



UNIVERSAL PCB EQUIPMENT CO LTD



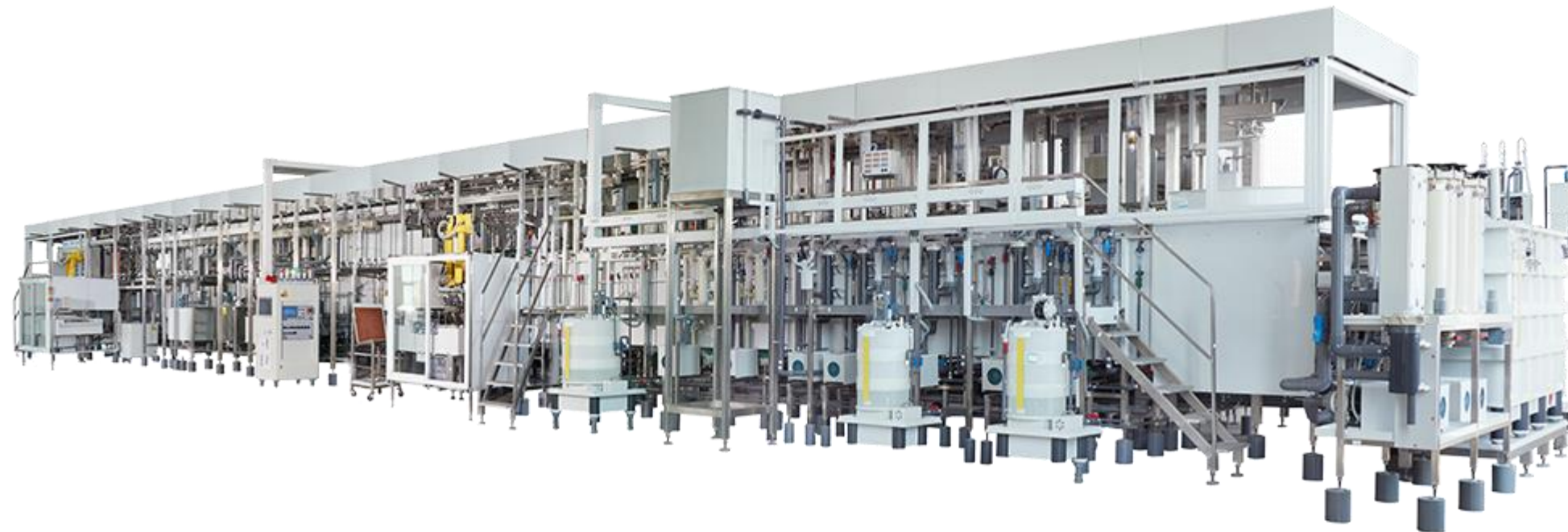
Insulectro - A Distributor of Equipment Technologies



Vertical Continuous Copper Plating Machine



U Type Vertical Continuous Plating Machine



Capability

Panel Size(FPC):	500mmW x 500mmL(max) 250mmW x 250mm L(min) 0.012mm(core)+12/12µm Cu~1.2mm
Throwing Power:	Through Hole <P0.1mm, TP>150% Blind Hole <P0.05mm, AR= 1:1, TP>90%
Filling Power:	Blind Hole <P0.05mm, AR= 1:1 Filling Hole Rate>95%
Plating Uniformity:	COV <5% (1/σ Standard Deviation/ Average Value) Absolute Deviation < +10% R<2.5µm (fiiiii) Cu=12µm
Panel Size (Rigid Board):	622 mmW x 635mm L(max)(standard) 622 mmW x 735mm L(max)(Heightened) 355 mmW x 406mmL(min) 0.1mm(core)+ 12/12µm Cu~3.2mm
Throwing Power:	Through Hole <P0.2 mm~ 0.2 5 mm, AR= 8:1, TP>90% Through Hole <P0.2 mm~ 0.25 mm, AR= 10:1, TP>85% '@:r Blind Hole <P0.1mm, AR= 1:1, TP>90%
Filling Power :	Blind Hole <P0.075mm ~0.1mm, AR= 1:1 Filling Hole Rate>95% Blind Hole <P0.12mm~ 0.15mm, AR= 1:1 Filling Hole Rate>90%
Plating Uniformity:	COV <5% (Standard Deviation/Average Value) Absolute Deviation < +10% R<5µm (Cu =25µm)

