2.6 QTH

HEATED ULTRASONIC CLEANER

GemOro®
POWERFUL ULTRASONICS

Operating Procedures & Manual

The Four Basic Steps

Step 1 Connect to an electrical outlet receptacle or power source with the appropriate voltage 100-120 volt / 220-240 volt. Do not turn the unit on when empty or damage may occur!

Step 2 Add an appropriate mixture of tap water and GemOro Super Concentrate Cleaning Solution to the tank. Make certain the solution in the tank is filled to approximately one inch from top edge of the tank and that the solution level remains this way.

Step 3 Place the jewelry to be cleaned in a basket or ring rack and submerge it in the tank, which must be filled with a water/solution mixture. Do not place or rest items on the tank bottom or damage may occur!

Step 4 Set your timer to the appropriate length of cleaning time, which will depend on the amount of cleaning required.

Specifications and Accessories

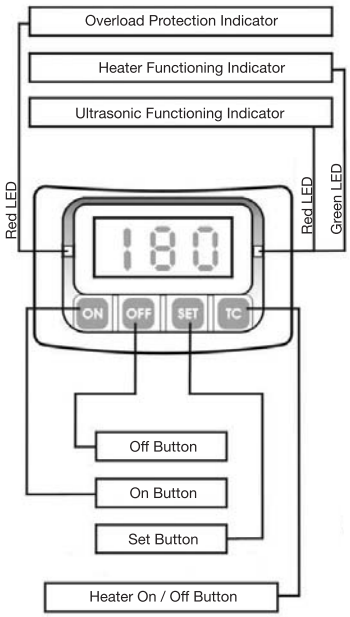
Model 2.6QTH

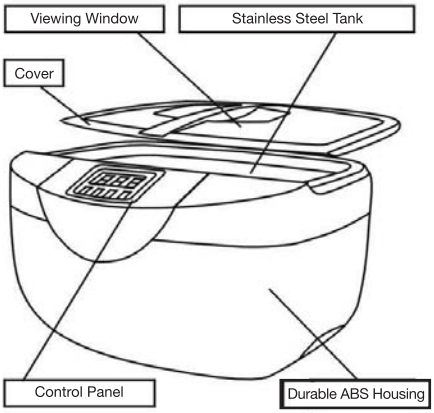
Model 2.6QTH – Stock #1787

2.6 Quart (0.65 Gal.), 160 Watt/100-120 Volt

Tank Size 264 x 164 x 80mm (L x W x H)

Cover and Stainless Steel Basket included.





Includes cover, power cord and stainless steel basket.

RoHS

Electrical Power Installation

Your GemOro Powerful Ultrasonics unit has been factory preset for use with 100-120 volt (or 220-240 volt if it is an export model), 50/60 Hz cycle operation. The ultrasonic is supplied with a three prong electrical plug. DO NOT remove the grounding prong from this connector, as it may cause an electrical shock! Install into an electrical outlet receptacle, which has a ground default device (GFI) for optimum safety operation. When possible, plug the ultrasonic into a separate dedicated circuit/outlet. Some electrical circuits/outlets will not supply enough power to properly run more than one electrical appliance, especially if large appliances such as steamers, polishers, etc. are being operated at the same time. Reduction of cavitation in your ultrasonic could be the end result of not enough power to your unit.

Water/Solution Mixture Used In Ultrasonic Tank

To achieve the highest degree of cleaning, the proper cleaning solution must be added to the water in the tank. We recommend one of the superior GemOro ultrasonic cleaning solutions which are specially formulated, super-concentrated, multi-purpose ultrasonic cleaning solutions. WARNING: Do not use flammable (alcohol based solutions, etc.) or acidic based (Drano, etc.) or ammonia based solutions (Mr. Clean, etc.) in your ultrasonic. Under any circumstances, NEVER TURN THE UNIT ON WHILE THE TANK IS EMPTY. Place the water/cleaning solution mixture in the tank with the solution filling the tank up to approximately one inch from the top edge of the tank.

