

Linistat™ Linear Stainer Operator Guide - English

A79810100 - Issue 2



Thermo
SCIENTIFIC

© 2007 Thermo Fisher Scientific. All rights reserved.

Thermo Shandon Limited is an ISO 9001 and TickIT Accredited Company

Thermo Fisher Scientific is the trading name of Thermo Shandon Limited

All other trademarks are the property of Thermo Fisher Scientific and its subsidiaries

Thermo Fisher Scientific makes every endeavour to ensure that the information contained in its support documentation is correct and clearly stated but does not accept responsibility for any errors or omissions. The development of Thermo Fisher products and services is continuous. Make sure that any published information that you use for reference is up to date and relates to the status of the product. If necessary, check with Thermo Fisher or your local Thermo Fisher representative.

This manual may not, in whole or in part, be copied, photocopied, reproduced, translated, or converted to any electronic or machine readable form without prior written consent of Thermo Fisher.

All information contained in this manual is proprietary and confidential, and the exclusive property of Thermo Fisher Scientific. This manual is protected by copyright and any reproduction is prohibited. This manual is for use only by the individuals to whom it has been made available by Thermo Fisher Scientific.

Contact Addresses

Anatomical Pathology
Tudor Road, Manor Park
Runcorn, Cheshire
WA7 1TA, UK

Anatomical Pathology
4481 Campus Drive,
Kalamazoo,
MI 49008, USA

Tel: +44 (0)1928 534000
Fax: +44 (0)1928 534001
www.thermoscientific.com/pathology

Tel: 1-800-522-7270
Fax: +1 269-372-2674
www.thermoscientific.com/pathology



The Linistat™ Linear Stainer meets the following CE Mark requirements:

In Vitro Diagnostic Directive 98/79/EC

Low Voltage Directive 2006/95/EC, as amended by 93/68/EEC

The Linistat™ is referred to throughout this document as the Linistat.



Symbols

The following symbols and conventions are used throughout this manual and on the instrument.



THIS SYMBOL IS USED ON THE EQUIPMENT, OR IN A DOCUMENT, TO WARN THAT INSTRUCTIONS MUST BE FOLLOWED FOR SAFE AND CORRECT OPERATION. IF THIS SYMBOL APPEARS ON THE INSTRUMENT, ALWAYS REFER TO THIS OPERATOR GUIDE.



THIS SYMBOL IS USED ON THE EQUIPMENT, OR IN A DOCUMENT, TO WARN THAT THERE MAY BE A BIOHAZARD ASSOCIATED WITH THE INSTRUMENT. ALWAYS ACT WITH COMMON SENSE AND BE AWARE OF THE SAMPLES USED. TAKE SUITABLE PRECAUTIONS.



THIS SYMBOL WARNS YOU THAT SURFACES ARE HOT. IF THIS SYMBOL APPEARS ON THE INSTRUMENT, ALWAYS REFER TO THIS OPERATOR GUIDE.



THIS SYMBOL IS USED ON THE EQUIPMENT, OR IN A DOCUMENT, TO WARN THAT HARMFUL CHEMICALS ARE USED WITH THE INSTRUMENT. REFER TO THE MATERIAL SAFETY DATA SHEETS FOR THE CHEMICALS USED. ALWAYS ACT WITH COMMON SENSE AND BE AWARE OF LOCAL LABORATORY PROCEDURES. TAKE SUITABLE PRECAUTIONS.

Warning A warning is given in the document if there is a danger of personal injury or damage to samples or equipment.

Note *Notes give more information about a job or instruction but do not form part of the instructions.*

Contents

| | |
|---|------------|
| How To Use This Guide | vii |
| Chapter 1 Introducing the Linistat | 1 |
| Identification of Parts | 1 |
| System Specification | 4 |
| Chapter 2 Daily Operation | 5 |
| Start-Up Procedure | 5 |
| Staining Method | 6 |
| Loading Slides | 9 |
| Using the Running Water Feature | 12 |
| Chapter 3 Installation and Setup | 15 |
| Unpacking | 15 |
| Positioning the Linistat | 16 |
| Fitting the Pipework | 16 |
| Electrical Connection | 19 |
| Performance Checks | 20 |
| Chapter 4 Troubleshooting | 23 |
| Water Circulation System | 23 |
| Slide Transportation System | 24 |
| Chapter 5 Cleaning and Maintenance | 25 |
| Safety | 25 |
| Internal Cleaning | 27 |
| Cleaning Staining Jars | 27 |
| Cleaning the Covers | 27 |
| Changing Fuses | 28 |

| | |
|---|-----------|
| Appendix A Spares and Accessories | 31 |
| Instruments | 31 |
| Spare Parts | 31 |
| Accessories | 32 |
| Appendix B Packing Instructions | 33 |
| Appendix C Declaration of Conformity | 35 |
| Index | 37 |

How To Use This Guide

Introduction

The Linistat Linear Stainer is designed for use in laboratories by operators familiar with staining techniques and laboratory equipment.

Before operating this instrument, users should have read and understood the [Safety Section](#) of the [Safety and Warranty Booklet \(A79910001\)](#).

Chapter 1 Introducing the Linistat

This chapter gives a tour of the instrument and its features. It describes the different parts of the instrument and gives information with regards to the system specifications and interfacing techniques.

Chapter 2 Daily Operation

This chapter explains the operating techniques required for day-to-day use of this Linistat instrument.

Chapter 3 Installation and Setup

This chapter provides all the information required to safely unpack, install and setup the Linistat instrument.

Chapter 4 Troubleshooting

This chapter is designed to help users identify and fix commonly encountered problems.

