



SP-Series

crew

AIR COMPRESSORS

螺旋式空氣壓縮機



Energy Saving(VSD)
節能



Environment Friendly
環保



Quiet
靜音



(本公司另有渦卷式、活塞式、乾燥機、氣動工具專屬型錄，敬請選購)

ISO-9001 / 13485 CE UL FDA REACH

PUMA 以專業產銷各式空壓機、氣動工具、高壓清洗機、生醫製品、壓力容器、周邊設備及零組件...等產品遍及全球。

「合作產銷、正派經營」是我們堅持的**經營理念**。

1979年將空壓機的“動力”與氣動工具及周邊設備的“應用”相結合，達成完整的空壓系統，而贏得“**AIR CENTER – 巨霸空壓**”的稱號。

PUMA 在1996年成立營運總部「管理、研發、行銷」三大中心及各生產部門，完成全球供應鏈。以**PDM** (產品資料管理系統)、**SCM** (供應鏈管理系統)、**GLM** (全球運籌管理系統)、**CRM** (客戶關係管理系統)、**ERP** (企業資源規劃系統)...等運籌系統的緊密運作，以符合本公司多元化、全方位的**經營策略**。

同時配合時代潮流及市場對高精密工業級空壓機氣源需求，已開發完成具備低震動、低噪音、高效率、變頻式及微電腦自動控制的「有油、無油及水潤滑」之活塞式、螺旋式、渦捲式空機壓，並提供醫療級/工業級/專業級/通用級/食品/化工...等用途。

Founded in 1969 by Eming Hsiao, **PUMA** has been working continuously with its partners and sponsors internationally and became a multinational company thereafter. **PUMA** sells and produces all type of Air Compressors, Air Tools, Pressure Washer, Medical Equipment, Pressure Vessels, and related accessories / spare parts worldwide. In 1979, we integrated Air Compressors' "Power Source" with Air Tools / Accessories' "Diversified Application", resulted in an integral air system and fulfilled our **vision** to become the first "**AIR CENTER**".

PUMA established General Management, Research & Development, Marketing & Sales 3 major centers in H.Q., and production department in 1996 to become the global supply chain. With the effective application of PDM, SCM, GLM, CRM, ERP management systems, we are determined to achieve company's diversified and comprehensive **business strategy**.

Following the market trend and increasing demand of precision-based Industrial Air Compressor, **PUMA** has designed and developed a range of low-vibration, low-noise, high performance and microcomputer controlled, frequency converted (VSD, variable-speed drive) Piston, Screw and Scroll type, Oil Free as well as Oil Lube air compressors application for Medical, Industrial, Professional, General, Food, and Chemical industries.

PUMA 除不斷研發創新外，「好還要更好！」是我們秉持的**品質政策**，管理層面更掌握了核心競爭能力，以高效率及差異化的企業運籌策略，達到了國際化水準。分別取得 **ISO 9001/13485** 國際認證、歐洲 **CE/REACH** 認證、美國 **UL/FDA** 認證、加拿大 **CSA** 認證、台灣甲等廠及精品獎認證、壓力容器 **ASME** 認證...及多國相關專利、商標註冊等。

我們已行銷**136**個國家，並在多國空壓市場居於領導地位。更透過不斷的精益求精、研發創新、達成我們「**打造全球 PUMA 氣動中心!**」的**經營宗旨**，隨著科技的演進及管理的提昇，使我們不斷的成長，我們在鞏固經濟層面後，更加強「**公益、誠信、卓越**」**企業社會責任 (C.S.R.)**，重視「**環保、節能、靜音**」的**使命**。

我們將成果回饋給所有合作夥伴，共創雙贏，並達到“**有太陽的地方，就有 PUMA**”的**經營目標**。



Not only does **PUMA** keep on researching and making innovation on our products, we also enforce our **quality policy**, "Better than better", on a daily basis. Furthermore, **PUMA** also masters on the high quality products and efficient management as core strategy competitive ability. To compete in the global market, we have obtained the ISO 9001 / 13485, CE / REACH, UL / FDA, CSA certificates, Taiwan Excellence Awards, pressure vessels certified by ASME, many multi-countries' patents and trademark registration.

Up to now, we have marketed our products in 136 countries and kept the top sales in many countries. **PUMA** will never satisfy with the current achievements. We believe that success is only achieved through innovation, pursuing excellence, and utilizing the most updated managerial and technological skills to help us grow. Meanwhile, **PUMA** is not only striving for financial stability but also paying more attention to the Company Social Responsibility (C.S.R.). We adhere to our **business philosophy** to be cooperative and honest with our partners. Moreover, it is also our **responsibility** and **mission** to pursue social equality, having good business ethics, and provide excellent products that are environment friendly, energy saving, and quiet.

We like to create more prosperous future with our partners and achieve our **goal** — —
"Where there is sunshine, there is **PUMA**".

