centralization tech sheet

Centralizer Evolution

Previous generation MWD tools are comprised of very long, thin probes that are prone to damage due to the severe drilling harmonics present downhole. The extreme shock and vibration imparted on the tool can result in catastrophic failure if the tool is not supported within the drill collar.

Conventional centralization for MWD tools makes use of short, rubber fins that get spaced throughout the length of the tool. Common failure modes of previous generation MWD tools are directly related to these rubber fins due to the significant distance between adjacent centralization points. Therefore, the tool is allowed to sag or flex and enter into harmonic excitation. Electrical connections and mechanical joints become fatigued. If the flexing is too much, the tool may begin to impact the collar. All of this culminates in catastrophically amplified shocks that destroy equipment.

Evolution™ has solved these issues with the patented full length support centralizer sleeve.

FULL LENGTH SUPPORT

Evolution's centralizer provides radial support and protection for the entire length of the probe. Harmonic excitation and sensor sag are eliminated with Evolution's centralizer.

HIGHER TOTAL FLOW AREA

The lobed design of Evolution's centralizer allows for fluid to flow internally and externally of the centralizer walls, allowing for higher total flow area (TFA). The higher TFA allows for higher mud motor efficiency, better hole-clearing capability, and reduced likelihood of pack-off

FLUID DAMPENING

The fluid channels on the internal and external regions of the centralizer create fluid cushions which support the probe by distributing the shock into the pressurized fluid. The internal lobes provide radial spring supports that push the probe back into a centered position.

PRECISION FIT

There is no need for any modifications to the centralizer in the field or in the lab, removing associated HSE and measurement error risks. The centralizer is designed to always have a positive engagement which guarantees proper fit; the centralizer is undersized to the probe, and oversized to the collar ID.

EASE OF SERVICE

The centralizer sleeve is secured in place in a very simple manner. If there is wear, then it is easily removed and a replacement can be slid in its place, in the lab or on site. There is no need to take the entire tool out of service.

ECONOMICAL

Evolution's centralizer is very economical and is designed to last for 1000 hr of drilling; longer than the life of one rubber fin.

CUTTING EDGE MATERIALS

The materials used to manufacture the centralizer are at the forefront of engineered polymer technology. Extensive lab and real-world testing at pressure over temperatures in excess of 175 °C (350 °F) has shown that there is no concern with chemical attack or temperature degradation.