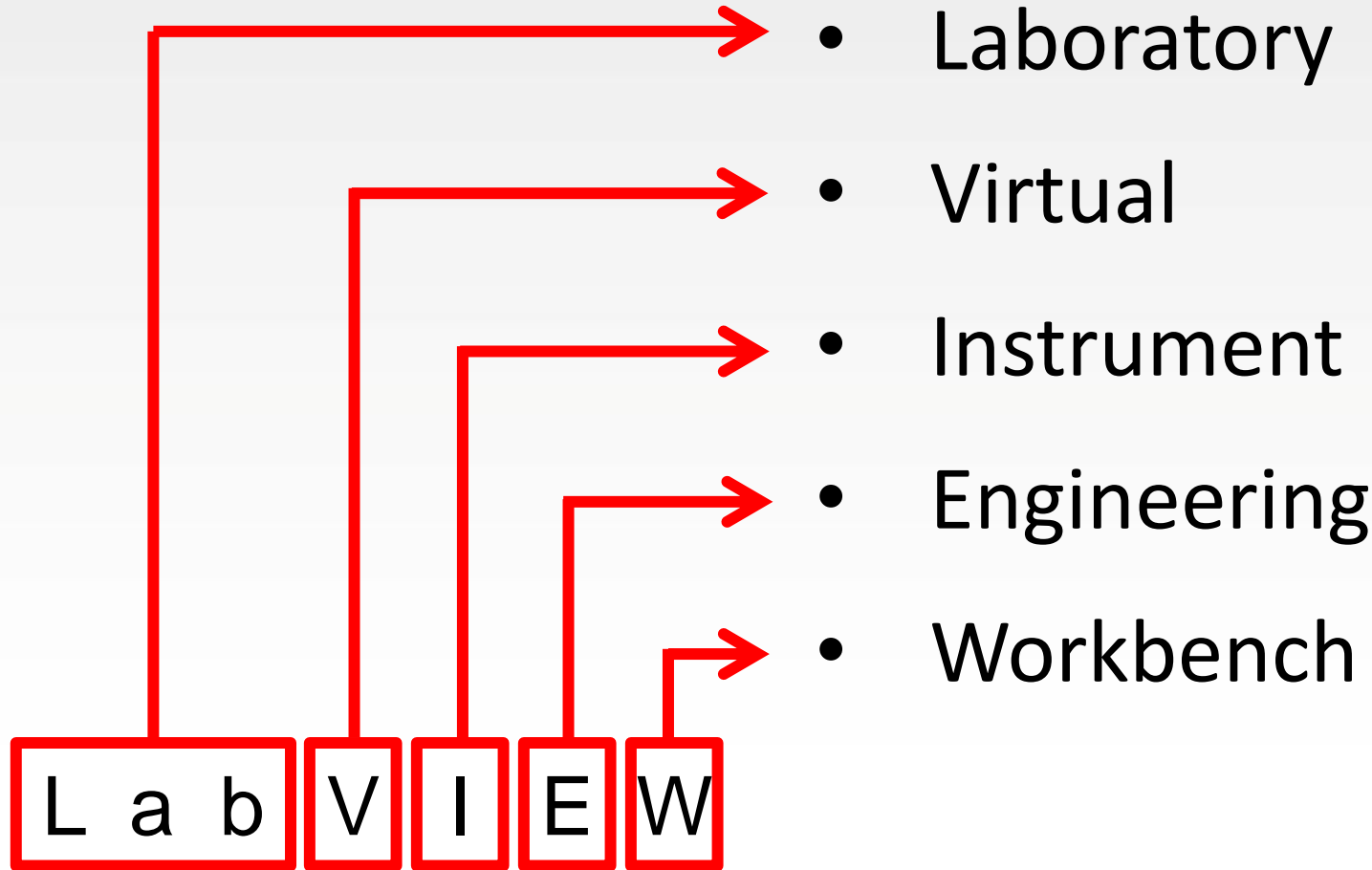


LabVIEW 圖控程式於流體傳動控制之應用

報告人：任志強



G 語言 (Graphic Language)

