

OIL FREE ^{SCROLL} AIR COMPRESSOR

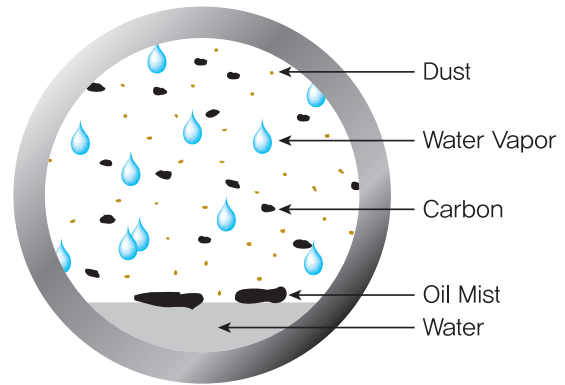


COAIRE
COMPRESSOR

Compressed air & Oilfree Scroll

» Compressed air of 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/m³ 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 Oilfree scroll air compressor

- ⦿ The oil-free scroll compressor products of Kyungwon 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 Class	Dirt		Water	Oil
	Particle Size (in μm)	Max. Concentration (mg/m ³)	Max. Press Dew Point (°C)	Max. Concentration (mg/m ³)
1	0.1	0.1	-70	0.01
2	1	1	-40	0.1
3	5	5	-20	1
4	15	8	3	5
5	40	10	7	25
6	-	-	10	-

- ※ 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, Kyungwon has been able to develop and manufacture the first oil-less 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 Kyungwon 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. Kyungwon manufactures 100% oil-less clean compressed air, which meets requirements of the most demanding customers.

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



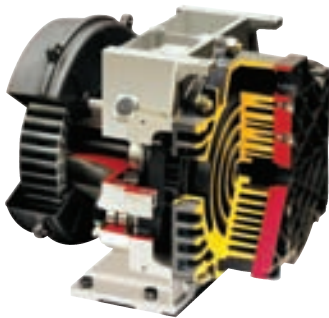
Acquired NEP award in 200



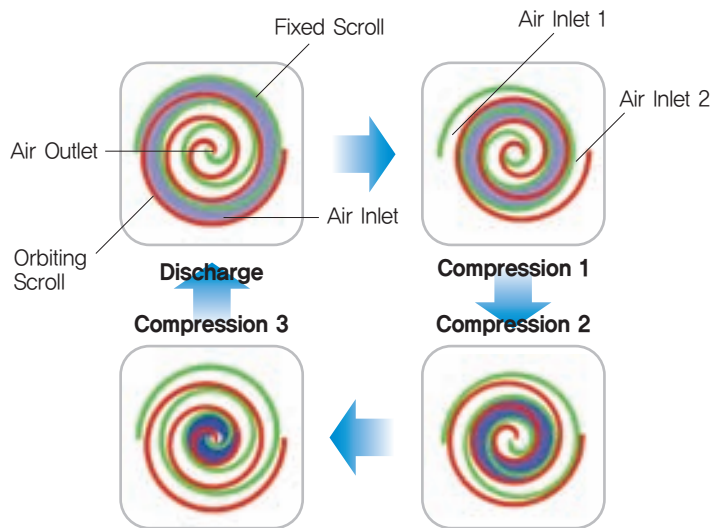
Compliance with ISO 8573-1 Class 0 Standard by TUV Germany

PRINCIPLE OF SCROLL AIR COMPRESSOR

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.



OILFREE SCROLL AIREND



Application of Oilfree Scroll Compressor



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



Golf range
Clothes and shoe cleaning, Practice range 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

Kyungwon Oilfree Scroll Technology

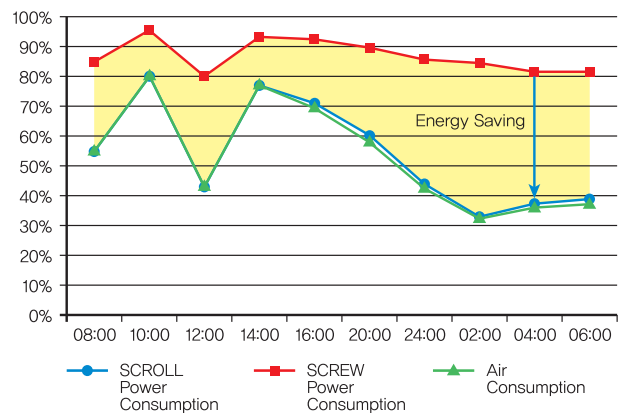
» Best Performance

- ⌚ 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.



