

3-3. SIGNAL DEFINITIONS

3-3-1. DRIVE SELECT 0,1,2,3

The SELECT lines are used to enable or disable all other interface lines. When the SELECT line is true (low), the drive is enabled and considered active. When the SELECT line is false (high), all controller inputs are ignored and all drive lines are disabled.

3-3-2. STEP

A true (low) pulse on this line will cause the Read/Write head to move to the adjacent track. The direction of the head movement is determined by the status of the DIRECTION signal at the time of stepping.

The step operation can be performed even if there is no disk inserted in the drive.

3-3-3. DIRECTION

A false (high) level on this input will cause a STEP pulse input to move the Read/Write head away from the disk spindle. A true (low) level will cause a STEP pulse input to move the Read/Write head toward the drive spindle.

3-3-4. HEAD SELECT

A true (low) level on this input will cause Head 1 (upper) to be selected. A false (high) level on this input will cause Head 0 (lower) to be selected. If the HEAD SELECT signal changes during either a write or erase operation, the head will not change until both the ERASE GATE and the WRITE GATE signal become false (high).

3-3-5. WRITE GATE

When this line is made true (low), the write current circuits are enabled and information may be written under control of the WRITE DATA input.

3-3-6. WRITE DATA

If the WRITE GATE signal is true (low), a true (low) pulse on the WRITE DATA line will cause a bit to be written on the disk. However, bits cannot be written from pulses on this line if the WRITE GATE signal is false (high).

No pre-compensation is required.

3-3-7. INDEX

When the drive is selected and the READY signal is true (low), a true (low) pulse is generated on this line by each revolution of the spindle.

3-3-8. TRACK 00

This line is true (low) when the Read/Write head is positioned on track 00 or on an outer position of track 00. At all other times, this line is false (high). The TRACK 00 signal derives its information from a track 00 sensor, not from the track position counter.

3-3-9. WRITE PROTECT

If a write protected disk is inserted, this line will be true (low) and the drive will not be able to write data. At all other times when the disk is inserted, however, this line will be false (high).

3-3-10. READ DATA

When the drive is selected and the READY signal is true (low), a true (low) pulse is generated on this line every time a bit is detected.

3-3-11. DISK CHANGE

This line is true (low) whenever a disk is removed from the selected drive. The line will remain true (low) until both the following conditions have been met:

- a. A disk is inserted,
and
- b. A STEP pulse or DISK CHANGE RESET signal has been received when the drive is selected.

3-3-12. DISK CHANGE RESET

If the DISK CHANGE RESET signal is true (low) and a disk is inserted, the DISK CHANGE line will be false (high).

3-3-13. READY

This line is true (low) when all of the following conditions are met.

- a. The drive is selected,
- b. A disk is inserted,
- c. The MOTOR ON signal is true (low),
- and
- d. The index period of the disk motor settles within $200\text{msec} \pm 2.5\%$.

3-3-14. MOTOR ON

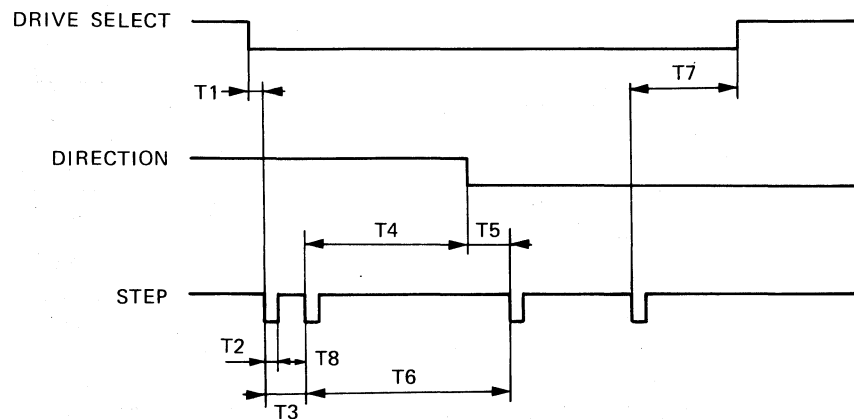
The motor latches on to the falling edge of the MOTOR ON signal when the drive is selected. If the drive is selected and the MOTOR ON signal becomes true (low), the motor will rotate when a disk is inserted. The motor will stay in the rotation mode until the MOTOR ON signal becomes false (high) while the drive is selected. However, if the MOTOR ON signal becomes false during either the write or erase operation, the disk motor will not stop rotating until both the ERASE GATE signal and the WRITE GATE signal become false (high).

