

## **Shuriken®** REAMER





#### **INNOVATION**

Our design engineers carefully analyze each driling application and develop practical and comprehensive solutions for even the most complex challenges.





#### **OUALITY**

Meticulous craftsmanship is one of our hallmarks. No product leaves our factory without passing some of the strictest quality control standards in the industry.





#### **SERVICE**

Our marketing teams and field engineers, with local knowledge and experience, offer one-on-one support to customers around the world.



BESTE offers a full line of fixed cutter bits and premium downhole drilling tools.



Matrix and Steel Body PDC Bits



Bi-Center



Mud Motor



Shuriken® Reamer



Stiletto® **Under Reamer** 



EXCITE® Circular Impact Accelerator .





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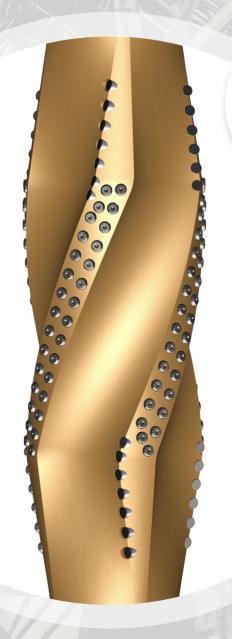
Chengdu Best Diamond Bit Co., Ltd. (BESTE)

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## Shuriken® REAMER

The BHA-driven solution to a smooth, stable wellbore













### Shuriken® REAMER

# Reduces drilling NPT and gives you a clean path to completion

Drilling highly reactive, unconsolidated, inter-bedded and similarly troublesome zones, especially with tortuous extended reach well paths, all-too-often induces non-productive time (NPT) to deal with stuck pipe and other wellbore instability issues. Project costs are further aggravated when post-drilling reaming runs are required to minimize tortuosity and condition the wellbore for the completion and production hardware.

With the uniquely engineered Shuriken® Reamer, BESTE gives you a durable and ultra-efficient tool that minimizes NPT and costs, while delivering a smooth and unobstructed wellbore to the completion team, generally without the need for any post-drilling remediation.

Featuring a proprietary forced balanced bi-directional cutting structure, the self-stabilizing reamer transfers more weight on bit than possible with any conventional BHA, which in tandem with optimized hydraulics, allows you to consistently drill ahead in the tightest well paths and at higher ROP. With its capacity to construct a clean, in-gauge wellbore while drilling the Shuriken® reamer mitigates the persistent risks of stuck pipe when rotating out of otherwise tight and highly restrictive holes. Above all, you are left with a stable and higher quality wellbore and one fully prepped for the unhindered running of casing, liners and completion tools. What's more, the Shuriken® Reamer is available in nonmagnetic and steel alloy materials, thus eliminating any concerns of interference with MWD/LWD tool responses.

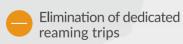
Clearly unlike any competitive tool the market has to offer, the truly innovative Shuriken® Reamer offers a host of novel and patent-pending features in blade design, cutting elements and cutting structure design.

A key differentiator of the Shuriken® Reamer is in its innovative dual action cutting structure; with an active cutting structure on the O.D. of the tool which is combined with a passive bidirectional cutting structure on the tapered sections of the tool blades. The uniquely shaped tungsten carbide inserts on the O.D. of the tool. along with their strategic positioning and placement within the blades, provide a better cutting and scraping action with less torque, less drag, more uniform wear and less insert breakage than comparable designs. The PDC cutters on the tapered blade sections of the tool are placed to provide a uniform cutting action, with varying back and side rakes to balance both the load and wear on the cutting structure.

The groundbreaking blade geometry provides complete PDC cutter exposure to the drilling fluid with much greater cleaning and cooling of the cutters when they are engaged. The unique blade geometry also improves fluid flow-by with a less restrictive flute design and reduced pressure drop across the tool. Obviously, better fluid flow translates into clean cutters, with reduced risk of bit balling and enhanced hole cleaning. The small taper angle at the ends of the blades, regardless of the tool size, greatly reduces the chances of hanging or ledging the tool. Unlike competitive tools on the market, the blades are fully spiraled on the OD of the tool providing full gauge coverage where it counts.

Minimal NPT while drilling and tripping



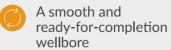




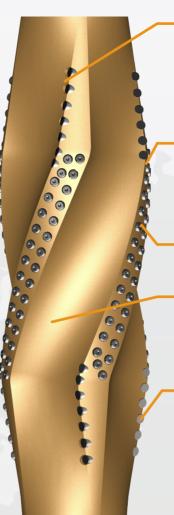
Faster drilling rates and Increased durability







The Shuriken® Reamer is available in nearly all targeted hole diameters and effective in any formation and hole condition.



Forced balanced PDC cutters provide uniform cutter wear and greater durability. Beste engineers adjusted the side and back rakes of individual PDC cutters to evenly distribute the work load and wear of individual cutters, regardless of their position on the blades. The results are significantly greater drilling efficiency and longer cutter life.



New dual-cutting carbide inserts increase the tool's OD scraping ability while lowering the BHA torque and drag. The new patented pending insert shape encourages greater drilling efficiency and is a more robust cutter that's less prone to breakage.



Full 360 degree coverage at OD provides optimum hole contact while ensuring maximum fluid bypass area.



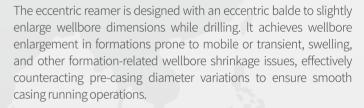
Unique blade geometry provides optimal cutter exposure to drilling fluid for improved cutter cooling and cleaning and extended cutter life. Specially shaped blade flute entrances increase the fluid flow and reduce the chances for tool balling.



Tapered blade configuration provides active and passive cutting action. Carbide inserts, strategically placed along the blade, provide a smooth, low torque cutting and scraping action against the wall of the hole. PDC cutters remain passive until unstable hole conditions demand they become active and engage the formation to provide a smooth, in-gauge wellbore.

The Shuriken® reamer family provides various configurations including concentric, eccentric, drill string type, and near-bit type to address diverse application requirements in drilling operations, based on the patented structural features of Shuriken® reamers:

The concentric reamer is utilized during the drilling process to maintain wellbore dimensions, providing a low-torque solution for addressing irregular wellbore issues such as key seats, protrusions, and ledges. It controls excessive impact of PDC cutters on the borehole, enhances wellbore quality, and maintains wellbore stability.



Both reamertypes deliver superior borehole quality tailored to specific operational priorities ,ensuring smooth drilling/tripping operations and trouble-free casing runs. By significantly improving drilling efficiency, reducing NPT, and mitigating operational risks, these reamers substantially lower overall drilling costs while optimizing well construction performance.

