PICO-200S Manual Table Feed Saw

Instruction Manual

Equipment	Manual Table Feed Saw
Model	PICO-200S
Electrical Requirements	110V or 220V
Frequency	50/60 Hz
Manual Revision Date	November 6, 2025

WARRANTY
Terms and Conditions apply to all PACE Technologies Products.

1. LIMITED WARRANTY AND DISCLAIMER
PACE Technologies Equipment is under warranty 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. "Normal operating conditions" are defined as the operational environment specified in the product manual or technical specifications. Warranty is void if equipment is used outside these conditions, modified without written authorization, or if recommended maintenance is not performed. Consumables are excluded from warranty coverage.

PACE Technologies' obligation under this warranty shall be limited to the repair or exchange, at PACE Technologies' discretion, of any PACE Technologies equipment or part which proves to be defective as provided herein. Repair or replacement processes, including turnaround times, are subject to change. PACE Technologies reserves the right to either inspect the product at the Buyer's location or require it to be returned to the factory for inspection. The Buyer is responsible for freight to and from the factory on all warranty claims. This warranty does not extend to Consumables, goods damaged or subjected to accident, abuse, misuse after release from PACE Technologies' warehouse, nor goods altered or repaired by anyone other than specifically authorized PACE Technologies representatives without written approval. Regular maintenance as specified in the equipment manual is required to maintain warranty coverage. Failure to perform recommended maintenance may void warranty.

Equipment requiring installation must be installed by qualified personnel in accordance with local codes and regulations. PACE Technologies does not provide installation services for all equipment. Customer is responsible for ensuring proper installation and may void warranty if installation is performed incorrectly.

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, including Buyer's specifications and any description in catalogs, circulars, and other written material, is solely for identification and does not create an express warranty that the goods shall conform to such description. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. THERE ARE NO IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. THIS WARRANTY STATES PACE TECHNOLOGIES' ENTIRE AND EXCLUSIVE LIABILITY AND THE BUYER'S EXCLUSIVE REMEDY FOR ANY CLAIM FOR DAMAGES IN CONNECTION WITH THE PRODUCTS. PACE TECHNOLOGIES WILL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES WHATSOEVER, NOR FOR ANY SUM IN EXCESS OF THE PURCHASE PRICE.

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, whether such liability arises from any one or more claims for breach of contract, tort (including negligence), delayed completion, warranty, indemnity, strict liability, or otherwise, shall be limited to one hundred percent (100%) of the purchase price, excluding lost profits, business interruption, indirect damages, and consequential damages.

3. DELIVERY
The 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 the Customer upon PACE Technologies' delivery of the Products to the common carrier of PACE Technologies' choice, or the carrier specified in writing by the Customer, for shipment to the Customer. Any claims for breakage, loss, delay, or damage shall be made to the carrier by the Customer, and PACE Technologies will render reasonable assistance in prosecuting such claims.

4. ACCEPTANCE
Upon receipt of delivery, the Customer is obligated to inspect the Products within ten (10) business days. This inspection should include a verification of product specifications, condition, and completeness against the order details. If the Customer finds any damages, errors, or shortages in the Products, they must submit a written objection to **pace@metallographic.com** within thirty (30) business days from the date of delivery as recorded by the carrier. This objection email should include the corresponding invoice number noted in the subject line. The objection should include detailed descriptions and any relevant documentation, such as photographs, to support the claim. Failure to conduct an inspection or to submit any claim within this thirty (30) business day period, commencing from the carrier's recorded delivery date, will be deemed as the Customer's acceptance of the Products as is. This acceptance constitutes a waiver of any right to make future claims regarding the condition or completeness of the products received. The Customer's acknowledgment of receipt is not required to initiate this inspection period.

5. PAYMENT
Payment Terms: Net 30 days for domestic customers with approved credit. International customers are required to pre-pay unless alternative arrangements are made in writing. Credit approval required for all Net 30 terms. The Customer agrees to provide timely payment for the Products in accordance with the terms of payment that are set forth on the corresponding Order Acknowledgment sent from an authorized PACE Technologies representative. PACE Technologies reserves the right to charge interest on late payments at the lesser of 12% per annum or the maximum rate allowed by law, and may suspend future shipments until the account is current.