- Exquisite Industrial Compressors 專業級空壓精品
- Energy Efficient Networking 節能聯動網功能
- Micro Computer Control 全系列微電腦控制
- Maintenance Easy 維修容易
- User Friendly 操作簡易



靜音
Silence

省電
Energy Saving

超效
Outstanding Efficiency

Air power
空之能·氣蒼穹

Air expert
空氣的專家

PUMA GLOBAL-WIDE MARKETING STRATEGIC ALLIANCE NETWORK

- 136 countries distributing.
 - 3,750 services centers.
 - 18,000,000 air compressor in service.
 - 45,000,000 air tools in service.
- 世界名牌 全球服務 World Brand Globalized Service



醫療級

工業級

職業級

通用級



有太陽的地方，就有 PUMA! Where there is sunshine, there is PUMA!



如何選購正確的空壓機 How to choose a screw compressor

壓力的決定

- 壓力越高，耗電越大。須考慮配管尺寸大小及長度所造成的壓力降，所有壓力降加上機器使用壓力即為空壓機排氣口最下限的壓力。
- 列出各種機器的使用壓力，如使用壓力相差太多時，則需購置不同壓力的空壓機或增壓機，根據實際需要選購，不可降低壓力使用，以免增加電費支出。

機型的選擇

- 計算出總實際使用風量再加上合理30%餘量為宜，以防不時之需。
- 注意耗能比值，以求省電，及實際排氣量(立方米/分)除以實耗功率(kW)，值越大越省電。

壓縮空氣品質

- 壓縮空氣中含有大量的水分，它對精密傳感器、氣動工具、氣動設備、閥、儀管路等造成莫大的傷害。因為水份會造成鏽蝕、堵塞儀器，降低成品品質、損壞設備而且增加修理維護工作。所以加裝壓縮空氣淨化系統確有其必要。
(參考氣配圖)

PRESSURE DETERMINATION

- The higher the pressure, the more electricity costs. The size and length of the pipe may cause some pressure drop, therefore the total pressure drop plus the required operating pressure is the minimum required compressor output pressure.
- Choose the pressure according to the actual requirement, or it will increase the unnecessary electricity cost.

AIR DEMAND AND MODEL SELECTION

- Calculate the total air demand and add reasonable capacity for contingent or unusual usage and future expansion.
- Check the ratio of air delivery (m^3/min) over the power consumption (kW). The bigger the ratio, the more efficient it is.

QUALITY OF THE COMPRESSED AIR

- Water in the compressed air will damage important components in the circulation system such as sensors, pneumatic tool, pneumatic devices, valve, pipes, etc. Because water will rust or obstruct the air passage, hence reduce the product quality and increase the cost for maintenance. It is necessary to install the "compressed air filtration system".

空壓機變頻改造方案：變頻箱

Improvement for your air compressor: Frequency Inverter Box

採用一個獨立節能變頻箱，只需將用戶原有空壓機系統的主電路和控制信號，接到對應的節能變頻箱接線端子上，並接入壓力傳感器，即可完成對空壓機的變頻改造工程。改造簡單，施工方便，不改變用戶習慣，保留原有介面和保護系統，同時也變於日後的保養和維修。

By installing an independent Frequency Inverter Box, with easy wiring instruction and adding the pressure sensor, the converting project is finished. It's an easy task for converting, no change on old interface and protection system. Same operation as old unit and easy maintenance for the owner.



型號 MODEL	馬力 HP	尺寸 W × H × D (cm)
FIG10	10	60×120×35
FIG20	20	60×125×35
FIG30	30	65×135×40
FIG50	50	100×180×60
FIG75	75	100×180×60
FIG100	100	100×180×60

備註 Remark :

1. 電壓 Voltage: 220V / 380V / 440V
2. 未列規格及特殊需求，請洽詢。
Special demand can be negotiated.
3. 傳統控制空壓機亦適用，加裝之後可達節能效益。
This control box is suitable to add on to the conventional air compressor to save energy.

結合高科技之創新設計

INNOVATIVE DESIGN BY INTEGRATING NEW TECHNOLOGIES



全系列產品特性 / FEATURE OF ALL MODELS

- PUMA機頭採用歐美先進螺旋轉子技術自動化精密加工，確保轉子精密度。
PUMA uses only the top quality screw air ends that manufactured in high-tech facilities.
- 堅固的徑向和軸向軸承，確保長時使用壽命。
Robust radial and axial bearings resulting in long life service.
- 對多點溫度進行檢測與控制保護。
Multi-point temperature monitor and protection.
- 保養簡便、成本低
Easy Maintenance and low service cost.
- 高度集成、高可靠性、高性價比
Intergrate, reliable, high P/C
- 新e代結構設計、體積小
New compact structure design.
- RS-485通訊功能
RS-485 communication port.
- 運行穩定可靠
Durable, Reliable service.
- 歷史故障查詢
Fault history recorder.
- 操作人性化
User friendly interface.
- 對空壓機進行防逆相保護
Phase reversal protection.
- 觸控式LCD中英文顯示面板
Multi-language LCD display.
- 獨立/聯動可選擇運行
Individual / multi units operation.
- 機旁/遠程可選擇控制
Local or remote control selection.
- 自動調節負荷率控制壓力平衡
Auto control on pressure balance.
- 多功能電腦版控制系統
Multi-fuctions micro computer panel.
- 低噪音散熱系統
Efficient and low noise cooling system.
- 低噪音、無震動、管路少
Low noise level, Vibration free, Less tubes.
- 智慧型風扇運作單元(多翼離心扇，降低整體噪音)
Smart cooling fan operation with centrifugal fan.
- 創新分流設計，獨立冷空氣吸入系統
Innovative circulation design with independent cool air intake system.
- 提供最高的性能及效率，低耗能，高氣量
Provide the highest performance, less power consumption, highest air flow.



