

Cee® Spin Coater Features and Benefits



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573-466-4300

Serving the Semiconductor Industry Since 1987

Spin Coating

What is important in a spin coater?

- Safety
- Durability
- Spin Chamber Design
- Precision
- Repeatability
- Flexibility
- Programmability



The Cee Advantages

Safety

- Spin chuck vacuum monitored by digital MEMS sensor
Stops spin process if vacuum is weak
- Lid interlock
Prevents operation with spinner lid open
- Vibration sensing
Detects off-center wafers
- Built in drain and fume exhaust systems
Safely guides waste chemicals out of the machine
 - Optional waste bottle full sensor system prevents overflowCaptures chemical fumes during spin process
 - Optional programmable exhaust flow management
- DataStream™ user management system
Limits who can operate and program the tool

User Management

Active Users

admin
eng
op
tech

New

Save

Delete

User Profile

Username Kevin-Bao

Password

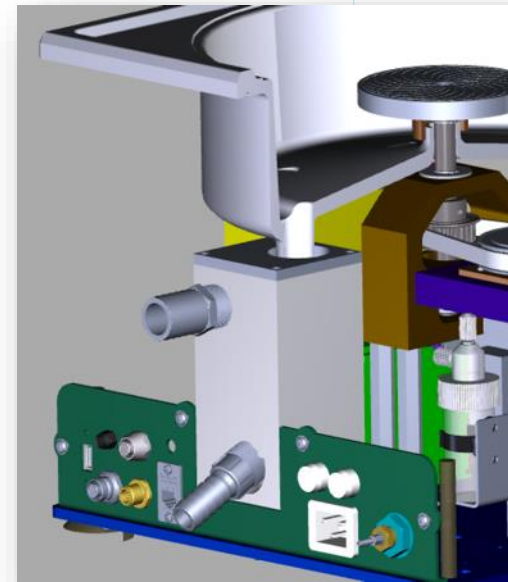
Confirm Password

Email

2nd shift coat tech

Permissions

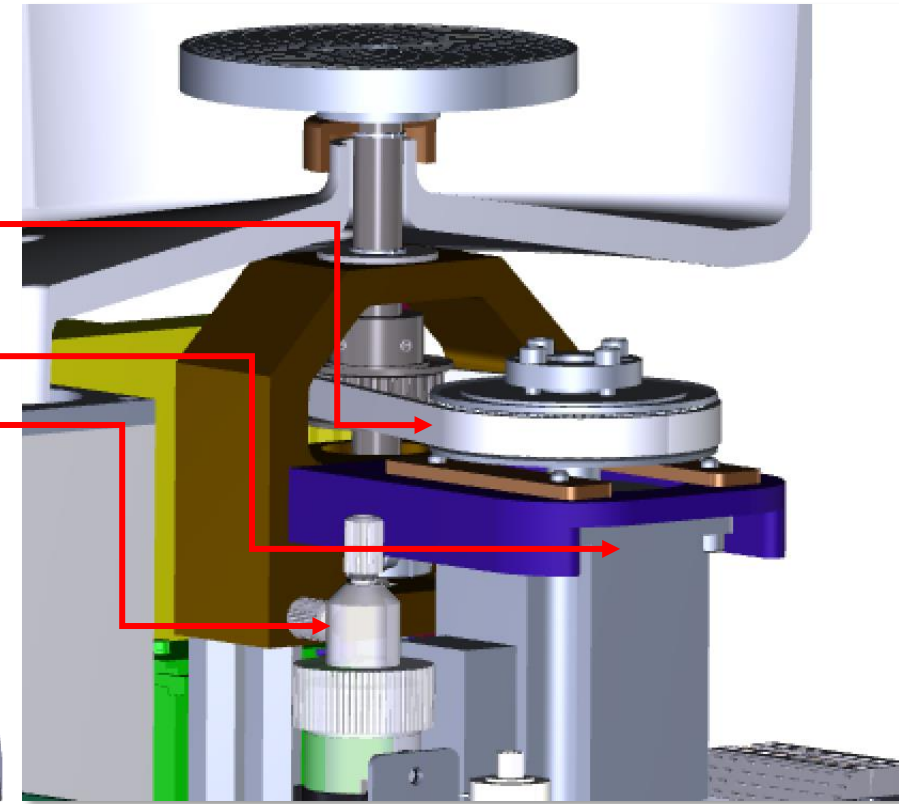
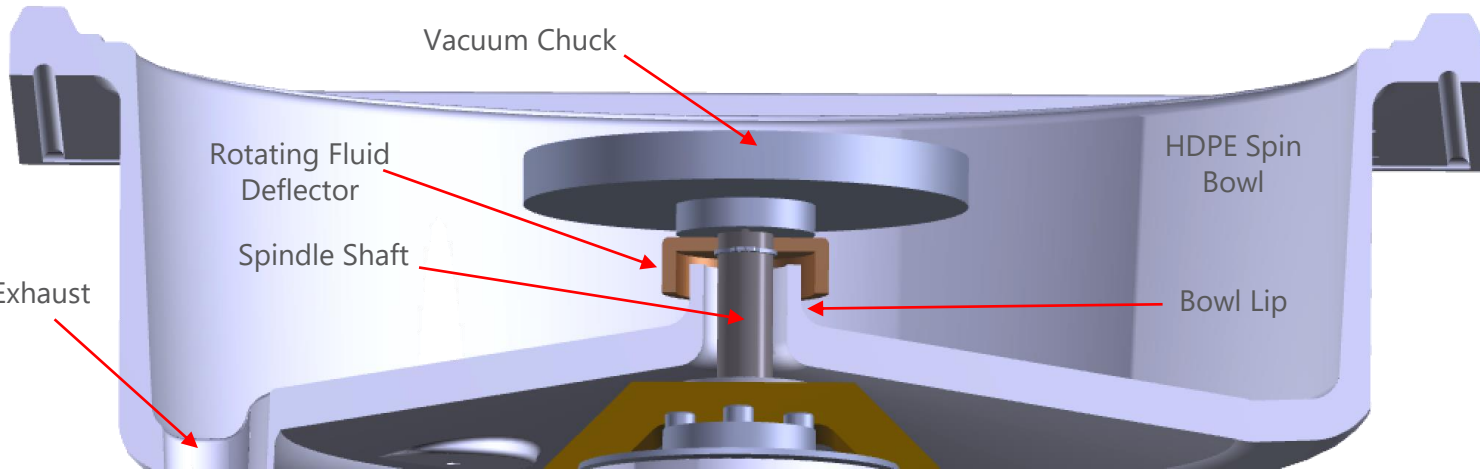
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Basic Recipe Editing ?	<input checked="" type="checkbox"/>
Advanced Recipe Editing ?	<input type="checkbox"/>
Export Log Files ?	<input checked="" type="checkbox"/>
Manual Tool Control ?	<input checked="" type="checkbox"/>
Remote Recipe Preparation ?	<input type="checkbox"/>
Tool Administrator ?	<input checked="" type="checkbox"/>
User Administrator ?	<input type="checkbox"/>