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

7. MISCELLANEOUS PROVISIONS
This agreement is exclusively governed and interpreted in accordance with the laws of the State of Arizona, without regard to its conflict of law principles. Any disputes, controversies, or claims arising out of or relating to the purchase of the equipment, including but not limited to its validity, interpretation, performance, breach, or termination, shall be resolved through binding arbitration. However, both parties agree that before proceeding to arbitration, they will attempt to resolve disputes through mutual negotiation or mediation. Arbitration shall be conducted in Pima County, Arizona, under the rules of the American Arbitration Association (AAA), but with the following stipulations:

- Each party shall bear its own costs related to the arbitration, regardless of the outcome. This includes attorney fees, administrative fees, and other expenses incurred during the arbitration process.
- The arbitrator's authority shall be limited to making determinations under the existing terms of this Agreement and shall not have the authority to award punitive or exemplary damages.
- The arbitration award shall be final and binding, and judgment on the award rendered by the arbitrator(s) may be entered in any court having jurisdiction thereof.

These terms and conditions, along with the product descriptions as outlined in the accompanying Order Acknowledgment or other official PACE Technologies documentation, constitute the entire agreement between the parties regarding this sale. This agreement supersedes all prior or contemporaneous agreements, negotiations, representations, and proposals, written or oral, related to its subject matter. Any amendment or modification to this Agreement is effective only if it is in writing and signed by duly authorized representatives of both parties. A waiver by either party of any breach or default under this Agreement shall not constitute a waiver of any subsequent breach or default and will not in any way affect the other terms of this Agreement.

8. RESTOCKING FEE

Equipment returns are subject to a 15% restocking fee unless determined to be non-conforming. Consumables may be returned within 30 days if unopened and in resaleable condition, subject to a 15% restocking fee. Opened consumables are not returnable. All returns must be in original condition with packaging and documentation.

In the event of a return due to non-conforming goods, PACE Technologies will conduct a thorough inspection and verification process. If the products are confirmed to be non-conforming, PACE Technologies will waive the restocking fee and may, at its discretion, offer a replacement, repair, or refund for the non-conforming goods. Failure to return goods in their original condition may result in additional charges or refusal of the return. PACE Technologies reserves the right to amend the restocking fee policy for specific categories of products, special orders, or in cases of bulk purchases, as detailed in the Order Acknowledgment at the time of sale.

Consumables should be stored according to manufacturer recommendations. Customer is responsible for checking expiration dates and proper storage conditions as indicated on product packaging.

9. DATA AND PRIVACY

Customer data handling is governed by our Privacy Policy, available on our website. Customer is responsible for data backup before any service or maintenance work. PACE Technologies is not liable for data loss during service or maintenance.

10. INTELLECTUAL PROPERTY PROTECTION

Customer may not reverse engineer, copy, or modify equipment without written authorization. All proprietary information remains confidential. Customer may not resell equipment without written permission. Trademark and copyright notices must remain visible. Any unauthorized modification voids warranty and may result in termination of support services.

11. FORCE MAJEURE
PACE Technologies shall not be liable for delays or failures in performance due to circumstances beyond its reasonable control, including but not limited to acts of God, war, terrorism, pandemic, government action, supplier delays, material shortages, labor disputes, or transportation issues. Either party may terminate this agreement if such delay exceeds 90 days.

12. DEFAULT AND TERMINATION
If Customer is in default, PACE Technologies may accelerate all payments, suspend shipments, place account on credit hold, and pursue collection remedies. Customer is responsible for all collection costs, including attorney fees. PACE Technologies reserves the right to repossess equipment if payments are not made as agreed.

13. SERVICE AND MAINTENANCE
Service calls outside warranty are subject to travel and labor charges. Customer is responsible for proper electrical and utility connections. Service response times are not guaranteed. Training requirements may apply for certain equipment. Customer must comply with all safety regulations and local codes.

