

E22838

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IN SEARCH OF INCREDIBLE



Service Manual

ASUS

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Chapter 1: ***Introduction***

Disclaimer

ASUS is not responsible for direct, indirect, intentional or unintentional damages resulting from improper installation and operation.

Safety precautions

- Before handling components, use a grounded wrist strap or touch a safely grounded object to avoid damaging them due to static electricity.
- Keep liquids or moisture away from your device to avoid short circuits.
- Remove rings, watches, and any other metal objects from your hands.
- Hold components by the edges to avoid touching the ICs.
- Properly install all components before connecting the AC power.
- Do not use power adapters or batteries from other devices to reduce the risk of injury to persons due to fire or explosion. Use only certified power adapters or batteries supplied by the manufacturer or authorized retailers.
- Detach all clips or flaps before removing cables to prevent damage.

- Disconnect cables, connectors, and power plugs by pulling the plug evenly to avoid damage.
- Use the correct screw models on your device to prevent damage.
- Confirm that the cable orientation is correct before connecting any cables.
- Fully remove all adhesive residue after removing and before installing any components.
- Photograph the appearance of cables, cable routing, connectors, and screws for later reference before proceeding with each step.

Pre-repair checklist

- Read the entire manual before starting any service procedures and follow all instructions.
 - Back up the data on your device.
 - Place your device on a clean and stable surface.
 - Turn off your device.
 - Disconnect all connected peripherals and cables.
 - Disconnect all power cables and remove the battery pack (if applicable).
-

IMPORTANT!

- If you are uncertain about performing the described service procedures, stop and contact an authorized service center for assistance.
 - Purchase replacement components from authorized retailers of this device to ensure maximum compatibility and reliability.
-

NOTE:

- The illustrations are for reference only.
 - The service procedures described in this manual depend on the model configuration and may not reflect the entire servicing process. To service components that are not covered in this manual, please visit an authorized service center for further assistance.
 - Keep all adhesive tape, insulating materials, screws, and other removable items in a safe place until the service procedure is completed, as they may be needed during installation.
-

Installation tools



Screwdriver

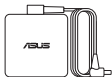


Plastic blade



Tweezers

Accessories



Power adapter

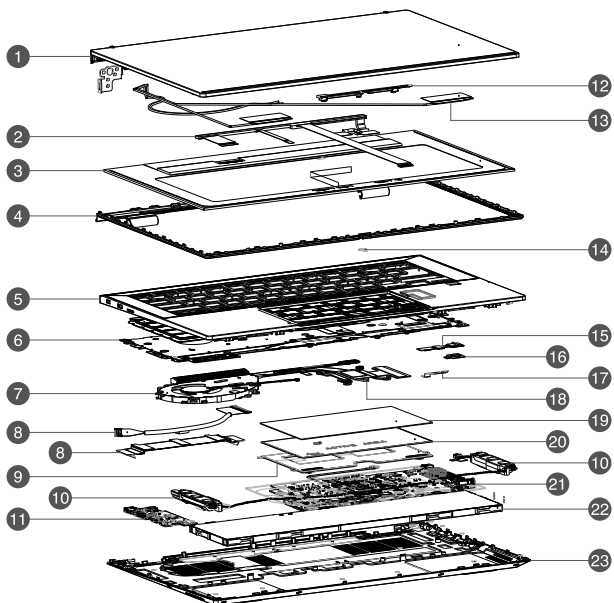
Software repair tools

After replacing certain system components, you may be required to download and run a repair tool to complete the service procedure.

For more information, visit www.asus.com/support/FAQ/1051611/.

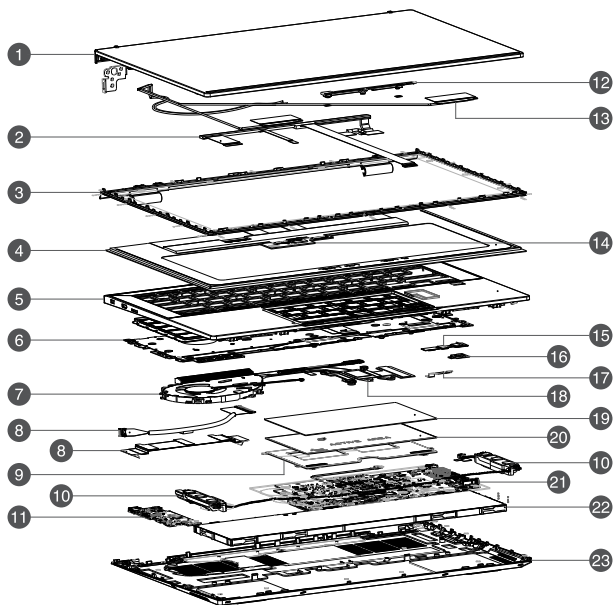
Major components

Non-touch model



1. Top cover
2. eDP cable
3. Display panel
4. Display bezel
5. Keyboard module
6. Keyboard bracket
7. Fan
8. I/O board cable
9. Touchpad bracket
10. Speakers
11. I/O board
12. Camera module
13. Antenna cable
14. Webcam shield
15. Fingerprint sensor
16. Fingerprint sensor bracket
17. Fingerprint sensor cable
18. Heat sink
19. Touchpad glass
20. Touchpad
21. Motherboard
22. Battery
23. Bottom cover

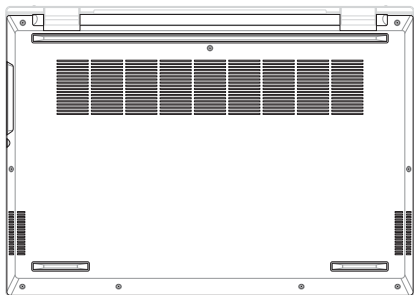
Touch model



1. Top cover
2. eDP cable
3. Display bezel
4. Display panel
5. Keyboard module
6. Keyboard bracket
7. Fan
8. I/O board cable
9. Touchpad bracket
10. Speakers
11. I/O board
12. Camera module
13. Antenna cable
14. Touch screen board
15. Fingerprint sensor
16. Fingerprint sensor bracket
17. Fingerprint sensor cable
18. Heat sink
19. Touchpad glass
20. Touchpad
21. Motherboard
22. Battery
23. Bottom cover

Chapter 2: ***Service Procedures***

Bottom cover



Before you begin

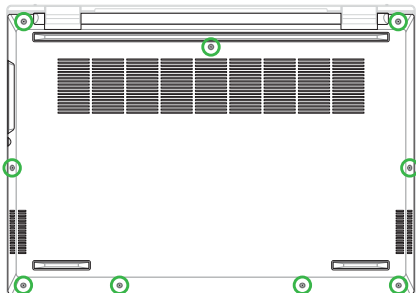
Read the **Safety Precautions** and complete the **Pre-repair Checklist**.

Screw list

- ⊕ M2.0 X 4.0L (9pcs)

Removal

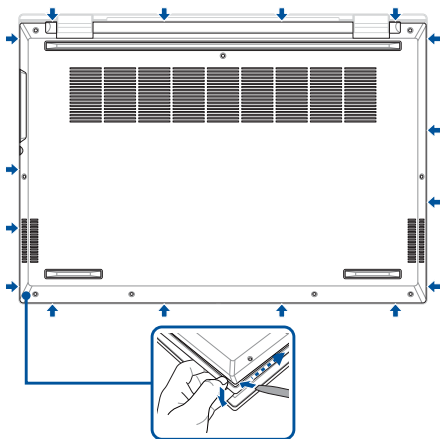
1. Remove the screw(s) from the bottom cover.



