SIMPSON
A Norican Technology

Operating Instructions

Laboratory Sifter

Model 42106

Type:	Laboratory Sifter
Model:	42106
Part No.:	0042106 / 0042106-220
Serial Number:	

Name and address of manufacturer:

Simpson Technologies
2135 City Gate Lane Suite 500
Naperville, IL 60563

For other Simpson Technologies offices around the world and for our contact information please visit us on the internet at www.simpsongroup.com on the Contacts page.

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1 Introduction

Congratulations, you have just purchased an extremely reliable sand testing instrument that is backed by the professional technical support and years of proven sand technology experience of Simpson Technologies .

This laboratory equipment is constructed of quality materials and is the result of unsurpassed craftsmanship. Laboratory Sifter should be operated only when it is in perfect condition, in accordance with its designed purpose and being aware of possible hazards. Observe the safety instructions in Section 2 and operating instructions in Section 5.

1.1 Application and Designated Use

The Laboratory Sifter, Model 42106, is intended exclusively for sieving foundry molding sand. Testing of other materials may be possible only after consulting with Technical Services of Simpson Technologies.

Any other application outside the intended usage will be regarded as use not in accordance with its purpose, and, therefore, the manufacturer / supplier will not be held liable for any damage that might arise hereunder. The risk in this case will be exclusively that of the User.

1.2 Organizational Measures

The operating instructions should be readily available at the place of operation. In addition to the operating instructions, the general legal regulations or other mandatory rules for prevention of accidents and environmental protection should be made known and be observed!

The personnel instructed to use this apparatus, before beginning work, should have studied and fully understood these Operating Instructions, in particular the "Safety" chapter.

No modifications, extensions or changes of design of the device that would impact safety requirements should be put into effect without prior consent of the supplier! Spare parts must conform to the technical specifications defined by the manufacturer. This is always guaranteed when using original spares.

2 Safety

NOTICE

Before operating and/or performing maintenance or repair on Simpson Technologies designed and/or manufactured equipment, it is required that all personnel have read and understood the entire Operating Instructions manual. If any questions exist, you must contact your supervisor or Simpson Technologies before taking further action.

If properly operated and maintained, your Simpson Technologies supplied equipment can provide many years of dependable and safe operation. Please follow all recommended safety, operating, and maintenance instructions. Furthermore, the introduction of any non-Simpson Technologies manufactured and/or approved parts to the equipment may create a hazardous situation. Never alter the equipment without prior consultation with Simpson Technologies .

***DO NOT** use this machine for purposes other than that for which it was intended. Improper use could result in death or serious injury.*

2.1 Safety Signs and Labels

Simpson Technologies has incorporated the ANSI Z535.6 / ISO 3864-1-2 safety symbol only label format on all of its laboratory equipment.

The harmonized ANSI Z535.6 format became an established safety label format since it not only fully meets the current ANSI Z535 standards, but also incorporates ISO 3864-2 symbology and hazard severity panel and thus, can be used for both the U.S. and international markets.

2.1.1 Safety Alert Symbols

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. OBEY all safety messages that follow this symbol to avoid possible injury or death.

DANGER! I*ndicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.*

The safety alert symbol used without a signal word to call attention to safety messages indicates a potentially hazardous situation which, if not avoided, could or may result in death or minor to serious injury.

NOTICE indicates information used to address practices not related to personal injuries but mayresult in property damage.

This symbol indicates information containing important instructions concerning the use of the machine or directions for further procedures. Ignoring this information can lead to malfunction of the machine.

2.1.2 Safety Symbol Labels

ELECTRICAL SHOCK / ELECTROCUTION

(STC #214043)

This label is located on the back of the tester next to electrical power receptacle.

With the front electrical or any other panels removed, the electrical power supply and electrical terminals are exposed. A hazardous voltage is present, can cause electric **shock** or **burn**, and will result in serious injury. Follow **Lockout** and **Tagout** procedures before servicing.

