AshAir
Compressed Air & Vacuum

Refrigerated Dryers



pneumatech
Pure air . Pure gas

AC & AD DRYERS

At Ash Air, it isn't just about the products. We're passionate about performance and service, with more than 40 qualified engineers working throughout the country providing unsurpassed compressed air solutions.

Broad product portfolio of robust compressors & tools

Decades of experience & innovation since 1979

24/7 service support with back up and hire equipment

"We are committed to being the easiest company to deal with in the air compressor and vacuum industry. Anywhere, Anytime. 24/7."

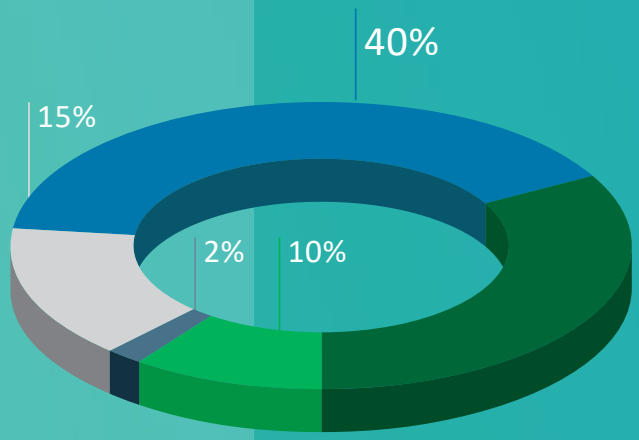
Energy Saving Solution

- 10,200 serviceable units
- 3.4 MWh potential yearly energy savings identified by leak detection
- 6015 kW combined power of VSD compressors installed
- 54.5 km AIRnet piping installed
- 6 MWh saved with AIRnet and VSD each year
- 4.2 MTon CO2 emissions eliminated each year

Control and Monitor your Dryer

The Purelogic™ Central Controller is the ideal complement to your Pneumatech refrigerated dryers. This state-of-the-art control solution will provide optimal control and monitoring of your machines, increased reliability and reduced energy use.

Potential Energy Savings with Purelogic™ Controller



- Investment
- Dryer energy cost
- Installation
- Indirect energy cost
- Maintenance & repair

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AC Cycling Dryers

Pneumatech cycling dryers only operate according to the air flow, unlike non-cycling refrigerated dryers that operate continuously even if the air flow is changing.

The dryers cycle based on the relative humidity of the air to the surrounding ambient temperature. Corrosion in the air lines is not a risk if the relative humidity is kept below 50%. The benefit is energy savings.

The AC dryer provides a solution that offers:

- A compact design with a low pressure drop.
- An optimised dew point to safeguard your production.
- Long service intervals that minimize your lifetime costs.

Applications

Cycling refrigerated dryers are suitable when your production has fluctuations in air demand or temperature. In addition, if you have higher demand, the Pneumatech cycling range is a must in order to save up to 20% of energy compared to the non-cycling range. It is ideal for intermediate or continuous air use.

AD Non-Cycling Dryers

Pneumatech's reliable and innovative non-cycling refrigerated air dryers are a cost-effective solution to remove condensation and the resultant corrosion from your compressed air system.

- These well tested and market-accepted dryers will give you years and years of reliable service.
- Minimise the pressure drop – with high-quality components.
- Limited energy consumption – by zero loss drain.
- Highly efficient – low refrigeration kW at at full load.

Applications

AD non-cycling dryers are commonly used in todays production environment. Almost all industries have a need for a refrigerated dryer that eliminates the vapor in a reliable and safe way.

The AD range is often used within the automotive, textile, wood, pulp and paper, construction and general industries where the usage is occasional or intermediate. They can also of course be used for continuous operation, but if energy efficiency is important we recommend the AC range.