Chapter 5 Cleaning and Maintenance

This chapter give advice on safe cleaning procedures as well as basic user maintenance methods.

Chapter 1 Introducing the Linistat

Identification of Parts

The following diagrams identify the different components of the Linistat.

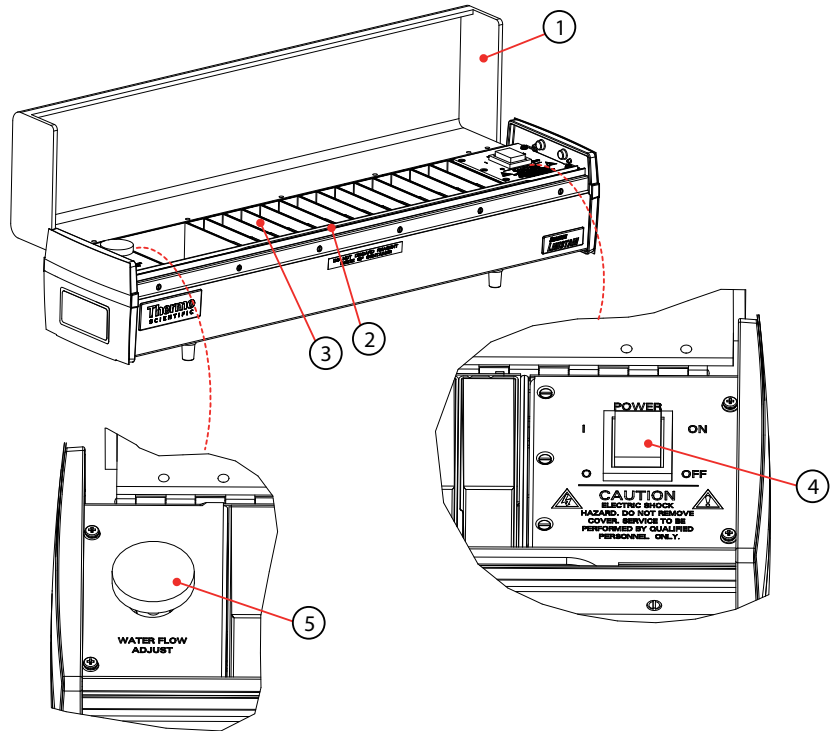


Figure 1-1. Front view of the Linistat.

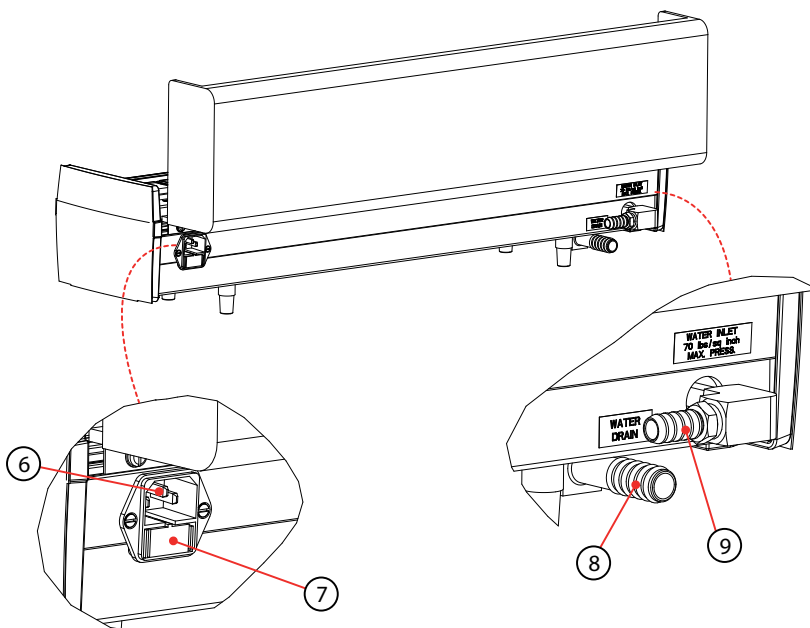


Figure 1-2. Rear view of the Linistat.

| Item | Description |
|------|-----------------------------|
| 1 | Instrument Cover |
| 2 | Slide Transportation System |
| 3 | Staining Jar |
| 4 | Power Switch |
| 5 | Water Flow Control |
| 6 | Power Connector |
| 7 | Fuse |
| 8 | Water Drain Connector |
| 9 | Water Inlet Connector |

Table 1-3. List of parts for the Linistat.

Slide Clip

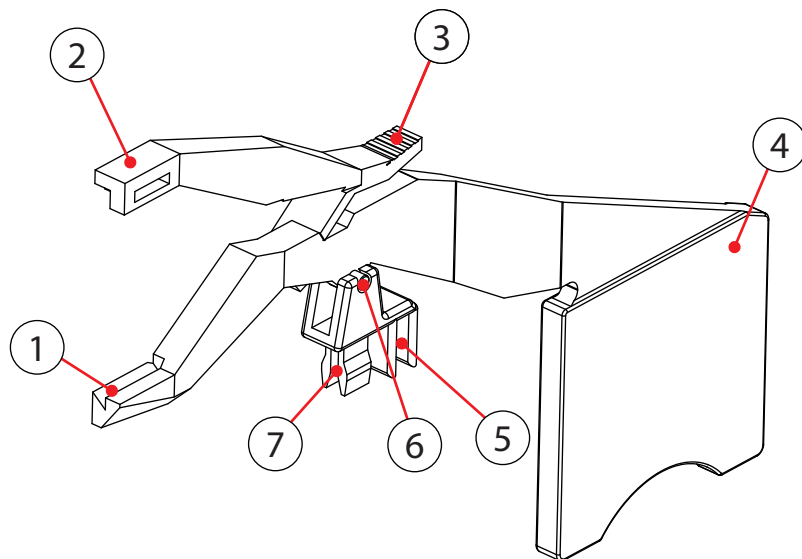


Figure 1-4. Slide clip for use with the Linistat.

| Item | Description |
|------|----------------|
| 1 | Lower Jaw |
| 2 | Upper Jaw |
| 3 | Slide Release |
| 4 | Counter-weight |
| 5 | Rail Guide |
| 6 | Pivot |
| 7 | Chain Insert |

Figure 1-5. List of features of the slide clip.

