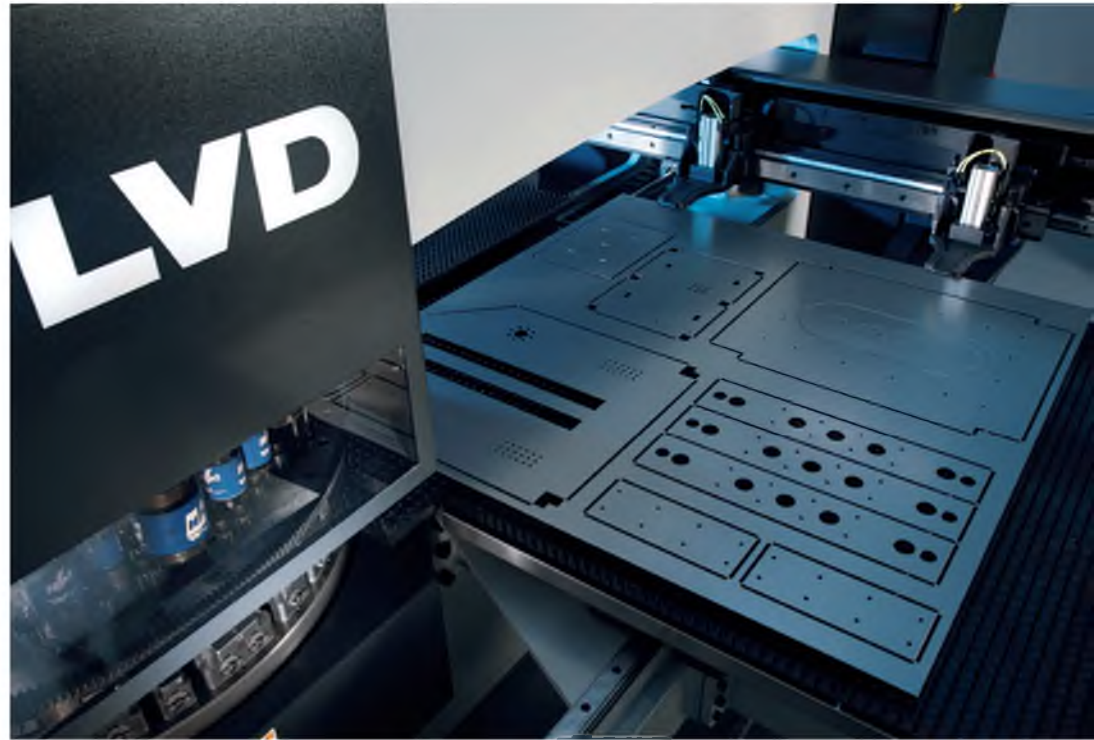




CNC TURRET PUNCH PRESSES

STRIPPIT M-SERIES



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Large Capacity & Flexibility

The Strippit M-Series of CNC turret punch presses offer the largest turret capacity of machines in their class. A 47-station turret provides high flexibility and reduces set-up time, increasing machine productivity.

The versatile mix of turret stations includes three 88,9 mm auto-indexing stations capable of accepting a variety of indexable Multi-Tools, tapping and wheel tools. Four 50,8 mm stations accommodate large punching and forming operations. A full 25 mm feed clearance between the upper and lower turret allows for the production of higher forms such as lances, louvers, embossments or card guides.

These rugged 200kN hydraulic punch presses handle a range of

material sizes and thicknesses, and are able to process large workpieces with sheet repositioning. Smart Clamp, a standard feature, automatically detects exact clamp locations to provide the smallest possible no-punch zones.

LVD's patented Smart Stroke[®] feature automatically optimizes the ram stroke and simplifies programming operations to assure high efficiency and productivity.

