200 LEAN GEN II

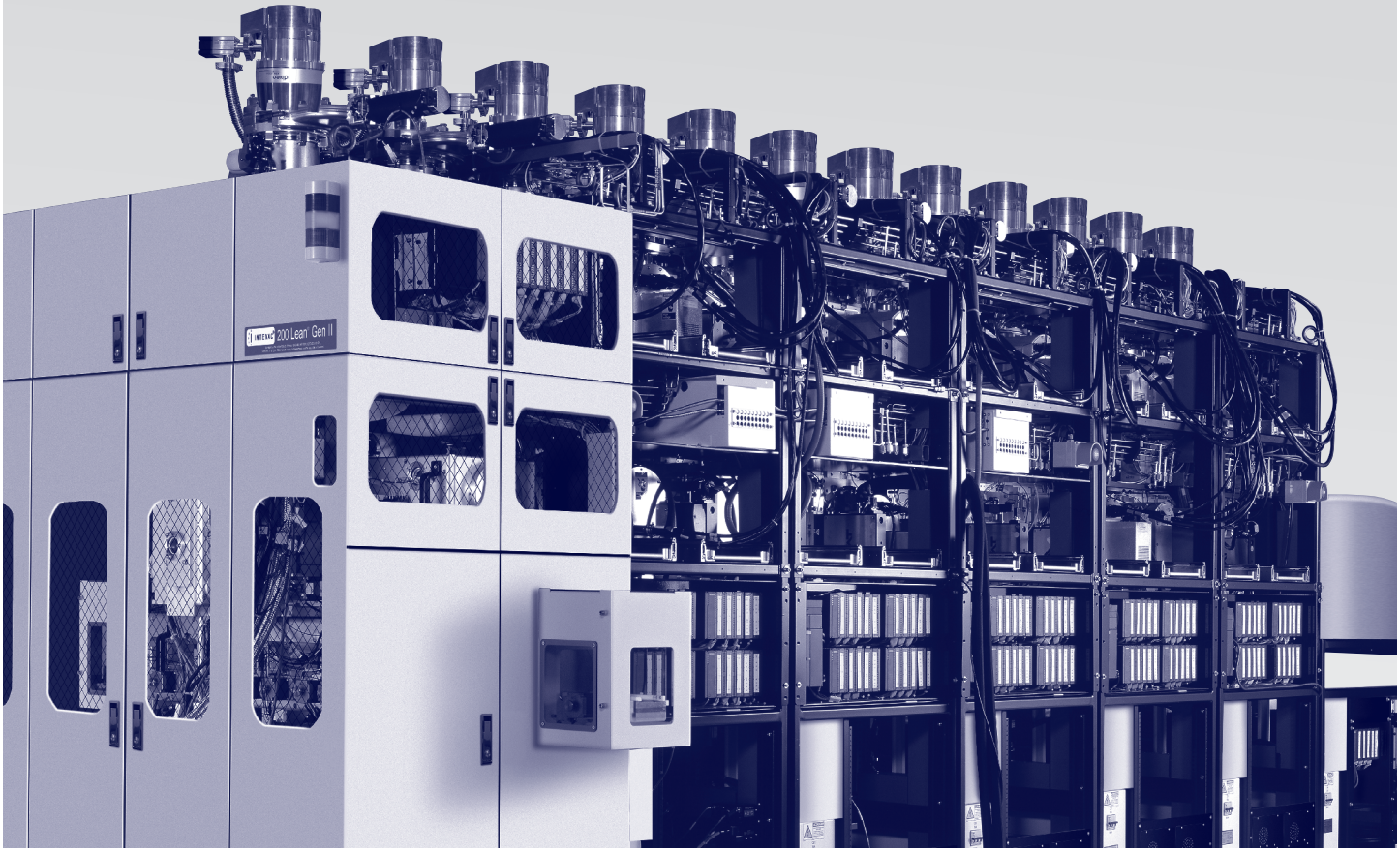
INTEVAC

THINK LEAN. CREATE VALUE.

HARD DISK DRIVE
MAGNETIC MEDIA MANUFACTURING

Intevac is a global leader in HDD magnetic media equipment.

Over 60% of the world's hard disk output is produced on Intevac systems; that's more than 50 million disks per month. Our 200 Lean® system successfully delivers state of the art Perpendicular Magnetic Recording (PMR) deposition technology, enabling the rapid industry-wide transition to high-density PMR. Intent on maintaining our leadership position, we are working closely with key customers to develop the tools required for the next leap in HDD to ultra-high density media.



