



## Downstream Equipment



Intelligent Air Technology



## The Clean Air Solution

The advanced range of CompAir inline equipment has been specially developed to meet the needs of modern manufacturing and processing industries ensuring that the air delivered is of the highest quality.

CompAir is committed to providing the very best products throughout the compressed air systems from compressor to final air delivery.

CompAir's experience in the design and manufacture of high quality compressed air systems spans almost 200 years. Today, through a continuous programme of research and development, CompAir delivers the high performance and quality standards that industry demands.

### Clean and dry compressed air

Air leaving any conventional air compressor is saturated with water vapour and may also contain small quantities of oil and atmospheric dirt particles. If allowed to remain in the system this corrosive mixture has a detrimental effect on pneumatic equipment.

CompAir filters remove the oil and dirt from compressed air whilst CompAir water separators remove 99% of bulk water, leaving CompAir dryers to remove water vapour before it reaches the point of use. The clean, dry air provided by CompAir air treatment products extends equipment life, reduces maintenance costs and improves efficiency and reliability.

CompAir filters and dryers are sized to match the requirements of modern air compressors covering outputs from 0.08m<sup>3</sup>/min to 110m<sup>3</sup>/min with dryers providing dew points as low as -70°C.

Ongoing investment in the latest design and manufacturing tools and rigorous implementation of ISO 9001 approved quality systems ensure you take delivery of a reliable, high quality product.



# Compressed Air Filters

CompAir compressed air filters are designed to provide the most energy efficient filtration solutions available. Low operating pressure drops mean that your compressor can operate at a lower working pressure than would be required with other filters. Lower working pressures result in reduced energy consumption. For example, a 2% reduction in working pressure results in a 1% saving in compressor energy costs.

To meet varying requirements, CompAir filters are available in five filtration grades:

## Grade A - Pre-Filtration

Particle removal down to 25 microns.

## Grade B - High Efficiency General Purpose Protection

For the removal of particles down to 1 micron including coalesced liquid water and oil, providing a maximum remaining oil aerosol content of 0.5mg/m<sup>3</sup> (0.5ppm) @ 21°C.

## Grade C - High Efficiency Oil Free Protection

For the removal of particles down to 0.01 micron including water and oil aerosols, providing a maximum remaining oil aerosol content of 0.01mg/m<sup>3</sup> (0.01ppm) @ 21°C. (Precede with Grade B filter).

## Grade D - Activated Carbon Filtration

For the removal of oil vapour and hydrocarbon odours giving a maximum remaining oil content of <0.003mg/m<sup>3</sup> (<0.003ppm) (excluding methane) @ 21°C.

(Precede Grade D with Grade C filter). (CD double stage filters combine C and D Grades).

## Grade E General Purpose Dust Filtration

For the removal of dust particles down to 1 micron.

ISO 8573.1 Air Quality Classes			
QUALITY CLASS	DIRT Particle size in Micron	WATER Pressure Dewpoint °C (ppm. vol.) at 7 bar g	OIL (including vapour) mg/m <sup>3</sup>
1	0.1	-70 (0.3)	0.01
2	1	-40 (16)	0.1
3	5	-20 (128)	1.0
4	15	+3 (940)	5
5	40	+7 (1240)	25
6	-	+10 (1500)	-

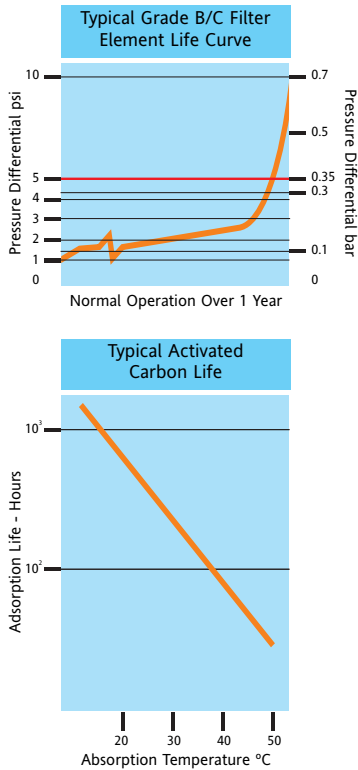


A comprehensive range of air filters and elements, all designed to get the best from your compressed air system and related production processes.





