ULTRASONIC CLEANER

OWNER’S MANUAL

WARNING: Read carefully and understand all INSTRUCTIONS before operating. Failure to follow the safety rules and other basic safety precautions may result in serious personal injury.

Item #159445
Thank you very much for choosing a NORTHERN TOOL + EQUIPMENT CO., INC. Product! For future reference, please complete the owner’s record below:

Model: _______________     Purchase Date: _______________

Save the receipt, warranty and these instructions. It is important that you read the entire manual to become familiar with this product before you begin using it.

This machine is designed for certain applications only. Northern Tool + Equipment cannot be responsible for issues arising from modification. We strongly recommend this machine is not modified and/or used for any application other than that for which it was designed. If you have any questions relative to a particular application, DO NOT use the machine until you have first contacted Northern Tool + Equipment to determine if it can or should be performed on the product.

For technical questions please call 1-800-222-5381.

**INTENDED USE**

This item is widely used in fields like hospitals, pharmacies, schools, scientific researches, petroleum, chemical industry, light industry, metallurgy, machines, transportations, national defenses etc. Currently it’s an ideal, efficient and accurate unit to clean thoroughly the instrument, meter, electronic device, circuit board, silicon dice of a semiconductor, magnetic material, galvanized parts, hardware, optical lens, audio-frequency magnetic head, Terylene™ filtering core, spinneret, latex mold, medical apparatus, glassware, bijouterie, parts of a clock and watch, fine metal, bearing, nozzle, oil pump and parts in manufacturing machine and some shape-complicated parts, especially deep hole, blind hole and concavo-convex surfaces.

**TECHNICAL SPECIFICATIONS & PACKING LIST**

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor</td>
<td>40kHz, 120W</td>
</tr>
<tr>
<td>Capacity</td>
<td>1 gallon</td>
</tr>
<tr>
<td>Temperature</td>
<td>68°–176°F</td>
</tr>
</tbody>
</table>

**GENERAL SAFETY RULES**

⚠️ **WARNING:** Read and understand all instructions. Failure to follow all instructions listed below may result in electric shock, fire and/or serious injury.

⚠️ **WARNING:** The warnings, cautions, and instructions discussed in this instruction manual cannot cover all possible conditions or situations that could occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.

**SAVE THESE INSTRUCTIONS**
WORK AREA

- **Keep work area clean**, free of clutter and well lit. Cluttered and dark work areas can cause accidents.
- **Do not use your ultrasonic cleaner where there is a risk of causing a fire or an explosion**; e.g. in the presence of flammable liquids, gasses, or dust.
- **Keep children and bystanders** away while operating an ultrasonic cleaner. Distractions can cause you to lose control, so visitors should remain at a safe distance from the work area.
- **Be aware of all power lines, electrical circuits**, water pipes and other mechanical hazards in your work area, particularly those hazards below the work surface hidden from the operator’s view that may be unintentionally contacted and may cause personal harm or property damage.

ELECTRICAL SAFETY

⚠️ **WARNING**: Always check to ensure the power supply corresponds to the voltage on the rating plate.

- **Do not abuse the cord.** Never carry cleaner by its power cord, or yank tool or extension cords from the receptacle. Keep power and extension cords away from heat, oil, sharp edges or moving parts. Replace damaged cords immediately. Damaged cords may cause a fire and increase the risk of electric shock.
- **Grounded tools** must be plugged into an outlet properly installed and grounded in accordance with all codes and ordinances. Never remove the grounding prong or modify the plug in any way. Do not use any adapter plugs. Check with a qualified electrician if you are in doubt as to whether the outlet is properly grounded.
- **Double insulated tools** are equipped with a polarized plug (one blade is wider than the other). This plug will fit in a polarized outlet only one way. If the plug does not fit fully in the outlet, reverse the plug. If it still doesn’t fit, contact a qualified electrician to install a polarized outlet. Do not change the plug in any way.
- **Avoid body contact** with grounded surfaces such as pipes, radiators, ranges, and refrigerators. There is an increase risk of electric shock if your body is grounded.
- **When operating a power tool outside**, use an outdoor extension cord marked “W-A” or “W.” These cords are rated for outdoor use and reduce the risk of electric shock.

