Hydrocyclone Cut Size — Field Reference Table

Cyclones have no moving parts: feed head is the machine. Cut point depends on cone diameter, feed head and mud properties — the ranges below are the accepted field values for water-based mud at design head.

Unit	Cone size	Cut point (D50 region)	Field note
Desander	6–12″	~40–74 µm	High volume per cone; takes the coarse fraction the shaker passed
Desilter	4″ (and smaller)	~15–40 µm	Many cones in parallel; the fine-solids workhorse
Mud cleaner	4″ cones over a fine screen	Cone cut ~15–40 µm; screen returns barite	Use on weighted mud — the screen decides whether you keep barite
Decanter centrifuge	—	~2–7 µm	The finest mechanical cut; downstream of the cones

Operating essentials (from the SC DrillTech equipment library)

Parameter	Target	Why it matters
Feed head	≥ 75 ft	Below ~75 ft the cone can’t form an air core. h (ft) ≈ 19.2 × P (psi) ÷ MW (ppg) — verify with a gauge at the inlet manifold.
Bank sizing	100–125% of circulating rate	Process the full flow with margin; starved banks bypass solids.
Healthy discharge	Umbrella spray + air core	Rope discharge = overload; dry apex = lost underflow. Both send solids downstream.

Full guide: scdrilltech.com/equipment/desander-desilter-hydrocyclones.html · comparison: /centrifuge-vs-hydrocyclone.html