

# Tape Drive Cleaning for NEO Series® Tape Libraries and Autoloaders

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## Preface

This Technical Information Bulletin describes the cleaning algorithms used in the NEO E-Series and S-Series tape libraries and autoloaders.

## Overview

The current generation of NEO E-Series and S-Series tape libraries and autoloaders configured with IBM LTO tape drives incorporate proactive cleaning algorithms to optimize read/write reliability and performance. By continuously monitoring tape drive operation, the firmware will signal a periodic cleaning request to the host or user after certain usage thresholds are reached. Ongoing write/read operations (backup or restore) are not impacted by these usage-based cleaning requests, but some backup applications may report TapeAlert warning conditions while the cleaning request is active. The tape drives continue to report a Clean indication until a valid cleaning cartridge is loaded into the drive and a cleaning cycle has been successfully completed.

## Background

The IBM LTO-4, LTO-5, and LTO-6 Ultrium tape drives used in the current generation of NEO E-Series and S-Series libraries may generate clean requests under certain operating conditions. There are two general categories of cleaning requests reported by the tape drive—Cleaning Required and Cleaning Requested.

**Cleaning Required** – This message is reported if the tape drive detects an unrecoverable error on a tape operation that may be resolved by cleaning the tape drive. When this condition occurs, a critical TapeAlert Flag 20 (Clean Now) is reported to the host. The tape drive remains in this state until a successful cleaning cycle or a Power On Reset occurs. If there is another data cartridge inserted before the drive has been cleaned, the drive attempts to function as normal, but it is likely that another unrecoverable error will be encountered until a cleaning operation or other corrective action is performed.

**Cleaning Requested** – This message is reported when the media usage threshold is exceeded. When this condition occurs, a warning TapeAlert Flag 21 (Clean Periodic) is reported to the host. The tape drive remains in this state until a successful cleaning cycle or a Power On Reset occurs. If there is another data cartridge inserted before the drive having been cleaned, the drive functions as normal, but the Cleaning Requested status will persist. The threshold criteria used for this proactive cleaning algorithm is determined by the tape drive model and is subject to change. The following table can be used as a general guideline to determine the approximate number of full tape cartridges that are processed (read and/or write) between requested cleaning operations.

**Table: Periodic Clean Criteria**

Tape Drive Model	Full Tape Passes
NEO E-Series LTO-4	23
NEO E-Series LTO-5	12
NEO E-Series LTO-6	15
NEO S-Series LTO-5	8
NEO S-Series LTO-6	15

## Cleaning Cartridges

LTO Universal Cleaning Cartridges can be purchased from your Overland Storage Authorized Reseller in single cartridge (OV-LTO901999), 5-pack (OV-LTOCLN05) or 20-pack (OV-LTOCLN20) quantities.



**IMPORTANT:** Only use LTO Universal Cleaning Cartridges to clean the tape drives in your NEO Series library.

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Refer to your NEO Series user guide for additional information on tape drive cleaning procedures for your library. The user guides can be found on the Overland website at:

<http://docs.overlandstorage.com/neo>