COMPRESSOR SYSTEMS
MADE IN GERMANY

ALMiG
Compressor Systems

COMPRESSED AIR TREATMENT

CLEAN COMPRESSED AIR

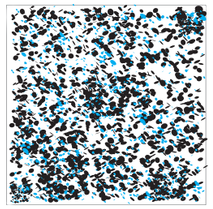
Economical and safe treatment of compressed air

To produce one cubic metre of compressed air with an overpressure of 10 bar, a compressor has to suck in eleven cubic metres of ambient air. Together with this air, it also sucks in all the impurities it contains, just like a large vacuum cleaner: dust, fumes, oil vapour, chemicals, etc. Added to this is the natural air humidity.
Despite high-quality intake filters, all these components of the intake air are found in the compressed air. The substances that were distributed over eleven cubic metres of ambient air before compression are now concentrated in a single cubic metre of compressed air. To ensure trouble-free operation, dirt, water and oil must therefore be separated from the compressed air.

Concentration of pollutants

in atmospheric air

at 10 bar overpressure



Humidity

Compressed air contains moisture depending on the ambient conditions. Depending on the application, this moisture must be extracted from the compressed air. There are the following possibilities:

- Cyclone separator: removes free water droplets from the compressed air.
- Refrigeration dryer: possible dew point up to max. +3 °C
- Adsorption dryer: possible dew point down to -70 °C.

Which drying is required in individual cases depends on the consumers operated.
Symptoms of incorrectly designed drying are moisture in the compressed air network, icing in winter or increased component wear due to corrosion.
To drain moisture from the compressed air system and dispose of it properly, it is recommended to use:

- Condensate drain
- Oil- Water separators

Solid impurities/oil

In addition to moisture, the compressed air is also contaminated with particles and oil. To remove these components, it is recommended to use filters such as:

- Coarse filter
- Microfilter
- Submicrofilter
- Activated carbon filter
- Activated carbon adsorber

By combining different preparation methods, the purity classes prescribed or recommended for the respective applications can be achieved.

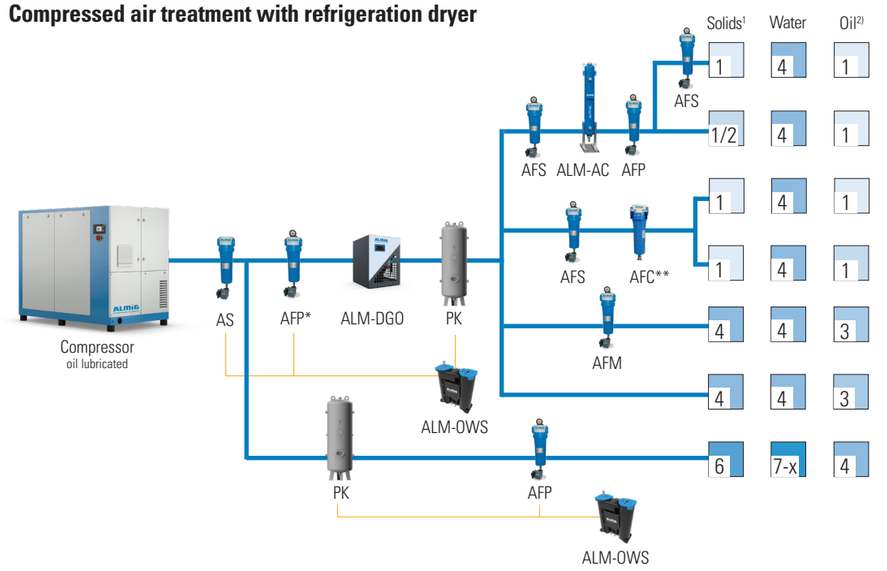
Compressed air storage

Compressed air tanks are used to store the generated compressed air. The required size is determined by calculation.

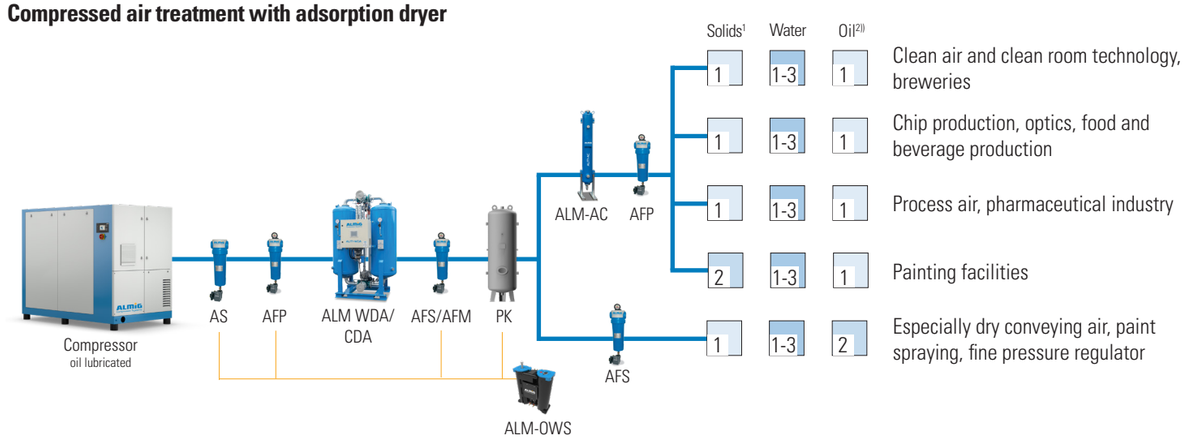
Compressed air quality classes according to ISO 8573-1:2010

ISO 8573-1:2010	Solid impurities			Humidity (vaporous)		Total oil content (liquid & gaseous)
Class	0,1µ < d ≤ 0,5µ	0,5µ < d ≤ 1,0µ	1,0µ < d ≤ 5,0µ	Pressure dew point		
0	better than Class 1 and to be agreed separately					
1	≤ 20.000	≤ 400	≤ 10	≤ -70°C		≤ 0,01 mg/m³
2	≤ 400.000	≤ 6.000	≤ 100	≤ -40°C		≤ 0,1 mg/m³
3	—	≤ 90.000	≤ 1.000	≤ -20°C		≤ 1 mg/m³
4	—	—	≤ 10.000	≤ +3°C		≤ 5 mg/m³
5	—	—	≤ 1000.000	≤ +7°C		—
6	Mass concentration C_p (mg/m³)		0 < C_p ≤ 5	≤ +10°C		—
7			5 < C_p ≤ 10	Residual humidity *cw* g/m³	*cw* ≤ 0,5	—
8			C_p < 10		0,5 < *cw* ≤ 5	—
9	—	—	—		5 < *cw* ≤ 10	—
X	—	—	—		*cw* ≤ 10	> 5 mg/m³
	Maximum number of particles per m³ of the given size in µm measured according to ISO 8573-4 Reference conditions: 1 bar absolute, 20°C, 0% r. h.			Maximum pressure dew point measured according to ISO 8573-3 at operating pressure. Reference conditions for residual humidity: 1 bar absolute, 20°C, 0% r. h.		Maximum total oil content measured according to ISO 8573-2 and ISO 8573-5. Reference conditions: 1 bar absolute, 20°C, 0% r. h.

