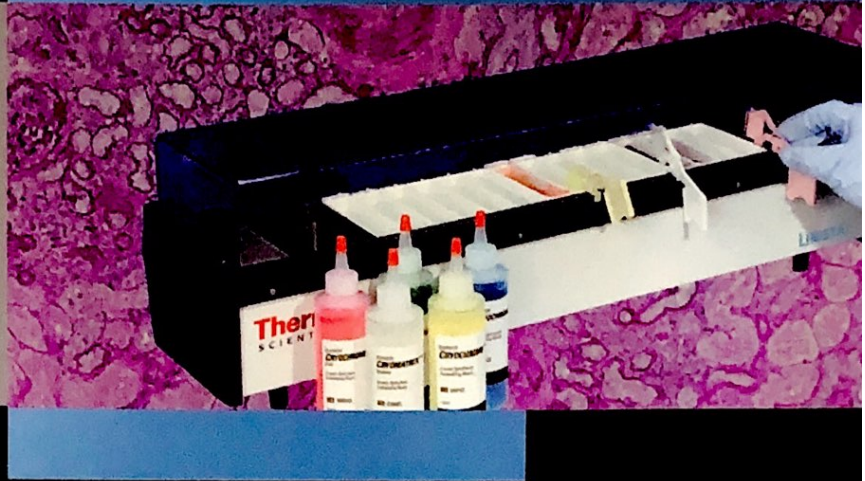


**Linistat™ Linear Stainer**  
**Operator Guide - English**  
A79810100 Issue 4



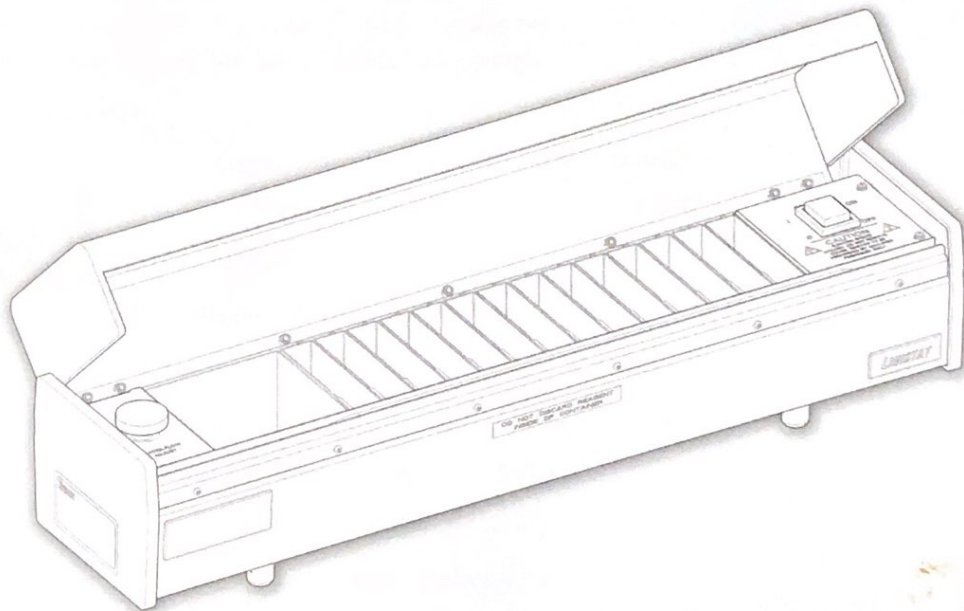
A79810100 Issue 4

**Thermo Scientific**

**Linistat™**

**Operator Guide**

**A79810100 Issue 4**



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LABORATORIES

## Company Information

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This instrument conforms to the essential requirements of:

*In Vitro Diagnostic Directive 98/79/EC*

*Machinery Directive 2006/42/EC*

## Symbols

The following symbols and conventions may be used throughout this document and on the instrument:



This symbol is used on the equipment, or in a document, to indicate that instructions must be followed for safe and correct operation. If this symbol appears on the instrument, always refer to the operator guide. This symbol is also used on the equipment, or in a document, to indicate that harmful chemicals are used. 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 and wear appropriate Personal Protective Equipment.



This symbol is used on the equipment, or in a document, to indicate 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 indicates that a surface is hot. If this symbol appears on the instrument, always refer to the operator guide. Take suitable precautions.



Manufacturer.

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# Safety Information

## Introduction

Thermo Fisher Scientific instruments are designed for convenient and reliable service; however, improper use or handling by a user may damage the instrument, or cause a hazard to health. The instrument must not be used in a manner not specified by Thermo Fisher Scientific. Correct maintenance procedures are essential for consistent performance. It is recommended that users secure a maintenance contract with our service department.

