

# BAD EXHAUST TEMPS?

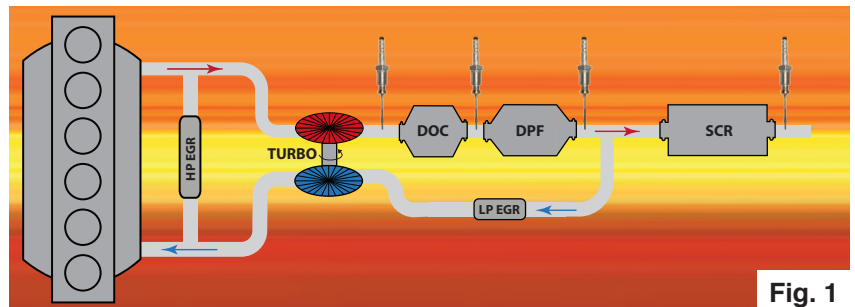


NOT ALL EGTS  
ARE CREATED EQUAL,  
AND YOU NEED TO  
UNDERSTAND THEM  
TO MEET CHANGING  
REQUIREMENTS.

In a global attempt to reduce our carbon footprint by decreasing our greenhouse gasses, air pollution and fossil fuel usage, we are constantly pushing our vehicles to new heights with increased fuel economy standards and lower tailpipe emissions. These global emissions standards are continually changing and becoming more stringent each year. This in turn has created the need for smarter and more sophisticated exhaust after-treatment systems. At the center of these after-treatment systems are an array of sensors designed to monitor and control the different aspects of the vehicles performance and operating condition.

Vehicle prices continue to rise with the inclusion of new technology sensors and more advanced computer systems. With this, we are continuing to see the trend of consumers keeping their vehicles longer. As these vehicles remain in use, they must maintain their compliance with the emissions standards. Included in this array of new sensors, one of the most commonly over-looked and ignored is the importance of the Exhaust Gas Temperature Sensor (EGTS). These sensors play a very important and crucial role in the overall health and performance of the vehicle and its exhaust system.

Generally, when someone thinks of an EGTS, we tend



**Fig. 1**

**Multiple EGTSs used in an after-treatment system**



**Fig. 2**

**Different styles of EGTS**

to think this part is only used on diesel powered vehicles. For the most part, this is true. High-temperature EGTSs were introduced on diesel vehicles in 2007. We estimate that there are currently more than 260,000,000 Sensors in Operation (SIO). On most vehicles, there are between 3 and 6 EGTSs per vehicle (Figure 1). On newer vehicles using Gasoline Direct Injection (GDI), we will begin to see EGTSs being used on these more advanced exhaust after-treatment systems. The primary role of the EGTS is reading the

temperature of the exhaust in multiple locations throughout the exhaust stream and sending that temperature information to the engine control module (ECM). The ECM will then take this information and use it to control the exhaust after-treatment system to reduce harmful emissions and maximize vehicle performance and efficiency.

With multiple vehicle processes affected by the EGTS, it is crucial that they are performing within their limits. The systems affected include the Diesel Particulate Filter (DPF), Diesel Oxidation Catalyst





**Fig. 3**

### **An EGTS being installed in the Exhaust system.**

(DOC) and Selective Catalyst Reduction (SCR) Systems. The potential consequences for failing to replace an EGTS in a timely manner may include:

- A clogged DPF
- Improper regeneration of the DPF
- Replacement of DPF
- Over fueling
- Increased exhaust temperatures
- Failure of internal engine components
- A check engine light
- Placing the vehicle into an idle only state, more commonly known as limp mode.

Not all EGTSs are created equal. There are many different types and styles of an EGTS. (See Figure 2). Some of these differences include: Closed and Open lower shields, Inconel and Stainless-Steel materials, Insertion depths and Fitment angles, Connectors, PTC and NTC Resistance types and many temperature rating differences.

The correct EGTS OEM base style sensor replacement is essential.

Regarding installation - a skilled DIYer would be able to replace their own EGTSs. Anyone with the ability to change their own spark plugs or oxygen sensors would have the mechanical skills required to replace a worn out or faulty EGTS. These sensors are mounted directly to the exhaust system (See Figure 3). They are subjected to very harsh conditions. The technician or DIYer may encounter challenges when replacing an EGTS. The most common challenge is an EGTS that won't break free from its mounting bung. In these situations, it may require a complete replacement of the mounting bung and sensor. Walker Products offers a full line of replacement bungs made from quality 303 stainless steel that will hold up to the harsh environments.

Until now, EGTSs were known as a “dealer item only”. These sensors and bungs are now available in the aftermarket at your local parts distributors, specialists and retailers. Our extensive library of all OEM EGTSs enables us to intelligently consolidate applications to provide an EGTS line with the fewest amount of SKU's while offering the largest and most current coverage resulting in a higher ROI for our channel partners.

Walker Products Inc., which began supplying the automotive aftermarket industry in 1946, produces quality products for many major OEM, OES, Co-manufacturers, Private branders, Retailers, Program Groups, Import Specialists, Traditional WD's, Rebuilders, and Special Market channel partners worldwide. Premium products available from Walker Products include Oxygen Sensors, Exhaust Gas Temperature Sensors, Mass Air Flow Sensors, Camshaft & Crankshaft Position Sensors, various other Engine Management Sensors, Ignition Wires, Coils, Coil on Plug, and Fuel System Products for passenger cars as well as light, medium and heavy-duty trucks in both the gasoline and diesel industries globally.

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