle variant available, "001" = 1st function; "002" = 2nd function; "003" = 1st and 2nd function...).

    ● To confirm your settings, please press [Enter].
    ● Then press either [◄] or [►] key* to move to the next configuration parameter.

● To exit configuration settings, press the [Start] or [Stop] key.

                    * auto-repeat function: For quickly make large changes, hold either [◄] or [►] key.

Parameter List of Configuration CFG 0-3

This list provides the possibility to record all parameters of the Configuration Menu (s. page **65**ff). A total of 4 parameter sets are available.

Product / Charge / Line >		Value of CFG 0..	Value of CFG 1..	Value of CFG 2..	Value of CFG 3..
Configuration Parameters					
..01	PRINT TRIGGER				
..02	LABEL TIMEOUT				
..03	VACUUM LEVEL				
..04	VACUUM TIMEOUT				
..05	EXTENS. TRIGGER				
..06	EXTENSION DELAY				
..07	EXTENSION TIME				
..08	PROXIMITY T. OUT				
..09	BLOW TRIGGER				
..10	BLOW DELAY				
..11	BLOW TIME				
..12	HOME TIMEOUT				
..13	SYNC PULSE DELAY				
..14	SYNC PULSE TIME				
..15	BARCODE RD T				
..16	CYCLE OPTIONS				

PROGRAMMING

> **NOTICE**
>
> Wrong parameters can lead to bugs and improper functions, also possibly leading to mechanical damage.
>
> This applies also in changes of reserved or undocumented parameters as well as entering values outside the valid ranges
>
> – The programming mode should only be edited by authorized and trained staff!

The PROGRAMMING mode allows the consideration of all 256 service parameters and enables the access to a further sub-menu. For a change of the values, a 5-digit password has to be entered.

DIAGNOSTICS

The diagnostics function is accessible, when the machine is in stand-by or in error condition, by simultaneously pressing the [◄], [Enter], [►] keys. The same happens if any key is pressed while the machine is switched-on. The display changes to a numerical display looking as follows:

```
 1      3       6       9       12       15       18

2E00030000B800010000
040200  040157  000000

 1     3      6     8       12      15       18     20
```

To exit the diagnostics function, press simultaneously the keys [Start] + [Stop] of the Display, whereas at the same time a re-initialization is carried out.

Please consider a 5% tolerance on the above mentioned pressure/vacuum values.

Most of the numbers have little meaning for the average technician, but few of them may be useful to diagnose common problems of the machine:

Upper Line

● the first line show status information aa to ll of status strings (for details refer to the service manual) sent via USB port..

Lower Line

● the first 6 digits represent the communication error counters.

● the 3 digits in 8th to 10th position show the analog value measured by the vacuum sensor (each unit corresponds to about 1/33 bar). Whereas the vacuum value is displaced so that the value "041" is displayed with standard ambient pressure. Values lower than 41 indicate vacuum in the Tamp, down to a theoretical minimum of 008 for absolute vacuum, while values above 41 indicate pressure in the Tamp (normally a short pulse during blow off procedure).

● the 3 digits in 11th to 13th position of the second line show the analog value measured by the air-supply pressure sensor (each unit corresponds to about 1/33 bar).

● the following 4 digits in 15th to 18th position show status information mm to nn of status strings (for details refer to the service manual) sent via USB port.

● the last 2 digits in position 19 to 20 represents the code of pressed the keys.

Firmware History

The firmware is the ''operating system'' of the labeler's control unit. Following is the chronological order of all firmware releases (including changes) until the publication of this Manual.

Version 4050.10   Creation Date: 07. July 2011

Version 4050.09   Creation Date: 09. February 2010

Version 4050.08   Creation Date: 20. February 2008

Version 4050.07   Creation Date: 30. November 2007

Version 4050.06   Creation Date: 26. November 2007

Version 4050.05   Creation Date: 08. March 2007

Version 4050.04   Creation Date: 26. January 2007

Version 4050.03   Creation Date: 03. August 2006

Version 4050.02   Creation Date: 23. June 2006

Version 4050.01   Creation Date: 10. May 2006

Version 4050.0   Creation Year: 2006

8. Maintenance

Safety instructions

⚠️ **WARNING** | **Hazard from direct or indirect contact with voltage-conducting parts.**

⚡ DANGER TO LIFE!