# Reduce Your Compressor Energy Costs



## A, B and C Grade filters are coalescing types

Air flow is from the inside of the filter element to the outside (1) passing through stainless steel support screens (2). The air passes through pre-filter material (3) where larger particles are removed. The remaining contaminants are then progressively filtered by a micro fibre medium (4). Solid particles are permanently trapped while liquids (including aerosols) coalesce into larger droplets which pass to an acid resistant anti-re-entrainment barrier (5). The larger droplets form a “wet band” (6) at the base of the element and are discharged (7) from the filter via an automatic drain. Clean filtered air passes through the “safe” area above the wet band where the resistance to flow is minimal. A captive O-ring seal (8) provides easy to fit positive sealing.

## General Purpose Dust Filtration

Grade E dust filters are designed to remove solid particulate and operate in a dry condition.

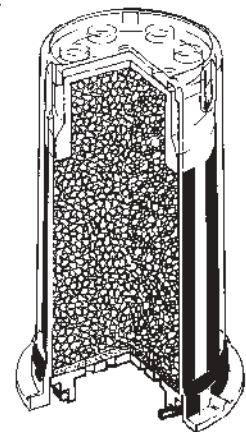
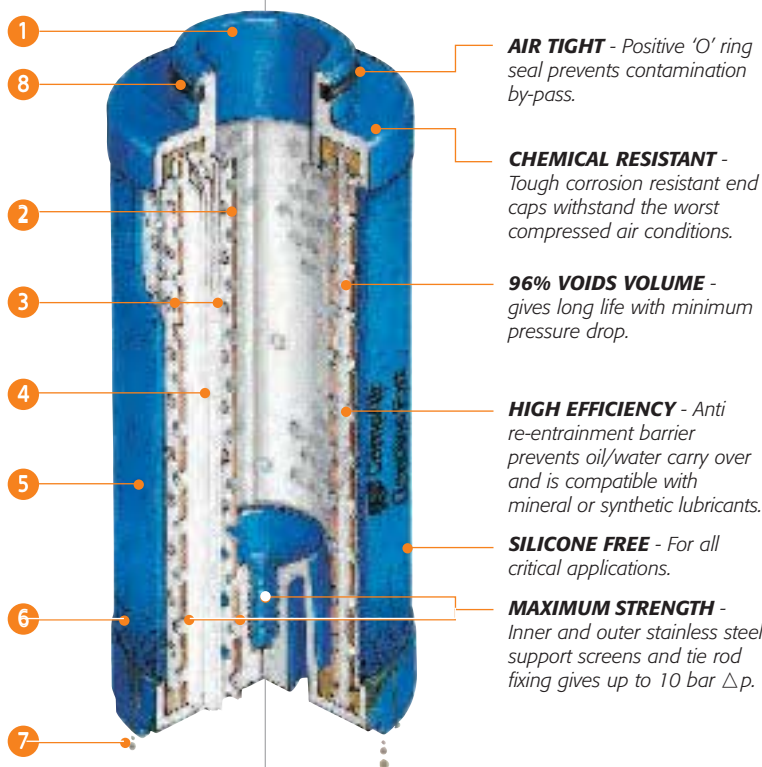
## Oil Vapour Removal

Grade D activated carbon filters operate on the adsorption principle:-

Air flow is from the inside of the filter element to the outside through a deep bed of activated carbon. The carbon is in fine granular form to offer the maximum surface area. A layer of high efficiency filter material then traps any carbon dust which may have been released. Air passing out of a Grade D filter can be 1 million times cleaner than the air we normally breathe\*. Grade CD filter types from 0004 to 0051 are two stage combination units incorporating both Grade C and D filter elements.

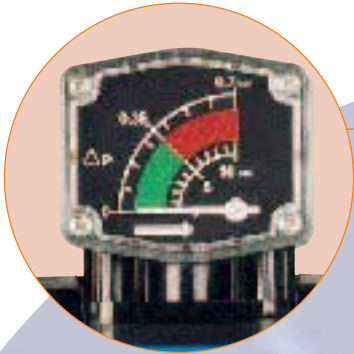
NOTE: It is essential that Grade D filter models are protected upstream by Grade B and C filters.

