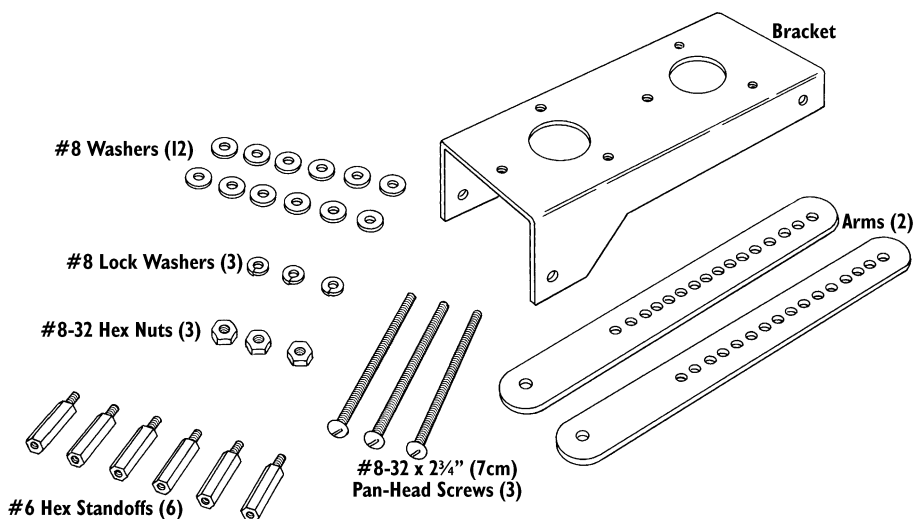


SENSOR TILTING BRACKET

The Sensor Tilting Bracket (STB) enables you to adjust the position of the solar radiation sensor and/or the UV sensor to match the angle of the sun's rays. Use the STB with the Energy EnviroMonitor™ to match the angle of the solar radiation sensor to the angle of your solar panels. Use the STB with the Heath EnviroMonitor™ for maximum temperature-humidity-sun-wind index and/or UV readings. Do not use the STB when mounting the solar radiation sensor for use with the GroWeather™. The GroWeather's ET calculations assume that the solar radiation sensor is mounted horizontally.

COMPONENTS

The Sensor Tilting Bracket includes the following components. Please make sure you have all listed components before continuing.



SENSOR TILTING BRACKET COMPONENTS

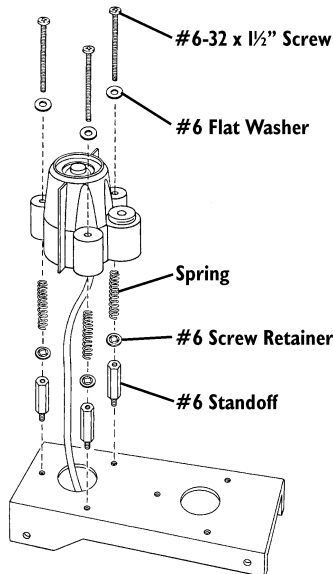
TOOLS AND MATERIALS NEEDED

In addition to the components listed above, you will need some of the following tools and materials. Please be sure you have everything you need before beginning the installation.

- ◆ **Solar Radiation and/or UV Sensor**
You will also need the #6-32 x 1-1/2" (38 mm) machine screws, #6 washers, #6 screws retainers, and springs included with the sensor.
- ◆ **Medium Phillips Screwdriver**
- ◆ **Wrench or Pliers**
- ◆ **Drill with 7/32" (.219", 5.5 mm) Drill Bit**
- ◆ **Cable Clips or Weather-Resistant Cable Ties with screw holes or other means for mounting**

USING STANDOFFS TO ATTACH SENSOR

Consult the sensor manual for instructions on attaching the sensor to the STB. However, if mounting the sensor on the tilting bracket in a location under 46° latitude or in a situation which requires the angle of the tilting bracket to be less than 28°, you will need to use the standoffs supplied with the tilting bracket as shown below. (The standoffs allow enough room between the bottom of the sensor and the SMA.) The standoffs are made of aluminum; take care not to overtighten when screwing into the bracket. Consult the sensor manual for the remaining instructions on attaching the sensor to the STB.



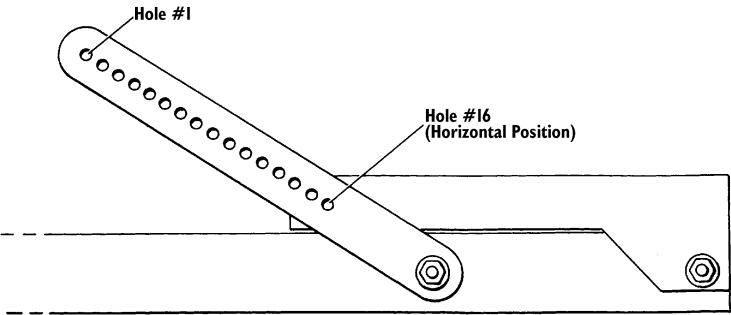
USING STANDOFFS TO MOUNT THE SENSOR

MOUNTING THE SENSOR TILTING BRACKET

The instructions below explain how to select the correct tilt angle for the STB and how to mount STB on the Sensor Mounting Arm or on another surface.