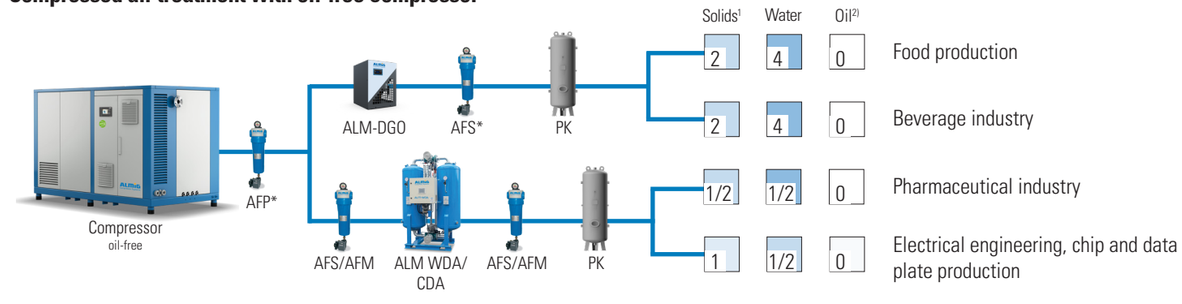
Compressed air treatment with refrigeration dryer



Compressed air treatment with adsorption dryer



Compressed air treatment with oil-free compressor



Explanations

AS	Cyclone separator
PK	Compressed air receiver
AFP	Prefilter/coarse filter

AFM	Micro filter
AFS	Submicro filter
AFC	Activated carbon filter

ALM-AC	Activated carbon adsorber
ALM-WDA/ ALM-CDA	Adsorption dryer

ALM-RD	Refrigeration dryer
ALM-OWS	Oil-water separators

Illustrations not to scale.

The overview is intended as a general recommendation for action; the use of various treatment components must be assessed individually on a case-by-case basis. This overview does not claim to be complete.
1) Attainable particle class assuming correctly executed piping and commissioning. 2) Achievable total oil content depending on the intake air and the compressor oils used.
* May be omitted when using the ALM-RD, as these are already integrated in the refrigeration dryer. ** Observe service life.
The compressed air classes refer to standard conditions. When generating oil-free compressed air, the intake air and the ambient conditions also have an influence on the quality. Different service lives for AFC and ALM-AC must be taken into account.

ALMIG COMPRESSED AIR TREATMENT

+ Generation and treatment: Everything from a single source and perfectly matched.
+ ALMiG covers the entire range of compressed air treatment products.
+ ALMiG can provide the right kind of compressed air treatment product for every requirement profile.
+ Treatment components can also benefit from our AirCare warranty extension* when purchased with a compressor.

Highly versatile

FILTERS
AFP, AFM, AFS, AFC

p. 6

Reliable condensate drain

CONDENSATE DRAIN
ALM-D

p. 10

Efficient pre-separation of condensate

AS
CYCLONE SEPARATOR

p. 8

For oil-free condensate

OIL/WATER SEPARATOR
ALM-OWS

p. 12

Compact and efficient

REFRIGERATION
DRYER ALM-DGO

p. 14

For oil-free & flavour-neutral compressed air

ACTIVATED CARBON
ADSORBER ALM-AC/CAC

p. 16

Compact and efficient

ADSORPTION DRYER
ALM-CCDA

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Dry and oil-free compressed air for dew points down to -70°C

ADSORPTION DRYER
ALM-CCDA C

p. 20

For pressure dew points down to -70°C

ADSORPTION DRYER
ALM-CDA

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High efficiency with high performance

ADSORPTION DRYER
ALM-WDA

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*Please observe AirCare conditions.
Illustrations not to scale.

AFP, AFM, AFS, AFC FILTERS

Compressed air filters guarantee clean compressed air to satisfy very stringent requirements.

They can be used in a multitude of applications - wherever compressed air is required clean, dry or free of oil aerosols. It's a huge undertaking, especially when you consider the fact that more than two billion particles and liquid molecules can be present in 1 m^3 of compressed air at a compression end pressure of 10 bar.
This is an undertaking to which the ALMiG heavy-duty filters are perfectly suited.

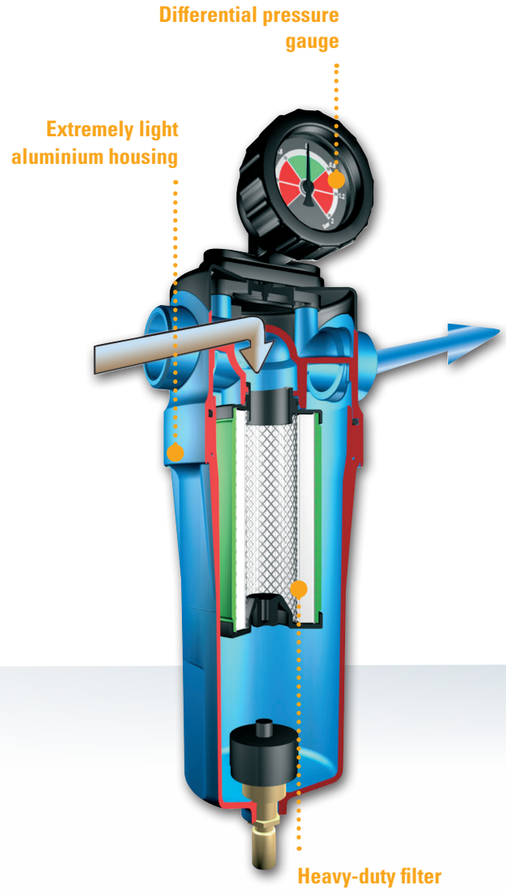
Equipment features:

- Standard version including differential pressure indicator and float drain
- Premium version including
  - differential pressure gauge to display the most cost-effective time to replace the filter element
  - electronically controlled condensate drain to discharge condensate without any loss of compressed air
- Three-part housing with bayonet lock for simple replacement and installation of the filter elements
- Extremely light aluminium housing with threaded connection for volume flows of 30 - 3300 m^3/h
- Alternatively, as of volume flows of 2760 - 13750 m^3/h, steel housing with flange connection