\*Grade D filters are not designed to remove carbon monoxide, carbon dioxide or other toxic gases or fumes.



High activated carbon content for long service life. Oil soluble dye will indicate red if bulk oil is present.

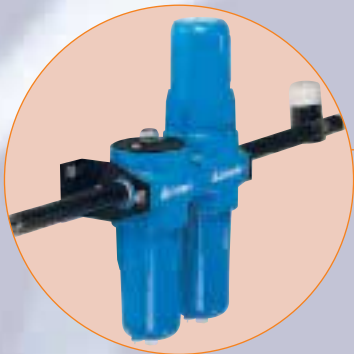
# The Complete Solution



The direct mounting differential pressure gauge is calibrated for accurate running cost measurement and has a remote sensing option. Fitted as standard on filters 3/4" and larger (except Grade D & CD filters).



Differential pressure indicator is fitted as standard on filters up to 1/2" connection size. (Except Grade D & CD filters).



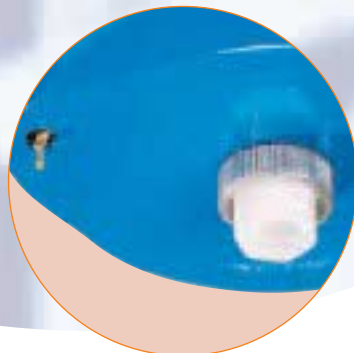
A patented fixing kit (CFA 10 - 13) connects two filters in series and convenient mounting brackets (CFA 5 - 9) are also an option.



Rapid maintenance.



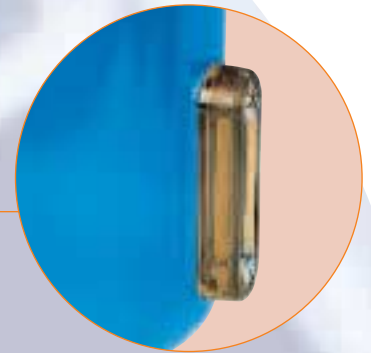
Automatic drain valve is standard so coalesced condensate is always removed (manual drain valve on Grade D and E only).



Bleed valve for rapid depressurisation and automatic drain function check.



Pressure relief hole gives an audible warning if any attempt is made to remove the filter bowl whilst under pressure.



Sight glass gives a visual check of condensate collection and drain function.



CompAir replacement filter elements ensure performance and long life.



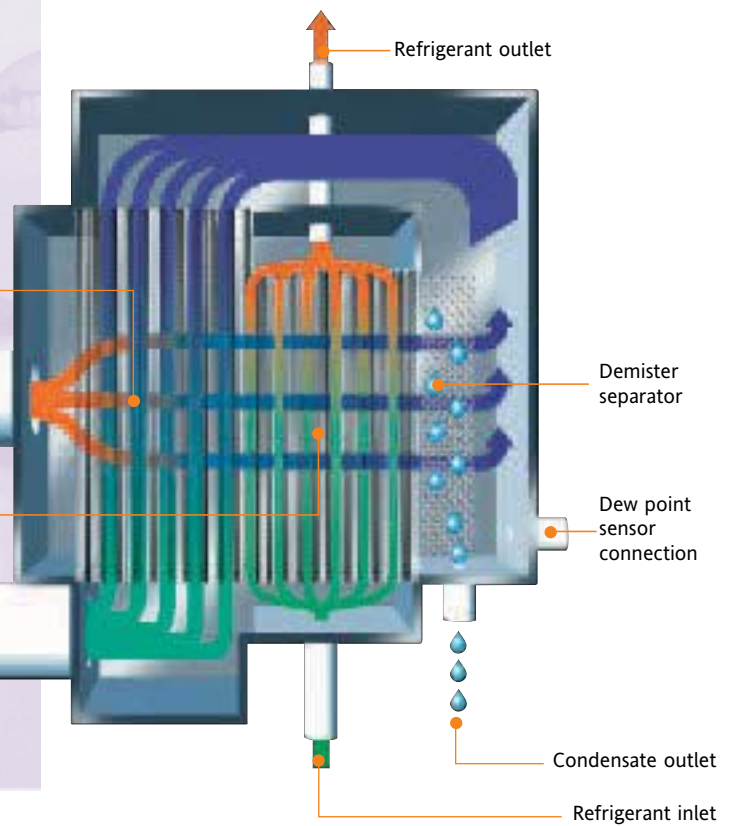
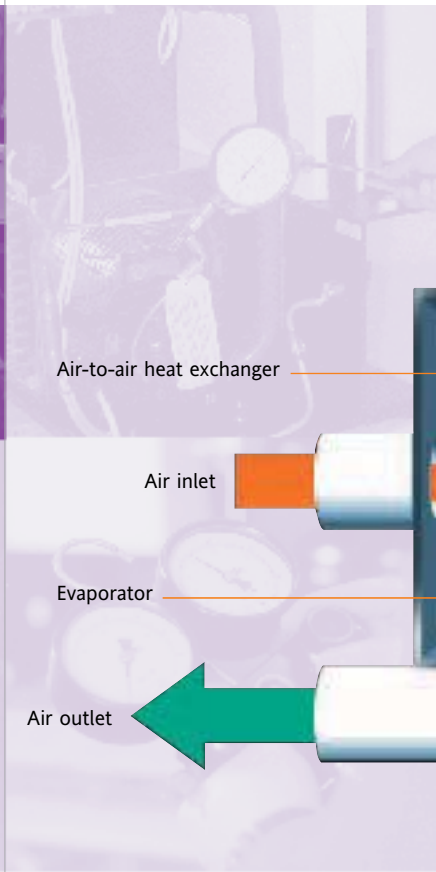
CompAir die-cast aluminium filter housings are corrosion protected by an Alocrom treatment and finished in hard wearing epoxy paint. Fabricated housings are internally and externally epoxy paint finished.



