

μ WF – Micro Wet Finisher



Operating & Commissioning Manual

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Version 1.6 *μ WF*
October 2004 English

Finishing Disc Quote Request

Save 20% on first order (Please use Ref: WF04)

Grit Size	Part Number	Packing Quantity	Quantity	Delivery Date
15μm	P401-380	Roll 500		
20μm	P401-390	Roll 500		
30μm	P401-400	Roll 500		
40μm	P401-410	Roll 500		
Foam Backing Pad	145543	Bag 50		
Silicon Carbide Pad	P401-002	Bag 50		

How often are these quantities required: (Please tick)

Monthly
 3 monthly
 6 monthly
 Annually
 Other (Please specify) _____

For Your Quotation Please Contact:

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2 Owner Registration

TO ENSURE SIBERT INSTRUMENTS SUPPLIES YOU WITH ANY NECESSARY HARDWARE, SOFTWARE OR DOCUMENTATION UPDATES, PLEASE ENTER YOUR COMPANY DETAILS, DETACH THIS PAGE AND FAX OR POST TO:-

SIBERT INSTRUMENTS CENTRE HOUSE THE PINES BROAD STREET GUILDFORD SURREY GU3 3BH ENGLAND	TELEPHONE: FAX: EMAIL:	+44 (0) 1483 739100 (Sales) +44 (0) 1483 739110 (Service) +44 (0) 1483 302699 Sales@Sibert.co.uk
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COMPANY NAME: ADDRESS: CONTACT:	
FAX: PHONE: EMAIL:	

I would like to register for a username and password for the Sibert Customer web site (please specify email address above)

DO NOT WRITE BELOW THIS LINE

<i>μWF – Micro Wet Finisher</i> SERIAL NUMBER	
DATE OF MANUFACTURE	
QA ENGINEER SIGNATURE and STAMP	

3 Important Notices

3.1 Safety Notices



Please do not switch on this equipment unless the operating manual has been fully read and understood. If there is any difficulty in understanding, or a translation is required, please contact the address below:



Ne mettez pas cet équipement sous tension avant d'avoir entièrement lu et compris le manuel d'utilisation. Si vous rencontrez des difficultés de compréhension ou avez besoin d'une traduction, contactez l'adresse suivante:



Bitte schalten Sie die Geräte nicht ein, bevor Sie das Bedienungshandbuch vollständig gelesen und verstanden haben. Wenn dabei Verständnisschwierigkeiten auftreten oder Sie eine Übersetzung benötigen sollten, wenden Sie sich bitte an die nachfolgende Adresse:



Non accendere questa apparecchiatura senza prima avere attentamente letto e compreso il Manuale delle istruzioni. In caso di difficoltà di comprensione, o se si richiede una traduzione, si prega di contattare il seguente indirizzo:



Deze apparatuur pas inschakelen als u de handleiding helemaal hebt gelezen en begrepen. Mocht er iets zijn dat u niet begrijpt, of mocht u een vertaling nodig hebben, neem dan contact op met het onderstaande adres:



No encienda este equipo antes de haber leído y comprendido El Manual de Funcionamiento correspondiente. Si tuviera alguna dificultad en comprenderlo o necesita una traducción, sírvase contactar con la dirección siguiente:

3.2 Information Content

All rights reserved. Reproduction of any part of this manual or *μWF – Micro Wet Finisher* program in any form whatsoever without the express written permission of Sibert Instruments is strictly forbidden.

All efforts have been made to ensure the accuracy of the information in this manual, however the contents of this manual are subject to change without notice.

Sibert Instruments shall not be liable against any damages or problems arising from the use of options, consumables or spares, other than those supplied or designated by Sibert Instruments.

3.3 Sales and Service Address

SIBERT INSTRUMENTS
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3.4 Safety Instructions

3.4.1 Site Selection

When selecting the installation site for the equipment and the pertaining components, relevant health and safety procedures should be followed.

Applicable technical and building regulations must also be observed.



The μ WF – Micro Wet Finisher has been tested under “A” weighted continuous sound and does not exceed 70 decibel noise levels.



The μ WF – Micro Wet Finisher has been tested under “C” weighted instantaneous sound and does not exceed 130 decibel noise levels.

The unit must be placed on a suitable level surface offering the system firm support.

Ensure there is sufficient surrounding clearance for maintenance and cleaning operations.

Sibert Instruments supplies an Equipment Workstation for the μ WF – Micro Wet Finisher that accommodates the Filtration Tank together with the pneumatic Filter/Regulator unit.



Do not deposit any objects in front or on top of the unit.



Hoses and electrical cables must be laid in a manner to prevent tripping and damage.

3.4.2 General Notes on Safety

All persons concerned with the installation, commissioning, operation, maintenance and repair of the system and its components must have read the operating instructions, particularly those on Safety. If necessary, in-house instruction should be provided, specifically taking into account the qualifications of the individual persons.

Prior to commissioning the system, the user must ensure that all safety conditions are met.



This Operating & Commissioning Manual should be read before attempting to operate the μ WF – Micro Wet Finisher.



Only authorised personnel to carry out maintenance or adjustments to this μ WF – Micro Wet Finisher.

The system must be maintained and repaired only by persons who are familiar with the system and have been informed about the potential hazards and possess the necessary qualifications.

The pertinent regulations for prevention of accidents and other generally recognised safety and industrial medical requirements must be observed.

3.4.3 Notes on Safety for Operating Personnel

All working methods are forbidden, which:

- constitute a danger to the life and limb of the user or third parties,
- are detrimental to the system or others,
- are detrimental to the safety and proper function of the system,
- are not in compliance with the specified notes on safety.



No safety devices may be removed or rendered inoperative.

If it should become necessary to remove safety devices for setting, repair and maintenance purposes, the safety devices must be replaced immediately on completion of maintenance or repair works, prior to switching the μ WF – Micro Wet Finisher on.



Safety devices must be replaced prior to re-connecting Electrical, Water or Pneumatic supplies.

The generally applicable safety rules and regulations for the prevention of accidents must be observed.

μ WF – Micro Wet Finisher



Only those items that can be adjusted or maintained by non Sibert personnel are to be accessed or adjusted.



Maintenance and repair may only be undertaken when the unit is switched off and disconnected from the Electrical input supply.



Hazardous voltages are present in this μ WF – Micro Wet Finisher.



This μ WF – Micro Wet Finisher must be earthed.



Repair work on the water and pneumatic system, may only be carried out when relevant pressures are zero or disconnected from all mains supplies.



The Upper Guard must be closed and all covers present during a normal stamper finishing operation.



When handling nickel Stampers, protective gloves should be worn.

3.4.4 Use for the Intended Purpose



This μ WF – Micro Wet Finisher is intended solely to finish the non-information side of CD/DVD Matrix Stampers, from diameter 130mm up to diameter 250mm. For optimum results, a hardness of 200 +/- 10% HV 0.5 is recommended. This machine is to be used only with the components supplied and approved by Sibert Instruments.

Use for any other than the intended purpose is considered improper. The manufacturer disclaims all liability for any damage resulting from such use; the user/operator is solely liable.

3.4.5 Spare Parts



Use recommended spare parts only. For a list of authorised spare parts please contact Sibert Instruments.



The Centre Adaptor and Rubber Mat for the refinishing of punched stampers are supplied as a matching pair and must not be interchanged with other sets.

3.4.6 Terms of Guarantee

Use, other than for intended purpose and unauthorised changes or modifications to the unit and/or its components or software or programs which are part of the scope of supply of Sibert Instruments, exclude any liability of the Manufacturer for damage caused as a result of such changes or modifications. The warranty/guarantee of the manufacturer is invalidated.

3.5 Other Safety Documentation



THIS MACHINE IS HEAVY (140 kg).

