

## ULTRASONIC WASHER MODEL UC-6030LT



### ACCESSORIES INCLUDED / OPTIONAL

- ✓ Full Length Basket
- ✓ Soap & Cleaning Agents (optional)
- ✓ Heavy-Duty Gloves (optional)
- ✓ Instruction Manual

- Warranty
- Safety
- Operation
- Service Parts
- Accessory Information
- Registration Form

# INSTRUCTION MANUAL

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## SAFETY REQUIREMENTS

### PLEASE NOTE

**All personnel must read this user guide before attempting to install, operate, maintain or service the ISTpure Ultrasonic Cleaning Equipment.**

### HAZARDS

- High voltages are present, **ALWAYS** disconnect unit from power source before attempting any maintenance or service procedure.
- Hot water; do not place unprotected hands in tank. Use baskets with tongs or proper rubber gloves to insert or remove parts from tank.
- Read MSDS sheet for cleaning agents recommended for the system. Note the requirements for personal protection listed on the MSDS.
- Make sure equipment is installed in accordance with all electrical codes.
- Never operate this equipment in an ungrounded condition.
- Never attempt to perform maintenance when cleaning solution is hot.
- Never open equipment or attempt service/warranty related repairs without first contacting ISTpure for safe and proper procedures.

## TECHNICAL SPECIFICATIONS

DESCRIPTION	DATA
Total liquid capacity	240 gal (200 main + 40 overflow)
Ultrasonic power	14,400 W peak / 7,200 W average
Heat power	12,000 W (2 X 6,000 W heating elements)
Electrical requirements	208-240V / 3 F
Cleaning tank (L x W x H)	60" x 30" x 26"
Overflow tank (L x W x H)	Lift table: 53,5" x 25" x 23"
Overall dimensions (L x W x H) (with open lid)	92,5" x 57" x 99"
Basket/Rack	# 365521

**SAFE OPERATION****DANGER**

**KEEP HANDS CLEAR WHEN EQUIPMENT IS RUNNING. NEVER PLACE HANDS IN TANK, AROUND LIFT TABLE OR PLATFORM AT ANY TIME, SEVERE HAZARDS ARE PRESENT.**

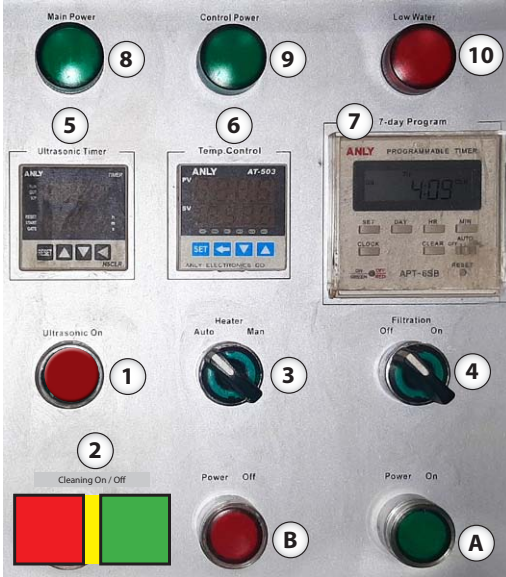
- LID MUST REMAIN OPEN WHEN MACHINE IS IN OPERATION
- Do not immerse hands or other body parts in the ultrasonic tank. Cleaning agents and contaminants can cause skin irritation and exposure to high intensity ultrasonic energy should be avoided.
- Do not operate system using volatile, explosive, combustible or acidic liquids (pH less than 7). Unauthorized cleaning agents, not approved by ISTpure, will invalidate warranty and may cause damage to system.
- Do not rest parts on the bottom of tank. A basket that stands off the bottom of the tank is mandatory for all parts; noncompliance will result in severe tank erosion and void the warranty.
- Do not operate the system unless the tank is full. Operating at less than full capacity may result in damage and void the warranty.
- Do not open up machine, disassemble any part(s), move or remove any components or electrical devices.
- Do not connect the tank to any other power supply than what is specified on the serial tag of the tank or generator (208V-240V, 3Ø, 4 wires, 40 A).
- The generators contain high voltages and should be maintained in a clean, dry environment at all times.
- Do not move the cleaning system without draining the tank and disconnecting the unit from the power supply and air supply.
- Operating temperatures of the solution requires protective clothing and equipment to protect against the possibility of scalds following accidental spills.
- Make sure that the sound levels experienced in your environment are known, and wear hearing protection if necessary. Ultrasonic energy produced by the system is measurable by sound meters and OSHA sound restrictions may apply.
- Do not leave the ultrasound on or leave parts in the tank longer than necessary. This can result in erosion of the part surface and/or the bottom of the tank.
- Do not allow moisture to build up inside the unit, this can cause electrical shorts and corrosion of the ultrasonic transducers.

