

NoTouch™ Wands

Flexible Integration Components

Tru-Si's NoTouch™ hand-held wands enable manual handling of flexible ultra thin to rigid full thickness wafers without touching or damaging them. Silicon, GaAs, InP, and other similar material can all be handled using the same wand. Even extremely uneven surfaces, such as bumped or dirty wafers, are no problem for NoTouch™ wands.

Wafers are levitated using multiple gas vortices to provide an evenly distributed lifting force that picks up and holds the wafer flat. Each of the gas vortices produces a mini tornado that creates a low pressure above the wafer. But since air is being blown out of the vortices, the wafer is suspended in equilibrium between the blowing air and the low pressure lifting force.

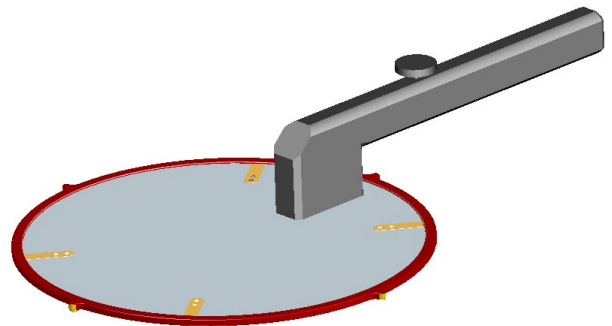
Gas vortices are distributed evenly over the surface of the wand to apply a uniform holding force over the entire surface of the wafer thus minimizing stress to thin fragile wafers. This distribution also insures that bowed wafers are flattened as they are picked up and then held flat suspended beneath the surface of the wand. Once suspended on the wand, wafers can be held at any orientation.

Small brakes made of peak plastic, the same material used in the manufacture of cassettes, are used to keep the wafer from sliding off or rotating on the wand. The peak brakes are mounted on an outer ring and only touch the edge of the wafer. Wafers can be oriented on the wand by manually rotating this outer ring.

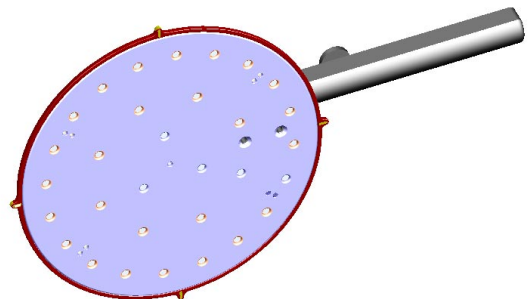
Front side protection of devices or bumps is unnecessary since no physical contact is made between the wafer and NoTouch™ wand.

Holding gas can be compressed air (CDA), dry nitrogen, or any other inert gas. If the gas is from a compressed source, wafers will be held in place during a power loss.

Tru-Si's NoTouch™ hand-held wands are available in 3", 100mm, 125mm, 150mm, 200mm and 300 mm sizes.



200 mm Wand Top View



200 mm Wand Bottom View

NoTouch™ Wands

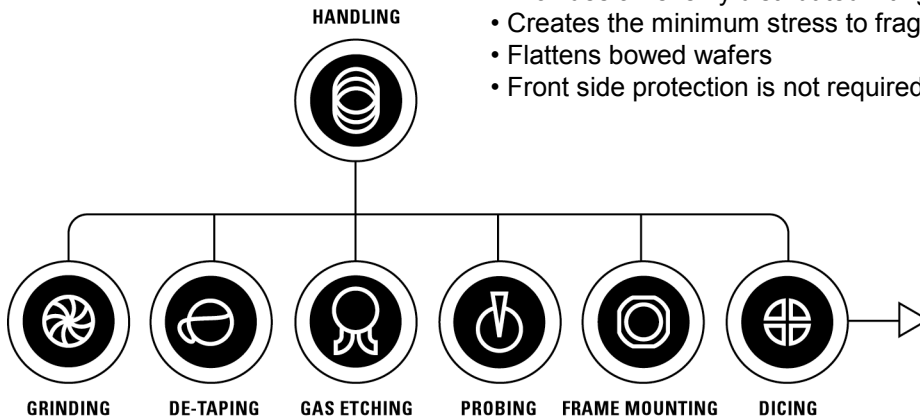
Flexible Integration Components

Specifications

Wands:	3 Inch	100 mm	125 mm	150 mm	200 mm	300 mm
Measurements						
length	3.12 in.	3.70 in.	4.50 in.	5.40 in.	7.39 in.	11.81 in.
width	3.12 in.	3.70 in.	4.50 in.	5.40 in.	7.39 in.	11.81 in.
thickness	0.21 in.	0.21 in.	0.21 in.	0.21 in.	0.21 in.	0.25 in.
Gas flow	25 LPM	30 LPM	35 LPM	35 LPM	50 LPM	100 LPM

Tru-Si's NoTouch™ Wand Advantages

- Handles ultra thin to full thickness wafers
- Handles Silicon, GaAs, InP, and other materials
- Bumped or dirty wafers are no problem
- Provides an evenly distributed lifting force
- Creates the minimum stress to fragile wafers
- Flattens bowed wafers
- Front side protection is not required



Tru-Si's flexible integration scheme allows customers to handle ultra thin wafers in and out of Tru-Si's etching equipment in addition to tools for other process steps in the ultra thin wafer processing flow such as grinding, detaping and film frame mounting.

Tru-Si's NoTouch™ robot end effectors and hand held wands, along with wafer stacking pods available from multiple vendors make flexible integration of advanced wafer thinning operations possible.

Tru-Si Technologies, Inc.
657 North Pastoria Avenue
Sunnyvale CA 94085

Phone: (408) 720-3333
Fax: (408) 720-3334
www.trusi.com
inform@trusi.com