Application
Industry

Volume flows
30 - 13750 m^3/h

Operating temperatures
Minimum: +1 °C
Maximum: +100 °C



AFP, AFM, AFS, AFC filters

+ Heavy-duty filter for clean and dry compressed air
+ Three-part housing for simple replacement of filter elements
+ Available as standard or premium version

The optimum filter for every requirement

Filter type	Type	Particle size	Collector efficiency (particlewith1µm)	Residual oil content[1]	Residual water content[2] (in liquid form)
		µm			
Pre-filter	AFP	5		-	present
Micro filter	AFM	1	99,985 %	0,1	not present[3]
Sub microfilter	AFS	0,01	99,99999 %	0,01	not present[3]
Active carbon filter	AFC			0,003	not present[3]

[1] at inlet concentration of 3 mg/m^3
[2] details relate to a station with no upstream compressed air drying
[3] the compressed air no longer contains residual water in a liquid form if the temperature is not reduced downstream of the filter elements (air is 100% saturated)

Filter with threaded connection

Type AFP, AFM, AFS, AFC	Volume flow		Standard version[1]				Premium version[2]		
	Nom.	Max.	Connection	Width	Height	Weight	Width	Height	Weight
	m^3/h	m^3/h	G	mm	mm	kg	mm	mm	kg
30	30	37	3/8"	90	233	0.7	90	367	1.0
60	60	75	1/2"	90	233	0.7	90	367	1.0
108	108	135	3/4"	90	293	0.8	90	427	1.1
180	180	225	3/4"	90	293	0.8	90	427	1.1
204	204	255	1"	120	328	1.2	120	452	1.5
300	300	375	1"	120	328	1.3	120	452	1.6
432	432	540	1 1/2"	120	408	1.4	120	532	1.7
570	570	710	1 1/2"	120	408	1.5	120	532	1.8
750	750	935	2"	165	523	3.8	165	647	4.1
990	990	1235	2"	165	523	3.9	165	647	4.2
1140	1140	1425	2 1/2"	165	698	4.9	165	822	5.2
1320	1320	1650	2 1/2"	165	698	5.0	165	822	5.3
1680	1680	2100	3"	200	735	6.8	200	857	7.1
2100	2100	2625	3"	200	888	8.0	200	1012	8.3
2640	2640	3300	3"	200	1008	8.9	200	1132	9.2

All details relate to 1 bar (abs), 20°C, 70% RH; [1] Aluminium housing with threaded connection including float drain and differential pressure indicator
[2] Aluminium housing with threaded connection including electronically controlled condensate drain and differential pressure gauge, operating pressure: 16 bar., operating temp.: min. +1 °C, max. +100 °C (60 °C)

Filter with flange connection

Type AFP, AFM, AFS, AFC	Nom.	Max.	Connection	Standard version[1] Width	Height	Weight	Premium version[2] Width	Height	Weight
	m^3/h	m^3/h		mm	mm	kg	mm	mm	kg
2760	2760	3450	PN 40	485	1139	125	485	1139	125
4200	4200	5250	PN 40	630	1130	196	630	1130	196
5700	5700	7125	PN 40	630	1235	210	630	1235	210
7500	7500	9375	PN 40	676	1277	264	676	1277	264
9300	9300	11625	PN 40	724	1320	314	724	1320	314
11000	11000	13750	PN 40	724	1330	320	724	1330	320

Operating overpressure pü (bar)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Correction factor $f_{pü}$	0.25	0.36	0.5	0.6	0.75	0.9	1	1.1	1.2	1.4	1.5	1.6	1.75	1.9	2	2.1

Conversion factors for other operating overpressures
The volume flows stated relate to a pressure of 7 bar. Volume flows for deviating pressures can be calculated with the correction factors.

Volume flow configuration
The volume flow through the filter element should be between 50% and 100% of the nominal volume flow. Running above or below this, impacts negatively on filter efficiency. The maximum volume flow must not be exceeded.

All details relate to 1 bar (abs), 20 °C, 70% RH.
[1] Steel housing with flange connection including float drain and differential pressure indicator
[2] Steel housing with flange connection including electronically controlled condensate drain and differential pressure gauge, operating pressure: 12 bar, operating temp.: min. +1 °C, max. +66 °C

CYCLONE SEPARATOR AS

The cyclone separators are developed for treating compressed air in industrial areas of use. They are used to remove liquid water from the compressed air, that is drawn in the ambient air due to air humidity and precipitates in the aftercooler. This condensate also contains particles of dirt and aerosols.
It is always a good idea to use a cyclone separator when a refrigeration dryer is installed directly downstream of the compressor so that less condensate precipitates in the refrigeration dryer.

The high centrifugal forces in the cyclone separator cause the water and particles of dirt to be "slung" against the inner wall, from where they slide into a collecting space.
The conical shape of the lower filter housing section means that separated-out aerosols cannot be swept up.

The turbulence-free zone in the lower part of the filter housing prevents condensate already separated in the wet area being swept up again by the air flow.
Due to their optimised design, the three-part housings with twist insert deliver low differential pressures at high flow rates.

As an option, the cyclone separators are also available in a premium version with electronic condensate drain.

Equipment features:
- Standard version including float drain
- Premium version including electronically controlled condensate drain to discharge condensate without any loss of compressed air

Application
Industry

Volume flows
30 - 13800 m³/h

Max. operating pressure
16 bar

Operating temperatures
Minimum: +1 °C
Maximum: +66 °C

Cyclone separator

	TYPE	Volume flow Nom. m³/h	Volume flow Max. m³/h	Connection G	Width mm	Height mm	Weight kg
Aluminium housing / threaded connection	30	30	37	3/8"	90	220	0.6
	60	60	75	1/2"	90	220	0.6
	180	180	225	3/4"	90	280	0.7
	300	300	375	1"	120	310	1.1
	570	570	710	1 1/2"	120	390	1.3
	990	990	1235	2"	165	505	3.6
	1320	1320	1650	2 1/2"	165	680	4.7
	2700	2700	3375	3"	200	718	6.2
Steel housing / flange connection	2400	2400	2760	DN 100	420	1030	41
	3000	3000	3450	DN 125	445	1040	55
	6600	6600	7500	DN 150	523	1095	81
	7500	7500	8630	DN 175	606	1180	117
	12000	12000	13800	DN 200	657	1275	157

