

# **COAIRE**



**OIL-FREE SCROLL AIR COMPRESSORS  
PRODUCT CATALOG**





## The history of compressors in Korea was established and advanced by Coaire.

Since the company was established in 1968, it has developed reciprocating type compressors for the first time in Korea. In 1986 the company was also the first in Korea to develop and supply screw compressors after establishing technological ties with Sweden-based SRM, and it developed oil free scroll compressors in 2004 for the third time in the world and for the first time in Korea. To put it simply, the company has created a new history of compressors in Korea.

In 2008, Coaire launched the upgraded CAS series and developed the 5th-generation “ $\alpha$ ” PROFILE AIREND, which makes the company justifiably equal to world-renowned makers.

The company has about 40 official agencies across the country and numerous production sites and customer centers located in 25 countries around the world in countries such as the US, China, and Thailand, in order to provide its customers with the best possible service.

As a total air solution producer, Coaire manufactures such products as oil-free compressors, oil injection reciprocating type compressors, screw compressors, scroll compressors, as well as driers and filters, which will best meet any customer demands.

In the future, the progress of compressors will continue to be written by Coaire, which is determined to do its best to be a leader in compressor industry throughout the world.

**COAIRE**





ISO13485/2003

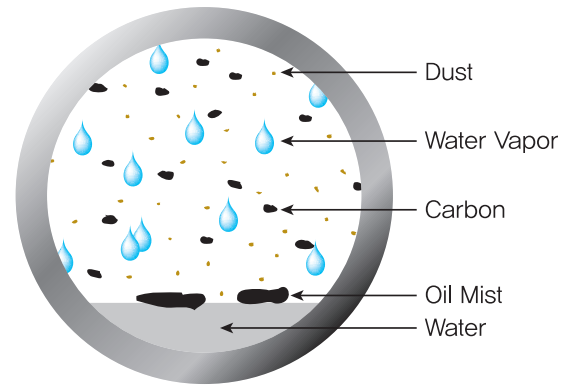


- 2014 Acquired ISO 13485 (Quality Management Certificate for the design and manufacture of medical devices)
- 2013 Awarded a Certificate of Merit as an Exporting company
- 2012 Acquired ISO 8573-1 CLASS 0 for the Scroll Compressor
- 2011 Acquired CE-MARK for the Scroll Compressor
- 2006 Selected as a Technology Innovation SME (INNO-BIZ Certificate)
- 2005 Acquired NT-Mark (Korea Innovation Certificate)
- 2004 Local Manufacturing of Oil Free Scroll Compressor
- 2001 Acquired Q-Mark  
Establishment of an affiliated R&D Center
- 2000 Changed Manufacturing Site and Headquarters to a new location
- 1996 Acquired ASME N STAMP (Heat Exchangers)
- 1995 Acquired ISO 9001
- 1994 Acquired American SCREW COMPRESSOR UL, Canadian CSA
- 1986 Technical partnership with SRM, Sweden, Launch of Screw Air Compressor
- 1970 Launch of Reciprocating Air Compressor
- 1968 Establishment of Kyungwon Machinery

# OIL-FREE SCROLL AIR COMPRESSOR

## Compressed air of an oil injection type air compressor

- The usual air feed contains about 1.8 billion particles of airborne dust, water vapor and oil mist, which are fed into the compression process and are transformed into 2 billion particles of dust and 0.03mg/m<sup>3</sup> of oil vapor in the output air stream, resulting from the heating of supplied grease that produces hydro carbon.
- The oil mist or vapor from the compressed air stream causes the machines being used to malfunction, the coats of paint to become easily separated or cause spin holes. If used in food processing or medical purposes, there is a risk that the harmful matter may be ingested.
- The oil mist problems can increase the expense of water treatment by the oil being included in the condensed water as an output of separation during dryer or filtering process.



Cross section of A/C pipe

※ Oil mist is the most difficult element to separate from the output air stream containing the pollutants such as water vapor and dust. Methods such as cooling or regenerated desiccant dryer or filters are commonly employed to remove the dust and water particles, but the oil mist filter does not offer the complete separation of the vapor, which causes unexpected problems in the secondary process as the mist is sure to pass through and corrupt the filters and dryers. In this respect, the surest way to prevent adverse effect lies in preventing the oil mist from occurring.

## Compressed air of Coaire’s Oil Free scroll air compressor

- The oil-free scroll compressor products of Coaire are developed to operate without the use of oil during the compression process, resulting in oil-free high grade compressed air.
- With the installation of a convenient dryer and filter, our oil-less scroll compressor products are able to produce pure compressed air of the first quality that meets the ISO standards.
- There would be no additional costs involved as the condensed water removed by the dryer and filters does not contain any oil, heading off any requirements for water treatment.

