KAESER COMPRESSORS®



Activated Carbon Adsorbers

ACT Series

Continuous operation for maximum compressed air quality

Flow rate 1.60 to 155.50 m^3/min, pressure 4 to 45 bar

www.kaeser.com

ACT series

Continuous operation for maximum compressed air quality

ACT series activated carbon adsorbers from KAESER are high-performance specialists for continuous operation when compressed air that is odourless, tasteless, and technically oil-free is required. Installed downstream from compressed air drying and prefiltration components, they attain Class 1 residual oil content in accordance with ISO 8573-1 to ensure dependable protection of sensitive production processes.

They are therefore the perfect choice for applications in the optical, surface technology, electronics, food production, and pharmaceuticals industries.

Technically oil-free compressed air

The ISO 8573-1 industry standard specifies a residual oil content of 0 to a maximum of 0.01 mg/m³ for the strictest compressed air purity class, 1. That makes Class 1 compressed air significantly cleaner than typical ambient air. Therefore, irrespective of the compression method used, compressed air treatment is essential.

In order to achieve this level of purity, it is insufficient simply to remove the residual liquid oil content via filters. The vapour components also need to be retained by means of activated carbon adsorption.

KAESER's high-performance ACT series activated carbon adsorbers are able to achieve residual oil contents significantly below the limit value for Class 1.

Energy savings

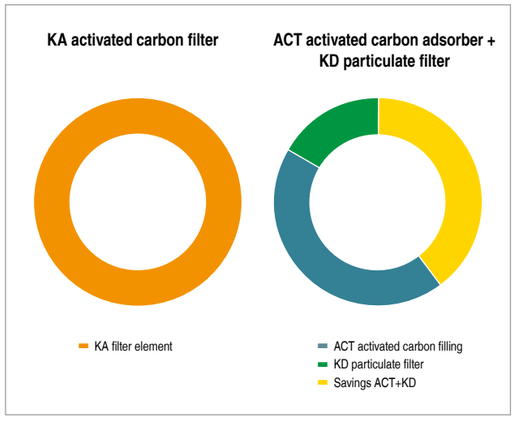
Generously dimensioned flow cross sections, together with stainless steel flow distributors, ensure even flow distribution with an exceptionally low maximum pressure loss of 0.1 bar.

As a result, the airend/block discharge pressure of upstream compressors, as well as the energy costs for compressed air generation, can be maintained as low as possible.

Exceptional reliability

ACT activated carbon adsorbers utilise a high-quality, generously dimensioned activated carbon filling. Optimised for gas purification, the special type of activated carbon used is fine-pored and features exceptional retention capacity. Whether as original equipment or for maintenance purposes, this carbon is abrasion-resistant, low-dust and has minimal ash content.

Furthermore, specially designed stainless steel flow distributors ensure an even flow distribution throughout the activated carbon bed. Consequently, exceptional compressed air purity is dependably assured for up to 12,000 full load hours or a maximum of 5 years.



Low life-cycle costs

When it comes to continuous compressed air demand, KAESER ACT activated carbon adsorbers are significantly more cost-effective than typical activated carbon filters. Thanks to significantly longer maintenance intervals, their life-cycle costs can match those of high-quality activated carbon filters by the third year. In subsequent years, they are by far the more cost-effective alternative. This advantage is further bolstered by improved compressed air availability due to the reduced number of maintenance operations required.

Basis:
Costs for investment, servicing (material, work and disposal), with the following replacement intervals: ACT activated carbon filling 12,000 operating hours, particulate filter 6,000 operating hours, activated carbon filter 1,000 operating hours; annual interest payments over 10 years.



Image:
ACT 140 with KAESER FILTER accessory (option)

Saves installation costs

Flexibly positioned compressed air connections make user-end adjustments unnecessary.



ACT series

Technically oil-free, with maximum cost-efficiency



Minimal pressure loss

ACT series activated carbon adsorbers feature generously sized cross sections for the pipework and chambers. They consequently operate with maximum differential pressures (dp) of 0.1 bar.



Activated carbon with long service life

Generous fill quantities, high-quality activated carbon, and stainless steel flow distributors enable the activated carbon filling in ACT activated carbon adsorbers to deliver an exceptionally long service life of up to 12,000 full load hours, or a maximum of 5 years, without being changed.



Stable steel base frame

KAESER ACT series activated carbon adsorbers are mounted on an exceptionally durable protective steel base frame.



Accessories: KAESER compressed air filters

ACT activated carbon adsorbers should always be equipped with KAESER FILTERs. Installed as upstream and downstream filters, they ensure maximum service life for the activated carbon and, with minimal pressure loss, prevent carbon dust from contaminating the cleaned compressed air.

Equipment

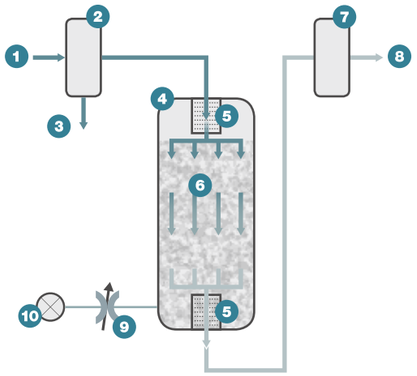
Standard equipment

Desiccant chamber including activated carbon filling, upper/lower stainless steel flow distributors and separate upper/lower filling and emptying ports; equipped with chamber pressure gauge and pressure regulator with oil vapour indicator; pre-installed compressed air inlet and discharge line (flexible positioning); stable base frame, 2-component wet paint coating.

