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Super Great Factory | Air Dryer, N₂ & Spare Parts



Factory : FUJIAN EPSEA INDUSTRIAL CO., LTD.
Marketing & RD Center : GUANGDONG EPSEA INDUSTRIAL CO., LTD.
2024.09 VERSION

GEN 6 SUPER COLD AIR DRYER

SUPER COLD | SUPER GOOD





COMPRESSED AIR SYSTEM EXPERT

EPSEA integrate manufacture, sales, R&D and service together, covering **air dryer, nitrogen and oxygen generator, pressure vessel, filter, separator** and so on, we are applicable to any industry that needs safe and reliable compressed air.

1,000⁺ m²

R&D Lab

80,000⁺ m²

Full-chain Specialized
Manufacture Center

500⁺

Worldwide Employees & Worldwide
Factory Warehouse & Service Center



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WHY DO WE NEED HIGH QUALITY COMPRESSED AIR

Compressed air is an important power source widely used in industrial fields, and is the second largest power source after electricity.

Compressed air comes from the atmosphere, which contains a lot of dust, water vapor, impurities and so on. Unpurified compressed air will seriously wear pneumatic equipment, and cause blockage and corrosion of valves, pipelines, etc. It causes damage to production equipment and scrap of products, affecting normal production. Therefore, it is necessary to purify the compressed air it is essential.

With many years of professional experience, Epsea not only focus on the research and development and equipment manufacturing in the field of compressed air purification, but also through our understanding and summary of the manufacturing industry, we can provide users in various industries with more economical and efficient comprehensive compressed air purification solutions.

HOW TO CHOOSE THE RIGHT COMPRESSED AIR PURIFICATION EQUIPMENT?

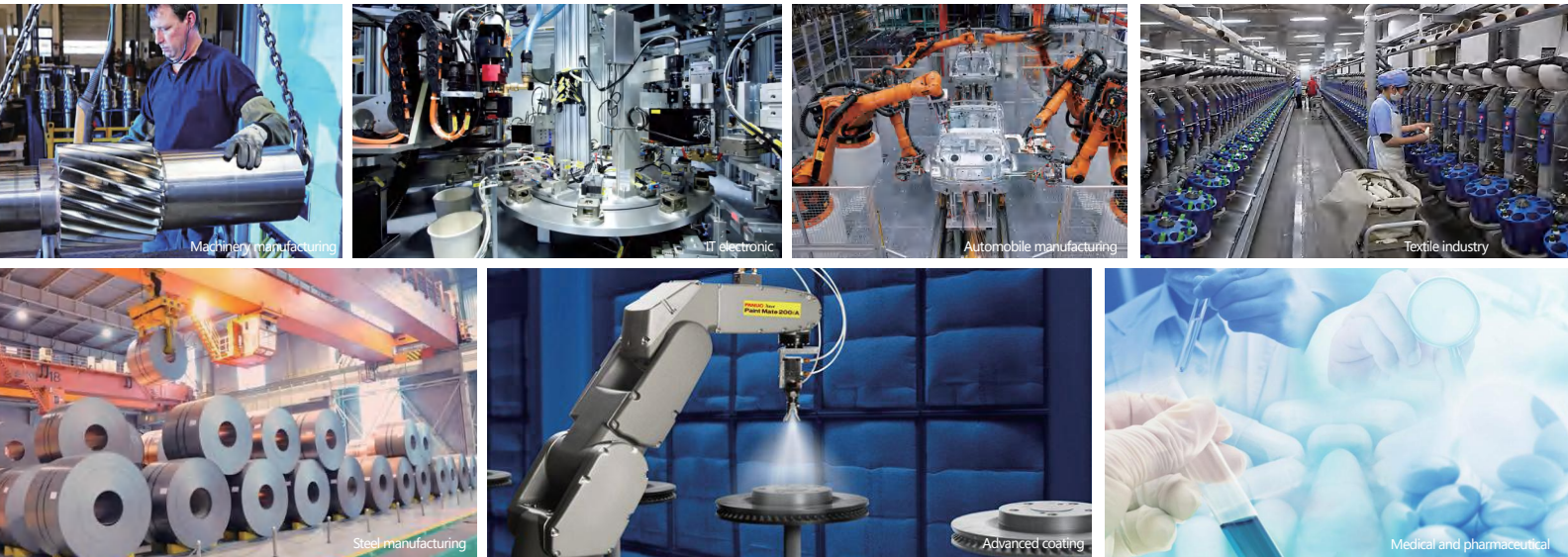
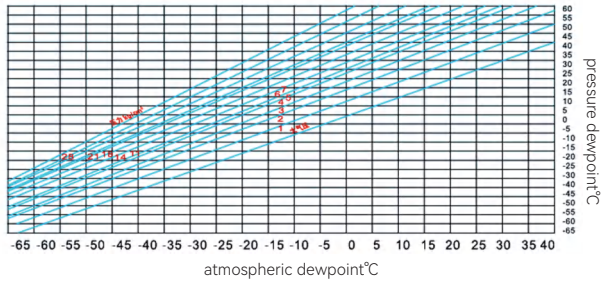
The requirements of modern industry for compressed air can be divided into the following aspects:

