High-Speed, Servo-Electric Turret Punch Press

EM NT Series

EM 2510NT, EMK 3510NT, EMK 3610NT
Innovative Technology. Superior Performance.

**AC Servo Driven Technology**

The cutting-edge EM Series turret punch press uses twin AC servo drives directly coupled to the drive shaft. Amada’s third generation drive system combines the simplicity of the original clutch and brake technology with the high speeds of the fastest hydraulic ram driven systems. The result is unmatched performance, superior reliability, and lower operating costs.

- The highest real-world hit rates and ram positioning accuracy.
- Twin servo drives eliminate the need for complex hydraulics or oil-cooling chillers—dramatically reducing maintenance and repair costs over the life of the machine.
- Precision ram motion control (speed, stroke length, hover height and hold time) helps reduce tooling wear and punching noise.
- Lower operating cost: EM technology stores and reuses energy generated during ram deceleration, providing electrical power savings of up to 50% over typical hydraulic machines.

**TURRET**

- The EMK 3510NT and EMK 3610 are configured with Amada’s 58-station triple track King turret as standard equipment. The King turret includes two 4½” and two 1¼” auto-index stations.
- The EM 2510NT comes standard with a 45-station turret with two 1¼” and two 2” auto-index stations. A 58-station turret with two 1¼” auto-index stations is optional.
- Laser-hardened turret bores help maintain accurate punch and die alignment.
- Increased feed clearance of 0.984” between upper and lower turret allows a wider range of forming capabilities.

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**Type** | **Maximum Size** | **Number of Stations (Keyed)**  
--- | --- | ---  
A | ½” (12.7mm) | 24 (16)  
B | 1¼” (31.7mm) | 12 (12)  
C | 2” (50.8mm) | 2 (2)  
D | 3½” (88.9mm) | 1 (1)  
E | 4½” (114.3mm) | 2 (2)  

**Auto Index**  
B | 1¼” (31.7mm) | 2 (2)  
C | 2” (50.8mm) | 2 (2)

---

**Type** | **Maximum Size** | **Number of Stations (Keyed)**  
--- | --- | ---  
A | ½” (12.7mm) | 36 (24)  
B | 1¼” (31.7mm) | 12 (12)  
C | 2” (50.8mm) | 4 (4)  
D | 3½” (88.9mm) | 2 (2)  
E | 4½” (114.3mm) | 2 (2)  

**Auto Index**  
B | 1¼” (31.7mm) | 2 (2)  
C | 2” (50.8mm) | 2 (2)
Standard Features

Quick and Easy Tool Changes

- Punches drop directly into upper turret stations.
- Easy-change die holders reduce setup time by allowing the operator to change up to three dies at once.

Air Blow Tooling

The integrated air blow oil mist lubrication system automatically detects the presence of air blow tooling. A precise mixture of air and oil is injected into the die — increasing tooling life by up to 5 times. By lubricating the turret bores, slug pulling is virtually eliminated.

- Used in ½" and 1¼" stations.
- Punch penetration can be reduced from 0.098" to 0.039", resulting in greater speeds and less wear.

Large Brush Table

- Punch full-size sheets without repositioning.
- Scratch-free part processing.
- Reduce secondary operations and environment sound levels.
- Supports 10 gauge (1/8") sheets on the EM 2510 and 7 gauge (3/16") on the EMK 3510 & 3610.

Power Vacuum Die

- Automatically detects raised, bowed, or buckled material if workpiece triggers the detection device.
- Machine automatically stops when triggered, minimizing broken tools.

Sheet Jam Protector

AMNC/PC Control (Ready to Connect to vFactory®)

Intelligent Turret Setup
- Change material, clamp positions, tool type, tool angle, tool size and tool location.

G-Code Editor Simulator
- Quickly review, edit and simulate program on the touch-screen display.
- Plot and highlight G-Code patterns.
- Pan and zoom functions.

Scheduler
- Specify job order and quantities.
- Check part quantities as they are completed.