Submerge the jewelry to be cleaned in the tank no less than 1/2 inch below the solution surface to obtain optimal cleaning and be certain not to place jewelry or anything being cleaned on the bottom of the tank, because it may damage the transducers and void the warranty. Be careful not to clean stones that may have many inclusions (example: emeralds), because the ultrasonic waves and heat may crack the stone. Be certain not to clean soft, water porous stones (such as pearls, opals, turquoise, etc.) as they too may be damaged. Be certain not to clean any oil treated stones in any cleaning solution which may contain a degreasing agent, as the solution may revert the stone back to its untreated condition. Typically, items such as gold, silver, platinum, diamonds, rubies, sapphires etc., are safe for ultrasonic cleaning. For more specific information on which stones are suitable for cleaning in an ultrasonic, we suggest you contact a gemologist or GIA (The Gemological Institute of America). Do not submerge watches in any ultrasonic, as damage to the watch may occur. However, it may be safe to carefully submerge the metal watchband into the tank for a brief cleaning while being certain not to submerge the head of the watch as any time. At your own risk, before attempting this, always be certain the watches stem is fully inserted and/or tightened all of the way in.

Turn Ultrasonic On By Setting Timer, And By Turning The Heater On If Appropriate

Depending on how dirty the jewelry is that you are cleaning will determine the length of cleaning time required. Heated water/solution will enhance the ultrasonics cleaning ability. By turning the heater on (press TC and red light will indicate the heater has been activated), the unit will quickly heat up to the optimal preset cleaning temperature that has a maximum temperature of 65C or 149F. The line of GemOro ultrasonic cleaning solutions are designed to work best with your heated GemOro Powerful Ultrasonics unit. To set the timer, when the ultrasonic is turned on by pressing the ON button it will automatically default to a cleaning time of 180S (seconds). The timer will begin at 180S and count down until it reaches 000 and will then stop operating. To set the timer, press SET and keep pressing SET until you reach the desired cleaning time of either 90S, 180S, 280S, 380S or 480S and then press ON again to activate the ultrasonic and begin cleaning.

IMPORTANT: BE CERTAIN TO ADD WATER AS IT EVAPORATES FROM THE TANK AND DO NOT LET THE WATER LEVEL FALL BELOW 1 INCH FROM THE TOP EDGE OF THE ULTRASONIC TANK.

Typical Degassing Period for Solution

Water that has not been degassed will cause the cavitation (action) of the ultrasonic to appear very slow or flat. Depending on the solution you are mixing with water in your unit, degassing time may vary from less than five (5) to as much as fifteen (15) minutes depending upon factors such as temperature and soap content. The rule of thumb is that the thicker and slimier the solution is, the less time the degassing process will take. Degassing is the natural process of removing gasses from any tank solution being affected by ultrasonic sound waves. Degassing occurs whenever you first use your ultrasonic with fresh water/solution and will recur each time you add to or change your water or solution.

Helpful Suggestions and Precautions - Please Follow Closely to Avoid Loss of Warranty Coverage!

- Change your solution regularly.
- Clean tank regularly.
- Cover your tank to avoid evaporation and lower noise levels.
- Use one of the superior GemOro ultrasonic cleaning solutions mixed with water for optimal cleaning.

- Operate with the proper level of water/solution mixture in the tank.
- Allow adequate time for the degassing process.
- Never put your fingers into an active, running ultrasonic tank, as repeated exposure to ultrasonic sound waves may be harmful, as well as a heated ultrasonic may burn you!
- When emptying and cleaning tank, always unplug from the electrical outlet FIRST.
- Be certain not to allow jewelry or other items to rest on the bottom of the tank.
- Be certain not to allow the water/solution in the tank to drop below two inches from the bottom.
- Be certain not to place flammable, acidic or ammoniated liquids in the tank, as they may ignite and/or cause damage to you or others. Further, it may cause damage to your ultrasonic which will void the warranty.
- Do not install plug into an ungrounded electrical outlet.
- Never operate the ultrasonic without water/solution in the tank.
- For any problems or questions, please consult your supplier.

Why Does The Ultrasonic Get So Hot?