# Refrigeration Dryers

F Series refrigeration dryers are the final result of an intensive research and development programme.

The result is the new benchmark in Refrigeration Dryers, ensuring optimum performance, and guaranteed dew points. Environmentally friendly refrigerants and insulation are standard across the range and all the dryers materials have been carefully selected for their recyclability.



## The heart of the dryer

The heart of the dryer is the ultra-compact module that includes an air-to-air heat exchanger, evaporator and service-free demister separator. The dryer is excluded from pressure vessel approvals, ensuring trouble-free installation worldwide. Furthermore, refrigerant charges have been reduced by 20%, benefiting the environment.

Larger models feature up to 6 exchanger modules. This unique feature improves delivery times and allows drastic reductions in maintenance costs as only a single module needs to be substituted in the unlikely event of a fault.

## Top performance and peace of mind

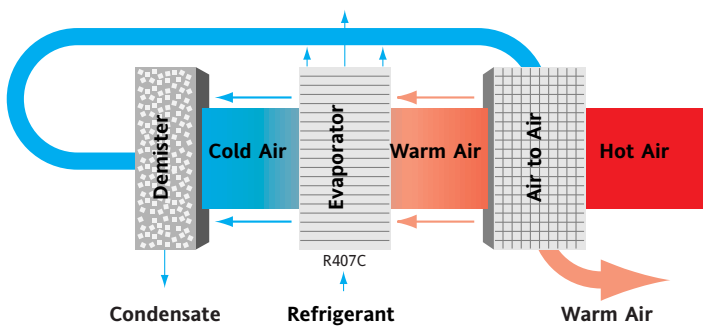
A modulating hot-gas by-pass valve ensures optimum dew point control under all operating conditions.

The pressure actuated control immediately reacts to variations in airflow guarantee the dew point. All models are available up to 12 bar g (16 bar g standard up to 3m<sup>3</sup>/min; up to 50°C ambient and 60°C compressed air temperatures, ensuring optimum performance whatever the application.

## Easy to install and operate

With frontal access to all major components, positioning the dryers is simple. All models are fitted with an effective condensate drain (electronic drain on request), positioned in a protected niche.

The air connections perfectly match CompAir's Filters and the optional air by-pass with integrated pre-filter allows for quick installation.



## Advanced yet simple design

Scroll compressors (from 11m<sup>3</sup>/min) significantly reduce power consumption, avoid pulsations, and reduce noise levels. The design allows for the elimination of the crankcase heater, ensuring fail-safe start-up and operation.

