Ultrasonic Cleaning Equipment for the AUTOMOTIVE INDUSTRY

www.tierratech.com
We offer solutions

TierraTech® is a leading international company involved in the manufacturing and distribution of Ultrasonic Cleaning Equipment and Systems.

The Motor Clean series offers equipment and ultrasonic cleaning systems designed specially for professionals of the motoring world. At TierraTech®, we know and understand the cleaning needs of the industry, so we have developed the most efficient cleaning system, ensuring an optimum quality in the cleaning processes of our clients.

Equipment from the Motor Clean series offer indisputable advantages over traditional cleaning systems. They are the best choice for degreasing, decarbonising and descaling engine pieces and components since they achieve the best results for being able to access the most hard-to-reach pieces regardless of their complexity and with no effort.

Our technical sales team is highly qualified thus enabling us to offer a personalised service and advice, and an ability to meet the needs of each client. With standard equipment available for immediate despatch, you will have the most advanced and efficient ultrasonic cleaning technology at your facilities.

Our wide range (21 standard equipments) allows us to recommend the equipment that suits best your needs. For special needs we design a tailor-made equipment according to your requirements.

At TierraTech®, we comply with the highest quality standards in all our processes, certified by TÜv Rheinland with registration No. 0.04.09057, according to the ISO 9001:2008 Quality Standard.
TierraTech® worldwide

TierraTech® is located directly in the USA, Mexico, Spain and France; Countries where we have design, production and sales facilities. In addition to our subsidiaries, we have an extensive distribution network in more than 30 countries, providing commercial and technical support to all our customers worldwide.

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Motor Clean in the automotive industry

The Motor Clean series includes equipment with capacities ranging from 8 to 2100 gallons specially designed to clean engines, components and accessories. This equipment covers the following needs: vehicle workshops, diesel injection workshops, truck workshops, ship engine repairs and cogeneration, aeronautics, grinding workshops, engine rebuilding workshops, turbocharger workshops, etc.

Applications

The efficiency of the TierraTech® ultrasonic cleaning systems over automotive pieces is outstanding. Oils, grease and carbon build-ups are removed quickly and efficiently. The Motor Clean series is specially designed to clean all types of components related to engines, such as engine blocks, cylinder heads, turbochargers, injectors or particle filters, as well as for cleaning brakes, gearboxes, radiators, transmission systems, etc.

This range of equipment uses a working frequency of 40 kHz (sweep system +2%), which is the most adequate for cleaning in the motor industry because it achieves optimal cleaning without damaging any soft materials such as aluminium, magnesium, brass, etc. For other, more specific, types of cleaning, we use other frequencies such as 40-09 kHz (Multifrequency) to clean electronic boards or certain soft materials where the quality requisite of the reconstructor is very high and 28 kHz (sweep system ±2%) in the cleaning of certain large steel pieces in industrial and naval engineering.

General workshop

Daily cleaning of all kinds of pieces in general workshops becomes a complex task if you do not have the adequate cleaning means. Ultrasonic cleaning is ideal for removing different types of dirt (grease, carbon deposits, oils, etc.) in pieces such as cylinder heads, pumps, particle filters, etc., both on the surfaces and parts which are hard to reach, reducing the effort and time employed by traditional systems.

Diesel injection workshops

Cleanliness plays an important role in diesel injection laboratories, both in respect of the quality of the final result and productivity. Ultrasonic cleaning is ideal for these laboratories, because it enables cleaning the pumps in a maximum of 10-15 minutes without having to dismantle them and once dismantled in another 10 minutes we have complete assurance that all the internal conduits are perfectly clean, thus avoiding the typical problem that arises when a repair is carried out without adequate cleaning.

Grinding workshops

Regardless of the type of grinding to be carried out or the piece to be treated, ultrasonic cleaning ensures an optimum finish and precision in the grinding industry. Removes carbon deposits, oils and grease, as well as the usual residue we find in cylinder heads and engine blocks easily. The use of ultrasonic cleaning considerably reduces the time employed in cleaning, obtaining the highest quality and avoiding the use of acids, brushes and grit blasting, simplifying the cleaning process and removing the bottleneck all grinding workshops have in this part of the process.
**Applications**

### Turbocharger workshops

Ultrasonic cleaning is the fastest and most efficient solution for turbocharger workshops because it removes carbon deposits and burnt oils, regardless of the complexity of the turbocharger structure. It also allows cleaning a great number of turbochargers in one single process, which improves quality and production times compared to traditional processes.