AC 30 - 600 - Cycling Refrigeration Dryers

Features & Benefits

- Premium energy efficiency
- Energy-saving & flow control: adapt energy consumption to the real load
- Lowest pressure drop over heat exchanger and air piping
- Zero-loss drains
- Strong performance & reliability
- Stable pressure dew point as low as 3°C
- Guaranteed drying performance in wide range of ambient temperatures
- Optimal control and monitoring
- Energy-saving control
- Voltage-free contact for remote alarm
- Auto-restart after voltage-failure
- Communication via industrial protocols like Modbus, Profibus or Ethernet/IP (for AC300-600 only)
- Remote internet visualization (for AC300-600 only)
- Easy installation and maintenance at low cost
- Pipe connections on top
- Long service intervals
- Easy access to key components

General Specifications

- AC refrigeration dryers: cycling type
- Operating pressure: 4-16 bar/(4-14 bar from AC 125 onwards)
- Max. inlet temperature: 60°C
- Flow rate : 900-17,100 l/min (32-604 cfm) {1}
- Pressure dew point: 3°C (ISO 8573-1:2010 class 4)
- Power supply: 150/230V 50 Hz
- Refrigerant: R134a (AC 30-100), R410a (AC 150-600)

Options

Integrated high efficiency line filters

Electric panel protection IP 54

Pneumatech's AC range offers premium refrigeration drying technology at the lowest operational costs.

All AC dryers are equipped with our proprietary energy saving algorithm, which adapts the energy consumption to the real load by continuously monitoring the ambient temperature and the pressure dewpoint. In this way, the risk of downstream corrosion is reduced to zero at all times. When there is less cooling needed, the refrigerant compressor stops and power consumption is significantly reduced, with savings up to 50%.

AC 250-600 dryers are also equipped with a flow switch which detects whether there is flow going through the dryer; and shuts down the refrigerant compressor when there is no flow (even if the energy saving algorithm would not be activated).

Technical specifications for AC 30-600 Aircooled

Pneumatech Variant → Specifications ↓	Units	AC 30	AC 65	AC 100	AC 150	AC 200	AC 300	AC 600
Flow[1]	l/min	900	1,800	3,000	4,200	5,700	9,000	17,100
	CFM	32	64	106	148	201	318	604
Power consumption	kW	0.33	0.41	0.5	0.7	0.89	1	2.2
Pressure drop over dryer	bar	0.12	0.25	0.2	0.28	0.25	0.15	0.22
Refrigerant type		R134a	R134a	R134a	R410A	R410A	R410A	R410A
Dimensions	L (mm)	496	496	716	792	792	882	948
	W (mm)	377	377	380	500	500	661	802
	H (mm)	461	461	676	680	680	1015	1026
Inlet and Outlet Connections		ISO7-R3/4"(m)	ISO7-R3/4"(m)	ISO7-R1"(m)	ISO7-R1"(m)	ISO7-R1"(m)	ISO7-R1 1/2"(m)	ISO7-R2 1/2"(m)
Weight	kg	32	34	57	82.4	109.4	170	197

1. Flow is measured at reference conditions: ambient pressure of 1 bar (a) and 25°C at operating pressure of 7 bar (g), inlet temperature 35°C .

K1 Flow correction factors due to compressed air inlet temperature and/or pressure dewpoint (PDP)

Temperature	°C	25	30	35	40	45	50	55	60
PDP	3°C	1.2	1.1	1	0.85	0.72	0.6	0.49	0.37
	5°C	1.35	1.23	1.11	0.94	0.8	0.67	0.55	0.42
	7°C	1.5	1.35	1.22	1.02	0.88	0.75	0.61	0.47
	10°C	1.72	1.54	1.38	1.15	1	0.86	0.7	0.54
	15°C	2.11	1.89	1.68	1.43	1.23	1.03	0.83	0.62

K2 Flow correction factors due to compressed air inlet pressure (g)

Air inlet pressure	bar(g)	2	3	4	5	6	7	8	10	12	14
		0.5	0.63	0.74	0.84	0.92	1	1.05	1.15	1.25	1.31

Flow correction factor due to ambient temperature

Temperature	°C	25	30	35	40	45	50
		1.00	0.95	0.88	0.81	0.74	0.67

AC 650 - 2100 - Large Cycling Refrigeration Dryers

Features & Benefits

- Premium energy efficiency
- Energy-saving & flow control: adapt energy consumption to the real load
- Variable speed range: exact match between energy consumption and actual demand (available for AC 1600-2100)
- Lowest pressure drop over heat exchanger and air piping
- Zero-loss drains
- Strong performance & reliability
- Stable pressure dew point as low as 3°C
- Rotary refrigerant compressors: limited mechanical load & low vibrations
- Guaranteed drying performance in wide range of ambient temperatures
- Refrigeration cycle optimized in all conditions thanks to automatic expansion valve & electronic hot gas bypass valve
- Air-cooled as well as water-cooled versions available
- Optimal control and monitoring thanks to the Purelogic™ controller
- Communication via industrial protocols like Modbus, Profibus or Ethernet/IP

