



Clean air solutions



# INNOVATIVE TECHNOLOGY FOR A SAFER FUTURE



## AIR IS AMONGST THE MOST PRECIOUS COMMODITY ON OUR PLANET

Camfil is the international leader in clean air technology and air filtration systems. We are represented by more than 50 agencies around the world, caring for the best and safest air quality.

Our innovative technology is based on committed research, innovative development and uncompromising quality control. It is our goal to protect people and their environment from all kinds of air pollution, whilst continuing to exceed the high expectations of our clients. We face this responsibility every day. Our expertise, drawn from 50 years of experience, protects and ensures a safer future.

## SECURITY CAN NEVER BE OVERESTIMATED

Especially when it comes to highly sensitive subjects such as the infection of humans and animals by highly contagious micro-organisms.

The highest standards must be fulfilled, particularly when hazardous materials like infective micro-organisms or radioactive particles have to be filtered, for example in pharmaceutical, biotechnological, nuclear or BSL 3/BSL 4 laboratories.

## WHICH AIR FILTRATION SOLUTION BEST MEETS THE HIGHEST STANDARDS?

CamContain CS was developed by our Research and Development team, in very close co-operation with our clients. Finding the optimal solution for especially sensitive and demanding applications involved a comprehensive analysis of what top-level laboratories require.

The result: an individual and intelligent filter housing system that satisfies even the very highest expectations.

## WHAT GIVES THE HIGHEST SECURITY WITH THE EASIEST USE?

CamContain CS. Before creating a customized filter housing concept, the safety requirements have to be defined by the client. Based upon the given requirements, Camfil will develop a solution specifically tailored to meet these demands, for example by choosing an automatic controlled filtermeasurement section.

Whatever you require – we offer individual and competent advice, helping you find the best solution for your needs.

# THE CAMCONTAIN CS SECURITY SYSTEM THE ADVANTAGES OF SAFETY



CamContain CS insures maximum safety and protection for operators, lab employees and the environment.

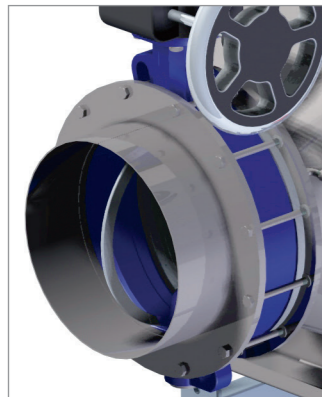
- Welded (gas-tight), torsion resistant stainless steel housing conforms to tightness-class as required by nuclear power stations (DIN 25496, Table 3)
- Double security for all sealing components of the housing
- The innovative filter tensioning mechanism assures that the service bag and service hatch inside do not get contaminated, even if the filter material is damaged. And even without the service lid, the housing is fully functional.
- Added security through service bag change mechanism
- The novel filter slide-in mechanism (with a centred guide slide bearing) allows for a safe filter installation without the risk of filter seal damage
- A robust frame with pneumatic tension release permits an easy and safe filter installation
- The intelligent decontamination concept for housing, filter and all relevant components
- (Opt.) Automatic HEPA-filter (incl. seal) scanning in installed state (per DIN 1822)
- (Opt.) Bypass-system for using non-contaminated air during filter test phase
- (Opt.) Mobile CamScan unit for userfriendly testing of the HEPA-filter, including appropriate documentation



