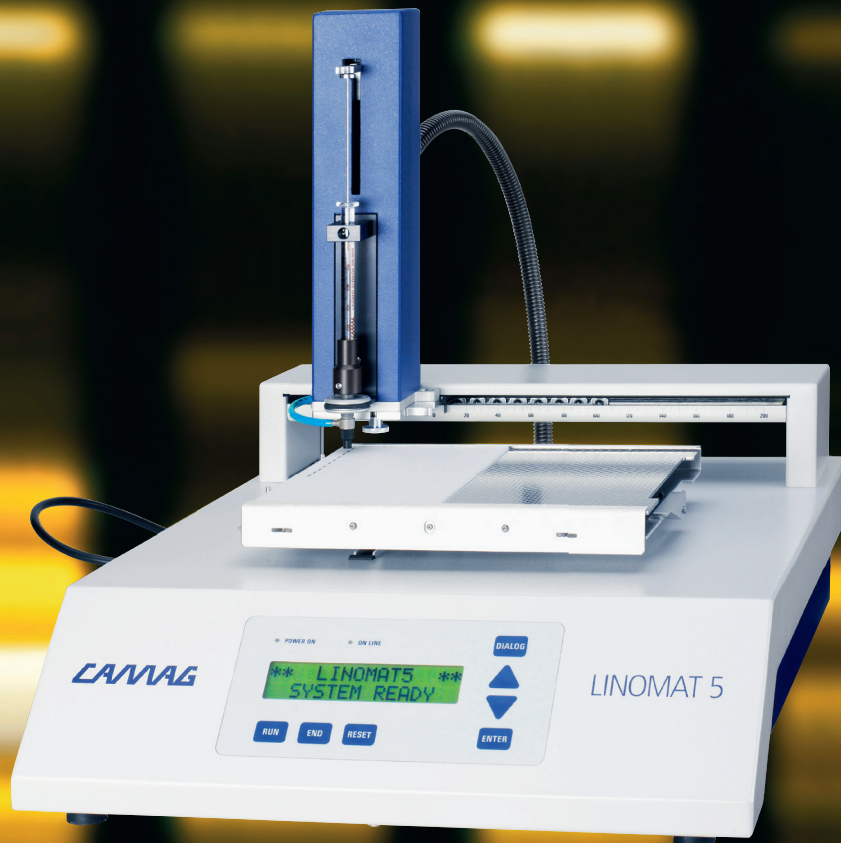


CAMMAG®



INSTRUCTION MANUAL LINOMAT 5



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1

Introduction

1.1 CAMAG Linomat 5

The CAMAG Linomat 5 is a semiautomatic sample application device for use in qualitative, quantitative and preparative Thin-layer chromatography. The Linomat 5 is shipped with EquiLink, RS232 cable and built in interface for connecting to a computer from which the instrument can be programmed.

The parameters for up to 10 application programs can be stored for stand-alone operation without PC- control.

The Linomat 5 is software controlled, visionCATS/winCATS controls and reports all parameters and steps of the TLC analysis including definition of plate material, sample application, derivatization, development and evaluation. All data are handled in a cGMP/cGLP-compliant manner.

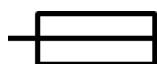
1.2 Precautions



- Please read this operating manual before starting the installation! This manual contains information and warnings the user has to follow to ensure reliable operation of the instrument.
- Some interior parts of the instrument are under AC power. Careless and improper use can cause injury. Unauthorized manipulations can cause damage
- This sign indicates (on instrument and in this manual) that failure to take note of the accompanying information may result in damage of the instrument
- The instrument is manufactured and tested in accordance with the respective European safety publications shown on the Declaration of Conformity (DoC). The instrument complies with safety class 1 and has been designed for indoor use only (IP 20). Further, this device has passed the CAMAG Quality Assurance tests and has been delivered in safe operation condition. For detailed instrument data see chapter technical data
- Attention: For safety reasons the instrument may only be used for the purposes described in the operating manual
- To avoid injury use adequate safety equipment (protective goggles, gloves etc. if applicable) when working with the instrument
- Before first operation, check whether the voltage shown on the instrument matches your local mains voltage. The power cord may only be connected to a grounded, fused (not higher than

16A) outlet. Do not use extension cords without ground contact

- When working with the fluids of the instrument, be sure to take the appropriate caution (protect your eyes from direct contact with liquid)
- The instrument may be used only by properly trained laboratory staff
- The instrument may not be used in rooms with danger of explosions
- The instrument contains highly sophisticated electronics and optical parts. It may be operated only in a non-condensing atmosphere in the temperature range outlined in the chapter "Technical Data". Before installation and use, the instrument should be acclimated properly
- Use a damp lint free cloth for cleaning the instrument surface. Do not employ aggressive detergents
- Protect yourself and the instrument from electrostatic shock which can cause damage to the electronic parts
- Only authorized personnel may open the instrument. Service and repair is only to be performed by trained specialists. Use spare parts and consumables supplied by CAMAG only. The warranty is voided if parts from other sources are used. Check the service manual before you start service to reduce product-specific risks
- The power cord has to be removed before the instrument is opened. It is not permitted to work on an instrument that has been opened and is connected to the power supply
- Spare fuses must be of the type specified by the instrument manufacturer. It is forbidden to short-circuit or manipulate fuses
- Use only the original, with the instrument delivered power cord type
- If the instrument is found to be defective, it must be switched off and steps must be taken to ensure that it cannot be switched on by mistake
- If liquids penetrate the inside of the instrument, the power has to be disconnected immediately. Small amounts of liquid can be wiped off and/or dried by means of a hairdryer, with larger amounts of liquid a service technician has to be called. A test of functionality has to be performed in all cases
- Carry out all safety checks and the preventive maintenance as recommended by the manufacturer in order to assure your personal safety and the full functionality of the instrument. Have



an authorized service specialist perform any service not described by this manual

- See original manufacturers' manuals for further safety data on third party equipment supplied with the system
- Lift/move/transport the system with the necessary care and with sufficient manpower (install the transport security devices if applicable, transport it only in the original packaging)
- The safety of any system incorporate with the equipment is the responsibility of the assembler of the system
- This symbol indicates that this equipment must not be disposed of as unsorted municipal waste but is to be collected separately as electrical and electronic equipment (WEEE-Directive 2002/96/EC). To properly recycle the instrument or parts of it you are requested to send the equipment back to the distributor, producer or an adequate collection system at the end of its life. This will have potential effects on the environment and human health



1.3 Parts supplied

Part no	Units	Description
695.0014	1	Sample Syringe 100µL
140.7808-1	1	Tool kit, comprising:
715.2329	1	Down holder for TLC sheets
715.2328	1	Down holder for TLC plates
140.0450-1	1	Pneumatics connecting kit
125.1021	1	RS232 connecting cable
362.0006	2	Fuses 1AT
705.0018	1	Allen wrench 2.5mm
	1	Respective power cord
B.022.7808E	1	Instruction manual (English)

1.4 Spare parts

Part no	Description
695.0014	Sample Syringe 100µL
695.0015	Sample Syringe 500µL
022.7830	Plunger for syringe 100µL
022.7831	Plunger for syringe 500µL
115.0570	Venturi jet assembly

2 Installation

2.1 Instrument

- ☛ *Observe the environmental requirements (2.2 Installation environment) when setting up the instrument.*
- ✓ Carefully unpack all components and accessories listed on the shipping list from of the upper part of the packing. Make sure the shipment is complete.