General Specifications

- AC refrigeration dryers: cycling type including VSD option (only for AC 1600-2100)
- Operating Pressure: 4-14 bar
- Max. temperature: 50°C
- Flow rate: 1116-3636 m³/hr (657-2141 cfm)[1]
- Pressure dew point: 3°C
- Power supply: 400V/50Hz
- Refrigerant: R410a
- Cooling type: Air-cooled and water-cooled

Options

IP 54 protection
(only for 650-1050;

[1] Flow is measured at reference conditions: ambient pressure of 1 Bar(a) and 25°C at operating pressure of 7 bar (g), inlet temperature 35°C .

AC 650-2100 is Pneumatech's premium refrigeration dryer range at higher flows: from 1120 up to 3636 m³/hr (657-2141 cfm).

As in the small AC range, operating costs are significantly reduced thanks to the energy saving and flow switch algorithms, the zero-loss drains, the low pressure drop over the heat exchangers and the combination of rotary compressors and R410A refrigerant. The refrigeration cycle is further optimized in all working conditions by making use of the automatic expansion valve & electronic hot gas bypass valve.

From AC1600 onwards, dedicated variable speed (VSD) variants have been added to the range. The VSD controller incorporated in these dryers matches the energy consumption to the actual compressed air demand. This reduces energy used by as much as 70%, compared to conventional dryers. It works by varying the speed of the compressor, hereby ensuring a stable dew point.

Technical specifications for AC650-2100

		Air Cooled (including VSD)								Water Cooled (including VSD)							
Pneumatech Variants → Specifications ↓	Units	AC 650	AC 1250	AC 1600	AC 1600 VSD	AC 1800	AC 1800 VSD	AC 2100	AC 2100 VSD	AC 850	AC 1250	AC 1600	AC 1600 VSD	AC 1800	AC 1800 VSD	AC 2100	AC 2100 VSD
Flow[1]	m³/min	18.6	36.6	45.6	45.6	52.2	52.2	60.6	60.6	24.6	36.6	45.6	45.6	52.2	52.2	60.6	60.6
	CFM	657	1293	1610	1610	1843	1843	2140	2140	869	1293	1610	1610	1843	1843	2140	2140
Power consumption	kW	2.80	4.80	5.30	5.30	6.60	5.8	7.40	6.6	2.4	3.10	3.60	3.3	4.50	4.2	5.10	5.6
Pressure drop over dryer	mBar	230	170	170	170	140	140	170	170	210	170	170	90	140	120	170	170
Refrigerant type		R410a	R410a	R410a	R410a	R410a	R410a	R410a	R410a	R410a	R410a	R410a	R410a	R410a	R410a	R410a	R410a
Inlet and Outlet Connections	Inch/DN	G3"	DN100	DN100	DN100	DN150	DN150	DN150	DN150	G3"	DN100	DN100	DN100	DN150	DN150	DN150	DN150
Dimensions	L (mm)	986	1040	1245	1245	1245	1245	1580	1580	1250	1245	1245	1580	1245	1580	1245	1580
	W (mm)	850	1060	1060	1060	1060	1060	1060	1060	850	1060	1060	1060	1060	1060	1060	1060
	H (mm)	1190	1580	1580	1580	1580	1580	1580	1580	1375	1580	1580	1580	1580	1580	1580	1580
Weight	kg	200	320	380	380	400	400	460	460	240	350	360	410	370	410	380	410

1. Flow is measured at reference conditions: ambient pressure of 1 Bar(a) and 25°C at operating pressure of 7 bar (g), inlet temperature 35°C .
2. Power consumption of the units are specified for max ambient tepertaure of 40°C. In case of higher ambient temperatures contact Pneumatech.