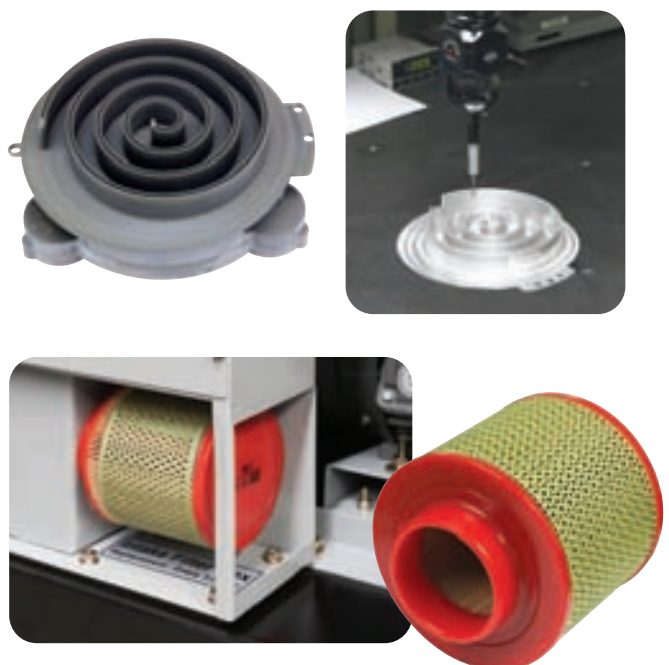
» Energy Saving

- ⌚ **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:** Kyungwon 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 50°C.
- ⌚ 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 supports including English and Chinese interfaces.

☞ Use of proven and reliable components

● Feature (Apply to AL3~AL10)

- ▶ 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.)

☞ Intelligent Micom Controller

● Feature (Apply to AL15 ~ AL40)

- ▶ 5" large sized LCD panel
- ▶ The key pad is designed in consideration for the operator movements.
- ▶ Multi-language interface (Korean, Chinese 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 all customer demands

● Feature(Apply to AL50)

- ▶ 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.



Tandem Controller



Standard Controller

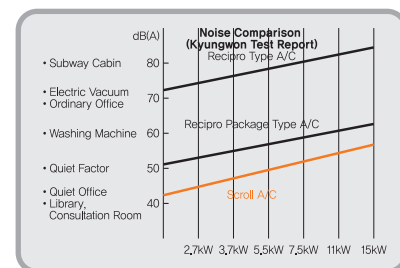


Touch Screen Controller

» The most minimal noise level of 49dB among the competitors

☞ 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.



» Large selection of models and numerous customer centers

☞ The total air solution producer manufactures a large selection of models ranging from AL series of 3~50 HP, to AL T series (Tank Mount), AL D series (Dental), and AL A series (all in one) to best meet all customer demands.

☞ Kyungwon has about 35 distributors in Korea, 20 more distributors all over the world, to provide its customers with the best service.



Various Model

» AL Series



● Automatic ON/OFF through AL3, AL5 pressure sensors

- 100% oil-free condensed water drastically reduces the cost for water treatment.
- The stainless tank is provided as a built-in standard.
- A Micom Controller is a built-in standard for all Kyungwon products.
- Service room temperature: ambient temperature of +25°C (per standard 5HP)
- The opening of covers from the four sides allows convenient service access for maintenance and inspection.
- 3 ~ 5HP products comes in the 'without Tank Type.' (AL3N ~ AL5N)

● Tandem control interface with the array comprising two units of AL7 and AL10 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 +15°C (per the standard of AL10)



● Array of multi-units of AL15, AL20, AL25, AL30, AL40, and AL50 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 +15°C (per the standard of AL40)

Various models of Kyungwon products will satisfy all your requirements.

» AL A/J Series

Dryer, Filter and Receiver tank all integrated in one compressor!

●AL A Series Feature

- ▶ Model : 3~10HP (AL3A~AL10A)
- ▶ 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.
- ▶ DDew point: 10 ℃
- ▶ Filtration: 5 Micron

●AL J Series Feature

- ▶ Model : 7.5~10HP (AL7J, AL10J)
- ▶ Dryer and filter are built in (no receiver tank)



» AL D Series



Dental Oil-free Scroll Compressor – Solution for problems such as “oil, noise, and stench”

●AL D Series Feature

- ▶ 100% Oil-free provides highest quality of compressed air.
- ▶ The stainless tank is provided as a built-in standard.
- ▶ Filter is provided as a built-in standard. (1 Micron)
- ▶ One unit set is capable of operation for up to 6 chair units.
- ▶ Reliable sound insulation and the vibration-preventing structure enable a pleasant dental operation.

