



ULTRASONIC CUTTER MANUAL

English Branded Edition

For FIBC, PP woven fabric, laminated fabric and technical textile cutting applications

Branding Heyaansh FIBC Pvt Ltd	Document Type Operator, Safety & Maintenance Manual	Website Theme Orange / Gold / Black
--	---	---

Important: Read the safety precautions before installation, operation, adjustment or maintenance.

Contents

1. Safety Precautions
2. General Information
3. Operation Instructions
4. Settings and Adjustment Guide
5. Maintenance of Ultrasonic Equipment
6. Installation Appendix
7. Quick Operator Checklist

Operator Quick Reference

This manual has been converted into English-only format and restyled for Heyaansh FIBC branding. Use this document for operator training, safety awareness, basic operation and routine maintenance. For electrical repair, internal control-box work or pneumatic repair, use trained technical personnel only.



Sealed Edges
Reduced fraying



Low Pressure
Less material damage



FIBC Fabric
PP woven materials

1. Safety Precautions

The following safety instructions are mandatory for safe installation, operation, adjustment and maintenance of the ultrasonic cutter. Incorrect operation can cause personal injury, equipment damage, electric shock or fire.

1.1 Safety Signs and Their Meanings

Sign	Meaning	Icon
Danger	Ignoring this warning and operating incorrectly may cause serious personal injury or death.	&
Caution	Ignoring this notice and operating incorrectly may cause personal injury or equipment damage.	!9
Attention	Pay attention to the marked hazard or instruction. The symbol indicates the specific matter requiring attention.	% ³
Forbidden	The marked action is not allowed.	"~
Must / Ground	The marked action must be carried out. Grounding must be reliable.	#Ú

1.2 General Safety Rules

- Before opening the control box, turn off the power switch, unplug the power supply and wait at least 5 minutes. Touching high-voltage parts can cause injury.
- Avoid operating the machine near strong electrical interference sources, such as high-frequency welding machines. Interference can affect normal operation.
- The power supply voltage fluctuation should remain within +/-20% of the rated voltage. If the fluctuation is larger, use a voltage regulator.
- Operate within the recommended working temperature range of 5°C to 35°C. Temperatures outside this range may affect operation.
- Use the machine in relative humidity of 45% to 85%, with no condensation inside the equipment.
- The compressed-air supply must exceed the total air consumption required by the machine. Insufficient air supply may cause abnormal machine action.
- During thunder, lightning or storm conditions, turn off the power and unplug the power cable.

1.3 Installation Safety

- Installation must be performed by trained technicians.
- Do not connect the machine to the power supply until installation is complete. Accidental pressing of the start switch may cause injury.
- When tilting or erecting the machine head, use both hands and avoid forcing the unit. Loss of balance may cause injury or equipment damage.
- The machine must be grounded. Loose or unreliable grounding may cause electric shock or malfunction.
- All cables must be fixed at least 25 mm away from moving parts. Do not over-bend cables or fasten them too tightly with nails or clamps.
- Install the safety cover on the machine head before operation.

1.4 Maintenance and Inspection Safety

- Only trained technicians should perform repair, maintenance and inspection.
- For electrical repairs, maintenance or inspection, contact qualified electrical-control personnel.
- Before inspection, adjustment, repair or replacement of consumable parts such as knives, switch off the power and unplug the machine.
- Before inspecting, adjusting or repairing pneumatic devices, disconnect the air supply and wait until the pressure gauge falls to zero.
- If adjustment must be performed with power and air connected, follow all safety instructions carefully and work with extreme caution.
- Unauthorized modification or disassembly may damage the equipment and can void warranty coverage.

Safety Reminder

Always isolate power and air before opening covers, changing cutting tools or servicing the machine.

2. General Information

2.1 Summary

Ultrasonic cutting loads ultrasonic vibration into a cutting tool. The cutting blade vibrates at high frequency, helping cut the material with low pressure and reduced friction.

2.2 Principle of Ultrasonic Cutting

The principle of ultrasonic cutting is different from traditional blade cutting. The ultrasonic transducer supplies energy to the tool, causing local heating and melting at the cutting point. Because of this, ultrasonic cutting does not require an extremely sharp edge or heavy pressure, and it helps reduce edge collapse, breakage and sticking on the blade.