### ISO 8573.1 Compressed Air Quality

Quality Classes	SOLIDS	MOISTURE		OIL	
	Maximum particle size (microns)	Dew Point		Liquid and Gas	
		°C	°F	mg/m <sup>3</sup>	ppm <sub>w/w</sub>
0	as specified	as specified		as specified	
1	0.1	-70	-94	0.01	0.008
2	1	-40	-40	0.1	0.08
3	5	-20	-4	1	0.8
4	15	3	38	5	4
5	40	7	45	-	-
6	-	10	50	-	-

※ The importance of producing high quality compressed air has become highly significant as the industry of modern days helps increase the drastic popularity of the grade air that is determined by the quality of particles of dust, oil mist and water vapors.

ISO Quality Standards for the types of compressed air is as follows;

#### ● Quality Standard of Compressed Air for Each Category of Use

Application	Quality Class			Application	Quality Class		
	Dirt	Water	Oil		Dirt	Water	Oil
Photographic	1	1	1	Pneumatic Cylinder	3	3	5
Conveyance of food / Beverages	2	3	1	General Works Air	4	4	5

## ISO 8573-1 Class 0 Compliance



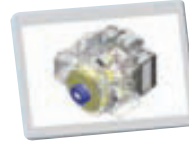
Based on more than 40 years of experience in producing air compressor products, Coaire has been able to develop and manufacture the first oil-free scroll air compressor products in 2004, with numerous citations including Korean government awards of Net Technology (NT) and New Excellent Technology (NEP). Also in 2012 Coaire acquired ISO 8573-1 Class 0 Certificate from a global provider of technical, safety and certification services TUV Germany, thus becoming a superior manufacturer of oil free compressors. Coaire manufactures 100% oil-free clean compressed air, which meets requirements of the most critical applications.

**NEP is....**

An award for the product developed by using creative know-how technology and that has perfect performance and quality.

**Class 0 is....**

Certification according to ISO 8573-1 covers more stringent quality requirements to the total oil content (aerosol, liquid, vapour)



Launch of oil free scroll compressors in 2004 for the first time in Korea



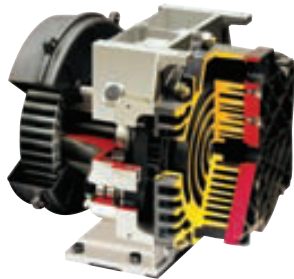
Acquired NEP award in 200



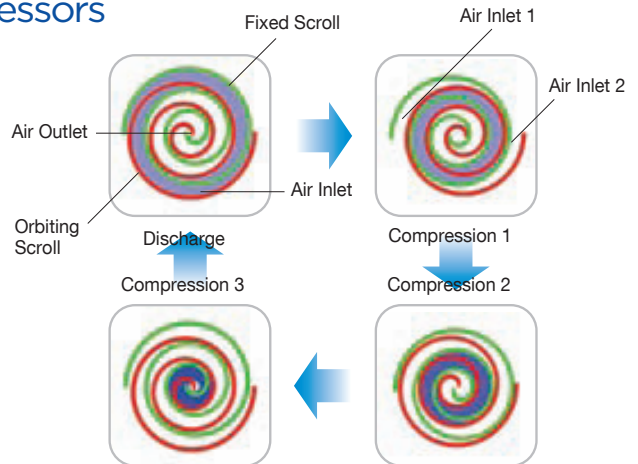
Compliance with ISO 8573-1 Class 0 Standard by TUV Germany

## The principle of Scroll Air Compressors

The motion of the rotation scroll causes the decreased volume (compression) of the feed air in the shape of a crescent moon formed between the fixed scroll and the rotating scroll, which compress the feed air before being output to the outlet.



OIL FREE SCROLL AIR END



## Oil Free Scroll Compressor Applications



- Medical equipment
- Medical-grade Gas supply
- Air-vacuum
- Dental clinic

- Golf range Clothes and shoe cleaning
- Practicerange management equipment

- Paint
- High-precision paint

- Food processing
- Packing
- Mixer
- Screening
- Packaging

- High-precision semiconductors
- Various machining centers
- Semiconductor equipment