## INSTALLATION & INITIAL SETUP

- Receiving- Inspect packaging and unit carefully to ensure there has been no damage in shipping. If there is damage, contact the carrier immediately to process a claim.
- Place the unit in a well-ventilated area on a flat level surface.
- Remove lower tank panel below filter canisters to expose pump. Remove fill plug and fill pump with water to prime, replace fill plug and tank panel.
- Make sure drain valves (2) are closed (located on the left side of unit) and then add water and cleaning agent to the main tank. When the main tank is full (200 gallons) the water will cascade over the weir into the side overflow tank (40 gallons); continue adding solution until the level in the overflow tank is 3" below the top of the weir.
- Use only ISTpure approved cleaning agents and be sure you use the proper, recommended concentrations.
- **CHECK YOUR POWER SUPPLY BEFORE CONNECTING TO UNIT** (record readings on Warranty Registration - page 14). The system is designed to operate with 208 V – 240 V, 3 phase, 4 wires, 80 A, and 60 Hz power supply. Blue/Black/ Brown wires = hot wires & Yellow/Green wire = ground.
- **DO NOT CONNECT MACHINE TO 3 PHASE POWER SUPPLY THAT DOES NOT HAVE 3 EQUAL LEGS (Y). IF YOU HAVE A "HIGH LEG" CONTACT ISTpure FOR PROPER WIRING CONNECTIONS.**
- Connect air supply to regulator located on left side of unit. Pressure should be 0.5 MPa (72 psi). Adjust pressure using black knob on top of regulator.
- Make sure oil in air regulator oil canister #2 is between Min and Max level indications on canister (use Turbine Oil ISO VG32)
- Fill out WARRANTY REGISTRATION form, page 14 (serial # plate located on side of unit) and send back to ISTpure to ensure activation of your warranty.
- Unit is now ready to clean parts, see NORMAL OPERATION procedures.

**Fill out WARRANTY REGISTRATION form, page 14 (serial # plate located on side panel of unit) and send back to IST to ensure activation of your warranty.**

## TANK CONTROL PANEL (IN FRONT)



## SYSTEM OPERATION

- (A) Power ON:** Green button controls the main power into the unit, this button must be ON to operate any other functions of the unit.
- (B) Power OFF:** Red button turns power off to the unit and shuts off all functions
- (1) Ultrasonic On:** This button turns ultrasonics **On**
- (8) (9) Main Power/Control Power:** Green lights illuminate when the Power ON button is pushed indicating power to all functions.
- (2) Cleaning ON:** Green button turns cleaning program on
- (2) Cleaning OFF:** Red button turns cleaning program off, lift table returns to up position
- (3) Heater:** This switch turns heat manually **Man** (pointing to the right) and automatically **Auto** (pointing to the left)
- (4) Filtration:** Switch turns **Off/On** the pump to sparge the oils from the top layer of the water and also filter the solution. **NOTE: Filtration switch should not be ON at the same time that the Ultrasound is ON. This will hamper/reduce the cleaning action.**

**(6) Temperature Controller:** Controls the temperature of the solution operating temperature, should be 140 °F - 160 °F. Factory set @ 160 °F, this setting is thermostatically maintained and should only need to be re-set if process or materials being cleaned change. To change temperature, press the ◀ button, and then use the ▼▲ to set.

