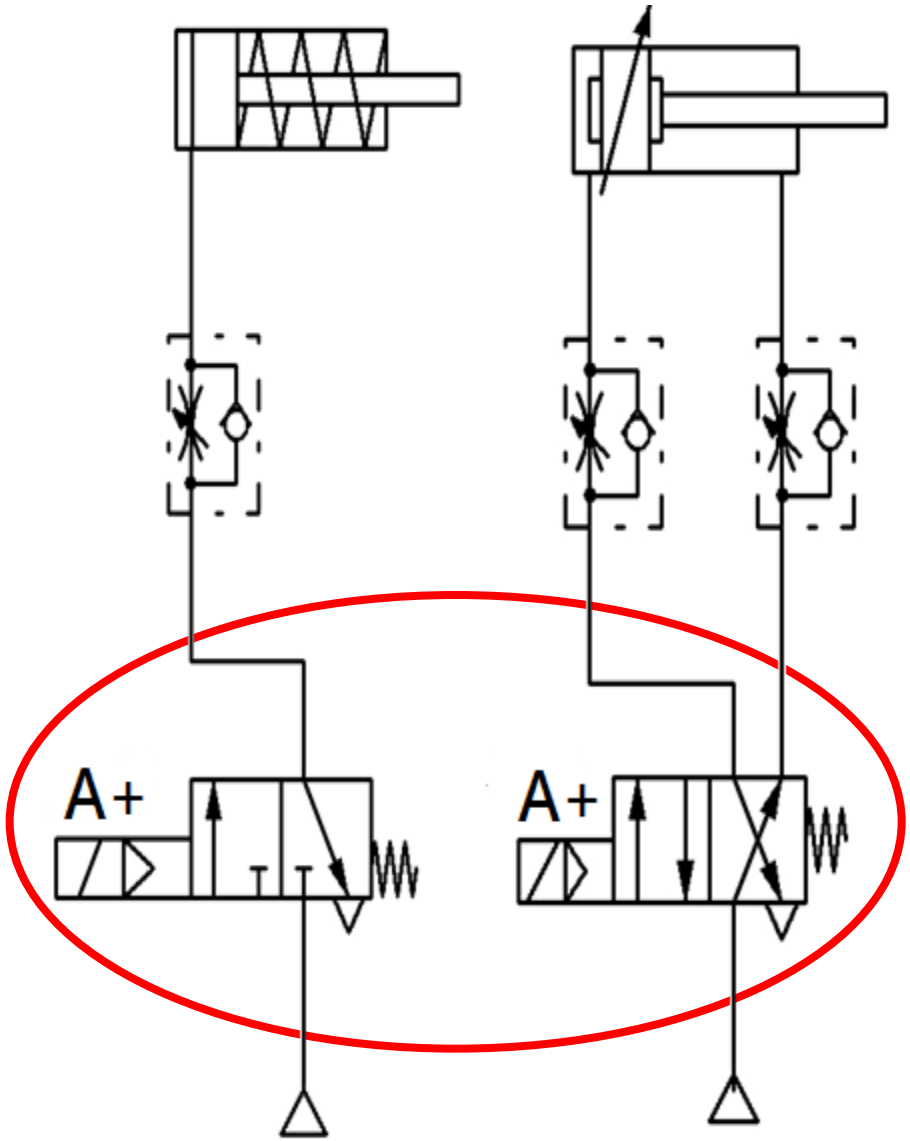
氣壓實習

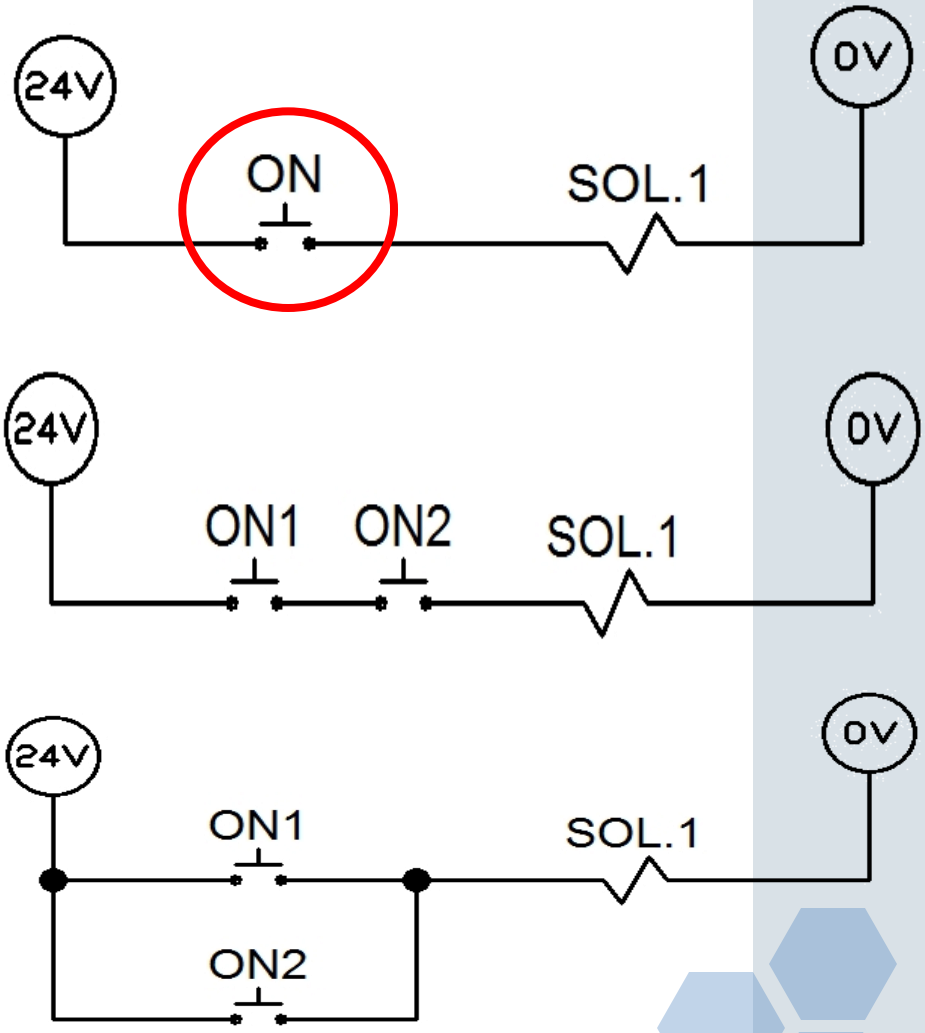
指導老師：黃文政

單元一

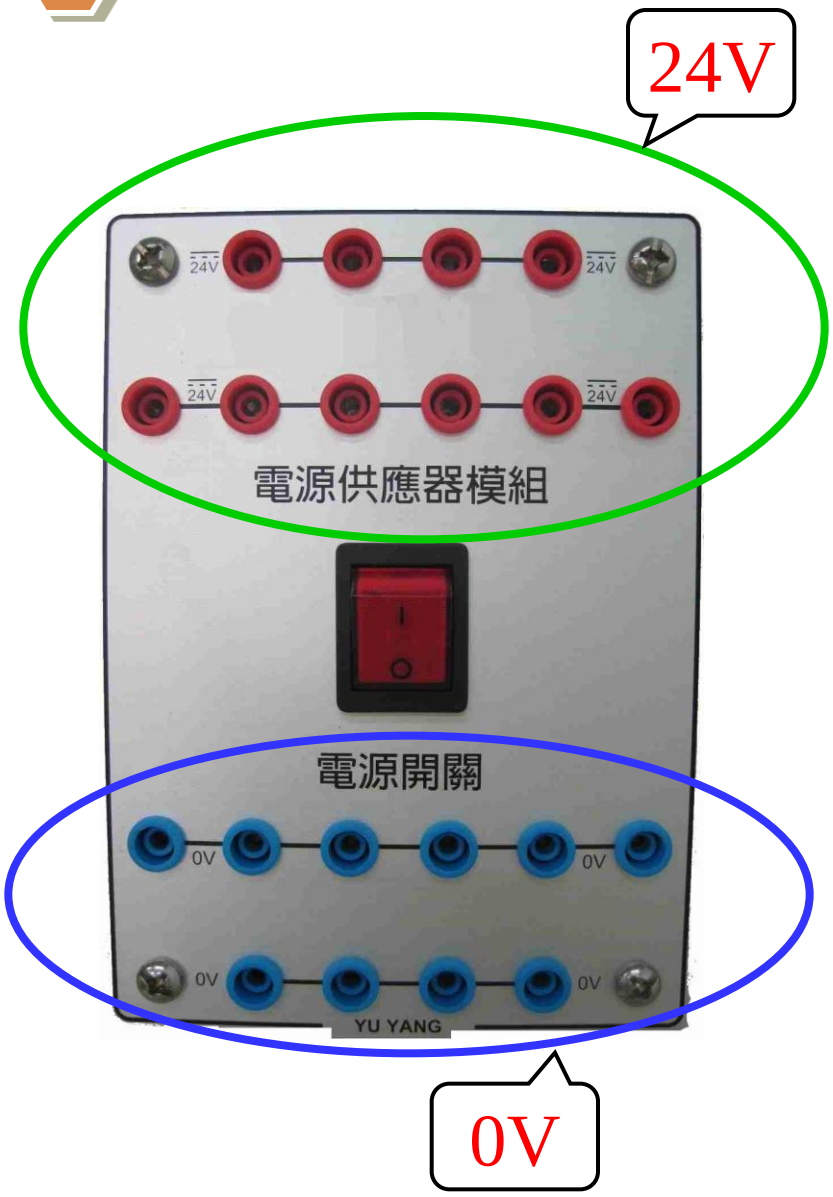
單動電磁閥直接控制迴路

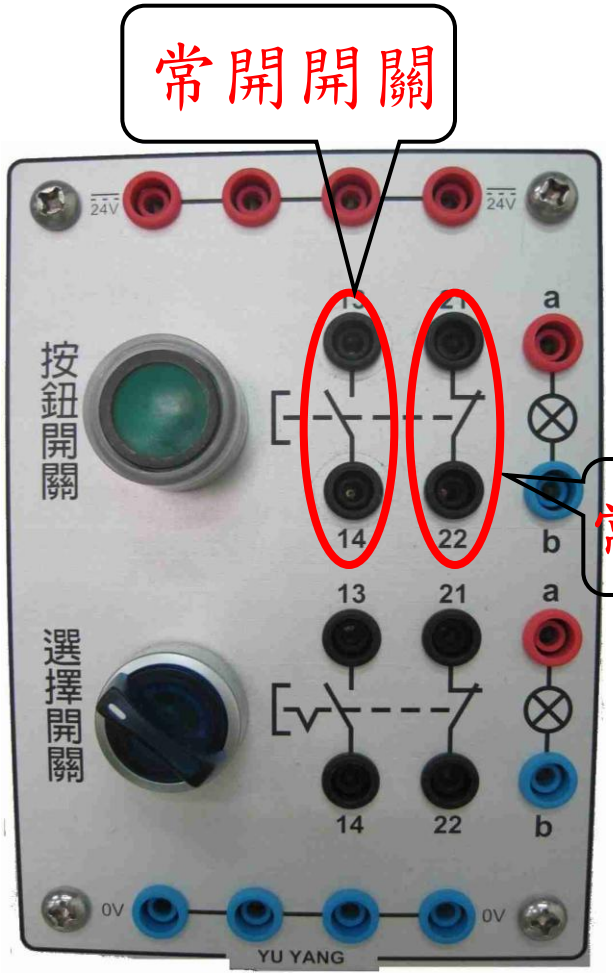
氣壓-電氣迴路圖





元件介紹1

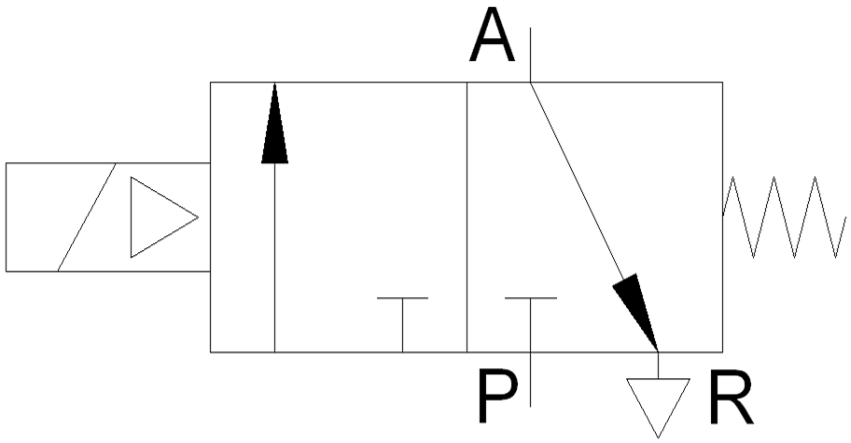




LTIVS-ME

元件介紹2

❖3口2位電磁作動彈簧回位閥

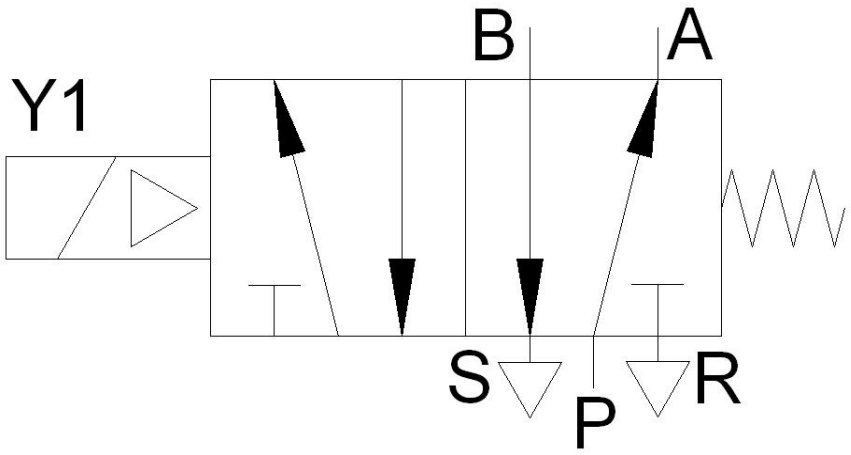


- 1.當電磁線圈未通電時，高壓氣體在P口即被堵住，而A處之殘留氣體會由R口排至大氣。
- 2.當電磁線圈通電激磁時，閥體會切換至左側，故P口之高壓氣體會流至A口輸出。

LTIVS-ME

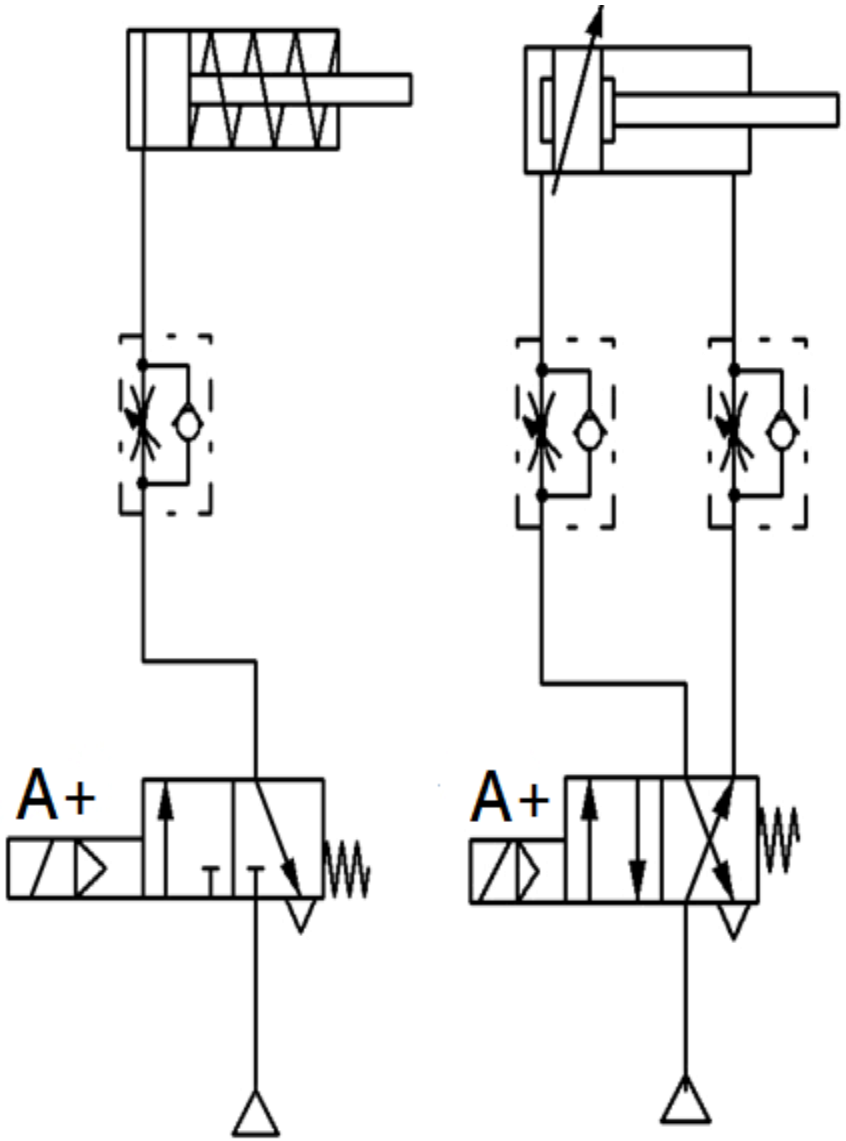
元件介紹3

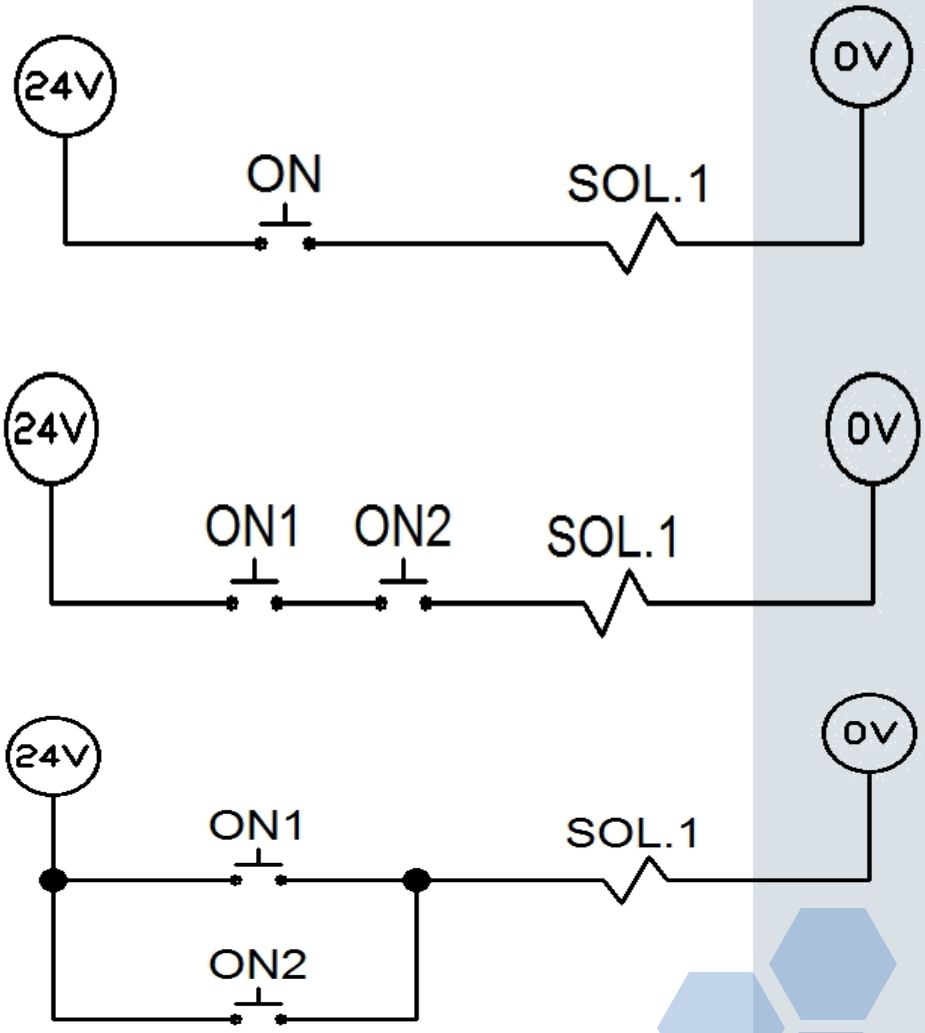
❖5口2位電磁作動彈簧回位閥



- 1.當Y1未通電，彈簧將閥體推至右側作動，故高壓氣體會由P口通至A口輸出，而B處之殘留氣體會由S口排至大氣。
- 2.當Y1通電，閥體會切換至左側，故P口之高壓氣體會流至B口輸出，而A口之殘留高壓氣體會由R口排至大氣。

