

2.5 P.I.D. Control of Hydraulic Motor

This example shows the ability of HyPneu to incorporate complex control algorithms such as a proportional, integral, and derivative (P.I.D.) controller into a hydraulic circuit. Other controllers can be readily formulated using the logic and sensor elements provided in HyPneu. Of course, the user can always develop his own controller such as adaptive or knowledge based elements by using HyPneu programming protocol.

The curves shows the result of a P.I.D. controller programmed to maintain a 40 rad/sec motor speed with both low gain and high gain filters for the controller.

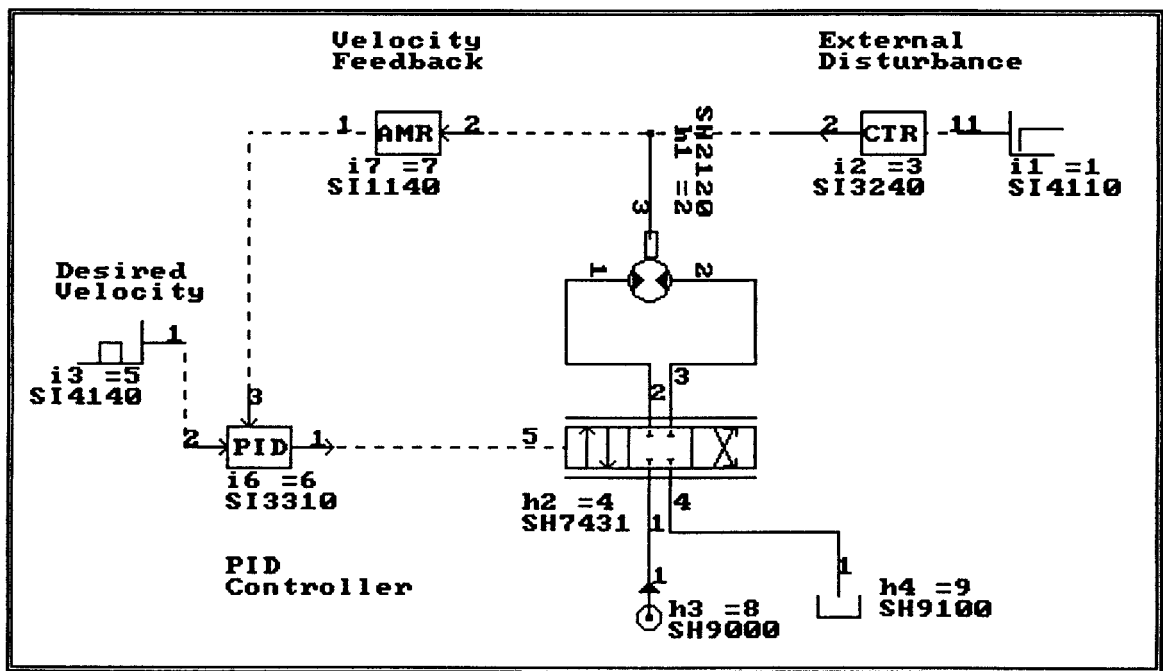


Figure 2.5a. P.I.D. Control System Schematic.

