ULTRASONIC CLEANING EQUIPMENT
INDUSTRIAL LINE

www.tierratech.com
Providing Solutions

TierraTech® is an international leading company in the manufacturing and commercialisation of Ultrasonic Cleaning Equipment and Systems.

With 15 years of experience in ultrasound technology, we count on production plants in Europe and America, and an extensive network of distributors that represent us in more than 30 countries.

Our highly qualified technical and commercial teams enable us to offer personalised service and advice, as required by needs of each client.

With immediate delivery for standard equipment, you will have the most advanced and efficient ultrasonic cleaning technology at your facilities.

We offer solutions and to do so, we have a very efficient R&D department, working continuously on new technologies and applications for the ultrasonic cleaning environment. We incorporate cutting-edge components and materials, achieving a flexible design and a personalised product execution.

We cater for the industrial sector with standard models, special equipment adapted to every requirement and an automatic multi-stage line divided into Smart and Heavy equipment.

At TierraTech®, we comply with the highest quality standards in all our processes. We are certified according to the ISO 9001:2008, endorsed by TÜV Rheinland under registry number 0.04.09057.
TierraTech® Worldwide

TierraTech is directly represented in the U.S.A., Mexico, Spain and France. With a distribution network in more than 30 countries, we are able to provide commercial and technical consultation worldwide. TierraTech® has two design and production plants located in Spain for the European market, a sales and logistics center in France and the second plant in Mexico to serve the American market. As well a commercial and logistics center in United States to serve North America.
Aplications by Industry

Automotive industry
At TierraTech®, we are backed by a wide experience in supplying standard and special equipment for the automotive industry and related industries. According to the application and the number of pieces to be washed, we will recommend standard or special equipment to best adapt to the needs of the client.

Aeronautical Industry
The precision of ultrasound cleaning helps both the manufacturers of the components and MRO centres to satisfy the high-quality requirements and the strict safety standards of the sector. In a sector where safety is crucial, the equipment offered by TierraTech® is essential to clean of hydraulic systems, heat exchangers, engine pieces, injection pumps, vanes, etc. since it does not damage the materials or modify the dimensions or geometry of the surfaces.

Graphic Industry
Ultrasound cleaning systems are used to clean rollers and anilox sleeves, etching plates, cartridge holders, ceramic rollers and other removable printing pieces that accumulate oil, water, alcohol or UV-based ink. The accumulation of dirt causes a progressive deterioration of the drum, which affects the printing quality. The advantages of ultrasound cleaning are the recovery of the transference level of the cells from the anilox rollers (recovery of the cell volume) and also, rotogravure cylinders in all sizes. Ensures you obtain a consistent and high printing quality.

Plastic Industry (Moulds)
Immersion washing in our ultrasound tanks is an efficient and high-quality solution to clean all kinds of plastic, rubber, rubber/metal, aluminium and zamak injection moulds. They also enable cleaning the mould in full without having to dismantle the piece and damaging the parts. This is why this represents the most efficient alternative as opposed to traditional cleaning systems.

We design and manufacture multistage cleaning equipment adjusted to the amount of moulds to be cleaned and the particular needs of the production process to best suit each customer.

Aplications by Industry

Treatment of Surfaces and Electroplating
Ultrasound cleaning before coating the pieces entails saving quite a lot of time and labour because it replaces manual cleaning and the long immersion times required by the traditional cleaning methods. It removes polishing pastes, grease and dirt swiftly and efficiently from all types of metal and plastic components, reaching any hidden areas. This means a better adherence to the surface of an electrolytic coating and, therefore, an enhanced appearance and quality of the product.

Stripping
In the field of stripping, the use of ultrasounds enables accelerating processes and eliminating all the organic coating from metallic surfaces. This is why we use the latest generation of strippers. Strippers combined with the mechanic action of ultrasounds enables removing paint or coating in full. Tierra Tech® has ample experience in industrialised stripping processes for steel, aluminium, etc. We have considerable experience in recovering valuable parts, for example, alloy wheels, automotive components and aluminium profiles for architectural purposes, etc. and in maintaining instruments used in painting lines.

Industrial Energetic (Nuclear, Eolian, Thermal, Cogeneration, Solar)
The energy industry encompasses sectors such as nuclear, eolian, thermal, cogeneration and solar. We have different solutions adapted to the different sectors, such as cleaning of heat exchanger plates and heads in the nuclear sector.

For the Cogeneration Industry, we decarbonise and degrease engines and clean heat exchangers.

In the Eolian Industry, ultrasounds are used to maintain gear motors.

Industrial Food
Our equipment is ideal to remove oil, greasy dirt, waste and calcareous encrustation. With the recommended ultrasound system, we achieve a better cleaning result compared to traditional methods. This constitutes a guarantee for the maintenance of equipment and instruments in an industry with such high hygienic requirements.
Pharmaceutical and Laboratory Industry

TierraTech® is present in the pharmaceutical industry. Our ultrasound equipment is used to remove traces of chemical products, oils, pigments, among other residues. We remove dirt from complex pieces with cracks, hard accesses or joints without damaging them. Ultrasound equipment achieves a superior cleanliness and saves time and effort compared to manual washing.

Electronics

Ultrasound cleaning in the electronic field is used for printed circuit boards and electronic components in order to remove soldering residues, dust, grease and other contaminants that reduce the performance. We achieve a high-quality cleanliness even in areas that are hard to reach or blind holes, but at the same time it is delicate with fragile soldering and small pieces. After the ultrasound cleaning process, the electronic components improve effectiveness and the results of the SIR tests.

Machining and Precision Parts

Ultrasound cleaning is the most efficient solution in industrial bar turning and piece machining. It is an excellent solution to clean and remove residue such as shavings, remnants of grease, rust, etc. Our systems are being implemented in all machining sub-sectors and bar turning in the ancillary automotive industries, including connections, couplings, implants/medical prosthetics...

Industrial Maintenance

Ultrasonic equipment in industrial maintenance performs an essential task for the entire manufacturing process. The harsh working conditions of this type of machinery makes preventive maintenance essential to extend their useful life and ensure smooth operation. Our ultrasonic cleaning equipment facilitates cleaning chains, gears, electro-valves, transmissions or hydraulic gears, heat exchangers, filters, etc. contributing to a correct maintenance that favours efficient operation of the machinery and reduces the possibility of unexpected breakdowns.

