



Kerry Microsolve
solvent precision cleaning

Kerry Microsolve Ultrasonic Cleaning Range



Microsolve Mono-Solvent

Precision cleaning with low running costs



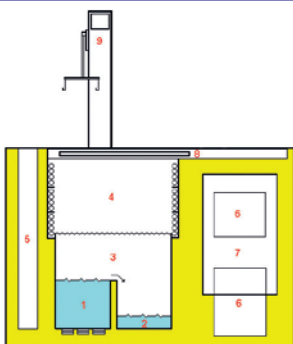
The Kerry Microsolve Mono-Solvent system manufactured by Guyson has three process stages comprising of ultrasonic cleaning, followed by vapour rinsing and freeboard drying. The Microsolve has unique proven solvent retention features that provide economic benefits as well as effective use of HFE (hydrofluoroether) or HFC (hydrofluorocarbon) solvents.

Cleaning with or without the use of ultrasonics is carried out in the stage one tank by immersion of the components into the solvent. The ultrasonic transducers are mounted on the tank base and powered by a dual frequency generator incorporating ultrasonic output power control, pulsed operation of the ultrasonics (if required) and frequency modulation and sideband sweep. Stage one is also supplied with solution heating and a pumped closed-loop filtration system comprising a course strainer, fine filter cartridge, welded pipework and "O" ring sealed valves.

The second tank (stage two), is electrically heated with unique pulsed control operation allowing the solvent to boil efficiently whilst helping to minimise solvent emissions. The resulting vapour rinses the components, which are then dried in the freeboard zone (stage three). Distilled solvent, condensed by the primary cooling coils, passes through a water separator with in-line heat exchanger and returns to the ultrasonic tank, displacing contaminated solvent into the boiling sump. Distillation, together with filtration of the solvent, ensures that the ultrasonic tank is maintained at a controlled level of cleanliness.

Solvent retention features unique to the Microsolve range include triple coil reflux cooling, vapour break, 150% freeboard, optional auto top-up and solvent monitoring. These ensure that systems are safe and comply fully with environmental and safety legislation. These design features also mean that Microsolve systems are able to operate with low, predictable solvent usage and customers enjoy low, predictable running costs.

The Mono-Solvent process is intended for applications with light to medium contamination levels and typical applications include precision cleaning of bearings, gyro components and medical components; maintenance cleaning of pneumatic and hydraulic components; and, in electronics, rosin flux removal from PCBs or from solder jigs and fixtures.



KEY TO SCHEMATIC (left)

- 1 Ultrasonic clean with filtration
- 2 Boiling solvent sump
- 3 Vapour rinse zone
- 4 Freeboard dry with refrigerated cooling coils
- 5 Water separator / sieve
- 6 Refrigerated cooling system
- 7 PLC based electrical controls
- 8 Sliding lid
- 9 Autotrans iDrive automation or semi-automatic Single Axis lift (option)



Microsolve Co-Solvent

Heavy duty solvent cleaning systems for cleaning & degreasing

The Kerry Microsolve Co-Solvent system manufactured by Guyson has four process stages comprising of ultrasonic cleaning, ultrasonic rinse, followed by vapour rinsing and freeboard drying. The Microsolve has proven unique solvent retention features that provide economic benefits as well as effective use of HFE (hydrofluoroether) or HFC (hydrofluorocarbon) solvents.

Cleaning with or without the use of ultrasonics is carried out in the stage one tank by immersion of the components into the Co-Solvent mixture, usually comprising of a HFE (hydrofluoroether) and petroleum distillate based solvating agent. The solvating agent and HFE are carefully selected by Guyson to suit the client's particular application either from experience or by performance evaluation cleaning trials on sample components. This combination of solvents can remove high levels of contamination when required, which is then taken up by the solvating agent's capacity to carry contamination before becoming saturated. The usual frequency for changing the solvating solution is four to six months.