實作時間





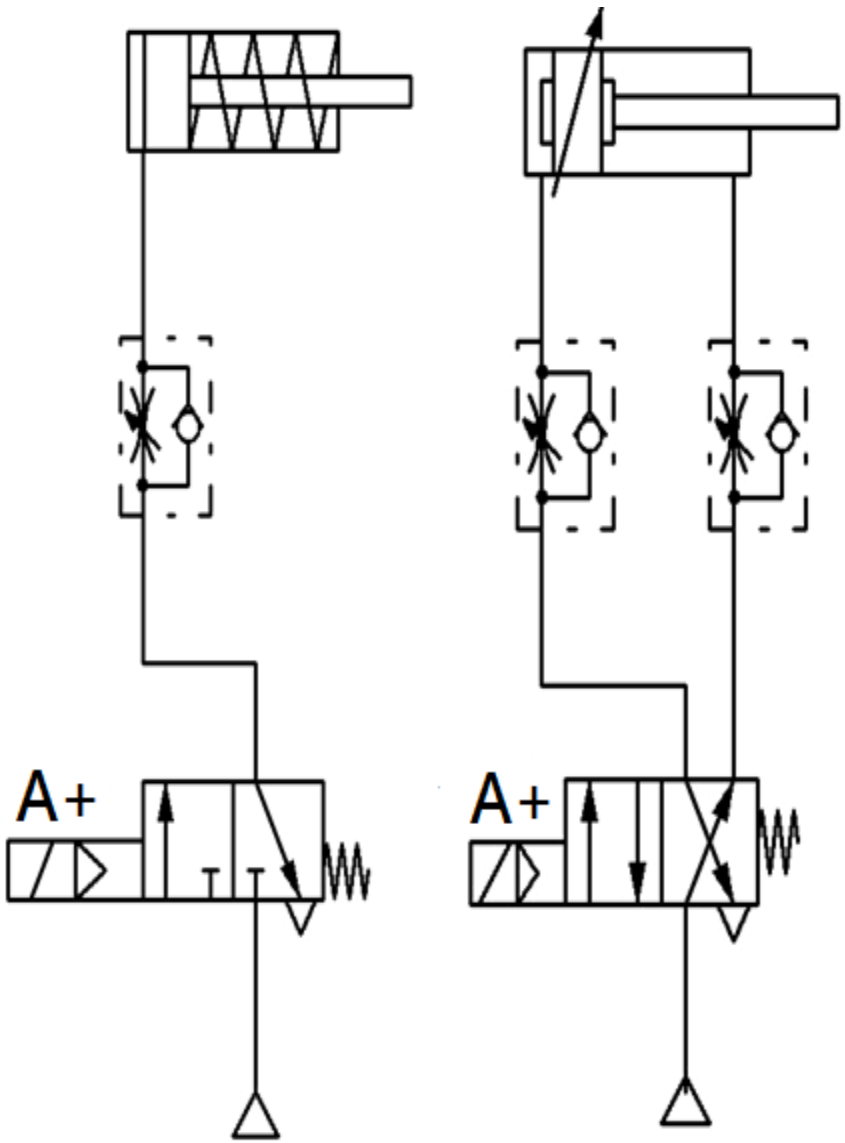
LTIVS-ME

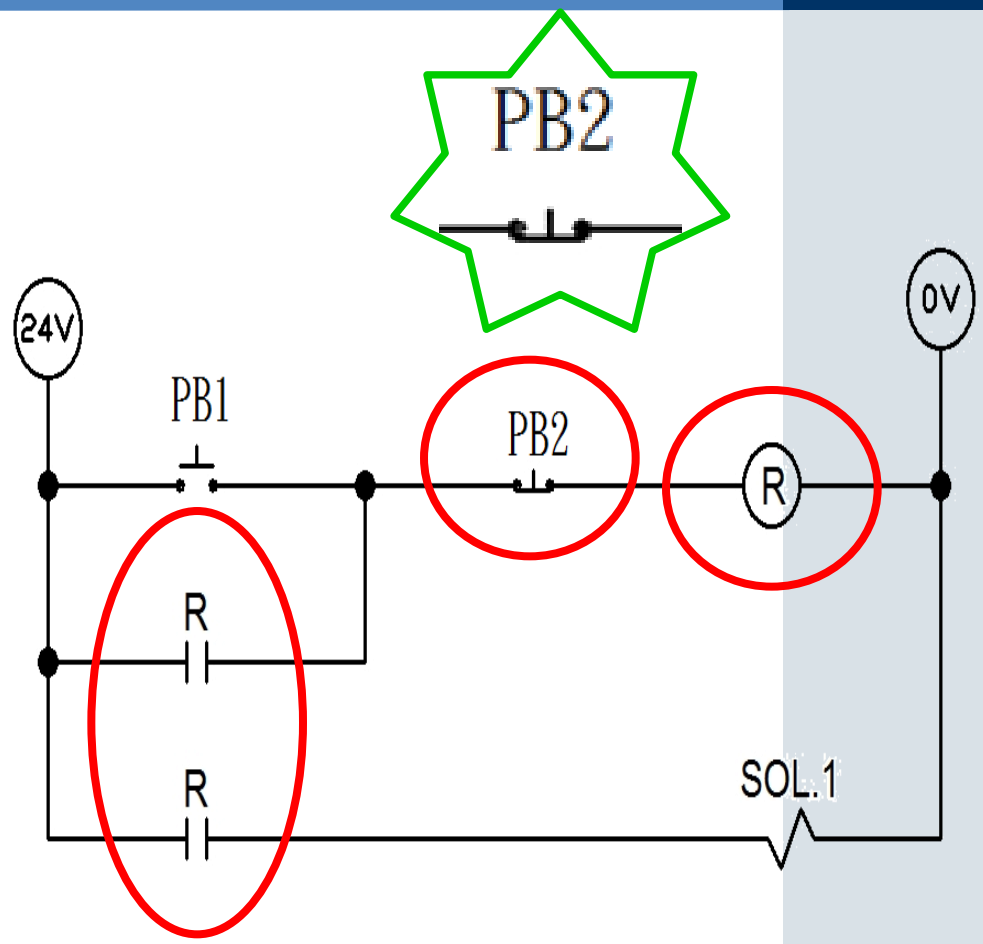
單元二

單側電磁控制迴路

自保持迴路

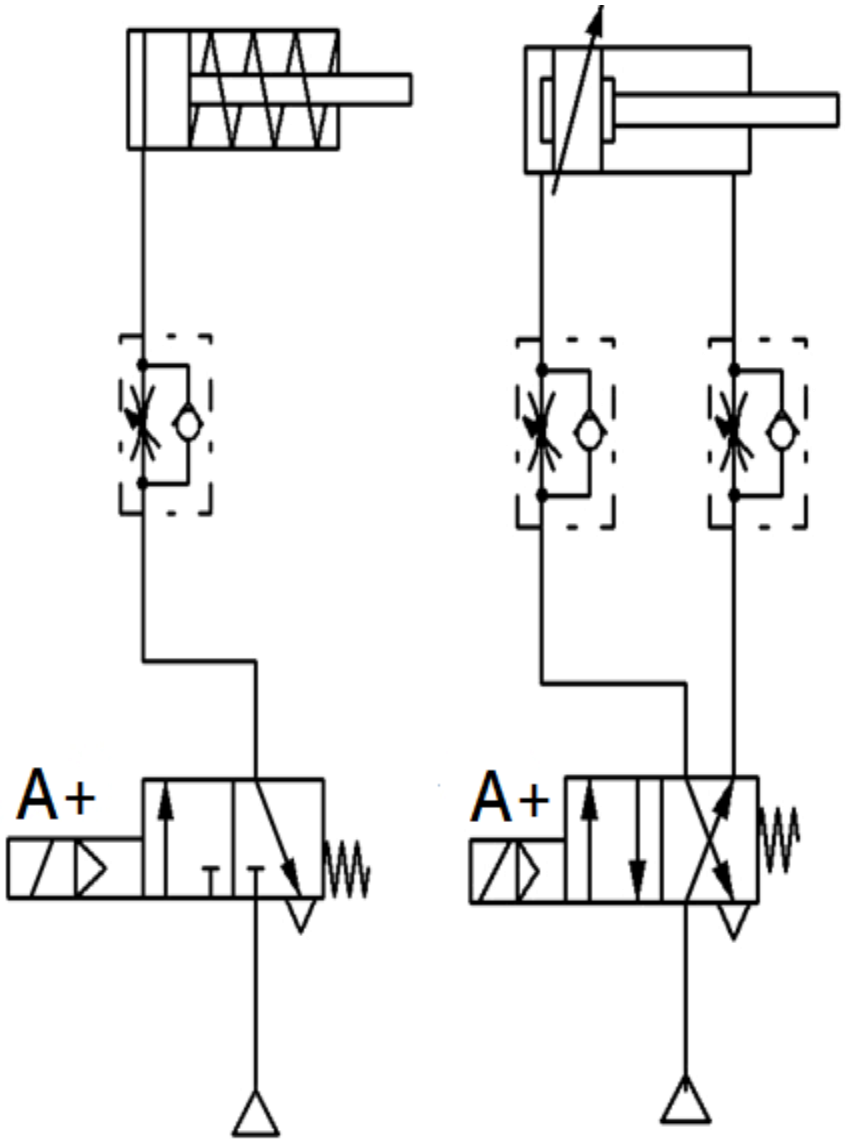
氣壓-電氣迴路圖1

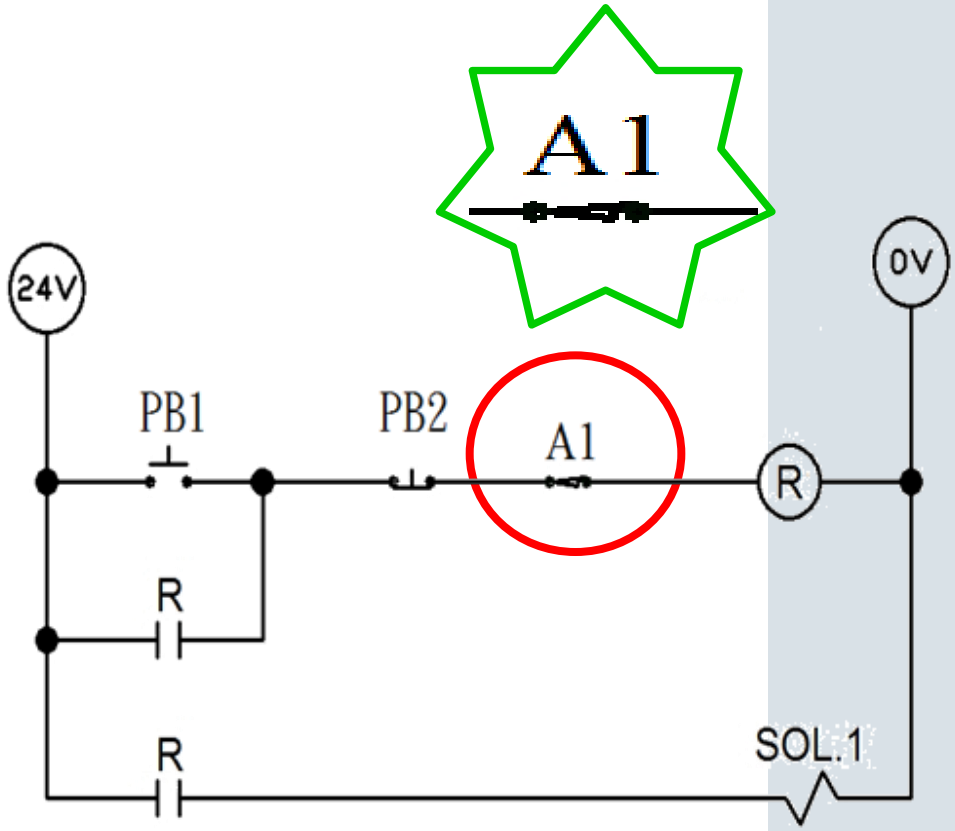




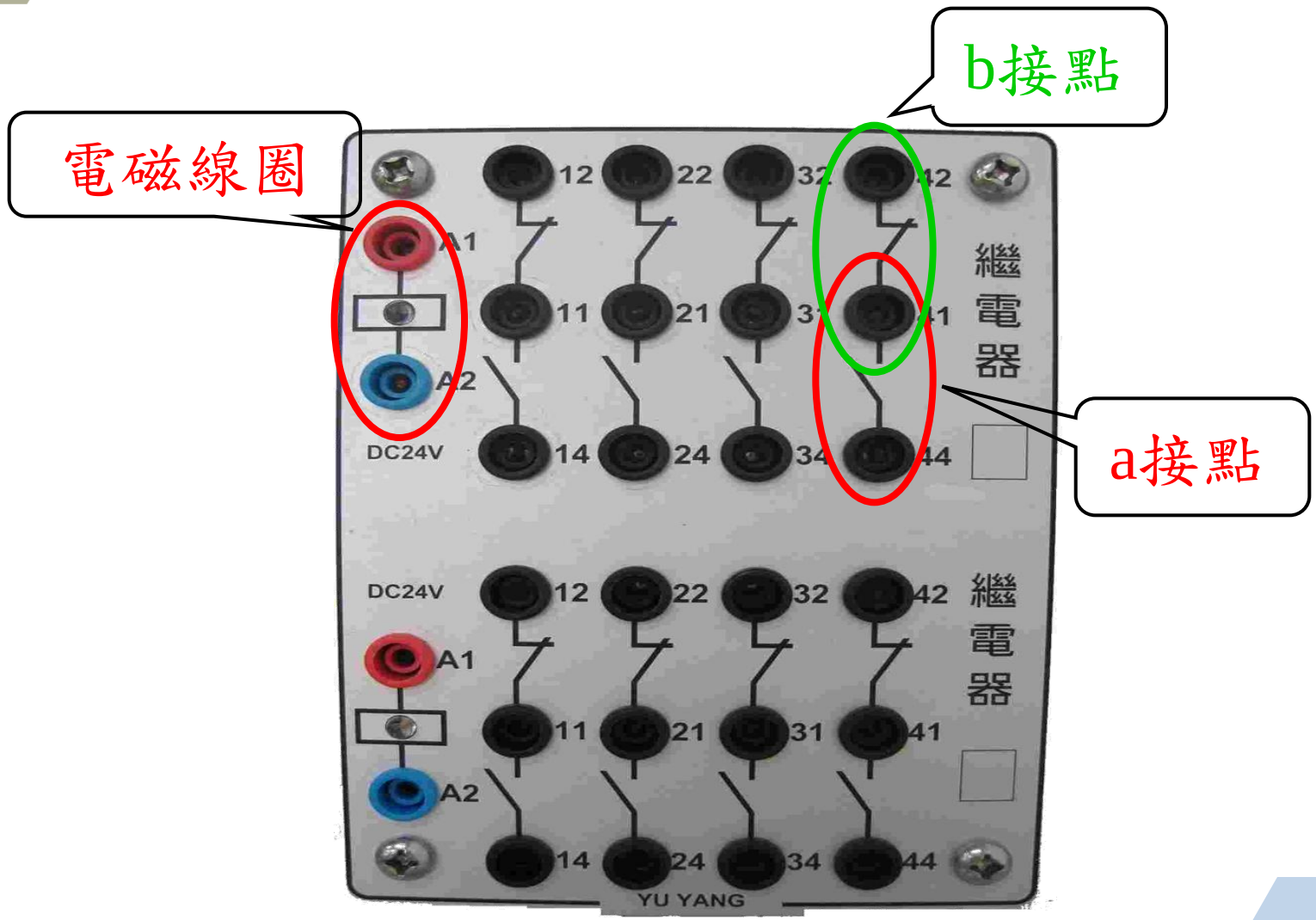
LTIVS-ME

氣壓-電氣迴路圖2





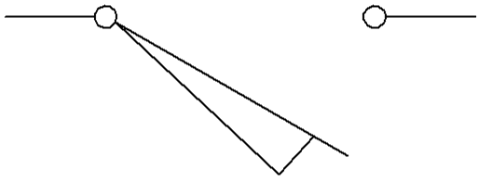
元件介紹1



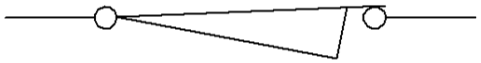
LTIVS-ME

元件介紹2

❖極限開關

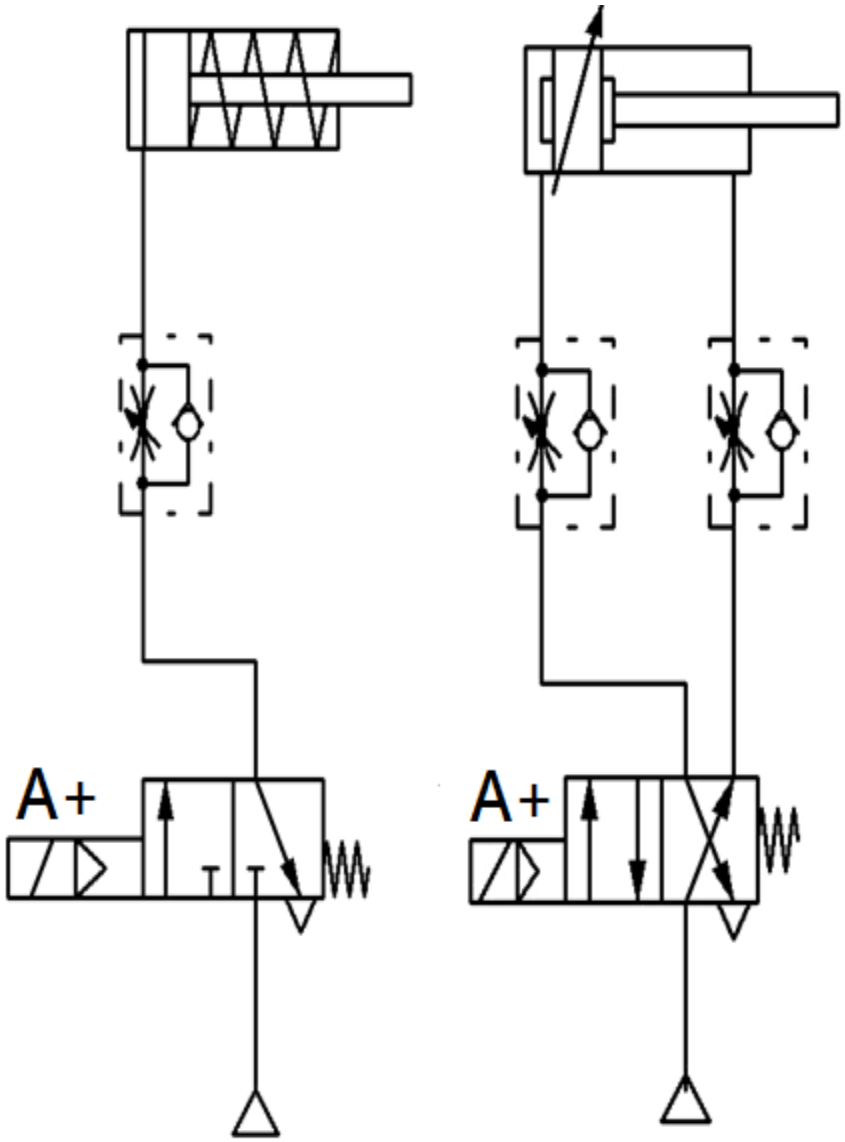


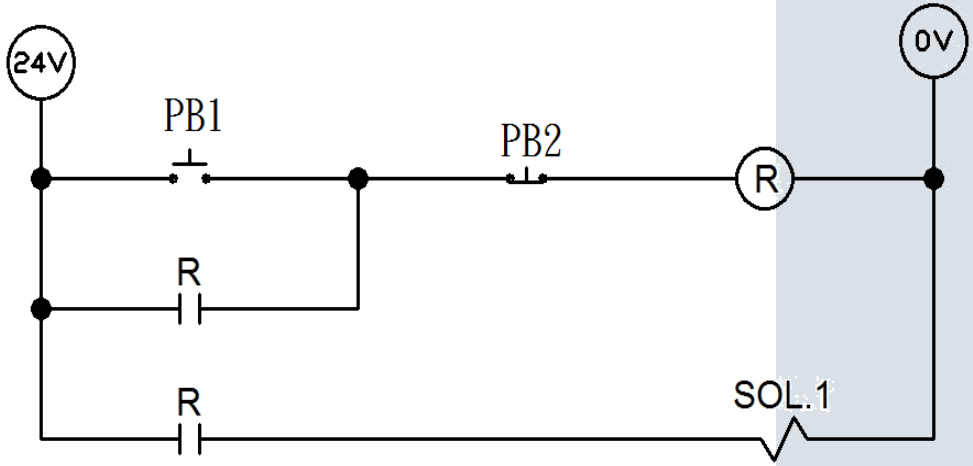
a接點
（常開接點）

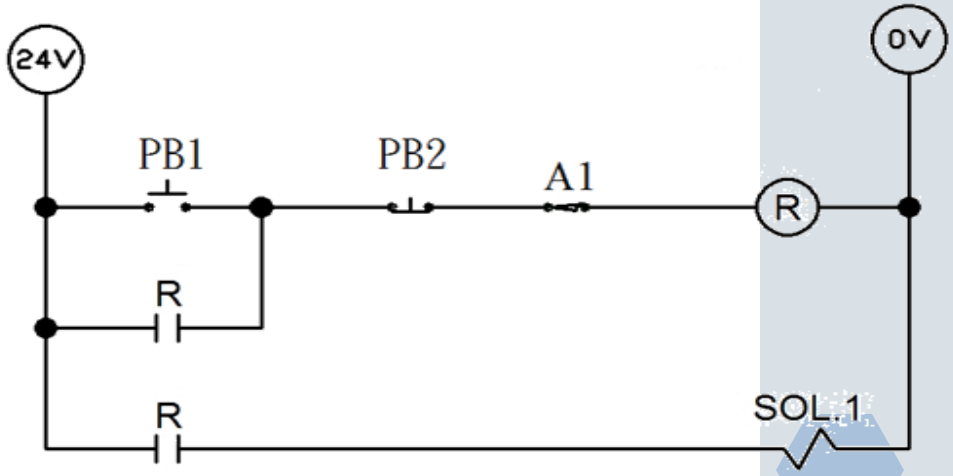


b接點
（常閉接點）

實作時間



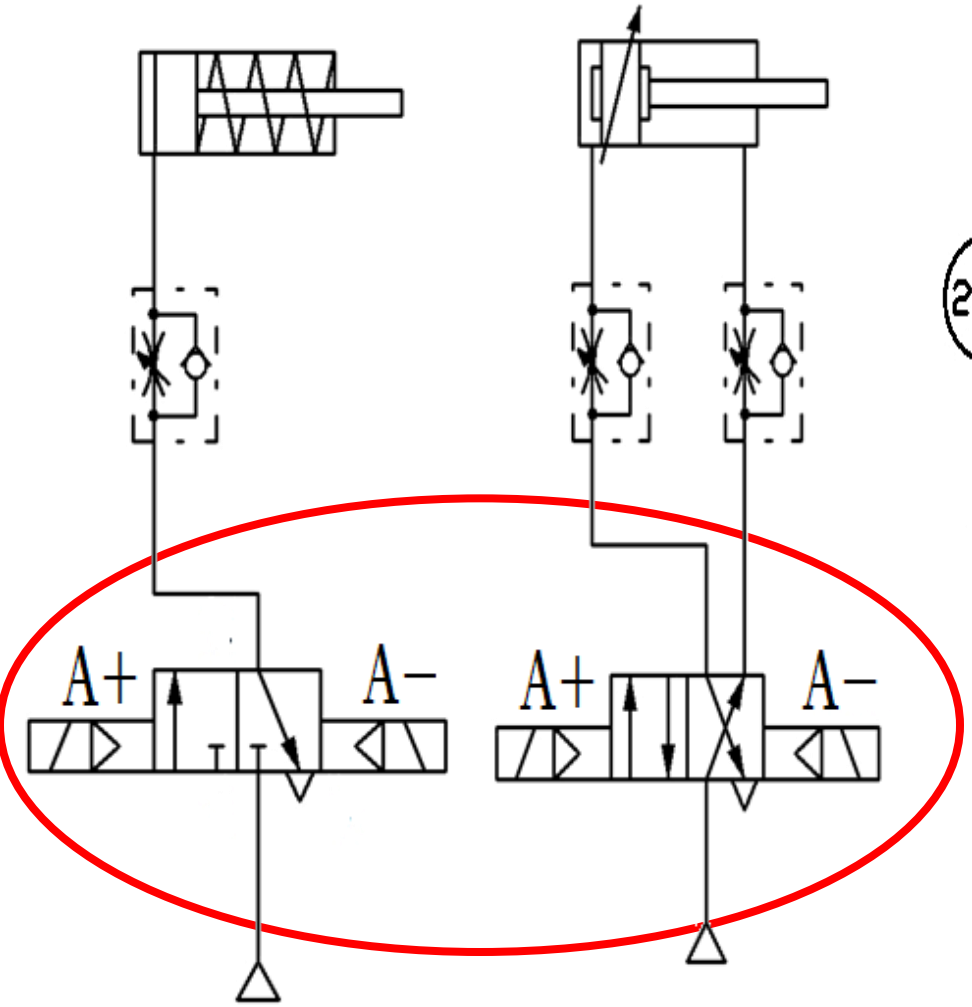


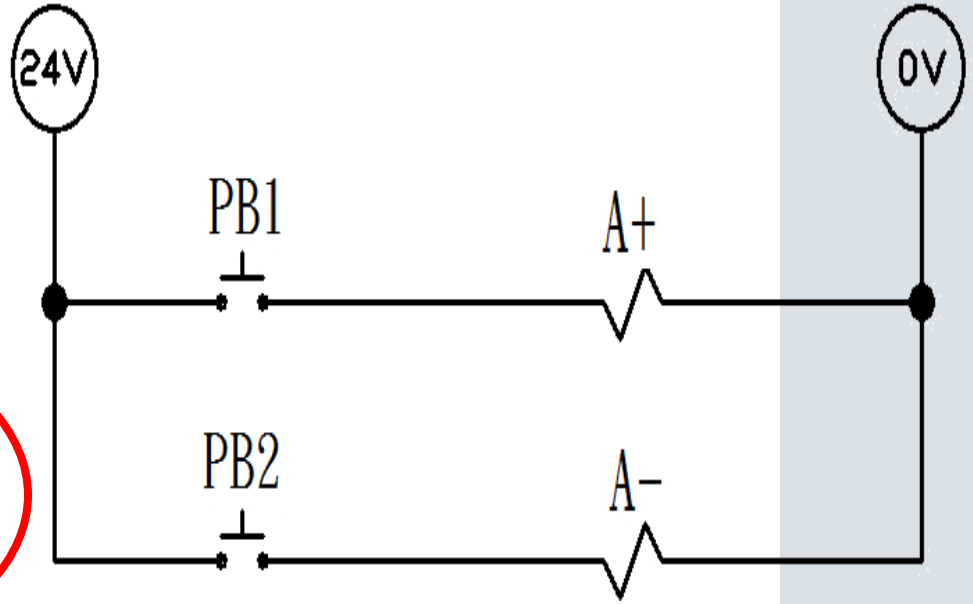


單元三

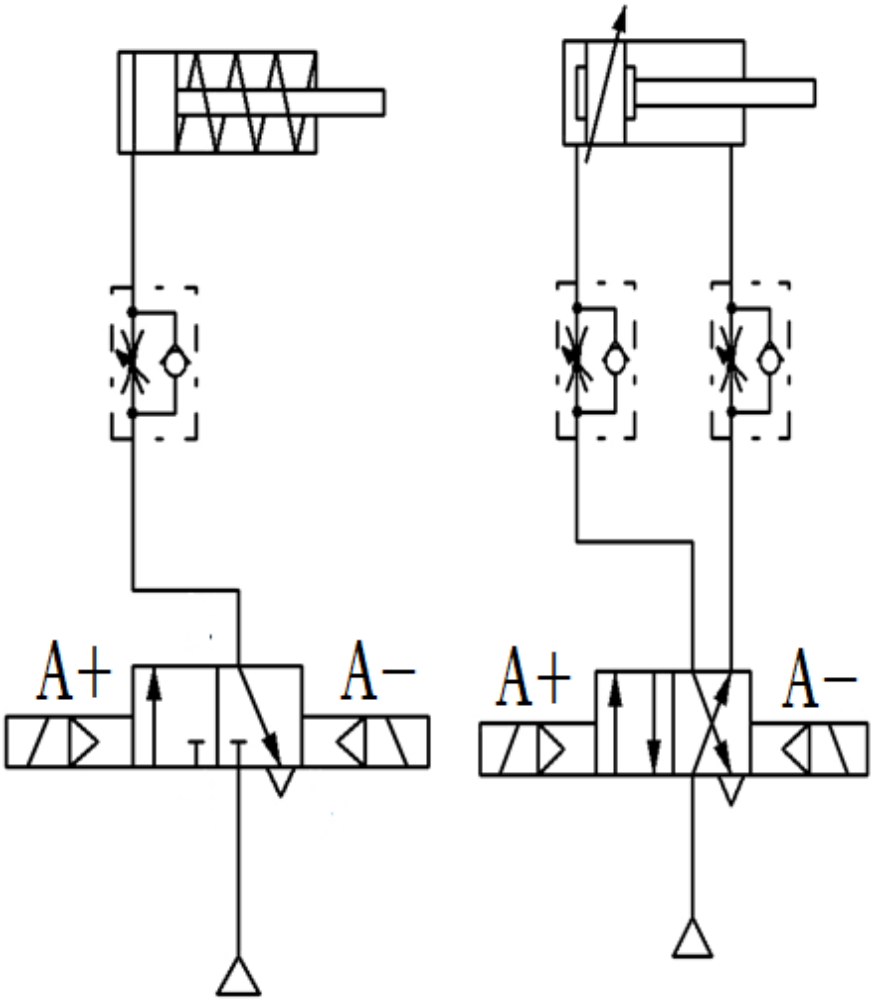
