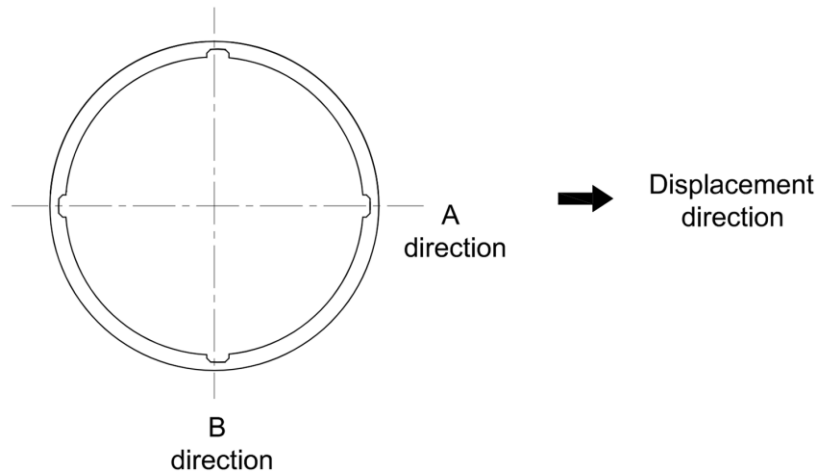


# Digital vertical inclinometer measurement direction

## 1. Inclinometer casing installation direction

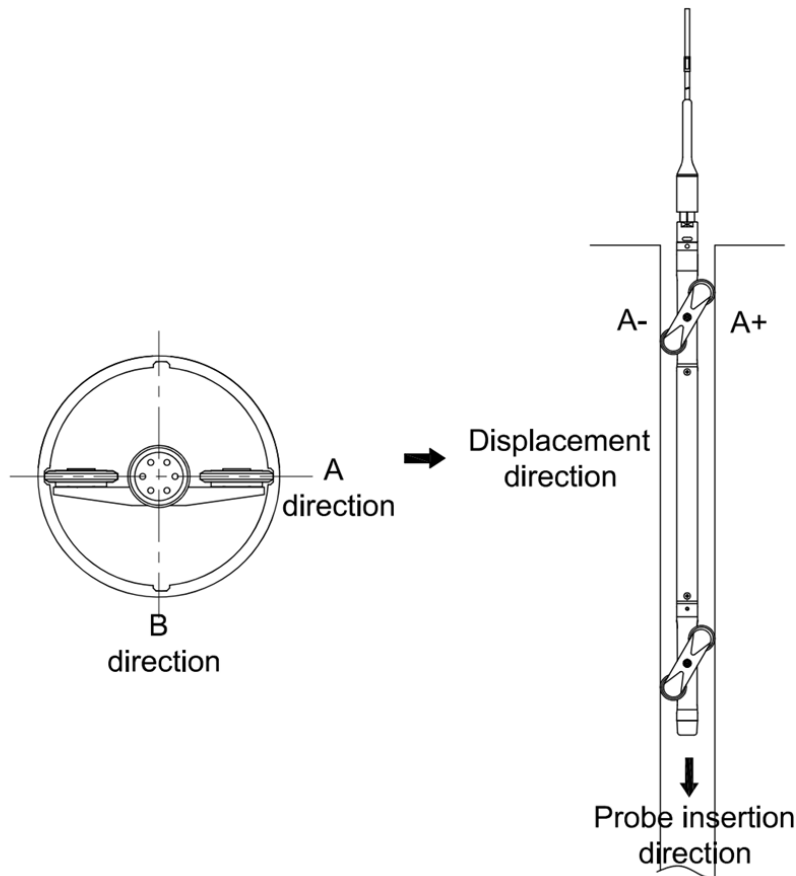
Inside the inclinometer casing, there are four grooves at 90° angles. When installing the inclinometer casing by drilling, one of the grooves must always face the direction of displacement (excavation direction).



Generally, the displacement direction is referred to as direction A, and the direction perpendicular to it is referred to as direction B, as shown in the figure.

