ENABLING THE DIGITAL WORLD

ASM E-SOLUTIONS LINE

Quality and performance guaranteed
COMPARE!
ALL-ROUNDER WITH TOP PERFORMANCE

With placement machines and stencil printers from the AMS E-Solutions Line you produce top quality at high speeds while enjoying a new level of flexibility. You improve your equipment performance and utilization, minimize costs, and become more competitive. Make the comparison.

There’s more: All central workflows on your factory floor benefit from ASM software solutions in the world’s leading electronics manufacturing plants. Manufacture the smart way and employ intelligent software to optimize your production, accelerate your processes, and maximize their stability.

With ASM’s E-Solutions Line, making your production smart quickly pays for itself – guaranteed.

One ASM offers all this:

- Best-in-class equipment
- State-of-the-art software technologies
- Integrated workflows
- Reliable material logistics
- Efficiently automation
- Suppliers, customers and users fully connected
- Investment protection through strategic initiatives (IPC-HERMES-9852, ADAMOS)
TYPICAL PRODUCTION PROFILE

4  Automotive
6  Industrial
8  EMS
10 Consumer electronics
TYPICAL MANUFACTURING PROFILE
AUTOMOTIVE

TYPICAL REQUIREMENTS
▪ High process quality and stability
▪ Material traceability
▪ Broad spectrum of small and large component shapes, including exotic snap-in connectors (odd-shaped components)

E-SOLUTIONS IMPACT ON KPIS

Equipment utilization  
Yield/quality  
Cost of rejected components  
OEE

CIRCUIT BOARD CHARACTERISTICS
▪ Typical board sizes ranging from 75 × 75 mm to 450 × 460 mm, few small PCBs.
▪ Placement performance per line 20,000 – 30,000 cph
▪ 1–2 setup changeovers per day
▪ Average number of products/variants
▪ Components ranging from 0402 to exotic snap-in connectors supplied on trays (100 mm × 50 mm) that must be picked up with special grippers

ASM SOLUTIONS (HARDWARE & SOFTWARE)
▪ Tray changers and stick feeders for exotic and bulky components
▪ Smart feeders
▪ ASM Line Monitor for reliable material supplies
▪ Odd-Shaped Component Package
▪ Paste verification (DEK HawkEye)
▪ Roll Height Monitor
▪ Closed-look printing optimization with SPI
▪ Verification & traceability
▪ Optional: Automotive Electronic Pack
SAMPLE LINES

Line 1

Line 2

PERFORMANCE CALCULATIONS

<table>
<thead>
<tr>
<th>Configuration</th>
<th>No. of setups</th>
<th>No. of products</th>
<th>cph</th>
<th>Utilization</th>
<th>Feeders required</th>
<th>Comp. up to 6 x 6 mm</th>
<th>Comp. up to 45 x 45 mm</th>
<th>Comp. up to 200 x 110 mm</th>
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</thead>
<tbody>
<tr>
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<td>#1</td>
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<td>26,110</td>
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<td>101</td>
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<tr>
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<td>75 %</td>
<td>148</td>
<td>132</td>
<td>15</td>
<td>3</td>
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TYPICAL MANUFACTURING PROFILE
INDUSTRIAL

TYPICAL REQUIREMENTS
- High product quality
- Material traceability
- Large circuit boards
- Expensive components
- Large placement volume per board

E-SOLUTIONS IMPACT ON KPIS
- Equipment utilization
- Speed
- Cost of rejected components

CIRCUIT BOARD CHARACTERISTICS
- Typical board sizes ranging from 75 × 75 mm to 600 × 450 mm
- Placement performance per line 15,000 – 25,000 cph
- Up to 200 difference components per board
- 1 setup changeover per day
- Few variants, long production times
- Components ranging from 0402 to exotic snap-in connectors supplied on trays (100 mm × 50 mm) that must be picked up with special grippers

ASM SOLUTIONS (HARDWARE & SOFTWARE)
- Long Board Option for lengths of up to 1,200 mm and LED products
- Tray changers and stick feeders for exotic and bulky components
- Integrated PCB control for shield placements and expensive components eliminates special inspections and/or special shield placer modules
- Odd-Shaped Component Package
- Stencil mount adjustable from 14" to 29"
- Optional: Module Pack
**SAMPLE LINES**

**Line 1**

![Line 1 Diagram]