The Cee Advantages

Durability

- Indirect motor drive system (impossible to flood the motor)
- Oversized bearings and belt drive
- Brushless motor
- Teflon™ solvent trap protects vacuum valve and sensor
- Semiconductor-grade white powder coated stainless steel



The Cee Advantages

4th Generation Spin Chamber Design

- 28 years experience of spin coater development
- Optimized airflow for both thin and thick film coating
- Adjustable lid gap for flexible process development
- Integrated drain/exhaust separator for repeatable airflow
- Electrostatic charge management (grounded lid and spindle)



Superior repeatability wafer to wafer, hour to hour, day to day, machine to machine

- Sophisticated controls
- Manufacturing quality systems
- Designed for the lab and the fab



The Cee Advantages

DataStream™ System <https://www.costeffectiveequipment.com/technology/>

Critical parameters monitored and logged

Real-time charts and graphs

Access by web browser outside the lab/cleanroom (Tablet, PC, Phone)

Create/edit, upload/download process recipes

Monitor processes in real-time

Download detailed process logs in Excel® format

User permissions management

Unlimited recipes

Unlimited steps

Table View

Parameter	Actual	Set Point	Status
Spin Speed	0 rpm	0 rpm	In Range
Spin Acceleration	500 rpm/s	500 rpm/s	In Range
Active Dispenses	None	None	In Range
Dispense Source Empty	None		In Range
Chuck Vac	98.8 kPa	98.8 kPa	In Range
Waste Bottle Full	False		In Range
Ambient Temperature	28.4 °C		In Range
Humidity	18.7 %		In Range
Vibration	3		In Range