K1 Flow correction factors due to compressed air inlet temperature and/or pressure dewpoint (PDP)- 50Hz units									
Temperature	°C	25	30	35	40	45	50	55	60
PDP	3°C	1,2	1,1	1	0,85	0,72	0,6	0,49	0,37
	5°C	1,35	1,23	1,11	0,94	0,8	0,67	0,55	0,42
	7°C	1,5	1,35	1,22	1,02	0,88	0,75	0,61	0,47
	10°C	1,72	1,54	1,38	1,15	1	0,86	0,7	0,54
	15°C	2,11	1,89	1,68	1,43	1,23	1,03	0,83	0,62

K1 Flow correction factors due to compressed air inlet temperature and/or pressure dewpoint (PDP)- 60Hz units									
Temperature	°C	25	30	35	38	45	50	55	60
PDP	4°C	1,14	1,09	1,03	1	0,8	0,67	0,53	0,4
	7°C	1,27	1,22	1,14	1,09	0,88	0,74	0,59	0,44
	10°C	1,4	1,35	1,24	1,18	0,96	0,8	0,65	0,49
	15°C	1,63	1,55	1,41	1,32	1,08	0,91	0,74	0,56

K2 Flow correction factor due to compressed air inlet pressure (g)											
Air inlet pressure	Bar(g)	2	3	4	5	6	7	8	10	12	14
		0,5	0,63	0,74	0,84	0,92	1	1,05	1,15	1,25	1,31

Flow correction factor due to ambient temperature or cooling water temperature - 50Hz units							
Temperature	°C	25	30	35	40	45	50
		1,00	0,95	0,88	0,81	0,74	0,67

Flow correction factor due to ambient temperature or cooling water temperature - 60Hz units							
Temperature	°C	25	30	35	38	45	50
		1,10	1,06	1,02	1,00	0,93	0,88

AD 25 - 3000 - Non-Cycling Refrigeration Dryers

General Specifications

- Non-cycling refrigeration dryers
- Operating Pressure:
  AD25 - 50: 4-16 bar
- AD100 - 3000: 4-13 bar
- Max. inlet temperature: 55°C
- Flow rate: 840 - 84,000 l/min / 30-2966 cfm[1]
- Pressure dew point: 3°C (ISO 8573 - 1:2010 class 4)
- Power supply:
  AD25 - 250: 230V 50 Hz
- AD300 - 3000: 400V/50Hz
- Refrigerant: R134a (AD25 - 50); R410A (AD125 - 1250) & R404a (AD100 & AD1600 - 3000)

Refrigeration Dryers: AD Series (25-3000) Non cycling

AD 25-50

Features & Benefits

- Stable performance and guaranteed dew point of 3°C
- Ingeniously designed components to ensure maximum performance
  - Hot gas bypass valve to prevent freezing at lower loads
  - Zero-loss electronic drain to prevent loss of valuable compressed air
  - Brazed plate heat exchanger with integrated water separator and air-to-air heat exchange
- R134a refrigerant gas: low global warming impact, zero ozone depletion
- Digital display with real-time PDP monitoring
- Easy plug-and-play installation

AD 100

Features & Benefits

- Stable performance and guaranteed dew point of 3°C
- Ingeniously designed components to ensure maximum performance
  - Hot gas bypass valve to prevent freezing at lower loads
  - Zero-loss electronic drain to prevent loss of valuable compressed air
  - Aluminium block heat exchanger with integrated water separator and air-to-air heat exchange
- Environmental safe refrigerant gases R404a
- Digital display with real-time PDP monitoring
- Easy plug-and-play installation

[1] Flow is measured at reference conditions: ambient pressure of 1 bar (a) and 25°C at operating pressure of 7 bar (g), inlet temperature 35°C .

Pneumatech's AD 25-3000 non-cycling refrigeration dryers are designed to protect your compressed air system by lowering the presence of moisture in the compressed air.

With a stable dew point as low as 3°C these dryers provide a highly efficient and reliable solution for your drying needs. Thanks to the new controller with digital display, real time PDP monitoring is possible. The zero-loss electronic drains avoid compressed air losses. The well-designed heat exchangers ensure maximum cooling efficiency, making the AD dryers a genuine air drying solution in industrial applications.

AD 125-250

Features & Benefits

- Stable performance and guaranteed dew point of 3°C
- Rotary compressors and R410A refrigerant: the winning combination
  - 30% more energy efficient
  - Requires 19% less refrigerant gas
  - Extremely reliable: low vibration levels and limited mechanical load
- Ingeniously designed components to ensure maximum performance
  - Hot gas bypass valve to prevent freezing at lower loads
  - Zero-loss electronic drain to prevent loss of valuable compressed air
  - Aluminium block heat exchanger with integrated water separator and air-to-air heat exchange
- Digital display with real-time PDP monitoring and voltage-free contact for remote alarm
- Easy plug-and-play installation