**(7) Touch Screen:** The cleaning program and functions are set and adjusted using this screen

**(10) Low water:** This light illuminates red and has an audible alarm when the liquid level in the main tank or overflow tank is low and water needs to be added to the tank. When the Buzzer light is illuminated it shuts off power to the heater, filtration, ultrasonics and lift table until water is added to the proper level. \*Note: You must go to the alarm screen to reset the alarm, / Alarm Reset.

**(5) Ultrasonic Timer:** To change cleaning time, press the ◀ button, and then use the ▼▲ to set to set time (e.g. 10 minutes = 00:10).

### SETTING CURRENT TIME (MILITARY) & DAY:

- **Set Military Time:** Hold **CLOCK** and Press **HOUR** until correct hour appears, Hold **CLOCK** and Press **MIN** until the correct minute appears. (example: 0900 is 9 a.m.)
- **Set Day:** Hold **CLOCK** and Press **DAY** until correct day appears

### SETTING 7-DAY TIMER:

#### Heater ON

- Press **SET**, "1" appears with "**ON**" above (function 1 when heat will turn on).
- Press **DAY** until the correct day(s) that you want the heat on appears.
- **Example:** If you want the heat to come on at the same time Monday through Friday, Press **DAY** until the 5 days appear on the top of the screen, **MO/TU/WE/TH/FR**.
- **Example:** If you want the heat to come on everyday at the same time Press **DAY** until the 7 days appear on the top of the screen, **MO/TU/WE/TH/FR/SA/SU**
- **Example:** If you want the heat to come on Monday Press **DAY** until only **MO** appears at the top of the screen.
- Press **HOUR** to set the hour that the heater will start for the days displayed.
- Press **MIN** to set the minute that the heater will start for the days displayed.

## INITIAL SETUP

- Press Power ON green button (main power light, control power light, touch screen, temperature controller and cleaning off light are on)
- Welcome Screen, touch
- **Home Screen:**

### Parameters, set/change up your cleaning program:

- ◆ User, 1
- ◆ Enter Password, 1111 enter
- ◆ **Agitation Time** – time that lift table agitates before and after ultrasonics,
  - ◆ (e.g. 0M 30S = 30 seconds)
- ◆ **Ultrasonic Time** – Ultrasonic cleaning time; (e.g. 5M 0S = 5 minutes)
- ◆ **Filtration Time** – After ultrasonic cleaning time ends, filtration turns on to remove surface contaminants and remove particles from cleaning solution before lift table automatically raises. (e.g. 0M 30S = 30 seconds)
- ◆ **Warm-up Time** – 7- day programmer for the heating, allows you to program your heat cycle based upon your work schedule so unit is at operating temperature when needed and shuts down at the end of the workday (normal heat up time is typically 1-2 hours).
- ◆ **Change Time:** Allows you to set date (Y year, M month, D day, W week of the month) and time (military time, e.g. 5:00 pm = 17:00). Must press CONFIRM when completed
- ◆ **Normally Open:** U/S and Heater must be in the ON position for AUTO operation.
  - U/S ON
  - Heater MAN
- ◆ **Alarm:** Allows you to see cause of alarm, reset alarm and turn off audible buzzer
- ◆ **I/O-Parameter:** Used for PLC programming only, consult ISTpures technician before use
  - **Auto/Manual:** Select automatic operation based upon set parameters or manual operation for individual functions
  - **Auto:** automatically starts and completes cleaning program when Cleaning ON button is pressed
- ◆ **Manual:** manually control functions when Cleaning ON button is pressed
  - Up – lift table manually up
  - Down – lift table manually down
  - Filtration – manually turns on filtration/skimming, operates only when lift table is in the down position
  - U/S, ultrasonics on
  - Heater, heater man
  - Oil Skimmer, use with optional oil skimmer