- Printing
- High-precision printing
- Book binding

- Pharmaceutical
- Chemical drug and chemical product manufacturing

# Coaire's Oil Free Scroll Compressor Technology

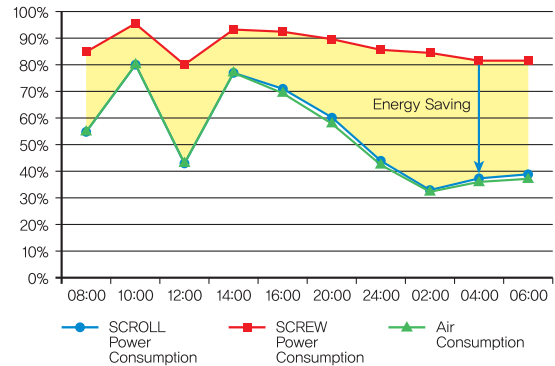
## World-Class Performance

- The optimized output outlet of the scroll airend is designed to maximize energy saving and the output volume.
- The standard stainless steel tanks are designed to produce optimally-controlled air without any additional after cooler.
- Corrugated type high performance after cooler and large capacity cooling fan enable scroll air compressor produce optimized air without any additional after cooler installation.



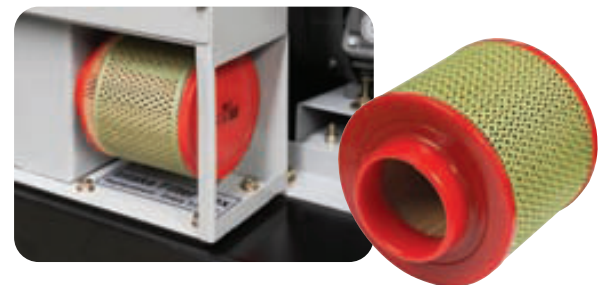
## Energy-Saving

- Energy saving through the sequential control: the in rush or starting current affecting the current peak loading is designed to be minimal by applying the sequencing process of starting up the series of air compressors.
- Energy saving based on the pyramid control process: Coaire scroll compressor products consist of a series of compressors, which offer flexibility to various conditions required by independent or unmanned automatic operations. The control process proves to be the most effective energy saving device by utilizing the amount of air being consumed to minimize the power consumption.



## High Reliability

- The simple mechanism of the Scroll Air End provides the industrial durability by the small number of components being used.
- The specially treated coating after the high-precision fabrication offers desirable weather resistance and durability in extreme conditions.
- The heavy-duty Sirocco fan to cool the Scroll Airend and the 2-way cooling method of the after cooler offers stable operation at the ambient temperature of 122°F.
- The suction filter unit offers 99.9% of dust elimination and provides a clean, compressed air supply.
- The controllers are CE-approved and passed EMI and EMC testing requirements.
- The use of a rotary (time-shifting) control process is used to offer sequential operation as programmed for the operation time to balance the average usage hours and to maximize the overhaul cycles.





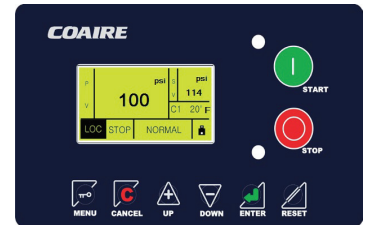
## User Friendly

➤ The controller suitable for the capacity is selected to enable Tandem, time-shifting and emergency jump operations and to provide language support including English, Korean, Spanish and Chinese interfaces.

### ➤ Use of proven and reliable components

#### ● Features (Apply to CSOF-S3-10)

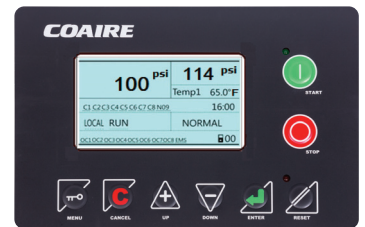
- ▶ Compact design to offer ultimate convenience.
- ▶ Timer function programmable to carry out various operations. (Automatic pause delay, manual pause delay, operation delay, load delay)
- ▶ The alarm and shutdown functions are designed to provide stable operation (Detection sensors for pressure, upper or lower limit of temperature).
- ▶ The built-in hour meter provides added convenience. (Operation hour, maintenance cycle check, elapsed time after the latest service).
- ▶ The resident self-diagnostic functions are designed to protect your valuable tools and machines (to detect the on or off status of pressure and temperature sensors).
- ▶ Multi-language interface (Korean, Chinese, Spanish and English) is a built-in function for international use.