風扇系統為離心式，噪音小
Centrifugal fan system, Low Noise.



新型控制迴路設計
New Control Loop.

分流進氣系統 CIRCULATION DESIGN



特殊功能 SPECIAL FEATURES

多功能電腦版控制系統

Multi-function Micro Computer system



可調節工作參數 Adjustable Parameters

- 壓力上限 / Max. Pressure
- 工作壓力 / Working Pressure
- 風機啟動溫度 / Temp. To Start Fan
- 風機停機溫度 / Temp. To Stop Fan
- 星角延時時間 / Y-Δ Delay
- 加載延時時間 / Load Time Delay
- 空載延時時間 / Unload Time Delay
- 主機啟動時間 / Main Motor Delay
- 停機延時時間 / Stop Delay Time
- 啟動延時時間 / Blowdown Time Delay
- 風機啟動時間 / Cooling Fan Starting Time

標準顯示 Standard Display

- 供氣壓力 / Pressure
- 電機電流 / Amperage
- 排氣溫度 / Temperature
- 運行總時間 / Total Running Time



預警與提示 Warning And Alarm

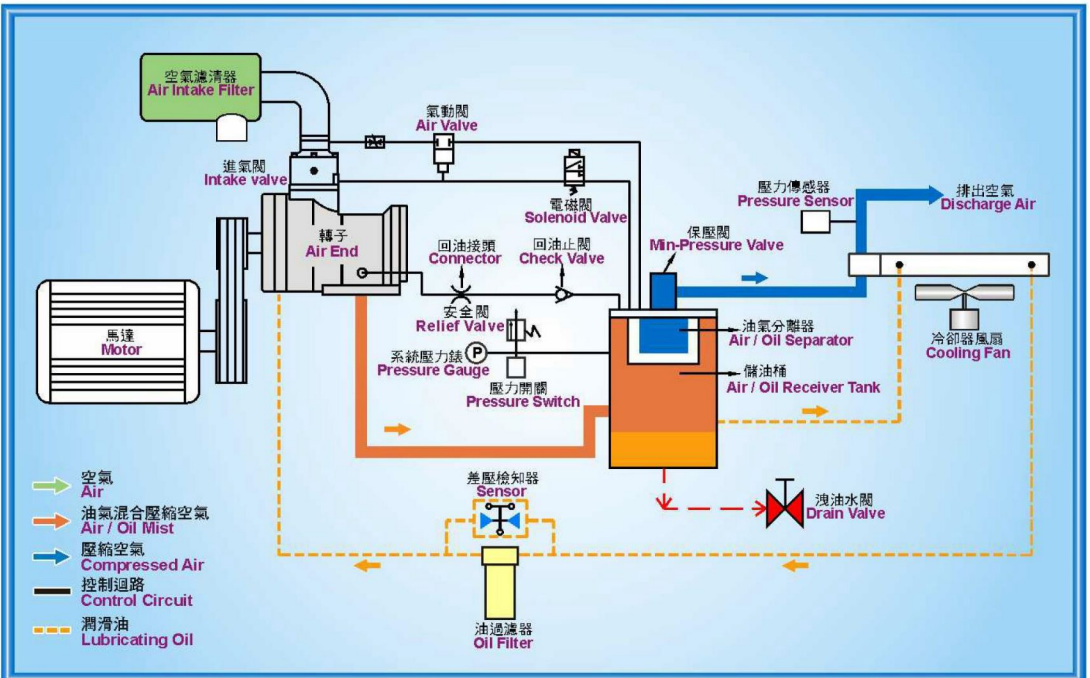
- 更換油過濾器 / Change Oil Filter
- 壓縮腔排氣溫度過高 / Discharge Over Heat
- 更換空氣過濾器 / Change Air Filter Elements
- 更換油氣分離器濾蕊 / Change Oil / Air Separator

故障停機保護 System Protection

- 傳感器失靈保護 / Sensor Out
- 電機逆相保護 / Phase Reversal
- 系統超溫保護 / System Over Heat
- 排氣超溫保護 / Over Heat In Discharge
- 供壓超壓保護 / Over Pressure In Discharge
- 聯動保護 / Multi Units Connecting Protection
- 對電機具有短路、堵轉 / Motor Over Load Protection
- 缺相、過載、不平衡等全方位保護功能

系統流程圖

Major Components Arrangement and Flow





空氣迴路 AIR LOOP

- 空氣由進氣過濾器濾去塵埃及雜質後，經進氣閥進入至轉子壓縮，在壓縮過程中，噴入機油，形成油氣混合，完成壓縮程序，油氣混合物進入油氣分離桶做初步分離，再經油氣分離器的過濾，而後經壓力維持閥至後部冷卻器冷卻，即可送至系統中使用。
- Air is sucked in through AIR FILTER to remove the dust and impurities, entering INTAKE VALVE to AIR END, mixing with cooling oil. After compressing, the air/oil mixture flows into the receiver tank where the first stage separation of air and oil takes place. The compressed air flows through the fine AIR/OIL SEPARATOR, into the AIR COOLER, then exhausts to the air supply line.