The field-tested electronic control (from 11m<sup>3</sup>/min) features alarms with fault history, remote control, hour counter and alarm/warning contacts.

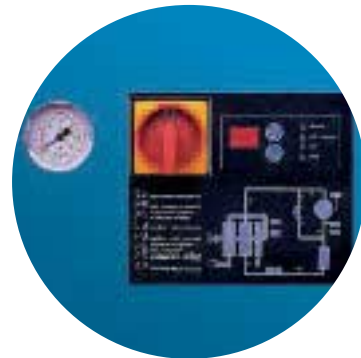
## Protects your investment

All models are protected from overheating or excess current within the compressor. Further protection is offered by a fan pressure switch, high pressure switch on models from 1.73m<sup>3</sup>/m and a high pressure thermostat for models 11m<sup>3</sup>/min and above. In addition a low pressure gauge (from 11m<sup>3</sup>/min) monitors the refrigerant pressure, a key indicator to the dryer's health.



### **Innovative**

Scroll compressors considerably reduce the absorbed power and noise level, without compromising performance.



### **Precise**

The control panel is positioned on the front for simple use and also for a visual guarantee of a constant pressure dew point.



### **Efficient**

The timed electrical condensate drain is positioned in a protected niche.



### **Under Control**

A by-pass regulator controls the cooling capacity, precisely controlling the refrigeration circuit containing CFC-free and ozone-friendly gas.



# Modular Desiccant Air Dryers

The modular design gives total installation flexibility to match specific customer requirements.

## Benefits

- Highest quality, clean, oil-free and dry compressed air always.
- Totally stops corrosion preventing product spoilage and damage.
- Compact and lightweight advanced modular construction is less than half the size of conventional dryers.
- Energy efficient giving maximum savings.
- Easy and flexible installation minimal space required.
- Simple maintenance giving reduced downtime.
- Reduced noise pollution super quiet operation.



## Range Features

- High tensile aluminium construction alocromed to prevent corrosion.
- Pressure gauges indicate performance continuously.
- Constant pressure dewpoint.
- Hydraulically tested to 75 bar g (1100 psi g).
- Moisture indicator monitors condition of desiccant material.
- Anti-corrosive and abrasion resistant epoxy paint finish.
- Extended desiccant life.
- Simple bolt on pre- and after compressed air filters are mounted directly to dryer.
- Supplied complete with Grade C oil free protection pre-filter and a Grade E dust filtration after-filter.
- For heavily contaminated compressed air systems a Grade B general purpose protection filter should be installed before the Grade C filter.



## Additional Features

### Heatless Dryers - (S)

- Control system fully protected.
- May be wall or floor mounted.
- Column outlet pressure gauges (A7S to A50S models only).

### Heatless - (X) and Heat Regenerative Dryers - (R)

- Hinged control enclosure for easy maintenance.
- Supplied complete with outlet flexible connection.
- Supplied complete with miniature circuit breaker (MCB)/isolator, (heat regenerative (R) models only).
- Electrical enclosure on the heat regenerative (R) models complies with IP65.
- Solid state timer option with memory retention allowing dryer to restart from point of interruption.

## Electronic control system

A Microprocessor based electronic control system is now available for the X and R model desiccant air dryer range.

An integral part of this optional feature is a complete energy management system utilising the well proven and tested Dewpoint Dependent Switching System used in hundreds of dryers worldwide.

The electronic control system will provide a significant reduction in operating costs whilst providing a full monitoring capability, which will enable quantified energy savings to be obtained.



The system will provide at a glance detailed information about the operating status and performance of the dryers and is ideally suited for retrofitting to existing cam timer operated X and R model dryers.

## Options

- -70°C pressure dewpoint available on all models.
- Fully pneumatic versions (S & X models) available for hazardous area installations.
- Energy saving Dewpoint Dependent Switching System can be fitted to \*X & R models. Compressed air systems rarely operate at full capacity, therefore, by extending the drying period beyond the standard fixed cycle time according to outlet dewpoint, considerable savings can be made.

\*Standard and solid state timer.