- 1) Pressure and flow requirements;
- 2) Requirements for dryness (i.e. water content or dew point temperature);
- 3) Cleanliness requirements (relatively complex, including: solids, oil mist, microorganisms, harmful gases, etc).

HOW CAN CLEANLINESS REQUIREMENTS BE ACHIEVED THROUGH FILTERS?

The filter plays a key role in the compressed air drying and purification system. The use of different filters can remove oil (including liquid, gas), solid impurities, microorganisms, harmful gases and other pollutants in the compressed air. In the compressed air drying and purification system, filters exist everywhere. In industrial production, the filter used by the compressed air system is often divided into several categories according to its use: oil removal filter, dust removal filter, sterilization filter and special filter.

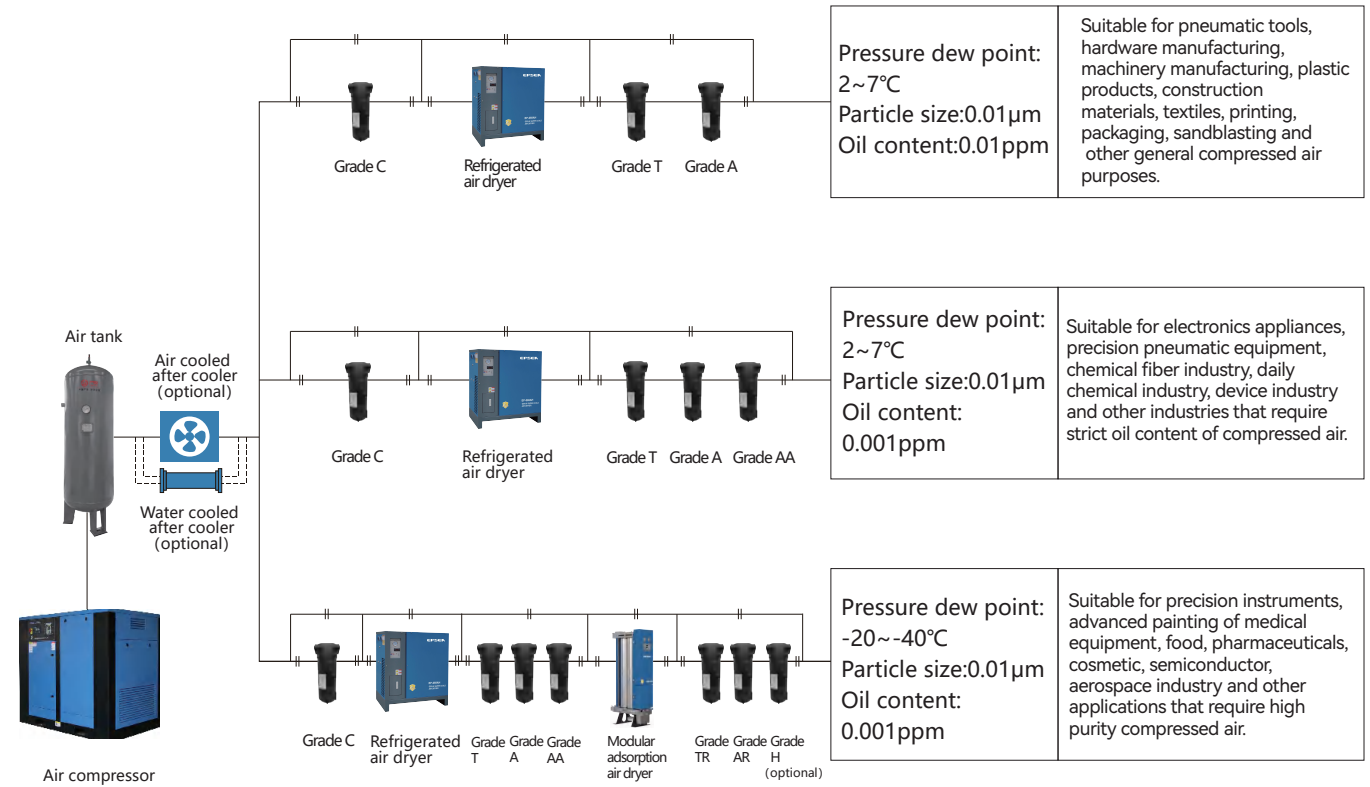
PRESSURE DEW POINT ATMOSPHERIC DEW POINT CONVERSION CHART



CONTAMINANTS AND PURITY CLASSES ACCORDING TO ISO 8573:1-2010