READ AND UNDERSTAND ALL SERVICE MANUAL INSTRUCTIONS
(STC #214042)

This label is located on frame right corner of the Sand Rammer.

Before operating and/or performing any maintenance or repair on Simpson Technologies designed and/or manufactured equipment, it is required that all personnel read and understand the entire Operating Instructions manual. All protective guards and covers shall be installed, and all doors and panels closed before operating the equipment. If any questions exist, you must contact your Supervisor or Simpson Technologies before taking further action. Follow Lockout and Tagout procedures before servicing.

2.2 Safety System Procedure

NOTICE

Whenever performing any type of maintenance or repair, whether in the form of cleaning, inspection, adjustment or mechanical maintenance, the equipment must be rendered into ***Zero Mechanical State (ZMS)****.*

Prior to any maintenance (routine or otherwise) or repair of equipment, a safety procedure should be established and maintained. This procedure should include training of personnel; identification and labelling of all equipment which is interlocked mechanically, electrically, through hydraulics, pneumatics, levers, gravity or otherwise.

"Lockout and Tagout" refers to specific practices and procedures to safeguard personnel from the unexpected energizing of machinery and equipment, or the release of hazardous energy during service or maintenance activities. This requires, in part, that a designated individual turns off and disconnects the machinery or equipment from its energy source(s) before performing service or maintenance, and that the authorized employee(s) lock or tag the energy-isolating device(s) to prevent the release of hazardous energy and take steps to verify that the energy has been isolated effectively.

2.2.1 Lockout and Tagout Devices

When attached to an energy-isolating device, both lockout and tagout devices are tools used to help protect personnel from hazardous energy. The lockout device provides protection by holding the energy-isolating device in the safe position, thus preventing the machine or equipment from becoming energized. The tagout device does so by identifying the energy-isolating device as a source of potential danger; it indicates that the energy-isolating device and the equipment being controlled may not be operated until the tagout device is removed.

2.2.2 Glossary:

Authorized Person(s) - Personnel who have been designated by his/her department to perform maintenance or service on a piece(s) of equipment, machinery or system, and are qualified to perform the work through proper training on the Lockout/Tagout procedures for the equipment, machinery or system.

Lockout - The placement of a lockout device on an energy isolating device, in accordance with an established procedure, to ensure that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

Lockout Device - Any device that uses positive methods, such as a lock (either key or combination type), to hold an energy isolating device in a safe position, thereby preventing the energizing of machinery or equipment. When properly installed, a blank flange or bolted slip blind are considered equivalent to lockout devices.

Tagout - The placement of a tagout device on an energy isolating device, in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.

Tagout Device - Any prominent warning device, such as a tag and a means of attachment, which can be securely fastened to an energy isolating device in accordance with an established procedure. The tag indicates that the machine or equipment to which it is attached is not to be operated until the tagout device is removed in accordance with the energy control procedure.

Zero Mechanical State - The mechanical potential energy of all portions of the equipment or machine is set so that the opening of pipes, tubes or hoses, and the actuation of any valve, lever or button, will not produce a movement which could cause injury.

3 Short Description & Specifications

3.1 Application

The Laboratory Sifter, Model 42106, is used to determine the fineness of foundry sands by sifting dried sand.

3.2 Description

The sifter is designed to hold up to 11 standard half-height, 8-inch or 200mm diameter sieves. (Note: The Sand Testing Sieves, Model 42106A, are purchased separately.) A sieve analysis is used to check sand particle size and distribution and to calculate the AFS grain fineness number and surface area. The sifter consists of an electromagnetic vibrator and controls for regulating vibration intensity and frequency. A built-in digital timer controls the shaking time. The sand poured into the top sieve by the vibrating sieve set is separated into screening fractions corresponding to the mesh sizes.

