YASKAWA

PRE- AND POST-ANALYTIC
SPECIMEN-PROCESSING PLATFORM

AutoSorter™ III

Specimen throughput capacity: 300-800 specimens per hour*

AUTOMATE CONSISTENCY AND EFFICIENCY INTO YOUR LABORATORY

HIGHLIGHTS

Flexibility to process a wide variety of clinical specimen configurations through centrifugation, decapping and sorting in preparation for loading to diagnostic instruments and systems

Consolidates post-analytic specimens and creates inventory files for archive

High sorting accuracy and specimen traceability

Robust design and industrial components provide high system uptime and reliability

Compact design with efficient footprint utilization

Free your staff from non-value added specimen processing tasks

- Stand-alone pre- and post-analytic specimen-processing platform that addresses the needs of mid-size and large hospital laboratories.
- Dual Cartesian specimen handlers operate cooperatively, moving specimens between input drawers, centrifuge, decapper and output drawers.
- Input and output drawers are configurable to permit use of most popular instrument racks, including Siemens, Olympus, Hitachi/Roche, Sysmex and Yaskawa Motoman.
- Centrifugation is performed (as required) by a fully integrated Hettich Rotanta centrifuge with capacity for 72 tubes per cycle.
- Decapper is provided for cap removal prior to sorting specimens to the target output racks (as required by processing instructions).
- Most specimen handling-related mechanical components are located above the workspace, leaving the “deck” open. This allows processing equipment and queue areas to be optimized.
- Each handler is equipped with a servo-driven specimen gripper with attached barcode reader, and is capable of traversing the entire processing area.
- The all servo-drive design, including Yaskawa linear servo motors, is ideal for high duty-cycle applications. It offers exceptional life and extended service intervals.
- LIS connectivity through Data Innovations’ Instrument Manager™ and other connectivity methods enables specimen processing instructions and sort results reporting in real time. This approach permits the AutoSorter III to act as an integral tool in the pre- and post-analytic specimen processing workflow with enhanced tracking and visibility of samples through archiving.

* Varies per use of centrifuge and spin time.

AUTOSORTER III

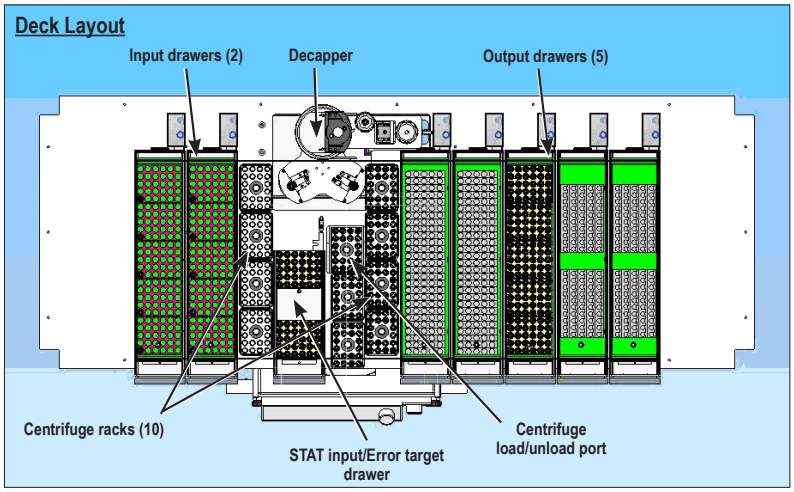
Specimen Loading Process

- Incoming specimens are prepared for processing simply by loading them into an input rack (in random order).
  - Drawers provide access to load racks of specimens for processing, and to remove empty racks.
  - Input racks may be generic or instrument-specific.
  - A separate drawer is also provided specifically for input of STAT specimens.
- The handler picks up a specimen from the input rack and rotates it to permit reading of the barcode.
- The specimen ID (SID) is compared to a local database (periodically updated from LIS) for processing instructions.
- Processing instructions direct the specimen processing sequence, which may include any combination of centrifugation, decapping and/or sorting to target racks.

Note: If the SID is not found or if the barcode label is unreadable, the specimen is sorted to an "error" target for manual resolution. This occurs without interrupting processing.

Centrifugation Process

- Specimens requiring centrifugation are first loaded to one of the available centrifuge racks.
  - Tubes are weighed, and racks are loaded to maintain balance within the allowable range of the centrifuge.
- Specimens are loaded to this set of racks until the centrifuge cycle completes, at which time the centrifuge is unloaded, and reloaded with racks of specimens awaiting centrifugation.
- Once the centrifuge has been serviced and re-started, the racks of centrifuged tubes are unloaded; each specimen is transferred to decapping, or directly to its sort target if decapping is not required.



AUTOSORTER III SPECIFICATIONS

Dimensions*	Height Width Depth Shipping Weight	2,051 mm (80.8 in) 2,230 mm (87.8 in) 1,069 mm (42.1 in) 1,800 lbs.	**Specimen Formats**	Tube diameter Tube height Mixed formats	12-16 mm 75-100 mm Yes
Specimen Throughput**	With centrifugation (4 min cycle) Without centrifugation	300 tubes per hour 800 tubes per hour	**Utility Requirements**	Pneumatic Electrical	Not required 30 amps at 208 VAC, 3-phase

* Without centrifuge attached, the AutoSorter III is capable of movement through a 0.9-m doorway opening and fits into a 2.5-m elevator.
** Estimates based on initial time studies

Decapping Process

- The decapping process is performed in an isolated area serviced by a rotary positioner.
- Tubes are loaded to the positioner outside of the decapping zone; the positioner rotates, aligning the tube with the decap tool.
- Air flow around the tube is managed to isolate any aerosolized specimen, and the closure is removed with a "twist and pull" method.
- The cap is pulled by vacuum into a chute leading to a removable waste container.
- Positioner rotates again to move decapped tube to the unload position.
- This cycle operates continuously (as long as tubes require decapping), with load, decap and unload able to occur simultaneously on each cycle.

Sorting Process

- Every specimen is sorted to one of the target output racks.
  - Output racks are arranged in drawers, permitting the use of generic and/or instrument-specific racks as targets.
  - The racks contained within the drawer may be determined and changed as necessary to facilitate specimen mix at different times of day, conversion to use of a new instrument, etc.
  - The output drawer may be accessed at any time to allow a rack of specimens to be removed.
- Specimens are tracked as they progress through the Specimen Processing System. Additionally the system records the target rack barcode (if provided) and row/column location.

Note: This tracking is very useful in providing archive consolidation of post-analytic specimens, as well as maintaining traceability of specimens through the pre-analytic sequence.

OPTIONS

- Track connectivity: enables transfer of specimens to a transportation conveyor as a sort target, and retrieval of specimens from a transportation conveyor as an input source. Requires compressed air source.
- Centrifuge delete option: allows future addition of centrifuge.

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