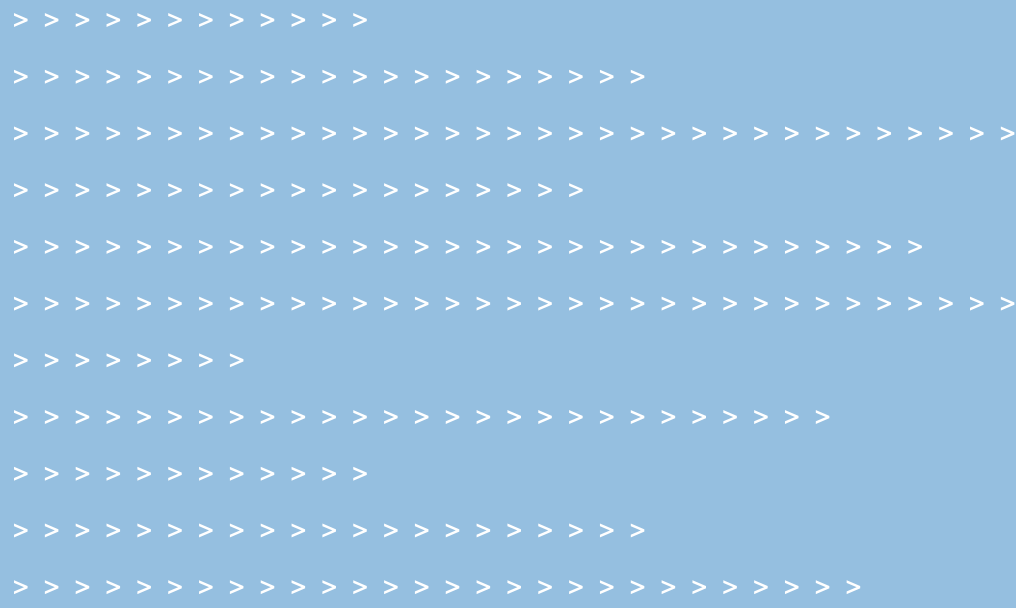


# PillAerator

## The PillAerator

*High tech for an intelligent wastewater treatment*

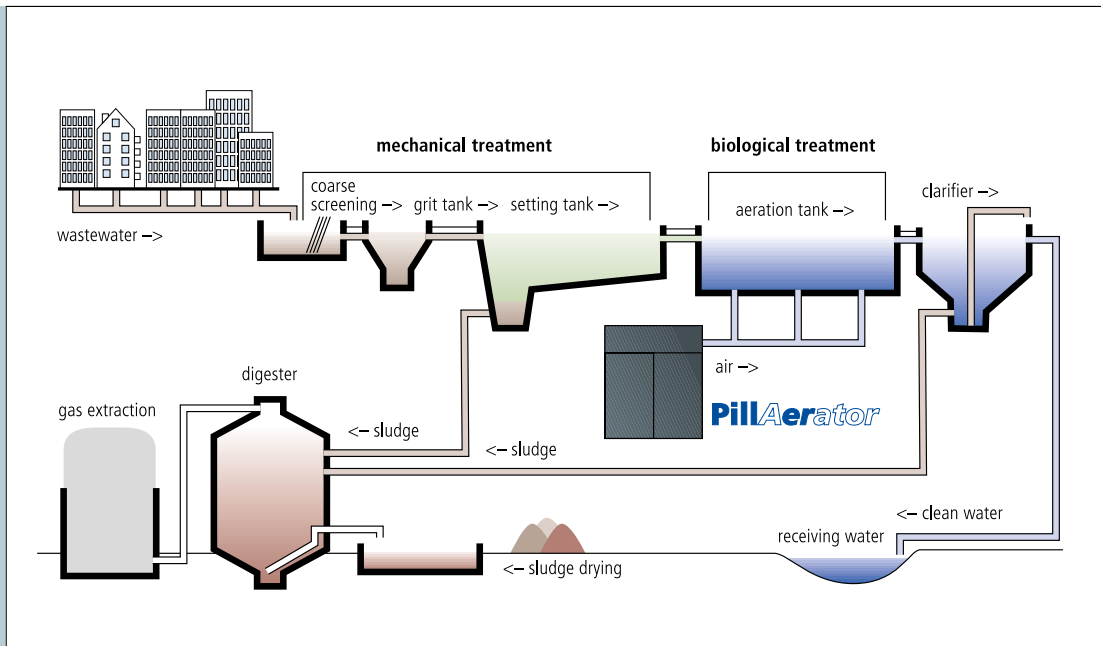


Deutschland  
Land der Ideen



Ausgewählter Ort 2009

>>> Made  
>>> in  
>>> Germany



## The PillAerator: For clean water all over the world.

*Water is one of the most precious treasures of this planet. And clean water is the most important resource making life possible on earth. However, the explosive increase of the world population, the enormous development of mega-cities as well as the rapid progressing of industrialisation augment the worldwide need for clean water. In Germany alone, the production site of PillAerator, more than 10,000 wastewater treatment plants clean approximately 10 billion m<sup>3</sup>. The plants are fed by a sewage network of 515,000 km (that's 13 times around the globe). Each year thousands of smaller and larger plants are added which shows the importance of purification quality.*

Protecting the environment means saving energy and conserving precious resources. That's why we at PillAerator GmbH have rolled up our sleeves and developed the PillAerator. The innovative turbo compressor is a real multi-talent and has an important share in improving the water quality and operates so efficiently that the operation costs of the plant decrease.

For this development, the PillAerator has received an innovation award in which the PillAerator stood up to more than 2,000 applicants. The award honors the efforts for a highly-efficient product which combines state-of-the-art components. The innovative development is not only present in a smooth and energy-efficient running performance but also in a nearly maintenance-free design.



**It keeps going. And going. And going.**

As the impeller and the high-performance synchronic-motor are directly connected and the rotor unit floats contact-free in a magnetic field, wear-intensive components are omitted. Nevertheless, the motor is absolutely gas-tight and cannot be polluted by the ambient air. This increases the performance safety, the on line availability and life-time of the machine.