The Tilt Angle

The STB allows you to angle the sensors between 0° and 66°, depending on which hole in the STB arms you use when mounting the bracket. The illustration below shows the orientation of the holes (from 1 to 16).



SENSOR TILT BRACKET ARM HOLE DESIGNATIONS

The table below shows the tilt angle achieved by using any given hole.

<u>HOLE #</u>	<u>SENSOR ANGLE</u>	<u>HOLE #</u>	<u>SENSOR ANGLE</u>
1	66.0°	9	32.6°
2	61.5°	10	28.5°
3	57.3°	11	24.4°
4	53.0°	12	20.3°
5	48.9°	13	15.7°
6	44.7°	14	11.4°
7	40.6°	15	6.4°
8	36.6°	16	0.0°

Determining the Correct Tilt Angle

If you know the angle at which you want to mount the sensor (to match the angle of a solar panel, for example), use the table in “The Tilt Angle” on page 3 to determine which hole on the STB arms best matches that angle.

To maximize solar radiation or UV readings (and all related readings), start by determining your latitude. Determine the correct angle (depending on the season during which you want maximum readings) as described below. Finally, use the table in “The Tilt Angle” on page 3 to determine which hole on the STB arms best matches that angle.

Note: *If desired, you may change the angle of the STB every four months to maximize your readings year round.*

◆ **Maximum Readings During Spring or Fall**

If you want maximum readings in the Spring or Fall, use your latitude as the angle (that is, at 45° latitude, use an angle of 45°).

◆ **Maximum Readings During Summer**

If you want maximum readings in the Summer, subtract 18° from your latitude to determine the correct angle (that is, at 45° latitude, use an angle of 27°).

◆ **Maximum Readings During Winter**

If you want to maximize readings in the Winter, add 18° to your latitude to determine the correct angle (that is, at 45° latitude, use an angle of 63°).

For greater accuracy in determining the correct angle, consult a table of the sun’s declination over the desired time span. The best tilt angle is derived by subtracting declination from latitude. You may then use the table in “The Tilt Angle” on page 3 to determine which hole on the STB arms best matches that angle.

Mounting on the Sensor Mounting Arm

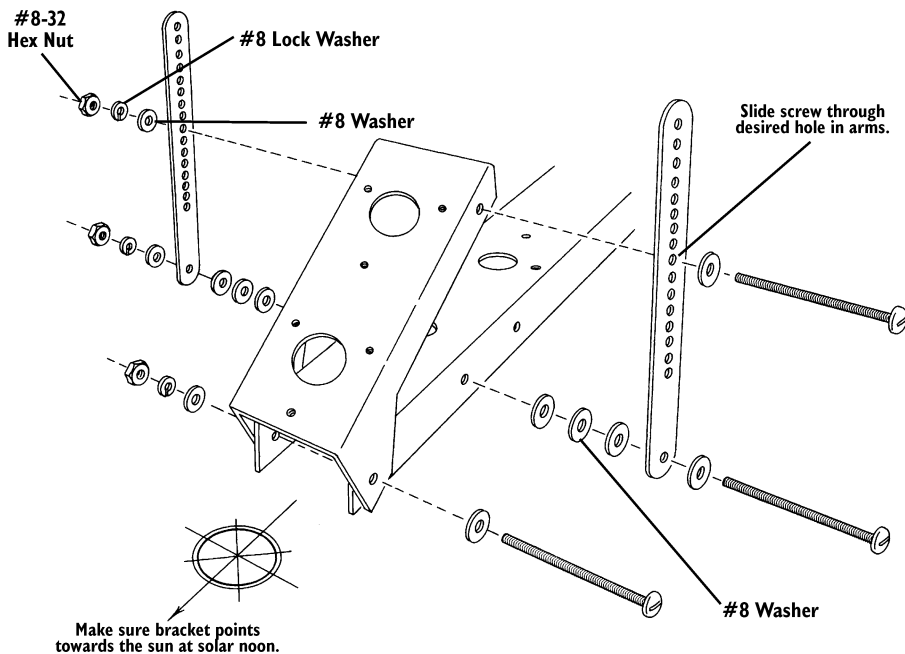
Follow the instructions below to mount the STB on the Sensor Mounting Arm (SMA).

1. Make sure that you mount the SMA (or plan to mount the SMA) so the sensor(s) on the STB point towards the sun at solar noon.

Solar noon occurs halfway between sunrise and sunset; consult your local paper or the WeatherLink[®] software for sunrise and sunset times. To correctly align the arm, screw a mounting screw part way into any of the screw positions on the mounting arm and rotate the arm until the shadow from the screw is parallel to the edge of the sensor arm at solar noon.