## GENERATOR

(LOCATED AT THE BOTTOM) (use the special key to open the trap)



- ① **Main Power ON/OFF switch:** Controls generator power on. Switch should be in “ON” position (push down) for ultrasonics to run.
- ② **Power Control:** Ultrasonic output power, can be adjusted to suit cleaning objectives
- ③ **Power Level (red LED display):** Direct visual reference of ultrasonic power output
- ④ **Time (-, +):** Not applicable, time controlled by digital timer on control panel
- ⑤ **Mode:** Diagnostic program to check functions of the generator
- ⑥ **Overload, Amp, Scan, Time, kHz:** Call tech services for specific instructions/use, displays the value in kiloHertz (kHz).
- ⑦ **Start /Stop:** Not applicable, start/stop controlled by digital timer on control panel





## NORMAL OPERATION

**CAUTION** LID MUST BE OPEN WHEN "CLEANING ON". LIFT TABLE AUTOMATICALLY RETURNS TO THE UP POSITION AT THE END OF THE CLEANING CYCLE!

**DANGER** KEEP HANDS CLEAR WHEN EQUIPMENT IS RUNNING. Never place hands in tank, around lift table or platform at any time, severe hazards are present.

- Press Power ON green button (main power light, control power light, touch screen, and temperature controller are on)
- Make sure solution is at operating temperature (preset @ 160°F, to change operating temperature see page 6, Temperature Controller)
- Open lid and leave open while operating the machine
- Never operate the filtration manually ON with lift table in the UP position
- Never operate the filtration manually ON with the ultrasonics ON
- Press Cleaning ON green button (cleaning cycle begins based on your parameter settings – lift table lowers, agitation, ultrasonic cleaning, filtration/skimming, lift table raises)
- Complete one cleaning cycle to make sure parameters are correct and to "Degas" the tank. This is a process that eliminates the existing bubbles from the solution and can cause some squeaking noises which is normal. This process of degassing should be done each time you change your solution and before you start cleaning parts.
- Now you are ready to start cleaning parts, arrange parts in basket or on lift table platform
- Press Cleaning ON green button (cleaning cycle begins based on your parameter settings – lift table lowers, agitation, ultrasonic cleaning, filtration/skimming, lift table raises)
- Remove basket or large parts from platform.
- **NOTE:** Parts are hot, use proper protective equipment to prevent exposure.
- Close lid at end of day to conserve heat and reduce water loss due to evaporation.

## MAINTENANCE

### **Preventive - There is a minimum of preventive maintenance required.**

- The overall environment around the unit needs to be kept clean, dry and dust free.
- Heating element & Low Level Sensors (2 pc, 1 in each tank) needs to be checked quarterly to ensure no leakage:
  - Disconnect machine from power source
  - Remove side panels and check for leakage around heating element and LLS (one in each tank).
  - If necessary, tighten bolts to snug, do not over tighten

### **Daily:**

Water level needs to be checked in both tanks (main and overflow tanks) daily due to evaporation. Maintain proper water levels (main tank full to weir level, overflow tank 3" below weir level)

### **Visually inspect air regulator assembly:**

- Canister #1, drain any water in separator canister using valve on bottom of canister
- Canister #2, maintain oil level between Min and Max level indications on canister (use Turbine Oil ISO VG32)

### **Routine:**

- Both Filter Elements should be replaced when the pressure gauge indicates an increase in pressure or the flow from the spray bar located in the front of the main tank is slowed. Most users regularly replace their filters each month to avoid any decrease of flow.
- Solution should be replaced regularly to avoid a drop in cleaning performance that will result from too many contaminants in the solution.

