堅·持·最·高·品·質·承·諾

ATMAOE MF68

Fully Automatic CCD Registering Screen Printer



ISO 9001 & ISO14001 認證通過

1993~2004 年榮獲 台灣精品獎

2000 年榮獲 小巨人獎

1997 年榮獲 創新研究獎

歐洲安全規格認證

國家磐石獎

1996 年榮獲 台灣產品形象銀質獎

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網 版 印 刷 機 材 研 發 製 造

APPLICATION :

Suitable for high precision screen printing on various flexible / rigid material substrate, such as flexible / rigid printed circuits (FPC/PCB), BGA, PCB embedded resist or, LCD frame glued, touch-screen panel, ITO conductive glass, thin film, backlit module diffusive plate, Electroluminescent (EL), Biomedical test stripe and so on.

CHARACTERISTIC :

(1) Registration

Entire machine is consisted by registering and printing section, shuttle table connects in between, working principle can be stated below :

1.1 Manual loading substrate (or use optional feeder) onto shuttle table top (pre-registering three-point edge alignment or inserting onto pins is necessary), following to turn vacuum ON (digital control suction power can preset seven levels, also preset gentle air blow to assist loading), holds substrate firmly onto table top, 2 CCD cameras shoot target (the printed pattern or hole) on substrate and feedback to control system matching position. If deviation is found, device of X/Y/θ servo transmission system underneath table top which will be turn on immediately to remove table (substrate on top) to achieve precise registration.

1.2 After accomplishment registering, shuttle table starts immediately to carry substrate into the printing section. And then printing gets start.

1.3 After printing, shuttle table returns to registration section for manual off-loading (or use optional off-loader, take-off from edge side of printing section.

(2) Printing Section

Printing section adopts G7 version four-post type, equipped with various unique design precise transmission and adjustment structure, smooth and stable operation and precise positioning.

- Servo for squeegee / flood coater : linear guide leading (parallel precise adjustment), enable to set single / double squeegee for 4 types of printing cycle mode, digital control setting printing stroke start / ending, squeegee / flood coater speed and equalizing. Besides, manual setting squeegee / flood coater depth, skew and swivel angle. Squeegee / flood coater up down is equipped with high class guide rail cylinder to raise precision of linear exercise and resistance stress to express complete equalization.
- Servo peel-off : linear guide rail leading, digital control setting peel-off height and delay start
- Screen fine adjustment X/Y/θ : precise smooth double frame design, fine adjustment dial gauge indication original at coordinates.
- Digital control screen up down : German SEW gear motor + double chain to drive four-post synchronous up down, digital control setting (printing level / stand by / cleaning level), equip with unique four-post locking system to secure precise positioning.

(3) Control System

All transmission systems are considered to digi tize and equipped with top class facilities in order to reduce installation time, convenient operation to raise productivity, poka yoke foolproof, endurable long hours operation to achieve top requirement for digitization, standardization and safety processing. Consist transmission system. Every transmission system includes :

6 groups of servo : shuttle table movement (1 group), peel -off up down (1 group), printing head forth and backward (1 group), X/Y/ θ axis displacement of CCD registering (3 groups).

- 1 group of AC deceleration : printing section up down (German SEW gear motor + encoder)
- 1 group of digital control equalizing air pressure : 1 group for squeegee / flood coater pressure, professional circuit loop design to perform automatic switch.
- Adopt advanced PLC unit : chain locking every digital control transmission / control system mentioned above, reserve several groups of Input / output point in order to link up / downstream equipment for synchronous integration.
- Operation interface adopts switches panel + colored touch-screen : provides convenience for instant operation, setting and showing various parameters for exquisite control. Setting 100 groups memory of operation mode, only touch several icons on screen easily to get saved and retrieved memory, this is another feature of saving set up time.

(4) Safety Guard System

Equipped with other safety protection : error diagnosis loop, failure indication, single key automatic safety restoration loop, safety light barrier, emergency stop press button, warning lamp, etc. comprehensive safety protection.