TT Multi-Stage Automatic Smart

TierraTech® has designed a standardised line both in capacity and in cleaning or treatment stages. Since the requirements for quality and quantity of the parts to be cleaned are different, each cleaning system is built accordingly, bearing in mind the production and features of such piece. The Automatic Smart series are fully automated systems with a useful capacity of 14-95 gallons. This equipment is designed to meet the highest requirements for industrial cleaning, thereby achieving cleaning results that meet the requirements and standards demanded by our customers.

TT Automatic 50

Modular system of ultrasonic cleaning with a useful capacity of 14-20 gallons. Depending on the part to wash different modules are incorporated as they can be clarified, passivation, dried, etc... The model that we show below is a standardized system that consists of washing by ultrasound, two rinsed in cold, rinsed in hot and dried.

Technical specifications

- Power supply: 410V
- Maximum capacity by tank: 20 gallons.
- 5 cleaning process stations:
  - ultrasonic cleaning
  - rinse in cold 1
  - rinse in cold 2
  - enlightened in hot
  - drying tank
- An ultrasonic generator with an output power of 800W
- Tank built in stainless steel AISI 316 of 0.08” in
- Exterior paneling steel fingerprint free of 0.04” in
- Thermal-acoustic insulation k-flex duct net of 0.8” in
- Automatic covers operated by pneumatic cylinder in all tanks
- Level detectors
- 9’’ module PLC with touch screen
- Dimensions (length x width x height):
  - Internal: 20” x 12” x 20” in
  - Total external: 150” x 105” x 84” in

Equipment Fairing

This equipment has characteristics similar to the former but is fully equipped. It consists of fairing and exhaust fumes. You can be added optionally oil extractors, air caps, filtering systems, systems of rotating baskets, dried by hot air dried by vacuum, loading and unloading automatic.
TT Multistage Automatic Smart

Modular system of ultrasonic cleaning with a useful capacity of 27-32 gallons. Depending on the piece to be washed can be incorporated different modules such as rinses, passivation, dried, etc. The model shown below is a standardized system that consists of washing by ultrasonic, two rinses in cold, rinsed in hot and dried.

Technical specifications

- Power supply: 400V
- Maximum capacity by tank: 32 gallons
- 5 cleaning process stations:
  - Ultrasonic cleaning
  - Rinse in cold 1
  - Rinse in cold 2
  - Enlightened in hot
  - Drying tank
- An ultrasonic generator with an output power of 1000W.

TT Automatic 100

Modular system of ultrasonic cleaning with a useful capacity of 40-45 gallons. According to the piece that you have to wash can incorporate different modules such as rinses, passivation, dried, etc. The model shown below is a standardized system that consists of washing by ultrasonic, two rinses in cold, rinsed in hot and dried.

Technical specifications

- Power supply: 400V
- Maximum capacity by tank: 45 gallons
- 5 cleaning process stations:
  - Ultrasonic cleaning
  - Cold rinse 1
  - Cold rinse 2
  - Hot rinse
  - Drying
- An ultrasonic generator with an output power of 1700W.

TT Automatic 150

Modular system of ultrasonic cleaning with a useful capacity of 80-95 gallons. The model shown here is a standardized system that consists of two washed by ultrasonic rinsing cold, rinsed and dried. Manufactured with fairing, exhaust fumes and oil sump system. You can optionally add more stations, rinses, passivation, pneumatic covers, filtration systems, systems of rotating baskets, dried by vacuum, loading and unloading automatic.

Technical specifications

- Power supply: 400V
- Maximum capacity of the tank: 95 Litres
- 5 cleaning process stations:
  - Ultrasonic cleaning
  - Cold rinse 1
  - Cold rinse 2
  - Enlightened in hot
  - Drying
- An ultrasonic generator with an output power of 3400W.

TT Multi-Stage Automatic Smart

Modular system of ultrasonic cleaning with a useful capacity of 80-95 gallons. The model shown here is a standardized system that consists of two washed by ultrasonic rinsing cold, rinsed and dried. Manufactured with fairing, exhaust fumes and oil sump system. You can optionally add more stations, rinses, passivation, pneumatic covers, filtration systems, systems of rotating baskets, dried by vacuum, loading and unloading automatic.

Technical specifications

- Power supply: 400V
- Maximum capacity of the tank: 135 Litres
- 5 cleaning process stations:
  - Ultrasonic cleaning
  - Cold rinse 1
  - Cold rinse 2
  - Enlightened in hot
  - Drying
- An ultrasonic generator with an output power of 4300W.

PROVIDING SOLUTIONS

Basket out of tank by rinsing in hot detail. Multi-Stage computers can have various types of drying and passivating parts.

Decanting of oils and filtration tanks.

SIEMENS screen mod. KTP900 TFT panoramic 9". Backlit 800 x 480px. All automatic equipment have installed this screen of series.

Detail of basket entering ultrasonic station. Racks and baskets are customized according to the needs of customer size.
TT Multi-Stage Automatic HEAVY

TT-Automatic Heavy line is a manufacture of equipment to measure for parts of great weight and volume that require high quality cleaning processes. These equipments are designed according to the customer’s needs and are very robust and functional equipment of last generation. We then show you some representative examples:

**TT-4 x 800**
Special equipment for cleaning heat-switches of stainless steel, it has a load of 1700lb and a useful capacity of 210 gallons per tank. The system of vertical/horizontal translation is performed by a carriage porch. The team of four seasons is washed by ultrasound, rinse, rinse with demineralized water and drying water. Includes automatic lids and a common area for loading and unloading.

**TT-3 x 750**
Special equipment designed for cleaning cutting tools and parts in its manufacturing process. It has a movement of load of 650lb and a useful capacity of 200 gallons per tank. There are 4 stages, the team is washed by ultrasounds, double rinsing in cold and oiled water repellent. It also has automatic lids and a common area for loading and unloading.

**TT-5 x 720**
Special multi-tank designed to clean aluminium frame which has a payload of 1100lb and a useful capacity of 190 gallons per tank. The system of vertical/horizontal translation is performed by carriage porch. It consists of 5 stages, ultrasonic cleaning, double rinsing cold, rinsed and dried. It also has automatic lids and common loading and unloading.
TierraTech® is specialized in the manufacture of large equipment for the naval industry, nuclear industry, electroplating, etc. With an own engineering staff, we develop projects of large vats. We then show you some examples of large capacity equipment:

**TT-8000**

Equipment for special cleaning of 8000 litres capacity useful for the cleaning of marine engines. With 20 emitters 1700W each one has a total power of 51000W. It has an auxiliary tank for the extraction of oils and fats in order to avoid contamination in the cleaning tank.

