

PDC REAMER OPERATING GUIDE

Field-use guidance for selection, preparation, installation, reaming and post-run care.

IMPORTANT

This guide does not replace the approved bore plan, rig manual, connection specification, product drawing, job hazard analysis or site procedures.

1. Confirm the application

Identify formation type and variability, pilot bore condition, planned final diameter, reaming sequence, bore profile, fluid program and expected returns.

2. Verify tool selection

Confirm nominal diameter, overall length, connection at both ends, nozzle configuration and cutting structure against the approved drawing and purchase order.

3. Check rig compatibility

Verify rig pullback and torque capacity, drill string connection, handling equipment, swivel and downstream components. Obtain project engineering approval where required.

4. Inspect before assembly

Clean the tool. Inspect PDC cutters, gauge area, nozzles, body, welds, fluid passages and both threaded connections. Remove damaged tools from service.

5. Prepare the connection

Use clean, undamaged mating threads and the approved thread compound. Make up the connection using the manufacturer-approved procedure and torque value.

6. Confirm fluid delivery

Verify all nozzles are installed, unobstructed and oriented as specified. Test circulation at a safe pressure before entering the bore.

MODEL AND NOZZLE QUICK REFERENCE

Model range	Diameter	Nozzle configuration
7-5-13D	7 in / 177.8 mm	7 x 8 mm; 5 front + 2 back
8-5-13 through 12-5-13D	8 in to 12 in	8 x 8 mm; 5 front + 3 back
14-6-16D and 16-6-16D	14 in and 16 in	12 x 8 mm; 9 front + 3 back
18-6-16D	18 in / 457.2 mm	12 x 8 mm; 6 front + 6 back

REAMING OPERATION

Controlled operation protects the bore, tool, drill string and equipment.

1	Establish circulation	Start circulation in accordance with the approved fluid plan and verify returns before applying significant rotation or pullback.
2	Engage gradually	Begin rotation and pullback smoothly. Avoid impact loading, abrupt direction changes and uncontrolled acceleration.
3	Maintain stable loading	Use the approved operating window. Monitor torque, pullback, rotation, fluid pressure/flow, returns, vibration and rate of progress.
4	Manage cuttings transport	Maintain effective fluid delivery and avoid advancing faster than cuttings can be removed. Poor returns can indicate blockage, losses or inadequate transport.
5	Respond to abnormal conditions	Stop and investigate sudden torque increase, unstable pullback, severe vibration, pressure change, loss of returns, unusual noise or stalled progress.
6	Complete the pass	Reduce load before exiting. Maintain control until the tool is clear and secured for handling.

POST-RUN CARE

CHECK: Clean the body, cutter pockets, gauge area, nozzles, fluid passages and both threaded ends.

CHECK: Inspect cutters for chipping, loss, cracking or abnormal wear. Inspect gauge protection and body erosion.

CHECK: Check all nozzles and confirm no blockage, washout, looseness or impact damage.

CHECK: Inspect threads and shoulders. Refit clean thread protectors after applying the approved corrosion protection.

CHECK: Record the model, drawing number, run details, observed wear and disposition: return to service, repair or quarantine.

CHECK: Store in a stable cradle or rack in a clean, dry area protected from impact and unauthorized handling.

OPERATING LIMITS

The supplied drawings do not state RPM, torque, pullback, flow, pressure or make-up torque. Obtain these values from the approved product data, rig/equipment manufacturer and project engineer.