The plate support has been secured with foam pieces for shipment. To unlock the plate support, remove all foam pieces from the slit in the instrument base.

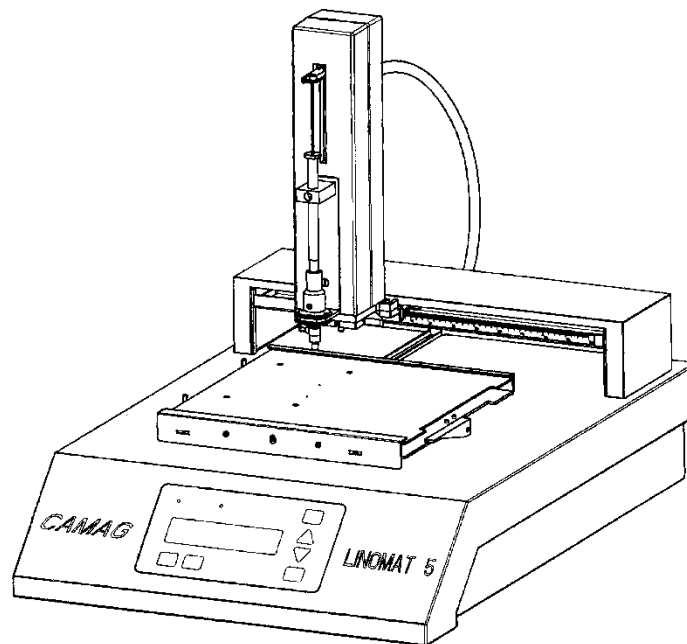


Fig. 1: The instrument

- ✓ Remove the dosage turret carefully from the package and place it on the turret support (fig. 2).
- ✓ Make sure that the dosage turret has been properly positioned on the fixation (3) before tightening the two turret screws (2 and 4) by means of the screwdriver supplied.
- ✓ Tighten screw (1) by hand.
- ☛ *Connect the turret cable with connector (2) as shown in fig. 3.*

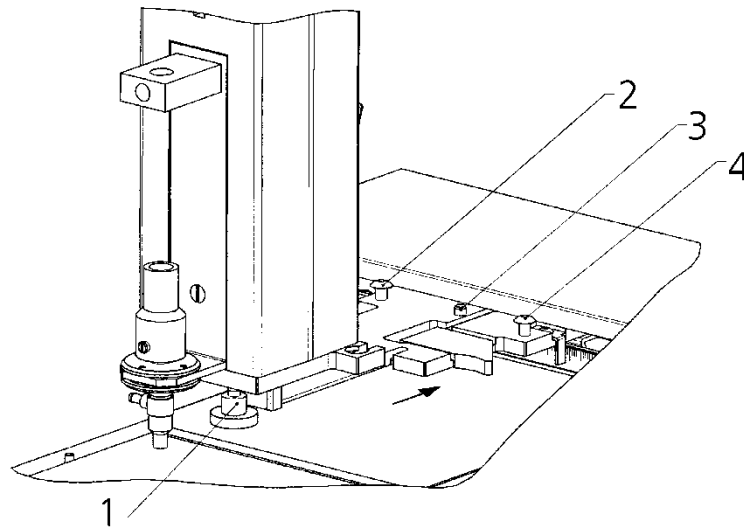


Fig. 2: Mounting the dosage turret

2.2 Installation environment

The place for installation should meet the following requirements:

Bench space	Width 360mm Depth 510mm (add space for cables approx. 100mm) Height 410mm Weight 12.5kg
-------------	--

➡ Add adequate space for a PC next to the instrument

Operating temperature	The temperature should be within a range of 18 to 35 degrees centigrade and free from significant variations.
Humidity	Humidity and temperature conditions must not cause condensation.
Atmospheric conditions	Adequate ventilation free from acidic, alkaline or other gas that may corrode metal or painted surfaces must be secured.

Further requirements:

- Do not place the instrument in a location where the temperature significantly changes (e.g. under an air conditioning duct or by a window). Significant changes in temperature will affect the performance of the unit.
- Do not place the instrument in direct sunlight. Direct sunlight may create significant temperature changes which will affect the performance of the system.
- Do not use the instrument in an environment with moving ambient air (draft).
- Do not expose the instrument to any strong vibration or shock.
- Avoid placing the instrument near equipment that radiates heat. Do not place the instrument near gas burners, electric heaters or ovens.

- Do not place the instrument near equipment that generates intense magnetic fields such as electric welding equipment, high frequency furnaces, pole transformers, etc.
- Protect the instrument from excessive dust.
- Connect the instrument to power lines that are free from sudden changes or voltage fluctuations.
- If you must use power motor driven equipment (such as a stirrer or shaker) in the same line as your instrument, ensure that a noise reduction unit is in the same power line

2.3 Conditions for the installation

Confirm that the following requirements exist before installing the instrument:

Power supply and ground

Line voltage: 100 – 240V (see rating plate on instrument).

Frequency: 50 / 60 Hz

Power capacity: 20 W

Ground terminal: A grounded outlet should be within 2 meters of the instrument.

Gas supply

N₂ or Required pressure 4 - 6 bar (58 -87 psi)

compressed air Gas consumption 1 L/min

2.4 Gas supply

✓ Connect the supplied pressure tubing to the gas inlet nipple (fig. 3, item 4) on the backside of the instrument.

✓ Connect the other end of the tubing to the gas supply.

If the outlet of your gas supply does not fit, the N₂/compressed air connection kit allows connection to standard ¼" tubing.

✓ Adjust the primary pressure to 4 - 6 bar (58-87 psi).

✎ *The message: „WAITING FOR SYSTEM PRESSURE“ will be displayed if the instrument is started with too low pressure.*

✎ *If long thin tubing is used it is recommended to increase the primary pressure to 6-8 bar (87-115 psi).*

2.5 Mains connection

✓ Ensure that the voltage shown on the rating plate (left side) matches that of the mains.

✓ Use the supplied power cord for connecting the instrument to the mains outlet.