# QUALITY IN EVERY DETAIL: CAMCONTAIN CS



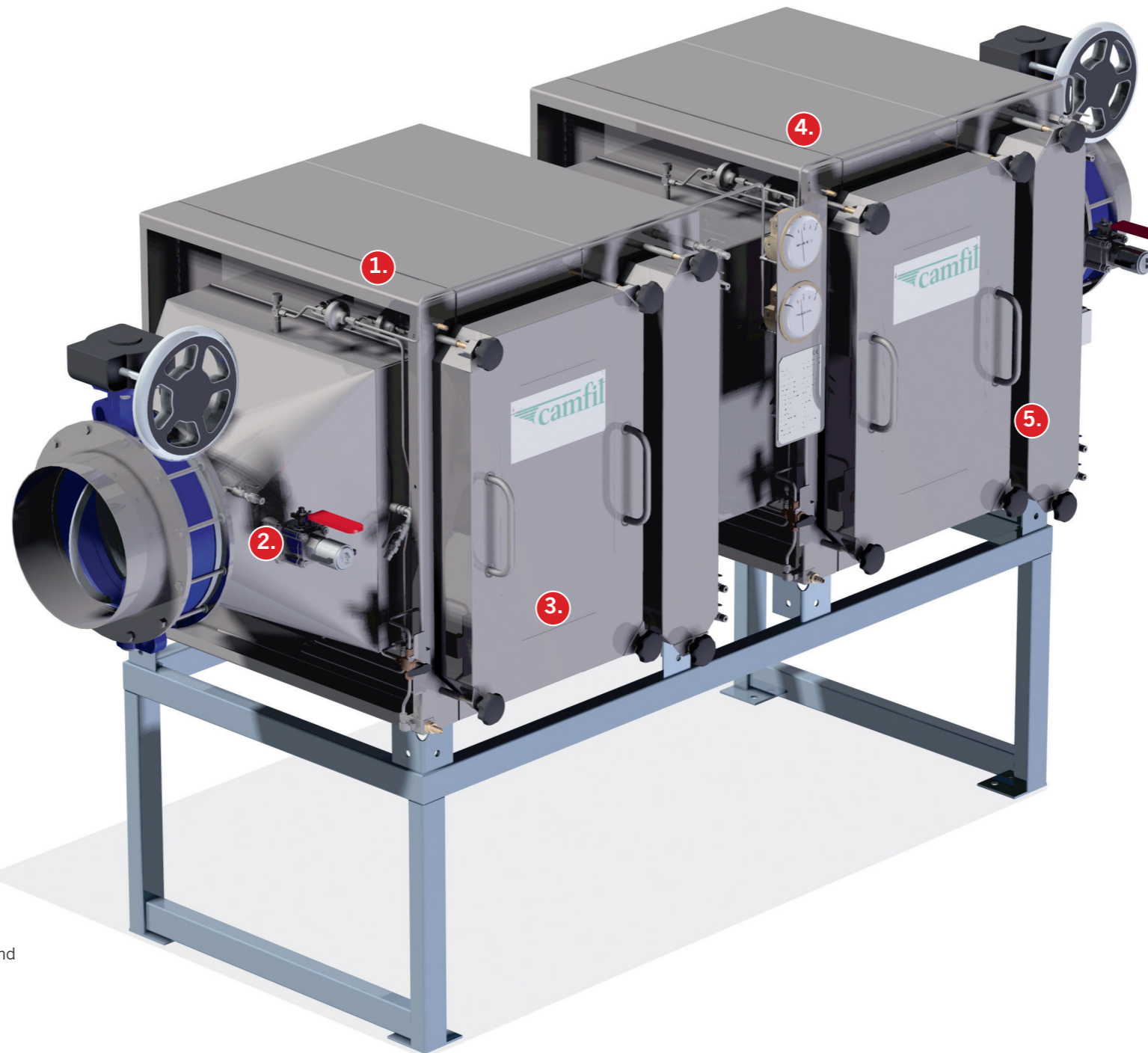
**1. Filter housing**  
The containment system design consists of gas-tight, welded, torsion resistant stainless steel. The leak tightness complies with DIN 25496, Table 3.



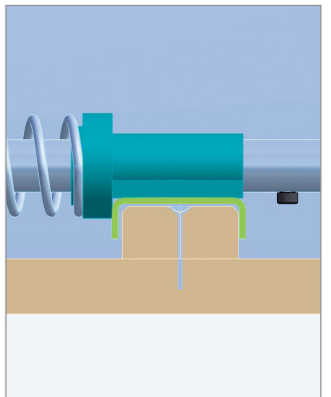
**2. Valves**  
Both isolation valves (particulateladen and clean gas) meet the highest tightness requirements and may be operated manually or pneumatically. The following standards are complied with:  
- DIN 3230 T3 BO BN (leakage rate 1)  
- ISO 5208, Category 3  
- ANSI B 16-104, Class VI



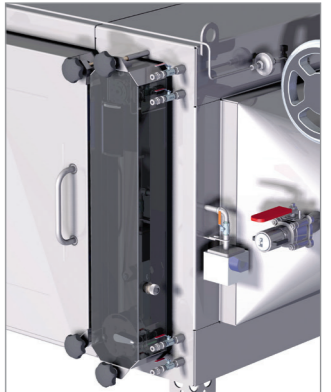
**3. Filter clamping device/ Service lid**  
The innovative, pneumatic clamping device, permits full operation, even without a closed service lid, and prevents contamination of the service bag or lid inside. The seal between the lid and the housing, and the area directly behind the service lid, acts as a further safety barrier.



**4. Filter gliding system**  
Filters are installed with the help of a centred guide slide bearing. When the filter is released, cylinder and spring forces loosen the seals from the clamping frame automatically. A safe filter change is guaranteed since the seals do not rub on the frame (in both horizontal and vertical arrangements) and hence do not get damaged.



**5. Filter measurement**  
The filter test section is available in different versions, either to measure the overall efficiency or to check for possible filter leakages acc. EN 1822. The CamScan Mobile may be used to evaluate the air being tested.



**6. Decontamination**  
For highly dangerous pathological agents (microbiological), a safe decontamination of the housing, filter and all relevant components is absolutely essential. CamContain CS offers the intelligent decontamination solution.