3.3 Specifications, Dimensions and Weights (Approximate)

Specifications	Laboratory Sifter (Model 42106)
Voltage	110V/220V +5% / -10%
Electrical supply	1-Ph ~; L,N,PE; 50/60 Hz
Power consumption	200W
Fuse	6.3A 250V
Time	Adjustable
Pre-set potentiometer	0-10
Number of oscillations	3000 min 1
Max. amplitude	2 mm
Height	ca.800 mm
Width	ca.305 mm
Depth	ca.362 mm
Shipping Weight (not incl. sieve set)	ca. 75 kg
Sound level	< 70 dB(A)

3.4 Accessories

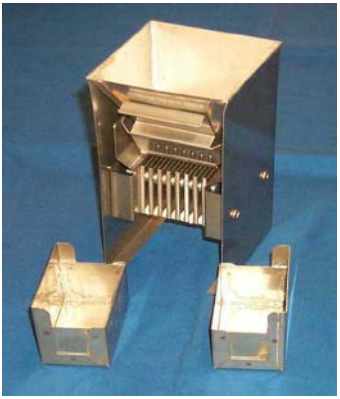
3.4.1 Sand Testing Sieves (Model 42106A)

The Sand Testing Sieves are used with the Laboratory Sifter, Model 42106, for determining the AFS grain fineness number and for the distribution of molding and core sands. Included are a nest of AFS sand testing sieves consisting of U.S.A. sieve numbers 6, 12, 20, 30, 40, 50, 70, 100, 140, 200, 270 and a pan. For the nest of metric (DIN standard) sand testing sieves, the mesh sizes are 1.4mm, 1.0mm, 0.71mm, 0.5mm, 0.355mm, 0.25mm, 0.18mm, 0.125mm, 0.09mm, 0.063mm and pan. Other sieve seizes and configurations are available upon request.

Specifications	Sand Testing Sieves
Diameter	ca.203mm (8”)
Height	ca.330mm (13”)
Weight	ca. 5.5 kg. (12 lb.)

3.4.2 1/8 Inch Micro Splitter (Model 42106B)

The 1/8” Microsplitter is used to prepare a representative sample of unbonded foundry sands for sieve analysis testing. Sixteen 1/8” chutes obtain representative sand samples of 125 grams or smaller. The sand poured down the splitter is divided in half with each pass. This reduction technique will yield a representative size sample of the sand for testing.



Specifications	1/8” Micro Splitter
Length	ca.114mm (4.5”)
Width	ca.114mm (4.5”)
Height	ca.203mm (8”)
Weight	ca. 1.8kg. (4 lb.)

3.4.3 1/2 Inch Rifle Splitter (Model 42106D)

The 1/2” Riffle Splitter is used to prepare a representative sample of unbonded foundry sands for sieve analysis testing. Fourteen (14) 1/2” chutes divide the sand accurately in half to provide representative sand samples down to 125 grams. The 1/8” Microsplitter, Model 42106B, (see above) is needed in conjunction with the 1/2” Riffle Splitter to accurately obtain representative size sand sample small enough for sieve analysis testing.

Specifications	1/2”Rifle Splitter
Length	ca.381mm (15”)
Width	ca.292mm (11.5”)
Height	ca.356mm (14”)
Weight	ca. 7.7kg. (17 lb.)

4 Unpacking and Installation

4.1 Unpacking

NOTICE

Your new Laboratory Equipment has been closely inspected before being shipped to your plant. However, damage can occur in route, so it is wise to inspect all equipment on arrival. Notify both the carrier and Simpson Technologies of any damage at once. Damage should be noted on the shipper's receipt before signing for receipt of the shipment.

Unpacking the Laboratory Sifter, Model 42106, may require two people because of its weight (75 kg), dimensions and tight-fitting crate. The approximate instrument dimensions are 800mm x 305mm x 362mm.

ONLY authorized personnel may unload and install this equipment. Two people may be required to unpack this instrument due to the bulky dimensions and tight-fitting packing crate.

1. Remove screws securing sides of crate to base of crate and remove the upper portion of the crate.
2. Carefully remove any accessory pieces of equipment that are packed loosely around the main sifter unit.
3. Remove bolts holding main unit to the bottom of the crate from the underside of the crate.
4. Gently remove the main unit from the bottom of the crate and place on a stable bench.
5. Once removed from the package proceed in taking off any protective wrap.