When individuals touch parts that conduct electricity arising from malfunctions can lead to death.

– Before performing any work at the labeling station, disconnect it from electrical power.

⚠️ **CAUTION** | **Hazard from residual compressed air in the pneumatic components.**

Whipping compressed air hoses, thrown parts or uncontrolled moving parts can cause injury.

– Disconnect the labeler from the compressed air supply before working on the labeler.

⚠️ **CAUTION** | **Danger to health from the improper use of lubricants and cleaners.**

⚠️ HEALTH HAZARD!

The instructions in the manufacturer's current safety data sheets for the specific lubricants and cleaners that are used must be observed along with the applicable safety and disposal regulations.

NOTICE | **Damages of machines and machine parts**

Failed or faulty maintenance- and repair works reduce the operational availability of the machine. This may result in subsequent damages and exclusion from warranty claims.
The machine functions must be continuously monitored.
Unusual noise or movements (such as bucking, hammering, etc.) are indicative of malfunctions and must be investigated.

– All noticed defects have to be eliminated immediately and professionally.

– The operation of the machine is forbidden particularly at defects at safety equipment until the defects are repaired correctly.

– The labeler's maintenance is only permitted to experts (s. Authorized Personnel on page 19)

Daily Maintenance (After Approx. 8 Hours of Operation)

Requirements

- Labeler is free of energy (free of power and air pressure)
- No transportation of products

Required Resources

- Alcohol (*21800915) and/or roller solvent (*21800977)
- Lint-free cloth (*21800978)
- Label remover (*21800771)

* Product recommendation! Can be ordered at the Bluhm Weber Group by 8-digit article number.

Instruction

Please arrange the daily maintenance as follows:

Step	Procedure
1	Clean the print head and feed roller either daily or each time you change the roll. Spray some of the roller solvent onto a lint-free cloth and clean the rubber rolls. Ensure before reloading print material that everything is dried.
2	Examine the label guidings and deflection rollers as well as the peeler bar for excessive adhesive build up/label rests. Clean if necessary, with label remover or alcohol.
3	Examine the drain valve of the air pressure connection. Drain and eliminate the source of water/oil if possible by opening the valve at the bottom.
NOTICE	A lot of water in drain valve is a hint that the operating air pressure is not working correctly. Water/oil – mixtures in drain valve have to be considered as an alarm signal! The reason has to be examined. If oil flows in the air pressure circle, it will lead generally to failures! Maintenance to this filter will be greatly reduced if you use an adequate pre-filter. (for 300l/minute flow rate at 7bar, 10 µm).
4	Examine the Tamp surface and the peeler bar for possible adhesive residues. Remove them with label remover or alcohol.
5	Examine / clean the air filter from the protective cabinet (if option available).

Weekly Maintenance (After Approx. 40 Hours of Operation)

Requirements

● Labeler is free of energy (free of power and air pressure)

● No transportation of products

Required Resources

● Alcohol (*21800915) and/or roller solvent (*21800977)

● Lint-free cloth (*21800978)

● Label remover (*21800771)

● Compressed air spray (*21800768)

● Soft brush (round or plain approx. 10 mm)

*Product recommendation! Can be ordered at the Bluhm Weber Group by 8-digit article number.