***NOTE: Consult your IST representative for recommended schedule for solution change based on your application.***

## EQUIPMENT CLEANING

- Manually lower Lift-Table to the bottom of tank
- Push **Power OFF** button (all control lights should be **OFF**, except **Main Power**)
- **DISCONNECT UNIT FROM POWER SUPPLY, (LOCK-OUT/TAG-OUT)**, all lights should be off.
- **DISCONNECT UNIT FROM AIR SUPPLY (LOCK-OUT/TAG-OUT)**
- Wait a minimum of 15 minutes before draining contaminated solution from the tank (this enables heating element to cool and prevent damage).
- Drain tank using the drain valve,  
*NOTE: Solution is hot and contaminated, protective clothing and equipment should be used to prevent any exposure.*
- Remove and clean metal pre-filter located in rear tank.
- Rinse the inside of the tank with clean, clear water.
- Clean Low Level Sensors (one in each tank) and ensure proper operation (donut slides up and down easily on shaft)

**CAUTION** NEVER ENTER TANK AREA OR PLACE HANDS, ARMS OR ANY BODY PARTS INSIDE THE TANK AREA.

- Wipe work and outside surfaces with a dry, clean, soft cloth.
- Remove filter canisters located on the side of the unit using the special tool to loosen the collar and remove canisters. Insert filter elements (size is stamped on side of filter, typically 125 microns & 50 microns) into the correct canister (larger filter in rear canister, smaller filter in front canister). Carefully reattach canisters to housings (be careful not to damage O-rings), hand tighten the collar while holding the canister in place to ensure a tight fit, use tool to snug canister, do not over tighten.

*NOTE: Canisters and solution are hot and may be contaminated; protective clothing and equipment should be used to prevent any exposure.*

- When discarding contaminated solution follow all local, state and federal environmental and regulatory requirements.
- Follow installation instructions listed earlier for refilling and start up procedures.

## MAXIMIZING ULTRASONIC PERFORMANCE

### ○ TEMPERATURE

Temperature has a dramatic effect on the cleaning performance and time needed to clean a part. The recommended temperature range is 140°F to 160°F (70°C). Temperatures below or above can decrease the ultrasonic action. Consideration needs to be given to the cleaning agent used when determining the proper temperature. NOTE: Always check the MSDS for the cleaning agent and note its boiling point or flash point. Operation near or above the boiling point/flash point is hazardous and can cause noxious fumes.

### ○ CLEANING AGENT

Cleaning agents can enhance or decrease the performance of the ultrasonic action and speed of cleaning. Always use IST approved cleaning agents at their proper concentrations.

### ○ DEGASSING

Liquids containing air and dissolved gases can interfere with the formation of cavitation bubbles necessary for ultrasonic cleaning. Follow the installation section to ensure liquid is ready for cleaning.

### ○ PART EXPOSURE

In order for a surface to be cleaned, it must be exposed to the liquid. This requires proper placement of the parts in the parts basket. Do not overload baskets with small parts that prevent the middle layers from getting proper exposure to the liquid. Also, improper placement of parts with blind holes or cavities can result in air pockets, where no cleaning action occurs. In general, clean large numbers of parts a few at a time using shorter cleaning cycles.

### ○ CONTAMINATED SOLUTION

As contaminants build up in the solution the ultrasonic performance drops. The cavitation bubbles waste their energy imploding on the contaminants and not on the part surface. It is important that you change the solution on a regular basis.

### ○ PARTS MATERIALS AND CONTAMINATION

Certain materials absorb ultrasonic energy, generally these are soft materials like rubber, fabric, gaskets and heavy grease. Ultrasonics is extremely effective with a hard surface to impact against. Therefore, parts contaminated with heavy amounts of grease or soft materials should be pre-cleaned prior to exposure to the ultrasonic tank.

## SERVICE & WARRANTY PROCEDURES

**NOTE: DO NOT OPEN EQUIPMENT OR ATTEMPT ANY SERVICE OR WARRANTY RELATED WORK BEFORE CALLING ISTpureS**

Our service tech will help troubleshoot any problem and instruct user on the safe and proper procedures for repairs.

