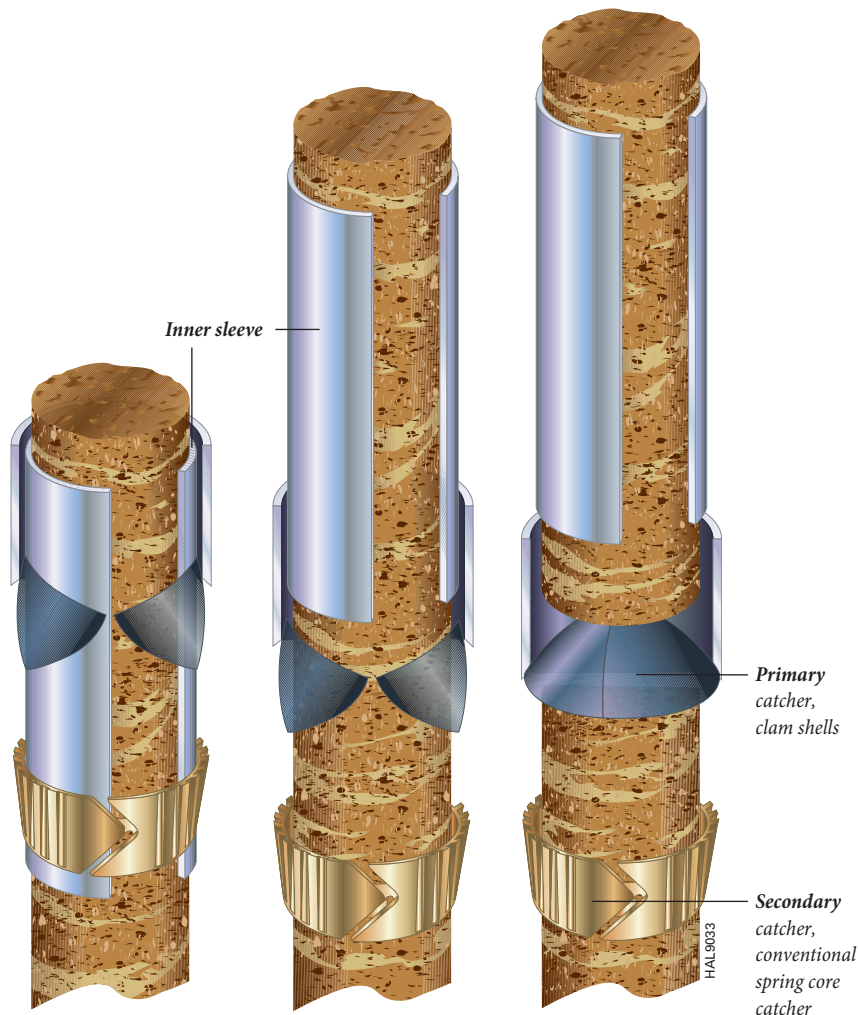


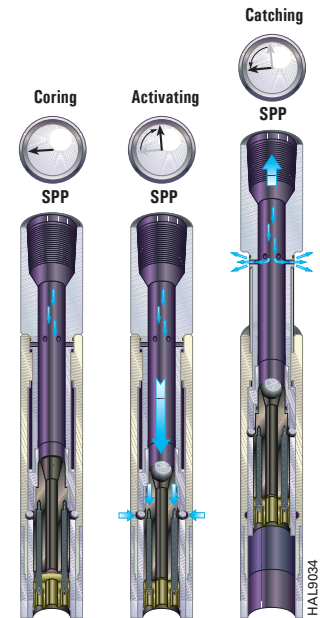
Unconsolidated Coring

PosiClose™ System

The PosiClose™ system (patented) is designed to maximize core recovery in soft, unconsolidated formations. Unrestricted entry eliminates jamming from premature catcher-core contact. The catcher system fully closes to ensure complete retention throughout retrieval.



