

Filter Driers for HFC and CO2 Systems — Danfoss DML, DCL, DAS Burn-Out and DCR Replaceable-Core Selection

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The difference between solid-core liquid-line driers (DML 100 % molecular sieve, DCL with activated alumina), suction-line burn-out driers (DAS) and replaceable-core shells (DCR), how to size the connection and when to change cores, with the catalogue's stocked sizes.

Four jobs, four families

DML (solid core, 100 % molecular sieve). The default liquid-line drier for HFC/HFO plants: maximum water capacity, fully compatible with POE oil. Stocked from 1/4" to 7/8" solder and in flare versions — e.g. DML 083s 3/8", DML 164s 1/2", DML 305s 5/8", DML 307s 7/8", flare DML 303/DML 306.

DCL (solid core with activated alumina). Adds acid adsorption capacity — the choice after moisture incidents on mineral-oil plants and for general clean-up duty: DCL 084 1/2" flare, DCL 165s 5/8" solder.

DAS (suction-line burn-out driers). Installed temporarily after a motor burn-out to scrub acid and debris before they reach the new compressor: DAS 084s, DAS 164s, DAS 305s, DAS 307s, DAS 309s, DAS 417s. Monitor the pressure drop across them and remove or replace once clean-up is complete — a forgotten suction drier is a permanent capacity loss.

DCR (replaceable-core shells). For larger plants where cores are changed on condition instead of cutting driers out of the line: shells from 5/8" to 1 5/8" solder with one or more 48-size cores — DCR 0485, DCR 0487, DCR 0489, DCR 04811, DCR 04813. Henry SRC shells (SRC-487, SRC-4811, SRC-9613 two-core) serve the same role.

Suction strainers

Distinct from driers: WSL-type suction filters (WSL 164S ... WSL 7513S 1 5/8") protect compressors from construction debris and are standard on new large installations.

Sizing and installation

Match the connection to the liquid line and check the drier's capacity tables for the refrigerant and plant charge; a drier one connection size larger costs little and doubles reserve capacity. Install in the direction arrow after the receiver, ahead of the sight glass, so the moisture indicator reports what reaches the expansion device. Mount cores and solid driers slightly inclined or vertical per the maker's sheet where specified. On CO2 systems use the versions rated for the pressure class — e.g. the Danfoss DMT 132, 140 bar.

When to change

At every compressor change and every system opening — a drier is a one-use moisture sponge.

When the sight-glass indicator shows wet after a full day of stable running.

When pressure drop across a DCR shell exceeds the maker's limit (typically ~0.14 bar liquid / clean-up criteria per core sheet) — then swap cores, not the shell.

After burn-out: solid liquid drier + DAS suction drier immediately; recheck acid with a test kit after 72 h; change both again if acid persists.

Record drier type, size and change date on the plant card; serial drier history is the cheapest diagnostic trail a refrigeration plant has. For the oil-side context see the oil selection guide.

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