

BSD300 Series
Semi-Automated Punch System

From media to process in seconds

The BSD300 is a semi-automated punch instrument specifically designed to increase the laboratory throughput of all media-derived biological samples.

The versatile instrument can integrate into existing SOPs due to the wide combination of punch and receiving tray / tube options, enabling immediate integration without additional validation.

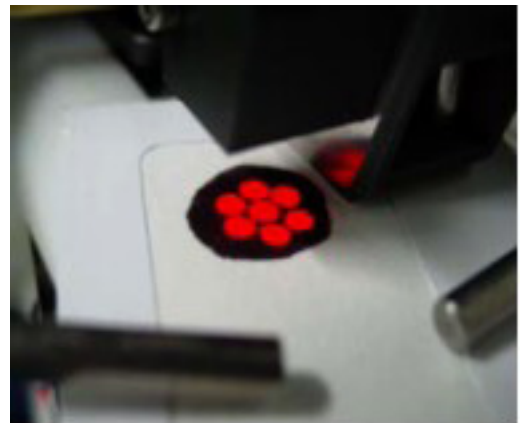
The laboratory can be completely confident in the results generated due to the many safety features built into the BSD300 as standard.

BSD300 Features & Functions

- **Dual Punch System**

Designed to punch two of the same or differently sized disks at the same time.

A range of punch configurations are available to enable immediate compatibility with validated laboratory procedures. This feature also delivers the flexibility required to address the ever-increasing challenges of modern clinical laboratories.



- **BSD Light Targeting System**

Guides the user for total punch accuracy.

The number of punches chosen and the size of each punch are automatically illuminated exactly at the punch site itself. This feature enables the user to punch quickly and accurately every time, delivering optimal results irrespective of spot morphology.



- **Multiple Strike Function**

Accelerating output and time to result.

Up to seven disks can be punched either into one, or multiple wells of a receiving plate, or a duplicate plate without needing to realign the card.

- **Auto-Trigger System**

Eliminates the need for hand / foot switches.

Automatically detects the presence of a sample card and punches as directed by the user.

The BSD300 has evolved by the incorporation of valuable customer input to become the industry standard in semi-automated punch instrumentation. It delivers unrivalled speed with sample tracing functionality to significantly reduce time to result and eliminate repetitive strain injuries often associated with manual punching.

- **Disk Detector System**

Delivers confidence in punching.

Utilising a number of sensors the instrument will recognise if a disk has not passed into the receiving well / tube and will automatically respond.

- **Low Pressure Air & Anti-Static Systems**

Further delivers confidence in punching.

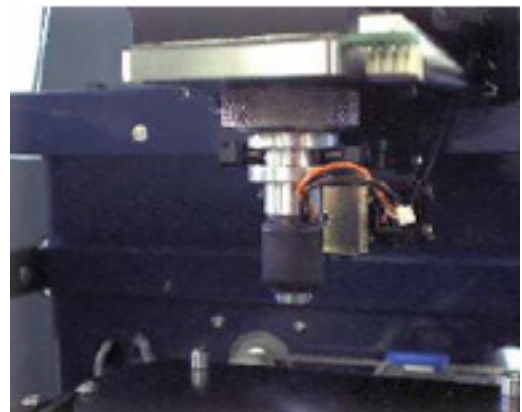
Working in tandem with the Disk Detector System these combine to ensure the punch is delivered to the correct receiving well / tube for downstream processing.

These features combine to maintain an accurate filling order on the receiving plate. This delivers confidence in the results and increases speed of throughput to data generation.

- **Dust Extraction System**

Further minimises contamination issues.

By vacuuming away paper dust from the punch site to a disposable filter, the BSD300 further reduces the potential for contamination of other samples, and of instrument surfaces.



- **Built in Barcode Reader**

Enables positive identification and traceability of plates, samples, controls and standards.

This feature allows for traceability at all levels of the punching process delivering unique identification information which will travel with the punch on its journey to analysis.

- **Punch Cleaning System and Dedicated Cleaning Receptacle.**

Minimises against any cross contamination concerns

The BSD300 also incorporates a Punch Cleaning System that can be used if cross contamination is of concern.

The safety features built into the BSD300 as standard further strengthen its position as an invaluable tool in the semi-automated punching of samples. These important considerations coupled with the flexibility of punch diameters and receiving plate / tube compatibilities make it an immediate and attractive answer to the constant drive to increase productivity by reducing the time to generate valuable results.

