

SONO Guide Installation

Last Updated: April 19, 2018

Before Beginning:

Required Equipment and Software:

- **SONO-VARIO** (*M308070, M308074, M308090*) probe(s)
- **Mounting Plate Assembly for SONO-VARIO Probe** (*M308037*)

Overview:

- Installations will vary based on your plant's specifications and batch control system
- Pitch angle of the probe face and distance of the probe below the gate are specified by material type. Accurate placement is required for best results.
- A properly installed and angled probe requires only a small adjustment (+/- 1 %).
- **DO NOT WELD WITH THE PROBE MOUNTED IN THE PLATE!**

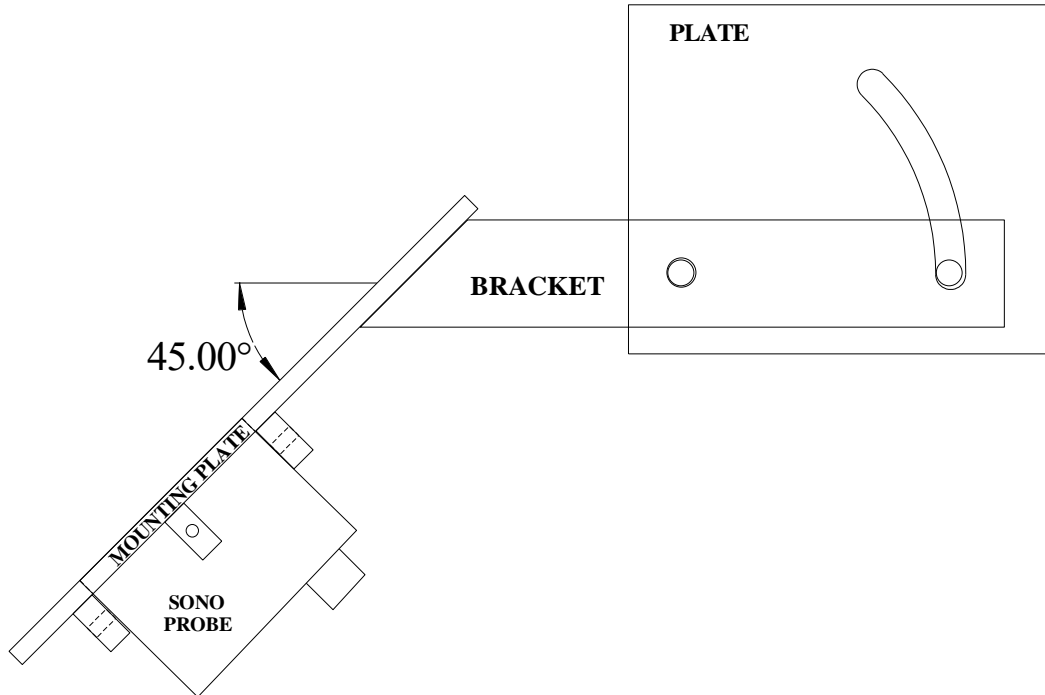
Item # M308037 (shown assembled)



The SONO-Probe Mounting Plate Assemble includes the following items, (shipped knocked down).

- 12" x 8" **Mounting Plate** with $\text{Ø}108\text{mm}$ cutout and set screws.
- 12" x 2" **Bracket**, one end has a 45° angle.
- 8" x 6.5" **Plate** with bolt hole and angle adjustment slot.
- 2-each, 7/16" - 20 Thread Hex Screw 1-1/2" long with Hex Nut and Washers.

How to use a SONO-Probe Mounting Plate Assembly (304 Stainless Steel)



The SONO-VARIO Probe Mounting Plate is designed to conveniently hold any SONO-VARIO probe having a Ø108mm circular-style. The remainder of the Assembly is specifically designed to help with installation and positioning of the SONO probe under a hopper gate.

The SONO-VARIO probe is to be installed in the Ø108.5mm cutout, such that the front of the probe is flush with the front of the mounting plate. On the back of the 12" x 8" mounting plate are four (4) ¼" set screws [18-8 Stainless Steel Cup-Point Set Screws, 1/4"-20 thread, ½" long], used to securely hold the probe in the Mounting Plate.