### Engine rebuilding work

In engine rebuilding work, ultrasonic cleaning prevails as an efficient, fast and adaptable system for any place within the production chain. Ultrasonic cleaning removes all kinds of residue in cylinder heads, valves, pistons, engine blocks, commutators, alternators, etc. caring for the most delicate surfaces and ensuring an optimum finish both for later assembly processes and the final presentation of the engines.

### Gearbox repair shops

In these repair shops, cleaning the pieces from the transmission system is a daily necessity that requires a fast and efficient system. The Motor Clean series covers this requirement, regardless of the complexity of the piece or amount of pieces to be cleaned, removing grease, oils and metallic shavings for instance, fast and efficiently, without the hard-to-access pieces becoming a challenge.

### Marine

The Motor Clean series has large capacity equipment ideal for cleaning large pieces. The naval sector finds our ultrasonic cleaning equipment the most adequate option for the maintenance and repair of all types of engines because they facilitate the cleaning of pieces such as heat interchangers, cylinder heads, turbochargers, intercoolers, tube bundle, coolers or propellers, and other large and heavy pieces, thus reducing the time and effort involved with the traditional systems.

### Heavy machinery

The harsh working conditions to which this type of machinery is subjected to makes preventive maintenance a fundamental task to lengthen their useful life and ensure smooth operation. The Motor Clean ultrasonic cleaning equipment facilitates cleaning radiators, cylinder heads, engine blocks, transmissions, hydraulic systems and working tools, such as shovels or chains, thus contributing towards a proper maintenance that favours efficient work of heavy machinery and decreases the possibility of unexpected breakdowns.

### Aeronautics

The precision of ultrasonic cleaning helps both the manufacturers of the components, as well as MRO centres to satisfy the high-quality requirements and the strict safety standards of the industry. In an industry where safety is essential, the Motor Clean series are indispensable for the cleaning of hydraulic systems, heat interchangers, engine pieces, injection pumps, vanes, etc. since it does not damage the materials or modify the dimensions or geometry of the surfaces. The frequencies used for aeronautical applications are 40 kHz (sweep system ±2%) and 40-90 kHz, multi-frequency.
The Motor Clean standard series includes equipment with capacities ranging from 8 to 2100 gallons, specially designed to clean, degrease, decarbonise and descale all sorts of pieces, components and accessories.

All the equipment in this series, from 75 litres upward, incorporate an elevating platform to facilitate loading and manipulating pieces. Optionally, and depending on the application, we have water filtering and treatment systems, to adapt the standard system to the appropriate conditions required by our client.

73 dB. Max.  Water savings  Fastest cleaning  Our frequencies

28 kHz (sweep system)  40 kHz (sweep system)  40-90 kHz Multi-frequency

Large stocks available  IMMEDIATE DELIVERY
Standard Model

**MOT-30 - 6.6 Gallons**
- Capacity: 6.6 gallons
- Internal dimensions: 22" x 12" x 10" in
- Useful basket measures: 20" x 10" x 7" in
- External dimensions: 29" x 18" x 15" in
- Power supply: 240V
- Heat resistance: 2x350W
- 1 ultrasonic generator with a power output of 600W (1200W p-p)
- 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: 75 Lb

**MOT-50 - 11 Gallons**
- Capacity: 11 gallons
- Internal dimensions: 24" x 12" x 12" in
- Useful basket measures: 22" x 10" x 9" in
- External dimensions: 32" x 16" x 11" in
- Power supply: 240V
- Heat resistance: 2x450W
- 1 ultrasonic generator with an output power of 700W (1400W p-p)
- 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: 88 Lb

**MOT-75 - 16 Gallons**
- Capacity: 16 gallons
- Internal dimensions: 28" x 14" x 15" in
- Useful basket measures: 26" x 12" x 12" in
- External dimensions: 38" x 22" x 16" in
- Power supply: 240V
- Heat resistance: 3x450W
- 1 ultrasonic generator with a power output of 800W (1600W p-p)
- 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: 156 Lb