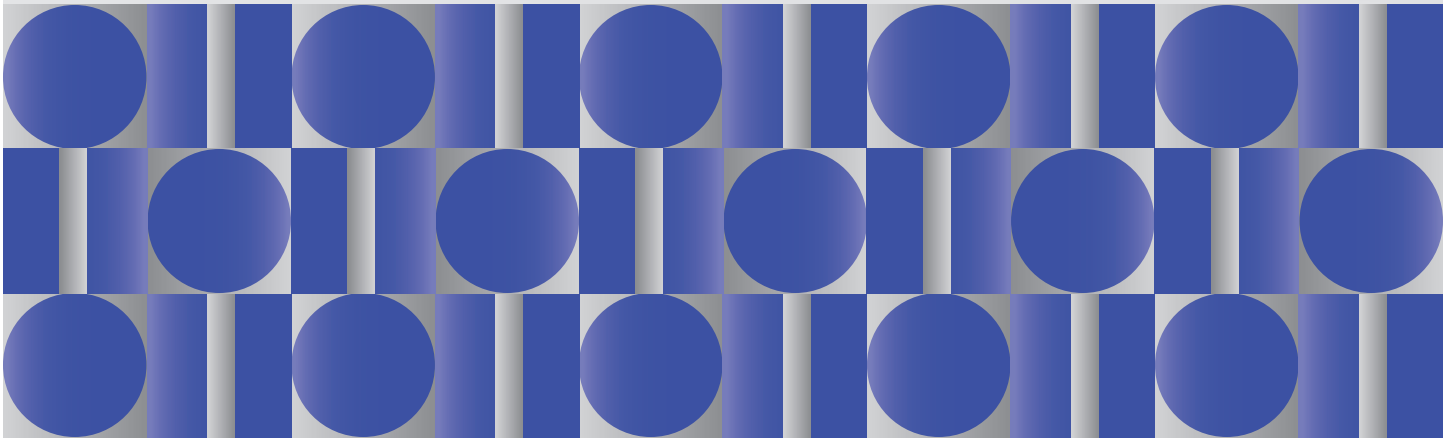
200 LEAN GEN II

UNSURPASSED IN PRODUCTION EFFICIENCY

The 200 Lean Gen II fully utilizes Intevac's lean philosophy of equipment design and is our latest product offering for the HDD industry. Based on our market leading 200 Lean platform, the 200 Lean Gen II offers significant upgrades while maintaining the highly efficient space utilization, low cost of ownership and superior operational efficiency of the 200 Lean. This tool is at the forefront of magnetic hard disk media manufacturing.

This flexible platform incorporates a linear motor-driven transport system which does not rely on friction to drive the carriers. This enables disk transfer from process station to process station in 600 milliseconds. This represents a 40% decrease in transport time compared to the 200 Lean and boosts throughput from 800 disks per hour to 1,000 disks per hour. The transport system inside the vacuum chamber is a simple self-aligned rail. This makes servicing the tool simple and fast.

200 Lean Gen II is designed to meet advanced media processing requirements including high temperature (650 ºC) processing and transport. The advanced software and control system enables the tool to deposit multiple ultra thin layers of films using the Multi Layer Source. The additional benefits of the 200 Lean Gen II are available as an upgrade kit to enhance the performance of installed 200 Lean systems.

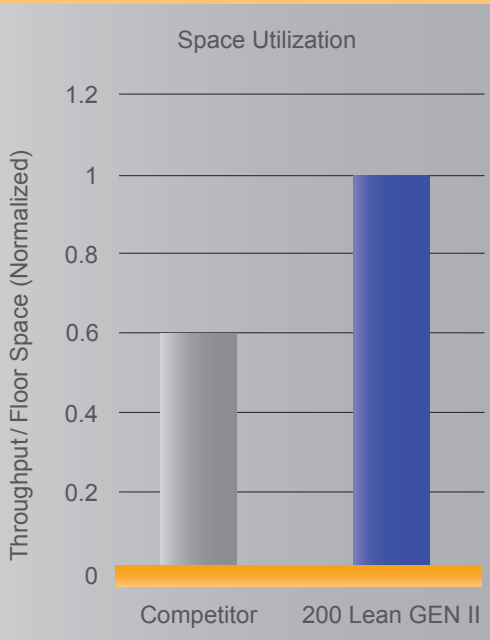


200 LEAN GEN II
INDUSTRY SPECS

Current Specifications

Process Stations	4 to 24+
Disk Form Factors (mm)	95, 84, 70, 65, 27, 21
Maximum Throughput (dph) @ 3.0s Process Time	>1,000
Total Transport Time (sec)	0.6
Base Vacuum (Torr)	7x10-8
Process Type	Single Disk
Simultaneous Two-sided Sputter Deposition	Yes
Footprint (m^2) 20 Stations	12.4
MDP-250B Source Compatibility	Yes
Magnetic Alloy Thickness Uniformity	≤ ± 3%
Non-magnetic Alloy Thickness Uniformity	≤ ± 3%
Carbon Thickness Uniformity	≤ ± 3%