Engineered for superior accuracy and long production life, Strippit M-Series machines are built on a heavy-duty frame with an advanced table positioning system that achieves accuracy of $\pm 0,10$ mm with a repeatability of $\pm 0,05$ mm over the entire table. The design also has no rail or



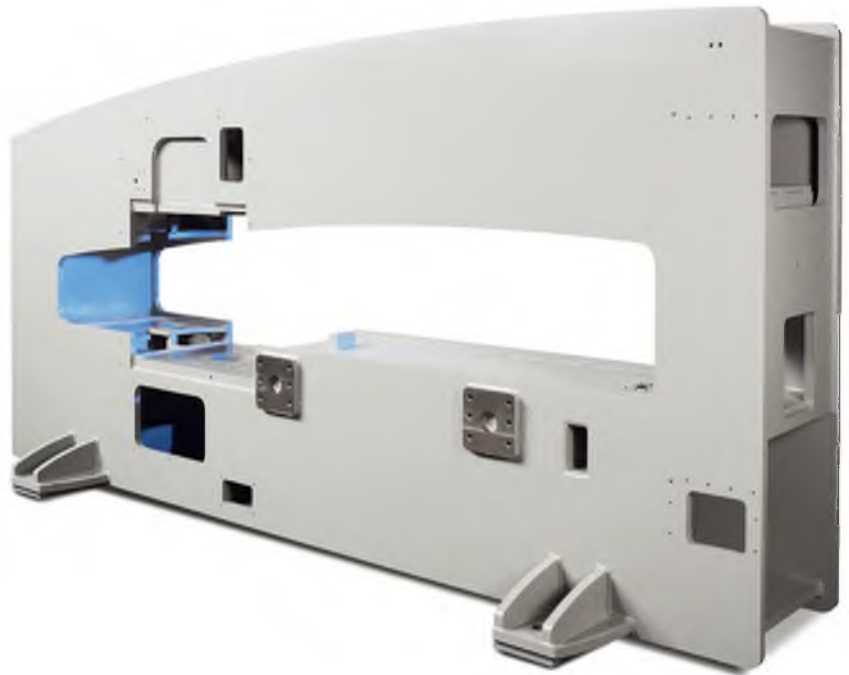
table obstructions in the work-space area, allowing the operator easy access when loading full size sheets.

Equipped with LVD's Energy Reduction System (ERS), Strippit M-Series punch presses consume up to 30% less electrical power than comparable machines and are less costly to operate and maintain.



Strippit M-Series punch presses can be integrated with an optional, retrofitable automatic load/unload system or 6- or 10-pallet Compact Tower (CT-P) for complete material loading, unloading, storage and retrieval.

For high flexibility, large capacity and long-term reliability in a mid-range punching machine, the Strippit M-Series is the solution.

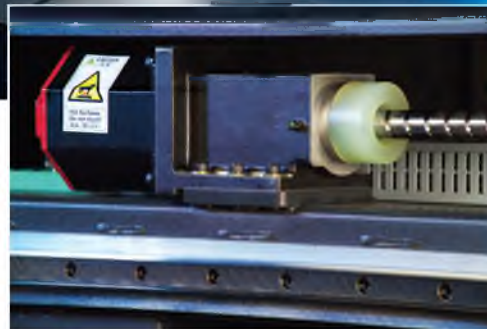


Precision with Reliability

A high technology positioning system provides heavy sheet carrying capacity and accurate motion control to achieve accuracy of $\pm 0,10$ mm with a repeatability of $\pm 0,05$ mm over the entire table. The accuracy of finished parts ensures the success of secondary bending and assembly operations.

Strippit M-Series punch presses feature a direct drive axes configuration that provides the industry's tightest tolerances. This rigid design better controls both part tolerance and repeatability to eliminate backlash and wear for long-term accuracy and reliability.

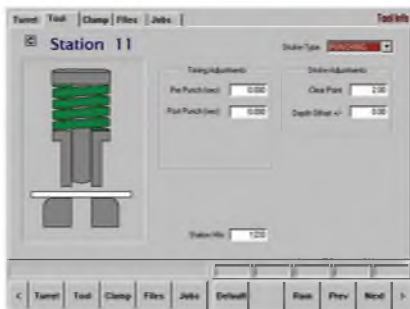
- A sophisticated table guiding system handles heavy load capacities.
- Patented sheet repositioning system handles larger sheets and special part configurations.
- Smart Clamp feature automatically detects exact clamp locations to provide the smallest possible no-punch zone.
- Distance between work clamps can be maximized for excellent stability while punching large sheets.