6. Install the four leveling feet (Figure 7.1, Item 14) in the holes where shipping bolts were removed. Level the sifter by means of the leveling feet.
7. Ensure the apparatus voltage selector switch (Figure 7.3, Item 11) is set to the correct local voltage.

4.2 Components

The apparatus is shipped with the following accessories and installation components. Please take note and identify that the following items were included and are not damaged (refer to the schematic figures at the end of the manual):

- Sieve Shaker (Assembled)
- Leveling Feet (4)
- Power Cord

If any of the above components or literature is missing, call your local Simpson Technologies office.

NOTICE *Do not store the device in the open and unprotected from atmospheric conditions. If this instruction is not followed, claims under guarantee will no longer be considered.*

4.3 Installation

The installation of the apparatus is the responsibility of the Client to include procuring and preparing the material required for this purpose.

The apparatus must be installed on a level, firm and stable working surface that is securely attached to the floor. Furthermore, as to not transmit vibrations to other laboratory equipment, the apparatus should be isolated on its own bench or working surface. The machine can be leveled by making adjustments to the four adjustable rubber feet located at each bottom corner of the tester.

NOTICE *The Laboratory Sifter must be leveled from both left to right and front to back.*

The Laboratory Sifter would likely be occupied by one operator at a time. It is used in a foundry sand laboratory, with its operation display and control buttons placed at an ergonomically correct level to allow the operator to comfortably handle the sand sample as well as the control buttons.

4.4 Electrical Power Connection

Electrical Requirements: 100 – 240 Volts, 50-60 Hz + Ground (5Ω or less).

Connect the equipment to a ground electrical outlet.

This device is equipped with a connecting plug that contains an integrated safety fuse. Connection to the main power supply is provided by means of the supplied power cable.

1. 1. Verify the voltage on the specification plate located on the back of Laboratory Sifter. Ensure the voltage selector switch (Figure 7.3, Item 11) is properly set to the appropriate line voltage. The voltage selector switch shown below can be rotated using a flat head screwdriver to the appropriate line voltage.

Verify that the voltage marked on the serial number nameplate is the same as the electrical outlet to be used for the machine. Outlet must be properly grounded! Failure to follow safety procedures could result in serious injury.

Verify that the voltage selector switch is properly set to the appropriate line voltage. Failure to select the correct voltage will result in severe damage to the machine.

2. Connect the power cable supplied with the tester into the power plug receptacle located on the back of the Laboratory Sifter (Figure 7.3, Item 13).

Some areas may require an electrical plug that is not supplied with the power cord to properly conform to the specific electrical outlet. These special electrical plugs will need to be purchased separately by the customer.

3. Verify the proper voltage of the electrical outlet before plugging the power cord into the outlet. Connect power cord to the AC electrical outlet that is free of disturbances/fluctuation and is properly grounded.

NOTICE *It is highly recommended that a voltage stabilizer/filter (line conditioner) is installed between the electrical outlet and the inlet of the Laboratory Sifter. This device will help to ensure the proper performance of the Laboratory Sifter.*

4.5 Installing the Sieves

Place the chosen sieves within the supporting plate (Figure 7.1, Item 2). Be sure to install sieves in sequence with the coarsest sieve on top and a solid pan at the bottom.

4.6 Airborne Noise Emission

The equivalent continuous A-weighted sound pressure level at the workstation does not exceed 70db(A).

5 Operating Instructions

For more information on how to use and care for your Simpson Analytics equipment and accessories visit our Simpson Technologies channel on YouTube and search our library of videos. Subscribe to our channel to keep updated on new releases.

5.1 Loading the Sieves

1. Load the upper sieve with a representative sample of sand.

On foundry sands, we generally recommend that this sample be between 25 and 30 grams. When making a sieve analysis of fine material, it is best not to use too large a sample. We recommend a sample close to 25 grams. A smaller sample properly taken and carefully reduced will usually give more accurate and consistent results than a larger sample which might overload one or more sieves. Weigh and record the weight of the test sample to an accuracy of 0.1 percent.