Occasionally users of ultrasonic cleaners become concerned due to the fact that the temperature of their ultrasonic cleaning solution within the tank becomes too hot. This is typically only experienced by high volume trade shops, jewelry repair shops and jewelry manufacturers who utilize the heated ultrasonic throughout the day. The principle of ultrasonic cleaning is to cavitate a liquid medium (typically water & ultrasonic cleaning solution/soap – solution) and is done so by the tremendous shock waves caused by millions of microscopic vacuum cavities imploding within the solution inside of the tank. These vacuum cavities build to tremendous pressures and temperatures (above 10,000 degrees Fahrenheit) and are instantaneously released into the solution upon implosion – the release of this energy causes the solution temperature to elevate.

By simply turning the ultrasonic cleaner ON and OFF will cause the solution temperatures in the tank to fluctuate - rising from the cavitational energy and falling from evaporative losses when the ultrasonic cleaner is OFF. The longer an ultrasonic cleaner is ON – the hotter the solution will become and the more intense the cavitation is – the faster the solution temperature will rise. In addition, when the heater is also left ON, the heat even further intensifies.

There are several variables that affect the rate of temperature increase such as length of cleaning cycles, the batch load size of each cycle, the rate of heat loss and the length of time between cleaning cycles. Additionally, the performance of the ultrasonic cleaner itself plays a huge part in the rate of temperature increase – cavitation density and power levels. Caution should always be used when operating an ultrasonic cleaner, as the solution does become

hot, and can cause injury to hands, etc. – to protect from possible injury, gloves must always be worn.

Things to Know in Order to Address the Concerned Cleaning Technician When They Ask - "Why Is the Ultrasonic Cleaner Getting So Hot?"

- Energy causes substances to rise in heat.
- Higher energy levels cause accelerated rise in temperature.
- Cavitation is energy.
- The principle of ultrasonic cleaning is to cavitate a liquid.
- Using an ultrasonic cleaner will cause the solution temperature to rise.
- An ultrasonic cleaner with high levels of cavitation will cause the solution temperature to rise at a faster rate than low level cavitation ultrasonics.
- GemOro ultrasonic cleaning systems yield high-powered, high density cavitation through its proprietary Turbo Sweep Technology.
- If a GemOro ultrasonic as described above is being used in the capacity as also noted above, be certain to turn OFF the heater as the heat rises to avoid damage to the ultrasonic which will void the warranty. If the solution in the tank becomes excessively hot or reaches boiling point, this is an indication that the heat level must be reduced immediately as it is not designed to function in this environment.
- Gloves should be worn to prevent injury.

IMPORTANT! If these instructions for overheating are not followed, you could void your warranty!

One Year Limited Replacement Warranty Important Notice - Premature Tank Erosion & Component Failure

Congratulations on your purchase of a GemOro Powerful Ultrasonics unit, the best, most powerful and efficient ultrasonic cleaner available. Your complete ultrasonic is warranted for a one year from the date of purchase (as shown on the Warranty Registration Form and your suppliers sales receipt) from defects in manufacturing and workmanship when used in accordance with the GemOro Powerful Ultrasonics Operating Procedure (with the exception as noted in this document*). In the event your ultrasonic fails to perform to its specifications, please contact your supplier and make prompt arrangements for it to be returned for service. It is always wise to save your original shipping container for transporting your ultrasonic safely, but if it is not available, please be certain to properly pack to protect your ultrasonic during shipping. If upon examination of the ultrasonic by the factory, the factory determines

that the ultrasonic has been damaged due to misuse, this warranty is void. (Please be aware that there are certain tell-tale signs of abuse which will automatically void the warranty. Some user abuse signs are: Holes in the tank, bluing of the metal and specific odors associated with acid and ammonia exposure. Burn marks on the tank are signs that an inadequate amount of water has been used in the tank. Pitting or marks on the tank bottom are indications of items being placed on the tank bottom.) Otherwise, at the factory's sole discretion, assuming the ultrasonic is not replaced, this warranty is limited to only the cost of any parts, materials, and labor required while repairing the unit. In the rare case of an "out-of-box failure," immediately contact your dealer, as the unit may be returned for replacement.

All units are pre-tested to help insure your receipt of a top quality ultrasonic. Pre-testing requires filling the ultrasonic with solution and turning the heater on (if applicable). This action may leave a slightly visible ring or stain where the water level reached or where any water has touched as well as a discoloration on the bottom of the tank from testing the heater. This ring may show up on your unit anytime your water level gets below its normal full level. This ring or stain in many instances may be cleaned with many regular household cleaners or WD40, but can never be completely removed.