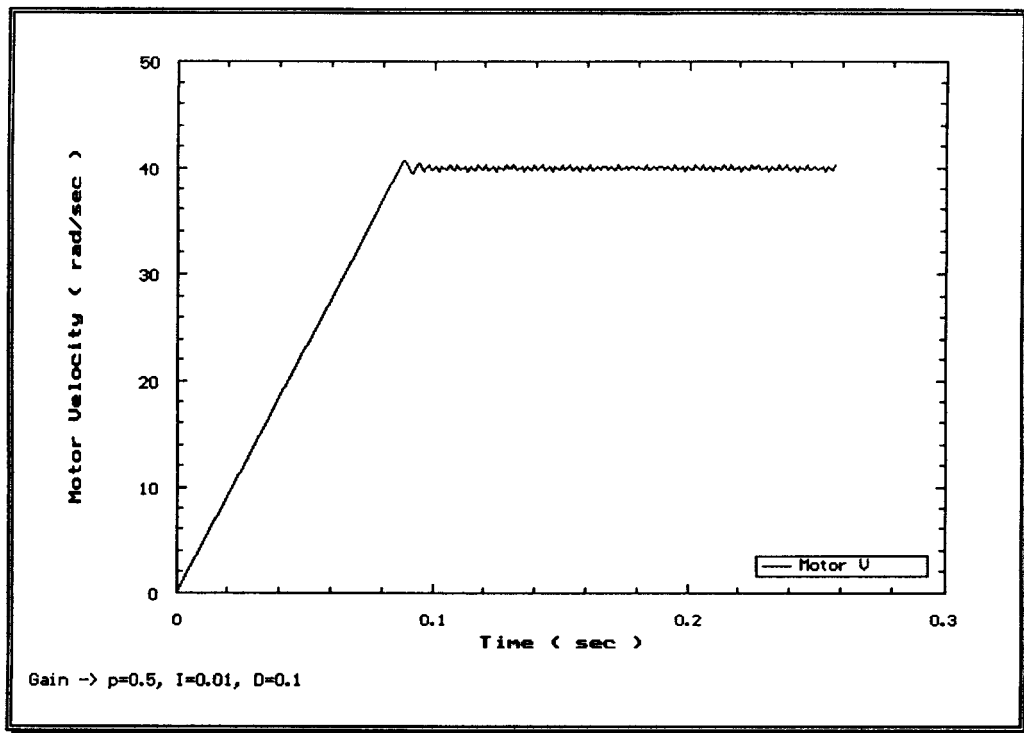


Figure 2.5b. PID Control Analysis with a Lower Filter Gain.

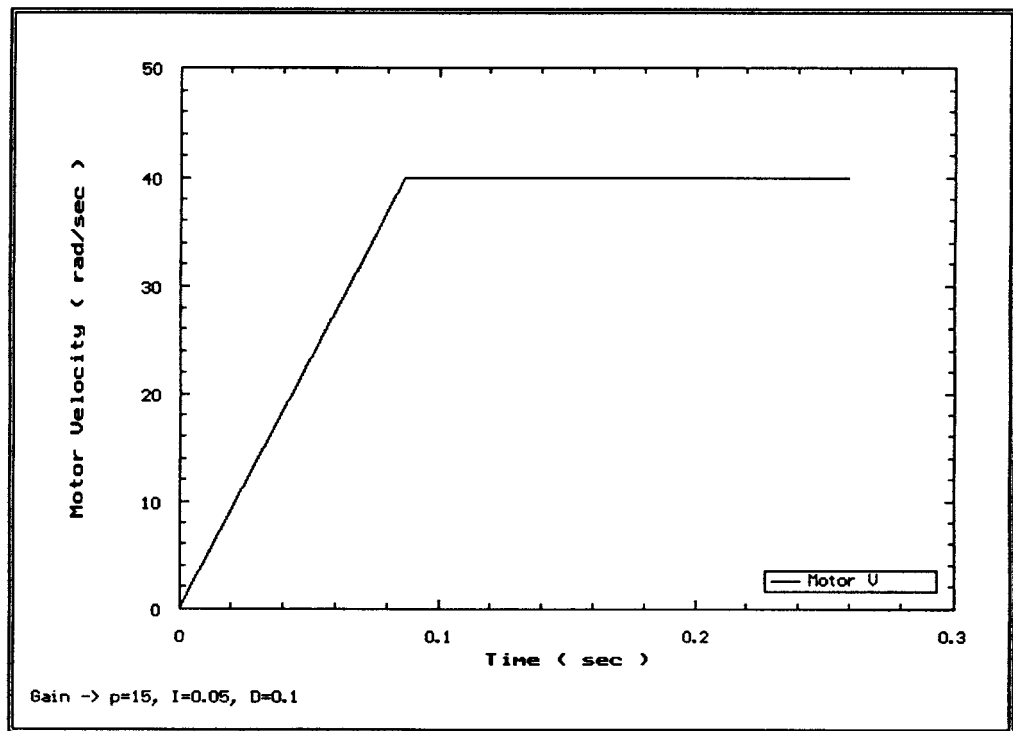


Figure 2.5c. PID Control Analysis with a Higher Filter Gain.