Instruction

Please arrange the weekly maintenance as follows:

Step	Procedure
1	Clean the Tamp surface, the peeler bar and all paper guiding parts from adhesive using label remover or alcohol.
2	Clean all sensors (product sensor, low label sensor and label gap sensor) carefully with a soft brush or compressed air.
NOTICE	Do not use air pressure from the shop air supply to blow dust from the machine. There is a possibility that this air can contain water and emulsified oil, which can damage the electrical components in the machine.
3	Examine air supply connections for leakage and fixed position, correct if necessary.
4	Remove dust from the system cabinet.
5	Examine all roller assemblies for free rotation, excessive play, etc., and correct if necessary.
6	Examine the mechanics of the linear- resp. swing unit and the Tamp for tightness and possibly solved screws.

Six-Month Maintenance (After Approx. 1000 Hours of Operation)

Requirements
● Labeler is free of energy (free of power and air pressure)
● No transportation of products

Required Resources
● Vacuum Cleaner

Instruction
Please arrange the six-month maintenance as follows:

Step	Procedure
1	Replace the air filter elements (if available).
2	Clean the system cover outside and the protective cabinet (if available) inside using an industrial vacuum cleaner.
NOTICE	Do not use air pressure from the shop air supply to blow dust from the machine. There is a possibility that this air can contain water and emulsified oil, which can damage the electrical components in your machine!
3	Check the home position sensor. Fix if loose.

Yearly Maintenance (After Approx. 2000 Hours of Operation)

Requirements
● Labeler is free of energy (free of power and air pressure)
● No transportation of products

Required Resources
● Proline, Pro 672U Food Grease (*92100772)

* Product recommendation! Can be obtained from the Bluhm Weber Group with the 8-character article number.

Instruction
Please arrange the yearly maintenance as follows:

Step	Procedure
1	Examine label liner rewinder for excessive wear. Check all timing belts for wear and correct tension. Exchange all parts that are necessary for a correct function.
2	Check all moving parts for wear and bearing clearance. Replace if worn.
3	Only systems with linear stroke: Clean the guide rods and lubricate it thin.

Spare Parts

⚠ **WARNING**   **Hazard from incorrect spare parts!**

Incorrect or faulty spare parts can impair safety and cause injury or damage to the machine.

– Only use original spare parts or parts that are specifically approved by the Bluhm Weber Group.

Information on the safety- and standard spare parts of the labeler Legi-Air 4050E are included in the documentation folder together with this operating instructions.

Wiring- and Pneumatic Diagrams

Information on wiring- and pneumatic diagrams are included in the documentation folder together with this operating instructions.

Cleaning Notes

s. next page

REINIGUNGSHINWEISE / CLEANING NOTES

DE / GB

Bluhm Weber Group

REINIGUNG NACH JEDEM ROLLENWECHSEL !
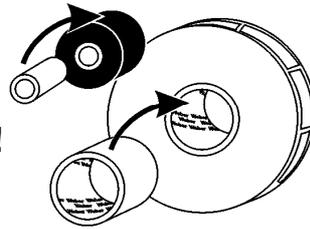
CLEANING AFTER EACH ROLL CHANGE !

BESTELL-NUMMERN / ORDER NUMBERS

21800771	21800915	21800768	21800977	21800978	21800921
ETIKETTEN-LÖSER LABEL REMOVER	ALKOHOL ALCOHOL	DRUCKLUFT COMPRESSED AIR	WALZENREINIGER ROLLER-SOLVENT	FLUSENFREIES TUCH LINT-FREE CLOTH	REINIGUNGSFOLIE LAP SHEET
①	②	③	④	⑤	⑥

BESTELLANNAHME
ORDER PROCESSING   ☎ **+49 (0)2224/ 7708-672**   ✉ **bestellung@bluhmsysteme.com**