2. Use the plastic blade to pry open the indicated area of the bottom cover as shown in the illustration below.

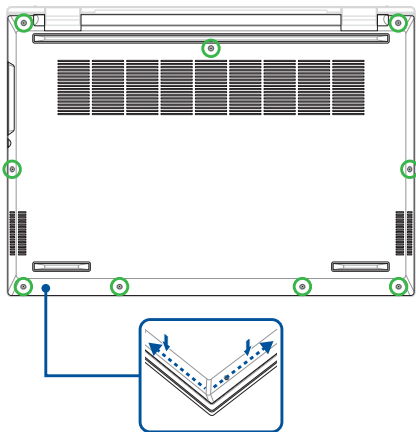
IMPORTANT! Avoid sliding the plastic blade along the side of your device or air vents to prevent damage.

3. Remove the bottom cover.

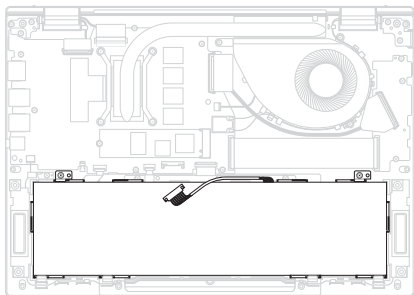


Installation

1. Install the bottom cover.
2. Gently press down on the bottom cover until it clicks into place.
3. Secure the bottom cover using the screw(s) you removed earlier.



Battery



Before you begin

1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Bottom cover

Screw list

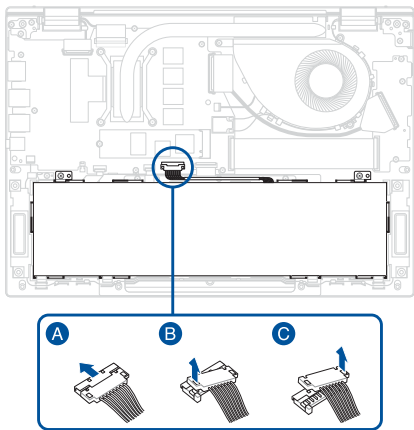
- ⊕ M2.0 X 3.0L (2pcs)

Removal

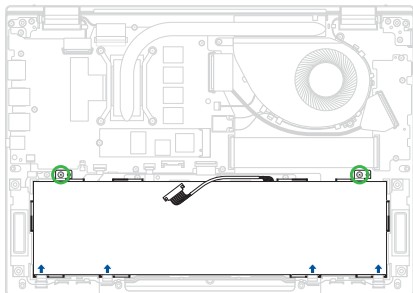
1. Disconnect the battery power cable.

IMPORTANT!

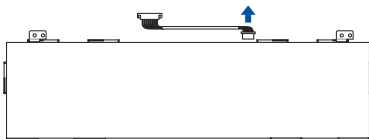
- Disconnect the battery power cable by lifting the side with the red wires first.
 - Serious risk of fire or explosion may occur if the battery is punctured. If you are uncertain about proceeding, stop and contact an authorized service center for assistance.
-



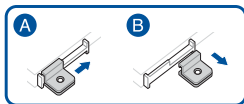
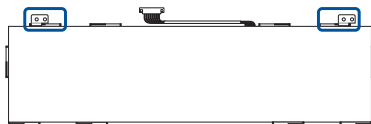
2. Remove the screw(s) from the battery, then remove the battery.



3. Remove the battery power cable.

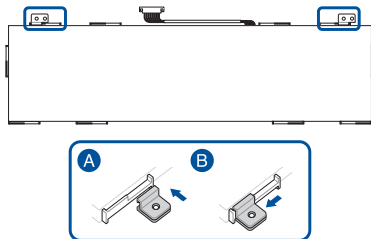


4. Remove the battery brackets from the battery.

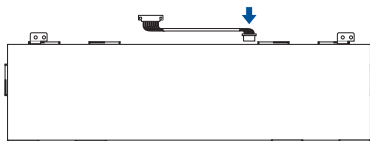


Installation

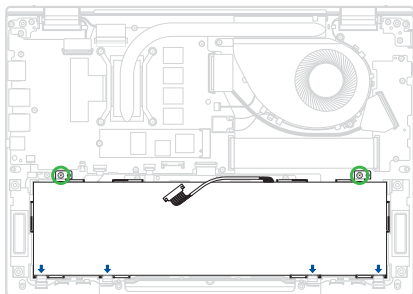
1. Attach the battery brackets to the battery.



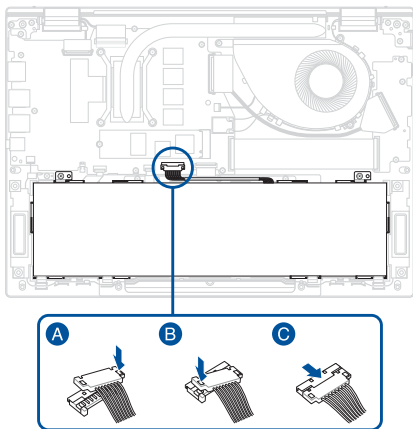
2. Connect the battery power cable to the battery.



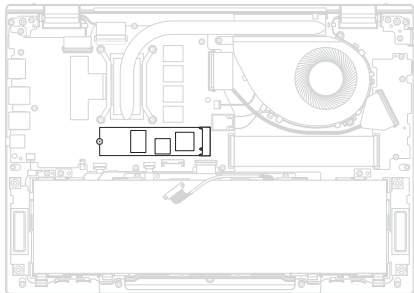
3. Install the battery, then secure the battery using the screw(s) you removed earlier.



4. Reconnect the battery power cable.
5. Install the components you removed in the *Before you begin* section.



M.2 SSD module



Before you begin

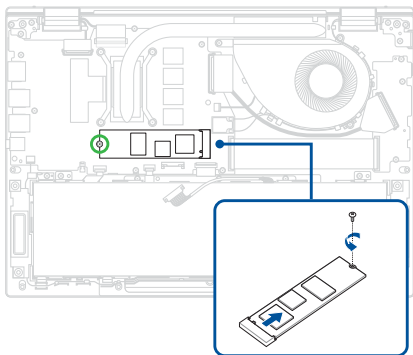
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Bottom cover
 - Battery

Screw list

- ⊕ M2.0 X 2.0L (1pc)

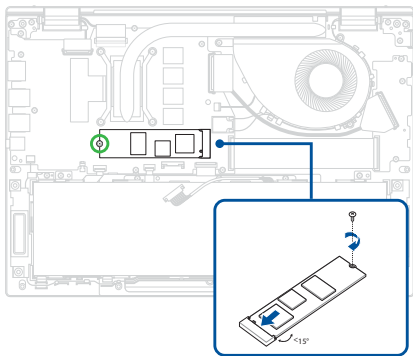
Removal

Remove the screw, then remove the M.2 SSD module.

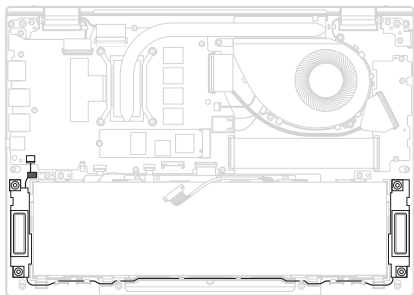


Installation

1. Align and insert the M.2 SSD module into the M.2 connector on the motherboard, then secure the M.2 SSD module using the screw you removed earlier.
2. Install the components you removed in the *Before you begin* section.