Level	Compressed air purity level of particles Maximum particle size per cubic meter as a function of particle size, db			Moisture content Pressure dew point	Total oil content Including oil vapor mg/m³
	0.1µm<d≤0.5µm	0.5µm<d≤1.0µm	1µm<d≤5.0µm		
0	In accordance with the requirements specified by the equipment user or supplier, the requirements are higher than the first				
1	≤20000	≤400	≤10	≤-70°C	≤0.01mg/m³
2	≤400000	≤6000	≤100	≤-40°C	≤0.1mg/m³
3	—	≤90000	≤1000	≤-20°C	≤1mg/m³
4	—	—	≤10000	≤+3°C	≤5mg/m³
5	—	—	≤100000	≤+7°C	—
6	—	—	—	≤+10°C	—

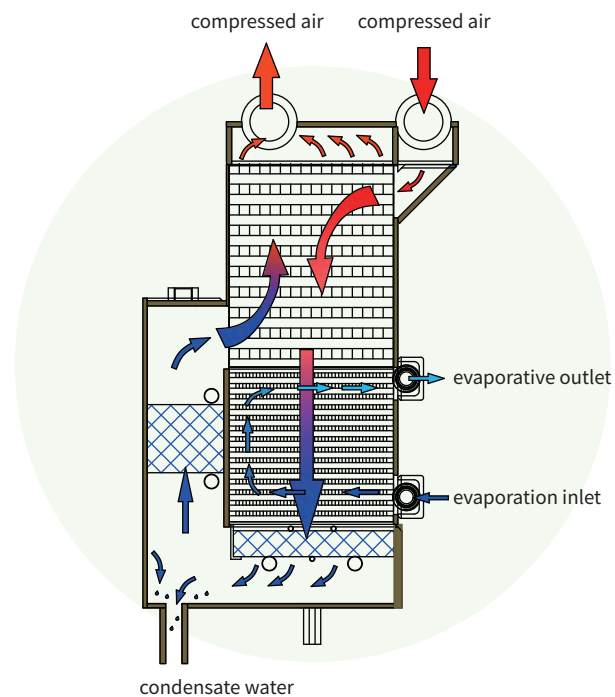
COMPRESSED AIR PURIFICATION SYSTEM FLOWCHART



R410a



Patent Technology 3 in 1 • Heat Exchanger System



Extreme Speed Pre-cooling System

The unique structural design of the precooling channel ensures that the compressed air at the entrance is fully and quickly cooled. Ultra-low pressure loss makes the refrigeration system cycle run more efficiently.

