MILESTONE
HELPING PATIENTS

MAGNUS

High Throughput Lean Tissue Processor

www.milestonemed.com

MAGNUS

The tissue processor you always wished for.

Envision a tissue processor that:

- Reduces specimen turnaround time
- Is flexible enough to optimize any workflow
- Delivers outstanding quality
- Reduces operating costs
- Safe by design
- Xylene-free processing
- Allows for auto-embedding
- Delivers the utmost reliability and uptime
- Fully automated continuous throughput (dual run)

Your vision is now a reality: MAGNUS.

The Game Changer for the lab of the future.

- Up to **5-6 runs** per shift for small biopsies
- Up to **600 cassettes** at full capacity with dual run (random baskets)
- Continuous operation, no downtime even for daily maintenance

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The fastest processor on the market for all type of tissues (small, large, fatty).

Specimen thickness	Full batch processing time*	Batch loading every
Small biopsies**	**55m**	**40m**
1 mm	**1h 40m**	**1h 20m**
3 m	**3h**	**2h**
5 mm	**5h 50m**	**3h 45m**

** All times include fixation and reagent pumping in/out. Protocols can last a few more minutes if loaded at full capacity. Batch up to 210 biospecimens with 5 Lt. container.*

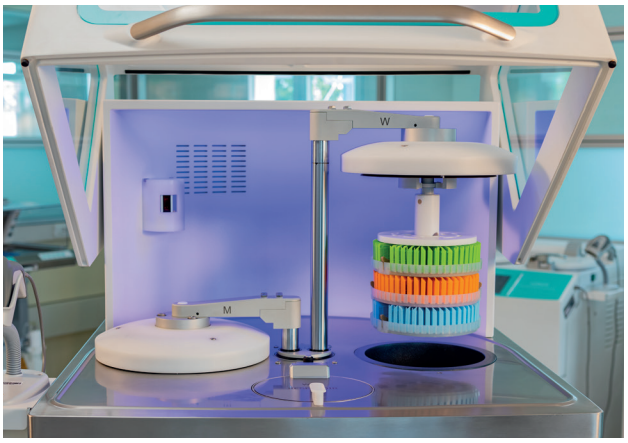
*** (i.e. small biopsies like GI/Endoscopic)*

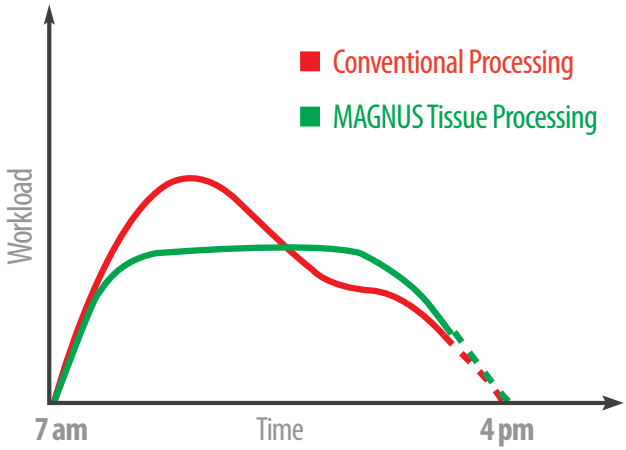
ENGINEERED FOR ENHANCED THROUGHPUT AND FLEXIBILITY

Incomparable flexibility for processing any tissue throughout the day or overnight.

MAGNUS[1] is designed to accommodate all types of histological specimens and workloads. Histotechs can process urgent and small biopsies, on demand, thanks to its double retorts and automatic arm configuration. These small biopsies, which can account for 45-75% of the total volume of a modern histopathology lab, are rapidly processed to eliminate peaks in the workload. The rapid processing time with MAGNUS allows for the slides to be available for the pathologist on the same day. Larger specimens, such as fatty tissues like colon and breast, can also be rapidly processed, either during the remaining part of the daily shift or overnight.

Streamline process: reduce stress and optimize efficiency.



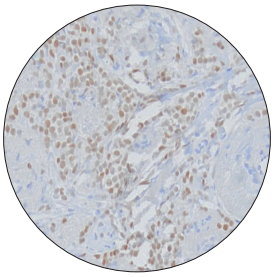


The MAGNUS' robotic arm enhances throughput thanks to the automatic transfer of cassettes from the reagent retort to the paraffin retort. As the cassette rack is moved to the second retort, a new rack can be loaded in the first retort and a new program can be started. With this method, lean lab principles are achieved through rapid processing cycles.