IF ANY LIFTING IS REQUIRED, PLEASE USE THE TWO LIFTING HOLES PROVIDED ON EACH SIDE OF THE MACHINE CASTING.

PLEASE USE CORRECT LIFTING EQUIPMENT FOR MOVING THE MACHINE.



THE MICRO WET FINISHER IS EQUIPPED WITH SAFETY DEVICES TO PROTECT BOTH THE OPERATOR AND THE MACHINE.

DUE TO WATER BEING USED AS PART OF THE MACHINE'S PROCESS, IT IS STRONGLY RECOMMENDED THAT ADDITIONAL SAFETY PROTECTION IS ACHIEVED BY CONNECTING THE MACHINE TO A MAINS SUPPLY THAT IS PROTECTED BY A 30 mA RCD (RESIDUAL CURRENT DEVICE).

NOTE: THIS MACHINE IS DESIGNED TO OPERATE BETWEEN AC 100 – 230V +/- 10% 50-60 Hz WITH A MAXIMUM POWER CONSUMPTION OF 500 VA.



THIS MACHINE IS SUPPLIED WITH A FILTRATION TANK FITTED UNDER THE EQUIPMENT WORKSTATION. THIS UNIT IS FITTED WITH TWO FILTERS WHICH SHOULD BE CHECKED/REPLACED REGULARLY IN RELATION TO THE QUANTITY OF STAMPERS PROCESSED ON THE MACHINE.

THE FILTRATION TANK IS DESIGNED TO BE A CLOSED LOOP SYSTEM AND CAN BE FILLED WITH DI OR NORMAL TAP WATER (IF YOUR PROCESS ALLOWS). WHEN ANY CLEANING, MAINTENANCE OR FILTER REPLACEMENT IS UNDERTAKEN, DUE TO THE NICKEL WASTE HELD IN THE WATER, ALWAYS WEAR PROTECTIVE GLOVES AND FOLLOW SAFETY OR COSHH REGULATIONS.

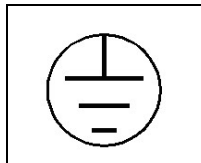
WHEN CHANGING THE WATER IN THE FILTRATION TANK, THE WASTE WATER MUST BE PUT TO APPROPRIATE WASTE WATER DRAINAGE, LEADING TO A WASTE WATER TREATMENT SYSTEM CAPABLE OF REDUCING THE NICKEL CONCENTRATION ACCORDING TO LOCAL LEGAL REQUIREMENTS. (E.G. IN GERMANY THE LEGAL LIMIT FOR NICKEL IS $\leq 0.5\text{mg/l}$ IN ANY WASTE WATER.)

4 Warning Labels



EMERGENCY
STOP

FOUND ON FRONT PANEL




FOUND ON INSIDE OF PSU MODULE
ADJACENT TO
PRIMARY EARTH POINT



WARNING
THIS EQUIPMENT
MUST BE EARTHED

FOUND ON RIGHT HAND SIDE AT
REAR OF MACHINE ABOVE
ELECTRICAL POWER INLET



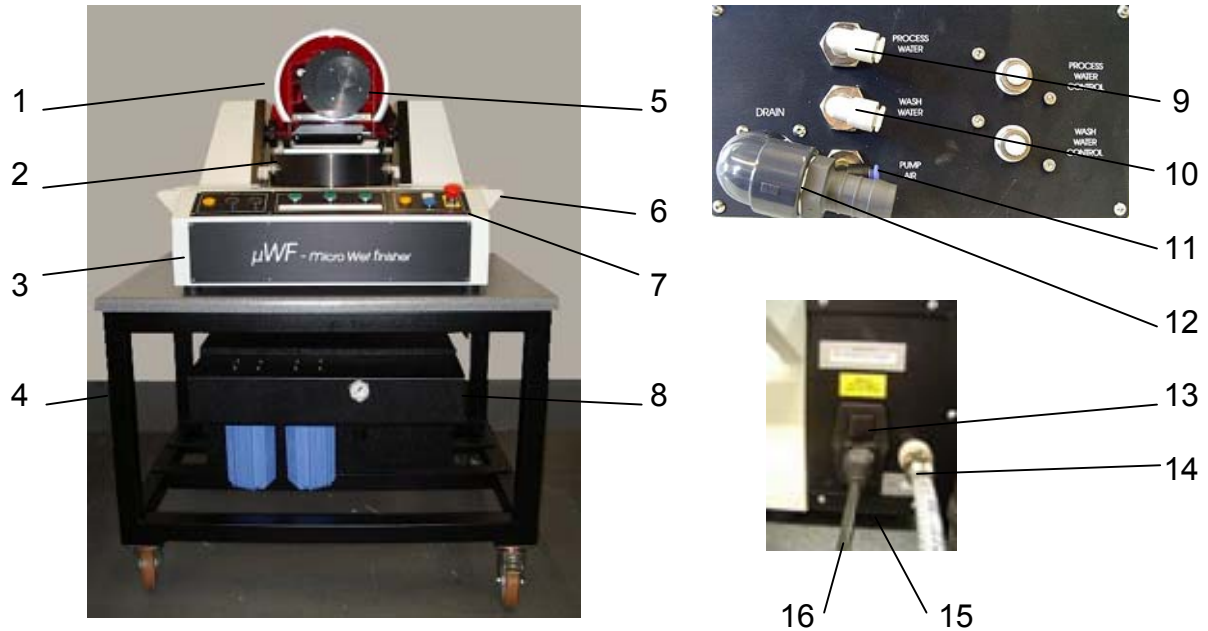
DANGER  DO NOT REMOVE COVER UNLESS
DISCONNECTED FROM MAINS
SUPPLY

FOUND ON ALL REMOVABLE
COVERS PROTECTING
ELECTRICAL SYSTEMS

μ WF – Micro Wet Finisher

5 Equipment Diagram

5.1 Overall Machine



1 Upper Guard	9 Process Water Inlet
2 Process Chamber & Turntable	10 Wash Water Inlet
3 Technician Cover	11 Air Supply to Pump
4 Equipment Workstation	12 Waste Water Outlet
5 Orbital Head	13 Power On Switch
6 Lifting Holes	14 Pneumatic Input Connection
7 Front Panel	15 Inlet Fuse
8 Filtration Tank	16 IEC Mains Lead

Note: Process & Wash Water Inlet adjustment valves are to the right hand side of their pipe connections. These will be set prior to dispatch of equipment.

μ WF – Micro Wet Finisher

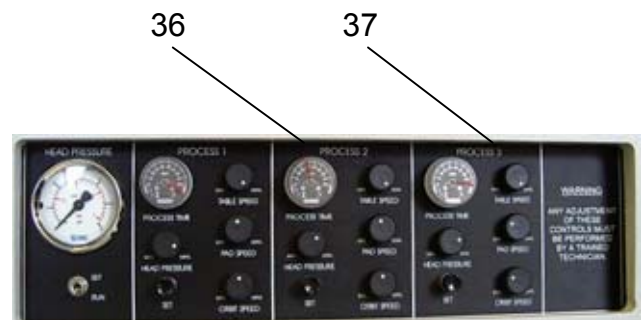
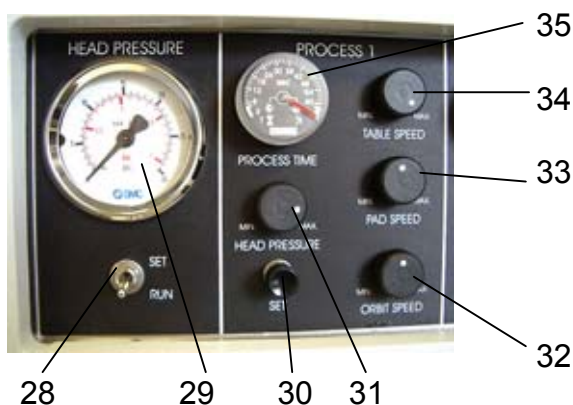
5 Equipment Diagram

