



Dual Tube Sampling

Today, dual tube sampling is the most popular method used for collecting soil samples with a PowerProbe™.

With the AMS dual tube tooling systems, both depth discrete and continuous sampling are possible. The external direct push extensions act as the sampler body and cases the hole to minimize the chance of cross contamination while displacing soils during direct push penetration. The internal direct push extension is attached to a plastic liner which is inserted into the external direct push extension. Both are simultaneously driven into the soil to fill the liner. The internal string is then removed to recover the sample.

AMS offers a variety of external drive tips for specific soil situations:

- 1) Clays can present problems as they are depressurized when entering the sampler. Clay tips cut a smaller sample to allow for some expansion;
- 2) Oversize drive tips are used in tight formations to allow the tool string to make a larger diameter hole, enhancing penetration rate by reducing friction; and

- 3) Dry, sandy, or saturated soils can be kept within the sample liner with the use of a core catcher cap or other sample retainer system, allowing soil to enter the liner, but minimizing the chance of losing the sample.

Features

- Collect undisturbed, continuous sample through a cased borehole.
- Install small-diameter monitoring wells through the same tool string.
- Core catcher cap and a variety of outer drive tips available.

G3 Features

- Thicker design
- Penetrate deeper depths
- Endure more push/hammer and pull back power
- Minimize chance of liner failure

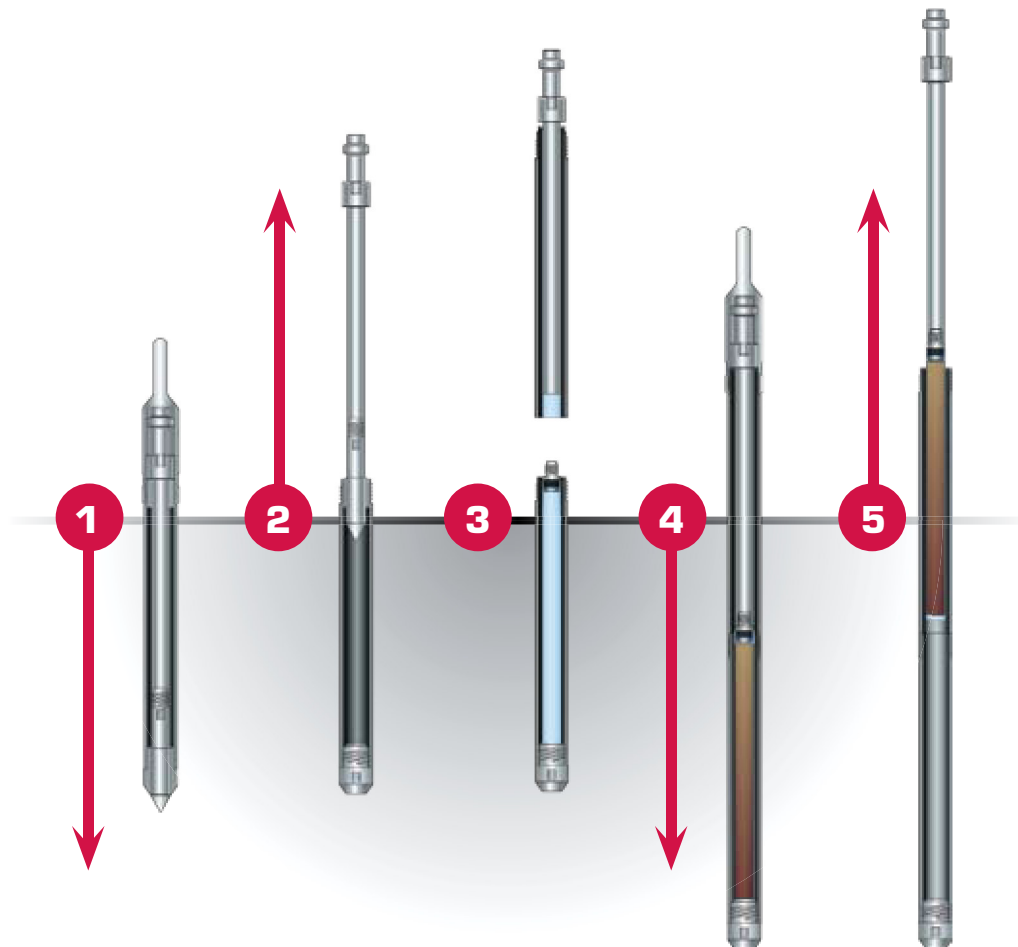
Dual Tube Application:

The AMS dual tube samplers are used to collect soil samples continuously from the surface or from a desired discrete depth below the surface.

