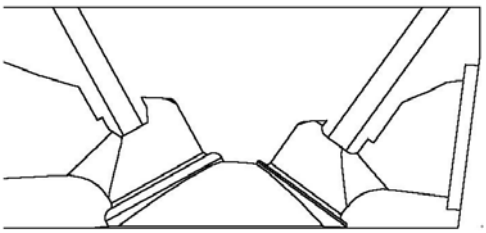
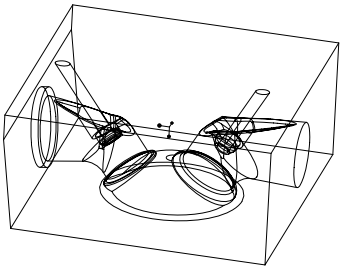
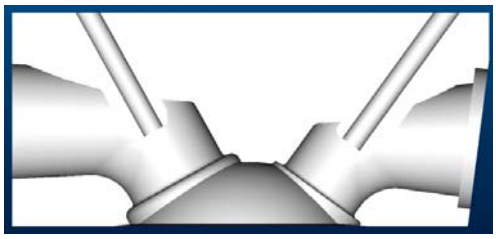
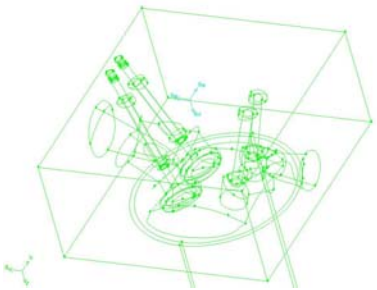
Cylinder Head Port Design





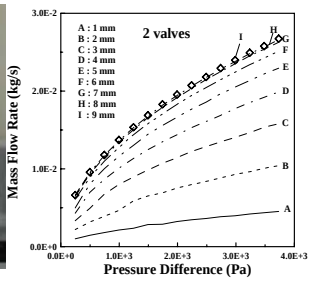


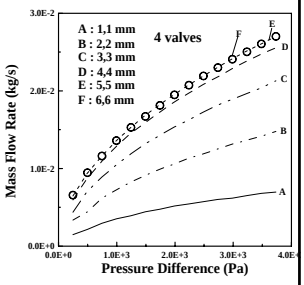


缸頭氣道流量研究測試

1.量測汽缸頭Air Flow、Swirl、Tumble

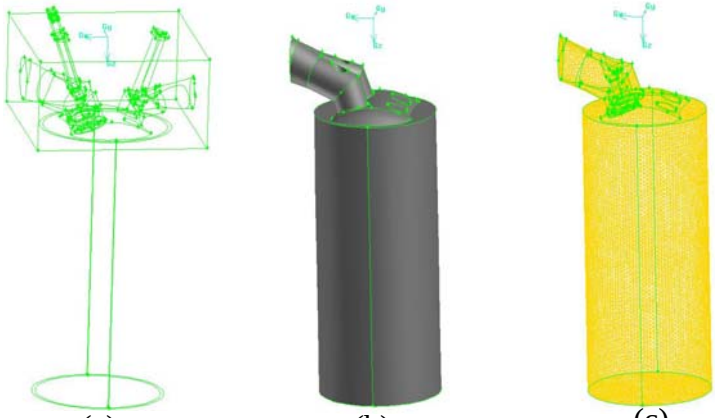
2.確認汽缸頭之Flow Coefficient 符合引擎性能之設計規範，必要時得再修改氣道形狀。





測試結果

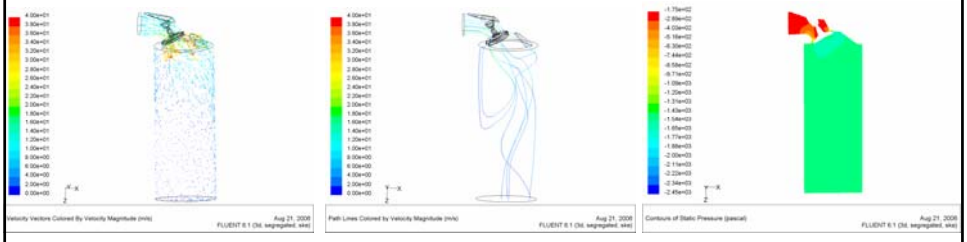
Simulation and Experimental Measurement of Flow Field within Four-Stroke motorcycle engines