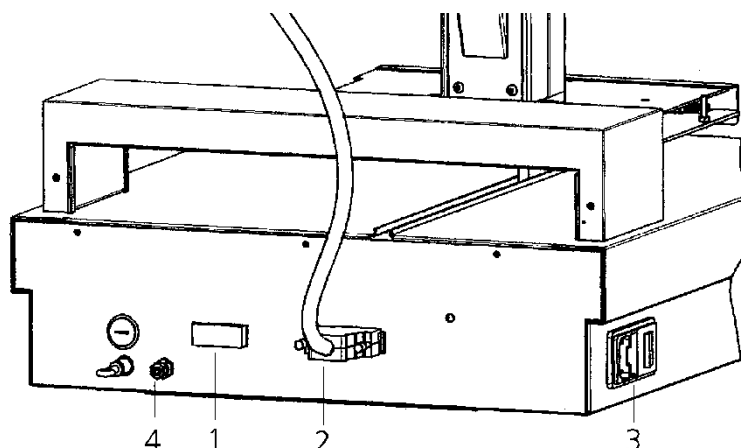


Fig. 3: Connections. 1 = RS232 Interface, 2 = dosage turret connection, 3 = Power switch and mains connection with fuse box, 4 = gas connection

2.6 Connection to the PC

The CAMAG Linomat 5 is shipped with a 9-pin interface cable for connection to the PC.

- ✓ Connect the cable to the instrument and to a free COM-port of the PC to enable data transfer.

3 Getting started

3.1 Automatic instrument monitoring

A sensor in the CAMAG Linomat 5 monitors the pressure of the gas supply and generates an error message if the pressure drops below 3.5 bar during spray-on application.

All valves are controlled in such way that they close if the power fails or the instrument is switched off.

3.2 Checking system functions

- ✓ Switch on the instrument.

The Linomat 5 will now perform the following checks and tasks:

1. Initializing the plate stage drive
2. Initializing the syringe drive.

If startup was successful the display will read:

** Linomat 5 **
Instrument ready

In this phase, only physical blocking of a drive can cause an error. If necessary, check if all transport locks have been removed and whether there are foreign objects in the instrument. (e.g. below the plate stage).

3.3 Inserting a dosage syringe

Installation of a syringe (see fig. 4):

- ✓ Make sure plate stage is in front position and the syringe lever arm is at the top of the turret.
 - ✓ Fill the syringe with at least the minimum amount indicated on the display.
 - ✓ Use the left hand to move the lever arm (1) to the left and hold it there.
 - ✓ Carefully insert the syringe through the syringe holder (2) into the spray head (3) and lower the syringe carefully until it rests in the spray head. This way the needle is guided through the spray nozzle.
- ➡ *The volume of the syringe in use must be set in the user dialog. If a wrong syringe volume is entered, the application volumes will all be wrong.*

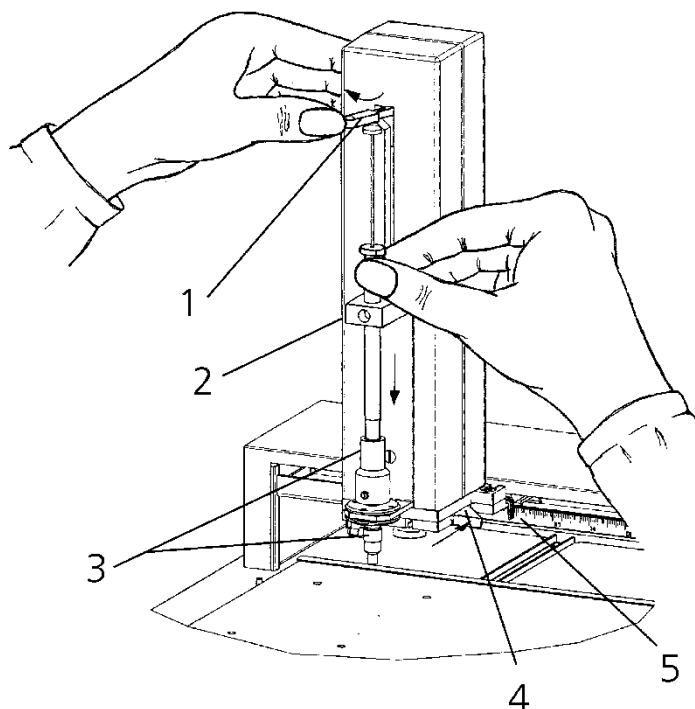


Fig. 4: Installation of the syringe. 1= Lever arm, 2 = syringe holder, 3 = Spray head assembly with nozzle, 4 = slide coupler, 5 = scale pointer

Entering syringe volume:

- ✓ Press the **DIALOG** key on the instrument to start the user dialog.
- ✓ Use the arrow keys ▲ and ▼ to select the volume of the syringe in use.
- ✓ Confirm by pressing the **ENTER** key on the instrument.

3.4 Setting the application position

The application position Y is set by moving the dosage turret to the proper position.

- ✓ Press the slide coupler (4) backwards till the lock pin is released.
- ✓ Move the turret to the desired application position and then release the slide coupler. You can read the position (5) on the ruler at the front edge of the turret bridge.

3.5 Loading a TLC plate or foil

All plate sizes held by both front and rear ledge (20x20, 20x10):

- ✓ Move the plate lift lever (1) situated on the right side of the plate stage to the rear position in order to lower the table.
- ✓ Now flip the front ledge (2) of the stage down (forward) making the plate table freely accessible.
- ✓ Place the plate (3) in the rear left corner of the table so that it touches the rear stage ledge and both positioning pins (4).
- ✓ Now flip up the front ledge (2) and move the plate lift lever (1) carefully to the forward position. Guide the lever to avoid that the stage moves up too quickly.

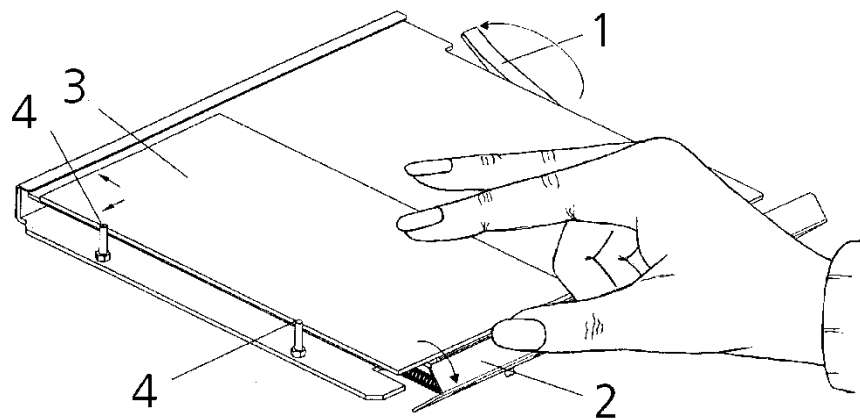


Fig. 5: Plate stage. 1 = plate stage lever, 2 = front ledge, 3 = TLC-plate, 4 = pin.

