The 6 types · side-by-side

Distributor-facing reading. Each row gives best-for, key trade-off, capacity, price band, and how many of SPC's tier slots carry an option at that product type.

PRODUCT TYPE	BEST FOR	KEY TRADE-OFF	TYPICAL CAPACITY	PRICE BAND	BRANDS SPC CARRIES
Rotary Screw — Fixed-Speed CONTINUOUS PLANT DUTY · STEADY LOAD · ~4 CFM/HP	**The industrial workhorse.** Production-line air, automotive plants, plastics, woodworking, food packaging (non-direct-contact). Any operation that runs air all day at a roughly steady draw within ~30% of rated capacity. The default compressor for industrial duty when demand stays close to rated.	WASTES ENERGY ON SWINGING DEMAND An unloaded motor still draws 25-40% of full-load power without producing air. If demand swings wider than ~30% of rated, the unloaded cycles burn $4-8K/year of electricity making nothing — that's the case for a VFD, not fixed-speed.	5 – 500+ HP · 20 – 2,000+ CFM belt-drive (stocked) · direct-drive (lead-time)	$$ – $$$	5 / 5 · DEEP
Rotary Screw — VFD VARIABLE DEMAND · 25-50% ENERGY SAVINGS · SINGLE-SETPOINT PRESSURE	**Multi-shift and batch plants.** Any facility where air demand swings hard across the day — multi-shift manufacturing, batch chemical, auto assembly, food packaging, plastics with cycling presses. Holds pressure on a single setpoint instead of drifting across a band, which is a second energy dividend on top of matched-demand savings.	PREMIUM UPFRONT · ELECTRONICS TO FAIL Roughly $2-5K premium over fixed-speed, repaid in 1-3 years on energy where demand actually swings. Drive cabinet derates above 104°F ambient. Multi-VFD plants need harmonic mitigation (line reactor or active filter) to stay inside IEEE 519.	5 – 450+ HP · 20 – 1,800+ CFM induction motor · permanent-magnet (premium tier)	$$ – $$$	2 / 5 · SOLID
Reciprocating INTERMITTENT SHOP DUTY · 60-70% LOADED · FIELD-REBUILDABLE	**Shops, body work, small fabrication.** Two-bay auto shops, body shops, small machine shops, agricultural buildings, residential garages, equipment-rental yards. The entry point of the category — lowest upfront cost, simplest mechanism, common-parts rebuild. Two-stage cast-iron Quincy QR-25 class is a 15-year machine when the duty cycle stays honest.	NOT CONTINUOUS DUTY · LOUD Cast-iron pump capped at ~60-70% loaded time per hour; run harder and it overheats, the rings glaze, valves cook, and rebuild interval collapses. 80-90 dB versus rotary screw's 60-75. If the customer's real duty is continuous, recip is the wrong tool.	Fractional HP – 30+ HP · 1 – 120+ CFM single-stage to ~175 PSI · two-stage to ~200 PSI	$ – $$	5 / 5 · DEEP

Oil-Free ISO 8573-1 CLASS 0 · SCREW / TOOTH / SCROLL	**Food, pharma, medical, electronics, fine finishing.** Any application where compressed air touches product, package, or process gas directly. Pharma fill-finish, food packaging blowoff, semiconductor wafer handling, dental and lab air, automotive paint, breathing-air supply. The architectural answer to "no oil allowed" — certified Class 0, not "low oil."	2-3× THE COST · STILL NEEDS TREATMENT Roughly 2-3× the price of an equivalent oil-lubricated unit; ~5-10% lower full-load efficiency from tighter tolerances and extra cooling. Oil-free at the source does NOT dry the air or remove particulate — downstream dryer + filtration is still the full stack.	1.5 – 500+ HP · 4 – 2,000+ CFM scroll · rotary tooth · two-stage screw	$$$	1 / 5 · ELGI
Portable / Contractor WHEELED OR SKID · 120V / 240V / GENERATOR / OFF-GRID	**Take the air source to the work.** Framing and roofing crews, mobile auto service, body-shop frame work, agricultural service, disaster response, equipment-rental fleets. Reciprocating mechanics on a wheeled or skid frame — sized small (fractional HP to ~10 HP) for the air budget of one crew.	OFF-GRID NEEDS THE DRYER PAIRING Most distributors quote the compressor and forget the dry-air problem. No-power sites need a deliquescent dryer paired with the compressor — passive vessel, dry-desiccant tablets, no electricity. The off-grid stack is moving compressor + passive dryer; ignore that and the customer can't run paint or finish work on the job.	Fractional HP – 10 HP · 2 – 35 CFM hand-carry · wheeled · skid (forklift)	$ – $$	1 / 5 · CASTAIR ONLY
Duplex / Triplex System TWO OR THREE PUMPS · SHARED RECEIVER · LEAD-LAG STAGING	**Uptime is the priority.** Hospitals on NFPA 99 medical air (code-required redundancy), continuous- process chemical and semiconductor, automotive paint and finishing on JIT contracts, food and beverage packaging, plants outgrowing their original single compressor. When a day's air outage costs more than the second pump.	SIZE FOR ONE-PUMP-OUT, NOT NAMEPLATE Duplex with both pumps at 100% of demand is not redundant — it's just two compressors. Quote duplex sized so a single pump covers full demand (or triplex so two pumps do). Shared receiver goes against COMBINED output (4-6 gal/CFM combined); undersized tank short-cycles the lead regardless of how clever the stager is.	10 – 60+ combined HP · 35 – 200+ combined CFM lead-lag staging · alternating-lead wear balancing	$$ – $$$	1 / 5 · CASTAIR

Reading the brand bench column — the bar shows how many of SPC's tier slots (Industry Leader · Emerging · Economical · adjacent) carry an option at that product type. A deep bench means a price-driven and a spec-driven option both close cleanly; a narrow bench means the available brands map closely to the technical requirements and the comparison stops being a tier choice. Generation has SPC's deepest brand bench in the whole system on the reciprocating and fixed-speed-screw rows; the bench narrows deliberately on oil-free (Class 0 architecture has real engineering content that economical-tier makers don't deliver reliably) and on portable (most contractor portables in the field are Castair-class regardless of badge).