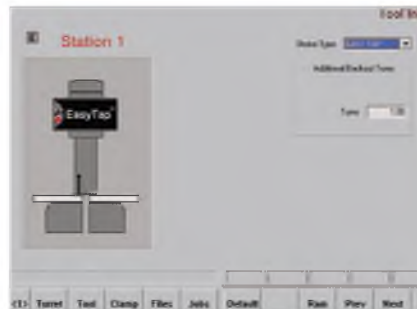
Advanced Hydraulic Press Drive for High-Speed Processing

Strippit M-Series punch presses feature an advanced servo hydraulic press drive and interactive software, optimized for high-speed operation and ease of use. A low-pressure, high-pressure hydraulic press drive is energy efficient. LVD's Energy Reduction System (ERS) regulates the hydraulic pump and motor to lower energy consumption.

The hydraulic drive also reduces noise and shock to increase machine longevity and reduce tool wear.



Easy to use interactive set up screens.



Graphic tool images aid with selections.

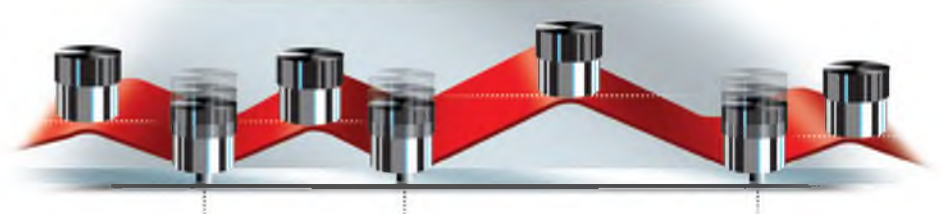
Innovative User Interface

An innovative user interface provides graphic tool images to aid with selections, making entering tool information easier than ever before. Operators interact with a single graphic screen. No tool measurements or electronic adjustments are necessary for routine tooling applications. The operator simply selects the tool to be used – punching, forming, wheel tool, scribing, marking or tapping – and the control software automatically determines the correct stroke settings. No further input is required.

LVD's hydraulic ram also offers the flexibility of electronic adjustments and features that take advantage of the intuitive control interaction. Users can apply custom settings or alterations to stroke elements such as depth offset, dwell and ram speed, to further maximize machine capabilities.

Patented Smart Stroke® programming maximizes productivity by automatically calculating the optimum hover height for every stroke of the ram.

HOW SMART STROKE® MAXIMIZES PRODUCTIVITY



Smart Stroke® automatically selects the optimum hover height for each table move.

Programmable ram modes include:

Standard Smart Stroke – The tool is kept close to the material on short table moves. As hits move farther apart, the software automatically increases the ram hover height to provide clearance for sheet warpage.

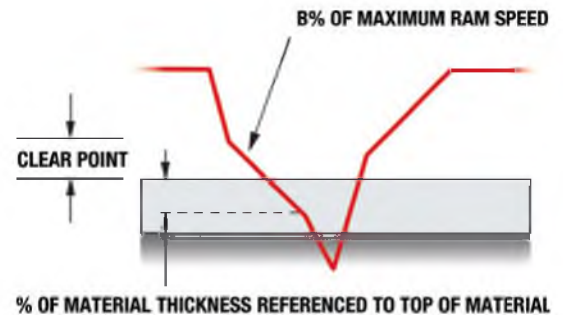
The Smart Stroke system also allows the machine to run mechanical machine programs with no need to edit traditional nibble routines or input hover height commands.

Forming - A dwell can be programmed at the bottom of the stroke, allowing the material to flow more completely into the desired shape, minimizing springback and improving the quality of the formed part.