The 12" x 2" Bracket is fabricated with a 45° angle on one end. The 45° end of the Bracket is to be welded to the **back** of the Mounting Plate as shown in the image above. The additional 8" x 6.5" **Plate** with bolt hole and angle adjustment slot is to be bolted to the Bracket and can allow for easy adjustment to the desired angle. The 8" x 6.5" **Plate** is to be securely attached to the plant structure, typically this is achieved through welding.

DO NOT WELD WITH THE PROBE MOUNTED IN THE PLATE!

Positioning the SONO probe below a hopper gate:

These instructions should be followed when installing the probe:

The SONO probe should be installed about 12-inches (30mm) below the hopper gate. The mounting should be rigid. Position the 12" x 8" **Mounting Plate** direct under a clam gate, such that the flowing aggregate covers the face of the SONO probe completely.

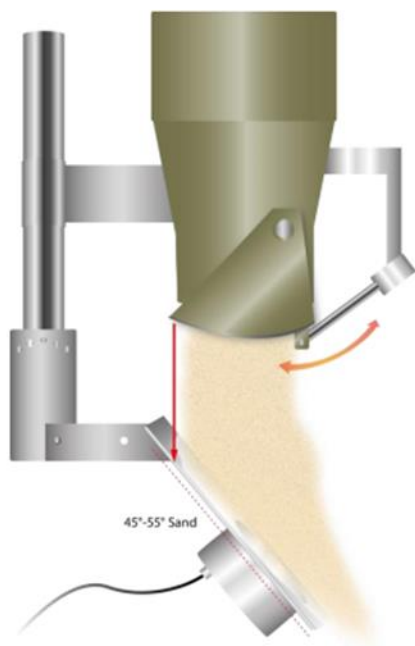
The direction of the aggregate flow should drop directly on and against the probe surface, when the flap opens. This assures that the SONO probe is covered with material immediately upon the opening of the gate and not only when the gate flap is opened completely. This assures fast and accurate moisture measurements during short duration openings.

Recommended Mounting Plate Angles:

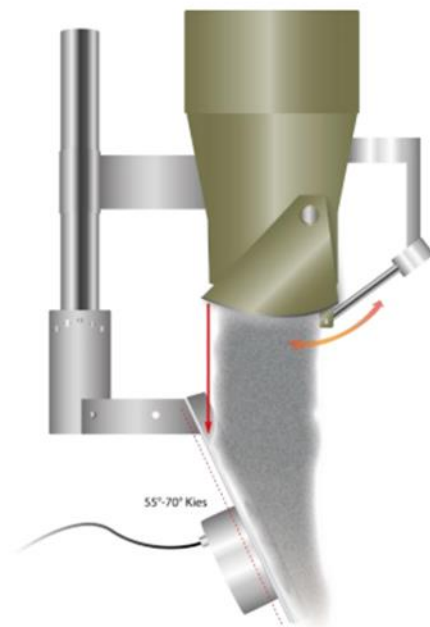
For sand, the angle of the mounting plate should be between 45°-55°.

For gravel and rock and stone, the angle must be steeper, between 55°-70°

Material should not sit on the probe face between batches.



Sand: Angle sensor holder 45° to 55°



Gravel: Angle sensor holder 55° to 70°

Examples of SONO probe installations









Images of the Mounting Plate Assembly Parts:



IMAGE: 12" x 8' Mounting Plate with Ø108mm cutout and set screws.

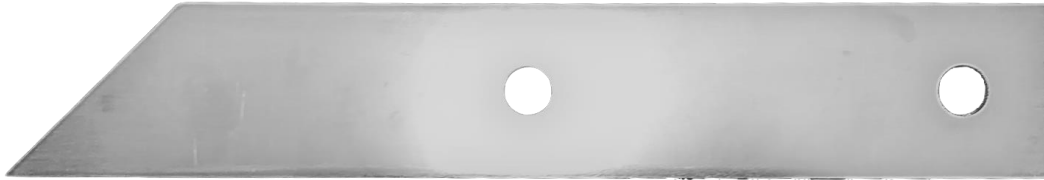


IMAGE: 12" x 2" **Bracket**, one end has a 45° angle.



IMAGE: 8" x 6.5" **Plate** with bolt hole and angle adjustment slot.



IMAGE: 2-each, 7/16" - 20 Thread Hex Screw 1-1/2" long with Hex Nut and Washers.