System Specification

The following tables show the Technical Specifications for the Linistat.

| | |
|--------|---|
| Height | 190 mm (7½ in) 260 mm (10¼ in) – Clearance |
| Length | 640 mm (25 in) |
| Width | 190 mm (7½ in) |
| Weight | 7.3 kg (16.3 lbs) |

Table 1-6. Linistat system mechanical specification.

| | | |
|-----------|---------------------------|---------------------------|
| Voltage | 110 - 120 V _{ac} | 220 - 240 V _{ac} |
| Frequency | 60 Hz | 50 Hz |
| Power | 300 VA (Max.) | |
| Fuses | T 2.5 A | T 1.25 A |

Table 1-7. Linistat system electrical specification.

| Warning - For indoor use only | |
|--------------------------------------|---|
| Temperature (Operating Limits) | +5°C to +40°C (+41°F to +104°F) |
| Temperature (Storage) | -25°C to +55°C (-13°F to 131°F) +70°C (158°F) for short exposure |
| Relative Humidity | Max. 80% RH up to 31°C Decreasing linearly to 50% RH at 40°C |
| Altitude | Up to 2,000 m (6,500 ft) |
| Pollution Degree | 2 |
| Over Voltage Category | II |

Table 1-8. General environmental specification.

Chapter 2 Daily Operation

Start-Up Procedure

To start-up the Linistat:

- Raise the Instrument Cover to allow access to the Power Switch.
- Switch the Power Switch to the ON (I) position.
- The Power Switch will light up and the chain of the Slide Transportation System will begin to move.



Warning To avoid injury, ensure that nothing is obstructing the movement of the chain before turning the power on.

Staining Method

How to Determine a Staining Sequence

The Linistat uses a constantly moving Transportation System to move slides through a predetermined sequence of reagents.

Exposure to reagents is a major factor in determining the staining quality.

There are two methods of controlling the exposure to reagents, which can be used either independently or together to tailor a sequence to give the desired effect.



Warning The following control techniques do not refer to any particular cases or reagents, and use generic examples. They do not take into account real-life factors such as reagent carry-over, temperature effects or any other factors which may affect staining. Therefore, all staining sequences should be thoroughly tested before being used on irreplaceable specimens.

Immersion Time

The Linistat instrument allows a single slide to be immersed in a reagent for 20 seconds.

The addition of extra Staining Jars full of exactly the same reagents will result in extended immersion time.

Example *3 consecutive jars of Reagent 'A' on the Linistat will equate to an immersion time of 1 minute.*

Note *Staining Jars are available in single and double widths to facilitate this control method.*

Reagent Concentration

The concentration of a reagent will also affect the amount of exposure.

The following graph illustrates the approximate relationship between reagent concentration and equivalent time spent immersed in the reagent.

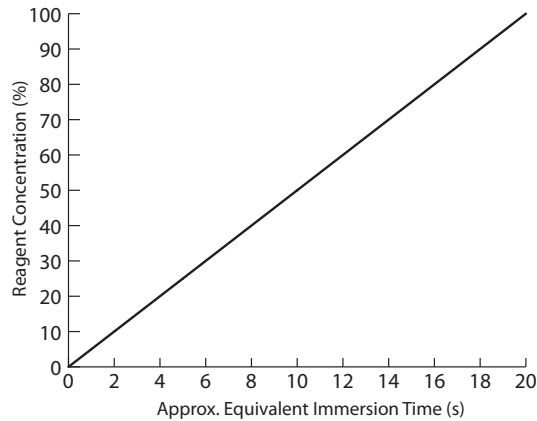


Figure 2-1. Concentration vs. Time Graph for the Linistat

Combining Both Control Methods

In order to fine-tune a sequence it may be necessary to combine both control methods.

Example *An equivalent immersion time of 50 seconds in Reagent 'A' at 100% concentration is required using the Linistat instrument.*

A Possible Solution

Two single width jars (or one double width jar) at 100% concentration (40 seconds), followed by one single width jar at 50% concentration (10 seconds).

Note *The number of possible solutions for this example are numerous, and some may work better than others. It is recommended that any procedure be thoroughly tested before use.*

Filling Staining Jars with Reagents



Warning Turn off the water flow before removing Staining Jars or Rinse Jars.

- Once the Staining Procedure has been established, arrange the empty Staining Jars and Rinse Jars as required in the instrument.
- Carefully fill each Staining Jar with the appropriate reagent.
- Each Staining Jar should contain approximately 125ml of reagent.

Note *Double width Staining Jars are available and should contain approximately 250ml of reagent.*

Loading Slides

Loading Slides into Slide Clips

- Push down on the Slide Release lever to increase the separation between the Upper and Lower Jaws.

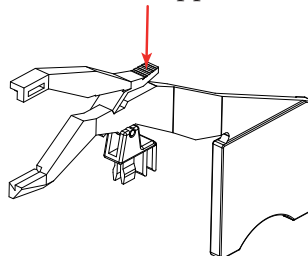


Figure 2-2. Separating the Upper and Lower Jaws.

