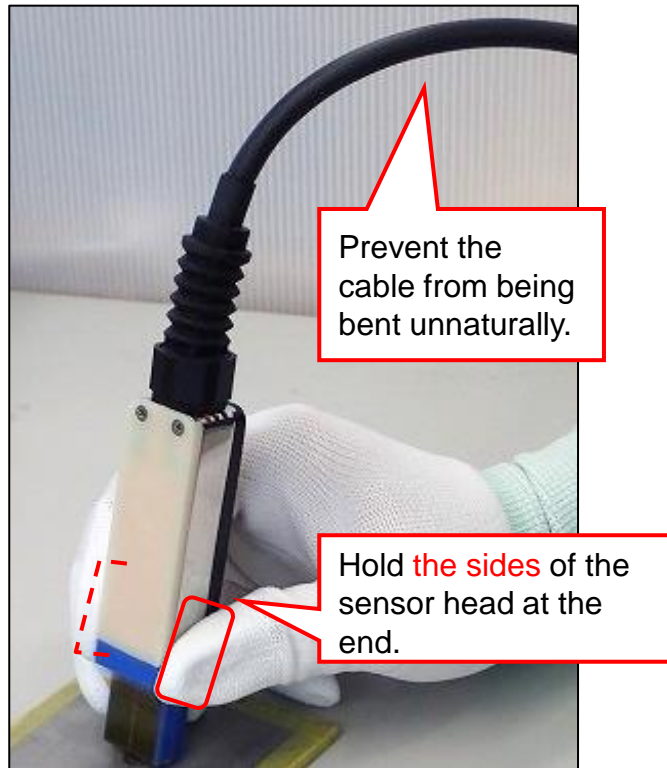


Inspection Method: How to Place a Sensor and Prohibitions

Contents

1. How to Hold a Sensor
2. Posture for Inspection
3. Guidelines for Placing a Sensor
4. Correcting Position
5. Navigation Display and Shift Direction
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1. How to Hold a Sensor Correctly

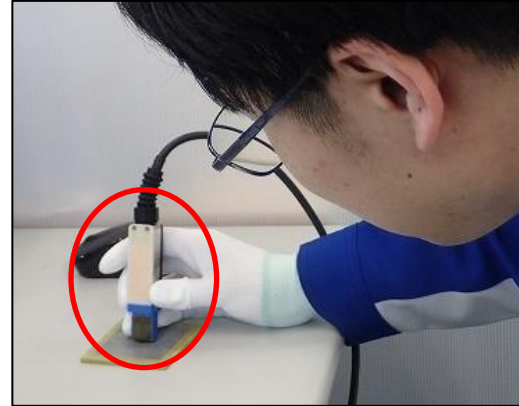
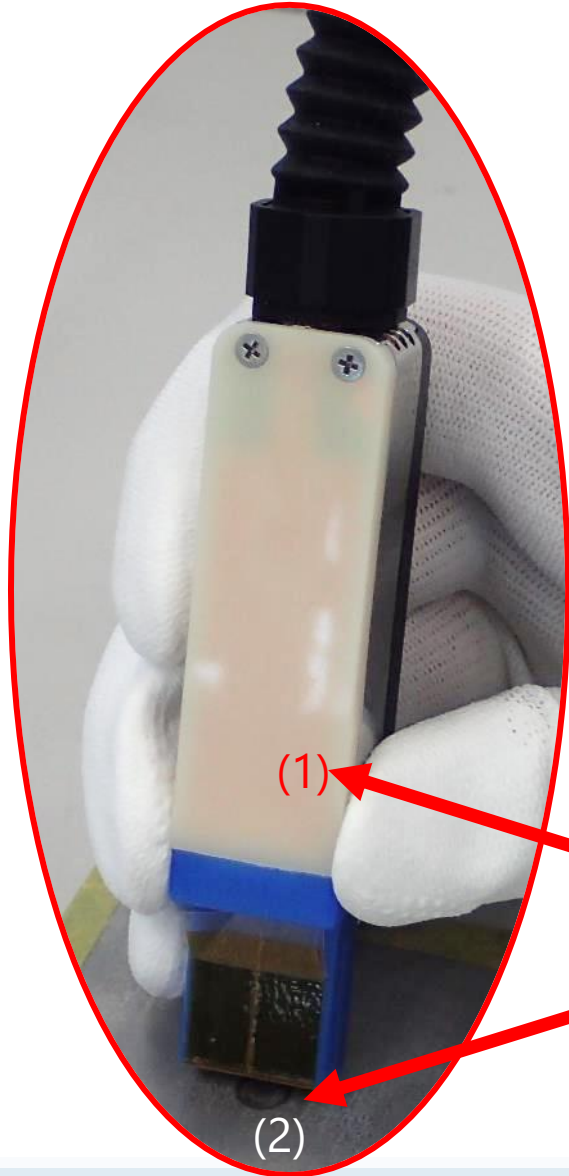


