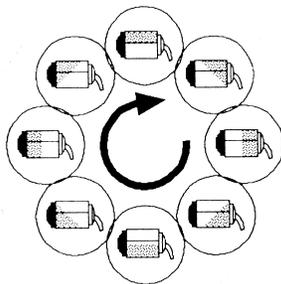


58-13 RotoMix (Project 98-45) (6/99)

The RotoMix is a new single-speed capsule mixer marketed by ESPE that features a unique "rotational centripetal/centrifugal" mixing cycle as compared to current linear oscillating models. ESPE maintains that newer high-viscosity, condensable glass ionomers may tax the mechanical function of present triturators which could result in air voids in the mixed material. ESPE claims that the RotoMix mixes the powder and liquid contents of the capsule with "rotational centripetal/centrifugal" forces. This rotational mixing principle is said to minimize material air voids, simplify handling, and reduce noise level and mixing time. Although developed for use with glass-ionomer and resin capsulated products, ESPE states that the RotoMix is compatible with all capsules that are of the correct size and weight to be fitted into the capsule holder. During mixing, the capsule revolves in an 80-cm orbit while the capsule holder rotates around its own axis. As the platform and capsule holder rotate in opposite directions, the capsule remains horizontal. ESPE claims that the resultant centrifugal



force is applied uniformly inside the capsule (see the drawing at left). After mixing, the capsule does not rotate on the platform while being centrifuged. Rather, it spins for approximately three seconds with its plunger orientated outward. This causes centrifugal force to be directed toward the capsule plunger. ESPE claims that air voids are virtually eliminated as mixed material is collected on the side of the plunger rather than into the nozzle orifice. The company also

states that this homogenized mixing requires less manual pressure to extrude the mixed material from the capsule.

The RotoMix unit is composed of three main subcomponents. The first is a microprocessor-controlled power control board that controls all RotoMix functions. The RotoMix has only one frequency setting (3000 cpm). The microprocessor has two factory-preset time programs (eight and ten seconds), while four additional mixing time settings can be programmed into the machine by the user. ESPE states that speed monitoring is controlled by an optoelectronic monitoring mechanism. If speed should drop below 2440 rpm, mixing will cease and an error code will be displayed. The product's technical information makes no mention about the need for calibration. The RotoMix weighs 8 lb., 13 oz. And is 8 9/32 inches deep by 9 11/16 inches wide by 7 3/32 inches high.



Manufacturer:

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(610) 277-3800
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Suggested Retail Price:

\$675.00 RotoMix (Item number 076310)

Government Price:

\$440.00 Rotomix (Item number as listed above)

ADVANTAGES:

- + Produces consistent mixes of materials.
- + Mixing chamber is isolated from internal mechanical compartment, which facilitates cleanup of capsule leaks.
- + Quietest triturator that DIS has evaluated.
- + Capsule placement and removal can be accomplished with one hand.
- + Compatible with all tested capsule designs.
- + Meets all electrical safety requirements.
- + Set mixing times and frequency are accurate.
- + No undue vibration during operation.
- + Comparable in price to other triturators.
- + Securely packed for shipment.
- + Safety switch prevents mixing while mixing chamber lid is raised.

DISADVANTAGES:

- May require some time before manufacturers develop optimal mixing times for this unit.
- Not currently recommended by manufacturer for triturating amalgam.

SUMMARY AND CONCLUSIONS:

The RotoMix is a single-speed device for mixing precapsulated resin composites and glass-ionomer products. The unit utilizes a unique circular/centrifugal mixing cycle that is claimed to produce less porosity in mixed materials. The RotoMix is well designed and well built and it passed all electrical safety tests. The RotoMix displayed accurate mixing times and frequency, was compatible with all capsule designs tested, and was the quietest triturator that DIS has evaluated. It did not produce undue vibration during operation. Clinical users confirmed that the RotoMix produced consistent mixes and capsules were easy to place and remove. Evaluators did discover that the RotoMix produced clinically acceptable mixes of amalgam, although ESPE does not currently recommend it for mixing amalgam. As with any new technology, some time may be required before other manufacturers develop product-mixing times for the RotoMix. The price of this unit is comparable to those of other triturators. The **RotoMix** is rated **Acceptable** for use by the federal dental services.