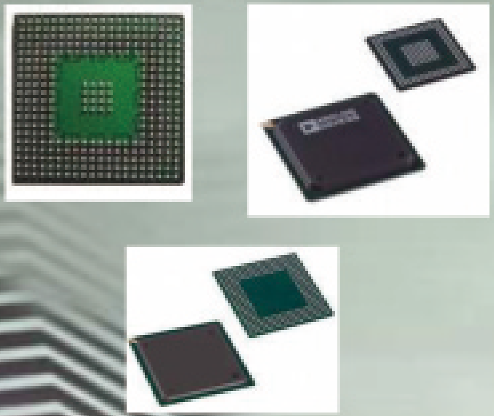
MINAMI
CO., LTD.

Solder ball placing machine with built-in high precision general purpose screen printer based on cutting-edge technology from Minami

MK-BP2000



MINAMI Co., Ltd.

New type round shaped placing head

Movie of this product ▶▶

- Balls in actual movement
  - Realization of high precision placement by secure movement

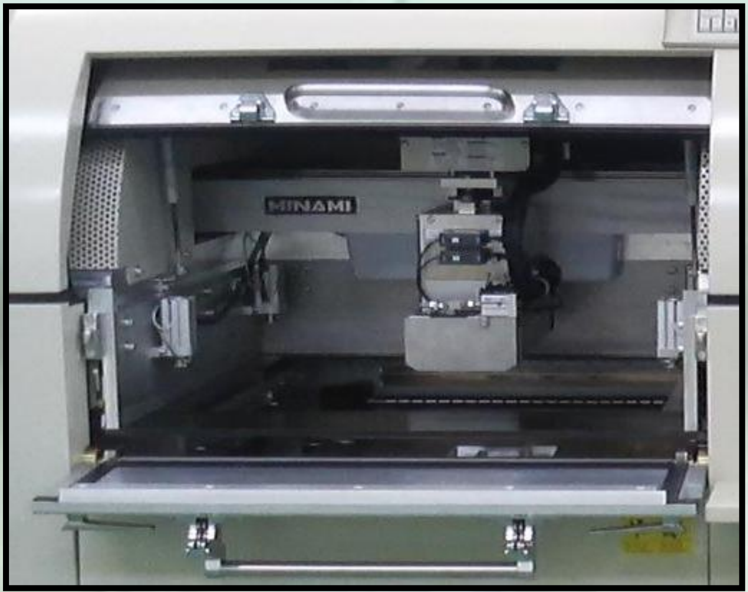
New type round shaped placing head

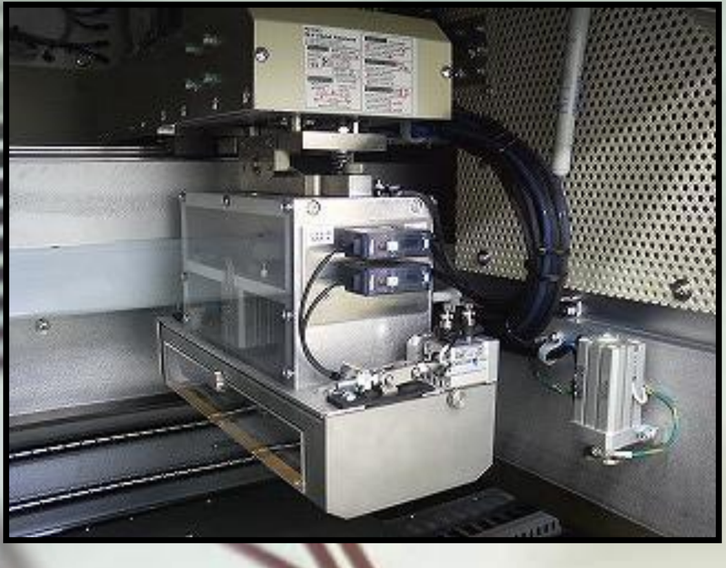
Movie of this product

- Sucking of moving balls
  - Realization of high precision placement by secure movement