Options

- Silicone-free version as per VW test standard PV 3.10.7
- Working pressure 16 / 45 bar for models ACT 16 – 140
- Working pressure 10 bar for models ACT 175 – 1555

Function



(1) Compressed air inlet
(2) Prefilter (accessory)
(3) Condensate outlet
(4) Desiccant chamber
(5) Stainless steel flow distributor
(6) Activated carbon filling
(7) Afterfilter (accessory)
(8) Compressed air outlet
(9) Pressure regulator
(10) Oil vapour indicator

Calculating flow rate

Correction factors for deviating operating conditions (flow rates in m³/min x k...)

Deviating working pressure at filter inlet p													
p bar$_{(g)}$	4	5	6	7	8	9	10	11	12	13	14	15	16
k_p	0.63	0.75	0.88	1.00	1.06	1.12	1.17	1.22	1.27	1.32	1.37	1.41	1.46

Example:				
Working pressure	8 bar	->	Factor	1.06

ACT 140 activated carbon adsorber with 14.0 m³/min flow rate
Max. possible flow rate under operating conditions
V_{max} Operation = $V_{Reference}$ x k_p
V_{max} Operation = 14.0 m³/min x 1.06 = 14.84 m³/min

Technical data

Model	Flow rate [1] m³/min	Working pressure bar	Pressure loss bar	Compressed air connection	Ambient temperature °C	Max. temperature compressed air inlet °C	Dimensions W x D x H mm
ACT 16	1.6	4 – 16	≤ 0.1	R ¾"	+2 – +45	+2 – +55	350 x 750 x 1950
ACT 23	2.3	4 – 16	≤ 0.1	R ¾"	+2 – +45	+2 – +55	350 x 750 x 1950
ACT 34	3.4	4 – 16	≤ 0.1	R 1 ½"	+2 – +45	+2 – +55	350 x 750 x 1970
ACT 52	5.2	4 – 16	≤ 0.1	R 1 ½"	+2 – +45	+2 – +55	350 x 750 x 1980
ACT 67	6.7	4 – 16	≤ 0.1	R 1 ½"	+2 – +45	+2 – +55	550 x 750 x 1980
ACT 84	8.4	4 – 16	≤ 0.1	R 2"	+2 – +45	+2 – +55	550 x 750 x 1990
ACT 115	11.5	4 – 16	≤ 0.1	R 2"	+2 – +45	+2 – +55	550 x 750 x 1990
ACT 140	14	4 – 16	≤ 0.1	R 2"	+2 – +45	+2 – +55	550 x 750 x 2000
ACT 175	17.5	4 – 10	≤ 0.1	DN 80	+2 – +45	+2 – +55	800 x 1160 x 2215
ACT 225	22.5	4 – 10	≤ 0.1	DN 80	+2 – +45	+2 – +55	800 x 1160 x 2505
ACT 275	27.5	4 – 10	≤ 0.1	DN 80	+2 – +45	+2 – +55	960 x 1230 x 2385
ACT 330	33	4 – 10	≤ 0.1	DN 80	+2 – +45	+2 – +55	1010 x 1230 x 2385
ACT 395	39.5	4 – 10	≤ 0.1	DN 100	+2 – +45	+2 – +55	1010 x 1250 x 2595
ACT 450	45	4 – 10	≤ 0.1	DN 100	+2 – +45	+2 – +55	1110 x 1454 x 2835
ACT 610	61	4 – 10	≤ 0.1	DN 150	+2 – +45	+2 – +55	1110 x 1728 x 2868
ACT 870	87	4 – 10	≤ 0.1	DN 150	+2 – +45	+2 – +55	1540 x 1965 x 2873
ACT 1190	119	4 – 10	≤ 0.1	DN 200	+2 – +45	+2 – +55	1540 x 2169 x 2984
ACT 1555	155.5	4 – 10	≤ 0.1	DN 200	+2 – +45	+2 – +55	1580 x 2187 x 3297

[1] Reference point: 1 bar(a), +20 °C, 0% relative humidity; Operating point: Working pressure 7 bar, compressed air inlet temperature +35 °C

Dimensions

Image: ACT 140



Image: ACT 1555



More compressed air for less energy

The world is our home



As one of the world's largest manufacturers of compressors, blowers and compressed air systems, KAESER KOMPRESSOREN is represented throughout the world by a comprehensive network of wholly owned subsidiaries and authorised distribution partners in over 140 countries.

By offering innovative, efficient and reliable products and services, KAESER KOMPRESSOREN's experienced consultants and engineers work in close partnership with customers to enhance their competitive edge and to develop progressive system concepts that continuously push the boundaries of performance and technology. Moreover, decades of knowledge and expertise from this industry-leading systems provider are made available to each and every customer via the KAESER group's advanced global IT network.

These advantages, coupled with KAESER's worldwide service organisation, ensure that every product operates at the peak of its performance at all times, providing optimal efficiency and maximum availability.

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