

# Matador 4000

## Ultrasonic Small Parts Cleaner

### Operating Instructions



### Introduction

The Matador 4000 Ultrasonic small parts cleaner has been designed to be the ultimate in small parts cleaning systems. It features 4 jars and costs thousands of dollars less than other machines in the marketplace. It utilizes time-tested ultrasonic cleaning with a variable speed and variable temperature dryer. The dual timers allow for simultaneous cleaning and drying operations. Its four line digital display shows the status of all operations. The machine is preprogrammed with four languages: English, Spanish, German and French, and the transducer frequency can be digitally adjusted from the front panel.

# Solutions

The Matador 4000 uses small quantities of fluids in its cleaning and rinsing cups. It is recommended that they be changed frequently for best cleaning efficiency. For the ultimate in safety and reduced environmental impact, we recommend the use of water based fluids over the traditional, commercially available petrochemical-based watch cleaning fluids available from L+R and Zenith.



Dryer

Wash and rinse cups

Ultrasonic head

Transducer "Nose"

Control buttons

## Machine Setup

Unpack the machine. It is recommended that the packing materials be saved for future transport of the machine. Place the Matador on a level, smooth surface. Plug the supplied cord into the back of the machine, and then into a grounded 20 amp wall receptacle. The required voltage is listed on the rear of the machine. Fill the cups to within 1/4 inch (6 mm) of the top



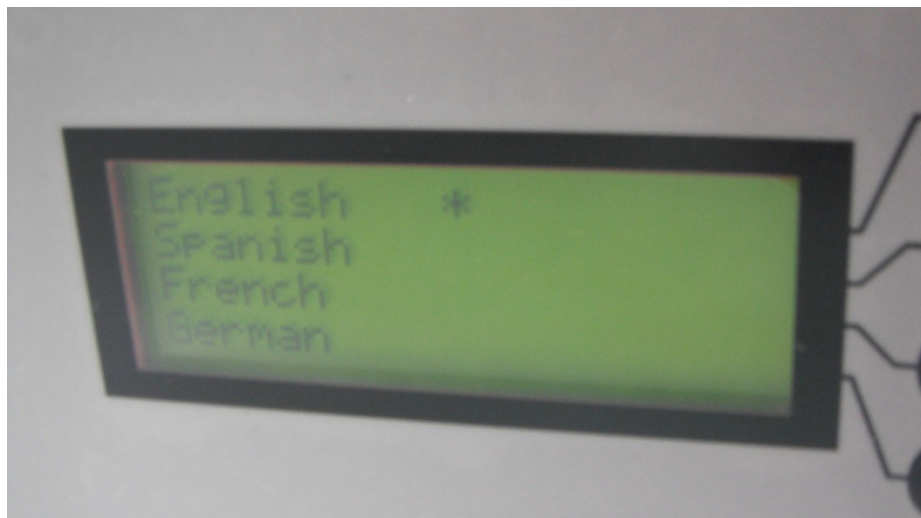
Vent fan jack

Power Switch

Fuse tray

Power inlet

with approved fluids and cover with the supplied lids. Typically one cup is reserved for cleaning fluid, and 3 cups are used for rinsing. Snap the dryer cover over the dryer. The default language is English. To change the language, depress the two top buttons simultaneously on the front panel, while powering on the machine with the power switch which is located on the rear panel on the power entry module. Release the buttons after the display backlight illuminates. The “language” screen will appear. Select the desired language by depressing the appropriate button on the left column of the front panel. After a few seconds, the Matador will automatically advance to its startup display with the appropriate language displayed.



## Cleaning

Place the parts to be cleaned in the supplied basket. If cleaning wrist watches, the supplied divider can be installed, allowing the simultaneous cleaning of four main plates and four small parts baskets. Remove the lid and place the basket of parts in the cup containing the wash solution. Place the ultrasonic head over the cup. The fluid level must be high enough to touch the stainless “nose” of the transducer. The stainless lid can be hung from the transducer holder on the left side of the machine. Select the desired cleaning time using the top row of buttons on the front panel,. At the end of the cycle the beeper will sound signaling the end of the cycle. Remove the ultrasonic head and the basket with the parts. Shake the parts to remove the excess fluid and place the basket with the parts in the first rinsing cup. Repeat the above operations for the remaining 2 cups.

## Drying

After parts have been ultrasonically cleaned and rinsed, they must be dried. Remove the basket containing the parts from the final rinse. **Shake or blot the excess fluid from the basket before placing in the dryer.** Snap the screened lid on the dryer making sure that it is secure. Do NOT flood the dryer with excess liquid. Set the dryer temperature to low, medium or high using the 3<sup>rd</sup> row of buttons on the front panel, and the dryer speed (200-1000RPM) using the forth row of buttons. The dry time can be set using the second row of buttons on the front panel. At the end of the drying cycle, the beeper will sound. The dryer fan will continue to run for two minutes to cool the parts for more comfortable handling.

## Transducer Tuning

The resonant frequency of the ultrasonic transducer must be matched to the ultrasonic power supply. During assembly and final testing, Lititz Precision Products takes great care in this procedure. There can be some drift in this setting due to age, excessive heating and other factors that affect the transducer assembly.

To tune the transducer, place it over one of the cups which is filled with fluid. The fluid must touch the stainless “nose” of the transducer. Turn off the machine using the rear power switch. Depress the two buttons on the 3<sup>rd</sup> row of the front panel while powering on the machine with the power switch which is located on the rear panel on the power entry module. Release the buttons after the display backlight illuminates. The “Tuning” screen will appear. Adjust the frequency of the system using the + and – buttons until the desired ultrasonic action is achieved. Press save and then exit and the setting will be saved. The nominal resonant frequency is approximately 31,000 Hz.

## Troubleshooting

Symptom	Possible fault	Remedy
No machine operation, display blank	No power at receptacle	Plug into a powered receptacle
	Cord loose in rear of Matador	Insert firmly
	Power switch off	Press switch to "ON"
	Blown main fuse in rear of machine	Replace fuse
No ultrasonic action, display normal	Fluid levels too low	Raise fluid level to touch transducer
	Internal ultrasonic fuse blown	Contact Lititz Precision
	Transducer not tuned properly	Tune transducer
	Transducer overheated	Wait for transducer to cool
No dryer heat, display normal	Internal dryer fuse blown	Contact Lititz Precision
Dryer too hot	Vent fan blocked	Unblock vent fan

## Technical Specifications

Weight: 14 pounds (6.3 Kg)

Power requirements: 120 VAC or 240 VAC factory selected. 6.3 amps max.

Ultrasonic frequency: 32 KHz Front panel adjustable

Ultrasonic power: 60 watts max

Cup Capacity: 6 Ounces (50 ml)

Dimensions: 16" wide, 10" deep, 6" high (41 cm, 26 cm, 15 ch)

Dryer speed: 200-1000 RPM, Ramp up/Ramp down

Dryer: Dual ball bearing brushless

Languages: 4 English, Spanish, French, German

Audible end of cycle indicator

Dryer timer: 20 minutes

Ultrasonic timer: 10 minutes