Application of RAETTS Explorer's Air Bearing Blower in Wastewater Treatment

-------- Take the Master Kong Group sewage treatment station as an example

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In order to make our customers more clear about latest air bearing blowers, this article will take the Master Kong Group sewage treatment station as an example and introduce you RAETTS latest air bearing centrifugal turbo blowers.

What are the advantages of this blower? Now the site where our blower is installed is the sewage treatment station of the Master Kong Group. As you can see, here they have 1, 2, 3, 4, a total of 4 blowers. So, what is the power of each of their blowers? 22KW. What is their original operating mode? 3 working and 1 standby, that is to say, 3 blowers are running, the total power is 66KW, and the other one is used as a backup.

So after our investigation, we decided to transform these blowers for our customer. Based on the data conversion of the original blower, we finally selected a 37KW air bearing blower of RAETTS series. So, why can we replace the original 3 sets of total 66KW Roots blowers?

First of all, the first reason is: the impeller of our blower, which adopts the ternary flow high-speed turbine technology, the efficiency of this turbine can reach 87%. While the efficiency of the traditional Roots blower is only 55%-60%, so there is a nearly 30%-40% power-consumption gap. So with our latest technology, it can replace the original Roots blower, achieving more than 30% energy savings.

Well, there is another aspect, our blowers are not just energy efficient. As you can see, when I was speaking, our blowers were running. As for the Roots blowers, everyone knows that when they are running, the noise is very high, reaching more than 100 decibels. In general, we can't hear people talking. But now, our blowers are open, and I can also introduce them here to prove that our noise is very lowl. So now we will use a more professional noise tester to test how much noise we have now? There are other noises on the scene, and the outdoor also is noisy, so we need to wait for it to stabilize. Ok, everyone sees that if we eliminate other noises, the noise of our blowers is now around 78 decibels, far below the industrial noise standard of 90 dbs. Therefore, our current working environment is very ideal.

In addition, there is another aspect. Because we are using a blower designed with the most advanced air bearing technology, we can see that because the air bearing is contactless, its speed can reach 36,300 rpm.

As you can see, although the motor power of our blower is 37KW, the actual shaft power of our blower is about 27KW, which means that the running power is far lower than we originally
expected.

In addition, there is a configuration for monitoring the outlet airflow. You can see that 30.5 here refers to the flow of discharged. In addition, we also have a filtration system inside, there is a pressure difference sensor inside the filtration system, and now its pressure difference is 293 Pa. If the pressure difference reaches 1500 Pa, it will alarm and remind users to replace the filter element. This filter element is located at the front and rear ends of the blower cabinet. It can now be seen that this filter is a bit dirty after running for a while. This also shows that the environment is still a little dusty.

In addition, our blowers are not only energy-saving, low noise, but also a big feature is maintenance-free. As we all know, the traditional Roots blower, as you can see, is motor and belt driven. First of all, the belt can be damaged by grinding. Secondly, everyone has found that there is a lot of oil on this surface. Yes, it is driven by a gearbox with oil inside the gearbox. Everyone knows that the gearbox is like the oil in the car. It is replaced every month, and it is very troublesome to replace. Put a bucket underneath, put the oil out, and then exchange the new oil, which makes it easy to leave a lot of oil on the surface.

But when we replaced RAETTS air bearing blower, we didn't need to do any of the work we mentioned earlier. We only need to periodically clean or replace the filter according to the pressure difference. And our whole machine is now offering a two-year warranty.

Therefore, in terms of quality, energy saving, noise, maintenance, etc., in general, the RAETTS Explorer air bearing blower is now the first choice for the sewage treatment industry. Basically, the investment return period of this blower is about one year.

Hello everyone, we just learned some of the processes of our blowers, but you may not know much about some of the processes of sewage treatment. Then I will tell you about the role of our blowers in sewage treatment.

First of all, you can see that on my right hand side, there is one sewage pool after another, and the sewage pool is bubbling. How did this effect come from, that is, the air from the RAETTS air bearing blower we just saw came into the water. Why do you want to do this? First of all, in the process of sewage treatment, there is a process called aerobic reproduction. Bacteria, fungi and other organisms in the sewage pool should continue to reproduce by continuously supplying oxygen, thereby achieving the purpose of decomposing organic matter in the sewage and purifying the sewage. Therefore, blower aeration is an important part of our sewage treatment. You can see that the entire environment of this sewage pool is like this.

Let us listen to the relevant person in charge of Master Kong on the evaluation and recommendations of this RAETTS air bearing blower

Wu: Hello. Director Li, I am Xiao Wu of the RAETTS blower. We have installed this blower in the sewage station for a while. During the operation, what do you think of our blower?
Director Li: The effect is pretty good. First of all, the first one is noise, and the noise is extremely low, which is much lower than the previous Roots blower. The second is electricity consumption. For the power consumption, the new RAETTS blower can replace the previous Roots blower 2-3 units.

Wu: In our daily maintenance, will it bring us some convenience?

Director Li: This is of course. First of all, this type of blower replaces the former mechanical bearing. It is now an air bearing, which eliminates the previous maintenance mode of bearing replacement and lubrication, which saves a lot of manpower. In addition, when the blower is automatically running, it does not require much human attention.

Wu: That, Mr. Li, may I ask, what other areas of our blower need further improvement and optimization? Can you give us some better suggestions?

Director Li: In this respect, it is mainly the air outlet of the motor exhaust, whether it can be designed to discharge hot air to the outside? This is a drawback because the hot air that is discharged causes the room temperature to rise. I think it is necessary to improve this aspect. Others are basically quite OK.

Wu: Ok, we are very grateful to Mr. Li for his advice. We will give feedback to our company's technical department and implement your request as soon as possible. Thank you very much, Director Li.

For more information, please contact RAETTS’ engineers or call the RAETTS Service Hotline. We will be happy to help you. For more videos, please browse our Youtube website: https://www.youtube.com/watch?v=8zI0OhIafVk.