RiD

Recording Interchange Diagnostic

A comprehensive drive diagnostic to protect your software investment.

Dymek’s R.I.D.—A fast, low cost, accurate standard for detecting a faulty disk drive before it can damage your valuable disk library.
Recording Interchange Diagnostic

The Dymek R.I.D. (Recording Interchange Diagnostic) is a precision tool, set up in terms of software routines, on a 5.25" flexible disk. The disk can be inserted in a drive for fast (less than 1 minute), comprehensive, extremely accurate, pass-fail determination of seven critical drive factors that affect disk interchangeability.

SEVEN TESTS ASSURE INTERCHANGEABILITY

Disk Speed
This test determines if rotational speed is within requirement. Speed must be within 2 percent for a “PASSED” reading. If the drive speed is out of this tolerance, record overlap or data detection failure can occur, particularly if in a drive interchange mode. The display will prompt the user to seek service for fail conditions.

Noise Tolerance
A flexible disk drive must be able to read at half amplitude while the head is at its innermost track. This track is more prone to noise due to an inherently low signal level. This test checks if the drive can play back a stressed signal pattern at half the normal amplitude. If the track cannot be read correctly, the system displays “FAILED”. The user is first prompted to insert a head cleaning disk to try to correct the problem. If this doesn’t work, then the problem can be due to a worn or damaged head or a very high level of “system” noise. Do not attempt writing data with a drive in this condition, as data may not be recoverable. Service will be recommended by the display.

Write/Read
If the drive head can write and read a record properly, write over the record and then read the second record without error, the drive will pass the test. If the new record cannot be read without error, the user is advised not to attempt write operations as new record loss is possible. The diagnostic further advises that either the head or the write circuitry requires maintenance, and to obtain service.

Track Alignment
The head should already be aligned correctly for track position. If the head does not position itself with the required accuracy for a 48 track per inch drive, data interchange failure can occur. This tolerance includes all effects of temperature, humidity, runout and clamping. Although a disk may be read with a misaligned head, any attempt to write data could damage adjacent tracks, causing an inability to later read the adjacent track. Writing should not be attempted, although data may be recoverable by copying to another drive in proper alignment. A fail diagnostic recommends service be obtained.

Positioner Backlash (Hysteresis)
Head alignment may be jeopardized by the direction of head positioner travel. If there is backlash, the head will not repeat position when it approaches a track from opposing directions. Failure in this test has the same effect as alignment failure. A fail diagnostic recommends service.

Disk Clamping (Eccentricity)
The drive must be able to center and clamp the disk securely to the drive hub. Centering does not necessarily repeat from one disk insertion to the next. Non-centering produces eccentricity and has the same effect as being misaligned for a portion of disk rotation. A clamping error results in the user being told by the diagnostic to remove the disk and reinsert it. A minimum of five insertions in two groups is recommended to the user. Further failure results in the recommendation of obtaining service.

Disk drives are designed to operate with or without reinforcement rings around the disk center hole. Many disks have them. They help protect the disk oxide surface from abrasion caused by the drive clamping mechanism. In order to provide meaningful drive performance testing, the R.I.D. disk cannot use these rings.

Erase Crosstalk
A high level of erase crosstalk will degrade data disk interchangeability. Trim erase heads can crosstalk enough erroneous signals to cause early off-track data handling failure. The R.I.D. disk checks for this problem in a test similar to the alignment test. When erase crosstalk causes a “FAIL”, the R.I.D. will recommend service which will probably require head replacement.

System Compatibility
The R.I.D. disk is available for the 5.25-inch drives in 48 and 96 TPI formats for IBM PC and XT, Apple II System Family, and the Radio Shack TRS-80 systems. Other popular formats will soon be available. The R.I.D. disks will operate in normal office conditions and are written to the most stringently graded media.

Manufacturer
Dymek Corporation was founded in 1978 and is the largest producer of flexible analog alignment disks worldwide. Dymek also produces a line of flexible head and media test equipment that are standards for this industry. Dymek is well known for its quality products by all the head, drive, media and system manufacturers.

SPECIFICATIONS

The disk used shall meet or exceed requirements of the American National Standards Institute for Unrecorded Flexible Disk Cartridges X3.83-1980, with the exception, center hole shall be 1.1250" ± 0.0050 inches.

ITEMS TESTED TOLERANCE

Disk Speed 300 rpm ± 2% (With the exception of the Apple II System Family which is 300 rpm +1.5% -2.0%) Noise Tolerance
By halving the read amplitude of a worst-case data pattern at the inner-most track, system noise tolerance is stressed. No errors are allowed.

Write/Read
The drive is required to write over previous records and read error-free on track 25, typically.

Track Alignment
With the head at the track 16 location ± .002 inches, a normal data pattern is read. No errors are allowed.

Positioner Backlash (Hysteresis)
The alignment test is done with the positioner arriving from either direction alternately. No errors are allowed.

Clamping (Eccentricity)
The alignment test is done satisfactorily without the “Clamping Error” message. Clamping and alignment position error combine and must not exceed the alignment tolerance. No errors are allowed.

Erase Crosstalk
Signals read by the erase core affect the alignment test and will cause an “Erase Crosstalk” error message. No errors allowed.

For further information, please call toll free:

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