14. INTERNATIONAL SALES
International customers are responsible for all customs duties, taxes, and import fees. Currency fluctuations may affect pricing. Customer must comply with all export and import regulations. International warranty terms may differ from domestic terms. Customer is responsible for obtaining necessary import licenses and permits.

15. SOFTWARE AND FIRMWARE
Software is licensed, not sold. Customer may not copy, modify, or distribute software. Updates and support are provided at PACE Technologies' discretion. Customer is responsible for maintaining current software versions. Software license terminates with equipment sale or transfer.

Table of Contents

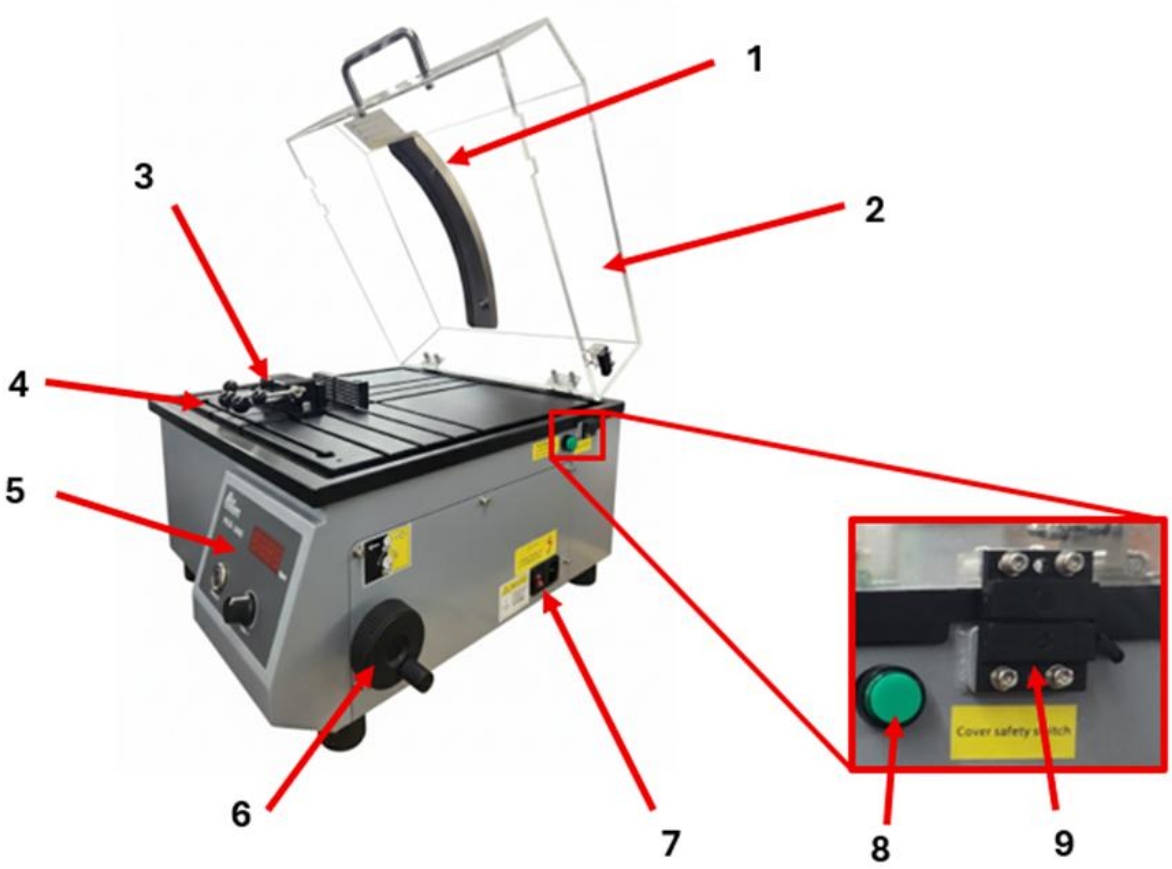
1.0 Product Overview

The PICO-200S is a precision wafering saw that delivers accurate sectioning across different sample types, including PCB boards, semiconductor components, wafer ceramics, quartz glass, and petrographic materials. Its variable cutting speed (100–3000 rpm) supports both delicate and high-demand cutting tasks.