LEFT. Inner sleeve provides smooth, unrestricted bore for core entering the inner tube, which prevents jamming from premature contact with both core catchers. MIDDLE. Inner sleeve lifted after ball drop from surface, system ready to engage core. RIGHT. Clam shell catcher closes fully to cut and retain core, actuated by upward movement of the drillstring. If clam shells do not cut core, the conventional spring core catcher catches core in the standard method.



LEFT. At the surface, SPP (stand pipe pressure) while coring. MIDDLE. Ball is dropped from surface when coring run is complete. Clear surface indication that catcher system is unlocked and ready. Hydraulic pressure increases and lifts inner sleeve to expose core to catchers. RIGHT. Clear indication at surface when catcher is activated by stroking upper sub. Internal lower mechanism forces clam shells to shut, cut and seal-off core.

FIELD ADAPTABLE


Clam shells close for complete retention. PosiClose is available for the 6-3/4" HDT core barrel, for core size of 4 in. (101mm) with maximum core length of 90 ft (27m) for Top Drive systems, 30 ft (9m) for Kelly systems. Applications for up to 45° hole angle. All types of consumable inner tubes can be used. All company coreheads are available and are fitted with a PosiClose shank. A slotted ball valve is installed at the surface with an activating ball.



PosiClose™ System Technical Specifications

SYSTEM (BARREL X CORE SIZE)	6-3/4" X 4"	
	IMPERIAL	METRIC
Hole Size Compatibility	8 to 9 in.	203 to 229 mm
Maximum Flow Rate	300 gpm	1,363 lpm
Core Size	4 in.	101.6 mm
Minimum Unit Length	30 ft	9.14 m
Core Barrel Type	HDT 6-3/4	HDT 6-3/4
OUTER ASSEMBLY		
Top Connection (Box-API)	4-1/2 IF	4-1/2 IF
Minimum Unit Length	30 ft	9.14 m
Outer Barrel (OD x ID)	6-3/4 x 5-3/8 in.	171.5 x 136.5 mm
Bit Sub (OD)	7.50 in.	190.5 mm
Core Head Shank (OD)	7.25 in.	184.15 mm
Pulling Capacity *	506,000 lbs	228 T
Maximum Torque **	39,000 ft-lbs	5,300 daNm
Make-up Torque ***	25,800 ft-lbs	3,500 daNm
INNER TUBE ASSEMBLY		
Minimum Unit Length	30 ft	9.14 m
Maximum OD	5.28 in.	134.0 mm
Ball Size (1st and 2nd)	1-1/4 in. and 1-1/2 in.	31.8 mm and 38.1 mm
Steel Inner Tube (OD x ID)	4-3/4 x 4-1/4 in.	120.7 x 108 mm
Slick Aluminum Inner Tube (OD x ID)	4-3/4 x 4-1/4 in.	120.7 x 108 mm
Fluted Aluminum Inner Tube (OD x ID)	4-3/4 x 4-1/8 in.	120.7 x 104.8 mm
Fiber Inner Tube (OD x ID)	4-3/4 x 4-1/4 in.	120.7 x 108 mm
(*) P.C. calculated with tensile stress = 80% of the yield strength		
(**) Maximum Torque is about 80% of the yield torque		
(***) M.U.T. is based on torque test performed in Halliburton lab facilities		

Threadform Comparison

	HEAVY DUTY THREADFORM (patented)		STANDARD THREADFORM	
	Maximum Torque	39,000 ft-lbs	Maximum Torque	14,800 ft-lbs
	Make-up Torque	25,800 ft-lbs	Make-up Torque	9,600 ft-lbs
	Maximum Pull	506,000 lbs	Maximum Pull	471,000 lbs
	Static Bending	17 deg./100 ft	Static Bending	14 deg./100 ft
	Maximum Dogleg Severity	10 deg./100 ft	Maximum Dogleg Severity	2 deg./100 ft
	Fatigue Life	> 1,000%	Fatigue Life	100%
	