---

a
TISCHDRUCKER
DESKTOP PRINTER

b
DRUCKMODULE
PRINT MODULES

c
ETIKETTIERER
LABELER

d
ETIKETTIERER
LABELER

DRUCKKOPF / PRINTHEAD
a ✔
b ✔
c
d
② ⑤ ⑥

GUMMIWALZEN / PLATEN ROLLERS
a ✔
b ✔
c
d
④ ⑤

SPENDEKANTEN / PEELER BARS
a ✔
b ✔
c ✔
d
① ⑤

ANTRIEBSWALZE / DRIVER ROLLER
a
b
c ✔
d
③

FRIKTIONSWALZE / FRICTION ROLLER
a
b
c ✔
d
① ⑤

AUF- & ABSPULERACHSEN
UN- & REWIND MANDRELS
a ✔
b
c ✔
d ✔
① ⑤

STÜTZLUFT-EINHEIT
AIR ASSIST ASSEMBLY
a
b
c ✔
d ✔
① ⑤

FRIKTIONSEINHEIT / FRICTION UNIT
a
b ✔
c
d
① ⑤

SENSOREN / SENSORS
a ✔
b ✔
c ✔
d ✔
③

ANDRÜCKWALZEN
PRESSURE ROLLERS
a
b
c ✔
d ✔
① ⑤

FÜHRUNGSROLLEN / GUIDE ROLLERS
a
b ✔
c ✔
d ✔
① ⑤

STEMPELPLATTE / TAMP PLATE
a
b
c ✔
d ✔
① ⑤

Artikel-Nr./ Part-No.: 55203819 /18.08.2010

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9.   Troubleshooting

This chapter is divided into 2 parts; "Mechanic Failures" and "Messages by Display". The possible causes and their elimination are described in the following two passages.

The troubleshooting instructions address only to experts (s. Authorized personnel on page 19).

Mechanic Failures

Problem	Possible cause	Solution
Label liner tears	Damage of label roll: • Nicks or label cutter-die damage on liner. • Dents/damages at the side of the label roll. • Liner width varies significantly.	Exchange label roll.
	Adhesive residues in the area of the peeler bar.	Remove adhesive residues and check the label roll for damages caused by adhesive residues. Otherwise exchange roll.
Labels are not being held onto the Tamp. Label placement on the Tamp is consistently poor.	Generation of vaccum (Venturi) does not work.	Check the vacuum. If necessary, increase pressure and clean or replace Venturi.
	Air pressure too low.	
	Air assist pressure too high or low.	
	Air assist tube is in wrong position.	
Label placement on the product consistently poor.	The product is not yet/ not anymore incorrect labeling position.	Check sensors of the conveyor used to determine the stop position.
	Product sensor (or its reflector) are loose or vibrate.	Check sensors and remount, if required.
	Changing conveyor speed (e.g. depending on load)	Check the speed and record. Contact supplier of conveying system.
	Label with not suitable adhesive, insufficient initial adhesion.	Change label quality.
	Wrong parameterization.	Check time- and delay settings of the responsible configuration parameters (blow-, extension-…)
Air assist does not function or is not sufficient during the transfer of the label to the Tamp…	Air-pressure too high or low. Internal air pressure container leaky.	Check air pressure (appr. 5-7 bar).Check the tank of the pneumatic system if it is sealed.
	Air assist tube is wrongly positioned, defect or not connected correctly.	Examine air assist setup or replace defective parts or inquire Service Technician at the Service-Hotline (s. page **8**).

