2.3 EVG6200

Wafer / substrate parameters:

Size: 3" – 200mm, up to 200mm x 200mm

Thickness:

Mask aligner: 0.1 – 10 mm (max 2 mm for bottom side alignment)

Bond aligner: 0.1 – 3 mm for each wafer or substrate, max stack height 4.5mm

Mask parameters: size: 9" x 9", thickness: < 7mm

Alignment:

Range of alignment: X, Y ± 5mm

Rotation: Theta 3°

All movements are performed fully motorized, controlled by analog three axes joystick or manually using high precision micrometers spindles

Alignment accuracy:

Mask aligner: down to ± 0.5µm for top side alignment

                     down to ± 1µm for top to bottom side alignment

Bond aligner: down to ± 0.5µm for glass/silicon

                     down to ± 1µm for silicon/silicon

Handling system:

Three axis robot

Wafer cassettes: Up to 5 cassette stations, free programmable as send, receive or standby cassette.

Robot accuracy: ± 25µm

Accuracy of prealignment station:

                     X: ± 50µm, Y: ± 50µm, Theta: ± 0.09°

Separation/ proximity adjustment:

Separation: Up to 1000µm adjustable in 1µm steps, software controlled.

Contact force:

Between mask and substrate for wedge compensation.

Mask aligner: Adjustable from 0.5 – 40N (without tools loaded, e.g. mask holder, mask)

Bond aligner: Adjustable from 1 – 40N (without tools loaded, e.g. bond chuck)

Printing resolution: (350 – 450nm)*

Vacuum contact: down to 0.6µm

Soft contact: down to 2.0 µm

Hard contact: down to 1.5µm

Proximity: down to 4.0 at 20 µm gap

* results achieved with EVG standard process and materials

Monitor/ Camera:

High resolution B/W CCD camera and TFT monitor

Lamp house:

Standard NUV for 350 – 450nm (Optional DUV for 220 – 350nm), standard lamp power for 350W, 500W or 1000W

UV light uniformity:

        150mm: ≤ ± 3%, 200mm: ≤ ± 4%

Intensity: (measured at 365nm)

        350W: 8 - 12mW/ cm²

        500W: 12 - 15mW/ cm²

        1000W:18 - 22mW/ cm²

Applied industry standards:

NRTL – (UL – listed)