High-efficiency Evaporation System

The improved evaporation channel is developed so that the heat of the compressed air is fully absorbed by the liquid refrigerant. Absorbed, the refrigerant is completely "vaporized" back to the compressor suction port for the refrigeration system. In a cycle, the gaseous water in the compressed air is cooled and a large amount of liquid water is precipitated.

Dual Stage Water Separation System

Efficient gas-water separation contains crude. The two-channel structure is compressed into the water distributor. The air flow rate is reduced, the coarse water separation structure will completely separate a large number of liquid water, and the fine water separation. The structure will again separate some of the liquid water droplets carried by the airflow fluid drag force, ensuring that. Maximum separation efficiency, thus achieving a more stable dew point.

Technical Indicators

Intake Temperature	Cooling	Ambient Temp.	Pressure Dew Point	Working Pressure Range
10~60°C	Air Cooled	2~45°C	2~7°C	0.6~1.3MPa

Note: Other special standards can be customized; more details please contact us.

6 advantages and 6 guarantees

01 Eco-friendly refrigerant • Double efficiency

R410a refrigerant is used, which is more efficient than R22 and does not damage the ozone layer.

02 System optimization • Reject ice jams

The smart energy hot gas bypass control system can maximize the cooling capacity of the combination, and accurately control the excess cooling capacity at the same time, that is, to ensure the dew point and not to block the ice.

03 Larger channel • Lower pressure drop

The specially designed vertical reverse flow heat exchanger can effectively control the pressure drop, so that the pressure drop is less than 0.2Bar, which can save the power consumption of the system for the user's direct connection.

04 New material • Professional corrosion resistance

Aluminum alloy materials used in the heat exchange system have good corrosion resistance, and the surface volume of aluminum is easy to produce A layer of dense and solid Al_2O_3 protective film, which can be very good.

Protect the substrate from corrosion, effectively protect the compressed air into the heat exchange system will not produce secondary contamination.

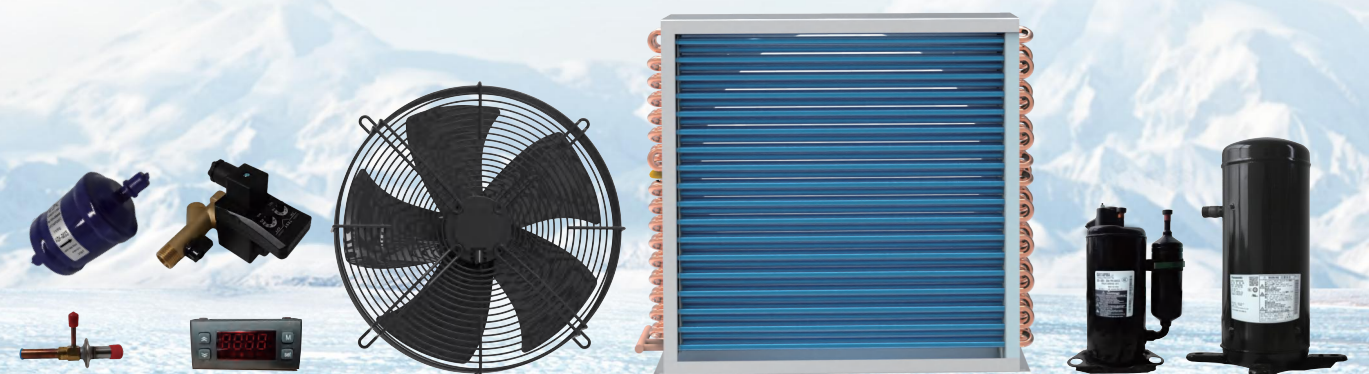
05 Upgrade configuration • More stable dew point