**TT-10000**

Double-tank of special manufacture of 2700 gallons of capacity designed for the cleaning and degreasing of metal parts, for the preparation of parts before painting. Each tank has a capacity of 2700 gallons. The first tank is used for degreasing hot and the second cuba for dewaxing of parts.

**TT-12000**

Machine’s internal dimensions (length x width x height): 200” x 16” x 220” inches, 3200 gallons useful capacity. Developed especially for the nuclear industry and its high cleaning requirements. Equipment designed for the cleaning of plates of coolers for nuclear reactors.

**TT-17000**

Cleaning system special 4500 gallons capacity, for cleaning and descaling of steel parts. It has a filtering system through two filters bag TTF-2. It has pneumatic pump for recirculation of fluids and sweep of metal particles on the bottom.
These machines are aimed at companies with special cleaning needs, well by the characteristics of the parts to be cleaned or the needs of its manufacturing process. They can incorporate several processes such as rinsing, drying or different treatments in addition to the cleaning. From the first moment we work side by side with our client to find the specific solution and more according to your needs. Below are some examples of special equipment developed to measure for our customers:

**TT-60-1000N+RN**

Machine double-tank for cleaning of automotive rubber injection moulds. With a capacity of 265 gallons. It has a tank of high power ultrasonic washing and rinsing. Automatic covers.

**TT-150+AC+S**

Special machine for the cleaning of metal parts from precision turned parts, has a useful capacity of 40 gallons. Designed with anchor for load, drain and discharge of parts and 3-stage system. Washed by ultrasound, rinsed, and dried.

**TT-2 x 150 NS + Passivating**

Ultrasonic cleaning system, specially designed for the internal requirements of ZF. With a tank of high power and a passivating tank ultrasonic cleaning. Used in machining parts cleaning.

**TT-90-2000-US+A+P+S**

Special multi-tank ultrasonic cleaning of injection moulding of plastic in the manufacture of razors/rakes of disposable razors. It has a useful capacity of 530 gallons per tank. This team consists of wash tank ultrasonic, rinse hot with microbubbles tank, hot air drying tank and passivating. It has automatic tops opening system.
Special Equipment / Automatic Multistage

For the correct cleaning ultrasonic design tailored to each customer support structures for washing of parts, which can be arranged in baskets, special racks, racks or drums circular, with the possibility of batting, tilt and swivel.

TT-6 x 30-US+A+US+A+P+SV

Special multi-tank of fully automated cleaning to clean springs for the automotive sector. With a capacity of 100 gallons. It carries a gyro system powered by Motor-reducer, gear and transmission oil seals with mechanical system to attach to the tank. 6 stages of cleaning, first wash ultrasonic tank, are second ultrasonic rinse tank, double tank rinsing, passivation tank and vacuum drying system. All tanks have 5 micron filtration system. Automated loading and unloading system. Fairing and enclosure of safety with fumes.

TT-45-600US+E+E+S+S

Automatic multistage equipment with 6 tanks of 600 litres each. It is used for the cleaning of aluminium and other metal parts and programmed for the degreasing of 32,000 parts in 120 hours.

Standard Models

The industry standard range includes among 8 and 2100 gallons capacity, are modular and are specially designed for cleaning, degreasing and descaling of all kinds of parts, components and accessories. All computers of this line, from 20 gallons may incorporate a pneumatic lift platform to facilitate the loading and unloading of parts. They include filtering, separation of oils and water among other treatment systems. All to facilitate and provide the best solution to the industrial sector.

Large stock available
IMMEDIATE DELIVERY

For the correct cleaning ultrasonic design tailored to each customer support structures for washing of parts, which can be arranged in baskets, special racks, racks or drums circular, with the possibility of batting, tilt and swivel.
**Standard Models**

**TT-6030 - 6,6 gallons**
- Capacity: 6.6 gallons
- Internal dimensions: 22" x 12" x 10" in
- Measures useful basket: 20" x 10" x 7" in
- Power supply: 240V
- Heat resistance: 2x350W
- Ultrasonic power: 600W (1200W p-p)
- Working frequency: 40kHz with system of frequency sweep (sweep system ±2%)
- 12 piezoelectric transducers in IBL, high performance titanium steel
- Tank built in stainless steel AISI 316 steel of 0.08" in
- Weight: 75lb.

**TT-7075N - 16 gallons**
- Capacity: 16 gallons
- Internal dimensions (including auxiliary tank): 26" x 15" x 19" in
- Measures useful basket: 24" x 13" x 10" in
- Power supply: 240V
- Heat resistance: 2250W
- Ultrasonic power: 800W (1600W p-p)
- Working frequency: 40kHz with system of frequency sweep (sweep system ±2%)
- 16 piezoelectric transducers in IBL, high performance titanium steel
- Tank built in AISI 304 stainless steel of 0.08" in
- Pneumatic lifting reinforced load on dive platform.
- Maximum load capacity: 66lb
- Auxiliary tank integrated for the separation of lubricants and oils
- Optional: filter for sludge and waste system

**TT-7050 - 11 gallons**
- Capacity: 11 gallons
- Internal dimensions: 24" x 12" x 12" in
- Measures useful basket: 22" x 10" x 9" in
- Overall dimensions: 32" x 16" x 21" in
- Power supply: 240V
- Heat resistance: 2x450W
- Ultrasonic power: 700W (1400W p-p)
- Working frequency: 40kHz with system of frequency sweep (sweep system ±2%)
- 14 piezoelectric transducers in IBL, high performance titanium steel
- Tank built in stainless steel AISI 316 steel of 0.08" in
- Weight: 88lb.