Any problems and queries should be referred to your Thermo Fisher Scientific service department..



**The following sections contain important information for the safe setup and use of the instrument, and should be read and understood by the user before using the instrument.**

## General Safety



Do not remove any panels or access covers, unless specifically instructed to do so. The instrument does not have any user serviceable parts. Potentially lethal voltages are present inside the instrument.

The instrument must be positioned such that it is possible to interrupt the Mains supply at the source by removing the plug from the socket.

Use only factory approved accessories or replacement parts within the instrument.

The instrument must be connected to the Mains via an earthed socket outlet.

Position the instrument such that it is possible to interrupt the Mains supply at the source by removing the plug from the socket.

If the equipment is used in a manner not specified by Thermo Fisher Scientific, the protection offered by the equipment may be impaired.

- All users must have read and understood the Operator Guide and these safety instructions; and only operate the unit in accordance with the instructions.
- Any problems and queries should be referred to your Thermo Scientific supplier.
- Correct maintenance procedures are essential for consistent performance. It is recommended that a Maintenance Contract is taken out with our Service Department.
- Any maintenance or service work required may only be carried out by trained personnel.
- The instrument should be placed on a suitable level surface and not in direct sunlight.
- Only use cleaning agents recommended in the Operator Guide



## Chemical Safety

This instrument, as supplied, conforms to IEC 61010-1; however, the addition of chemicals introduces potential hazards. Good Laboratory Practice must be employed and consideration must be given to the potential for hazard when dealing with these chemicals. The introduction of chemicals creates potential hazards. Thermo Fisher Scientific has adopted the following position with regard to the subject of volatile chemicals used in laboratories:



- Only use the approved cleaning reagents.
- The operator is fully aware of the contents of the Material Safety Data Sheets detailing the properties of the chemicals they are using.
- The operator has carried out any legally required assessment of chemicals used and is using good laboratory practice and wearing the appropriate PPE.
- The instrument contains no sources of ignition in any areas where reagents are used.
- Some reagents required for the use of this instrument are flammable. Do not bring sources of ignition in the vicinity of the instrument when it is loaded with reagents.
- Harmful chemical vapours such as Xylene and Toluene may be emitted during normal operation. Keep the lid closed when not in use.

## Environment

This instrument is required to comply with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive 2002/96/EC. It is marked with the following symbol:



At the end of the product life it must be recycled in accordance with local regulations. It can be returned to a Municipal Collection Facility or to the retailer when a replacement is purchased. Where applicable this facility will be offered by the Product dealer.

Further information on Thermo Scientific compliance with these Directives, the recyclers in your country, and information on Thermo Scientific products which may assist the detection of substances subject to the RoHS Directive are available from your distributor.

## Warranty Statement

Thermo Fisher Scientific is proud of their quality, reliability and of our after-sales service. We continuously strive to improve our service to our customers.

Please ask your distributor or Thermo Fisher Scientific representative about service contracts which can help maintain your instrument in an optimal operating condition.

Warranty provisions necessarily vary to comply with differences in national and regional legislation. Specific details can be found in the delivery documentation or from your dealer or representative.

Please note that your warranty may be invalidated if:

- This instrument is modified in any way, or not used as intended by Thermo Fisher Scientific.
- Accessories and reagents which have not been approved by Thermo Fisher Scientific are used.
- The instrument is not operated or maintained in accordance with instructions.

## **How to use this Guide**

### **Introduction**

Before operating this instrument, users should have read and understood the Safety section.

### **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 specification and interfacing techniques.

### **Chapter 2 – Installation and Setup**

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

### **Chapter 3 – Daily Operation**

This chapter explains the operating techniques required for day to day use of this 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 gives advice on safe cleaning procedures as well as basic user maintenance methods.

## Chapter 1 – Introducing Linistat

### Introduction

The Linistat linear stainer has been designed as a compact answer to H&E frozen section protocols. Designed for laboratory use the Linistat™ features an efficient footprint which fits on top of most cryostats for streamlining workflow during frozen sectioning. Other features include 14 staining stations (20 sec. each), running water and a 13 slide capacity collection tank. Staining time is under 5 minutes. Colour coded clips correspond to the coloured slides and coloured frozen section embedding media, Thermo Scientific™ Cryochrome™. For situations which require hand staining the technician may dip through the stations, eliminating the need to set up separate staining dishes.

### IVD Intended Use

The Linistat is intended to be used as an automated slide stainer designed for use in Histology and Cytology laboratories by trained medical laboratory technicians familiar with staining techniques and laboratory equipment. The Linistat is designed to stain fixed tissue or cell samples on microscope slides and make them available for subsequent examination by a technologist or pathologist.

