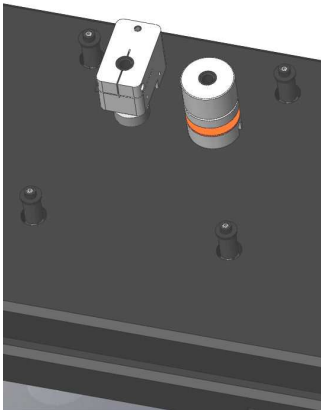


**VP-8411 High Speed Via Punching System**

Model VP8411



Detail of Punch Configuration



Model VP8411 is an ultra-precision programmable Green Ceramic via punch system with speeds as high as 80 vias per second (4 vias per stroke, up to 20 strokes per second or 80 vias per second which equals up to 4800 vias per minute). It uses a custom Step-and-Repeat punch system designed for via punching 4 holes at a time into ceramic tape blanks. The VP8411 has a single pattern of 4 via punch sites placed in pre-defined quadrants of the tape “Active Area” to provide 4 times the throughput of a conventional Via Punching System. The 4-up pattern can be set for 6X6 tape or 8X8 tape or others.

The VP8411 has true “Drop-In” tooling changeover that takes as little as 1 minute to change out a complete set of tooling. The Actuator head moves out of position to expose the punch holders which can be manually lifted out of the bridge assembly and replaced. The dies are all pre-mounted onto a die block which is inserted into the die elevator. A single flip of the air toggle valve inserts the entire set of dies.

The VP8411 Via Punching System is built to the highest possible manufacturing tolerances. The XY stage is constructed out of 7075 aircraft aluminum that is finished machined, cryogenically stress relieved and finish ground to straightness of .0001”. The linear bearing sets are custom made in the US and hand-picked to be the highest accuracy available. The ground ball screws are held to the same tolerance that is held for the ball-screws in ball screw grinding machines. The ball screws are mounted in ultra-precision matched set ball bearings to provide perfect rotation, smooth thrust and maximum stiffness during direction changes. The XY Stage is assembled in a class 1000 clean-room according to a strict regimen which includes precision measurement after each assembly step. Things such as machining the under surface of the screw head of every bearing mounting screw and relieving the non-threaded portion of the screw body to eliminate side torque during installation are examples of the great detail we take in assuring the highest possible accuracy.

Windows-based software has a full complement of technician functions that are used for maintenance and trouble-shooting. On-board tuning capability keeps your VP8411 performing to the highest possible quality and throughput.

**Specifications and Components**

- 4 Primary via punches sites and two large sites, one each for registration and square punches.
- One complete punch site Patterns for either 6"X6" or 8"X8" tapes.
- Tool Plate for unframed tapes accept either 6"X6" or 8"X8" tapes.
- Tape divided into quadrants with one via punch per quadrant.
- Via Punch sizes range from .05mm (.002") UP TO 1.14mm (.045")
- Tape thickness .05mm to 3mm
- Main Bridge Assembly and XY Stage mounted on Granite Surface Plate for maximum stability and accuracy.
- Registration Punch size range up to 4.75mm.
- Up to 4800 holes/min depending on spacing
- XY Stage
  - 12 X 12 inches travel
  - Aircraft Grade 7075 Aluminum Cryogenically Stress Relieved Slide Members
    - 0.00004" resolution
    - 0.0001" repeatability
    - 0.0001" linearity over 12 inches
    - 0.0001" axis orthogonal
  - High Output Servo-Motors
  - Highest Accuracy Ball Screws Available
  - 1 μ Rotary Encoders
  - Highest Accuracy Matched Set Thrust Bearings

DIE TYPE	INSERTS IN REMOVABLE PLATE
STRIPPER TYPE	URETHANE RUBBER
REGISTRATION PUNCH	UP TO 3/16" DIA.
MOTOR TYPE	RARE EARTH MAGNET DC BRUSHED SERVO
ENCODER TYPE	ROTARY ENCODER
TUNING	BUILT IN INTERFACE
MOTION TYPE	HIGH ACCURACY GROUND BALL SCREWS
UP/DOWN SENSORS	2 PER PUNCH SITE
PUNCH TO DIE ALIGNMENT	AUTOMATIC
PUNCH PROGRAMMABILITY	EACH INDEPENDENT
CONTROLLER	PC/WINDOWS XP
STATIC CONTROL	BUILT IN IONIZER
POWER	110/240 VAC 5A 50/60 CYC
AIR REQUIREMENTS	100 PSI 5 CFM
VACCUUM REQUIREMENTS	25" @ 2 CFM

- Expected punch/die life 1,000,000 holes
- Square punch size .5mm to 3.556mm
- 2<sup>nd</sup> Loading accuracy .0125mm.
- Maximum tape thickness 1mm.
- Accepts 6" x 6" or 8" x 8" blanks.
- PC Controller with 15" LCD Display.
- Process Centering within Software.
- Hand Picked Linear Axis Bearings
- Punch Drive: Pneumatic 100 psi .5 cfm
- 110/240V Single Phase, 50/60 HZ
- Vacuum 25" Hg, 3 cfm
- 36"W X 48"D X 50"T
- 1200lbs net wt.
- Delivery 20 weeks ARP

**Included**

- Tooling Kit for installing round punches/Dies
- Tooling Kit for installing square punches/Dies

**Options (Consult Factory)**

- Auto-handler
- Larger Frame sizes
- Frame Clamp
- Via verification
- Measurement System