- Insert the Slide so that it sits securely in the recesses in the Jaws.

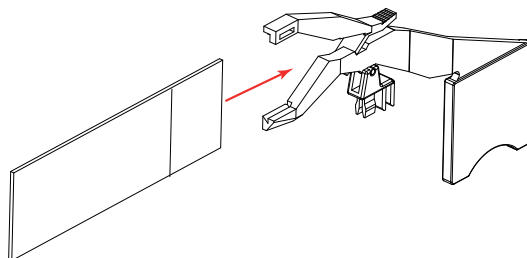


Figure 2-3. Inserting the Slide.



Warning Slides should fit easily into the recesses in the Jaws. If the slides do not fit easily use a thinner slide - do not modify the Jaws or force the slide as this may cause injury or damage.

- Allow the Jaws to grip the Slide by letting go of the Slide Release lever.

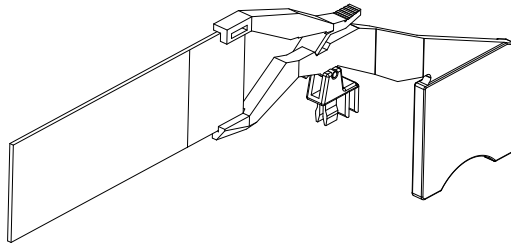


Figure 2-4. Slide held securely by clip.

Loading Slide Clips onto the Slide Transportation System

- Load Slide Clips as instructed above.
- Orient the Slide Clip so that the Slide is towards the rear of the instrument.
- Push the Chain Insert between any two Pins on the chain at the input end of the instrument.

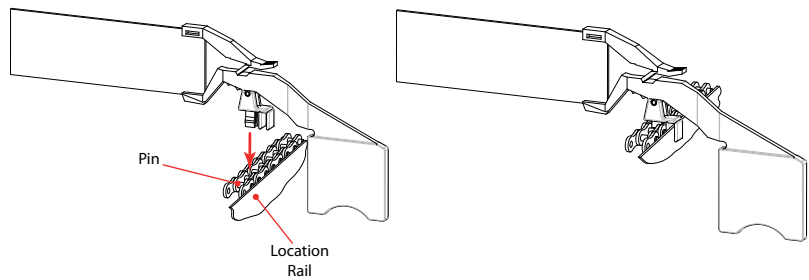


Figure 2-5. Attaching a slide clip to the transportation system.

Note *Ensure the Rail Guide fits around the Location Rail.*

- When correctly fitted, the Slide Clip should be free to tilt up and down as shown.

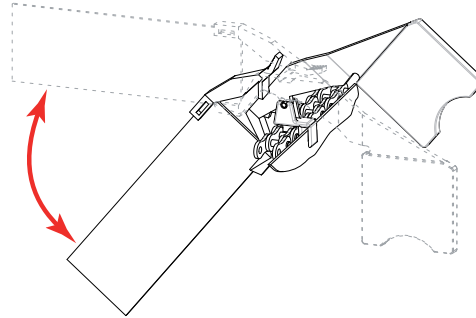


Figure 2-6. Loaded slide clip showing correct range of movement.

Using the Running Water Feature

The Linistat has a Running Water Wash feature which allows some of the staining stations to become running water stations.

Table 2-7 shows the number of stations that the Linistat allows to be used as running water stations.

| Total No. of Stns | No. of Running Water Stns. |
|-------------------|----------------------------|
| 14 | 13 |

Table 2-7. Possible number of running water stations.

Note *The pipework to the Water Inlet, Drain (and Overflow if fitted) Connectors must be correctly installed to use the Running Water Feature.*

Turning the Water On

- Turn the Water Flow Control knob anti-clockwise to start the water flow.

Adjusting the Water Flow Rate

The flow rate of the water can be altered using the Water Flow Control knob as shown.

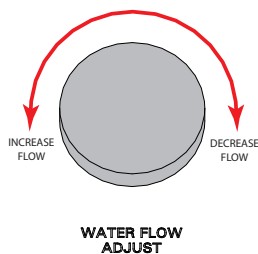


Figure 2-8. Operation of the water flow control knob.

Note *Turning the Water Flow Control knob clockwise all the way will turn off the water flow.*

Rinse Jar Setup

A standard Staining Jar can be made into a Rinse Jar to allow a continuous flow of water through it.

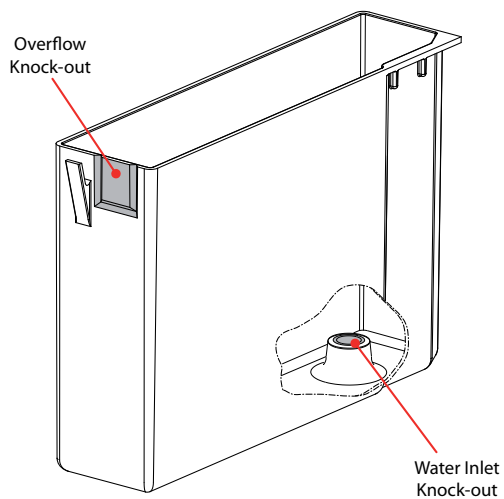


Figure 2-9. Location of knock-outs for use as a rinse jar.

- Use a pair of pliers to carefully remove the Overflow Knock-out.
- Use a suitable rod to remove the Water Inlet Knock-out.

Setting Running Water Stations

The Linistat has a Delivery Pipe with several Outlets for locating Rinse Jars on.