# Twin Tower Desiccant Air Dryers

## Features

- Dewpoint options of  $-25^{\circ}\text{C}$ ,  $-40^{\circ}\text{C}$  and  $-70^{\circ}\text{C}$ .
- Standard desiccant medium allows inlet temperatures up to  $50^{\circ}\text{C}$  with TX range &  $40^{\circ}\text{C}$  with TV range with high adsorption and desorption efficiency.
- Molecular sieve option offers higher inlet temperatures.
- Operation can be matched to the load/unload state of the compressor.
- High capacity drying beds offer good moisture separation and long reserve times.
- Stainless steel support screens ensure low pressure drop and an even flow distribution through the desiccant beds.
- Pressure vessel codes to CE, TUV, BS5500, ASME VIII, other approvals on request.
- Vessel designs have good aspect ratios resulting in optimum bed velocities and contact times.
- Electronically controlled valves are fitted as standard.

## Dewpoint Dependent Switching (DDS)

Regeneration air requirements are dependent upon flow, pressure and temperature.

Compressed air systems are rarely constant and all three factors change according to the time of day, ambient temperature and relative humidity. This can result in the constant regeneration flow of compressed air being used inefficiently.

Dewpoint Dependent Switching (DDS) measures the outlet air dewpoint and adjusts the cycle times accordingly, to lower operating costs by up to 70%.

## Purification Systems

The CompAir purification systems combine the standard components of the TX model compressed air dryer with an activated carbon absorber which is installed between the dryer and the dust filter.

This system provides oil vapour free compressed air.

Purification systems can be used in any compressed air installation but is particularly applicable to:

- Electronics/ Semiconductor Industry
- Food Industry
- Breweries
- Hospitals
- Medical Laboratories
- Instrumentation

## Standard Control

A time based control system operates the changeover from one vessel to the other.

A soft start system is recommended to ensure the desiccant beds are protected from overflow, particularly during initial start up.