Speakers

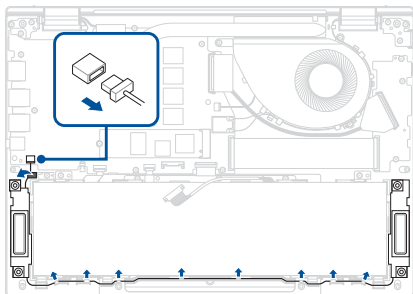


Before you begin

1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Bottom cover
 - Battery

Removal

1. Disconnect the cable, then remove the tape.
2. Remove the cable from the cable guide(s).
3. Remove the speakers.

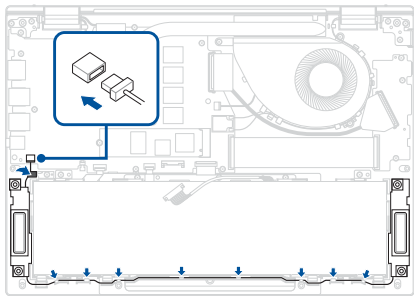


Installation

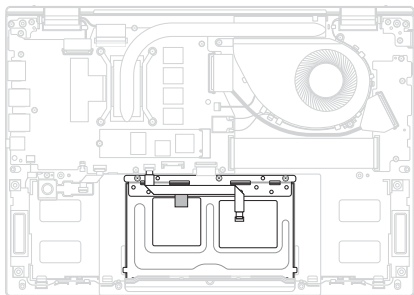
1. Install the speakers.
2. Route the cable through the cable guide(s).

IMPORTANT! Damage may occur if cables are not properly routed through the cable guides. Confirm that all cables are routed through each of the indicated cable guides before proceeding.

3. Reconnect the cable, then reattach the tape.
4. Install the components you removed in the *Before you begin* section.



Touchpad



Before you begin

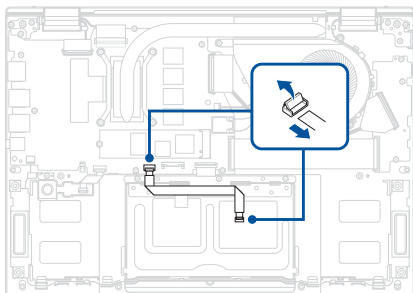
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Bottom cover
 - Battery

Screw list

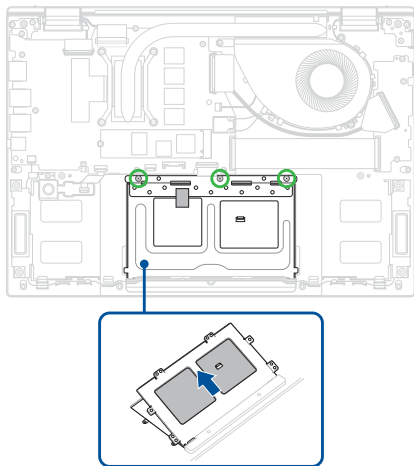
- ⊕ M2.0 X 2.0L (3pcs)

Removal

1. Disconnect the cable.

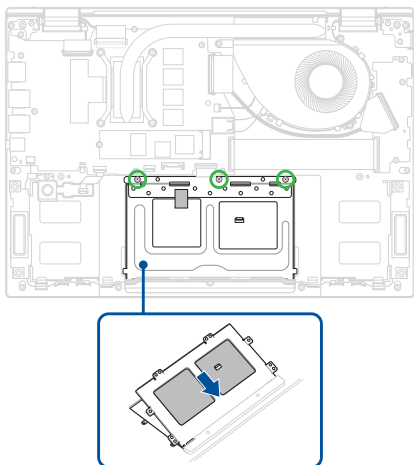


2. Remove the screw(s), then remove the touchpad.

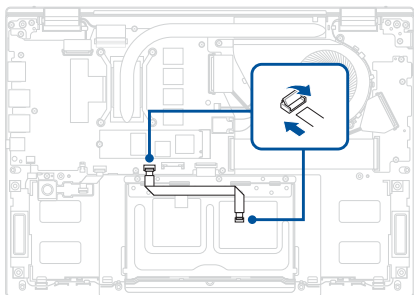


Installation

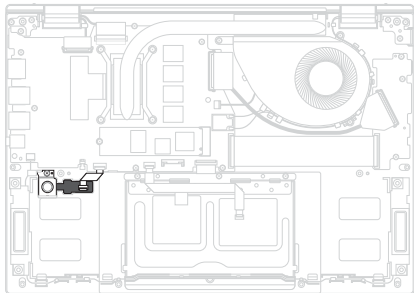
1. Install the touchpad, then secure the touchpad using the screw(s) you removed earlier.



2. Reconnect the cable.
3. Install the components you removed in the *Before you begin* section.



Fingerprint sensor



Before you begin

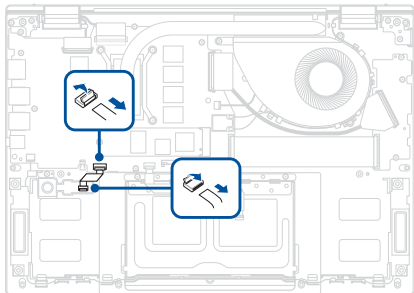
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Bottom cover
 - Battery

Screw list

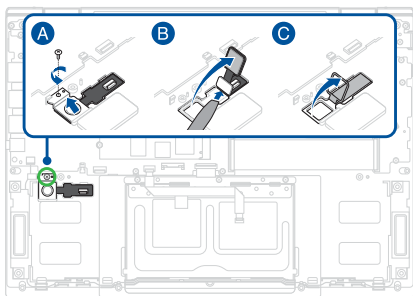
- ⊕ M2.0 X 3.0L (1pc)

Removal

1. Disconnect the cable.

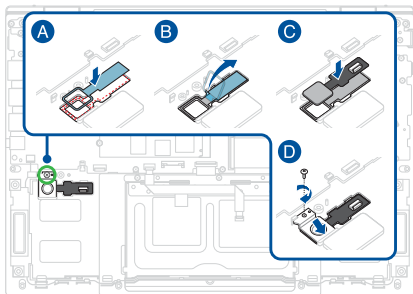


2. Remove the screw, then remove the bracket.
3. Carefully pry the fingerprint sensor loose, then remove the fingerprint sensor.
4. Remove the conductive sticker.

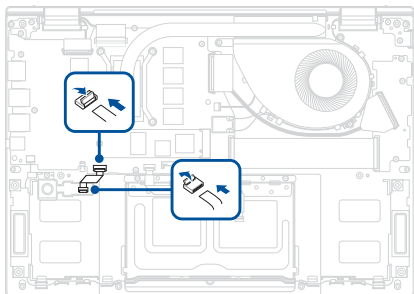


Installation

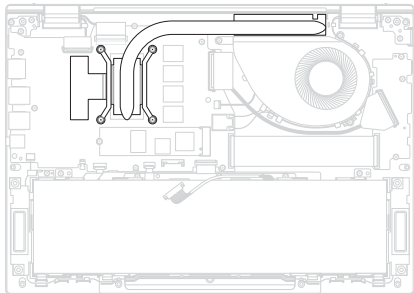
1. Attach the conductive sticker.
2. Remove the release liner from the conductive sticker.
3. Install the fingerprint sensor.
4. Install the bracket, then secure the bracket using the screw you removed earlier.



5. Reconnect the cable.
6. Install the components you removed in the *Before you begin* section.



Heat sink



Before you begin

IMPORTANT! Thermal paste, thermal pads, liquid metal, or other thermal interface materials must be thoroughly removed and replaced if this component is removed. Ensure that replacement materials are available before proceeding, or contact an authorized service center for assistance.

