



SDB

high accuracy diebonder

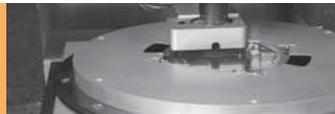
SDB PRECISION OF ASSEMBLY <1 µm

- 1µm placement accuracy
- Flip-chip option
- Assembly of chip and micro-optics
 - WDM, optoelectronic components, micro-lenses, micro- mechanics
- Die Sorting
- Wafer mapping
- Eutectic bonding via diode-laser
- Epoxy stamping and dispensing
- Active / Passive alignment
- Active bond-force -control
- Postbond inspection
- Modular machine concept



Amicra follows a policy of continuous product improvement. Specifications are subject to change without notice.

Technical informations



General

control	multi-axis-controller
operating system	Windows XP
programming	keyboard and graphic display
operator Interface	menu driven, English
data transfer	ethernet TCP/IP , electronic connection: 10 Base T, 10 Mbit/s

Equipment

BONDHEAD TRANSFER SYSTEM

function	moves bondhead from source side (chip side) to destination side (substrate side)
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coarse X axis positioning	linear motor driven, high velocity and acceleration; noncontact linear encoder, resolution 1µm
Z axis	AC servo drive, noncontact linear encoder, resolution 1µm

TABLE FOR WAFER AND SUBSTRATE

XY axis	AC or stepper motor driven, open-frame design
range of XY axis	300 x 200 mm

CAMERA AXIS

Z axis (focussing)	AC or stepper motor driven
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BOND HEAD

function	construction for active adjustment; high accuracy positioning; bondforce controlling
XY axis	piezo driven; resolution 0.1µm; range 400µm x 400µm
rotation axis	360°, resolution 0.001°
bond force	programmable, standard working area 3 -100 g; resolution 0.5 g (other working area available)
touch sensor	determines first mechanical contact between chip and substrate

EJECTION SYSTEMS

needle systems	single or multi-needle system according to component size
ejection needle type	0.7 mm shaft diameter, 17.0 mm long, radius 25µm, other needles on request
ejection height	programmable height and delays
ejection speed	programmable

Lasersystem

function	for fast eutectic bonding with controlled heat
technique	fiber-coupled high power laser with focussing optic
max. output power	45 W or 75 W
center wavelength	808 nm (+-10%) other wavelength on request
temperature	programmable, range: up to 400° C, online measurement pyrometer; resolution: 100 mA
pulsetime	programmable, range: 0.01s to 9.99s; resolution: 10ms
cooling	TEC cooling with temperature feedback

Image Recognition

vision System	COGNEX
focussing	programmable; optional autofocus function during programming
recognition methods	standard vision tools; special filter for micro structures
pattern recognition	programmable windows and models

Dimensions/Power Ratings

size (WxDxH), weight	1400 x 1200 x 1700 mm, 1200 kg
vacuum	- 0.8 bar, Throughput: 3 m³/h
compressed air	5 bar dry and oilfree air
nitrogen	1 bar
electrical power ratings	distribution voltage: 230 V
ambient temperature	18 to 25 °C
relative humidity	non-condensing

Capacity Ratings

module-specific cycle time	depending on configuration and application
module-specific cycle time for flip-chip process	depending on configuration and application
throughput	up to 360 components/h device dependent
machine availability	>95%
accuracy	1 µm@3s



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