**TT-150N - 33 gallons**
- Capacity: 33 gallons
- Internal dimensions (including auxiliary tank): 28" x 19" x 21" in
- Useful measures: 26" x 16" x 13" in
- Overall dimensions: 50" x 32" x 36" in
- Power supply: 240V / 400V
- Heat resistance: 3750W
- Ultrasonic power: 1700W (3400W p-p)
- Working frequency: 40kHz with system of frequency sweep (sweep system ±2%)
- 34 piezoelectric transducers in IBL, high performance titanium steel
- Tank built in AISI 304 stainless steel of 0.08" in
- Pneumatic lifting reinforced load on dive platform.
- Maximum load capacity: 132lb
- Auxiliary tank for the separation of lubricants and oils
- Optional: filter for sludge and waste system

**TT-7075 - 16 gallons**
- Capacity: 16 gallons
- Internal dimensions: 28" x 14" x 16" in
- Measures useful basket: 26" x 12" x 11" in
- Overall dimensions: 38" x 22" x 35" in
- Power supply: 240V
- Heat resistance: 3x450W
- Ultrasonic power: 800W (1600W p-p)
- Working frequency: 40kHz with system of frequency sweep (sweep system ±2%)
- 16 piezoelectric transducers in IBL, high performance titanium steel
- Tank built in stainless steel AISI 316 steel of 0.08" in
- Weight: 156lb

**TT-300N - 66 gallons**
- Capacity: 66 gallons
- Internal dimensions (including auxiliary tank): 35" x 24" x 25" in
- Useful measures: 34" x 20" x 15" in
- Overall dimensions: 60" x 40" x 41" in
- Power supply: 400V
- Heat resistance: 7000W
- Ultrasonic power: 3400W (6800W p-p)
- Working frequency: 40kHz with system of frequency sweep (sweep system ±2%)
- 34 piezoelectric transducers in IBL, high performance titanium steel
- Tank built in AISI 304 stainless steel of 0.08" in
- Pneumatic lifting reinforced load on dive platform.
- Maximum load capacity: 551lb
- Auxiliary tank for the separation of lubricants and oils
- Optional: filter for sludge and waste system
- Weight: 606lb
### TT-400N - 88 gallons
- **Capacity:** 88 gallons
- **Internal dimensions (excluding auxiliary tank):** 43" x 24" x 27" in
- **Useful measures:** 42" x 20" x 37" in
- **Overall dimensions:** 68" x 40" x 43" in
- **Power supply:** 400V
- **Heat resistance:** 7000W
- **Ultrasonic power:** 3400W (6800W p-p)
- **2 submersible transmitters with a power of 1700W each / 3400W (6800W p-p).** Each transmitter contains 34 piezoelectric transducers in IBL, high performance titanium steel.
- **Working frequency:** 40kHz with system of frequency sweep (sweep system ±2%)
- **Tank built in AISI 304 stainless steel 0,1" in**
- **Pneumatic lifting reinforced load on dive platform.**
- **Maximum load capacity:** 551b
- **Auxiliary tank for the separation of lubricants and oils**
- **Optional:** filter for sludge and waste system
- **Weight:** 701b

### TT-600N - 132 gallons
- **Capacity:** 132 gallons
- **Internal dimensions (excluding auxiliary tank):** 52" x 26" x 26" in
- **Useful measures:** 48" x 26" x 37" in
- **Overall dimensions:** 77" x 47" x 42" in
- **Power supply:** 400V
- **Heat resistance:** 9000W
- **Ultrasonic power:** 5100W (10200W p-p)
- **3 submersible transmitters with a power of 1700W each / 5100W (10200W p-p).** Each transmitter contains 34 piezoelectric transducers in IBL, high performance titanium steel.
- **Working frequency:** 40kHz with system of frequency sweep (sweep system ±2%)
- **Tank built in AISI 304 stainless steel 0,1" in**
- **Pneumatic lifting reinforced for loading, batting and unloading platform.**
- **Maximum load capacity:** 770b
- **Auxiliary tank for the separation of lubricants and oils**
- **Optional:** filter for sludge and waste system
- **Weight:** 711b

### TT-1000N - 220 gallons
- **Capacity:** 220 gallons
- **Internal dimensions:** 99" x 35" x 34" in
- **Useful measures:** 86" x 28" x 22" in
- **Overall dimensions:** 109" x 53" x 43" in (incl. tank generators Assistant and wardrobe).
- **Power supply:** 400V
- **Heat resistance:** 12000W
- **Ultrasonic power:** 6800W (13600W p-p)
- **4 submersible transmitters with a power of 1700W each / 6800W (13600W p-p).** Each transmitter contains 34 piezoelectric transducers in IBL, high performance titanium steel.
- **Working frequency:** 40kHz with system of frequency sweep (sweep system ±2%)
- **Tank built in AISI 304 stainless steel 0,1" in**
- **Pneumatic lifting reinforced for loading, batting and unloading platform.**
- **Maximum load capacity:** 1212b
- **Auxiliary tank for the separation of lubricants and oils**
- **Optional:** filter for sludge and waste system
- **Weight:** 1212b

### TT-2000N - 440 gallons
- **Capacity:** 440 gallons
- **Internal dimensions:** 69" x 43" x 43" in
- **Useful measures:** 65" x 36" x 31" in
- **Overall dimensions:** 127" x 63" x 53" in (incl. auxiliary tank and distribution board).
- **Power supply:** 400V
- **Heat resistance:** 24000W
- **Ultrasonic power:** 10200W (20400W p-p)
- **6 submersible transmitters with a power of 1700W each / 10200W (20400W p-p).** Each transmitter contains 34 piezoelectric transducers in IBL, high performance titanium steel.
- **Working frequency:** 40kHz with system of frequency sweep (sweep system ±2%)
- **Tank built in AISI 304 stainless steel 0,1" in**
- **Pneumatic lifting reinforced for loading, batting and unloading platform.**
- **Maximum load capacity:** 2204b
- **Auxiliary tank for the separation of lubricants and oils**
- **Optional:** filter for waste and sludge system
- **Weight:** 2751b

### TT-3000N - 660 gallons
- **Capacity:** 660 gallons
- **Internal dimensions:** 81" x 47" x 47" in
- **Useful measures:** 76" x 39" x 35" in
- **Overall dimensions:** 142" x 70" x 58" in (incl. auxiliary tank and distribution board).
- **Power supply:** 400V
- **Heat resistance:** 241200W
- **Ultrasonic power:** 13600W (27200W p-p)
- **8 submersible transmitters with a power of 1700W each / 13600W (27200W p-p).** Each transmitter contains 34 piezoelectric transducers in IBL, high performance titanium steel.
- **Working frequency:** 40kHz with system of frequency sweep (sweep system ±2%)
- **Tank built in AISI 304 stainless steel 0,1" in**
- **Pneumatic lifting reinforced for loading, batting and unloading platform.**
- **Maximum load capacity:** 3306b
- **Auxiliary tank for the separation of lubricants and oils**
- **Optional:** filter for waste and sludge system
- **Weight:** 4078b

