

REVISIONS

REV.	DESCRIPTION	E. C. NO.	DATE	APPROVAL
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<p>TITLE</p> <p>DYSAN 224/2A ALIGNMENT DISKETTE ENGINEERING SPECIFICATION</p>

ORIGINATOR	<i>Brad Baker</i>	8-17-79	DWG. NO. 810 - 142	REV. B
CHECKED	<i>Dee Phagn</i>	8-17-79		
APPROVED	<i>Dennis H. Payne</i>	8-17-79		SHEET 1 OF 8
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i. SCOPE

This specification describes the functional characteristics of the Dysan 224/2A alignment diskette. It also includes tolerance specifications for the data recorded on the diskette.

II. GENERAL DESCRIPTION

The Dysan 224/2A double sided alignment diskette incorporates the following established alignment features, which are to be used to align 5.25" one and/or two head flexible disc drives.

- A. Locate and identify track 00.
- B. Adjust photo index timing.
- C. Check skew error of read/write head positioning mechanism.
- D. Align head positioning mechanism to track center-line.
- E. Verify read output for correct head to diskette compliance.
- F. Check head azimuth error.

III. APPLICABLE DOCUMENTS

- A. Dysan 224/2A alignment instructions.
- B. Diskette jacket drawing 500735.

IV. ALIGNMENT TRACK DESCRIPTIONS

A. Radial locations:

1. Side "0"

- a. Track 00: 2.2500 + .0010 inches
- b. Track 01: 2.2292 ± .0010 inches
- c. Track 16 (lobes equal in amplitude):
1.916667 + .000300 inches
- d. Track 33: 1.5625 + .0010 inches
- e. Track 34: 1.5417 ± .0010 inches

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2. Side "1"

- a. Track 00: $2.1667 \pm .0010$ inches
- b. Track 01: $2.1458 \pm .0010$ inches
- c. Track 16 (lobes equal in amplitude):
 $1.833333 \pm .000300$ inches
- d. Track 33: $1.4792 \pm .0010$ inches
- e. Track 34: $1.4583 \pm .0010$ inches

B. Tracks "00" and "33" (both sides)

These tracks are recorded with a full revolution 125 khz + 5% data pattern. This signal locates and identifies track 00 and is used to insure correct head to diskette compliance on track 33.

C. Track "01" and "34" (both sides)

- 1. These tracks are recorded with a timing burst used to position the disc drive index transducer.

- a. The burst is located as follows:

The center of the index hole is located $78^{\circ}47' \pm 3'30''$ above a radial line drawn through the diskette center and passing through the leading edge of the timing burst.
(See Figure 1)

