COST EFFECTIVE EQUIPMENT | APOGEE® BAKE PLATES

Apogee bake plate features and benefits

Cost Effective Equipment has built its own process tools since 1987, starting with the spin coaters and hot plates its own work needed. This sheet goes through the features CEE builds into every Apogee bake plate and what each one means for you in daily use.

Apogee bake plates handle soft bakes, post-exposure bakes, dehydration bakes and hard bakes on wafers, photomasks and square substrates. They run as benchtop tools, flange-mounted in your own bench or as modules in CEE's X-Pro II workstation.

Apogee bake plate with its exhaust cover closed

±0.3%
temperature uniformity at 200°C

0.1 mm
Smart Pin height steps, from 0 to 19 mm

300°C
top temperature as standard (400°C optional)

300 mm
largest round substrate, Apogee 300

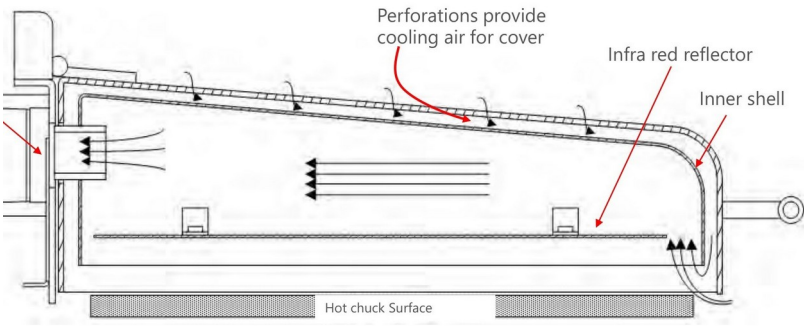
Feature by feature

Feature	What it means for you
SAFETY AND FUME CONTROL	
Double-shell exhaust cover	The cover protects operators and carries chemical fumes away to your exhaust. Air drawn through its perforations keeps the outer shell cool to the touch.
Adjustable exhaust gate	You set the exhaust draw to suit your process and your lab's extraction.
Infrared reflector panel in the cover	Heat is reflected back down onto the substrate, which improves uniformity and repeatability.
Closed bake chamber	Stray air currents in the room can't reach the wafer and cool it unevenly.
Nitrogen purge option	Available for processes that need an inert bake.

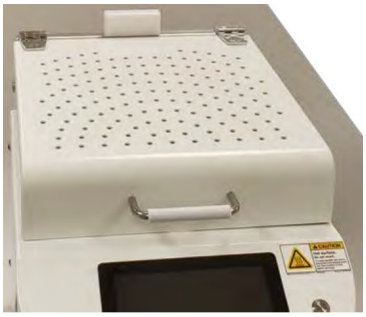
Feature	What it means for you
UNIFORMITY AND REPEATABILITY	
Platen of proprietary alloys with an integrated heating element	Temperature uniformity is ±0.3% (±0.6°C) at 200°C, so the whole substrate gets the same bake.
Ultra-flat plate with no grooves	The surface is even under the whole substrate, for consistent contact and proximity bakes.
Temperature set and logged to 0.1°C	You can set the bake exactly and show afterwards that it ran as programmed.
Automatic plate sizing	Vacuum zones match the substrate: 2", 3", 100, 150 and 200 mm on the Apogee 200, and 100 to 300 mm on the Apogee 300. Movable stop pins locate the wafer, and CEE can customise the plate for special sizes.

> CEE builds the Apogee to repeat, from one wafer to the next and from one machine to another. That comes from its controls, its manufacturing quality systems and careful airflow management inside and outside the machine.