1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Bottom cover
 - Battery

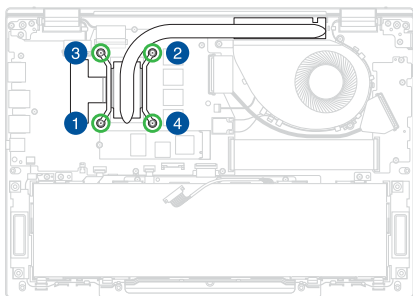
Screw list

- ⊕ M2.0 X 2.0L (4pcs)

Removal

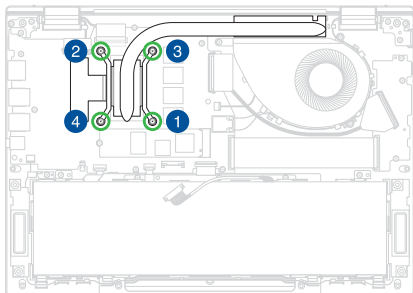
Remove the heat sink screw(s) one by one in the sequence shown in the illustration below, then remove the heat sink.

IMPORTANT! Vertically lift the heat sink to prevent damage.

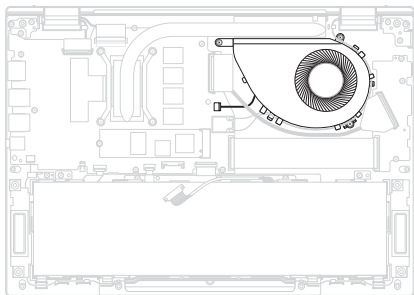


Installation

1. Install the heat sink, then secure the heat sink screw(s) one by one in the sequence shown in the illustration below.
2. Install the components you removed in the *Before you begin* section.



Fan module



Before you begin

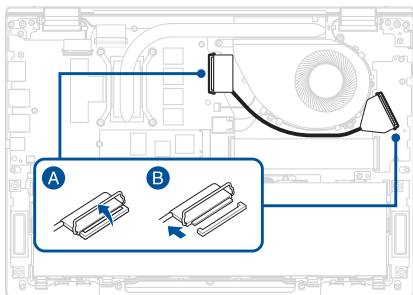
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Bottom cover
 - Battery

Screw list

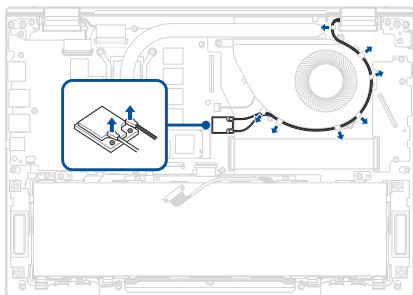
- ⊕ M2.0 X 3.0L (3pcs)

Removal

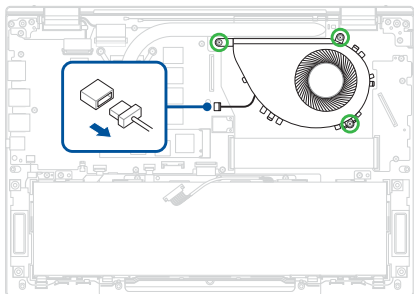
1. Disconnect the cable.



2. Disconnect the cable(s), then remove the cable(s) from the cable guide(s).

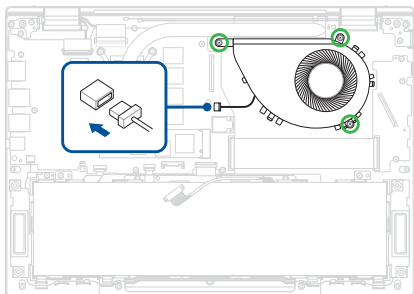


3. Disconnect the cable.
4. Remove the screw(s).
5. Remove the fan.



Installation

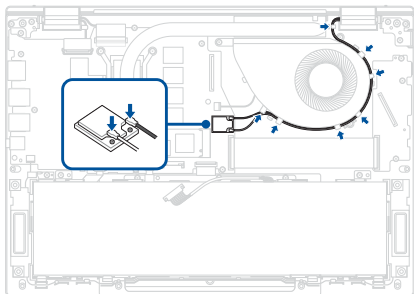
1. Install the fan.
2. Secure the fan using the screw(s) you removed earlier.
3. Reconnect the cable.



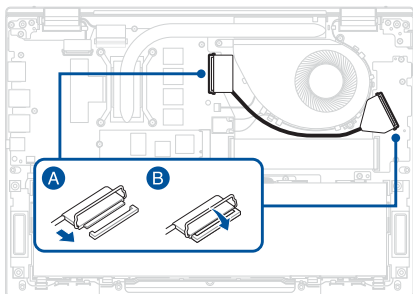
4. Route the cable(s) through the cable guide.

IMPORTANT! Damage may occur if cables are not properly routed through the cable guides. Confirm that all cables are routed through each of the indicated cable guides before proceeding.

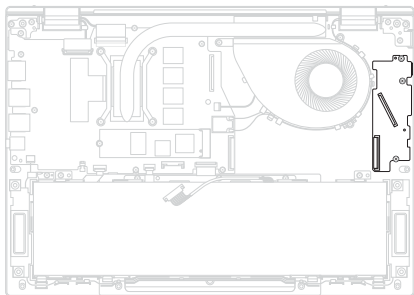
5. Reconnect the cable(s).



6. Reconnect the cable.
7. Install the components you removed in the *Before you begin* section.



I/O board



Before you begin

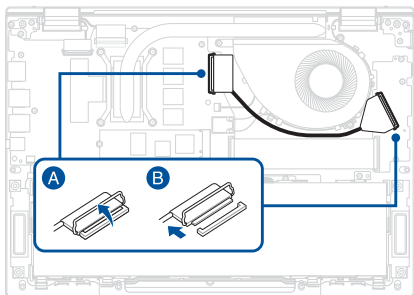
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Bottom cover
 - Battery

Screw list

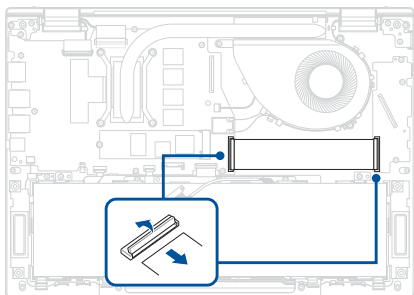
- ⊕ M2.0 X 2.0L (3pcs)

Removal

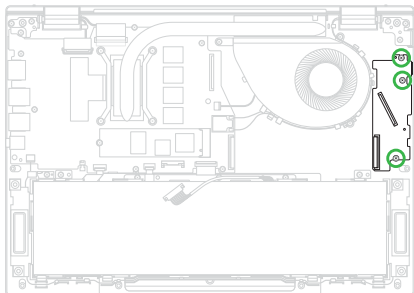
1. Disconnect the cable.