AD 360-1250

Features & Benefits

- Stable performance and guaranteed dew point of 3°C
- Rotary compressors and R410A refrigerant: the winning combination
  - 30% more energy efficient
  - Requires 19% less refrigerant gas
  - Extremely reliable: low vibration levels and limited mechanical load
- Ingeniously designed components to ensure maximum performance
  - Hot gas bypass valve to prevent freezing at lower loads
  - Zero-loss electronic drain to prevent loss of valuable compressed air
  - Aluminium block heat exchanger with integrated water separator and air-to-air heat exchange
- Advanced controlling and monitoring thanks to the controller installed
  - Digital PDP display
  - Remote start/stop
  - Voltage-free contact for general alarm
- Easy plug-and-play installation

AD1600 - 3000

Features & Benefits

- Stable performance and guaranteed dew point of 3°C.
- Ingeniously designed components to ensure maximum performance
  - Hot gas bypass valve to prevent freezing at lower loads
  - Zero-loss electronic drain to prevent loss of valuable compressed air
  - Aluminium block heat exchanger with integrated water separator and air-to-air heat exchange
- Environmental safe refrigerant gases R404a
- Advanced controlling and monitoring
  - Digital PDP display
  - Remote start/stop
  - Voltage-free contact for general alarm
- Easy plug-and-play installation

Filter

Bypass

AD 25 - 3000 - Non-Cycling Refrigeration Dryers

Technical specifications for AD 25-3000 50Hz

Pneumatech Variants → Specifications ↓		AD 25	AD 50	AD 100	AD 125	AD 175	AD 250	AD 360	AD 500	AD 600	AD 750	AD 1000	AD 1250	AD 1600	AD 1800	AD 2500	AD 3000
Flow[1]	l/min	840	1,860	3,000	3,600	5,220	7,680	12,000	15,000	18,000	24,000	30,000	34,980	45,000	49,980	70,020	84,000
	CFM	30	66	106	127	184	271	424	530	636	848	1,059	1,235	1,589	1,765	2,473	2,966
Nominal electric power	kW	0.19	0.28	0.67	0.65	0.83	1.09	1.63	1.89	2.11	3.26	3.89	4.75	6.71	6.80	10.20	12.30
Voltage / Phase		230 1 ph	230 1 ph	230 1 ph	230 1 ph	230 1 ph	230 1 ph	400 3 ph	400 3 ph	400 3 ph	400 3 ph	400 3 ph	400 3 ph	400 3 ph	400 3 ph	400 3 ph	400 3 ph
Max Operating Pressure	Bar	16	16	13	13	13	13	13	13	13	13	13	13	13	13	13	13
Refrigerant Gas		R134a	R134a	R404A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R404A	R404A	R404A	R404A
Inlet and Outlet Connections	inches / DIN	R3/4"	R3/4"	R1"	R1 1/2"	R1 1/2"	R1 1/2"	R2"	R2"	R2"	R3"	R3"	R3"	DIN 125	DIN 125	DIN 125	DIN 125
Dimensions	L (mm)	350	350	370	460	460	580	735	735	735	1020	1020	1020	1020	1020	1020	1020
	W (mm)	511	511	515	575	575	604	952	952	952	1082	1082	1082	1123	2099	2099	2099
	H (mm)	484	484	764	789	789	899	1012	1012	1012	1535	1535	1535	1551	1560	1560	1560
Weight	kg	20	27	44	53	65	80	146	158	165	325	335	350	380	550	600	650

1. Flow is measured at reference conditions: ambient pressure of 1 bar (a) and 25°C at operating pressure of 7 bar (g), inlet temperature 35°C .
2. 380V/60Hz and 460V/60Hz variants are also available for the AD300-3000 range. Please refer to the datasheets or consult Pneumatech for technical data.

Correction factors for ambient temperature							
Ambient temperature	°C	25	30	35	40	45	
	Ktmb	1.00	0.92	0.84	0.80	0.74	(AD 25-250)
		1.00	0.91	0.81	0.72	0.62	(AD 360-3000)

Correction factors for compressed air inlet temperature								
Inlet temperature	°C	30	35	40	45	50	55	
	Kt	1.24	1.00	0.82	0.69	0.58	0.45	(AD 25-250)
		1.00	1.00	0.82	0.69	0.58	0.49	(AD 360-3000)