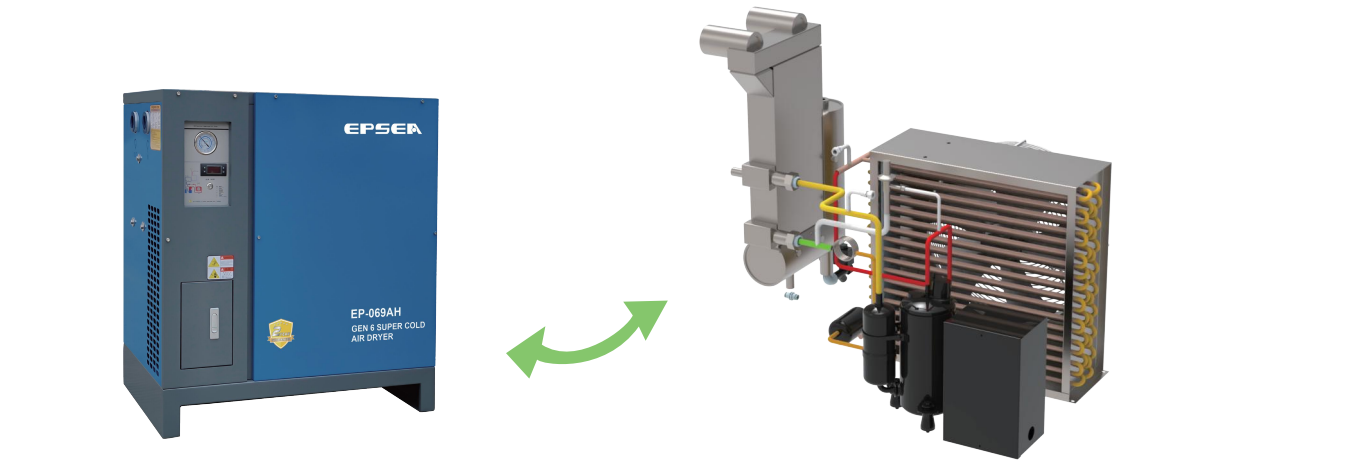
Three-in-one high efficiency heat exchange system is equipped with a reverse flow heat exchanger with larger surface volume, which should be relaxed for various high temperature working conditions and more stable dew point.

06 Selected parts • Quality worry free

- Self-developed refrigerated air dryer specially used micro-computer control device, which can control the start and stop of dryer and high temperature protection according to the change of system load;
- Self-designed cooling condenser, thickened copper tube and hydrophilic aluminum foil, combined with famous brand high air volume external rotary blower, better heat dissipation effect and more durable;
- The whole series adopts the joint venture brand refrigerant compressor, based on the various machine types, choose the most suitable high efficiency rotary or vortex compressor.

Core component





According to the general compressed air dryer selection guide, the design of the cold dryer is based on the following parameters, the working pressure of 7bar, the intake temperature of 45 ° C, and the ambient temperature of 38 ° C. For different working pressures and temperatures, the following correction factors should be considered.

Table 1: Compressed air inlet temperature correction factor (C₁)

Intake temperature (°C)	32	35	38	40	42	45	50	55	60
Correction factor	1.53	1.39	1.25	1.2	1.06	1.00	0.83	0.68	0.58

Table 2: Intake pressure correction factor (C₂)

Intake pressure MPa	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.3
Correction factor	0.76	0.86	0.93	1.00	1.04	1.07	1.12	1.15

Table 3: Pressure dew point correction factor (C₃)

Pressure dew point (°C)	3	7	10
Correction factor	0.81	1	1.17

Table 4: Ambient temperature correction coefficient (C₄)

Ambient temperature (°C)	25	30	35	38	40	45
Correction factor	1.10	1.06	1.03	1.00	0.96	0.71

The air flow under different working conditions can be obtained by multiplying the nominal flow in the specification parameter table with the correction coefficient, and the actual dryer capacity = nominal flow ×(coefficient C₁× coefficient C₂× coefficient C₃× coefficient C₄). When the actual correction factor is greater than 1, the intake flow selection shall prevail.