All sizes not held by both front and rear ledge (10x10 or smaller):

- ✓ Position the plate to be applied on as described above
- ✓ Position another plate of same thickness under the front ledge for thickness compensation.
- ✓ Position the plate holder behind the TLC plate to add stability.

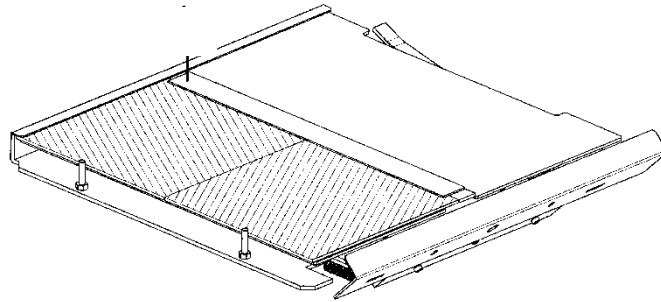


Fig. 6: Plate stage for (2x)10 x 10 cm plates.

TLC foils (1):

Aluminium foils may not lay flat on the stage but can be held in place by means of the down holder for foils (2). It is employed according to fig. 7 and may be left in place if only foils are being used.

The positioning of foils is similar to that of TLC-plates although the edge of the foil must be placed under the down holder and in contact with the positioning pins.

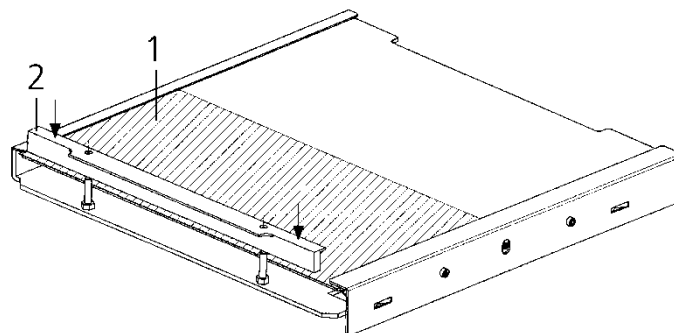


Fig. 7: Plate stage with foil. 1 = foil, 2 = down holder for foils.

3.6 Waste plate

To ensure proper spraying all newly filled syringes are started by predosing a small volume at the waste position. The waste position is below the spray nozzle wherever the turret is currently positioned.

- ✓ Put a 20x10cm TLC plate (waste plate) on the instrument housing below the spray nozzle.
- ➡ To avoid predosing into the slit in the housing make sure not to position the turret between (approx.) 40 and 65mm (3).
- ➡ Move the waste plate from time to time so the spray does not always hit the same position.

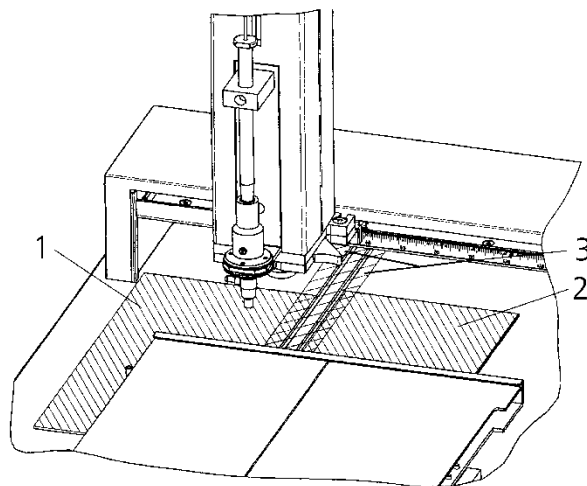


Fig. 8: 1 and 2 = possible positions for waste plate, 3 = no spray area

4

Manual operation

4.1 Display and function of keys

Control lamps

The control lamps in the display indicate the following status:

- POWER ON: this lamp is lit when the instrument is switched on.
- ON LINE: this lamp is lit when the instrument is ON-LINE with winCATS or is communicating with visionCATS

The following keys are available:

DIALOG

Selects the syringe size selection display (System ready) or activates the manual parameter input mode (Method stack).

ARROW KEYS ▲ and ▼

Select the next / previous parameter (or method) in the dialog.

ENTER

Confirms the current parameter, switches to the selected dialog or (re-)starts the (last) selected method.

END

Interrupts the current application or switches back to the previous dialog.

RESET

Resets and re-initializes the instrument. The current application is interrupted but all parameters remain in memory.

RUN

Shows the selection of stored methods.

- ✓ Use the arrow keys ▲ and ▼ to select a method to start.

- ✓ Press **ENTER** to start the selected method or **DIALOG** to change the parameters of the method locally.

4.2 Stand-alone operation

The instrument can be used in stand-alone mode. Up to 10 methods can be stored and used locally.

- ✎ *Note that locally started methods cannot be used in an analysis in visionCATS/winCATS and that local parameter changes are not documented in the software.*

Procedure for OFF-LINE start:

- ✓ Prepare the instrument for sample application.
- ✓ Press the **RUN** key
The most recently used method is displayed. With the ▲ and ▼ keys you can select another locally stored method.
- ✓ Press the **ENTER** key to start the displayed method. The last method is re-started if **ENTER** is pressed in the "System ready" mode.

Procedure for local input of parameters:

- ✓ Press the **RUN** key
The most recently used method is displayed. With the ▲ or ▼ key you can select another locally stored method.
- ✓ Press the **DIALOG** key to locally change parameters of the selected method.
Press the ▲ or ▼ key to select a parameter group (global parameters, layout parameters, track assignment parameters, save method) for local input and press **ENTER** to confirm.
- ✓ Now you can step through the parameters of the group by means of the **ENTER** key or use the ▲ or ▼ key to change the current parameter. Press **ENTER** to confirm the new value and move on the next parameter.

Procedure for saving a changed method:

- ✓ Select the parameter group **Save method** or press the **END** key after having changed the parameters.
- ✓ Select the memory position to save the new method in by means of the ▲ or ▼ key. Press **ENTER** to confirm position and execute the save routine.

Procedure for local delete of a saved method:

- ✓ Press the **RUN** key
The most recently used method is displayed. With the ▲ or ▼ key you can select the locally stored method to delete.

- ✓ Press the key combination **RUN-END** (press and hold **RUN**, then press **END**) and confirm deleting with **ENTER**.

✎ *Flow diagrams for these dialogs are depicted in part 7 Display texts.*

4.3 Aborting an application in progress

- ✓ Press the **END** key
The application in progress is aborted. An aborted application cannot be continued.

