

## Disk 4 — Reference Oscillator / Divider

### Function:

- Generates the stable frequency reference used for servo phase comparison.

### Main ICs:

- MC4046 — Phase-locked loop
- MC1747CL — Dual op-amp
- MC14011CP — AND gate (logic divider interface)

### Notes:

- Produces reference frequencies corresponding to 33⅓ rpm and 45 rpm.
- Derived from a quartz crystal or RC-based oscillator network.
- Its output feeds the servo control board (Disk 2A).
- Includes fine-tuning trimmers for speed calibration.