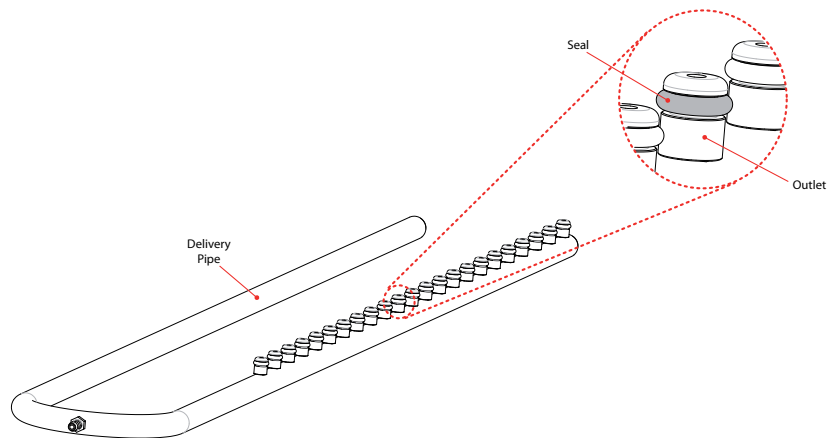


Figure 2-10. Identification of internal plumbing features.

- Ensure that a Rinse Jar is positioned at a station with an Outlet.
- Push the Rinse Jar down firmly so that the Water Inlet seals properly with the Outlet on the Delivery Pipe.

Note *The Overflow should be positioned towards the rear of the instrument.*

If the Rinse Jar feels loose, ensure that the Seal on the Outlet is not damaged, dislodged or missing.

Chapter 3 Installation and Setup

Unpacking No special tools are required for the unpacking of this instrument.



Warning Always exercise reasonable care when removing this Linistat instrument from its shipping container.



Warning Do not use blades or other sharp implements to cut any part of the packaging.



Warning This Linistat instrument may be heavy and require more than one person to allow safe lifting.



Warning Always ensure that the instrument is supported at both ends when lifting.

It is recommended that the shipping container and all packing materials be stored in case it is necessary to re-pack the instrument for any reason.

After unpacking, carefully inspect the instrument and accessories for visible signs of damage.

Check that all the items listed on the Packing List (A798-1901) are present.

In the event of damaged or missing items please contact your Thermo Fisher Scientific representative.

Positioning the Linistat

This instrument should be located on a suitable, level workbench.

It must have easy access to a water supply and a suitable source of electricity.

The drain point must be located below the instrument.

This instrument should be positioned so that it has at least 100mm of clearance around each side.

The Linistat comes ready for use and does not require any extra assembling.

Fitting the Pipework

The pipework should be fitted as follows:

- Locate the 10mm bore, clear PVC pipe and (one of) the 13mm bore, black PVC pipe(s).
- Place a hose clip over each pipe as shown.

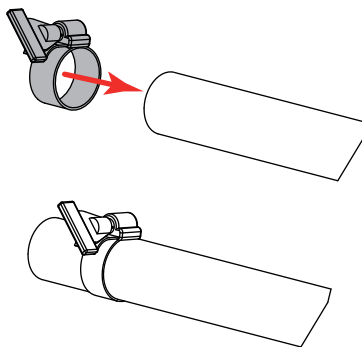


Figure 3-1. Locating the hose clips.

- Push the end of the clear tube over the Water Inlet Connector, and the black tube over the Water Drain Connector.

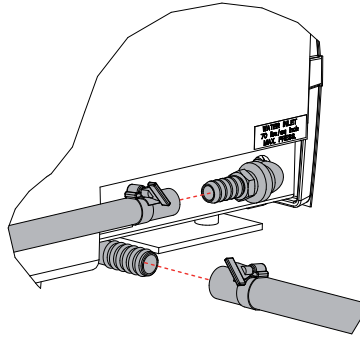


Figure 3-2. Attaching the PVC tubes.

Note *Immersing the ends of the tubes in hot water for 30 seconds will allow the tubes to be fitted over the connectors more easily.*

- Position the hose clips so that they are over the barbed portion of the connectors and tighten using the thumbscrews as shown.

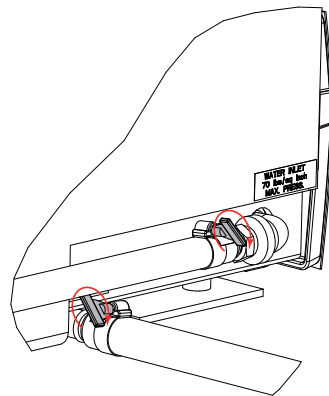


Figure 3-3. Tightening the thumbscrews.

- Attach the opposite end of the clear PVC tube to the water supply using appropriate means.

Note *An extra hose clip is supplied with the instrument for this purpose.*

- Locate the opposite end of the black PVC tube in a drain below the level of the Water Drain Connector.



Warning Failure to ensure that the drain is lower than the Water Drain Connector may result in the waste water backing up in the system and causing it to overflow.



Warning Maximum water pressure at Inlet must not exceed 70psi.

Electrical Connection



This instrument should be connected to a suitably rated and earthed Mains power outlet as follows:

Warning Ensure that the Power Switch on the instrument and at the Mains supply is in the 'Off' position before making any electrical connections.

- Plug the relevant end of the Mains Lead into the Power Connector on the back of the instrument.

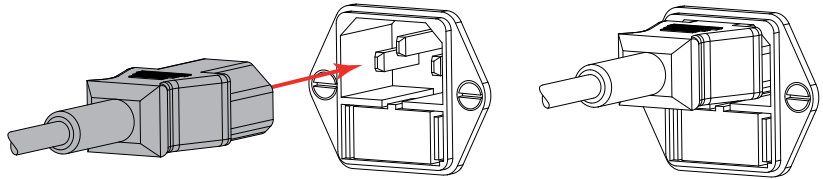


Figure 3-4. Connecting the instrument to the Mains supply.

