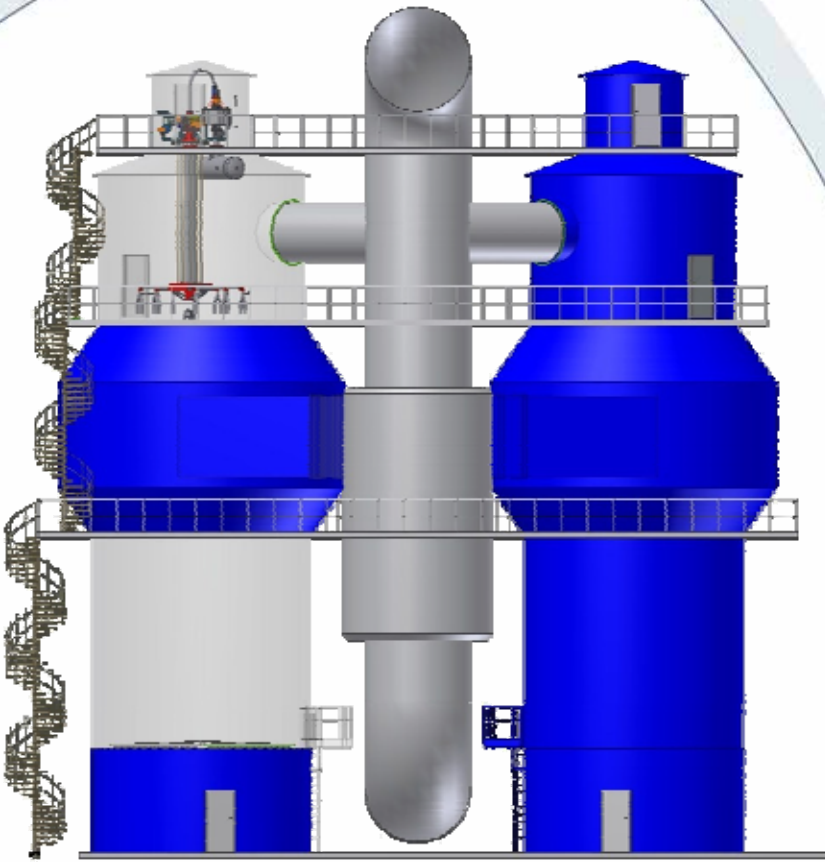


# Filter Technology

High-Capacity Filters  
SimPulse® 3CS



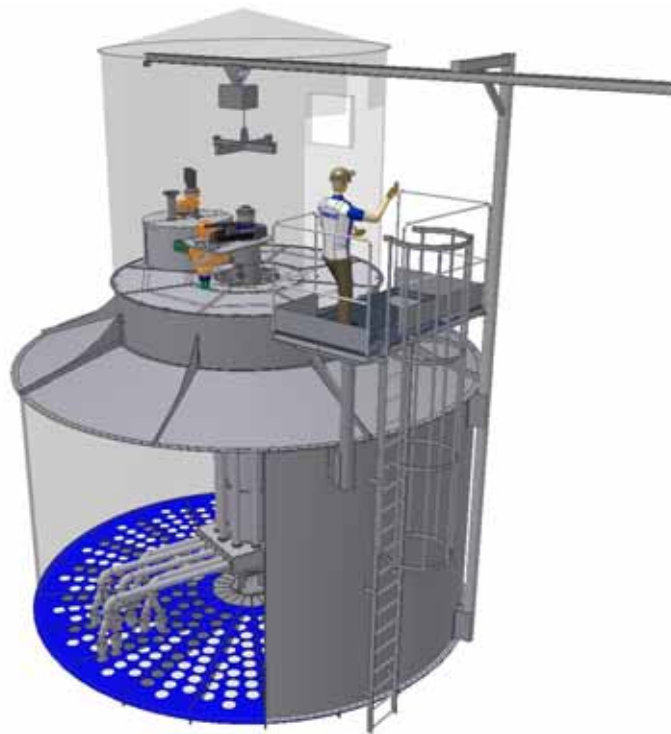
# SimPulse<sup>®</sup> 3CS

The SimPulse 3CS - a novelty within Simatek's range of high-capacity filters - provides a remarkable enlargement of the capacity of the well-reputed line of SimPulse 3C filters.

The SimPulse 3CS is a high-capacity filter representing a newly developed filter technology based on the state of the art, all functions of which are driven by servo motors.

