tierratech®

ULTRASONIC CLEANING SYSTEMS

Ultrasonic Cleaning Equipment for the AUTOMOTIVE INDUSTRY

MotorClean
BY TIERRATECH

ENG

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BY TIERRATECH

THE BEST SOLUTION FOR THE AUTOMOTIVE INDUSTRY

®TT TierraTech
Ultrasonic Cleaning Equipment
Motor Line
2022

TÜVRheinland CERT ISO 9001

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BY TIERRATECH

ULTRASONIC CLEANING EQUIPMENT
AUTOMOTIVE INDUSTRY

WHO WE ARE ?

TierraTech® is a leading company in the manufacturing and commercialization of ultrasonic cleaning systems and equipment with over 20 years of experience in ultrasonic technology.
Our highly qualified technical and sales team provides personalized service and advice according to the needs of each customer.

Minimum effort, better results

WHAT WE MAKE

TierraTech® provides standard ultrasonic cleaning equipment and systems or turn-key projects which offer optimal cleanability thanks to the combination of ultrasonics, detergent and water.

Large national and international companies in the naval, aeronautical and automotive industry have already relied on our *MotorClean* line with customized or standard equipment, manual or fully automated, specially designed to clean their parts and improving their production process.

We provide solutions thanks to the permanent work of our efficient R+D+I team on new technologies and applications around the ultrasonic cleaning, incorporating state-of-the-art components and materials with an agile design for the realization of custom-made projects.

TierraTech® complies with the highest quality standards in all processes, our Quality Management System was certified by TÜV Rheinland according to UNE EN ISO 9001:2008 with register number 0.04.09057

TÜVRheinland CERT ISO 9001

TIERRATECH® WORLDWIDE

TierraTech® is located directly in the EEUU, Mexico, Spain, France and Germany; Countries where we have design, production and sales facilities. In addition to our subsidiaries, we have an extensive distribution network in more than 40 countries, providing commercial and technical support to all our customers worldwide.

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PROVIDING SOLUTIONS

1
Advising

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 in order to provide every day a quality service from the production process to after-sales.

2
Suitable equipment

With immediate delivery for standard equipment and a nimble design and development for custom equipment, you will have the most advanced and efficient ultrasonic cleaning technology in your facility

3
Technical service

We have our own technical department with extensive experience, capable of resolving any incident in the shortest possible time, thus guaranteeing the reliability of our customers' equipment and the trust they have placed in us.

ULTRASONIC CLEANING ADVANTAGES *in the motor industry*

The efficiency of the TierraTech® ultrasonic cleaning systems on automotive pieces is outstanding. Oils, grease and carbon build-ups are removed quickly and easily.

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

- HIGH-QUALITY CLEANING
- REDUCES LABOUR TIME, BENEFITING OTHER TASKS IN THE PRODUCTION PROCESS.
- REDUCES ENERGY COSTS
- SAVINGS IN WATER AND CLEANING PRODUCTS BY IMMERSION CLEANING
- TECHNOLOGIE PLUS RESPECTUEUSE DE L'ENVIRONNEMENT
- TIERRATECH® GUARANTEE

MotorClean series

includes equipment with capacities ranging from 30 to 8000 litres 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.

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.

APPLICATIONS BY SECTOR

WORKSHOPS

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.

BEFORE AND AFTER. CARBURETOR CLEANING

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.

BEFORE AND AFTER. TURBOCHARGER CLEANING

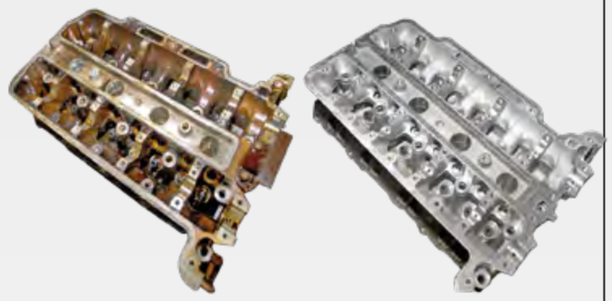
DIESEL INJECTION WORKSHOPS

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

BEFORE AND AFTER. DIESEL INJECTION CLEANING

ENGINE REBUILDING & GRINDING WORKSHOPS

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.

