

# Injectronics

Electronic & Mechatronic  
Components



➔ Remanufacturing

➔ Testing & Diagnosis

➔ Repair Service

➔ Research & Development

[injectronics.com.au](http://injectronics.com.au)



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For over 30 years, Injectronics has been providing supply solutions for automotive electronics to the aftermarket and the OEM. During this time, Injectronics has developed a reputation as Australasia's leading supplier of quality new & remanufactured automotive electronic components.



Injectronics' dedication to providing superior quality products is highlighted by the International Standards Organisation, awarding it with ISO9001 accreditation.

With our own dedicated R&D department, we can test and validate new products and develop testing and remanufacturing processes for the most complex electronic parts.

State of the art equipment and processes enables Injectronics to offer; unique testing and repair services for a variety of products that are both late model or no longer available new.



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- ABS Module and Sensors
- Airflow / Mass Meters
- Body Control Modules
- Climate Control
- Electronic Control Modules
- Throttle Bodies
- Immobilisers and Key matching
- Instrument Clusters / Information Display
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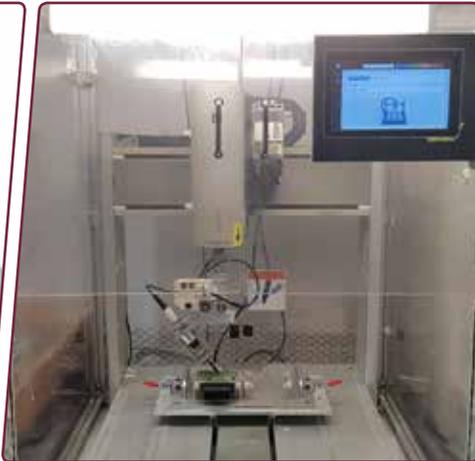
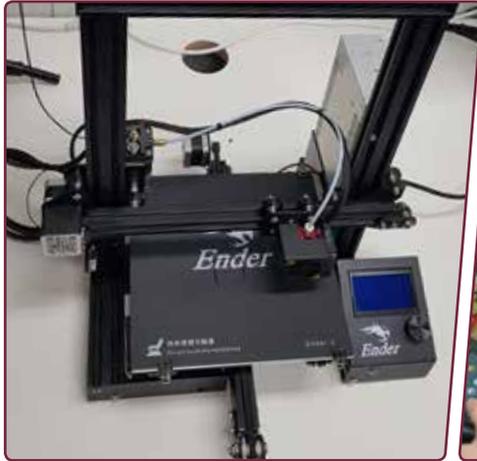
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## Research & Development

Injectronics has its own dedicated Research and Development department, that is continually developing solutions for many of the latest technologies and designing individual and specific product requirements and enhancements.

The team consisting of scientists, programmers and engineers are constantly developing and designing remanufactured products or repair solutions for the Injectronics remanufacturing laboratory, and also works closely with partners to provide individual and customised services for many worldwide external clients.



## ABS Modules & Sensors

Injectronics repair, remanufacture, and stock, a large range of these Antilock Braking Systems to suit such vehicles as: Audi, VW, GMH, Ford, Mercedes Benz, BMW, Saab, Volvo, Jaguar, Jeep, Nissan, Subaru, Toyota, Mitsubishi, Mazda and many other vehicles.

The common brands are ATE, Tevic, Bosch, TRW and Aisin.

Early Antilock Braking Systems consisted of a separate ABS Electronic Control Module (ABS ECM or ECU) also known as an ABS computer.

The ABS Module controls the valve body solenoids after processing input signals from the vehicles wheel speed sensors, and in later systems additional sensors, such as steering wheel angle and gyroscopic sensors were used to detect the direction of the vehicle. Mercedes Benz and then other European vehicles, including BMW, Volvo, Saab, Audi, and VW were all early users of Antilock Braking Systems.

Later ABS Modules incorporate the electronics, the valve body, pump and brake booster as one complete assembly. This ABS Module assembly can also have incorporated Traction Control, (also known as ETC), stability control (ESP), cornering brake control (CBC), along with hill descent control (HDC).





## Air Flow / Mass Meters

An **Air Flow Meter, AFM** or **Air Mass Meter, AMM** measures the air flow or air mass that is drawn into the intake of the engine. This measurement is transmitted as a frequency or a variable voltage to the ECM, ECU, or PCM, so that it can calculate the correct amount of fuel to deliver via the injectors and ignition timing in relation to the air going into the engine. Other terms used for this sensor are: MAF Sensor, Mass Air Flow Sensor, or Karmen Vortex AFM.



