System Features
- Placement rates up to 4800 cph
- Accommodates board widths up to 13.5". Board lengths range from 12" to 32" depending on model. *(See Specifications)*
- Placement accuracy to 0.001"
- Vision system with fiducial correction, on-board dual function camera/computer color monitor
- Flexible feeder set-up allows easy interchange of electro-optical SmartCount™ tape, feeders
- On-the-fly component centering or optional touchless Cyberoptics® laser centering
- Resolution of 0.0000787" (2 microns) and accuracy to 0.001. Accurately places virtually all SMT components including discretes, SOICs, PLCCs, QFPs, and BGAs
- Capable of placing fine pitch components as low as 15 mil (0.381mm) and 0201s*

Automated Pick & Place
- Interchangeable tape, tube, bulk or tray feeders
- Fully self-contained all electric system. No shop air required
- Friendly, easy to use Windows® based software
- Automatic 4-position nozzle changer
- Fiducial correction
- Optional CAD transfer software.
- Software for panelized boards
- Accessible, unobstructed work plate for operator
- Heavy, welded, steel frame construction
- Full interlock system for operator safety
- Optional convenient SuperStrip™ feeders for short tape strips
- Optional fluid dispenser

L Series System Configuration
The L Series machines come in three basic sizes:

- The **L40** has a maximum board size of 13.5" x 22" and a maximum capacity of 64 8 mm tape feeders.
- The **L60** has a maximum board size of 13.5" x 32" and a maximum capacity of 96 8 mm tape feeders.

Options are available for both models.

Operation
Once a specific PCB is programmed, the machine automatically picks up each component from its designated feeder or tray, centers the part via laser Cyberoptics® or centering fingers, moves to the placement location via closed loop servo system, and accurately places the part. The feeders automatically position the next component for pick-up.

Vision Centering
LS40V & LS60V vision assist pick & place systems use the full features of Cognex® vision centering. Bottom, top and on-the-fly places CSPs, micro BGAs and 15 mil pitch QFPs

Feeders
Easy to change SmartCount™ electro-optical feeders available for tape, tube, bulk or matrix tray components.

Standard tape feeder sizes include 8 mm, 12 mm, 16 mm, 24 mm, 32 mm and 44 mm.

The L40 has a feeder capacity of 64, and the L60 has a feeder capacity of 96 positions. With the optional 12 position 8 mm bank feeders, capacity can increase by 50%, i.e. the model L60 would increase to a capacity of 144 8 mm tape feeders.

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The vibratory feeder can handle loose and tube components.

Unique SuperStrip™ feeders are a convenient way to use short tape strips.

Feeder positions are pre-programmed for quick set-up.
Laser Centering
The touchless Cyberoptics® centering option enables fast and accurate placement of the complete range of components.

Components
A wide range of components can be placed including 0201s, 0402s, 0603s, 0805s, 1206s, melfs, SO-28 to SO-8s, SOTs, SOICs, (fine pitch) QFPs, BGAs, large PLCCs, sockets and many others.

Software
The latest pentium PCs are included with these machines, and the software is Windows™ based to allow easy straightforward teach-in, requiring minimal operator training.

Multiple (panelized) boards can be programmed using the quick step-and-repeat feature.

Vision System
The teach-in camera magnifies the positions onto a dual use color monitor. Its built-in vision software provides fiducial correction of misregistered boards.

Fluid Dispenser
Computer controlled in 10 millisecond increments with separate interval/raise-lower speed allows solder paste or adhesive glue to be applied accurately prior to component placement. This time/pressure fluid dipenper has dispense rates up to 10,000 dots per hour.

Standard Features on all Models
- Automatic 4-position nozzle changer with 4 nozzles
- Friendly easy to use Windows® interface including software for panelized boards, self diagnostics, error recognition, fault monitoring and more!
- On-the-fly component centering using centering fingers
- Fiducial correction
- The latest pentium PC with flat screen monitor
- Positional resolution of 0.0000787” (2 microns) with closed loop micro servo driven motion control and digital encoders
- The component squaring station enables accurate placement of fine pitch components while protecting fragile leads from damage due to excessive force

Accessories/Options
- Universal CAD transfer software
- Touchless Cyberoptics® laser centering system
- SuperStrip™ feeders for pickup from short tape strips
- SmartCount™ electro-optical tape feeders
- Tube and bulk feeders
- Matrix tray holders
- Bank Feeders (12 8mm lanes) offer a lower per lane cost and higher 8mm feeder capacity
- Automatic fiducial correction
- Fully computerized fluid dispensing system
- Micro nozzles or Multi-Micro nozzles for small components
- Touch screen with enhanced operator interface
- Cognex® vision assist placement models: LS40V & LS60V
### Specifications