2. Cover the nest of sieves with the lid.
3. Gently place the cross bar (Figure 7.1, Item 4) into the notches located on the columns (Figure 7.1, Item 3) closest to the top of the sieve nest.
4. Slowly turn the screen tightening plate (Figure 7.1, Item 5) onto the sieve lid until the sieves are firmly attached to the sifter. Do not over tighten.

5.2 Setting the Timer

1. Set the timer to the desired agitation time. To adjust the agitation time, please refer to the timer OEM instructions, Section 10.1.

Most foundry sands will require 15 minutes of agitation. If you are classifying olivine sands or extremely fine materials more time may be required. To determine the end point, or agitation time, on fine or extremely angular materials, continue the sieving operation in 1 minute intervals until the additional agitation fails to change the weight on any sieves used by more than 1.0 percent.

For further information, please refer to the OEM manual for the timer.

5.3 Adjusting the Apparatus

The sifter should match the natural resonance of the nest of sieves in order to achieve the quietest and most effective use of the input energy. This can be done by varying the electrical frequency control dial (Figures 7.1 & 7.2, Item 9) and the voltage rheostat (Figures 7.1 & 7.2, Item 8).

1. Ensure that the prior sections are followed and completed.
2. Set the agitation time with the timer (Figures 7.1 & 7.2, Item 7) as described in Section 5.2.
3. Push start button (Figures 7.1 & 7.2, Item 10) to start cycle.
4. Initially set the voltage rheostat (Figure 7.2, Item 8) to position 4.
5. With the proper sieves in the sifter and while the sifter is running, slowly rotate the frequency control dial in both directions to the point where maximum vibration occurs.

Typically, this occurs near 4 on the frequency control dial (Figure 7.2, Item 9).

6. The frequency control dial (Figures 7.1 & 7.2, Item 9) will have to be adjusted up and down to determine the correct setting. The

correct setting is determined at the point just before a sudden drop in vibration of the sifter. The frequency setting may slightly change when using fewer sieves.

7. Readjust the voltage rheostat to get optimum vibration intensity.

NOTICE *If a loud banging noise is heard, lower the adjustment on the rheostat (Figure 7.2, Item 8) to the point where the banging noise stops*.

5.4 Screen Analysis

5.4.1 Preparation of Screen Analysis

1. Prepare one sieve set with bottom and cover.
2. Weigh out every sieve and make a note of its weight.
3. Stack up the sieves fitting them into each other so that they will be arranged with the mesh width lowering from the top sieve down to the bottom one.
4. Then place the sieve set into the laboratory sifter.

5.4.2 Grain Size Fraction

1. Weigh out the grain size fractions yi together with the corresponding individual sieves and make a note of these values. Then deduct the weights of the sieves. Now, calculate the percentage of the different grain size fractions.

   For example: 50g of dry sand have been weighed in:

$$\text{Grain fraction}_i = \frac{y_i}{50} \times 100 \ (\%)$$

2. Weight Check: The sum of the individual fractions should correspond to the quantity of sand originally weighed in.

After the screen analysis, empty the sieves and carefully clean them with a soft brush. Residual or sticking grains which cannot be removed by means of a brush may remain in the sieve.

5.4.3 Calculation of the AFS Grain Fineness Number (acc.to DIN ISO 3310-1)

In order to determine the AFS Grain Fineness Number, the values of the individual screening rejects (in grams) will have to be multiplied by the corresponding multiplier. The total of these products is then divided by the weight of the quantity of sand originally weighted in (in grams) and will amount to the grain fineness number.

$$\text{Grain fineness number} = \frac{\Sigma(\text{screening rejects(g)} \times \text{multiplier})}{\text{originally weighted quantity(g)}}$$

Multipliers for the AFS – Grain Fineness Number

Sieve Mesh Width in mm	Multiplier
1.4	6
1.0	9
0.71	15
0.5	25
0.355	35
0.25	45
0.18	60
0.125	81
0.09	118
0.063	164
Sieve bottom	275

After the screen analysis, empty the sieves and carefully clean them with a soft brush. Residual or sticking grains which cannot be removed by means of a brush may remain in the sieve.