The T-slot worktable of the PICO-200S provides flexible fixturing options, and the system includes horizontal vises and backstops, with compatibility for additional workholding accessories, such as the vertical vise and straight angle bar. The large cutting area accommodates long parts, while the wheel-feeding mechanism enables precise control of blade pressure and feed rate for consistent, high-quality results.

1.1 Features

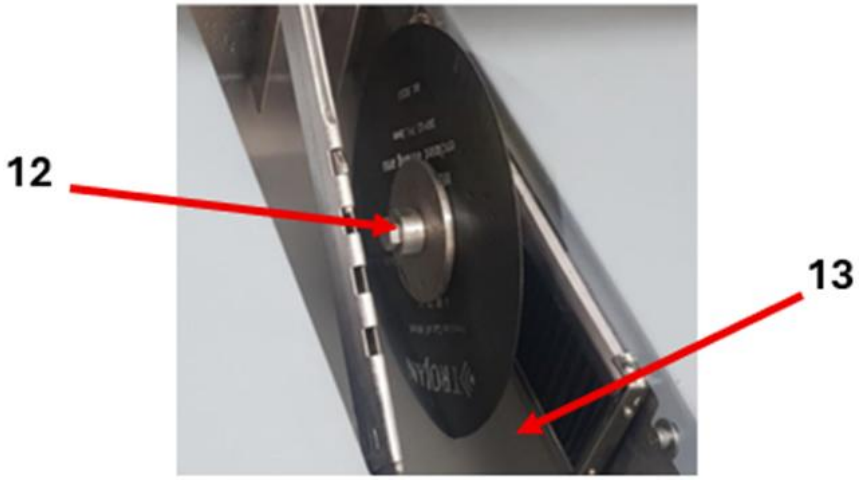
- Variable cutting speed: 100 - 3000 rpm for optimized processing across different materials.
- T-slot worktable for flexible fixture positioning and stable sample support.
- Supplied with horizontal vises and backstops; compatible with vertical vises and straight-angle bars.
- Large cutting area for sectioning long or oversized parts.
- Wheel-feeding mechanism for precise control of blade engagement, feed rate, and cutting pressure.



1. Splash Guard
2. Acrylic Cover
3. Horizontal Vises and Backstops set
4. T-slot Cutting Worktable
5. Control Panel
6. Cutting Blade Feed Wheel
7. Power Socket and Switch
8. Safety Magnetic Over-ride Button
9. Safety Magnetic Switch

Note: The Safety Magnetic switch causes the cutting wheel to stop running when the acrylic cover is lifted, whereas pressing the Safety Magnetic Over-ride Button deactivates it in case it's needed to lift the worktable to access the cutting wheel while running for dressing, hand feeding of samples, or other purposes.

10. Cooling Fan
11. Coolant Drain and its valve



12. Cutting Wheel Flanges
13. Coolant Tank

1.2 Technical Specifications

Wheel	**Diameter**	7 – 8-inch (178 – 203 mm)
	Arbor	0.5-inch (12.7 mm)
	Material	Diamond Blades Abrasive Blades
	Speed	100 – 3000 rpm
Electrical	**Voltage / Frequency**	110/220 V (50/60 Hz)
	Rated Power	0.95 kW
Cutting Capacity	**Max. Cutting Diameter**	1.2-inch (30 mm)
	Max. Square Cross-Section	1.2 × 2-inch (30 × 50 mm)
Working Table	**Dimension (W × D)**	13.8 × 14.6-inch (350 × 370 mm)
	Y-axis	Manual Cutting (blade moves by operating a hand wheel)
	Travel	3.9-inch (100 mm)
Coolant Tank	**Capacity**	3 Liters
	Cooling System Type	Internal
Temperature Condition	**Working**	32° - 100°F (0 – 40°C)
	Shipping	32° - 130°F (0 – 54°C)
	Storage	32° - 100°F (0 – 40°C)
Overall Dimension	**W × D × H (Closed)**	18.5 × 19.9 × 14.2-inch (470 × 505 × 359 mm)
	W × D × H (Open)	18.5 × 21.9 × 24.8-inch (470 × 556 × 631 mm)
Weight	99.2 lbs (45.0 kg)	

2.0 Equipment Handling & Setup

2.1 Shipping

When moving the unit from or to a pallet, seek assistance and lift by the base. The PICO-200S is constructed with sensitive electronic and mechanical components. Do not drop.