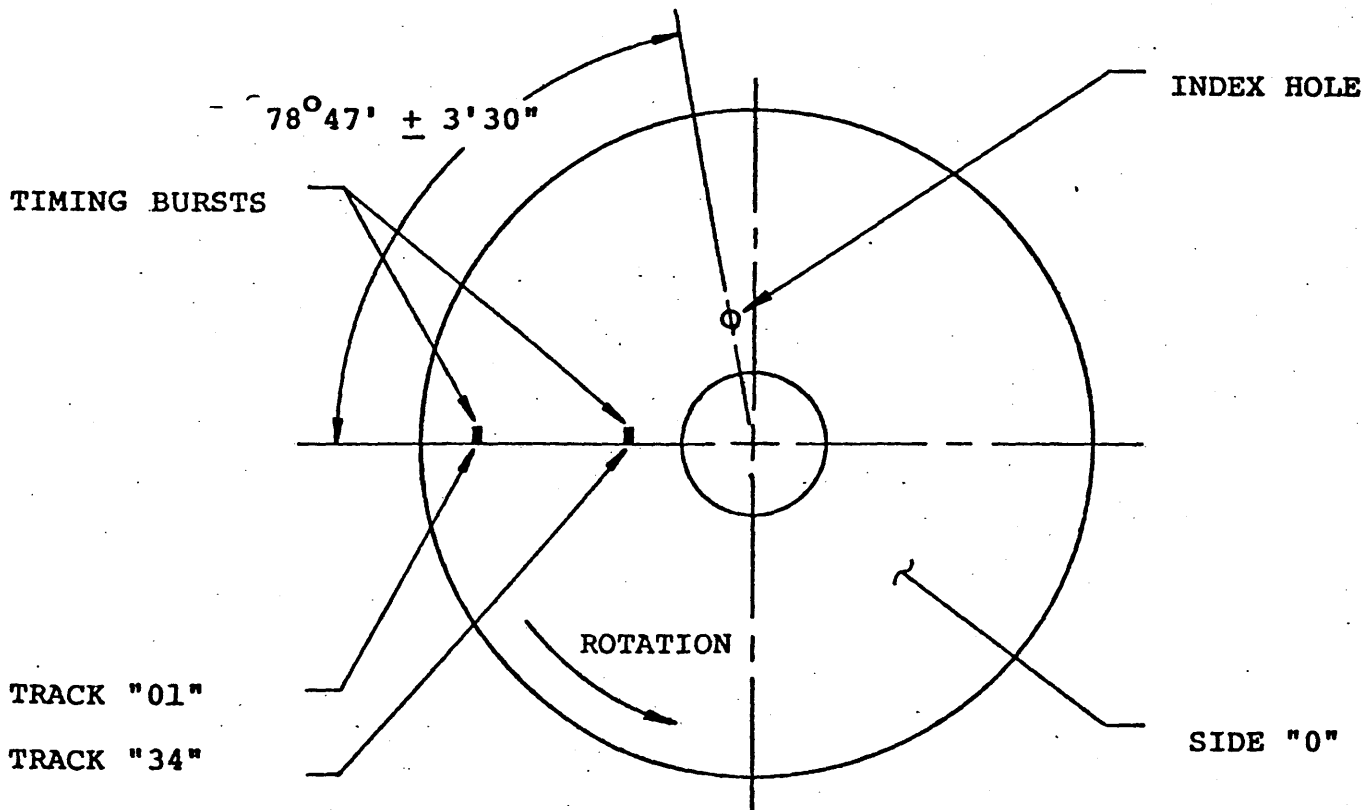


FIGURE 1

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- b. This burst has a duration of $50 \text{ usec} \pm 10 \text{ usec}$ and is written in such a position as to occur $200 \text{ usec} \pm 32 \text{ usec}$ after the leading edge of the photo index pulse in a properly aligned drive.

(See Figure 2)