**MOT-300N - 66 Gallons**
- Capacity: 66 gallons
- Internal dimensions: 35" x 24" x 25" in
- Useful measures: 34" x 20" x 15" in
- External dimensions: 60" x 40" x 41" in
- Power supply: 400V
- Heat resistance: 7000W
- Ultrasonic power: 3400W (6800W p-p)
- 1 ultrasonic generator with a power output of 1700W (3400W p-p)
- 1 submersible transmitter with a power of 1700W (3400W p-p) built in AISI 304 stainless steel of 0.1" in
- Tank built in AISI 304 stainless steel of 0.08" in
- Pneumatic lifting reinforced load on dive platform
- Maximum load capacity: 132 Lb
- Auxiliary tank integrated for the separation of lubricants and oils
- Optional: filter for sludge and waste system
- Weight: 385 Lb

**MOT-75N - 16 Gallons**
- Capacity: 16 gallons
- Internal dimensions: 26" x 15" x 10" in
- Useful measures: 24" x 13" x 10" in
- External dimensions: 46 x 29 x 35" in
- Power supply: 240V
- Heat resistance: 2250W
- 1 ultrasonic generator with a power output of 800W (1600W p-p)
- 1 submersible transmitter with a power of 800W (1600W p-p) built in AISI 304 stainless steel of 0.1 in
- The transmitter contains 16 piezoelectric transducers in IBL, high performance titanium steel.
- Ultrasonic power: 800W (1600W p-p)
- Working frequency: 40kHz system of frequency sweep (sweep system ±2%)
- Tank built in AISI 304 stainless steel of 0.08" in
- Pneumatic lifting reinforced load on dive platform.
- Maximum load capacity: 66 Lb
- Optional: filter for sludge and waste system
- Weight: 288 Lb

**MOT-150N - 33 Gallons**
- Capacity: 33 gallons
- Internal dimensions: 28" x 19" x 21" in
- Useful measures: 26" x 16" x 13" in
- External dimensions: 50" x 32" x 16" in
- Power supply: 240V / 400V
- Heat resistance: 3750W
- Ultrasonic power: 1700W (3400W p-p)
- 1 ultrasonic generator with an output power of 1700W (3400W p-p)
- 1 submersible transmitter with a power of 1700W (3400W p-p) built in AISI 304 stainless steel of 0.1" in.
- Tank built in AISI 304 stainless steel of 0.08" in
- Pneumatic lifting reinforced load on dive platform
- Maximum load capacity: 132 Lb
- Auxiliary tank integrated for the separation of lubricants and oils
- Optional: filter for sludge and waste system
- Weight: 551 Lb

**MOT-150 - 33 Gallons**
- Capacity: 33 gallons
- Internal dimensions: 28" x 19" x 21" in
- Useful measures: 26" x 16" x 13" in
- External dimensions: 50" x 32" x 16" in
- Power supply: 240V / 400V
- Heat resistance: 3750W
- Ultrasonic power: 1700W (3400W p-p)
- 1 ultrasonic generator with an output power of 1700W (3400W p-p)
- 1 submersible transmitter with a power of 1700W (3400W p-p) built in AISI 304 stainless steel of 0.1" in.
- Tank built in AISI 304 stainless steel of 0.08" in
- Pneumatic lifting reinforced load on dive platform.
- Maximum load capacity: 132 Lb
- Auxiliary tank integrated for the separation of lubricants and oils
- Optional: filter for sludge and waste system
- Weight: 385 Lb

**MOT-300 - 66 Gallons**
- Capacity: 66 gallons
- Internal dimensions: 35" x 24" x 25" in
- Useful measures: 34" x 20" x 15" in
- External dimensions: 60" x 40" x 41" in
- Power supply: 400V
- Heat resistance: 7000W
- Ultrasonic power: 3400W (6800W p-p)
- 1 ultrasonic generator with a power output of 1700W (3400W p-p)
- 1 submersible transmitter with a power of 1700W (3400W p-p) built in AISI 304 stainless steel of 0.1" in.
- Tank built in AISI 304 stainless steel of 0.08" in
- Pneumatic lifting reinforced load on dive platform.
- Maximum load capacity: 132 Lb
- Auxiliary tank integrated for the separation of lubricants and oils
- Optional: filter for sludge and waste system
- Weight: 551 Lb

