

Introduction:

The DiskMantler™ utilizes shock, harmonics, and vibration to efficiently disassemble hard drives and SSDs into their critical rare earth components, such as neodymium magnets, printed circuit boards (PCBs), disk platters, aluminum casings, and voice coils. This process creates a clean, separated waste stream, which is ready for responsible recycling.

Technological Features

- Precision Disassembly: Ensures materials like magnets and aluminum remain uncontaminated, allowing high-quality recycling and reuse. The DiskMantler efficiently and effectively removes labelcovered screws that hold hard drives together—an intricate task that current robotic technologies are unable to perform.
- Scalability: The DiskMantler is compact and easily scalable or mobile ready for deployment into recycling facilities and data centers.
- **Automated Process:** Reduces manual labor, making operations faster and safer.

Video Link:

DiskMantler - HDD Disassembly and Recycling Video

Key Benefits

- Maximizes Material Recovery: Enables clean separation of critical materials, boosting recovery rates.
- **Environmental Impact:** Reduces e-waste sent to landfills, drastically cutting carbon emissions.
- **Economic Competitiveness:** Increases profitability for recyclers by enhancing the value of recovered materials and cutting processing costs.

Partnerships & Future Plans

- Current Partnerships: Working with recycling facilities, data centers and manufacturers for real-world implementation.
- **Next Steps:** Expand partnerships with e-waste collectors, data centers, manufacturers, and national labs for further validation and lifecycle assessments.

Social Impact

• **Empowering Communities:** The Garner DiskMantler creates job opportunities and offers training in advanced recycling technologies, empowering underserved communities with valuable skills. These efforts promote both economic empowerment and environmental stewardship, ensuring lasting benefits for communities and the planet.

Bottom Line:

The Garner DiskMantler is advancing e-scrap recycling by optimizing critical material recovery, enhancing economic and environmental sustainability, and fostering social impact by creating jobs, providing training, and empowering underserved communities to actively participate in the green economy.