2. Disconnect the cable.

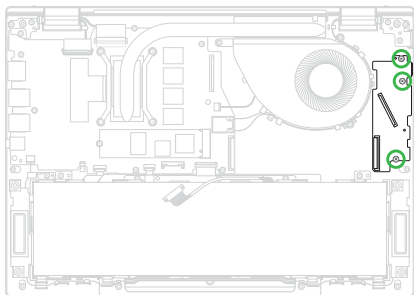


3. Remove the screw(s), then remove the I/O board.

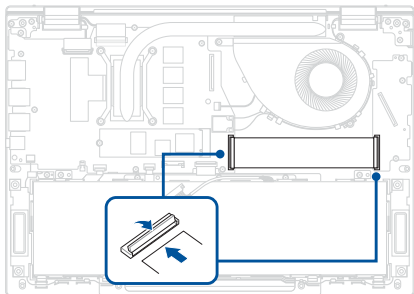


Installation

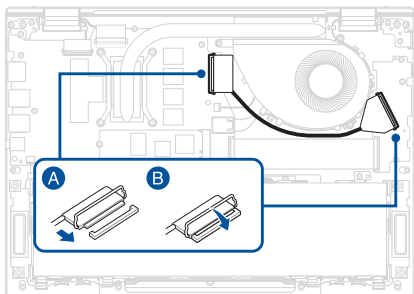
1. Install the I/O board, then secure the I/O board using the screw(s) you removed earlier.



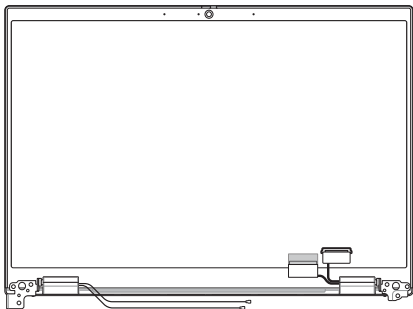
2. Reconnect the cable.



3. Reconnect the cable.
4. Install the components you removed in the *Before you begin* section.



Display panel module



Before you begin

IMPORTANT! Do not bend the display panel in any way to avoid risk of display panel leakage.

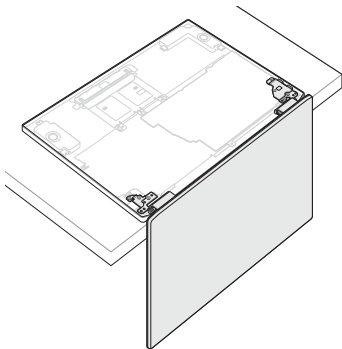
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Bottom cover
 - Battery

Screw list

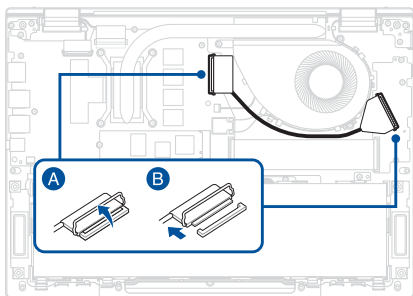
- ⊕ M2.5 X 4.0L (6pcs)

Removal

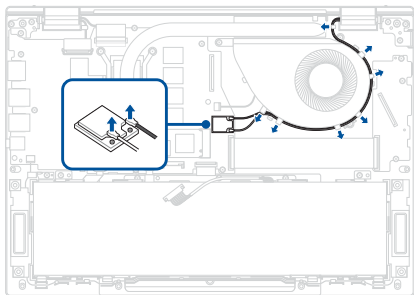
1. Place your device with the display panel hanging over the edge of the workspace as shown in the illustration below.



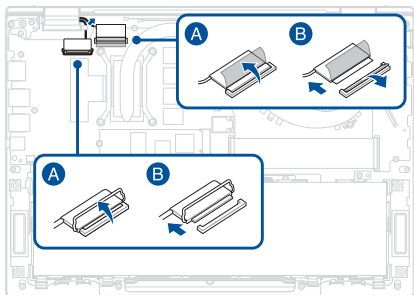
2. Disconnect the cable.



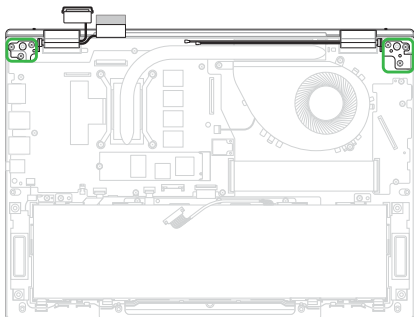
3. Disconnect the cable(s), then remove the cable(s) from the cable guide(s).



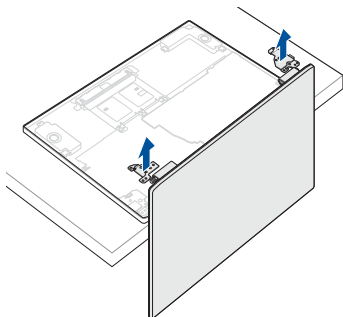
4. Disconnect the cable(s), then remove the cable(s) from the cable guide(s).



5. Remove the screw(s).

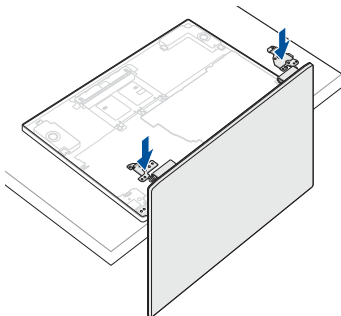


6. Remove the display panel module.

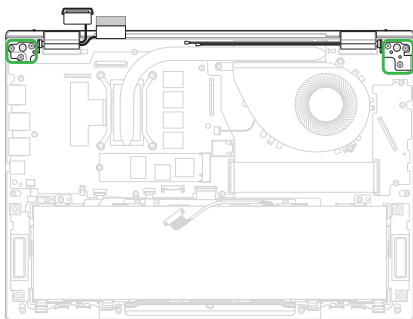


Installation

1. In the orientation shown, align and place the hinges of the display panel module on the screw holes.



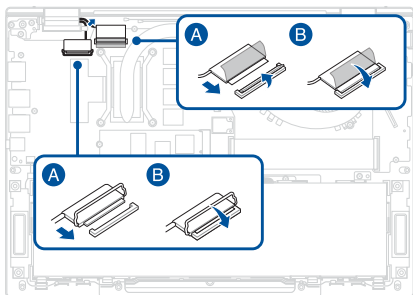
2. Secure the hinges using the screw(s) you removed earlier.



3. Route the cable(s) through the cable guide(s).

IMPORTANT! Damage may occur if cables are not properly routed through the cable guides. Confirm that all cables are routed through each of the indicated cable guides before proceeding.

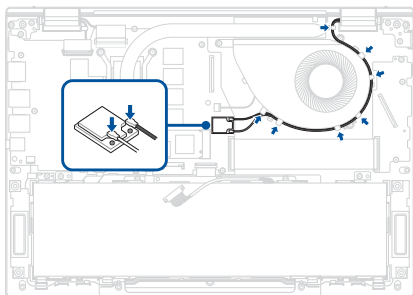
4. Reconnect the cable(s).



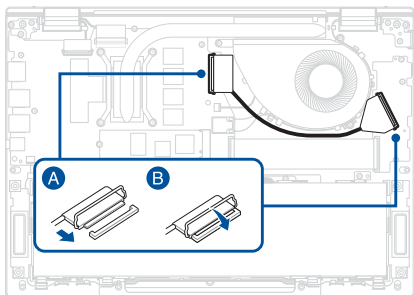
5. Route the cable(s) through the cable guide(s).

IMPORTANT! Damage may occur if cables are not properly routed through the cable guides. Confirm that all cables are routed through each of the indicated cable guides before proceeding.

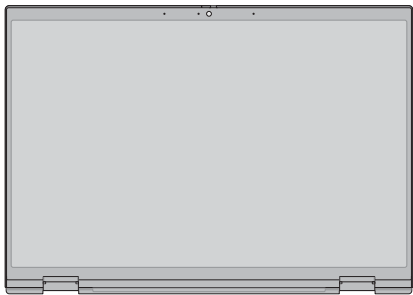
6. Reconnect the cable(s).