- Hold the boundary between **the sides** of the sensor head (blue nylon section) and the SUS case with the thumb, index, and middle fingers.
- Prevent the cable from being bent unnaturally.

In Sections 1 to 3, look at the weld (object to inspect) without seeing the inspection screen.

Sections 1 to 5 provide descriptions of how to place a sensor.

2. Correct Posture for Inspection



With the sensor kept in the air, take a posture so that the following two points are within the range of vision:

- (1) The **white** side of the sensor resin cover
- (2) The end of the dent to inspect

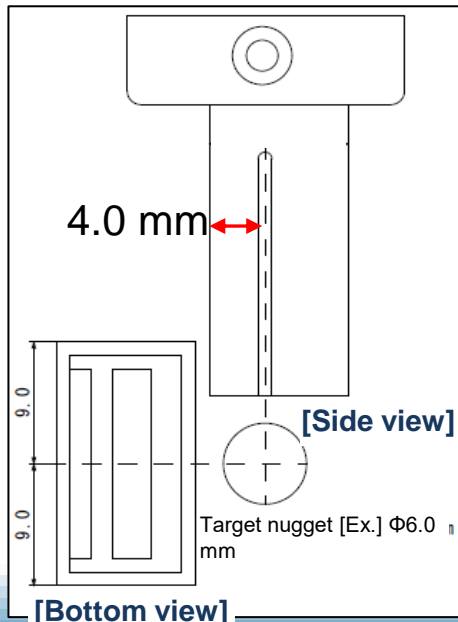
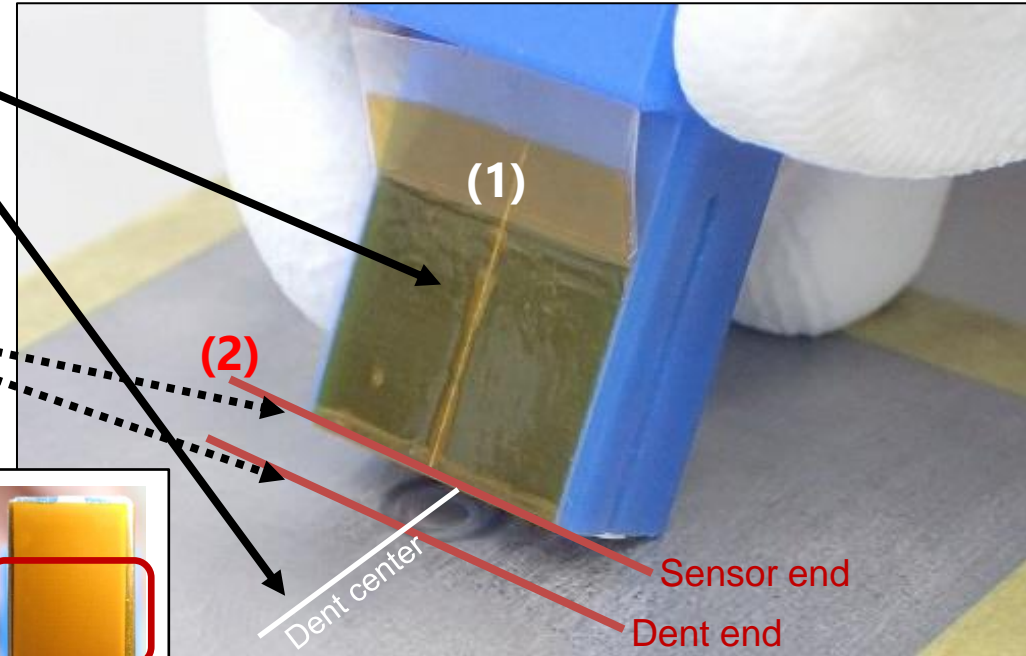
3. Guidelines for Placing a Sensor

Guideline 1. Make sure that the sensor center line is aligned with the dent center.

