Using the UPD motor driver package, the system designer has total control over all of the important motion profile parameters. As shown in **Figure 2**, each step pulse received by the driver results in a motor movement of one step. This makes control of velocity, acceleration, deceleration and position simply a matter of controlling the frequency (pulses per second) and number of pulses sent to the driver.

A velocity of exactly one revolution per second can be obtained from a 0.72 degree motor by sending pulses to the driver at 500 pulses per second. Acceleration and deceleration of the motor can be regulated by adjusting the frequency of the pulses sent to the driver.

Position can also be readily controlled because the amount of motor movement is equal to the number of pulses applied to the driver, times the motor step angle. For example, a 0.72 degree motor can be made to rotate exactly one revolution by applying 500 pulses to the driver.

Figure 3 shows a typical motion profile. In the time between T1 and T2, the frequency of the pulses being sent to the driver increases, causing the motor to accelerate. Between T2 and T3, the driver receives pulses at a fixed rate, and the motor turns at constant velocity. The pulses to the driver decrease in frequency between T3 and T4, until they stop. This causes the motor to slow down and halt. The amount of shaft rotation in degrees is determined by multiplying the total number of pulses between T1 and T4 by the number of degrees per step of the step motor.

Figure 2
MOTOR MOVEMENT VS. INPUT SIGNALS
NOTE: The direction input signal should be changed only while the step pulse signal is not being sent and is "LOW" or "OFF".

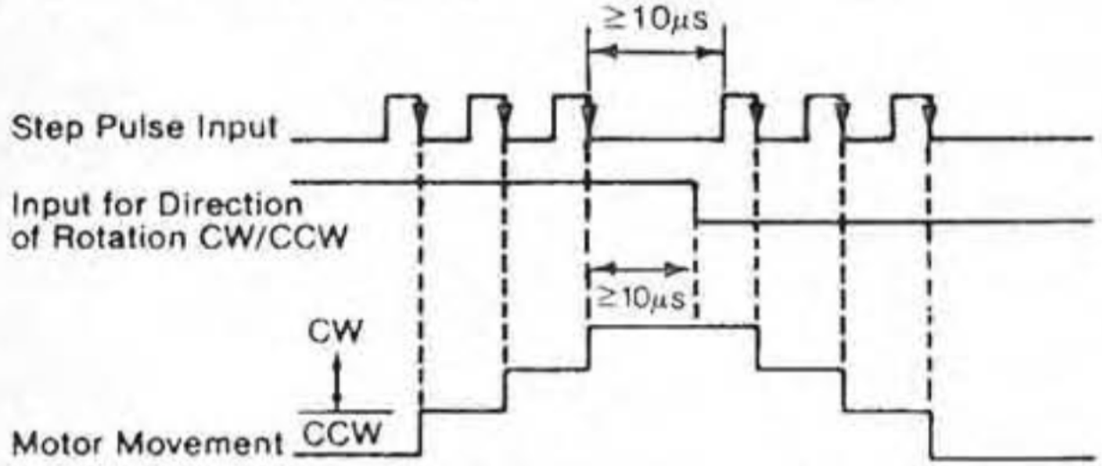
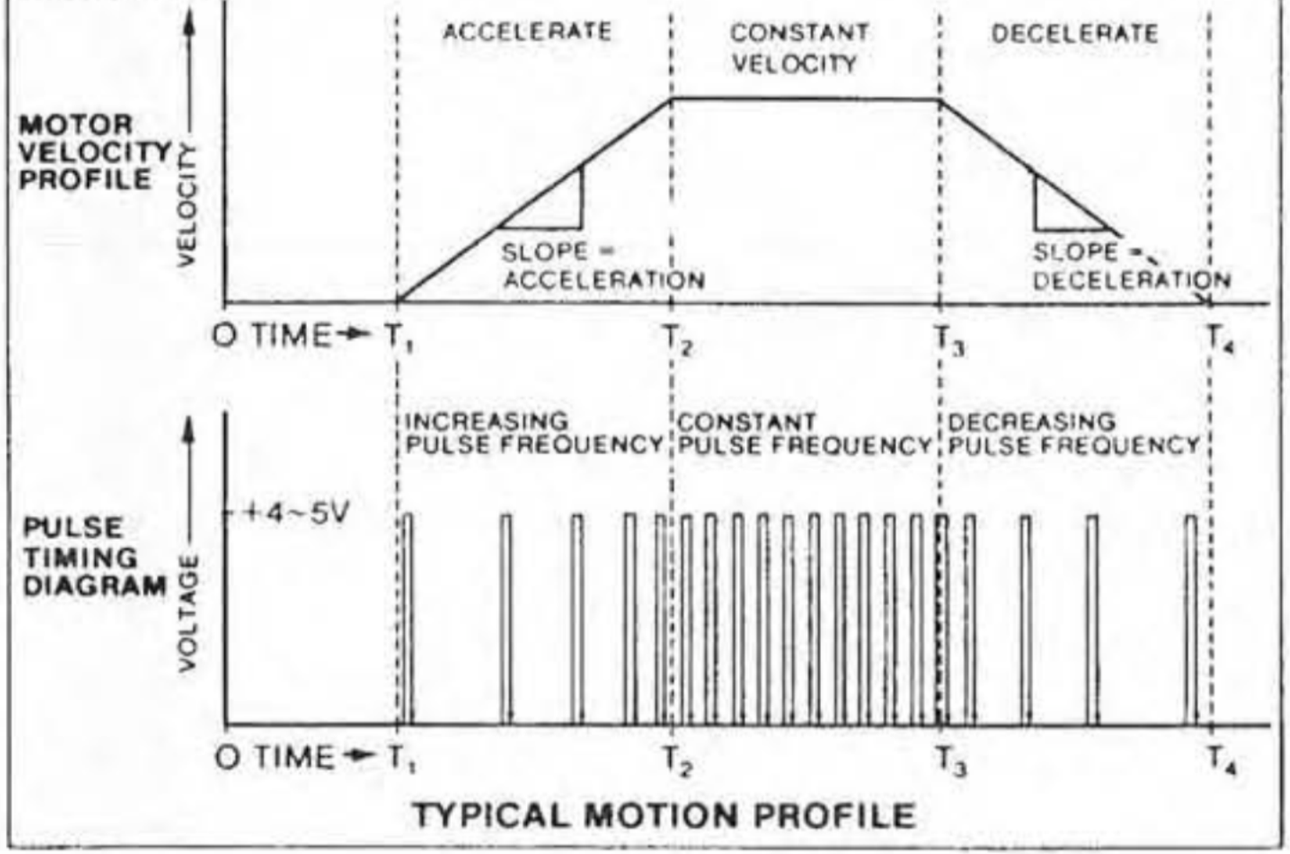


Figure 3



TYPICAL MOTION PROFILE