5.2 Front Panel



17 Vacuum Warning Light	23 Process 3 Start Button
18 Vacuum On Button	24 Warning Light (Upper Guard, Water Pressure & Pneumatic Pressure)
19 Vacuum Off Button	25 Mains On Light
20 Reusable Strip For Process Notes	26 Reset Button
21 Process 1 Start Button	27 Emergency Stop Button
22 Process 2 Start Button	

5.3 Technician Panel



28 Head Pressure Set Switch	33 Pad Speed Adjustment (Process 1)
29 Head Pressure Gauge	34 Table Speed Adjustment (Process 1)
30 Head Pressure Set Button (Process 1)	35 Process Time (Process 1)
31 Head Pressure Adjustment (Process 1)	36 Process 2 Set Buttons
32 Orbit Speed Adjustment (Process 1)	37 Process 3 Set Buttons

μ WF – Micro Wet Finisher

5.4 Technician Panel Controls



Only authorised personnel to carry out maintenance or adjustments to this μ WF – Micro Wet Finisher.

Note: Remove the Technician Cover to access these controls and adjust the variables with in the three Process areas. The controls described below are the same for all three Process areas.

28 Head Pressure Set Switch

In order to adjust the Head Pressure setting or for removal of the Head for cleaning or replacement purposes (see section 13.4), move this switch from 'Run' to the 'Set' position.

Note: After Head replacement or adjusting the Head Pressure, this switch must be returned back to the 'Run' setting, otherwise the machine will not function.

29 Head Pressure Gauge

This gauge is used to set the desired pneumatic pressure (0 to 1.9 bar / 0 to 28 psi) for the Orbital Head.

30 Head Pressure Set Button

By depressing this button, while switch 28 is in the 'SET' position, the existing head pressure will be displayed on the gauge and the Orbital Head will move forward to the test position.

This feature is also useful when removing the Head (see section 13.4), as it allows access to the flats on the drive shafts for removal with spanners provided in the tool kit.

31 Head Pressure Adjustment

Rotate this dial to increase or decrease the Head Pressure. The 'Head Pressure Set Button' above, can be depressed during or after this adjustment to display the air pressure to the Head.

32 Orbit Speed Adjustment

Rotate this dial to increase or decrease the speed of the Orbit Plate drive (0-190 rpm) that runs independently to the Pad Speed. This is designed to provide a controllable, driven axis of rotation that is not influenced by other turning moments from the Turntable and pad motors.

33 Pad Speed Adjustment

Rotate this dial to increase or decrease the speed of the pad plate (0-2500 rpm) and therefore the finishing disc that is contact with the backside of the stamper.

34 Table Speed Adjustment

Rotate this dial to increase or decrease the speed of the Turntable (0-800 rpm) in order to achieve the desired speed of stamper rotation.

35 Process Time

Rotate the outer casing in order to move the red line clockwise or anticlockwise. This will set the desired Process Time in seconds (0-60 seconds). **Note: Do not rotate outer casing passed the mechanical stops situated at 0 and 60 positions.**

μ WF – Micro Wet Finisher

6 Accessories

- 1 off Tool Kit storage case containing:-
 - Operation Manual including
 - Pneumatic Schematics & Layouts
 - Electrical Schematic & Layouts
 - Water Schematics & Layouts
- 2 off T10A Fuse
- 1 off F1A Fuse
- 2 off T5A Fuse
- 1 off T1.6A Fuse
- 1 off T6.3A Fuse
- 1 off Hex Key Set
- 1 off 14mm Spanner
- 1 off 13mm Spanner
- 1 off Regulator Filter Element (5 microns)
- 1 off Check Unit
- 1 off Jubilee Clip
- 1 off Moulded Mains Lead (Country dependant) *
- 2 off Air Pipe (1M and 2M) *
- 1 off Filter-Regulator Unit *
- 2 off Spare Plastic Balls for Water Level Indicator
- 1 off Head Setting Piece
- 1 off ¼" BSP Plug
- 1 off Purge Pipe & Fitting



* These items are either fitted to the equipment workstation or packed separately in crate.

All items are available as **Sibert** supplied spares.

Rubber Vacuum Mats:-

Punched Mat(s) to suit customer specified size(s).

Unpunched Mat with stamper alignment rings.

Stepped Mat for smaller diameter stampers is available upon customer request.

Other various types of mat are available upon customer request.

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Finishing Discs:-

4 x 500 rolls of various Finishing Disc grades will be supplied with the machine.

Foam Backing Pads:-

One bag of 50 off 55mm diameter Foam Backing Pads will be supplied with the machine.

μ WF – Micro Wet Finisher

7 Unpacking

7.1 Removing Crate Panels



This machine is heavy (140kg).

When the μ WF – Micro Wet Finisher arrives it will be packed in a strong pallet sized Crate, together with the Equipment Workstation and Filtration Tank.

Remove the Top panel using a suitable spanner.

μ WF – Micro Wet Finisher should arrive pre-packed and positioned on top of the Equipment Workstation.



Do not remove the Side panels at this time.

Identify the cross-head screws on the outer sides of the Crate, that secure the internal lengths of timber used to brace the machine.

Remove these screws before releasing the Front and Back panels.

Remove any wrapping material from around the machine and Equipment Workstation.

Remove all the included ancillary parts such as: Tool Kit, Manuals, Filter/Regulator (if not fitted to the Equipment Workstation), Connection Pipes and Leads etc.

Release the wheel brakes on the Equipment Workstation and roll the machine out of the Crate.



7.2 Lifting Guidelines



The lifting device must be able to carry a minimum of 300Kg and have a lifting height of 1.9 Metres.



Weight of μ WF – Micro Wet Finisher including Equipment Workstation, Filtration Tank and Crate is 265 Kg.

7.3 Lifting from Crate

PLEASE NOTE:

IF ANY LIFTING IS REQUIRED, PLEASE USE THE TWO LIFTING HOLES PROVIDED ON EACH SIDE OF THE MACHINE CASTING.

PLEASE USE CORRECT LIFTING EQUIPMENT TO REMOVE MACHINE FROM THE CRATE AND ONCE CLEAR OF ANY OBSTRUCTIONS, WHEEL THE EQUIPMENT WORKSTATION OUT AND REPOSITION MACHINE BACK ON TOP READY FOR COMMISSIONING.



Keep clear of the machine or Equipment Workstation while lifting is in progress.

μ WF – *Micro Wet Finisher*

8 Locating

8.1 Equipment Workstation Description

Sibert Instruments produce and supply an Equipment Workstation for the μ WF – *Micro Wet Finisher*. This Equipment Workstation accommodates the Filtration Tank and pneumatic Filter/Regulator, with an aperture for the water, pneumatic and electrical supplies.

8.2 Mounting on Equipment Workstation

The μ WF – *Micro Wet Finisher* should be mounted centrally on top of the supplied Equipment Workstation, with the two filter canisters on the Filtration Tank facing forwards.



μWF – *Micro Wet Finisher*

9 Connecting Supplies

9.1 Electricity Supply

The *μWF* – *Micro Wet Finisher* is supplied with a mains supply lead (16) for connection to the Power Inlet at the rear of the machine.

The machine will be delivered to operate in the range:-

AC 100 - 230V ± 10% 50 - 60 Hz



Check the specification on the side of the machine.

Connect machine to supply only if it conforms to specification.