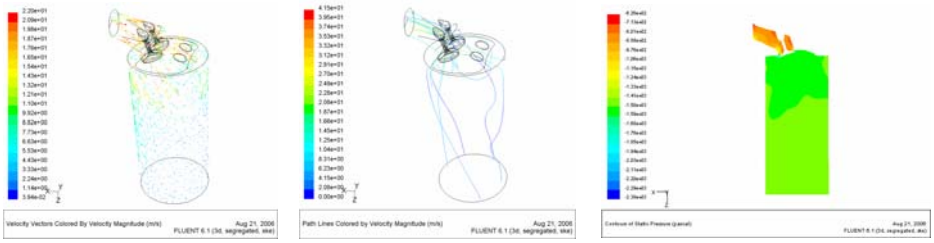
(a) (b) (c)

(a) The four-stroke engine designed with Pro/E
(b) The four-stroke engine model
(c) The pattern of internal grids

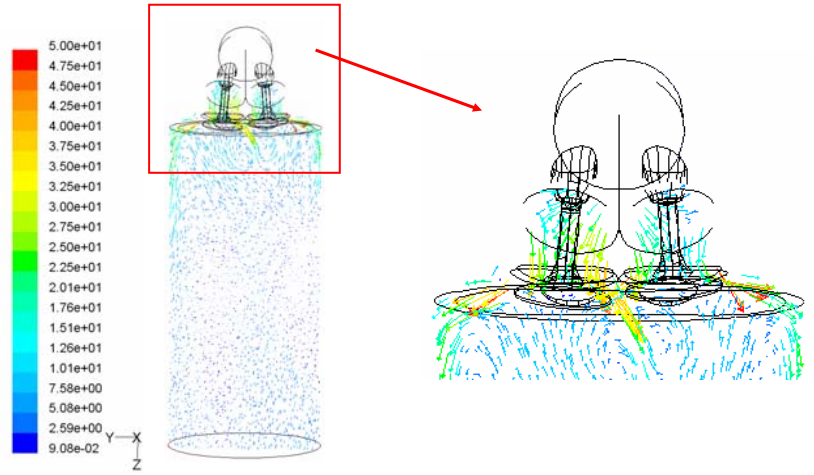
2 valves, valve lift=2mm, △p=6in-H_2O



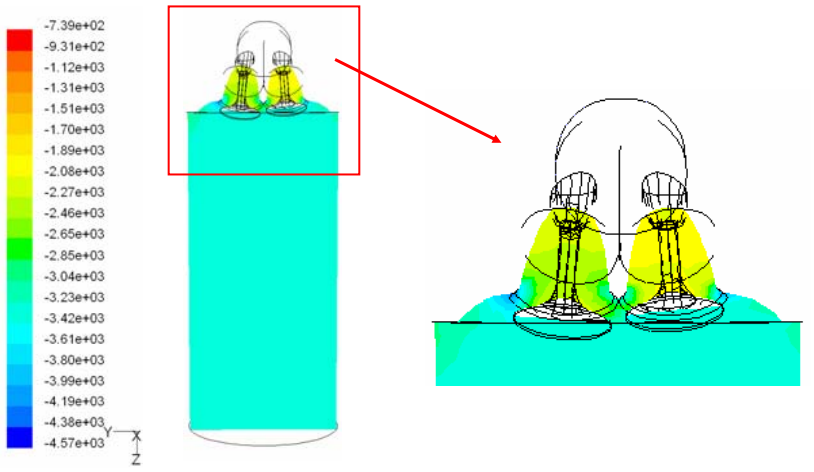
4 valves, valve lift=3,3mm, △p=6in-H_2O



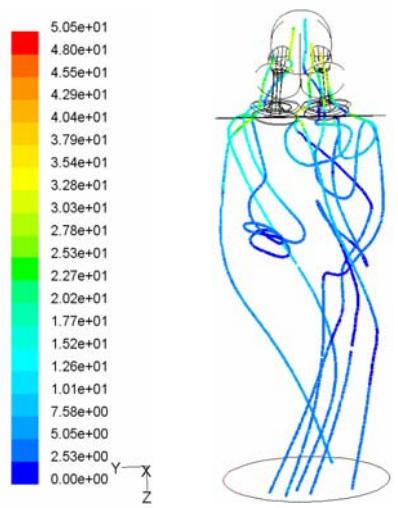
The velocity profiles at X=10mm, for the four-valve engine with different lift strokes 5mm and 3mm for both intake valves



