

PUNCHING MACHINE

PAM S-series



- **Punch via and registration holes in green tape**
- **Suitable to punch most via forming designs**
- **Manual programming, CAD input, NcDrill and DXF files**
- **Tool breakage detection**
- **Automatic sheet alignment for re-punching**
- **High output**

Suitable for production and laboratory LTCC productions

The PAM S-series of punching machines are mainly designed for LTCC applications, where it's required to be able to punch all kinds of patterns. The PAMS-series uses single pin punching tools to punch via holes or registration holes in green ceramic tapes, either on carrier film or free-standing. Every hole size is punched using a different tool. Up to 4 or up to 8 different punching tool dimensions can be installed on the machine. Special multiple pins (gang) punching tools are available in order to punch grid type pattern to increase productivity. Numerous versions are available, starting with the basic unit, where the operator places single sheet on an alignment table, the machine picks the sheet with a vacuum tool and punches it according to the program, up to the fully automatic version, where individual sheets are cut from a roll, punched and transferred to a magazine. Machine comes (standard) with pin breakage control and sheet vision alignment for sheet alignment against pre-punched registration holes.

Available single pin punching tools:

- pneumatically driven, diameters 0.1 (4 mils) to 1 mm (40 mils)
- pneumatically driven, square 0.2 x 0.2 to 1 x 1 mm; (8 x 8 to 40 x 40 mils)
- pneumatically driven, diameters 1.1 (43 mils) to 5 mm (200 mils)

Available grid punching tools:

- grid type tools available up to 24 round pins
- max. punch diameter not bigger than 0.5 mm (20 inch) depends on pattern

Technical specification:

Punching speed: 13 holes/s in distance 1 x 1 mm

Punching area: up to 225 x 225 mm max.; (9 x 9 inch)

Tape thickness: up to 500 microns (20 mils) (to be confirmed)

Mylar thickness: 30 to 75 microns; (1.2 to 3 mils)

X,Y drive: high precision ball screw and AC servo motors

Positioning accuracy: +/- 5 microns

Programming: manual on the machine or CAD file input (NcDrill or DXF)

Work (sheet) fixing: by vacuum, optional metal frames fixing

Carrier film thickness: 20 to 75 microns (0.8 to 3 mils)

Punching pin exchange: less than 2 minutes, no special alignment required

Control: PC

Pin breakage test: by camera and vision control (every hole, last hole)

Sheet alignment for re-punching: by camera and punching coordinate calculation

Tape handling: manual by operator,

Automatic from magazine to magazine

Automatic from roll to magazine

Safety: CE compliant

Dimensions: depend on version app. L=2.5 m

B=1.5 m

H=2.2 m

Electricity: app. 2 kW (connection custom)

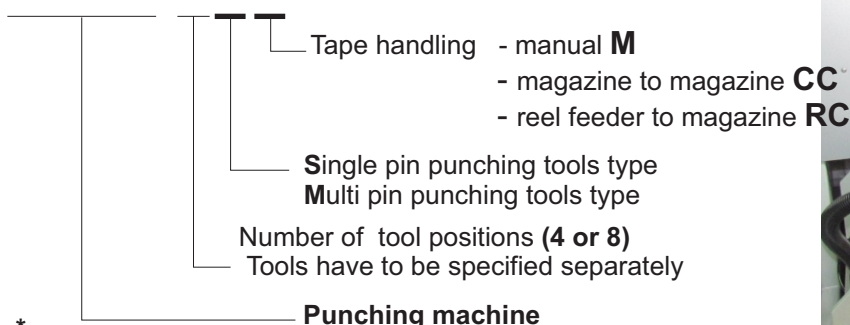
Compressed air: 0.6 MPa, 200 L/min

Vacuum: External vacuum source required.

Optional vacuum pump can be supplied

How to order: *

PAM-xxx



* Options and other requirements have to be specified separately.



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