The SimPulse 3CS **Pulse Air Distributor (PAD)** easily handles a gas flow of about 5 mio. Am<sup>3</sup>/h, typically required within the lines of combustion and smelting processes.

The system is manufactured in a sturdy design and requires only a minimum of regular maintenance.



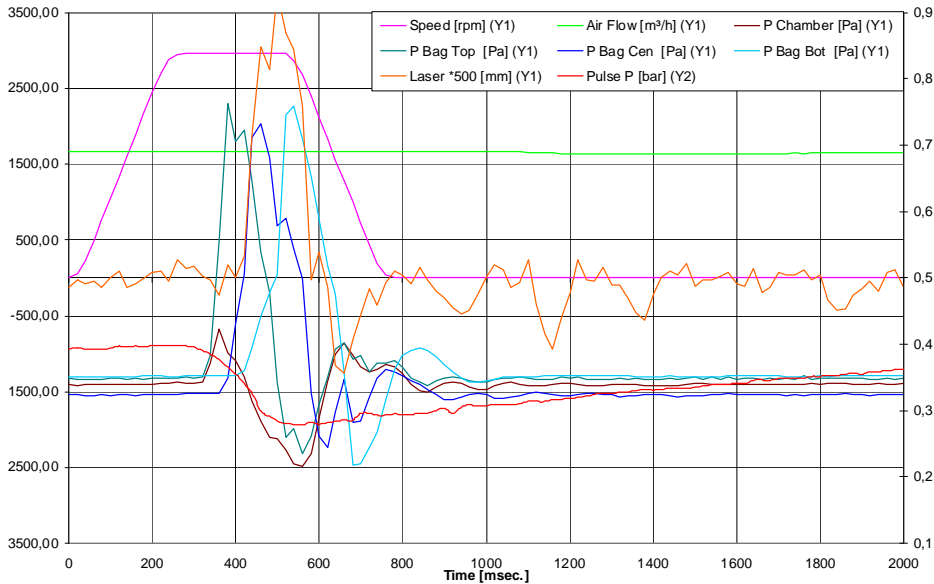
The SimPulse 3CS is the NEXT GENERATION of high-capacity Pulse-Jet Filters suitable for almost any type of Gas Cleaning application (up to 250°C continuously).

SPECIAL FEATURES compared to conventional bag filters:

- **Pulse-Jet System based on LOW PRESSURE – HIGH ENERGY**
- **Long-Bag Technology – uniform cleaning of filter bags of 16 metres length**
- **Simultaneous Jet-Pulsing of only two filter bags**
- **Compact Design – Limited Footprint**
- **Low Energy Consumption**

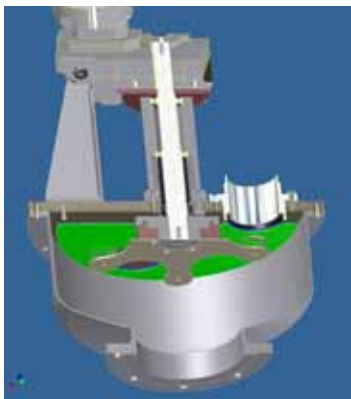
# SimPulse® 3CS

## How to Clean Long Filter Bags of 16 Metres



### Uniform Bag Cleaning

The servo-driven Pulse Positioning Unit (PPU) ensures that all filter bags are cleaned uniformly with the exact same, optimum cleaning-pulse energy.



### SimPulse Valve (SPV)

The servo-driven SPV ensures a stable jet-pulsing.

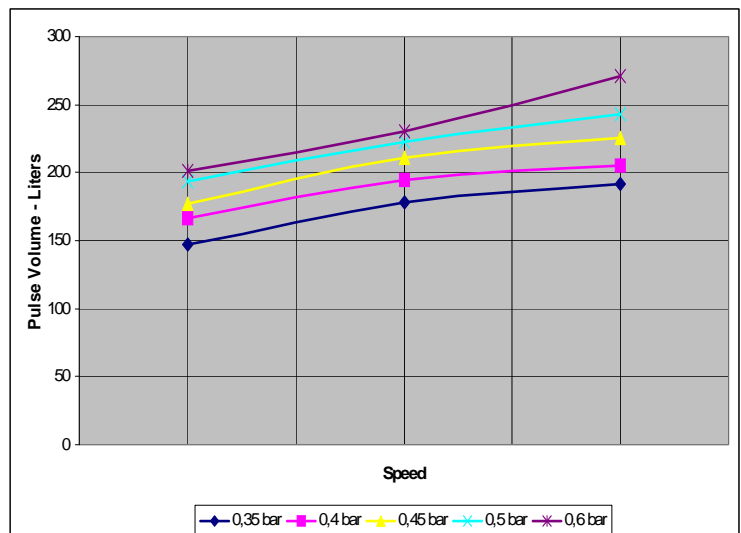
Thanks to the extremely high airflow, the pulse energy is remarkably high compared to alternative membrane valves ( $k_v$ -value).