100% Elapsed 00:00:00 Remaining 00:00:00

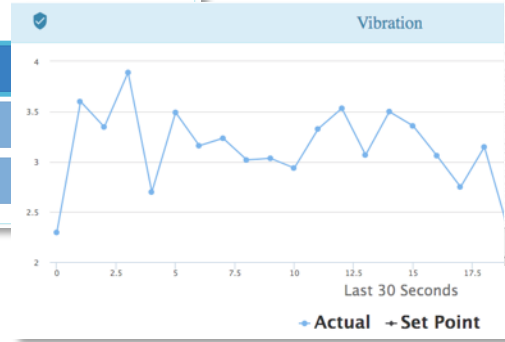
Editing Recipe-

Name: AZ_4620_ResistCoat

Use this for the GaN frontside prep.

Enable Chuck Vac

Step	Velocity (rpm)	Ramp (rpm/s)	Time (seconds)	Dispenses
1	250	1000	5	None
2	3780	12000	12	None
3	7200	1000	30	None

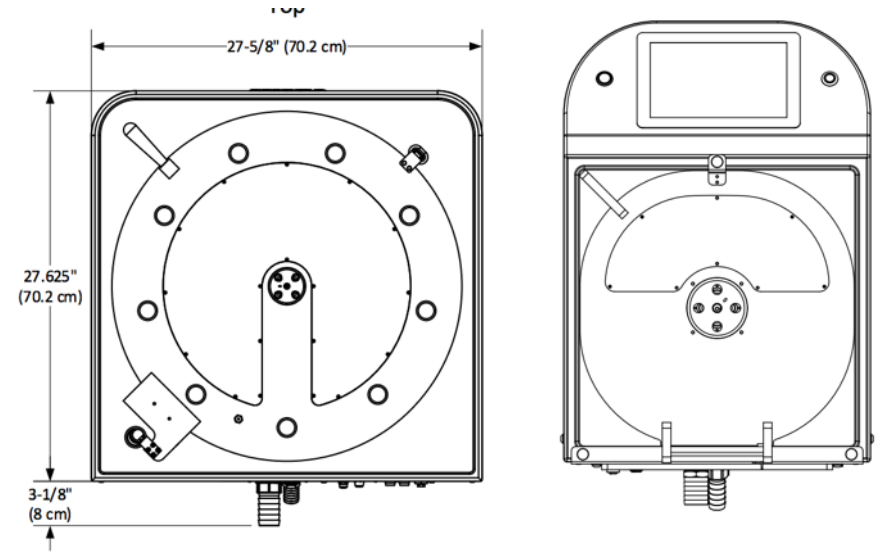


	A	B	C	D	E	F	G	H
1	Ambient Temperature - current (Chuck Vac - current (kPa)	Chuck Vac - setpoint (kPa)	Humidity - current (%)					
2	0.0865	27.3	0.0862	98.7507	0.0862	98.7507	0.0863	14.9
3	1.7484	27.2	0.9655	98.7352	0.3764	98.7352	0.3769	15
4	1.9169	27.3	1.2917	98.7507	0.5481	98.7507	0.6873	14.2
5	2.2092	27.2	4.1711	98.7352	1.2073	98.7352	0.966	15.5
6	2.5449	27.3	4.7808	98.7507	1.292	98.7507	1.1463	14.1
7	3.2502	27.1	5.3796	98.7352	1.6028	98.7739	1.2925	14.8
8	3.5619	27.2	6.6359	98.7507	1.7475	98.7507	1.6033	15.1
9	4.7819	27.3	6.7973	98.7352	4.7811	98.7739	1.7479	14.8
10	6.3321	27.2	8.06	98.7121	5.0818	98.7507	2.2087	15.1
11	6.6371	27.3	8.3577	98.7352	6.032	98.7352	2.5444	15
12	6.7984	27.2	8.6774	98.7121	6.3312	98.7121	2.9204	14.8
13	7.0681	27.3	8.9853	98.7352	6.6361	98.7352	3.5614	15.4
14	7.7561	27.4	9.2912	98.7121	8.0602	98.7121	3.8625	14.9
15	8.061	27.3	9.6619	98.7352	8.358	98.7352	4.1716	15
16	8.359	27.2	9.8902	98.7121	9.2914	98.7121	5.0823	14.9
17	8.9854	27.3	10.8308	98.6889	11.2425	98.6889	5.3802	14.8



