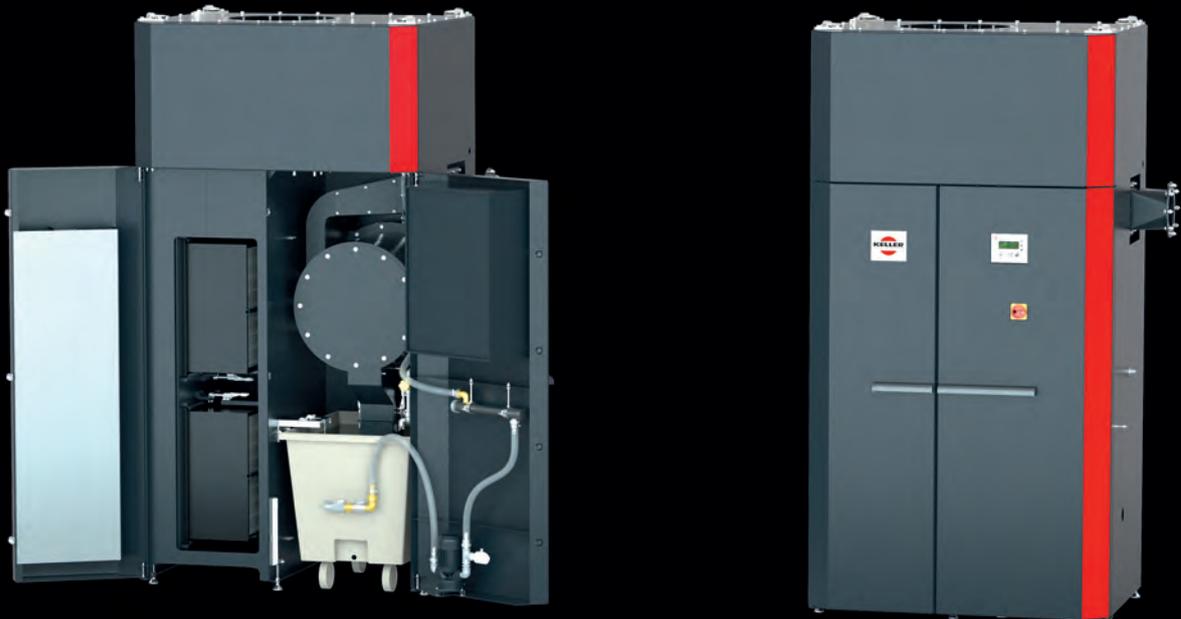


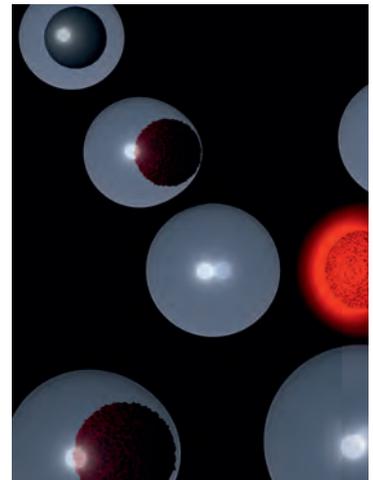
HydronPlus - a compact wet separator



Standard for clean air

Ideal solution for the separation and cleaning of process exhaust air from mixed materials or with combustible, explosive, or adhesive risks.

Designed for placement at the workstation with clean-air recirculation.



All particulates, whether combustible, explosive or adhesive, are captured by a dense water curtain (Venturi principle), which separates the particulates from the exhaust air.



**ENVIRONMENTAL
TECHNOLOGY AWARD**
BADEN-WÜRTTEMBERG 2017

1ST PRIZE

CATEGORY 3
EMISSION REDUCTION,
TREATMENT & SEPARATION



The versatile, compact wet separator

Why clean the air?

Air quality in the workplace plays an important role in employee health, satisfaction, and productivity. It also can effect the quality of the products being manufactured.

The ability to recirculate clean air also results in considerable reduced energy usage; for example, energy cost savings for heating or cooling the air can reach up to \$2,400.

Wet separation is a proven solution for complex or combustible processes.

When processing partially-finished products, it's common to have a mixture of particulates in the exhaust. This is especially true for processing products made of compound material.

Wet separation technology has also safely simplified the extraction and separation of explosive dust as well as direct flying sparks.

