



<u>Equipment Type:</u>	Diamond Table Saw for 6in - 8in blades
<u>Model:</u>	<b>PICO-200</b>
<u>Speed:</u>	100 – 3000 rpm
<u>Electrical Requirements:</u>	110 / 220 Volts
<u>Frequency:</u>	50 / 60 Hz
<u>Motor Power:</u>	200W
<u>Manual Revision Date:</u>	April 24, 2022



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## WARRANTY

### Terms and Conditions applying to all PACE Technologies Products

#### 1. LIMITED WARRANTY AND DISCLAIMER:

PACE Technologies Products are warranted for two years from the purchase date to be free from defects in material and workmanship under correct use, normal operating conditions, and proper application. PACE Technologies obligation under this warranty shall be limited to the repair or exchange, at PACE Technologies option, of any PACE Technologies Product or part which proves to be defective as provided herein. PACE Technologies reserves the right to either inspect the product at Buyer's location or require it to be returned to the factory for inspection. Buyer is responsible for freight to and from factory on all warranty claims. The above warranty does not extend to goods damaged or subjected to accident, abuse or misuse after release from PACE Technologies warehouse, nor goods altered or repaired by anyone other than specifically authorized PACE Technologies representatives. PACE Technologies shall not in any way be responsible for the consequences of any alteration, modification or misuse unless previously approved in writing by an officer of PACE Technologies. Note: Corrosion is considered a maintenance issue and not a warranty issue.

PACE TECHNOLOGIES MAKES NO EXPRESS WARRANTIES OTHER THAN THOSE WHICH ARE SPECIFICALLY DESCRIBED HEREIN. Any description of the goods sold hereunder, including any reference to Buyer's specifications and any description in catalogs, circulars and other written material published by PACE Technologies, is the sole purpose of identifying such goods and shall not create an express warranty that the goods shall conform to such description.

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#### 2. LIABILITY CAP:

PACE Technologies maximum aggregate liability for loss and damage arising under, resulting from or in connection with the supply or use of the Equipment and Consumables provided under this purchase, or from the performance or breach of any obligation (s) imposed hereunder, whether such liability arises from any one or more claims or actions for breach of contract, tort, (including negligence), delayed completion, warranty, indemnity, strict liability or otherwise, unless otherwise limited by the terms hereof, shall be limited to one hundred percent (100%) of the purchase price.

#### 3. DELIVERY:

Customer assumes and shall bear the risk of all loss or damage to the Products from every cause whatsoever, whether or not insured, and title to such Products shall pass to Customer upon PACE Technologies delivery of the Products to the common carrier of Pace Technologies choice, or the carrier specified in writing by Customer, for shipment to Customer. An

y claims for breakage, loss, delay, or damage shall be made to the carrier by the Customer and Pace Technologies will render customer reasonable assistance in prosecuting such claims.

#### **4. ACCEPTANCE:**

Customer shall inspect the Products promptly upon receipt of delivery. Unless customer objects in writing within thirty (30) business days thereafter, customer shall be deemed to have accepted the Products. All claims for damages, errors, or shortage in Products delivered shall be made by Customer in writing within such five (5) business day period. Failure to make any claim timely shall constitute acceptance of the Products.

#### **5. PAYMENT:**

Customer agrees to provide timely payment for the Products in accordance with the terms of payment set forth on the reverse side hereof or in any proposal submitted herewith. If any payment is not paid on or before its due date, Customer shall pay interest on such late payment from the due date until paid at the lesser of 12% per annum or the maximum rate allowed by law.

#### **6. DEFAULT:**

If Buyer is in default (including, but not limited to, the failure by Buyer to pay all amounts due and payable to Seller) under the work or purchase order or any other agreement between Buyer and Seller, Buyer's rights under the warranty shall be suspended during any period of such default and the original warranty period will not be extended beyond its original expiration date despite such suspension of warranty rights.