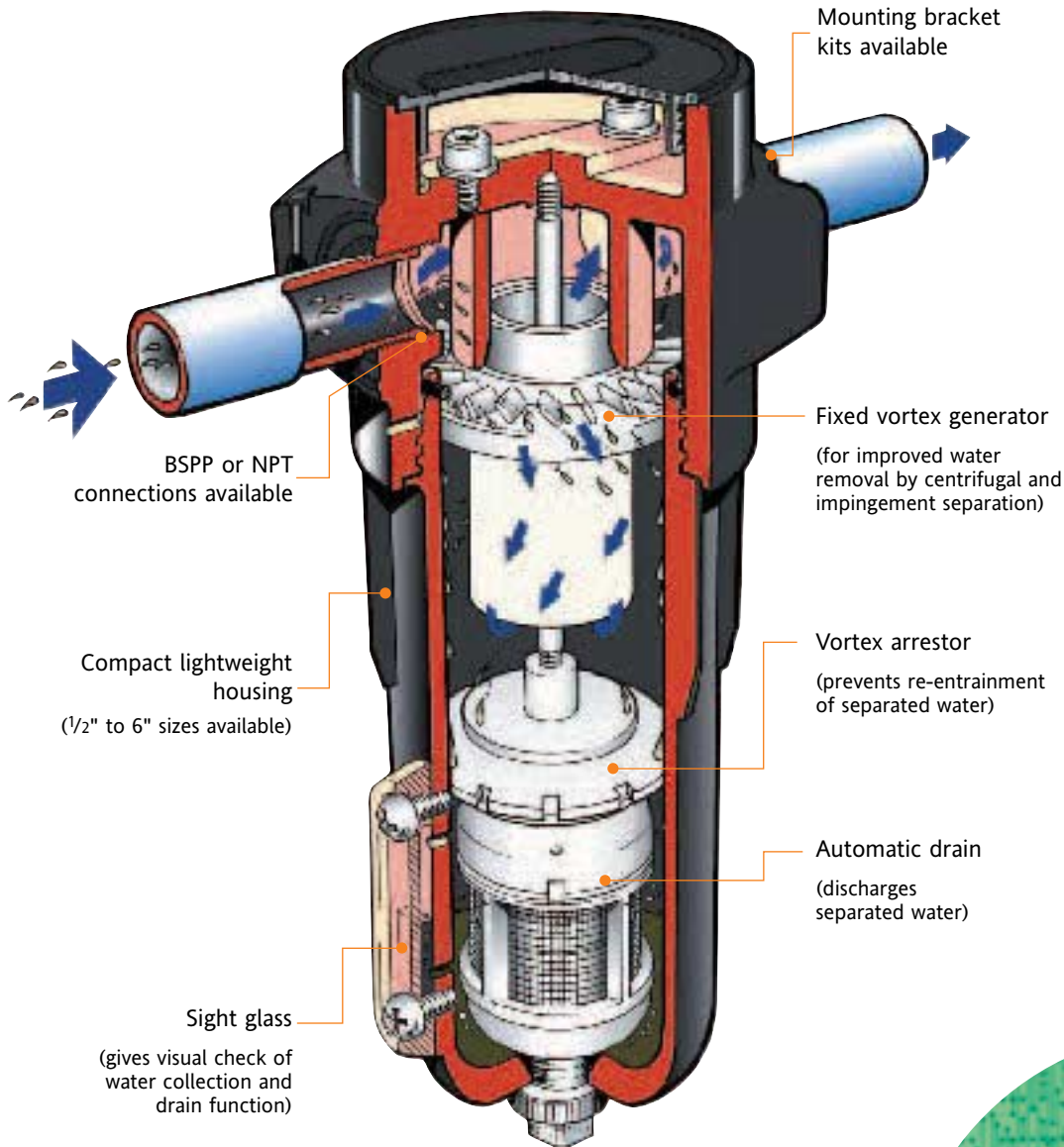


*Overnight regeneration allows low cost electrical power to be used. Using this function will significantly reduce electrical costs and typical savings of up to 70% can be achieved.*



# Water Separators

Over 99% of bulk water can be easily and economically removed by installing a CompAir X Series High Efficiency Water Separator. Now, your compressed air system will operate much more efficiently with reduced downtime and maintenance costs. This new, patented technology will also improve the effectiveness of aftercoolers, refrigerant dryers, filters and other downstream equipment.

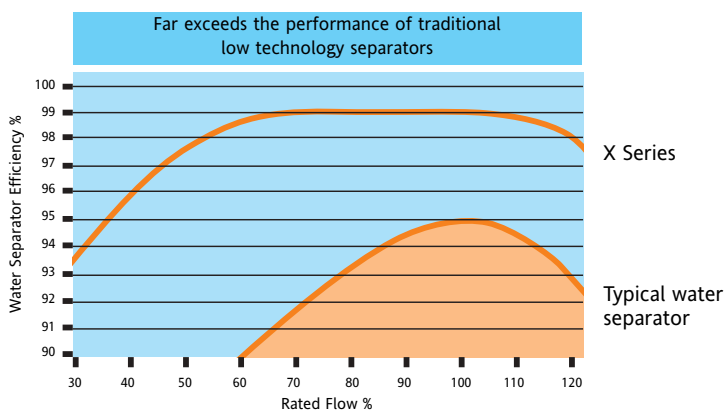


## Benefits

- 99% efficient
- Cost effective
- Low maintenance
- Proven patented design
- High flow rates
- Very low differential pressure
- Automatic drainage
- Removes rust and pipe scale
- Lifetime guarantee

## Options

- Available with automatic or manual drain
- External electronic drain valves
- 50 bar g (740 psi g) versions
- 276 bar g (4000 psi g) versions
- Stainless steel range
- Fabricated steel range



# Intelligent Air Technology

Compressed air solutions for every application

## Compressors

0.1 - 43m<sup>3</sup>/min  
0.75 - 260kW

### Lubricated

Rotary Vane  
Single Stage Screw  
Speed Regulated Screw  
Piston  
Portable

### Oil-Free

Two Stage Screw  
Water-Sealed Screw  
Piston  
Portable

## Complete Accessories Programme

Filters and Dryers  
Cooling Systems  
Heat Recovery  
Condensate Management  
Air Receivers  
Multi-Set Controllers  
Lubricants

## Value Added Services

Air Audit  
Performance Reporting  
Utility Air  
Performance Contracting

## Complete Service for Compressed Air Technology

Engineering of Complete Compressor Stations  
Local Service Centres  
Guaranteed Parts Availability



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