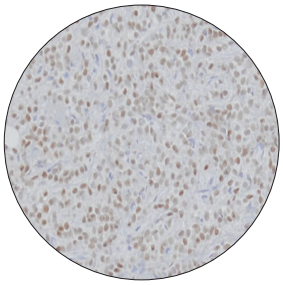
[1] *US Patent 7,075,045 - European Patent 1 605 243*

ENGINEERED FOR HIGH QUALITY AND CONSISTENCY OF PROCESSING

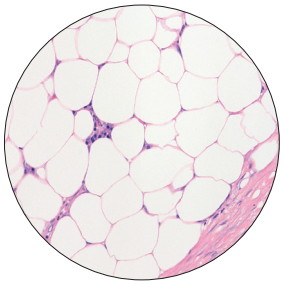
Rapid processing protocols have been validated to guarantee optimal specimen morphological and molecular preservation. MAGNUS fulfills all CAP/ASCO guidelines for assessing Her2, ER and PgR testing in breast tissues. MAGNUS allows for the use of any type of fixative as well as state of the art formalin fixation.



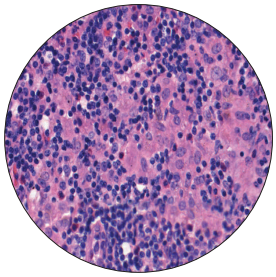
Progesterone receptor



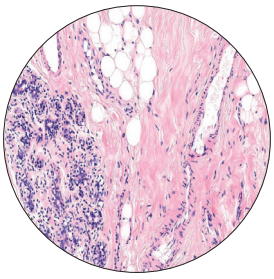
Estrogen receptor



Colon fat 20x

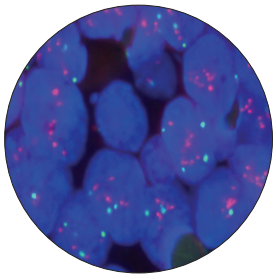


Lymph node 20x



Breast 4x

Best quality for all tissue types, including supermega cassettes and whole mount processing



FISH HER2

ENGINEERED FOR COST SAVING

The elimination of Xylene and clearing solvents has a great impact on toxic reagent disposal costs extending significantly the life of paraffin wax. The reduction of reagent costs compared to traditional xylene processing can therefore be greatly reduced.

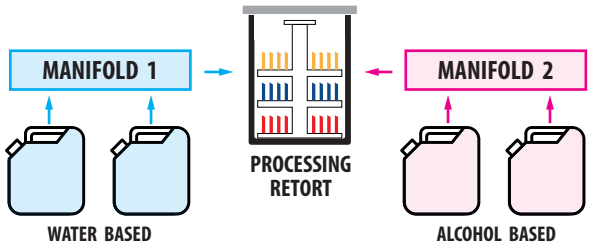
ENGINEERED FOR PATIENT SAFETY BY ERROR-PROOF OPERATION

MAGNUS' standard protocols are based on using Ethanol and Isopropanol alcohols for operation as a xylene-free, open system. Dedicated reagents, such as Milestone's propriety MileONE and MileTWO, can also be used to enhance the quality of fatty tissues with rapid processing. For ease of operation, MAGNUS can operate with standard 5 liter or 1 gallon commercial containers, reducing decanting and reagent replacement time for a greatly shortened daily maintenance downtime. Optional barcode scanning capability eliminates reagent replacement errors.

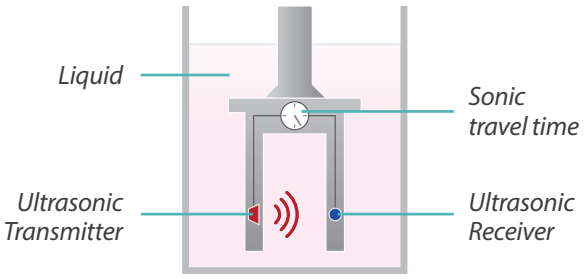
Step 1: reagent container barcode scanning

Step 2: reagent loading position scanning

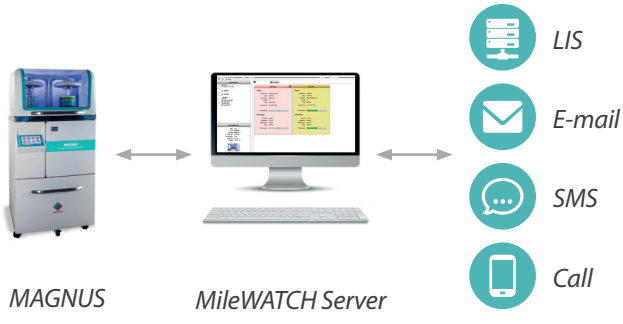
Thanks to the dual manifold configuration, water-contamination is eliminated. Water based and alcohol based reagents are kept separate by dedicated manifolds, ensuring tissue safety.