循環油迴路 OIL LOOP

- 在油氣分離桶的機油，流經油冷卻器冷卻，並在油過濾器前混合，進入油過濾器濾去油中所含的雜質後，分為兩路，其一通到排氣端，潤滑軸承，另一由轉子底部進入，潤滑吸氣端軸承，及噴入壓縮室與空氣混合後，經排氣口至油氣分離桶，經由油氣分離桶做初步分離，油氣分離器的作用油與空氣分離，機油流至油氣分離桶貯存，完成整個迴路。
- The oil circulation is very important for the operation of the compressor. The cooling oil is filtered through the OIL FILTER and then injected into the AIR END, mixing with compressed air. The compressed air/oil mixture enters the receiver for first stage separation. The oil sinks to the receiver bottom, then flows through the OIL COOLER, and then returns to the AIR END through the OIL FILTER.



高品質高性能部件 Parts with high quality and high performance

空氣濾清器 Air filter element



過濾空氣中雜質、粉塵、水份，減低轉子、軸承磨損，保證整體性能。

Dust, powder, moisture are removed through this two-stage air filter, ensuring the constant supply of clean air into the compressor.

機油過濾器 Oil filter



過濾潤滑油雜質 (10 μ 以下)，提供乾淨之潤滑油潤滑轉子、軸承。

The oil filter removes any excess impurities in compressor oil (filtering capacity: 10micron).

油氣分離器 Oil / Air separator



採高效率分離裝置，有效分離油氣，使出氣含油低於2PPM以下。

Removes any trace of lube oil and mist through a dense fiber element to produce clean air with oil content below 2PPM.

離心式風扇 Centrifugal fan



風輪經平衡校正，震幅、震動最小，運轉平穩，採抽風型式，噪音小。

Centrifugal fan through a balance correction, minimum vibration, stable operation. By ventilation type, Low noise.

壓力傳感器 Pressure sensor



特別設計使用於工業環境系統，依據 EU EMC 抗干擾保護設計，具溫度補償及使用雷射校正，使用耐酸鹼不銹鋼 AISI 316L 的材質

A high-performance pressure sensor that can continuously detect any slight changes in the line pressure and balance automatically.

螺旋專用油 Puma oil



黏度穩定、抗氧化性、防積垢形成能力特高。

Thermal stability with excellent resistance to oxidation, prevent sludge and deposit formation.



皮帶傳動 / BELT-DRIVEN TYPE



先進多溝皮帶式傳動系統
Poly-V Belt Ensures Long Life



槓桿式皮帶調整結構
Easy maintenance mechanism

Model	HP - KW	WORK Kg/cm ²	AIR M ³ /min/CFM	Cooling	cm	Kg	dBA	REMARK	
SP10	10	7.5	8	1.15 / 40.60	Air	85x60x124	300	70	Tradition
			10	1.02 / 35.90					
			13	0.86 / 30.20					
SP15	15	11	8	1.69 / 59.50	Air	95x75x144	400	72	Tradition
			10	1.51 / 53.40					
			13	1.30 / 45.80					
SP20	20	15	8	2.16 / 76.00	Air	95x75x144	440	72	Tradition
			10	1.90 / 67.00					
			13	1.60 / 57.00					
SP30	30	22	8	3.43 / 121.00	Air	115x95x150	730	75	Tradition
			10	2.91 / 103.00					
			13	2.30 / 81.00					
SP50	50	37	8	5.43 / 192.00	Air	130x100x172	1040	78	Tradition
			10	5.01 / 177.00					
			13	4.46 / 157.00					
SP5S	5	3.7	10	0.41 / 14.50	Air	89x60x78	230	68	Compact
SP7S	7	5.5	10	0.68 / 24.00	Air	89x60x78	270	69	Compact
SP10S	10	7.5	10	0.96 / 33.90	Air	89x60x78	290	70	Compact

- 使用電源 Electric Power : 3φ,220V/380V/440V(50/60HZ)
- 起動方式 Starting Mode : 380V / 7.5-15 kW 直接起動 / Direct Connect
220V / 11 kW Y-△ 起動 / Y-△ Starting
220V / 15 kW↑
380V / 22 kW↑
- 最大工作壓力 Max. Working Pressure : 13kg/cm²
- 全部機型油及空氣均有冷卻系統。Complete Cooling System, including air and lube oil.