#### **7. MISCELLANEOUS PROVISIONS:**

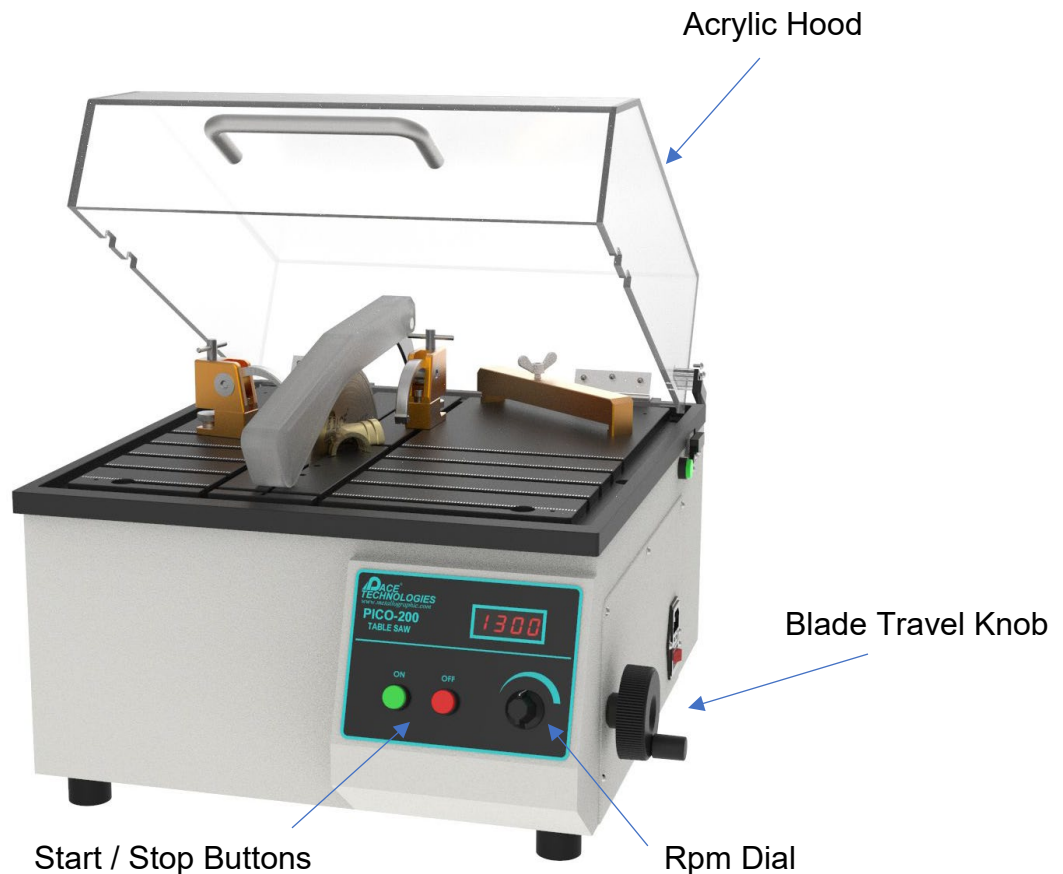
This agreement has been made in and shall be governed by the laws of the State of Arizona. All disputes arising under or relating to the purchase of the equipment shall be brought and resolved solely and exclusively in the State of Arizona, Pima County. These terms and conditions and the description of the Products on the reverse side hereof or in any proposal submitted herewith constitute the entire agreement and understanding of the parties with respect to this sale and supersede all prior and contemporaneous agreements or understandings, inducements or representations, expressed or implied, written or oral, between the parties with respect hereto. Any term or provision of this Agreement may be amended, and any observance of any term of this Agreement may be waived, only by a writing signed by the party to be bound. The waiver by a party of any breach shall not be deemed to constitute a waiver of any other breach. Should suit be brought on this Agreement, the prevailing party shall be entitled to recover its reasonable attorneys' fees and other costs of suit including costs and attorneys' fees incurred on appeal or in collection of any judgment. errors, or shortage in Products delivered shall be made by Customer in writing within such five (5) business day period. Failure to make any claim timely shall constitute acceptance of the Products.