» AL P Series

Most economic and compact-sized oil free scroll air compressor

●AL P Series Feature

- ▶ Model: 3~5HP (AL3P, AL5P)
- ▶ 100% oil free, dust and oil vapor eliminated
- ▶ Compact design for easy installation and space saving
- ▶ Moving wheel installed for easy moving and installation(option)
- ▶ 4 way cover adopted for easy check and maintenance

※ Air receiver tank is not included



▶ Option



Specification



AL Series

Model	Max. Working pressure		Capacity		Motor Power		Noise	Tank Volume	Dimension (LxWxH)	Air Outlet	Weight
	kgf/cm ² G	psig	LPM	CFM	kW	HP	dB(A)	ℓ	mm	A(B)	kg
AL3	8.0	113.7	271	9.6	2.2	3	49	38	700x740x1070	15(1/2)	175
	9.9	140.8	219	7.7							
AL5	8.0	113.7	416	14.7	3.7	5	50	38	700x740x1070	15(1/2)	185
	9.9	140.8	352	12.4							
AL7	8.0	113.7	687	24.3	2.2x1	3x1	52	N/A	640x1150x1020	25(1)	330
	9.9	140.8	571	20.2	3.7x1	5x1					
AL10	8.0	113.7	832	29.4	3.7x2	5x2	53	N/A	640x1150x1020	25(1)	340
	9.9	140.8	704	24.9							
AL15	8.0	113.7	1248	44.1	3.7x3	5x3	56	N/A	750x1280x1260	25(1)	485
	9.9	140.8	1056	37.3							
AL20	8.0	113.7	1664	58.8	3.7x4	5x4	58	N/A	750x1280x1625	25(1)	620
	9.9	140.8	1408	49.7							
AL25	8.0	113.7	2080	73.5	3.7x5	5x5	59	N/A	750x1280x2040	25(1)	750
	9.9	140.8	1760	62.2							
AL30	8.0	113.7	2496	88.1	3.7x6	5x6	62	N/A	1600x1280x1260	25(1)	1080
	9.9	140.8	2112	74.6							
AL40	8.0	113.7	3328	117.5	3.7x8	5x8	63	N/A	1600x1280x1625	25(1)	1250
	9.9	140.8	2816	99.4							
AL50	8.0	113.7	4160	146.9	3.7x10	5x10	65	N/A	1600x1280x2040	25(1)	1420
	9.9	140.8	3520	124.3							

* If moving caster adopted, height increases 40mm



AL A/J Series

Model	Max. Working pressure		Capacity		Motor Power		Noise	Dew Point	Tank Volume	Filtration	Dimension (LxWxH)	Air Outlet	Weight
	kgf/cm ² G	psig	LPM	CFM	kW	HP							
AL3A	8.0	113.7	271	9.6	2.2	3	49	10	38	5	700x740x1450	15(1/2)	210
	9.9	140.8	219	7.7									
AL5A	8.0	113.7	416	14.7	3.7	5	50	10	38	5	700x740x1450	15(1/2)	220
	9.9	140.8	352	12.4									
AL7A	8.0	113.7	687	24.3	2.2x1	3x1	52	10	74	5	700x1530x1390	25(1)	435
	9.9	140.8	571	20.2	3.7x1	5x1							
AL10A	8.0	113.7	832	29.4	3.7x2	5x2	53	10	74	5	700x1530x1390	25(1)	445
	9.9	140.8	704	24.9									
AL7J	8.0	113.7	687	24.3	2.2x1	3x1	52	10	-	5	700x1230x1390	25(1)	380
	9.9	140.8	571	20.2	3.7x1	5x1							
AL10J	8.0	113.7	832	29.4	3.7x2	5x2	53	10	-	5	700x1230x1390	25(1)	390
	9.9	140.8	704	24.9									

* If moving caster adopted, height increases 40mm

* A Series : Dryer, Filter, Receiver tank built in (All in one)

* J Series : Dryer, Filter built in



AL D Series

Model	Max. Working pressure		Capacity		Motor Power		Tank Volume	Filtration	Dimension (LxWxH)	Air Outlet	Weight
	kgf/cm ² G	psig	LPM	CFM	kW	HP					
AL3D	8.0	113.7	271	9.6	2.2	3	38	5	645x670x960	15(1/2)	90
AL5D	8.0	113.7	416	14.7	3.7	5	38	5	645x670x960	15(1/2)	100

AL P Series



Model	Max. Working pressure		Capacity		Motor Power		Noise	Dimension (LxWxH)	Air Outlet	Weight
	kgf/cm ² G	psig	LPM	CFM	kW	HP				
AL3P	8.0	113.7	271	9.6	2.2	3	50	550x670x780	15(1/2)	130
	9.9	140.8	219	7.7						
AL5P	8.0	113.7	416	14.7	3.7	5	50	550x670x780	15(1/2)	140
	9.9	140.8	352	12.4						

* If moving caster adopted, height increases 40mm

* P Series : Receiver tank not included

Oilfree Reciprocating Air Compressor

The oil-free reciprocating type compressor is the masterpiece of Kyungwon's endeavor in the area of oil-less compressor industry.