- Plug the opposite end of the Mains Lead into the Mains power outlet.
- Switch the Mains power outlet 'On'.

Performance Checks

Power On Check

- Make sure that the Slide Transportation System is moving.

Water Circulation System Check

- Turn the Water Flow Control fully clockwise.
- Turn the main water supply 'On'.
- Turn the instrument water flow 'On' (see [Chapter 2 - Using the Running Water Feature](#)).
- Turn the Water Flow Control anti-clockwise by a small amount to allow the air to be expelled from the system.
- Observe the Rinse Jars to ensure that water is entering through the Water Inlet Knock-outs.
- Steadily increase the water flow to produce a gentle circulating flow throughout the system.
- All the Rinse Jars should fill up to the Overflow Knock-out before overflowing and running out via the drain.
- Check that the drainage is functioning correctly and that the water does not back-up into the instrument.
- Check that there are no kinks which might impede the flow in either the drain or the water supply tube.
- Switch the water flow 'Off' and ensure that the water flow stops immediately.

Slide Transportation System Check

- Load a slide into a Slide Clip (see [Chapter 2 - Loading Slides](#)).
- Load the Slide Clip onto the Slide Transportation System.
- Check that the Slide Clip travels smoothly from right to left.
- Check that the Slide dips into each pot and pivots upwards as it reaches the opposite edge.

Note *If the Slide Clip does not function properly, try another Clip to ensure that the problem is not a faulty pivot.*

- Allow the Slide Clip to travel to the far left of the instrument.
- The Slide Clip should automatically disengage from the Transportation System and remain stationary in the unloading area.

Chapter 3 - Installation and Setup

Chapter 4 Troubleshooting

Water Circulation System

| Problem | Action |
|--|--|
| Water enters some but not all of the Rinse Jars. | Check that the Water Inlet Knock-outs have been removed from all the appropriate jars. |
| | Check that all the Delivery Tube Outlets are clear. |
| | Check that water flow rate is sufficient. |
| | Remove all Jars and check the condition of the Outlet Seals and replace if necessary. |
| | If problem persists, contact Thermo Fisher Scientific Service Department. |
| Water backs-up into instrument. | Check that the drainage tube is not kinked or obstructed in some way. |
| | Check that the whole of the drainage tube is below the base of the instrument. |
| | Check that the Water Drain Connector is free from debris. |
| | If problem persists, contact Thermo Fisher Scientific Service Department. |
| Water flow through Rinse Jars is inadequate. | Check that water flow rate is sufficient. |
| | Remove all Jars and check the condition of the Outlet Seals and replace if necessary. |
| | If problem persists, contact Thermo Fisher Scientific Service Department. |

Figure 4-1. Water circulation system troubleshooting table.

Slide Transportation System

| Problem | Action |
|--|---|
| Chain does not move. | Check that the instrument is plugged in to a suitably rated Mains power supply. |
| | Check that the instrument is switched 'On' at the Power Switch. |
| | Check the fuse(s) and replace if necessary (see Chapter 5 - Replacing Fuses). |
| | If problem persists, contact Thermo Fisher Scientific Service Department. |
| Slide Clips detach from the Slide Transportation System prematurely. | Ensure that correctly sized slides are being used (see Chapter 2 - Loading Slides). |
| | Check the condition of the Staining Jars. Look for: <ul style="list-style-type: none"> • Worn or rough edges • Warped Jars Replace Jars as necessary. |
| | Ensure Chain Inserts on the Slide Clips are located between chain pins NOT on them. |
| | Check that all Staining Jars are fully seated. |
| | If problem persists, contact Thermo Fisher Scientific Service Department. |

Figure 4-2. Slide transportation system troubleshooting table.

Chapter 5 Cleaning and Maintenance

Safety Before carrying out any cleaning or maintenance procedures the user must have read and understood the following statements:



Warning If the Instrument has been used with, or has come into contact with, hazardous material, ensure that the appropriate decontamination procedures have been followed (See World Health Organization 'Laboratory Biosafety Manual').



Warning Cleaning or decontamination methods, other than those recommended in this document, should be checked with a Thermo Fisher Scientific agent to ensure that they will not damage the instrument.



Harmful Always wear suitable protective coverings when carrying out cleaning using chemicals.



Warning Do not use chemicals which may interact with the materials of manufacture - If in doubt contact your Thermo Fisher Scientific agent.



Warning Do not use hypochlorites in strong solution.



Warning Do not use abrasive compounds or metal components to clean the Instrument or its accessories.



Warning Always clean up spills immediately.



Warning In the event of a major spillage on or around the Instrument, immediately disconnect the instrument from the Mains supply, and do not reconnect until the instrument has been thoroughly dried and checked by a Thermo Fisher Service Engineer.



Warning Potentially lethal voltages in excess of 110VAC are present within the Instrument - Do not remove any access covers.



Warning Disconnect the Instrument from the Mains before cleaning.



Warning Inspect the instrument for obvious damage or wear whenever it is being cleaned.

Cleaning the Covers

Clean the outer covers as required in the following manner:

- Use a clean, damp cloth and mild detergent to wipe the surfaces.



Warning Never use solvents on the covers as these may discolour the plastic parts.

Internal Cleaning

Clean the inner surfaces and compartments as required in the following manner:

- Use a vacuum cleaner with a non-metallic nozzle to remove any accumulated dust within the instrument.
- Use a clean damp cloth and mild detergent to wipe the surfaces.