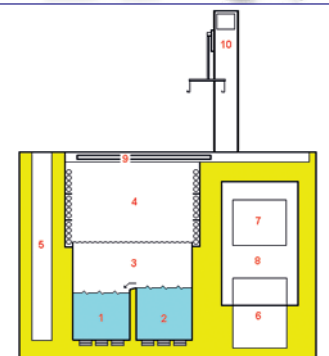
Immersion into stage two's tank of pure HFE distillate, removes any residues from the components, carried over from stage one's cleaning tank - with or without the use of ultrasonics. Both the cleaning and rinsing tanks have the ultrasonic transducers mounted on the tank base, connected to the Guyson's dual frequency generators incorporating ultrasonic output power control, pulsed operation of the ultrasonics (if required) and frequency modulation and sideband sweep.

Both stages one and two are each supplied with solution heating and a pumped closed-loop filtration system comprising of a course strainer, fine filter cartridge, welded pipework and "O" ring sealed valves. The first tank (stage one) is electrically heated with unique pulsed control operation allowing the solvent to boil efficiently whilst helping to minimise solvent emissions. Primary rinsing in stage two is then followed by a final rinse in the vapour zone located above both tanks comprising of the pure distilled solvent. Drying then takes place with the components located in the freeboard area where the solvent evaporates mostly back onto the refrigerated cooling coils situated above and around the process tanks.

Autotrans iDrive automatic work handling systems include the appropriate software programme(s) allowing items to be processed efficiently producing clean, dry components whilst minimising solvent emissions and the drag out that can occur with manually operated systems - thereby increasing solvent topping up and high running costs. All Autotrans iDrive systems are supplied with guarding to comply with CE regulations for moving parts, with various options to suit machine location, factory layout and operating procedures.

The Co-Solvent process is intended to replace all VOC solvents (Volatile Organic Compounds), which impact upon global warming and are also classified as CMRs (Carcinogens, Mutagens & Reproductive Toxins). Co-Solvent handles with ease applications such as polishing compound removal, power generation system component cleaning and flux removal from PCBs, including no-clean and lead-free solder flux residues.

Any photos showing machines without guarding are for illustrative purposes only.



KEY TO SCHEMATIC (above)

- 1 Ultrasonic co-solvent clean with filtration
- 2 Ultrasonic HFE clean with filtration
- 3 Vapour rinse zone
- 4 Freeboard dry with refrigerated cooling coils
- 5 Water separator / sieve
- 6,7 Refrigerated cooling system
- 8 PLC based electrical controls
- 9 Sliding lid
- 10 Autotrans iDrive automation (option)



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Guyson International

MICROSOLVE TECHNICAL DATA Dimensions (mm) - Manual Systems

	250M	350M	450M	350C	450C
Overall - length (l-r)	1310	1850	2220	1850	2200
Overall - width (f-b)	750	700	850	700	850
Overall - height*	1080	1290	1350	1290	1350
Tank (internal) - l	200	350	450	350	450
Tank (internal) - w	250	250	325	250	325
Tank (internal) - d	250	300	300	300	300
Basket (internal) - l	155	295	395	295	395
Basket (internal) - w	193	185	256	185	256
Vapour depth	250	300	300	300	300
Freeboard height	375	375	450	375	450
Initial fill (litres)	25	44	70	74	118
Ultrasonic Stages					
Power	300	500	1000	500	1000
Watts/litre	20	17	22	17	22
Electrics					
Electrical supply	415V 50 Hz 3 phase N&E				
Loading per phase (A)	16	20	32	20	32
Handling System**					
Autotrans iDrive	n/a	Option	Option	Option	Option
Single Axis lift	Option	Option	Option	n/a	n/a
Materials					
Tank units	316L electropolished stainless steel				
Pipework	Stainless steel				
Framework, panels	Mild steel				
Paint	Durable, semi-gloss, acrylic Box section frame RAL 7037 Dusty Grey - Panels RAL 7035 Light Grey				
Control Panel					
HMI With Bright STN Technology					
Function buttons	On/Off, Ultrasonics Control, Filtration Control,Temp Display, Set Variable Operating Parameters				
Notes					
* The addition of adjustable feet will increase any Microsolve height by 30 - 80 mm approx. ** Strongly recommended for maximum solvent retention and process control. Where Autorans iDrive option is available - Minor and Major versions available - choice dependent on weight of components					