4.4 Resetting the instrument

Procedure:

- ✓ Press the **RESET** key
This will abort all activities in progress and re-initialize the instrument.

4.5 Docking the syringe

After a method has been started the display will show the required volume and the vial or ID of the sample to be used.

- ✓ Draw up the required volume of the sample indicated.
- ✓ Mount the syringe as described in chapter 3.3
- ✓ Press **ENTER**

The syringe drive will now perform an automatic docking at the indicated volume, then the spraying is started at the waste position and finally sample application starts.

If you do not wish to perform automatic docking after mounting the syringe, you can move the syringe drive manually by means of the ▼ key. Press both arrow keys to move fast.

5 Maintenance and trouble shooting

5.1 General maintenance

The instrument may be serviced only by authorized technicians familiar with its technical/functional properties. In daily use the Linomat 5 requires maintenance about once a year. The chapter Maintenance Data Sheet informs about the parts and their frequency to be changed.

5.2 The Setup dialog

By means of the Setup dialog you can select the communication baud rate between the instrument and the PC, the language and LCD contrast.

To enter the Setup dialog:

- ✓ Hold down the **DIALOG** key and press the **RESET** key.
- ✓ Release the **RESET** key, then release the **DIALOG** key.

The display will now show **LIN05 Vx.xx.xx Setup Mode** where x.xx.xx is the actual firmware version of the Linomat 5.

- ✓ Press the **ENTER** key to start the Setup dialog.

Set baud rate

Start the Setup dialog according to the procedure above. The display now shows the current baud rate (default is 19'200).

- ✓ Press the ▲ or ▼ key to change the setting.
- ✓ Press the **ENTER** key to accept the current selection (and move on to the language selection).
- ✓ Press the **RESET** key to quit the user dialog.

Set display language

Start the user dialog according to the procedure above. The display now shows the current baud rate.

- ✓ Press the **ENTER** key to move on to the language selection display.

The current language setting is displayed.

- ✓ Press the ▲ or ▼ key to change the setting.
- ✓ Press the **ENTER** key to accept the current selection (and move on to the LCD contrast selection).
- ✓ Press the **RESET** key to quit the user dialog.

Set the LCD contrast

Start the user dialog according to the procedure above. The display now shows the current baud rate.

- ✓ Press the **ENTER** key twice to move on to the LCD contrast selection display.

The current contrast setting is displayed.

- ✓ Press the ▲ or ▼ key to change the setting.
- ✓ Press the **ENTER** key to accept the current selection.
- ✓ Press the **RESET** key to restart the instrument.

5.3 Handling of the HAMILTON-syringe

To achieve a maximum lifetime for the gas-tight HAMILTON-syringe the following points must be observed:

- Ensure extremely clean conditions when handling the syringe body and plunger.
- Never lubricate the plunger.
- The Teflon tip of the plunger is very sensitive. Even slightest scratches can cause a leak.
- Plungers and syringe bodies are exchangeable.
- To fill the sample dosage syringe make sure the needle is not pushed against the bottom of vial and that no air bubbles remain in the needle.

➡ *The plunger must not be exposed to boiling water.*

The following replacement plunger can be obtained:

022.7830 Replacement plunger for 100 µL syringe

022.7831 Replacement plunger for 500 µL syringe

5.4 Adjusting the spray gas

Spray gas flow is controlled by a gas pressure regulator, factory adjusted to 1.0 bar. It may be suitable to increase this pressure to achieve better spray quality when using highly viscous liquids.

Procedure:

- ✓ Turn the spray pressure regulator (1) clockwise to increase pressure. The pressure can be read from an external gauge you can attach at (2). Adjust pressure to 1.5 bar.

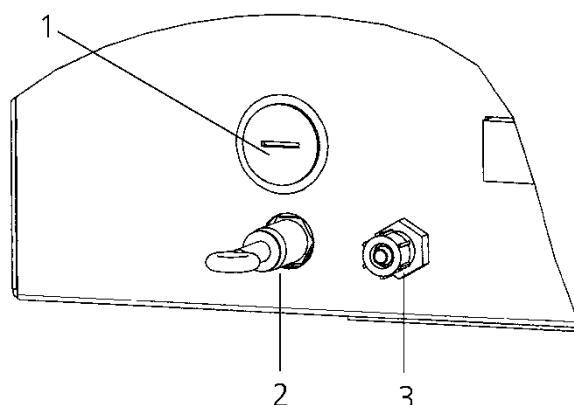


Fig. 9: 1 = pressure regulator, 2 = connection for external gauge, 3 = gas supply,

- ➡ Change the pressure *only while sample application is in progress* to get a correct reading from the gauge.

5.5 Cleaning the jet assembly

The jet assembly, a part of spray nozzle, consists of a square outlet into which a circular needle is inserted. At the four free corners gas flows at high speed and sprays the sample emerging from the needle tip onto the TLC plate. Clogged corners make the jet stream irregular.

- ✓ Unscrew the jet assembly and wash it with a suitable solvent (ultrasonic bath).

5.6 Replacing fuses

Procedure:

- ✓ First disconnect the power cord from the mains connection of the instrument.
- ✓ Pull out the fuse holder next to the power connection with a small screwdriver.
- ✓ Replace the fuse(s). The label 250 V 1.0 AT (slow) is valid to the full voltage range.
- ✓ Push back the fuse box.
- ✓ Reconnect the power cord.

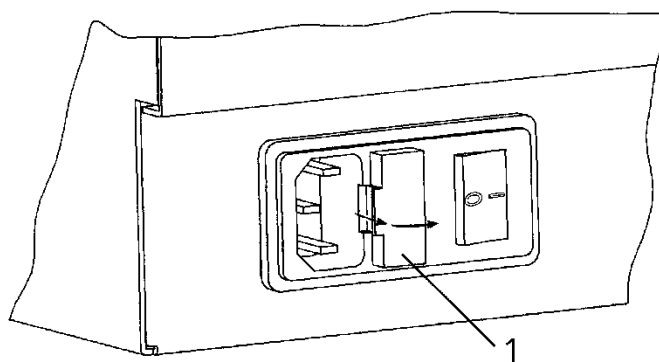


Fig.10: Mains connection, switch and fuse holder

5.7 Maintenance Data Sheet

CAMAG Maintenance Data Sheet

Linomat 5

February 2015

Purpose	The maintenance data sheet informs about maintenance interval of the respective instrument as well as the proposal for IQ/OQ interval if applicable. In addition, it identifies consumable parts with the respective replacement cycle.
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Maintenance interval

