

MECP Advanced Installation Technician Job Description - 2017



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Position Summary - MECP Advanced Installation Technician

The MECP Advanced level Installation Technician position involves carefully and correctly installing and configuring entry to mid level difficulty aftermarket electronic products in a wide range of vehicles with minimal supervision. In addition to installation duties, the MECP Advanced level technician position commonly involves troubleshooting, utilizing both experience and specific tools to satisfactorily rectify operational problems and installation errors that are present in existing and new installations. The position also often includes dealing directly with customers before, during, and after the installation in a courteous manner, as well as maintaining a clean, safe and functional workshop environment.

Full Description - MECP Advanced Installation Technician

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Duties and Responsibilities

- Install aftermarket replacements of in-dash audio/video source units (both direct OEM fit replacements with a dash kit and custom fitted replacements requiring cosmetic and/or electrical modification).
 - Duties (cosmetically) will typically requiring at least some degree of customization to fit and function with light cosmetic modifications to the surrounding dash and mounting area where no commercially available dash kit and trim panels are offered.
 - Duties (electrically) for source unit replacements should focus on retaining functionality of existing factory installed electronics and features with the use of wire harness and antenna adapters, and other specialty integration devices where available or hard wire with custom connections when no alternative to accomplish the task exists commercially.
- Install and replace OEM speakers with aftermarket speakers, both in OEM factory and custom locations, either direct replacement or with adapters the technician uses or fabricates so fit and function of the speakers have no leaks, gaps in mounting surfaces, warping of the mounting adaptor, damages due to placement (being kicked, poked, unnecessarily contacted with moisture), etc.
- Install aftermarket speakers in locations where no speaker currently resides, but where interior panels and sheetmetal exist with sufficient space to accommodate a speaker. This includes cutting the mounting hole(s) for the speaker in the vehicle's sheetmetal, interior panel(s) and sufficiently wiring/mounting the speakers with no leaks, gaps in mounting surfaces, warping of the mounting adaptor, damages due to placement (being kicked, poked, unnecessarily contacted with moisture), etc.
- Install communication antennas for AM/FM/HD Radio, GPS, Satellite Radio, Telematic Systems and other mobile communication devices without compromising the interior or exterior fit and finish or the safe operation of the vehicle while also understanding how to maximize effectiveness through selecting proper locations.
- Install aftermarket Keyless Entry, Security, and Remote Start devices to enhance vehicle security and convenience features, while maintaining all pre-existing vehicle functionality. This includes, but is not limited to OEM anti-theft and anti-drive-off systems, door lock security features, and emergency communication and vehicle access features, including the use of commercially available integration modules and accessories.
- Install reverse cameras, back up distance sensors, in-vehicle video screens of all types, and OEM video screen integration with driver safety as a priority, and in a way that maintains standard vehicle operation and safety features. Screens and monitors should be installed in compliance with all local and Federal laws, as well as in compliance with CEA recommended practice.
- Install Bluetooth hands-free cellular devices or modules, or wireless audio streaming devices or modules with driver safety as a priority, and in a way that maintains standard vehicle operation and safety features. Hands-free devices should be installed in compliance with all local and Federal laws, as well as in compliance with CEA recommended practices.
- Properly choosing and running wires, cables and harness assemblies throughout the vehicle (including into the engine compartment, trunk/hatch and doors) with a competency to execute safe and serviceable methods in observing current capacity, weather proofing, passage of wire through metal, wiring alongside existing vehicle wiring, and where wiring passes near any moving parts. Must also understand the difference of non-standard wire size labeling as it compares to the AWG reference standard including compensations for adequate current capacity and corrosion resistance.
- Possess a complete understanding of how to evaluate and test a vehicle charging system (State of Health), including the use of commercially available, menu driven battery condition and load test equipment, DMMs and Hall-Effect DC current clamps, as well as effectively test for voltage drops, short circuits, open circuits, AC ripple, charging system current output/capacity and key-off parasitic current draw in a vehicle electrical system.

Knowledge, Skills, and Ability

- Ability to read and understand wiring and electronic component schematics provided by service based support tools (from both Aftermarket Providers and from OE Manufacturers) to plan installation related connections when such schematics are available to the technician.
- Ability to understand electrical circuit paths and vehicle electrical systems, including hybrid gas/electric and high voltage powertrain components, with respect to how to apply aftermarket electronic device installation and areas of caution to avoid for safety purposes.