Apogee™ Spin Coater Specs

- 175mm Color Touchscreen Display
- DataStream™ Control System
- Indirect Drive
- Full Interlocks
- Integrated Drain/Exhaust



Model	Apogee Spin Coater	Apogee 450
Max speed	12,000rpm	6,000rpm
Max acceleration	30,000rpm/sec unloaded	30,000rpm/sec unloaded
Precision/resolution	<0.2rpm	<0.2rpm
Max substrate size	200mm round 180mm square	450mm round 355mm square

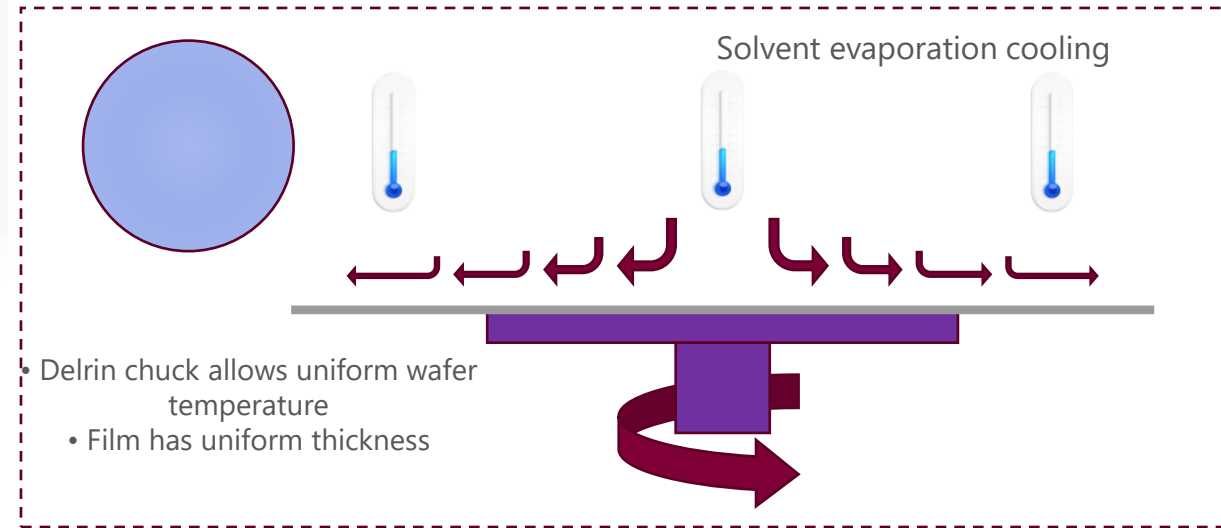
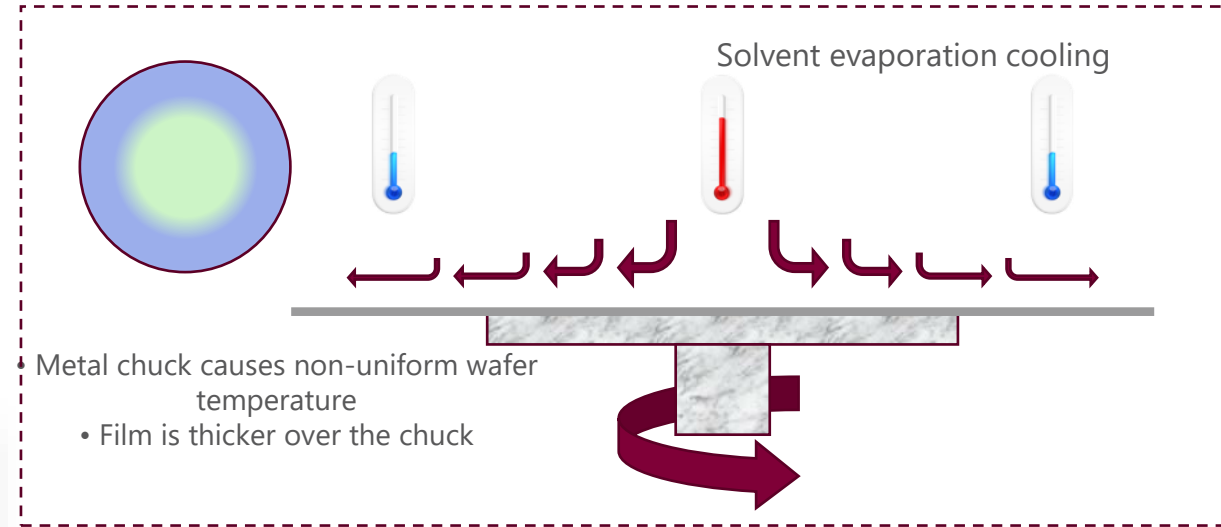


