

FOX SMD Pick & Place System

Version 3.0, May 2017

Specifications

		FOX ¹		FOX ²		FOX ⁴	
		Stand Alone	In Line	Stand Alone	In Line	Stand Alone	In Line
Productivity ⁽¹⁾	Optimum placement speed Chip	7'000 cph		12'000 cph		18'800 cph	
	Speed (IPC 9850)	Chip 6'100 cph QFP 5'600 cph		Chip 10'800 cph QFP 5'600 cph		Chip 16'100 cph QFP 7'600 cph	
	Speed (IPC 9850A)	Chip 5'900 cph QFP 4'500 cph		Chip 10'300 cph QFP 4'500 cph		Chip 15'000 cph QFP 5'600 cph	
	Job changeover time	< 1 min (loading job, adjust conveyor/table, restart production)					
Feeder	Feeder system	CLM (intelligent cassette feeder) ⁽¹⁾ hyQ (intelligent single feeder) <i>⁽¹⁾ on FOX⁴ not front-side mounting possible</i>					
	Feeder capacity (8mm tape)	180	120	180	120	180 / 200 ⁽²⁾	120 / 140 ⁽²⁾ <i>⁽²⁾ with optional Extended Rack</i>
Components	Component size range	0201 – 33 x 33 mm incl. leads → Standard 0201 – 80 x 33 mm incl. leads → With optional MFOV ⁽³⁾ software license Up to 80 x 80 mm incl. leads → With opt. MFOV license and Vision Box ⁽⁴⁾ 01005 (0.4x0.2mm) → With opt. Nozzle 0 and hyQ feeder type <i>⁽³⁾ Multi Field of View ⁽⁴⁾ Requires space of up to 10 Feeder lanes front side</i>					
	Mass moment of inertia	60 g x cm ²					
	Min. lead pitch	0.3 mm (12mil)					
	Min. ball diameter / pitch	0.2 mm					
	Min. component height	> 0.0 mm					
	Max. component height	Standard: 18 mm / On request 25 mm					
	Process height	± 18 mm (0.71") from zero height					
	Accuracy	Linear encoder resolution (x,y)	0.2 µm				
Rotation axis resolution		0.007°					
Overall placement accuracy XY Chips		± 50 µm (3σ) ²					
Overall placement accuracy XY QFP 64/100		± 45 µm (3σ) ²					
PCB	Min. PCB dimensions	20 x 20 mm (0.8 x 0.8")	50 x 50mm (2 x 2")	20 x 20 mm (0.8 x 0.8")	50 x 50mm (2 x 2")	20 x 20 mm (0.8 x 0.8")	50 x 50mm (2 x 2")
	Max. PCB dimensions	406 x 305 mm (16 x 12")					
	PCB thickness	0.5-3.5 mm (0.02 - 0.13")	0.5-5.0 mm (0.02 - 0.2")	0.5-3.5 mm (0.02 - 0.13")	0.5-5.0 mm (0.02 - 0.2")	0.5-3.5 mm (0.02 - 0.13")	0.5-5.0 mm (0.02 - 0.2")
	PCB edge clearance	3.0-5.0 mm (0.11 - 0.2") <i>(varies with PCB thickness)</i>	T: 3.0 mm (0.11") B: 5.0 mm (0.2")	3.0-5.0 mm (0.11 - 0.2") <i>(varies with PCB thickness)</i>	T: 3.0 mm (0.11") B: 5.0 mm (0.2")	3.0-5.0 mm (0.11 - 0.2") <i>(varies with PCB thickness)</i>	T: 3.0 mm (0.11") B: 5.0 mm (0.2")
	Max. Board weight	-	4 kg (8.8 lb)	-	4 kg (8.8 lb)	-	4 kg (8.8 lb)
	Conveyor height	-	SMEMA 940 – 965 mm	-	SMEMA 940 – 965 mm	-	SMEMA 940 – 965 mm
	Clearance below PCB	40 mm (1.57")					