**Extension Cord Use:**

A. Use only ‘Listed’ extension cords. If used outdoors, they must be marked “For Outdoor Use.” Those cords having 3-prong grounding type plugs and mating receptacles are to be used with grounded tools.

B. Replace damaged or worn cords immediately.

C. Check the name plate rating of your tool. Use of improper size or gauge of extension cord may cause unsafe or inefficient operation of your tool. Be sure your extension cord is rated to allow sufficient current flow to the motor. For the proper wire gauge for your tool, see chart.

**CHART FOR MINIMUM WIRE SIZE OF EXTENSION CORD:**

<table>
<thead>
<tr>
<th>Nameplate AMPS</th>
<th>25’</th>
<th>50’</th>
<th>100’</th>
<th>150’</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-6</td>
<td>18 AWG</td>
<td>16 AWG</td>
<td>16 AWG</td>
<td>14 AWG</td>
</tr>
<tr>
<td>6-10</td>
<td>18 AWG</td>
<td>16 AWG</td>
<td>14 AWG</td>
<td>12 AWG</td>
</tr>
<tr>
<td>10-12</td>
<td>16 AWG</td>
<td>16 AWG</td>
<td>14 AWG</td>
<td>12 AWG</td>
</tr>
<tr>
<td>12-16</td>
<td>14 AWG</td>
<td>12 AWG</td>
<td>(NOT RECOMMENDED)</td>
<td></td>
</tr>
</tbody>
</table>

If in doubt, use larger cord.
Be sure to check voltage requirements of the tool to your incoming power source.

- **Do not expose** power tools to rain or wet conditions. Water entering a power tool will increase the risk of electric shock.
- **Do not let your fingers** touch the terminals of plug when installing to or removing from the outlet.
- **Ground fault circuit interrupters.** If work area is not equipped with a permanently installed Ground Fault Circuit Interrupter outlet (GFCI), use a plug-in GFCI between power tool or extension cord and power receptacle.

**PERSONAL SAFETY**

- **Stay alert**, watch what you are doing and use common sense when operating an ultrasonic cleaner. Do not use ultrasonic cleaner while you are tired or under the influence of drugs, alcohol or medication. A moment of inattention while operating may result in serious personal injury.
- **Dress properly.** Do not wear loose clothing, dangling objects, or jewelry. Keep your hair, clothing and gloves away from moving parts. Loose clothes, jewelry or long hair can be caught in moving parts. Air vents often cover moving parts and should be avoided.
- **Use safety apparel and equipment.** Use safety goggles or safety glasses with side shields which comply with current national standards, or when needed, a face shield. Use as dust mask in dusty work conditions. This applies to all persons in the work area. Also use non-skid safety shoes, hardhat, gloves, dust collection systems, and hearing protection when appropriate.
- **Avoid accidental starting.** Ensure the switch is in the off position before plugging ultrasonic cleaner into power outlet. In the event of a power failure, while ultrasonic cleaner is being used, turn the switch off to prevent surprise starting when power is restored.
- **Do not overreach.** Keep proper footing and balance at all times.

**TOOL USE AND CARE**

- **Never use an ultrasonic cleaner with a malfunctioning switch.** An ultrasonic cleaner that cannot be controlled with the switch is dangerous and must be repaired by an authorized service representative before using.
- **Disconnect power** from ultrasonic cleaner and place the switch in the locked or off position before servicing, adjusting, installing accessories or attachments, or storing. Such preventive safety measures reduce the risk of starting the cleaner accidentally.
- **Store idle cleaner.** When ultrasonic cleaner is not in use, store it in a dry, secure place out of the reach of children. Inspect for good working condition prior to storage and before re-use.
- **Never leave cleaner** running unattended.
- **Never use volatile solvents**, including flammable liquids and penetrating oils, to clean objects in the ultrasonic cleaner.
- **Do not overload** the tank.