A major advantage of ultrasonic cutting is that the cut area can be fused during cutting. This creates a sealed-edge effect and helps prevent loosened fabric structure or fraying. Applications can also extend to punching, scraping, engraving and slitting, depending on the tool and machine configuration.

2.3 Key Characteristics

Characteristic	Practical Meaning
Wide material range	Natural fibers, synthetic fibers, aramid fibers, carbon fibers, glass-fiber woven fabrics, non-woven fabrics and knitted fabrics can be processed where the machine/tool configuration is suitable.
Clean cutting	Low friction reduces sticking on the blade and helps create smoother edges.
Sealed edge effect	The cut edge can be fused while cutting, helping reduce loose threads and fabric fraying.
Lower contamination	The equipment heats locally during cutting and is intended to avoid smoke, smell and fire risk associated with some hot-cutting methods.
Suitable for FIBC production	Useful for PP woven fabric, laminated fabric and bulk-bag / jumbo-bag component cutting applications.

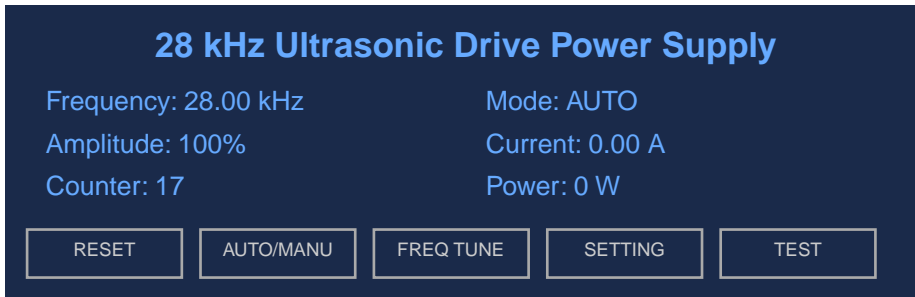
2.4 Working Conditions

Item	Recommended Condition
Use location	Indoor use
Humidity	<= 85% RH, no condensation
Ambient temperature	0°C to 40°C for equipment surroundings; 5°C to 35°C recommended for stable operation
Cooling space	Keep at least 150 mm clear space around the equipment for heat dissipation
Fan matching	Use 110V fan with 110V power supply and 220V fan with 220V power supply, as applicable

3. Operation Instructions

3.1 28 kHz Ultrasonic Drive Power Supply

The main screen displays frequency tracking, resonance frequency, amplitude, production counter, operating mode, current and power information.



English-only main screen reference

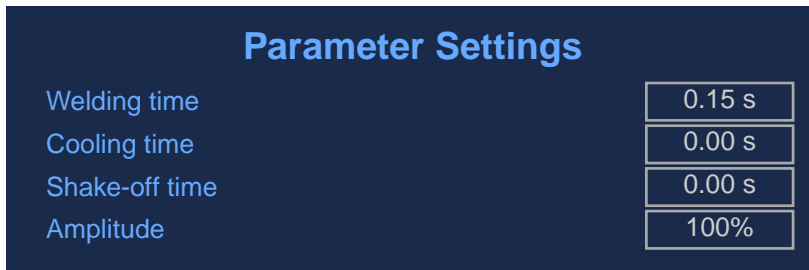
No.	Display Field	Function
1	Frequency Range	Shows the tracked resonance position of the transducer and horn. The ideal setting is near the generator centre frequency.
2	Frequency	Shows the actual resonance frequency at the current time, in kHz.
3	Amplitude	Shows ultrasonic output amplitude and output power percentage.
4	Counter / Volume	Shows the production count or ultrasonic welding/cutting operation count.
5	Mode	Two modes: Auto mode and Manual/Die-adjustment mode. In Auto mode, the process follows the preset time. In Manual mode, pressing Start lowers the head for adjustment.
6	Current	Shows the working current.
7	Power	Shows the maximum instant output power after operation.

3.2 Toolbar Functions

Key / Function	Description
Counter Reset	Clears the production count to zero.
Auto / Manual	Switches between Auto mode and Manual/Die-adjustment mode.
Frequency Tune	Starts automatic frequency scanning after replacing a horn or tool. After successful tuning, the system saves the frequency data automatically. If tuning is abnormal, the system alarms and displays the relevant malfunction message.
Setting	Opens the setting page to adjust welding/cutting parameters. Press again to confirm and save.
Resonance Test	Checks the no-load consumption power of the transducer, booster and horn assembly. It also helps confirm whether the horn is normal. A defective horn may trigger overload even without load.
Move Up / Move Down	Moves through parameters on the setting page.
Increase / Decrease	Adjusts the selected parameter value.