Cyclone separator - premium version

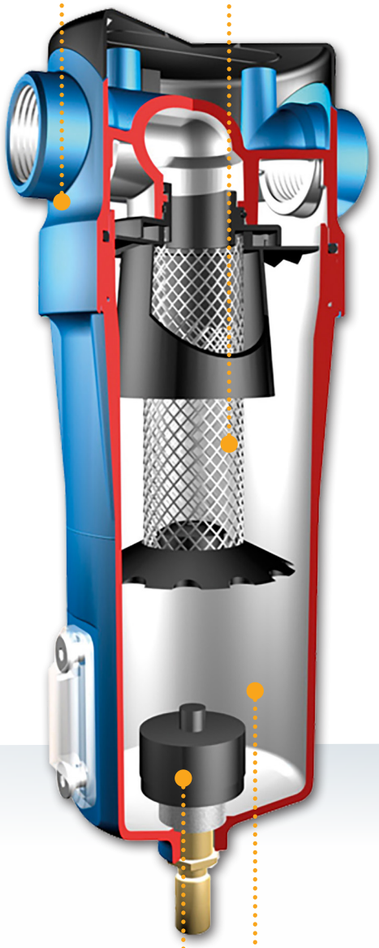
	TYPE	Volume flow Nom. m³/h	Volume flow Max. m³/h	Connection G	Width mm	Height mm	Weight kg
Aluminium housing / threaded connection	30	30	37	3/8"	90	295	0.8
	60	60	75	1/2"	90	295	0.8
	180	180	225	3/4"	90	355	0.9
	300	300	375	1"	120	380	1.3
	570	570	710	1 1/2"	120	460	1.5
	990	990	1235	2"	165	575	3.8
	1320	1320	1650	2 1/2"	165	750	4.9
	2700	2700	3375	3"	200	785	6.4
Steel housing / flange connection	2400	2400	2760	DN 100	420	940	41
	3000	3000	3450	DN 125	445	950	55
	6600	6600	7500	DN 150	523	1005	81
	7500	7500	8630	DN 175	606	1090	117
	12000	12000	13800	DN 200	657	1185	157

All details relate to 1 bar (abs), 20 °C, 70% RH.

- + Low differential pressures with high flow rates
- + Separated-out aerosols cannot be swept up
- + Available as standard or premium version

Three-part housing
resulting in low differential pressures

Heavy-duty cyclone separator



Turbulence-free zone
Prevents condensate from being swept up

Float drain

AS cyclone separator

ALM-D CONDENSATE DRAIN

+ Incredibly compact
+ Corrosion-resistant aluminium housing
+ Condensate drain free of compressed air losses
+ Unique installation flexibility and reliability

You cannot avoid producing condensate when generating compressed air. The condensate contains oil and particles of dirt and may cause corrosion in the receiver, compressed air lines and on the consumer if not reliably drained. The ALM-D condensate drains from ALMiG deliver reliable condensate drainage. Avoiding compressed air losses can result in huge energy savings.

Level-controlled condensate drain
ALM-D 10
The ALM-D 10 is a level-controlled condensate drain without compressed air losses for smaller compressed air systems. The ALM-D 10 features a reliable, directly controlled valve with FPM seal and covers pressure ranges of between 0 and 16 bar (up to 230 PSI).
With an inlet height of just 74 mm, the ALM-D 10 is a very compact solution offering unique installation flexibility and reliability.
Given its very compact size and low weight of less than 500 grammes, it is typically used in refrigeration dryers and filters. The maximum compressor capacity of this drain is 10 m³/min (350 CFM).

Equipment features:
- Compact solution with no compressed air losses.
- Very light.
- One model covers all capacities up to a compressor capacity of 10 m³/min.
- The inlet height of just 74 mm makes for simple installation.
- The fact that the valve is located externally means that maintenance is quick and easy.
- Robust, corrosion-resistant aluminium housing.
- Integrated clever valve self-cleaning mode.
- Voltage options: 230/115/24 VAC, 24 VDC.
- DIN 43650-B plug connection.
- IP65 protection class.

Electronically level-controlled condensate drain
ALM-D 100
The ALM-D 100 removes all kinds of condensate from compressed air systems of up to 100 m³/min without any air losses.
The compact and robust aluminium housing, the 2/2-way directly controlled valve with a large aperture and the integrated strainer make the ALM-D 100 the most reliable solution available for all compressed air solutions.

Equipment features:
- Compact solution with no compressed air losses.
- Alarm function (NO or NC) integrated as standard.
- Capacitive level control technology saves compressed air, energy and money.
- Robust, corrosion-resistant aluminium housing, EP paintwork.
- Directly controlled valve ensures a reliable condensate drain.
- Integrated stainless steel strainer.
- Voltage options: 230/115/24 VAC, 24 VDC.
- DIN 43650-B plug connection.
- IP65 protection class.

Application
Industry

Max. compressor capacity
ALM-D 10: 10 m³/min
ALM-D 100: 100 m³/min

Min./max. System pressure
0 - 16 bar

Valve type
2/2-way, directly controlled

valve aperture
ALM-D 10: 2 mm
ALM-D 100: 4 mm

Inlet / outlet
1/2" inlet union /
1/4" outlet union

Medium temperature / ambient temperature
1 - 50 °C

ALM-D 10

ALM-D 100

OIL-WATER SEPARATOR ALM-OWS

Condensate is produced when generating compressed air. This condensate is contaminated with oil, which is drawn in from the surrounding air and used in the compressor stage for cooling. Because the contaminated condensate must not be discharged into the sewer system, it has to be separated from the oil.

The ALM-OWS series of oil-water separators reliably removes oil from any condensate produced in compressed air systems.
In order to reliably separate the oil from the water, the condensate passes through several stages of separation and is filtered by several filter elements.
The oil-adsorbing elements combine various kinds of adsorption technology to achieve a residual oil content of less than 10 ppm.
The first oil-adsorbing element has a saturation indicator and provides an optical check, allowing the separator to be monitored visually (even from a distance). The combinations of elements are always analysed and put together on the basis of the latest range of adsorption technologies.
The last stage contains specially selected active carbon for separating the remaining contaminants.

Equipment features:

- Quick and easily replacement of elements.
- Several condensate inlets.
- Test bottle and test drain for taking samples.
- Use of heavy-duty filter elements.
- Simple, quick and clean installation and replacement process.
- Successful separation of mineral oil, synthetic oil and stable condensate emulsions by heavy-duty elements – for maximum reliability.
- Brass hose humps ensure quick and easy installation and maintenance.
- Simple to dispose of in line with environmental requirements.
- All types and designs of condensate drain can be used.
- Compact design and small footprint.