### Note

*If required, training can be provided, Contact your Thermo Fisher Scientific distributor for more information.*

## Identification of Parts

The following diagrams identify the different components of the Linistat.

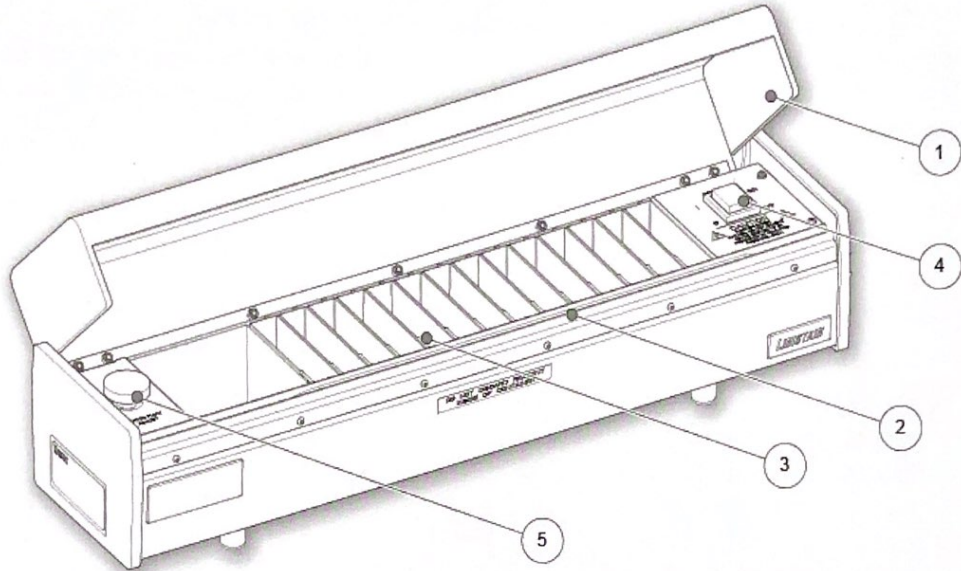


Fig 1-1

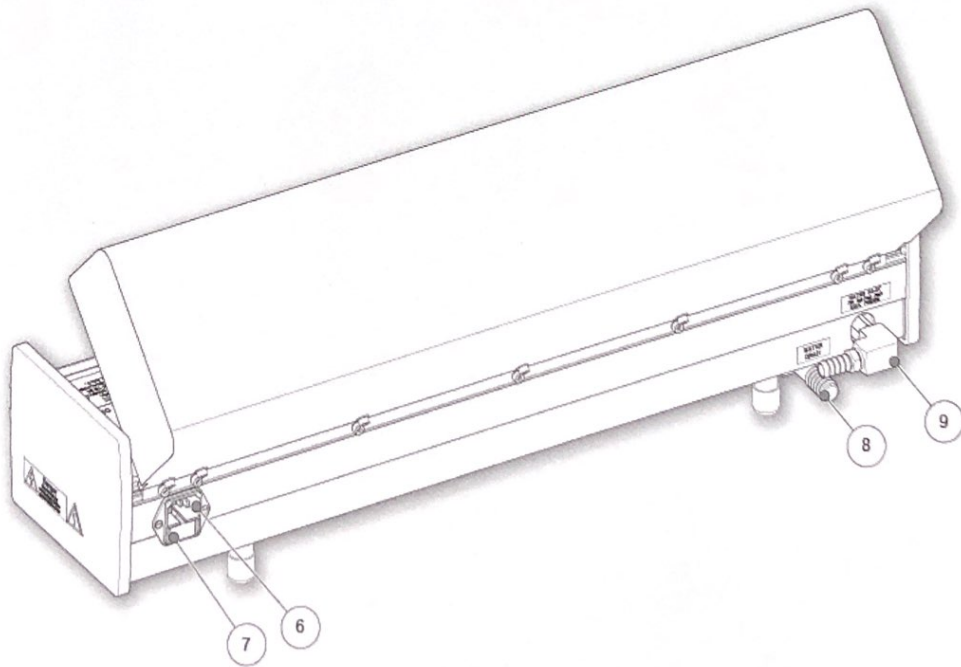
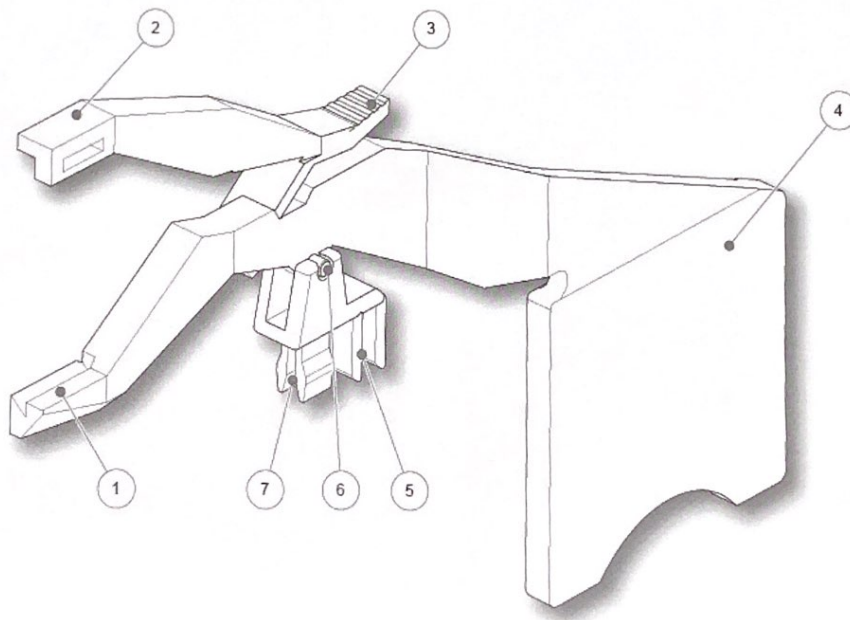