**Standard Model**
**Standard Model**

**MOT-400N - 88 Gallons**
- Capacity: 88 gallons
- Internal dimensions: 43' x 24' x 27' in
- Useful measures: 42' x 20' x 17' in
- External dimensions: 68' x 40' x 43' in
- Power supply: 400V
- Heat resistance: 7000W
- Ultrasonic power: 3400 (6800W p-p)
- 1 ultrasonic generator with a power output of 3400 (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 0,08” in
- Transmitter contains 34 piezoelectric transducers in IBL, high performance titanium steel.
- 2 generators of ultrasound with a power output of 6800W (13600W p-p)
- Pneumatic lifting reinforced load on dive platform
- Maximum load capacity: 551 Lb
- Optional: filter for sludge and waste system
- Weight: 705 Lb

**MOT-600N - 132 Gallons**
- Capacity: 132 gallons
- Internal dimensions: 51' x 29' x 26' in
- Useful measures: 48' x 26' x 17' in
- External dimensions: 77' x 47' x 42' in
- Power supply: 400V
- Heat resistance: 9000W
- Ultrasonic power: 5100W (10200W p-p)
- 2 ultrasonic generators with a power output of 5100W (10200W p-p)
- 3 submersible transmitter 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 0,11” in
- Transmitter contains 34 piezoelectric transducers in IBL, high performance titanium steel.
- 6 generators of ultrasound with a power output of 20400W (40800W p-p)
- Pneumatic lifting reinforced load on dive platform
- Maximum load capacity: 771 Lb
- Optional: filter for sludge and waste system
- Weight: 771 Lb

**MOT-1000N - 220 Gallons**
- Capacity: 220 gallons
- Internal dimensions: 59' x 35' x 34' in
- Useful measures: 56' x 28' x 22' in
- External dimensions: 105’ x 35’ x 43’ in (incl. auxiliary tank and distribution board).
- Power supply: 400V
- Heat resistance: 2x7000W
- Ultrasonic power: 6800W (13600W p-p)
- 2 generators of ultrasound with a power output of 6800W (13600W p-p)
- 4 submersible transmitter 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
- Transmitter contains 34 piezoelectric transducers in IBL, high performance titanium steel.
- 12 generators of ultrasound with a power output of 20400W (40800W p-p)
- Pneumatic lifting reinforced load on dive platform
- Maximum load capacity: 1653 Lb
- Optional: filter for sludge and waste system
- Weight: 1212 Lb

**MOT-2000N - 440 Gallons**
- Capacity: 440 gallons
- Internal dimensions: 69' x 43' x 43' in
- Useful measures: 65’ x 36’ x 33’ in
- External dimensions: 123’ x 63’ x 53’ in (incl. auxiliary tank and distribution board).
- Power supply: 400V
- Heat resistance: 2x9000W
- Ultrasonic power: 10100W (20200W p-p)
- 3 generators of ultrasound with a power output of 10100W (20200W p-p)
- 6 submersible transmitter with a power of 1700W each / 10100W (20200W 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 0,28” in
- Pneumatic lifting reinforced load on dive platform
- Maximum load capacity: 2204Lb
- Optional: filter for waste and sludge system
- Weight: 2755 Lb

**MOT-3000N - 660 Gallons**
- Capacity: 660 gallons
- Internal dimensions: 81' x 47' x 47' in
- Useful measures: 76’ x 39’ x 35’ in
- External dimensions: 142’ x 70’ x 58’ in (incl. auxiliary tank and distribution board)
- Power supply: 400V
- Heat resistance: 2x12000W
- Ultrasonic power: 13600W (27200W p-p)
- 4 generators of ultrasound with a power output of 13600W (27200W p-p)
- 8 submersible transmitter 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 0,2” in
- Pneumatic lifting reinforced load on dive platform
- Maximum load capacity: 3306Lb
- Optional: filter for waste and sludge system
- Weight: 4078 Lb

**MOT-4000N - 880 Gallons**
- Capacity: 880 gallons
- Internal dimensions: 94’ x 59’ x 50’ in
- Useful measures: 89’ x 34’ x 35’ in
- External dimensions: 161’ x 89’ x 62’ in (incl. auxiliary tank and distribution board)
- Power supply: 400V
- Heat resistance: 2x15000W
- Ultrasonic power: 20400W (40800W p-p)
- 6 generators of ultrasound with a power output of 20400W (40800W p-p)
- 12 submersible transmitter 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 0,11” in
- Pneumatic lifting reinforced load on dive platform
- Maximum load capacity: 4409 Lb
- Auxiliary Tank for the separation of lubricants and oils
- Optional: filter for waste and mud system
- Weight: 6172 Lb
MOT-8000 - 1760 Gallons