Achievable residual oil content
<10 ppm

Maximum compressor capacity
2 - 60 m³/min

Separation of
mineral oil
synthetic oil
condensate emulsions

Input connection
1/2" (2")

Output terminal
1"

ALM-OWS

TYPE	Compressor capacity	Max. oil absorption of elements	Heavy-duty elements	Active carbon elements	Overflow warning indicator	Indicator showing element's service life	Maintenance drain valve
	m³/min	Litres					
02	2	2	1	1	No	No	No
05	5	5	2	1	Yes	Yes	No
10	10	10	2	1	Yes	Yes	Yes
20	20	15	2	1	Yes	Yes	Yes
30	30	25	2	1	Yes	Yes	Yes
60	60	50	2	2	Yes	Yes	Yes

Optical display
Separator can even be monitored from a distance

Quick and easy replacement of elements

Water drain valves
to simply empty the individual towers

+ Simple, quick and clean installation and replacement process.
+ Successful separation of mineral oil, synthetic oil and stable condensate emulsions.


ALM-OWS 02


ALM-OWS 05


ALM-OWS 10


ALM-OWS 20


ALM-OWS 30


ALM-OWS 60

REFRIGERATION DRYER ALM-DGO

Clean, dry compressed air is crucial for all applications. Moisture or contaminants can lead to failures that reduce productivity and compromise product quality. With the new ALM-DGO series, you can rely on maximum safety and
efficiency.

The advantages:

- Pressure dew point from +3 to 5 °C for reliable process safety.
- Minimal pressure loss ensures immediate energy savings.
- Short start-up and response times guarantee rapid availability of the required compressed air quality.
- Optimised heat exchanger design for maximum energy efficiency and lower operating costs.
- Robust construction with durable components for reliable continuous operation.
- Refrigerant R513a: environmentally friendly, efficient and with optimal thermodynamic properties for a long service life of the refrigerant compressor.

The refrigerant circuit and insulation of the ALM-DGO series
The DGO series uses state-of-the-art refrigeration technology and high-quality insulation to ensure consistent operating conditions. The R513a refrigerant used
operates at low pressure, which extends the
service life of the components.
With ALM-DGO refrigeration dryers, you can be sure of a continuous supply of
reliable compressed air – economical, efficient and future-proof.
With ALM-DGO refrigeration dryers, you can be sure of a continuous supply of
reliable compressed air – economical, efficient and future-proof.

ALM-DGO refrigeration dryer

TYP	Max. Volume flow rate	compressed air connection	power consumption	Width	Length	Height	Weight
	m^3/h		kW	mm	mm	mm	kg
24	24	3/4"	0,18	333	392	446	18
36	36	3/4"	0,18	333	392	446	18
54	54	3/4"	0,20	333	392	446	19
78	78	3/4"	0,29	364	432	486	21
106	106	3/4"	0,32	364	432	832	24
144	144	1"	0,40	399	462	541	27
180	180	1"	0,47	399	462	541	34
216	216	1"	0,45	399	462	541	41
300	300	1 1/2"	0,64	509	522	681	55
365	365	1 1/2"	0,94	527	627	1123	74
480	480	1 1/2"	0,93	527	627	1123	79
660	660	2"	1,65	675	715	1559	164
780	780	2"	1,88	675	715	1559	166
800	800	2"	1,70	675	715	1559	169
1000	1000	2" 1/2"	1,99	675	715	1559	184
1300	1300	2" 1/2"	2,37	675	715	1559	196
1500	1500	2" 1/2"	3,16	849	859	1750	163
1850	1850	2" 1/2"	3,55	849	1100	1750	175
2200	2200	3"	4,29	849	1100	1750	289
2750	2750	3"	5,02	849	1100	1750	309
3000	3000	4"	5,69	849	1100	1750	360
3500	3500	4"	6,60	849	1100	1750	379
4400	4400	DN150 Flansch	6,87	971	1511	1750	475
5400	5400	DN150 Flansch	7,77	971	1511	1750	520
6400	6400	DN150 Flansch	7,78	971	1511	1750	650
7800	7800	DN150 Flansch	10,69	1389	1511	1750	680
10400	10400	DN250 Flansch	12,86	1476	2410	1969	900
12500	12500	DN250 Flansch	15,62	1476	2410	1969	1080

The ALM-DGO series is available in **standard and pro versions**: models 24–1300 come with a time-controlled solenoid valve as standard, while models 1500–12500 feature level-controlled condensate drainage – the pro version offers this feature across the entire range from 24–12500.


ALM-DGO 24


ALM-DGO 365


ALM-DGO 660

Correction factors for different operating pressures

Betriebsdruck (bar)	4	5	6	7	8	10	12	14
Korrekturfaktor	0,77	0,86	0,93	1,0	1,05	1,14	1,21	1,27

Correction factors for ambient temperature

Umgebungstemperatur in (°C)	25	30	35	40	45	50
Korrekturfaktor (°C)	1,0	0,96	0,9	0,82	0,72	0,60

Correction factors for different compressed air inlet temperatures

Lufttemperatur (°C)	25	30	35	40	45	50	55	60	65	70
Korrekturfaktor	1,2	1,12	1,0	0,83	0,69	0,59	0,50	0,44	0,39	0,37

Correction factors for the pressure dew point

Drucktaupunkt in (°C)	3	5	7	10
Korrekturfaktor	1,0	1,09	1,19	1,37

ACTIVATED CARBON AD-SORBER ALM AC & ALM-CAC

The ALM-AC & ALM-CAC activated carbon adsorbers supply absolutely oil-free compressed air that is neutral in taste and odour. The special activated carbon ensures the adsorption of oil vapour from the compressed air.

The ALM-AC & ALM-CAC activated carbon adsorbers guarantee:

- Oil-free with a residual oil content ≤ 0.003 mg/m³ due to high oil vapour absorption. Entry requirements:
- Residual oil content: 0.01mg/m³ ; inlet temperature 35°C.
- Service life of the activated carbon of approx. 9,000 operating hours.
- Absolute operational safety.
- Maximum performance, safety and quality.
- A constant degree of efficiency.