Apogee™ Standard Spin Chucks

All popular sizes

Delrin is inert and durable

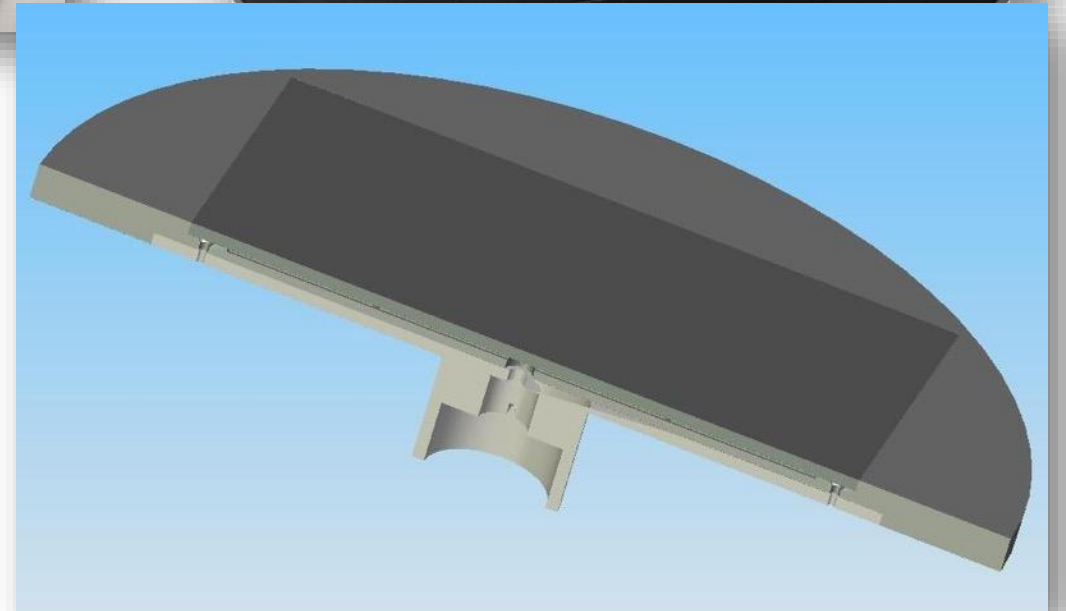
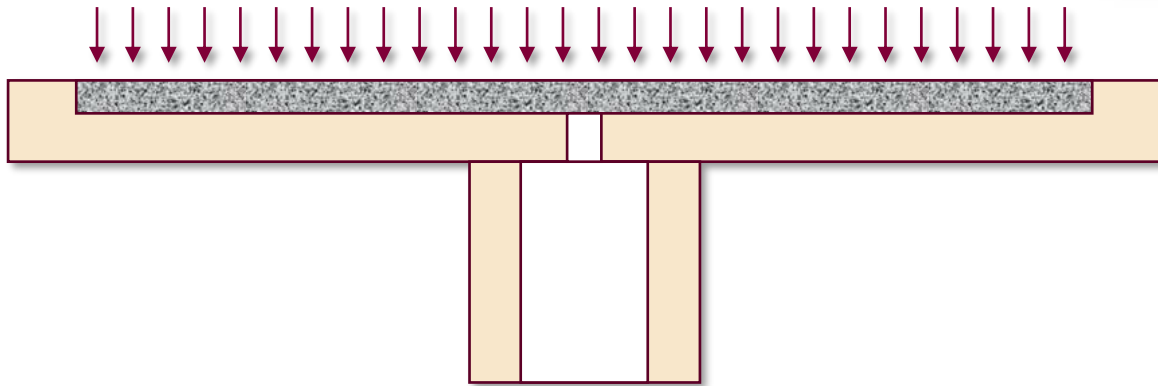
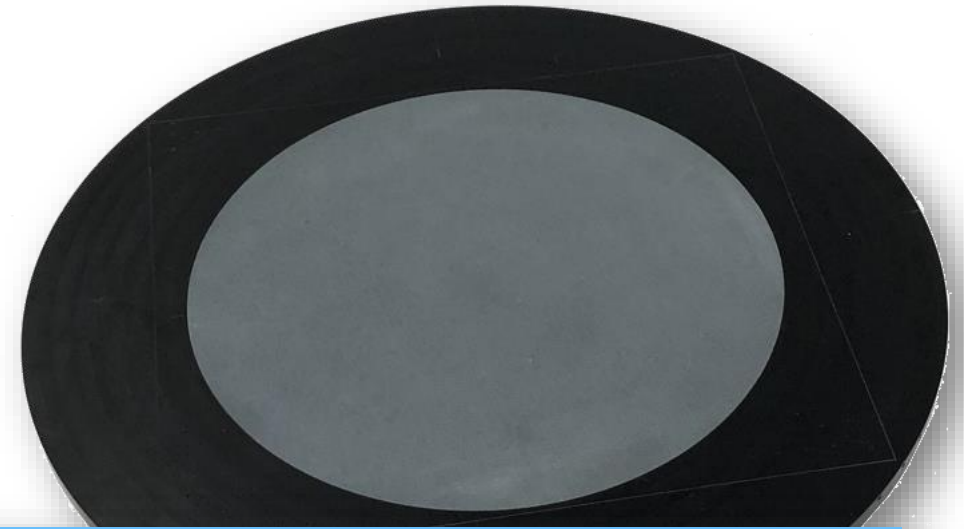
Prevents thermal chuck mark