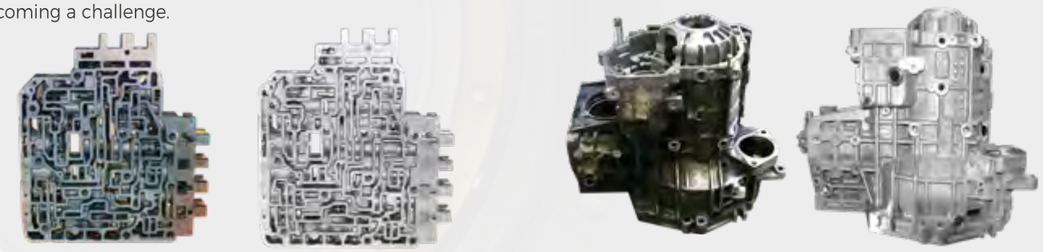


Regardless of the type of grinding to be carried out or the piece to be treated, ultrasonic cleaning ensures an optimum finish and precision in the grinding industry. Removes carbon deposits, oils and grease, as well as the usual residue we find in cylinder heads and engine blocks easily. The use of *Motor Clean* equipment range 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.

BEFORE AND AFTER. CLEANING OF DIESEL CYLINDER HEAD AND ENGINE BLOCK

GEARBOX REPAIR SHOPS

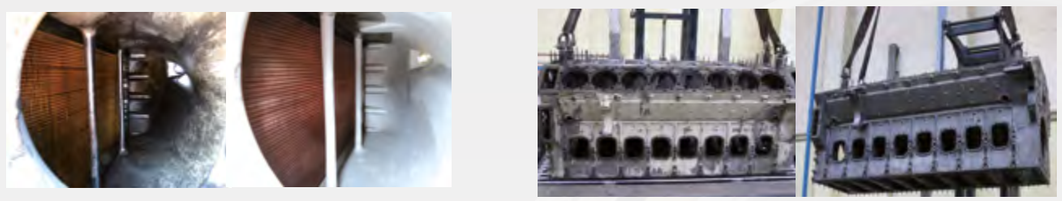
In these repair shops, cleaning the pieces from the transmission system is a daily necessity that requires a fast and efficient system. The *Motor Clean* range covers this requirement, regardless of the complexity of the piece or amount of pieces to be cleaned, removing grease, oils and metallic shavings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



BEFORE AND AFTER. CLEANING OF VALVE BOX AND GEARBOX

MARINE

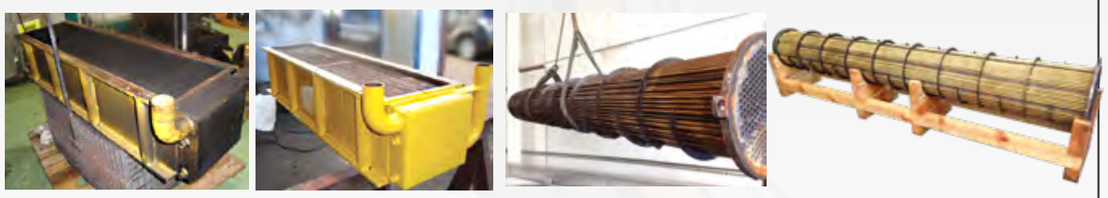
The *Motor Clean* range has large capacity equipment ideal for cleaning large pieces. The marine sector finds our ultrasonic cleaning equipment the most adequate option for the maintenance and repair of all types of engines because they facilitate the cleaning of pieces such as heat interchangers, cylinder 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.