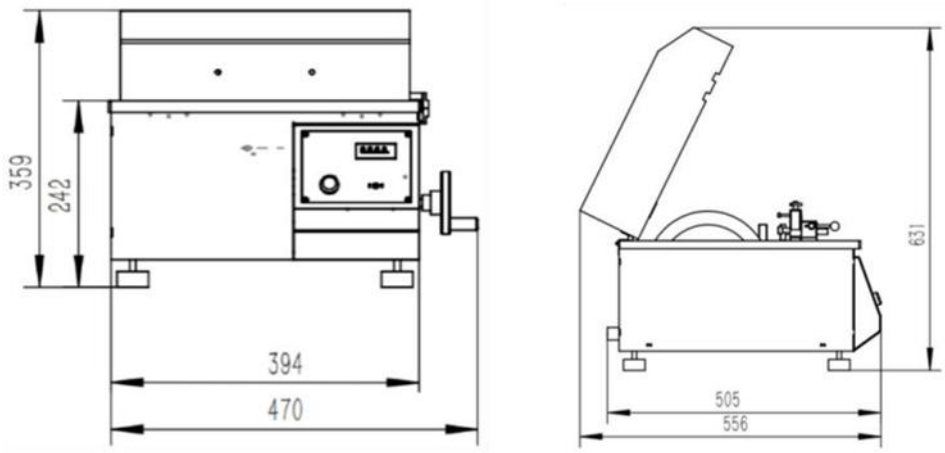
Caution: Heavy equipment. Take care to avoid bodily injury.

2.2 Unpacking

The unit is delivered in a box on a pallet. Unpack and check for completeness and quality of parts.

2.3 Installation

Install the unit carefully! Improper installation voids the warranty.



1. The ***PICO-200S*** should be placed on a flat, stable surface.
2. The unit is set **for 110V or 220V**. Contact the sales representative for any changes in voltage.
3. Verify the voltage and other electrical information of the unit on the nameplate in the back.
4. After verifying that the Cutting Wheel Flanges are tight, press the “ON” to start the machine and verify the direction of rotation of the cut-off wheel. The wheel blade/flanges should turn from top to bottom as viewed from the front of the machine. If not, contact Pace customer service to resolve this issue.

3.0 Safety Guidelines

This sign points to special safety features on the machine.

3.1 Safety Precautions

Careful attention to this instruction manual and the recommended safety guidelines is essential for the safe operation of the PICO-200S.

Proper operator training is mandatory for the safe operation of the PICO-200S. Any unauthorized mechanical and electrical change, as well as improper operation, voids all warranty claims. All service issues need to be reported to the manufacturer/supplier.

Before operating, the cutting chamber hood must be closed.

Use only certified wafering wheels from a professional supplier. Improper blade selection voids warranty. (For appropriate blade selection, refer to the Wafer Cutting Consumables section on page 11).

Disconnect power before opening the machine, especially the electrical side.

Replacement parts should be installed only by qualified personnel and according to the guidance of one of the PACE sources and/or a customer service rep.

Securely clamp the part /sample to the working table. During cutting, consider that the part may pinch and cause jamming of the cut-off wheel. Use the appropriate clamping devices to avoid this occurrence.

Never start cutting under load.

Do not leave tools inside the cutting chamber.

Be mindful of fingers when closing the table and lid.

Extra precautions should be taken when the magnetic stop is overridden.

Ensure the cut-off blade is rotating down and into the sample.

3.2 Emergency Statement

Always follow proper operational guidelines and avoid contact with moving parts, lubricants, and abrasives. Seek appropriate medical care for cutting injuries.