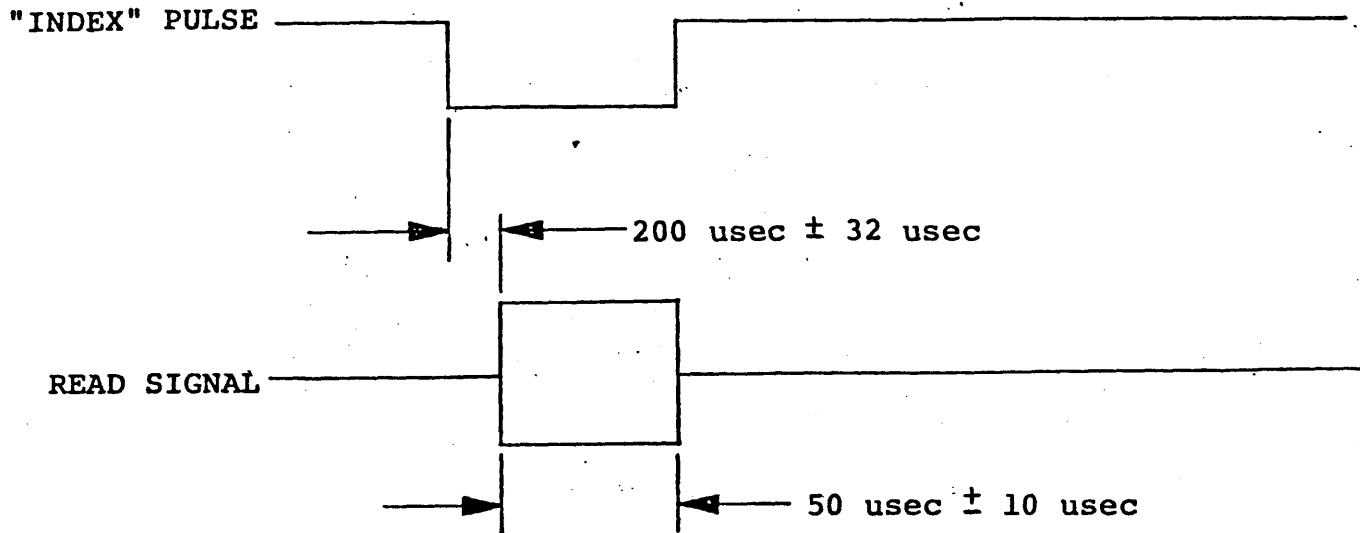


FIGURE 2

- c. The recording frequency is $125 \text{ khz} \pm 5\%$.
- d. The timing burst location may be verified by measuring the time between the leading edge of photo index and the leading edge of the timing burst on a system approved by Dysan Corporation. The time must be $200 \text{ usec} \pm 64 \text{ usec}$.

D. Track "16" (both sides)

1. Two eccentrically recorded tracks are written about the centerline of track 16.

- a. The recording frequency is $62.5 \text{ khz} \pm 10\%$.

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2. When inserted in an aligned drive, a lobed or "cats eye" pattern will be observed. Alignment of track 16 centerline ($1.916667 + .000300$ inches on side "0" and $1.833333 + .000300$ inches on side "1") is achieved when the two lobe patterns are of equal amplitude. Crossover points will occur every $100 + 4$ ms. The first crossover point will occur at photo index time ± 10 msec.