### TT-4000N - 880 gallons
- **Capacity:** 880 gallons
- **Internal dimensions:** 94" x 59" x 50" in
- **Useful measures:** 89" x 54" x 35" in
- **Overall dimensions:** 161" x 89" x 61" in (incl. auxiliary tank and distribution board).
- **Power supply:** 400V
- **Heat resistance:** 241500W
- **Ultrasonic power:** 20400W (40800W p-p)
- **12 submersible transmitters with a power of 1700W each / 20400W (40800W p-p).** Each transmitter contains 34 piezoelectric transducers in IBL, high performance titanium steel.
- **Working frequency:** 40kHz with system of frequency sweep (sweep system ±2%)
- **Tank built in AISI 304 stainless steel 0,1" in**
- **Pneumatic lifting reinforced for loading, batting and unloading platform.**
- **Maximum load capacity:** 4409b
- **Auxiliary Tank for the separation of lubricants and oils**
- **Optional:** filter for waste and mud system
- **Weight:** 6172b
Standard Models

**TT-8000 - 1760 gallons**

Capacity: 1760 gallons

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Volume</th>
<th>Internal Measures (in.)</th>
<th>Useful Measures (in.)</th>
<th>Ultrasonic power</th>
<th>Frequency</th>
<th>Warming</th>
<th>Pneumatic power payload (lb)</th>
<th>Waterflow</th>
<th>System</th>
</tr>
</thead>
<tbody>
<tr>
<td>TT-6630</td>
<td>6.6 gal</td>
<td>22” x 12” x 10”</td>
<td>20” x 10” x 8”</td>
<td>600 W (1200 p-p)</td>
<td>40 kHz (sweep sys ±2%)</td>
<td>2 x 350W</td>
<td>—</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>TT-7050</td>
<td>11 gal</td>
<td>24” x 12” x 12”</td>
<td>22” x 10” x 9”</td>
<td>700 W (1500 p-p)</td>
<td>40 kHz (sweep sys ±2%)</td>
<td>2 x 450 W</td>
<td>—</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>TT-707S</td>
<td>16 gal</td>
<td>28” x 14” x 16”</td>
<td>26” x 12” x 11”</td>
<td>800 W (1600 p-p)</td>
<td>40 kHz (sweep sys ±2%)</td>
<td>3 x 450 W</td>
<td>—</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>TT-707N</td>
<td>16 gal</td>
<td>26” x 15” x 19”</td>
<td>24” x 13” x 10”</td>
<td>800 W (1600 p-p)</td>
<td>40 kHz (sweep sys ±2%)</td>
<td>2250 W</td>
<td>65 lb</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>TT-150N</td>
<td>33 gal</td>
<td>28” x 15” x 21”</td>
<td>26” x 18” x 13”</td>
<td>1700 W (3400 p-p)</td>
<td>40 kHz (sweep sys ±2%)</td>
<td>3750W</td>
<td>132 lb</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>TT-300N</td>
<td>66 gal</td>
<td>35” x 24” x 25”</td>
<td>34” x 20” x 15”</td>
<td>3400 W (6800 p-p)</td>
<td>40 kHz (sweep sys ±2%)</td>
<td>7000 W</td>
<td>550 lb</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>TT-400N</td>
<td>88 gal</td>
<td>43” x 24” x 27”</td>
<td>42” x 20” x 17”</td>
<td>3400 W (6800 p-p)</td>
<td>40 kHz (sweep sys ±2%)</td>
<td>7000 W</td>
<td>550 lb</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>TT-600N</td>
<td>132 gal</td>
<td>51” x 29” x 26”</td>
<td>48” x 26” x 17”</td>
<td>5100 W (10200 p-p)</td>
<td>40 kHz (sweep sys ±2%)</td>
<td>9000 W</td>
<td>770 lb</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>TT-100N</td>
<td>220 gal</td>
<td>59” x 35” x 34”</td>
<td>56” x 28” x 22”</td>
<td>6800 W (13600 p-p)</td>
<td>40 kHz (sweep sys ±2%)</td>
<td>2x7000 W</td>
<td>1650 lb</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>TT-200N</td>
<td>440 gal</td>
<td>69” x 43” x 43”</td>
<td>65” x 36” x 31”</td>
<td>10200 W (20400 p-p)</td>
<td>40 kHz (sweep sys ±2%)</td>
<td>2 x 9000 W</td>
<td>2200 lb</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>TT-300N</td>
<td>660 gal</td>
<td>81” x 47” x 47”</td>
<td>76” x 39” x 35”</td>
<td>13600 W (27200 p-p)</td>
<td>40 kHz (sweep sys ±2%)</td>
<td>2 x 12000 W</td>
<td>3300 lb</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>TT-400N</td>
<td>880 gal</td>
<td>94” x 59” x 50”</td>
<td>89” x 54” x 35”</td>
<td>20400 W (40800 p-p)</td>
<td>40 kHz (sweep sys ±2%)</td>
<td>2 x 15000 W</td>
<td>4400 lb</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>TT-8000</td>
<td>1760 gal</td>
<td>118” x 79” x 59”</td>
<td>114” x 75” x 46”</td>
<td>34000 W (68000 p-p)</td>
<td>40 kHz (sweep sys ±2%)</td>
<td>4 x 15000 W</td>
<td>—</td>
<td>—</td>
<td></td>
</tr>
</tbody>
</table>

All equipment and features are susceptible to changes in catalog.

*Hydraulic lifting system 4410lb - 1540lb

Table of Specifications for Standard Models

Ultrasonic Generators

We make available to our customers a wide range of ultrasonic generators. Depending on the application, material of parts and to remove dirt, TierraTech® will always recommend the most appropriate generator. Since mono equipment 28/40 kHz. Sweep - System frequency ±2% to generators of last generation models SB - 10 and SB - 30 fully digital Burst and Multitech frequency system.

**Generator TT-10**

- Powers available 600W, 700W, 800W, 1000W and 1500W.
- Operating system: 
  - Sweep System ±2% modulation of frequency (setting set).