3.3 Safety Tests

Examine and verify that the PICO-200S safety devices and operating performance are in good working condition prior to use. The following safety checks are considered important:

Safety Magnetic Switch

Test	Activate the main switch and close the hood. Run the cutting wheel by pressing the "START" button. Open the hood slightly (approx. 1 inch).
Proper Response	The cutting wheel stops.
Malfunction	The cutting wheel does not stop.
Corrective Measure	If the system does not power down, disconnect the power supply cord and contact customer service.

4.0 Start-Up and Operation

Make sure to perform the following setup procedures after the installation and safety testing of the PICO-200S before operation and use:

4.1 Coolant System Setup

- Close the drain valve and lift the workbench to add the cutting coolant.

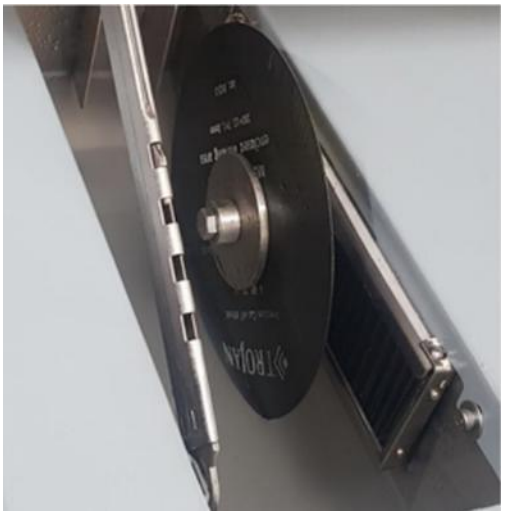
Note: Distilled water and/or deionized water are not recommended for use with the PICO-200S, as both these liquids will absorb carbon dioxide from the air and form a corrosive solution. It is highly recommended that a cutting solution with a corrosion inhibitor be used in the machine (Refer to Maintenance section for recommendations).

- The cutting coolant should not be filled too high; the level should submerge approximately 15 mm of the cutting blade.
- Close the workbench by lifting it fully upward and then lowering it back down completely.

- To empty the tank, open the drain valve and let the coolant drain out.

4.2 Cutting Blade Setup and Replacement

1. Lift the front of the worktable, which should be locked into multiple positions.
2. Place the right 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-size blade onto the shaft.
4. Install the left flange, ensuring that the flat side of the flange is left exposed.
5. Attach the end cap and bolt and hand-tighten it.
6. Using the two provided wrenches, place one on the shaft and one on the bolt. Rotate in opposite directions to tighten everything together.



Changing the Blade:

Remove: loosen by turning counterclockwise

Tighten: Turn clockwise

Note: It is recommended to dress the blade periodically to optimize its effectiveness.

4.3 Sample Setup

Note: If a sample cannot be properly secured on the table's surface, a larger abrasive saw, such as a MEGA-M250S, can be used to secure it in place.

Depending on the size, material, and shape of the sample required to be cut, the right clamping vise device will be selected to secure the sample in place during the cut. Contact a customer service representative for further clarification and guidance in this matter.

Using the Horizontal Vises:

The standard Quick Clamping Vises (Left and Right) with their Backstop are usually used to clamp the sample securely.

- Check if the Backstops are bolted down to their place in their dowel pins into the far edge of the cutting table.
- Place the sample against the Backstops and flat on the cutting table.
- The vises need to be pushed all the way back until they reach the sample and can clamp it from both sides.
- Bolt down both vises to the cutting table and then clamp the sample in place. Try to move the sample to verify that it's clamped securely and properly.

Using the Vertical Vises:

- Using the blade travel knob, move the blade towards the back of the machine.
- Position the vertical vise(s) in the desired configuration by sliding the square nut through the slots on the T-Slot table.
- Orient the sample in front of the blade.
- Rotate the vises so that the arm is over the top of the sample's surface.
- Tighten the vise down onto the table by rotating the large screw on the back side of the vise.
- Rotate the T-bar on the top of the vise until it touches the sample's surface. Apply some pressure to the sample. If you use more than one vise, repeat the steps.

