Dysan Digital Diagnostic Diskette

Dysan

Digital Diagnostic Diskette

The Dysan Digital Diagnostic Diskette (DDD) is an evaluation tool used to analyze and adjust drive alignment and performance characteristics. It is recorded with track and sector ID fields aligned to track centerline while data field information is intentionally misaligned.

Available in 5.25" and 8" diskette sizes, the Digital Diagnostic Diskette provides user-oriented benefits no other technique can provide such as:

- performs a greater variety of tests than conventional methods
- is fast and easy to use
- determines drive operating margin
- ensures data interchangeability between drives
- reduces costs
- eliminates the need for system disassembly in most cases
- simulates real world operating conditions

Dysan's digital diagnostic technology offers superior capabilities for testing drive alignment and performance characteristics, while saving time and money. The advantages of this approach are numerous.

First, the DDD can perform more tests in far less time than conventional "cat's-eye" techniques. With appropriate software, the following evaluations can generally be performed in less than four (4) minutes:

- radial alignment
- head positioner linearity
- head positioner hysteresis
- diskette eccentricity
- read margins and head-media compliance
- photo-index timing
- diskette rotational speed
- head positioner skew
- relative head positioning
- head azimuth
- head load time

Software programs can be self-instructional allowing inexperienced users to perform the tests. Since an oscilloscope is not required, test results are not subject to operator interpretation.

Secondly, the DDD can determine a drive's operating margin. For example, the ability of one drive to read data recorded by another drive can be demonstrated. This serves to ensure data interchangeability between drives over the maximum environmental operating range. End users can use the DDD to "fingerprint" each drive. If data was unintentionally recorded on a misaligned drive, it can be recaptured by intentionally misaligning another drive. In addition, periodic use of the DDD will measure degradation in the operating margin allowing a better determination of preventative maintenance scheduling.

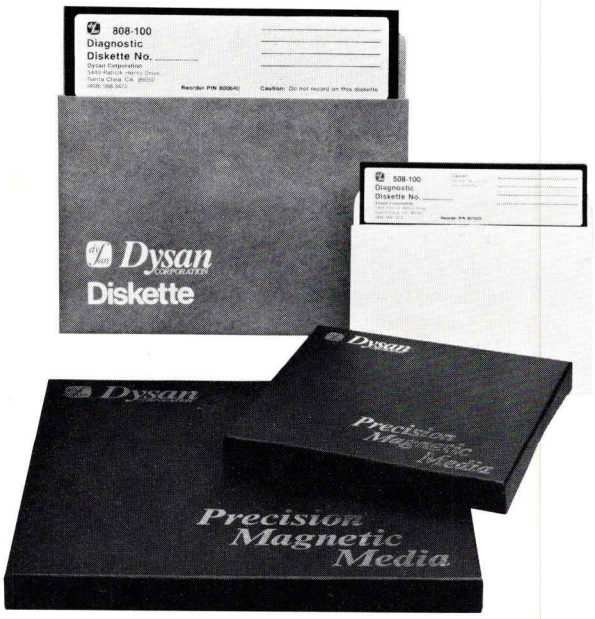
Another advantage is cost reduction. The DDD is less expensive to use than existing methods. Because it eliminates the need for additional test equipment and experienced service personnel, substantial cost savings can be realized.

Convenience is another feature of Dysan's Digital Diagnostic Diskette. Tests are performed without the need for system disassembly usually required to access internal test points. This eliminates the possibility of drive misalignment which can result from the re-assembly process. In fact, the DDD approach is the only way on most systems to verify the alignment of an assembled drive.

Simulation of real world operating conditions is another important feature. The DDD tests drive mechanics, drive electronics, and controller electronics as a system using digital data like that encountered in actual field applications to determine proper operation.

In addition to these advantages, the diskettes selected for digital diagnostic applications exceed certification and performance criteria established for standard data diskettes. All media are individually screened, verified, and aged to ensure accuracy and long-term stability.

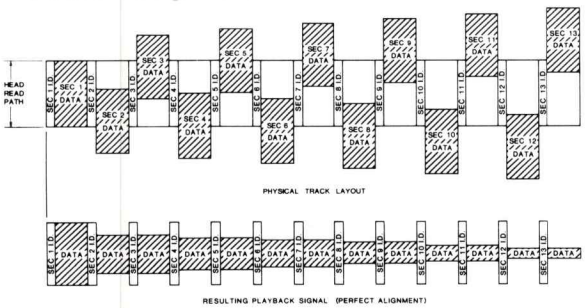
Compare this digital diagnostic technique to existing test procedures. We think you'll agree that using Dysan's Digital Diagnostic Diskette to check drive alignment and performance is the best way to ensure the integrity of your valuable data.



