Helping to protect the future

A look at the development of XK-compatible catalytic converters by **Classicfabs**

Catalytic converters first began to appear in the mid-1970s, and first saw widespread use in the US in response to legislation introduced to reduce harmful emissions from car exhaust systems. Similar laws were gradually introduced in Europe, and from 1993 all new cars sold in the UK had to be fitted with catalytic converters.

In their 'raw' form, petrol-engine exhaust gases include potentially harmful – to both humans and the environment – concentrations of carbon monoxide, unburned hydrocarbons, and various oxides of nitrogen. A catalytic converter uses a catalyst – you may remember from school chemistry lessons that a catalyst speeds up a chemical reaction without undergoing any permanent change itself – to combine oxygen with the carbon monoxide and unburned hydrocarbons to produce less-harmful carbon dioxide and water. Certain types of catalytic converter can also reduce nitrous oxide emissions by transforming the nitrogen oxides into nitrogen.

Although compulsory for all new cars, there is currently no UK legislation that requires the fitting of catalytic converters to classic cars – or indeed any cars produced prior to 1993 – but doing so can bring significant benefits. Firstly, there is obviously a benefit for the environment, with significantly reduced pollution. Secondly, fitting a catalytic converter can make for a more pleasant driving experience, with a major reduction in unpleasant exhaust fumes – and their associated smell – drawn into the car.

Thirdly, with ever-increasing concerns about the impact of petrol-engined cars on the environment, and the ongoing move from petrol to electric-powered vehicles, it seems highly likely that in the future regulations may be introduced to reduce exhaust emissions from classic cars, either by requiring the fitment of emission-control systems – most likely a catalytic converter – or perhaps even a move to reduce the use of classics. Therefore, to some degree, fitting a catalytic converter may help to 'future-proof' a classic car and mitigate against any potential move to restrict their use.

Fort William-based Classicfabs – already a leading specialist in the design and production of exhaust manifolds and systems – has been working to develop a range of compatible exhaust manifolds, systems and catalytic converters for use with classic cars that are fitted with carburettors, including XKs and other classic Jaguars. While the emissions-control systems used on all current production cars require electronic-control systems (integrated with the engine-management system), the catalytic converters offered by Classicfabs are specifically designed to operate without electronic control.

Classicfabs holds the exclusive worldwide rights for use of these patented catalytic converters in systems designed by the company for Jaguar, Aston Martin, Porsche 911, or any other model using a Classicfabs system, or an existing or future system adapted by them to take these converters for 'historic/non-cat' cars. These 'cats' are available to fit all Classicfabs Jaguar exhaust systems – plus those for other classic marques – and standard OEM cast-manifold systems, and can be retrofitted to both.

The company has carried out back-to-back testing against a standard exhaust system fitted to a Series 1 4.2 E-type, with the results providing:

- 53.12% reduction in hydrocarbon (HC) emissions.
- 18.61% reduction in carbon monoxide (CO) emissions.
- 60.42% reduction in nitrous oxide (NOx) emissions, and an almost 100% reduction at certain speeds (30mph and 50mph under test conditions).

The testing was carried out by an independent automotive company (Taylor Automotive in Sussex), with the test car supplied by Moss Jaguar.

These results come with no drop in performance and produce a reduction in emissions to comply with the Euro 5 standard – currently a higher standard than that required for petrol engines in most of the Low Emissions Zones in UK cities, including the London ULEZ. This means that cars can be driven in those areas without penalty if restrictions on classic cars come into force. Euro 6 is also achievable as an upgrade.

When compared with a standard E-type 1.75-inch exhaust system, the Classicfabs Long Manifold system fitted with a catalytic converter saw an increase in power from 181bhp at 4,370rpm to 195bhp at 4,630rpm. Torque went up from 244lb ft at 3,240rpm to 265lb ft at 3,220rpm.

In many ways, investing in an expertly designed catalytic converter and matching exhaust manifold/system is not only protecting the environment, but is also an investment in the future of classic cars as a whole, as well as, of course, enhancing your classic Jaguar and protecting its future.