Quiet Punch - The tool is programmed to rapidly approach the material, then slow to enter the material, continuing until shearing is complete. Once breakthrough occurs, the ram completes its cycle at rapid speed. This process reduces noise and shock while maintaining productivity.

THE QUIET PUNCH FEATURE HELPS REDUCE NOISE AND SHOCK

B - Ram breakthrough speed (% of max speed)
K - Slow breakthrough amount (% of material thickness)



Large Turret Optimizes Efficiency



Strippit M-Series punch presses feature a large 47-station turret configuration that offers tremendous flexibility and capacity. This versatile turret design allows every station to accept shaped punches and dies, reducing set-up time.

The Strippit M-Series turret is gear-driven from the outer diameter for smooth, precise motion. Shot pin assemblies are also mounted beyond the punch and die locations to optimize alignment at the tool during the punch cycle.

Self-stripping tooling uses the punch guide to firmly press the material down on the die. The guide continues to hold the sheet against the die until the punch has retracted into the guide, preventing distortion of even the thinnest materials. The end result is flat parts with virtually burr-free holes, greater finished part accuracy and increased machine productivity.

- Turret capacity can be easily expanded through the use of indexable Multi-Tools.
- Large tool change door allows easy access to the turret for quick tool loading. Quick change die holders further reduce turret set-up time.
- Ability to punch at any location on the sheet using any turret station within the nominal sheet size reduces repositioning and maximizes productivity.
- Joystick mounted near the tool load door provides easy, convenient rotation of the turret for tool changing.



Three Standard Auto-Index Stations

Strippit M-Series punch presses are equipped with three "D" size gear-driven auto-index stations that are a full 88,9 mm. These programmable stations make it possible to punch shapes at any angle to increase flexibility and improve finished part quality.

Large auto-index stations accept a variety of indexable Multi-Tools, further enhancing turret capacity and flexibility while reducing set-up time.

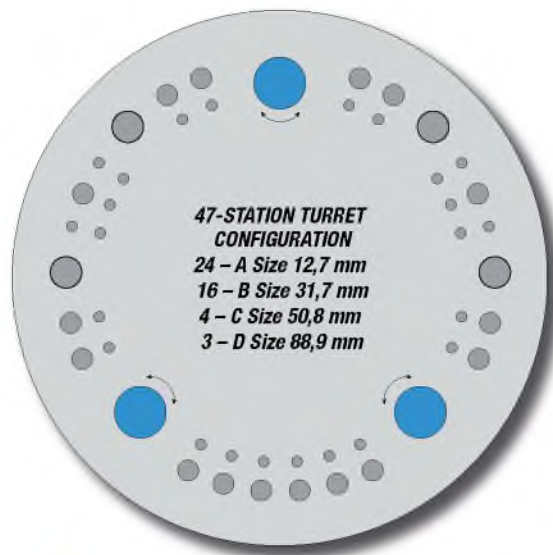
Enhanced Forming Capabilities

Strippit M-Series machines provide expanded forming capability with a full 25 mm feed clearance between the upper and lower turret. This generous feed clearance allows for the production of higher forms such as lances, louvers, embossments or card-guides.

Precision Alignment

Strippit M-Series turrets are designed for superior precision. Hardened steel guide bushings provide accurate punch and die alignment and are keyed to accept shapes in every station. Bushings can be quickly and easily replaced by the machine operator, eliminating the need for costly remachining of the turret.

- Hardened outboard shot pins provide precise alignment of punch and die for exceptional hole quality.
- Gear-driven turret design ensures fast, precise indexing.
- Bi-directional turret rotation automatically selects the shortest possible route to the next punching station for fast station-to-station positioning and increased productivity.