Cavitation - Inertial cavitation occurs in the presence of an acoustic field. Microscopic gas bubbles which are generally present in a liquid will be forced to oscillate due to an applied acoustic field. If the acoustic intensity is sufficiently high, the bubbles will first grow in size and then rapidly collapse or implode at which point the gas within dissipates into the surrounding liquid via a rather violent mechanism, which releases a significant amount of energy in the form of an acoustic shock-wave and as visible light. At the point of total collapse, the temperature of the vapor within the bubble may be several thousand degrees Kelvin and the pressure several hundred atmospheres. Ultrasonic cleaning baths efficiently utilize the inertial cavitation of microscopic gas bubbles for the cleaning of dirt from materials such as jewelry, medical instruments, etc.

When the cavitation bubbles collapse or implode they focus liquid energy into very small volumes. Thereby, they create spots of high temperature and emit shock waves which are the source of the noise typically heard with ultrasonic cleaners. Although the collapse of the bubbles is a relatively low energy event, it is highly localized and can and does erode metals such as stainless steel over time. The pitting seen in ultrasonic tanks caused by the collapse of bubbles produces great wear on the stainless steel tanks in ultrasonics as well as ultrasonic components and can dramatically shorten the lifetime an ultrasonic cleaner, especially its tank. Because of this reality, every ultrasonic tank will eventually fail due to erosion and depending on the ultrasonics usage the lifespan of the ultrasonic and tank will vary from ultrasonic to ultrasonic. Ultrasonics systems that are operated excessively simply reach the end of their lifetime sooner than those that are not. In addition to the cavitational

erosion - the elevated bath temperatures from heavy or prolonged operation contributes dramatically in assisting with the speed in which erosion will naturally occurs in this type environment. Further, with the understanding that acidic or caustic chemicals (as described and expressly warned against further in this document) will directly damage the tank causing quick erosion while voiding the ultrasonics warranty, it should be recognized that many buffing compounds like rouge contain abrasives which also will over time speed up the erosion process of the stainless steel tank as well. With this and mind and to slow down the process of erosion as a result of abrasives in the solution, it is highly recommended that users change their dirty cleaning solution depending on usage at minimum daily.

IMPORTANT! - GemOro Powerful Ultrasonics warranty coverage applies to defects in manufacturing and workmanship only. Because the factory cannot control the operation of the ultrasonics, premature failure due to, amongst things such as heavy or prolonged operation, therefore are not covered under its warranty. There are no user serviceable parts in the 2.6QTH. The warranty will be void if the user attempts to open and repair the ultrasonic.

Note: If you have any questions concerning the operation of your ultrasonic, its warranty or would like to purchase a new ultrasonic, please contact your supplier or for any technical questions contact the GemOro at 214.351.0380 or 800.527.0719, FAX 214.351.1903 or 800.832.9871 or EMAIL gemoroservice@sykessler.com. To view the complete line of GemOro Powerful Ultrasonics, please visit our website at www.gemoroproducts.com or contact us and on our dealers behalf request that we mail you a copy of our catalog. To register your ultrasonic, please visit www.gemoroproducts.com/warrantyregistration. GemOro Powerful Ultrasonics and GemOro XSteam, UltraSteam and BrilliantSpa steamers as well as other GemOro products are available through our worldwide network of dealers and distributors. Please contact us for the name of our dealer or distributor nearest you!