Fig 1-2

Item	Description
1	Instrument Cover
2	Slide Transport 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 Limistat*



*Fig 1-4 Slide Clip for use with Limistat*

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

## System Specifications

### Mechanical Specifications

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

### Electrical Specification

Voltage	115 V <sub>ac</sub>	230 V <sub>ac</sub>
Frequency	60 Hz	50 Hz
Current	1.0 A	0.5 A
Fuses	T 2.5 A 250 V	T 1.25 A 250 V

### Environmental Specification

<b>Warning - For indoor use only</b>	
Temperature (Operating Limits)	5 °C to 40 °C
Temperature (Recommended Operation)	+5°C to +40°C (+41°F to +104°F)
Temperature (Transportation and 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	Level 2
Over Voltage Category	II

## Chapter 2 – Installation and Setup

### Unpacking

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



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



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



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



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.

### Backflow Prevention



As supplied, the Linistat™ does not have a backflow protection device installed.



If required, a suitable backflow protection device, which complies with local regulations for potable water supplies and takes into account the nature of the specimens to be processed, should be installed with the water inlet pipe-work.



## 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.

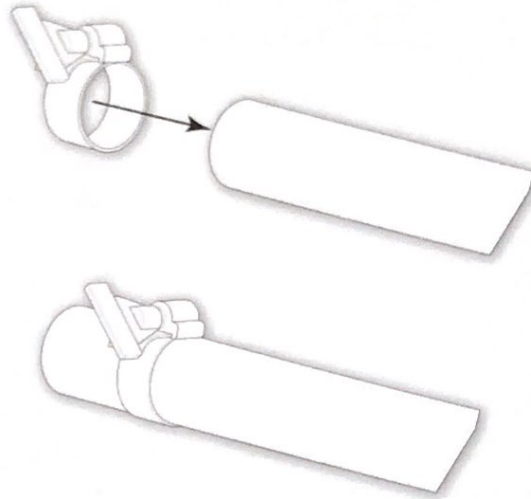


Fig 3-1 Locating the hose clips

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

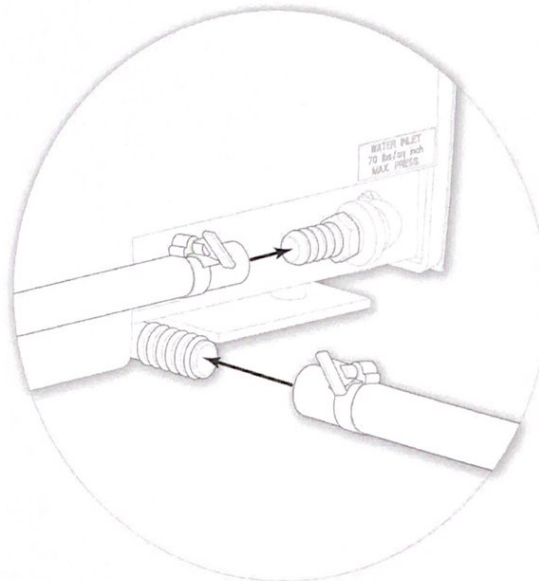


Fig 3-2 Attaching the PVC tubes

### 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.

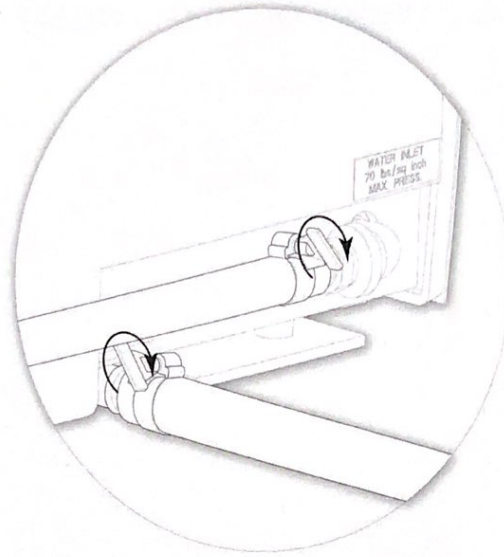


Fig 3-3 Tightening the thumbscrews

- 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.