Standard version

- Pre- and post-filter ALM-CAC 02-45
- ALM-AC optional (recommendation pre-filter H-degree, post-filter U-degree);
- Oil test indicator optionally available

Applicarion
Industry

Nominal flow rate inlet
8,40 - 4200 m³/h

Operating pressure
Max. 16 bar(ü)

Ambient temperature
+2 up to +45°C

ALM-AC & ALM-CAC

TYPE	Nominal throughput at inlet[1]	Length	Width	Height	Weight	Connection
	m³/h	mm	mm	mm	kg	
ALM-CAC 02	8,40	276	210	420	8	1/4"
ALM-CAC 04	15,60	276	210	670	10	1/4"
ALM-CAC 07	25,20	276	210	920	13	1/4"
ALM-CAC 10	34,80	276	210	1120	14	1/4"
ALM-CAC 15	56,40	406	250	993	26	1/2"
ALM-CAC 20	72	406	250	1243	30	1/2"
ALM-CAC 30	108	565	320	1036	53	1"
ALM-CAC 45	162	565	320	1387	63	1"
ALM-AC 53	190	335	500	1890	115	DN25
ALM-AC 67	240	335	500	2040	125	DN25
ALM-AC 106	380	450	500	1930	191	DN25
ALM-AC 150	540	450	620	2130	218	DN40
ALM-AC 181	650	450	620	2220	230	DN40
ALM-AC 236	850	570	620	2000	276	DN40
ALM-AC 292	1050	570	660	2290	325	DN50
ALM-AC 389	1400	650	800	2200	383	DN80
ALM-AC 472	1700	700	800	2220	455	DN80
ALM-AC 569	2050	750	800	2250	509	DN80
ALM-AC 667	2400	800	800	2250	562	DN80
ALM-AC 778	2800	850	1000	2270	619	DN80
ALM-AC 889	3200	1000	1000	2400	686	DN100
ALM-AC 1028	3700	1000	1000	2420	762	DN100
ALM-AC 1167	4200	1040	1000	2450	830	DN100

[1]referred to 1 bar (abs) and 20°C intake condition, 7 bar (g) and 35°C inlet temperature, 16 bar operating pressure

Pre-filter and after-filter
factory-mounted on the dryer

Compact Design

- Absolute operational safety
- Maximum performance, safety and quality
- Constant efficiency

ALM-AC

ALM-CAC

ADSORPTION DRYER ALM-CCDA

The ALM-CCDA series of compact adsorption dryers cost-effectively provides the highest air quality at the desired extraction point. With reliable technology proven thousands of times in the market, the ALM-CCDA provides the assurance that the production process will operate without interruption - without wear or faults on compressed air tools and with more safety for downstream machines and manufacturing processes.

This series comes complete with built-in pre- and post-filters, filled with desiccant and proven PCB controller with indicator lights to monitor the drying process. The dryers are completely ready for use and only need to be connected to the power supply and the compressed air system. Alternatively, both a potential-free start/stop control and a load-dependent control are available to save energy. The compact adsorption dryers of the ALM-CCDA series meet the requirements of ISO 8573.1 class 1.2.1 as standard. Higher quality classes are available on request.

Features and benefits:

- Use at the extraction point: Air quality where it is needed.
- Easy installation: Connection to power and compressed air supply only required.
- Compact design: Designed for point-of-use, small footprint.
- Easy maintenance: Designed for quick replacement of standard components.
- Universal connection: Can be mounted on the wall or on the floor possible.

Application:

ALM-CCDA dryers provide clean air directly at the point of use.

- Sensitive measuring instruments
- Dental air
- Medical air
- Food packaging
- Prefiltration for gas separation membranes
- Breathing air without CO or CO_2 removal
- Paint spraying

Application
Industry

Pressure dew point
-20°C, -40°C, -70°C

Nominal flow rate inlet
up to 162 m^3/h

Operating pressure
4-16 bar

Ambient temperature
+1 °C up to +50 °C

+ Cold regenerating
+ Compact and space-saving
+ Easy installation and operation
+ Low maintenance costs

Pre- and after-filter
factory-mounted on the dryer

Extremely compact

High-performance desiccant
Long service life at high input temperatures for very low pressure dew point.

Maintenance friendly Design

ALM-CCDA

TYPE	Nominal throughput at inlet[1]	Length	Width	Height	Weight	Connection
	m^3/h	mm	mm	mm	kg	
02	8,4	366	226	420	14	1/4"
04	15,6	366	226	670	18	1/4"
07	25,2	366	226	920	24	1/4"
10	34,8	366	226	1120	28	1/4"
15	56,4	550	273	993	51	1/2"
20	72	550	273	1243	51	1/2"
30	108	755	338	1036	93	1"
45	162	755	338	1386	114	1"

[1] based on 1 bar (abs); -40°pressure dew point and 20°C; 0%rh at 7 bar (g) operating pressure and inlet temperature 35°C

Correction factor at different operating temperatures and pressures

	Inlet temperature T °C					
Pressure bar(ü)	25	30	35	40	45	50
4	0,66	0,64	0,62	0,59	0,55	0,50
5	0,80	0,77	0,75	0,71	0,67	0,63
6	0,94	0,90	0,87	0,84	0,79	0,76
7	1,07	1,03	1,00	0,96	0,92	0,87
8	1,16	1,14	1,11	1,08	1,04	1,00
9	1,23	1,21	1,18	1,14	1,10	1,07
10	1,32	1,30	1,27	1,24	1,20	1,16

ADSORPTION DRYER
ALM-CCDA C - OIL-FREE

The ALM-CCDA C series of compact adsorption dryers with downstream activated carbon oil vapour adsorber is designed to dry compressed air down to a dew point of -70°C and a residual oil content of 0.003 mg/m³. The compact design allows it to be used directly where dry and technically oil-free compressed air is required.
All dryers are delivered ready for use with pre- and after-filter, desiccant and reliable PCB controller with indicator lights.
Optionally, both a potential-free start/stop control and a load-dependent control are available to save energy.
The compact adsorption dryers meet the requirements of ISO 8573.1 class 1.2.1 as standard, and higher quality classes are available on request.

Features and benefits:
- Adsorption dryer
- Including additional activated carbon stage for oil-free compressed air with residual oil content up to 0.003mg/m³ (at 20°C)
- Including pre-filter and after-filter already mounted on the dryer at the factory.
- Particle separation 0.01 micron pre-filter, 1 micron post-filter
- Cold regeneration design
- Use at the point of extraction: air quality where it is needed.
- Easy installation: Connection to power and compressed air supply only required.
- Compact design: Designed for point-of-use, small footprint.
- Easy maintenance: Designed for quick replacement of standard components.