2. Attach the STB to the SMA as shown below using the #8-32 screws, #8 washers, #8 lock washers, and #8-32 hex nuts. See "The Tilt Angle" on page 3 to determine which hole to use on the arms.

Make sure you place three #8 washers between the arms and the SMA. For clarity, the sensor is not shown in the drawing below.



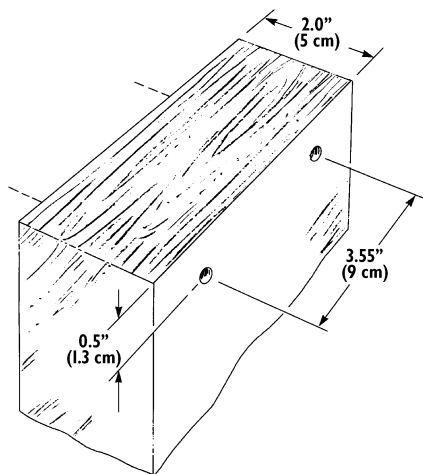
MOUNTING ON THE SENSOR MOUNTING ARM

3. Make sure you secure the sensor cable below the SMA as shown in the sensor manual.

Mounting on Alternate Surfaces

You may also mount the STB on a block of wood or a metal bracket.

1. Prepare the mounting surface by drilling two holes using a 7/32" (.219", 5.5 mm) drill bit in the locations shown below.

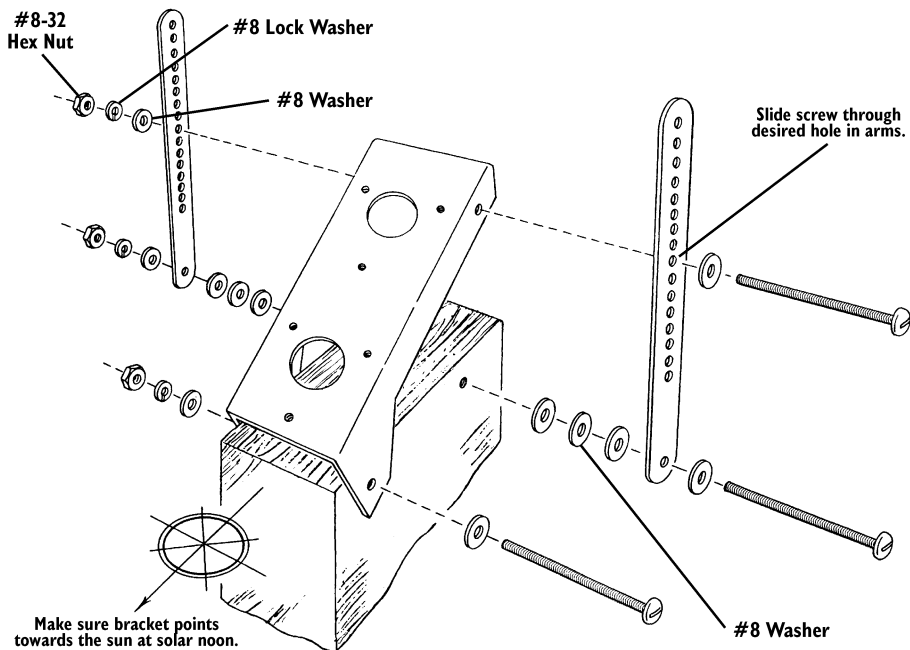


PREPARING MOUNTING SURFACE

2. Make sure that you position the alternate surface (or plan to position it) so the sensor(s) on the STB point towards the sun at solar noon.
Solar noon occurs halfway between sunrise and sunset; consult your local paper or the WeatherLink[®] software for sunrise and sunset times.

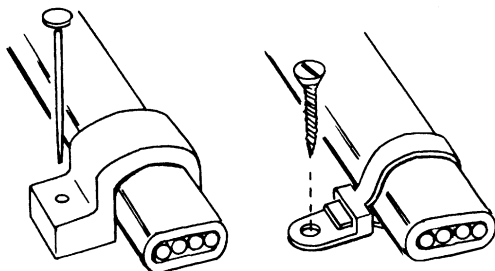
3. Attach the STB to the surface as shown below using the #8-32 screws, #8 washers, #8 lock washers, and #8-32 hex nuts. See "The Tilt Angle" on page 3 to determine which hole to use on the arms.

Make sure you place three #8 washers between the arms and the mounting surface. For clarity, the sensor is not shown in the drawing below.



MOUNTING ON AN ALTERNATE SURFACE

4. Secure the sensor cable to the mounting surface using cable clips or weather resistant cable ties with screw holes or other means for mounting.



SECURING SENSOR CABLE

Product Numbers: 7706

Davis Instruments Part Number: 7395-108

Sensor Tilting Bracket

Rev. B Manual (10/14/99)

This product complies with the essential protection requirements of the EC EMC Directive 89/336/EC.

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