KNOKOO Delivers High Quality Fume Extraction System Solutions for Digital Printing and Signage Workshops

Shenzhen, Guangdong Jun 8, 2026 (Issuewire.com**)** - Inside a busy 350-square-meter print shop overseas, the hum of wide-format machines runs from morning to night. Three large UV flatbed printers lay down vivid graphics on rigid boards, two eco-solvent photo machines turn out banners and vehicle wraps, and a pair of DTF (Direct-to-Film) garment printing lines push apparel transfers through heat-curing ovens. The operation looks modern and orderly on the surface, yet a closer look reveals an issue familiar to many digital print houses: a faint chemical haze near the printers, fine powder drifting around the curing stations, and operators rubbing tired eyes after long shifts. To bring the workshop back into balance, the plant manager turned to digital printing and advertising signage fume purification solutions developed by Shenzhen Knowhow Technology Co., Ltd., a Shenzhen-based manufacturer focused on the research, development, production, and sale of fume extraction equipment for welding, electronics manufacturing, laser processing, and related industrial fields.

A Workshop Caught Between Productivity and Air Quality

Digital print production has grown increasingly sophisticated, but the by-products of high-throughput printing remain a real concern. In this particular facility, three pain points stood out.

The first was dry particulate emission from the DTF curing process. When printed films coated with hot-melt adhesive powder enter the high-temperature oven, the circulating hot air causes part of the powder to vaporize, generating a dense, fine, dry smoke. Left uncaptured, those micro-particles drift through the shop, settle on surfaces, and degrade overall air quality.

The second was chemical odor build-up. UV inks release volatile organic compounds (VOCs) at the moment of LED-UV curing, and the eco-solvent photo machines emit a lighter, but still noticeable, level of solvent vapor as the inks dry. Even so-called "mild" or "eco" solvent inks, under continuous operation in a closed workshop, produce trace organic emissions that accumulate over time and contribute to complaints of dry eyes and throat irritation.

The third was equipment contamination. Suspended micro-dust tends to settle on the precision linear rails and printheads of digital machines. Once that happens, mechanical wear accelerates and printheads clog more often, both of which threaten color registration and print sharpness — the very qualities the workshop sells.

Why a Distributed Capture Strategy Made Sense

Because the print floor combines several stations, non-combustion materials, dry powder emissions, and gaseous odors, KNOKOO engineers recommended a distributed, source-capture approach rather than a single centralized system. Localized purifiers placed directly at the emission points are generally more efficient for this kind of mixed-process environment, and they keep contaminated air from crossing the workshop before treatment.

The recommendation also reflected a practical view of "eco" inks. Although their odor is significantly lower than older solvent formulas, the heated curing stage still releases trace VOCs in machine-dense, enclosed rooms. Pairing each printer with localized extraction — or at minimum ensuring strong directional airflow — remains an important safeguard for respiratory health and for meeting modern environmental production standards.

For clients with more demanding processes, the same equipment series can be extended with specialized oil-mist pre-filters to handle high-concentration aerosols from oil-based inks. That flexibility is part of why KNOKOO is recognized as a one-stop industrial purification solutions provider serving customers in different print and manufacturing segments.

Equipment Configuration on the Print Floor

The deployed system used two KNOKOO models working in coordination.

Two FES600 industrial fume extractors were connected via heat-resistant ducting directly to the exhaust ports of the two DTF curing ovens. With strong negative pressure, they pull thermal smoke straight from the source before it can disperse into the room.

Three FES150 compact fume extractors were installed behind the three UV flatbed printers, each equipped with a wear-resistant extraction arm positioned close to the printhead area. Their job is to capture the chemical odor released during the brief, intense UV curing flash.

This portable, modular configuration reflects KNOKOO's positioning as a one-stop portable fume extractor manufacturer: customers can scale capacity station by station, instead of redesigning an entire ventilation network.

Inside the Multi-Stage Filtration

Each unit on the floor runs the same multi-stage filtration logic, with the option to customize specific layers when the process calls for it.

The pre-filter stage physically intercepts airborne fibers and larger adhesive powder particles. In workshops dealing with oil-based inks or condensed oil mist, this layer can be upgraded to a specialized metal-mesh oil-mist filter to handle aerosol loads.

The H13-grade glass-fiber HEPA layer captures 99.97 percent of dry digital dust down to 0.3 microns,

preventing fine particulate from accumulating around the machines.

The deep activated carbon stage is filled with high-iodine-value columnar carbon, which adsorbs the molecular-level chemical odors and VOCs released by UV inks and eco-solvent evaporation.

Together, these stages address dry particulate and gaseous pollution in one airflow path — a structure typical of high quality fume extraction system solutions designed for mixed-emission workshops.

Measured Results After Commissioning

After installation and a stabilization period, sampling and on-site monitoring produced clear figures.

VOC odor removal reached 92 percent. The strong UV-ink and solvent smell that had defined the workshop was no longer noticeable at operator stations.

Particulate capture from the DTF ovens reached 99.9 percent at the source, keeping fine dry smoke out of the general air.

Noise at operator positions stayed between 55 dB and 70 dB even with all printing and purification equipment running at full load — well within a comfortable range for a busy production floor.

Maintenance load on the printers themselves dropped as well. With fewer airborne particles settling on rails and printheads, cleaning cycles became less frequent and unplanned downtime decreased. Effective production capacity across the workshop rose by roughly 11 percent, a direct return on the air-quality investment.

The Company Behind the System

Shenzhen Knowhow Technology Co., Ltd. (KNOKOO) is a professional manufacturer based in Shenzhen, China, focused on fume extraction equipment for industrial environments. Its product range covers soldering, laser, and printing applications, and the company is recognized in export markets as a China leading industrial fume extractor manufacturer and a China top high quality smoke purifier supplier. Beyond the digital printing case described here, KNOKOO also serves the electronics assembly sector as a China soldering fume extractor solution provider, and supports smaller production cells with compact, mobile units typical of a top industrial compact fume extractor company.

The company's approach is built on three commitments that show up in projects like this one: reliable engineering with low-noise and energy-efficient operation, strict quality control across production batches, and a customer-centric service model that includes site-specific customization and ongoing technical support. Products are shipped to clients in a range of overseas markets, where the same distributed-capture logic is adapted to local processes and workshop layouts.

A Cleaner Path Forward for Digital Print Production

Digital printing and signage manufacturing continue to expand, driven by short-run customization, faster turnaround expectations, and a growing focus on workplace health and environmental compliance. As regulators tighten indoor air standards and brands scrutinize their suppliers' production conditions, fume extraction stops being optional and becomes part of the production system itself. Source-capture solutions like the one deployed here illustrate how targeted engineering can improve air quality, protect expensive print equipment, and lift output at the same time.

For more information on KNOKOO products, configurations, and industrial purification services, visit https://www.knokoo.com/.

Media Contact

Shenzhen Knowhow Technology Co., Ltd.

*********@knokoo.com

https://www.knokoo.com/

Source : Shenzhen Knowhow Technology Co., Ltd.

See on IssueWire