**Beyond Borders.**

The frequency converter enables the compressor to run at the exact operation point. Mechanical regulating devices which can wear or allow only restricted positions at reduced efficiency are not necessary. The excellent efficiency of the frequency converter supports also the energy-efficiency of the PillAerator. State-of-the-art measuring, innovative design and a perfect composition of the main components allow a operation between 15 % and 100 % with an efficiency of up to 88 %.





**The Communicative Type.**

The S7-300 control with its touch-screen panel allows the operators to quickly view all operating conditions of the PillAerator. All operating modes like pressure and volume flow control or an external set point/actual value control such as a D.O. signal are standard options. Via this Human-Machine-Interface all operating parameters can be monitored and modified. The easy to understand symbols makes the handling self-explanatory. Moreover, the control is also equipped with the destination's national language. Via Profibus DP the PillAerator can be connected with the master control room of the plant. Upon request our Service-Department at our headquarters will monitor your machine within the scope of service-agreement via a cordless GPRS/UMTS connection. Technical enhancement and changes within the plant can be considered even after years of operation.

**Silence, please!**

An integrated intake silencer and a soundproof cabinet keep the sound emission below 80 dB(A). Additional sound protection is not necessary.



### **Stays cool even if it's hot.**

The cooling system of the PillAerator insures that the machine always operates at a proper temperature. The combination of air-water and water-water cooling dissipates the process heat and guarantees stable temperature conditions which supports the lifetime of the motor, the electronic components and the performance of the PillAerator even at high temperatures.