3-3-15. IN USE

When the drive is selected the LED will turn on when the falling edge of the IN USE signal is sensed. The LED will then stay on even if the drive is no longer selected. Only when the rising edge of the IN USE signal is detected while the drive is selected, the LED will turn off.

3-4. TIMING REQUIREMENTS

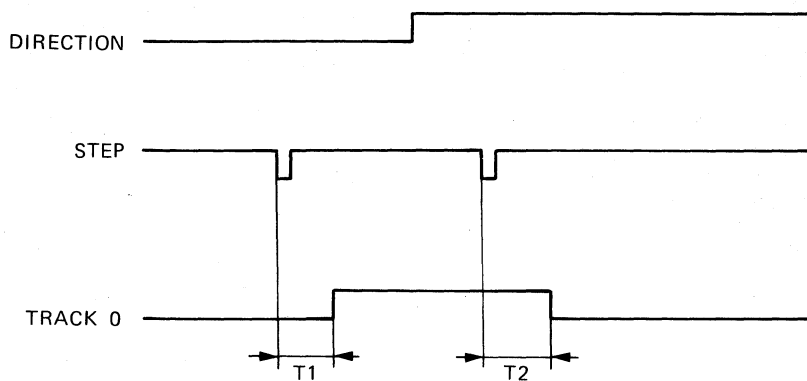
3-4-1. Head Access



T1 : 0.5μsec Min.	T5 : 0.5μsec Min.
T2 : 1.3μsec Min.	T6 : 21.0msec Min.
T3 : 6.0msec Min.	T7 : 0.5μsec Min.
T4 : 2.4μsec Min.	T8 : 1.3μsec Min.