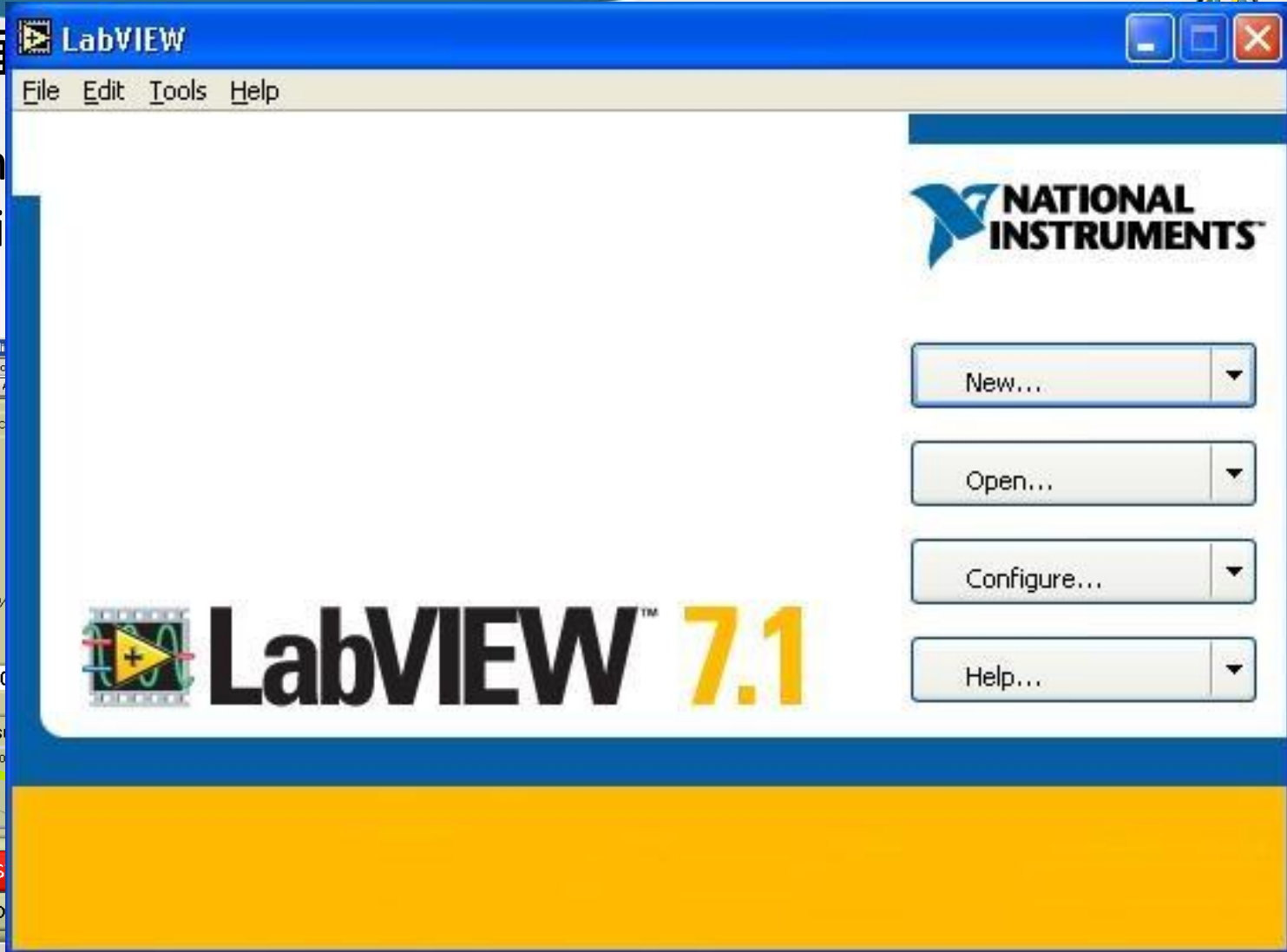


LabVIEW的構成



前置面

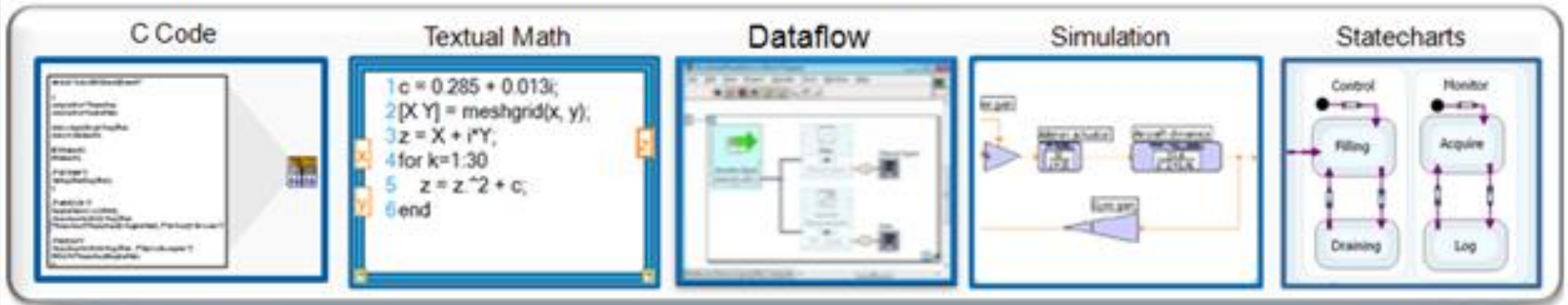
- Con
- Indi



LabVIEW實驗研究與科學運算



High Level of Abstraction Models of Computation System-Level Design Models



NATIONAL INSTRUMENTS

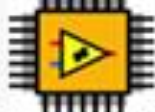
LabVIEW™

Graphical System Design Platform

MPU, MCU & DSP



FPGA



Reconfigurable hardware

Real-Time



N-Core



PC w/ GPU



High Performance Computing

Blade Servers



範例說明-訊號產生器製作

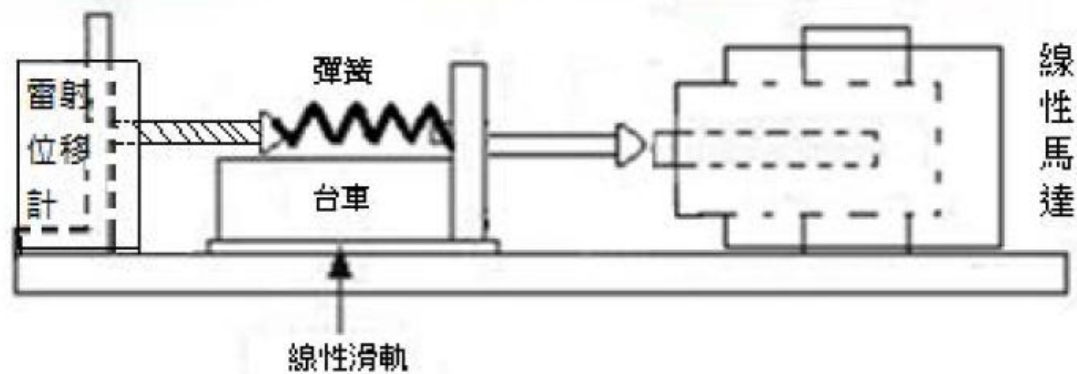
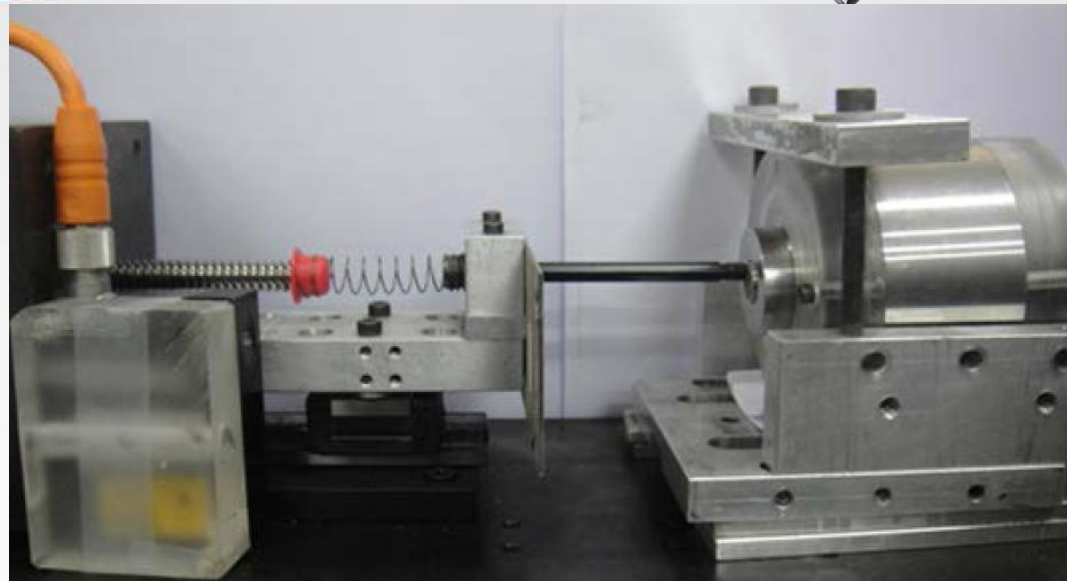


應用實例 – 線性馬達定位控制

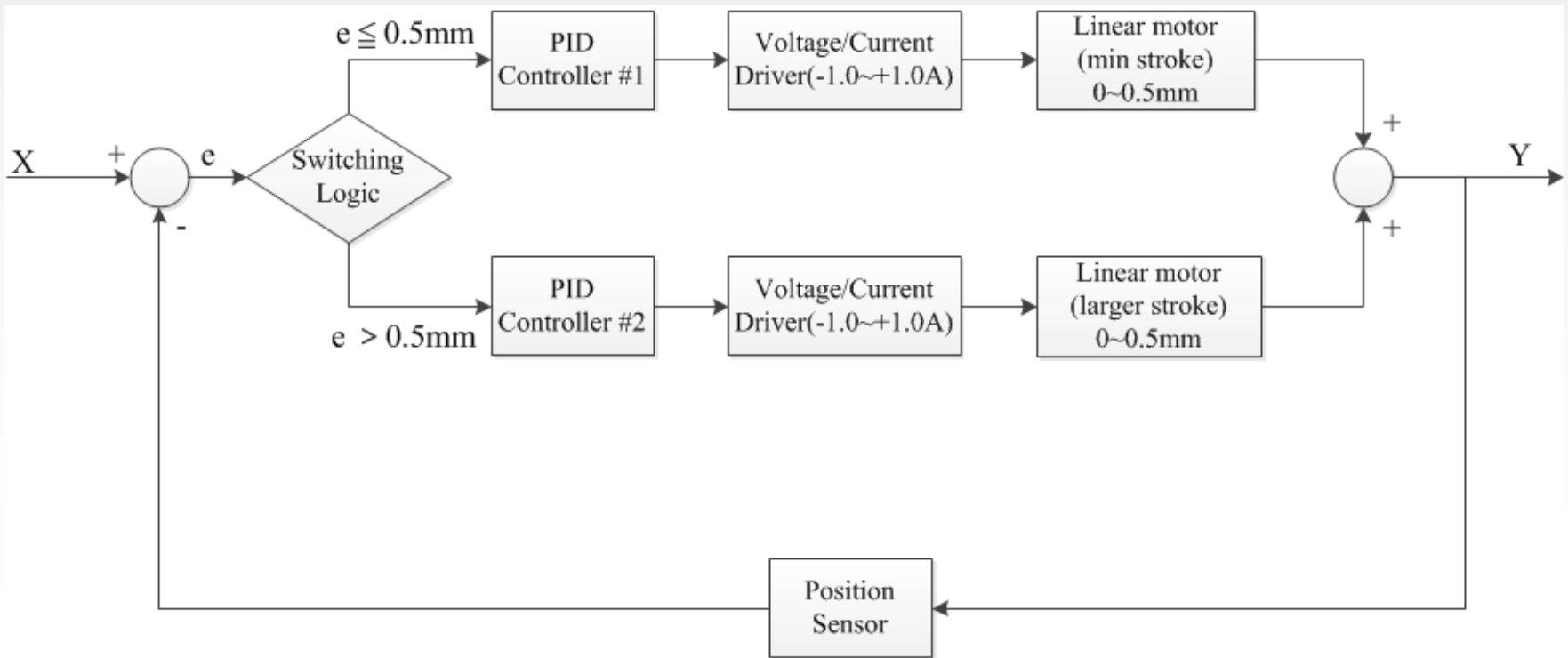


行程定位實驗台主體

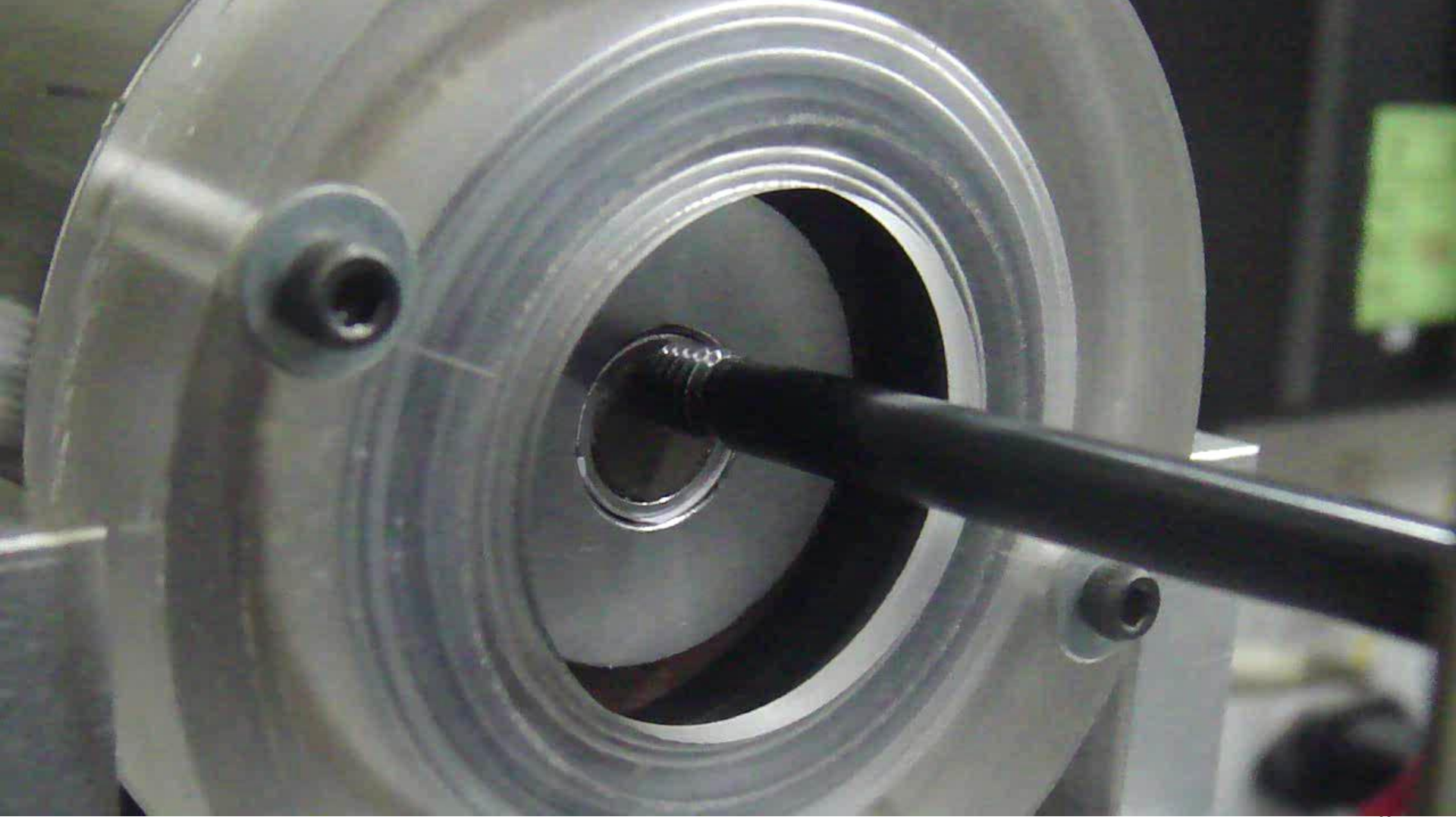
- 底座
- 台車
- 彈簧
- 線性滑軌
- 雷射位移感測器
- 線性馬達固定夾治具