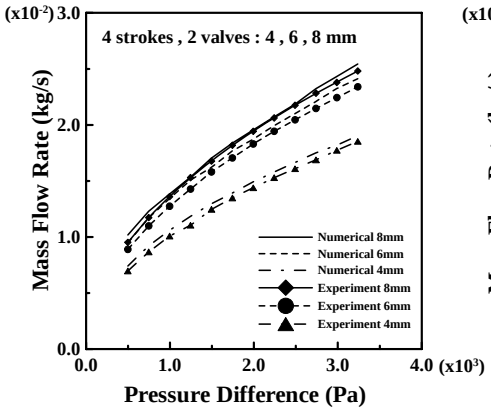
The profiles of pressure at X=10mm, for the four-valve engine with different lift strokes 5mm and 3mm for both intake valves.



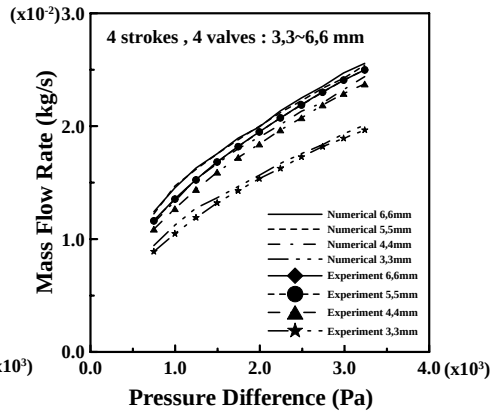
The three-dimensional pattern of streamline for the four-valve engine with different lift strokes 5mm and 3mm for both intake valves.



Numerical and Experiment



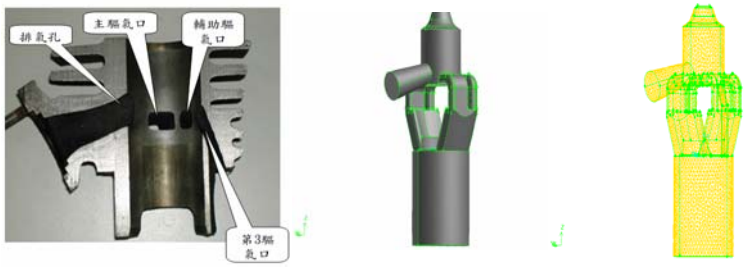
The variation of mass flow rate with pressure difference for the two-valve engine with several assigned valve lifts 4, 6, and 8mm



The variation of mass flow rate with pressure differnce for the four-valve Engine with the same lift stroke 3-6mm for both intake valves.

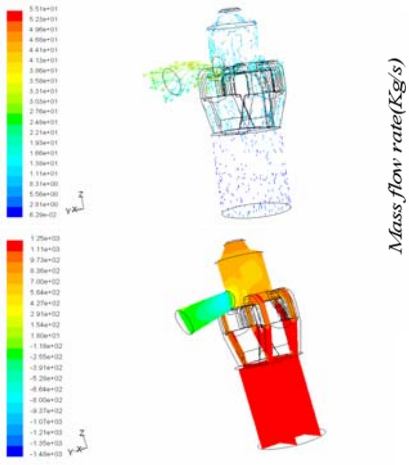
The Measurement and Analysis of the Air Flow for Single Cylinder Two-Stroke Engine

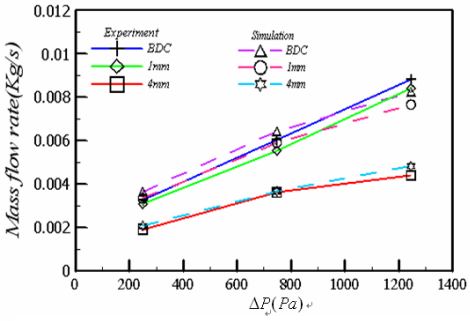
(a) (b) (c)



(a)二行程引擎之氣缸剖面圖，顯示各個驅氣口與排氣道
(b)運用電腦繪圖軟體(GAMBIT)建構二行程氣缸圖形
(c)運用電腦繪圖軟體(GAMBIT)建構二行程氣缸之內部網格型態

二行程氣缸於活塞下死點(全開)，且環境壓差為1245.33Pa時，其流場速度向量分佈圖與壓力分佈圖





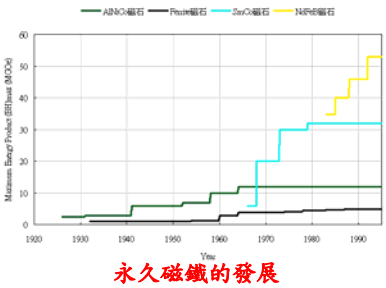
二行程氣缸於活塞下死點(全開)、活塞上行1mm及活塞上行4mm時，其壓差值與流量值之關係圖

