

# Development of a disk drive exerciser/tester

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## Introduction

The most widely used computer storage media is the magnetic disk. The disk driver needs maintenance checks and adjustments to function reliably and effectively. The checks determine whether part of the driver should be adjusted in order to operate within the specified tolerances or replaced in which case the replaced part should be adjusted and then checked to verify its correct operation. A basic tool in the maintenance of the disk drive is the disk drive exerciser/tester. The purpose of this equipment is to enable the engineering technician to issue commands to the drive in order to check the outcome of the command with other equipment and also to monitor some of the drives functions through the exerciser itself. The development of this exerciser was based on the TM100-1, TM100-2 Tandon disk drives and the text refers to them but the exerciser can be used with little or no change on other drives as well.

Originally the project presented three choices:

- 1) To go through the DMA. This was discarded since the aim was to isolate the disk driver and to regulate problems related with the drive exclusively.
- 2) Use a microprocessor and write the appropriate program to produce an exerciser by simply interfacing the microcontroller to the drive.
- 3) Use discrete digital components. This choice was taken as it offered experience in designing a circuit that had not been studied before and at the same time it offered the opportunity to use a microcontroller as well by interfacing it to the drive through the digital circuit so that both can be used and give the opportunity to study the advantages and disadvantages between the two approaches.

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