### Intelligent Cleaning Pulse

If critical conditions should occur, an intensification of the cleaning energy may be required, for short or longer periods.

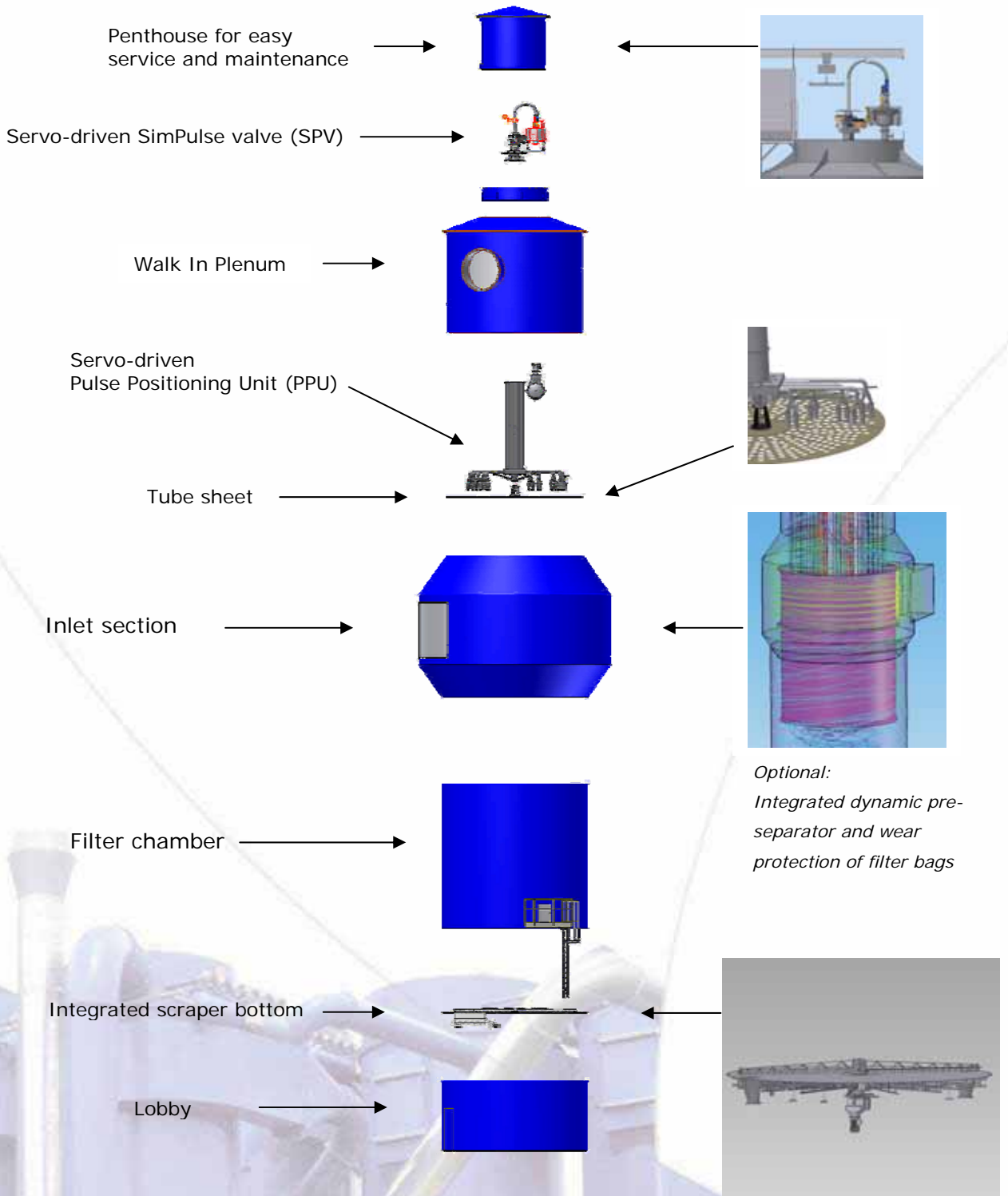
The SimPulse 3CS automatically adjusts the cleaning pressure and the cleaning-pulse energy.