Application:
ALM-CCDA C dryers provide clean and oil-free air directly at the point of use.
- Sensitive instruments
- Dental air
- Medical air
- Food packaging
- Prefiltration for gas separation membranes
- Breathing air without CO or CO_2 removal
- Paint spraying

Application
Industry

Pressure dew point
-20°C, -40°C, -70°C

Nominal flow rate inlet
up to 162 m³/h

Operating pressure
4-16 bar

Ambient temperature
+1 °C up to +50 °C

ALM-CCDA C

TYPE	Nominal throughput at inlet[1]	Length	Width	Height	Weight	Connection
	m³/h	mm	mm	mm	kg	
02	8,4	515	226	420	22	1/4"
04	15,6	515	226	670	30	1/4"
07	25,2	515	226	920	38	1/4"
10	34,8	515	226	1120	44	1/4"
15	56,4	773	273	993	77	1/2"
20	72	773	273	1243	92	1/2"
30	108	1050	338	1036	145	1"
45	162	1050	338	1387	178	1"

[1] based on 1 bar (abs); -40°pressure dew point and 20°C; 0%rh at 7 bar (g) operating pressure and inlet temperature 35°C

Correction factor at different operating temperatures and pressures

	Inlet temperature T °C					
Pressure bar(ü)	25	30	35	40	45	50
4	0,66	0,64	0,62	0,59	0,55	0,50
5	0,80	0,77	0,75	0,71	0,67	0,63
6	0,94	0,90	0,87	0,84	0,79	0,76
7	1,07	1,03	1,00	0,96	0,92	0,87
8	1,16	1,14	1,11	1,08	1,04	1,00
9	1,23	1,21	1,18	1,14	1,10	1,07
10	1,32	1,30	1,27	1,24	1,20	1,16

+ Residual oil content of 0.003 mg/m³
+ Cold-regenerating
+ Compact and space-saving
+ Simple installation and operation

High-performance desiccant
Long service life at high input temperatures for very low pressure dew point

Extremely compact

Pre- and after-filter
factory-mounted on the dryer

Downstream Activated carbon oil vapour adsorber

Maintenance friendly Design

ADSORPTION DRYER ALM-CDA

+ Cold regenerating
+ Compact and space-saving
+ Easy installation and operation
+ Low maintenance costs

Drying compressed air by adsorption is a purely physical process in which water vapour is bound (adsorbed) to a desiccant by deposition. For adsorption, the humid compressed air is passed through the adsorption dryer. As the compressed air flows through the container from bottom to top, the compressed air comes into contact with the hydrophilic desiccant. The desiccant absorbs the moisture and dry compressed air flows out of the container.

ALMiG offers two control systems for the ALM-CDA adsorption dryers:

1. PLC (time-based control)

The HDD adsorption dryer has a time-based PLC control as standard. The standard cycle has five minutes of adsorption, followed by four minutes of desorption (removal of deposited water vapour from the desiccant) and one minute for pressure build-up.

2. LCS (load dependent control)

The LCS control is a load-dependent control with which energy savings can be realised. Instead of the five-minute cycle of the time-based control, the LCS control has a dew point sensor that measures the moisture content at the dryer outlet. The dryer only regenerates when the set dew point is exceeded. This saves purge air and thus energy.

Features and benefits:

- Welded vessels according to ASME or PED standard.
- Other standards and approvals on request
- The use of self-cleaning wedge wire made of stainless steel in the humid area enables an even distribution of the air flow through the dryer with a low differential pressure
- Indicator lights for on/off function, adsorption, desorption and LED indication of dew point (if a dew point sensor is installed)
- Use of a high-performance molecular sieve for use in a wide range of conditions
- Use of standard industrial valves for quick change or maintenance
- Customised versions available on request
- Easy maintenance

Application
Industry

Pressure dew point
-20°C, -40°C, -70°C

Nominal flow rate inlet
up to 4200 m^3/h

Operating pressure
4-16 bar

Ambient temperature
+1 °C up to +50 °C

ALM-CDA

TYPE	Nominal throughput at inlet[1]	Length	Width	Height	Weight	Connection
	m^3/h	mm	mm	mm	kg	
53	190	1515	610	1953	251	1"
67	240	1515	610	2110	273	1"
106	380	1620	610	1990	417	1"
150	540	1736	637	2211	487	1 1/2"
181	650	1736	637	2312	513	1 1/2"
236	850	1876	637	2084	610	1 1/2"
292	1050	2075	780	2365	729	2"
389	1400	1510	740	2150	959	DN80/3"
472	1700	1620	760	2180	1136	DN80/3"
569	2050	1670	790	2220	1272	DN80/3"
667	2400	1720	860	2270	1404	DN80/3"
778	2800	1770	920	2240	1547	DN80/3"
889	3200	2100	930	2380	1739	DN100/4"
1028	3799	2160	970	2400	1903	DN100/4"
1167	4200	2270	1020	2400	2074	DN100/4"

[1] based on 1 bar (abs); -40°pressure dew point and 20°C; 0%rh at 7 bar (g) operating pressure and inlet temperature 35°C

Correction factor at different operating temperatures and pressures

Pressure bar(g)	Inlet temperature T °C					
	25	30	35	40	45	50
4	0,66	0,64	0,62	0,59	0,55	0,50
5	0,80	0,77	0,75	0,71	0,67	0,63
6	0,94	0,90	0,87	0,84	0,79	0,76
7	1,07	1,03	1,00	0,96	0,92	0,87
8	1,16	1,14	1,11	1,08	1,04	1,00
9	1,23	1,21	1,18	1,14	1,10	1,07
10	1,32	1,30	1,27	1,24	1,20	1,16

ADSORPTION DRYER ALM-WDA

Two containers connected in parallel are needed for the continuous drying process using adsorption drying. Each vessel is filled with desiccants that act as a drying medium.
For ALMiG heat regenerating adsorption dryers, high performance desiccants are used which have a long lifetime at high inlet temperatures and thus ensure very low pressure dew points.
The advantage of a vacuum system over other heat regenerating systems is the lower evaporation temperature. Under vacuum conditions, water evaporates at a lower temperature than under pressure conditions. This shortens the heating time, which is cost effective in terms of energy savings.