9.2 Pneumatic Supply

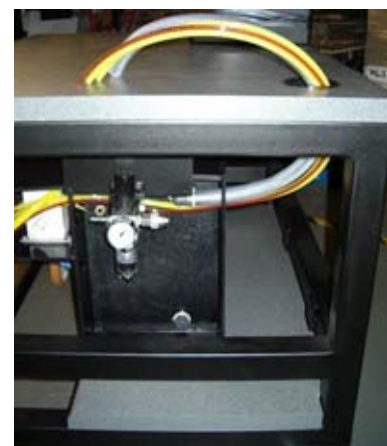
The *μWF* – *Micro Wet Finisher* is supplied with a Filter/Regulator Unit together with an Air Hoses for Connection to the Pneumatic Mains Input on the right hand side at the rear of the machine.

The pneumatic supply pressure to the *μWF* – *Micro Wet Finisher* should be between the specified limits 100-115 psi (7-8 bar).

16



The Sibert Instruments supplied *μWF* – *Micro Wet Finisher* Equipment Workstation has the Filter/Regulator unit pre-fitted as shown.



μ WF – Micro Wet Finisher

9.2.1 Connection

Connect the Filter/Regulator Unit to the mains air supply using the check unit provided.



All pneumatically operated equipment and machinery should only be operated by trained personnel.

Wherever possible, turn off mains air pressure to the check unit.

Make sure that the tailpiece is inserted squarely into the check unit and not at an angle. Push the check unit and tailpiece together.

When the two units are connected correctly, a 'click' will be heard and the sleeve on the check unit will engage onto the tailpiece by locking up against the hexagonal shoulder of the tailpiece.

Rotate the grey plastic lock ring on the check unit until the two black arrows are inline.

Check the coupling is correctly engaged by gently pulling each end of the assembly. It should be secure and not pull apart.

Mains air pressure may now be applied.

The Regulator should be pulled to unlock, adjusted to within 100-115 psi (7-8 bar) for the μ WF – Micro Wet Finisher, then pushed to lock.

9.2.2 Release



All pneumatically operated equipment and machinery should only be operated by trained personnel.

Wherever possible, turn off mains air pressure to the coupling assembly.

Rotate the grey plastic lock ring on the check unit through about 90 degrees, until the two black arrows are separated and none of the orange body of the check unit is visible.

Pull the sleeve on the check unit backwards and the tailpiece will be released from the coupling.

Remove the tailpiece and the release is complete.

Pull top to adjust



μ WF – Micro Wet Finisher

9.3 Filtration Tank

The Filtration Tank supplied with the μ WF – Micro Wet Finisher is designed to be a self-contained closed loop system.

The Filtration Tank may be filled with DI water or normal tap water, in accordance with your process requirements.

The μ WF – Micro Wet Finisher has separate adjustable Process and Wash Water Inputs in both direction and flow rates.

The Process Water is directed onto the stamper during the finishing process.

The Wash Water provides a screen or ‘wall’ of water around the inside of the Process Chamber. This collects any nickel from the finishing process and returns this to the Filtration Tank efficiently, thus minimising the build up of any residue in the drainage pipes.

If there is not enough Process Water onto the stamper, the quality of finish will reduce, as the finishing disc will not clear the process debris away from its working area. However, if there is too much water, excessive amounts of splashing will occur during the finishing process inside the Process Chamber.

The Filtration Tank is fitted with two filter cartridges, located on the front of the unit. A primary filter with a nominal 5 micron grading and a secondary absolute 0.6 micron filter.

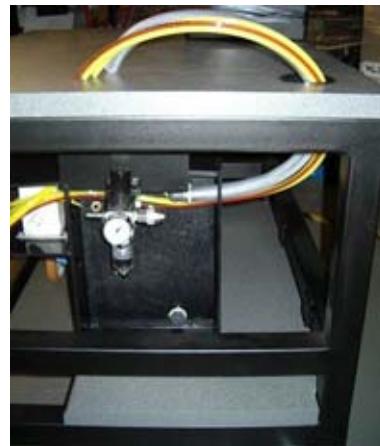
If there is reduced flow to the machine, please check these filters and change if necessary.



The μ WF – Micro Wet Finisher is fitted with an internal pressure switch to monitor water input to the machine. If there is not enough water pressure, the finishing cycle will not start and Warning Light (24) will illuminate.



Pipe work ready for connection & priming



View showing connections ready for operation



Process Water – Top Yellow
Wash Water – Bottom Yellow
Waste Water – Clear Braided
Air Supply to Pump – Red

Note: Process & Wash Water adjustment valves are to the right of the connections.

μ WF – Micro Wet Finisher

9.3.1 Filling and Priming the Filtration Tank

To fill the Filtration Tank, unscrew both filter canisters (clockwise from above), remove filters, half fill with the chosen type of water, refit the filter elements and refit the canisters (viewed from front, 5 micron on left hand side and 0.6 micron on right hand side).

Remove lid of the Filtration Tank and fill with the chosen type of water from the right hand side of the centrally positioned weir. Keep filling from the right hand side until the level in the second left hand side section is approximately 25 mm from the top of the weir.

To prime the filters and pump, locate the yellow output pipe from the pump situated on the right hand end. This will be connected into a 'Y' piece splitting into two further yellow pipes for the Wash and Process water. These will be connected to the machine later. Disconnect the yellow pipe from the pump at the 'Y' piece and connect it to the bulkhead fitting situated on the same end of the Filtration Tank at the top.

Using the adapter in the filtration kit, connect the red mains air pipe from the tank to the Filter/Regulator unit attached to the Equipment Workstation (make sure it is at zero). Do not adjust the Regulator on the Filtration Tank as this is factory set to 40 psi.

Adjust the Filter/ Regulator unit very slowly up to 20 psi until a continuous flow of water can be seen into the first section of the tank from the short yellow pipe that is connected to this side of the bulkhead fitting.

After a few minutes the flow will stabilize to a minimal and uniform quantity of air exiting from this pipe. The Filtration Tank is now fully primed. Check the water level again in the Filtration Tank and refill as necessary. (As above, ensure the water in the second left hand side section is approximately 25 mm from the top of the weir.)

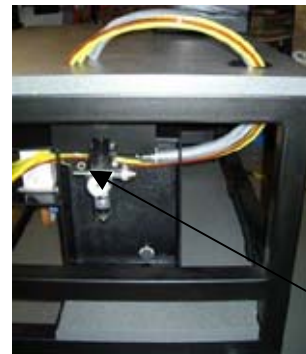
Reconnect the yellow pipe at the 'Y' piece and pass the two yellow pipes from this through the hole provided in the Equipment.

Workstation top and connect them to the Process and Wash water inputs on the machine.

In the same way, connect the clear braided drainage pipe from the Filtration Tank to the machine and secure with a Jubilee Clip provided.

Finally, connect the red main air pipe that feeds the water pump, to the output connection on the side of the machine and adjust the Filter/Regulator unit on the Equipment Workstation, back up to normal working pressure (around 100 psi). The Filtration Tank is now ready for use with the machine.

Right Hand End



Bulkhead fitting for priming

Left Hand End



μ WF – Micro Wet Finisher

Note: An external water level indicator is also fitted to the Filtration Tank at the left hand end. This provides the water level in the second section of the Filtration Tank at a glance.

Note: Once the water tank level is correct, detach the ball secured to the outside of the clear plastic tube and inset through the top. It is designed to float at the water level. There are also Maximum & Minimum markings on the tube for ease of reference.

The μ WF – Micro Wet Finisher is fitted with an internal water pressure switch. If the water level in the Filtration Tank becomes too low the equipment will cease to operate. Warning Light (24) will also illuminate. In this case the finishing cycle will not start. It is therefore recommended that the water level is checked on a weekly basis.



