



HDD FIXED-CUTTER PILOT TOOLING

PDC Pilot Bit Safety & Handling Guide

Practical controls for sharp cutters, heavy tooling, stored energy, pressurized fluid, connections, transport and storage.

Document scope

Safety and handling guide for the DRILLNOVA PDC pilot bit family represented by drawings D260410B, D260511B-1, D20260608B-1, D20260724B-1 and D260508B-1.

Model	Drawing OD	Overall length	Connection	Nozzles
4-3/4 in PDC Pilot Bit	120.65 mm	249.4 mm	2-3/8 REG pin	5 x 6 mm
5-1/2 in PDC Pilot Bit - 2-3/8 Connection	139.7 mm	253 mm	2-3/8 API REG	5 x 6 mm
5-1/2 in HDD PDC Pilot Bit - 2-7/8 Connection	139.7 mm	262.3 mm	2-7/8 API REG	6 x 4 mm
8-1/2 in HDD PDC Pilot Bit	215.9 mm	325.7 mm	4-1/2 REG	5 x 6 mm
10 in PDC Pilot Bit	250.8 mm drawing OD	410.7 mm	6-5/8 API REG pin	7 x 6 mm

Important: The supplied drawings define geometry, cutter references, nozzle arrangements and connections. They do not define universal operating torque, rotary speed, thrust, pullback, flow or pressure limits. Those values must be approved for the exact bit, rig, formation and bore plan.



1. Core safety rules

Competent personnel only	Installation, inspection and operation must be performed by trained personnel following the rig manufacturer, site and project procedures.
Sharp and brittle cutting elements	PDC cutters and edges can cause cuts and can be damaged by impact. Wear suitable gloves and eye protection; never use cutters as lifting or support points.
Heavy or unstable tooling	Bits can roll, tip or shift. Use rated lifting equipment, stable cradles and exclusion zones. Never place hands or feet beneath a suspended tool.
Stored mechanical energy	Prevent rotation, thrust, pullback and movement before approaching the tool. Apply lockout and site isolation procedures.
Pressurized drilling fluid	Never loosen nozzles or connections while pressurized. Isolate, bleed and verify zero pressure before work.
Thread and pinch hazards	Keep hands clear during alignment and makeup. Use controlled handling methods and tools intended for the connection.
Contamination and chemicals	Follow the drilling-fluid and thread-compound safety data sheets. Use suitable skin and eye protection.



2. PPE and work area

- [] Safety footwear, safety glasses and task-appropriate cut-resistant gloves.
- [] Hard hat and high-visibility clothing where required by the site.
- [] Face protection and chemical-resistant PPE when cleaning or handling fluids and compounds.
- [] Hearing protection in designated areas.
- [] A clean, well-lit and barricaded work area with a stable tool support.

3. Lifting and handling

- Determine the actual tool mass from shipping or manufacturing records; the supplied drawings do not state weight.
- Use lifting equipment and accessories rated above the verified load.
- Attach only to approved lifting points or use a documented cradle arrangement.
- Protect cutting elements, nozzles, threads and shoulders from sling or fork contact.
- Use tag lines where appropriate; keep personnel outside the suspended-load zone.
- Set the tool onto chocks or a cradle that prevents rolling and keeps cutters clear of the floor.

4. Pressure and energy isolation

- [] Stop the rig and circulation system using the approved shutdown sequence.
- [] Isolate power and prevent unintended rotation or axial movement.
- [] Bleed the fluid system and verify zero pressure at an approved point.
- [] Confirm the tool is mechanically supported before loosening a connection or nozzle.
- [] Do not use hands to search for a suspected high-pressure leak.



5. Transport, storage and preservation

Before transport	Clean and dry the bit. Fit connection protection. Secure loose components and document condition.
Packaging	Use a cradle or blocking that prevents rolling, blade contact and cutter impact. Restrain the tool for the expected transport loads.
Storage	Store indoors where practical, dry and stable, with identification visible. Keep the connection capped and cutters off the floor.
Corrosion control	Apply approved protection to susceptible metal surfaces without contaminating cutters, nozzles or sealing interfaces.
Return to service	Remove preservation material, clean the connection and nozzles, and complete the pre-use inspection.

6. Damage and incident response

- Stop work and isolate the system if the bit is dropped, struck or involved in an abnormal drilling event.
- Quarantine the tool and identify it as awaiting inspection.
- Record photographs, event details, operating data and affected components.
- Do not grind, weld, heat, straighten or repair a bit unless an approved repair instruction authorizes the work.
- Escalate cutter loss, body cracking, connection damage or repeated nozzle failure for engineering review.

Emergency priority

Protect people first. Follow the site emergency plan and obtain appropriate medical or emergency support before equipment recovery.



7. Safety FAQ

Can the bit be lifted by a blade or cutter pocket?

No. Use only the approved lifting or cradle method. Cutters and blades are not lifting points.

Can a blocked nozzle be cleared while connected to the pressurized system?

No. Isolate, bleed and verify zero pressure before inspection or removal.

Can a damaged PDC cutter be hammered back into position?

No. Impact can create additional damage and is not an approved repair method.

What torque should be used on the connection?

Use the approved connection and assembly procedure for the exact configuration. The supplied drawings do not specify makeup torque.

Can the bit be operated after being dropped?

Not until it has been quarantined, inspected and released under the applicable quality procedure.