Measurement of Lean Manufacturing



HARD DISK DRIVE
PROCESS SOURCES

MAGNETRON SPUTTER SOURCE

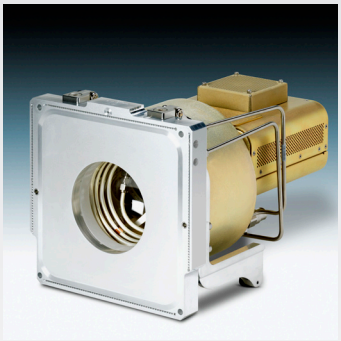
Advanced control rotating magnetron assembly offers DC, pulsed DC and reactive sputtering. The high efficiency magnetic pole assembly provides high target utilization and full target surface erosion to achieve a low target cost per disk.

NCT CARBON DEPOSITION SOURCE

The gridless CVD source deposits ultra-thin (<20 Å) high-density diamond-like carbon overcoat for excellent corrosion resistance and low particle performance.

CONFINED PLASMA SOURCE

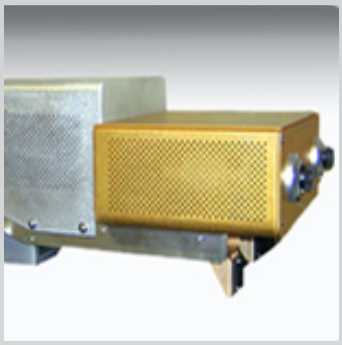
Confined Plasma Source generates high plasma density to produce high quality (density) film. The substrate is not immersed in plasma and exposed to direct ion bombardment resulting in lower surface damage on substrate.



ICP ETCH SOURCE

The ICP source has versatile, highly controllable, multi-application process capability for surface cleaning, isotropic etching and ashing with high etch rate up to 5 nm/sec.

HARD DISK DRIVE
PROCESS SOURCES



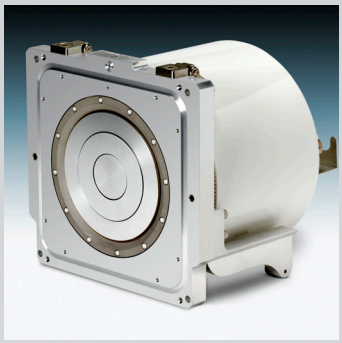
HALO ETCH™ SOURCE
High rate anisotropic etch source is used for patterned media etching. This capacitive coupled plasma etch source is capable of generating a high etch rate of up to 5 nm/sec.

HIGH TEMPERATURE HEATER
Enhanced heating source capable of processing temperatures of 650 °C with exceptional uniformity, and high heating rate. This is essential for the production of advanced magnetic thin film stacks to be used in ultra high density recording applications.

DYNAMIC COOLING SOURCE
This efficient cooling source provides higher cooling rates which are required for high system throughput.

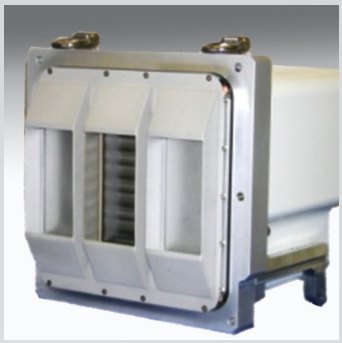
RF DEPOSITION SOURCE
This source is most suitable for deposition of non-metallic (insulating) or high resistivity metal targets that may be used in advanced media applications.

HARD DISK DRIVE
PROCESS SOURCES



TRIATRON SOURCE

Deposition source which can independently deposit up to three different materials in the same chamber simultaneously or sequentially, and can sputter from one or more of three concentric rings of material. This source is ideal for R&D activities where the study of various material composition ratios is required to select optimum performing magnetic thin film materials.



MULTI-LAYER SOURCE

The multi-layer source is capable of depositing up to three different materials in a pass by mode. This is well suited for manufacturing of multi-layer magnetic stack media with high throughput, excellent uniformity and low material usage.

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