**OPERATION**

The ultrasonic cleaner uses high frequency sound waves to create millions of microscopic bubbles which expand and collapse. This collapsing action loosens and removes dirt from any surface the liquid touches, literally “scrubbing” items clean.
WARNING: Be sure the ultrasonic cleaner is unplugged before filling or emptying.

- When using the ultrasonic cleaner for the first time, test a single item to make sure the results are what you want before cleaning the rest.
- Always make sure the solution is compatible with the stainless steel cleaner tank.
- Always follow instructions and precautions recommended by the cleaning solution manufacturer.
- Avoid contact with the solution.
- Always provide adequate ventilation.
- Never place hands or fingers into the tank while the ultrasonic cleaner is operating.
- Never use solvents or flammable liquids in the ultrasonic cleaner.
- Never operate the cleaner without liquid in the tank.

1. Fill 2/3 of the tank with cleaning solution. NOTE: The liquid level should never be below 1/3 of the height of the tank.

Plug the ultrasonic cleaner into a 120V power outlet, press the button on the front keypad to activate timing controller.

2. Place objects to be cleaned in the basket. Never place items directly on the tank bottom.

3. Suspend the basket in the cleaning solution.

Set the cleaning temperature according to the cleaning requirements.

4. Set the timer for how long the item needs to be cleaned. Normally the time can be set between 3–30 minutes; the time can be prolonged for items that may require additional cleaning.

5. Remove the item and rinse under running tap water and dry. Repeat above steps if additional cleaning is required.

NOTE: Change cleaning solutions regularly. Cleaning solutions lose effectiveness over time, and over-used solutions contain deposits that can re-coat items and also settle on the bottom of the tank, reducing ultrasonic effectiveness.

Temperature-controlled timing

- Set the ultrasonic cleaning time (for example, 60 minutes)
- Press “increase” or “decrease” to set needed cleaning time
- Set the temperature (68°–176°F)
- Press “increase” or “decrease” to set the temperature the of needed cleaning solution
- Press “START/STOP” button to start the machine to work

MAINTENANCE

WARNING: Make sure this ultrasonic cleaner is disconnected from its power source before attempting any maintenance, cleaning, or inspection.

- Maintain your tools. It is recommended that the general condition of any ultrasonic cleaner be examined before it is used. Keep it in good repair by adopting a program of conscientious repair and maintenance in accordance with the recommended procedures found in this manual. If any abnormal vibrations or noise occurs, turn it off immediately and have the problem corrected before further use. Have necessary repairs made by qualified service personnel.
- Cleaning. Use only soap and a damp cloth to clean your ultrasonic cleaner. Many household cleaners are harmful to plastics and other insulation.
A thorough check of the machine should be done periodically:

- Check the contact of every connection of the power and the output line for overheating, dampness and looseness.
- Check the mesh enclosure of the power cooling fan, and remove any dust from it.
- Check for leakage of the seal of the supporting plate.
- Contact the supplier if the ultrasonic oscillator falls off or the power tube is burned.

**DIAGRAM & PARTS LIST**

<table>
<thead>
<tr>
<th>Part#</th>
<th>Description</th>
<th>Qty.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Energy absorber</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>Purge tank</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>Control panel</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>Shell</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>Drain valve</td>
<td>1</td>
</tr>
</tbody>
</table>

For replacement parts and technical questions, please call 1-800-222-5381.

**WARRANTY**

One Year Limited Warranty

Northern Tool + Equipment Co.,
2800 Southcross Drive West
P.O. Box 1499 Burnsville, MN 55337-0499
Made in China