View showing external water level indicator, fitted to the left hand end of the Filtration Tank.

μ WF – Micro Wet Finisher

10 Power Failure Reset Procedure

If any of the following conditions occur:-

Electrical supply loss or if the μ WF – Micro Wet Finisher is switched off in error

then the following procedure must be undertaken

- 1 Switch OFF the μ WF – Micro Wet Finisher using Electrical Inlet Power switch (13).
- 2 Restore Electrical supply to the μ WF – Micro Wet Finisher (if removed).
- 3 Switch ON the μ WF – Micro Wet Finisher using Electrical Inlet Power switch (13).
- 4 Press the RESET button on the front panel.



The μ WF – Micro Wet Finisher is now ready for normal use.

Note: If the Emergency Stop was pressed prior to the Power Failure or Reset Procedure, release this by pulling outwards before steps 3 and 4 above.

Note: During normal operation, if either Warning Light (17 or 24) is displayed, press Reset and the light(s) should extinguish.

Note: If either or both of the Warning Lights (17 or 24) do not extinguish, please refer to section 13.8 Troubleshooting.

11 Operation

11.1 General Layout

The *μWF - Micro Wet Finisher* is designed to give a consistent and smooth finish to the back of CD and DVD stampers. The flow of water enables a consistent surface finish down to Ra (roughness average) 0.03μm, and the improved cutting action is capable of finishing stampers in fewer cycles. The wet extraction and filtering of particles prevents dust entering the atmosphere. This assists user health and safety, whilst reducing the chance of cross-contamination with other processes. Nozzles situated around the sealed Vacuum Turntable direct jets of water onto the surface of the stamper and the Filtration Tank filters the water ready for reuse.

A variety of finishes can be achieved with a range of different Finishing Disc grades.

Note: The *μWF - Micro Wet Finisher* has three PROCESS cycle buttons (21, 22, 23), located on the Front Panel, factory set prior to delivery of the equipment. If you have not supplied Sibert with sample stampers for test purposes, a standard set up will be applied to each Process button. This is achieved by adjusting the variable controls located behind the Technician Cover of the machine (as shown in section 5.3). Final adjustment to process can be carried out by a trained Supervisor or Operator to suit specific 'on site' stamper requirements.

Note: This *μWF – Micro Wet Finisher* is intended solely to finish the non-information side of CD/DVD Matrix Stampers, from diameter 130mm up to diameter 250mm and hardness within 200 +/- 10% HV 0.5.



Only authorised personnel to carry out maintenance or adjustments to this *μWF – Micro Wet Finisher*.

Adjustable Pre-set Processes

All adjustable settings can be pre-set within each Process (i.e. 21, 22, 23) which optimises the stamper finishing and make the machine easy for operators to use.

Adjustable Settings

Head Pressure, Orbit Speed, Pad Speed, Table Speed, Process Time, Process Water and Wash Water.

Factory Defaults

Unless otherwise specified prior to ordering the machinery, the *μWF - Micro Wet Finisher* controls will be factory set on the Technician Panel to a standard set up.

Note: These settings are for general purposes only and may require adjustment to achieve an optimum set up for your Stamper requirements.

Particle Removal and Filtration

Connection, filling and priming the Filtration Tank has been covered earlier in sections 9.3 and 9.3.1. I.E. water is either recycled in a closed loop or supplied from a DI plant and drained to waste. Quick change dual filters are damp when removed for controlled disposal of the nickel waste.

μ WF – Micro Wet Finisher

11.2 Vacuum Turntable

The Vacuum Turntable can accommodate either punched or unpunched stampers.

Place the selected rubber Vacuum Mat onto the turntable within the recessed area provided.

Note: If you do not have the correct Vacuum Mat for your type of stamper, please contact our Sales or Service Departments. (Contact details are at the front of this manual.)

Place the stamper centrally onto the Vacuum Mat and press the Vacuum On Button.

If the Vacuum Warning Light (17) comes on, there is insufficient vacuum to retain the stamper during the finishing process.

If this situation occurs, check the stamper is flat onto the mat or press it down gently onto the mat until a vacuum is achieved.

The Vacuum Turntable and stamper are now ready to start the finishing process.

After the finishing process is complete, release the vacuum by pressing the Vacuum Off Button.

Another air purge sound will be audible at this point. This is the auto-drain facility for the vacuum filter within the machine. It is designed to remove any excess water that has been sucked into the vacuum system during finishing, back to the Filtration Tank. This will be heard each time the vacuum is switched off.

Note: Although this auto-drain feature negates frequent vacuum filter inspection, access for maintenance and filter replacement purposes is straightforward. Follow the procedure in section 13.2 for Lifting and Tilting the machine and see the Pneumatic Layout Schematic for location.

11.3 Orbital Head

The design principle of this part of the machine is for the Finishing Disc to rotate on the Pad Plate, whilst the Orbit Drive provides additional rotation, resulting in an even and consistent finishing effect on the stamper surface.

With the lid/upper guard in the open position, the Finishing Discs can be mounted / changed.

Select the correct grade of Finishing Disc appropriate to your stamper. The discs are graded in micron sizes. As a basic and general rule, the larger the grit size, the more aggressive and therefore more material will be removed and the smaller the grit size, the less aggressive and less material will be removed.

It is good practice to have at least a small amount of stock removal capability left on the Finishing Disc after a finishing operation is complete. This means that the disc will not be rubbing against the stamper surface without a cutting action. Even with the Process Water from the machine, if the disc has no grit left on its surface, it cannot cut and this can cause detrimental results to the stamper surface.

Note: As mentioned previously, the Process Water is designed to clear away any nickel particles and Finishing Disc residue from the working area and the Wash Water is designed to carry all sediment back to the Filtration Tank. These may require some adjustment to find the optimum settings for your stamper finishing process.

Make sure there is a Foam Backing Pad attached centrally to the pad plate and attach the first Finishing Disc in place by firmly pressing it.

The Orbital Head is now ready to start the finishing process.

Note: The Finishing Discs are adhesive backed and specially prepared for usage within a wet working environment. The flexible adhesive will stick to the Foam Backing Pad and ensure an even finishing pattern. However, due to the nature of the adhesive, please do not leave a Finishing Disc attached after a finishing cycle is complete, as it will become more difficult to remove and break down the surface of Foam Backing Pad. For increased consistency, it is advisable to replace the Foam Backing Pad periodically, in relation to its usage.

μ WF – Micro Wet Finisher

11.4 Operating / Finishing a Stamper

The stamper should now be ready for processing.

Select and press the required Process button (21, 22 or 23) appropriate to your set up and the lid will lower slowly.

Should the lid be obstructed whilst it is closing, it will automatically lift to the upright position and the machine will default to its home position. If this occurs, press the Reset Button, remove the obstruction and repeat the processes described above.

When the finishing cycle is complete, a short delay ensures the turntable momentum is reduced for operator safety.

After this the lid will raise back to the vertical position ready for replacement of the finishing disc and start of the next finishing process.

Once the lid has fully opened, the stamper can be inspected and remain in position for the next process or removed for further evaluation or punching.

To remove the stamper, press the Vacuum Off Button.

If for any reason, the stamper should lose vacuum clamping it to the table during the finishing process, the cycle will be reset, the Vacuum Warning Light (17) will illuminate, the Turntable will stop rotating and the lid will lift so that the problem can be rectified.

If necessary the finishing process can be interrupted by pressing the Reset button.

If for any reason a situation occurs that is not clear or expected, press the Emergency Stop button immediately and follow the Reset Procedure in section 10. If any further

assistance is required, please see the Troubleshooting section 13.8 or call our Customer Service Department +44 (0) 1483 739110.