### ➤ Intelligent Micom Controller

#### ● Features (Apply to CSOF-S15-40)

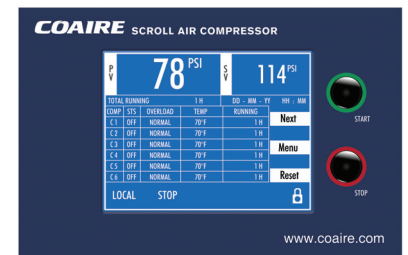
- ▶ 5" large sized LCD panel
- ▶ The key pad is designed in consideration for the operator movements.
- ▶ Multi-language interface (Korean, Chinese, Spanish and English) is a built-in function for international use.
- ▶ The Pull-down Menu makes the operation or handling easier.
- ▶ The operation history saved up to 160 items is a safeguard for stable operation.



### ➤ Wide selection of models and options to meet a wide range of customer demands

#### ● Features (Apply to CSOF-S50)

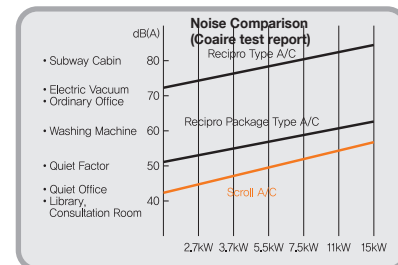
- ▶ 6" large sized touch Screen
- ▶ Large touch-screen LCD display makes visual monitoring and handling easier. The large selection of input and output terminals allows the operation up to 60HP.
- ▶ The Pull-down Menu makes the operation or handling easier.
- ▶ The reliable multi-phased control allows maximum energy-saving and efficiency.
- ▶ Multi-language interface (Korean, Chinese, Spanish and English) is a built-in function for international use.



Touch Screen Controller

## Ultra quiet operation (49dB )

- The scroll mechanism designed to minimize the torque fluctuations through the continuous cycle of air feed, compression and output, and the sound insulation treatment of the front cover are designed to keep the noise levels at a minimum.
- The balancing design of crank shaft and rotor scroll and the special sound insulating rubber that supports the Airend and Motor base feature complete vibration- and sound-preventing structure.



## Various Oil Free Scroll models to fit any application

### CSOF-S SERIES

#### ● CSOF-S3, S5 Models

Most economic and compact-sized oil free scroll air compressor

- Model: 3~5HP
  - 100% oil free, dust and oil vapor eliminated
  - Compact design for easy installation and space saving
  - Moving wheel installed for easy moving and installation (optional)
  - 4 way cover adopted for easy check and maintenance
- ※ Air receiver tank is not included



#### ● Tandem control interface with the array comprising two units of CSOF-S8 and CSOF-S10 compressors

- The combination of two compressors allows for a time-shifting operation suitable for the commissioned work environments to optimize the life span of the compressors.
- The automatic On/Off functions are in sync with the air output demands and allow 50% of energy saving.
- The operation temperature of +59°F (per the standard of CSOF-S10)



#### ● Array of multi-units of CSOF-S15, CSOF-S20, CSOF-S25, CSOF-S30, CSOF-S40 and CSOF-S50 compressors

- Multi-control system is adopted for the array of multiple operation ranging from 3 to 10 units as required by the output air demands to provide optimal operation efficiency.
- Rotary control and emergency jump operation (Bank-up function) is possible.
- The Pull-Down Menu makes the operation easier.
- Timer operation for daily or weekly basis is possible.
- The operation temperature of +59°F (per the standard of CSOF-S40)



## CSOF-D SERIES

### ● CSOF-D3, D5 Models

Dryer, Filter and Receiver tank all integrated into one compressor

- Model : 3-5HP
- All-in-one functions including cooling dryer provide instant operation without the need to install separate piping structure.
- Stainless tank is provided as a built-in standard.
- Dew point: 50°F
- Filtration: 5 Micron



## CSOF-M SERIES

### ● CSOF-M3, M5 Models

- Automatic ON/OFF through CSOF-M3-CSOF-M5 pressure sensors
- 100% oil-free condensed water drastically reduces the cost for water treatment.
- The stainless tank is provided as a built-in standard (10 gallon receiver).
- A Micom Controller is a built-in standard for all Coaire products.
- Service room temperature: ambient temperature of +77°F (per standard 5HP)
- The opening of covers from the four sides allows convenient service access for maintenance and inspection.