THE MEASUREMENT AND ANYSIS FOR TRANSMISSION CHARACTERISTIC OF NOVEL AXIAL MAGNETIC COUPLINGS

Hsiao-Ming Chu

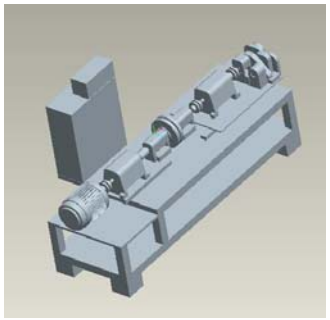
磁浮驅動傳動系統之設計與性能量測 (1)

一、具過負載保護特性，當最大扭矩超過聯軸 器之傳輸扭矩時，只會造成聯軸器磁極間之滑移，對於結構無不良影響；
二、可獲完全之密封特性，適合應用於高真空、或高腐蝕性之半導體製程設備及化工設備中；
三、無磨耗及摩擦阻力之損失，可使用於高速運轉中，無機件之磨 耗與能源之損失；
四、可吸收一定程度的軸向或角向位移誤差；
五、較為安靜，因為沒有接觸及碰撞，故無噪音存在。



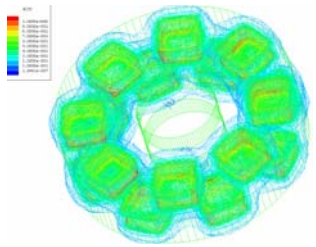
永久磁鐵的發展

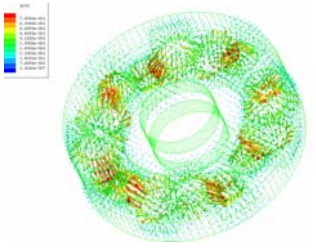
驅動盤設計圖



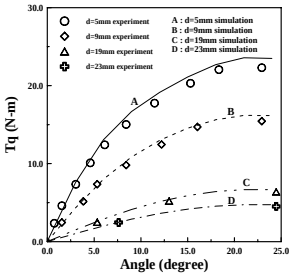
磁傳系統測試檯設計圖

磁浮驅動傳動系統之設計與性能量測 (3)

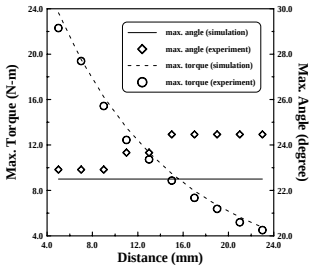




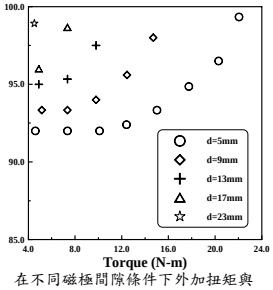
磁性聯軸器扭矩分析磁通密度粒子分佈圖與向量分佈圖



扭矩與滑差角實驗值與模擬值的比較圖



最大扭矩、最大磁力與磁極間隙大小實驗值與模擬值的比較圖

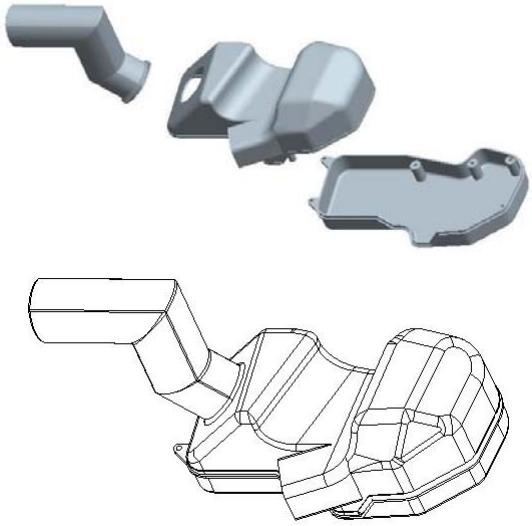


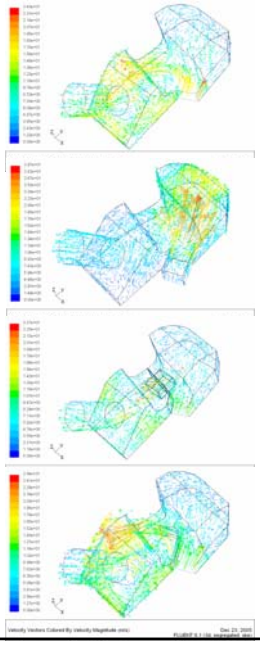
在不同磁極間隙條件下外加扭矩與傳輸效率之關係圖

Optimal Design of Air Cleaner for Motorcycle

Hsiao-Ming Chu

Optimal Design of Air Cleaner for Motorcycle (1)