Semi S2, S8 certified

3 Description of Components

3.1 General View
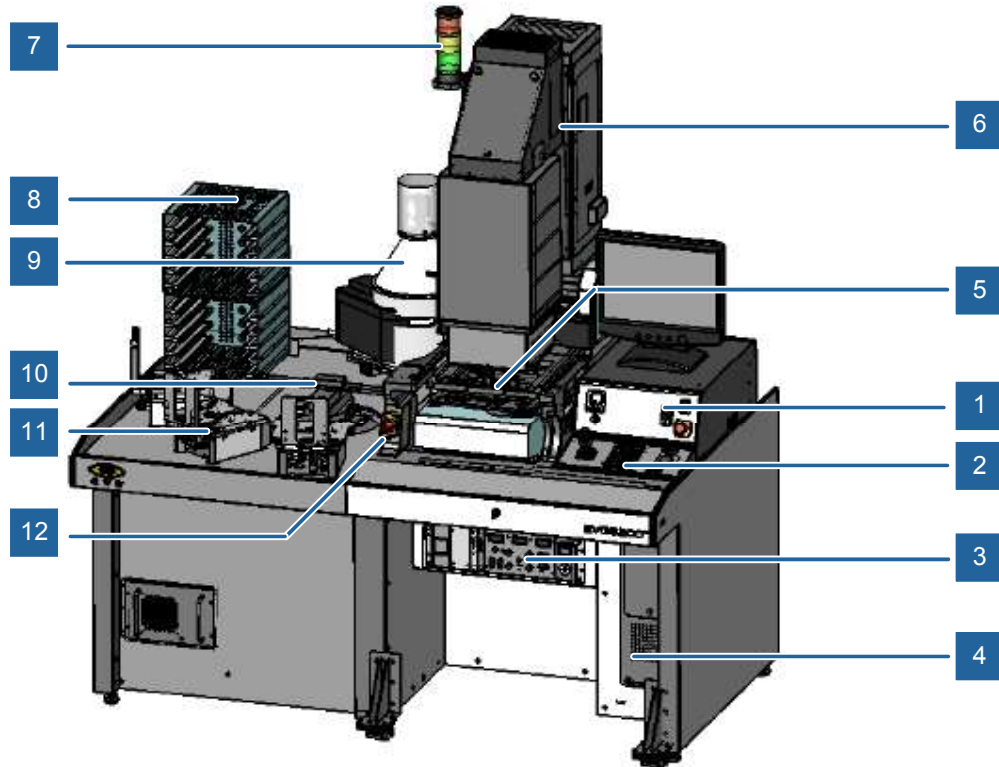

Figure 2 - General View

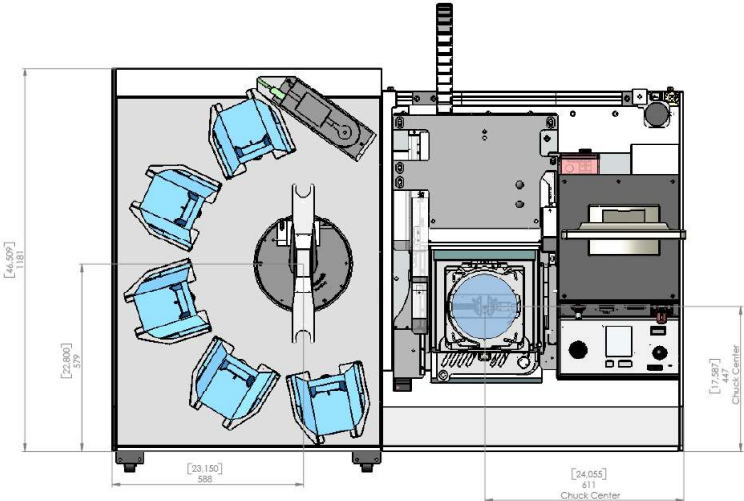|				
1	Control Panel	2	Keyboard
3	Lamp Power Supply	4	PC Equipment Rack
5	Optical Alignment Module	6	Lamp House
7	Signal Lamp	8	Storage Rack
9	Optical Pre-aligner	10	Robot
11	Cassette Station	12	Emergency Off Button

3.1.1   Top View
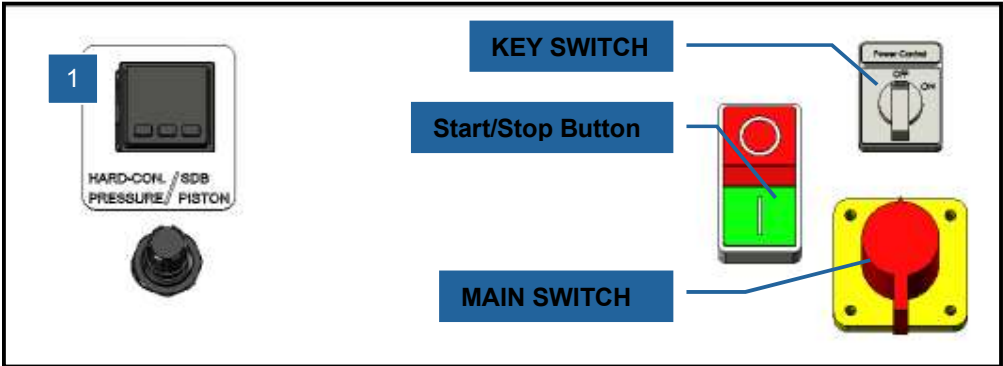

Figure 3 - Top View

3.2 Control Panel

Figure 4 - Control Panel

Hard-cont. / SDB PISTON (1)

- To adjust the Hard Contact pressure.
- To adjust the pressure of the SDB Piston (for Silicon direct bonding)
- To supply the flag-cylinder for Proximity Mask holder.

3.2.1 Keyboard Description

Figure 5 - Keyboard Description

KEY PANEL

5 Rough and fine adjust of motorized Stage.

8 ↑ Movement control of the Stage

2 ↓ Movement control of the Stage

4 ← Movement control of the Stage

6 → Movement control of the Stage

1 ↻ Move stage clockwise

3 ↺ Move stage counter clockwise

Enter

ENTER

Confirms data input

TRACK BALL

The track ball is used for the PC-control

JOYSTICK

With the Joystick it is possible to control the optic motors or if equipped the motorized stage.

Switch between stage and optic selection with the **button** on the joystick.

An active Exposure procedure sequence can be aborted with the button at the Joystick.

Microscope movement:

Y-direction↑↓:

Move joystick in ↑front or ↓back direction.

If topside is selected, the whole optic moves forward and backward.

If bottom side is selected, the corresponding objective moves in Y-direction.

X-direction←→:

Move joystick in left or right direction.

With top as well as bottom microscope selection, the corresponding objective moves in X-direction.

Z-direction (Z-direction = PHI):

Turn the joystick clockwise or counter clockwise to move the optic in Z-direction (focusing) or the stage in theta direction (PHI axis)

3.2.2 Emergency Stop

Emergency Stop – shut down the system.

4 Start Up System

4.1 Check Facilities

1) Check all facilities of the system:

    a) Exhaust

    b) Electrical Connections

    c) CDA, N2; Vacuum

4.2 Check Interlock

1) Make sure that all EMO buttons are released.