## 2. Inclinometer probe insertion direction

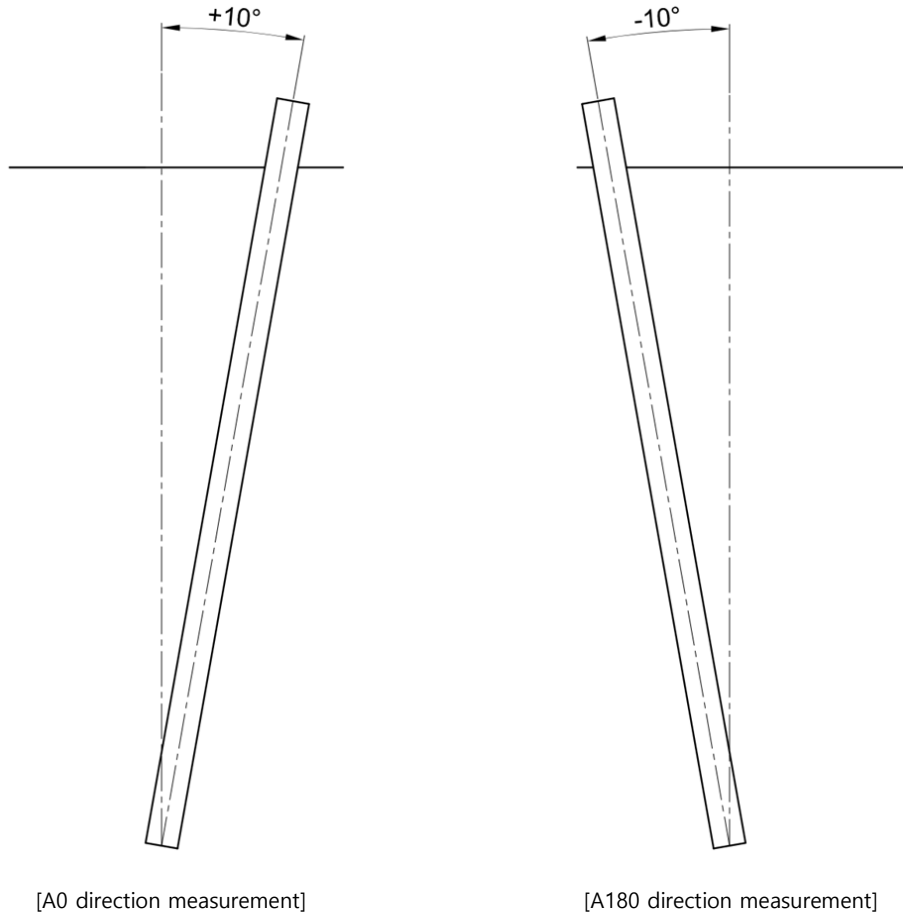
The inclinometer probe is inserted into the installed inclinometer casing for measurement. The + direction of the probe wheel should be aligned with the displacement direction (A+ casing groove).



# Digital vertical inclinometer measurement direction

## 3. Measurement direction

The digital vertical inclinometer performs two measurements in the A0 and A180 directions to ensure accurate measurement and minimize errors. The average of the A0 and A180 directions is taken, and the data is accumulated according to the depth to form the complete profile of the inclinometer casing. It is essential to measure in the A0 direction first to create the absolute direction profile. If the A180 direction is measured first, the profile will be formed in the opposite direction, and the displacement direction will also proceed in reverse. As shown in the figure below, if the absolute profile is tilted by  $+10^\circ$  in the field direction (A0 direction), measuring from the A0 direction will maintain the  $+10^\circ$  tilt, while measuring from the A180 direction will result in a  $-10^\circ$  tilt.



## 4. Measurement method

After measuring the A0 direction (displacement direction), rotate the probe  $180^\circ$  to measure the A180 direction. The B-axis is fixed at a  $90^\circ$  angle to the A-axis sensor, so it is automatically measured during the A-axis measurement. Therefore, measuring both the A0 and A180 directions in a single hole will measure both the A-axis and B-axis.