Gen 6 Super Cold Air Dryer Specifications Table

MODEL	AIR CAPACITY m³/min *	REFRIGERATION COMPRESSOR POWER(kW)	POWER SUPPLY (V/Hz)	INLET/OUTLET	DIM ENSIONS(mm)			MATCHED AIR COMPRESSOR POWER (kW)	WEIGHT(kg)
					LENGTH	WIDTH	HEIGHT		
EP-015AH	1.5	0.48	220	G1	650	420	780	7.5	52
EP-026AH	2.6	0.62	220	G1	680	450	850	15	60
EP-038AH	3.8	0.875	220	G1-1/2	760	500	890	22	76
EP-069AH	6.9	1.15	220	G1-1/2	870	560	970	37	96
EP-110AH	11	2.25	220	G2	1000	620	1035	55	140
EP-140AH	14	2.41	380	G2-1/2	1050	650	1090	75	155
EP-180AH	18	3.28	380	G2-1/2	1100	750	1160	90	180
EP-220AH	22	4.49	380	G3	1250	800	1240	110	216
EP-280AH	28	4.75	380	G3	1320	800	1250	150	275
EP-320AH	32	5.75	380	G3	1650	850	1300	160	353
EP-380AH	38	6.55	380	DN100	1700	950	1535	200	400
EP-460AH	46	8.6	380	DN100	1700	1100	1535	250	580
EP-550AH	55	9.9	380	DN125	1700	1200	1590	315	630
EP-670AH	67	10.9	380	DN125	2000	1200	1610	355	690
EP-750AH	75	12.1	380	DN125	2250	1300	2150	400	900
EP-900AH	90	13.8	380	DN150	2250	1400	2150	450	950
EP-1100AH	110	9.9*2	380	DN150	2300	1500	2240	630	1100

Use conditions of the gen 6 super cold air dryer: Power supply 220V~380V/50Hz The specific type of refrigerant is subject to the name plate of the machine, and the specific data is subject to the actual situation.

*Related to 1bar abs and 20°C according to ISO 7183

Compressed air line filter



MODEL	FLOW RATE m³/min *	INLET/OUTLET	Dimensions (mm)		FILTER ELEMENT		WEIGHT(kg)
			HEIGHT	WIDTH	TYPE	QTY	
EP-001G-III	1.5	Rc3/4	251	100	*-001-III	1	1.3
EP-002G-III	2	Rc3/4	301	100	*-002-III	1	2.5
EP-003G-III	3	Rc1	320	132	*-003-III	1	3.05
EP-004G-III	4	Rc1-1/2	320	132	*-004-III	1	2.85
EP-007G-III	7	Rc1-1/2	420	132	*-007-III	1	3.35
EP-010G-III	11	Rc2	536	165	*-010-III	1	6.5
EP-014G-III	14	Rc2-1/2	536	165	*-014-III	1	6.2
EP-018G-III	18	Rc2-1/2	531	215	*-018-III	1	8.15
EP-022G-III	22	Rc3	531	215	*-022-III	1	7.95
EP-028G-III	28	Rc3	696	215	*-028-III	1	8.8
EP-033G-III	33	Rc3	696	215	*-033-III	1	8.85
EP-033F	33	DN80	1055	513	EP18+EP14	1+1	75
EP-038F	38	DN100	1120	513	EP18	2	75.5
EP-046F	46	DN100	1270	513	EP22	2	81.5
EP-055F	55	DN125	1100	565	EP18+EP14	2+1	105
EP-067F	67	DN125	1225	565	EP22+EP18	2+1	110
EP-075F	75	DN125	1263	657	EP22+EP18	1+3	136
EP-085F	85	DN150	1412	657	EP22	4	150
EP-095F	95	DN150	1288	706	EP22+EP18	2+3	165
EP-110F	110	DN150	1459	706	EP22	5	190
EP-130F	130	DN200	1355	780	EP22+EP18	3+4	220
EP-160F	160	DN200	1535	780	EP22	7	240
EP-180F	180	DN200	1438	830	EP22+EP18	6+3	360
EP-200F	200	DN200	1600	830	EP22	9	375
EP-250F	250	DN250	1580	930	EP22+EP18	8+4	400

Note: For more filter information, please contact us. The above technical parameters and specifications are subject to change without prior notice, please subject to the actual product.

