SOCLEMA
Advanced Industrial Sampling

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GP-SD
GENIE PROBE – SMALL DIAMETER

Installation and Operation Instructions

Caution:

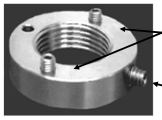
- Not designed for external fire.
- Prior to use in a system, a properly sized relief device is to be installed which limits the use to 110% of the MAWP.
- This product may vent while being installed, operated, or maintained. The user should follow company safety practices concerning Personal Protective Equipment (PPE) as well as any and all OSHA, state and local regulations.

Housing for GP-SD

- **To ensure that the Housing is never accidentally loosened or removed a Locking Mechanism is provided.**
- **A+ Corporation's Locking Mechanism ensures that the Housing can only be removed intentionally or knowingly.**

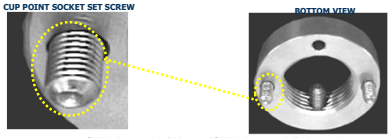
Locking Mechanism (if supplied)

Set Screws Backed Out



TOP VIEW

Set Screws Fully Engaged



Housing for GP-SD

- **Turn locking mechanism (counter-clockwise) until it is at its extreme upper position.**
- **Apply thread sealant to thread area below vertical slot in threads.**
- **Do not allow thread sealant to invade slot, otherwise it may interfere with locking mechanism.**

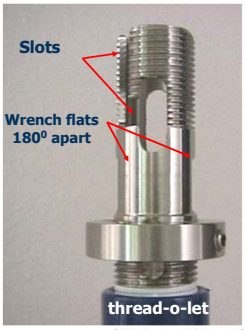
Mounting Orientation

- **Vertical (preferred), or 45° maximum angle relative to vertical required**

Insertion of Housing

- Confirm that the pipeline has been depressurized.
- Insert the housing into the depressurized pipeline thru a ¾" NPT thread-o-let (Minimum ID of thread-o-let = 0.91")

Insertion of Housing

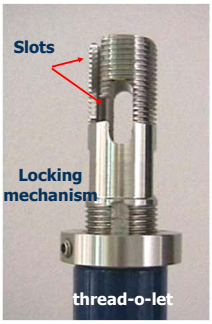


Using a wrench and the wrench flats, turn the housing until it is secure and sealed. This will require approximately 3-5 turns.

DO NOT OVERTIGHTEN

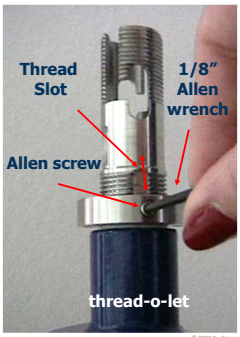
The Housing may be damaged if over tightening causes the housing to swage.

Insertion of Housing



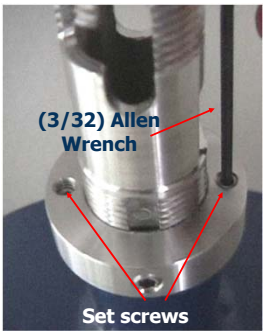
- Turn the locking mechanism clockwise until it first touches the top of the thread-o-let.

Insertion of Housing



- Turn the locking mechanism counterclockwise until the Allen screw is aligned with the thread slot.
- Using a 1/8" Allen wrench, tighten the Allen screw until its tip is tight against the slot.
- Do not over tighten Allen screw, otherwise Housing wall may become indented.

Insertion of Housing



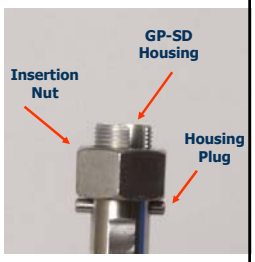
- Using a (3/32) Allen wrench, tighten the Allen screws on the locking mechanism's surface until their tips are firmly set into the thread-o-let's upper surface.

Insertion of Housing

- The housing is now installed. The locking mechanism should prevent the housing from becoming unintentionally unscrewed from the thread-o-let.
- The pipeline may now be re-pressurized.
- Once the Housing is installed, the GP-SD can now be inserted as per the instructions beginning with Slide #13.

Install the Weather Head or stainless steel plug that prevents foreign objects from entering Housing cavity on the Housing if the Probe will not be installed at this time.

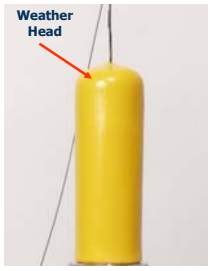
or



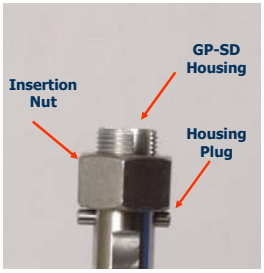
GP-SD

PROBE INSERTION

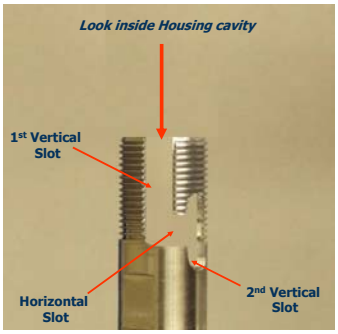
The Weather Head or stainless steel plug that prevents foreign objects from entering Housing cavity should have been installed on the Housing.



or



If present remove the weather head or plug and confirm that no foreign objects are in the Housing cavity. Use a light source (flashlight) to view the top of the Foot Valve Housing and stem.