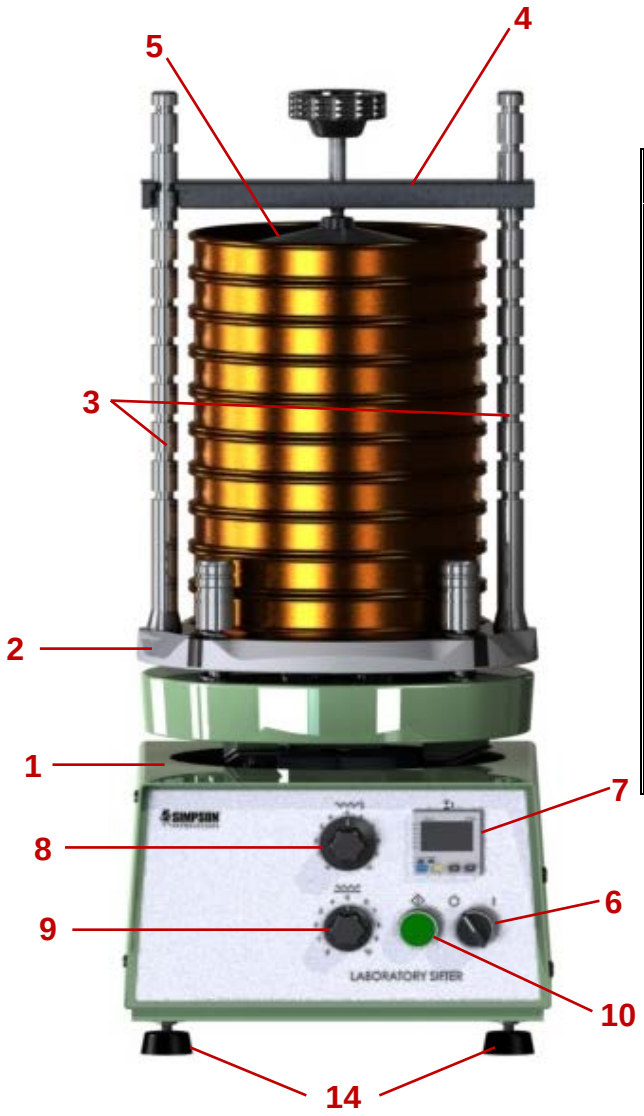
6 Maintenance and Calibration

For more information on how to use and care for your Simpson Analytics equipment and accessories visit our Simpson Technologies channel on YouTube and search our library of videos. Subscribe to our channel to keep updated on new releases.

Before performing any maintenance, remove the electrical power cord from the wall receptacle. The Laboratory Sifter must be put into ***Zero Mechanical State (ZMS)****. Follow* ***Lockout and Tagout*** *procedures before servicing.*

- Clean the apparatus after each application.
- The fine-meshed sieves are subject to inevitable wear and should, therefore, be inspected prior to every analysis. The general condition of the wire cloth should be examined against a uniformly lighted background. If the fabric shows any irregularities, the screen must be exchanged.
- For any additional checks, e.g. verification of the mesh width, follow the standards DIN ISO 3310-1 or ASTM.