However, knowing the composition of particulates in your dirty air is often less important if a wet scrubber is used (than when using classic filtration methods).

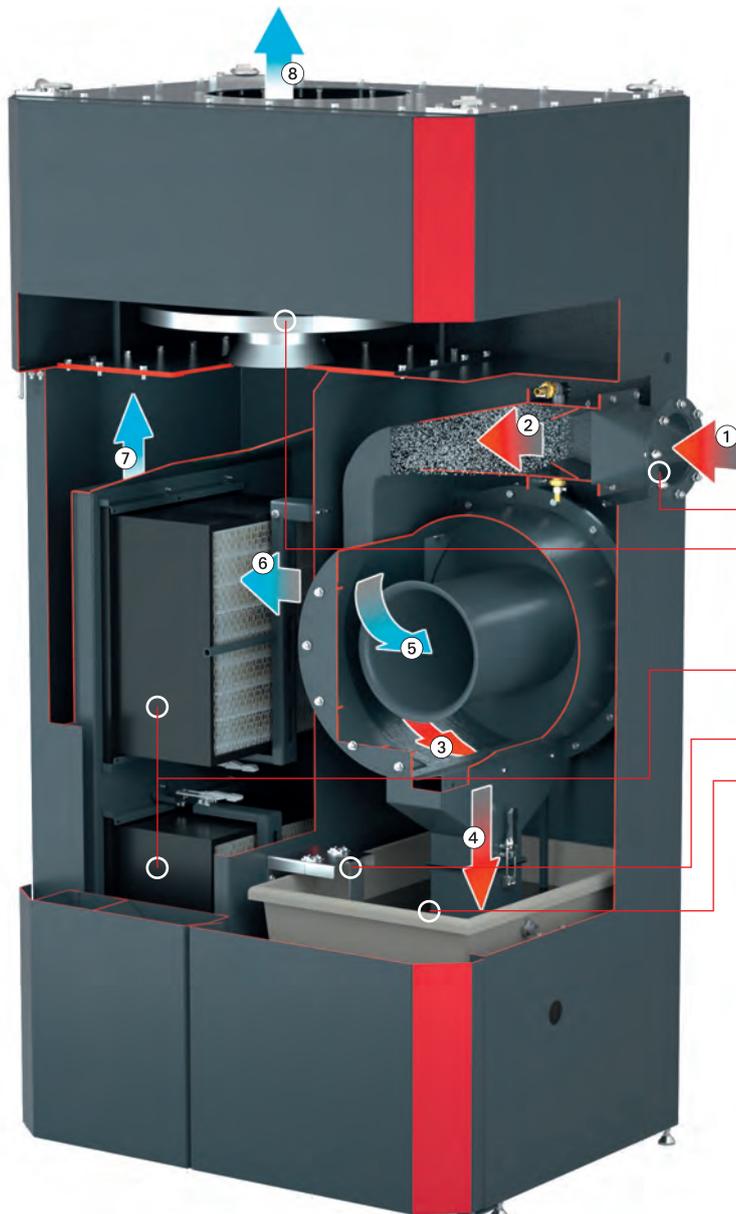
HydronPlus, Keller's newest wet scrubber, offers a versatile trouble-free package for a variety of manual and automatic processes.



HydronPlus has a sleek design and minimal space requirements, for installation in the workplace.

Clean air can be recirculated because of the secondary filter stage

Automatically Self-regulating



- ① Dirty air inlet
- ② Spraying zone (water curtain)
- ③ Droplet Separator
- ④ Drain into process water tank
- ⑤ Extraction of largely cleaned air
- ⑥ Secondary filtration using dry filters
- ⑦ Clean air chamber
- ⑧ Clean air outlet

Flange connection to air intake

A radial fan with a frequency converter generates the required airflow and pressure differential (automatically controlled)

Secondary filter stage for clean air recirculation

Level sensor

Process water collection bin



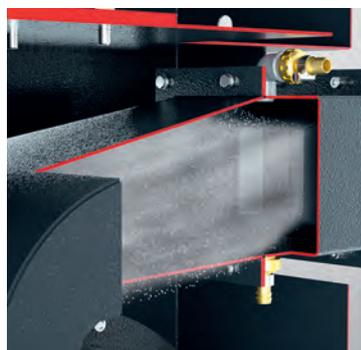
An optional UV-light prevents the propagation of hazardous bacteria growth. Recommended for prolonged use of process water.