- Push the dual tube sampler to the depth where soil sampling is to begin. (Figure 1).
- Once at depth the internal direct push extension attached to the internal drive tip is removed (Figure 2).
- Add a liner, liner grabber, internal and external direct push extensions, thread protector cap, and direct push extension drive head (Figure 3).
- At this point the direct push extensions are pushed simultaneously approximately to the same length as the liner that is being used (Figure 4).
- Upon collection of the sample, the internal extension with the attached liner and soil sample are removed (Figure 5).
- Continuous sampling can be conducted by repeating steps shown in Figures 3 through 5 to the maximum desired depth.

Note: Use the external drive tip with liner if continuous sampling. Use the liner grabber to hold the liner while attaching to the DP extension.

G3 and G3 Advanced Dual Tube Sampling



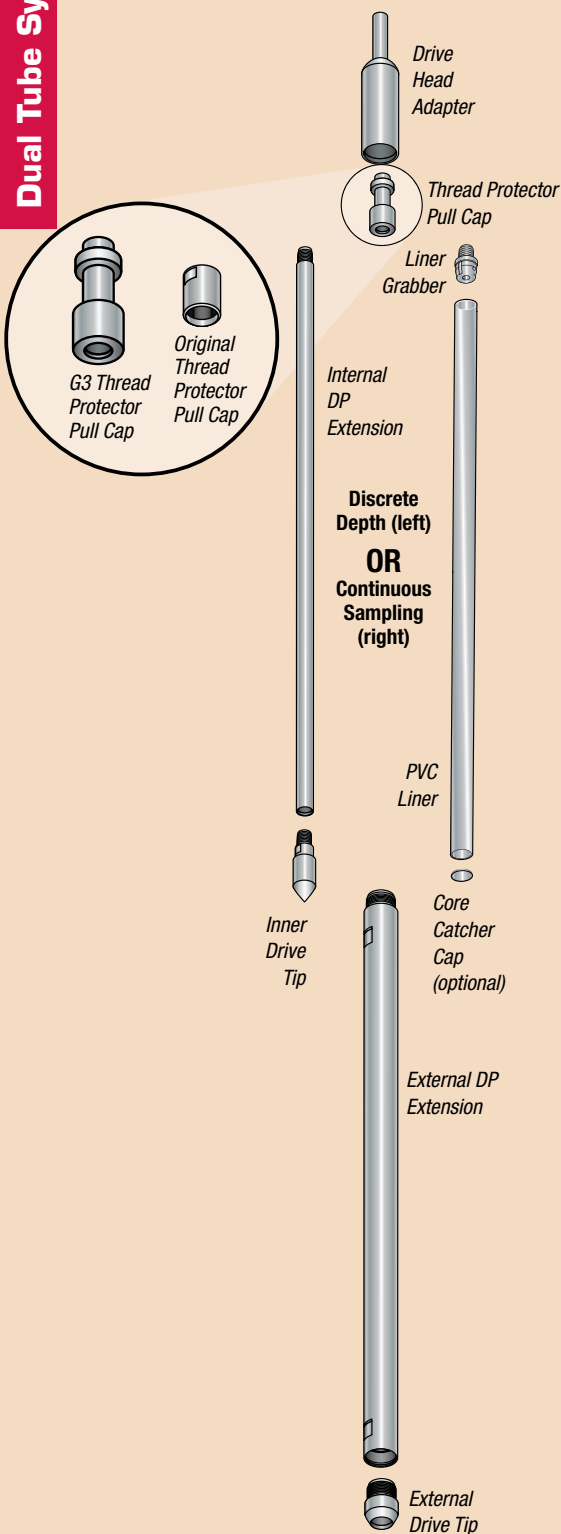
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Dual Tube System



G3 2 3/8" Dual Tube System



The Generation Three (G3) dual tube system is based upon a thicker walled design and provides the needed durability and reliability recommended for the AMS PowerProbes with maximum hammer and push/pull capability.

- Best option for collection of discrete or continuous samples in deep depth and difficult soils
- Improved to ensure reliable liner sampling. The internal DP extensions are supported by the external extensions, preventing possible liner collapse during deep probing
- Best option for installation of 3/4" prepack monitoring wells
- Effective conduit for soil gas and groundwater sampling
- Use 1 1/2" OD liners

3 1/2" Dual Tube System

- Ideal for placement of 2" prepack monitoring wells (2.8"OD), through the external DP extension
- Increased versatility with 1 5/8" heavy duty extension option
- Efficient collection of discrete or continuous samples
- Effective conduit for soil gas and groundwater sampling
- Use 2 3/4" diameter liners

2 3/4" Dual Tube System

- Increased versatility with 1 5/8" heavy duty extension option
- Ideal for placement of 1" prepack monitoring wells
- Effective collection of discrete or continuous samples
- Effective conduit for soil gas and groundwater sampling
- Use 2" diameter liners



Expendable Holder with Expendable Sample Tip for collecting soil samples and subsequent installation of well screen or prepack wells.



Expendable Holder with Solid Tip for installation of well screen or prepack wells.

Note: If sampling soil before well placement, use expendable drive tip holder with expendable drive tip with liner. Use the holder with solid drive tip if installing a well only.

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