Problem	Possible cause	Solution
…	Fast discharge valve is defect.	Examine the valve or replace if necessary
	Controller failure.	Contact the Service Hotline (s. page **8**).
Operating sequence not possible. Label will not be applied.	Printer jam.	Open obstruction and re-thread labels.
	Print module hasn't received any data.	Check message at the printer display to examine if print data available.
	Incorrect print engine parameter values.	Check parameter on the basis of the printer manual and system checklist (as an appendix of this manual).
	Tamp home sensor is not functioning.	Examine sensor setup or inquire Service Technician at the Service-Hotline (s. page **8**).
	No triggering by customer PLC or product sensor.	Check incoming trigger signal. Countercheck with [Enter] key.
	Optional proximity sensor is not functioning.	Examine sensor or replace if necessary or inquire Service Technician at the Service-Hotline (ref. page **8**).
The desired rate of application cannot be reached with the labeler.	The required rate of application from the conveyor exceeds the specifications.	Check conveyor speed and the product gap; compare the values with the specifications of the LA 4050E regarding the stroke length. Reduce conveyor speed if possible.
	Incorrect configuration parameter values of the labeler. Excessive cycle processing time.	Inquire Service Technician at the Hotline (s. page **8**).
	Tamp speed too low.	Optimize the flow control regulator setup of the cylinder or inquire a Service Technician at the Service-Hotline (s. page **8**).
…	Excessive printer processing time.	Ensure that maximum possible print speed is used. Check the possibility of optimizing the layout data (e.g. outsourcing data to Memory-Card, avoiding True-Type fonts). For more information refer to the printer manual.
Machine functions occur at random without being initiated.	Product detector loose or vibrating, or being affected of reflecting light from product surface.	Check the adjustments of the sensors and inquire if needed a Service-Technician at the Service-Hotline (s. page **8**).
	Loose wiring connections.	Check all connections at labeler s. page 42.

Problem	Possible cause	Solution
Incomplete label feed.	Wrong print engine setup.	Check calibration of label material (according to printer manual).
	Labels are not loaded correctly.	Control paper guiding in print engine (according to printer manual) and at labeler (s. page **51**).
	Powered rewinder is not switched off by rewinder dancer arm.	Control the function of the dancer arm. If the liner tenses, the Rewinder has to stop.
	The unwinder brake is not approved by unwinder dancer arm.	Control the function of the dancer arm. If the label web becomes more tense, the label roll has to be unwinded easily.
No label feed possible.	Tamp home sensor is broken or out of adjustment. Refer also to „.Operating sequence not possible".	Replace or adjust sensors as neeeded or contact the Service-Hotline (s. page **8**).
Label fails to leave the Tamp optimal.	Fast discharge valve is defect.	Examine and replace defective part if necessary.
	Optional proximity sensor switches too early or not at all.	Examine and replace sensor if necessary or inquire Service Technician at Hotline (s. page **8**).
	Incorrect configuration of parameters concerning BLOW timing.	Check configurations from page **73**>> BLOW TIME too early, too short or wrong trigger.
	Blow valve does not work correctly.	Examine, clean the valve or replace as needed.
Labels are printed continuously.	Missing synchronization due to wrong parameterization of the print engine.	Compare the setup with the printer manual or system checklist (as an appendix of this manual)
Poor print quality.	Incorrect configuration or print media. Dirt at the printer.	Follow the notes of the printer manual.
Bad tags are not rejected by reject device. Labeler changes into error condition.	Incorrect configuration of printer error check.	Disable the printer error check or inquire Service Technician at Hotline (s. page **8**).

Error Messages by Display

The Legi-Air 4050E immediately stops operation if an error was detected or was stopped by pressing the [Stop] key, and the labeler interrupts the application cycle. The Machine changes to stand-by mode, the green Indicator LED at the user panel turns off and the red one illuminates. In the second line of the display appears an error message showing following description:

```
AP4050.XX CFG01 00000
PRESSURE LOW   E03
```

Error Reset

Acknowledge the error after its elimination by pressing the [Start]-key on the display and the Legi-Air 4050E changes to normal operating conditions. If instead the [Stop] key is pressed, the labeler changes to settling time (same condition as after switching on). In both cases it is guaranteed that the event is counted in the event counter (s. page **63**).

```
NOT RESPONDING E01
```

The message indicates that one of the slave processors is not responding to master commands, probably due to a connection problem (typically when the applicator cable is disconnected) or due to a hardware fault. For analyzing the error the following steps should be performed: in the mode Programming 003 change the value (default 000) to 002. The display shows an error code instead of error E 01. Values in a range of 50…52 point out to problems with the I/O-Board, values about 64…65 point out to applicator problems.

```
PARAMETERS ERROR E02
```