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.



Maximum water pressure at Inlet must not exceed 70psi.



Only discharge waste water into the drain if allowed by local water regulations; if in doubt seek guidance from your local waste water authority.



Ensure water fittings are connected correctly. Consider nearby electrical connections and other risks.

## Fitting / Removing the Staining Jars

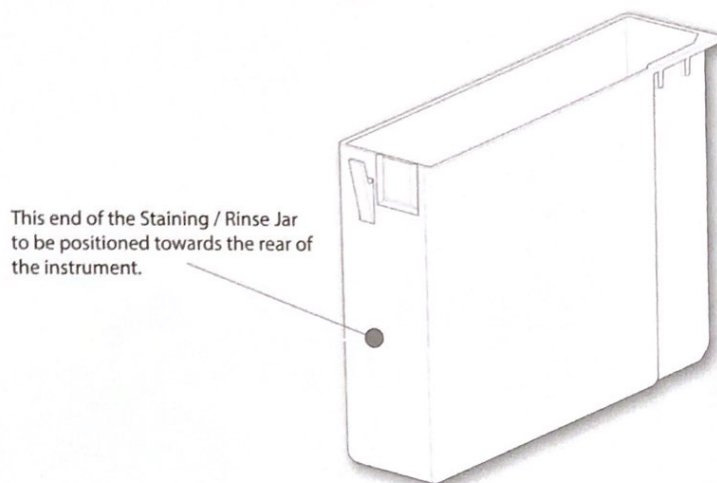


Fig 3-4 Staining / Rinse Jar

To install the Staining / Rinse Jar simply position it over one of the Water Inlets and push down firmly.

**Note**

*If the Staining / Rinse Jar feels loose ensure that the seal on the Outlet is not damaged, dislodged or missing.*

**Note**

*There must be a Staining / Rinse Jar in each available position to ensure that the slides will transport the length of the instrument and be deposited into the collection tank.*

To remove the Staining / Rinse Jar simply lift vertically clear of water inlets and straight up away from the instrument.

**Note**

*If possible, empty the Staining / Rinse Jars of reagents before removal from the instrument.*



If the Staining Jars cannot be emptied before removal then exercise caution when removing the Staining Jar to prevent spillage of reagents.



Ensure that the water flow is switched off before removing a Staining or Rinse Jar.

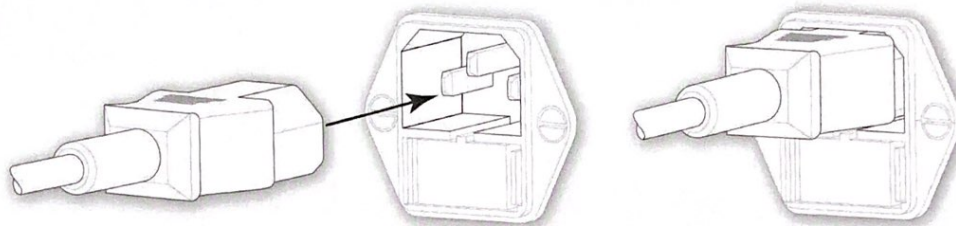
## Electrical Connection

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



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.



*Fig 3-5 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'.



Do not replace the Mains Lead with an inadequately rated lead.

## 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', refer to [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, refer to [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 – Basic Operation

### Start-Up Procedure

To start 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.



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.



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.



Always check slide transit time before use. The Linistat is designed for operation on the electrical supply defined in Chapter 1 - System Specifications. If fitted to a supply frequency outside of these limits the timing of 20 seconds per reagent could vary by up to 20% or more.

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.

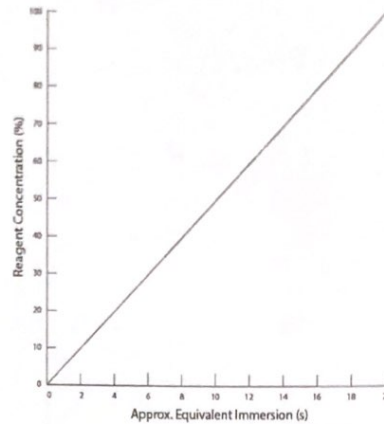


Fig 2-1

## 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



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.*

*See Chapter 2 for instructions on fitting and removing the Staining Jars and Rinse Jars.*

## Disposal of Reagent

Dispose of Reagents in accordance with local regulations.