7. Reconnect the cable.
8. Install the components you removed in the *Before you begin* section.



Display panel (Touch model)



Before you begin

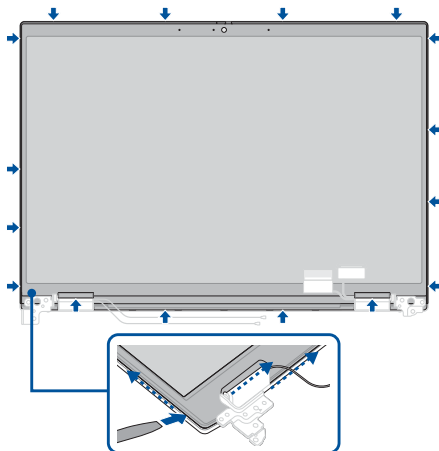
IMPORTANT!

- This component is fragile. Damage may occur if the service procedure is performed incorrectly. If you are uncertain about proceeding, stop and contact an authorized service center for assistance.
 - Do not bend the display panel in any way to avoid risk of display panel leakage.
-

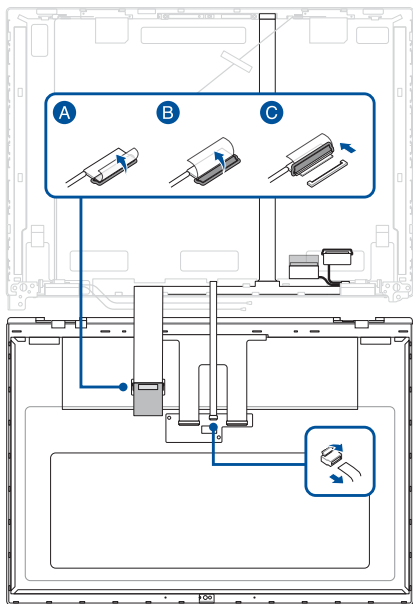
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Bottom cover
 - Battery
 - Display panel module

Removal

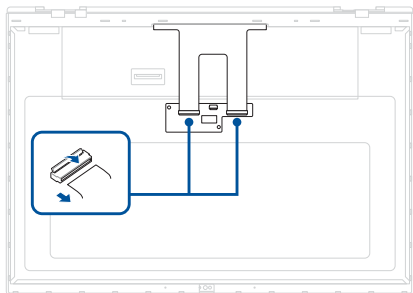
1. Carefully pry the display panel loose.



2. Flip the display panel over.
3. Disconnect the cable(s).
4. Remove the display panel.

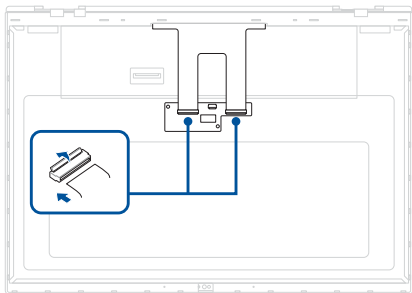


5. Disconnect the cable(s).
6. Remove the touch screen board.

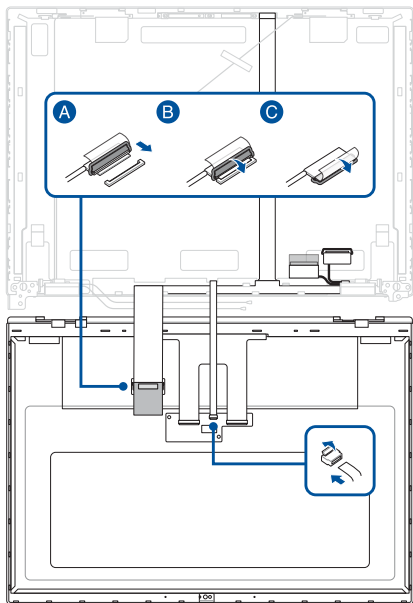


Installation

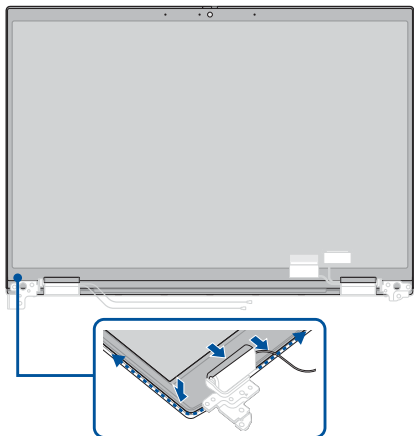
1. Install the touch screen board.
2. Reconnect the cable(s).



3. Reconnect the cable(s) to the rear side of the display panel.



4. Align and install the display panel, then gently press down on the display panel until it clicks into place.
5. Install the components you removed in the *Before you begin* section.



Display panel (Non-touch model)



Before you begin

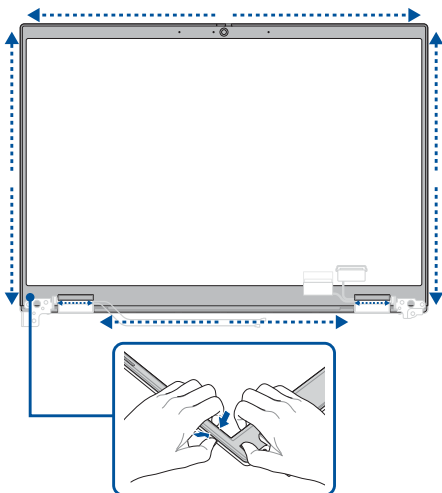
IMPORTANT!

- This component is fragile. Damage may occur if the service procedure is performed incorrectly. If you are uncertain about proceeding, stop and contact an authorized service center for assistance.
 - Do not bend the display panel in any way to avoid risk of display panel leakage.
-

1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Bottom cover
 - Battery
 - Display panel module

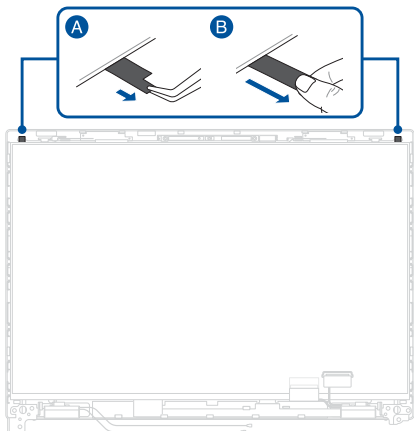
Removal

1. Carefully pry the bezel loose, then remove the bezel.

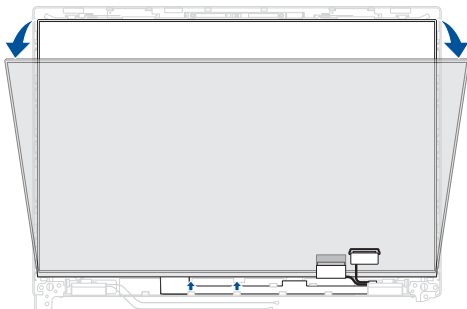


2. Locate the tip of the stretch release tape, then carefully pull out the stretch release tape as shown in the illustration below.