#### **8. RESTOCKING FEE:**

All Returns are subject to a restocking charge equal to 15% (fifteen percent) of the Invoice, unless the Goods are proved to be non-conformed by PACE Technologies.

## 1.0 Product Description

### 1.1 General Description



- The PICO-200 is a precision wafering table saw for sectioning delicate specimens ranging from fish bones to microelectronic components. The PICO-200 has the ability to cut at speeds ranging from 100 to 3000 rpm. The PICO-200 comes equipped with vertical vices and a straight angle bar. The T-Slot table allows the fixtures to be mounted where needed to achieve the best cut possible.
- The PICO-200 has a large cutting area and is capable of sectioning long parts. The PICO-200 features a wheel feeding mechanism. The ability to move the blade into the sample allows control of the cutting pressure and feed rates.

## 1.2 Technical Specifications

<u>Electrical Specifications:</u>	110 / 220 Volts (50 / 60 Hz)
<u>Cut-Off Wheels:</u>	6in - 8in Diamond Blades 6in - 8in Abrasive Blades
<u>Motor Power:</u>	400W (0.5HP)
<u>Variable Speed Range:</u>	100 - 3000 rpm Variable Speed
<u>Weight:</u>	Approx. 60lbs (28-kg)
<u>Dimensions (W x H x D):</u>	Approx. 16in x 9in x 17in (410mm x 230mm x 432mm)
<u>Working Temperature:</u>	32° - 100°F (0 – 40°C)
<u>Shipping Temperature:</u>	32° - 130°F (0 – 54°C)
<u>Storage Temperature:</u>	32° - 100°F (0 – 40°C)
<u>Tank Size:</u>	1 Gallon (MAX)

## 1.3 Basic Size Dimensions

**Note:** Installation of the PICO-200 should take place on a sturdy flat surface with access to a drain and electrical connections.



## 1.4 Features

- The PICO-200 is equipped with a large T-Slot cutting surface. This allows for a large variety of parts to be mounted and sectioned as required.
- Measurement increments clearly contrasted to the hard-black coating make it easy to line up straight cuts. Vertical vices are utilized to clamp down on surfaces of samples, including irregular shaped samples.
- The PICO-200 is a variable speed diamond saw. The ability to adjust the rpm is essential to properly tune a procedure and to ensuring the quality of the cut



surface. Simply rotating the speed knob, on the front panel, will adjust the rpm of the machine from 100 to 3000 rpm. Adjustments are very visible due to the PICO-200's large digital LCD readout display.

- The PICO-200 utilizes a magnetic stop sensor for an added layer of safety while the machine is powered on. If the hood is opened the machine will cut power to the motor and stop the blade from rotating. The PICO-200 is also equipped with an override button if hand feeding of samples is needed.

## 2.0 Shipping, Unpacking and Installation

### 2.1 Shipping

- The PICO-200 is shipped in a specially designed custom box. When unpacking check that all parts are included and undamaged.

### 2.2 Unpacking

- When moving box, lift from the bottom.
- It is recommended a minimum of two people assist when moving an object exceeding 40lbs.

Measurements:  
(W x H x D)

Approx. 16in x 9in x 17in  
(410mm x 230mm x 432mm)

Weight:

Approx. 60lbs (28-kg)

**! Caution:** Heavy equipment. Take care to avoid bodily injury.



## **2.3 Installation**

- The PICO-200 should be placed on a stable flat surface with access to drain and electrical connections.
- After drain and electrical connection are establish the system is ready for operation by activating the main power switch.

## **2.4 Side Connections**



### 3.0 Safety Guidelines

#### 3.1 Warning Sign:



A large explanation point is used to point out special safety features on the machine.