Guideline 2. Make sure that the sensor end is aligned with the dent end.

Note: It is when the dent diameter is 7 to 8 mm. For other cases, see the supplementary note.

Guideline 3. Make sure that the sensor center is perpendicular to the surface of the object to inspect.



<Supplementary note>

Make sure that the groove on the side of the sensor head is aligned with the dent center.

* The length from the sensor end to the groove is 4.0 mm.

- When the dent radius is less than 4.0 mm: After Guideline 2, displace the sensor in the outward direction of the dent.
- When the dent radius is 4.0 mm or more: After Guideline 2, displace the sensor in the inward direction of the dent.

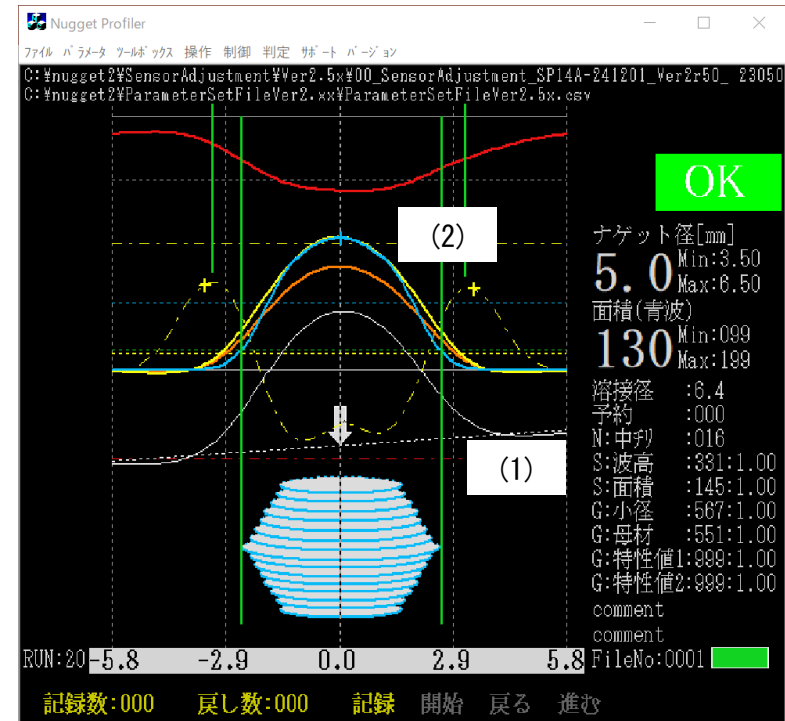
* **The amount of displacement is within 2.0 mm at most.**

* A guide for displacement is to aim at the point where the white waveform peaks (see Section 4).

4. Correcting Position

Move the white arrow (convex shape in white) to the center of the screen.

Note: The amount of movement should be within 3 mm in the positive or negative direction.



If you continue moving the sensor, the waveform is not displayed.

- (1) When you stop the sensor for two seconds: A white waveform is displayed. (Move the white arrow to the center of the screen.)
- (2) When you stop the sensor for further two seconds: A blue waveform is displayed.
* All the steps for placing a sensor (inspection) are now complete.

5. Navigation Display and Shift Direction

Orientation	Upper	Lower	Right	Left
Display				
Sensor				
Position				
Shift direction				

6. Lineup

Our lineup includes a one-hand-free type.