BEFORE AND AFTER. INTERCOOLER AND MTU ENGINE CLEANING

HEAVY MACHINERY

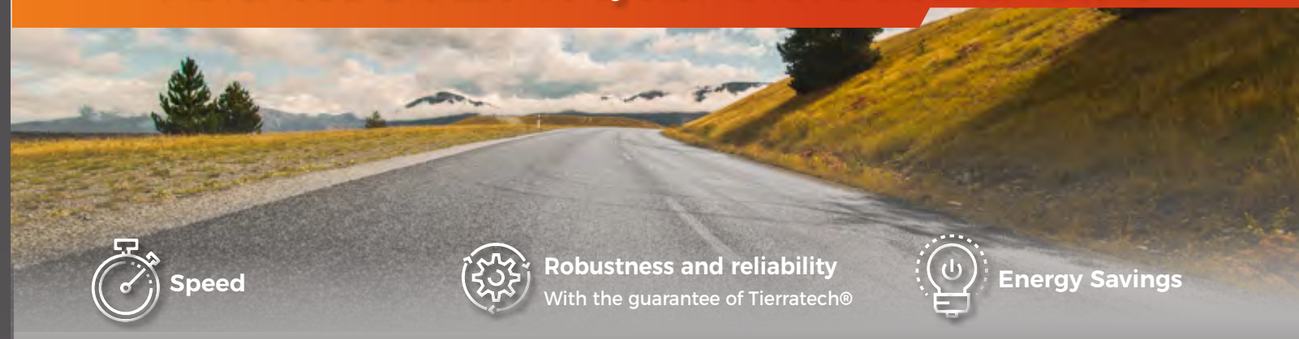
The hard working conditions to which this type of machinery is subjected, makes preventive maintenance a fundamental task to extend its useful life and ensure smooth operation. The *Motor Clean* ultrasonic cleaning equipment facilitates the cleaning of radiators, cylinder heads, engine blocks, transmissions, hydraulic systems and working tools, such as shovels or chains, thus helping to ensure correct maintenance that favors the efficient work of heavy machinery and reduces the possibility of unexpected breakdowns.



BEFORE AND AFTER. CLEANING OF THE CYLINDER HEAD AND TUBULAR BEAM

ADVANCED LINE

Advanced Ultrasonic Systems for a cleaner future



Speed

Robustness and reliability
With the guarantee of Tierratech®

Energy Savings

Ergonomics
Simplicity and comfort

Water savings
Complete watertightness that prevents loss of water by evaporation

Silence
60 dB maximum

MOT-200N ADVANCED
215 Litres

- **USEFUL MEASUREMENTS:** 730x465x370 mm.
- **INTERNAL DIMENSIONS:** 760x520x590 mm.
- **MAIN TANK CAPACITY:** 215 Litres.
- **WFS CAPACITY:** 38 Litres.
- **POWER SUPPLY:** 240V / 400V.
- **HEATING ELEMENT:** 3750W.
- **ULTRASONIC POWER:** 2000Wp (4000Wp-p).
- 1 Ultrasound generator with an output power of 2000Wp (4000Wp-p).
- 2000W ultrasonic emitter (4000Wp-p) of power built in stainless steel AISI 316 L, 2.5mm thick with 38 high-performance titanium-steel IBL piezoelectric transducers with 60W each
- **WORKING FREQUENCY:** 40 KHz. Frequency sweep System (Sweep System ± 2%)
- **PNEUMATIC PLATFORM:** made of stainless steel AISI 304, with a loading capacity of up to 200Kg, adjustable rising and lowering flow and condensation filter.

MOT-185 ADVANCED
185 Litres

On Board
COMPACT AND HERMETIC
Recommended for the Naval Industry

- **USEFUL MEASUREMENTS:** 730x455x310 mm.
- **INTERNAL DIMENSIONS:** 760x520x595 mm.
- **WEIGHT:** 175 Kg.
- **POWER SUPPLY:** 240V / 400V.
- **HEATING ELEMENT:** 3750W.
- **ULTRASONIC POWER:** 1800Wp (3600Wp-p).
- 1 Ultrasound generator with an output power of 1800Wp (3600W p-p).
- 1800W ultrasonic emitter (3600Wp-p) of power built in stainless steel AISI 316 L, 2.5 mm thick with 36 high-performance titanium-steel IBL piezoelectric transducers with 50W each.
- **WORKING FREQUENCY:** 40 KHz. Frequency sweep System (Sweep System ± 2%)

CONTACT US

STANDARD EQUIPMENT

The *Motor Clean* standard series includes equipment with capacities ranging from 30 to 8000 litres, 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.