Ram Control and Tool Stroke Verification
- Control speed, depth, hover height and hold time.
- Utilities to calculate punch and die length parameters.
- Perform trial tool hits.
**Options**

**Z Turret**

- Lower turret disk larger in diameter than the upper turret.
- Loading station allows tools to be changed quickly.
- No special tools required to extract dies.

**Punch & Form**

**EMK 3510NT / EMK 3610NT**

- Up-acting cylinder raises special forming dies.
- Increase forming height with less deformation.

<table>
<thead>
<tr>
<th>Type</th>
<th>Maximum Size Round</th>
<th>Number of Stations (Keyed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>½″ (12.7mm)</td>
<td>24 (24)</td>
</tr>
<tr>
<td>B</td>
<td>1¼″ (31.7mm)</td>
<td>12 (12)</td>
</tr>
<tr>
<td>C</td>
<td>2″ (50.8mm)</td>
<td>2 (2)</td>
</tr>
<tr>
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<tr>
<td>Auto Index</td>
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</tr>
<tr>
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<td>2 (2)</td>
</tr>
</tbody>
</table>

**Toggling Brush Table**

**EMK 3510NT / EMK 3610NT**

- Form features to a depth of 0.197″
- Raise and lower brushes during sheet movement.

**Work Chute**

**EMK 3510NT / EMK 3610NT**

- Large, fast acting (4 second cycle).
- 19.68″ x 19.68″
- A powered roller ensures all parts drop through.

**Automation**

**EM 2510NT / EMK 3510NT / EMK 3610NT**

- **ASR/MJC**
  An innovative part separation system combining rear material loading and part storage with a unique micro-joint cutting (MJC) device. The micro-joint cutter separates parts from the skeleton, storing them separately, while the punch press continues to produce parts.

- **ASR 510M**
  Flexibility to produce smaller lot sizes in a variety of material types and thicknesses is provided by the additional shelves of the ASR material tower. The greater material capacity of the tower can extend unattended operation to multiple shifts. The ASR is ideal for lights-out operation in a lean environment.

- **MP/RMP**
  The MP single-shelf loader automates the handling of small or large sheets and facilitates unmanned operation of the EM. The shelves on the MP can be retracted to allow manual loading of material. The MP is available in 4’x8’ and 5’x10’ models. The RMP is the latest configuration added to the product line.

- **PR/UL**
  The PR/UL automatically removes, sorts, and stacks parts – eliminating the need for micro-joints. The last hit along the part perimeter frees the part from the skeleton. The system’s vacuum cups remove the part from the machine table and place it in a pre-programmed location on a skid. The skeleton is then removed and placed on a separate skid.
Productivity-enhancing tooling reduces secondary processing

**Slotting Tool**
This unique tool allows continuous material parting without the overlap marks associated with conventional parting tools. The Slotting Tool provides outstanding edge quality for cosmetic-sensitive parts and reduces secondary edge clean-up. The 4½" station design is available in the Sheet Saver configuration. With clamp relief on both sides of the punch and die, clamp dead zone is minimized and material utilization is increased.

**Small Parts Removal Tool**
Designed to separate small parts from the work sheet and deposit them through the slug chute, the small parts removal tool eliminates the need for micro-joints and manual part separation after punching.

**Safety Inch Bend Tool**
Short flanges can be formed safely where processing on the press brake may not be possible. For a 2" station, minimum flanges of 3 times material thickness to a maximum of 1.378" can be achieved. This size tool can form a maximum bend length of 1.181" in material ranging from 0.0020" to 0.63" thickness (CRS, aluminum and stainless steel).

**Contouring Tool**
The contour tool allows nibbling at pitches less than material thickness – resulting in smooth edges that eliminate secondary finishing. Its ability to process almost any geometry reduces the need for special tooling.

**Deburring Tool**
Reduce costly and time-consuming, post-punch deburring by doing the work “in the sheet.” Use of the deburring tool ensures that burrs raised during the punching process are flattened – resulting in improved edge quality while streamlining the manufacturing process.