- CP14
- CP12
- CP12/PP & JTF

**Line 2**

- CP14
- CP12
- TH & JTF

**PERFORMANCE CALCULATIONS**

<table>
<thead>
<tr>
<th>Configuration</th>
<th>No. of setups</th>
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<th>cph</th>
<th>Utilization</th>
<th>Feeders required</th>
<th>Comp. up to 6 x 6 mm</th>
<th>Comp. up to 45 x 45 mm</th>
<th>Comp. up to 200 x 110 mm</th>
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<td>132</td>
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<tr>
<td>Line 2</td>
<td>#1</td>
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<td>27,468</td>
<td>75 %</td>
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<td>202</td>
<td>19</td>
<td>3</td>
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<td>#2</td>
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<td>37,539</td>
<td>75 %</td>
<td>148</td>
<td>132</td>
<td>16</td>
<td>2</td>
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TYPICAL MANUFACTURING PROFILE
EMS

TYPICAL REQUIREMENTS
- Low production costs and/or placement costs per component
- Material traceability
- Intelligent material management
- Assignment of production data to individual customers (product details, placement protocols, material data)

E-SOLUTIONS IMPACT ON KPIS
- Equipment utilization
- Cost of rejected components
- Setup effort (time/costs)
- Placement performance

CIRCUIT BOARD CHARACTERISTICS
- Typical board sizes ranging from 75 × 75 mm to 508 × 620 mm.
- Placement performance per line 10,000 – 20,000 cph
- 2-4 setup changeovers per day
- Large product mix, few component commonalities
- Components ranging from 0402 to exotic snap-in connectors supplied on trays (100 mm × 50 mm) that must be picked up with special grippers

ASM SOLUTIONS (HARDWARE & SOFTWARE)
- Material management for transparency
- Tray changers and stick feeders for exotic and bulky components
- Optimization tools for setups and production schedules
- Special functions for rapid offline NPIs on printers and placement machines
- Innovative setup concepts and random setup for rapid setup changeovers
- Visual performance monitoring Live KPIs and work progress
- Long-Board Option for sizes of up to 1,200 mm for placement machine and 620 mm for printer
- Flexible board support with DEK Grid-Lok
- Optional: Module Pack
SAMPLE LINES

Line 1

<table>
<thead>
<tr>
<th>Configuration</th>
<th>No. of setups</th>
<th>No. of products</th>
<th>cph</th>
<th>Equipment utilization</th>
<th>Feeders required</th>
<th>Comp. up to 6 x 6 mm</th>
<th>Comp. up to 45 x 45 mm</th>
<th>Comp. up to 200 x 110 mm</th>
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<td>19,429</td>
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<td>166</td>
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<td>26,163</td>
<td>78 %</td>
<td>174</td>
<td>166</td>
<td>8</td>
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PERFORMANCE CALCULATIONS
TYPICAL MANUFACTURING PROFILE
CONSUMER ELECTRONICS

TYPICAL REQUIREMENTS
▪ Low placement cost per component
▪ Material traceability
▪ Medium-sized component spectrum
▪ Low-mix/medium-volume production

E-SOLUTIONS IMPACT
ON KPIS
▪ Equipment utilization
▪ Placement performance
▪ Equipment availability

CIRCUIT BOARD CHARACTERISTICS
▪ Typical board sizes: 75 × 75 mm to 300 × 250 mm.
▪ Placement performance per line 10,000 – 20,000 cph
▪ 1 setup changeover per day
▪ Small product spectrum
▪ Components ranging from 0402 to odd-shaped components

ASM SOLUTIONS (HARDWARE & SOFTWARE)
▪ ASM Setup Center for material verification and setup preparation
▪ Optimization tools for production data and family setups
▪ Multi-stick/tube feeders for various components
▪ Integrated PCB control for shield placements and expensive components eliminates special inspections and/or special shield placer modules
▪ Squeegee speed: 300 mm per second
▪ Optional: Consumer Electronic Pack and LED Pack
SAMPLE LINES

Line 1

CP12

Line 2

CP12

CP12/PP

PERFORMANCE CALCULATIONS

<table>
<thead>
<tr>
<th>Configuration</th>
<th>No. of setups</th>
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<th>cph</th>
<th>Equipment utilization</th>
<th>Feeders required</th>
<th>Comp. up to 6 × 6 mm</th>
<th>Comp. up to 45 × 45 mm</th>
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<tr>
<td>Line 2</td>
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<td>19,429</td>
<td>81 %</td>
<td>174</td>
<td>166</td>
<td>8</td>
<td>0</td>
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</tbody>
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