Capacity: 1760 gallons
Internal dimensions: 118” x 79” x 59” in
Useful measures: 114” x 75” x 46” in
Overall dimensions: 156” x 102” x 71” in
Power supply: 400V
Heat resistance: 4x15000W
Ultrasonic power: 34000W (68000W p-p)
10 generators of ultrasonic with a power output of 34000W (68000W p-p)
20 submersible transmitter with a power of 1700W each / 34000W (68000W 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 0.11” in
Optional: filter for waste and sludge system
Weight: 7716 Lb

Motor Clean models and specifications

<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>Water flow system</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOT-30</td>
<td>6.6 gal</td>
<td>22” x 12” x 10”</td>
<td>20” x 10” x 7”</td>
<td>600 W (1200 p-p)</td>
<td>40 KHz</td>
<td>2 x 350W</td>
<td>—</td>
<td>—</td>
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<tr>
<td>MOT-50</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</td>
<td>2 x 450 W</td>
<td>—</td>
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<tr>
<td>MOT-75</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</td>
<td>3 x 450 W</td>
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<td>—</td>
</tr>
<tr>
<td>MOT-75N</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</td>
<td>2250 W</td>
<td>65 lb</td>
<td>✓</td>
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<tr>
<td>MOT-150N</td>
<td>33 gal</td>
<td>28” x 19” x 21”</td>
<td>26” x 16” x 13”</td>
<td>1700 W (3400 p-p)</td>
<td>40 KHz</td>
<td>3750W</td>
<td>130 lb</td>
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<tr>
<td>MOT-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</td>
<td>7000 W</td>
<td>550 lb</td>
<td>✓</td>
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<tr>
<td>MOT-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</td>
<td>7000 W</td>
<td>550 lb</td>
<td>✓</td>
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<tr>
<td>MOT-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</td>
<td>9000 W</td>
<td>770 lb</td>
<td>✓</td>
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<tr>
<td>MOT-1000N</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</td>
<td>2x7000 W</td>
<td>1650 lb</td>
<td>✓</td>
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<tr>
<td>MOT-2000N</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</td>
<td>2x11000 W</td>
<td>2200 lb</td>
<td>✓</td>
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<td>MOT-3000N</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</td>
<td>2x12000 W</td>
<td>3300 lb</td>
<td>✓</td>
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<tr>
<td>MOT-4000N</td>
<td>880 gal</td>
<td>94” x 55” x 50”</td>
<td>89” x 54” x 35”</td>
<td>20400 W (40800 p-p)</td>
<td>40 KHz</td>
<td>2x15000 W</td>
<td>4400 lb</td>
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<tr>
<td>MOT-8000</td>
<td>1700 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</td>
<td>4x15000 W</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

All equipment and features are susceptible to changes in catalog.
*Hydraulic lifting system 4400 lb - 15000 lb
In addition to the standard model, we also manufacture models made to measure and Multi-stage systems. These units are designed for companies with special cleaning needs, be it for the characteristics of the pieces to be cleaned or for the requirements of their fabrication process. They can incorporate several processes such as rinsing, drying or different treatments other than cleaning.

Right from the start, we have worked in tandem with our clients seeking the specific solution best suited to their needs.

Examples of special equipment:

**MOT-3X1000 US+A+S: Ultrasonic cleaning + Rinsing + Drying**
High-powered ultrasound system and three stages for cleaning, rinsing and drying turbo chargers.

**MOT-75+AC+S: Ultrasonic cleaning + Warm Rinsing + Drying**
Multistage equipment with ultrasonic cleaning plus warm rinsing and drying, designed for cleaning injection pumps.

**MOT-2X150NS + Passivation with bubbles**
A two-stage high-powered ultrasonic cleaning system for the cleaning and passivation of engine parts.

**MOT-150NS+V**
Tailor-made equipment for the cleaning of interchangers with water circulating system and filters to retain sludge and internal shavings.

Equipment manufactured for ZF-internal standards for their plant in Saarbrücken (Germany).

Special equipment developed on ZF-internal standards for their plant in Saarbrücken (Germany).