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- Ability to read and understand installation and operation instructions supplied by the aftermarket equipment manufacturer, both supplied with the products and within the manufacturer's online, fax and telephone resources.
- Knowledge and ability to use important automotive and electronic test and diagnostic equipment:
 - Using a DMM to measure voltage (AC and DC), low current (<10a), resistance and continuity on vehicle electrical systems and aftermarket mobile electronics equipment, then know what the expected normal results should be.
 - Using a Hall-Effect DC current clamp (integrated clamp or as an accessory to a DMM) to take high current (>10a) measurements and what the expected normal results would be.
 - Using an oscilloscope to identify audio signal waveforms. Knowledge to differentiate between sine waves and other implementations of waveforms in automotive audio and electronics applications applying to aftermarket electronics and installations.
- Knowledge and understanding of Ohm's Law and Watt's Law and basic math (addition, subtraction, multiplication, and division) to combine with electrical diagnosis and form a basis for good/bad diagnoses of operational aspects in aftermarket equipment and the vehicle electrical system.
- A thorough knowledge of electronic components such as automotive SPDT relays, silicon diodes, resistors, and switches is required as well as the application of them in aftermarket installations. The candidate must know what the electronic components do, their schematic representations as well as how to apply them in aftermarket installations where they are required.
- A brief knowledge of visually and schematically identifying transistors and terminology knowledge of their parts.
- Knowledge of series and parallel wiring practices and understanding the individual calculation process of DC resistance, inductance and/or capacitance, including dual voice coil speakers, resistors and capacitors. The candidate should be able to accurately calculate a given DC resistance load on an amplifier channel when using multiple speakers or voice coils.
- General knowledge of inductors, transformers and capacitors with regard to how they are applied in installation considerations in the audio signal path and/or power supply applications external of components (such as external power supply noise filtering and energy storage) as well as connecting multiples of a component in series or parallel.
- Knowledge of various commercially available installation accessories such as dash kits, wiring harnesses, antenna adapters, speaker adapters, line output converters, specialty interfaces for OEM premium audio system replacements, audio patch cables, high current power/ground wiring, circuit protection devices, etc.
- General knowledge and familiarity of the appropriate application of various fasteners for equipment mounting and those encountered during removal interior panels with regard to the original integrity of the vehicle and subsequent installation.
- A firm knowledge of security system/remote starter components and advanced functionality (including brain, siren, sensors, input/outputs, programmable features, etc.), including what functionality of the vehicle's electrical interface is a discrete circuit, variable voltage, or true data bus circuit. The individual should be able to complete installation of vehicle security systems and remote starters in cars with commercially available devices that require application specific connection and configuration by the technician.
- A firm knowledge of specific remote starter concerns (such as high and low current ignition wiring, vehicle transponder devices, hood pin/brake switch safety and common programmable features) and the ability to install/connect these devices. The individual should be aware enough to correctly and safely determine a safe and reliable approach observing these concerns when installing a remote starter.
- Knowledge of mobile video and rear seat entertainment system components and how they interconnect. Also a general knowledge of how direct replacement headrest and overhead video screens install.
- Knowledge of all Bluetooth profiles and applications for communication, control, audio/video, and serial communications relating to consumer products used and installed in the vehicle.
- General knowledge of the Global Positioning System (GPS) operation and how common devices that receive a GPS signal operate in an in-vehicle application as well as the factors that affect reception and/or using GPS data in addition to mapping data to determine routing and/or position reporting.
- Skill to use a personal computer, internet browser, and various technical support software resources.
- Skill to disassemble vehicle interiors without damaging the vehicle or the interior components or where to locate information if disassembly procedure is unknown or not evident.
- Ability to accurately measure dimensions and calculate subwoofer enclosure volume, both internal and external, in square and rectangular enclosures (including those with an angled "wedge style" design on one of the enclosure sides).
- Ability to establish priorities and work with supervision, ask for clarification when necessary.
- Ability to understand the differences between the various wireless data and voice communication methods employed in commercially available aftermarket consumer products relating to car electronics.
- Ability to diagnose and resolve common installation errors through Identify-Isolate-Eliminate troubleshooting before calling on technical support resources.

Credentials and Experience

- One to three (1-3) years of professional experience is necessary and is expected by most employers
- Candidate should have personal experiences with his/her own installations in addition to professional work experience
- Candidate should possess a current MECP Advanced Installation Technician certification
- Training at an installation related school or program is a plus.

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- *Continuing Education within the mobile electronics industry, such as industry sponsored seminars and events is a plus.*

Special Requirements

- *Must be able to speak/read English (MECP Advanced level exam and study materials are only delivered currently in English)*
- *Willing to work weekends, holidays, and shift overtime as required by the employer.*
- *In most states or provinces, the individual will be required to supply his/her own basic installation tools.*

Notes about MECP Advanced Installation Technician Certification

- *MECP Advanced level certification is intended for individuals with 1-3 years of hands-on work experience installing aftermarket 12v vehicle electronics. Prior work experience of at least one year must be expected and validated by the employer.*
- *These individuals should be able to function in a working environment with just minimal supervision of the work related tasks and a daily communication of the day's work related goals.*
- *The exam contains five key topic areas and 200 total questions.*
- *Passing score on the MECP Advanced level exam is 70% or greater in each of the five sections.*
- *The certification is valid for four (4) years.*
- *MECP certified technicians are granted a certificate with a CEA License number that can be validated at any time by contacting mecp@mecp.com as a free service to potential employers or clients.*
- *Prospective employers are encouraged to place any candidates with MECP Advanced certification on the lower end of the suggested experience range of 1-3 years in a supervised work environment for at least 15 days to ensure the best employee development and retention.*