#### 3.2 Safety Precautions

- ! Careful attention to this instruction manual and the recommended safety guidelines is essential for the safe operation of the PICO-200.
- ! Proper operator training is required for operation of the PICO-200. Any unauthorized mechanical or electrical modifications made to the PICO-200, as well as improper operation, voids all warranty claims. All service issues need to be reported to the manufacturer or supplier.
- ! Operate unit as specified in this manual.
- ! Disconnect from power before opening unit.
- ! Do not leave tools inside cutting chamber.
- ! Be mindful of fingers when closing the table and lid.
- ! Extra precaution should be taken when magnetic stop is overridden.
- ! Ensure all samples are securely held in place before cutting.

#### 3.3 Emergency Statement

The PICO-200 table saw was designed for cutting metallographic specimens. **DO NOT CUT** oversized objects. Always follow proper operational guidelines and avoid contact with moving parts, lubricants, and sharp edges. Seek immediate medical care for cutting injuries.

## 3.4 Safety Test



**Important:** The following safety check of the magnetic safety cut-off switch is **required** to verify that the PICO-200 is functioning properly and is ready to use.

Test:

- 1). Activate main power switch to turn on machine.
- 2). Deactivate override button, if active.
- 3). Start the motor.
- 4). Lift the hood

Correct Response:

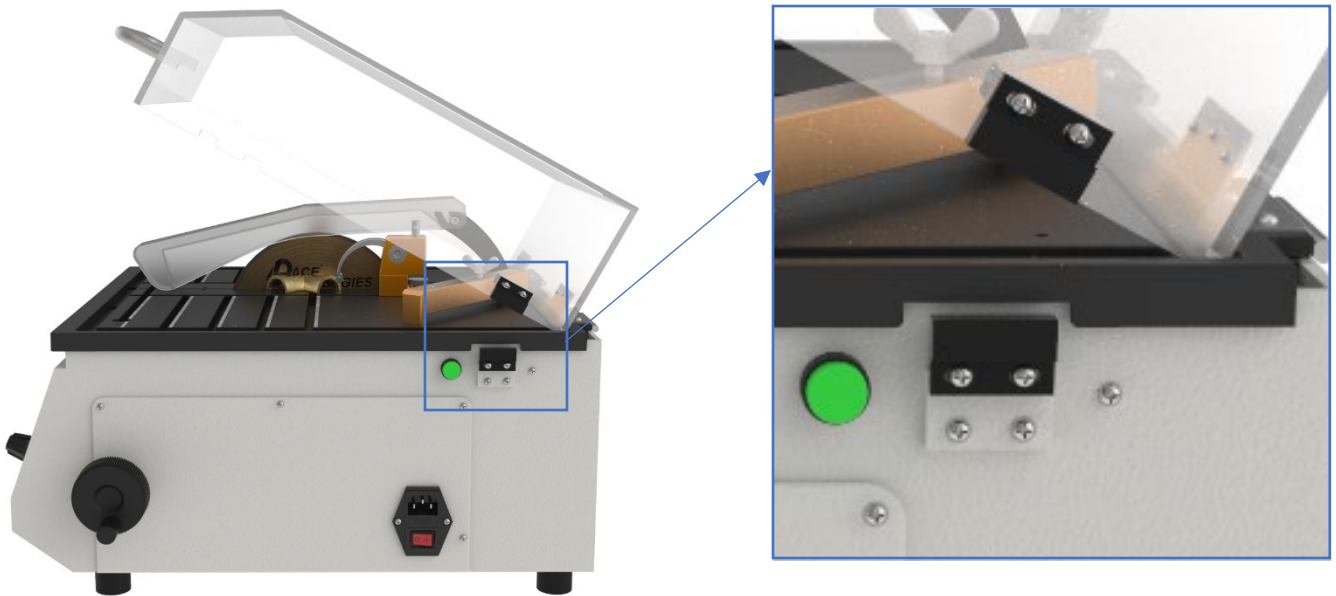
The motor immediately powers down.

Malfunction:

Motor does not lose power.

Corrective Measure:

If the motor fails to lose power, disconnect the power supply cord and call a service technician before continuing use.



## 4.0 Start-up and Operation

### 4.1 General

- The PICO-200 is a highspeed table saw.