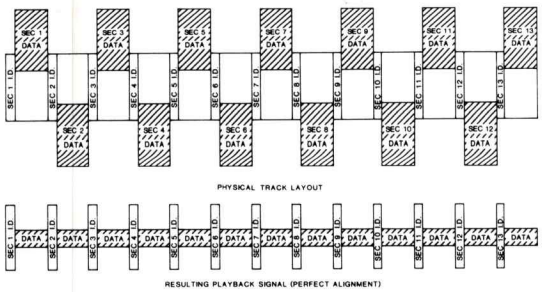
THEORY OF OPERATION

Currently, three types of test data field patterns are provided on a Digital Diagnostic Diskette. The ability of the drive to read specific fields provides information which is used to calculate test results. The illustrations which follow are pictorial representations of this technology.

One type of data field pattern has the track and sector ID information written on track with data fields radially displaced. Starting from sector one, successive data fields are radially displaced *progressively further away* from track centerline. This displacement takes place alternately both toward and away from the spindle. If a drive is aligned, the first two sectors that it fails to read should be equally displaced on either side of track centerline. A non-symmetrical maximum read pattern indicates misalignment.



A second type of data field pattern has ID information written on track with data fields alternately displaced *an equal amount* on either side of track centerline. That is, an "alternate off-set" pattern of data fields is provided. By interpreting data field read failures, this pattern can be used to evaluate eccentricity.



The third type of data field provided has ID information written on track with data fields azimuthally rotated. If the head under test is at zero azimuth, the first two sectors that it fails to read should be equally rotated clockwise and counterclockwise.

Timing-related tests (photo-index, skew, rotational speed) are accomplished by measuring precisely placed circumferential data bits on the DDD relative to the photo-index pulse. Thus, performance of these tests requires that the photo-index pulse be accessible by the computer system.

DISKETTES AVAILABLE

Digital Diagnostic Diskettes are available in 5.25" and 8" sizes. The diskettes are format equivalent with IBM's diskettes 1, 2 and 2D.

MODEL NUMBER	NUMBER OF SIDES	SECTORS PER TRACK	BYTES PER SECTOR	TRACKS PER INCH
508-100	1	16	128	48
508-200	1	16	256	48
508-300	2	16	128	48
508-400	2	16	256	48
808-100	1	26	128	48
808-200	1	26	256	48
808-300	2	26	128	48
808-400	2	26	256	48

SPECIFICATIONS

PHYSICAL CHARACTERISTICS

Substrate:	Polyethylene Terephthalate
Coating:	Unoriented Fe_2O_3 on both sides
Nominal Thickness:	0.003-inch (0.0076 mm) smooth to within two microinches, CLA
Thermal Expansion Coefficient: (Maximum)	13.8×10^{-6} in./in./°F (25×10^{-6} cm/cm/°C)
Hygroscopic Expansion Coefficient: (Maximum)	15×10^{-6} in./in./% RH (15×10^{-6} cm/cm/% RH)
5.25" Diskette	
Inside diameter:	1.125 in. (2.857 cm)
Outside diameter:	5.125 in. (13.017 cm)
8" Diskette	
Inside diameter:	1.500 in. (3.81 cm)
Outside diameter:	7.880 in. (20.02 cm)

ENVIRONMENTAL CHARACTERISTICS

Operating:
68°F (20°C) and 50% RH for maximum operating accuracy and correlation.

Acclimation time:
24 hours or for as long as the diagnostic diskette was removed from the operating environment, whichever occurs first.

Storage:
8% to 80% RH, 50°F to 125°F (10°C to 51.6°C)

Shipping:
8% to 80% RH, −40°F to 125°F (−40°C to 51.6°C)

NOTE: 5.25" diskettes in 96 TPI versions, and models 808-200 and 808-400 are projected to be available in July, 1981.

Dysan® CORPORATION

Dysan Corporation
5440 Patrick Henry Drive
Santa Clara, CA 95050
(408) 988-DISC (3472)
TLX: 171551 DYSAN SNTA (INTERNATIONAL)
TWX: 910-338-2144 (DOMESTIC)