

MacBook Air (Mid 2013, Early 2014, and Early 2015)

Technician Qualification Process

1. Complete the following courses (found in the Service Training section of GSX).
 - Embedded Battery Safety self-paced training course
 - MacBook Air (Mid 2013, Early 2014, and Early 2015) self-paced training course (This ONE course covers both the MacBook Air (11-inch, Mid 2013, Early 2014, and Early 2015) and MacBook Air (13-inch, Mid 2013, Early 2014, and Early 2015))
2. Take the MacBook Air (Mid 2013, Early 2014, and Early 2015) service qualification exam.

Note: Passing this one exam qualifies you to service both the MacBook Air (11-inch, Mid 2013, Early 2014, and Early 2015) and MacBook Air (13-inch, Mid 2013, Early 2014, and Early 2015) models.

Battery Safety

Important

- Batteries must be handled with utmost care.
- All work space must be free of foreign or sharp material and batteries should not be exposed to heat or open flame.
- Do not drop, stack, puncture, crush, flex or apply unnecessary pressure to a battery, as this may result in damage.
- Damage to a battery may result in a potential fire hazard.

Best Practice

The battery contains several soft battery cells. Do not press on the battery cells with your fingers, and do not handle the battery pack in any way that might apply any physical pressure to these cells.

- Handle the covered battery by its edges only, with two hands at all times.
- Keep the battery cover on the battery at all times when the battery is out of the computer.
- Only remove the battery cover just before replacing the computer's bottom case. Keep the battery cover on the battery at all other times.
- Do not drop a loose battery. If the battery is dropped, replace the battery.
- Only tighten the battery's screws finger tight; do not overtighten them by any amount, or irreparable

damage to the battery pack can result.

- Do not twist or torque the battery, or irreparable damage to the battery can result.

Tech Specs

Service Advisory

MacBook Air (11-inch, Mid 2013, Early 2014, and Early 2015) and MacBook Air (13-inch, Mid 2013, Early 2014, and Early 2015) models contain a new flash storage module that uses a different connector compared to the modules used in previous MacBook Air models.

- Newer flash storage used in MacBook Air (Mid 2013, Early 2014, and Early 2015) models is NOT compatible with earlier MacBook Air models.
- Flash storage modules used in MacBook Air models prior to 2013 are NOT compatible with MacBook Air (Mid 2013, Early 2014, and Early 2015) computers.

Connections & Expansion

- 11-inch
 - A = MagSafe 2
 - B = USB 3
 - C = Headphone (audio out) D = Dual Microphone
 - E = USB 3
 - F = Thunderbolt
- 13-inch
 - A = MagSafe 2
 - B = USB 3
 - C = Headphone (audio out)
 - D = Dual Microphone
 - E = SDXC Card Slot
 - F = USB 3
 - G = Thunderbolt

Service Tools

The following tools and materials are required to service MacBook Air (Mid 2013, Early 2014, Early 2015) models:

- Clean, soft, lint-free cloth
- ESD-safe workstation, including ESD mat and wrist or heel strap
- ESD bags, for storing ESD-sensitive parts while removed from unit
- Phillips #000 screwdriver (magnetized)
- Torx T5 screwdriver (magnetized)
- Torx T8 screwdriver (magnetized)
- Nonconductive nylon or plastic flat-blade tool
- EMI-safe plastic or nylon tweezers for routing antenna cables
- Alcohol wipes
- Kapton tape
- Permanent ink, fine-point pen
- Pencil, to mark microphone alignment
- Magnifying glass, for reading serial number etched on bottom case
- Digital volt meter, for troubleshooting

Order these tools and materials directly from Apple:

- Thermal grease syringe (922-7144)
- Nylon probe tool (black stick) (922-5065)
- Pentalobe screwdriver and protective battery cover (076-1372)
- Battery cover only, MacBook Air (11-inch) (922-9736)
- Battery cover only, MacBook Air (13-inch, Early 2014) (922-9735)
- Motorola Symbol DS6707 handheld digital imager scanner (922-9230)

Software Tools

Diagnostics for MacBook Air (Early 2015) Computers

The MacBook Air (11-inch, Early 2015) and MacBook Air (13-inch, Early 2015) use AST 2.