Maintenance	12 Months
IQ/OQ	12 Months

Consumable parts

Part No.	Description	Replacement cycle
695.0014	Syringe 100µl	24 Months
695.0015	Syringe 500µl	24 Months
115.0570	Spray nozzle	24 Months
022.7830	Plunger for 100µl syringe	3 Months
022.7831	Plunger for 500µl syringe	3 Months

6

Technical data

Power connections	100 – 240 V 50 / 60 Hz 20 W
Dosing syringe	Choice of 100 µL or 500 µL, gas-tight
Dosing volume	0,1µL to 5000µL (i.e. 50 fillings of 100µL syringe per application!)
Syringe drive	Stepper motor 1600 steps / rev.: 100nL = 120 steps for 100µL syringe 100nL = 24 steps for 500µL syringe
Stage drive	Stepper motor 3200 steps/rev. 8 steps = 0.1 mm Maximum speed 250 mm/s with acceleration ramp Positions programmable: 5.0 – 195.0 mm in 0.1 mm increment
In- output connection	RS232
Measures	Width 360mm, depth 510mm, height 410mm
Weight	12.5 kg

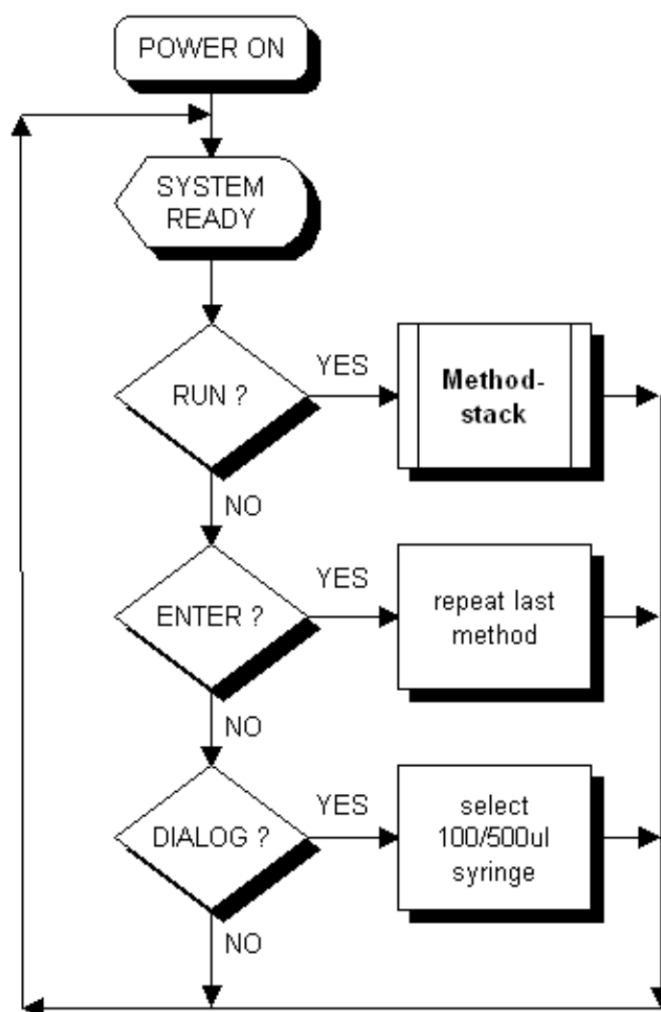
7

Display texts and diagrams

7.1 Normal mode

Text	Description
FW V: 1.00.01 *****	Firmware version at start up Device Power on
** CAMAG ** **LINOMAT5**	The system was properly initialized and is waiting for an application.
LINOMAT5 SYSTEM READY	The system was properly in initialized and is waiting for application.
THIS METHOD? TEST 87364	Selection of a stored method
WAITING FOR SYSTEM PRESSURE	System pressure too low (4..6bar). Device is waiting for gas.
GO TO PARK POSITION	Plate table and syringe lever are moved to the parking position.
INIT TABLE DRIVE	Initialization of specified drive.
↓ 02/12 Σ 05/32 PREDOSE 1.3µl	Predosage is running for the 2. of 12 samples and the 5. of total 32 bands
↓ 03/05 Σ 09/18 02/04 4.7µl	Dosage is running for the 3. of total 5 samples and the 9. of total 18 bands. 4.7µl of the 2. of total 4 bands from sample 3 has been applied.
OPERATION COMPLETED	Application has been properly completed
LINOMAT 5 TESTING DRIVES	Drives test is running
** PAUSE! ** 12 min 48 s	Instrument is in pause mode since 12 min and 48 sec.
** ERROR 38 ** TEXT TEXT TEXT	See chapter 7.4 for error messages