7 Apparatus Layout



Item	Description
1	Cabinet
2	Screen Supporting Plate
3	Columns
4	Crossbar
5	Screen Tightening Plate
6	Main Power Switch
7	Digital Timer
8	Voltage Rheostat
9	Frequency Control
10	Start Button - Agitation Cycle
14	Leveling Feet (4)

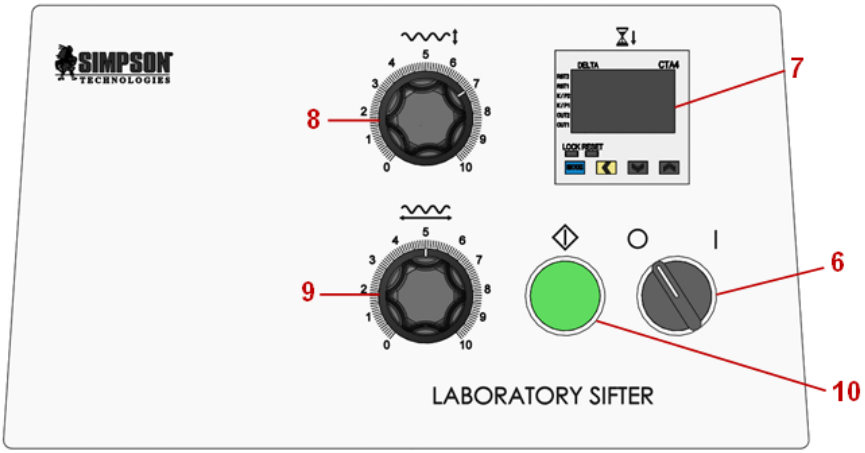


Figure 7.2: Controls

Item#	Description
6	Main Power Switch
7	Digital Timer
8	Voltage Rheostat (Amplitude Adjustment)
9	Frequency Control
10	Start Button

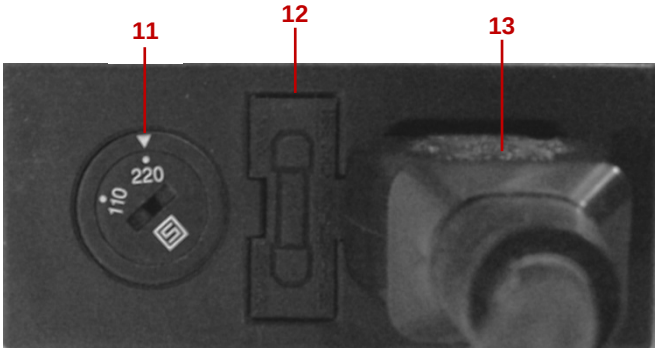


Figure 7.3: Back Panel

Item#	Description
11	Voltage Selector
12	Fuse Holder (6.3 Amp, 250V)
13	Power Cord Input

8 Parts List / Ordering Parts / Returns

8.1 Spare Parts List

Simpson maintains a large inventory of common spare parts for all current Simpson Analytics products. The following table provides part numbers for common spare parts for this device. Contact Simpson Technologies with the part number and description when ordering.

Part No.	Description
214645	Leaf Spring & Support Set (3)
214641	Crossbar Assembly

8.2 Ordering Replacement / Spare Parts

The source of replacement parts for your Simpson Analytics equipment is just as important as the make of the equipment you purchase. ALWAYS order parts for your Simpson Analytics equipment directly from Simpson Technologies. To find the Simpson office closest to you please visit us on the internet at www.simpsongroup.com on the „Contact Us“ page.

Parts may be ordered from the sales department via e-mail at parts@simpsongroup.com: When contacting our sales department to obtain a quotation on replacement parts or service please always include the equipment serial number, the description of the part and the part number. Your Simpson Technologies sales team representative will provide you with a quote on the items with current price and delivery times. When ordering, please always refer to the quote number on your order.

To arrange for calibration support or repair assistance please contact our customer service department at service@simpsongroup.com.

8.3 Returned Goods Policy

Simpson Technologies strives to provide their customers with maximum follow-up support and, in order to offer the most practical flexibility, the following conditions apply to returned goods. Adherence to these procedures will ensure the most prompt and efficient service.

RETURNS WILL BE CONSIDERED IN THE FOLLOWING SITUATIONS:

- Products ordered in error by customer (subject to a restocking charge).
- Incorrect or defective products shipped to customer.
- The return of existing products for factory repair or upgrade.
- Products ordered correctly but which are unwanted or unsuitable (subject to a restocking charge).
- A Safety Data Sheet (SDS) must accompany material that is sent to Simpson Technologies for testing purposes. Simpson Technologies will NOT authorize the return of hazardous materials.