12 Schematics

12.1 Pneumatic Schematic

Drawing No. 341901

12.2 Pneumatic Layout

Drawing No. 341902

12.3 Electrical Schematic

Drawing No. 341903

12.4 Electrical Layout

Drawing No. 341904

12.5 Water Schematic

Drawing No. 341905

12.6 Water Layout

Drawing No. 341906

μ WF – *Micro Wet Finisher*

13 Cleaning & Maintenance



Disconnect Filter-Regulator from the Pneumatic supply before attempting filter replacement.



Only those items that can be adjusted or maintained by non Sibert personnel are to be accessed or adjusted.



Maintenance and repair may only be undertaken when the unit is switched off and disconnected from the Electrical input supply.



Hazardous voltages are present in this μ WF – *Micro Wet Finisher*.



This μ WF – *Micro Wet Finisher* must be earthed.



Repair work on the water and pneumatic system, may only be carried out when relevant pressures are zero or disconnected from all mains supplies.



When handling nickel Stampers, protective gloves should be worn.



Only authorised personnel to carry out maintenance or adjustments to this μ WF – *Micro Wet Finisher*.

13.1 Air Line Filter

The Air Line Filter should be periodically checked to ensure that it remains clean. If necessary it should be replaced.

Unscrew the outer body by twisting it counter clock-wise. The filter can be removed after unscrewing the retaining screw and cap.

A new filter can then be inserted as shown and the above procedure reversed.



μ WF – Micro Wet Finisher

13.2 Lifting and Tilting Machine for Servicing

Disconnect all supplies (Electrical, Pneumatic, Process Water, Wash Water and Drainage) to the machine.



Tie the water and drainage pipes above the Equipment Workstation top level. This will maintain the water level in the supply pipes and prevent having to prime the pump on the Filtration Tank again on reconnection.



Pull the machine towards the edge of the bench and lift and tilt upwards, so the machine is resting on the side of the main casting and bench top (as shown in the pictures below).



To access internal components, remove rubber feet, two base plate securing screws, base plate and earth straps from the machine.



Please Note: For safety purposes, it is recommended that a minimum of two people are available for this lifting/tilting operation.



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13.3 Filtration

The Filtration Tank is designed to be a self-contained unit that fits within the package of the Equipment Workstation.

The unit is intended to operate completely independently of any water supply, as a closed loop system, utilising DI or standard tap water.

Layout is based around a weir that divides the tank into two equal sections. The first section is further divided by a baffle plate (open bottom) that controls the waste water drained from the machine, downwards towards the base of the Filtration Tank.

The baffle has two main functions. Firstly, it removes the turbulence from the water as it enters the Filtration Tank from the machine drain, thus preventing sediment in the waste water being pushed across the surface into the second section. Secondly, it extends downwards close to the bottom, creating an area for sediment to settle before the water flow is pushed upwards again on the other side of the baffle and over the weir.

From the second section of the tank, the water is fed through to the in line primary and secondary filters prior to the pump. The machine is then fed with filtered water for both Process and Wash Water functions.

The pump situated on the front of the tank is pneumatically driven (maximum air pilot consumption is 3.33l/s or 7.06cfm) and is factory set at a working pressure of around 40 psi.

If the machine cuts out due to lack of water (by activation of the water pressure switch within the machine) the pump can be easily primed again, once the water has been replaced, following the instructions in section 9.3.1.

Once filled, the tank capacity is approximately 20 – 25 litres (including the filtration canisters, pipe work and pump).

Note: An external water level indicator is also fitted to the Filtration Tank. This provides the water level in the second section of the Filtration Tank at a glance.

The machine is fitted with two water inputs – Process Water and Wash Water. If required, this allows the Process Water to be supplied independently, direct from a DI source, fresh for each finishing cycle. However, due to all spent water being drained to the tank and in order to prevent overflow, the tank has a plugged output (level indicator shown in section 9.3.1). This can be opened/removed for disposal of the excess Wash and Process Water direct to a waste water treatment plant. Obviously, other than for water level inspection, this plugged output only requires removal if this type of set up is preferred, as the tank will be delivered factory set to run as a closed loop system.

Note: In this case a separate switch or cut off for the DI input will not be required, as the machine controls the on and off functions of the Process and Wash Water independently. As stated above, DI water can be utilised more easily by using it in the tank and therefore remaining self-contained. However, DI water retained within the tank will degrade over time and require replacing at a frequency that is dependent on the usage.

Note: When any cleaning, maintenance or filter replacement is undertaken, due to the nickel waste held within the water, always wear protective gloves and follow Safety or COSHH regulations.

Two plugged drainage outlets are provided in the base of both ends of the tank, for removal of spent water during cleaning.

Note: DI or soft water is often preferred because, depending on the Calcium and Magnesium content in standard tap water, this can precipitate and cause scoring on internal components.

μ WF – Micro Wet Finisher

The *μ WF – Micro Wet Finisher* is fitted with an internal water pressure switch. If the water level in the Filtration Tank becomes too low the equipment will cease to operate. Warning Light (24) will also illuminate. In this case the finishing cycle will not start. It is therefore recommended that the water level is checked on a weekly basis. Use the water level indicator as a guide and fill from the top of the Filtration Tank, as described earlier, in order to achieve the correct quantity of water in the system.

Note: When changing the water in the Filtration Tank, the waste water must be put to appropriate waste water drainage, leading to a waste water treatment system capable of reducing the nickel concentration according to local legal requirements. (e.g. in Germany the legal limit for nickel is $\leq 0.5\text{mg/l}$ in any waste water.)

Example Photos of Filters

Example of a clean damp secondary 0.6 micron Absolute filter, ready for installation.



Example of a clean canister with correct level of clean water for inserting a new filter.



Example of a primary 5 micron Nominal filter having processed about one hundred stampers (not ready for changing).



Example of a dirty canister that requires cleaning before refitting.



Example of a primary 5 micron Nominal filter that is near the end of its useful life.



μ WF – Micro Wet Finisher

13.4 Orbital Head Assembly

The Orbital Head is fitted with a 55mm diameter Pad Plate.

The Head Assembly should have been set to the correct position to suit your diameter of stamper, prior to despatch. This can be adjusted to the left or right to accommodate a different diameter of stamper. This method is also explained briefly in the section 13.5.

When removing the Orbital Head for cleaning or replacement or to facilitate the cleaning of the Upper Guard, move the Head to the out position by activating the Head Pressure Set Button (see section 5.3).

Using the 13mm and 14mm spanners supplied in the Tool Kit, locate the drive shafts behind the Head, position the spanners on the flat faces of one drive shaft and undo. When both shafts have been separated, remove the Orbital Head.

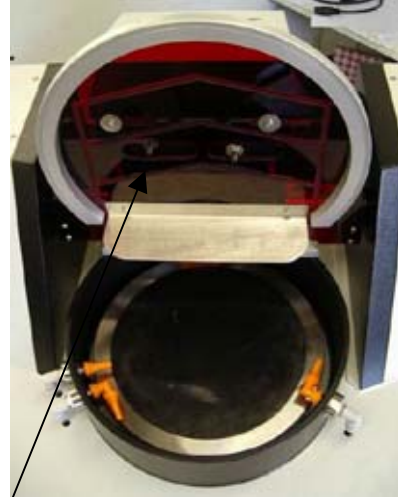
Note: The Orbital Head must be held during this procedure.

After cleaning, make sure the Orbital Head is fitted back onto the machine in the correct orientation (please see photos opposite). When this operation is complete, the Drip Guard, also shown, should be on the underside of the Orbital Head.



Maintenance and repair may only be undertaken when the unit is switched off and disconnected from the mains input supply.