The message may be displayed just after switch-on and it indicates that the integrity check performed on the parameters stored in the internal memory has failed. It is normal to receive this message after a chip reprogramming or a factory default reset of the parameters. Possible cause: at repeated appearance, problems with data loss at the memory chip of the slave processor.

```
PRESSURE LOW E03
```

The Legi-Air 4050E provides an air supply pressure sensor to monitor the air supply pressure. If air supply pressure is not within the limits established for correct operation of the machine, this message will occur. Possible cause: Defective air supply…. If it is okay, it could be a defect at one of the internal pressure sensors…

```
PRESSURE HIGH E04
```

see above E03

```
HOME NOT FOUND E05
```

The above-mentioned message indicates that the home sensor detecting the "home" position (fully retracted) of the application plate did not activate within the configured time limit (HOME TIMEOUT, s. page **74**) during the retraction phase. Possible causes: Incorrect adjustment of home sensor position, defective home sensor or cable, stroke mechanically blocked….

HOME ERROR   E06

This error indicates that the home sensor did not deactivate within the configured time limit (settable at programming 054 [for Config. 00]; 078 [for 01]; 102 [for 02] 126 [for 03] default value = "100" x 10 ms = 1s) at the beginning of the plate extension phase. Possible cause: mechanical defectives at the cylinder avoid extension of the Tamp….

TRIGGER ERROR E07

The message can be generated only if the trigger status check has enabled (by corresponding parameterization of input trigger, ref. page **66**) in configuration and it indicates that the status of the selected trigger input was not returned to the inactive condition since last activation or that it was activated too early, so that the applicator did not recognize the active transition. Possible causes: contamination or incorrect adjustment of product sensor, slow or none conveyance of the product, insufficient product distance, signal of one of the product sensors is active before proximity sensor (if available) is activated at Tamp….

PRINTER ERROR E08

The message indicates that just before or during printout, a FAULT signal was detected from the printer, or that the PRINT signal was already active before the next label was requested. Possible causes: ribbon end, printer paused, printer defective….

MISSING LABEL E09

The message indicates that the requested label did not start printing within the configured time limit (ref. page **68**). Possible causes: print data not available, label could not be printed… .If the inquiry "label on Tamp" was activated (see value + "016", page **75**), the missing label on the product is detected.

INSUFF. VACUUM E10

Behind "INSUFF. VACUUM   E10" hides the "Label on Pad" examination. This means, within the configured timeout (ref. page **69**) the vacuum was insufficient or level subsequently dropped. Possible causes: label incomplete or not at the Tamp >> due to an >> incorrect Air Assist adjustment, unexpected removal of the label or to some other problem in the pneumatic circuit (Venturi tube)….

VACUUM LOST E11

This message appears if after an incipiently successful "Label on Pad" examination, the vacuum level drops down, under the configured limit (ref. page **68**). Possible causes: unexpected removal of the label, malfunction in pneumatic circuit….

MISSING BLOW E12

The message indicates that an abnormally weak pressure peak was detected in the Tamp during the blow phase. The minimum blow is controlled by "programming 14". Possible causes: leakage or malfunction in the pneumatic circuit…].

PEAK BLOW PRESS. E13

The message indicates that an abnormally high pressure peak was detected in the Tamp during the blow phase. The maximum blow is controlled by "programming 15" (default = 3,03 bar). Possible causes: typically some obstruction, like a label sticking on Tamp, blocked Tamp perforation or malfunction in the pneumatic circuit….

PROXIMITY ERROR E14

The above-mentioned error indicates that the "variable stroke" sensor mounted on the Tamp (s. page **71**) did not detect the approaching of the product's surface within the configured time limit during the extension phase. Or an object was detected too early in extension phase Possible causes: contamination or incorrect adjustment of proximity sensor, sensor or cable broken, product feeding insufficient….

WRONG PASSWORD E15

Wrong password entered (s. page **66**).

BARCODE READ ERR E16

The message is generated only if barcode feature is activated (programming 028, value > "0") and the barcode reader mounted on the Tamp has reached the maximum scanning repetition.