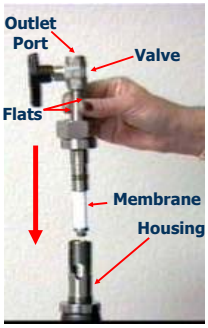
GP-SD Housing

With 2 sets of "Zig-Zag" Slots

Confirm that the allen cap screw head's hollow hex cavity is free from foreign material (I.e. Confirm that it is clean.)

Confirm that the Allen cap screw that holds the Membrane Ferrule is torqued wrench-tight. The torque value should be 10 inch/lb. If the allen cap screw is only hand tight, not wrench tight to the appropriate torque value, the screw may protrude excessively. The extra Probe length may prematurely actuate the Foot Valve when the Probe is installed into the Housing.

GP2 Option



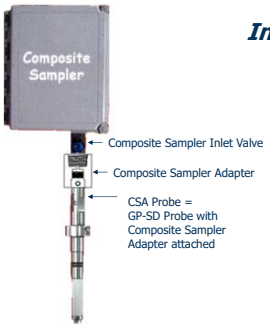
Insertion of GP2 Probe

- First install a valve in the GP outlet port (1/8" NPT female) as shown.
- *Close the valve before inserting the probe into its housing .*
- CAUTION – Failure to install and close the valve will result in full line pressure at the outlet port, and the unrestricted flow could damage the foot valve o-ring.
- Use a backup wrench on the wrench flats during valve installation.

Regulator Option

- Be sure that the Regulator Adjustment screw is fully counter-clockwise.

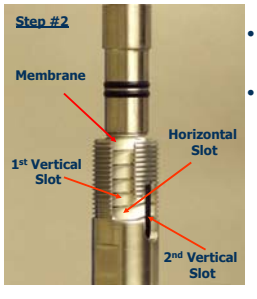
Composite Sampler Option



Insertion of CSA Probe

- Install the Composite Sampler with its inlet valve *closed* onto the Probe.
- The valve must be *closed before inserting the Probe into its housing .*
- CAUTION – Failure to install and close the valve will result in full line pressure at the outlet port, and the unrestricted flow could damage the foot valve o-ring.
- Use a backup wrench on the wrench flats during valve installation.

Insertion of Probe

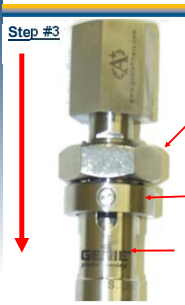


Composite option shown

- Position the membrane end of Probe above the installed housing
- Slowly and carefully, lower the Probe into the Housing. (Avoid membrane contact with upper section of housing.)

Do not apply any downward force. The Probe should easily slide into the Housing.

Insertion of Probe



Composite option shown

- Only lower the probe far enough to thread the insertion nut one complete thread.

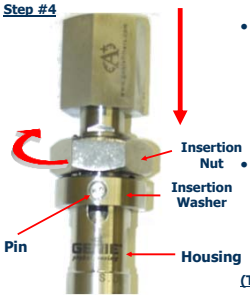
Do not apply any downward force by hand to the Probe.

Do not unscrew the Insertion Nut in this procedure once it has been engaged.

(The pins are in the 1st vertical slot.)

Insertion of Probe

Step #4



- Thread the Insertion Nut down by hand, lowering the Probe until the insertion washer pins slide to the bottom of the the ***first vertical slot***.
- The threaded nut on the Housing ensures that if all other safety procedures are disregarded, it is mechanically impossible to remove the Probe.

(The pins are at the bottom of the 1st vertical slot.)

Composite option shown

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Insertion of Probe

Step #5

- Rotate ***Probe*** counter clockwise until the pins are to the far right in the horizontal slot.
- At this point the Probe is sealed against the Housing interior wall.

(The pins are in the middle of the 2nd vertical slot.)

Composite option shown

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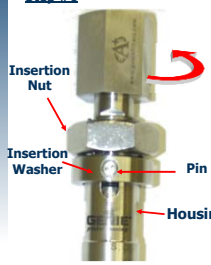
Insertion of Probe

Step #6



- Loosen the Insertion Nut until it is above the top of 2nd vertical slot. The Probe should not rise to the top of the 2nd Vertical Slot. If the Probe rises in the 2nd Vertical slot, the Foot Valve O-ring may have been damaged or attacked by the process.
- The threaded nut on the Housing ensures that it is mechanically impossible to remove the Probe.
- Perform the next step regardless of the status of the Foot Valve O-ring.

Composite option shown

(The pins are in the middle of the 2nd vertical slot.)