The speed-controlled SimPulse valve (SPV) continuously ensures the optimum pulsing profile.



# SimPulse® 3CS

## Design



- Height-saving
- Integrated screw conveyor(s)
- Heating elements
- No cold spots

# SimPulse® 3CS

## Flue Gas Cleaning

SimPulse 3CS filter unit installed in a 250 mW power station.

The plant is a modern power station firing multi-fuel (coal, oil, and biomass).

The filter system is integrated in a dry-absorption process for removal of acid gases, heavy metals, and dioxins.



### Flat Bottom Design

The filter modules are typically designed with a flat scraper bottom to ensure an efficient discharge, even of sticky waste product (ash).

### Penthouse Design

Each single filter unit is equipped with an easily accessible **Pulse Air Distributor** holding a SimPulse Valve (SPV), a Pulse Direction Valve (PDV), and a Pulse Positioning Unit (PPU)





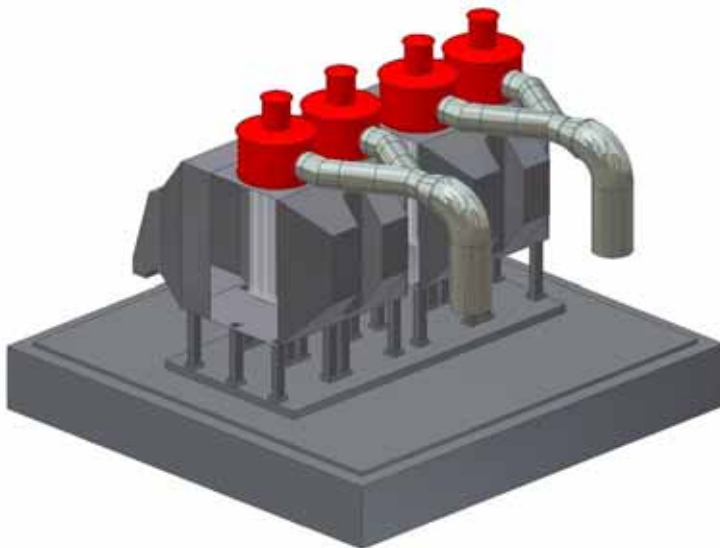
# SimPulse<sup>®</sup> 3CS

## ESP - Retrofitting

The authorities seem to constantly tighten the emission values allowed, which calls for an optimization and retrofitting of existing Electrostatic Precipitators (ESPs).

When it comes to emission values, the pulse-jet fabric filter technology ensures a far more efficient emission limitation than the ESP technology, and the natural choice - from a technical as well as an economical point of view - is likely to be a retrofitting of the existing ESPs to pulse-jet bag filters.

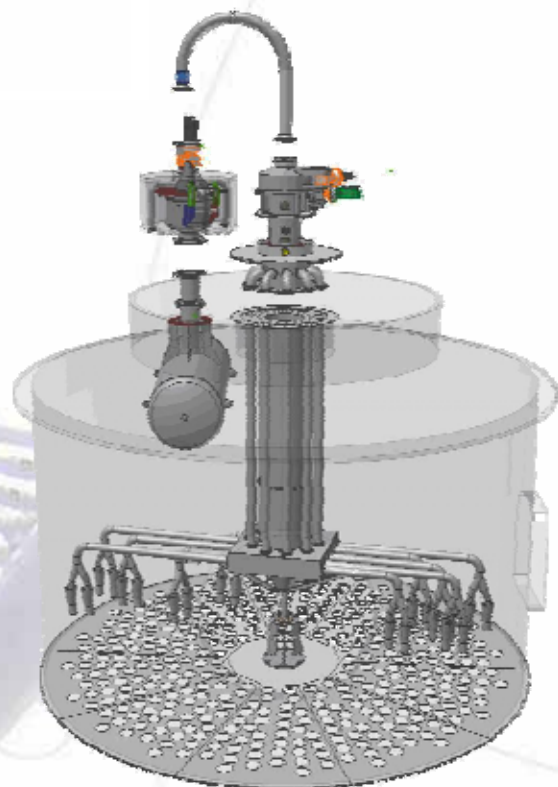
If sufficient space is available, the optimum solution would be to keep one section of the ESP in the system to serve as a pre-separator and to replace the other sections by fabric-filter units (a hybrid filter system).



