

AVOID DPF FAILURE WITH THESE EASY STEPS



A Diesel Particulate Filter, or DPF for short, is a special filter on the exhaust system of a diesel standby generator. This filter removes particulates from the exhaust of a diesel engine and entraps them so that they do not pollute the air. This pollution control device is a critical component in your emergency backup generator and it is mandated, permitted, and controlled by the local AQMD in California.

There are thirty-five AQMDs, or Air Quality Management Districts, within the state of California and they regulate the air quality management guidelines within their designated area in the state. Each AQMD has their own requirements for air quality so a generator equipped with a DPF in one AQMD may not be mandated in another.

Like most components of a generator, DPFs require preventative maintenance measures to ensure a long operating life. Failure to implement basic operating procedures and maintenance measures may result in the premature failure of your DPF, generator downtime, and cost you tens of thousands of dollars in repair bills!

But, before we get to those important details, we will dive into the specifics of what a DPF is, how it operates, and why it is required.

**MORE
INFORMATION**



CONTACT US

1-888-682-6888
info@collicutt.com
www.collicutt.com

AVOID DPF FAILURE WITH THESE EASY STEPS



WHAT IS DIESEL EXHAUST?

Most standby generators larger than the “Home Depot specials” are powered by a diesel engine which obviously burns diesel fuel!

During the combustion process, diesel fuel combined with compressed air ignites, creating an explosion within the cylinder of a diesel engine. This explosion drives the piston in that cylinder downward and causes the engine crankshaft to turn. This is known as the “power stroke.”

The very next stroke of the piston is named after what is expelled from that same cylinder. The byproduct of combustion, the diesel exhaust, is forced out of the cylinder in the “exhaust stroke.” This exhaust travels into the exhaust manifold and is routed through the hot side of the turbo and then into the exhaust piping which eventually makes its way into the open air.

This exhaust contains pollutants that need to be removed before reaching the environment. Diesel exhaust typically contains the following components (the amount of each component depends on things like the engine type, quality of fuel, load on the engine, etc.):

- Carbon
- Carbon monoxide and carbon dioxide
- Oxygen
- Water vapor
- Nitrogen
- Nitrogen oxide and nitrogen dioxide
- Sulphur dioxide
- Polycyclic aromatic hydrocarbons
- Diesel particulates

MORE
INFORMATION



AVOID DPF FAILURE WITH THESE EASY STEPS



WHAT IS A DPF AND WHY IS IT REQUIRED?

A Diesel Particulate Filter, or DPF, is simply a filter that traps diesel particulates preventing them from entering our air. DPFs were created as part of a concerted effort to reduce air pollution. The higher the population density, the greater the need for pollution control on diesel engines.

PROPER DPF OPERATION

A DPF is sized to run under engine load. What this means is that it is designed to filter out particulates when a diesel engine is running at least at 30% to 50% load (although this does vary between installations). This means that your generator must be powering a load that requires 30% to 50% of the diesel engine's capacity.

If you run your generator very often at loads less than this, your DPF will become clogged with carbon soot and unburned diesel fuel. This clogging causes the diesel engine to shut down on a high back-pressure condition. This basically means that the exhaust cannot exit the engine fast enough through the clogged DPF and causes a high exhaust pressure on the engine.

Once you get to this state, the DPF must be regenerated or removed and cleaned to prevent damage to it and potential generator downtime.

MORE
INFORMATION



CONTACT US

1-888-682-6888
info@collicutt.com
www.collicutt.com

AVOID DPF FAILURE WITH THESE EASY STEPS



TAKE ACTION: FOUR WAYS TO PREVENT DPF FAILURE

So now that we have learned the basics of DPFs and their importance to your backup generator and to our environment, what can you do right now to ensure your DPF is ready for action?

Simply follow the steps below to ensure that you maximize the life of your DPF and avoid any unnecessary generator downtime:

1. Ensure that your generator does not run without at least a 30% to 50% load
2. Monitor your DPF's control module. Most DPFs come equipped with sensors and an indicator panel of some sort to show DPF health.
3. Load bank your generator at least once a year. This safely burns off excessive accumulation in your DPF
4. Periodically remove the DPF and have it cleaned. The frequency of cleaning depends on manufacturer recommendations and its time in service.

If you have questions about your DPF or power generation system in general, give us a call. Collicutt's service technicians are trained and qualified to work on all makes and models of generators and DPFs and we would be glad to offer advice and service!

MORE
INFORMATION



CONTACT US

1-888-682-6888

info@collicutt.com

www.collicutt.com