雙動電磁閥控制迴路

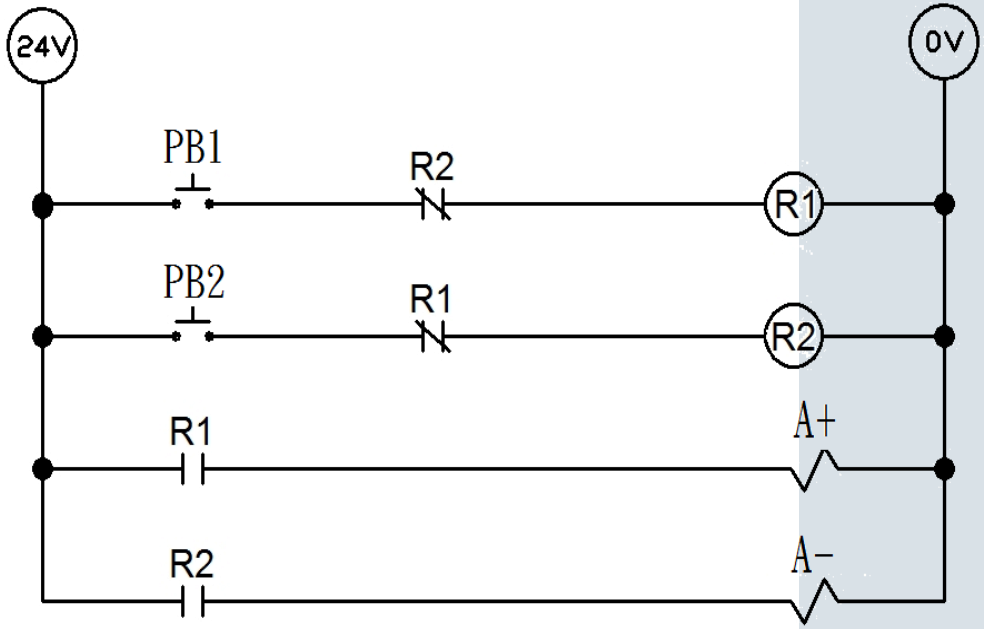
氣壓-電氣迴路圖1



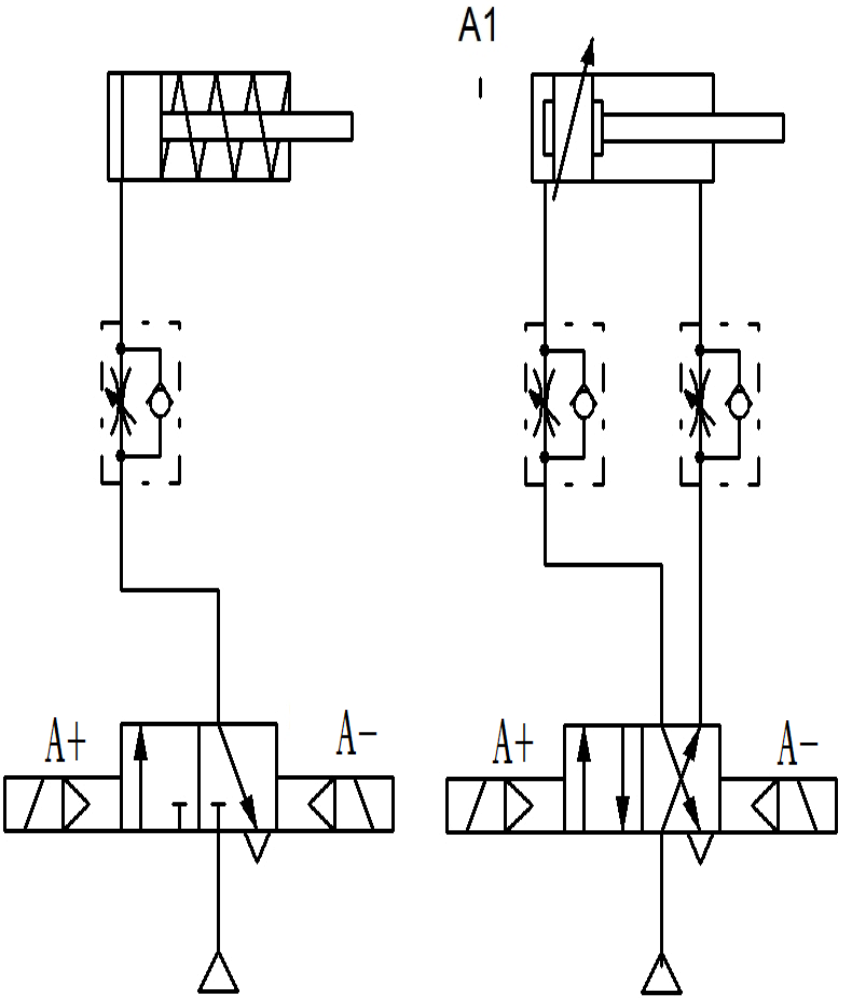


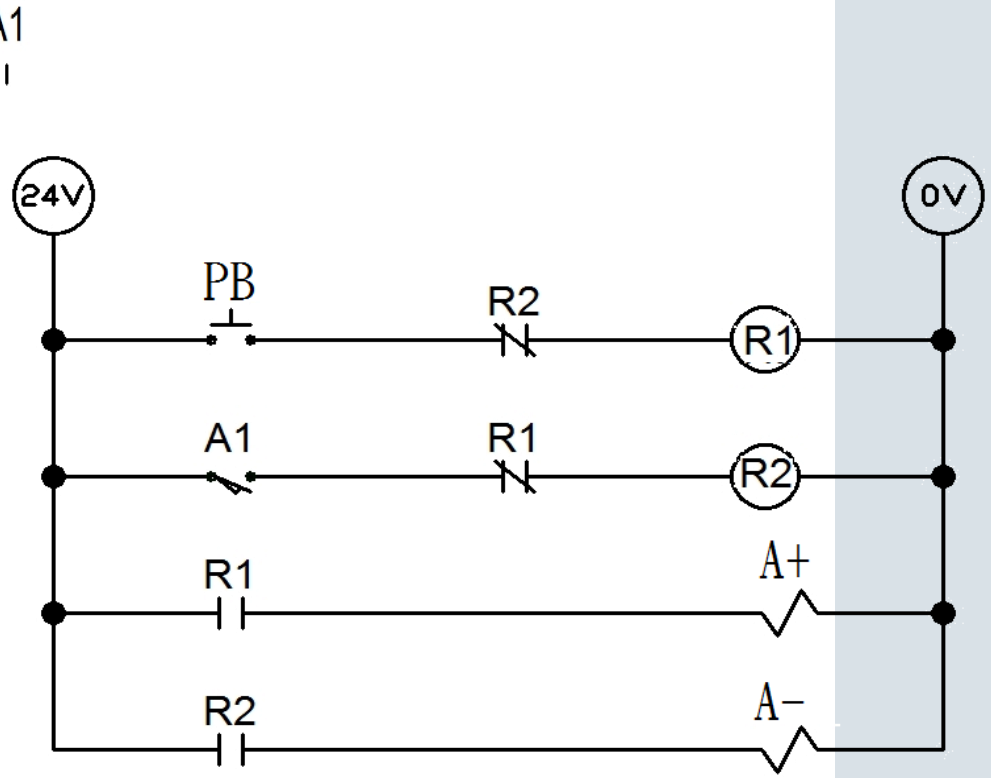
氣壓-電氣迴路圖2





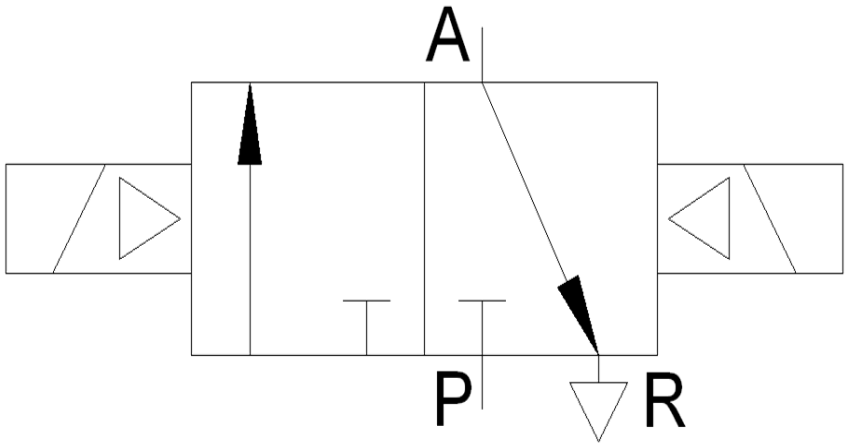
氣壓-電氣迴路圖3





元件介紹1

❖3口2位電磁引導氣壓作動閥

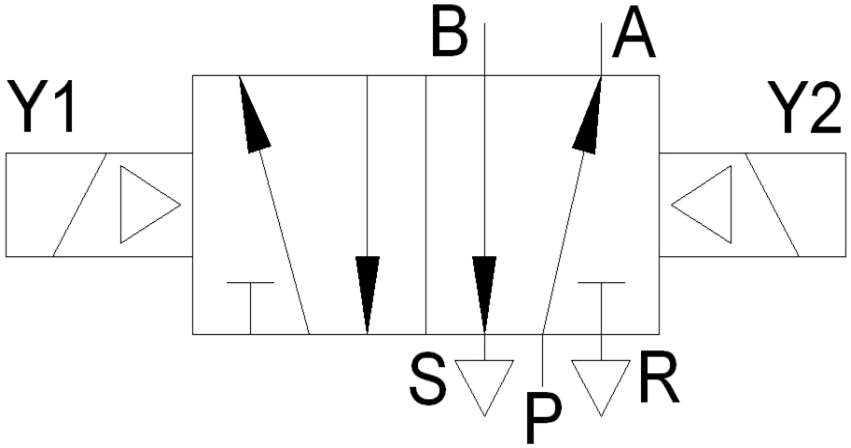


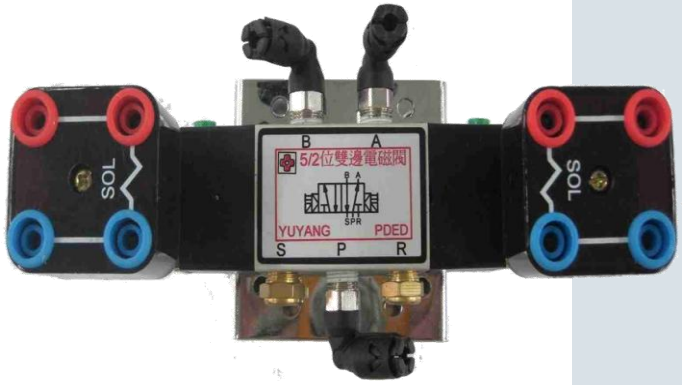
- 1.當左側電磁線圈未通電，而右側有時，高壓氣體在P口即被堵住，而A處之殘留氣體會由R口排至大氣。
- 2.當右側電磁線圈通電，而右側無時，閥體會切換至左側，故P口之高壓氣體會流至A口輸出。

LTIVS-ME

元件介紹2

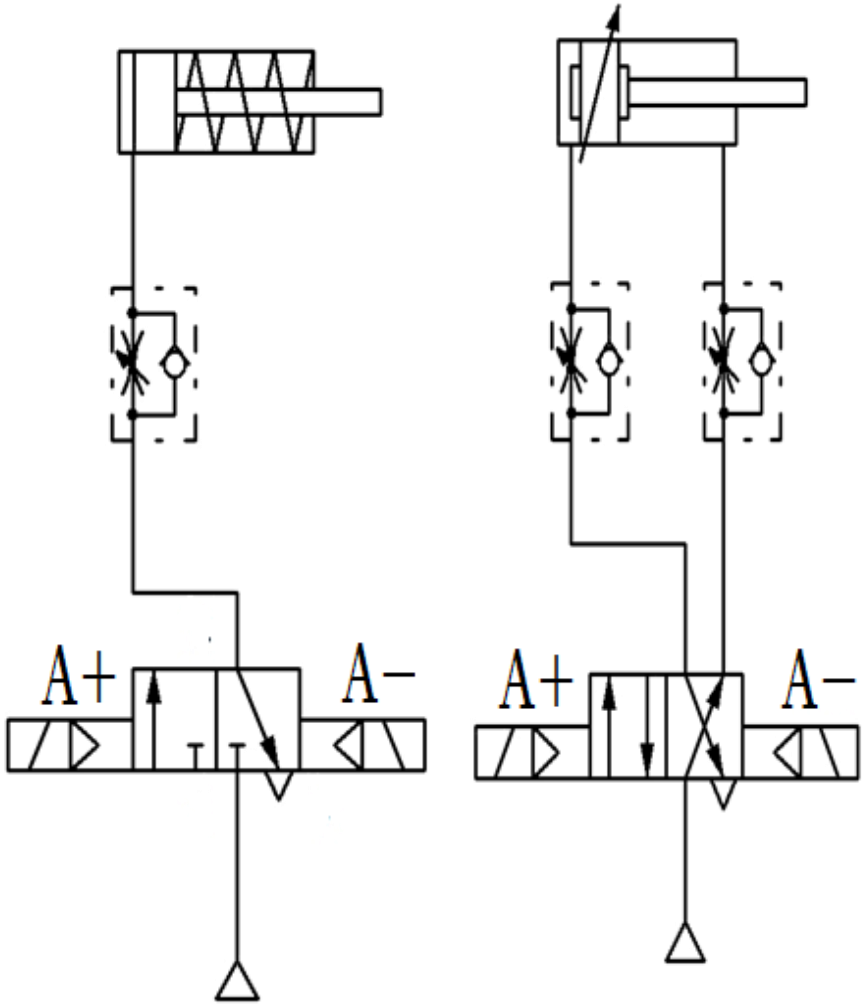
❖5口2位電磁引導氣壓作動閥

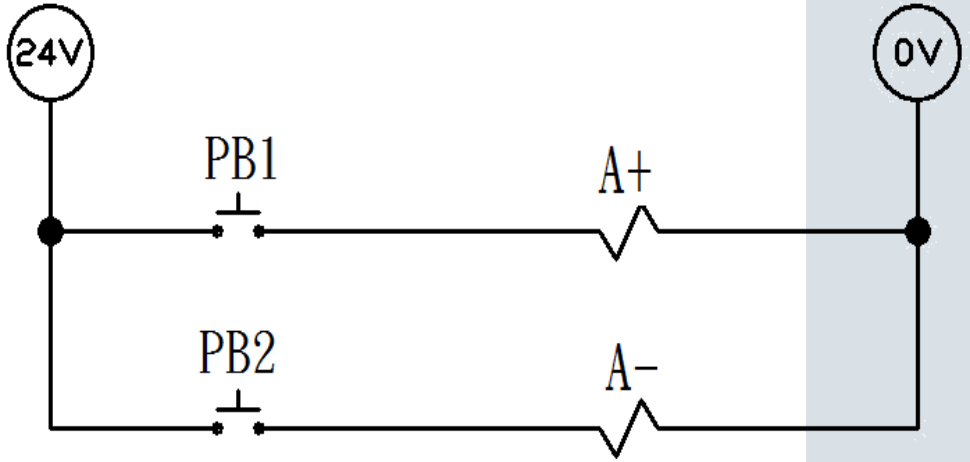


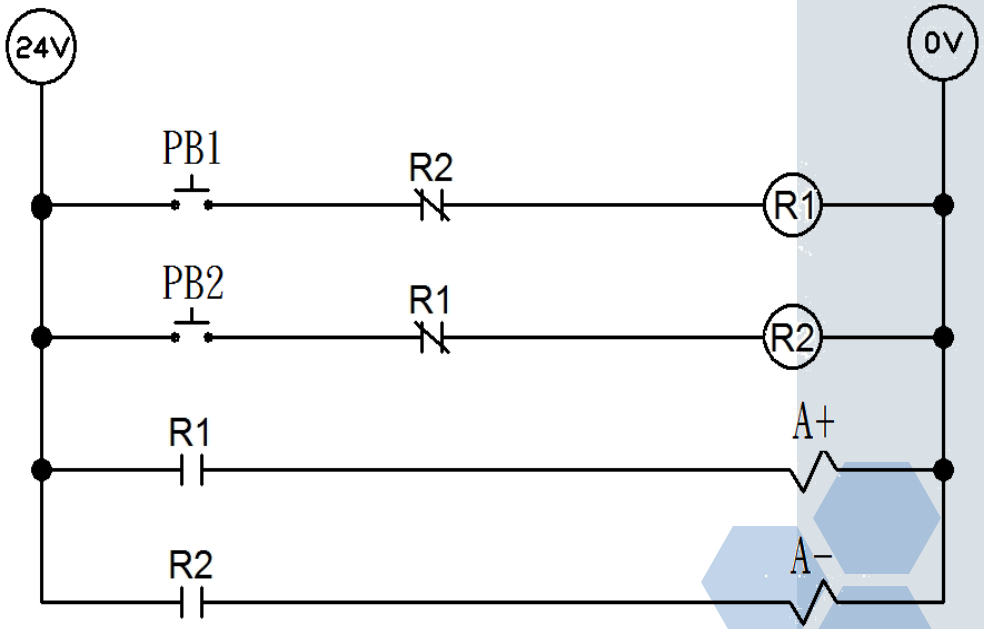


- ❖ 當Y1電磁線圈未通電，而Y2有時，高壓氣體會由P口通至A口輸出，而B處之殘留氣體會由S口排至大氣。
- ❖ 2.當Y1通電，而Y2無時，閥體會切換至左側，故P口之高壓氣體會流至B口輸出 ，而A口之殘留高壓氣體會由R口排至大氣。

