VIDEO	AUDIO
	For many years no one paid attention to what the operators of heavy equipment were breathing while they worked. In 2001 Sy-Klone International took an interest in the topic with the introduction of the Gideon Powered HVAC Air Filtration System. This system became a standard in the Waste Industry and provided a basic level of filtration, which protected the operator as well as the HVAC equipment on the machine.
	While the Gideon System was an excellent solution, Sy-Klone continued to research HVAC air filtration solutions and developed the newly introduced RESPA-SD air filtration System.
	One of the strengths of RESPA-SD is the ability to choose a level of filtration required to meet your needs.
	There are two filter options available for RESPA-SD. For most installations the High Capacity filter will provide the necessary level of air filtration. This filter is rated as MERV 8 and will remove common airborne debris such as: Mold, pollen, Spores, textile and carpet fibers, dusting aids, cement dust, Sanding dust, spray paint dust and other similar airborne debris.
	For those applications that require a greater level of filtration, upgrade the RESPA-SD to include the High Efficiency filter. This filter is rated at MERV 17 and will remove 99.97 percent of debris down to 0.3 microns in size. This includes bacteria, tobacco smoke, insecticide dust, most smoke, lead dust, coal dust, auto emissions, welding fumes and other similar airborne contaminates.
	While the RESPA-SD is an excellent HVAC air filtration solution there are environments and working conditions where even greater air filtration needs are required. For these applications RESPA-SD becomes the foundation for a

	complete RESPA Air Filtration system. Let's take a look at how this works.
	During the development of RESPA-SD, Sy-Klone International partnered with air conditioning manufacturers, filtration experts, industry leaders from waste and mining and the National Institute for Occupational Safety and Health to form a comprehensive team with a single goal of producing a commercially viable product that will meet the filtration needs of heavy equipment toady and in the future.
	Based on research conducted by NIOSH it was learned that the airflow pattern of the cab of the machine was critical to success in protecting machine operators.
	NIOSH concluded that the operator needed to be surrounded in a pool of clean air that enters the cab from the top and blows down over the operator pushing debris to the lowest point, the floor of the cab.
	NIOSH research also indicated that keeping the cab sealed and clean, as well as keeping the operator's clothing and equipment clean played a significant role in being able to protect the operator from airborne debris.
	Sy-Klone took this NIOSH data and spent the next five years investigating how our patented Gideon Technology and an engineered filter media could be combined to create an effective, cost-efficient air filtration solution.
	This cab represents a complete RESPA air filtration system. It is made up of a RESPA-SD and a RESPA-RECIRC unit, which are feeding filtered air to a RED DOT roof mounted HVAC unit. The mounting locations of the RESPA units are for demonstration purposes only. In actual installations the installer will need to identify the actual location for the RESPA units to be installed. Refer to Sy-Klone's installation guidelines for important considerations that must be

	taken into account prior to installation of the System.
	One of the questions we receive all of the time is, "I currently have or need a blower-pressurizer for my system to work properly. How does the RESPA-SD compare?" To better understand the differences between the RESPA-SD and an ineffective blower-pressurizer unit ask your Sy-Klone representative for our technical white paper for a detailed explanation.
	The fresh air enters the HVAC system via the RESPA-SD. The integrated Gideon Technology Powered Air Precleaner ejects debris back into the environment. The pre-cleaned air then passes through either a high capacity or high efficiency air filter depending on filtration needs and enters the HVAC unit.
	Once the fresh air enters the HVAC unit it is heated or cooled as appropriate and the blower fan inside the unit forces the conditioned air in to the cab above the operator. By feeding the conditioned air into the cab from above we are enveloping the operator in a pool of clean air and forcing any airborne debris towards the floor of the cab.
	As the air travels past the operator, loose debris on his clothes or equipment is also forced to the floor.
	Once the airflow reaches the floor it is drawn into the recirculation side of the system through a vent as close to the floor as possible. The location of the vent is important since we are trying to remove as much debris as possible from the cab environment.
	The air through a RESPA-RECIRC box which contains Sy-Klone's High Efficiency Filter and is filtered before returning to the HVAC unit to be mixed with the fresh air.
	This process repeats as long as the machine is powered on, even when the

	HVAC unit is turned off.
	As was mentioned earlier it is important to keep the cab clean and to ensure the cab is properly sealed. Again NIOSH testing proved that in order to achieve effective cab filtration the cab must be sealed well enough to achieve positive pressure in the cab.
	Sy-Klone offers an optional cab pressure sensor which will monitor the cab's pressure and alarm when the pressure drops below 0.2" wc. When the alarm sounds the operator or maintenance provider should verify the cab is still properly sealed, all of the doors and window glass are intact, that the HVAC blower is operating properly and resolve any identified issues. The final item to address would be to change the filters in the RESPA-SD and RESPA-RECIRC units to restore adequate cab pressurization.
	While the RESPA system will provide cost-effective and efficient filtration for nearly any application there is one particular environment where Sy-Klone has adapted the RESPA air filtration system to meet a specific need.
	In 2001 the United States Government enacted rules which regulated the amount of Diesel Particulate Matter or DPM that a miner could be exposed to during a work shift. In May of 2008 the final maximum exposure level was enacted and limited exposure to 160 micrograms of carbon in a 10 hour period.
	To help meet this requirement Sy-Klone worked with NIOSH, HVAC manufacturers, filter experts and industry leaders to design a system specifically for the reduction of DPM exposure.
	RESPA-DPM uses the same components as the RESPA system described earlier except for two important differences. First the filter media in both the Fresh air

	and recirc air units have been engineered specifically for DPM filtration and second the cab pressure sensor is required to determine when the cab has lost pressure and a filter change may be required. While the DPM filters are specific to DPM reduction they will also provide similar filtration levels to the High Efficiency filter once a dust bed has built up on the filter media.
	While DPM exposure reduction is currently only a requirement for underground mining, this same air filtration solution can be used in any environment where DPM exposure is a problem. This includes warehouse operations, transfer stations and other similar enclosed working environments. DPM exposure problems have also been reported on school busses and areas where over the road trucks congregate like truck stops, truck yards and port and rail facilities.
	While this video may provide an adequate explanation of the RESPA Air Filtration System you should discuss your particular filtration needs with your Sy-Klone representative to ensure you are getting the most appropriate installation for your needs.
	If you have questions about the RESPA air Filtration system or need additional information please contact Sy-Klone at (904) 448-6563 extension 1310.