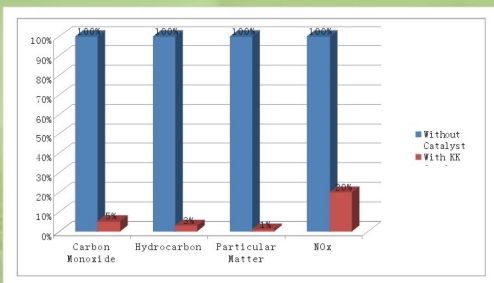




## Emission Test Result and Quality Control

In the KK laboratory, the diesel engine was conditioned by engine dynamometer with different loadings/resistances to produce known emission gases given all other conditions unchanged. By installing various purifiers on the engine, the KK engineer monitored the change of emission performance. Assumption made for the emission performance is not affected by the change of engine capacity because diesel engine behaves intrinsically the same. However, the latest engine technology along with low sulfur diesel fuel does improve emission results.

KK does have a quality control process and equipment on monitoring the products consistency. This will make sure that every single piece of products could be well performed under manufacturing conditions.



## Terminology

A Diesel Oxidation Catalyst (DOC) is air pollution control device, which helps reduction of unwanted and harmful pollutants from diesel combustion engines. In general, the unwanted gases, monitored by the governments, are carbon monoxide (CO), hydrocarbon (HC) and nitrogen oxide (NO<sub>x</sub>). In the diesel emission, particulate matter (PM) is often time being regulated.

### Design Specifications behind DOCs

Typically speaking, DOCs are made of three major components as follows:

- 1) Metallic Substrates
- 2) Wash-coat chemicals
- 3) Catalyst casing



Before



After



## After Sales Services

KK has been in business in Hong Kong since 1970's and provided services to local customers continuously. In the past, we have serviced to the Hong Kong local bus companies in retrofitting diesel buses with integrated purifier/muffler system. At the same time, we have also installed our purifiers to the emergency generator sets in government premises. {HK Office}



## Durability and Material of Construction

All KK purifiers are made of either 300 or 400 series of stainless steel materials to sustain in corrosive environments for long-lasting performance. The cellular monolith substrate unit is constructed with a high temperature resistance alloy, which tolerates up to 1500 operating temperature without entering into a failure mode.

## Technology

During the catalyst reaction occurred inside the purifier, often time, the unwanted gases are reduced to the desire limit. The Kwong Kee DOCs are to reduce Particulate Matter (also know as the black smoke), Carbon Monoxide and Hydrocarbon and convert the gases into water and carbon dioxide. The conversion rate is function of temperature, which is dictated by the operation loading of the engine. In general, the KK purifier is able to reduce up to 90% unwanted gases.

## Application

The KK purifier is also suitable for emergency power generator set, underground mining engines, off road equipment, forklifts, pumps and diesel vehicles, etc. the emission requirement is always established by the local government to allow fraction of pollutants to emit in the air. Thanks to the KK engineer, who is able to custom made formulation or provide existing one to meet your emission needs.

## Device Dimensions and Treatment Capacity

Often time, the DOC is designed to handle various capacities of the engine exhaust. We scale the volume of the DOC based on the engine capacity and exhaust flow rate. As a rule of thumb, larger the exhaust volume, a larger DOC is applied.



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