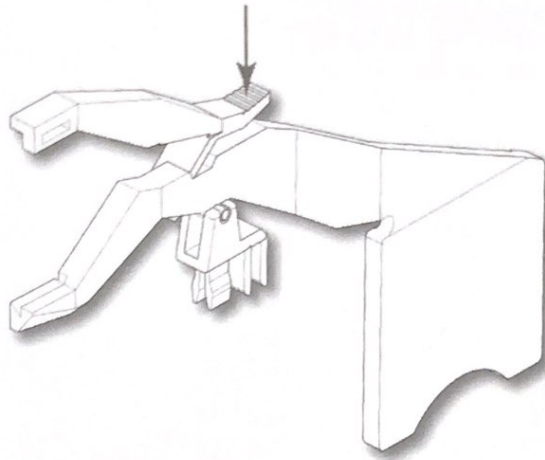


Do not discard reagent inside the Linistat.

## Loading Slides

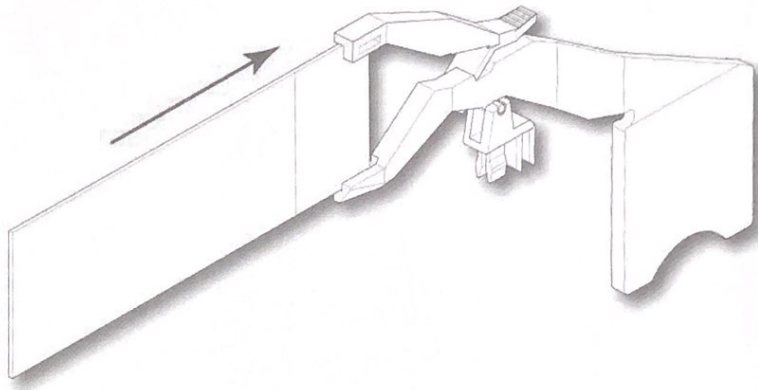
### Loading Slides into Slide Clips

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



*Fig 2-2 Separating the Upper and Lower Jaws*

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



*Fig 2-3 Inserting the Slide*



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.

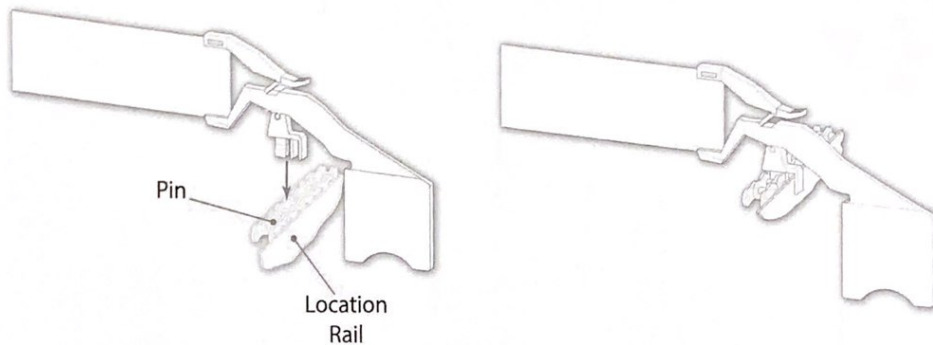


## Slide Dimensions

Length	Up to 76.5mm
Width	24.7 – 26.3mm
Thickness	0.8 – 1.2mm

## 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.

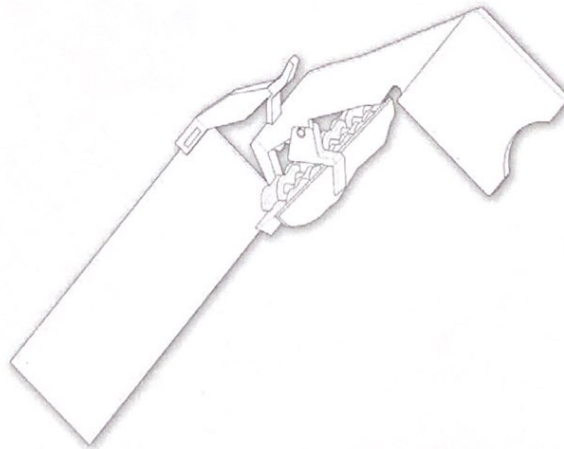


*Fig 2-4 Attaching a slide clip to the transportation system*

### Note

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

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



*Fig 2-5 Loading 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 2-6 shows the number of stations that the Linistat allows to be used as running water stations.