Please note that functions of Apple Service Diagnostic are included in AST 2.

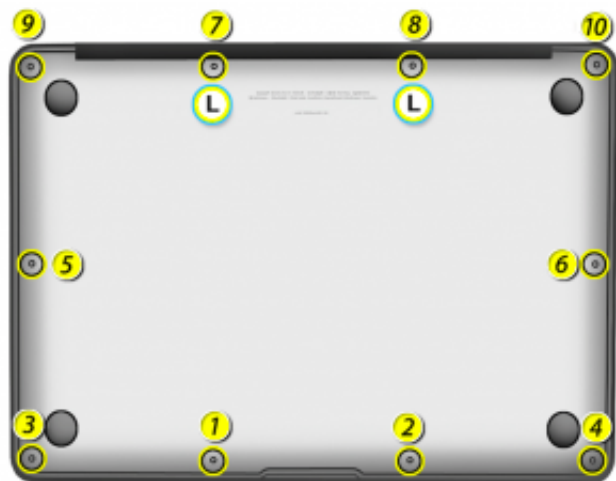
In addition, these MacBook Air models provide Apple Diagnostics 1.0.13 for customer use.

Quick Check Procedures

- Reset SMC (System Management Controller)
 - power off machine
 - Shift + Opt + Cmd + power
 - iMac/MacMini - unplug, hold power for 5 to 10 seconds

- Reset NVRAMP/PRAM
 - cmd + Opt + P + R
- Startup in safe mode
 - Left Shift + S
- Boot to Recovery HD
 - Repair disk
 - Disk partitioning
 - Restore using timemachine backup
 - Cmd + R