RETURN PROCEDURE:

- **The customer must obtain a Return Material Authorization Number (RMA#) from Simpson Technologies prior to returning the goods.**
- To obtain an RMA#, the customer should contact the Customer Service department by phone, fax, e-mail to service@simpsongroup.com. The material being returned must be identified and the reason for its return clearly specified. Once approved for return, Simpson Technologies will issue the customer an RMA form to be included with the shipment and with instructions on where and how to ship the goods.
- All returned goods are to be shipped with transportation charges PREPAID, unless otherwise agreed when the RMA# is assigned. If it has been predetermined that return goods are to be shipped COLLECT, Simpson Technologies will specify the desired routing.
- All returned shipments will be subject to inspection upon arrival at Simpson Technologies.
- Material returned without an RMA# may be refused and returned at customer's expense.

9 Decommissioning

*Before doing any work, review the Safety Procedures in Section 2 and **Lockout and Tagout** all the power sources to the machine and peripheral equipment.*

Failure to follow safety procedures could result in serious injury.

Use qualified personnel and follow safety procedures, applicable local policies and regulations in decommissioning the Rapid Sand Washer and peripheral equipment.

Electrical Power: Disconnect the electrical power source and verify there is no power on all components being decommissioned.

WASTE DISPOSAL

The machinery and controls consists of:

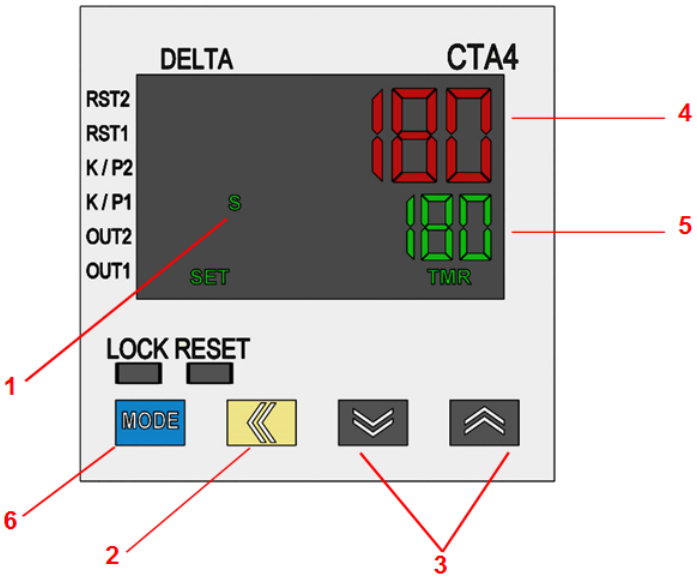
- Iron
- Aluminum
- Copper
- Plastic
- Electronic Components

Dispose of the parts in accordance with the applicable regulations.

10 Commercial Manual

10.1 Instructions Delta Electronics CTA4 Timer - Adjust Time Setpoint

1. Turn on power switch of the equipment.
2. The time unit for the Timer is in seconds.
3. Press the yellow, left arrow button (Item 2, Figure 1) to enter the set mode. The first digit to the right column on the Set Value Display (Item 5, Figure 1) will begin to flash.
4. Press the UP or DOWN arrow buttons (Item 3, Figure 1) to set the first digit on the selected column.
5. Press the yellow, left arrow button to move the cursor to the next left and use the UP and DOWN arrow buttons to set the desired digit.
6. Repeat this process for as many columns and digits being utilized.
7. Once desired set value time is showing on the display, press the blue MODE button (Item 6, Figure 1) to set the time.
8. The unit is now ready to start.



Item	Description
1	Seconds
2	Left Arrow Button
3	UP and DOWN Arrow Buttons
4	Present Value Display
5	Set Value Display
6	Mode Button

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