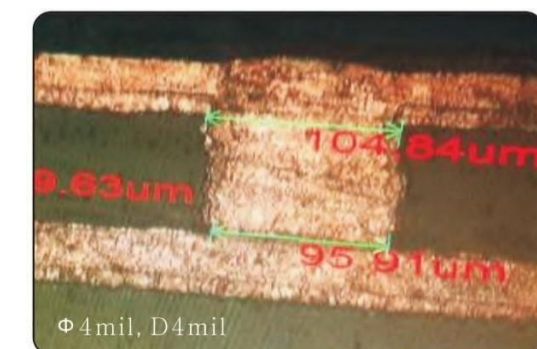
Specification and capability are subject to contract, and machine should work with proper chemicals and current density

Application:

First plating, Full panel plating, Pattern plating, VIA Fill plating, Half VIA Fill plating

Fill-up rate >95%, working parameters are as below:

Flash Plating Tank's Current	Copper Plating Tank's Current	Speed (m/min)	Spray Flowrate (LPM)	Flash Plating Time (min)	Plating Time (min)	Flash Plating Thickness (µm)	Plating Thickness (µm)
18ASF	15ASF	0.35	300-350	9.25	60	3.4	19



VCP Recommended Reference

Plating Line				Technology			Rigid Panel Thickness		Flex Panel (FPC)	Anode Type		500mm deep FPC panel installation dimensions		635mm deep panel installation dimensions		730mm deep panel installation dimensions		
General classification	Medium classification	Rectifier	Cathode flight bar	Panel plating	Pattern plating	Hole filling	0.3-3.2mm	0.05-3.2mm	0.036-1.2mm	Soluble	insoluble	(m m) Width	(m m) Height	(m m) Width	(m m) Height	(m m) Width	(m m) Height	
Transfer-type VCP	Single-row Upper and Lower transfer-type VCP	DC	Top clamp	●	●	●	●	●	●	●	●	2950	3800	2950	4000	2950	4200	
		Pulse-electroplating		●	○	*	●	●	*	●	*	*	*	3650	4000	3650	4200	
		DC	Upper and lower clip frame	●	●	●	●	●	●	●	●	●	2950	4800	2950	5000	2950	5200
		Pulse-electroplating		●	○	*	●	●	*	●	*	*	*	3650	5000	3650	5200	
	Double-row Upper and Lower Transfer-type DVCP	Top clamp	DC	●	●	●	●	●	●	●	●	●	4350	3800	4350	4000	4350	4200
			Pulse-electroplating	●	○	*	●	●	*	●	*	*	*	5500	4000	5500	4200	
		Upper and lower clip frame	DC	●	●	●	●	●	●	●	●	●	4350	4800	4350	5000	4350	5200
			Pulse-electroplating	●	○	*	●	●	*	●	*	*	*	5500	5000	5500	5200	
	Single-row Li-transfer-type UVCP	Top clamp	DC	●	●	●	●	●	●	●	●	●	5120	3500	5120	3600	5120	3700
			Pulse-electroplating	●	○	*	●	●	*	●	*	*	*	5120	3600	5120	3700	
		Upper and lower clip frame	DC	●	●	●	●	●	●	●	●	●	5120	3600	5120	3750	5120	3850
			Pulse-electroplating	●	○	*	●	●	*	●	*	*	*	5120	3750	5120	3850	
	Double-row Li-transfer-type UDVCP	Top clamp	DC	●	●	●	●	●	●	●	●	●	7000	3500	7000	3600	7000	3700
			Pulse-electroplating	●	○	*	●	●	*	●	*	*	*	7000	3600	7000	3700	
		Upper and lower clip frame	DC	●	●	●	●	●	●	●	●	●	7000	3600	7000	3750	7000	3850
			Pulse-electroplating	●	○	*	●	●	*	●	*	*	*	7000	3750	7000	3850	
Integrated-type EVCP	EVCP Integrated-type	DC	Top clamp	●	*	*	●	*	*	●	●	*	*	2350	3600	2350	3700	
		Pulse-electroplating		●	*	*	●	*	*	●	*	*	*	2350	3750	2350	3850	

● Applicable

* Not applicable

○ Applicable for copper plating, not applicable for tin plating

1. No insoluble anode has been used in Pulse-electroplating

2. -Integrated type is not recommended for pattern plating nor hole filling process, and is not recommended for manufacturing thin panel



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