

Safe Regeneration of DPF

- Combifilter made by Silicon Carbide honeycomb ceramic, has totally different material properties compared with Cordierite DPF both mechanically and chemically. Particulate will be trapped in SIC-DPF when engine exhaust flows through filter walls of SIC-DPF, and the exhaust will be cleaned after the contamination of soot been trapped. In general, the soot loading for one liter SIC-DPF is about 12 grams of soot, which is double than Cordierite DPF. When the amount of soot trapped by filter is reached the limit of design soot loading of the emission control system, the SIC-DPF needs to be regenerated by heat to remove the trapped soot, and the filtering capability as the clean filter will be maintained.
- In theory, the particulate of engine exhaust can only be decomposed to CO_2 and H_2O at very high temperature over 550°C . In the very early stage of filter regeneration technology, the filters have to be dismantled from the client's factory and send back to supplier's workshop for kiln regeneration, that increases maintenance cost dramatically and huge resource also been heavily involved. Although the recent development by using catalyst coating technology to reduce the decomposition temperature of particulate from 550°C down to below 300°C , and the DPF regeneration can be completed by using the heat of engine exhaust when engine is running with load. **But in the application of the Standby Gensets and Dynamic UPS, the back up power supply system need to be tested weekly without engine load for 15-20 minutes at very low exhaust temperature, to ensure the back up power system is in good standby condition. This special operation pattern of Standby Gensets and Dynamic UPS of running engine without load has made the regeneration of traditional filter or even the catalyzed filter become incomplete due to low exhaust temperature.**

- The potential fire hazard of the filter frequently caused by the incorrect design of filter regeneration; over sooting of filters and improper use of Cordierite substrate, which has less strength and thermal properties than SIC-DPF. These are the root causes of cracked or melted filter, especially when the engine is running continually at full load with very high exhaust temperature.



- In Taiwan, there are many fire incidents caused by incorrect filter design. The use of SIC-DPF in Trivision's patented system, provides not only much stronger material properties; higher filter soot loading, but also with high efficiency of DPF regeneration design, that will always keep the filter be cleaned. These are the key success of the patented system to ensure the safe operation with high reliability.