### **No more compromises.**

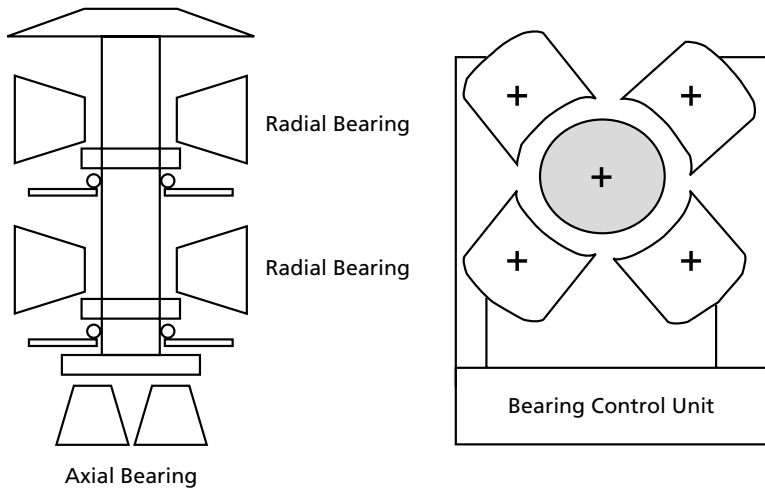
Perfection is not reached when there is nothing more to add but when there is nothing more that can be left out. We have designed the PillAerator according to this motto. No accessories, no extras because everything, from the intake filter to the electronics of the magnetic bearing, is included in the PillAerator right from the beginning. The compact design allows a quick and easy installation with a maximum of quality and is 100 % oil-free.

### **Which maintenance?**

The PillAerator has an integrated intake filter. Via a differential pressure measuring the degree of pollution is monitored and the filter must be changed one to two times a year accordingly. That is so easy that it can be done by the customer as it saves time and money. More maintenance is not necessary for the PillAerator.

### **Power break down! Well Then?**

A safe permanent power supply is not available everywhere. To avoid damage of the magnetic bearing in case of a power failure, the PillAerator Team has developed a solution which does not need additional and maintenance-intensive components like batteries or ups units. After a power failure the PillAerator is immediately ready of operation without any additional measures.



**Scheme of the magnetic bearing technology**

**A balanced business.**

The advantages of a magnetic bearing are obvious. The shaft is always centered and contact free, so no lubrication is necessary. And even frequent start-stop processes are possible without problems. At shut-down the shaft will be guided by the magnetic bearing till cessation. In the most unlikely case of failure of the magnetic bearing electronic, the shaft will be secured by safety bearings.