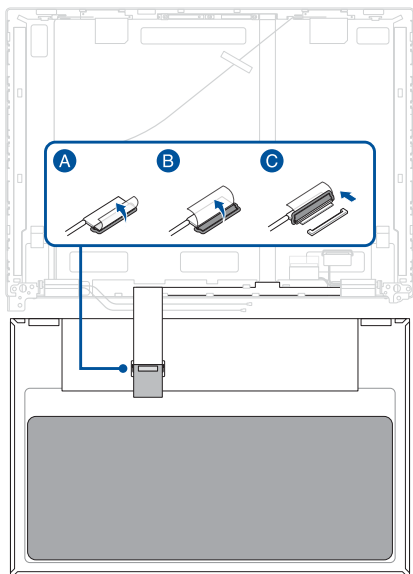
IMPORTANT! Maintain a flat angle and constant speed when pulling the stretch release tape. Excessive force may damage the stretch release tape and prevent removal of the display panel.



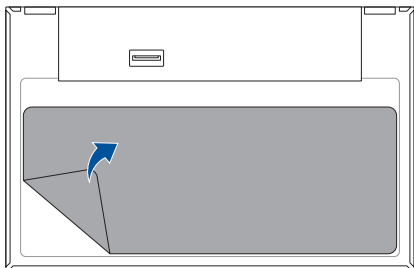
3. Remove the cable from the cable guide(s), then remove the display panel.



4. Flip the display panel over, then disconnect the cable.



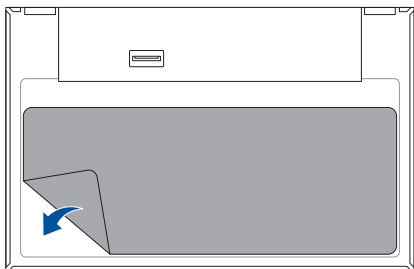
5. Remove the polyester film.



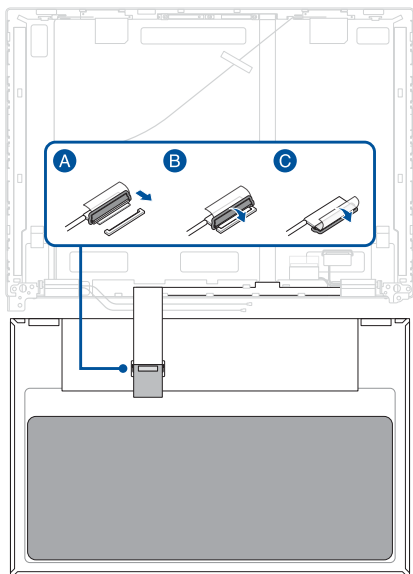
Installation

1. Reattach the polyester film.

NOTE: The polyester film cannot be reused. Use new polyester film when reinstalling components.

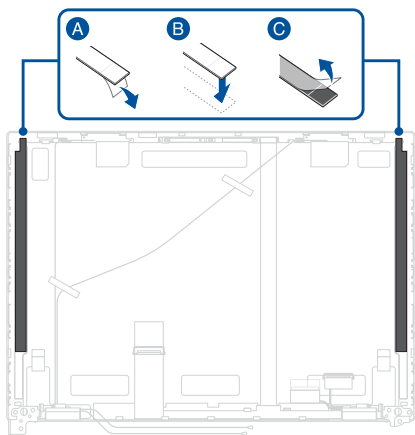


2. Reconnect the cable to the rear side of the display panel.



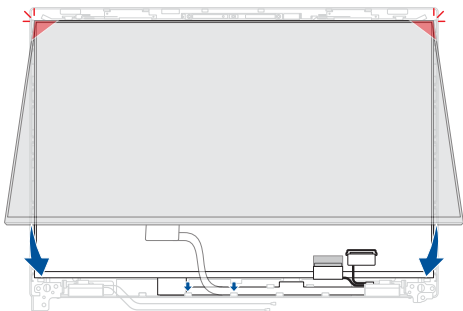
3. Remove the release liner(s) from the bottom side of the stretch release tape.
4. Align and attach the stretch release tape to the top cover.
5. Remove the release liner(s) from the top side of the stretch release tape.

NOTE: The tape cannot be reused. Remove any adhesive residue and use new tape when reinstalling components.



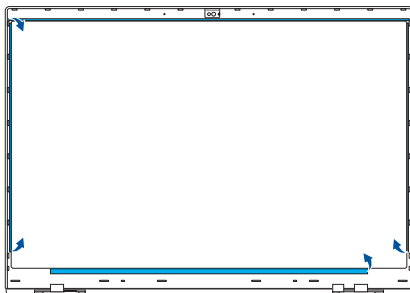
6. Align and install the display panel.
7. Route the cable through the cable guide(s).

IMPORTANT! Damage may occur if cables are not properly routed through the cable guides. Confirm that all cables are routed through each of the indicated cable guides before proceeding.

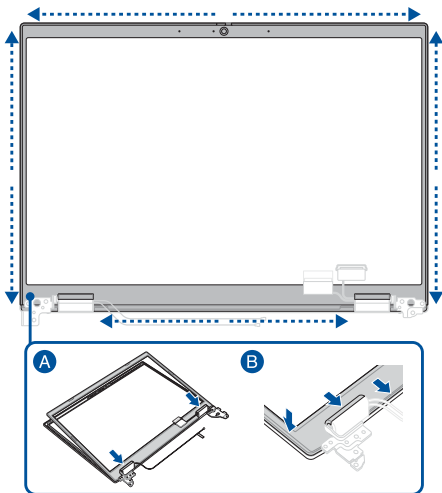


8. Remove the release liner(s) from the tape on the bezel.

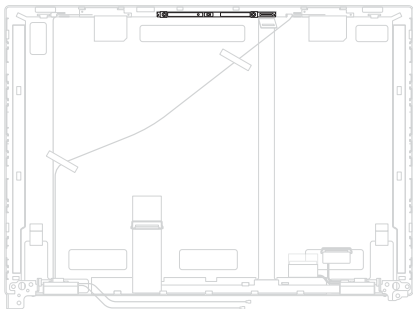
NOTE: The tape cannot be reused. Remove any adhesive residue and use new tape when reinstalling components.



9. Align and install the bezel.
10. Install the components you removed in the *Before you begin* section.



Camera module



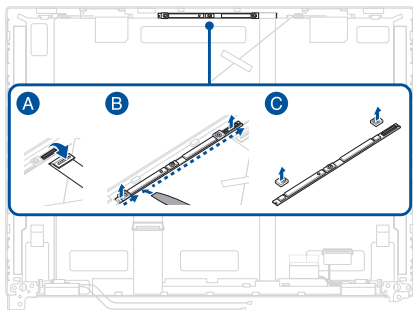
Before you begin

IMPORTANT! This component is fragile. Damage may occur if the service procedure is performed incorrectly. If you are uncertain about proceeding, stop and contact an authorized service center for assistance.

1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Bottom cover
 - Battery
 - Display panel module
 - Display panel

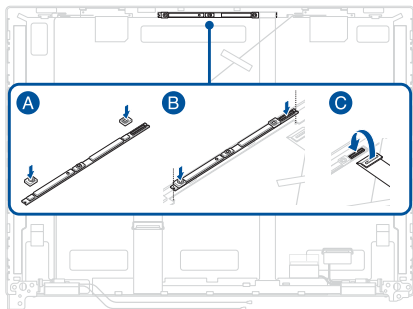
Removal

Disconnect the cable from the camera module and carefully remove the camera module, then remove the rubber caps from the camera module.

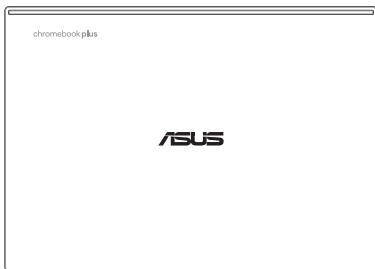


Installation

1. Attach the rubber caps to the camera module, then install the camera module and reconnect the cable to the camera module.
2. Install the components you removed in the *Before you begin* section.