4.4 Operation

- Install the right Cutting Blade for the sample as instructed.
- Close the valve of the Coolant Drain in the back and lift the worktable to fill up the tank with the proper coolant solution as recommended.
- Close the Worktable and shake the handwheel to see if the cutting piece moves smoothly, and then close the Acrylic Cover.
- Set the speed to the minimum RPM with the Speed Dial and start the run, and increase gradually.
- After verifying that everything is normal, stop the run.

Cutting Options:

1. **Fixed Sample – Moving Cutting Blade:** The sample is fixed, and the cutting blade is moved to cut it. Suitable for cutting off small workpieces that are difficult to hold in place.

- Place the sample on the worktable and aim at the position to be cut.
- Press the workpiece with a vertical or horizontal clamping fixture as instructed in the Sample Setup.
- Close the Acrylic Cover and click the start button to run the cutting piece. Adjust to a proper speed as needed.
- Rotate the handwheel slowly so that the cutting blade is gradually moving closer to the sample until the sample starts cutting off.

2. **Moving/ Sliding Sample – Fixed Cutting Blade:** The fixed cutting blade pushes through the sample, ideal for circuit boards and large workpieces.

- Put on the water protective cover.
- Click the start button to rotate the cutting blade.
- Adjust to a proper speed and press the sample on the working table with both hands and push forward slowly, maintaining a parallel thrust during pushing until the sample is cut off.

Notes: At the end of each cutting, set the speed to zero, in case the next time starts up, and the protective cover is not put on, the water from the rotating cutting blade will splash on the operator. The cutting piece should be close to the sample slowly to prevent the cutting speed from being too fast, so that the cutting blade is clamped or the cutting piece is pressed out of shape.

4.5 Wafer Cutting Consumables

Wafer Blade Selection Guideline

Material	Characteristic	Speed (rpm)	Load (grams)	Blade (grit/conc.)
Silicon substrate	Soft/Brittle	<300	<100	Fine/Low
Gallium arsenide	Soft/Brittle	<200	<100	Fine/Low
Boron composites	Very brittle	500	250	Fine/Low
Ceramic fiber composites	Very brittle	1000	500	Fine/Low
Glasses	Brittle	1000	500	Fine/Low
Minerals	Friable/Brittle	>1500	>500	Fine/Low
Alumina ceramic	Hard/Tough	>1500	>500	Medium/Low
Zirconia (PSZ)	Hard/Tough	>3500	>800	Medium/Low
Silicon nitride	Hard/Tough	>3500	>800	Medium/Low
Metal matrix composites	—	>3500	>500	Medium/High
General purpose	—	Variable	Variable	Medium/High

Pace Technologies offers a wide selection of wafering blades ranging from 3 to 8 inches. Explore our available blades at ***shop.metallographic.com*** or click this link.

Abrasive Cutting Fluids

Pace Product Name	Catalog No	Packaging
DIACUT™ Water-Based Diamond Cutting Fluid	WL-3000-16 WL-3000-32	16 oz 32 oz
DIACUT™ 2 Water-Based Diamond Cutting Fluid with Anti-Corrosion Additive	WL2-3000-16 WL2-3000-32	16 oz 32 oz
DIACUT™ Oil-Based Diamond Cutting Fluid	OL-3000-16 OL-3000-32	16 oz 32 oz

4.6 Accessories

The accessories listed below are not included with the equipment. Please contact us at pace@metallographic.com for inquiries or additional information.

Type	Part Number	Image
Horizontal Quick Clamping Vises	Left: P200-QCL Right: P200-QCR	
Backstops for Horizontal Quick Clamping Vises	P200B	
Vertical Clamping Vises with Shoes	P200V	
Height Adapters for Vertical Clamping Vises	P200H	
Cutting Guide	P200G	

5.0 Maintenance

The PICO-200S 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.