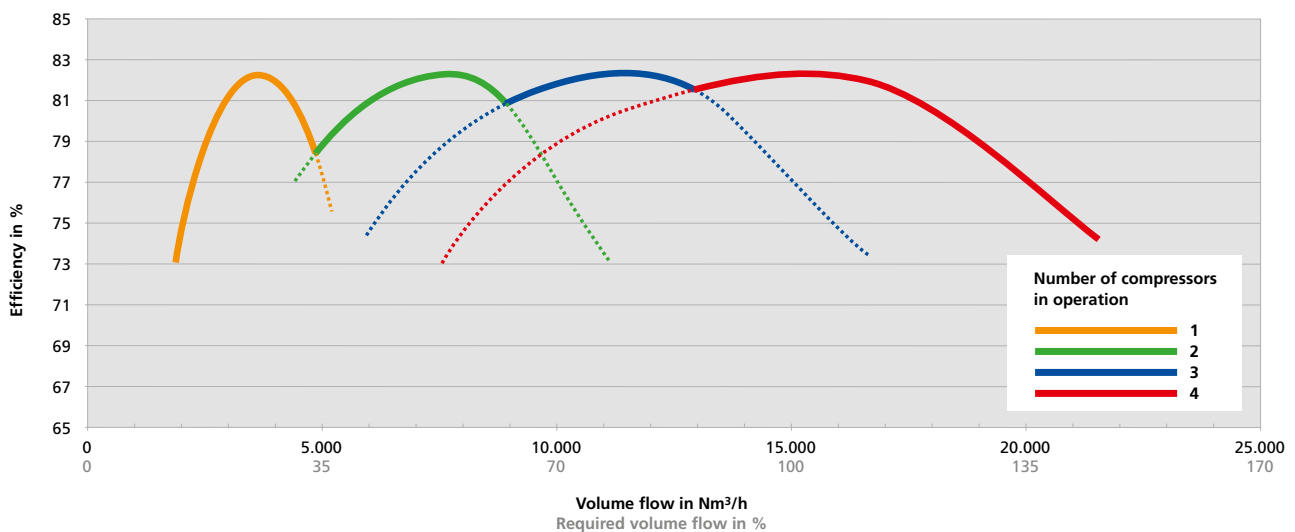
# PillAerator BrainBox



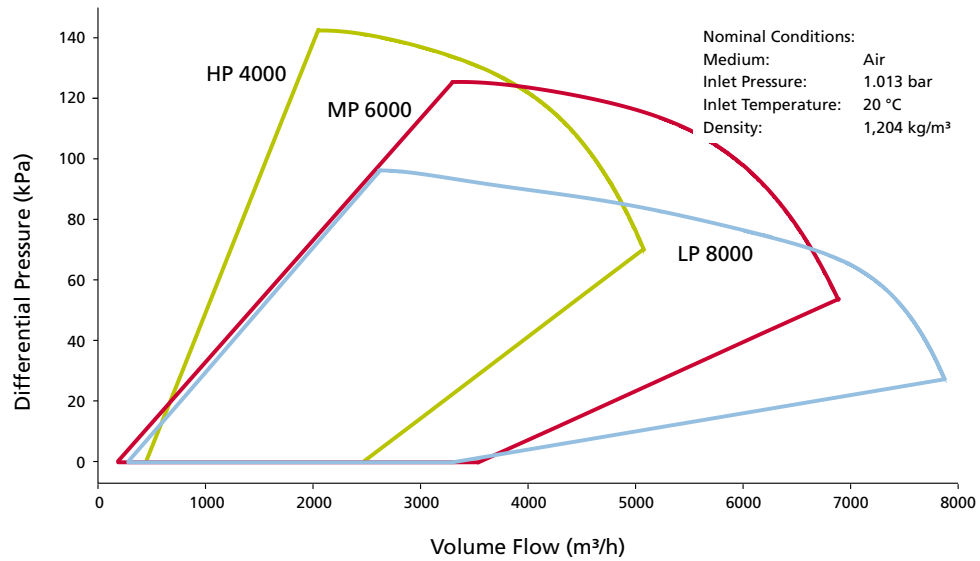
## Group Dynamics.

In case several PillAerators are operated together, our multiple-compressor control unit **BrainBox** is deployed. With this in-house development, it is possible to always have the ideal compressor combination. Not only the individual compressors are started or stopped depending on the demand the BrainBox always finds the ideal efficiency for all machines. This creates a unique combination of performance, energy-efficiency and flexibility. Discover the possibilities!

Performance range in which the compressors are kept by the BrainBox, in case of several blowers in operation