### **Combining the ESP and SimPulse Technologies**

By utilizing the unique ability of the SimPulse 3CS to clean long filter bags, comparatively limited space is required.

The implementation of one, or a certain number of, standard SimPulse PADs will expectedly establish the required filter area within the physical limits of an existing ESP.

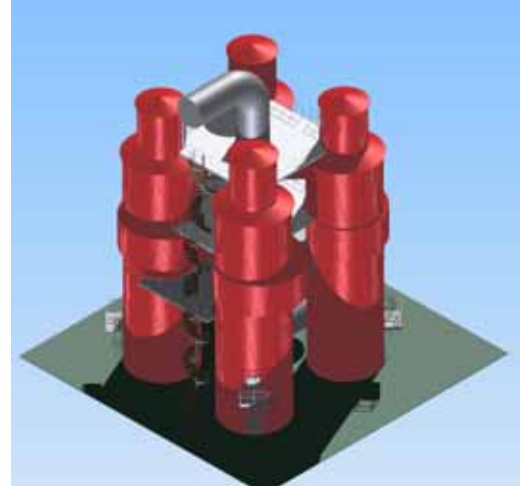


# SimPulse® 3CS

## Filter Clusters

The SimPulse 3CS filter units are typically configured in clusters of up to 4 filter modules.

The cluster design allows for the application of cylindrical filter modules for high capacities.



### Highlights:

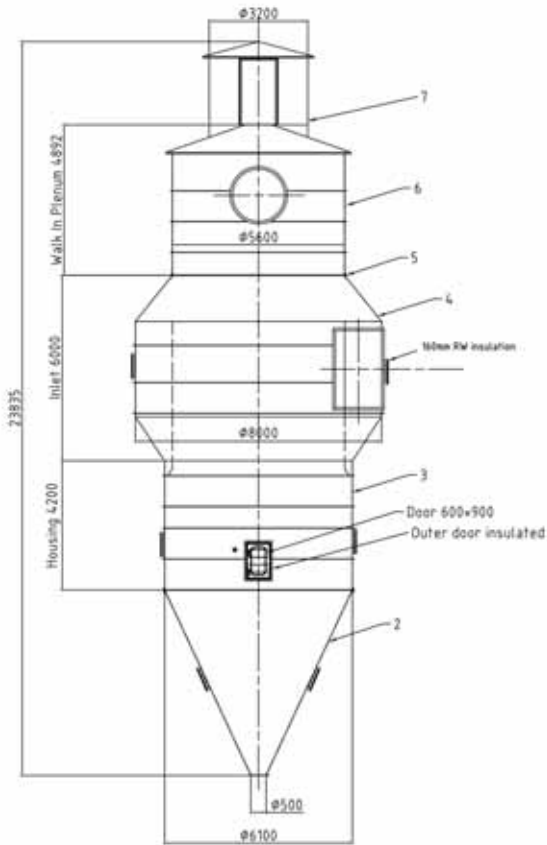
- Limited footprint
- High vacuum resistance
- Low weight (minimum of steel)
- Optimum air distribution
- Low corrosion risk (no temperature gradients)
- 100% down-flow filtration (essential for sub-micron operation)
- On-line cleaning (no compartments shut-off during bag-cleaning)