MOT-30

- **Capacity:** 30 litres
- **Internal dimensions:** 550 x 300 x 250 mm
- **Useful measurements:** 500 x 250 x 175 mm
- **External dimensions:** 720 x 420 x 500 mm
- **Power supply:** 240V
- **Heating element:** 700W
- Ultrasound generator with an output power of 600Wp (1200Wp-p)
- **Ultrasonic power:** 600Wp (1200Wp-p)
- **Working frequency:** 40 KHz. Frequency sweep System (Sweep System ± 2%)
- 12 PZT (lead zirconate titanate) piezo-electric transducers with aluminium alloy body.
- Tank made of 2 mm thick stainless steel AISI 316
- **Weight:** 34 kg

MOT-50

- **Capacity:** 50 litres
- **Internal dimensions:** 600 x 300 x 300 mm
- **Useful measurements:** 550 x 250 x 225 mm
- **External dimensions:** 775 x 420 x 540 mm
- **Power supply:** 240V
- **Heating element:** 900W
- Ultrasound generator with an output power of 700Wp (1400Wp-p)
- **Ultrasonic power:** 700Wp (1400W p-p)
- **Working frequency:** 40 KHz. Frequency sweep System (Sweep System ± 2%)
- 14 PZT (lead zirconate titanate) piezo-electric transducers with aluminium alloy body
- Tank made of 2 mm thick stainless steel AISI 316
- **Weight:**40kg

MOT-75

- **Capacity:** 75 litres
- **Internal dimensions:** 700 x 350 x 400 mm
- **Useful measurements:** 650 x 300 x 290 mm
- **External dimensions:** 1075 x 575 x 900 mm
- **Power supply:** 240V
- **Heating element:** 1350W
- Ultrasound generator with an output power of 800Wp (1600Wp-p)
- **Ultrasonic power:** 800Wp (1600Wp-p)
- **Working frequency:** 40 KHz. Frequency sweep System (Sweep System ± 2%)
- 16 PZT (lead zirconate titanate) piezo-electric transducers with aluminium alloy body
- Tank made of 2 mm thick stainless steel AISI 316
- **Weight:**71 kg

MOT-75N

- **Capacity:** 75 litres
- **Internal dimensions:** 650 x 390 x 470 mm
- **Useful measurements:** 620 x 325 x 270 mm
- **External dimensions:** 1260 x 730 x 925mm
- **Power supply:** 240V
- **Heating element:** 2250W
- Ultrasound generator with an output power of 1000Wp (2000Wp-p)
- **Ultrasonic power:** 1000Wp (2000Wp-p)
- **Working frequency:** 40 KHz. Frequency sweep System (Sweep System ± 2%)
- 16 PZT (lead zirconate titanate) piezo-electric transducers with aluminium alloy body
- Tank made of 2 mm thick stainless steel AISI 304
- **Weight:** 130 kg
- **Pneumatic load platform:** Up to 30 kg

MOT-150N

- **Capacity:** 150 litres
- **Internal dimensions:** 700 x 480 x 540 mm
- **Useful measurements:** 670 x 415 x 345 mm
- **External dimensions:** 1355 x 825 x 945 mm
- **Power supply:**240V/400V
- **Heating element:** 3750W
- Ultrasound generator with an output power of 2000Wp (4000Wp-p)
- **Ultrasonic power:** 2000W (4000Wp-p)
- **Working frequency:** 40 KHz. Frequency sweep System (Sweep System ± 2%)
- 34 PZT (lead zirconate titanate) piezo-electric transducers with aluminium alloy body
- Tank made of 2 mm thick stainless steel AISI 304
- **Weight:** 175 kg
- **Pneumatic load platform:** Up to 60 kg

