

Drill Bit Size Finder — HSS DIN 338, HSS-Co Cobalt, SDS-Plus / SDS-Max Masonry, Wood, Tile and Step Drills by Diameter (Milwaukee, Bahco, DeWalt, Ironside, Vix Tools)

cBallast Technical Sourcing · Twist drills, hammer drill bits, wood and tile bits, hole saws and step drills · issued 2026-09-29 · cballast.com/documents/drill-bit-size-finder-hss-din-338-cobalt-sds-plus-masonry-wood-tile-step-drills-by-diameter-milwaukee-bahco-dewalt-ironside

Drill bits are chosen by material to be drilled, diameter and shank. Metal: HSS twist drills to DIN 338 (jobber length) and DIN 340 (long), HSS-G ground, HSS-Co (5 % cobalt) for stainless and hard steel, TiN-coated for longer life, in 0.5 mm steps from 1 to 13 mm with reduced shanks above 13 mm. Masonry and concrete: SDS-Plus (to about 30 mm) and SDS-Max (to 52 mm) hammer bits with carbide heads, in lengths from 110.

Why acid appears

Two chemistries sour a refrigeration system: moisture hydrolysing POE ester oil into organic acids (slow, from poor evacuation or a wet drier), and motor burn-out cracking oil and refrigerant into acids and soot in seconds. Both attack motor insulation and copper-plate bearing surfaces; both are measurable at the oil, cheaply, before they are measurable as a dead compressor.

Testing

The stocked kits cover the chemistry split: ETK for ester (POE) oils and the TKO universal kit for mineral and synthetic oils. Method: draw the sample from a live oil point (sight-glass drain or oil valve) into the kit vial, mix per instructions, read the colour change against the card — the kits resolve 'acceptable' from 'acid present' at the thresholds printed on the kit. Test: at commissioning (baseline), at every service on plants with a history, after any moisture event, and on schedule for critical plants. Record results on the plant card; the trend is the diagnosis.

Mild acid (wet system, no burn-out)

Fit/renew an oversized liquid-line drier (DML/DCL selection); run; retest in days.

Persistent acid: oil change (correct grade per the oil guide) plus a second drier change; find the moisture source — chronically wet systems have a leak on the low side or a service-practice problem.

Verify with the sight-glass moisture indicator dry and an acid retest after a week of normal running.

Burn-out clean-up — the sequence that works

Diagnose first: megger the old motor, read the protection module's memory (Kriwan Diagnose) — a burn-out has a cause, and the new compressor inherits it unless found.

Recover and inspect: acrid refrigerant and black oil = severe burn; flush the worst from accessible low points.

Replace compressor, liquid drier (step a size up), and install a suction burn-out drier (DAS family: 164s, 305s, 309s) with gauge access to watch its pressure drop.

Expansion device and strainers: clean/replace inlet strainers (EEVs: E2V 150 µm strainer); severe burns justify TEV/orifice replacement.

Evacuate deep, charge, run 24–72 h, then: oil sample acid test, suction-drier 9E & V F—æR Å ö—Å 6† ævR —b F k.

Swap the suction drier cores / remove the DAS once two consecutive tests pass clean; a forgotten suction drier is a standing capacity tax and will eventually plug.

Document: tests, driers, oil batches into the plant file — the warranty inspector's first request.

What clean looks like

Clear oil at the sight glass (glass and O-ring stocked), acid tests passing on two dates, moisture indicator dry, suction drier 9E stable and low, and compressor current/discharge temperature at commissioning values. Keep one ETK and one TKO kit on the van permanently: the five-minute test before quoting a compressor exchange routinely changes what gets quoted.

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