**Generator S-10**

- Powers available 1000W to 1700W, 7 power levels indicated by LEDs, analog Display, Control power, Start/Stop, PLC, Preheat alarm and Open Short.
- Ext control: ultrasonic ON/OFF contact.
- Operating system: 
  - Normal:tracking of frequency wave.
  - Sweep System ±2%: frequency modulation (adjustment set).

**Generator S-30**

- Powers available 2000W to 3400, 7 power levels indicated by LEDs, analog display, Control power, Start/Stop, PLC, Preheat alarm and Open Short.
- Ext control: ultrasonic ON/OFF contact.
- Operating system: 
  - Normal:tracking of frequency wave.
  - Sweep System ±2%: frequency modulation (adjustment set).

**Generator SB-10 digital**

- Powers available 1000W to 1700W, with automatic power monitoring, and monitoring of frequency wave. Display: ranges of power, time, power, operating state, limit alarm.
- Communication (PLC): RS 422, condition monitoring, Control (ON/OFF, operating system, power, alarm control).
- Operating system: 
  - Normal: tracking of frequency wave.
  - Sweep System ±2%: frequency modulation (adjustment set).
  - Burst: Modulation of amplitude (adjustment set).
  - Ext control: ultrasonic ON/OFF contact.

**Generator SB-30 digital**

- Powers available 2000W to 3400, with automatic power monitoring, and monitoring of frequency wave.
- Display: ranges of power, time, power, operating state, limit alarm.
- Communication (PLC): RS 422, condition monitoring, Control (ON/OFF, operating system, power, alarm control).
- Operating system: 
  - Normal: tracking of frequency wave.
  - Sweep System ±2%: frequency modulation (adjustment set).
  - Burst: Modulation of amplitude (adjustment set).
  - Ext control: ultrasonic ON/OFF contact.

**Generator Multitech**

- Powers available 600W, 800W and 1000W to 35-70-105kHz. Display (choice of time, power, alarm, power limiter, operating state).
- Ext control: ultrasonic ON/OFF by contact. Communication (PLC) control: Control ON/OFF, operating system, power, 3 frequencies 2 alarms.
- Operating system: 
  - Normal: tracking of frequency wave.
  - Sweep System ±2%: frequency modulation (adjustment set).
Depending on the needs, we have a wide range of ultrasonic emitters in standard sizes. For special applications we design the emitter according to the client’s needs, with multiple different applications.

### Ultrasonic Emitters

- **SUS-2**
  - Power: 0.6-7.5 kW
  - Frequency: 15-240 kHz

- **SUS-5P**
  - Power: 5 kW
  - Frequency: 5.5-240 kHz

- **SUS-17**
  - Power: 17 kW
  - Frequency: 17-105 kHz

- **SUS-22**
  - Power: 22 kW
  - Frequency: 22-90 kHz

- **SUS-23**
  - Power: 23 kW
  - Frequency: 23-90 kHz

### Cleaning Product

#### Ultrasonic-2
- **Product type:** degreaser
- **Features:** Detergent for iron and steel. Removes embedded sediments of fats, oils, and any kind of stubborn, avoiding that it redeposit on the parts already clean. Surfactants, solvent and alkali. High alkaline degreaser. Suitable Materials: iron, galvanized steel and aluminum.
- **Dosage:** 3-5%
- **Color:** yellow
- **Appearance:** liquid.

#### Ultrasonic-5P
- **Product type:** degreaser
- **Features:** Cleaning and descaling of fats, oils, and any kind of stubborn, avoiding that it redeposit on the parts already clean. Suitable materials: all materials and metals (including aluminum and its alloys).
- **Dosage:** 3%
- **Color:** white
- **Appearance:** powder.

#### Ultrasonic-6
- **Product type:** degreaser
- **Features:** Removes sediments of fats, oils, and any kind of stubborn, avoiding that it redeposit on the parts already clean. Surfactants, solvent and alkali. High alkaline degreaser.
- **Dosage:** 2-5%
- **Color:** transparent
- **Appearance:** liquid.

#### Ultrasonic-7W
- **Product type:** degreaser
- **Features:** Cleaning and descaling charcoal. To achieve these results it should be used together with Ultrasonic-A.
- **Suitable materials:** all materials and metals.
- **Dosage:** 3%
- **Color:** white
- **Appearance:** powder.

#### Ultrasonic-17
- **Product type:** degreaser
- **Features:** Highly concentrated, developed for the cleaning of heavily soiled components (spare parts) of steel and light metals. Suitable Materials: iron.
- **Dosage:** 8-12%
- **Color:** transparent
- **Appearance:** liquid.

#### Ultrasonic-20
- **Product type:** degreaser and surfactant
- **Features:** High cleaner power degreaser. Their carefully selected surfactants facilitate the penetration of the product within the soil. Especially formulated for use in hard water, since it prevents the precipitation of the calcium and magnesium salts.
- **Suitable Materials:** iron.
- **Dosage:** 5%
- **Color:** white
- **Appearance:** powder.

#### Ultrasonic-22
- **Product type:** degreaser
- **Features:** Strong alkaline degreaser for ferrous metals.
- **Dosage:** 3-5%
- **Color:** white
- **Appearance:** powder.

#### Ultrasonic-23
- **Product type:** degreaser and surfactant
- **Features:** Alkaline cleaner formulated for the degreasing of surfaces of steel and suitable also for the Elimination of phosphate layers.
- **Suitable Materials:** iron.
- **Dosage:** 5%
- **Color:** white
- **Appearance:** powder.