Apogee™ Porous Spin Chucks

Porous ceramic recessed in a Delrin chuck

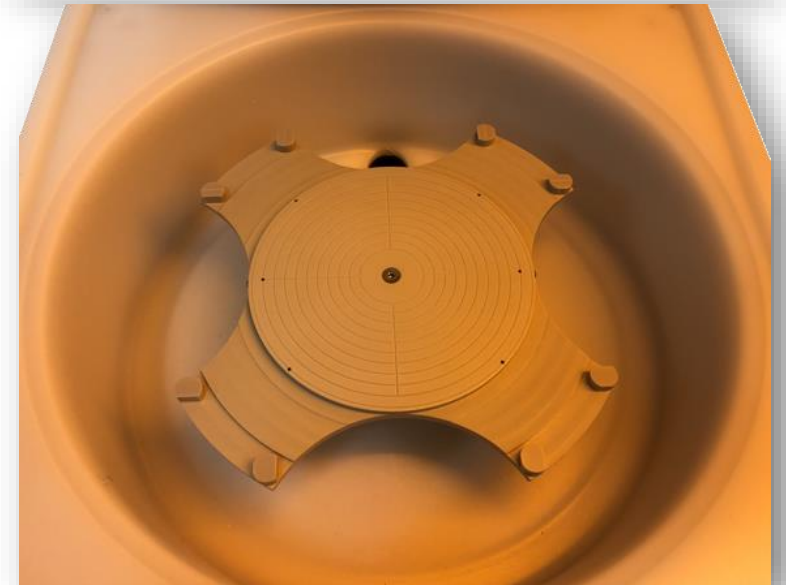
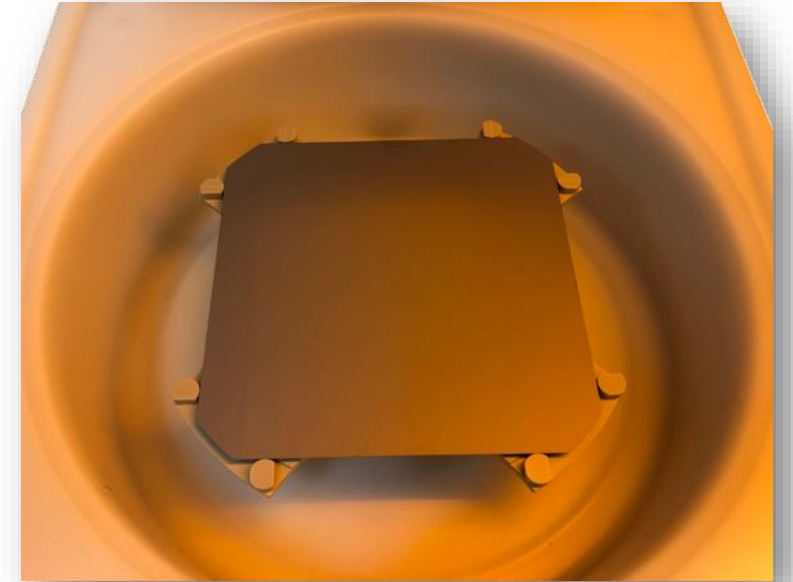
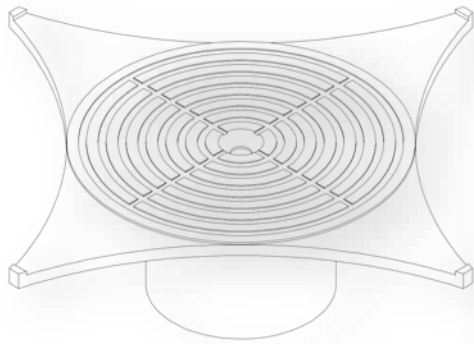
- Thin <math>< 150\mu\text{m}</math> substrates
- Flexible substrates
- Metal foils