應用實例 – 線性馬達定位控制



應用實例 – 線性馬達定位控制

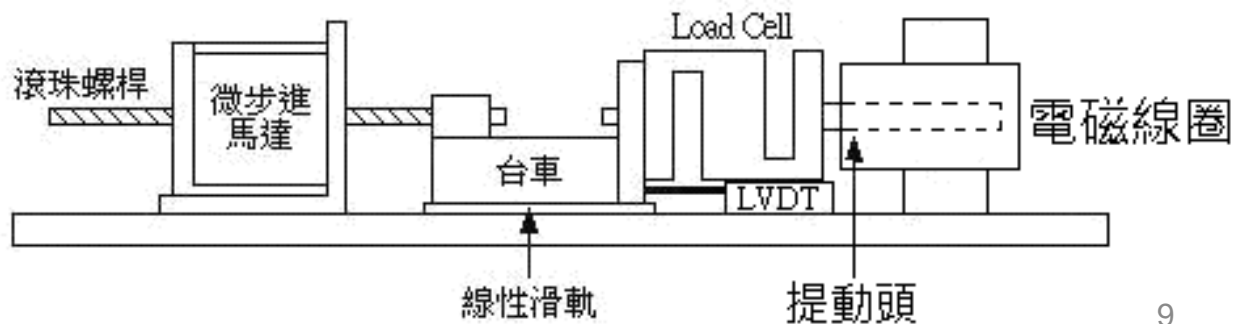
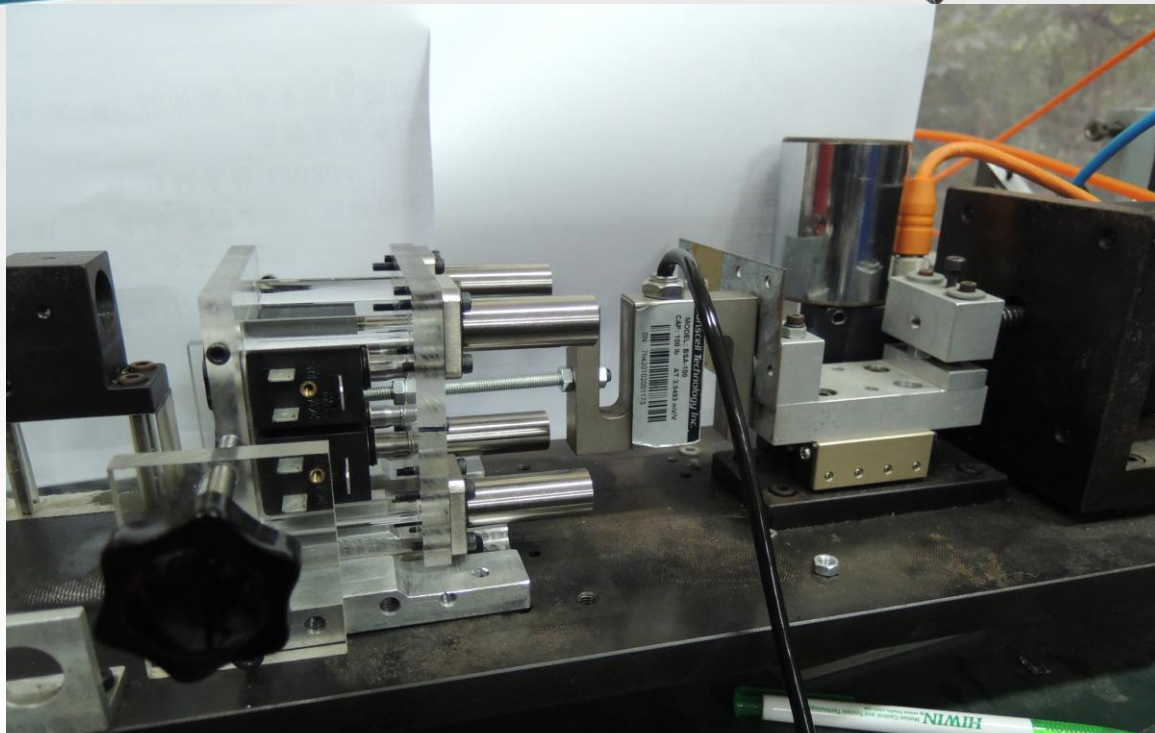