■ Indicates Standard Auto-Index Station



Versatile Tooling Capabilities

To meet high-performance fabricating requirements, Strippit M-Series machines can accommodate the latest adjustable thick turret style tooling. Advanced tooling technology provides:

- Reduced set-up time
- Long tool life
- Quick and precise tool length adjustment
- Low maintenance costs
- Slug control capability

Multi-Tool dramatically boosts turret capacity. Once tools are loaded into the holder, Multi-Tool remains in the turret, reducing set-up time. Multi-Tool reduces set-up time by 75% compared to individual punch and die set-up.

Subsequent tool selection by program is completed in less than one second. Standard on Strippit M-Series punch presses, the Multi-Tool indexing mechanism allows each station within the Multi-Tool to be automatically indexed, eliminating the need for specially keyed punches and dies, and allowing indexing of a greater range of commonly used tools.

Strippit M-Series punch presses accept 3- or 8-station Multi-Tool configurations.

Form tooling increases machine utilization and reduces secondary operations. The hydraulic ram improves forming operations. Precise programmable ram control minimizes part springback and produces an exceptionally accurate formed part.



M-Series machines accept 3- or 8-station Multi-Tools.



The Multi-Tool indexing mechanism allows any selected punch to be oriented in increments of 0,01° to any programmed angle automatically.



Strippit M-Series machines have the flexibility to use wheel-tool technology to rollcut and rollform for quick and efficient cutting and/or forming of straight or curved shapes without nibbling. LVD CNC turret punch presses also employ part marking technology for part or sheet marking requirements and can utilize tapping tools.



Advanced tooling technology including wheel-style tooling further expands the flexibility of M-Series machines.

Powerful CNC Control



The Fanuc 31i-PB control provides renowned reliability.

Strippit M-Series punch presses are equipped with a world-class Fanuc 18i-PB control. The control allows the machine operator to edit, input or output programs during machine operation to reduce set-up and improve productivity.

- Large 1 GB flash drive provides ample space for program storage
- Random and repeat patterns simplify programming, reduce program length
- Tool hit record tracks hits for each punch in the turret
- Network interface card allows direct network connection to offline programming systems or other computers
- USB port for auxiliary program storage devices, including USB and hard drives



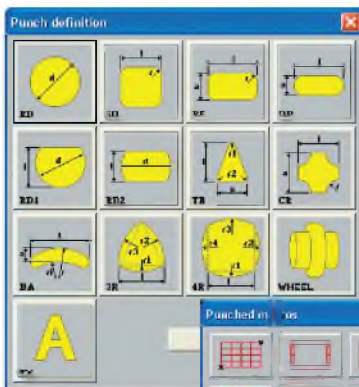
LVD's optional CADMAN® software package offers the ideal solution to prepare offline programs for punching, laser cutting and bending. The 3D base module, running with a Windows® operating system, provides 3D design, bending information, and automatic unfolding of 3D parts. Powerful, user-friendly CAM software modules for punching, bending or laser cutting are then

added to provide an effective way to program and integrate production processes, significantly increasing the productivity and flexibility of your manufacturing processes.

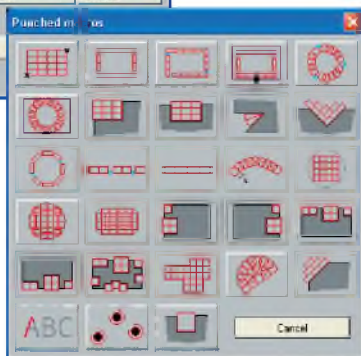
The CADMAN P-3D module for punching allows you to:

- DXF, DWG, IGES, SAT file import (standard); MI file import (optional)
- Use interactive CAD techniques
- Generate parametric forms
- Add dimensions and text
- Nest dissimilar parts
- Automatically select tools from the tool library or from a standard turret
- Program the machine's punch and nibbling functions
- Make manual changes to any automatically generated features or sequences
- Simulate the punch sequence
- Calculate production time for the machine
- Create NC files
- Create a set-up file that guarantees the correct loading of the turret

