

Degaussing Data Storage Tape Magnetic Media

An alternating current (AC) bulk eraser (degausser) is used for complete erasure of data and other signals on magnetic media. Degaussing is a process where magnetic media is exposed to a powerful, alternating magnetic field. Degaussing removes previously written data, leaving the media in a magnetically randomized (blank) state. The degausser must subject the media to an alternating magnetic field having sufficient intensity to saturate the media and then by slowly withdrawing or reducing the alternating magnetic field leave the magnetic media in a magnetically neutral state.

To erase recorded data, it is necessary for the strength of the degaussing field to be higher than the coercivity of the magnetic media. Simply stated, coercivity is the magnetic field strength, rated in oersteds (Oe), required to change the magnetic orientation of a magnetic material. Check with knowledgeable dealers and degausser manufacturers to identify the degausser models that meet your requirements. Some examples of typical coercivities for computer magnetic tapes and disks [gleaned from various sources] are shown in [Table 1](#).

Data is typically not lost until its level has been decreased 65% to 75% (or more) below its original recording signal level, depending on the drive system. Complete erasure level, for most systems, is 60 – 70 dB below the original signal level; this will, of course, depend on the system and also depend on the user's security requirements. A 60 dB signal decrease equates to reducing the signal to one tenth of one percent of its original value.

Warning: Magnetic media products that have factory prerecorded magnetic servo patterns should not be degaussed. Degaussing erases factory written magnetic servo signals and this leaves the media unusable. See comments in [Table 1](#). For many other newer drives, the drives have highly sensitive magneto-resistive read heads and improper or incomplete degaussing will make the media unusable, until the media is properly degaussed.

For magnetic media (without magnetic servo signals), after *proper* degaussing, the quality of subsequent data recording should be unchanged or even improved. It is very important to understand and follow the degausser's operating instructions. This is most important for models where operators control the media's movement through the unit's degaussing field. For higher coercivity media, four passes are often recommended – two passes, with a 90° rotation for the second pass, and then repeat the process with media turned upside-down. Of course, these and other very important operating considerations will vary with the type, power and construction of the individual degausser model.

Degaussers come in different strengths and with various features. Discuss your needs with your Computer Products Dealer for recommendations of degausser models that can meet the requirements for your magnetic media technology. *Nominal* coercivity values shown in the following chart.

Table 1. Nominal Coercivity

Magnetic Tape Products (Data Tape)	Typical * Coercivity	Comments
9-Track Reel-to-Reel Computer Tape	300 Oe	
TK50, TK70	350 Oe	
3480, 3490E	520 Oe	
SLR1, SLR2, TR-1, DC2120, DC6150, DC6525	550 Oe	
SLR3, SLR4, SLR5, TR-3, DC9100, DC9120, ID-1	900 Oe	
SLR24 ⁽¹⁾ , SLR32 ⁽¹⁾ , TR-4 ⁽¹⁾	900 Oe	Do Not Degauss, See Note 1
ADR30 ⁽¹⁾ , ADR50 ⁽¹⁾ , ADR2-120 ⁽¹⁾	900 Oe	Do Not Degauss, See Note 1
TR-5 ⁽¹⁾ , SLR40 ⁽¹⁾ , SLR50 ⁽¹⁾ , SLR60 ⁽¹⁾ , SLR100 ⁽¹⁾	1650 Oe	Do Not Degauss, See Note 1
TR-7 (Travan 40GB) ⁽¹⁾ , SLR75 ⁽¹⁾ , SLR140 ⁽¹⁾	1650 Oe	Do Not Degauss, See Note 1
DLTtape III, DLTtape IIIXT	1540 Oe	
DLTtape IV, DLTtape VS1, NCTP	1850 Oe	
SuperDLTtape I	1900 Oe	
SuperDLTtape II	2600 Oe	
DLTtape S4	2650 Oe	
D8: 8mm 112m, 8mm 160m,	1600 Oe	
DDS1: 4mm 60m, 4mm 90m	1590 Oe	
DDS2 4mm 120m	1750 Oe	
DDS3 4mm 125m	2250 Oe	
DDS4 4mm 150m, DAT-72 4mm 170m	2350 Oe	
DAT-160 (DDS 6 th Generation)	2387 Oe	
DD-2 19mm	1550 Oe	
DD-2 QD (Quad Density) 19mm	1850 Oe	
DTF-1	1579 Oe	
DTF-2	2300 Oe	
Redwood SD-3	1515 Oe	
Magstar MP: 3570-B ⁽¹⁾ , 3570-C ⁽¹⁾ , 3570-C/XL ⁽¹⁾	1625 Oe	Do Not Degauss, See Note 1
Magstar: 3590 ⁽¹⁾ , 3590-E ⁽¹⁾	1625 Oe	Do Not Degauss, See Note 1
Enterprise 3592 ⁽¹⁾ , STK-T10000 (T10K) ⁽¹⁾	2500 Oe	Do Not Degauss, See Note 1
STK-9840 ⁽¹⁾ , STK-T9940 ⁽¹⁾	1625 Oe	Do Not Degauss, See Note 1
LTO-Ultrium 1 ⁽¹⁾	1850 Oe	Do Not Degauss, See Note 1
LTO-Ultrium 2 ⁽¹⁾	2150 Oe	Do Not Degauss, See Note 1
LTO-Ultrium 3 ⁽¹⁾	2600 Oe	Do Not Degauss, See Note 1
LTO-Ultrium 4 ⁽¹⁾	2710 Oe	Do Not Degauss, See Note 1
LTO-Ultrium 5 ⁽¹⁾	~2700 Oe	Do Not Degauss, See Note 1
Mammoth 8mm, AIT-1 8mm, VXA-1 8mm	1320 Oe	
M2 Mammoth 2 8mm, VXA-2 8mm 230m	1350 Oe	
AIT-2 8mm, AIT-3 8mm	1382 Oe	
S-AIT-1 ½"	1400 Oe	
AIT-4 8mm	1759 Oe	
Magnetic Flexible Disk Products		
3.5" 720KB DD Microdisk, 5¼" 1.2MB HD Minidisk	650 Oe	
3.5" 1.44MB HD Microdisk	720 Oe	
5¼" 360KB DD Minidisk	300 Oe	
Zip 100 MB Disk ⁽¹⁾	1550 Oe	Do Not Degauss, See Note 1
Zip 250 MB Disk ⁽¹⁾ , Zip 750 MB Disk ⁽¹⁾	2250 Oe	Do Not Degauss, See Note 1
SuperDisk 120MB	1500 Oe	

NOTE 1: DO NOT DEGAUSS – This product has factory prerecorded *magnetic* servo tracks. The media will be unusable, if the servo tracks are bulk erased (degaussed). Products that use factory prerecorded magnetic servo signals should not be degaussed unless destruction of the recording media is desired.

*These coercivity values are a guideline for determining degaussing equipment requirements only. Consult with degaussing equipment vendors about the features and degaussing-strength needed to meet your requirements.