MOT-300N

- **Capacity:** 300 litres
- **Internal dimensions:** 900 x 615 x 640 mm
- **Useful measurements:** 860 x 525 x 390 mm
- **External dimensions:** 1620 x 1020 x 1045 mm
- **Power supply:** 400V
- **Heating element:** 7500W
- Ultrasound generator with an output power of 4000Wp (8000Wp-p)
- **Ultrasonic power:** 4000Wp (8000Wp-p)
- **Working frequency:** 40 KHz. Frequency sweep System (Sweep System ± 2%)
- 34 PZT (lead zirconate titanate) piezo-electric transducers with aluminium alloy body
- Tank made of 2 mm thick stainless steel AISI 304
- **Weight:** 275 kg
- **Pneumatic load platform:** Up to 250 kg

MOT-400N

- **Capacity:** 400 litres
- **Internal dimensions:** 1100 x 615 x 690 mm
- **Useful measurements:** 1060 x 525 x 440 mm
- **External dimensions:** 1820 x 1020 x 1095 mm
- **Power supply:** 400V
- **Heating element:** 7500W
- Ultrasound generator with an output power of 4000Wp (8000Wp-p)
- **Ultrasonic power:** 4000Wp (8000Wp-p)
- **Working frequency:** 40 KHz. Frequency sweep System (Sweep System ± 2%)
- 34 PZT (lead zirconate titanate) piezo-electric transducers with aluminium alloy body
- Tank made of 2 mm thick stainless steel AISI 304
- **Weight:** 320 kg
- **Pneumatic load platform:** Up to 250 kg

MOT-600N

- **Capacity:** 600 litres
- **Internal dimensions:** 1300 x 735 x 665 mm
- **Useful measurements:** 1230 x 650 x 430 mm
- **External dimensions:** 2050 x 1200 x 1070 mm
- **Power supply:** 400V
- **Heating element:** 9000W
- Ultrasound generators with an output power of 6000Wp (12000Wp-p)
- **Ultrasonic power:** 6000Wp (12000Wp-p)
- **Working frequency:** 40 KHz. Frequency sweep System (Sweep System ± 2%)
- 34 PZT (lead zirconate titanate) piezo-electric transducers with aluminium alloy body
- Tank made of 2 mm thick stainless steel AISI 304
- **Weight:** 400 kg
- **Pneumatic load platform:** Up to 350 kg

MOT-1000N

- **Capacity:** 1000 litres
- **Internal dimensions:** 1500 x 810 x 875 mm
- **Useful measurements:** 1410 x 720 x 580 mm
- **External dimensions:** 2915 x 1395 x 1100 mm
- **Power supply:** 400V
- **Heating element:** 14000W
- Ultrasound generators with an output power of 8000Wp (16000Wp-p)
- **Ultrasonic power:** 8000Wp (16000Wp-p)
- **Working frequency:** 40 KHz. Frequency sweep System (Sweep System ± 2%)
- 34 PZT (lead zirconate titanate) piezo-electric transducers with aluminium alloy body
- Tank made of 2 mm thick stainless steel AISI 304
- **Weight:** 550 kg
- **Pneumatic load platform:** Up to 500 kg

MOT-2000N

- **Capacity:** 2000 litres
- **Internal dimensions:** 1750 x 1010 x 1080 mm
- **Useful measurements:** 1650 x 910 x 790 mm
- **External dimensions:** 3300 x 1660 x 1345 mm
- **Power supply:** 400V
- **Heating element:** 18000W
- Ultrasound generators with an output power of 12000Wp (24000Wp-p)
- **Ultrasonic power:** 12000Wp (24000Wp-p)
- **Working frequency:** 40kHz con sistema de barrido de frecuencia (sweep system ±2%)
- 34 PZT (lead zirconate titanate) piezo-electric transducers with aluminium alloy body
- Tank made of 2 mm thick stainless steel AISI 304
- **Weight:** 1250 kg
- **Pneumatic load platform:** Up to 1000 kg