MAX RFID REJECTS E17

This message indicates that the maximum predefined number of consecutive or cumulative rejected RFID labels and with this the maximum capacity of the reject device has been reached.

Or, if programming 028 (value 001-127) is enabled the maximum of determined repetitions was exceeded.

DOOR NOT OPENING E18

The shutter (door) of the protective cabinet (option) could not be opened within the preset time (programming 041). Possible causes: shutter mechanically blocked, door open sensor misadjusted/ damaged….

EMERGENCY STOP E19

Presumed that the labeler is equipped with the optional hardware, this message is displayed if the emergency stop circle is interrupted (e.g. by opening the safety door switch of the safety device and/or the cabinet by pressing [Air Pressure "OFF"] of the remote button box).

REWINDER TIMEOUT E20

Presumed that the labeler is equipped with the generation of the intelligent rewinder boards and accordingly configured (programming 003, value = "+008"), this message is displayed if the dancer arm of the unwinder comes not to correct working position Possible causes: the liner paper is not reversed correctly by dancer arm and rewinder, there is no tension or it is torn, defective rewinder motor, sensor or sensor flag….

Status Messages via Display

The following status messages are shown at the display and they will be replaced by new status or error messages. For clarification, the messages will be described in chronological sequence, as they are displayed during the labeling cycle:

`WAIT TRIG. CYCL 01` or

`WAIT TRIG. PRI. 01` or

`WAIT TRIG. APP. 01` or

`WAIT BLOW TRIG 01`

… are not error messages but status messages, to brief that a trigger signal is expected. The ID number "01" at the end of line, specifies the corresponding <u>input</u> where the trigger is expected. This means:

01 = primary; 02 = secondary; 03 = AUX   …input (also refer page **66**).

If trigger delays have been set, immediately after the trigger signal has been detected, the number on the right will show a 3-digit countdown indicating the elapsing delay time.

`WAITING LABEL   100`

This message appears where the number on the right is a 3-digit countdown that shows the remaining time before an error will be generated if the printer does not start feeding a label within the configured timeout.

`LABEL PRINTING`

This message is displayed during the print procedure, when the air assist jet pushes the label against the Tamp.

`WAITING VACUUM   000`

Vacuum is switched additionally in order to catch the label at the Tamp. The number on the right indicates in real time the current vacuum level ("000" means no vacuum, "020" to "030" is the maximum vacuum level reachable, depending on air supply pressure). This phase is normally very short, so the message is barely noticeable, but if there are aspiration problems (mispositioned label or leakages on the pneumatic circuit), the message lasts long enough to be readable (up to 2,55 seconds) and it may give some diagnostic help, before Error E10 (s. page **91**) appears.

`REJECT LBL   050`

This message is displayed with activated RFID-Reject-Function (s. page **75**), during Reject-Unit is rejecting bad tags. The cycle changes automatically to "WAITING LABEL" – stage in order to print a new label.

`PLATE EXTENSION 080`

The number on the right shows a 3-digit countdown, according to the configured duration within the Tamp should have left the home position.

If the labeler is equipped with a variable stroke sensor, at correct configuration (s. page **71**) for a short moment of time of the plate extension time, the following status messages are displayed:

`WAIT PROXIMITY 200`

The number on the right is a 3-digit countdown that shows the remaining time (s. page **71**), before the error E14 (s. page **92**) will be generated if the sensor does not detect the product within the configured timeout. At timeout-setting 255 = endless, the countdown display is omitted.

`READING BARCODE 050`

During verifying the barcode the number on the right shows a 3-digit countdown, according to the configured barcode reading.

`PLATE RETRACTION   050`

Assumed that the optional swing Tamp applicator and corner application have been enabled, the message is temporarily displayed after having applied the label on the front side, while the plate is wiping the label on the corner. The number on the right shows a 3-digit countdown, according to the configured duration.