View of Machine with Orbital Head Removed



Connect these two shafts first

Rear View of Orbital Head



Front Face of Orbital Head



Drip Guard

μ WF – Micro Wet Finisher

13.5 Changing Head Position

The Head position can be altered if a different Finishing diameter on the stamper is required.

The standard factory set position for the Head is 90mm, which provides a Finishing diameter of 154mm \pm 1mm with a 55mm Finishing Disc. From the front of the machine the 90mm measurement is the distance between the right hand side of the Head Body to the inside face of the right hand Side Support.



Maintenance and repair may only be undertaken when the unit is switched off and disconnected from the mains input supply.

Remove the four screws holding the left hand Side Cover in place and remove.

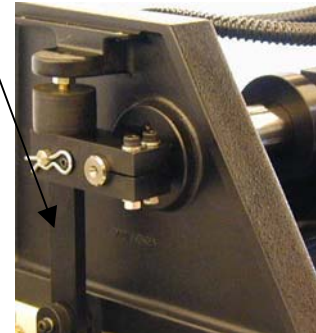
Ensure the Head is in its locked down position by pushing the mechanical arm backwards until it is in a vertical position.

Loosen the four screws on the back of the Head Body, (Taking care to support the front of the Polishing Body), this will allow the whole assembly to slide along the shaft to the new position. Once the required position is reached and the Head is set parallel to the turntable, then tighten the four screws evenly.

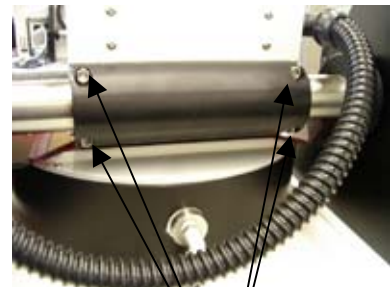


A check to see if the Orbital Head is parallel to the Turntable is required if the Head has been removed or re-positioned. (Please see Section 13.6 for this information.)

Push arm back to vertical position



View from rear of machine



4 Clamping Screws

13.6 Checking Head is Parallel to Table



Maintenance and repair may only be undertaken when the unit is switched off and disconnected from the mains input supply.

Note: This procedure will be covered in detail during the commissioning of the machine. The following notes represent a brief outline to this operation. If you have any queries on the maintenance areas described in these sections, please do not hesitate to call our Technical Support Department on +44 (0) 1483 739110.

Remove the four screws holding the left hand Side Cover in place and remove.

Raise the Upper Guard and remove the Orbital Head Assembly (see section 13.4).

There are two Guard Collars retaining the Upper Guard to the main horizontal shaft of the machine. Remove the 4 off Guard Collar Screws.

Next remove the Upper Guard retaining screws within the Head Body area, complete with springs and large washers, to allow the removal of the Upper Guard from the machine. The Orbital Head Assembly should now be replaced (see section 13.4).

With this method, the adjustment is carried out from the front of the machine.

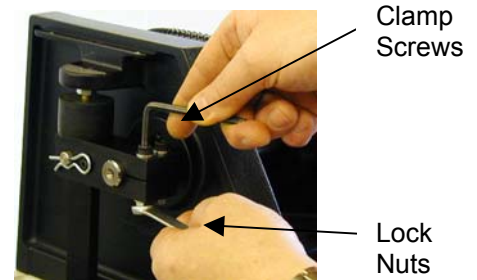
Make sure the Head is in its locked down position by pushing the mechanical arm backwards until it is in a vertical position (see section 13.5).

If present, remove the rubber mat and then insert the Head Setting Piece (parallel steel bar from Tool Kit) through the front or back of the machine, so that it is underneath the Orbital Head. Locating this tool in the correct place is important, if an accurate reference is to be established. The correct location for the tool is offset from the centre of the Head so it is positioned under the Orbit Drive Plate and not touching the Foam Backing Pad or outer Head casing.

Check both ends of the tool for movement between Head and Turntable, if there is no movement the head is parallel and no adjustment is necessary.

If there is movement, release the Clamp Screws and Lock Nuts, (Taking care to support the front of the Polishing Body). Allow the shaft to rotate until the Setting Piece has no movement at either end and then tighten the Clamp screws and Lock Nuts.

Note: This procedure is a delicate operation and may require several attempts before the correct setting is achieved.



μ WF – Micro Wet Finisher

13.7 Fuse Replacement



Ensure mains supply is disconnected before attempting to replace any fuse.

The machine will be delivered to operate in the range:-

AC 100 - 230V \pm 10% 50 - 60 Hz

There is one Mains Supply Fuse (15) fitted externally on the right hand side of the machine.

The 20mm fuse is as follows:-

Rating T 6.3 A

There is a spare fuse contained in the fuse holder carrier.

Additional fuses can be found in the Tool Kit.

The fuse (15) can be replaced by removing the Moulded Mains Lead (16) and then pulling the small carrier out from beneath the socket.



If the fuse blows on replacement, the reason should be investigated immediately.



μWF – Micro Wet Finisher

13.8 Troubleshooting

Note 1:

If the machine will not start for any reason, please check the following:

The Emergency Stop has not been depressed. If so, please follow the Reset procedure in section 10.

The internal safety relays have reset. These are housed within the power supply module on the rear of the machine and should automatically reset themselves. If a Reset or Emergency Stop condition is used that results in the machine being powered down (switched off), it is strongly advised to wait for at least 10 seconds for these relays to reset before restoring power to the machine.

During normal operation, if either Warning Light (17 or 24) is displayed, press Reset and the light(s) should extinguish.

Note 2:

General machine notes and hints:

Should the lid be obstructed whilst it is closing, it will automatically lift to the upright position and the machine will default to its home position. If this occurs, press the Reset Button, remove the obstruction and start the finishing process again.

If for any reason, the stamper should lose vacuum clamping it to the table during the finishing process, the cycle will be reset, the Vacuum Warning Light (17) will illuminate, the turntable will stop rotating and the lid will lift so that the problem can be rectified.

Ensure that there is the correct level of water within the machine's filtration tank (i.e. the water level will be full on the right hand side and about 25mm below the weir on the left hand side). For more details please see section 9.3.1.

The μ WF – Micro Wet Finisher is fitted with an internal pressure switch to monitor water input to the machine. If the water level in the tank reduces to the point whereby no water can get through to the filters, there will be no water to the pump and therefore no pressure at the switch. Warning Light (24) will also illuminate. In this case the finishing cycle will not start.

Note 3:

Drainage and water flow:

The internal pipe work for draining the waste water back to the filtration tank is designed to remove the maximum flow of water efficiently.

If the external drain or any water from the machine is not flowing downwards, an airlock will occur and cause an interruption to the free flow of water back to the Filtration Tank. This could also cause flooding within the Process Chamber, ensure therefore that the clear braided drainage pipe has a downwards gradient to the Filtration Tank.

The internal pipe work will be factory assembled with a gradient to move spent water efficiently to the outlet manifold that connects to the clear braided hose on the outside of the machine.

When changing the water in the Filtration Tank, the waste water must be put to appropriate waste water drainage, leading to a waste water treatment system capable of reducing the nickel concentration according to local legal requirements. (e.g. in Germany the legal limit for nickel is $\leq 0.5\text{mg/l}$ in any waste water.)

Note 4:

Contact us:

If anything is unclear or not functioning correctly on the machine, please call our Customer Service Department +44 (0) 1483 739110.