MOT-3000N

- **Capacity:** 3000 litres
- **Internal dimensions:** 2050 x 1200 x 1205 mm
- **Useful measurements:** 1930 x 1080 x 900 mm
- **External dimensions:** 3675 x 1800 x 1465 mm
- **Power supply:** 400V
- **Heating element:** 24000W
- Ultrasound generators with an output power of 16000Wp (32000Wp-p)
- **Ultrasonic power:** 16000Wp (32000Wp-p)
- **Working frequency:** 40 KHz. Frequency sweep System (Sweep System ± 2%)
- 34 PZT (lead zirconate titanate) piezo-electric transducers with aluminium alloy body
- Tank made of 2 mm thick stainless steel AISI 304
- **Weight:** 1850 kg
- **Pneumatic load platform:** Up to 1500 kg

MOT-4000N

- **Capacity:** 4000 litres
- **Internal dimensions:** 2400 x 1500 x 1260 mm
- **Useful measurements:** 2280 x 1380 x 900 mm
- **External dimensions:** 4165 x 2260 x 1560 mm
- **Power supply:** 400V
- **Heating element:** 30000W
- Ultrasound generators with an output power of 24000Wp (48000Wp-p)
- **Ultrasonic power:** 24000Wp (48000Wp-p)
- **Working frequency:** 40 KHz. Frequency sweep System (Sweep System ± 2%)
- 34 PZT (lead zirconate titanate) piezo-electric transducers with aluminium alloy body
- Tank made of 2 mm thick stainless steel AISI 304
- **Weight:** 2800 kg
- **Pneumatic load platform:** Up to 2000 kg

MOT-8000

- **Capacity:** 8000 litres
- **Internal dimensions:** 3000 x 2000 x 1495 mm
- **Useful measurements:** 2800 x 1800 x 1175 mm
- **External dimensions:** 4000 x 2640 x 1795 mm
- **Power supply:** 400V
- **Heating element:** 60000W
- Ultrasound generators with an output power of 600Wp (1200Wp-p)
- **Ultrasonic power:** 40000Wp (80000Wp-p)
- **Working frequency:** 40 KHz. Frequency sweep System (Sweep System ± 2%)
- 34 PZT (lead zirconate titanate) piezo-electric transducers with aluminium alloy body
- Tank made of 2 mm thick stainless steel AISI 304
- **Weight:** 3500 kg

IMMEDIATE DELIVERY

SPECIAL EQUIPMENT

CUSTOMIZED SOLUTIONS

The quality and quantity requirements of the parts to be washed are different in each case, so each cleaning system is made according to special washing needs either by the characteristics of the parts or by the requirements of the manufacturing process and taking into account the necessary production output. The *MotorClean* range offers customized equipment that solves the cleaning needs of our customers in any of the applications of the motor sector. They can incorporate various processes such as rinsing, drying or different treatments in addition to cleaning. From the very first moment we work hand in hand with our client to always find the specific and most appropriate solution.

MULTISTAGE
MOT-2x150N

Special ultrasonic cleaning equipment with 2 stages of 170 liters of capacity and 2 baskets for loading, draining and unloading of parts that during the process of remanufacturing need to be completely cleaned from paint and coatings.

USEFUL DIMENSIONS: 670 x 415 x 335 mm
INTERNAL DIMENSIONS: 700 x 480 x 540 mm
CAPACITY: 170 L

ONE-TANK
MOT-4000N+2 TTF2

Ultrasonic cleaning equipment with one tank of approximately 4.100 liters of capacity, automatic insulated lid and pneumatic lifting platform for loading and immersion of engine parts of the naval sector.

USEFUL DIMENSIONS: 2280 x 1380 x 900 mm
INTERNAL DIMENSIONS: 2400 x 1500 x 1260 mm
CAPACITY: 4100 L

MANUAL MULTISTAGE
MOT-2000N+AF+AF+H

Manual multistage equipment with 4 tanks of 2.000 liters capacity. The direction of the cleaning of the engine parts will be from left to right starting with the ultrasonic cleaning, then 2 cold rinsings and passivation tank.