`WAITING HOME 150`

The number on the right shows a 3-digit countdown, according to the configured duration (s. page **68**), within the Tamp should been received to home position once the label has been blown onto the product. At timeout-setting 255 = endless, the countdown display is omitted.

Once the plate has returned back in home position, the following message is displayed:

`CYCLE COMPLETE   005`

The number on the right is a 3-digit countdown that shows the SYNC PULSE duration (ref. page **75**). This phase is normally very short, so this last message is barely noticeable, being immediately overwritten by the first message of the next cycle.

`MAINTENANCE!`

The maintenance has to be arranged. The Hotline (s. page **8**) is pleased to wait for your order for a Service-Technician.

`DOOR OPENING`

This message is displayed when the shutter (option) of the protective cabinet is opened for Tamp movement.

10. Index

Catchwords from A to Z

Only valid for labelers with Safety Guardings from Bluhm Weber Group or labelers with factory limited Tamp force (up to 50 Newton). Otherwise it is forbidden to operate the partly completed machine. Furthermore the details of the Declaration of Incorporation (which is part of the Assembly Instructions) are applicable.

(DE) **EG-KONFORMITÄTSERKLÄRUNG**, gemäß EG-Maschinenrichtlinie 2006/42/EG, Anhang II A

(GB) EC-DECLARATION OF CONFORMITY, according to EC Machinery Directive 2006/42/EC, Appendix II A

(FR) DÉCLARATION DE CONFORMITÉ CE, conforme à la directive machine 2006/42/CE, appendice II A

(NO) EU- SAMSVARSERKLÆRING, i henhold til EU-maskineridirektivet 2006/42/EC, Tillegg II A

(DK) EG-OVERENSSTEMMELSESERKLÆRING, i henhold til EU-maskindirektivet 2006/42/EF, bilag II A

Weber Marking Systems GmbH
Maarweg 33
D-53619 Rheinbreitbach

(DE) **Wir erklären in alleiniger Verantwortung, dass das Druck-Spende-System**
(GB) We declare under our sole responsibility that the print-apply-system
(FR) Nous déclarons sous notre responsabilité exclusive que le système d'application et d'impression
(NO) Vi erklærer på eget ansvar at skrive-mate-systemet
(DK) Vi erklærer som eneansvarlige, at print-apply-systemet

Legi-Air 4050E

(DE) **auf das sich diese Erklärung bezieht, den Bestimmungen und Richtlinien**
(GB) to which this declaration relates corresponds to the regulations and directives
(FR) que concerne cette déclaration, est conforme et aux directives
(NO) som denne erklæringen gjelder, er i overensstemmelse med bestemmelsene og direktivene
(DK) som denne erklæring refererer til, er i overensstemmelse med følgende bestemmelser og direktiver

2006/42/EG
2004/108/EG
2006/95/EG

(DE) **und mit den folgenden Normen und norminativen Dokumenten übereinstimmt**
(GB) and conforms with the standards or standardized documents
(FR) et en conformité avec les normes ou documents normalisés suivant
(NO) og følgende normer og standarder
(DK) og i overensstemmelse med de normer og standardiserede dokumenter, der er anført nedenfor

EN ISO 13849-1:2008   EN 349:1993+A1   EN 60204-1:2006/A1
EN ISO 13857:2008   EN ISO 12100:2010-11

(DE) **Bevollmächtigter für die Zusammenstellung der relevanten technischen Unterlagen:**
(GB) The person authorised to compile the relevant technical documentation:
(FR) La personne autorisée à élaborer la documentation technique nécessaire:
(NO) Personen som har fullmakt til å sette sammen den tekniske dokumentasjonen:
(DK) Autoriseret repræsentant for udarbejdelse af relevante tekniske dokumenter:

Lutz Krämer
Maarweg 33
D-53619 Rheinbreitbach

Rheinbreitbach, 22. Oktober 2013

Eckhard Bluhm

Geschäftsführer **/**director / gèrant / Adm.dir /Amministratore