應用實例 – 線圈拉力測試實驗台

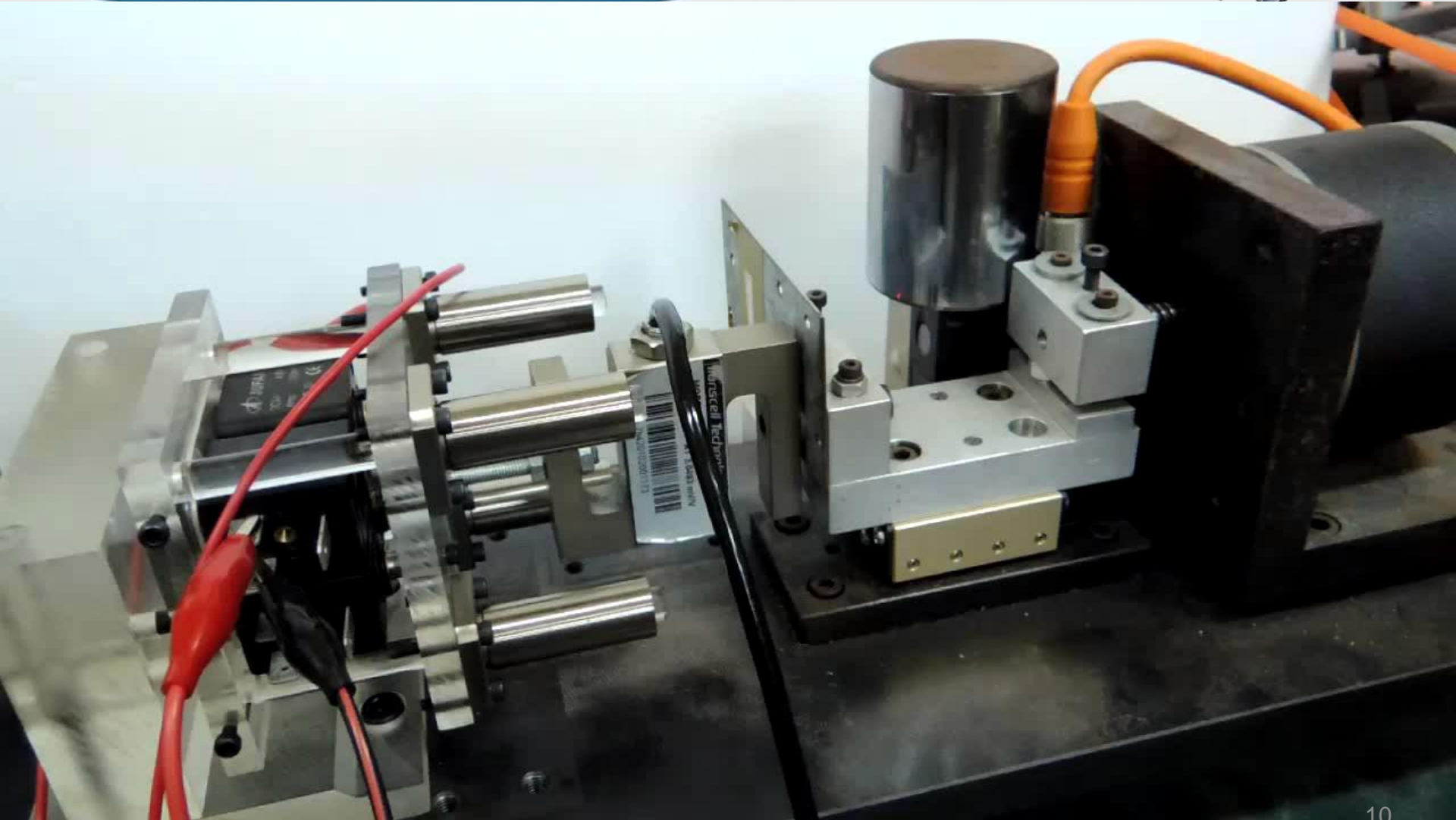


力量測試實驗台主體

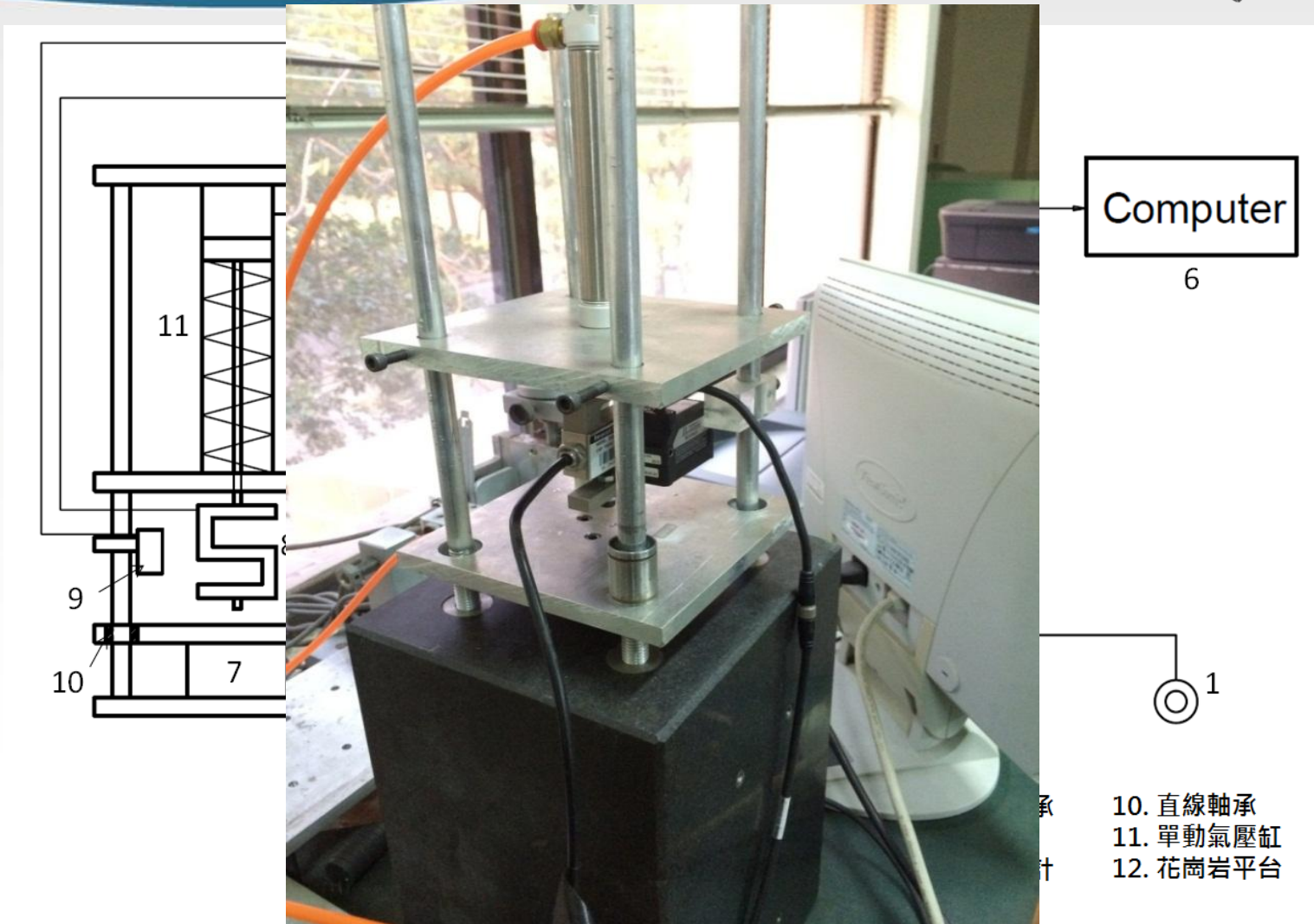
- 底座
- 微步進馬達
- 滾珠導螺桿
- 線性滑軌
- 台車
- 力量感測器
- 雷射位移計
- 線圈固定夾治具



應用實例 – 線圈拉力測試實驗台

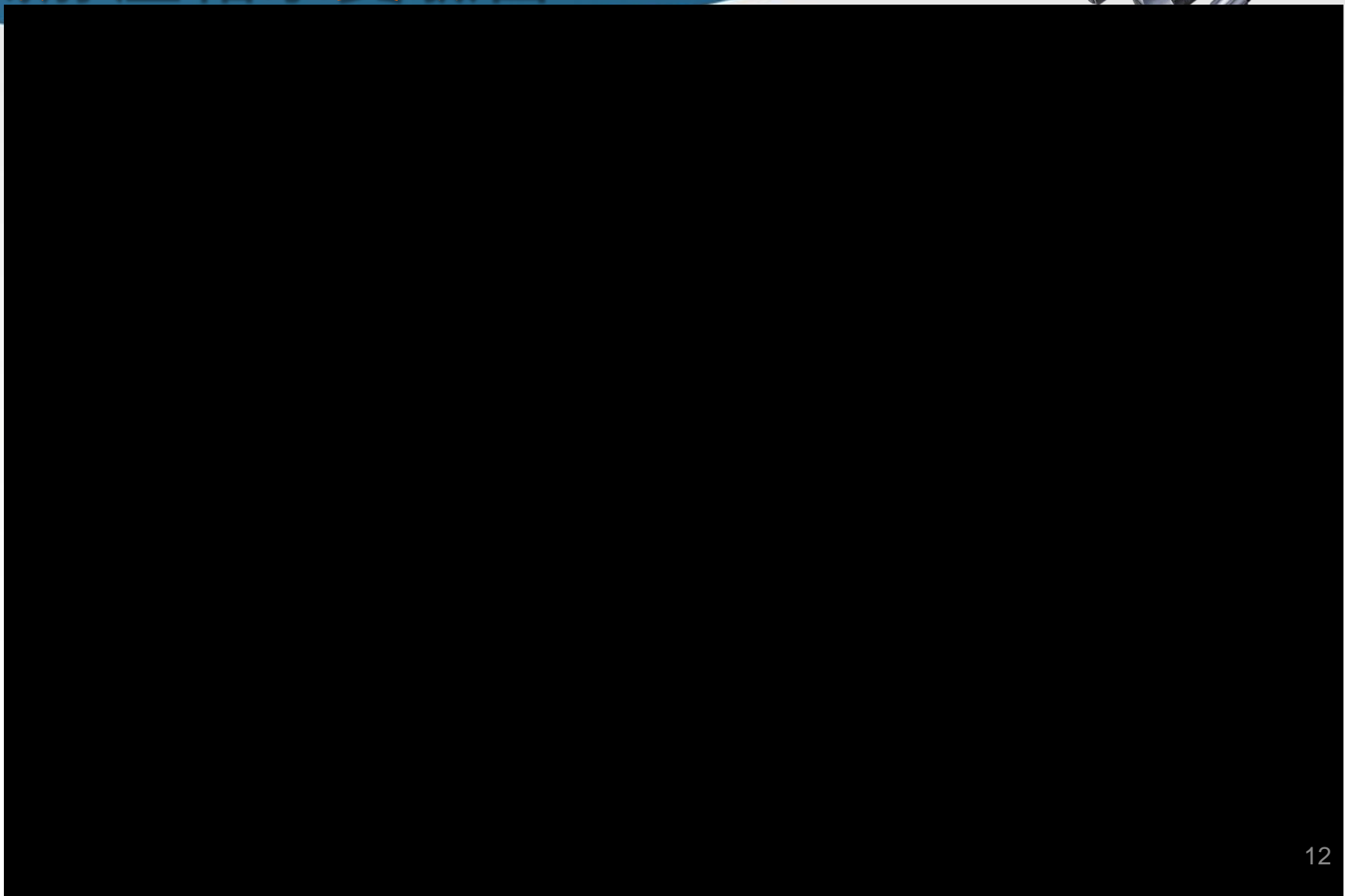


應用實例 - 氣靜壓軸承實驗台



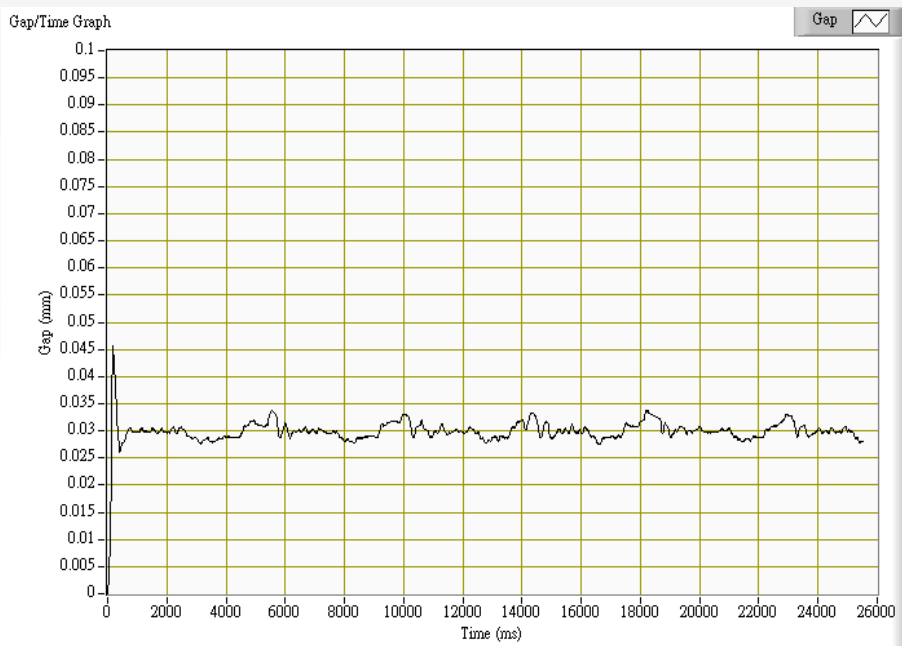
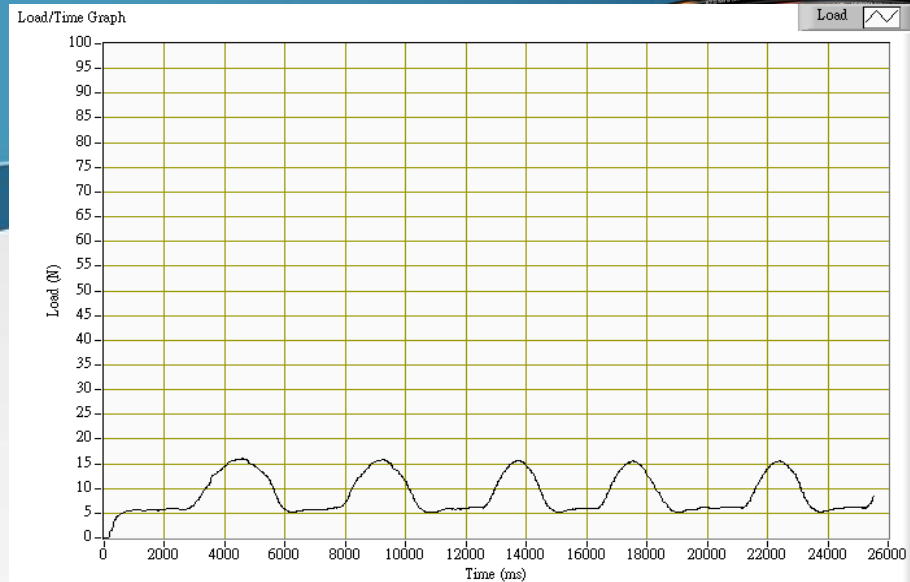
- 承 10. 直線軸承
- 計 11. 單動氣壓缸
- 12. 花崗岩平台