**High-Speed Marking Tool**
With the EM’s ability to mark at up to 1800 hits per minute, the marking of part numbers, manufacturing dates, bend lines and symbols now becomes practical. Add value to punched parts without adding secondary operations. Tools are available to mark the top or the bottom of the part.

**vFactory® – Shop management software**
- Monitor machine utilization and program status from any PC connected to your intranet.
- Benchmark current performance of machinery and programs.
- Measure effects of management changes on green-light ontime.
- Monitor consumables and preventative maintenance.
### Dimensions

**EM 2510NT**

**EMK 3510NT / EMK 3610NT**

Illustrations are for reference only. Dimensions and specifications are subject to change without notice.

### Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>EM 2510NT</th>
<th>EMK 3510NT</th>
<th>EMK 3610NT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Press Capacity</td>
<td>22 Tons</td>
<td>33 Tons</td>
<td>33 Tons</td>
</tr>
<tr>
<td>Maximum Sheet Weight</td>
<td>110 lbs. (F1) / 330 lbs. (F4)</td>
<td>110 lbs. (F1) / 330 lbs. (F4)</td>
<td>110 lbs. (F1) / 330 lbs. (F4)</td>
</tr>
<tr>
<td>Feed Clearance</td>
<td>0.984&quot;</td>
<td>0.984&quot;</td>
<td>0.984&quot;</td>
</tr>
<tr>
<td>Stroke Length</td>
<td>1.45&quot;</td>
<td>1.45&quot;</td>
<td>1.45&quot;</td>
</tr>
<tr>
<td>Maximum Sheet Thickness</td>
<td>0.135&quot;</td>
<td>0.187&quot;</td>
<td>0.187&quot;</td>
</tr>
<tr>
<td>Punching Accuracy</td>
<td>+/- 0.004&quot; (+/- 0.0027&quot; High Accuracy Mode)</td>
<td>+/- 0.004&quot; (+/- 0.0027&quot; High Accuracy Mode)</td>
<td>+/- 0.004&quot; (+/- 0.0027&quot; High Accuracy Mode)</td>
</tr>
<tr>
<td>Table Positioning Speed</td>
<td>X: 3937 IPM, Y: 3150 IPM</td>
<td>X: 3937 IPM, Y: 3150 IPM</td>
<td>X: 3937 IPM, Y: 3150 IPM</td>
</tr>
<tr>
<td>Turret Rotation Speed</td>
<td>30 rpm</td>
<td>30 rpm</td>
<td>30 rpm</td>
</tr>
<tr>
<td>Hit Rate 1&quot; Pitch (0.197 stroke)</td>
<td>X: 500 HPM, Y: 330 HPM</td>
<td>X: 500 HPM, Y: 330 HPM</td>
<td>X: 500 HPM, Y: 330 HPM</td>
</tr>
<tr>
<td>Hit Rate 0.039&quot; Pitch (0.197 stroke)</td>
<td>X: 780 HPM, Y: 515 HPM</td>
<td>X: 780 HPM, Y: 515 HPM</td>
<td>X: 780 HPM, Y: 515 HPM</td>
</tr>
<tr>
<td>Hit Rate Marking (0.055 stroke)</td>
<td>X: 1800 HPM, Y: 830 HPM</td>
<td>X: 1800 HPM, Y: 830 HPM</td>
<td>X: 1800 HPM, Y: 830 HPM</td>
</tr>
<tr>
<td>Electric Power Required</td>
<td>AC200V 3-Phase 50/60Hz, 23kVA</td>
<td>AC200V 3-Phase 50/60Hz, 27kVA</td>
<td>AC200V 3-Phase 50/60Hz, 27kVA</td>
</tr>
<tr>
<td>Machine Weight</td>
<td>39,683 lbs.</td>
<td>52,000 lbs.</td>
<td>54,000 lbs.</td>
</tr>
</tbody>
</table>

The dimensions for the EMK 3510NT and the EMK 3610NT are identical except for overall length (indicated in red).