直聯傳動 DIRECT COUPLING TYPE



Model	HP - KW	WORK Kg/cm ²	AIR M ³ /min/CFM	Cooling	cm	Kg	dBA	
SP30D	30	22	8	3.63 / 128	Air	130x85x145	680	74
			10	3.29 / 116				
			13	2.49 / 88				
SP50D	50	37	8	5.75 / 203	Air	150x92x163	920	76
			10	5.40 / 191				
			13	4.80 / 168				
SP75D	75	55	8	9.29 / 328	Air	200x120x178	1740	76
			10	8.60 / 304				
			13	6.83 / 241				
SP100D	100	75	8	12.32 / 435	Air	200x120x178	2100	78
			10	11.30 / 399				
			13	9.13 / 322				
SP150D	150	110	8	18.03 / 637	Air/Water	260x135x194	2900	79
			10	16.38 / 578				
			13	14.29 / 504				
SP200D	200	150	8	24.06 / 850	Air/Water	300x160x173	3360	80
			10	21.50 / 761				
			13	18.18 / 642				
SP250D	250	185	8	28.56 / 1009	Water	340x170x203	4120	80
SP300D	300	220	8	35.30 / 1247	Water	340x170x203	4720	83
SP350D	350	250	8	42.00 / 1483	Water	320x195x210	4800	85
SP400D	400	300	8	51.00 / 1800	Water	420x230x235	6500	82
SP450D	450	355	8	62.00 / 2189	Water	420x230x235	6800	82
SP540D	540	400	8	73.00 / 2577	Water	420x230x235	7200	82

優點 / ADVANTAGES

- 馬達與轉子是直聯，故沒有傳動能耗損失。
Direct coupling between motor and air end without transmission loss.
- 無側向拉力，延長軸封軸承壽命。
Longer life for shaft seal and bearing because no transverse forces.
- 減少零部件，增加可靠性，且降低維護成本。
Less repair parts, less maintenance cost, hence more reliable.
- 較大轉子以較低轉速運行，效率更高，進一步節省能源。
Use larger air end with lower speed, result in better energy efficiency.
- 轉速較低，整體震動值小。
Less overall vibration due to lower revolutionary speed.



開放式 PACKAGE TYPE

- 皮帶傳動 Belt-Driven



- 直聯傳動 Direct Coupling 1:1



※ 不包含桶 Tank is not included

Model	HP - KW	WORK Kg/cm ²	AIR M ³ /min/CFM	Cooling	cm	Kg	REMARK	
SP15N	15	11	8	1.69 / 59.5	Air	116x66x91	290	BELT
			10	1.51 / 53.4				
			13	1.30 / 45.8				
SP20N	20	15	8	2.16 / 76.0	Air	116x66x91	310	BELT
			10	1.90 / 67.0				
			13	1.60 / 57.0				
SP10DN	10	7.5	8	1.08 / 38.0	Air	107x66x102	295	Direct Coupling
SP15DN	15	11	8	1.70 / 60.0	Air	107x66x102	312	Direct Coupling
SP20DN	20	15	8	2.16 / 76.0	Air	107x66x102	360	Direct Coupling
SP30DN	30	22	8	3.21 / 113.0	Air	115x76x117	490	Direct Coupling
SP20GN	20	15	8	2.16 / 76.0	Air	100x60x100	390	GEAR
			10	1.90 / 67.0				
			13	1.60 / 57.0				
SP30GN	30	22	8	3.43 / 121.0	Air	105x66x104	510	GEAR
			10	2.91 / 103.0				
			13	2.30 / 81.0				

水潤滑無油 WATER INJECTION OIL FREE



Model	HP - KW	WORK Kg/cm ²	AIR M ³ /min/CFM	Cooling	cm	Kg
SW5	5 4	8	0.55 / 19.42	Air	110x100x140	255
		10	0.48 / 16.95			
SW7	7.5 5.5	8	0.81 / 28.60	Air	110x100x140	265
		10	0.71 / 25.07			
SW10	10 7.5	8	1.12 / 39.56	Air	110x100x140	290
		10	1.02 / 36.02			
SW15	15 11	8	1.71 / 60.39	Air	110x100x140	320
		10	1.39 / 49.09			
SW100	100 75	8	11.7 / 413.24	Water	245x140x160	2000
		10	10.3 / 363.79			
SW125	125 90	8	14.1 / 498.01	Water	245x140x160	2250
		10	12.3 / 434.43			
SW150	150 110	8	17.3 / 611.03	Water	2600x1500x1600	2500
		10	15.1 / 533.33			

優點 / ADVANTAGES

- 完全無油壓縮，提供100%無油壓縮空氣。
Water-lubricated screw compressor delivers 100% oil-free compressed air.
- 專利設計軸承、使用壽命長。
Due to patented design, the bearing has longer service.
- 水潤滑為單級壓縮，更高的壓縮效率。
Water-lubricated isothermal compression result in higher efficiency.
- 潤滑水循環使用成本低。
Low operating cost with water circulation.
- 無油過濾器、油氣分離器，維護成本低。
Low maintenance cost because no oil filter, no oil/air separator.
- 低轉速、低噪音、振動小、無需增速齒輪。
Low speed, low noise, low vibration, without transmission gears.
- 壓縮空氣中不含油，無需特殊處理。
No oil in the system hence easy treatment for compressed air.
- 適合長時間滿負載運轉工作。
Suitable for long full load operation due to low operating temperature.
- 最大工作力: 15kg/cm²。
Max. Working Pressure: 15kg/cm²。