Correction factors for compressed air inlet pressure														
Operating pressure	bar(g)	5	6	7	8	9	10	11	12	13	14	15	16	
	Kp	0.90	0.96	1.00	1.03	1.06	1.08	1.10	1.12	1.13	1.15	1.16	1.15	(AD 25-250)
		0.90	0.97	1.00	1.03	1.05	1.07	1.09	1.11	1.12	-	-	-	(AD 360-3000)

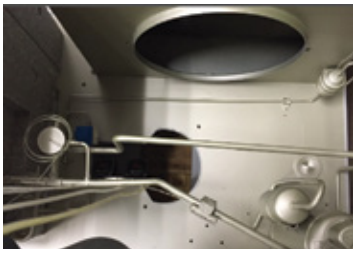
Anti-corrosion treatment (available for all refrigerant dryers)

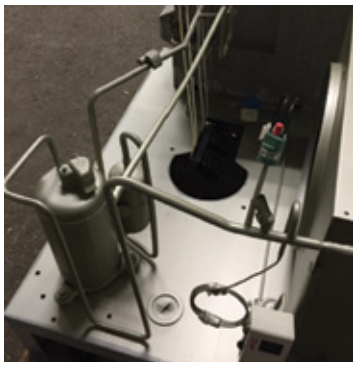
Technical specifications

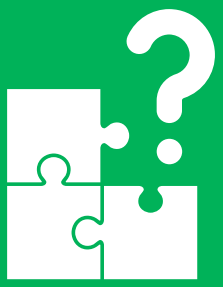
Coating type	Aluminum pigmented polyurethane
Color	Champagne
Pretreatment	Degreasing
Temperature Range (dry)	-20 to 150°C
Substrates	Aluminum and Copper
ASTM B117	4000+ hours (neutral-salt spray test)
Kesternich (2.0 ltr SO_2)	80 cycles
Layer Thickness	25-30 µm (1 mil)
Pressure Drop	0-5% (depending on fin geometry)
Thermal Resistance	0-3% (depending on fin geometry)
UV Resistance	Excellent
Adhesion (cross hatch)	0 (European)
Chemical Resistance	Excellent

Coating resistance of some typical corrosive gas vapors (based on exposure temperature of 20°C/68°F) – maximum concentrations

Chlorine	64 ppm	Ethanol	320 ppm
Ammonia	160 ppm	Sulphuric acid	320 ppm
Phosphoric acid	320 ppm	Seawater	640 ppm

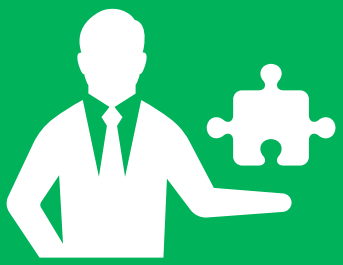






Problem

Refrigerant dryers can be subjected to severe corrosion when placed in environments rich of e.g ammonia and sulfurs, or close to the seaside. In these cases incompatible metals like copper will be affected since the condenser-fan is blowing a high volume of polluted air through the dryer. Corrosion and pollution of condensers will directly impact the dryer performance. Corrosion can even lead to leaks in the condenser and refrigeration piping.



Solution

Pneumatech offers a long-lasting corrosion protection to the condenser and the refrigerant piping without affecting heat transfer and pressure drop. The heat conductive pigmentation in the coating is oriented in such a way that it creates a very high chemical resistance at a low layer thickness. Therefore it is considered the best available option to prevent refrigeration dryer failure and unnecessary energy consumption.

Globally present. Globally certified.

Pneumatech was founded in Kenosha, Wisconsin, USA in 1966 and has grown continuously. At the start of this century Pneumatech expanded into compressed air and gas treatment and industrial nitrogen generation markets. It currently has production sites in the USA, Europe and China. In 2010 Pneumatech received ISO 9001 and ISO14001 certification, and OHSAS 18001 certification in 2011.

pneumatech


Piston Compressors


Screw Compressors


Nitrogen & Dryers


Portable Compressors & Generators


Air Tools


Vacuum Pumps

Ash Air: Compressed Air Solutions Specialists

The team at Ash Air is passionate about the performance of their products and services, with more than 40 qualified engineers working throughout the country providing unsurpassed compressed air solutions. We look after New Zealand's air compressors and vacuum pumps, from the smallest to largest companies. 9,500+ businesses have trust us to set-up, upgrade, and look after their compressed air systems.

We are available 24/7 when and where you need us, with 13 strategically located service centres in New Zealand, so you'll never be caught without the back up you need.

AshAir
Compressed Air & Vacuum

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