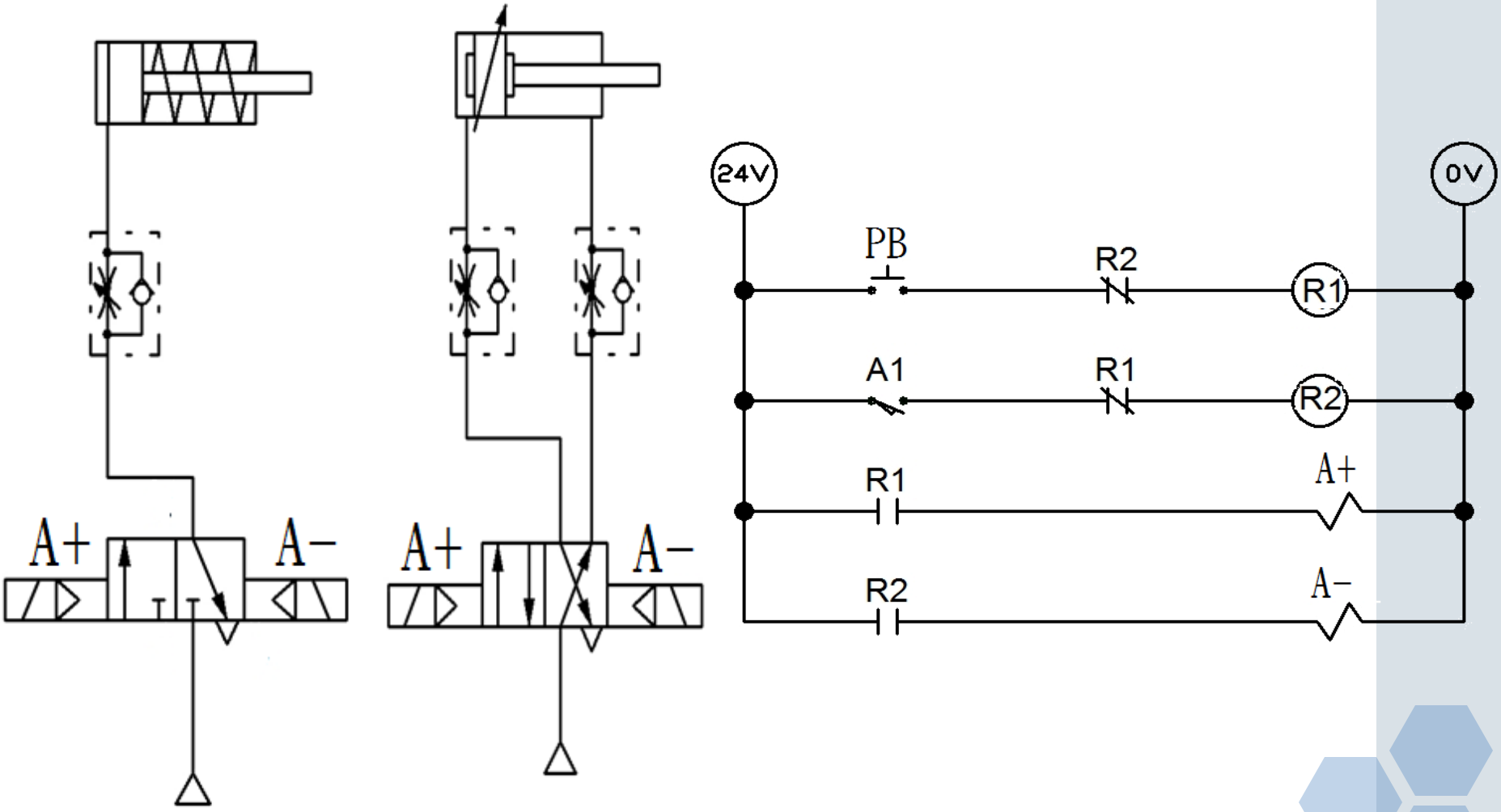
實作時間







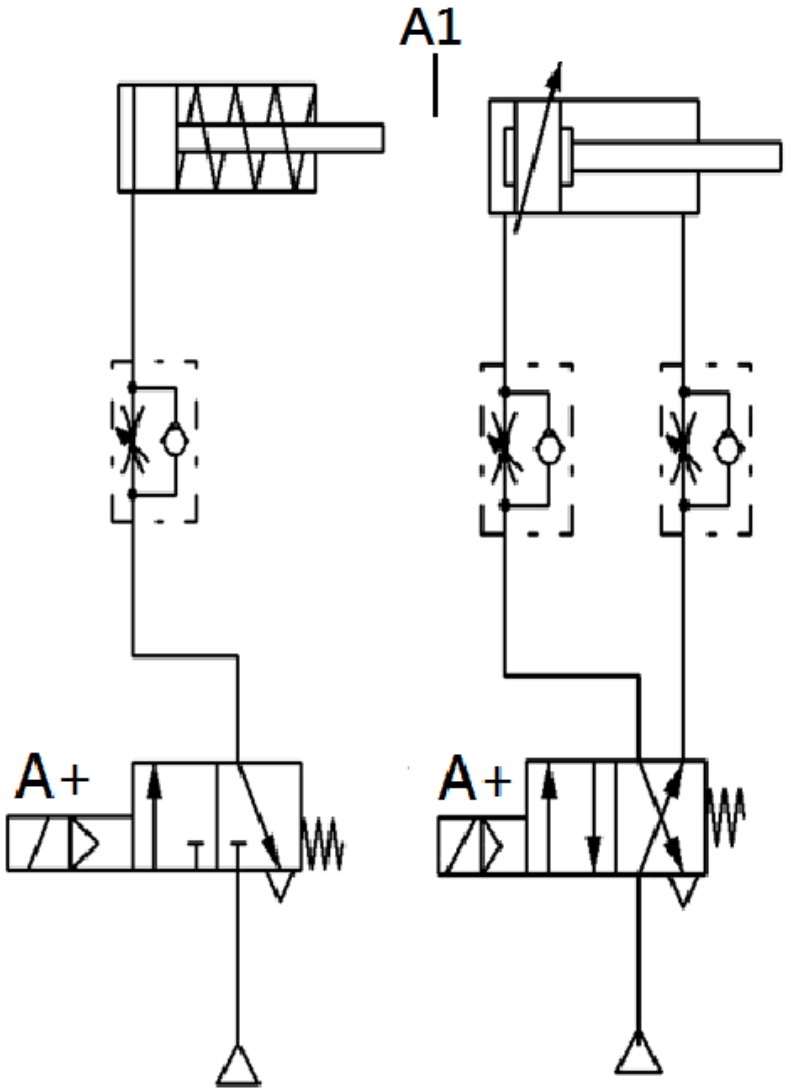
實作時間

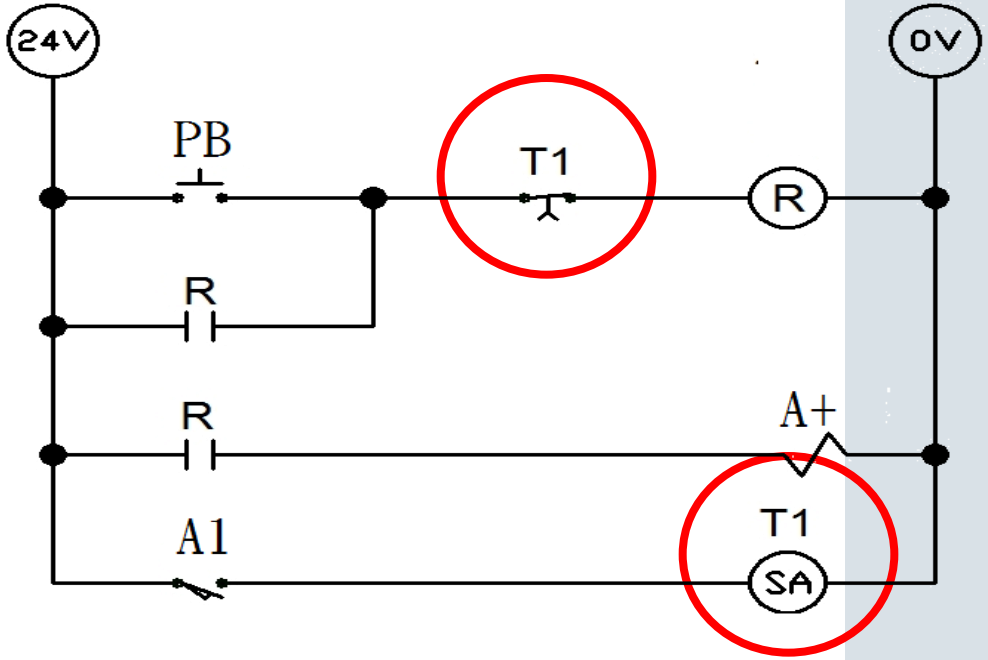


單元四

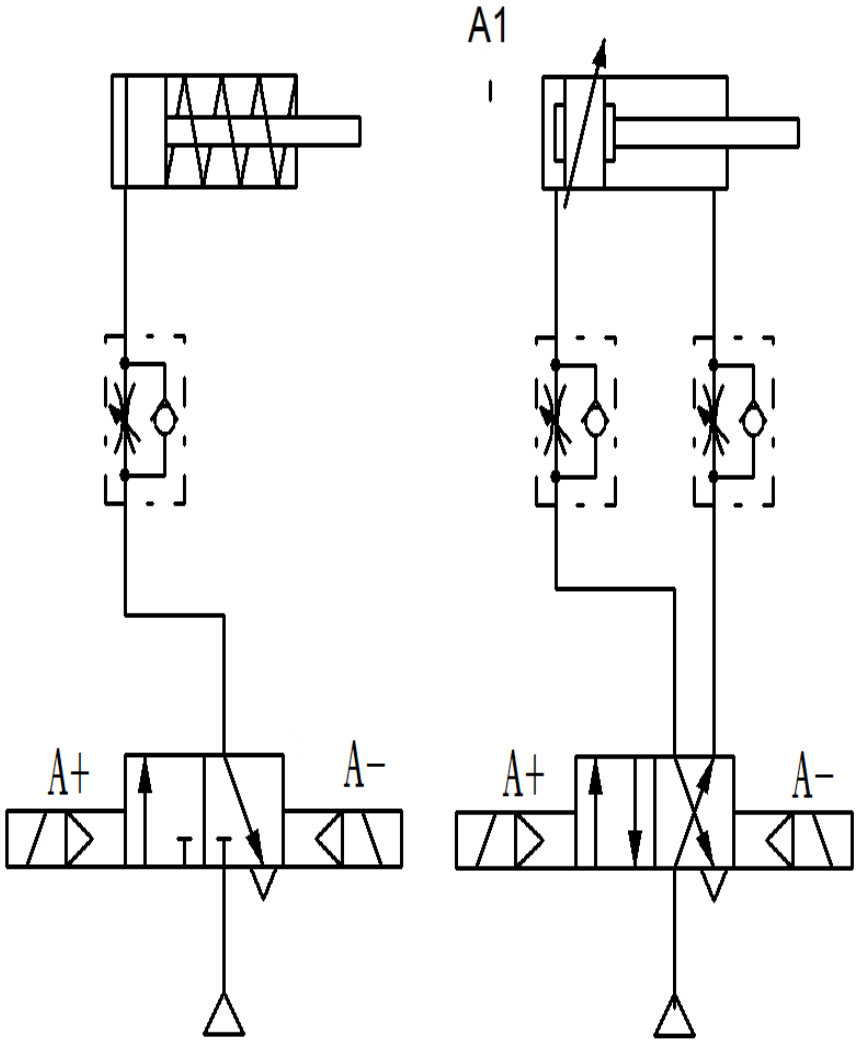
電磁控制延時器迴路

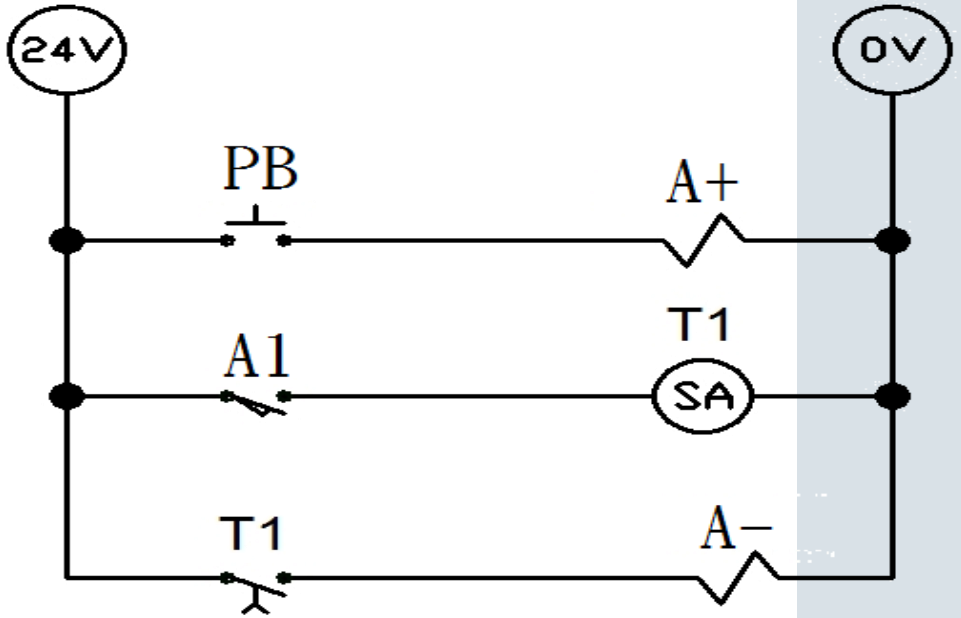
氣壓-電氣迴路圖1





氣壓-電氣迴路圖2



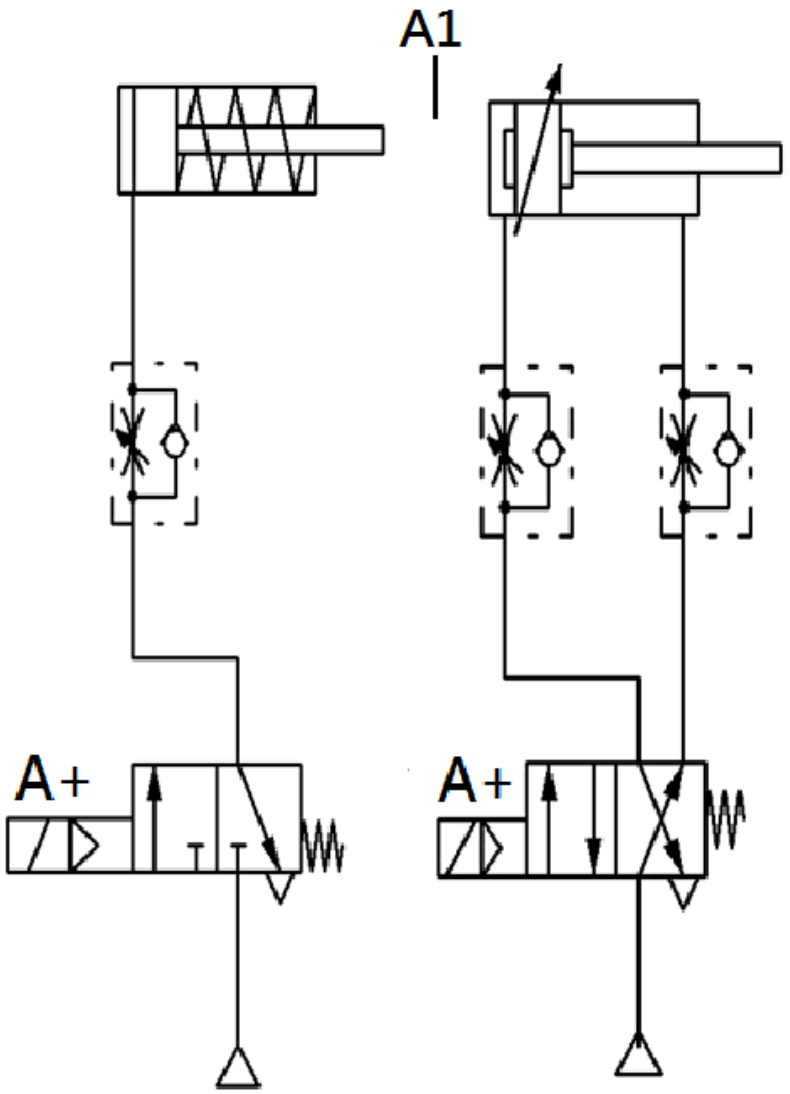


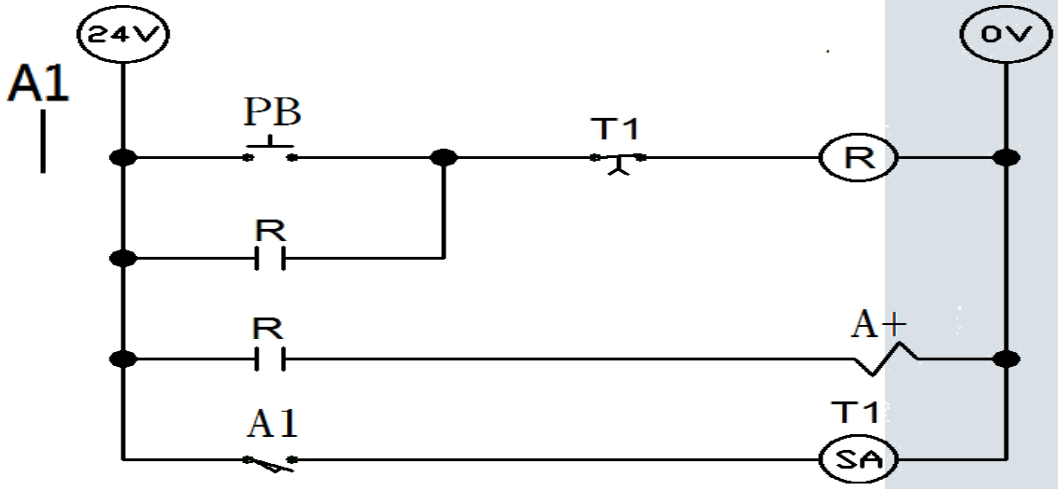
元件介紹

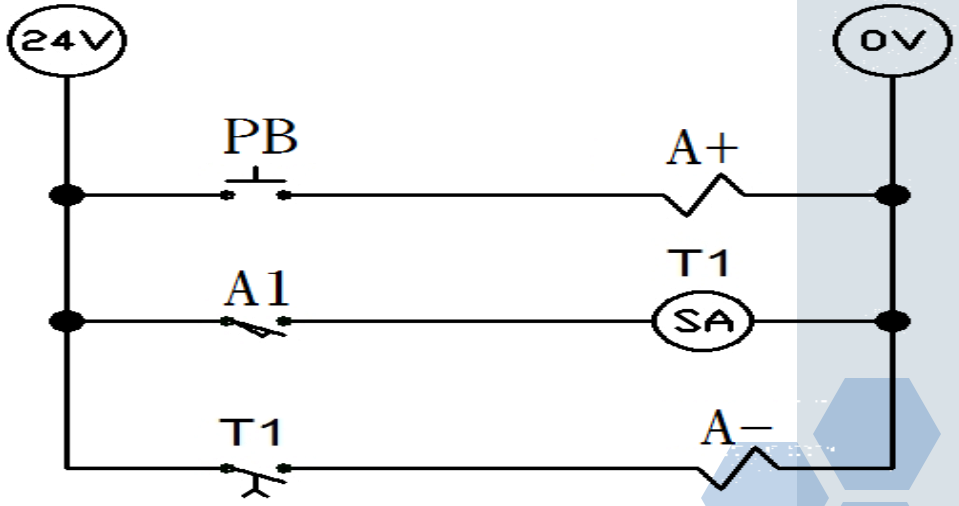
1.當定時器上方之[(+)、(-)]通電後，定時器即開始計時，至所設定之時間後，則左、右側之接點即切換。