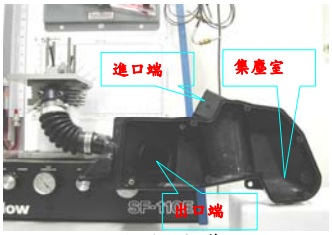
Air Cleaner 設計圖

Optimal Design of Air Cleaner for Motorcycle (2)

流量測試檯

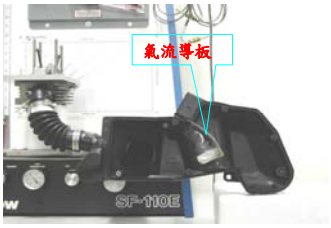
汽缸頭Valve lift調整機構實體圖

Optimal Design of Air Cleaner for Motorcycle (3)

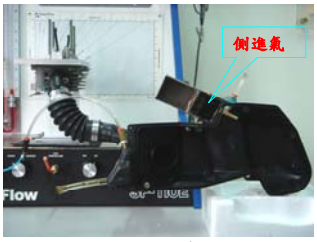


(a)無氣流導板

(c)隔板及導管



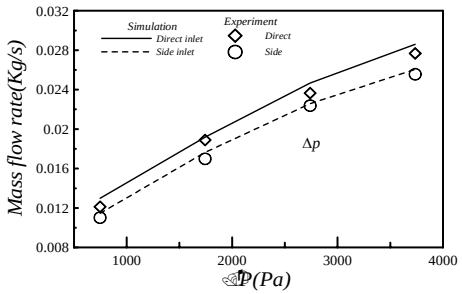
(b)有氣流導板

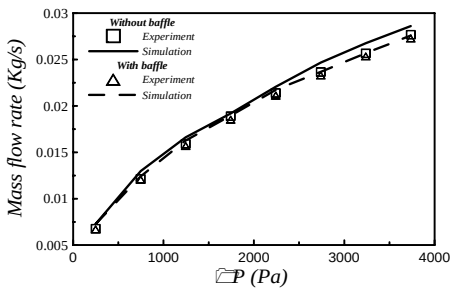


(d)側進氣

圖 (a)、 (b)、(c)、 (d)空氣濾清器實體圖

Variations of the mass flow rate with pressure difference



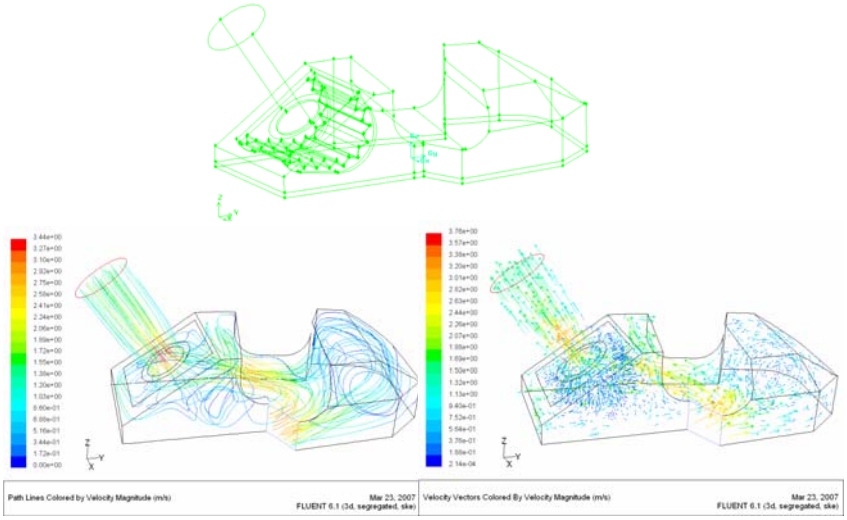


空氣濾清器粉塵捕捉測試

無氣流導板式空氣濾清器粉塵捕捉測試量

有氣流導板式空氣濾清器粉塵捕捉測試

A/C 濾芯摺數為10



散熱片及冷卻流道設計