USEFUL DIMENSIONS: 1650x910x800 mm
INTERNAL DIMENSIONS: 1770x1030x1150 mm
CAPACITY: 2000 L

ONE-TANK
MOT-1600+TTF2

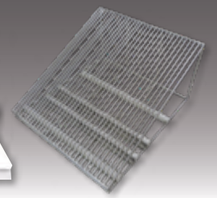
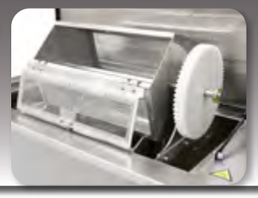
Special one-tank equipment of approximately 1700 liters of capacity, sloping bottom and waterflow system with independent tank cleaning for the collection of oil and residual particles from cleaning parts of the grinding industry.

USEFUL DIMENSIONS: 3000x800x400 mm
INTERNAL DIMENSIONS: 3100x900x710 mm
CAPACITY: 1700 L

PROPER CLEANING

WE DESIGN TO SUIT EACH CUSTOMER THE SUPPORT STRUCTURES FOR WASHING PARTS, WHICH CAN BE AVAILABLE IN BASKETS, SPECIAL RACKS AND RACKS WITH THE POSSIBILITY OF BATTING, TILTING OR ROTATING SYSTEMS.



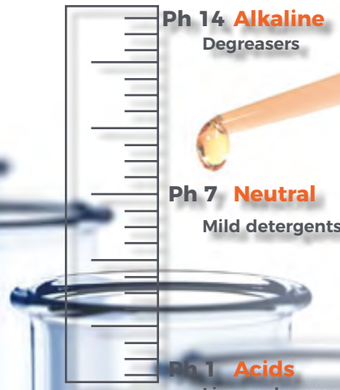




ULTRASONIC CLEANING PRODUCTS

Do we need to remove grease or oil?, decarbonize parts?, eliminate shavings?. Depending on the type of dirt we want to clean and the material of the part, we will add to the water a proportion of the cleaning liquid suitable in each case.

TierraTech® has a wide range of cleaning products, carefully and specifically developed for use in its highly effective Ultrasonic Cleaning Systems, which protect parts and materials in the cleaning, descaling and stripping process.

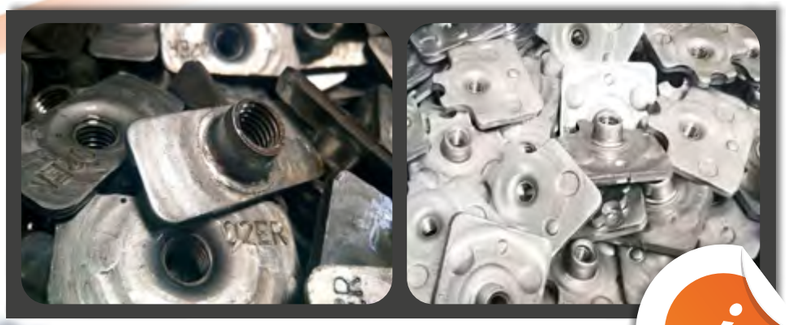
Mainly used in a proportion between 2% and 5% of the volumetric capacity of the tank and essential for the action of ultrasonics on the parts to be 100% effective. The selection of the right product, with the advice and experience derived from TierraTech's long presence in the market, is very important to obtain optimal results in terms of quality and time.