Various designs have been used over the years by different manufacturers to measure the air delivery to the engine, including vane or flap, hotwire, hot film, membrane and karmen vortex type to name just a few.

Injectronics can test, repair, and remanufacture many brands of Air Flow Meter (AFM) and Air Mass Meter (AMM), including Bosch, Siemens, VDO, Hitachi, Mitsubishi, Delco, Delphi, Jecs, Nippon Denso, Kefico, and Lucas.



Injectronics tests and calibrates all Air Meters using an Air Flow Analyser test bench, which flows air through the meter and precisely checks the output of AMM's and AFM's compared to learnt OEM specifications.



## Body Control Modules

Injectronics stock a large range of remanufactured Body Control Modules (BCM's / BEM's) including Ford Falcon E series and B series, plus Holden Commodore VT – VE series and Cruze.

The BCM controls many functions such as vehicle security / immobiliser, central locking, electric window operation, windscreen wipers, rear demisters, electric aerial and interior lighting.

Body control modules are also known by other names including Central Electronics Module (CEM), Signal Acquisition Module (SAM), and also Footwell Module (FRM). Injectronics can test and repair these units for their commonly displayed faults.



## → Climate Control

Electronic Climate Controls are used in most of today's vehicles to ensure optimum passenger comfort. Injectronics repairs and stocks a large range of interior fan speed control modules and electronic climate control modules.

These are also known as a HVAC (Heating, Ventilation and Air Conditioning) Modules, and in Ford AU Falcon, Fairlane, Fairmont and LTD they are referred to as a Message Display Centre.

Some common Climate Control Module or HVAC units we repair, test and remanufacture are: BMW 3 series E36, X5, 5 Series E39, Audi A4 and A6, Mercedes Benz C. Class, Ford Fairlane, Falcon, Fairmont, EA, EB, ED, EF, EL, and the Message Display unit in the AU Ford. Holden Commodore, Berlina, Calais and Statesmen, VN, VP, VR, VS, VT, VX, single and dual zone. Honda Accord, Saab, Porsche, Mazda 3 and Kenworth Truck.



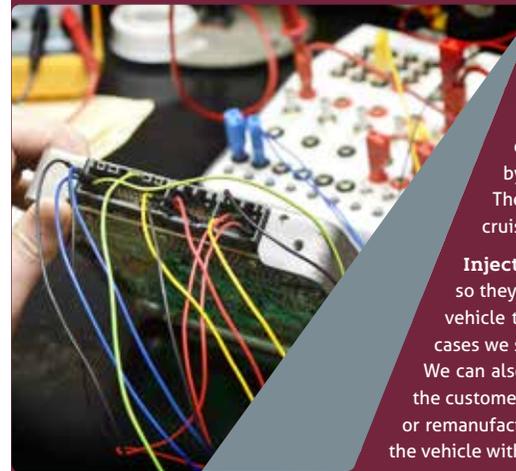
## → Electronic Control Modules

The engine Electronic Control Module, ECM has been called many things including Electronic Control Unit, ECU, Powertrain Control Module, PCM, Engine brain, Black box.

Common modules can be tested on the Injectronics designed Virtual Automotive Simulator (VAS). This provides accurate pin by pin testing and programming, providing a comprehensive full function test.



## → ECM PROGRAMMING



Many late model vehicles require ECM's to be programmed to a specific vehicle in order to match or align the ECM to the vehicles BCM or immobiliser system. Other late model ECM's require variant coding, a process that enables manufacturers to use one particular ECM's hardware in a range of vehicles, by programming it with a particular vehicle's variants. These variants may include diff ratio, tyre size, ABS type, cruise control, transmission ratios etc.

Injectronics can pre-program many types of ECM's, so they can be fitted to the vehicle without having to take the vehicle to a dealer for programming with a scan tool. In many cases we simply require a VIN number or certain vehicle options. We can also clone ECM's where we copy all the information from the customer's faulty ECM, and program this information into a new or remanufactured unit, this allows them to plug in the unit and run the vehicle without having to do any other programming operations.