Advantages:

- The welded steel tanks are designed according to PED 2014/68/EU (other standards and approvals are available on request).
- A stainless steel slotted screen in the wet section of the tank is a self-cleaning system that allows for even distribution of airflow with low pressure differential throughout the system
- Touch screen control for continuous monitoring to communicate with customer's control equipment via integration of Profibus and Modbus
- interfaces
- Additional integrated monitoring of inlet and outlet temperatures
- Features load sensing control (LCS) as standard
- Use of standard industrial valves for fast availability and easy maintenance
- Low energy consumption, fast return on investment
- No purge air is required for regeneration /
- "ZERO PURGE

Application
Industry

Pressure dew point
-40°C at 100% nominal load

Nominal flow rate inlet
800 - 7120 m^3/h

Operating pressure
4 - 10 bar(ü)

Ambient temperature
+1°C up to +40 °C

ALM-WDA

TYPE	Nominal throughput at inlet[1]	Length	Width	Height	Weight	Connection
	m^3/h	mm	mm	mm		G
222	800	1290	1250	2350	750	DN50/2"
333	1200	1550	1400	2510	1106	DN80/3"
464	1670	1610	1480	2550	1493	DN80/3"
583	2100	1670	1630	2570	1792	DN80/3"
750	2700	2050	1620	2970	2335	DN100/4"
917	3300	2060	1670	3000	2755	DN100/4"
1056	3800	2170	1770	3010	3188	DN100/4"
1167	4200	2200	1800	3030	3600	DN100/4"
1361	4900	2500	1800	3180	4060	DN150/6"
1556	5600	2560	1870	3200	4713	DN150/6"
1708	6150	2620	2120	3220	5370	DN150/6"
1978	7120	2690	2200	3250	5895	DN150/6"

[1] based on 1 bar (abs) and 20°C; at 7 bar (g) operating pressure and inlet temperature 35°C

Correction factor at different Operating temperatures and pressures

Pressure bar(ü)	Inlet temperature T °C 25	30	35	40
4	0,66	0,64	0,62	0,59
5	0,80	0,7	0,75	0,71
6	0,94	0,90	0,87	0,84
7	1,07	1,03	1,00	0,96
8	1,16	1,14	1,11	1,08
9	1,23	1,21	1,18	1,14
10	1,32	1,30	1,27	1,24

High-performance desiccant
Long service life at high input temperatures for very low pressure dew point.

Vacuum system
for lower evaporation temperatures and thus reduced heating time to achieve energy savings.

Load-dependent control
Maximising adsorption time and minimising regeneration time for economical and energy-saving operation.

+ Proven technology
+ Robust construction
+ Reliable performance
+ Easy maintenance
+ No purge air, "ZERO PURGE

ALMiG

POWERFUL TECHNOLOGIES FOR EVERY APPLICATION

ALMiG is one of the leading compressed air technology system providers and has decades of experience delivering premium products in the compressed air sector. Companies all around the world trust in our customer focused solutions, our quality, innovation and flexibility.

Constant research and development form the essential foundations for the efficiency of every system manufactured by ALMiG. Only these constant enhancements and improvements enable us to react quickly and flexibly to individual customer wishes. This approach is complemented by our comprehensive understanding of the sector and extensive service offering which enable ALMiG to stand as skilled partners alongside every customer whatever the issue.

Our customers receive from ALMiG sophisticated compressor technologies and extensive service provision. The latest technologies combine excellence with the quietest possible running performance, optimal energy efficiency and particularly careful conservation of resources. You see: it pays to get to know our long-established Swabian company.

ALMiG: Compressor Systems Made in Germany

Our compressors meet the acceptance conditions according to:
- ISO 1217-3 Annex C-2009
- ASME
- OSHA

and comply with the CE guidelines. Even the strictest acceptance conditions such as DNV-GL, BUREAU VERITAS, LLOYD's REGISTER OF SHIPPING, ABS and others are a matter of course for us.
The ALMIG company is certified according to: IRIS 02, ISO 9001: 2008, ISO 14001: 2004

Service - Anytime. Worldwide.

High-quality products such as ALMiG's compressed air solutions deserve first-class service. We therefore offer you the complete service program: from comprehensive consulting, to ensuring availability and increasing economic efficiency, to the development of energy saving potentials. Reliability, fast response times and competent advice are our top priorities. We offer a comprehensive network of highly qualified ALMiG service technicians, certified according to SCC** (Safety Certificate Contractors), and specially trained and authorised service partners. In this way we ensure the operational safety of your compressed air station at all times, both at home and abroad.

- Consulting, planning and installation
- Measurements of compressed air consumption and quality
- Maintenance contracts
- Original spare parts
- Further training, including energy-saving and compressed air seminars

5 YEARS AirCare CERTIFIED WARRANTY COVERED BY ALMiG TERMS & CONDITIONS APPLY

The ALMiG AIRCARE package gives you the opportunity to assert claims for rectification of defects even after the statutory warranty period has expired. Keep a full overview of your service costs and avoid unpleasant surprises.

The special feature of ALMiG AirCare is that this extension **not only includes the newly purchased ALMiG compressor(s), but also additional components** such as refrigeration dryers, filters etc. (see AirCare Conditions).

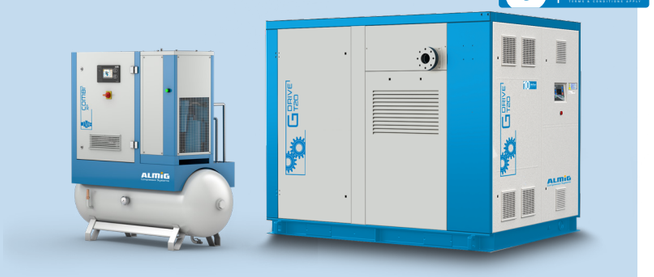
Our products

Efficiency and sustainability are ALMiG's guiding values. With the „Green & Blue" orientation, we are constantly developing our products with regard to resource-saving and environmentally compatible use. In the „Blue" area, we are continuously working on increasingly efficient compressors in order to reduce the energy consumption of the plants and achieve an ever better specific performance.
The „Green" area includes our oil-free compressors and components for compressed air treatment. The less oil is used, and thus gets into the environment together with other dirt particles, the better for our environment. That is why we are continuously developing our oil-free systems further and our treatment components are also undergoing a constant optimisation process.

Oil-injected compressors

- High efficiency and reliability
- All possible drive options
- Low maintenance costs
- Low noise level

Power range: 4 to 315 kW
Volume flow: 0.27 - 62.7 m³/min
Operating pressure up to 13 bar



Speed-controlled compressors

- Highly efficient
- Adjust exactly to the compressed air requirement
- Costly idle times are reduced to a minimum

Power range: 5.5 to 315 kW
Volume flow: 0.27 - 62 m³/min
Operating pressure up to 13 bar

Oil-free compressors

- 100 % oil-free compressed air
- Extremely low energy consumption during operation
- User-friendly microprocessor control
- Minimum maintenance effort
- Air or water cooling

Power range: 15 to 2240 kW
Volume flow: 0.21 - 330 m³/min
Operating pressure up to 10 bar

Compressed air treatment

- Low pressure loss
- Reliable cleaning of the compressed air
- Safety in operation

COMPRESSOR SYSTEMS
MADE IN GERMANY

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