Apogee™ Captive Spin Chucks

Built in guides for perfect centering every time

- Volume production
- Heavy substrates
- Fragile substrates
- Odd shaped substrates



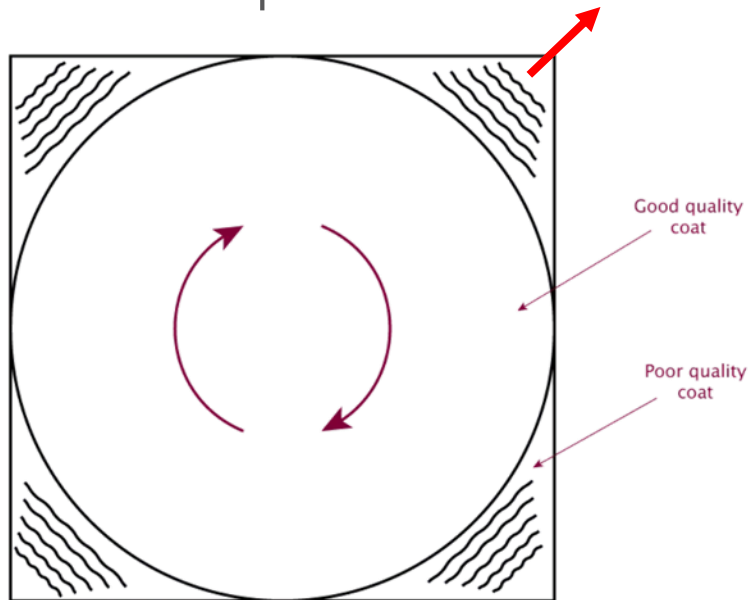
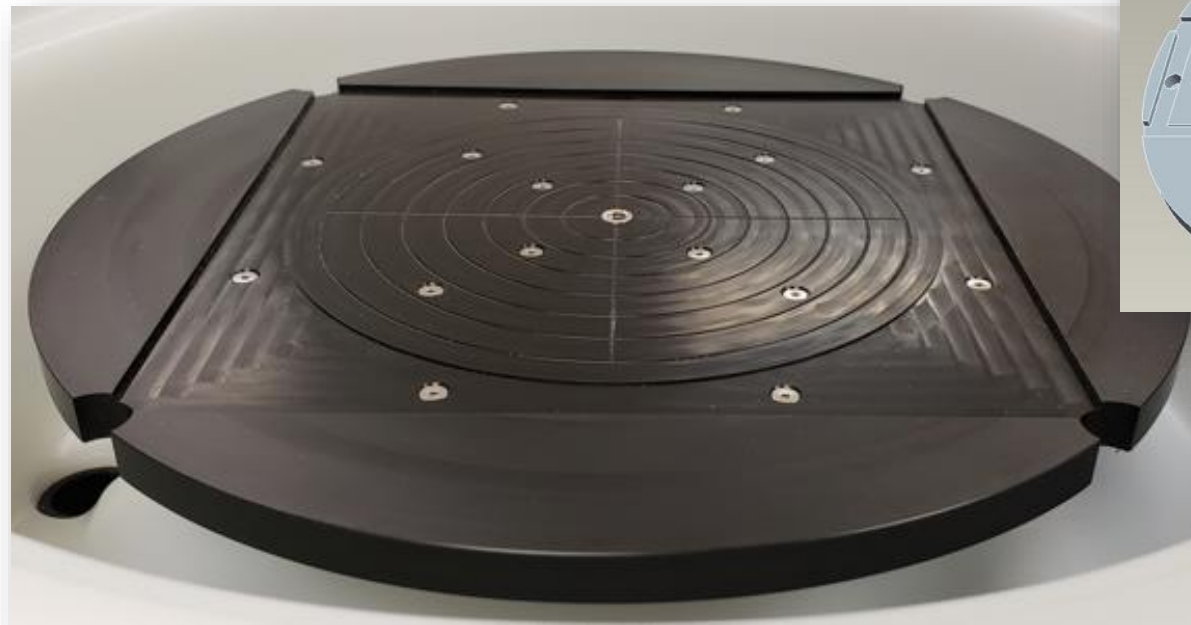
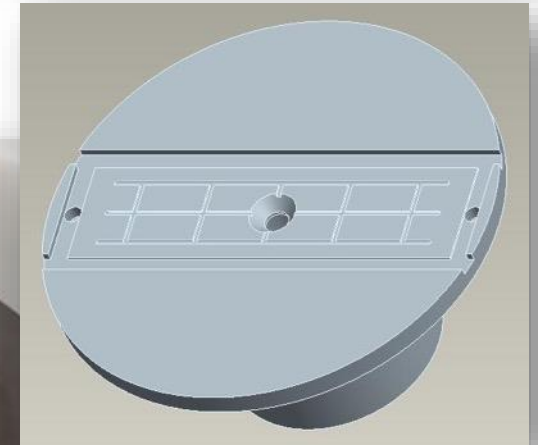
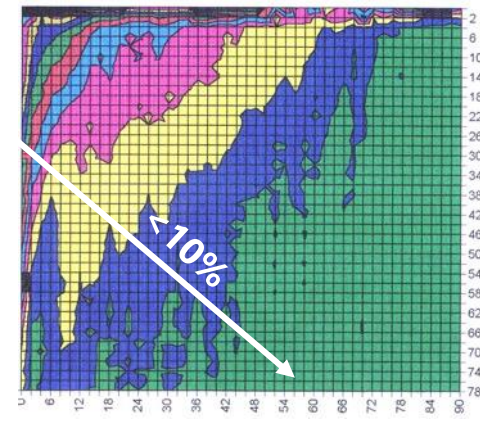
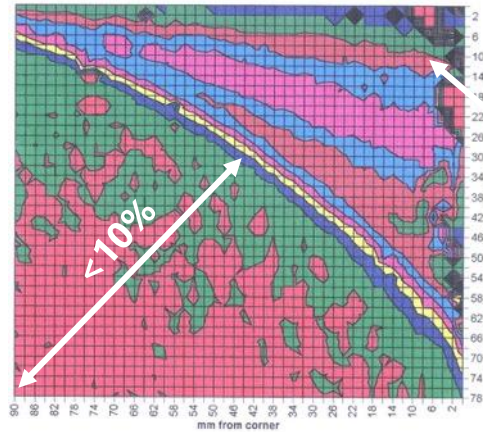
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Apogee™ Recessed Spin Chucks

Used for:

- Photomasks
- Display Glass
- Odd shaped substrates
- Microscope Slides



Apogee™ Customized Spin chucks

Optimized performance for all kinds of substrates

