

Dymek DK 592-11 Alignment Diskette Use Instruction

The Dymek DK 592-11 diskette is used for alignment of double-sided five-inch flexible disk drives. The diskette has been written with special information not intended for data transfer and is therefore write protected. The special information makes possible the following alignments:

- Index/Sector photo detectors
- Track 00 detector and head load timing
- Track 34 location of the read/write head
- Azimuth adjustment of the read/write head

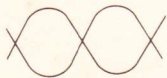
Note: On certain drives the write protect feature may not be installed, therefore, care must be exercised to prevent any write operations from occurring.

Disk contents are as follows:

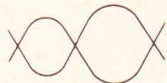
Track	Contents/Operation
00	1F (62.5 KHz) signal around the track for head load timing and track 00 recognition when setting the track 00 detector.
01	Data burst of about 500 msec duration. The leading pulse of the data burst is used to adjust the Index/Sector photo transistor.
34	Alignment track containing "cats-eyes" pattern for adjusting read/write head radial position. Azimuth bursts (4) for adjusting head azimuth for drives having that adjustment capability.

1. Read/Write Head Radial Alignment

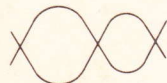
- Insert diskette in drive being careful to note proper side out. The diskette should be acclimated to the use environment at the rate of one hour for each 5° of temperature or 5% of relative humidity change from the previous environment.
- Set the carriage to track 34.
- Set up an oscilloscope with sync set on the leading edge of the Index pulse and vertical amplifier set up to look at the drive amplifier output.
- With the oscilloscope set to 20 msec/div, the display will show two lobes or "cats-eyes" of amplitude representing one revolution of the disk when the head is aligned. Follow the manufacturers' instructions for adjusting radial head position.
- The following illustration shows exact alignment and display when the lesser lobe amplitude is 80% of the greater, signifying an off-alignment error of .001 inch.



Exact alignment



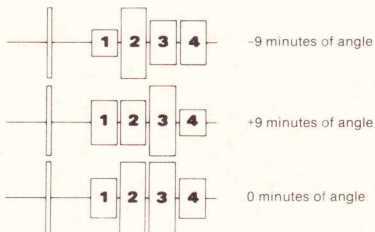
.001 in the direction
of Track 33



.001 in the direction
of Track 35

- Upon completion of alignment, with lesser lobe amplitude greater than 80% of the greater lobe amplitude, tighten motor hold down screws and step to track 34 from both directions to determine effects of positioner back-lash. Readjust if necessary.
- Whenever the track 34 alignment is made, the track 00 detector must be re-aligned.

2. Track 00 Detector Alignment
 - a. Insert diskette as in 1a.
 - b. Step carriage to track 00.
 - c. Verify track 00 by observing 1F (62.5 KHz) signal completely around the track by hooking up the oscilloscope as in 1c.
 - d. Adjust the track 00 detector as recommended in the manufacturers' instructions.
3. Head Load Setting Time Adjustment
 - a. Insert diskette as in 1a.
 - b. Step carriage to track 00.
 - c. With oscilloscope hooked up as in 1c, adjust solenoid bail in accordance with manufacturers' instructions and specifications to achieve the required setting time. This is defined as the point where the signal is 50% of the maximum amplitude.
4. Index/Photo Transistor Alignment
 - a. Insert diskette as in 1a.
 - b. Step carriage to track 01.
 - c. Hook up an oscilloscope as in section 1c and observe the time from index to the leading edge of the data burst. Adjust the photo transducer in accordance with the manufacturers' instructions, so that the data burst edge is at 200 ± 50 micro-seconds from the leading edge of the index pulse.
 - d. Step to track 34 and check the data burst timing as for track 01. If necessary a compromise adjustment of the photo transistor can be made to keep the timing at 200 ± 50 micro-seconds.
5. Head Azimuth Alignment
 - a. Insert diskette as in 1a.
 - b. Step to track 34.
 - c. Hook up an oscilloscope as in 1c, and observe four azimuth bursts preceded by a short index burst.
 - d. Proper adjustment of the carriage for azimuth should be done in accordance with the manufacturers' instructions where provided.
 - e. The following displays show the acceptable range of adjustment:



Note that when either burst 1 and 2, or 3 and 4 are equal, 9 minutes of angle occur.

- f. A short index data burst is provided immediately preceding the azimuth bursts for the purpose of providing a signal sync point and handy reference for alternate track 01 and 34 testing of index transducer alignment.