應用實例 – 氣靜壓軸承實驗台

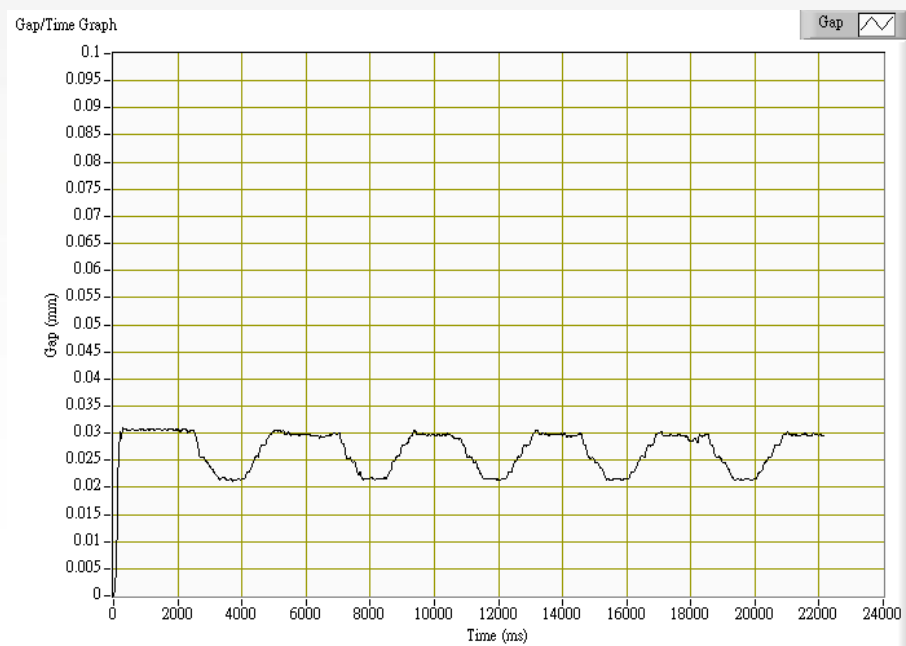


應用實例 – 氣靜壓軸承實驗台

施於力量負載 →

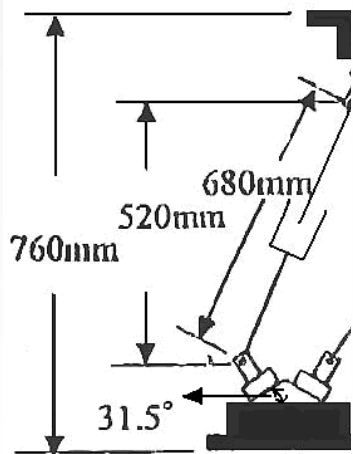
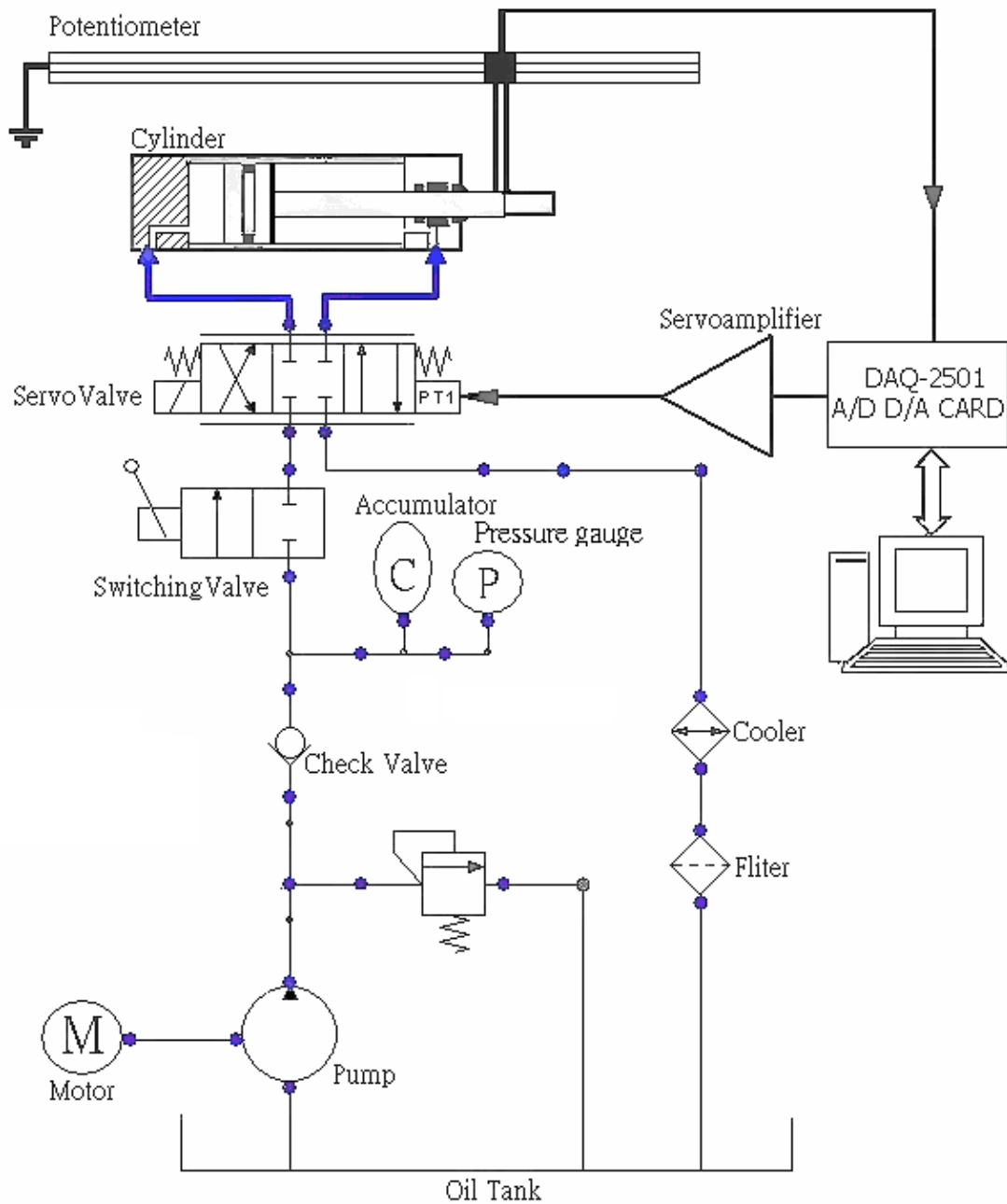