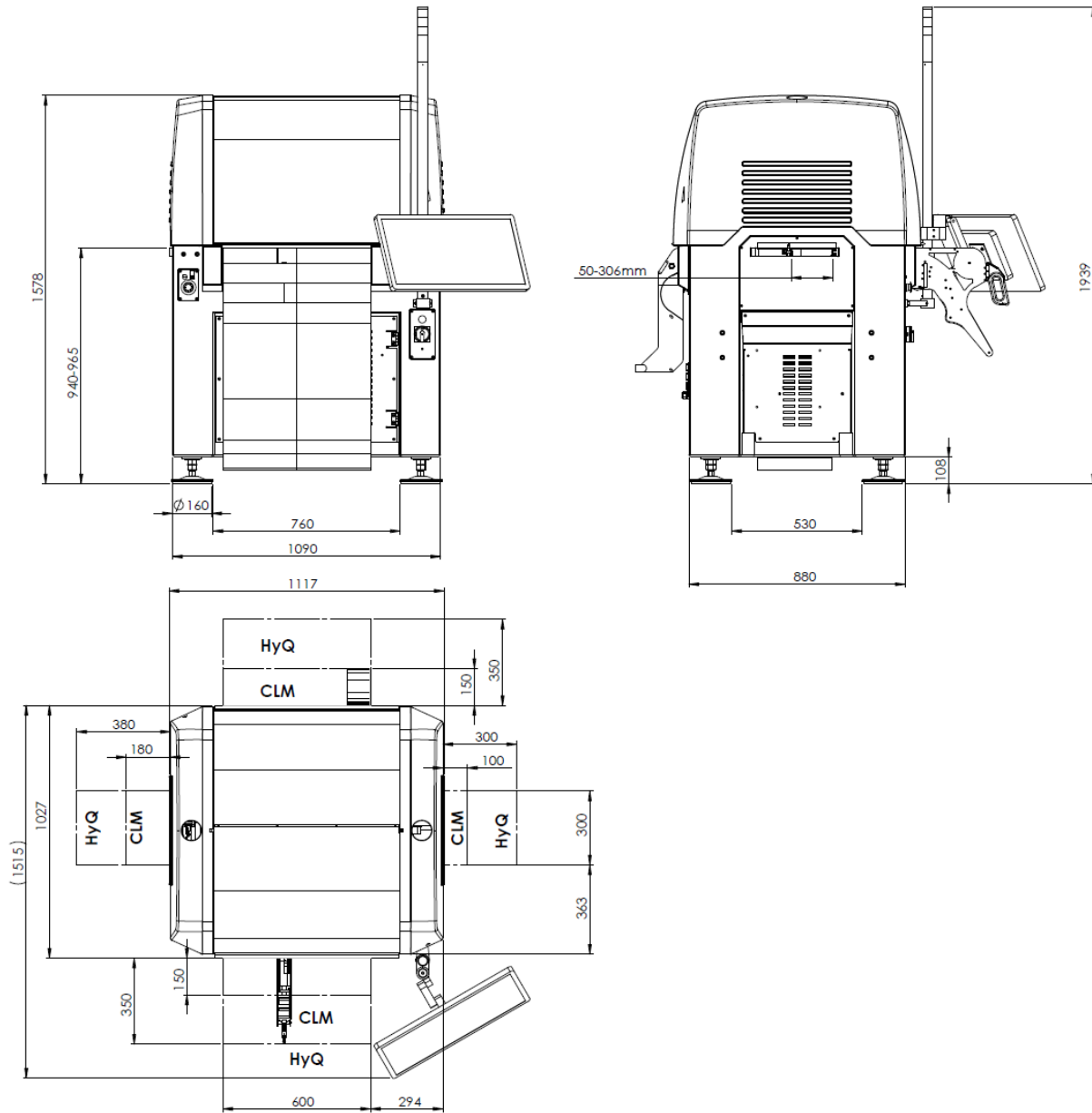


Configuration

		FOX ¹		FOX ²		FOX ⁴	
		Stand Alone	In Line	Stand Alone	In Line	Stand Alone	In Line
Machine base	Pick & Place head with 1 spindle	●	●				
	Pick & Place head with 2 spindles			●	●		
	Pick & Place head with 4 spindles					●	●
	Stand Alone type (PCB table, magnetic PCB holder, support pins)	●		●		●	
	In Line type (Conveyor 3 stage, support pins, manual width adjustment)		●		●		●
	Dispensing preparation kit (Dot plate, purge and z-height calibration station)	○	○	○	○		
	Interior lighting LED	●	●	●	●	●	●
	Signal tower (3 color)	○	○	○	○	○	●
PCB Handling	SMEMA interface		●		●		●
	Conveyor direction L/R, R/L, batch mode R/R, L/L		●		●		●
	Automatic width adjustment		○		○		●
	Conveyor extensions		○		○		○
	PCB inspection station on conveyor		○		○		○
Control and software	ePlace P&P software (En, De, Ru, Pl, Zh, Es, Cs, Ja)	●	●	●	●	●	●
	Machine PC with Windows 10 OS and 21.5" touch screen	●	●	●	●	●	●
	Technical support software	●	●	●	●	●	●
Alignment systems	Cognex SMD4 PatMax vision license (fiducials, chip, QFP, asymm. BGA and leads)	●	●	●	●	●	●
	Multi Field of View license (MFOV)	○	○	○	○	○	○
	Vision Box for 80x80mm components	○	○	○	○	○	○
	Laser height measurement	○	○	○	○	○	○
Dispensing valves (Cartridge sizes)	Time/pressure valve (5, 10, 30 cm ³)	○	○	○	○		
	Archimedean screw valve (5, 10, 30 cm ³)	○	○	○	○		
	Volume Dispenser (10, 30, 50 cm ³)	○	○	○	○		
	Jet valve (5, 10, 30 cm ³)	○	○	○	○		
	Pneumatic-Jet valve (5, 10 cm ³)	○	○	○	○		
	Cartridge level control	○	○	○	○		
	Dispenser Needle Heating	○	○	○	○		
Various (extract)	Standard User Level Management (software)	●	●	●	●	●	●
	Bad mark sensing with vision (software)	●	●	●	●	●	●
	Universal CAD conversion (software)	●	●	●	●	●	●
	Automatic Placement constraints (software)	●	●	●	●	●	●
	Basic calibration set P&P	●	●	●	●	●	●
	Maintenance kit	●	●	●	●	●	●
	Key Performance Indicator (KPI) (software)	○	○	○	○	○	○
	Process Improvement Tool P&P (PIT1) (software)	○	○	○	○	○	○
	Barcode Reading over Top Camera (software)	○	○	○	○	○	○
	Disp. Process Control Adjustment & Stabilization (PCAS) (software)	○	○	○	○		
	Second touch screen for machine backside	○	○	○	○	○	○
	Clean Room Option	○	○	○	○	○	○
	CVU (Component Verification Unit)	○	○	○	○	○	○
	Tray Slider (space for two additional trays)			○	○	○	○
Extended Feeder Rack (additional feeder lanes)					○	○	

● standard feature ○ optional feature

Dimension Drawings



- 1) Requires Software ePlace V23.0 and higher. Values reached using hyQ feeder type only.
- 2) Used speed mode "Accurate", up to 4 different speed modes available. Only applicable at zero height and within performance temperature / humidity range.

More information available in the FOX System Description and Product Notes. Please ask for it.

Disclaimer & Copyright:

We reserve the right to make changes without notice. All materials contained in this brochure are copyright © Essemtec AG, Switzerland, May 2017