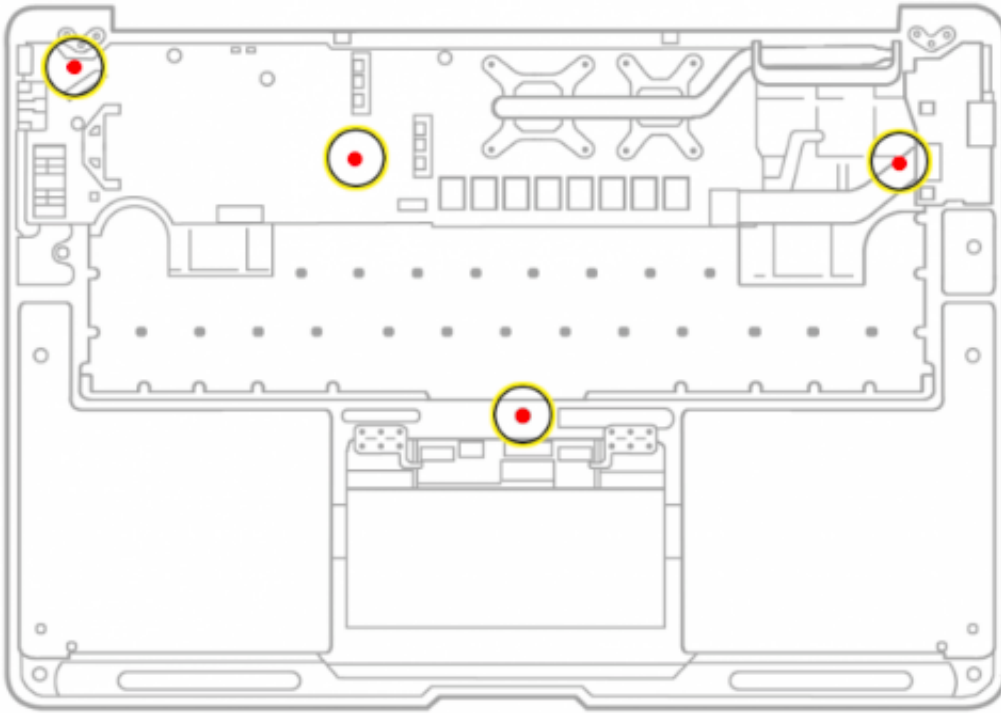
Bottom Case Removal



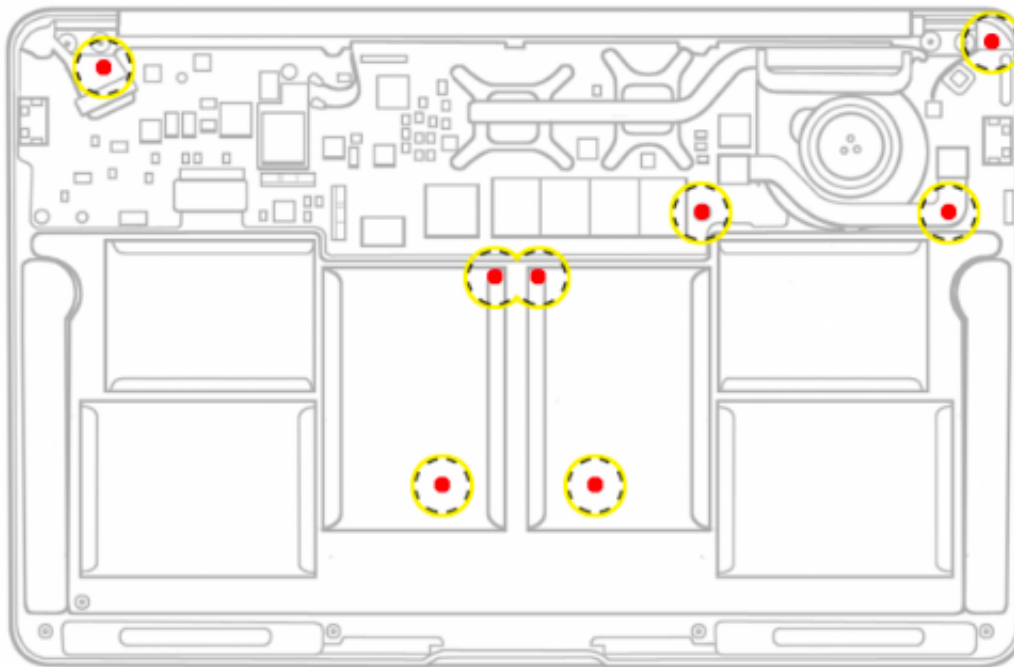
Connector Types

- Battery Connector
- Low-profile solid platform Flex cable
- Vertical Insertion
- Locking lever
- Thin, multi-pin horizontal insert
- Horizontal install

Liquid Contact Indicators



MacBook Air (13-Inch, Mid 2013, Early 2014, and Early 2015)



MacBook Air (11-Inch, Mid 2013, Early 2014, and Early 2015)

Heat Sink Precautions

- Do not add Thermal compound to smaller chip

Battery Return Instructions

1. Place protective cover on battery.
2. Place covered battery inside ESD bag.
3. Carefully place covered and wrapped battery in cardboard packing material.
4. Close inner box. Attach foam end pieces on box and tape the box closed. Note: The packing MUST be taped closed. Any tape will work.
5. Carefully place taped box into shipping box.
6. Close box and return battery using normal shipping procedures.
7. Do not staple anything to the box as it could puncture the battery

Service Considerations

Power-On Pads

If troubleshooting requires a need to start up the computer using the power-on pads, follow these steps:

1. To test startup on battery power, remove the bottom case only, and go to step 3.
2. To test startup using the power adapter, remove the bottom case and disconnect the battery cable to force the logic board to use the power adapter only.
3. Visually locate power-on pads next to IPD flex cable connector.
4. Using a jeweler's flat-blade screwdriver, touch power-on pads to power on logic board.
5. Listen for startup sound and/or fan operation to confirm power turns on.