## → Throttle Bodies

Many late model vehicles use Electronic Throttle Bodies which the ECM, ECU, or PCM controls. This can otherwise be known as drive by wire. Injectronics can repair, and also stocks a range of new and remanufactured Electronic Throttle Body assemblies. The range of vehicles is constantly growing and includes: Mercedes Benz, VW, Audi, Nissan Micra, Ford BA, BF, FG Falcon, Holden Barina, Commodore, Astra, Seat, BMW, Volvo and Suzuki.



## → Immobilisers & Key Matching

All late model vehicles now incorporate an immobiliser system. These are often failing, causing a no-start situation.

Immobiliser memories can become corrupt, or lose their link / synchronisation to the key, or the engine ECM. Injectronics have exchange immobilisers in stock as well as offering a speedy repair service.

We can also program keys to immobilisers and have a large range of keys in stock as well as resynchronising immobilisers to ECM's / BCM's.

We can also turn off the immobiliser function where required for many types of vehicles.

Many late model vehicles have an electronic ignition switch, proximity keys, immobiliser systems and electronic steering locks which often fail causing a no-start situation.

Injectronics offer a test and repair service, using our in house designed test equipment, of various components and can also supply and program additional keys for your vehicle.

For example; Injectronics can repair Electronic Steering Locks fitted to Mercedes Benz C class W204 vehicles, which are prone to fail, avoiding the need to purchase a new replacement unit and having it programmed by a dealer.

We also repair the Electronic Ignition Switches fitted to Mercedes Benz ML series, Sprinters, C class, E class and more, which are also prone to fail. Injectronics can also supply and program new replacement keys avoiding the need to wait for a dealer replacement to arrive from overseas.





## Instrument Clusters / Information Display

Today's vehicles Instrument clusters are becoming increasingly complex and now we are seeing complete LCD displays that can be totally customised to the driver's display preference.

When an instrument cluster fails, you cannot simply fit a second hand unit from another vehicle. This is because specific vehicle data, such as VIN and KLM's, and immobiliser information are electronically stored in the cluster and many other modules including the ignition keys. If these don't match, you may have an inoperative cluster, or even a no start situation. Injectronics can remanufacture your instrument cluster so there is no further installation programming required.

We stock many components, and provide a prompt repair service.



## Heavy Duty & Diesel

Injectronics can supply many new and remanufactured types of modules to suit the diesel and heavy duty market.

These include truck and trailer ABS modules, Air mass meters, electronic EGR valves and climate controls.

We can also supply a range of electronic turbo controls including such brands as Hella, Holsat and Mitsubishi.



Kenworth Truck Heater / A/C Control Unit



Electronic Gear Selector



Cummins Holsat Turbo Actuator



Diesel Truck ECM



Kenworth Truck Climate Control



Turbo Actuator



Hino 300 Truck ECM



Toyota Turbo Motor Driver



Mercedes / Man Truck PLD Control Unit

## Prompt Repair of Customers Unit

The proliferation of electronic and mechatronic products in today's modern vehicles requires a unique repair solution for products that are either no longer available or offer an expensive supply option. Additionally, individual and vehicle specific programming creates major challenges when replacing an electronic product.

To overcome both the supply availability and programming challenges, Injectronics offer a very unique repair service solution to the original product failure.

Injectronics prompt repair service enables the original failed component to be repaired and returned, enabling refitting to the original vehicle, saving workshops considerable time and money, while removing the need to additionally reprogram the product to the vehicle.

Injectronics repair service can provide a prompt repair service for electronic and mechatronic products fitted to all parts of the vehicles, and the range offered is continually expanding. Visit [www.injectronics.com.au](http://www.injectronics.com.au) or contact Injectronics to see if we have a service available to suit your requirements.

Following are samples of some of the unique services available:



Mercedes Benz Command control switch



Ford BA / BF / FG HIM Module



Bose audio amplifier



Mazda 3 transmission control module



Mercedes Benz Electronic selector module



Nissan Pathfinder R51 transmission controller



Mercedes Benz 7 Gtronic mechatronic conductor plate

Our support team is available to assist you with diagnosing vehicle faults, wiring diagrams, testing procedures, technical bulletins, common faults, programming procedures and any other questions you may have. Our service is free and we can be contacted by either:



Phone: 1300 30 80 50 AUS or 0800 536 547 NZ



Email: [techsupport@injectronics.com.au](mailto:techsupport@injectronics.com.au)



Online chat on the website: [www.injectronics.com.au](http://www.injectronics.com.au)  
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Part of the