2.當定時器上方之[(+)、(-)]斷電後，計時即中斷歸零。

實作時間



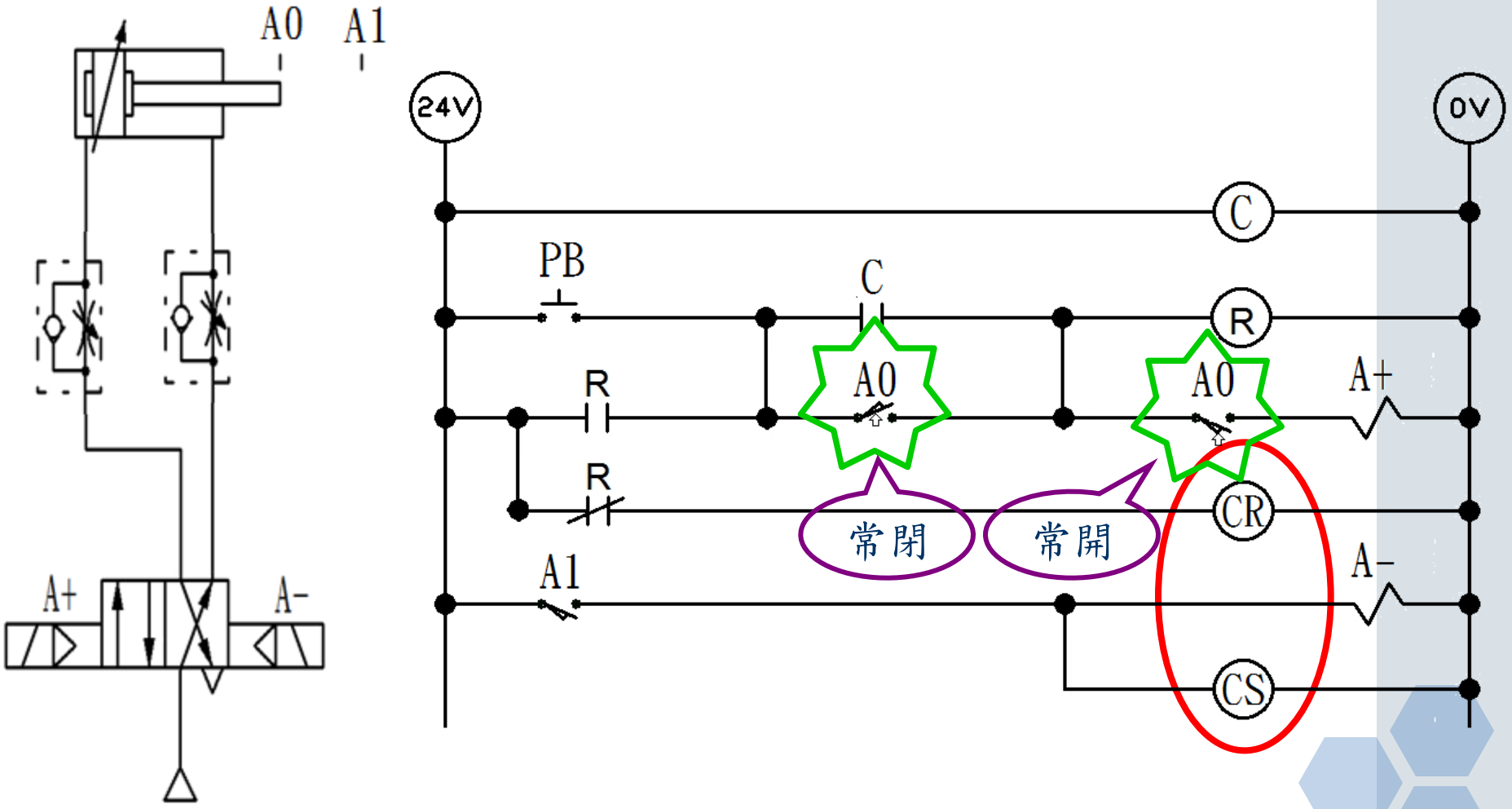




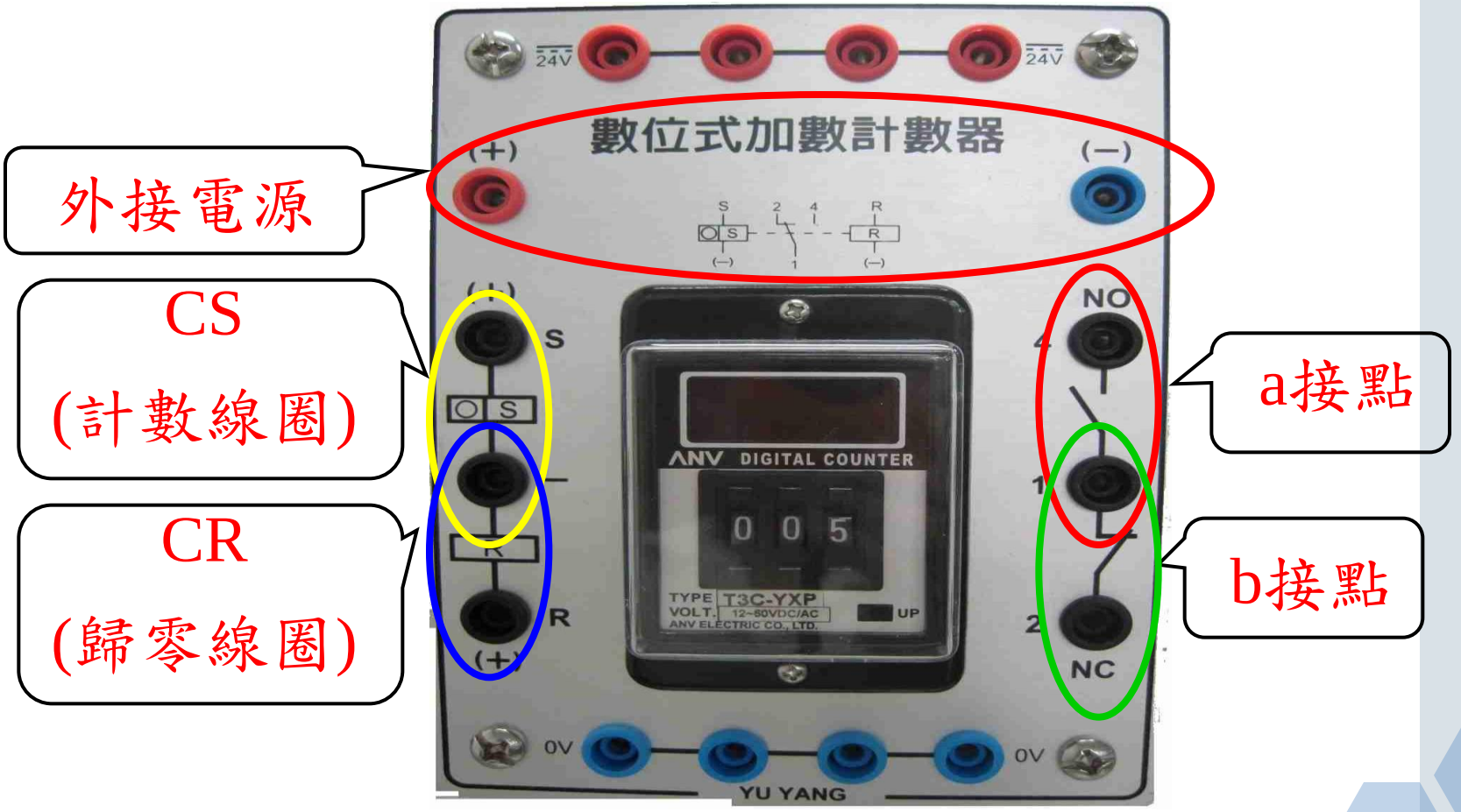
單元五

電磁控制計數器迴路

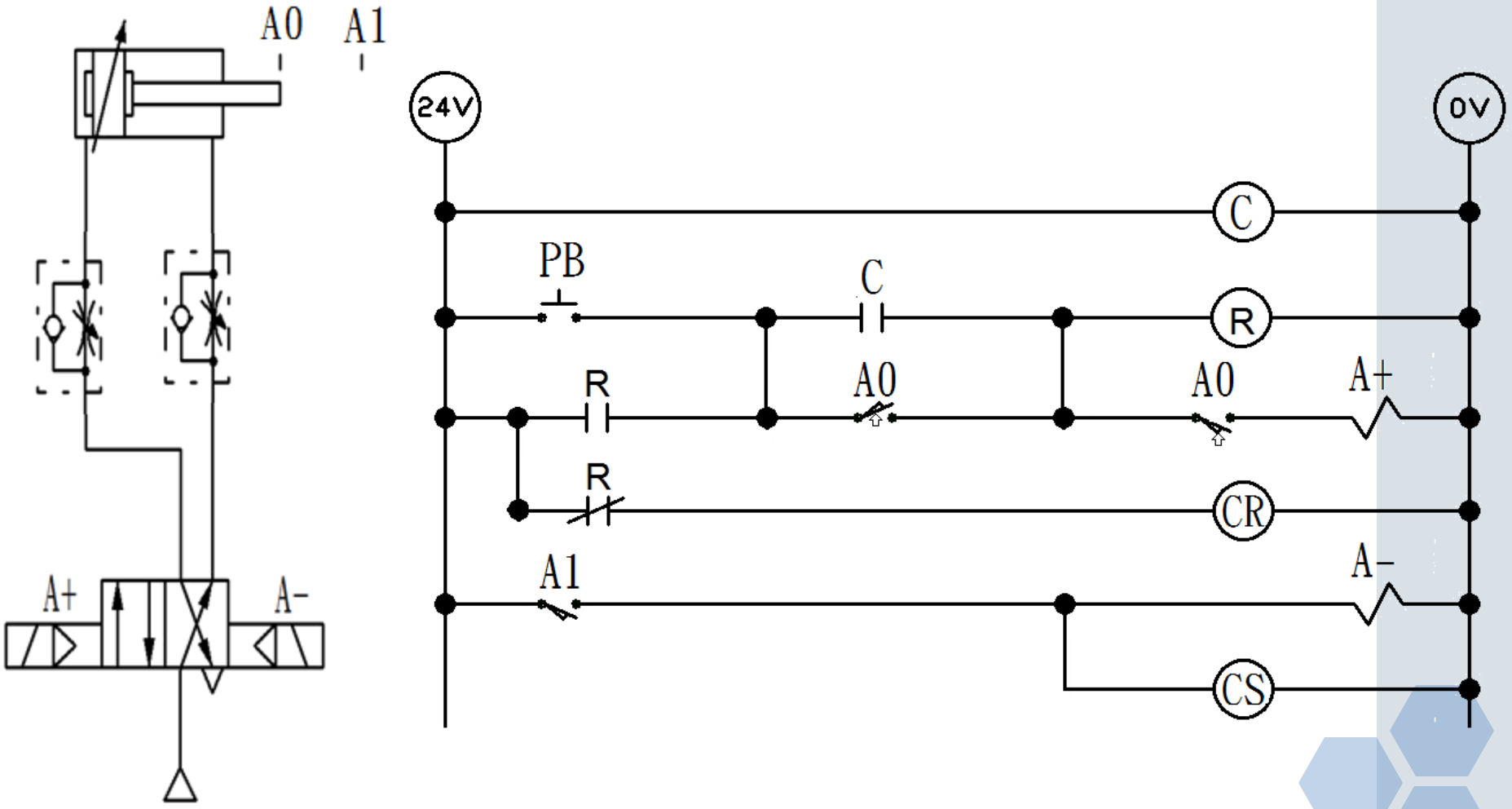
氣壓-電氣迴路圖



元件介紹


外接電源
CS
(計數線圈)
CR
(歸零線圈)
a接點
b接點
24V
24V
數位式加數計數器
(+)
(−)
S
R
(+)
S
R
(+)
NO
NC
ANV DIGITAL COUNTER
0 0 5
TYPE T3C-YXP
VOLT. 12~60VDC/AC
ANV ELECTRIC CO., LTD.
UP
0V
0V
YU YANG