4. Settings and Adjustment Guide

4.1 Parameter Setting Page



English-only settings reference

Parameter	Typical / Allowed Value	Notes
Welding / Cutting Time	Example: 0.15 s	Adjust as required by material and cut quality.
Cooling Time	Example: 0.00 s	Use when the process needs cooling or stabilization time.
Shake-off Time	Application-specific	Used where the machine configuration requires a shake-off cycle.
Amplitude	0% to 100% adjustable	Below 20% may lead to low ultrasonic output. Sustained operation above 85% may reduce service life of transducer and horn.

4.2 How to Change Parameters

- Press SETTING to enter the parameter page.
- Use the move keys to select the parameter to be revised. The selected value will flash.
- Use + or - to increase or decrease the value.
- Press SETTING again to confirm, save and exit.
- After a horn or tool change, perform Frequency Tune before regular operation.

4.3 Mechanical Adjustment Points

The adjustment locations below are included as a reference. Always isolate power and air before mechanical adjustment unless a live adjustment procedure is specifically required and performed by trained personnel.

Label	Part	Use
A	Lock screw	Locks the mechanical setting after adjustment.
B	Printing pressure adjusting screw	Adjusts pressure according to machine configuration and material requirement.
C	Roll	Guides / supports the material during operation.

4.4 Power and Connection Reference

Connection Check
 Confirm that the power switch is OFF before connecting the ultrasonic drive power plug.
 Verify reliable grounding before operation.
 Do not place the drive power supply in a confined space; maintain cooling clearance.

5. Maintenance of Ultrasonic Equipment

- Maintain sufficient cooling space around the ultrasonic drive power supply. Do not operate it in a closed or confined space.
- Ensure reliable grounding to help prevent lightning, electric shock and other electrical hazards.
- Before connecting the plug, confirm the power switch is OFF.
- Use hearing protection when working near ultrasonic equipment to reduce the risk of hearing injury.
- Clean dust and lint from the machine area regularly, especially around the cutting head and cooling areas.
- Inspect cables, connectors and air lines for damage before operation.
- Do not modify the machine, horn, transducer, control box or pneumatic system without authorization from qualified personnel.

5.1 Routine Inspection Checklist

Frequency	Check	Status
Before shift	Power cable, grounding, air supply, emergency stop and safety cover are in proper condition.	
Before shift	Cutting tool / horn is clean, correctly fixed and not visibly damaged.	
Before shift	No loose objects near moving parts.	
During operation	Cut quality is stable; no abnormal noise, smell, heat or alarm.	
After operation	Power is switched off; machine area is clean; abnormal issues are reported.	
After tool change	Frequency Tune has been performed and saved successfully.	

6. Installation Appendix

The installation figure and mounting list are included as reference information. Actual installation should follow the final machine design, customer sample and qualified technician guidance.

No.	Pic No.	Part / Installation Item	Qty	Specification / Notes
1	CP101	Mounting frame	1	Reference only; final installation should follow the customer sample
2	CP102	Cross axis 1	2	Round steel
3	CP103	Compression spring	4	
4	CP104	Support ring	8	Ø25 - Ø40 - 15
5	CP105	Linear slider	4	SCS25UU
6	CP106	Support block	4	
7	CP107	Ultrasonic device	2	
8	CP108	Mounting plate	2	380 - 50 - 10
9	CP109	Cross axis 2	2	Round steel

7. Quick Operator Checklist

- Read and understand all safety precautions before operation.
- Confirm power, grounding and air supply are correct.
- Check that safety covers are fitted and the machine area is clear.
- Use correct settings for material thickness, fabric type and cut quality requirement.
- Perform Frequency Tune after tool / horn replacement.
- Wear hearing protection during operation.
- Stop operation immediately if abnormal sound, alarm, burning smell, excessive heat or unstable cutting occurs.
- Use trained technical personnel for repair, internal electrical work and pneumatic work.

Heyaansh FIBC Pvt Ltd

Premium FIBC bulk bags and industrial packaging solutions.

Website: heyaanshfibc.com

Email: info@heyaanshfibc.com

Phone: +91 90030 48815