# Overview of all PillAerator-Types.

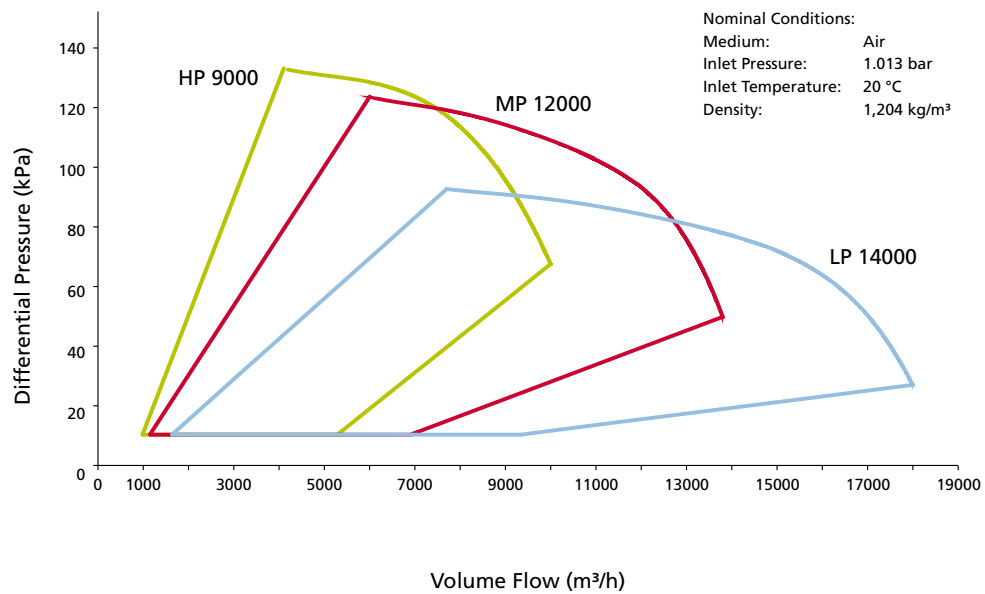


	<b>HP 4000</b>	<b>MP 6000</b>	<b>LP 8000</b>
Pressure Increase	45 – 140 kPa	35 – 100 kPa	25 – 80 kPa
Sound Emission	≤ 80 dB(A)	≤ 80 dB(A)	≤ 80 dB(A)
Weight	1780 kg	1780 kg	1780 kg
Piping Connections	Suction Site: NW 710 x 560 DIN 24193 Pressure Site: DN 200 PN 10	Suction Site: NW 710 x 560 DIN 24193 Pressure Site: DN 200 PN 10	Suction Site: NW 710 x 560 DIN 24193 Pressure Site: DN 200 PN 10
Power supply connection	380 – 690 V	380 – 690 V	380 – 690 V
Input Frequency	50/60 Hz	50/60 Hz	50/60 Hz
Motor Power	150 kW	150 kW	150 kW
I/O	Digital: Profibus DP Analogue: 4 – 20 mA DC 24 V	Digital: Profibus DP Analogue: 4 – 20 mA DC 24 V	Digital: Profibus DP Analogue: 4 – 20 mA DC 24 V
Approved suction temperature	min.: – 25 max.: + 50 °C	min.: – 25 max.: + 50 °C	min.: – 25 max.: + 50 °C

(Subject to modifications)

All machines bear the European Standard's CE mark and are in conformity with the provisions of EU Machinery Directive 2006/42/EC, EU Low-Voltage Directive 2006/95/EC, EU Electromagnetic Compatibility Directive 2004/108/EC. The performance test is executed according to ISO 5389.



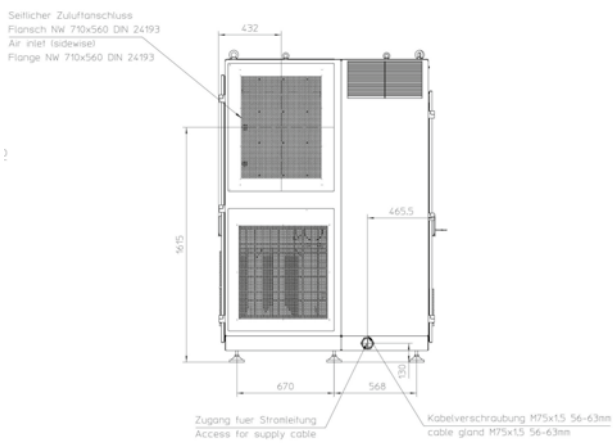
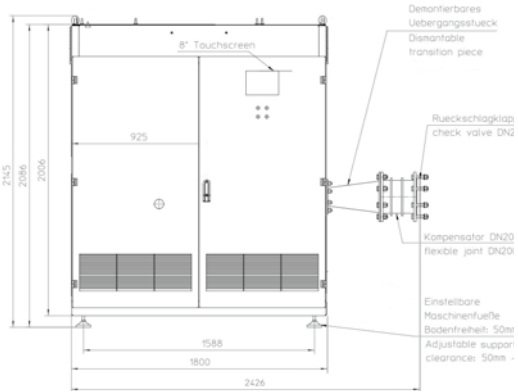
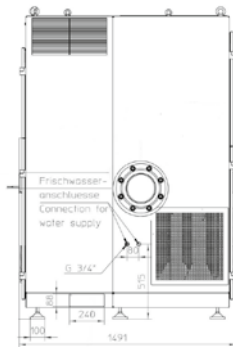