The Following List of Chemicals Can Attack the Stainless Steel Tank and/or the Drain of Your GemOro Powerful Ultrasonics Unit:

Acetic Acid (70 + degrees F)
Acetol Chloride
Acetol Bromide
Methyl Alcohol
Aluminum Chloride
Aluminum Fluoride
Anhydrous Ammonia
(70 + degrees F)
Ferrous Chloride
Fluorine
Freon
Hydrobromic Acid
Hydrochloric Acid
Hydrocyanic Acid
Hydrofluoric Acid
Hydrofluosilicic Acid

Aniline Hydrochloride
Antimony
Antimony Trichloride
Benzene
Bromine
Calcium Hydroxide
(50% + strength)
Carbon Disulphide
Carbon Tetrachloride
Chioracetic Acid
Chloric Acid
Chlorinated Water
Chromic Acid (70 + degrees F)
Citric Acid (70 + degrees F)
Copper Chloride
Ethers
Ethyl Bromide
Ethyl Chloride
Ethylene Dichloride
Ferric Chloride
Iodine
Ketones
Lactic Acid (70 + degrees F)
Magnesium Chloride
Mercuric Chloride
Muristic Acid
Oleic Acid
Oxalic Acid (70 + degrees F)
Phosphoric Acid (70 + degrees F)
Silver Bromide
Silver Chloride
Sodium Hypochloride (5% +)
Stannic Chloride
Stannous Chloride
Sulphur Chloride
Sulphur Monochloride
Sulphuric Acid
Sulphurous Acid
Trichloracetic Acid
Zinc Chloride (70 + degrees F)

IMPORTANT! Do not use any of these chemicals in your ultrasonic or the warranty will be void! Please be advised that pin holes, rust, bluing of the metal and cracks appearing in this ultrasonic tank are caused from the use of hazardous chemicals such as acid, Drano, etc. Any ultrasonic tank returned for repair with these symptoms will not be repaired under warranty coverage.

Recommended Cleaning Solutions

GemOro Sparkle Pak™

The GemOro Sparkle Pak is an innovative solution…for ultrasonic cleaning solution! All you do is fill your ultrasonic tank with water, then take a convenient Sparkle Pak and empty the contents in the water. No measuring. No mixing. No mess. No waste.

The Sparkle Pak is an amazing, professional strength, specially formulated jewelry cleaning solution. Each Sparkle Pak contains the precise amount of our concentrated formula that when added to a full tank of water produces the best jewelry cleaning solution that will make your jewels sparkle like new!

Recommended for removing dirt, grease, buffing compounds, rouge, Tripoli and oxides from jewelry and more! Non- ammoniated, non-toxic and non-flammable.

Sparkle Pak For 1 to 1.5 Pint Ultrasonic or Sonic Cleaner

PK/24 Stock #0915

Sparkle Pak For 2 Quart Ultrasonic

PK/24 Stock #0920

Sparkle Pak For 3 Quart Ultrasonic

PK/24 Stock #0930

Sparkle Pak For Consumer 1 to 1.5 Pint Ultrasonic or Sonic Cleaner

PK/12 Stock #0935

GemOro Super Concentrated Cleaning Solution

To obtain the best general cleaning results out of your ultrasonic, we have the solution: GemOro Ultrasonic Cleaning Solution! Economical to use, it dilutes 40 to 1 for light cleaning, 20 to 1 for heavy cleaning. Our solution is recommended for removing dirt, grease, buffing compounds, rouge, tripoli and oxides. Also used for cleaning instruments, burs, metal parts, gold and fine jewelry. GemOro Super Concentrated Cleaning Solution is great for ultrasonics, glass and general cleaning. Non-ammoniated, no color additives, super concentrated, biodegradable, non-toxic and non-flammable. Instructions for use are imprinted on each bottle in both English and Spanish.

1-Quart Bottle

Each quart makes up to 40 quarts
(Case quantity-12) Ship wt. 3 Lb. Stock #0901

1-Gallon Bottle

Each gallon makes up to 40 gallons
(Case quantity-4) Ship wt. 10 Lb. Stock #0902

GemOro cleaning solutions are non-ammoniated, super concentrated, biodegradable, non-toxic and non-flammable.

GemOro Special Sparkle™ Ultrasonic Cleaning Solution

Advanced formulated variation of our original GemOro Super Concentrated Cleaning Solution. Our GemOro Special has brighteners added to bring back jewelry's luster and it has a pleasant scent too. This formula is also economical to use. It dilutes with water 40 to 1 for light cleaning, 20 to 1 for heavy cleaning.