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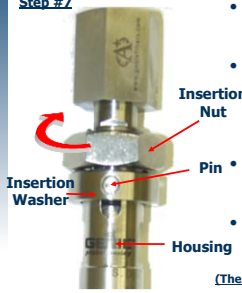
Insertion of Probe

Step #7



- Tighten the Insertion Nut (by hand) until it is against the Insertion Washer again.
- Using a wrench, tighten the Insertion Nut against the Insertion Washer so that the Pins are at the bottom of the 2nd Vertical slot.
- At this point the Foot Valve opens and the insertion process is complete.
- (Perform this step regardless of the status of the Foot Valve O-ring)

(The pins are at the bottom of the 2nd vertical slot.)

Composite option shown

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GP-SD can be easily retracted from its Housing.

RETRACTION OF PROBE

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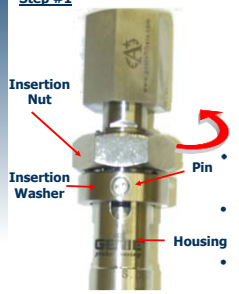
Retraction of Probe

Step #1



- Shut flow completely off by closing external valving or Regulator adjustment screw fully counter clockwise if regulator option before beginning to retract the GP-SD Probe . ***CAUTION-Failure to shut off sample flow may result in damage to housing foot valve seal.***
- Confirm that the valve connected to the Outlet Port on Probe is closed.
- Using a wrench, loosen the nut by rotating it counterclockwise until it can be turned by hand.
- The foot valve is closed at this point.

(The pins are at the bottom of the 2nd vertical slot.)

Composite option shown

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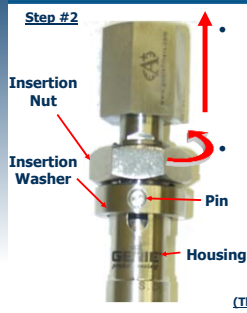
Retraction of Probe

Step #2



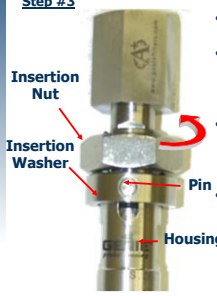
- **Loosen nut further by hand until the nut just clears the insertion washer. *Do not unscrew the nut beyond the top of the 2nd vertical slot.***
- **The pins will now be at the top of the second vertical slot. They are held there by the force of supply gas trapped between the foot valve and probe housing seals.**

(The pins are at the top of the 2nd vertical slot.)

Composite option shown

Retraction of Probe

Step #3

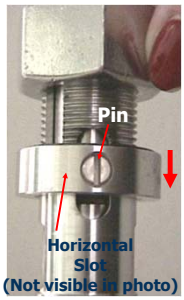


- Bleed down the sample pressure by allowing sample to flow externally.
- The Probe should fall until the pins align with the horizontal slot indicating that the Foot Valve is closed and the o-ring is sealed properly
- Once you have utilized the safety feature of the 2nd Vertical Slot to confirm the status of the Foot Valve O-ring, only then can you remove the Probe.
- The thread engagement of the Insertion Nut and the safety feature of the 2nd Vertical slot ensure that the Probe can not exit the Housing any other way than the correct retraction method.

(The pins are in the middle of the 2nd vertical slot.)

Composite option shown

Retraction



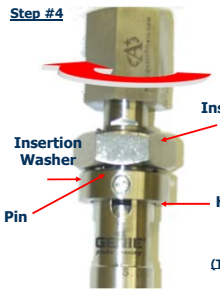
- **The sample pressure is relieved by allowing sample to flow externally. The Probe can now be easily pushed downward until the pins align with the horizontal slots, confirming the foot valve closed correctly.**
- **Even if Foot Valve failure would possibly occur, the Foot Valve leak rate would prevent you from pushing the probe downward until the pins align with the horizontal slots.**

CAUTION:

If the pressure is not reduced to zero,use the wrench to tighten the nut pushing the probe back into the housing and contact A+ Corporation or its representative.

Retraction of Probe

Step #4



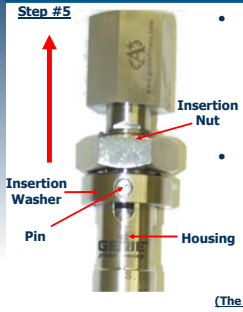
- **Rotate the Probe clockwise until the pins enter first vertical slots.**
- **Make sure the Insertion Nut stays threaded on the Housing.**

(The pins are at the bottom of the 1st vertical slot.)

Composite option shown

Retraction of Probe

Step #5



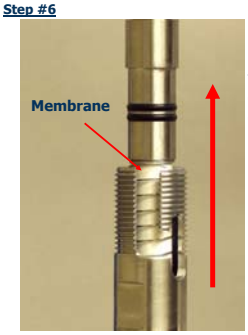
- **Confirm that *no* upward force from the supply pressure is present. (I.e. the Insertion Washer is not forced against the Insertion Nut as it is unthreaded.)**
- **After confirmation that *no* upward force from the supply pressure is present, completely unthread the Insertion Nut and lift the Probe upward from the housing.**

(The pins are in the middle of the 1st vertical slot.)

Composite option shown

Retraction of Probe

Step #6



During the retraction, keep the Probe centered in the housing to avoid membrane damage by contact with the upper section of the housing.

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