"INDEX" PULSE

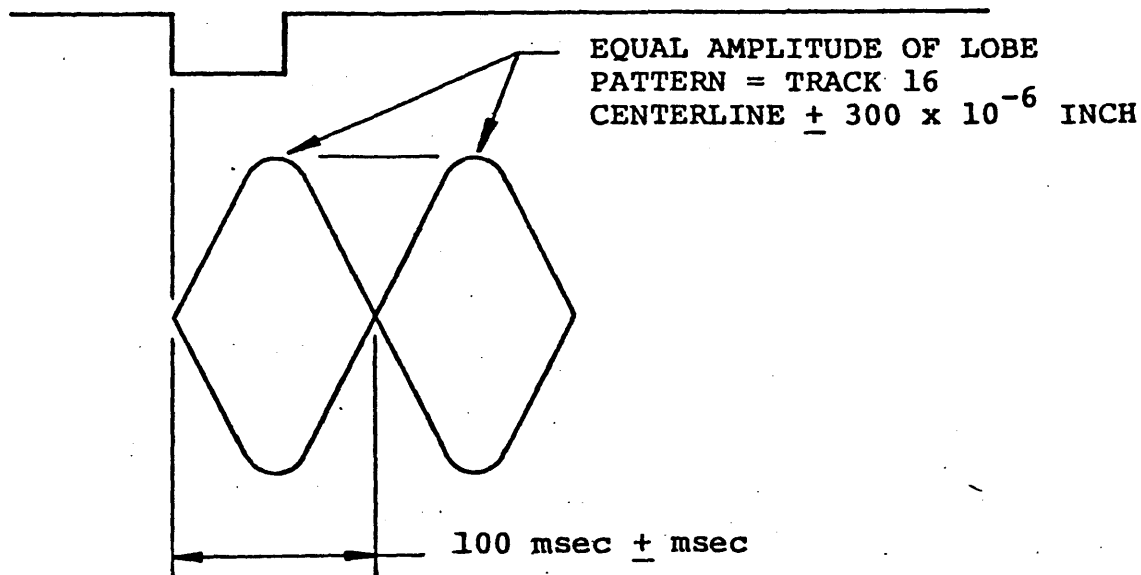


FIGURE 3

3. Lobe amplitude ratio vs. misalignment of track 16 centerline is shown in Figure 4.

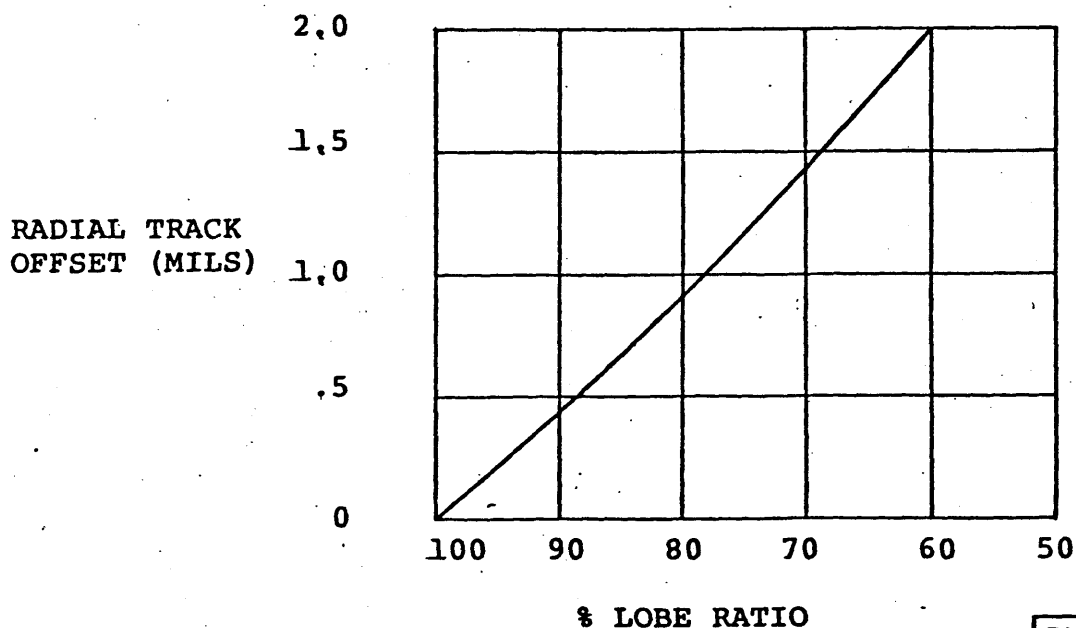


FIGURE 4

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E. Track "34" (both sides)

1. A series of four bursts are recorded such that the azimuth angle of the read/write heads may be determined from the relative amplitudes of the bursts.
2. The recording frequency of each burst is 125 khz \pm 5%.
3. Each burst has a duration of 500 usec + 20 usec.
4. The leading edge of the first burst is located $0^{\circ}32' + 0^{\circ}4'$ after the first peak of the index timing pulse.
5. There is a space of $0^{\circ}4' + 0^{\circ}2'$ between adjacent bursts.
6. When inserted in an aligned drive, a series of four bursts will be observed. Azimuth alignment of $0^{\circ}0' + 0^{\circ}2'$ is achieved when the first and fourth bursts are of equal amplitude. Azimuth alignment of $0^{\circ}-12' + 0^{\circ}2'$ is achieved when the first and second bursts are of equal amplitude. Azimuth alignment of $0^{\circ}+12' + 0^{\circ}2'$ is achieved when the third and fourth bursts are of equal amplitude.

V. MECHANICAL DESCRIPTION

- A. The diskette is physically compatible with the Dysan 104/2 Diskette (described in Dysan Engineering Specification 810150).
- B. The write enable notch has been deleted from the diskette jacket to minimize the possibility of inadvertent recording on the diskette.
- C. The diskette has an inside hole diameter of 1.125 \pm .0004 inches and is free of burrs, nicks, etc.

VI. ENVIRONMENTAL CONDITIONS

- A. Recording/Verification
 1. All media is stabilized and then recorded with alignment data at $68^{\circ}\text{F} \pm 2^{\circ}\text{F}$ temperature and $50\% \pm 5\%$ relative humidity.

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Figure 5 unavailable.

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B. Shipping

1. The diskette may be transported under the following conditions:

-40°F to 125°F temperature
8% to 80% relative humidity

C. Operation and Storage

1. The diskette may be stored and operated under the following conditions:

50°F to 125°F temperature
8% to 80% relative humidity
(maximum wet bulb temperature 85°F)

2. Prior to using the Dysan alignment diskette, it should be allowed to acclimate to the environment in which it is intended to be used for as long as it was removed from that environment or up to 24 hours, whichever occurs first.

3. The operational specification for radial track centerline applies only after stabilization of the diskette for a minimum of 24 hours at 68°F + 2°F and 50% + 5% relative humidity. (See correction factor chart shown in Figure 5)

VII. SERIALIZATION

- A. Each diskette is assigned a 5 digit serial number. This number appears on the jacket label of the diskette. Records are kept which include serial numbers and the date each diskette was written.

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