



**FLEXIBLE
SOLUTIONS**
FOR **Electronics Assembly
Automation**

Performance

PPM offers the field proven "C" series SMT placement systems for economical, high precision SMT production. Integrating ultra-fine pitch precision with system flexibility, these modular assemblers offer a comprehensive range of solutions for diverse SMT applications. The Quad IVc & IIc has been replaced with a state-of-the-art Pentium PC, Windows® XP, and the PrecisionPlace Pro control software.

The existing control hardware & software are removed from the machine and replaced with a rack mounted industrial Pentium PC running Windows® XP Pro and the PrecisionPlace Pro control software. It has easier programming capabilities, faster and more accurate setup / changeover times, simplified maintenance & repair procedures to name a few of the enhancements..

Platform

Adaptable for either stand-alone or in-line SMT applications, the "C" Series System accepts boards up to 18" x 23.9". Detachable base feeder carts support quick setup and rapid changeover. A matrix tray handler and bulk, vibratory or electronic tape feeders are also available. The AutoProgram operating software offers CAD support and automatic program generation for easy setup and operations.

Advanced Features for Maximum Precision

The QuadAlign in-process component alignment technology system, a high resolution vision system and direct drive theta maximizes the "C" Series system precision. The QuadAlign system provides automatic correcting for X, Y and theta positioning before placement.

The QuadVu 6 upward vision system offers programmable illumination angle and true measurement quality optics to create accurate video images. Interactive programmable illumination significantly increases the accuracy of fiducial correction and lead identification for fine pitch placement.

Quad 4000C

**PrecisionPlace Pro Software included
& Windows® XP Pro Operating System**



Features, Options and Benefits

- Windows® XP Pro Operating System
- Rack Mount industrial Pentium computer
- Intelligent Feeder System
- Optimization utility for your placement program
- Virtual component placement checking
- Offline programming software
- Built in CAD conversion utility
- Optimizer generates feeder locations on tabletop
- DOS central controller program conversion
- Rapid feeder setup
- PCB Population and component representation with point and click identification
- Tabletop changeover report with feeder locations

4000C - General Specifications

4000C Model	/120	/90	/68
Maximum Placement Rate	3600 CPH	3600 CPH	3600 CPH
Component Processing Range	0201 to 76.2mm (3.0") square		
QuadAlign Alignment			
Component range	0201 – QFP 208		
Minimum pitch	.635mm (0.025")		
QuadVu 6 Upward Vision Alignment*			
Minimum pitch	0.4mm (0.016")		
Feeder Capacity			
8mm feeders	120	90	68
8mm feeders w./Vu6	110	90	68
Placement repeatability @ 3 sigma			
Fine pitch	±0.060mm (±0.002")		
Chips	±0.100mm (±0.004")		
Number of placement nozzles	6		
Facilities			
Length	1067mm (42")	1321mm (52")	1067mm (42")
Width	1067mm (42")	1067mm (42")	1067mm (42")
Height (w/light tower)	1829mm (72")	1829mm (72")	1829mm (72")
Floor space requirements			
Length (w/computer console)	1524mm (60")	1524mm (60")	1524mm (60")
Width (w/ 7" reels & console)	1905mm (75")	2286mm (90")	1905mm (75")
Power requirements			
Input line voltage	200, 208, 220, 230 or 240 VAC, single phase		
Inline line frequency	50/60 Hz		
Power consumption	1.2 KVA		
Compressed air	5.56 bar (80 - 100 psi)		
Air flow	203 l/m (8.1cfm)	521l/m (2.1cfm)	521l/m (2.1cfm)
Operational temperature range	13° - 35°C (°55 - 95°F)		
Relative humidity	30 - 90%		
Shipping dimensions & weight			
Length	1220mm (48.0")	1524mm (60.0")	1220mm (48.0")
Width	1220mm (48.0")		
Height	1752mm (69.0")		
Shipping Weight	589kg (1300 lbs)	635kg (1400 lbs)	589kg (1300 lbs)
Accessories box dimensions	107 x 107 x 107mm (4.2" x 4.2" x 4.2")		
Accessories box weight	113kg (250 lbs)		

Board Handling

Maximum board size			
Width	457mm (18.0")	457mm (18.0")	457mm (18.0")
Length	457mm (18.0")	559mm (22.0")	607mm (23.9")
Minimum board size			
Width	not limited	51mm (2.0")	51mm (2.0")
Length	not limited	76mm (3.0")	76mm (3.0")
Conveyor height	952.5mm ±12.7mm (37.5 ±0.5"); SMEMA		
Maximum board warpage	±1.65mm (±0.065")		
Registration type	Edge, fiducial	Edge, pin, fid.	Edge, pin, fid.
Edge clearance	1.90mm (0.075")	17.8mm (0.70")	17.8mm (0.70")
Underside board clearance	45.7mm (1.8")	10.6mm (0.42")	10.6mm (0.42")
Topside board clearance	7.62mm (0.30")	7.62mm (0.30")	7.62mm (0.30")

Positioning System

User interface	Windows® XP
Camera teach capability	standard
Multi-image panels	standard
Rotated board images	standard
Component pattern repeats	standard
CAD/ASCII data input	standard - CAD for Windows® XP
Feeder optimization	standard - OLS & CAD for Windows® XP
Placement optimization	standard - Offline Loading Station
Line balancing	standard - Offline Loading Station
Integrated PC controller	standard - Industrial rack PC w/Pentium & SVGA

Vision System

Processing type	ICOS MVS 256-gray level pattern recognition system
QuadVu 3 Downward Vision	
Fiducial alignment types	board, panel, local
Fiducial target types	any repeatable image (scene)
Synthetic fiducial capable	square, circle, rectangle
Bad image rejection	standard Vu3
Bad image target types	light to dark or dark to light contrast
Lighting type	LED array
Light level adjust	automatic software control
Field of view	15.24mm (0.6")
QuadVu 6 Upward Vision	
	Fine Pitch Placement
Lighting type	bright and/or dark field illumination
Light level adjust	automatic software control
Optics type	telecentric
Field of view	38.1mm (1.5")
Multiple field of view	standard (components larger than 1.3" [33.02mm])
Processing time per view	1-3 seconds typical

Positioning System

X-Y drive system	micro-stepper motor-driven**
X-Y encoder type	linear glass scale
X-Y axis resolution	±0.0127mm (±0.0005")
Z-drive system	high performance stepper motor-driven ball spline
Z-axis resolution	±0.025mm (±0.001")
Theta drive system	stepper motor-driven anti-backlash twin gear assembly
Theta axis resolution	0.015°

Optional IQ Feeder System on the C-Series

Intelligent Feeders
 Reduces set up errors and costly rework
 Real time component inventory tracking
 Offline Loading Station, to setup feeders offline
 Inventory Management
 Bar Code System
 MT-30 Matrix Tray Handler

Optional Equipment

Detachable base docking feeder cart
 Underside board support
 MT-20 matrix tray handler
 Stationary matrix tray holder
 Vibratory Stick Feeders
 Offline Programming Station

