

## Model D1000 Instruction Manual – Handheld Homogenizer

D1000 Handheld homogenizer™ is a quiet, very powerful, mixer designed for homogenizing samples up to 250ml. It includes two generator probes for mixing within microtubes. Optional larger generator probes can be purchased for larger samples.

### I. Product Specifications:

**Speed / Control:** User settable 8500 to 30,000 rpm

**Speed Control:** 1 through 6 (6 = maximum speed)

**Included Probes:** 5mm flat and 7mm saw tooth

**Dimensions (wxdxh):** 45x58x225mm, Weight: 0.6kg

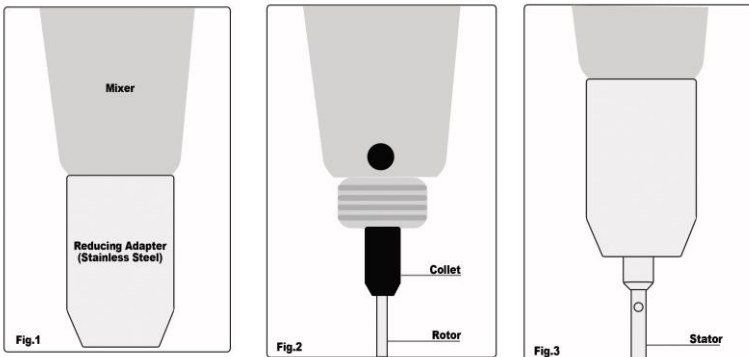
**Electrical:** 115VAC, 60Hz, 1 amp / 230VAC, 50Hz, 0.5 amps **CE** compliant

**Operating environment:** 4° C to 65° C **Warranty:** 2 years

### II. Product Set-Up, Installation of the Generator Probe:

- Inspect the rotor and stator to be sure that they are free from damage. The rotor should have a small white Teflon bearing in place on its lower end. Do not assemble if this bearing is missing or damaged (the bearing has a small slit in it - this is normal).
- Be sure that the power switch is set to the "off" position and that unit is unplugged.
- First remove the reducing adapter (stainless steel base) from the power unit by turning counter clockwise (See Fig.1)
- Press the black button, located on the front, lower end of the power unit, while turning the black collet (counter clockwise) - it may be necessary to use the supplied wrench to loosen the black collet.
- Once loosened, insert the rotor (thin metal piece with white band) as far as it will go into the collet and hand tighten the collet by pressing the black button and turning the collet clockwise (See fig. 2).
- Attach the stator (piece that is like a sleeve) to reducing adapter by threading it into the bottom. Insert the allen key into the two holes of the stator closest the adapter and use it as a lever to tighten the stator in place.
- Slide the reducing adapter/stator assembly into place over the rotor and turn clockwise to secure.
- When assembled, the end of the rotor should not protrude past the end of the stator.
- NOTE: Do not operate the homogenizer without both the rotor and stator securely in place. Do not touch the moving parts while in motion. Failure to follow these instructions may result in damage to the instrument or personal injury.

**Before a probe is used for the first time, the bearing must be "run-in". After installing the probe onto the power unit, place the probe tip in water and run the unit at full speed for 30 seconds.**



### III. Care and Maintenance:

No routine maintenance is required other than to keep the instrument clean. Wipe using a damp cloth. Do not immerse the unit or use any solvents. When storing the mixer, always wipe the plastic body free from any splashes.

The generator probe should be cleaned after each use. Before cleaning, the probe should be removed from the unit. To remove the probe, first ensure that the power to the unit is switched off and the unit is

unplugged from the power source. The probe can then be removed and disassembled by reversing the above instructions.

Probes may be cleaned by the following methods:

1. Autoclave at 120°, 15 minutes
2. Soak in 37% Formaldehyde for 15'
3. Soak in 70% Ethanol for 15'

A Teflon bearing prevents the rotor and stator from rubbing together and helps to prevent liquid from entering the power unit. Over time, this bearing may wear. Signs that the bearing needs replaced are: sudden increase in noise level when operating, bearing becoming discolored (brown or black - as if burnt). Replacement bearings are easily installed by the user may be ordered by contacting Benchmark Scientific.

In the event that the power unit fails to operate, the most likely cause is worn motor brushes. Motor brushes can be installed by the user and ordered from Benchmark Scientific.

#### **IV. Operation:**

After installation of the probe, the homogenizer is ready for use and may be plugged into a grounded power outlet. Be sure that the switch is set to the off position before connecting to the outlet.

- Place the probe tip into the tube containing the sample and lysis buffer. The tip of the probe should remain submerged in the buffer during operation.
- Turn on the power.
- Move the tip of the probe within the sample to increase the efficiency of homogenization. Homogenization time depends upon the sample.
- Turn off the power and remove the probe from the sample.
- Clean the probe before proceeding to the next sample.

Hints for effective homogenization:

- Be sure to use a suitable sized vessel. The probes supplied with the unit work well in 2.0ml microtubes.
- Sample size should be no greater than 1/2 the diameter of the probe.
- Always have the tip of the probe submerged in the buffer
- Remember that the probe will take up space within the tube. Do not overfill the tube
- DO NOT process samples dry. Always use buffer. Plant tissue may be homogenized in LN2, however, once the LN2 has evaporated, buffer must be added.
- The hand held homogenizer is not suitable for hard tissues such as bone.
- Homogenization produces heat in the sample. Do not homogenize for extended periods of time or the heat produced may damage sensitive samples.

#### **IV. Additional accessories:**

Additional probes are available in packs of 5. Larger probes are also available. Bearings and brushes may wear over time. Replacements may be ordered by contacting Benchmark Scientific.