7.2 The System ready dialog



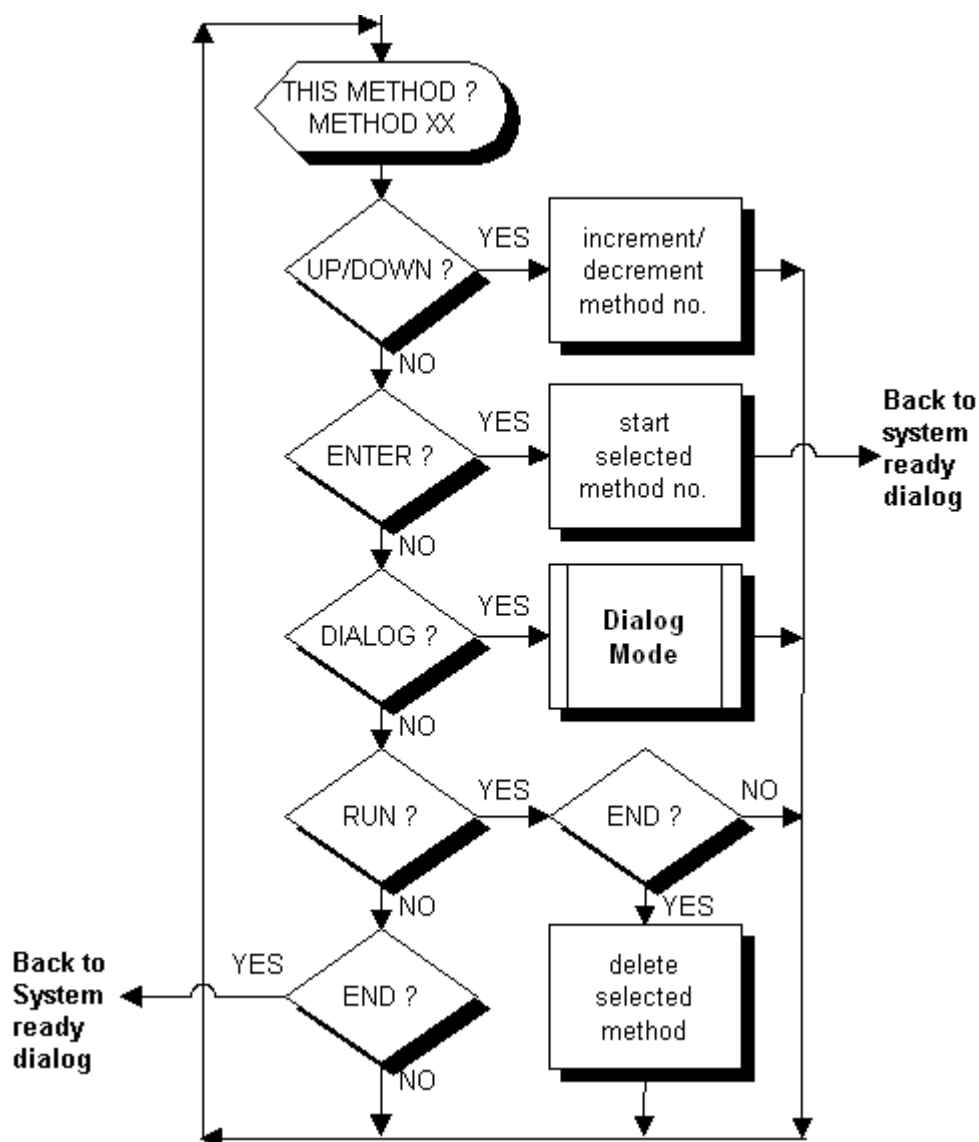
7.3 The syringe selection

To enter the Syringe selection, press the **DIALOG** key when the instrument display shows "System ready".

Text	Description
SELECT SYRINGE 100/500ul	Select syringe volume with UP and DOWN keys

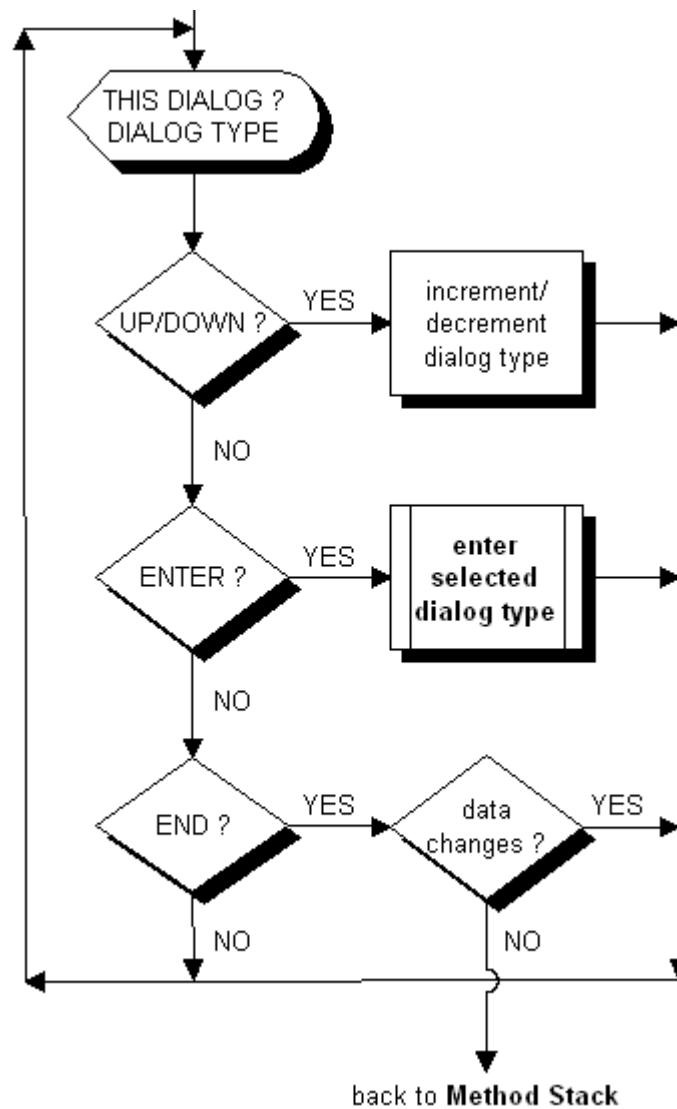
7.4 The method stack dialog

To enter the Method selection dialog (Method stack), press the **RUN** key when the instrument display shows System ready.



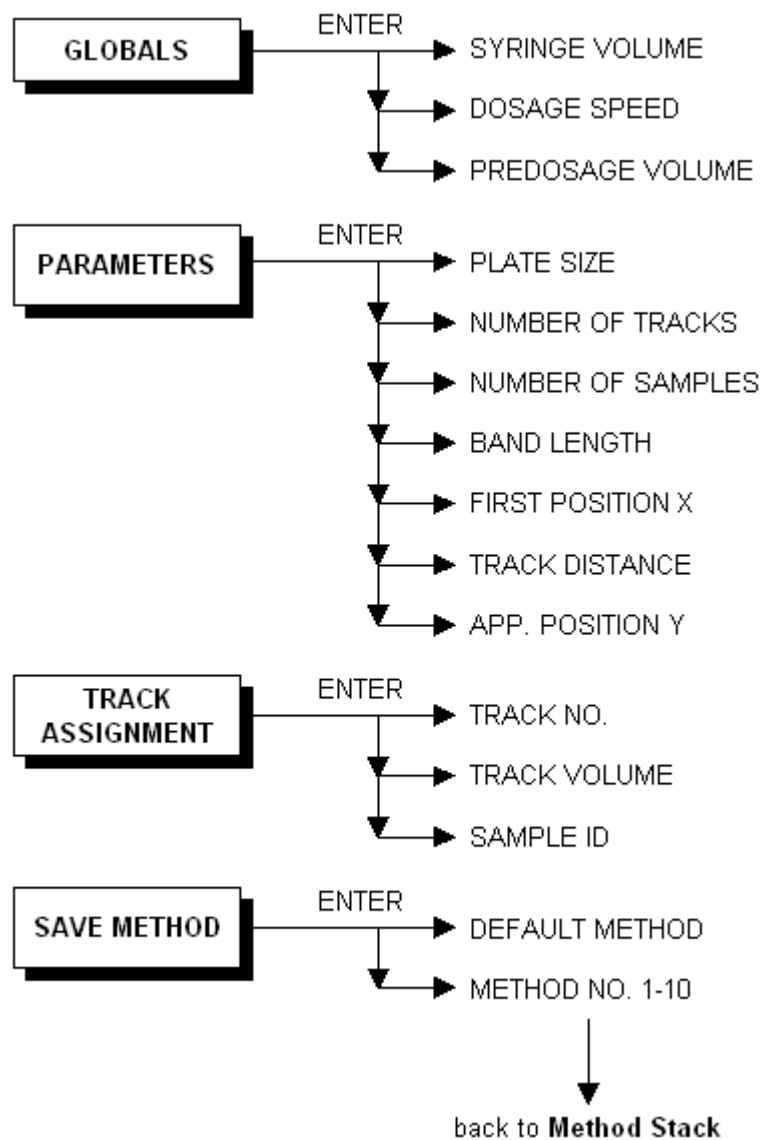
7.5 The parameter type selection dialog

To enter this parameter type selection dialog, press the **DIALOG** key when the instrument display shows the name of the method to be edited (in the method stack dialog).