*For different sizes please contact our Technical Department

*For different frequencies, please contact with our Technical Department

In addition to the standard measures, we adapt ourselves to your needs, giving the possibility to develop sets of special measures with the anchoring system that best suits your needs.
<table>
<thead>
<tr>
<th>Cleaning Product</th>
<th>Cleaning Product</th>
<th>Cleaning Product</th>
<th>Cleaning Product</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ultrasonic-24</strong></td>
<td><strong>Ultrasonic-550</strong></td>
<td><strong>Ultrasonic-51</strong></td>
<td><strong>Ultrasonic-53</strong></td>
</tr>
<tr>
<td><strong>Type of product:</strong> alkaline degreaser to 'pickle' carbon steel and stainless steel</td>
<td><strong>Type of product:</strong> Decalifying cleaner.</td>
<td><strong>Product type:</strong> paint stripper.</td>
<td><strong>Product type:</strong> Stripper.</td>
</tr>
<tr>
<td><strong>Characteristics:</strong> Specific pretreatment before phosphatization, galvanization or coating</td>
<td><strong>Characteristics:</strong> It is a high performance acid detergent that cleans and decalcs all types of calcareous incrustations.</td>
<td><strong>Features:</strong> Moderate acid product for use in the integral cleaning by contact surfaces and utensils strongly contaminated in the food industry, catering, large collectivities and surfaces and institutional hygiene, where in addition require descaling of lime deposits produced by the hardness of the water.</td>
<td><strong>Features:</strong> Iron hot (between 80 °C - 90 °C) stripper for stripping in short periods of time, primers, synthetic resins, water paints including paintings by anaphoresis and Cataphoresis, baked paint. Not causes problems of formation of vapours.</td>
</tr>
<tr>
<td><strong>Suitable for:</strong> Steel, iron and copper alloys</td>
<td><strong>Suitable materials:</strong> Iron materials.</td>
<td><strong>Suitable Materials:</strong> stainless steel.</td>
<td><strong>Suitable:</strong> Electronic boards.</td>
</tr>
<tr>
<td><strong>Dosage:</strong> 2-5%</td>
<td><strong>Dosage:</strong> It is used by immersion or applied on the surfaces to treat in a dose from 1:1 to 1:10.</td>
<td><strong>Dosage:</strong> 3:1</td>
<td><strong>Dosage:</strong> 2:5-3:1</td>
</tr>
<tr>
<td><strong>Appearance:</strong> powder</td>
<td><strong>Colour:</strong> White</td>
<td><strong>Appearance:</strong> Liquid.</td>
<td><strong>Appearance:</strong> Liquid.</td>
</tr>
<tr>
<td><strong>Ultrasonic-4</strong></td>
<td><strong>Ultrasonic-250</strong></td>
<td><strong>Ultrasonic-52</strong></td>
<td><strong>Ultrasonic-54</strong></td>
</tr>
<tr>
<td><strong>Type of product:</strong> degreaser</td>
<td><strong>Product type:</strong> Acid</td>
<td><strong>Type of product:</strong> Stripper</td>
<td><strong>Type of product:</strong> Stripper.</td>
</tr>
<tr>
<td><strong>Characteristics:</strong> Very powerful degreaser designed to remove oils and animal and vegetable fat. To be used as a degreasing detergent for food circuits, pasteurisers and recirculation cleaning systems.</td>
<td><strong>Characteristics:</strong> Detergent</td>
<td><strong>Features:</strong> Hot presents a very high capacity for stains on synthetic resins, baked paints, primers, water paints and paints of Cataphoresis.</td>
<td><strong>Features:</strong> Detergent</td>
</tr>
<tr>
<td><strong>Suitable for:</strong> Iron, steel</td>
<td><strong>Suitable materials:</strong> steels</td>
<td><strong>Suitable Materials:</strong> Iron.</td>
<td><strong>Suitability:</strong> Detergent</td>
</tr>
<tr>
<td><strong>Dosage:</strong> 3-10%</td>
<td><strong>Dosage:</strong> 5%</td>
<td><strong>Dosage:</strong> 3%</td>
<td><strong>Dosage:</strong> 2-5%</td>
</tr>
<tr>
<td><strong>Colour:</strong> brownish</td>
<td><strong>Colour:</strong> Orange</td>
<td><strong>Colour:</strong> Brown</td>
<td><strong>Colour:</strong> Red.</td>
</tr>
<tr>
<td><strong>Appearance:</strong> liquid</td>
<td><strong>Appearance:</strong> Liquid</td>
<td><strong>Appearance:</strong> Liquid.</td>
<td><strong>Appearance:</strong> Liquid.</td>
</tr>
<tr>
<td><strong>Ultrasonic-550</strong></td>
<td><strong>Ultrasonic-Ainox</strong></td>
<td><strong>Ultrasonic-51</strong></td>
<td><strong>Ultrasonic-53</strong></td>
</tr>
<tr>
<td><strong>Type of product:</strong> Stripper.</td>
<td><strong>Product type:</strong> Acid</td>
<td><strong>Type of product:</strong> Acid</td>
<td><strong>Product type:</strong> Stripper.</td>
</tr>
<tr>
<td><strong>Features:</strong> Hot it has unique properties for stripping in short periods of time, primers, synthetic resins, water paints including paintings by anaphoresis and Cataphoresis, baked paint. Not causes problems of formation of vapours.</td>
<td><strong>Features:</strong> Sanitizing acid cleaner.</td>
<td><strong>Features:</strong> Iron hot (between 80 °C - 90 °C) stripper for stripping in short periods of time, primers, synthetic resins, water paints including paintings by anaphoresis and Cataphoresis, baked paint. Not causes problems of formation of vapours.</td>
<td><strong>Features:</strong> Paint stripper.</td>
</tr>
<tr>
<td><strong>Suitable materials:</strong> stainless steel.</td>
<td><strong>Suitable Materials:</strong> aluminium.</td>
<td><strong>Suitable:</strong> Electronic boards.</td>
<td><strong>Suitable Materials:</strong> stainless steel.</td>
</tr>
<tr>
<td><strong>Dosage:</strong> 3:1</td>
<td><strong>Dosage:</strong> 1-10%</td>
<td><strong>Dosage:</strong> 2:5-3:1</td>
<td><strong>Dosage:</strong> 2:5-3:1</td>
</tr>
<tr>
<td><strong>Appearance:</strong> Liquid.</td>
<td><strong>Color:</strong> Blue.</td>
<td><strong>Appearance:</strong> Liquid.</td>
<td><strong>Appearance:</strong> Liquid.</td>
</tr>
<tr>
<td><strong>Ultrasonic-53</strong></td>
<td><strong>Ultrasonic-52</strong></td>
<td><strong>Ultrasonic-51</strong></td>
<td><strong>Ultrasonic-53</strong></td>
</tr>
<tr>
<td><strong>Type of product:</strong> Acid</td>
<td><strong>Type of product:</strong> Detergent</td>
<td><strong>Type of product:</strong> Stripper.</td>
<td><strong>Product type:</strong> Stripper.</td>
</tr>
<tr>
<td><strong>Characteristics:</strong> NEUTRAL, detergent and cleaning additive. It is used as a product enhancer to increase the cavitation strength of acid and alkaline products used in ultrasonic cleaning. Indicated to remove entrapped sediments on grease, oils and any type of tough dirt.</td>
<td><strong>Characteristics:</strong> Detergent</td>
<td><strong>Features:</strong> Iron hot (between 80 °C - 90 °C) stripper for stripping in short periods of time, primers, synthetic resins, water paints including paintings by anaphoresis and Cataphoresis, baked paint. Not causes problems of formation of vapours.</td>
<td><strong>Features:</strong> Paint stripper.</td>
</tr>
<tr>
<td><strong>Suitable for:</strong> All materials.</td>
<td><strong>Suitable materials:</strong> plastics.</td>
<td><strong>Suitable:</strong> Electronic boards.</td>
<td><strong>Suitable:</strong> Electronic boards.</td>
</tr>
<tr>
<td><strong>Dosage:</strong> 0.2-0.5%</td>
<td><strong>Dosage:</strong> 50%</td>
<td><strong>Dosage:</strong> 2:5-3:1</td>
<td><strong>Dosage:</strong> 2:5-3:1</td>
</tr>
<tr>
<td><strong>Colour:</strong> transparent</td>
<td><strong>Colour:</strong> Blue</td>
<td><strong>Appearance:</strong> Liquid.</td>
<td><strong>Appearance:</strong> Liquid.</td>
</tr>
<tr>
<td><strong>Appearance:</strong> liquid</td>
<td><strong>Appearance:</strong> Liquid.</td>
<td><strong>Appearance:</strong> Liquid.</td>
<td><strong>Appearance:</strong> Liquid.</td>
</tr>
<tr>
<td><strong>Ultrasonic-Pro</strong></td>
<td><strong>Ultrasonic-PRO</strong></td>
<td><strong>Ultrasonic-PRO</strong></td>
<td><strong>Ultrasonic-PRO</strong></td>
</tr>
<tr>
<td><strong>Product type:</strong> stripper</td>
<td><strong>Product type:</strong> stripper.</td>
<td><strong>Product type:</strong> Stripper.</td>
<td><strong>Product type:</strong> Stripper.</td>
</tr>
<tr>
<td><strong>Features:</strong> Pickling Gel for stainless steel suitable for the cleaning of austenitic stainless steels and alloy steels very strong base of nickel and chromium. The parts with anti-rust treatment is recommended.</td>
<td><strong>Features:</strong> Hot presents a very high capacity for stains on synthetic resins, baked paints, primers, water paints and paints of Cataphoresis.</td>
<td><strong>Features:</strong> Iron hot (between 80 °C - 90 °C) stripper for stripping in short periods of time, primers, synthetic resins, water paints including paintings by anaphoresis and Cataphoresis, baked paint. Not causes problems of formation of vapours.</td>
<td><strong>Features:</strong> Detergent</td>
</tr>
<tr>
<td><strong>Suitable materials:</strong> steels</td>
<td><strong>Suitable Materials:</strong> Iron.</td>
<td><strong>Suitable:</strong> Electronic boards.</td>
<td><strong>Suitability:</strong> Detergent</td>
</tr>
<tr>
<td><strong>Dosage:</strong> 0.5 - 3%</td>
<td><strong>Dosage:</strong> 50%</td>
<td><strong>Dosage:</strong> 2:5-3:1</td>
<td><strong>Dosage:</strong> 2-5%</td>
</tr>
<tr>
<td><strong>Colour:</strong> transparent</td>
<td><strong>Colour:</strong> Brown</td>
<td><strong>Colour:</strong> Red.</td>
<td><strong>Colour:</strong> Purple.</td>
</tr>
<tr>
<td><strong>Appearance:</strong> Liquid.</td>
<td><strong>Appearance:</strong> Liquid.</td>
<td><strong>Appearance:</strong> Liquid.</td>
<td><strong>Appearance:</strong> Liquid.</td>
</tr>
</tbody>
</table>
Cleaning Product