主動式閉迴路控制



開迴路控制

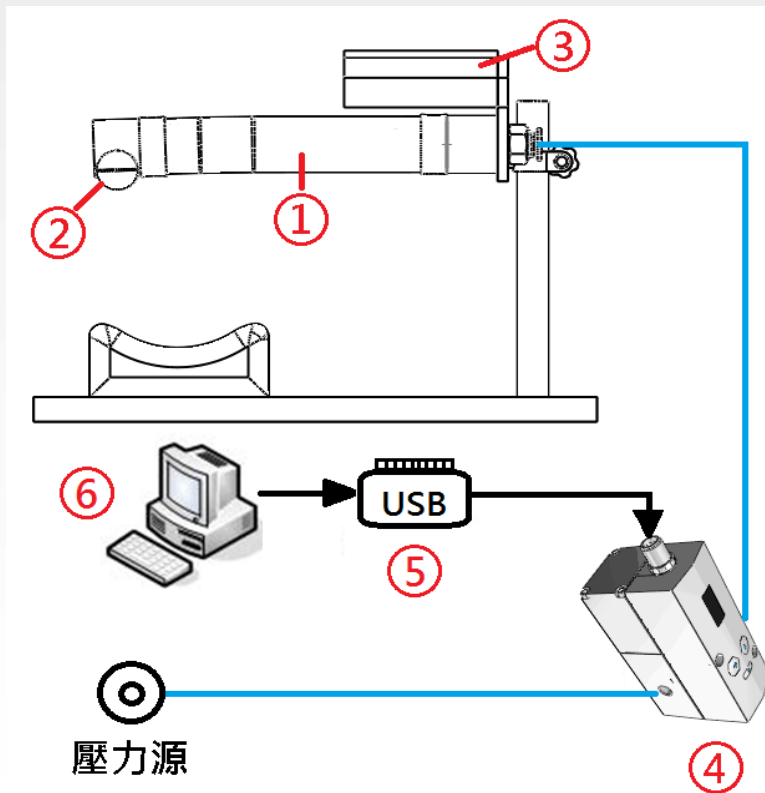
應用實例一 六軸動感



應用實例 – 六軸動感平台應用

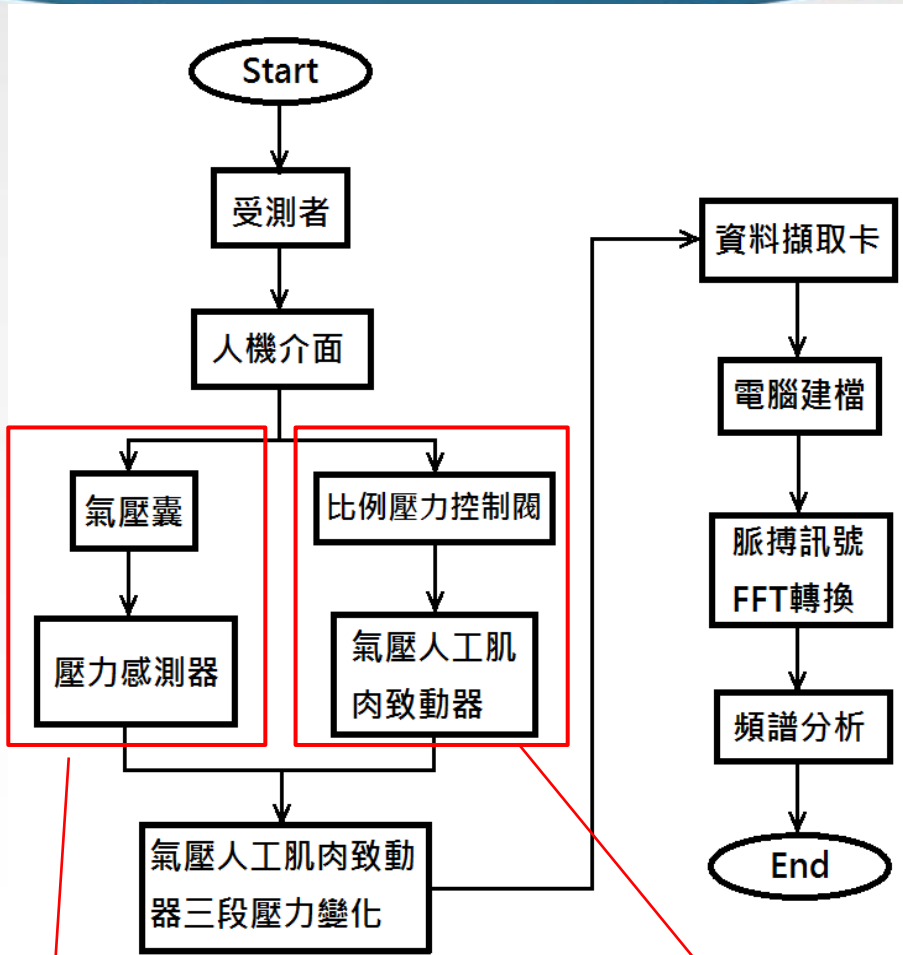


應用實例 – 氣壓撓性手臂脈搏量測



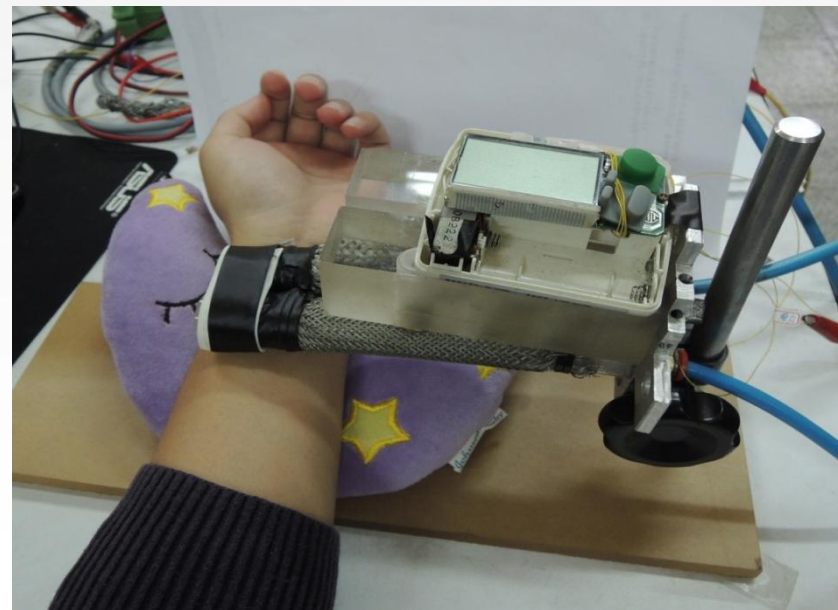
- | | |
|---|-----------|
| ① | 氣壓人工肌肉致動器 |
| ② | 氣壓囊 |
| ③ | 壓力感測器 |
| ④ | 比例壓力控制閥 |
| ⑤ | 擷取卡 |
| ⑥ | 電腦 |