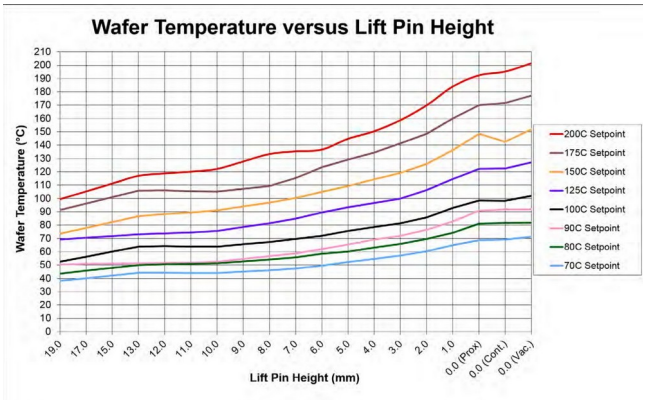
Feature	What it means for you
DATASTREAM CONTROL AND DATA	
Built-in touchscreen running DataStream™	Recipes are written and run on the tool itself, with unlimited recipes and steps, each step timed to 0.1 seconds.
Ramping temperature control	Plate temperature can ramp within a recipe for a controlled heat-up.
Web browser access	Engineers can prepare recipes and follow runs live from any browser outside the cleanroom, and start or stop heating remotely.
Process logs in Excel® format	Every run is on record, including room temperature and humidity, for quality checks and troubleshooting.



Exhaust cover cross-section: inner shell, infrared reflector and cooling perforations



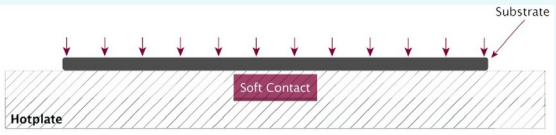
Perforated outer shell of the exhaust cover



Wafer temperature against Smart Pin height, from CEE test data

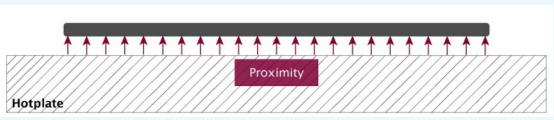
Three bake methods, plus Smart Pins

Every Apogee bake plate offers three ways to bake, and the method is set for each step of a recipe. Smart Pins add fine control over how quickly the substrate comes up to temperature.



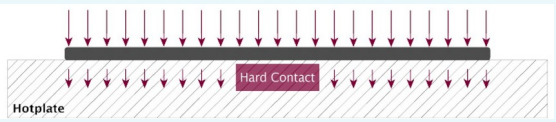
Soft contact

The substrate rests on the plate and is held by gravity alone.



Proximity

The substrate floats on a thin layer of heated gas, about 25 µm above the plate. Photomasks are baked this way, so the plate never touches the back of the glass.



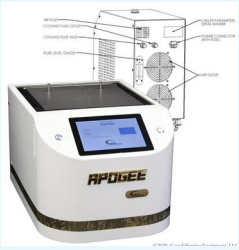
Hard contact

Vacuum holds the substrate firmly against the plate. CEE's test data shows the most even wafer temperature in this mode.

Smart Pins

Programmable lift pins hold the substrate from 0 to 19 mm above the plate in 0.1 mm steps. Lowering it in stages gives a controlled heat-up for delicate substrates, cuts thermal shock on compound semiconductor and glass wafers, and can replace a multi-stage, multi-tool bake.

Apogee chill plate



For a controlled end to the bake, the Apogee chill plate actively cools substrates from ambient down to 15 °C. A water chiller is included.

It has the same features as the Apogee bake plate apart from the exhaust cover, so recipes, Smart Pins and data logging work the same way on both. Pairing the two gives a repeatable heat-and-cool sequence on the bench or in an X-Pro II workstation.

Buying through SiSTEM

SiSTEM Technology is CEE's appointed distributor for the UK and Europe. We quote and supply the full Apogee bake plate range. Installation and training are arranged and quoted, and delivered by our UK and European after-sales team, who also look after the one-year warranty in territory. When something needs attention, we're the people you call.

Talk to us about your process

Send us your substrate sizes and bake temperatures, and we'll put together a quote for the right set-up. If your substrate is unusual, CEE's engineers can review drawings or photos with us before we quote.

sales@sistemtechnology.com **+44 (0)1327 362 844**

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