Total No of Stations	No. of Running Water Stations
14	13

Table 2-6 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.

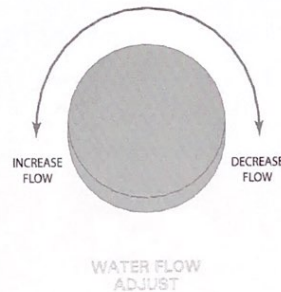


Fig 2-7 Operation of the water flow control knob



Ensure that running water has reached the overflow knock-out before starting to stain.

### 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.

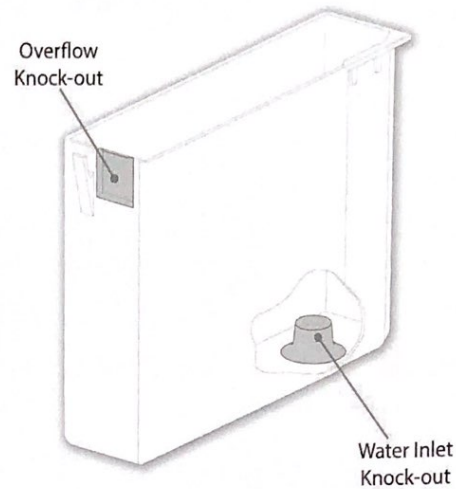


Fig 2-8 Location of knock outs for use as a rinse jar

- 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.

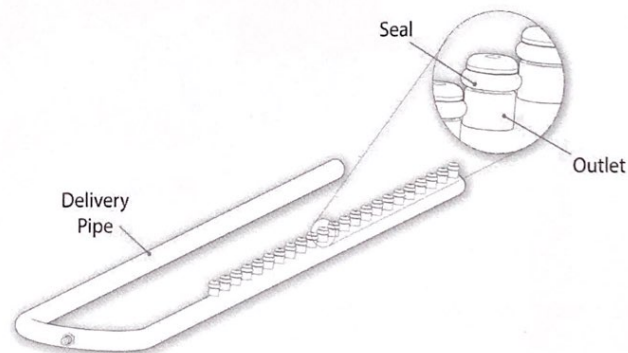


Fig 2-9 Identification of internal plumbing features

- 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 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.
Water backs-up into instrument.	If problem persists, contact Thermo Fisher Scientific Service Department.
	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.
Water flow through Rinse Jars is inadequate.	If problem persists, contact Thermo Fisher Scientific Service Department.
	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.

## 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, refer to <a href="#">Chapter 5 - Replacing Fuses</a> .
	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, <a href="#">Chapter 2 - Loading Slides</a> .
	Check the condition of the Staining Jars. Look for: <ul style="list-style-type: none"> <li>• Worn or rough edges</li> <li>• Warped Jars</li> </ul> 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.

## Chapter 5 – Cleaning and Maintenance

### Safety

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



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 Bio safety Manual').



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.



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



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



Do not use hypochlorites in strong solution.



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



Always clean up spills immediately.



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 Scientific Service Engineer.



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



Disconnect the Instrument from the Mains before cleaning.



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



Electric shock hazard. Do not remove any covers requiring a tool. Service to be performed by a qualified person only.

## 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.
- For mild detergent, use 10% Sodium Hypochlorite in water.



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.



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

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

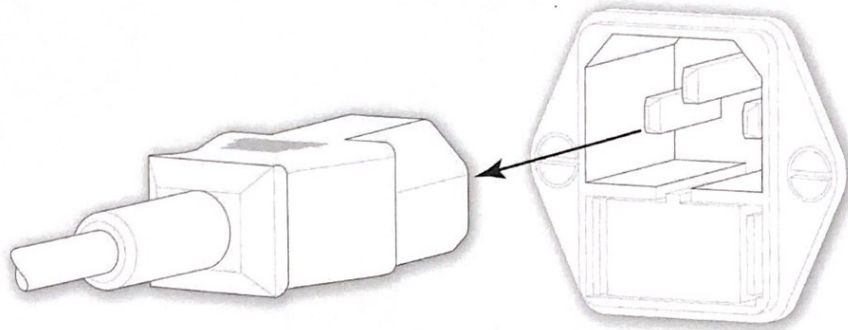
## Changing Fuses

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



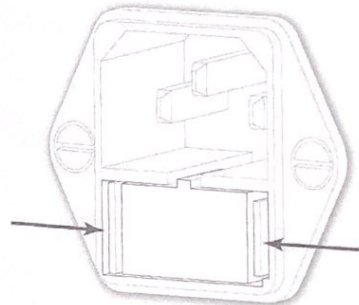
The fuse(s) should only be replaced by a competent person.