Antioxidante

**Type of product:** A corrosion inhibitor and metal protector.
**Characteristics:** It can be used on grinders, sharpeners and all kinds of machining. Suitable for cases where a passivating acid bath and metal protection are required, and especially for ferrous materials.
**Suitable for:** Iron, Stainless Steel, Plastic, Fat, Oil, Surfactant, Surfactant.
**Dosage:** 0.2-1%
**Appearance:** Liquid.

Adisec

**Type of product:** Drying additive.
**Characteristics:** Product indicated to lower the superficial tension of the water during cleaning processes. Suitable for: All kinds of surfaces.
**Dosage:** 0.5-3%
**Colour:** Transparent.
**Appearance:** Liquid.

Table of products and specifications

<table>
<thead>
<tr>
<th>Product</th>
<th>Usage temperature</th>
<th>Suitable material</th>
<th>Waste that removes</th>
<th>Type of product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ultrasonic-2</td>
<td>40º - 80º</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Ultrasonic-5P</td>
<td>0.5%</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Ultrasonic-6</td>
<td>5%</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Ultrasonic-7W</td>
<td>5%</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Ultrasonic-20</td>
<td>5%</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Ultrasonic-22</td>
<td>5%</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Ultrasonic-23</td>
<td>5%</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Ultrasonic-24</td>
<td>5%</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Ultrasonic-AP</td>
<td>3-10%</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Ultrasonic-4</td>
<td>0.2-1%</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Ultrasonic-A</td>
<td>0.2-0.5%</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Ultrasonic-B</td>
<td>0.2-0.5%</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Riner</td>
<td>0.1-0.3%</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Ultrasonic-293</td>
<td>2%</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Ultrasonic-PND</td>
<td>0.5-3%</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Ultrasonic-003</td>
<td>5%</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Ultrasonic-All</td>
<td>40%</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Hypal</td>
<td>5%</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Ultrasonic-01</td>
<td>100%</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Ultrasonic-02</td>
<td>5%</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Ultrasonic-03</td>
<td>40%</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Ultrasonic-04</td>
<td>50%</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Antioxidante</td>
<td>0.2-1%</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Additive</td>
<td>3.5%</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Electro</td>
<td>3-5%</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

Observations:
- It should be used with Ultrasonic A (0.5%).
- It should be used with Ultrasonic B (0.5%).