

## ELECTRICAL, ELECTRONIC PRODUCT SERVICE AND INSTALLATION ENGINEER.

### Profile:

The engineer will install and service a range of domestic and/or commercial equipment from washing machines and micro-wave ovens in the kitchen, laundrette or restaurant to television and audio equipment in the living room. The influence of computers in controlling washing machines and providing television, have brought the installation and service requirements of these products together. In the near future, the 'smart home' will give wireless control of these products and link their requirements still closer.

To meet the needs of these 'smart' products, it is essential that the engineer is I.T. literate and has an understanding of all aspects of connectivity, with the ability to make and troubleshoot I.P. connections to routers, Bluetooth and Wi-Fi connections, in both domestic and commercial situations. The engineer must also be capable in the usage of "Apps". Technology is developing at a rapid rate and the range of products requiring the engineers skills will expand and require the engineer to maintain and update their knowledge and skills to meet these future needs. Many products will be integrated into the 'smart home' in the future and talk to each other through the "Internet of Things" giving the engineer a secure and profitable future.

As most of the work is carried out in the customer's home or business, the engineer has to be polite, well dressed and have appropriate customer facing skills. The work will be interesting and varied giving the opportunity to work with a wide range of people in differing environments. The engineer should have an enquiring mind and be able to follow a logical sequence of mechanical events or electrical tests. Following the Apprenticeship, the engineer will have additional training if they are working on gas appliances or working in specific commercial premises, they may also have the opportunity to take additional qualifications to further develop their skills and extend their prospects into management, training or development.

**Generic job titles recognised across the industry:** Installer. Service engineer. Service technician.

Behaviours	What is required
Demeanour	<ul style="list-style-type: none"> <li>Giving a good impression of their employer and themselves by being polite and appropriately dressed.</li> </ul>
Friendly manner	<ul style="list-style-type: none"> <li>Having a friendly greeting and manner to colleagues and customers</li> </ul>
Showing respect	<ul style="list-style-type: none"> <li>Showing respect for customer's property and possessions</li> </ul>
Having concern	<ul style="list-style-type: none"> <li>Having concern for the safety of colleagues, customers, their family and pets</li> </ul>
Willingness to continue learning	<ul style="list-style-type: none"> <li>Continuing 'personal professional development' in an industry that is changing rapidly</li> </ul>
Honesty and integrity	<ul style="list-style-type: none"> <li>Developing a trusting relationship with customers and colleagues</li> </ul>

Knowledge	What is required – the engineer will need to know and understand:
Health & Safety	<ul style="list-style-type: none"> <li>Health &amp; safety regulations and practices relevant to the role.</li> <li>Testing to EU/BS Product Standards.( oven internal temperature &amp; surface temperature tests)</li> <li>PAT (Portable Appliance Testing)</li> </ul>
Customer Care Procedures & Techniques	<ul style="list-style-type: none"> <li>Customer care techniques including any particular company policies.</li> </ul>
Environmental Legislation	<ul style="list-style-type: none"> <li>Environmental legislation ie WEEE (Waste Electrical &amp; Electronic Equipment) Directive.</li> </ul>
Transporting & Protecting Electrical & Electronic Products	<ul style="list-style-type: none"> <li>Health and safety regulations and practices including waste carriage regulations and Electrostatic Discharge (ESD).</li> </ul>
Installing, Testing & Handing Over Electrical & Electronic Products	<ul style="list-style-type: none"> <li>Electrical services, utility services, signal requirements and network connections.</li> <li>Manufacturer's installation requirements eg: Ventilation, building strength, viewing distance and other site requirements.</li> </ul>
Diagnosing Faults and Repairing Electrical & Electronic Products	<ul style="list-style-type: none"> <li>The operating principles and products operating sequence.</li> <li>The function of software in the operation of the product.</li> <li>Manufacturer's service manuals as appropriate.</li> <li>The importance of van stock maintenance.</li> </ul>
Principles of Servicing Electrical & Electronic Products	<ul style="list-style-type: none"> <li>The principles by which the product operates to help diagnose the faulty area and component or software.</li> </ul>

Skills	What is required – the engineer will be able to:
Health & Safety	<ul style="list-style-type: none"> <li>• Observe health and safety regulations and procedures including:</li> <li>• Apply electrical safety tests.</li> <li>• Avoid the hazard left by residual energy.</li> <li>• Ensure all tools and equipment are safe and fit for purpose.</li> <li>• Understand and apply EU/BS product standards.</li> <li>• Apply Portable Appliance Testing.</li> </ul>
Customer Care Procedures & Techniques	<ul style="list-style-type: none"> <li>• Identify and use the appropriate mode of communication and be able to deal with and listen to customers.</li> <li>• Comply with health and safety procedures to protect colleagues, customers and their family.</li> <li>• Resolve disputes and know who to report to in case of problems.</li> </ul>
Environmental Legislation	<ul style="list-style-type: none"> <li>• Research and apply environmental legislation that is current and appropriate to installations and repairs.</li> <li>• Advise customers on energy saving practices and choosing environmentally friendly purchases in the future.</li> </ul>
Transporting & Protecting Electrical & Electronic Products	<ul style="list-style-type: none"> <li>• Use the correct lifting techniques.</li> <li>• Apply safe stowing procedures.</li> <li>• Fit / remove safety bolts.</li> <li>• Deliver product.</li> </ul>
Installing, Testing & Handing Over Electrical & Electronic Products	<ul style="list-style-type: none"> <li>• Agree suitable site, with customer, for installation.</li> <li>• Carry out electrical safety tests.</li> <li>• Install product to manufacturer's regulations.</li> <li>• Make network connections including WiFi, Internet and blue tooth.</li> <li>• Demonstrate product to customer's satisfaction ensuring customer can operate product.</li> <li>• Complete paperwork including re-call registration if agreed with customer.</li> </ul>
Diagnosing Faults and Repairing Electrical & Electronic Products	<ul style="list-style-type: none"> <li>• Select, use and apply diagnostic tools and aids to locate fault.</li> <li>• Ensure that there is not a primary reason for fault occurring.</li> <li>• Ensure replacement components are correct and meet specification.</li> <li>• Replace components or reinstate software using correct sequence, appropriate tools and techniques.</li> <li>• Ensure no damage to other components.</li> <li>• Ensure product is working properly, test it for electrical safety, EU/BS Standards and demonstrate it to the customer.</li> <li>• Communicate technical findings and Product / claim investigations, both verbally and in writing.</li> <li>• Observe and adhere to the principals of Electrostatic Discharge (ESD) when handling spare parts and open products</li> </ul>
Principles of Servicing Electrical & Electronic Products	<ul style="list-style-type: none"> <li>• Apply the appropriate electrical, electronic &amp; software principles to understanding the nature and reason for faults.</li> </ul>
Connectivity	<ul style="list-style-type: none"> <li>• Understand and apply the principles behind product connectivity</li> <li>• Understand and complete Network &amp; Router set-up</li> <li>• Relate performance to speed and/or set-up of the customer network</li> <li>• Understand Apps and use them in product function &amp; troubleshooting</li> </ul>

On completion the Apprentice will be eligible to apply for an ECS (Electrotechnical Certification Scheme) card.

**Entry requirements:**

Individual employers will set any relevant entry requirements. Apprentices without Level 2 English and maths will need to achieve this level prior to taking their end-point assessment.

**Duration:**

Typically three years.

**Level:**

This is a Level 3 Apprenticeship.