- Remove the Power Lead from the Power Connector.



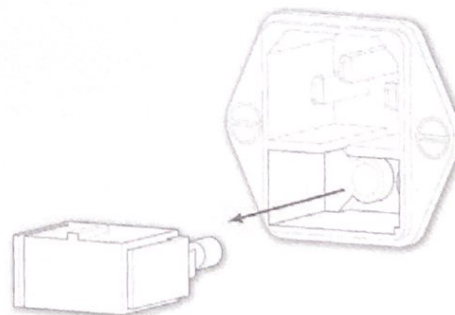
*Fig 5-1 Removing the power Lead*

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



*Fig 5-2 Opening the Fuse drawer*

- Remove the Fuse Drawer from the Power Connector.



*Fig 5-3 Removing the fuse drawer*



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

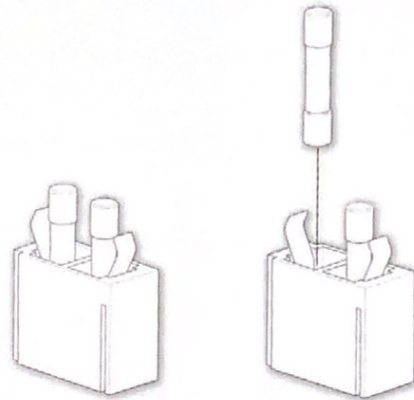


Fig 5-4 Replacing the fuses

**Note**

*The 230V model of each instrument uses two fuses, whereas the 115V model uses just one.*

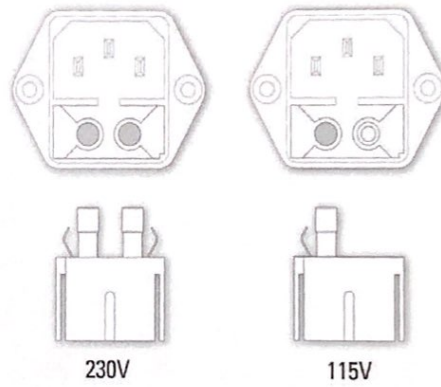


Fig 5-5 Fuse arrangements in the different voltage models

## Appendices

### Appendix A – Spares and Accessories

#### Instruments

Part No	Item
B1000200	Linistat, 115V, 60Hz
B1000201	Linistat, 230V, 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)
AP15437	Brass angle toggle valve
AP15440	Steel chain (6.35mm pitch, 2756mm length)
AP15464	Steel chain (6.35mm pitch, 1663.7mm length)

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P05943	Sealant (Arbosit 1081 silicon sealant, translucent)
P11824	Lubricant (lithium based)
P12031	Mains lead set – UK
P12032	Mains lead set – US
P12033	Mains lead set – Europe
AP15334	Mains Lead Set - China

## 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.



**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 Bio safety Manual').**

### Transportation After Delivery

The Linistat can be transported after delivery in its original packaging provided that the transportation conditions, marked on the packaging, are maintained.

### Removal from Use

If the Linistat is not going to be used for a long period of time, taken out of service or being prepared for transportation:

- Switch off the water supply.
- Switch off the mains by the switch at the rear, remove the mains cable and also remove the plug from the wall socket.
- Empty all staining / rinse jars
- Disconnect the pipework from the water supply and the drain.
- Clean in accordance with the cleaning instructions.
- If applicable, decontaminate the Linistat in accordance with local decontamination procedures.

## Appendix C – Approved Reagent List

The following table lists the reagents which Thermo Fisher Scientific has approved for use with Linistat.

Contact your Thermo Fisher Scientific dealer before using any non-approved reagent.



Use of non-approved reagents may result in damage to the instrument or samples. Before filling this instrument with reagents, refer to the [Chemical Safety](#) section of this Operator Guide.

### Approved Reagents

Reagent	Comments
Xylene	
Toluene	
Xylene Substitute	Xylene Substitute, Clear-Rite 3
Industrial Methylated Spirit (IMS)	Up to 5% Methanol in Ethanol
Reagent Alcohol	5% Methanol and 5% Isopropanol in Ethanol
Isopropanol (IPA)	
Acid Alcohol	1% HCl in 70% Ethanol
Acid Alcohol	10% Glacial Acetic Acid in 70% Ethanol
Clarifier 1 and 2	
Nu-Clear 1 and 2	
Eosin	Aqueous and Alcoholic
Haematoxylin	
EA-36/50/65	
OG6	
Phosphotungstic Acid	1% in Water
Ammonia Water	1% Ammonium Hydroxide in Water
Bluing Reagent	
Water	
Schiff's Reagent	
Periodic Acid	

### Approved Cleaning Reagents

Sodium Hypochlorite (10% in Water).

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