RODEL - *Waxless Fixturing*

Rodel pioneered the development of waxless mounting systems for the semiconductor market by inventing standard template assemblies and insert process template assemblies. Our template assemblies provide excellent flatness without using mounting wax.

Standard Template Assemblies

Compared to wax mounting, template assemblies are efficient and easy to use:

- **Easy application** - pressure sensitive adhesive on template assemblies allows easy application to carrier plates
- **Easy removal** - wafers are easily removed with a water pick or in a water bath after polishing
- **No de-waxing clean step is required** - no chemicals are used to hold the wafers
- **No CFC's** - template assemblies are environmentally friendly and non-hazardous

Standard template assemblies are composed of the backing materials on which the wafer rests and the template, which holds the wafer in the place. The FR4 template additionally provides a rigid support structure around the wafers during polishing.

Insert process Template Assemblies

Insert process template assemblies are composed of the mounting material and support structure. Unlike the template assembly, these two parts are physically separate entities. The support structure consists of urethane recesses attached to a urethane backing plate. Inserts of mounting material are precision die-cut to fit in the recesses before the wafers are put into place.
The assemblies are cost effective because the inserts - the surface the wafer contacts - are easily renewable while the support structure can remain on the carrier for numerous changes. Insert process template assemblies offer the following advantages over standard template assemblies.

- **Improved flatness** - over many runs, the inserted mounting material can easily be changed.
- **Greater economy** - the more durable portion of the fixture, the template itself, need not to be replaced when the mounting material is worn or fatigued.
- **Greater efficiency** - less operator time and effort are needed to replace an insert than to change standard template assemblies

Template Assembly Parameters

Parameter	Template Assembly	Insert Process Template Assembly
Recess Shape	Many possibilities	Round circles standard
Recess Size	Many possibilities	Standardized for 2" Through 6" wafers
Recess Depth	.005" to .024" standard, custom on request	Many possibilities
Outer Diameter	Corresponds to diameter of users carrier plate	Corresponds to diameter of users carrier plate
Mounting Material	DF200, WB20 & 40USD standard	DF200 is standard for inserts
Support Material	FR4	JR111

Materials for Wafer Mounting Assemblies

Mounting Materials for standard template assemblies can be made from either buffed or unbuffed poromeric materials.

Buffed surfaces - With buffed surfaces, the wafer "floats" on the mounting material and rotates in the pocket during polishing. This action minimizes localized surface irregularities on the polished wafer and yields the flattest wafers.

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Unbuffed surfaces - Unbuffed surfaces provide more secure mount through suction forces in the sponge-like structure of the mounting material. The resulting sealing action helps to protect the backside of the wafer. Some unbuffed materials can be used to mount irregularly shaped wafers without a template surround.

How to use Wafer Mounting Assemblies

Mounting the Assembly to the carrier:

- Peel back 1/5 of the release paper
- Line up assembly with clean carrier
- Press down thoroughly to exclude trapped air
- Remove remainder of release paper and press recess to exclude air bubbles
- Run hand outward to all sides insuring total adhesion to the carrier

Mounting the Wafer to the Template Assembly:

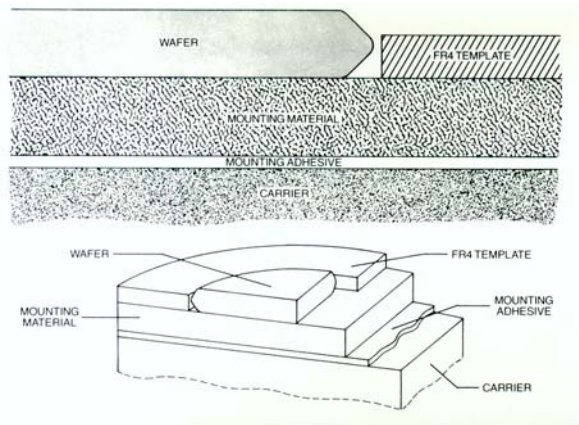
Standard Template Assembly

- Before first use, check pockets for trapped air under PSA. A slight razor cut and hand pressure should release it.
- Saturate assembly backing pad with DI water
- Scrub pockets with a soft nylon bristle brush and then rinse with DI water again
- Place wafers on assembly and wring onto the backing pad

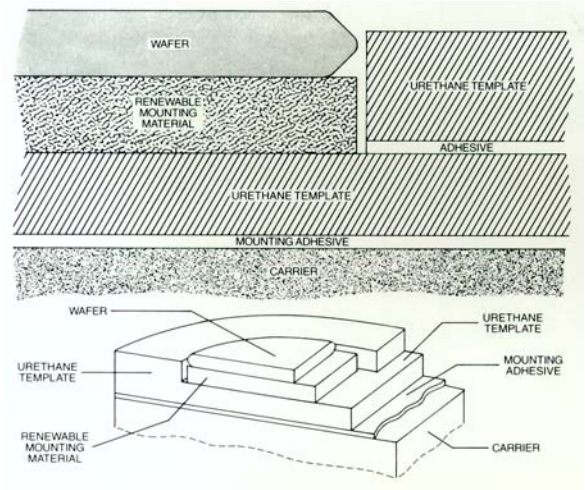
Insert Process Template Assembly

- Thoroughly wet both sides if inserts
- Place wet insert into pocket of template assembly
- Press wafer onto insert
- Scrub insert with a soft nylon bristle brush and then rinse with DI water

Standard Template Assemblies



Insert Process Template Assemblies



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