## SUPPLIES AND SPARE PARTS

**For ordering supplies, accessories, or spare parts:**

**Visit our website, [istsurface.com](http://istsurface.com)**

**Call to place your order: 1 877 629-8202 or email: [info@istsurface.com](mailto:info@istsurface.com)**

## ISTPURE LIMITED WARRANTY

IST warrants all equipment led in this manual which is manufactured by IST and bearing its name, to be free from defects in material and workmanship on the date of sale by an authorized IST distributor to the original purchaser for use. Notwithstanding any special, extended or limited warranty published by IST will, for a period of TWELVE (12) months from the date of sale, repair or replace any part of the equipment determined by IST to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with IST's written recommendations.

This warranty does not cover, and IST shall not be liable for general wear and tear, or any malfunction, damage or wear caused by faulty installation, misapplication, abrasion, corrosion, inadequate or improper maintenance, negligence, accident, tampering, or substitution of non-IST component parts. Nor shall IST be liable for malfunction, damage or wear caused by the incompatibility with IST equipment with structures, accessories, equipment or materials not supplied by IST, or the improper design, manufacture, installation, operation or maintenance of structures, accessories, equipment or materials not supplied by IST.

This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to an authorized IST distributor for verification of the claimed defect. If the claimed defect is verified, IST will repair or replace free of charge any defective parts. The equipment will be returned to the original purchaser, transportation prepaid. If the inspection of the equipment does not disclose any defect in material or workmanship, repairs will be made at a reasonable charge, which charges may include the costs of parts, labor, and transportation.

THIS WARRANTY IS EXCLUSIVE, AND IS IN LIEU OF ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

IST's sole obligation and the buyer's sole remedy for any breach of warranty shall be as set forth above. The buyer agrees that no other remedy (including, but not limited to, incidental or consequential damages for lost profits, lost sales, injury to person or property, or any other incidental or consequential loss) shall be available. Any action for breach of warranty must be brought forward within one (1) year of the date of sale.

IST MAKES NO WARRANTY, AND DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, IN CONNECTION WITH ACCESSORIES, EQUIPMENT, MATERIALS OR COMPONENTS SOLD BUT NOT MANUFACTURED BY IST. These items sold, but not manufactured by IST (such as electric motors, switches, hose, etc.), are subject to the warranty, if any, of their manufacturer. IST will provide the purchaser with reasonable assistance in making any claim for breach of these warranties.

### **LIMITATION OF LIABILITY**

In no event will IST be liable for indirect, incidental, special or consequential damages resulting from IST supplying equipment hereunder, or the furnishing, performance, or use of any products or other goods sold hereto, whether due to a breach of contract, breach of warranty, the negligence of IST, or otherwise.

Report all accidents or "near misses" which involve IST products to :  
- Technical Assistance

The following items are not covered under the IST warranty policy :  
- Parts or chassis replacement due to normal wears.

Report all accidents or negligence involving IST products to our Service Department :

**1 877 629-8202**



**INFORMATION / TECHNICAL ASSISTANCE**

ISTpure is a registered trademark of:



For more information, pricing or technical support, contact your local IST distributor or call / fax to our Consumer Information

**TEL.: 1 877 629-8202 & 450 963-4400**

Or visit us at:  
**[istsurface.com](http://istsurface.com)**

## ABOUT THE COMPANY

### WHO WE ARE

IST is a leading manufacturer of equipment for the surface treatment industry and the solvent recycling industry. Our extensive line of equipment includes batch units and automated machines designed to achieve the highest manufacturing standards.

### MISSION

IST works tightly with their customers to transform industrial processes to improve their quality, productivity, and environmental footprint.

### OUR SERVICES

- Custom Design & Fabrication
- Installation & Startup
- Preventative Maintenance Program
- Private Labels
- Testing Lab
- 24/7 Technical Support

### INDUSTRIES WE SERVE

- Aerospace & Aviation
- Aluminium Smelters
- Automotive
- Construction & Civil Engineering
- Flexography (labelling) & Lithography
- Foundry & Forge
- General Manufacturing
- Military
- Power & Energy
- Rail & Mass Transit
- Shipyards
- Wood finishing