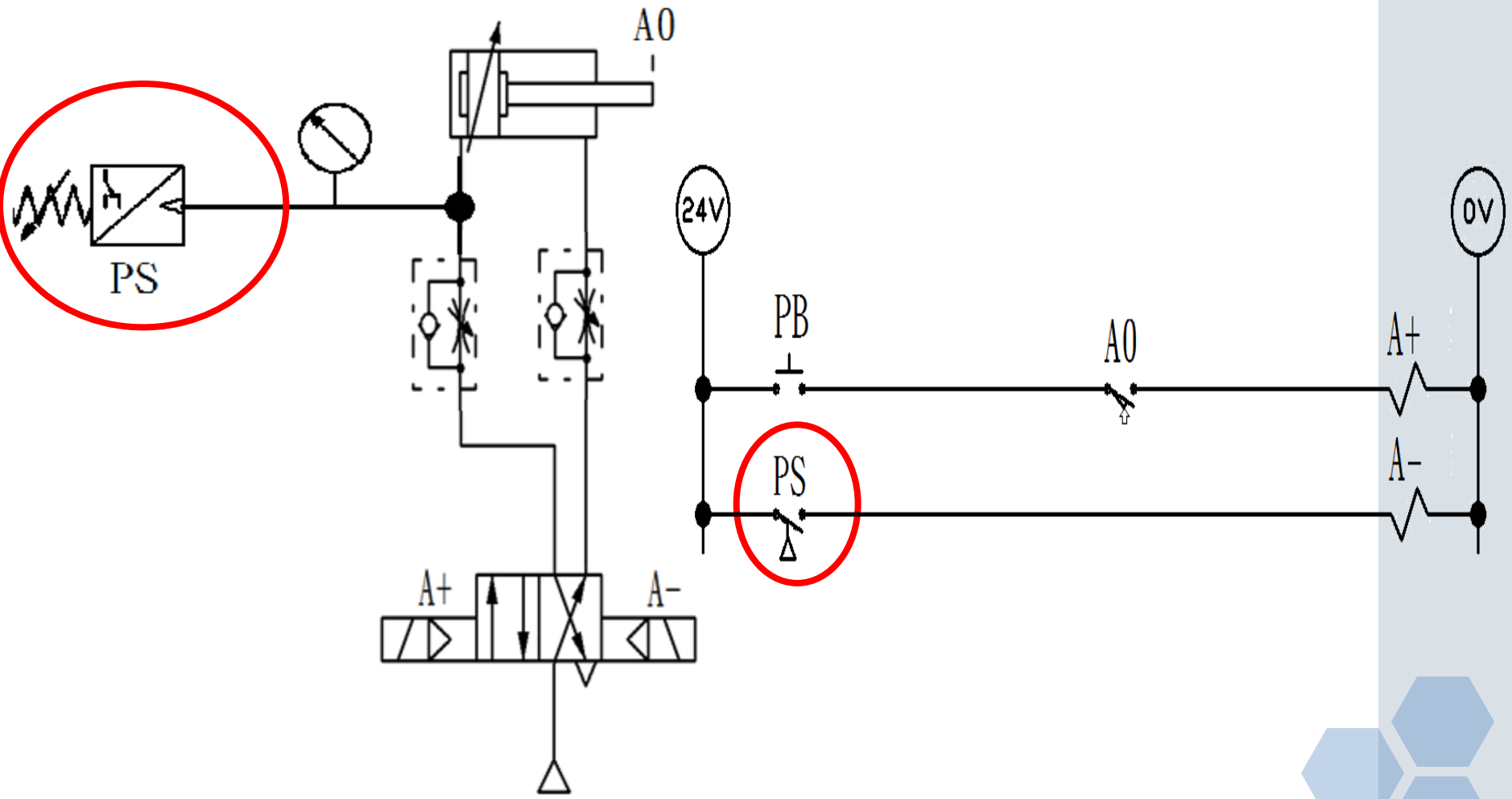
實作時間



單元六

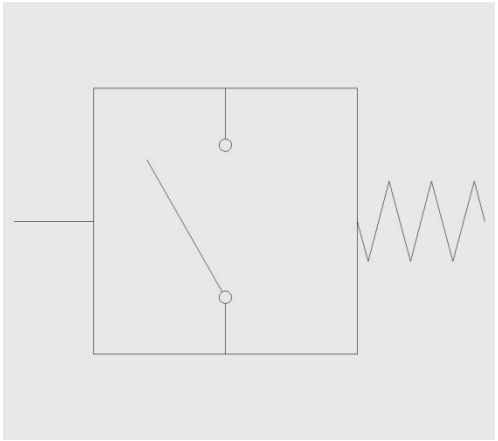
電磁控制常壓壓力開關迴路

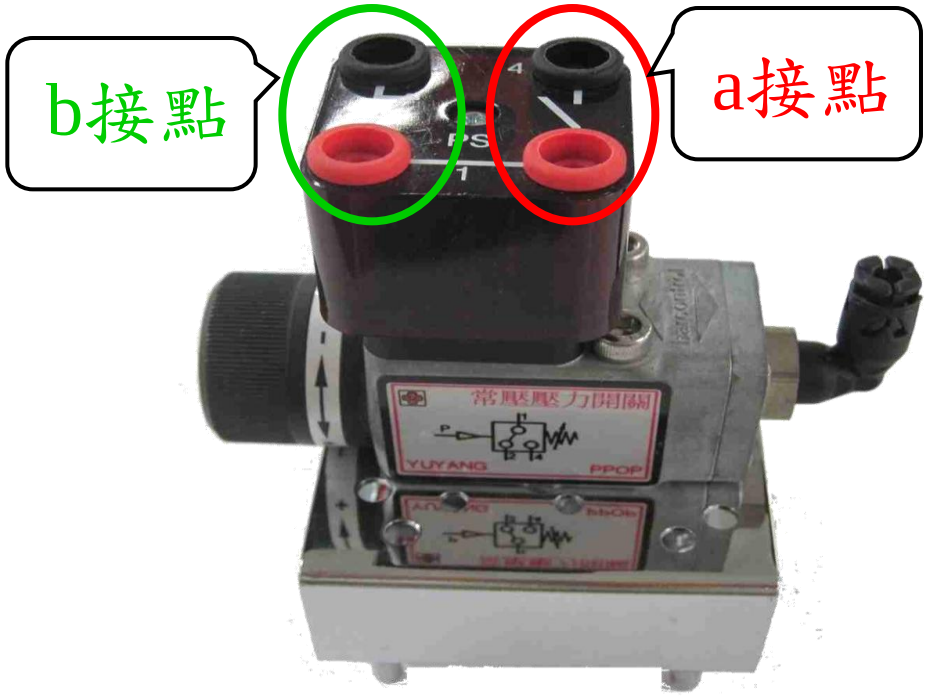
氣壓-電氣迴路圖



元件介紹

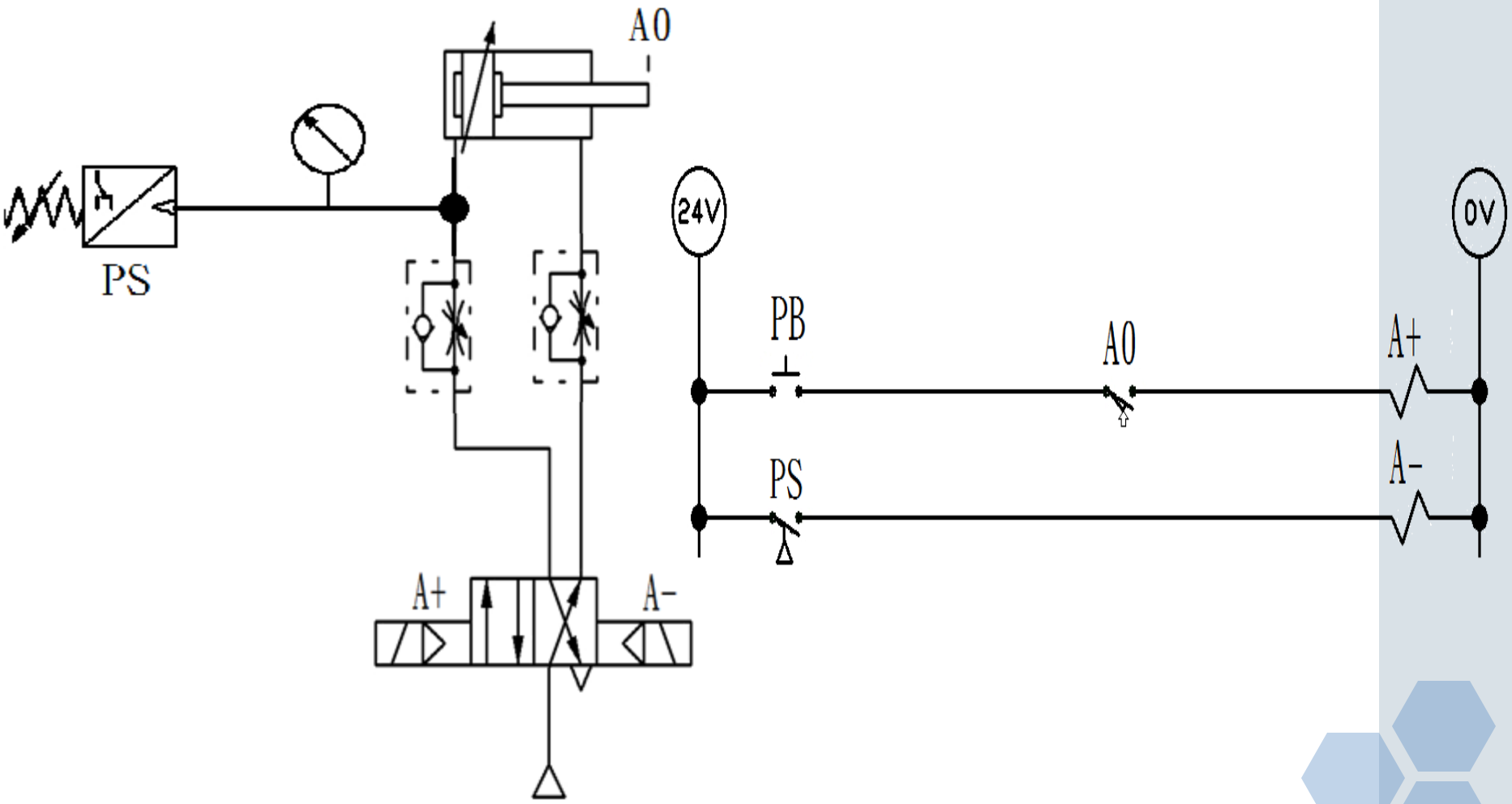
❖壓力開關





- 氣壓訊號由閥體右方之快速接頭輸入，左方有旋鈕可設定電氣接點啟閉之壓力，此閥體未含壓力表，故需另接壓力表以瞭解作動壓力是否為設定壓力。

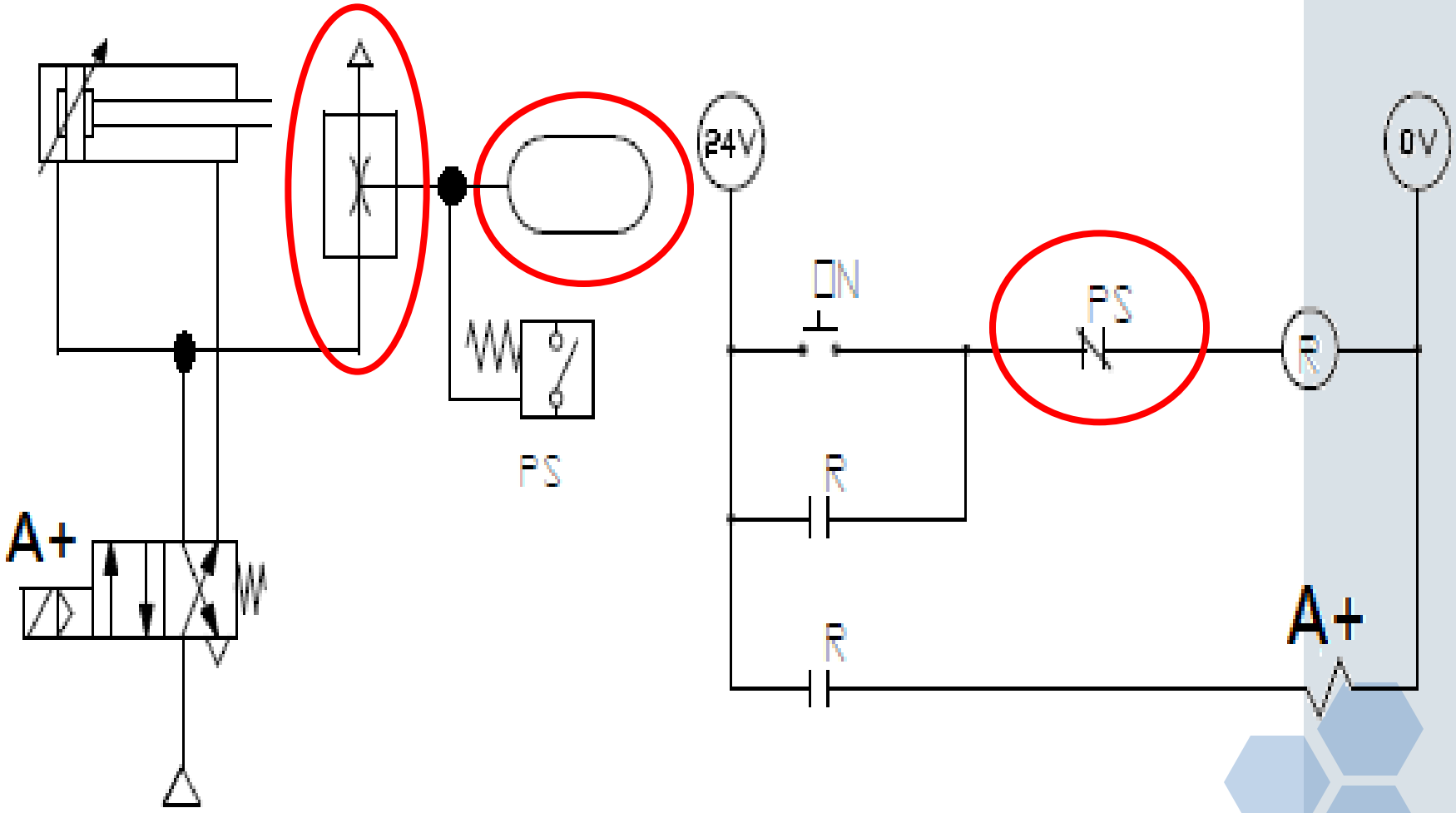
實作時間



單元七

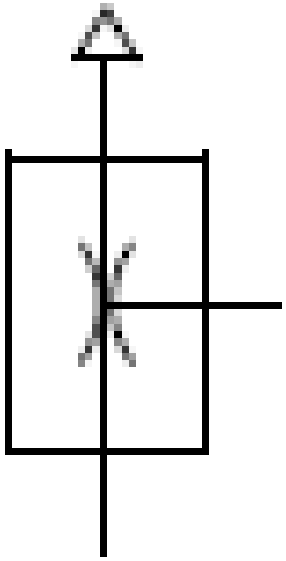
電磁控制真空壓力開關迴路

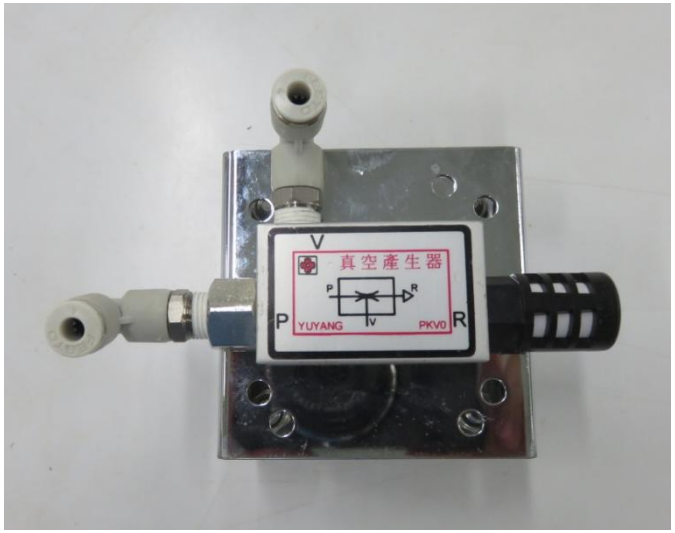
氣壓-電氣迴路圖



元件介紹1

❖真空產生器





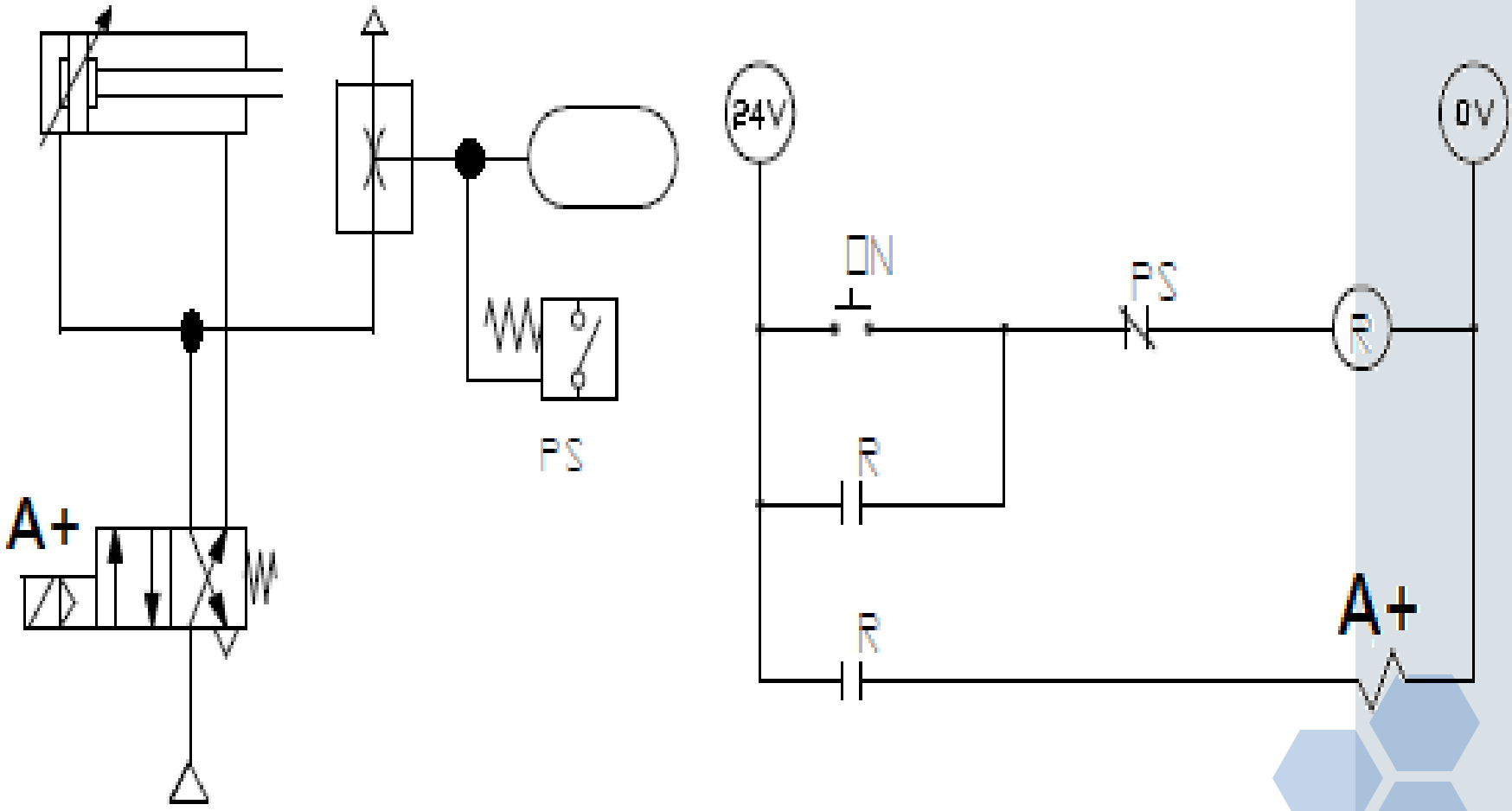
❖利用文氏管原理經由壓縮空氣來驅動，氣壓流經噴嘴時，流速增加，開口處因壓差而產生吸力。

