



HDD FIXED-CUTTER REAMING TOOLING

PDC Reamer Safety & Handling Guide

Controls for sharp cutters, heavy tooling, suspended loads, stored energy, pressurized fluid, connections, transport and storage.

Document scope Safety guidance for the supplied PDC reamer family. Site rules, rig instructions and local law take precedence.

Model	Drawing	OD	Overall length	Connection	Nozzles
PDC Reamer 7-5-13D	D260318B-1	177.8 mm	389 mm	2-7/8 API REG BOX, both ends	7 x 8 mm (5 front + 2 back)
PDC Reamer 8-5-13	D260314B	203.2 mm	427.9 mm	2-7/8 API REG BOX, both ends	8 x 8 mm (5 front + 3 back)
PDC Reamer 9-5-13D	D260318B-2	228.6 mm	434.5 mm	2-7/8 API REG BOX, both ends	8 x 8 mm (5 front + 3 back)
PDC Reamer 10-5-13	D260314B-2	254 mm	455 mm	2-7/8 API REG BOX, both ends	8 x 8 mm (5 front + 3 back)
PDC Reamer 12-5-13D	D260314B-3	304.8 mm	495 mm	2-7/8 API REG BOX, both ends	8 x 8 mm (5 front + 3 back)
PDC Reamer 14-6-16D	D260314B-4	355.6 mm	914.9 mm	2-7/8 API REG BOX, both ends	12 x 8 mm (9 front + 3 back)
PDC Reamer 16-6-16D	D260314B-5	408 mm	940.9 mm	2-7/8 API REG BOX, both ends	12 x 8 mm (9 front + 3 back)
PDC Reamer 18-6-16D	D260318B-3	457.2 mm	964.9 mm	2-7/8 API REG BOX, both ends	12 x 8 mm (6 front + 6 back)
PDC Reamer 24-6-16D	D260819B-2	609.6 mm	1210 +/- 10 mm	4-1/2 IF BOX, both ends	15 x 10 mm (12 front + 3 back)
PDC Reamer 30-6-16D	D260820B-7	762 mm	1340 +/- 10 mm	4-1/2 IF BOX, both ends	24 x 14 mm (18 front + 6 back)

What the drawings verify

OD, overall length, connections, cutter references, nozzle arrangement and identified body features.

What the project must approve

Formation suitability, staging, rig compatibility, makeup procedure, operating limits and hydraulic plan.

Four-step document use

1 Identify	2 Match	3 Verify	4 Approve
Confirm model and drawing.	Compare the bore, rig and connection.	Inspect the delivered configuration.	Release only under the project plan.

Controlled-use notice: Verify the current drawing, delivered configuration and project approval before use. The supplied drawings do not state weight or universal torque, rotary speed, thrust, pullback, flow or pressure limits.



1. Critical hazards and controls

Sharp cutting elements	Wear task-appropriate gloves and eye protection. Do not grasp, lift or support the reamer by PDC cutters or blade edges.
Heavy and unstable tooling	Verify actual mass from shipping/manufacturing records; drawings leave weight blank. Use rated lifting equipment and a stable cradle.
Suspended loads	Establish an exclusion zone. Never stand beneath a suspended reamer or place hands/feet under it.
Stored mechanical energy	Prevent rotation, thrust, pullback and uncontrolled movement before approaching the assembly.
Pressurized fluid	Isolate, bleed and verify zero pressure before loosening any nozzle or connection. Never search for a leak with a hand.
Threads and pinch points	Use controlled alignment and approved tools. Keep hands clear during engagement and makeup.
Chemicals and contamination	Follow the safety data sheets for drilling fluid, cleaner, corrosion protection and thread compound.

Minimum task controls

- [] Competent, authorized personnel and an approved job procedure.
- [] Safety footwear, eye protection and suitable cut-resistant gloves.
- [] Rated lifting gear, verified load, inspected accessories and a stable support.
- [] Clean, well-lit work area with barriers and clear communication.
- [] Lockout/isolation and zero-pressure verification before intervention.

2. Lifting, transport and storage

Lifting and movement

- Obtain actual tool mass; do not infer it from diameter or drawing scale.
- Select lifting equipment and accessories with adequate rated capacity.
- Use approved lifting points or a documented cradle/sling method that cannot contact cutters, nozzles, threads or shoulders.
- Control orientation with tag lines where appropriate and keep personnel outside the drop zone.
- Set the reamer on blocking or a cradle that prevents rolling and keeps cutting elements clear of the floor.

Transport and storage

Before transport	Clean, dry and inspect. Cap both connections and secure loose items.
Restraint	Block and restrain the reamer for expected transport loads without loading cutters or nozzles.
Storage	Store dry, stable and identified, preferably indoors, with cutters clear of contact surfaces.
Corrosion protection	Use approved protection without contaminating cutters, nozzles, threads or sealing surfaces.
Return to service	Remove preservation materials and repeat identification, cutter, nozzle, body and connection checks.

Dropped or impacted tool

- [] Stop work and isolate the area.
- [] Quarantine and clearly identify the reamer.
- [] Record the event, orientation of impact and photographs.
- [] Obtain inspection and engineering disposition before reuse.

3. Isolation, prohibited actions and emergency response

Before inspection, cleaning or disassembly

- [] Stop the rig and circulation system under the approved sequence.
- [] Isolate power and control rotation and axial movement.
- [] Bleed fluid pressure and verify zero pressure at an approved point.
- [] Mechanically support the reamer and adjacent components.
- [] Confirm the work area and communication method before loosening components.

Prohibited actions



- Do not lift from cutters, blades, nozzle ports or unapproved features.
- Do not loosen a nozzle or connection while pressurized or unsupported.
- Do not strike cutters or use uncontrolled heat to free a connection.
- Do not grind, weld, straighten, drill or modify the body without an approved repair instruction.
- Do not return a dropped, cracked, washed-out or connection-damaged reamer to service without release.

Safety FAQ

How is the correct lifting capacity selected?

Use the verified actual mass and the site lifting plan. The supplied drawings do not state weight.

Can a blocked nozzle be cleared on the drill string?

Only after the system is isolated, depressurized, mechanically supported and the approved procedure permits the work.

Can operating torque be taken from connection size?

No. Connection size alone is not an approved operating or makeup torque.

What happens after a cutter is missing?

Stop, quarantine and obtain engineering disposition. Account for loose components under the site recovery plan.

Pre-lift briefing record

Control	Verified information / evidence	Initials
Actual mass and centre of gravity		
Lifting accessory IDs and ratings		
Attachment / cradle method		
Travel path and exclusion zone		
Signal person and communication		

Quarantine / return-to-service record

Date	Reason / observed condition	Isolation or corrective action	Authorized release

Emergency priority	Protect people first. Follow the site emergency plan and obtain medical or emergency assistance before equipment recovery.
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