Component unit（printer side）

１. **Pressurized stencil separation unit**

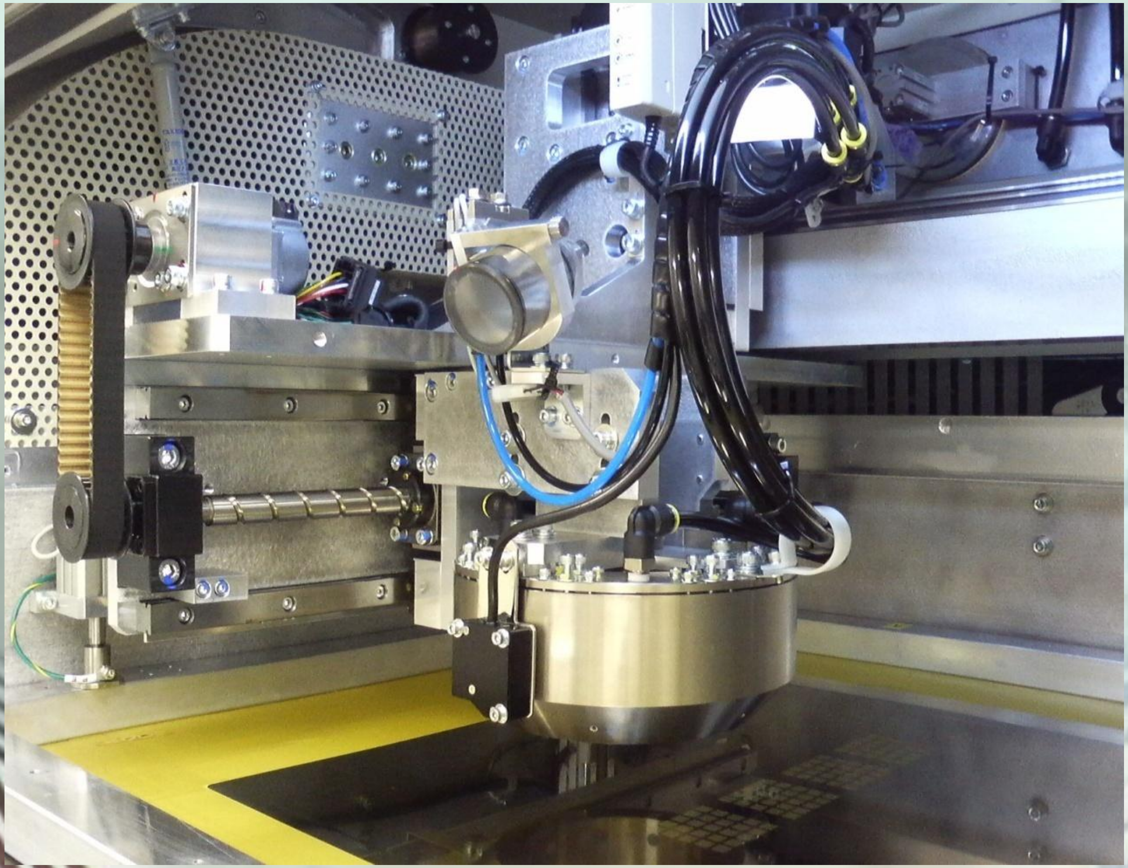




２. **Rotary squeegee unit**

Component unit（ball placer side）

３. Round shaped XY driven ball placing head



４. Ball scattering on a single stencil

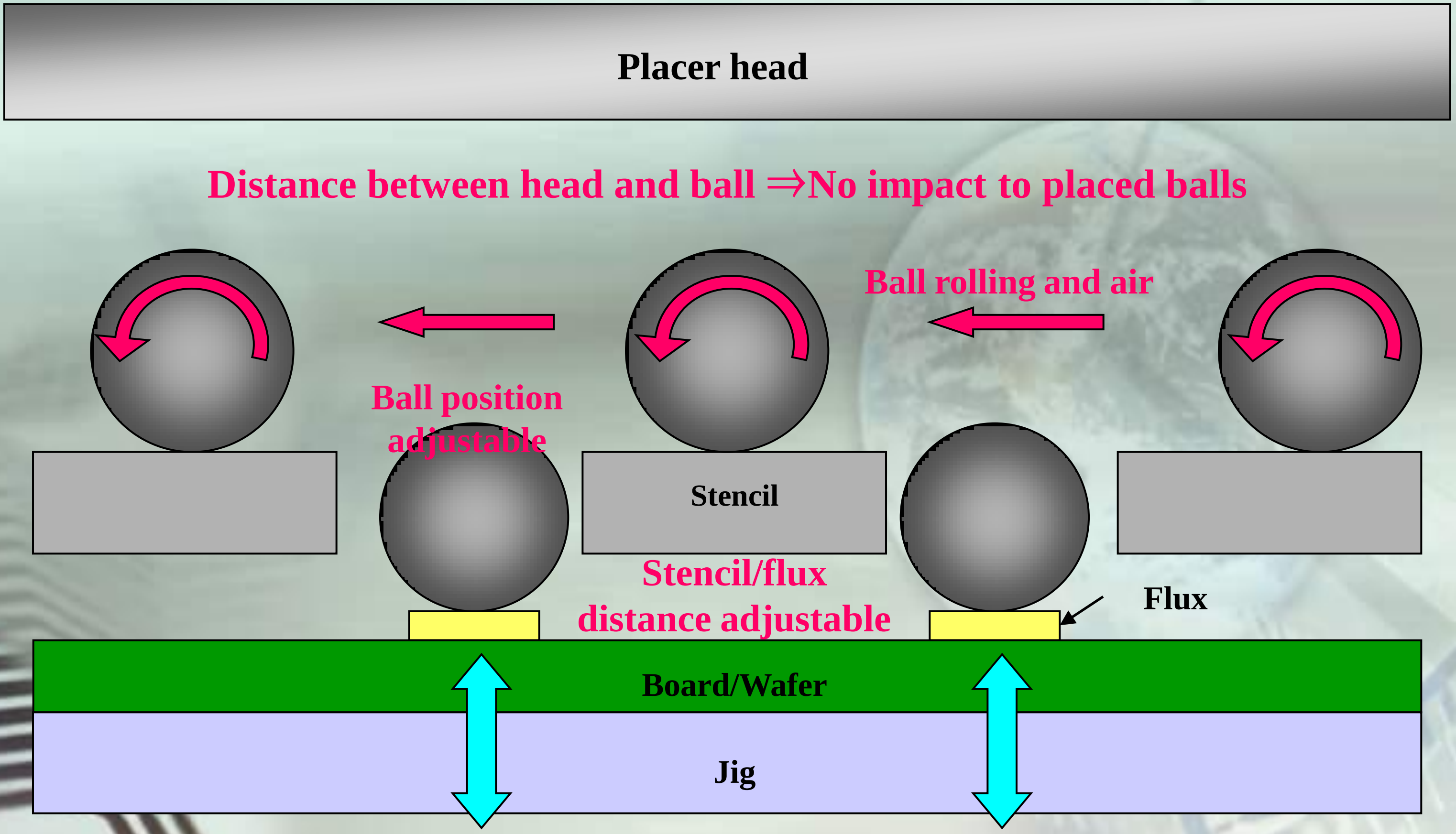
A series of actions from printing to placing

Movie of this product ▶▶

MK-BP2000 equipment specifications

	Printer side	Ball placer side
Printing positioning repetitive accuracy	±0.015mm or less（when using image recognition）	
Screen dimensions	(X)750mm×(Y)750mm×(T)25～40mm	(X)750mm×(Y)750mm×(T)25～40mm
Applicable work dimensions	Min.(X) 50mm×(Y) 50mm×(T)0.5mm Max. (X)480mm×(Y)304.8mm×(T)5mm	Min.(X) 50mm×(Y) 50mm×(T)0.5mm Max. (X)480mm×(Y)304.8mm×(T)5mm
Placement specifications	①Minimum 60～80um ② Minimum pitch 120um	
Takt time（using our sample board, including loading/unloading）	Approx. 10sec.	Approx. 30sec.
	①Board size：245mm x 197mm ②Number of placed balls：116,000 ③SR opening：70～100um ④Pitch：150um ⑤Ball diameter：85um	
External dimensions, wieght	(D)1255mm×(W)2320mm×(H)1280mm Approx. 1200Kg	
Power source	Single phase AC200V・2KVA 50/60Hz	