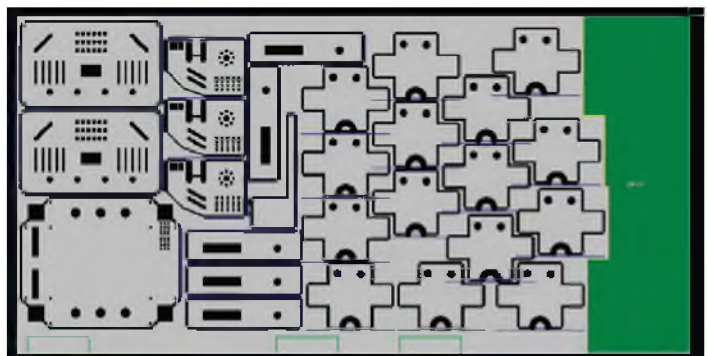
Windows is a registered trademark of Microsoft Corporation.



Parametric Tools



Punch Parts



Nesting

Cost-Effective Automation

For maximum productivity, Strippit M-Series punch presses can be integrated with an optional, retrofitable automatic load/unload system or 6- or 10-pallet Compact Tower (CT-P) for material loading, unloading, storage and retrieval.

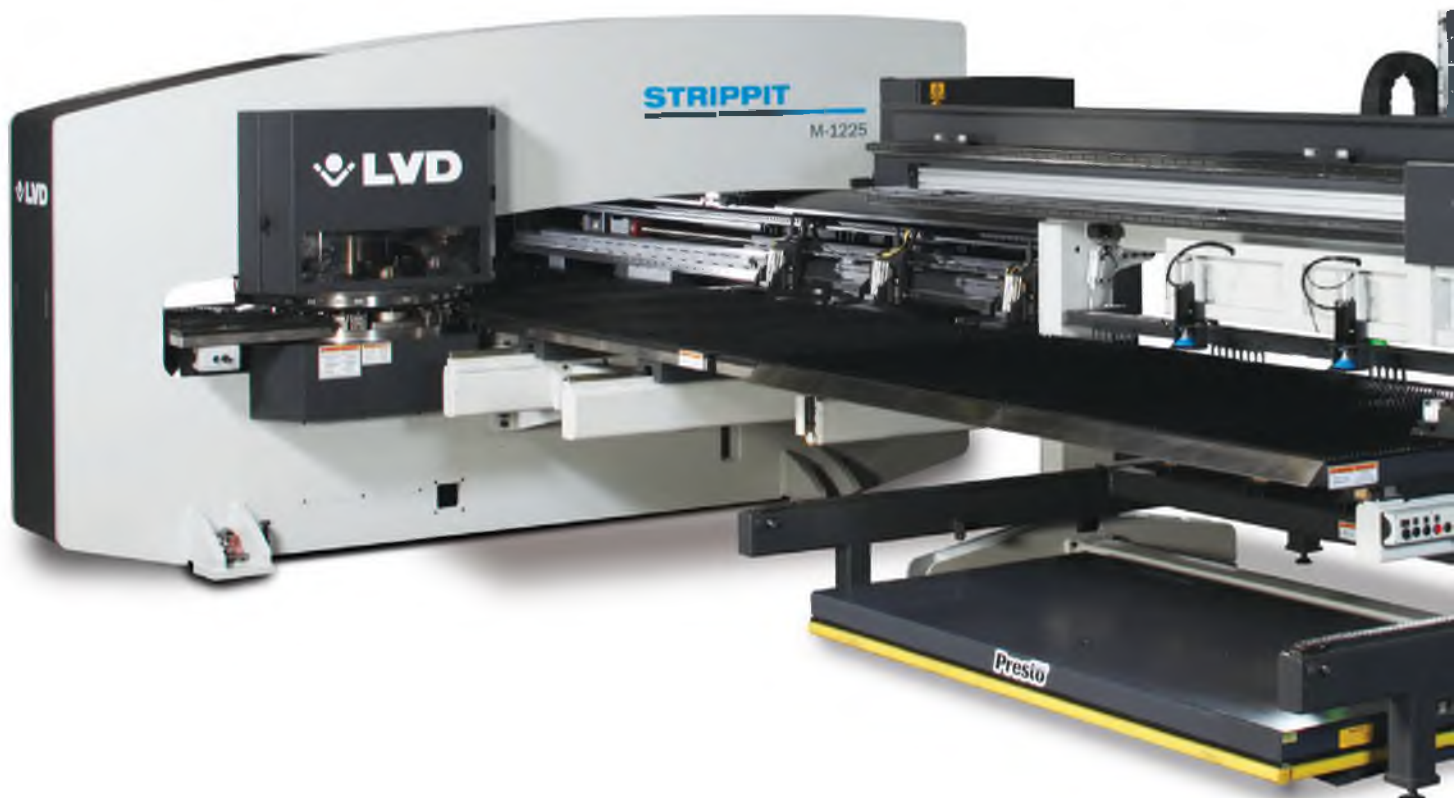
An automatic load/unload system reduces manual worksheet handling time by as much as 80% and provides fast, efficient processing of materials up to 3,5 mm.