Wet and dry separation as a single operating unit

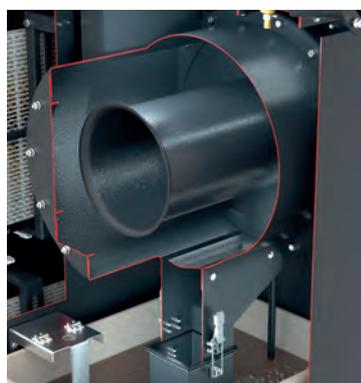


How it works

Combining wet and dry separation technologies



Cross sectional view: A dense water curtain is created in the spraying zone.



Cross sectional view: Droplet separator and drainage hose for discharging process (polluted) water into the collection bin.

Creating a dense water curtain for wet separation

The momentum of dirty air (loaded with dust particles) is accelerated at the Hyrdon's inlet through a narrowing in the suction channel of the cross-sectional area. Simultaneously, process water, supplied by a pump, is atomized by a cyclone effect into a water curtain (using the Venturi principle).

Airborn particles are absorbed

The dirty air is pulled through the water curtain, where dust particles are absorbed into the water droplets and any glowing sparks are extinguished.

Separating air and polluted water

Air and polluted water droplets flow down at an angle to the droplet separator. The polluted water cyclone flows against the droplet separator wall and is discharged into the collection bin for sedimentation. The process water is then recycled by a pump from the collection bin until the accumulated sediments require disposal.

Secondary filtration is performed using a dry filter

After being separated from the polluted water, Stage-1 filtered air is pulled through a secondary dry filter stage. The use of dry separation technology within the HyrdonPlus is possible because of Keller's particularly efficient wet separation technology. This secondary filter stage allows clean air to be recirculated back into the workplace.

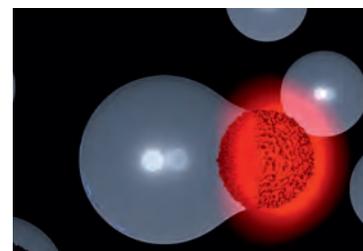
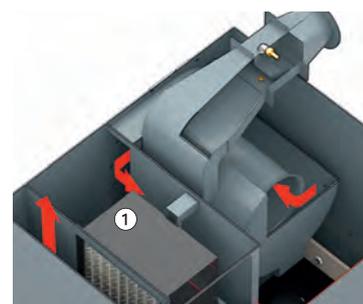


Diagram: The water spray collects dust particles, and glowing sparks are extinguished.



Easy disposal of contaminated process water.



Cross section view: Airflow entering and exiting the secondary filter stage. ①

Versatile and flexible

... up to four air intakes



HyrdonPlus on a Keller work table and brushing machine.



HyrdonPlus is ideal for individual processing machines.

As simplified as possible



Effortless cleaning



Front view with opened doors
Left image: Simple exchange of dry filter cassettes

Right image : The Droplet Separator is easily accessible for cleaning, simply remove the front cover.

The primary focus during the HydrionPlus design process was the simplified and time-saving cleaning of the wet separator. The droplet separator and drainage hose are directly accessible behind the front cover. The spraying zone is also accessible by a removable cover.

- ① Dry filter cassette
- ② Quick fastener
- ③ Opened cyclone
- ④ Opened spraying zone cover

Technical data

	HydrionPlus 1.5
Nominal airflow	up to 900 cfm (1500 m ³ /h)
Pressure available at inlet	3" w.c. (70 daPa) including secondary filter stage
	5" w.c. (120 daPa) without secondary filter stage
Dimensions B x D x H	50" x 37" x 96" (1250 x 946 x 2430 mm)
Noise pressure level	≤ 75 dB(A) *
Inlet Diameter	NW 160

* under free field conditions
(DIN EN ISO 3744)

HydrionPlus is delivered ready to use

After filling the unit with water, only the required airflow must be adjusted. Following a brief automatic adjustment of the system, HydrionPlus is ready for operation.

A water supply connection to the unit is recommended. However, HydrionPlus can be operated independently. Ducting from the air inlet can also be included in the delivery, if requested.

With the **GREEN BALANCE** initiative, Keller commits to Global Sustainability.

We balance Technological, Social, and Economic resources to sustain the environment.



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