Options	・Spring type print pressure unit ・Servo print pressure unit ・Rotary squeegee unit ・With a load cell for rotary squeegee unit ・Adhesive type cleaning unit ・Top surface cleaning unit ・Cleaning solvent tank residual amount sensor ・Air conditioner retrofit	・Air conditioner retrofit
	・UPS ・FOUP opener ・Work transfer mechanism ・Work aligner	

MK-BP2000 ball placer unit



Placer head

Distance between head and ball ⇒No impact to placed balls

Ball rolling and air

Ball position adjustable

Stencil

Stencil/flux distance adjustable

Flux

Board/Wafer

Jig

MK-BP2000 Z axis work table can move vertically

MK-BP2000 feature

１．High placement yield and high speed takt by special head

２．No damage to solder balls

３．Non-contact type head does not damage stencil surface

４．No contact with printed flux avoids stencil contamination and enables continuous placing

５．No cleaning required

６．Unique head design precludes mixture of balls from the previous placing and this time placing

Printer side: Pressurized stencil separation unit

High aspect ratio printing can be made

	Mask opening diameter （Stencil thickness t=150μ m）				
	150μ m	200μ m	250μ m	300μ m	350μ m
Without pressure	0.0%	2.8%	47.9%	66.7%	86.8%
When pressurized	0.0%	23.6%	97.2%	100.0%	100.0%

Printing unit can be used as a bump printer