Subject to alterations

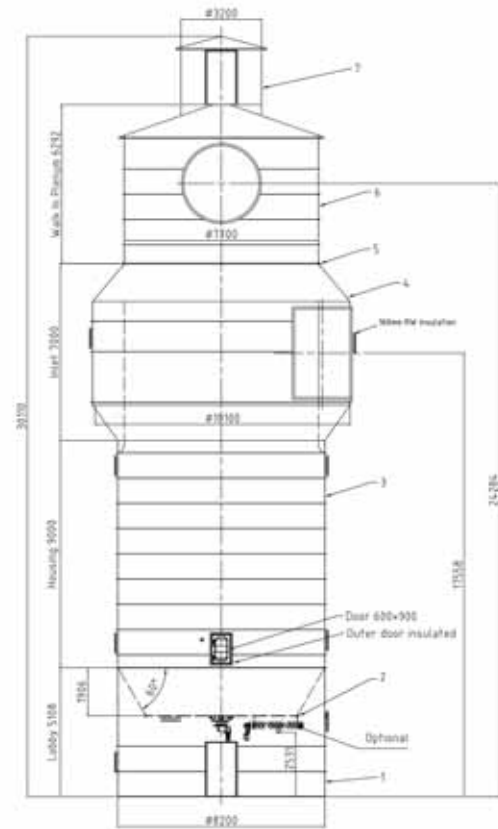
Type	Filter Module				Filter Cluster			
	Bag Length m	Dia. mm	Bag Dia. ø mm	Area m <sup>2</sup>	Modules Pcs.	Area m <sup>2</sup>	A/C-ratio m <sup>3</sup> /m <sup>2</sup> /min.	Cap. m <sup>3</sup> /h
JM 400	12,0	5.600	160	2.413	4	9.651	1,0	579.058
JM 400	14,0	5.600	160	2.815	4	11.259	1,5	1.013.352
JM 400	16,0	5.600	160	3.217	4	12.868	2,0	1.544.156
JM 624	12,0	6.900	160	3.764	4	15.056	1,0	903.331
JM 624	14,0	6.900	160	4.391	4	17.565	1,5	1.580.829
JM 624	16,0	6.900	160	5.019	4	20.074	2,0	2.408.883
JM 816	12,0	7.700	160	4.922	4	19.688	1,0	1.181.279
JM 816	14,0	7.700	160	5.742	4	22.969	1,5	2.067.238
JM 816	16,0	7.700	160	6.563	4	26.251	2,0	3.150.077
JM 1008	12,0	8.600	160	6.080	4	24.320	1,0	1.459.227
JM 1008	14,0	8.600	160	7.093	4	28.374	1,5	2.553.647
JM 1008	16,0	8.600	160	8.107	4	32.427	2,0	3.891.272
JM 1248	12,0	9.400	160	7.528	4	30.111	1,0	1.806.662
JM 1248	14,0	9.400	160	8.782	4	35.130	1,5	3.161.659
JM 1248	16,0	9.400	160	10.037	4	40.148	2,0	4.817.766
JM 1488	12,0	10.200	160	8.975	4	35.902	1,0	2.154.097
JM 1488	14,0	10.200	160	10.471	4	41.885	1,5	3.769.670
JM 1488	16,0	10.200	160	11.967	4	47.869	2,0	5.744.259

# SimPulse® 3CS

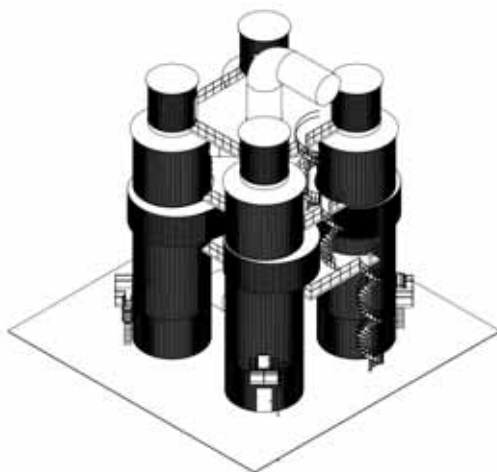
## Dimensions



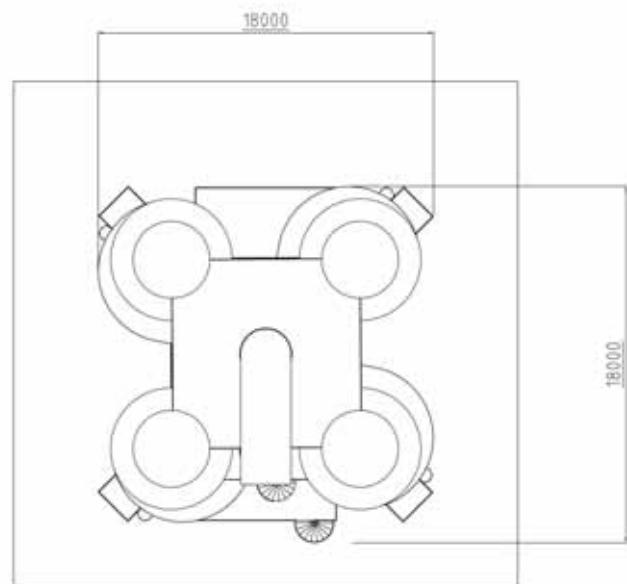
JM 400/100-04, 3CS



JM 816/160-12, 3CS



4 x JM 400, 3CS



4 x JM 400, 3CS