(5) Automatic Registering System (CCD Visual System)

CCD Visual Registering System adopts IPC + the advanced Window version to drive three axis servo registering system for quick and precise registering. Operational interface adopts color LCD monitor + tracking ball.

1. Purpose : Use CCD optical magnification enlarges target image, analysis, contrast to achieve high resolution, capability of image resolution reaches 0.4μm to match purpose of X/Y/θ servo drive and automatic precise registration. Registration accuracy is achieved 5μm, fast and accurate table displacement.

2. Characteristic : (1) provides appropriate visual light source (extreme bright LED white light)

(2) Field of view : FOV 10.5 x 8.4 Depth 0~6 mm.

(3) unlimited target shape, enable to make tracking.

(4) enable to add up to 4 CCD, increasing deviation of even accurate registration.

(5) enable to choose edge alignment instead of CCD registering.

(6) registration can be completed within 1 second in normal target.

(7) operation keypad adapts waterproof anti-dust and tracking ball keypad, no need to worry other condition occurrence during use, special function key is hidden to prevent mis-touch.

(8) adopts industrial professional screen, tempered glass, resistance acid and alkali, temperature and weather, anti-noise, long lifetime and apparent contrast.

3. Function : (1) achieve purpose of accuracy and fast registration, low defective rate.

(2) record is required for production management, internet connection for saving and retrieving at long distance end.

SPECIFICATION :

Table size	: 950 x 950 mm
Vacuum area	: 600 x 800 mm
Max printing area	: 600 x 800 mm
Min printing area	: 300 x 400 mm
Substrate thickness	: 0.05～6.0mm
CCD visible scope	: X±125～305 mm Y±405 mm
CCD field of view	: 12.5 x 9.3 mm
Image registration accuracy	: ±0.005 mm
Integrative accuracy	: 0.01mm
Registering integrative timing	: <1sec
Max screen frame O/D size	: 1300 x 1300 mm
Min screen frame O/D size	: 1000 x 1000 mm
Screen frame height	: 25～40 mm
Screen cleaning level	: 350mm
Table height	: 920+50mm
Productivity	: 300 P/H
Squeegee pressure	: 3～62 kg (digital control setting)
Squeegee skew angle	: 20±15
Squeegee / flood coater speed	: 20～625mm/sec.(independent digital control setting)
Printing head swivel angle	: ± 5°
Power source	: 3 ϕ , 220V/380V,50/60Hz
Power consumption	: 4.42 KW
Compressed air source	: 5～7 kg/cm²
Air exhausted	: 12 L/cycle
Machine dimension	: 2700x1780x1565 mm
Machine weight	: 1600 kg
※ Additional cost will be charged if modification is requested by customer.	

TOOLING ATTACHMENT :

Items	Descriptions	Specification	Quantity
Unknown	M-type squeegee holder	Confirmed later	1 pc
Unknown	M-type squeegee holder	Confirmed later	1 pc
Unknown	M-type flood coater	Confirmed later	1 pc
Unknown	M-type flood coater	Confirmed later	1 pc
67NTY002	Foot pedal switch		1 pc
*F412(T70)	Flat squeegee rubber	70°x1500mm	1 pc
YH50116	Spherical peak Allen key	2.5/3/4/5/6/8mm	1 set
YH50117	Flat peak Allen key	5mm*160L	1 pc
YH50075	Allen key with handle	8 mm	1 pc
YH50055	Adjustable wrench	12”	1 pc
YH50352	Cross screw driver	4”	1 pc
YH50376	Flat screw driver	2”	1 pc
YH50028	Open wrench	08/10 mm	1 pc
YH50037	Open wrench	21/23 mm	1 pc
57CEY001	H type clamp		4 pcs
57CM103	Gap gauge		1 pc
YD60001	Tool case (red)		1 pc
YD40340	key	C-408-H1	2 pcs
TMF60-S1-1	Instruction Manual	ATMAOE MF66	1 pc