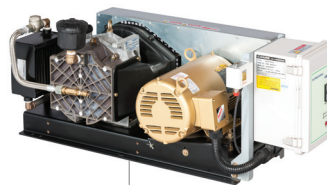
## CSOF BASE MOUNTED SERIES

### ● CSOF-BH, BV Models

- 3 & 5 HP available
- Aluminum compressor body
- Aluminum after cooler, will not rust
- Special, internal coating for excellent durability
- Integral fan for maximum cooling
- Continuous duty
- Very low noise
- Extremely low vibration
- Pivot type belt tensioner
- Vertical and horizontal configurations
- Extremely compact for OEM applications
- 10,000 hour bearing maintenance - 115 psi option (5,000 hour for 145 psi option)
- 10,000 hour tip seal - 115 psi option (5,000 hour for 145 psi option)
- Control Box (Optional)
- ISO Class O Air Quality



Vertical Mount



Control Box

Horizontal Mount

# Specifications

## CSOF-S Series

Model	Max. Working pressure		Capacity		Motor Power		Noise	Dimension (LxWxH)	Air Outlet	Weight
	kgf/cm <sup>2</sup> G	psig	LPM	CFM	kW	HP	dB(A)	inches	NPT	lbs
CSOF-S3PL	8.0	115	240	8.5	2.2	3	49	22x25x31	1/2	385
CSOF-S3PH	9.9	140	203	7.2						
CSOF-S5PL	8.0	115	400	14.1	3.7	5	50	22x25x31	1/2	407
CSOF-S5PH	9.9	140	340	12						
CSOF-S8PL	8.0	115	640	22.6	2.2x1	3x1	52	26x47x41	1	727
CSOF-S8PH	9.9	140	545	19.2	3.7x1	5x1				
CSOF-S10PL	8.0	115	800	28.2	3.7x2	5x2	53	26x47x41	1	750
CSOF-S10PH	9.9	140	680	24						
CSOF-S15PL	8.0	115	1200	42.3	3.7x3	5x3	56	30x51x50	1	1070
CSOF-S15PH	9.9	140	1020	36						
CSOF-S20PL	8.0	115	1600	56.4	3.7x4	5x4	58	30x51x64	1	1367
CSOF-S20PH	9.9	140	1360	48						
CSOF-S25PL	8.0	115	2000	70.5	3.7x5	5x5	59	30x51x81	1	1653
CSOF-S25PH	9.9	140	1700	60						
CSOF-S30PL	8.0	115	2400	84.6	3.7x6	5x6	62	63x51x50	1	2380
CSOF-S30PH	9.9	140	2140	72						
CSOF-S40PL	8.0	115	3200	112.8	3.7x8	5x8	63	63x51x64	1	2755
CSOF-S40PH	9.9	140	2720	96						
CSOF-S50PL	8.0	115	4000	141	3.7x10	5x10	65	63x51x81	1	3130
CSOF-S50PH	9.9	140	3400	120						

## Specifications

### CSOF-D Series

Model	Max. Working pressure		Capacity		Motor	Power	Noise	Dew Point	Tank Volume	Filtration	Dimension (LxWxH)	Air Outlet	Weight
	kgf/cm <sup>2</sup> G	psig	LPM	CFM									
CSOF-D3PL	8.0	115	240	8.5	2.2	3	49	50	10	5	28x30x59	1/2	462
CSOF-D3PH	9.9	140	205	7.2									
CSOF-D5PL	8.0	115	400	14.1	3.7	5	50	50	10	5	28x30x59	1/2	485
CSOF-D5PH	9.9	140	340	12									

### CSOF-M Series

Model	Max. Working pressure		Capacity		Motor	Power	Noise	Tank Volume	Dimension (LxWxH)	Air Outlet	Weight
	kgf/cm <sup>2</sup> G	psig	LPM	CFM							
CSOF-M3PL	8.0	115	240	8.5	2.2	3	49	10	28x30x59	1/2	451
CSOF-M3PH	9.9	140	205	7.2							
CSOF-M5PL	8.0	115	400	14.1	3.7	5	50	10	28x30x59	1/2	473
CSOF-M5PH	9.9	140	340	12							

### CSOF-BH/BV Series (Base Mounted Type)

Model	Max. Working pressure		Capacity		Motor	Power	Noise	Dimension (LxWxH)	Air Outlet	Weight
	kgf/cm <sup>2</sup> G	psig	LPM	CFM						
CSOF-BH3PL	8.0	115	240	8.5	2.2	3	49	38X28X28	1/2	200
CSOF-BH3PH	9.9	140	205	7.2						
CSOF-BH5PL	8.0	115	400	14.1	3.7	5	50	38X28X28	1/2	200
CSOF-BH5PH	9.9	140	340	12						
CSOF-BV3PL	8.0	115	240	8.5	2.2	3	49	26X26X33	1/2	180
CSOF-BV3PH	9.9	140	205	7.2						
CSOF-BV5PL	8.0	115	400	14.1	3.7	5	50	26X26X33	1/2	180
CSOF-BV5PH	9.9	140	340	12						



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