### 4.2 Control Panel



Cutting Wheel On:

Starts the cutting wheel.

Cutting Wheel Off:

Stops the cutting wheel (inductive break engages to slow wheel).

Rpm Dial:

Adjust rpm of cutting wheel.

Digital Speed Control:

Displays the rpm of the cutting wheel set by the rpm dial.

### 4.3 Changing the Wafering Blade

1. Grab the front of the table and lift. The table will lift and lock into multiple positions.
2. Place the blade flange onto the shaft. Ensure that the flat side of the flange is pressed against the collar of the flange.
3. Slide the proper sized blade onto the shaft.
4. Install the remaining flange, ensuring that the flat side of the flange is left exposed.
5. Attach the end cap and bolt.
6. Hand tighten the bolt.
7. Using the two provided wrenches, place one on the shaft and one on the bolt. Rotate in opposite directions to tighten everything together.
8. The blade is now safe to use.

To prevent shaft from turning, use wrench to hold it in place.

#### Changing the Blade:

Remove: loosen by turning counter-clockwise

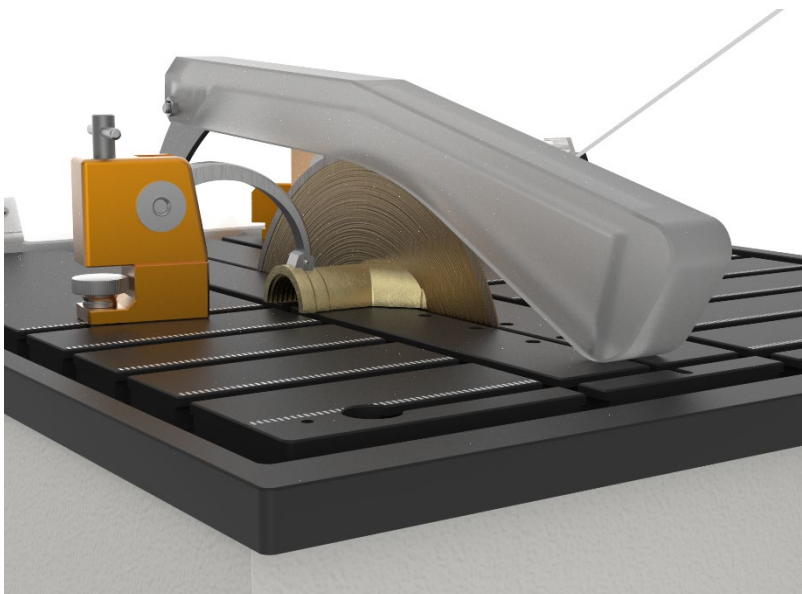
Tighten: Turn clockwise



## 4.4 Securing a Sample

**Note:** If a sample is unable to be properly secured on the tables surface, a larger abrasive saw such as a MEGA M250 can be used to create a flat surface.