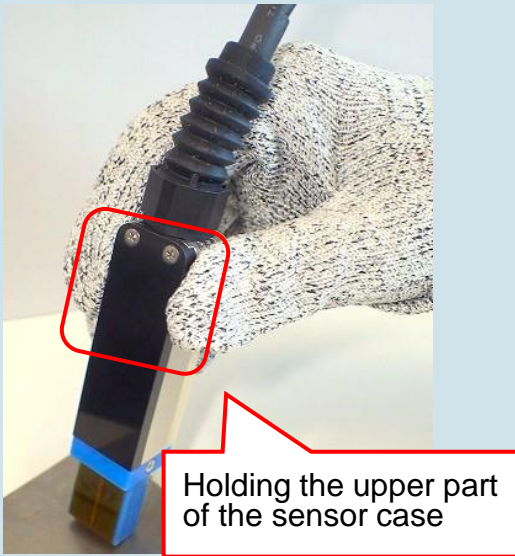


An object to inspect and the screen come within the range of vision at the same time.

7. Prohibitions

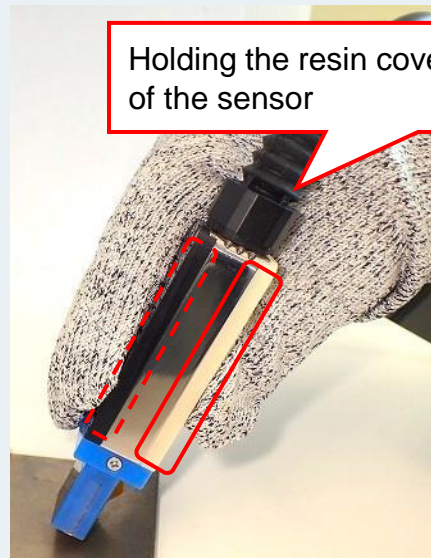
7.1. Incorrect Ways to Hold a Sensor (1) to (3)

(1) Holding the upper part of the sensor



The upper part of the sensor case (SUS) is held.
It is hard to make the end face of the sensor perpendicular to the area to inspect, making it impossible to conduct accurate inspection.
The movement of the sensor end tends to be greater.

(2) Holding the resin cover



The resin cover of the sensor is held.
The positioning of the sensor becomes difficult. In addition, pressure may be applied to the internal electronic circuitry, **causing a failure.**

(3) Holding the front and back sides of the head

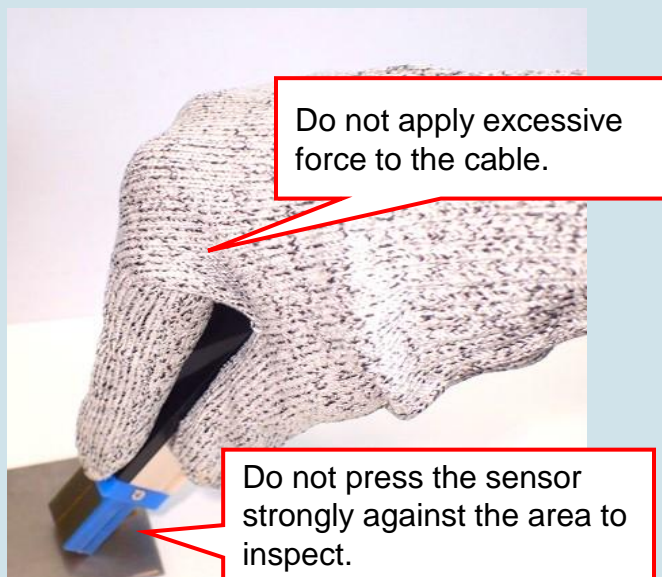


The front and back sides of the sensor head are held.
The positioning of the sensor becomes difficult. In addition, pressure may be applied to the internal magnetic circuitry, **causing a failure.**