Feature

The adoption of the new flapper valve improves the volumetric efficiency.

The durable Sandvic valve steel and the nickel-coated rust-proof valve spacer are Kyungwon's latest triumphs.

Adoption of a piston ring developed by Kyungwon to improve the sealing performance.

The Teflon ring that contains graphite to improve the resistance to heat and friction ensure the longer life span and the minimal leakage possibilities during the compression process.

An epoch-making heat cut piston pin featuring a high insulation was adopted.

We use a revolutionary "Heat Cut" piston pin that is designed to maximize the heat insulation between the piston and the connecting rod. Heat transfer is encapsulated within the piston pin thereby, extending the life of the bearings,



Clean Air

Low
Vibration

Energy
Saving

Simple
Design

Various
Model

Package Type P-U Combination

(Pressure Switch & Automatic Unloading)

- The operation can be switched by means of P-U switch. Users can select and use automatic unload operating mode or pressure-switching mode depending on their own choice of usage.
- Since sound adsorption and anti-vibration materials are installed inside the package, this system is suitable for places requiring less noise and vibration. (Less than 75dB(A))
- Since an extra auxiliary air tank is supplied users do not need a separate air vessel. (Except for 1~2HP)



Spec.	Model	AC-P1CA2	AC-P2CA2	AC-P3CA2	AC-P5CA2	AC-P7.5CA2
Motor	kW(HP)	0.75(1)	1.5(2)	2.2(3)	3.7(5)	5.5(7.5)
Bore x Stroke	mm	60x50	82x50		90x60	
No. of Cylinder	-	1		2		3
Piston Displacement	LPM	141	285	417	657	985
	CFM	4.98	10.1	14.7	23.2	34.8
Free Air Delivery	LPM	84	165	255	430	640
	CFM	3.0	5.8	9.0	15.1	22.6
Max. Working Pressure	kgf/cm ² (g)	7.0				
	psi(g)	99.6				
Air Receiver Tank Volume	Main(l)	25				
	Sub(l)	-				100
Air Outlet	A(B)	15A(1/2)				
Dimension(LxWxH)	mm	960x660x970			1200x710x1030	
Weight	kg	118	130	155	242	328

※The dimension and specifications may be subject to change without prior notice for improvement or other purpose.

Bare Type (pressure Switch System)

(Pressure Switch System)

- Users may choose between pressure switching mode and automatic unloading mode.
- The system of 10HP or higher is designed for use in tandem mode.



Spec.	Model	AC-B1PA1	AC-B2PA1	AC-B3PA1	AC-B5PA1	AC-B7.5PA1	AC-B10PA2	AC-B15PA2
Motor	kW(HP)	0.75(1)	1.5(2)	2.2(3)	3.7(5)	5.5(7.5)	7.5(10)	11(15)
Bore x Stroke	mm	60x50	82x50		90x60			
No. of Cylinder	-	1		2		3	2x2	3x2
Piston Displacement	LPM	141	285	417	657	985	1314	1970
	CFM	4.98	10.1	14.7	23.2	34.8	46.4	69.6
Free Air Delivery	LPM	84	165	255	430	640	860	1280
	CFM	3.0	5.8	9.0	15.1	22.6	30.2	45.2
Max. Working Pressure	kgf/cm ² (g)	7.0						
	psi(g)	99.6						
Air Receiver Tank Volume	l	75	75	135	155		260	280
Air Outlet	A(B)	15A(1/2)				25A(1)		
Dimension (LxWxH)	mm	1160x450x860	1160x450x900	1280x450x920	1460x530x990	1460x530x1090	1700x620x1100	1830x640x1220
Weight	kg	84	105	134	188	250	355	499

※The dimension and specifications may be subject to change without prior notice for improvement or other purpose.

Major Products

Oil Injection Air Compressor

- **Reciprocating Air Compressor**
Model: 5HP~20HP
- **Screw Air Compressor**
Model : Belt Type 7.5~20HP
Direct Type 30~500HP
All In One 7.5~15HP
Inverter 30~200HP

Oil Free Air Compressor

- **Reciprocating Air Compressor**
Model : Package 1~7.5HP
Bare Type 1~15HP
- **Scroll Air Compressor**
Model : Dental 2~5HP
All In One 3~20HP
Standard 3~50HP
- **Screw Air Compressor**
Model : 75~400HP

Air Compressor Accessories

- **Air Dryer**
Refrigerating/Desiccant
- **After Cooler**
- **Air Receiver Tank**
- **Filter**
- **Drain Trap**
- **Oil-Water Separator**



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