元件介紹2

❖蓄壓器

❖蓄壓器用於儲存高壓氣體，在迴路中可用於穩定迴路中之壓力，減少浪壓之影響。

實作時間



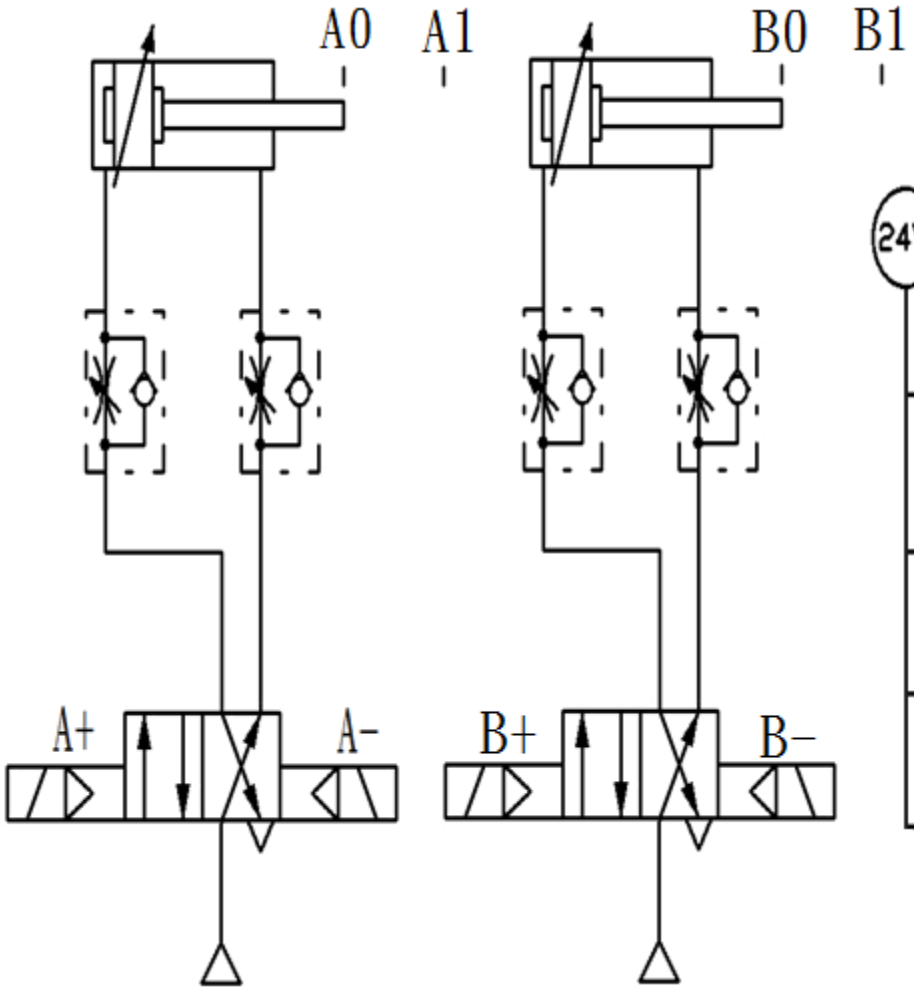
測驗4

完成此氣壓-電氣迴路

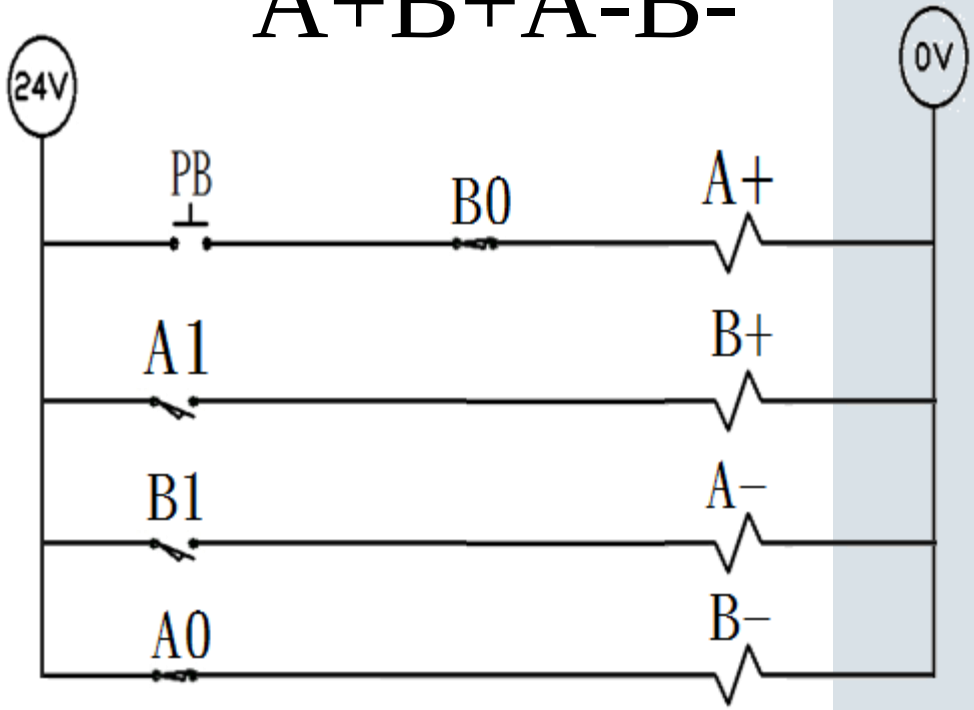
單元八

迴路設計–直覺法

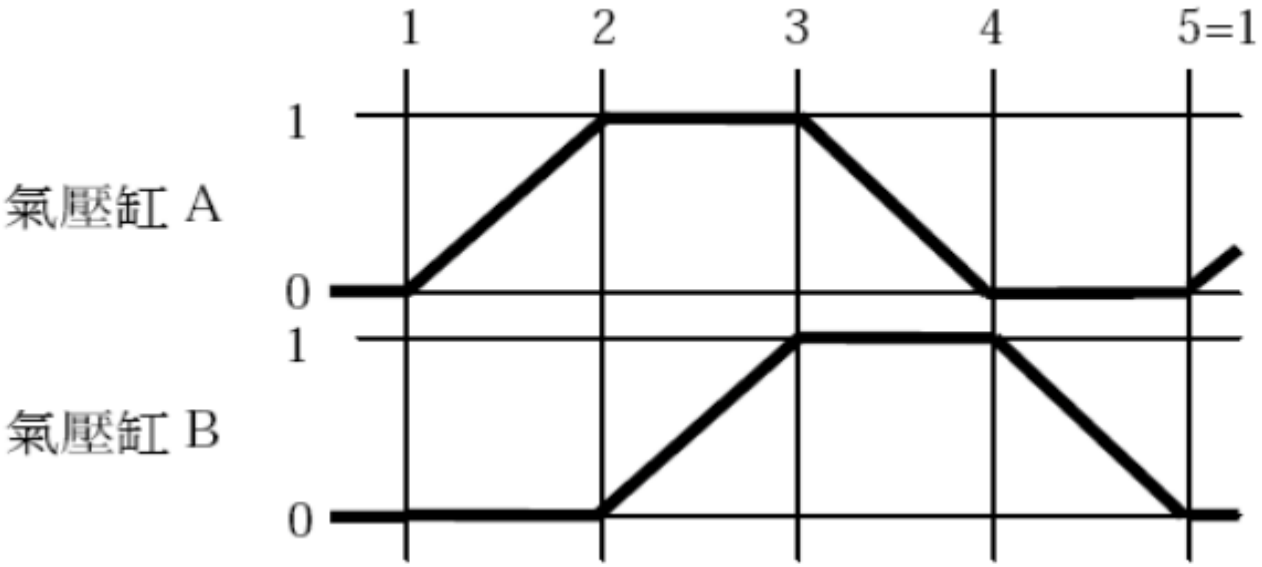
氣壓-電氣迴路圖



A+B+A-B-

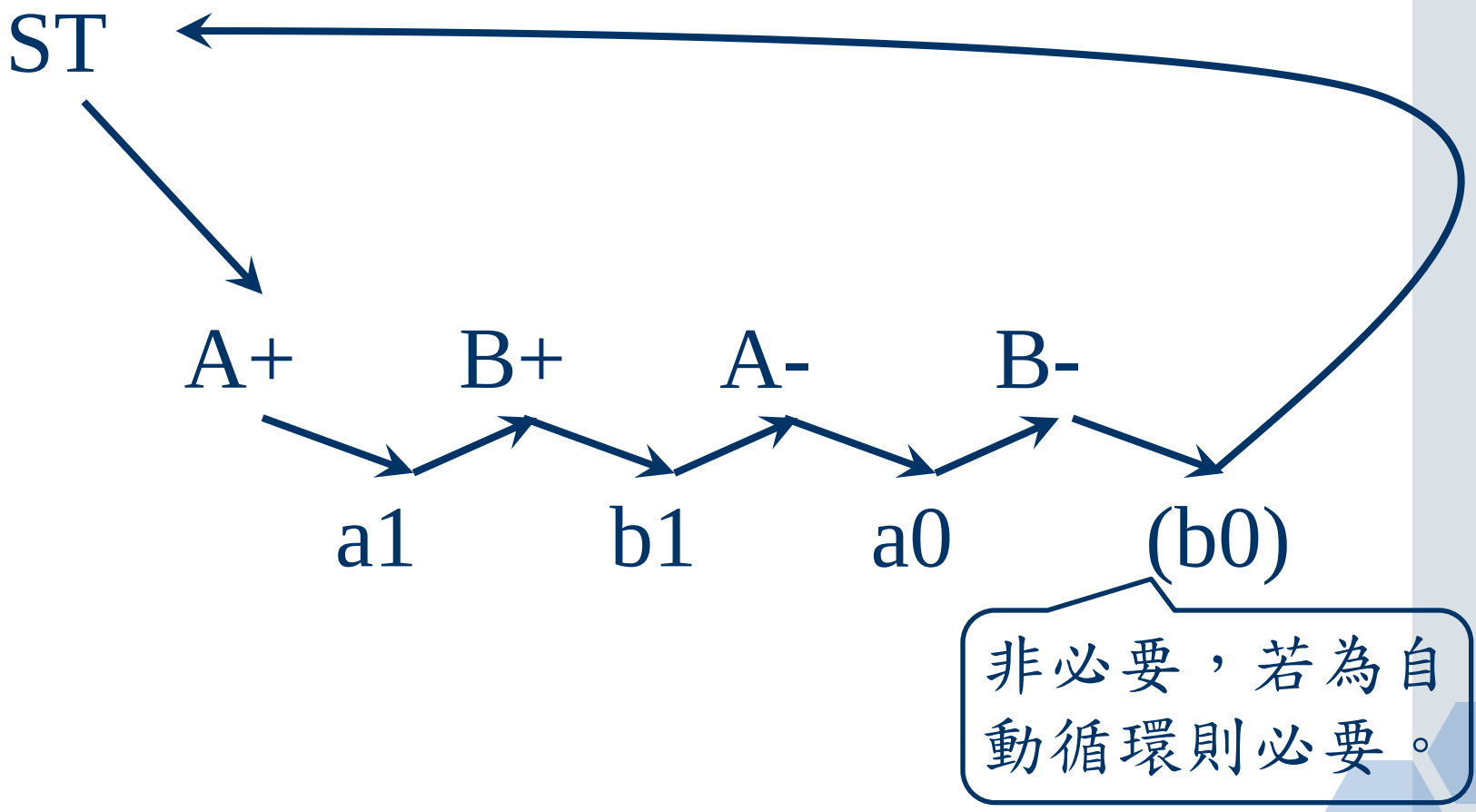


位移-時間圖　A+B+A-B-



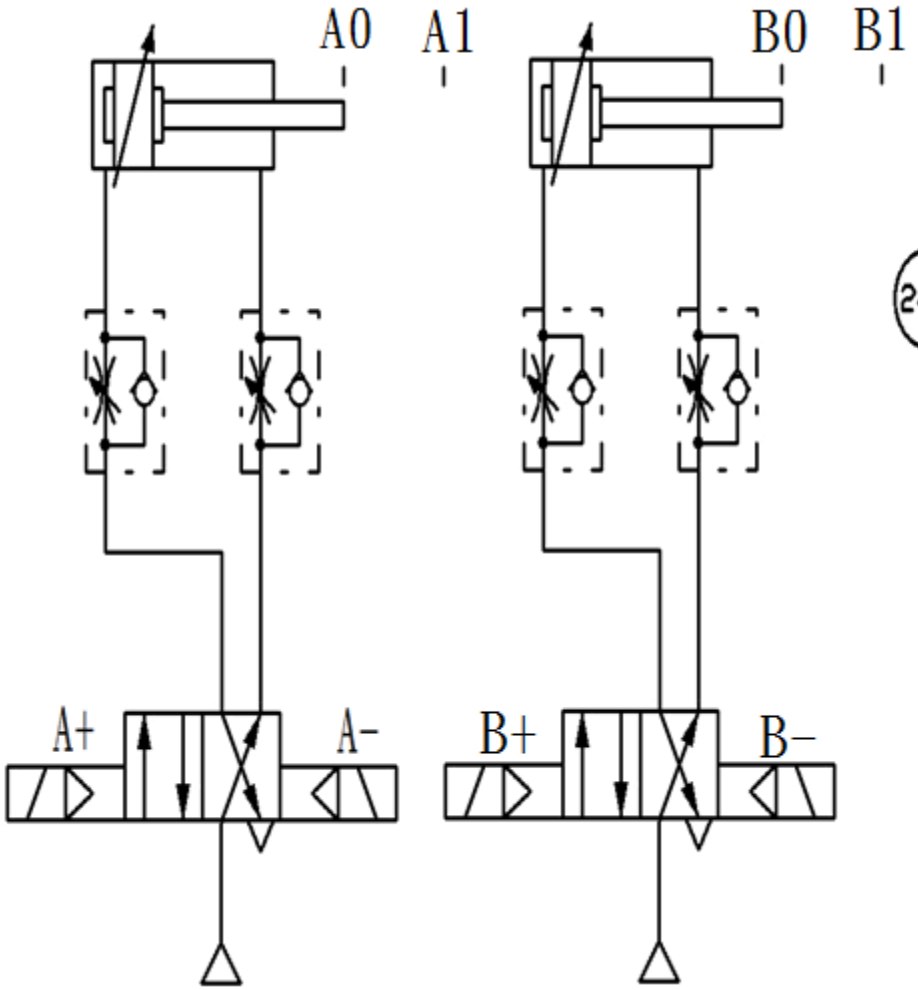
43

運動順序 A+B+A-B-

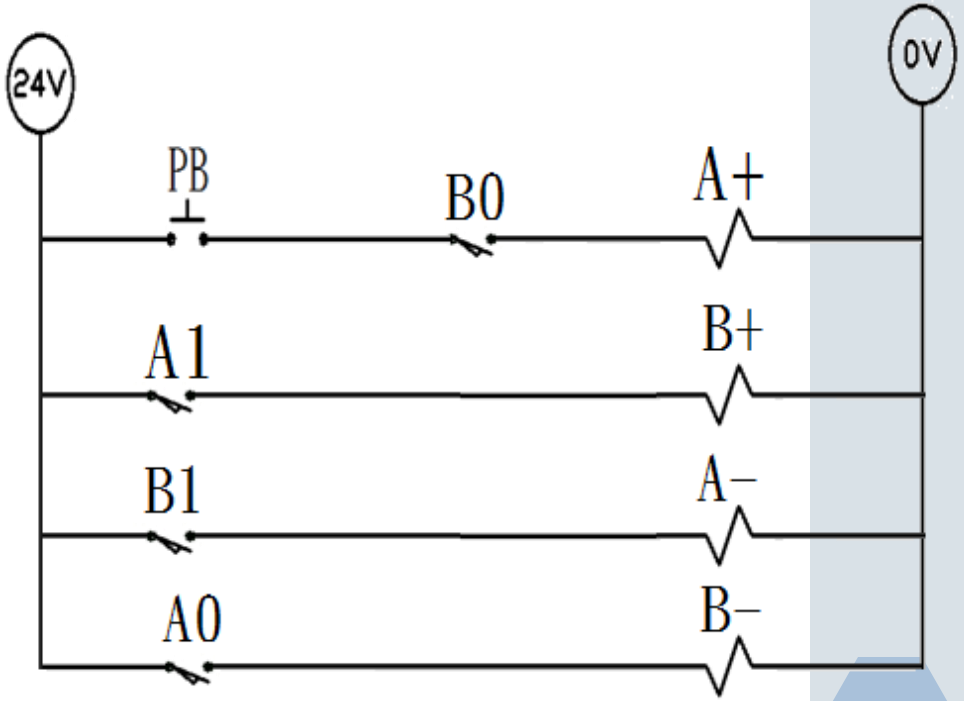


44

實作時間



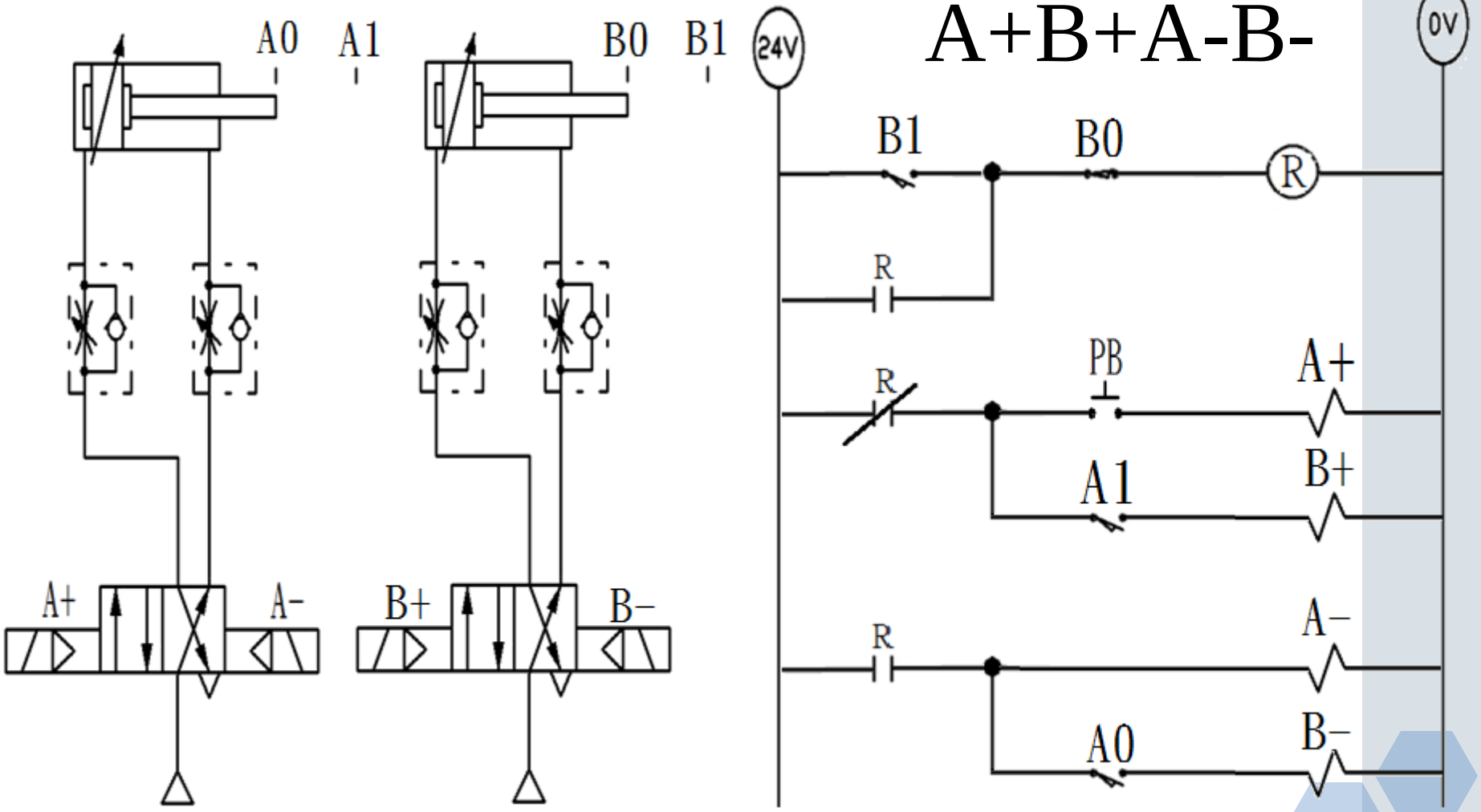
