

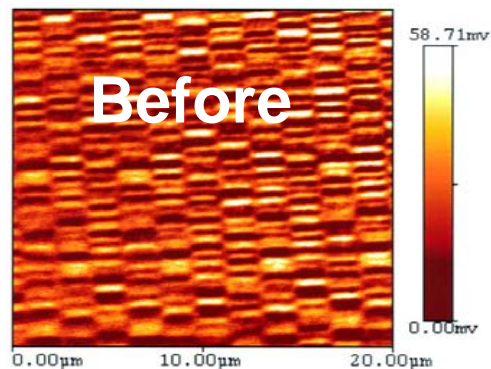
# Degaussing

## Background and Product Information

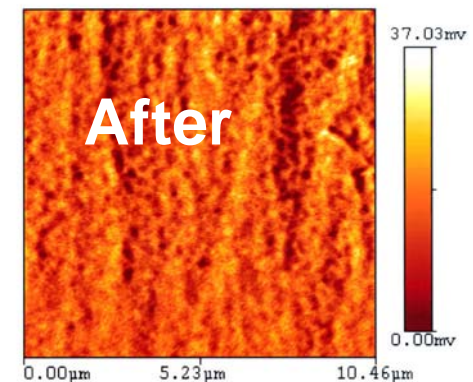
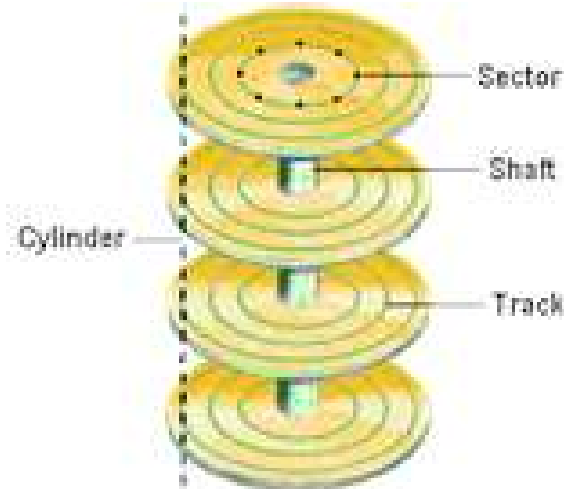


# What Does Degauss Mean?

- Computer hard drives use magnetic fields to store data on special discs called platters.
- Degaussing is the elimination of a magnetic field.
- A degausser of the appropriate strength will eliminate the magnetic fields on the hard drive platters eliminating all data.



Magnetic Force Microscopy



Magnetic Force Microscopy

## Why Degauss?

- Computer hard discs are made to be robust storage systems
- Removing data from a hard drive can be very difficult as it was designed to have many methods of retrieval
- Anyone can send a drive to a recovery company and have the data retrieved from it.
- Manufacturers of hard drives engineer retrieval methods into the design

# How Does a Degausser Work?

There are 3 types of degaussers:

*AC Degaussers*

*Permanent Magnet Degausser*

*Pulse Degaussers*

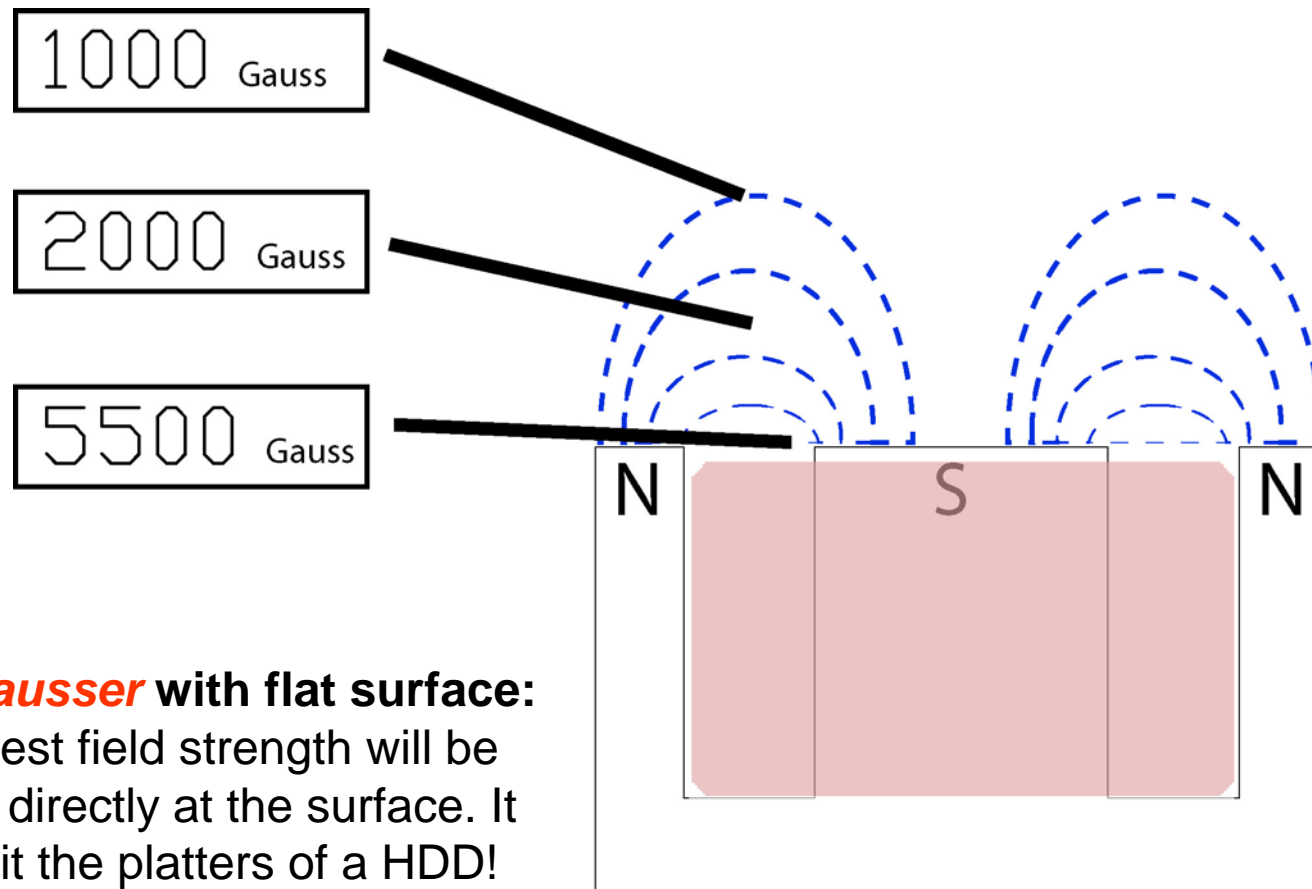


## AC Degaussers

**AC Degaussers** were originally designed to recycle tape. They typically have a flat surface and the media is pushed across it. The magnetic field is always on and it radiates from the surface of the degausser.



# Working Principle



**AC Degausser with flat surface:**  
The highest field strength will be archived directly at the surface. It will not hit the platters of a HDD!

# Permanent Magnet Degaussers

***Permanent Magnet Degaussers.*** A rare earth magnet is placed above and below a media tube and media is passed between those magnets. These magnets are always “On”. Some of the magnets can be extremely powerful and inflict the environment.



## Pulse Degausser

***Pulse degaussers*** like the Intimus 9000 use a large coil that the media passes inside of and the pulse is just for a fraction of a second.

The high energy magnetic field is ***focused inside the coil*** and very little is emitted outside of the machine.





## End of Life Cycle Plans

- Each company should have a detailed plan how to dispose electronic media
- Improper disposal can cause legal problems as well as security problems
- All necessary legal and security issues must be well documented
- 4 P: policy, processes, people & products!