Special equipment manufactured for Diesel Remaned in their Sao Carlos facilities in São Paulo, Brazil.
### Cleaning Product

**Ultrasonic-4**  
**Type of product:** degreaser  
**Characteristics:** Removes embedded sediments of fat, oils and any kind of stubborn dirt, preventing it from redepositing on parts already cleaned.  
**Suitable for:** Aluminium, iron and alloys  
**Dosage:** 3%  
**Colour:** beige  
**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: iron, galvanised steel and aluminum.  
**Dosage:** 3%  
**Color:** beige  
**Appearance:** liquid.

**Ultrasonic-5P**  
**Type of product:** degreaser.  
**Characteristics:** Cleaning and descaling of grease, oils and all types of stubborn dirt, preventing it from setting on clean parts again. Suitable for: All types of materials and metals (including aluminium and its alloys).  
**Dosage:** 3%  
**Color:** white  
**Appearance:** powder.

**Ultrasonic-20**  
**Type of product:** degreaser and decarboniser  
**Characteristics:** High degreasing cleaner. Its carefully selected surfactants facilitate the penetration of the product into the dirt. Specially formulated to be used in hard water, because it prevents the precipitation of calcium and magnetic salts.  
**Suitable for:** Iron  
**Dosage:** 5%  
**Colour:** white  
**Appearance:** liquid

**Ultrasonic-22**  
**Type of product:** degreaser  
**Characteristics:** The strongest alkaline degreaser for ferrous metals.  
**Suitable for:** Ferrous materials  
**Dosage:** 3-5%  
**Colour:** white  
**Appearance:** powder

**Ultrasonic-23**  
**Type of product:** degreaser and decarboniser  
**Characteristics:** Alkaline cleaner formulated to degrease steel surfaces and also to remove phosphate layers.  
**Suitable for:** Iron  
**Dosage:** 5%  
**Colour:** white  
**Appearance:** powder

**Ultrasonic-A**  
**Type of product:** degreasing additive  
**Characteristics:** Additive for degreasing detergents, tensoactivator  
**Dosage:** 0,2%-0,5%  
**Colour:** red  
**Appearance:** liquid

**Ultrasonic-B**  
**Type of product:** degreasing additive  
**Characteristics:** Additive for degreasing detergents, tensoactivator  
**Dosage:** 0,2%-0,5%  
**Colour:** yellowish  
**Appearance:** liquid

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[www.tierratech.com](http://www.tierratech.com)
Cleaning Product

Ultrasonic-51  PAINT STRIPPING

Type of product: paint stripper
Characteristics: When hot, it has unique stripping properties in short periods of time for synthetic resins, primers, paints and baked powder paints, water paints and very resistant cataphoretic coatings.
Suitable for: Aluminium
Dosage: 100%
Colour: yellowish
Appearance: Liquid

Ultrasonic-54  PAINT STRIPPING

Type of product: paint stripper
Characteristics: When hot it has the ability to remove stains on synthetic resins, baked paints, primers, water paints and cataphoretic coatings.
Suitable for: Iron
Dosage: 50%
Colour: Brownish
Appearance: Liquid

Products and specifications

<table>
<thead>
<tr>
<th>Product</th>
<th>Type of product</th>
<th>How to use</th>
<th>Suitable material</th>
<th>Waste to be removed</th>
<th>Type of product</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Concentration in water (%)</td>
<td>Bath temperature</td>
<td>Suitable material</td>
<td>Waste to be removed</td>
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<tr>
<td>Ultrasonic-4</td>
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<td>3%</td>
<td>100º-180ºF</td>
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<td>Ultrasonic-20</td>
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<td>5%</td>
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<td>Ultrasonic-22</td>
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<td>Oil, Grease, Paint, Decarburiser, Decarbonizer, Solvent, Additive</td>
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<tr>
<td>Ultrasonic-23</td>
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<tr>
<td>Ultrasonic-A</td>
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<td>0.1-0.15%</td>
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<td>Oil, Grease, Paint, Decarburiser, Decarbonizer, Solvent, Additive</td>
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<tr>
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<td>100º-180ºF</td>
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<td></td>
</tr>
</tbody>
</table>

Observations:
* Should be used with Ultrasonic 7(3%)
** Should be used with Ultrasonic 4(0,2-0,3%)