變頻式 FREQUENCY INVERTER

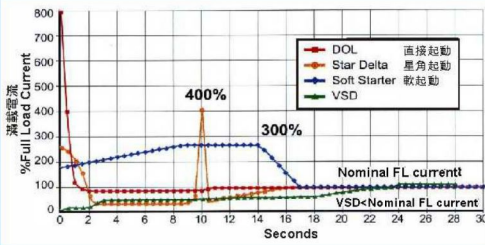


Model	HP - KW	Kg/cm ²	M ³ /min/CFM	Cooling	cm	Kg	dBA
SP10DV	10 / 7.5	8	1.15 / 40.5	Air	110×75×110	380	70
SP15DV	15 / 11	8	1.63 / 57.4	Air	135×80×110	450	72
SP20DV	20 / 15	8	2.20 / 77.4	Air	135×80×110	470	72
SP30DV	30 / 22	8	3.43 / 120.7	Air	145×90×145	750	75
SP50DV	50 / 37	8	5.50 / 193.6	Air	170×92×163	950	78
SP75DV	75 / 55	8	8.60 / 302.7	Air	200×120×178	1850	79
SP100DV	100 / 75	8	11.90 / 418.9	Air	215×125×185	2200	80
SP150DV	150 / 110	8	19.80 / 697.0	Air/Water	260×175×185	3150	80
SP200DV	200 / 150	8	24.00 / 845.0	Air/Water	260×175×185	3350	80
SP250DV	250 / 185	8	30.40 / 1070.0	Water	290×160×235	4450	80
SP350DV	350 / 250	8	42.00 / 1478.0	Water	350×200×210	4800	82
SP400DV	400 / 300	8	51.00 / 1795.0	Water	420×230×235	6800	82
SP450DV	450 / 355	8	62.00 / 2182.0	Water	420×230×235	7100	82
SP540DV	540 / 450	8	73.00 / 2570.0	Water	420×230×235	7500	82

- 電壓 Voltage : 3 φ , 220/380/440(50HP ↓)、380/440(75HP ↑)
- 傳動方式 Drive : 連軸器傳動 Direct coupling
- 冷卻方式 Cooling : 氣冷 Air
- 環境溫度 Ambient temperature : 0~45℃
- 馬達 Motor : 全密變頻專用馬達F級絕緣具強制冷卻風扇 TEFC for VSD with F class insulation
- 起動方式 Starting Mode : 低電流變頻起動 Low starting amperage
- 控制方式 Control : 微電腦控制及變頻恆壓控制 steady pressure supply and microcomputer panel
- 風量輸出調節範圍 Effective load range : 30%~100%



變頻裝置節能優點 Variable Speed Drive advantages



變頻啟動

變頻軟性啟動，線性運轉平穩，無傳統直接啟動或Y-△啟動大電流。大幅延長電磁接觸器、馬達或壓縮機體使用壽命。

Frequency Inverter Starting

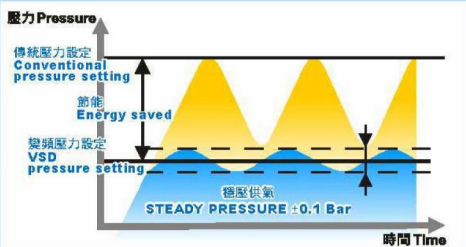
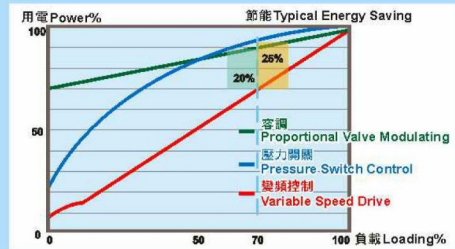
Has small slope amperage increase compared to other starting methods, hence it will prolong the service life of motor, contactor and compressor.

節能控制

變頻空壓機提供30%~100%線性無段容調控制，依客戶壓縮空氣的負載變化，自動控制馬力消耗，做節能控制。可大幅降低運轉成本。

Energy Saving Control

Provides best energy performance for load range of 30%~100%，and reduces the cost of operation by up to 25%.



恆壓供氣

變頻控制可以即時反應客戶使用的風量變化，供氣壓力穩定在 $\pm 0.1 \text{ kg/cm}^2$ 下，沒有傳統空壓機空重車壓差值所需 $1\sim 2 \text{ kg/cm}^2$ 的設定，因此可節省運轉電費。

Steady Pressure Air Supply

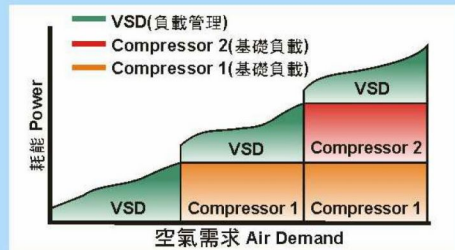
By maintaining the set pressure $\pm 0.1 \text{ bar}$, the VSD will save a good portion of electrical consumption.

負載管理

僅需一台變頻式空壓機作負載管理，與多台傳統式空壓機並聯節能運轉。可改善整個空壓系統運轉效率，提高客戶的競爭力。

Total Load Managing System

By adding only one VSD unit to the other conventional air compressors, as an energy efficient network, the whole system will improve the operation efficiency greatly.



最佳節能控制是以最少消耗電量為原則，而其方式即以控制馬達轉速，並提供足夠的供氣量。

一般而言購入成本、保養、維修等費用之總和遠比使用電費為小，電費約佔一台空壓機總費用之85%。

By controlling the motor rpm that meets your air demand with minimum energy cost is the best energy saving control. Energy accounts for roughly 85% of a compressor's lifecycle costs. The purchase price, maintenance, service and other costs add up to only a fraction of the total energy cost consumed by the compressor.