<table>
<thead>
<tr>
<th>Feature</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max board area L60</td>
<td>13.5’ x 32’ (343 x 813 mm)</td>
</tr>
<tr>
<td>Max board area L40</td>
<td>13.5’ x 22’ (343 x 560 mm)</td>
</tr>
<tr>
<td>Max travel area L60</td>
<td>22’ (X axis) x 32’ (Y axis) (560 x 813 mm)</td>
</tr>
<tr>
<td>Max travel area L40</td>
<td>22’ (X axis) x 22’ (Y axis) (560 x 560 mm)</td>
</tr>
<tr>
<td>Z axis max travel</td>
<td>1.5” (38 mm)</td>
</tr>
<tr>
<td>Board thickness</td>
<td>0.020” - 0.156” (0.5mm - 4.0 mm)</td>
</tr>
<tr>
<td>Typical verifiable placement rate</td>
<td>2500-3600 cph</td>
</tr>
<tr>
<td>Max placement rate</td>
<td>4800 cph</td>
</tr>
<tr>
<td>Placement accuracy</td>
<td>±0.006” standard, ±0.001”***</td>
</tr>
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</tr>
</tbody>
</table>

### Machine Accessories/Options

- **L-N4C** - Extra 4 position nozzle changer - for 8 total positions
- **L-CL** - Cyberoptics® centering laser
- **L-LD** - Liquid dispenser
- **L-BHS** - Board support
- **L-UCT** - CAD editor software option
- **L-AFO** - Auto fiducial recognition
- **L-TS** - Touch screen with enhanced operator interface

### Tape Feeders

- **L-T8** - 8 mm tape feeder - option
- **L-T8-0201** - 8 mm tape feeder - for 0201 or larger components - option
- **L-T12** - 12 mm tape feeder - option
- **L-T16** - 16 mm tape feeder - option
- **L-T24** - 24 mm tape feeder - option
- **L-T32** - 32 mm tape feeder - option**
- **L-T44** - 44 mm tape feeder - option**
- **L-BF-12** - Bank feeder with 12 positions for 8 mm tapes - option

### Vibratory Feeder Inserts

- **L-VF** - Vibratory tube/bulk feeder - option
  - L-VFI-1 - Tube insert for SO8M, component width of 0.236” (6.0 mm)
  - L-VFI-2 - Tube insert for SO14/16M, component width of 0.236” (6.0 mm)
  - L-VFI-3 - Tube insert for PLCC84M, component width of 1.190” (30.2 mm)
  - L-VFI-4 - Tube insert for SOP16M, component width of 0.311” (7.9 mm)
  - L-VFI-5 - Tube insert for SOL28M, component width of 0.405” (10.3 mm)
  - L-VFI-6 - Tube insert for SOV32M, component width of 0.480” (12.2 mm)
  - L-VFI-7 - Tube insert for SOX40M, component width of 0.540” (13.7 mm)
  - L-VFI-8 - Tube insert for SOY40M, component width of 0.567” (14.4 mm)
  - L-VFI-9 - Tube insert for SQ244M, component width of 0.630” (16.0 mm)
  - L-VFI-10 - Tube insert for SOL32J, component width of 0.84” (21.4 mm)
  - L-VFI-11 - Tube insert for SOX44, component width of 0.441” (11.2 mm)
  - L-VFI-12 - Tube insert for PLCC28M, component width of 0.490” (12.4 mm)
  - L-VFI-13 - Tube insert for PLCC44M, component width of 0.690” (17.5 mm)
  - L-VFI-14 - Tube insert for PLCC68M, component width of 0.990” (25.1 mm)
  - L-VFB-0305 - Bulk insert for 0305 and 0603 components
  - L-VFB-0608 - Bulk insert for 0603 and 0805 components
  - L-VFB-1012 - Bulk insert for 1206 and 2512 components

### Other Feeders*

- **L-MBH** - Matrix tray holders (set of 2) - option
- **L-SS-XX** - Dual Lane SuperStrip™ feeder for strips from 1” to 12” - option
  - XX indicates tape width: 8, 12, 16, 24, 32, 44, or 56 mm

### Nozzles*

- **L-N025-030** - Standard
- **L-N035-050** - Standard
- **L-N050-080** - Standard
- **L-N109-140** - Standard
- **L-N187-218** - Large nozzle option
- **L-N281-312** - Large nozzle option
- **L-N016-200** - Micro nozzle option
- **L-N045-020** - Multi micro nozzle option

*Custom options, nozzles and feeders available - contact factory.
**Max. component depth to 0.500 inches including carrier
***with L-GS option (digital glass scales)

30 mm square (1.18 square) max size with Cyberoptics® centering laser option

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**Leasing Options Available...**

For more information, phone us at 1-215-485-5663 or email us at info@ddmnovastar.com