

10 inputs determine the right filtration.

A distributor-facing pre-quote checklist. If the customer answers most of these at the first call, the second call is the quote.

01 What ISO 8573-1 cleanliness class does the application actually need?

The class determines the stack. **Class 1 oil (liquid only)** = 0.01 micron coalescing. **Class 0 oil (liquid + vapor)** = coalescing + carbon in series. **Sterile-grade** = full medical or pharma stack with sterile filter at the end. Customers who say "oil-free air" without citing a class usually mean Class 1 — confirm before quoting.

02 What's the system SCFM and operating pressure?

Sizes every housing in the train. **Oversize is fine** (lower pressure drop, longer element life); undersize is the consistent failure mode — elements blind early, pressure drop spikes, downstream tools starve. Verify pressure rating against actual system pressure including any boosters.

03 What's the upstream filtration today — and what's the current element-replacement cadence?

Coalescing elements lasting 3 months instead of 12 means the particulate pre-filter is missing or undersized. Walk the existing train before quoting; the right fix is usually adding the missing pre-stage, not replacing the symptom-stage with a premium brand.

04 Is there a regenerative desiccant dryer anywhere in the system?

Desiccant beds shed fines into the downstream air — **a particulate after-filter (1 micron) immediately downstream of every desiccant install is mandatory.** Refrigerated dryers don't shed; refrigerated installs only need pre-filtration, not after-filtration.

05 Is the system feeding a medical-air outlet under NFPA 99?

Different product, different code, different validation. Medical-air requires a sterile filter + CO/CO2 monitoring + alarm panel + dedicated medical-air compressor. **NFPA 99 installs are inspection-driven** — the documentation matters as much as the hardware.

06 Is the compressor indoors, near occupied space — offices, exam rooms, classrooms above or adjacent?

That's the qualifier for a filter-silencer at the intake. Bare intake filters on a piston compressor in a mechanical room **routinely test at 95-100 dBA** at three feet — past the OSHA hearing-conservation action level. A filter-silencer knocks 10-15 dB off the intake contribution at the source.

07 What's the compressor brand/model/HP and when was the air/oil separator last replaced?

For rotary-screw fleets, the separator is the anchor of the annual service kit. **Cross-reference to KELTEC is typically 40-60% of OEM list pricing** with same-day delivery. Bundle separator + oil filter + intake filter + oil onto one PM visit.

08 Does the customer have a differential-pressure gauge across each filter housing?

DP is the only honest indicator for element replacement on every stage except carbon. **Replace at 8-10 PSI DP, not on calendar guess.** Retrofit DP gauges to existing housings as a paid service for customers running calendar replacement.

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Where does the filter-sump condensate discharge — floor drain, sewer, or oil-water separator?

Oil-bearing condensate to sanitary sewer is a regulatory violation in most jurisdictions (\$25K-50K/day EPA fines). Every filter housing collecting liquid needs an automatic drain routed to an OWS, OWS effluent to permitted discharge.

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Is the install indoor heated, or outdoor / unheated mechanical room?

Outdoor or freezing installs need heated housings or insulated enclosures — **water in the sump turns to ice, blocks the drain, and over-pressures the housing**. Outdoor coalescing without freeze protection ruptures during the first cold snap.