Cleaning Staining Jars

Clean the Staining Jars as required in the following manner:

- Remove the Staining Jars and Evaporation Covers (if present) and dispose of any remaining reagents.



Harmful Take any necessary precautions to protect against any residual reagents present in the Staining Jars.

- Use a 10% commercial, Hypochlorite bleach solution in water to disinfect the Staining Jars and Evaporation Covers.
- Rinse with distilled water and dry thoroughly.

Changing Fuses

To change the fuse(s) in the Linistat instrument:



Warning The fuse(s) should only be replaced by a competent person.

- Remove the Power Lead from the Power Connector.

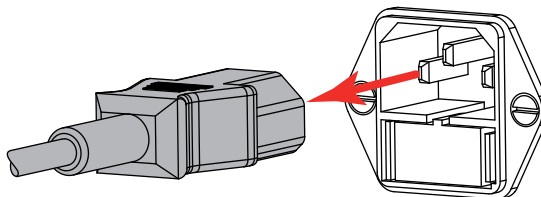


Figure 5-1. Removing the power lead.

- Open the Fuse Drawer by squeezing the two latch pieces together as shown.

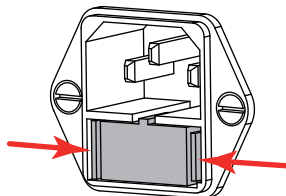


Figure 5-2. Opening the fuse drawer.

- Remove the Fuse Drawer from the Power Connector.

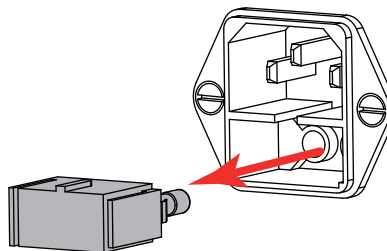


Figure 5-3. Removing the fuse drawer.

- Check and replace the fuse(s) as necessary.

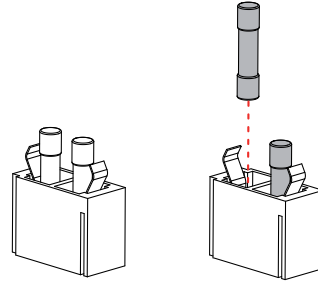


Figure 5-4. Replacing the fuses.

Note *The 220-240V model of each instrument uses two fuses, whereas the 110-120V model uses just one.*

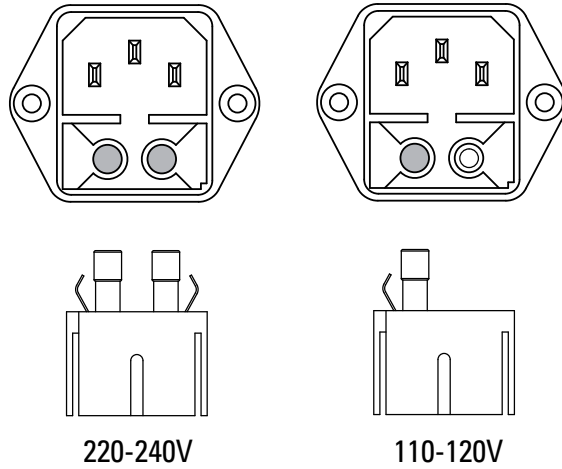


Figure 5-5. Fuse arrangements in the different voltage models.

Chapter 5 - Cleaning and Maintenance

Appendix A Spares and Accessories

Instruments

| Part No. | Item |
|-----------------|----------------------------|
| B1000200 | Linistat, 110 - 120V, 60Hz |
| B1000201 | Linistat, 220 - 240V, 50Hz |

Spare Parts

| Part No. | Item |
|-----------------|--|
| A79810001 | Valve complete |
| A79810033 | Manifold complete |
| A79810039 | Rinse water tubing kit |
| A79810040 | Motor kit for 120V Linistat |
| A79810044 | Fuse kit |
| A79820059 | Switch mounting plate |
| A79830020 | Jar tank |
| A79830027 | Gasket - drain coupling |
| A79830028 | Drain coupling |
| A79830036 | Xylene tank |
| A79830041 | Instrument cover |
| AP15371 | Steel chain (6.35mm pitch, 978mm length) |
| AP15380 | Mains connector (125/250V, 10A, double fuse) |
| AP15381 | Mains connector (125/250V, 10A, single fuse) |
| AP15387 | Thermostat |
| AP15389 | Type T thermocouple |
| AP15422 | Mains connector (250V, 10A, single pole) |
| AP15423 | Fuse drawer (250V, single pole) |
| AP15428 | Mains connector (250V, 10A, double pole) |
| AP15429 | Fuse drawer (250V, double pole) |
| AP15430 | Rocker switch (Illuminated DPST, 250V, 16A, green) |

Appendix A - Spares and Accessories

| Part No. | Item |
|-----------------|---|
| AP15437 | Brass angle toggle valve |
| AP15440 | Steel chain (6.35mm pitch, 2756mm length) |
| AP15464 | Steel chain (6.35mm pitch, 1663.7mm length) |
| P05943 | Sealant (Arbosil 1081 silicon sealant, translucent) |
| P11824 | Lubricant (lithium based) |
| P12031 | Mains lead set – UK |
| P12032 | Mains lead set – US |
| P12033 | Mains lead set – Europe |

Accessories

| Part No. | Item |
|-----------------|--------------------------------|
| 6754002 | Slide clips - white (25/pk.) |
| 6754005 | Slide clips - pink (25/pk.) |
| 6754006 | Slide clips - blue (25/pk.) |
| 6754007 | Slide clips - yellow (25/pk.) |
| 6754008 | Slide clips - green (25/pk.) |
| 6754003 | Staining jar - single (10/pk.) |
| 6754004 | Staining jar - double (5/pk.) |
| A79830022 | Evaporation cover |

Appendix B Packing Instructions

Prior to returning merchandise, please call the manufacturer for a Return Authorization Number. This number must appear on all paperwork and the carton.

