

S E R V I C E N O T E

Supersedes:

7900A-15
7901A-4

7900A/7901A DISC DRIVE

All Serial Numbers

HEAD ALIGNMENT USING CATSEYE PATTERN

The procedure on the following pages must be followed when using a HP CE Cartridge (P/N 1535-2531) for aligning heads and index transducer.

JG/lm/WN

6/73-22

HEWLETT  PACKARD

For more information, call your local HP Sales Office or East (201) 265-5000 • Midwest (312) 677-0400 • South (404) 436-6181 • West (213) 7-1281. Or, write: Hewlett-Packard, 1501 Page Mill Road, Palo Alto, California 94304. In Europe, Post Office Box 85, CH-1217 Meyrin 2, Geneva, Switzerland. In Japan, Yokogawa-Hewlett-Packard, 1-59-1, Yoyogi, Shibuya-Ku, Tokyo, 151.

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A. Head Alignment

To align the disc drive heads using the MDS certification pack, proceed as follows:

1. Install the DSU in the appropriate slot and disconnect channel cable.
2. Turn on the disc power supply and set UPPER DISC PROTECT SWITCH S3 to PROTECT.
3. Install the alignment disc cartridge (part number 1535-2531)
NOTE: For the 7901A, throw S1 on All to TEST (rear) position.
4. Set the LOAD/UNLOAD switch to Load.
5. Set the RESET DRIVE FAULT SWITCH on the disc service unit to ON.
6. Set the disc service unit to allow the disc drive to alternately seek between cylinders 000 and 202. The DELAY switch must be ON. (Refer to Disc Service Unit Operating and Service Manual.)
7. Allow the disc drive to operate in this manner for approximately 25 minutes to stabilize the disc drive temperature. The top cover of the disc drive must be ON during this time.
8. Using the disc service unit, position the carriage to cylinder 100 and select head 0. (100 decimal = 144 octal).
9. Connect the A Channel of the oscilloscope to TP2 on read/write pre-amplifier assembly A13. (A6TP1 for 7901A)
10. Connect the B channel of the oscilloscope to TP4 of the Sector Assembly A8 (A11TP3 for 7901A)
11. Set the oscilloscope for 2 milli-seconds/cm, 0.05V/cm for A channel and ZV/cm for B channel. (chopped).
12. Sync, internal negative on the upper index pulse (A8TP4).
13. Uncalibrate the oscilloscope horizontal until two index pulses can be seen. Adjust the oscilloscope until the two index pulses are on the two outer marks of the oscilloscope scale (SEE Figure 1).
14. Loosen the locking screw holding the head in place.
15. Using the head adjusting tool, position the head until the cross-over point is exactly in the center of the oscilloscope scale (See waveforms in Figure 1).
16. Tighten the locking screw and ensure that the adjustment has not changed.
17. Perform steps 7-15 for Hd 1.

B. Sector Circumferential Adjustment

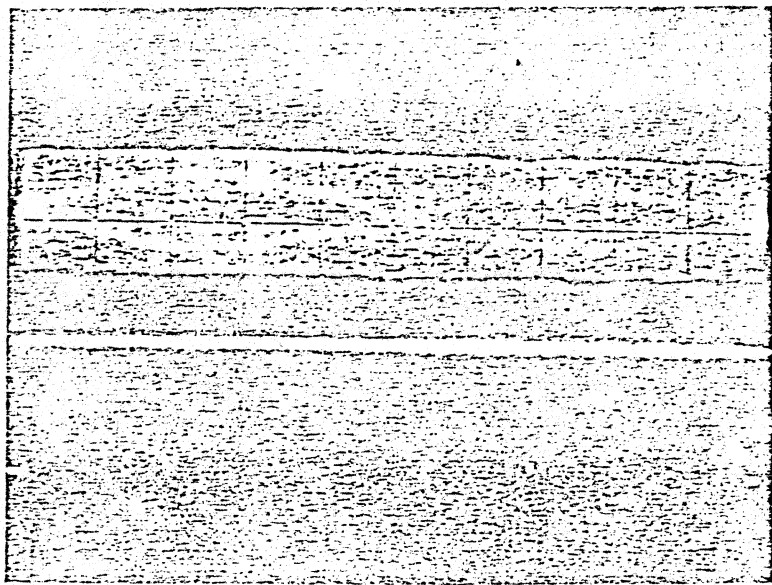
To adjust for minimum sector circumferential seek (or skew) proceed as follows:

1. Using the disc service unit, position the carriage at cylinder 95 and select head 0.
2. Connect the A channel of the oscilloscope to TP2 of read/write preamplifier assembly A13. (A6TP1 for 7901A)
3. Connect the B channel of the oscilloscope to TP4 of the sector assembly A8.
4. Sync internal negative on the upper index pulse (A8TP4). (A11TP3 for 7901A)
5. Set the oscilloscope for 5 micro-seconds/cm, A Channel .05V1 cm for A channel, and 2 V/cm for B channel. Make sure scope is set for alternative traces, and horizontal sweep is calibrated.
6. Adjust the sector position variable resistor (A8R1) for a 20 ± 3 micro-second delay from the index pulse (beginning of sweep) to the start of the first data pulse. (SEE the waveform figure 2)
7. Select Head 1.
8. Observe the waveform and ensure that the first data pulse is $20 \text{ msec} \pm 3 \text{ msec}$.

NOTE

If the above requirements are not met, care should be taken to ensure that the heads are properly seated in the carriage assembly. If heads are seated properly, and alignment cannot be accomplished within specs, replace head that is out of tolerance.

9. Adjust the sector position variable resistor (A8R1) so that the 20 micro-seconds of delay occurs midway between the pulse positions observed in steps "6" and "8", and no greater than 6 microseconds spread between the heads.
10. Remove any alignment tools, inspect heads for foreign matter, and restore the disc drive back to operation.

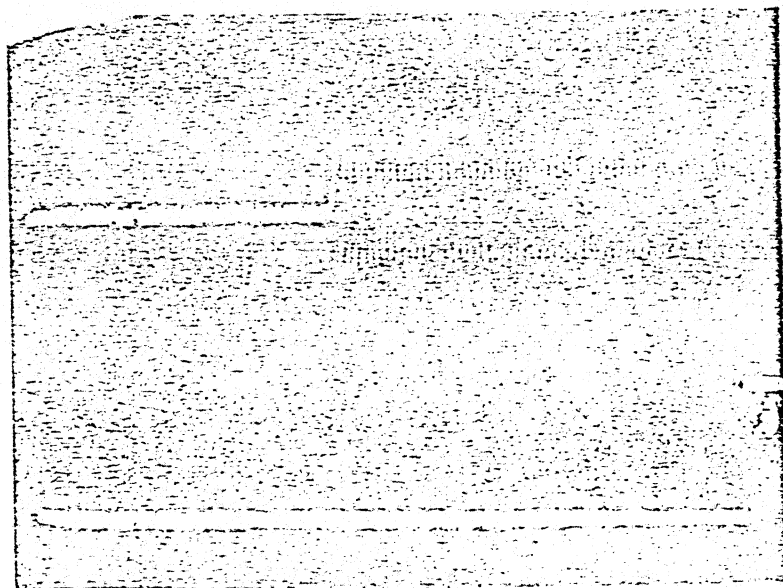


HEAD ALIGNMENT
SIGNAL

(CHOPPED)

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FIGURE 1



BURST DATA

(ALTERNATE)

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FIGURE 2