## HOW DO YOU GRADE YOUR ELECTRONIC MEDIA SANITATION PROCESS?

Electronic Hard Drive and Tape Media Sanitation Risk Matrix	Types of Sanitation						
	NSA Degauss and Destroy	Degauss and Destroy	Degauss	Disintegrate	Destroy or Shred	Overwrite or Secure Erase	Store Beyond Statute Date, Return for Warranty, Sell, Donate or Send to Recycler
Types of Information							
Government National Security Secrets	A++	⊖	⊖	⊖	⊖	⊖	⊖
Government Data, Corporate Secrets, e-mails, Back-Up Data Files, Medical Files	⊖	A+	A	B	C	D	F
Bank Account, Social Security Number, Credit Card Transactions, Business Financial Information, Medical History, Personal Financial Information, Pictures, Personal Information, Internet History	⊖	A+	A	B	C	D	F
Personal Information Not Included Above	⊖	A+	A	B	C	D	F
Reference Material	⊖	⊖	⊖	⊖	C	D	F
Information of a Non-Personal Non Business Nature	⊖	⊖	⊖	⊖	C	D	F

- Green** = Extremely Low Risk
- Blue** = A Small Risk
- Yellow** = Could Be Perceived as Risky
- Red** = Putting Yourself, Company or Country at High Risk
  
- A** = 0% of Data Remaining
- B** = Data remaining but very difficult to recover
- C** = Data mostly intact but difficult to recover
- D** = Data hidden but relatively intact and not difficult to recover
- F** = Data not hidden and completely intact
- ⊖** = Not Applicable
  
- Degauss** = Magnetic Erasure
- Disintegrate** = Cut in to very small pieces that are less than 3/32 inch in diameter
- Destroy/Shred** = Physically destroyed with remains 1" and larger

# End of Life Cycle

## ***Overwriting / Secure Erase:***

- Only adds layers to existing data
- Information is still there until new data is completely filling the drive
- Requires technical expertise and supervision of process.
- Disk Drive must be in perfect working order
- Nearly five times the cost of degaussing

### Cost to Overwrite 1,000 Drives

Overwrite or Secure Erase	= 3-6 h/Drive
4000 technician hours	= 260,000.00 €
Drives overwritten	= 1,000
Value Drives saved	= 20,000.00 €

⇒ **Total Cost 240,000.00 €**

### Cost to Degauss 1,000 Drives

Degauss	= 300 Drives/h
3 Technician hours to degauss	= 195.00 €
Number of Drives Degaussed	= 1,000
Cost of new replacement drives	= 40,000.00 €
Cost of Degausser	= 16,000.00 €