Figure 3-4. HEAD ACCESS

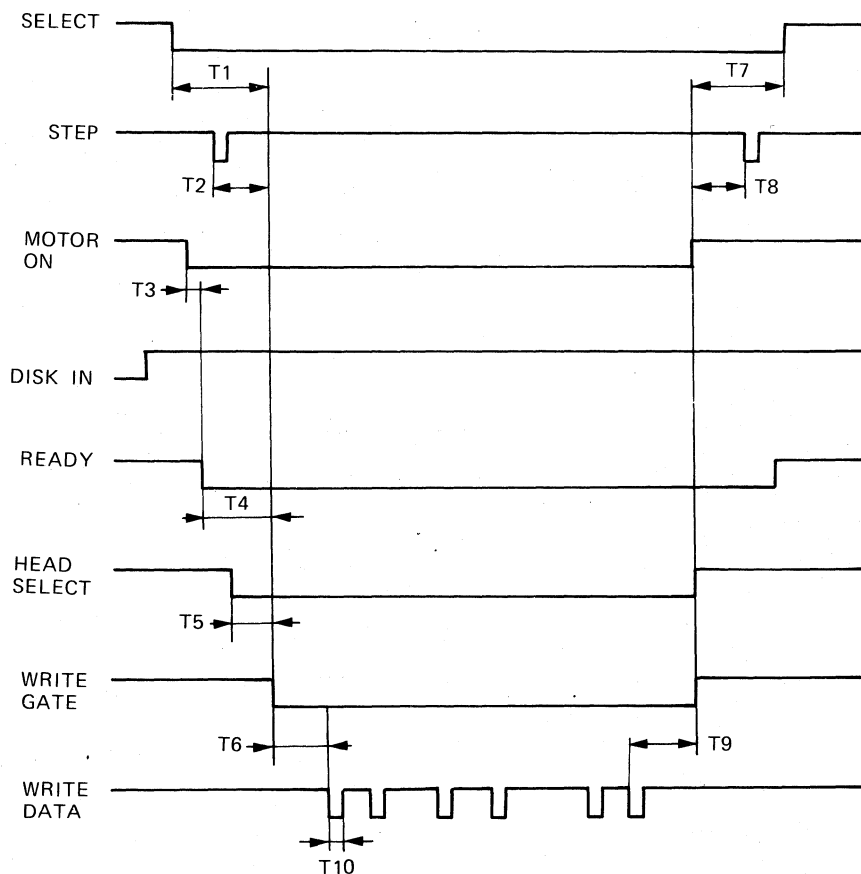
3-4-2. TRACK 00 Signal



T1 : 5.5msec Max. T2 : 5.5msec Max.

Figure 3-5. TRACK 00 SIGNAL

3-4-3. Write Data Timing



T1 : 0.5μsec Min.	T6 : 4μsec Max.
T2 : 21msec Min.	T7 : 0.5μsec Min.
T3 : 900msec Max.	T8 : 450μsec Min.
T4 : 0.5μsec Max.	T9 : 0.7μsec Min.
T5 : 100μsec Min.	T10 : 150nsec Min., 1,000nsec Max.