應用實例 – 氣壓撓性手臂脈搏量測

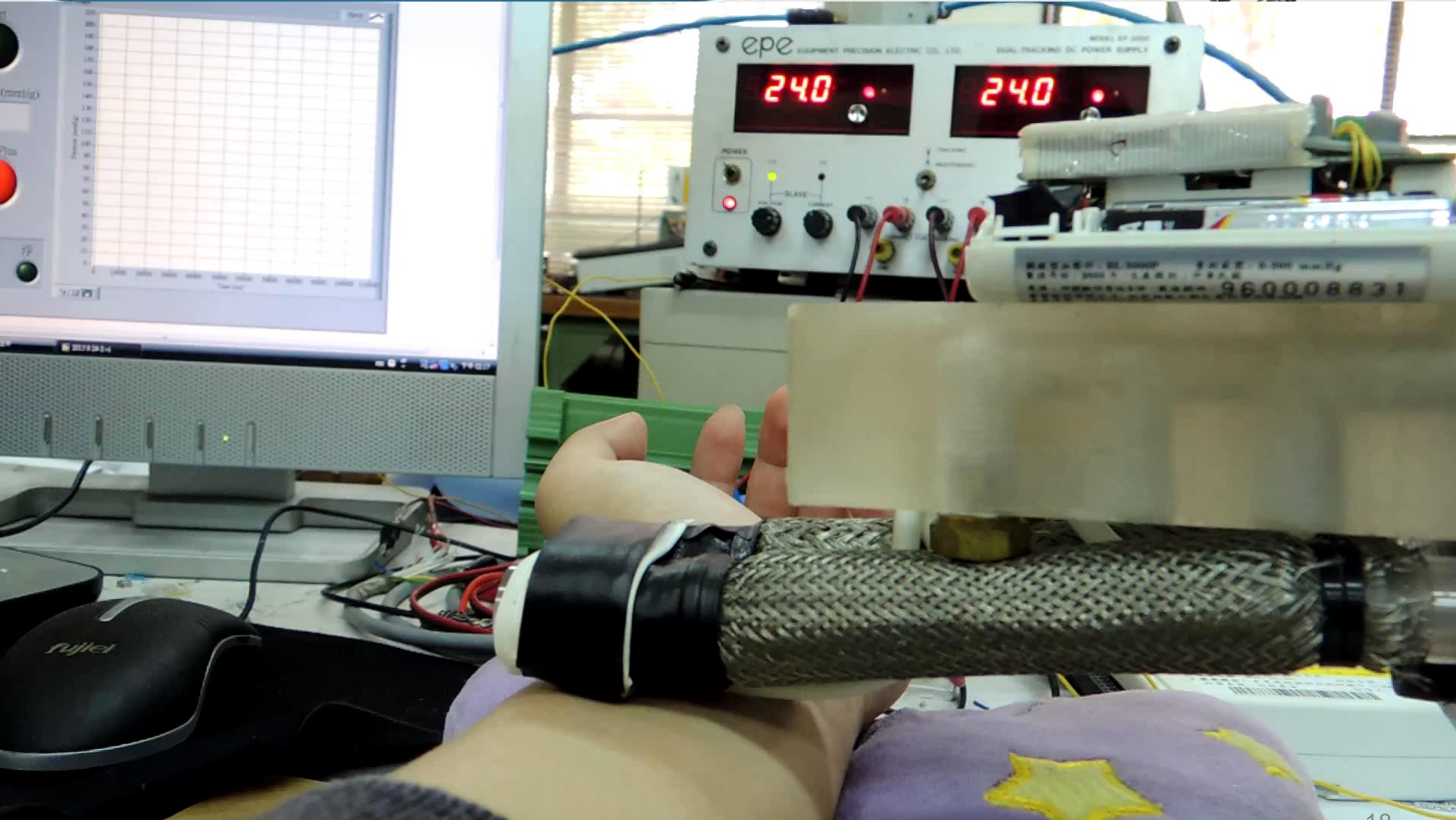


加壓馬達

氣壓源



應用實例 – 氣壓撓性手臂脈搏量測

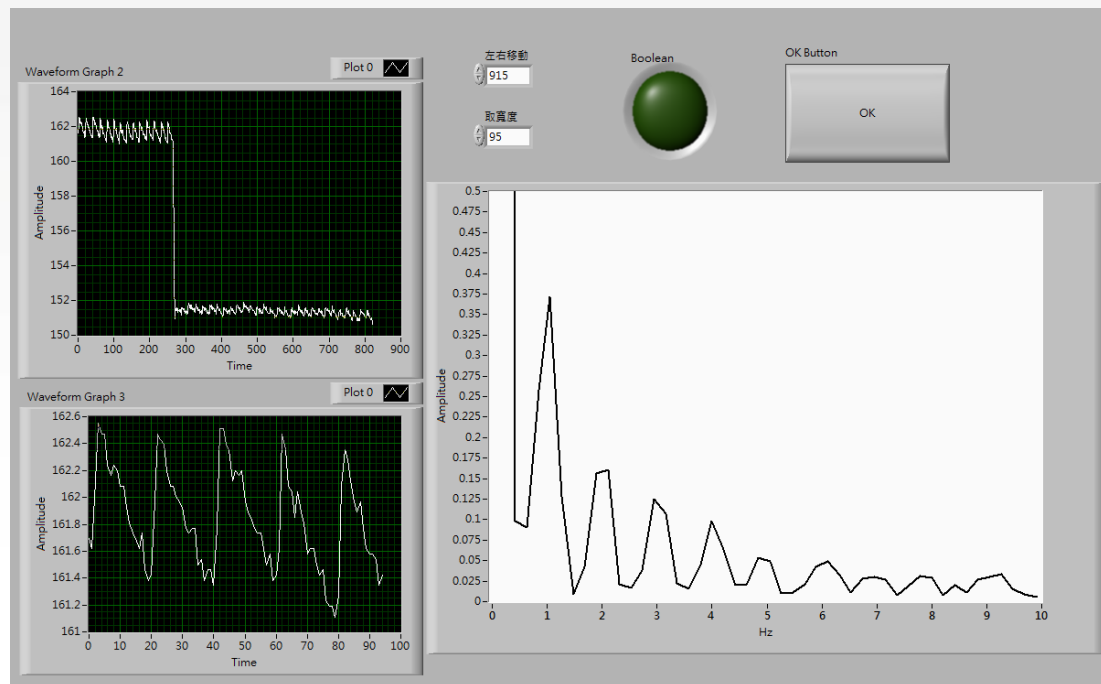


應用實例 – 氣壓撓性手臂脈搏量測



頻譜分析

將量測後的脈波圖分浮、中、沉三段做快速傅立葉轉換 (FFT)。

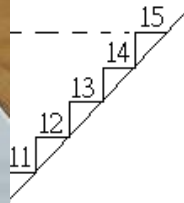
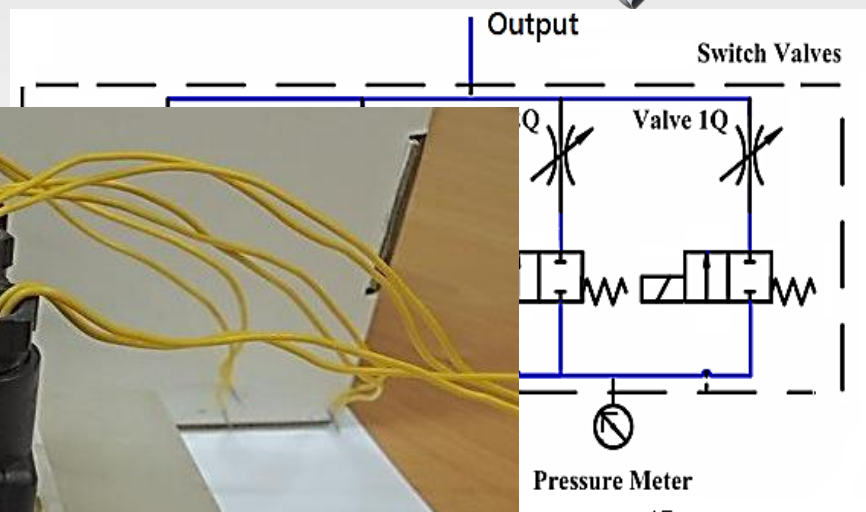
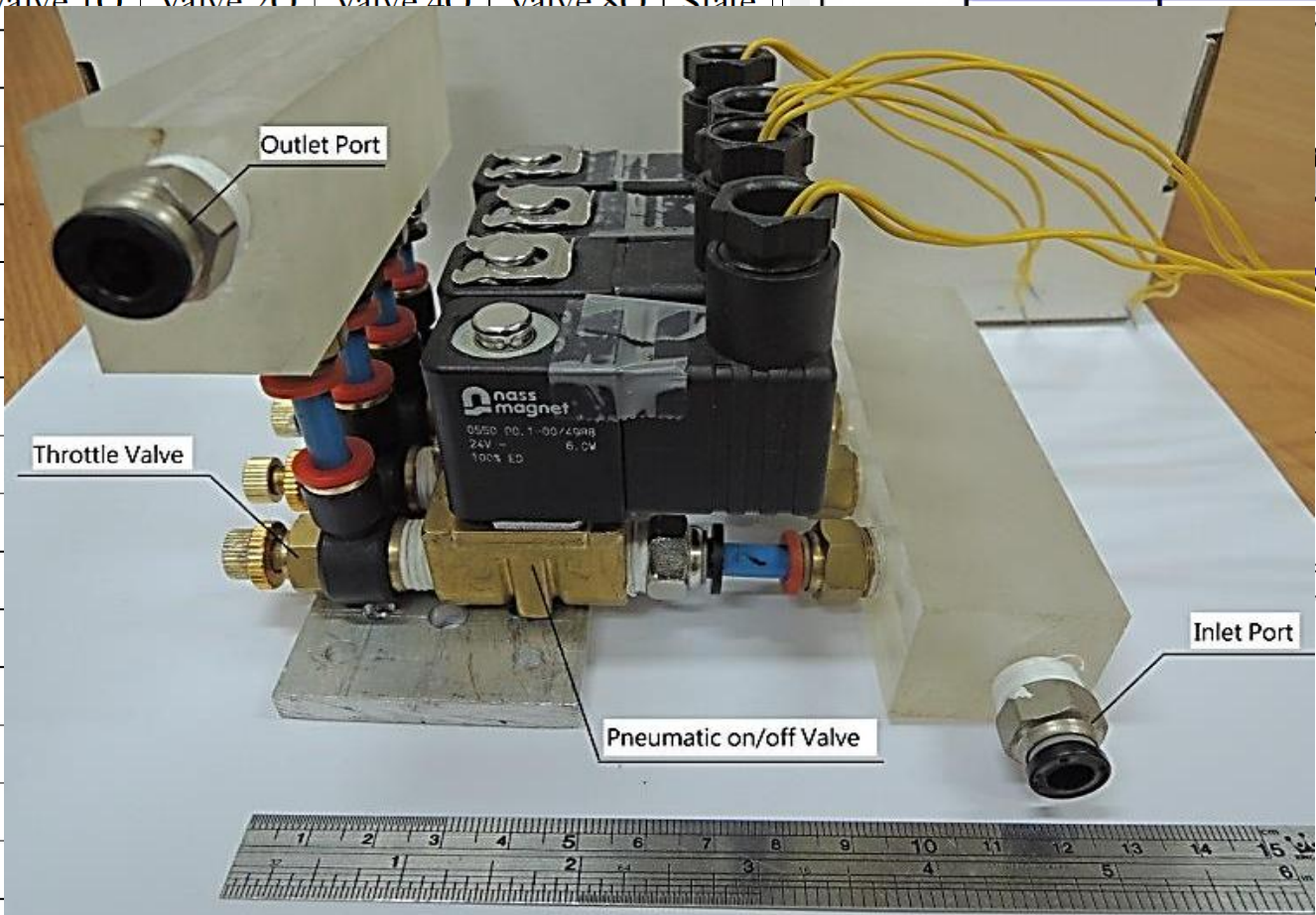


應用實例 - 數位類伺服閥定位控制應用



Binary Coding System for FDCV

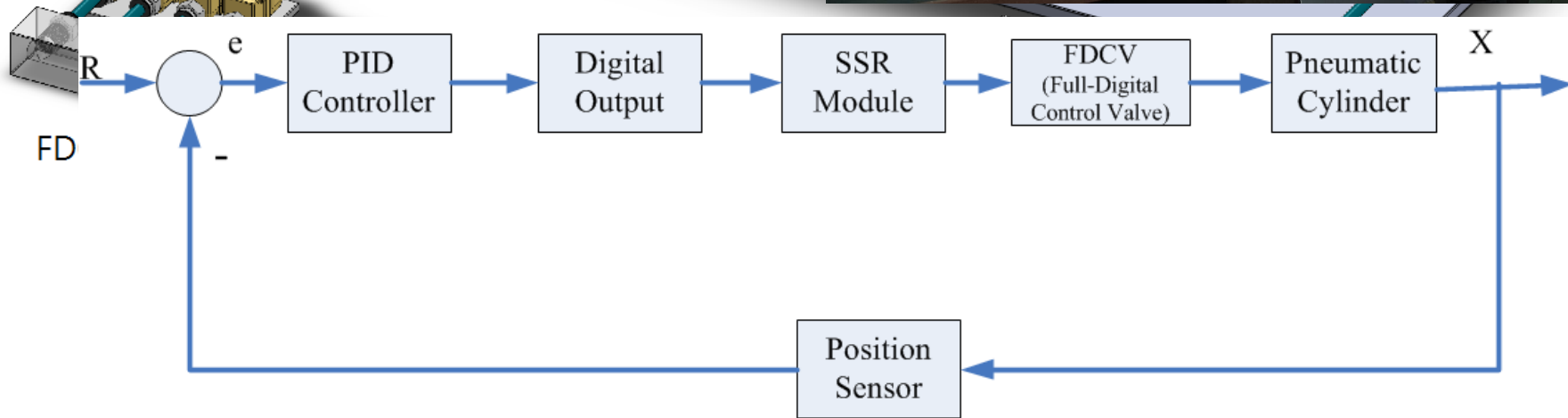
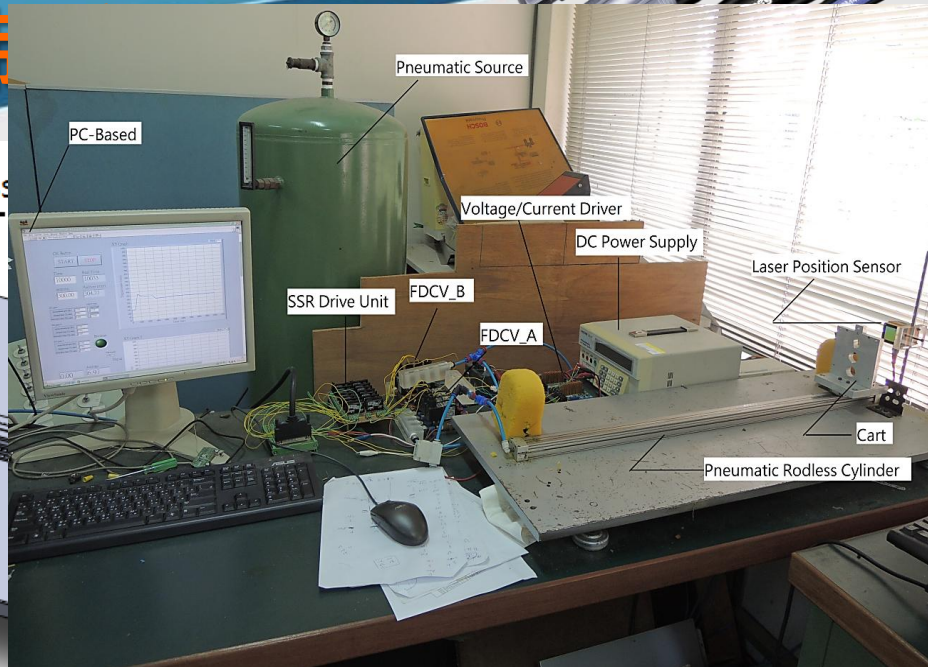
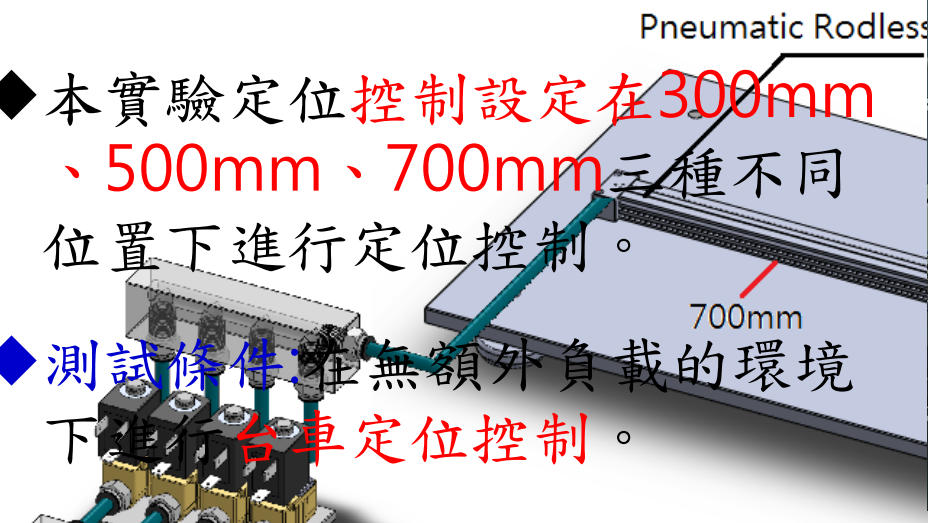
Net Flow	Valve 1Q	Valve 2Q	Valve 4Q	Valve 8Q	State
0					
1Q					
2Q					
3Q					
4Q					
5Q					
6Q					
7Q					
8Q					
9Q					
10Q					
11Q					
12Q					
13Q					
14Q					
15Q	1	1	1	1	15