Ph 14 Alkaline
Degreasers

Ph 7 Neutral
Mild detergents

Ph 1 Acids
Limescale removers / Corrosion inhibitors



CONSULT US

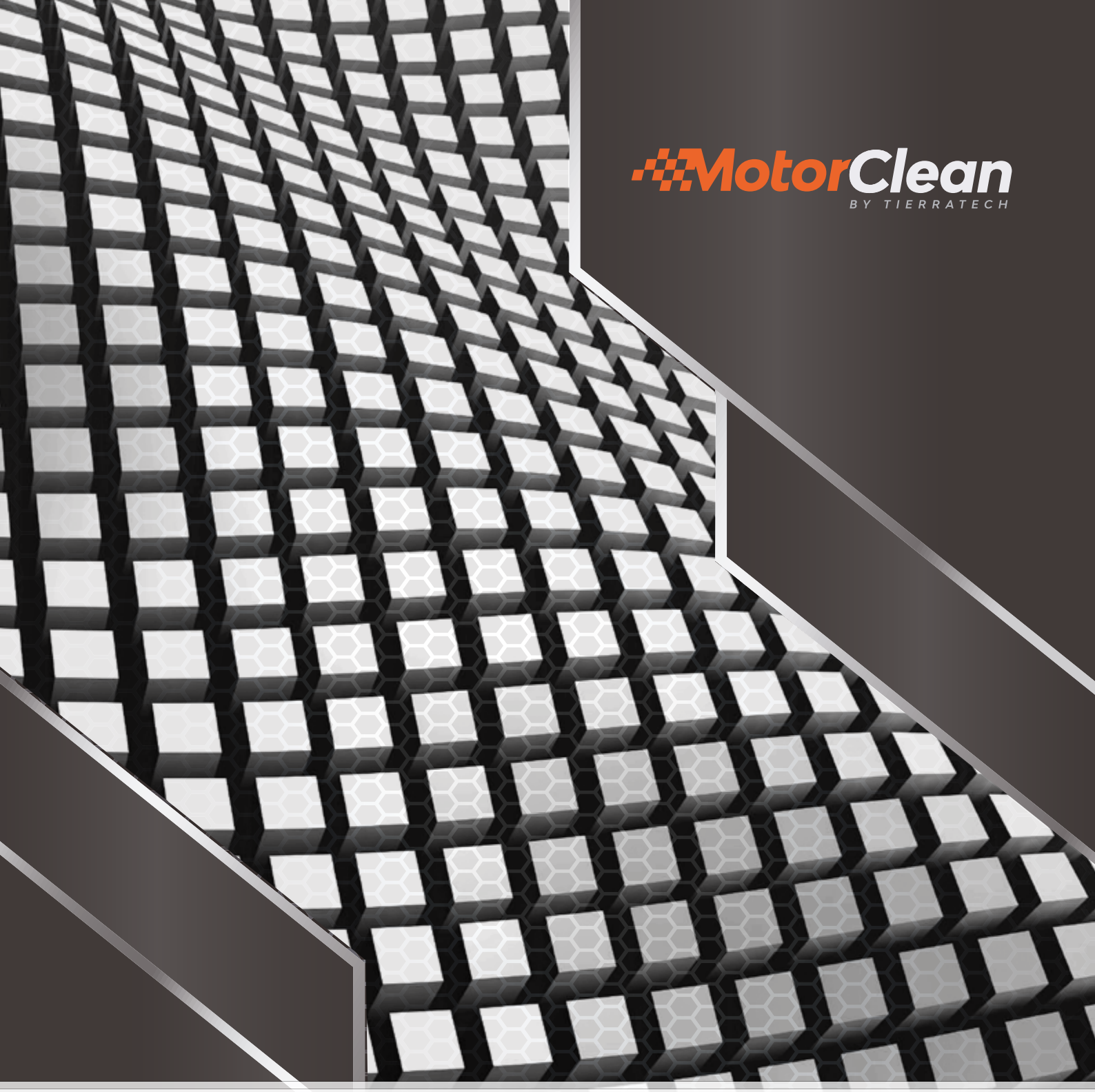
*Always check the properties of each Tierratech cleaning product before testing it.

MotorClean BY TIERRATECH

Contact us and consult us about the right product for your cleaning needs!

Some of our clients

ABB · GM · IBERIA · AIRFRANCE · AIRBUS · General Electric · Metro · MICHELIN · DETROIT · CARMEC · CATERPILLAR · Continental · Navantia · NISSAN · PARTS · ARA VBV · IcerRail · CITROËN · ROLLS ROYCE · BMW · Bombóleo · IVECO · Krug Naval · AIRTECH · renfe · BOSCH Service · Mercedes-Benz · HUTCHINSON · LucasDiesel · MAN · Aerospace Engineering Group · POMMÉE · VOLVO · COTERENA · mtu · WÄRTSILÄ · ZF · LKQ · ASTANDER · TURBOrail · ASPER ENGINES & TRANSMISSIONS · VEGE



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