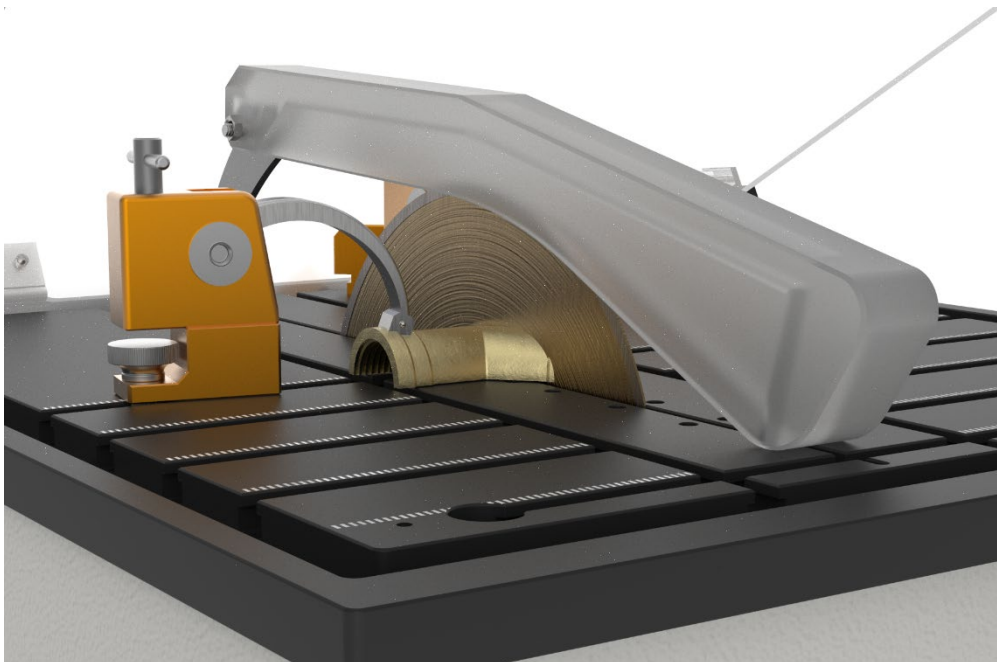
1. Using the blade travel knob, move the blade towards the back of the machine.
2. Position the vertical vice(s) in the desired configuration by sliding the square nut through the slots on the T-Slot table.
3. Orient the sample in front of the blade.
4. Rotate the vices so that the arm is over the top of the samples surface.
5. Tighten the vice down onto the table buy rotating the large screw on the back side of the vice.
6. Rotate the T-bar on the top of the vice until it touches the samples surface. Apply some pressure onto the sample. If using more than one vice, repeat steps.





#### 4.5 Cutting (Step-by-Step Procedure)

1. Ensure sample is secured properly to the table's surface (see reference section Securing a Sample above).
2. Close the PICO-200 acrylic hood.
3. Power on the PICO-200.
4. Set the desired rpm using the speed adjustment knob.
5. Press the green start button.
6. Rotate the blade travel knob to move the blade into the sample.
7. Adjust feed rate as needed.
8. Once the sample is cut all the way through, press the red stop button.
9. Open the hood and undo the vices, then take the sample out.





## 5.0 Maintenance

### 5.1 Introduction

- The PICO 200 wafering saw requires very minimal maintenance. However, to increase the life of the saw, it is suggested that the cutting fluid be changed regularly (weekly) using a cutting fluid containing an anti-corrosion additive (e.g. DIACUT 2 cutting fluid).
- After use it is also recommended that the unit be thoroughly rinsed and dried, leaving the hood open



**DIACUT Oil-Based  
Cutting Fluid**



**DIACUT 2 Anti-Corrosion  
Cutting Fluid**

### 5.2 Cleaning Outside Cabinet

- The outside cabinet and acrylic head can be cleaned with a damp cloth. **Do not** use cleaning chemicals or cleaning abrasives.

## **5.3 Service Panel**

- The PICO-200 is equipped with a removable side panel for service access.



## 6.0 Trouble Shooting

- For more extensive trouble shooting, repair guides, videos, and parts list visit <https://www.metallographic.com/PACE-service/pico200-service.html>

Problem	Cause	Solution
No Power or Function	a. Unit is disconnected from main electrical power supply	Verify electrical source and connection
	b. Main power switch is turned off	Turn on main power switch
	c. Emergency stop button is engaged	Release emergency stop button by turning clockwise
	d. Magnetic switch is not engaged	Close hood or wiggle hood in closed position until magnetic switch is engaged
	e. Shut off switch is engaged	Lift specimen holder arm or turn up shut off switch
	f. Loose or broken wire	Disconnect power and open up back panel. Check for any loose or broken wires at the 100 / 220V switch and power switch
	g. Unable to determine cause of problem	Contact service technician

## 6.0 Trouble Shooting Continued

Problem	Cause	Solution
Main Motor does not Operate	a. Hood is not closed properly	Securely close the hood
	b. Overload activated (error E1)	Press stop button and then start button
	c. Transformer switch not set to the correct voltage	Set switch to the correct voltage