



Electronic Actuator

Over the last few years the turbocharger market place has seen major changes to the design of turbos for passenger vehicles with the introduction of more and more turbos using electronic actuators.

The electronic actuator incorporates electrical circuits which pass pulses / signals to a motor that drives an arm linked into the variable vanes. There are preset stop positions within the actuator which control the boosting of the turbo. These will be slightly different for each turbo which makes each actuator turbo specific.



Remanufacturing electronic turbos

An off the shelf solution is not currently available to the market place to test and setup the electronic actuator. Therefore in the majority of cases rebuilding this next generation of electronically controlled turbos cannot be easily achieved. The result is that most companies can only offer to replace the faulty turbo with a NEW turbo.



Here at Essex Turbo we don't have to offer you a NEW replacement turbo as we have developed test equipment that allows us to check the electronic actuators for error codes. The equipment allows us to clear and reset the electronic actuator on the turbo therefore allowing us to rebuild the turbo in the knowledge that the complete turbo has been checked and setup correctly.

Frequently Asked Question (FAQ)

We get asked regularly if the electronic actuator is available as a separate component because the diagnostic equipment has identified a fault with the actuator. (Ref: Error Codes present).

Unfortunately the answer to that is 'no' on two counts:

- Having investigated this request we have been told that the electronic actuator was designed to be set up on the turbo and never designed as a separate 'plug and play' component.
- Also we have found from our experience that the vast majority of error codes are generated as a result of carbon build-up around the variable vanes found inside the turbochargers' exhaust housing. Sooty exhaust gases create a carbon build-up which restricts the full range of movement of the variable vanes.

So what appears to be an electronic actuator only problem does in fact, with further investigation on the turbo, turn out to be a variable vane issue as well.

Common reasons for failure

The vehicle experiences power (boost) issues which can show up on a garage's diagnostic machine as error codes. It is generally assumed by the user as an electronic actuator problem only, and that the turbo is mechanically sound. The next question to ask would be 'what might have caused the error codes to be generated in the first place?'

