



Dysan
CORPORATION

5440 Patrick Henry Drive
Santa Clara, California 95050
(408) 988-3472

DYSAN 224 ALIGNMENT INSTRUCTIONS

The Dysan 224 Alignment Diskette is used for alignment operations on 5.25" flexible disc drive units. The media itself is physically compatible with the Dysan 104/1 Diskette (described in Dysan Engineering Specification 810150). The Dysan 224 Diskette has been recorded with special purpose data in order to accomplish alignment operations associated with most 5.25" flexible disc drives.

Note: Care should be exercised not to record on the diskette. To do so will destroy its usefulness as an alignment tool. The write enable notch has been deleted from the diskette jacket to minimize the possibility of inadvertent recording on the diskette. This protective feature, however, is only functional on those drives that incorporate a write protect feature.

A description of the alignment operations that can be performed with the Dysan 224 Alignment Diskette is as follows:

Recommended Operation	Track Number
Track 00 Detector Adjustment	00
Index/Sector Photo Transducer Alignment	01
Read/Write Head Radial Alignment	16
Read/Write Head Load Pad Adjustment	34

I. Read/Write Head Radial Alignment

A. Insert Dysan 224.

Note: Before using the Dysan Alignment Diskette, it should be allowed to acclimate to the environment in which you intend to use it for as long as it was removed from that environment or up to 24 hours, whichever occurs first.

B. Step the Head Carriage to track 16.

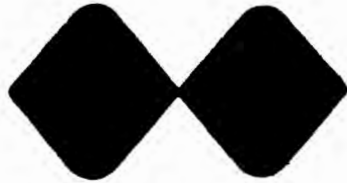
C. Sync an oscilloscope on "Index". Set time base to 20 msec/division. This should display one revolution.

D. Connect two probes and set the vertical deflection in such a fashion as to display the read signal at the output of the differential amplifier. Ground the probes to the drive Printed Circuit Board (PCB). Set the inputs to AC, Add and invert one channel.

E. The lobes displayed should be within 70% amplitude of each other. (See Figure 1) If the lobes do not fall within this specification, continue to Step F.

F. Loosen the screws which will allow radial adjustment of the Head Carriage. (It is recommended that the stepper motor or servo system be electrically detented while making this adjustment.)

G. Adjust the Head Carriage in or out as necessary to get the lobes to be equal in amplitude.



EQUAL AMPLITUDE
(ON TRACK 16)



LEFT 80% OF RIGHT
(-1 MIL OFF TRACK,
TOWARD 15)



LEFT 60% OF RIGHT
(-2 MIL OFF TRACK,
TOWARD 15)



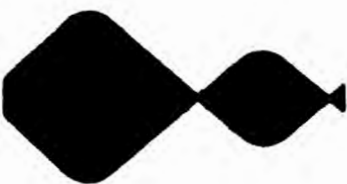
LEFT 40% OF RIGHT
(-3 MIL OFF TRACK,
TOWARD 15)



RIGHT 80% OF LEFT
(+1 MIL OFF TRACK,
TOWARD 17)



RIGHT 60% OF LEFT
(+2 MIL OFF TRACK,
TOWARD 17)



RIGHT 40% OF LEFT
(+3 MIL OFF TRACK,
TOWARD 17)

Figure 1

- H. Tighten the screws which were loosened in Step F.
- I. Check the adjustment by stepping off track and returning. Check in both directions.
- J. Whenever Radial Head Alignment has been adjusted, the Track 00 Detector Adjustment and Track 00 Stop must be checked.

II. Track 00 Detector Adjustment

- A. Insert Dysan 224.
- B. Step Carriage to track 00.
- C. Connect oscilloscope in such a fashion as to display the read signal at the output of the differential amplifier. Add differentially and sync on "Index". Set time base to 20 msec/division.
- D. The signal displayed should be a full revolution all "1's" data pattern. This data is written only on track 00 in this area of the diskette, thus by observing this signal track 00 may be easily identified.
- E. Referring to the drive manufacturer's instructions, and observing the track 00 detection signal adjust the Track 00 Detector.

III. Index/Sector Photo Transducer Alignment

- A. Insert Dysan 224.
- B. Step Carriage to track 01.
- C. With oscilloscope triggered on the leading edge of "Index", set the time base to 50 usec/division.
- D. Connect probes and set vertical deflection in such a fashion as to display the read signal at the output of the differential amplifier. Ground probes to the PCB. Set the inputs to AC, Add and invert one channel.
- E. Observe the timing between the start of the sweep and the first data pulse. This time should be $200 \text{ usec} \pm 100 \text{ usec}$. If the timing is not within this tolerance, continue to Step F.
- F. Observing the timing, adjust the Transducer in accordance with the manufacturer's instructions until a $200 \text{ usec} \pm 50 \text{ usec}$ time increment is obtained.

IV. Read/Write Head Load Pad Adjustment

Note: This procedure only applies to those flexible disc drives that have adjustable Head Load Pads.

- A. Insert Dysan 224.
- B. Step Carriage to track 34.

- C. Connect an oscilloscope in such a fashion as to display the read signal at the output of the differential amplifier. Add differentially, and sync on "Index". Set the time base to 20 msec/division.
- D. While observing read signal on the oscilloscope, rotate the Load Button counterclockwise in small increments (10°) until a maximum amplitude is obtained.