# CAMSCAN MOBILE TO CONTROL THE FILTER EASIER AND MORE RELIABLE



The **CamScan Mobile** is a test unit which allows the automatic testing of installed filters. Both the total efficiency as well as any possible filter leakage can be measured, as per DIN EN 1822.

All the measured values are recorded, enabling easy documentation of data.

### Description of the leakage test.

A mixer insures that the DEHS particles, introduced into the airflow before the HEPA-filters, are evenly distributed. The Cam-Scan Mobile analyzes the air by

means of laser particulate measurement. In the event that the total filtration efficiency is not attained or a leakage is detected, the filter needs to be exchanged (as defined in DIN 1822).

The entire test procedure, from the introduction of the DEHS particles, to the steering of the scan's sensor and including the processing of the test results, is automatic and controlled by the unit's software. All results may be saved for documentation purposes and processed elsewhere if necessary.

**Note :**

1. The system is also available in sections
2. Alternatively, a manual scan-sensor control for measuring with your own particle counter is available.

## BIO-SAFETY-LEVELS

CamContain CS has been developed for use in laboratories for safety classes BSL 3 and 4, and complies with the WHO's "Laboratory bio safety manual, Third edition", as well as DIN EN 12128.

Extract from EN 12128 (May, 1998):

Requirements*	Safety Class			
	1.	2.	3.	4.
Ventilation system - device to create negative pressure - HEPA-filter unit for exhaust air	no	no	optional yes	yes yes <small>(using 2 HEPA-filters)</small>
HEPA-filter unit for intake air	no	no	no	yes
Microbiological cabinet	optional	optional	yes	yes <small>(Class III)</small>

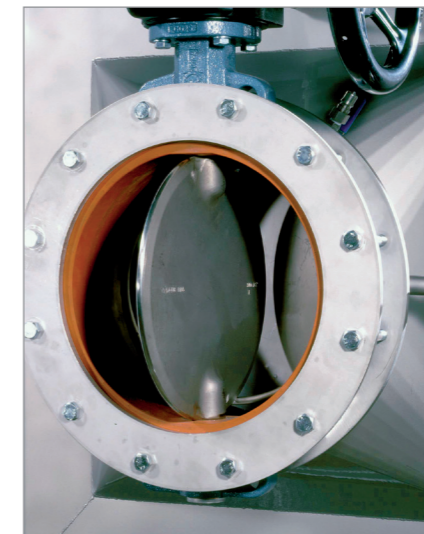
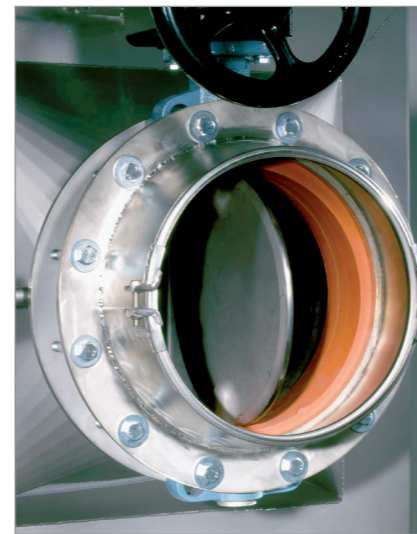
\*All requirements to comply with national safety standards within a bio-technical environment.

# CUSTOMISED CONCEPTS



### BYPASS SECTION

To prevent possible contamination of the measuring system during a filter test, a bypass-section is available. After the required decontamination, the test air is extracted via a bypass-inlet.



### CONNECTOR OPTIONS

The housing's connector can be tailored to meet your specific requirements.

### SIZES/CONSTRUCTION DESIGNS

Depending on the specific requirements, a maximum flow of up to 4000m<sup>3</sup>/h can be achieved per filter unit. It is possible to develop the CamContain CS system with several filter stages and different filter efficiencies. The modular design allows the parallel operation of multiple filters, therefore it is possible to achieve far higher airflows with a single CamContain CS system.

Our innovative filter pressing mechanism permits you to determine the air flow direction freely. Optionally, a robust support frame can be designed to accommodate your individual needs.

Please feel free to contact us to discuss a custom-designed solution, to suit your requirements.

**CAMFIL is the world's largest and leading manufacturer of filters and clean air solutions.**

There is a good chance that, at this very moment, you are breathing clean air that has passed through a filter manufactured by us. Our products can be found everywhere from offices to clean rooms for sensitive electronics production, mines, factories, hospitals and nuclear power stations. Camfil is a global company with 29 subsidiaries, 22 production plants and an extensive network of agents in Europe, North America and Asia.

[www.camfil.com](http://www.camfil.com)

For further information please contact your nearest Camfil office.