A highly-sensitive ultrasonic reagent sensor (optional) detects the correct solution and its purity while processing. This sensor allows for full specimen safety by detecting any alcohol-based reagents which are exhausted or contaminated by water. Once detected by the sensor, they are not used during the run.

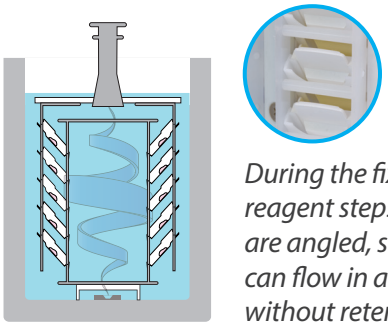


Thanks to MileWATCH, an advanced system for real-time monitoring, Lab Managers can get real-time text and call alert notifications regarding run status, time to completion and error alarms.

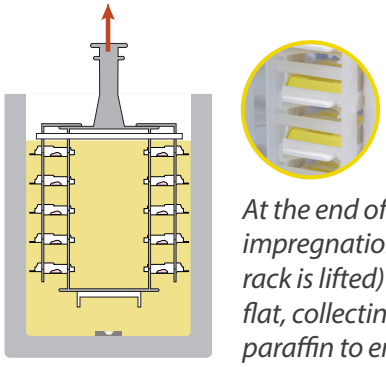


ENGINEERED FOR AUTO-EMBEDDING

MAGNUS can Achieve auto-embedding as part of the processing protocols, thanks to the unique patented technology of *Synergy* (European Patent 2 439 510). The specially designed rack has a leverage system that allows the molds+cassettes to sit in two positions according to the phase of processing.

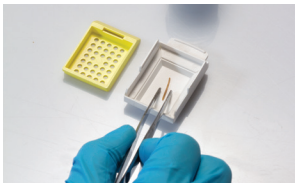


During the fixation and reagent steps, the molds are angled, so the fluids can flow in and out without retention.



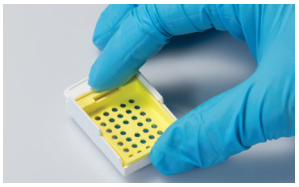
At the end of wax impregnation (as soon as the rack is lifted) the molds go flat, collecting the necessary paraffin to embed the tissue.

Synergy Step by Step



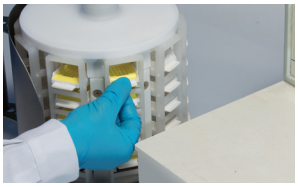
The specimen is placed at the base of the plastic mold.

A special pad to maintain the position goes on top.

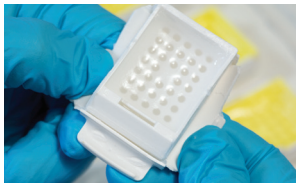


The cassette is applied as a mold cover.

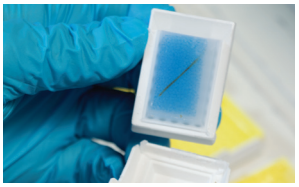
Mold and cassette assembly is inserted in the rack.



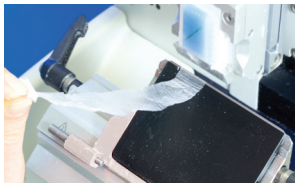
At the end of processing, the cassettes are placed on a standard cold plate.



Once cold, the mold/ cassette assemblies are ready to be opened.



The mold is opened and the specimen is quickly released for cutting.



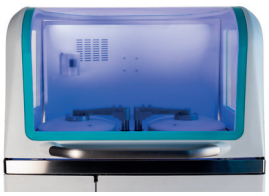
With Synergy, trimming is reduced.

Advantages and exclusive features of MAGNUS powered by Synergy

- Processing and embedding in a single step
- Up to 45 cassettes of needle biopsies processed and embedded every hour
- Manual embedding step skipped
- Optimal flat positioning also for small biopsies
- Optimized auto embedding protocols pre-loaded in each MAGNUS unit
- Standard tissue processor maintenance

MAGNUS BRINGS LEAN OPERATION TO YOUR LAB

Color coded status alerts



In operation

Ready to start

Alarm notification

User action required

Headquarters

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