The BSD300 is designed specifically for low to medium throughput laboratories processing biological samples stored on media in the following disciplines:

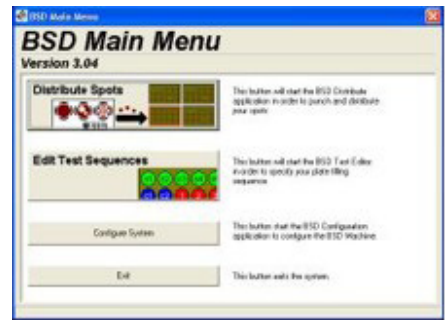
- Neonatal Screening
- Forensic Sciences
- DNA Databanking /Biobanking
- Paternity Testing
- Molecular Diagnostics and Pharmacogenomics (personalised medicine)
- Animal / Plant Breeding
- Transfusion Medicine
- Pharmaceutical and pharmacokinetics (drug toxicology and clinical studies)
- Agriculture / Food
- Academic & Industrial Research

BSD300 Software Capability

The BSD300 software consists of 4 modules:

- **Menu Module**

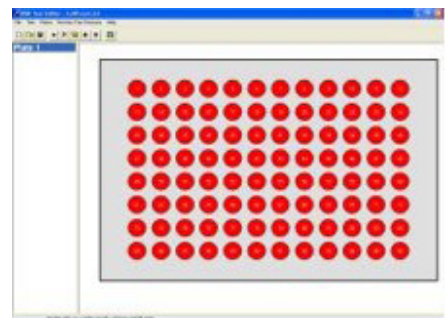
- Controls the access to the other software modules.
- Access to Menu Module is controlled using dedicated Supervisor and User level passwords.



- **Test Editor Module**

Allows for:

- The individual tests to be defined.
- Independent programming punching orientation and order of individual plates and wells.
- Programming of 96-well, 384-well formats and custom designed tube adaptors.
- Access is restricted to Supervisor level.



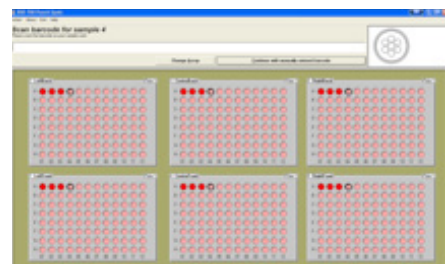
- **Configuration Module**

- Used to access the pre-defined configuration setting for the instrument.
- Allows for configuration setting of instrument to be determined according to requirements.
- Access is restricted to Supervisor level.



- **Distribution Module**

- Used to define individual punching runs and control of the instrument.
- Displays current status of the instrument.



Technical Specifications

- 1. Plate Capacity:** Six Sample Bays, each capable of holding an SBS-standard 96 well plate, or deep well plate, or PCR plate, or tube holder for 1.5 or 2ml tubes.
- 2. Disk Distribution Pattern for Samples, Controls, Unused Wells:** Totally flexible, independent for each plate, defined by laboratory. Computer Programmed & Controlled.
- 3. Single Punch Systems:** 1.2mm/1.5mm, 1.2mm/2.0mm, 1.2mm/3.2mm, 2.0mm/3.2mm, 3.2mm/4.7mm or 3.2mm/6.0mm or any same-size combination.
- 4. Mains Power Requirements:** 110-240 volts (general purpose electrical outlet).
- 5. Punch Activation:** Auto-Trigger system or foot/hand operation.
- 6. Computer Software:** Supplied by BSD Robotics:
 - BSD300 Software, supplied on CD, based on Microsoft Windows XP
- 7. Computer Hardware:** Supplied by laboratory:
 - IBM compatible
 - Minimum System Requirements:
 - Windows XP
 - Pentium 800 MHZ with SVGA capability
 - Colour monitor (Min. resolution 800 x 600)
 - CD ROM min. 12 x speed
 - 1GB HD (15 MB free space)
 - 32Mb RAM
 - 1 x 9 pin serial port (RS 232 Interface)
 - 1 x USB port
- 8. Bar Coding:** System is supplied with one barcode reader- Can be turned on and off- Operates at 5 volts
- 9. Disk Detector:** System is supplied with a disk detector comprised of a number of sensors located in the lower section of the chute designed to detect that each disk has passed through the chute. Responds by automatically re-cycling the chute up to three times if it has not.
- 10. Dust Extraction System:** Incorporates a vacuum pump and filter that draws air and associated airborne dust from the punch area, and passes air through the filter. Filter is easily cleaned and / or replaced.
- 11. Air System/Humidifier System:** Incorporates a low-pressure air pump. The system is designed to assist in stripping the punched disks from the cutting edge of the punch. Includes humidifier system to minimise effects of static electricity
- 12. Physical Dimensions:** (L) 400mm x (D) 1000mm x (H) 400mm, 55 kg
- 13. Bench Dimensions Required:** Supplied by laboratory (L) 500mm x (D) 1100mm x (H) 750mm
- 14. Total Space Required:** (L) 500mm x (D) 1100mm x (H) 600mm
- 15. Warranty:** A 12-month Warranty is included

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