*Related to 1bar abs and 20°C according to ISO 7183

Line filter elements

EFFECT

The filter element is an important part of the precision line filter, which can filter the liquid, oil mist, solid particles, oil vapor, hydrocarbons in the gas.

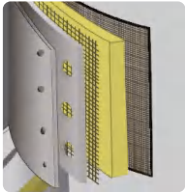
PRODUCT CHARACTERISTICS

- Multi-stage multi-stage filtration, high filtration accuracy, to achieve the best cost performance.
- Excellent structural performance, small size, corrosion resistance, long service life.
- Large dust capacity, small pressure loss, can effectively reduce the cost of compressed air.
- Complete range of products to meet different needs.



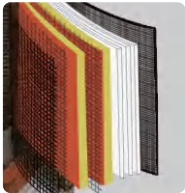
FILTRATION GRADE	NAME	FILTER TYPE	SOLID REMOVAL (INCLUDING WATER AND OIL MIST)	MAXIMUM OIL CONTENT (21°C)	FILTRATION EFFICIENCY	INITIAL DRY PRESSURE DROP	PREGRADE
C	prefilter	Coalescing	3um	5mg/m³ 5ppm	99%	≤0.007MPa	/
T	Universal oil removal filter	Coalescing	1um	0.5mg/m³ 0.5ppm	99.9%	≤0.007MPa	C
A	High efficiency oil removal filter	Coalescing	0.01um	0.01mg/m³ 0.01ppm	99.99%	≤0.01MPa	T
AA	Super efficient oil removal filter	Coalescing	0.01um	0.001mg/m³ 0.001ppm	99.999%	≤0.01MPa	A
H	Activated carbon filter	Oil vapor removal	N/A	0.003mg/m³ 0.003ppm	N/A	≤0.01MPa	A
TR	Universal dust filter	Solid dry particle	1um	N/A	99.9%	≤0.007MPa	/
AR	High efficiency dust filter	Solid dry particle	0.01um	N/A	99.99%	≤0.01MPa	TR

The precision filter element is made by winding type and folding type according to different needs. The winding filter element is made by borosilicate glass fiber through automatic winding process. The folding filter element uses boron.Sili-cate glass fiber is made by deep folding process, which reduces the speed of compressed air in the filter medium, improves the filtration performance of the filter element, and effectively increases the filtration area.Reduced pressure loss.



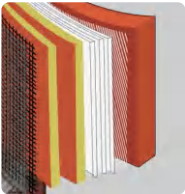
GRADE C FILTER ELEMENT

The first stage two stainless steel perforated tubes are mechanically separated by 10µm
The second stage deep fiber medium filters out 3um of solid and liquid particles



GRADE T FILTER ELEMENT

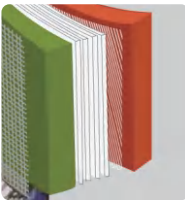
The first stage fiber medium and media filter take over the lamination to filter out larger particles
A second layer of epoxy resin binds the mixed fiber medium to gather oil mist and filter solid particles



GRADE A FILTER ELEMENT

The first stage multi-layer fiber media and media filter filter, filter the larger particles, before the air enters the second stage filtration for pre-filtration
The second stage multi-layer bonding mixed fiber medium filters out fine agglomerates

- ◆ Coated closed foam sleeve



GRADE AA FILTER ELEMENT

The first stage is coated with a closed foam sleeve for pre-filtration and air dispersion
The second stage multilayer matrix is mixed with fiber media to filter out fine condensates

- ◆ Coated closed sleeve



GRADE H FILTER ELEMENT

The first stage is an extremely fine activated carbon stabilization layer, which can filter out most of the oil vapor
The second level multi-layer fiber medium, bonding micro-fine activated carbon powder, can filter the residual oil vapor a multi-layer fine medium, prevent Pollutant transport

- ◆ The coated closed foam sleeve prevents the fiber from wandering – a design life of up to 1000 hours under rated conditions