If it becomes necessary to pack the stainer, and you no longer have the original carton with the special foam packing, proceed as follows:

- Enclose stainer in a plastic bag or suitable complete wrapping to prevent packaging materials from entering.
- Place stainer in a heavy duty corrugated cardboard carton and pack with soft packing material.
- Seal the inner carton and place it in an extra-strength outer carton.
- The outer carton must be large enough to allow a minimum of two inches of packing on all sides of the inner pack.
- Seal the outer package and mark it **FRAGILE**.
- Return by common carrier.

Appendix c Declaration of Conformity

ThermoFisher
SCIENTIFIC

The world leader
in serving science

Declaration of Conformity

This Declaration of Conformity, issued under our sole responsibility, is only valid when the instrument is used in accordance with the instructions for use.

Manufacturer's Name: Thermo Shandon Limited (Trading as Thermo Fisher Scientific)

Manufacturer's Address: Tudor Road, Manor Park, Runcorn,
Cheshire, WA7 1TA
UNITED KINGDOM

Product Description: Slide Stainer

Product Designation: **Linistat**

Part numbers: Linistat: A79800101, A79800102

including accessories supplied as standard and the following accessories

Staining Dishes: Double: 6754004, Single: 6754003

Slide Clips: 6754002, 6754005, 6754006, 6754007, 6754008

Year of Marking (CE): 1997

This product conforms to the essential requirements of the following directives:

In Vitro Diagnostics Directive 98/79/EC
Low Voltage Directory 2006/95/EC

This product complies with the following International Standards:

EMC: EN 61326
EN 61000-3-2

Safety: EN 61010-2-101:2002
EN 61010-1
CAN/CSA C22.2 No. 1010.1-92
UL 61010A-1

Issued by: K. Waldron
Quality Manager
Thermo Fisher Scientific
Anatomical Pathology Division



Date: 27th February 2012

Optional accessories considered subject to the In Vitro Diagnostic Medical Devices Directive (IVDD) are specifically identified on this Declaration of Conformity. Further supplies of standard accessories are treated as spares. Convenience aids offered as accessories are not subject to the IVDD.

Index

Symbols

10mm bore pipe 16

13mm bore pipe 16

A

Accessories list 32

Adjusting the water flow rate 12

B

Biohazard warning symbol iii

C

Cleaning cautions 25

Cleaning the covers 27

Clearance distance 16

Concentration v Time graph 7

Connecting to the power 19

Contact addressess ii

Control methods

Combining 7

Example of a combination of methods 7

Immersion time 6

Reagent concentration 7

D

Daily operation 5

Declaration of Conformity 35

Different voltage models 29

Dimensions 4

Drain position warning 18

E

Electrical specification 4

Environmental specification 4

F

Features of the side clip 3

Filling staining jars 8

Fitting the pipework 16

Attaching the PVC tubes 17

Drain position warning 18

Locating the hose clips 16

Maximum water pressure 18

Tightening the thumbscrews 17

Front view of Linistat 1

Fuse replacement 28

Fuse requirements 4

H

Harmful chemicals warning symbol iii

Hose clips 16

Hot surface warning symbol iii

Hypochlorite bleach solution 27

I

Immersion time of staining jars 6

Inner surface cleaning 27

Instrument positioning 16

Instrument start-up 5

Index

Internal plumbing features 14

Introduction vii

L

Loading slides 9

 Into side clip 9

 Onto transportation system 10

M

Mains power connection 19

Mechanical specification 4

O

Opening the fuse drawer 28

Outer cover cleaning 27

P

Packing material recommendation 15

Packing the instrument 33

Parts description 2

Performance checks

 Drainage 20

 Power on 20

 Slide transportation system 21

 Water circulation 20

Plugging in the instrument 19

Positioning the instrument 16

Power on check 20

Power requirements 4

Power switch 5, 19

PVC pipes

 10mm bore 16

 13mm bore 16

R

Reagent concentration 7

Rear view of Linistat 2

Recommended packing materials 33

Removing the fuse drawer 28

Replacing fuses 29

Return authorization number 33

Returning the instrument 33

Rinse jars 13

 Performance checks 20

 Positioning on delivery pipe 14

 Troubleshooting 23

 Water inlet knock-outs 13

Running water stations 14

Running water wash feature 12

 Allowable number of water stations 12

 Turning water on 12

S

Slide clip 3

 Loading slides 9

 Troubleshooting 24

Slide transportation system 10
 Loading slides 10
 Attaching a slide clip 10
 Performance check 21
 Troubleshooting 24
Spare parts 31
Spillage caution 26
Staining jars 6
 Cleaning 27
 Evaporation covers 27
 Filling 8
 Making into rinse jars 13
Staining sequence 6
Start-up procedure 5

T

Technical specifications
 Electrical 4
 Environmental 4
 Mechanical 4

U

Unpacking precautions 15

V

Voltage requirements 4

W

Warning symbol iii

Water circulation system
 Checking 20
 Troubleshooting 23
Water drainage troubleshooting 23
Water drain connector 17
Water flow 12
 Altering the rate 12
 Control knob 12, 20
Water inlet connector 17
Water stations 12
Weight of the Linistat 4