The FHPC tools are down-hole wireline-retrievable, hydraulic piston corers designed to take long, relatively undisturbed core samples in unconsolidated sediments, generally in an offshore marine environment.

A Geologic/Stratigraphic Snapshot

Where there exists a general geologic, stratigraphic or geohazard need, the Fugro Hydraulic Piston Corer presents a useful tool in gathering the information needed to completely evaluate the feature.

The FHPC tools are designed so that coring operations can be continuous, non-stop, high recovery rate and provide a nearly complete sample of the cored interval, to depths in marine sediments up to 200-300 m below the seafloor. Years of use of similar tools by research organizations have shown that the tools are rugged and reliable, require minimal maintenance, and produce core samples of marine sediments more undisturbed than by any other known coring system.

Method of Deployment

Cores are recovered in one-piece, clear plastic liners (cellulose acetate butyrate) of 2.8-in.-OD (71 mm-OD) and 2.6-in.-ID (66 mm-ID).

The FHPC system has a 25-ft (7.6 m) stroke length capable of being deployed through Fugro’s Medium Common Bottom Hole Assembly (BHA), allowing its use with a variety of other specialized coring systems and standard sampling and in situ.

FHPC’s standard cutting shoe was designed to provide optimal sample quality, with inner diameter-to-wall-thickness ratio comparable to that of geotechnical sampling tools, such as the Shelby Tube push sampler, believed to reduce sample disturbance due to ‘squeezing’ and/or expansion effects.
Coring Procedures

After drilling the borehole to the required coring depth, the procedures are generally:

- FHPC is lowered using sandline, and rests in BHA, having cutting shoe right at bit level
- Pressurize drill pipe to “firing” point (depending on number/type of shear pins, 90-195 bars)
- FHPC is “fired” through the bit into the soil formation at controlled stroke speed
- Sudden drop of mud pressure indicates fullstroke

Scientific Research

The FHPC has been used as the primary tool for nonpressurized coring in several Gas Hydrate programs around the world.

- Coring through the Sulfate-Methane Interface
- Recovery of dissociating or dissociated Gas Hydrate
- Recovery of Gas Hydrate in solid state
- Visual location of gas voids and expansion cracks
- Characterization of fault crossings