Figure 3-6. WRITE DATA TIMING

3-4-4. Read Data Timing

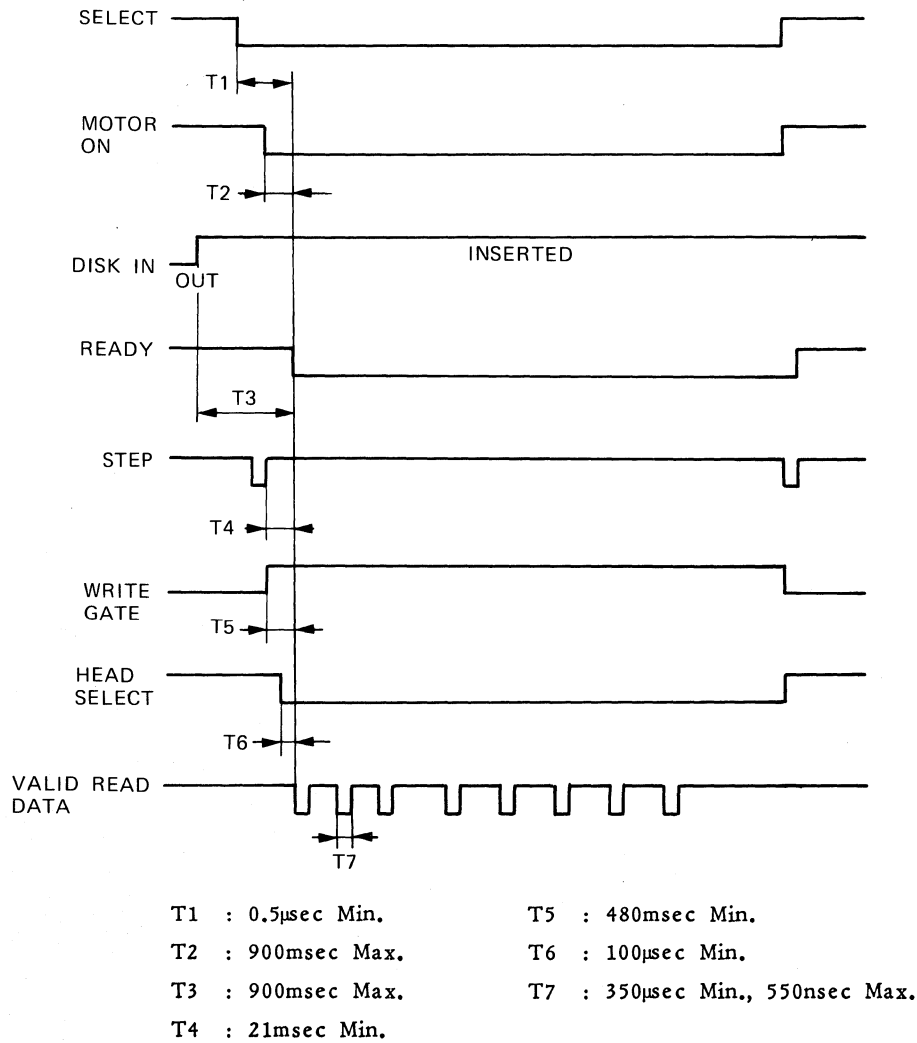


Figure 3-7. READ DATA TIMING

3-4-5. Index Pulse

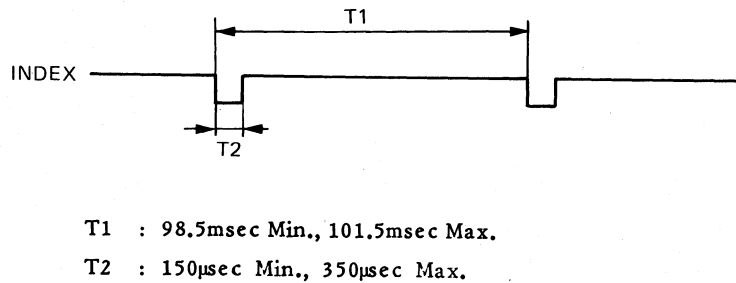


Figure 3-8. INDEX PULSE

3-4-6. Disk Change

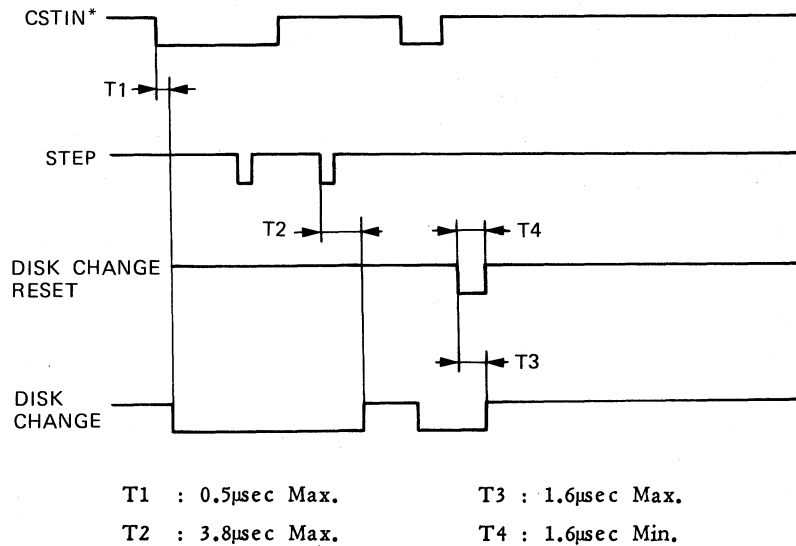


Figure 3-9. DISK CHANGE

*CSTIN, the disk-in sensor signal inside the drive, is high when a disk is inserted in the drive.

3-5. POWER ON AND POWER OFF REQUIREMENTS

3-5-1. Data Protection

Turning the power on or off will not cause any damage to recorded data on the disk as long as the drive is not in the midst of writing.

3-5-2. Power Supply Sequencing

No special supply sequencing is required by the disk drive as long as both the 5V and 12V power supplies have a monotonic rise time of less than 100msec. When the power is turned off, although there are no sequencing or timing requirements, both power supplies must fall monotonically to 0V.

3-5-3. Power On Reset Timing

Because it takes up to 200msec to reset the control IC after the power has been turned on, the MP-F52W cannot correctly perform any operations for this period of time.

3-6. DISK MOTOR ROTATION AND DISK INSERTION

Even if the MOTOR ON signal is true (low), the disk motor will not rotate until a disk is inserted.