1-Quart Bottle
Each quart makes up to 40 quarts
Stock #0905

1-Gallon Bottle
Each gallon makes up to 40 gallons
Stock #0906

GemOro Super Soap Classic™ Ultrasonic Cleaning Solution

This is our version of an industry standard. GemOro Super Soap is a unique, slightly thicker formula that has been relied upon by jewelry professionals who have sworn by its performance for years. It dilutes with water 20 to 1 for general cleaning.

1-Quart Bottle
Each quart makes up to 20 quarts
Stock #0907

1-Gallon Bottle
Each gallon makes up to 20 gallons
Stock #0908

GemOro Ultra Brilliance™ Ultrasonic Cleaning Solution

GemOro Ultra Solution is perfect for all cleaning applications and is extremely concentrated, offering a dilution ratio of up to an amazing 120 to 1 of solution to water! It will make your jewelry shine like no other and it is extremely economical to use. This solution is also available in our convenient precise portion GemOro Sparkle Pak packets.

1-Quart Bottle
Each quart makes up to 120 quarts
Stock #0909

1-Gallon Bottle
Each gallon makes up to 120 gallons
Stock #0910

Ask your supplier about quantity discounts!

GemOro BrilliantSpa®

PERSONAL STEAM CLEANER FOR JEWELRY

- The personal size steamer that professionally cleans diamonds, gold, silver and platinum jewelry
- Powerful high-pressure steam safely blasts away dirt, grime, oil and more
- Includes a 12.5 ounce tank capacity, tweezers, basket, water funnel with fill cup
- Designed for safety
- Advanced LED indicator lights show when unit is heating and when it is ready to steam
- Convenient blue LED light illuminates jewelry while being steam cleaned
- Unrestricted cleaning zone and convenient on/off power switch
- Easy-lift handles for moving
- Cabinet made of durable, long-life ABS, with contemporary stainless steel accent panels
- Compliments sister product: GemOro Sparkle Spa® Personal Ultrasonic Jewelry Cleaner
- Designed in the USA with European influence
- Designed for safety – ETL Listed
- 1 Year limited replacement warranty

Stock #0361

GemOro UltraSteam®

The world's first patent pending combination ultrasonic and steam cleaner for jewelers.

- Combination professional steam cleaner with built-in ultrasonic
- Perfect size 1.3 pint tank capacity powerful ultrasonic cleaner
- Ultrasonic includes stainless steel basket and cover with bright blue LED tank illumination
- Digital control panel provides cycles of 3, 6 and 9 minutes
- Built-in drain with removable drain fill reservoir for convenient ultrasonic tank water removal
- 1 Quart steam cleaner with 65PSI
- Button controls activate steam for continuous or burst steam options
- Includes: Plastic coated stainless steel jewelry holding tweezers, stainless steel handheld mini-basket and water funnel with measuring fill cup
- Designed for safety – ETL Listed
- 1 Year limited replacement warranty

Stock #0367

GemOro XSteam®

- Robust ¾ gallon tank capacity, with stainless steel housing and 65PSI
- Solenoid foot pedal with steam pressure gauge and LED indicators
- Rocker Shield™ switch boot cover protect from moisture
- Stainless steel basket for holding jewelry during cleaning and while drying
- Includes: Water funnel with measuring fill cup and plastic coated tweezers
- Designed for safety - ETL Listed
- 1 Year limited replacement warranty

Stock #0363

 Stock #1787

SPARKLE SPA®

PERSONAL ULTRASONIC CLEANER

Ask your supplier about quantity discounts!

Cleans quickly and easily with powerful, yet gentle ultrasonic waves in only 3 minutes or less.

Uses water & soap or optional cleaning solution.

No scrubbing or polishing.

Removes dirt & grime from rings, eyeglasses, jewelry, bracelets, small instruments, metal watch bands & more!

Ship wt. 3 Lbs. Stock #1780

GemOro 1.2qt Ultrasonic Cleaner

- Advanced Digital Control System (ADCS)
- High performance transducers
- Ideal capacity, 1.2 quart stainless steel tank
- Durable ABS construction
- Removable, full-size basket included
- Evaporation resistant, tight-close cover
- Perfect size for retail jewelers, pawnshops and other professional applications
- Great back-up ultrasonic!

Ship wt. 5 Lbs. Stock #1785

GemOro® SUPERIOR INSTRUMENTS