變頻空壓機除了節能，尚可穩壓供氣，且有軟啟動降脈衝電流的好處。

而變頻馬達可在全負載過程中維持高功率因素，即提供高馬達效率，亦是節能因素之一。

The VSD compressor can offer steady pressure supply. It can reduce the starting amperage (soft start eliminate current surge) and maintain the high power factor during whole range of loading which means higher motor efficiency.



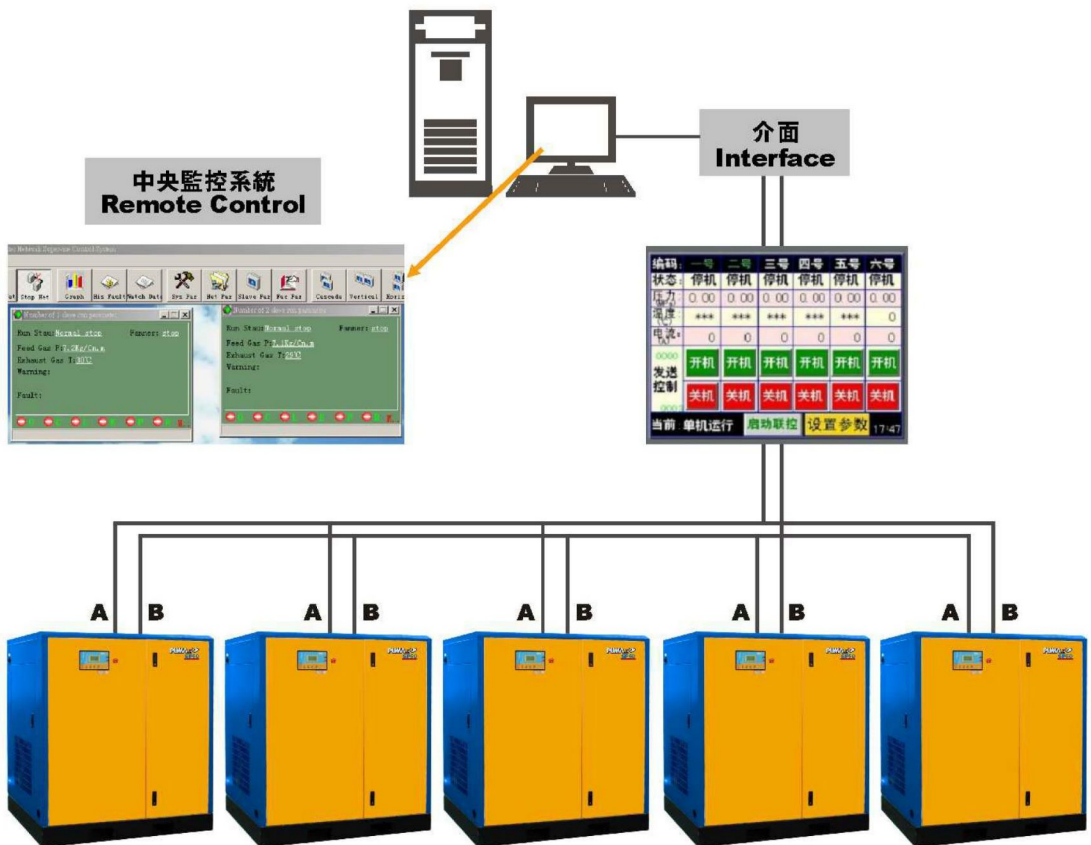
遠端監控系統 Remote Monitoring System

遠端監控為PUMA微電腦系統之選配功能之一。用戶可安裝連線，在電腦上監控現場之空壓機。此功能可幫用戶提早發現需保養、維修之項目，並避免日後之重大修護。

另一個選購項目，空壓機出現非正常情況時，可自動發出簡訊給維修人員之手機，在最快時間內施以矯正措施。

As a Puma optional microcomputer feature, the customer can have remote monitoring of each air compressor. This helps to identify potential problems at an early stage and prevent serious repair.

Another optional feature enables the service personnel to receive short messages via cell phone if there's an abnormal condition during the operation.





流量換算表 Flow Conversion Chart

LPM l/min	CMH m ³ /hr	CFM ft ³ /min	GPM(U.K.) Gal/min	GPM(U.S.A.) Gal/min
1	0.06	0.03532	0.220	0.2642
16.667	1	0.5887	3.667	4.404
28.3153	1.699	1	6.229	7.481
4.5455	0.2727	0.1605	1	1.2011
3.785	0.2271	0.1337	0.8325	1

單位換算表 Conversion Factors

1. 扭力 TORQUE	1 ft-lb = 1.356 nm = 0.138kg-m 1 nm = 0.738 ft-lb = 0.102 kg-m
2. 長度 LENGTH	1 m = 39.371 in = 3.281 ft 1 ft = 12 in = 0.305 m 1 in = 25.4 mm
3. 重量 WEIGHT	1 lb = 0.454 kg = 16 oz 1 kg = 2.205 lb = 35.274 oz 1 oz = 28.35 g = 0.063 lb
4. 功率 POWER	1 kw = 1.341 hp 1 hp = 0.746kw 1CV = 1 PS = 0.735 kw
5. 濃度 CONCENTRATION	1 mg/m ³ = 0.001 mg/L = 0.001 ppm 1 ppm = 1000 mg/m ³ = 1 mg/L