⇒ **Total Cost 56,195.00 €**

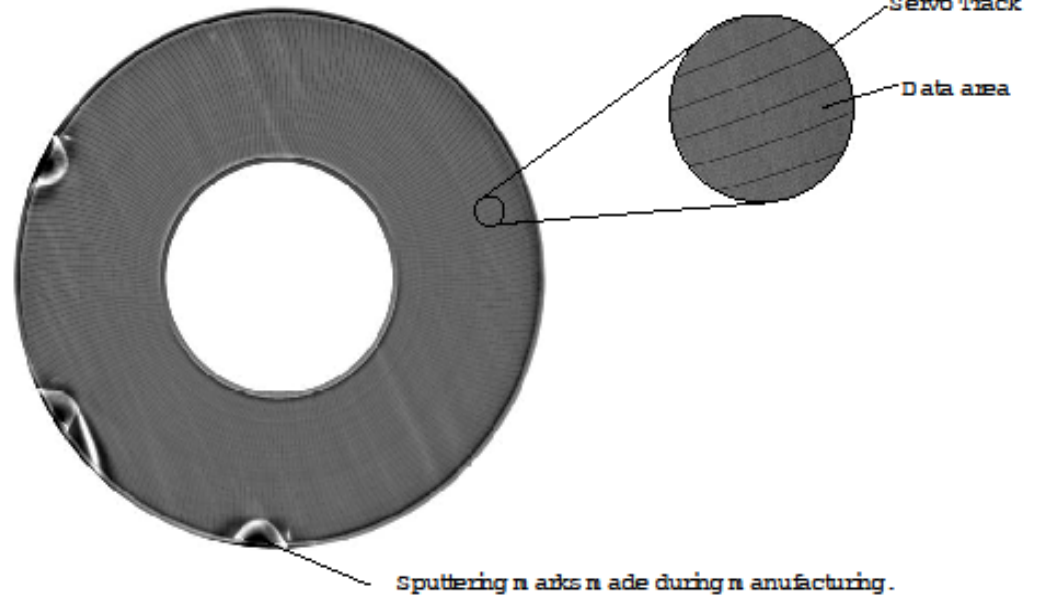
## Intimus 9000 Facts

1. Independently tested by SAS Type II Data Recovery labs (On-Track and Drive Savers) stated no recovery possible
2. Less magnetic exposure during operation than a small desk fan
3. Environmental friendly (takes max 7A while charging at 230V)
4. Independently certified to meet ANSI and CE standards
5. More than 50.000 duty cycles without further maintenance (more than 166 days at maximum duty (300 units/h))
6. No cooling systems needed as unit does not heat up (pulse technology)

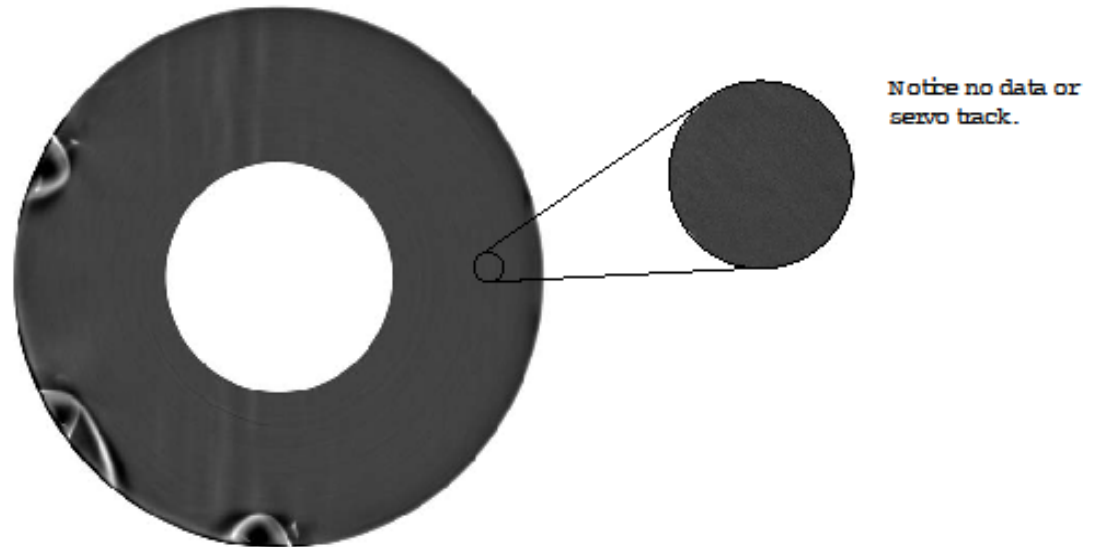




Undegaussed Hard Drive Disk Platter



Degaussed Hard Drive Disk Platter



***No remaining  
servo or data  
tracks at HDD***

## Intimus 9000 Benefits

### ***Easy-to-use:***

- Push-button or auto operation with door-activated auto feed
- Audio and visual verification of degauss
- Accepts media up to 1.66" (41.5mm)
- No remote control needed
- Audio diagnostics

### ***Fast and Reliable:***

- Min. 9.000oe, measured directly at disk
- Audio and visual verification of degauss
- 10 second cycle time
- Solid state design
- No cooling needed



# Intimus 9000 Benefits

## ***Environmental Friendly***

- Low energy consumption due to pulse technology (7,0A at 230V instead of up to 20A at AC degausser)
- Maximum power consumption at charging peak
- Very low magnetic influence to surrounding (below human interference outside of machine)
- No remote control necessary

## ***High Performance***

- High reliability due to high magnetic field
- More than 50.000 cycles without maintenance
- 10 second cycle time (vs. > 1 minute)
- Small, easy to transport, easy to use