5.1 Cleaning Outside Cabinet

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

5.2 Service Panel

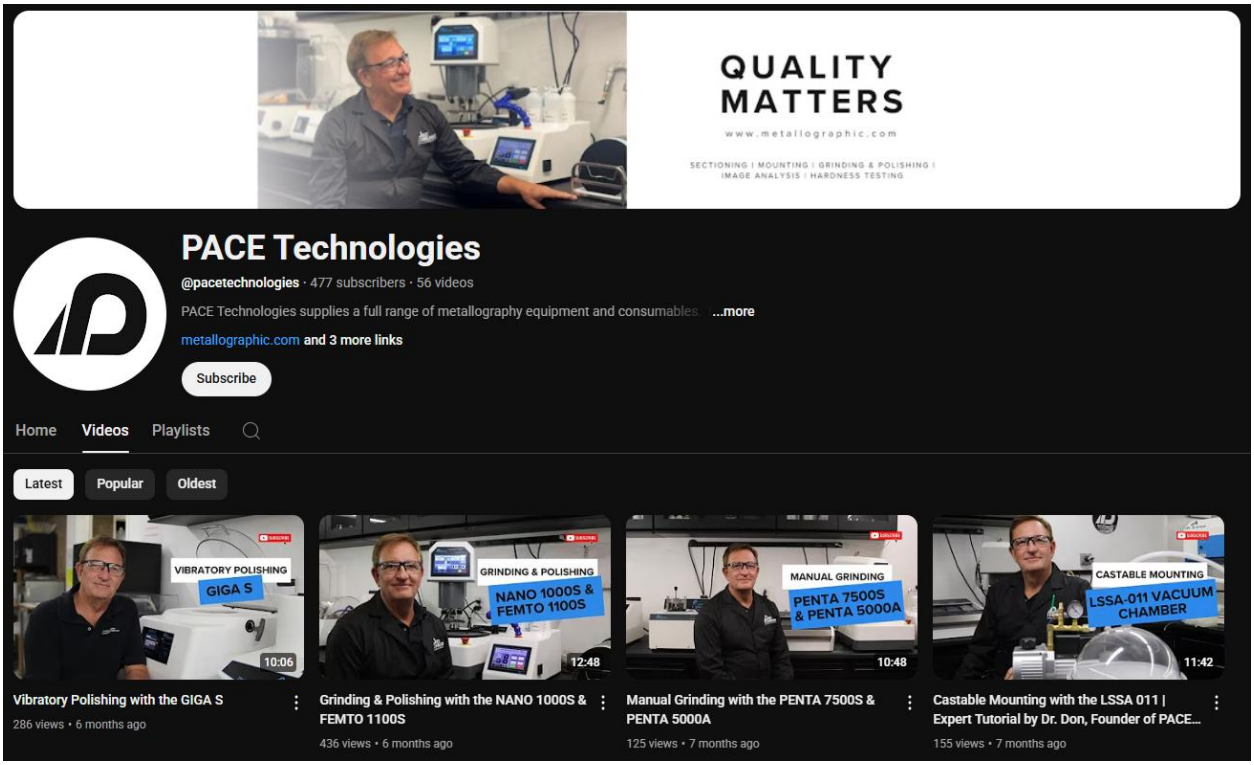
The PICO-200 is equipped with a removable side panel for service access.

6.0 Troubleshooting

Problem	Cause	Solution
No Power or Function	a. Unit is disconnected from the main electrical power supply	Verify the electrical source and connection
	b. The main power switch is turned off	Turn on the main power switch
	c. The magnetic switch is not engaged	Close the hood or wiggle the hood in the closed position until the magnetic switch is engaged
	d. Shut off switch is engaged	Lift the specimen holder arm or turn up the shut-off switch
	e. Loose or broken wire	Disconnect power and open the back panel. Check for any loose or broken wires at the 100 / 220V switch and power switch
	f. Unable to determine cause of problem	Contact the service technician
Main Motor Does Not Operate	a. Hood is not closed properly	Securely close the hood
	b. Overload activated (error E1)	Press the stop button and then the start button
	c. The transformer switch is not set to the correct voltage	Set the switch to the correct voltage

7.0 YouTube Video Tutorial

YouTube Tutorials at **youtube.com/@pacetechnologies** or click on the image below:



8.0 Additional Resources

Scan the QR code below for updates, tips, and industry insights:

Follow us for updates!