More compact than comparable material handling systems, the system features a full brush table configuration to reduce part scratching. The brush table and hydraulic lift table work in conjunction to efficiently handle delicate part nests. A space saving design loads and unloads material from the same side of the turret

punch press. The automatic load/unload system accommodates sheets up to 1500 x 3000 mm for processing of large workpieces or nested parts.

LVD's optional Compact Tower (CT-P) system creates a productive, flexible manufacturing cell capable of operating "lights out." The tower system, working in concert with the material handling unit, provides full capabilities for loading and unloading, and includes a shelving unit for storing raw material and finished parts.

The addition of automation provides fast, efficient processing of materials for continuous, uninterrupted workflow. A graphical user interface simplifies programming and makes operation of the automated system easy and intuitive.



TECHNICAL SPECIFICATIONS

	Strippit M-1212	Strippit M-1225	Strippit M-1525
Punching Specifications			
Maximum Punching Capacity	200kN	200kN	200kN
Maximum Material Thickness	6,35 mm	6,35 mm	6,35 mm
Punching Accuracy	± 0,1 mm	± 0,1 mm	± 0,1 mm
Maximum Hit Rate at 2 mm Working Stroke*			
1 mm Pitch	up to 900 HPM	up to 850 HPM	up to 850 HPM
25 mm Pitch	up to 430 HPM	up to 400 HPM	up to 400 HPM
Marking Stroke	up to 1700 SPM	up to 1700 SPM	up to 1700 SPM
Table Specifications			
Nominal Workpiece Size**	1250 x 1250 mm	1250 x 2500 mm	1524 x 2500 mm
Float Clamps	2 manual lock	2 manual lock	2 manual lock
Axis Traverse Speed	up to 110 m/min. combined	up to 96 m/min. combined	up to 96 m/min. combined
Brush Table Capacity	up to 110 kg	up to 110 kg	up to 110 kg
Turret Specifications			
Turret Configuration	47 Stations	47 Stations	47 Stations
Turret Layout	24 'A' - 12,7 mm 16 'B' - 31,7 mm 4 'C' - 50,8 mm 3 'D' - 88,9 mm	24 'A' - 12,7 mm 16 'B' - 31,7 mm 4 'C' - 50,8 mm 3 'D' - 88,9 mm	24 'A' - 12,7 mm 16 'B' - 31,7 mm 4 'C' - 50,8 mm 3 'D' - 88,9 mm
Auto-Index Stations	3 'D' - 88,9 mm	3 'D' - 88,9 mm	3 'D' - 88,9 mm
Angular Positioning Accuracy	± 0,05 degrees	± 0,05 degrees	± 0,05 degrees
Electrical Power Consumption			
Average Power Consumption, approx.	6,7 kW	6,7 kW	6,7 kW
Standby Operation, approx.	0,9 kW	0,9 kW	0,9 kW

*Material thickness + tip recess + die penetration

**Larger workpiece sizes handled with clamp reposition



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