	<b>HP 9000</b>	<b>MP 12000</b>	<b>LP 14000</b>
Pressure Increase	65 – 130 kPa	35 – 100 kPa	25 – 80 kPa
Sound Emission	≤ 80 dB(A)	≤ 80 dB(A)	≤ 80 dB(A)
Weight	3700 kg	3700 kg	3700 kg
Piping Connections	Suction Site: NW 900 x 670 DIN 24193 Pressure Site: DN 400 PN 10	Suction Site: NW 900 x 670 DIN 24193 Pressure Site: DN 400 PN 10	Suction Site: NW 900 x 670 DIN 24193 Pressure Site: DN 400 PN 10
Power supply connection	380 – 690 V	380 – 690 V	380 – 690 V
Input Frequency	50/60 Hz	50/60 Hz	50/60 Hz
Motor Power	300 kW	300 kW	300 kW
I/O	Digital: Profibus DP Analogue: 4 – 20 mA DC 24 V	Digital: Profibus DP Analogue: 4 – 20 mA DC 24 V	Digital: Profibus DP Analogue: 4 – 20 mA DC 24 V
Approved suction temperature	min.: – 25 max.: + 50 °C	min.: – 25 max.: + 50 °C	min.: – 25 max.: + 50 °C

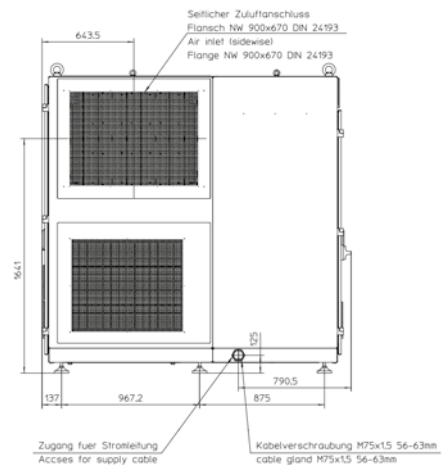
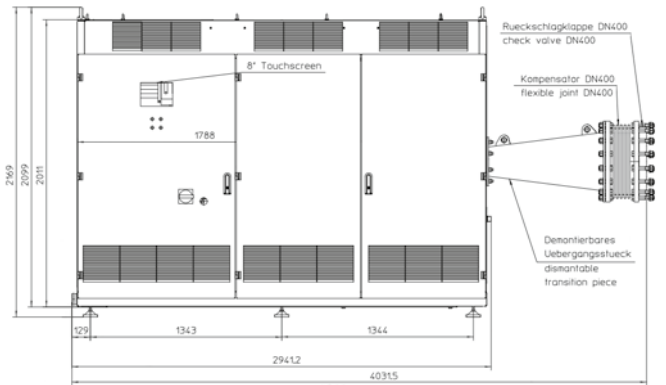
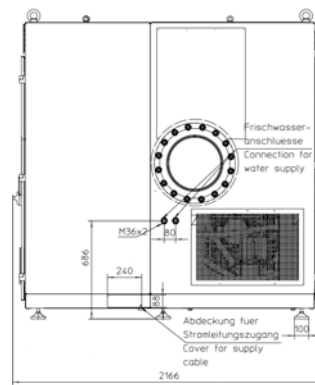
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**PillAerator HP 4000, MP 6000, LP 8000**



**PillAerator HP 9000, MP 12000, LP 14000**



(Subject to modifications)



## Wait till you see the energy savings.

How much you can save with the PillAerator, you can take from the following table:

	<b>Pd blower</b>	<b>PillAerator MP 6000</b>
Efficiency	65 %	84 %
Required power for compression	120 kW	120 kW
Required power of operation	185 kW	143 kW
Operating hours per day	20 h	20 h
Annual power consumption	1.350.500 kWh	1.043.900 kWh
Incurring energy cost per year (12 Euro Cent/kWh)	162.060 Euro	125.268 Euro
<b>Saving with the PillAerator per year:</b>		<b>36.792 Euro</b>

(Subject to modifications)

# PillAerator

**PillAerator GmbH is a 100% subsidiary company of Piller Industrieventilatoren GmbH and thus represented throughout the world:**



Australia	Benelux	Canada	China
Czech Republic	Denmark	Finland	Germany
Hungary	Italy	Israel	Japan
Korea	Malaysia	Portugal	Singapore
Spain	Sweden	Taiwan	Turkey
Ukraine	UK United Kingdom	United States of America	

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