Top cover

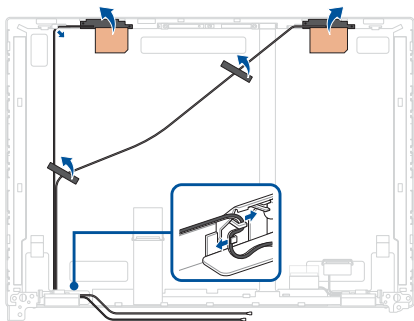


Before you begin

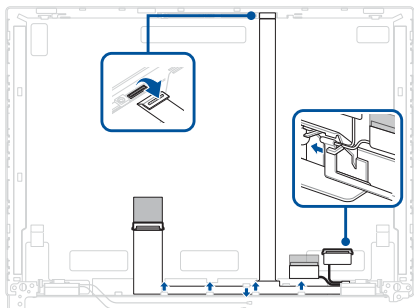
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Bottom cover
 - Battery
 - Display panel module
 - Display panel
 - Camera module

Removal

1. Remove the tape, then remove the antenna cable(s).
2. Remove the cable(s) from the cable guide(s).



3. Disconnect the cable.
4. Remove the cable(s) from the cable guide(s).

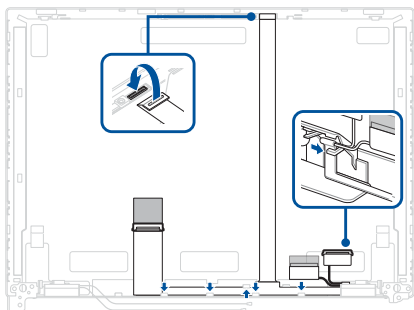


Installation

1. Route the cable(s) through the cable guide(s).

IMPORTANT! Damage may occur if cables are not properly routed through the cable guides. Confirm that all cables are routed through each of the indicated cable guides before proceeding.

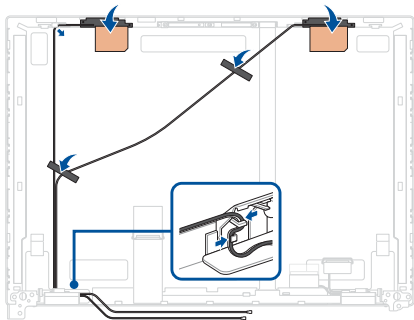
2. Reconnect the cable.



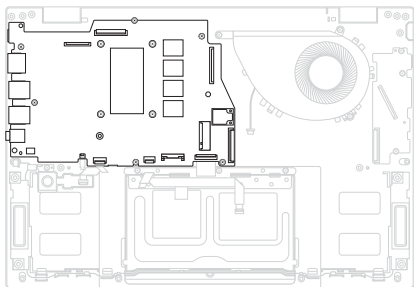
3. Route the cable(s) through the cable guide(s).

IMPORTANT! Damage may occur if cables are not properly routed through the cable guides. Confirm that all cables are routed through each of the indicated cable guides before proceeding.

4. Install the antenna cable(s), then reattach the tape.
5. Install the components you removed in the *Before you begin* section.



Motherboard



Before you begin

IMPORTANT! Thermal paste, thermal pads, liquid metal, or other thermal interface materials must be thoroughly removed and replaced if this component is removed. Ensure that replacement materials are available before proceeding, or contact an authorized service center for assistance.

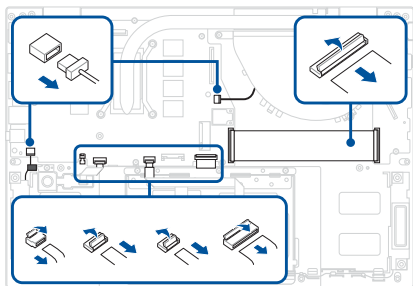
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Bottom cover
 - Battery
 - M.2 SSD module
 - Display panel module

Screw list

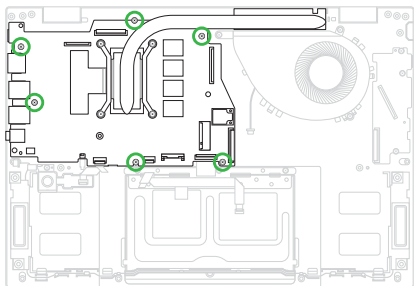
- ⊕ M2.0 X 2.0L (10pcs)

Removal

1. Disconnect the cable(s).

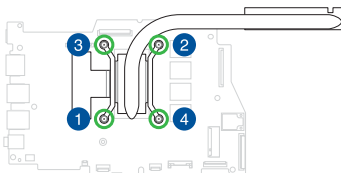


2. Remove the screw(s), then remove the motherboard from the chassis.



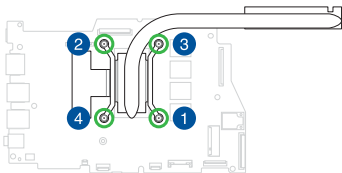
3. Remove the heat sink screw(s) one by one in the sequence shown in the illustration below, then remove the heat sink.

IMPORTANT! Vertically lift the heat sink to prevent damage.

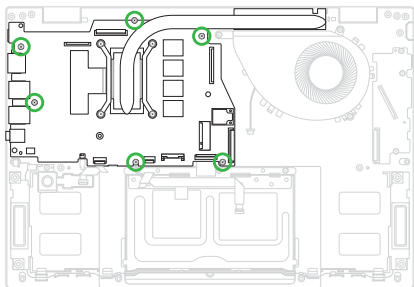


Installation

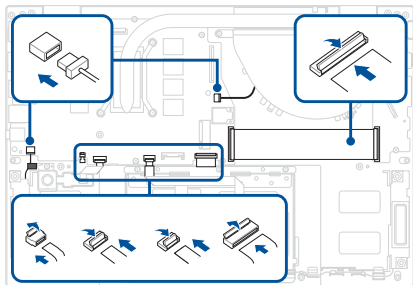
1. Install the heat sink, then secure the heat sink screw(s) one by one in the sequence shown in the illustration below.



2. Align and install the motherboard, then secure the motherboard using the screw(s) you removed earlier.

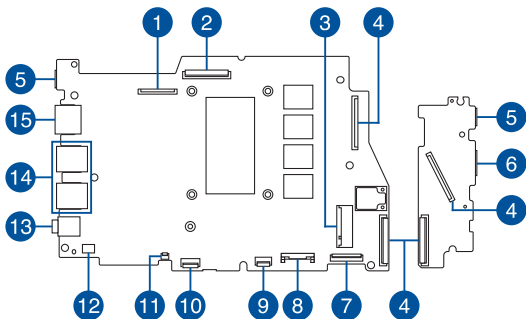


3. Reconnect the cable(s).
4. Install the components you removed in the *Before you begin* section.



Appendix

Wiring and connection diagrams



- | | |
|--------------------------------|-----------------------------------|
| 1. eDP connector | 9. Touchpad connector |
| 2. Camera/microphone connector | 10. Fingerprint sensor connector |
| 3. M.2 SSD connector | 11. Keyboard backlight connector* |
| 4. I/O board connector | 12. Speaker connector |
| 5. USB Type-C® connector | 13. Audio connector |
| 6. microSD card slot | 14. USB Type-A connector |
| 7. Keyboard connector | 15. HDMI connector |
| 8. Battery connector | |