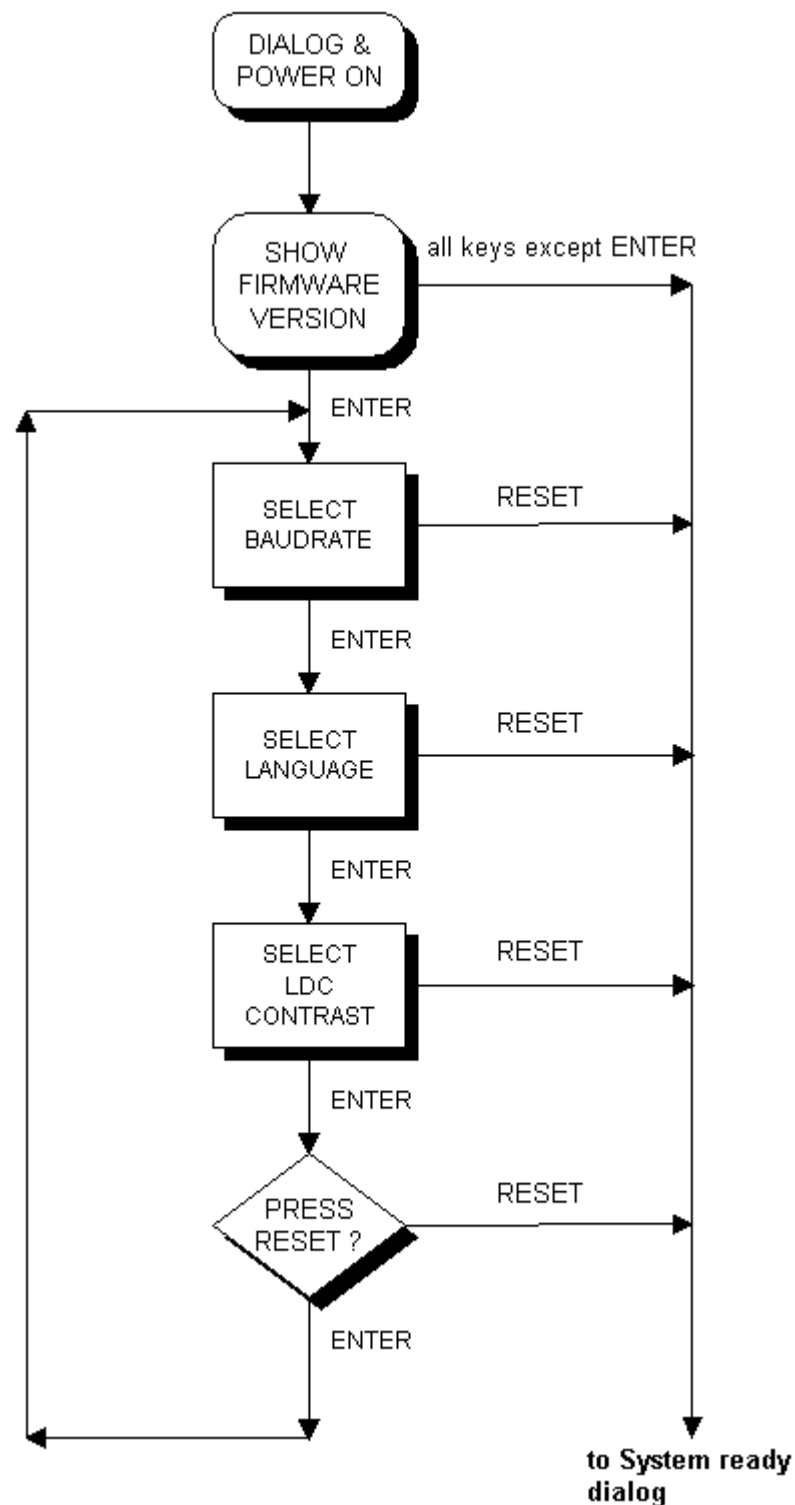
7.6 The parameters input dialog

To enter this parameter input dialog, press the **ENTER** key when the display shows the name of the parameter type to be edited (in the parameter type selection dialog).



7.7 The Setup dialog

To enter the Setup dialog, hold down the dialog key while switching on the instrument.



7.8 Error messages

Error#	Description
30	Pneumatic pressure too low at startup
31	Wrong syringe mounted. The syringe specified in the method does not match the syringe currently registered in the Linomat 5. To register another syringe: press the DIALOG key ion the System ready dialog.
33	Combination errors in method parameters during local parameter input, see also error 36.
34	Dosage volume 0µl not possible
35	Dosage volume >100/500ul not allowed for one band. The Linomat 5 cannot split the volume of one band on several syringe fillings.
36	Selected dosage parameters unrealistic: The overspray factor (OF) is calculated as: Dosage time=Application volume/Dosage speed Band time=Band length/band velocity OF=Dosage time/Band time The band velocity is automatically optimized between 1 and 20mm/s (target is 10mm/s). Possible errors: 1 The overspray factor (OF) is close to zero. 2 The max. distance sprayed is > 50m (OFxBand length)
37	Selected dosage parameters unrealistic: Turret drive speed too high!
38	Selected dosage parameters are unrealistic: Turret drive speed too low!
55	Method storage empty!
56	Content of activated method incorrect (data loss)
59	Interrupt of method by main interrupt
100	Syringe drive: end switch (LSX) active
101	Stage drive: end switch (LSX) active
104	Syringe drive: end switch was expected
105	Stage drive: end switch was expected:
106	Syringe drive: initialization has not been executed
107	Stage drive: initialization has not been executed
120	Pressure loss during dosage
121	Internal device voltage 24V got lost or too low

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EC – Declaration of Conformity

We, CAMAG Chemie-Erzeugnisse und Adsorptionstechnik AG
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Switzerland

declare under our sole responsibility that the product

CAMAG® Linomat 5

Product name

022.7808

Article number(s)

to which this declaration relates is in conformity with the following provisions of directive(s):

- 2006/95/EC
- 2004/108/EC

Following standard(s) or other normative document(s):

- EN61010-1: 2010
- EN61326-1: 2013

Muttenz, 26 March 2015



Walter Rahm, Head of Quality Management

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