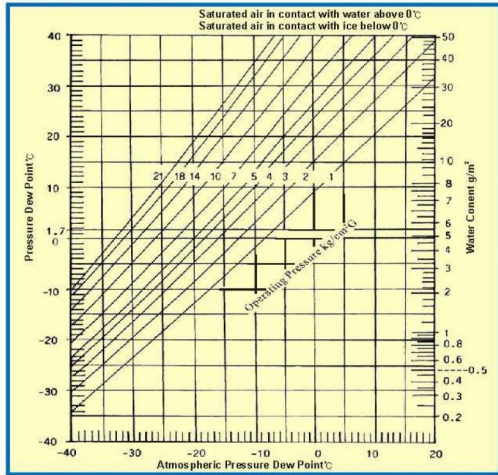
壓力換算表 Pressure Conversion Chart

Bar	KPa	Kg/cm ²	MPa	Psi
1	100	1.02	0.1	14.5
0.981	98.1	1	0.098	14.22
10	1000	10.197	1	145.036

真空換算表 Vacuum Conversion Chart

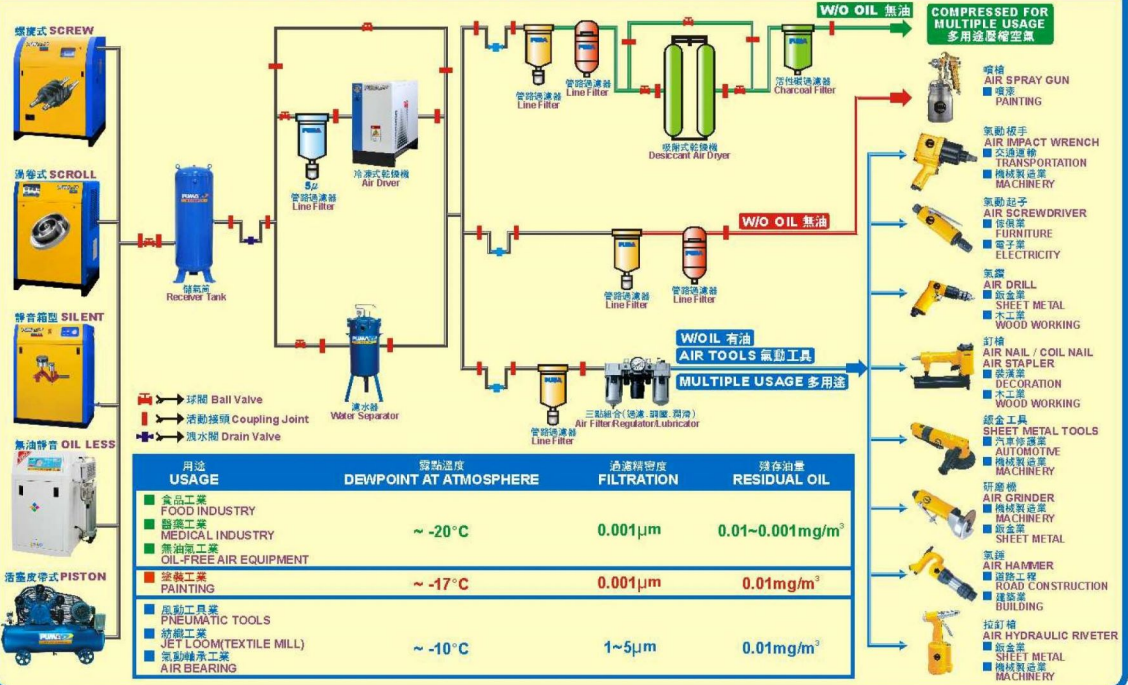
mbar	Pa (N/m ²)	Torr (mmHg)	mmHg (H ₂ O)	atm
1	100	0.75	10.2	9.87x10 ⁻⁴
0.01	1	7.5x10 ⁻³	0.102	9.87x10 ⁻⁶
1.33	133	1	13.6	1.32x10 ⁻³
9.81x10 ⁻²	9.81	7.36x10 ⁻²	1	9.68x10 ⁻⁵
1013	101325	760	10332	1

壓力露點轉換表 Pressure-dew Point Conversion Table



PUMA 巨霸全系列產品及氣配圖

PUMA PRODUCTS UTILITY & FLOW CHART



HONOR



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PUMA INDUSTRIAL CO., LTD. 合正機械股份有限公司

OFFICE & FACTORY :

NO. 427, Sec. 2, Doujhong Rd., Tianzhong Township, Changhua County 520, Taiwan

Export dep.

TEL:886-4-8761811 e-mail:sales@pumaair.com

FAX:886-4-8752211 <http://www.pumaair.com>

Domestic dep.

TEL:04-8752101 e-mail:dd@pumaair.com

FAX:04-8762385 <http://www.pumaair.com>



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