μ WF – Micro Wet Finisher

13.9 Preventative Maintenance Schedule

DAILY

- 1 General clean of Process Chamber, Orbital Head and Turntable working area
- 2 Change Foam Backing Pad on Orbital Head

WEEKLY

- 1 Check security of Orbital Head
- 2 Check perspex cover and sealing strip for wear
- 3 Check Vacuum on Turntable
- 4 Check condition of rubber mats and clean with warm soapy water
- 5 Check Primary Filter on Filtration Tank
- 6 Check condition and level of water in Filtration Tank

MONTHLY

- 1 Check water flowing freely from drainage pipe to Filtration Tank
- 2 Check tightness of Upper Guard screws
- 3 Check operation of lid obstruction microswitch
- 4 Check Vacuum Filter and replace if necessary
- 5 Check Primary and Secondary Filters on Filtration Tank
- 6 Drain Filtration Tank, clean and refill with fresh tap or DI water

YEARLY

- 1 Check tightness of all screws
- 2 Remove the Base Plate and check for any water leaks within the drainage compartment
- 3 Check vacuum system back to filter housing within machine
- 4 Check tightness of all electrical terminals
- 5 Check the condition and tightness of timing belts
- 6 Check alignment of Orbital Head to Turntable
- 7 Check for air leaks
- 8 Arrange an annual service visit by a Sibert Service Technician



Only authorised personnel to carry out maintenance or adjustments to this machine.



If required, Sibert Instruments can provide a Maintenance Package that includes an annual visit by a Service Engineer.



Maintenance and repair may only be undertaken when the unit is switched off and disconnected from the mains input supply.



Repair work on water and pneumatic systems, may only be carried out when relevant pressures are at zero.

Note: When any cleaning, maintenance or filter replacement is undertaken, due to the nickel waste held within the water, always wear protective gloves and follow Safety or COSHH regulations.

Note: When changing the water in the Filtration Tank, the waste water must be put to appropriate waste water drainage, leading to a waste water treatment system capable of reducing the nickel concentration according to local legal requirements. (e.g. in Germany the legal limit for nickel is $\leq 0.5\text{mg/l}$ in any waste water.)

13.10 Service History

Date	Engineer
Details	
Date	Engineer
Details	
Date	Engineer
Details	
Date	Engineer
Details	

Date	Engineer
Details	
Date	Engineer
Details	
Date	Engineer
Details	
Date	Engineer
Details	

μWF – *Micro Wet Finisher*

14 Documentation

14.1 Test Certificate

μWF SERIAL NO:

CUSTOMER:

COLOUR:

	ELECTRICAL	PNEUMATIC	WATER
SUPPLY / CONSUMPTION:			N/A
FUSE RATING:			N/A
SCHEMATIC DRAWING NUMBER:			
SCHEMATIC ISSUE NUMBER:			
LAYOUT DRAWING NUMBER:			
LAYOUT ISSUE NUMBER:			

INSPECTED BY STAMP:

SIGNED:

DATE:

TEST STAMPERS ENCLOSED:	Yes	No
--------------------------------	-----	----

PROCESS SET UP ENCLOSED:	Yes	No
---------------------------------	-----	----

14.2 CE Declaration of Conformity

**Directive 89/392/EEC, Amended By 91/368/EEC, Amended By 93/44/EEC,
Amended By 98/37/EEC**

Name of manufacturer: Sibert Instruments

Full postal address including country of origin: Centre House
The Pines
Broad Street
Guildford
Surrey
Postcode: GU3 3BH
England

Description of product: Semi automatic machine for finishing the non-information side of CD/DVD Matrix Stampers.

Name , type or model, batch or serial number: *μWF - Micro Wet Finisher*

Standards used:

- | | | | |
|----------------------|--------------------|--------------------|------------------|
| BS EN 292-1:1991 | BS 4168-7:1982 | BS 4278:1984 | BS EN 60127 |
| BS EN 292-2:1991 | BS 4320:1968 | BS EN 13602:2002 | BS 2950:1958 |
| BS EN 294:1992 | BS 4320:1968 | BS 3692:2001 | BS 5584:1978 |
| BS EN 418:1992 | BS EN 10270-1:2001 | BS EN 10270-3:2001 | BS EN 61347:2001 |
| BS EN 60204-1:1998 | BS 970-1:1996 | BS 5378: 1980 | BS EN 60921:1991 |
| BS EN 1050:1997 | BS EN 485 | BS EN 5499-5: 2002 | |
| BS EN 953:1998 | BS EN 515:1993 | BS EN 954-1:1997 | |
| BS EN 983:1996 | BS EN 573:1995 | BS EN 982:1996 | |
| BS EN ISO 4762:1998 | BS EN 12020-1:2001 | BS ISO 6432:1985 | |
| BS 4168-3:1994 | BS EN 12020-2:2001 | BS ISO 6431:1992 | |
| BS 4168:1994 | BS EN 755:1997 | BS 5200:1997 | |
| BS EN ISO 7380:1998 | BS EN 754 | | |
| BS EN ISO 10642:1998 | BS 5200:1997 | | |

Place of issue: Sibert Instruments, Guildford

Authorised representative Paul Sibert Executive Chairman

Name and Position of authorised signatories: James Gray Managing Director
Stephen Knight Product Manager
Ian Locke Project Manager
Richard Lewis QA Supervisor
David Humm Chief Inspector
David Gardner Internal Sales Co-ordinator

Declaration

I declare that as the authorised representative, the above information in relation to the supply/manufacture of this product is in conformity with the stated standards and other related documents following the provisions of 98/37/EEC Directives.

Signature of authorised signatory **Date**

For further information Telephone +44 (0) 1483 739100 Facsimile +44 (0) 1483 302699

μWF – Micro Wet Finisher

14.3 EMC Declaration of Conformity

**89/336/EEC Electromagnetic Compatibility Directive, Amended By 92/31/EEC & 93/68/EEC
72/23EEC Low Voltage Equipment Directive**

Name of manufacturer: Sibert Instruments

Full postal address including country of origin: Centre House
The Pines
Broad Street
Guildford
Surrey
Postcode: GU3 3BH
England

Description of product: Semi automatic machine for finishing the non-information side of CD/DVD Matrix Stampers.

Name , type or model, batch or serial number: *μWF - Micro Wet Finisher*

Standards applied:

EN 61000:-	1991/M'MENTS IN RADIO INTERFERENCE ON IND. EQUIP./RADIATED EMISSIONS
EN 61000:-	1991/M'MENTS IN RADIO INTERFERENCE ON IND. EQUIP./CONDUCTED EMISSIONS
BS EN 61000-3-2	HARMONICS EMISSIONS FROM EQUIPMENT (50Hz THROUGH TO 2KHz)
BS EN 61000-4-2 (Level 4):-	1995/EMC FOR INDUSTRIAL EQUIPMENT/ELECTROSTATIC DISCHARGE REQ.
BS EN 61000-4-4 (Level 4):-	1995/EMC FOR INDUSTRIAL EQUIPMENT/ELEC. FAST TRANSIENT REQ.

Other standards required:

BS EN 50081-2:-	1994/ ELECTROMAGNETIC COMP. GENERIC EM. STD./IND. ENVIRONMENT.
BS EN 50082-2:-	1995/ ELECTROMAGNETIC COMP. GENERIC IMM. STD./IND. ENVIRONMENT.
BS EN 60204 PT 1:-	1993/M/C SAFETY FOR ELEC. EQUIP./SPEC. FOR GENERAL REQUIREMENTS.

Declaration

The technical documentation required to demonstrate that the product meets the requirements of EMC, which includes the Low Voltage Directive, has been confirmed by the signatory below and is available for inspection by the relevant enforcement authorities. The CE mark was first applied in 1995.

Place of issue: Sibert Instruments, Guildford

Authorised representative Paul Sibert Executive Chairman

Name and Position of authorised signatories:

James Gray	Managing Director
Stephen Knight	Product Manager
Ian Locke	Project Manager
Richard Lewis	QA Supervisor
David Humm	Chief Inspector
David Gardner	Internal Sales Co-ordinator

Signature of authorised signatory **Date**

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