KAESER KOMPRESSOREN®




# 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

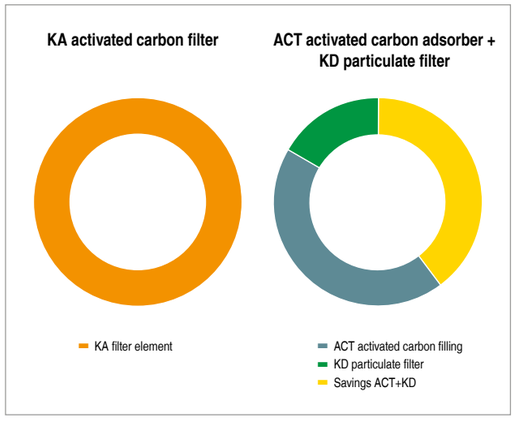
Generously dimensioned flow cross sections, together with stainless steel flow distributors, ensure even flow distribution with an exceptionally low maximum pressure loss of 0.1 bar.

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

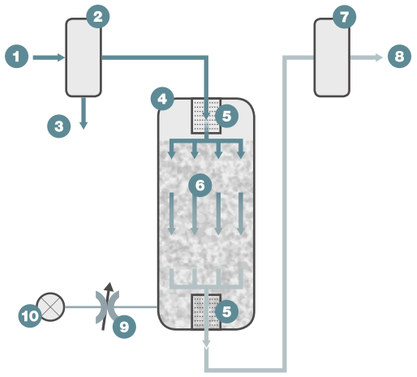
## Standard equipment

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.




**KAESER KOMPRESSOREN PHILIPPINES, Inc.**
Suite 200, PBD Bldg. II, 27 Don Alejandro Roces Avenue
1103 Quezon City, Philippines
Tel.: (+632) 8372-6642
E-mail: info.philippines@kaeser.com – www.kaeser.com

P-718PH Specifications are subject to change without notice. /25