7. Prohibitions

7.2. Prohibitions (1) and (2)

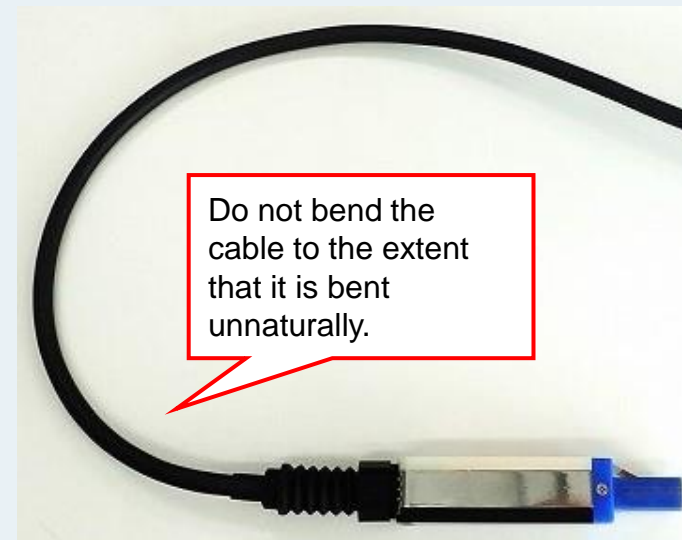
(1) Prohibition of excessive pressing force



Do not press down the sensor.
 Strong force is applied to the cable, **causing a disconnection.**
 Strong force is applied to the head, **causing breakage.**

The sensor pressing force should be **within 10 N at most.**
 Normally, use the sensor with a force of approximately 5 N.
 (The sensor weighs 180 g.)

(2) Prohibition of excessive cable bending

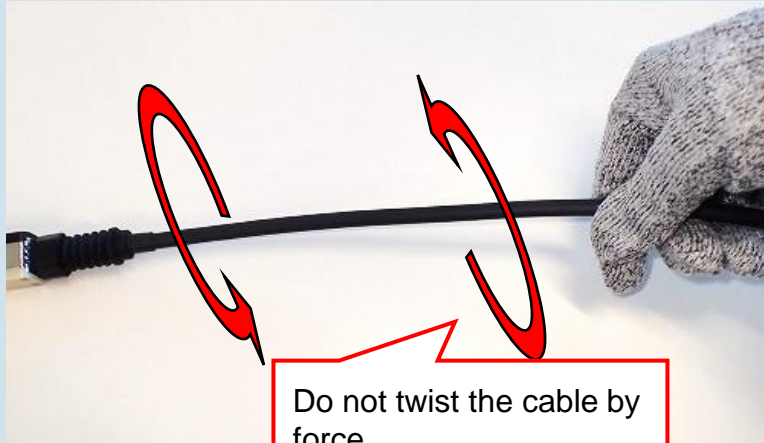


Do not bend the cable to the extent that it is bent unnaturally.
 Doing so applies strong force to the cable, **causing a disconnection.**
 Be careful, especially near the root of the cable.

7. Prohibitions

7.3. Prohibitions (3) and (4)

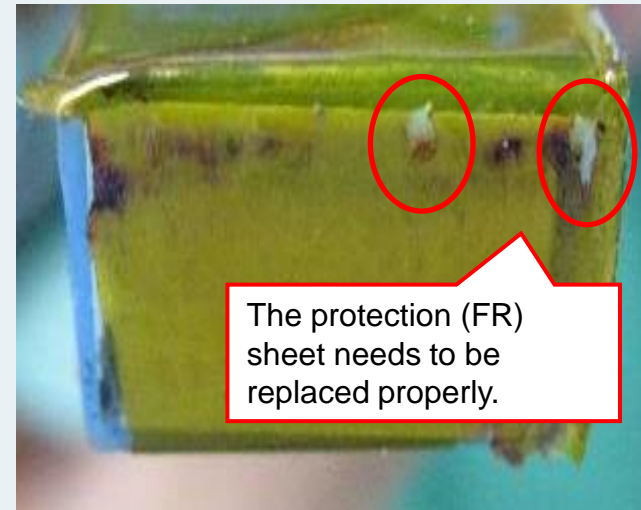
(3) Prohibition of cable twisting



Do not twist the cable by force.

Do not twist the cable more than a half turn. If a twist is formed in the cable, fix it. Strong force may be applied to the cable, **causing a disconnection.**

(4) Prohibition of use with no protection sheet



The protection (FR) sheet needs to be replaced properly.

The protection (FR) sheet needs to be replaced. If it is not replaced, the head is not protected, which may **cause breakage.**

- Requires replacement when **the protection (FR) sheet is damaged** severely
- Requires replacement after **20,000 inspections**
- **Once-a-week** replacement

Be sure to use an authorized protection (FR) sheet. It is **prohibited** to use tape or other items in place of it.