應用實例 - 數位類伺服閥定位控制

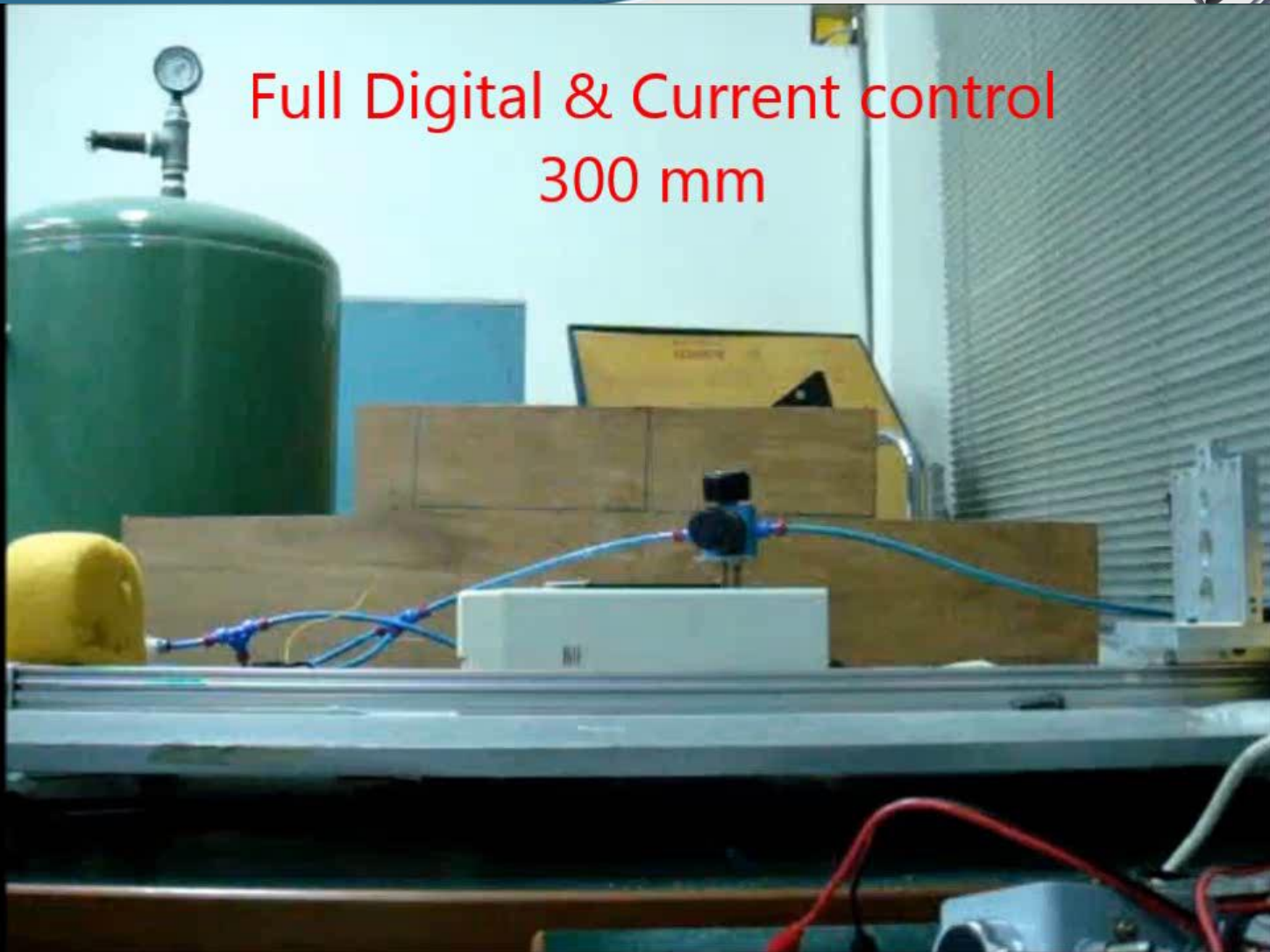
◆ 本實驗定位控制設定在300mm、500mm、700mm三種不同位置下進行定位控制。

◆ 測試條件：在無額外負載的環境下進行台車定位控制。



全數位氣壓缸PID定位控制系統方塊圖

應用實例 - 數位類伺服閥定位控制應用

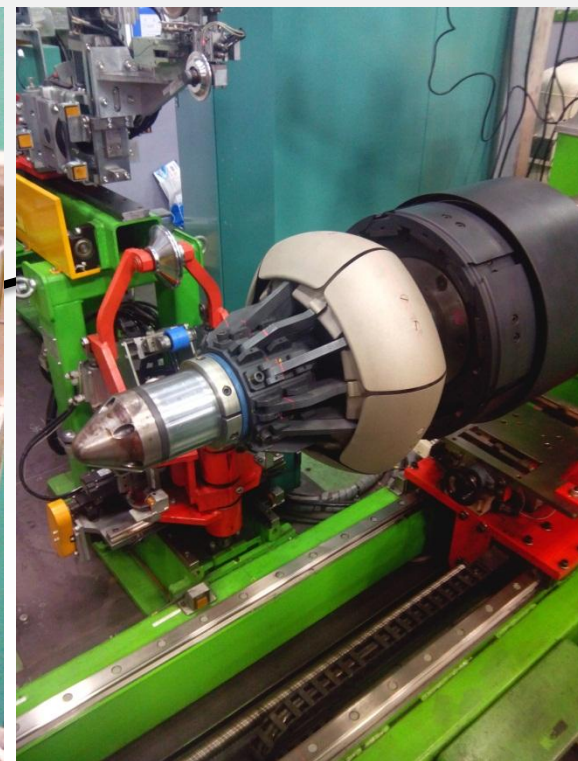


Full Digital & Current control
300 mm

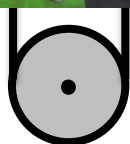
應用實例 - 輪胎張力資料擷取



引導輪

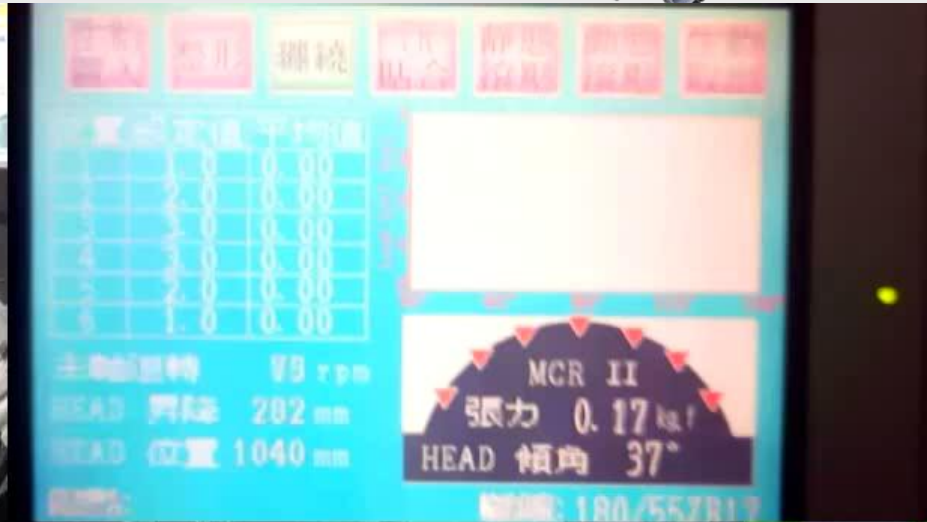


進料區



伺服馬達

應用實例 - 輪胎張力資料擷取



應用實例 - 輪胎張力資料擷取