A+B+A-B-



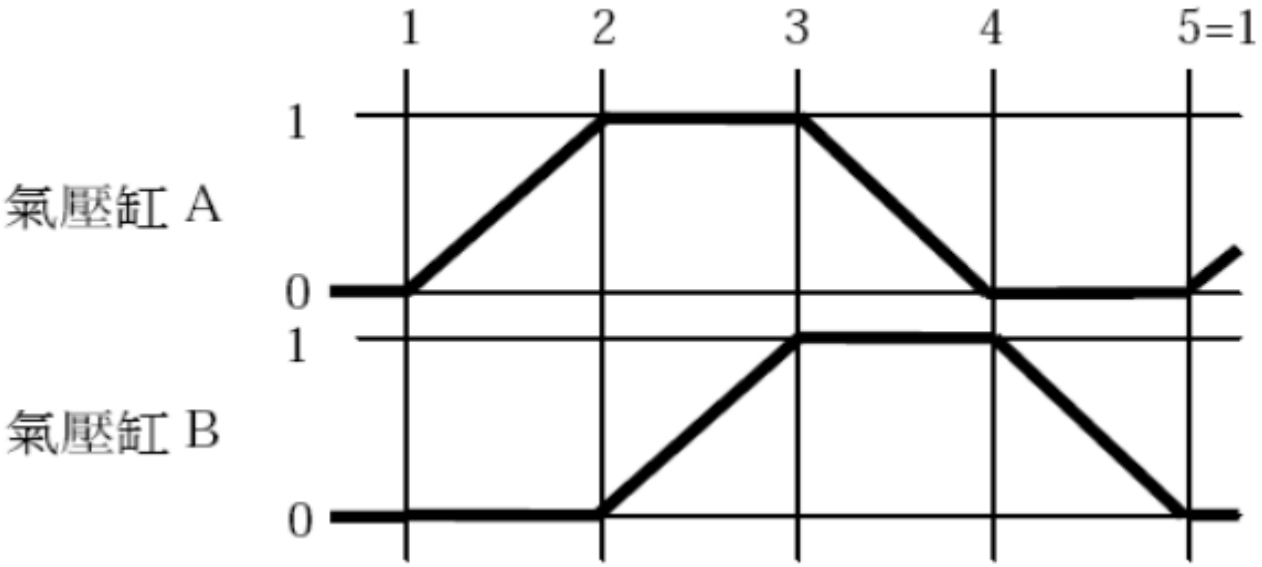
單元九

迴路設計–串級法

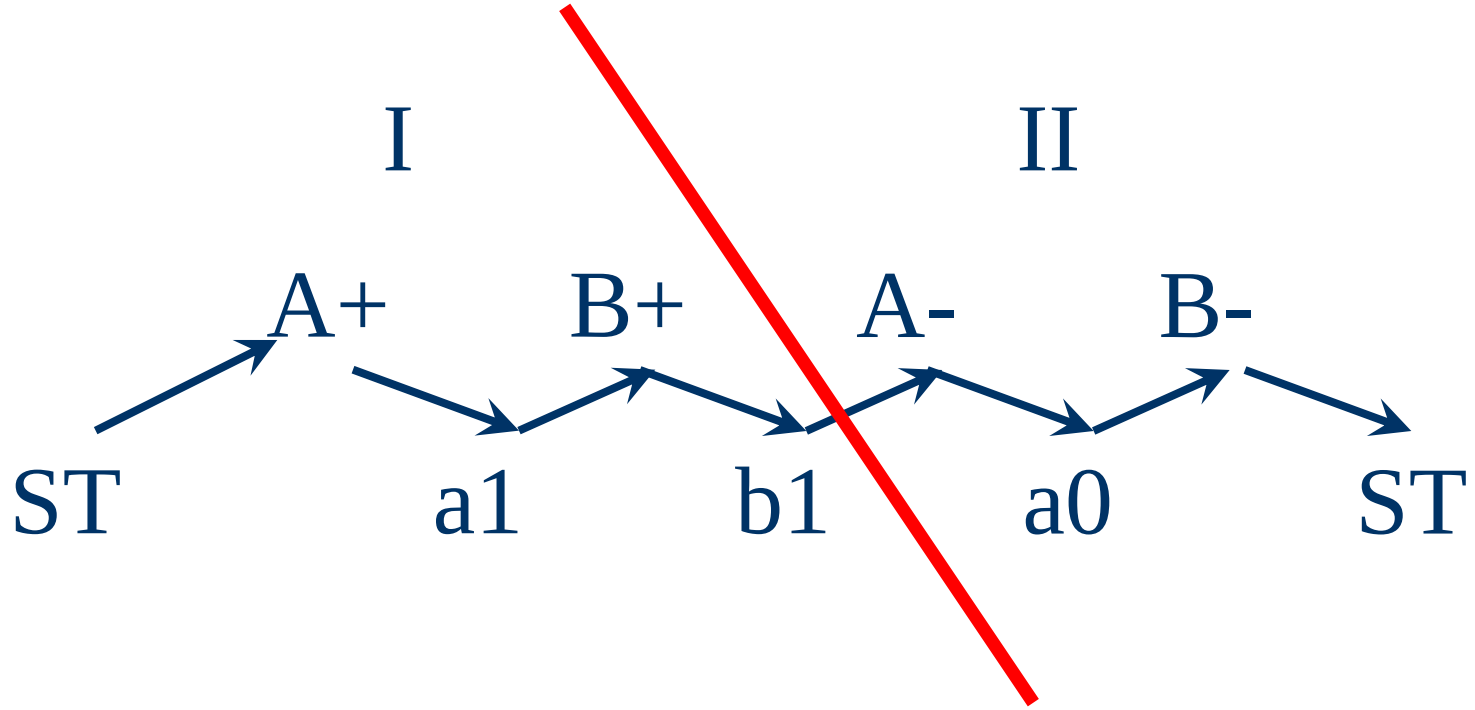
氣壓-電氣迴路圖



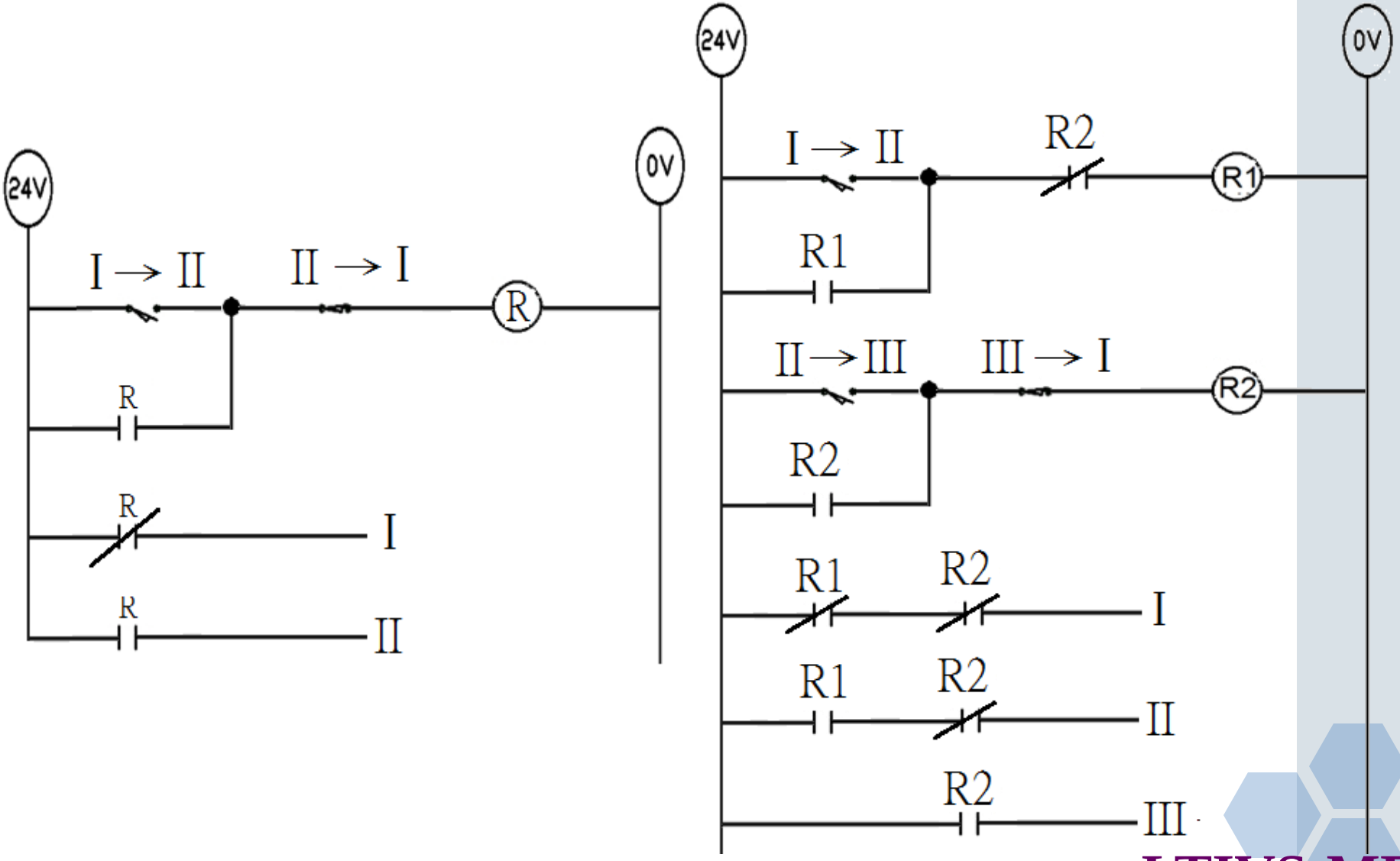
位移-時間圖　A+B+A-B-



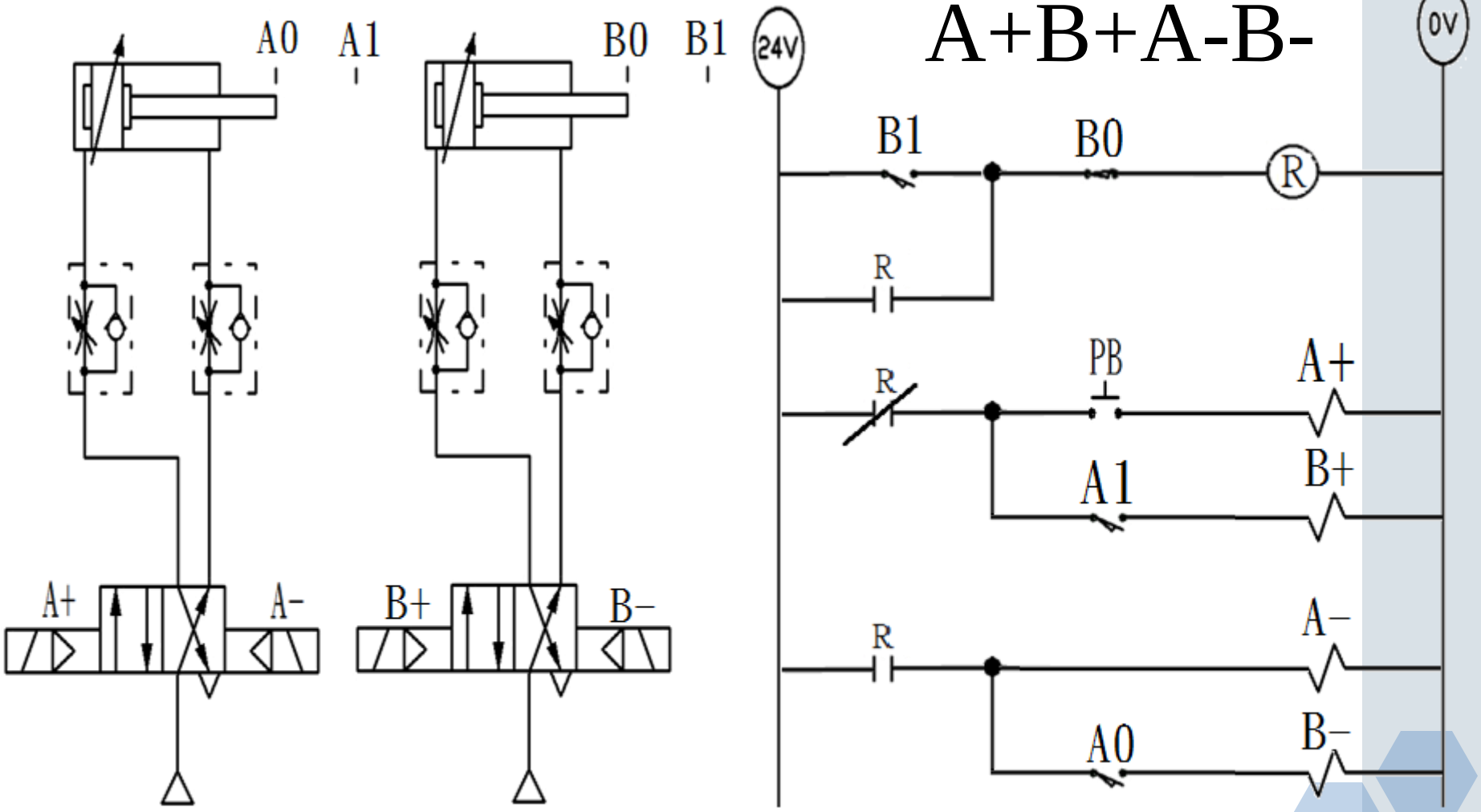
運動順序 A+B+A-B-



串級法電氣迴路圖


24V
0V
I → II
II → I
R
R
R
I
R
II
24V
0V
I → II
R2
R1
R1
II → III
III → I
R2
R2
R1
R2
I
R1
R2
II
R2
III

實作時間



測驗5

利用 串級法設計迴路

A+B+B-A-

並繪製位移-時間圖。

測驗5

利用 串級法設計迴路

A+A-B+B-

並繪製位移-時間圖。

Thank for you attention