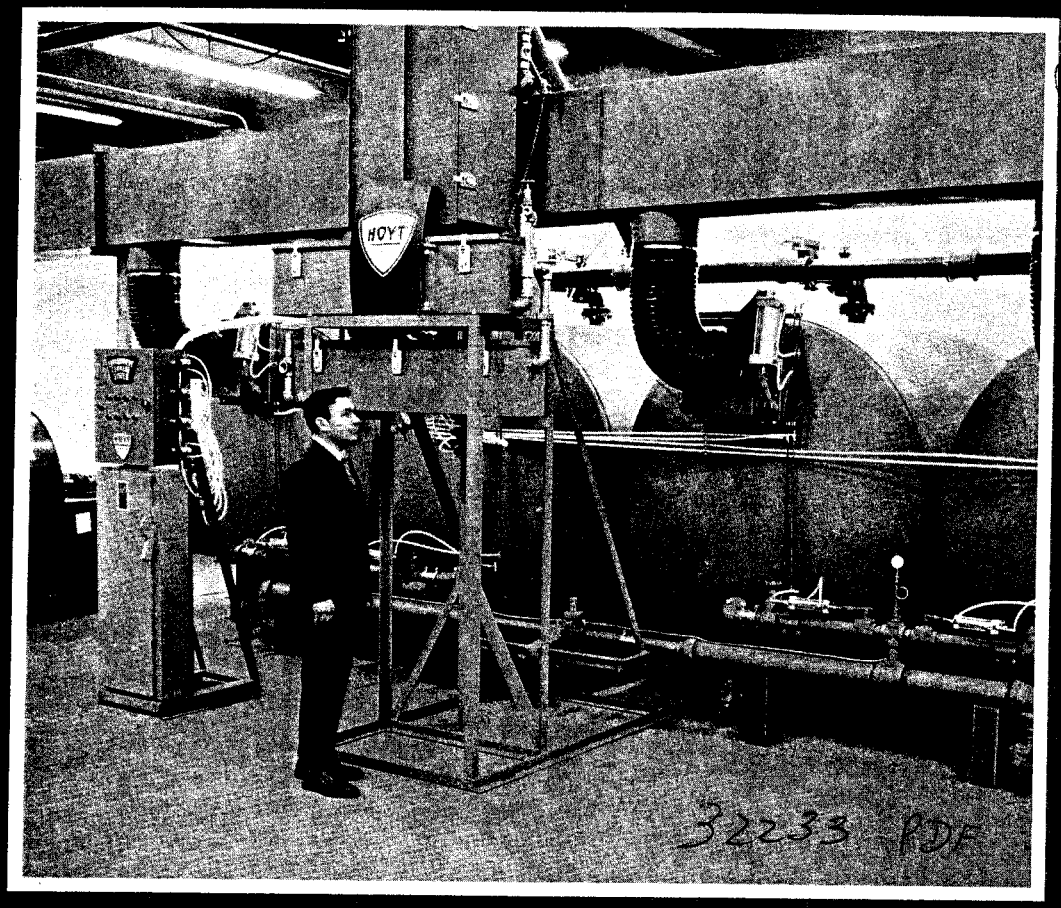


POUR YOUR SOLVENT EXPENSE BACK INTO THE BUSINESS. AND GET RID OF A HAZARDOUS POLLUTANT.

Industry takes a new look at its use of solvent.

Solvent can no longer be dismissed as an expendable processing material — allowed to escape as vapor into the in-plant atmosphere, pushed up the stacks or piped to drain as waste. Industry's need to recover solvent involves more than compliance with local, state and federal regulations relating to solvent-laden air as an employee health and safety hazard. The rising cost of solvents — the uncertainty about future solvent supply — has made it necessary for manufacturers to get maximum solvent mileage, simply as a matter of sound production economics.

Hoyt takes over the total solvent vapor problem for you.

Regardless of your plant size, product type or the volume of solvent throughput your production processes require — Hoyt Manufacturing Corporation provides the complete evaluation, design, engineering and fabrication capability to provide exactly the right system for recovering solvent, solvent mixtures or treated solvents.

Your system is supplied complete — ready for hook-up to your ducts and services, with adsorption/desorption tanks, automatic-cycle controls, instrumentation, blower and motor, pneumatic valves, condenser, decanter — and distillation unit if required. Hoyt will also assist in system start-up and test runs.

Hoyt's pilot system will prove itself before you purchase.

Some manufacturers prefer to conduct their own preliminary investigation into the feasibility of solvent recovery in their plant — to prove conclusively that a scale-up to a large-capacity Hoyt recovery system is practical and cost-effective for their operations. Hoyt can set you up to do trial-run documentation, without significant capital investment. You can lease compact, stand-alone, highly mobile Hoyt pilot units that are readily set up at any solvent vapor emission point in your plant. A pilot installation usually requires a relatively short trial run to prove out the efficacy and economics of moving up to a larger, permanent installation. It also provides valuable data for designing an optimum system, tailored exactly to your plant's requirements.

Hoyt also maintains complete solvent-recovery pilot unit facilities at its main manufacturing plant at Westport, Mass. You can ship us a drum of solvent, solvent mixture or treated solvent. Hoyt will process its vapor, recover it as a liquid, and send you documented samples so that you can verify the chemical integrity of your recycled solvent.

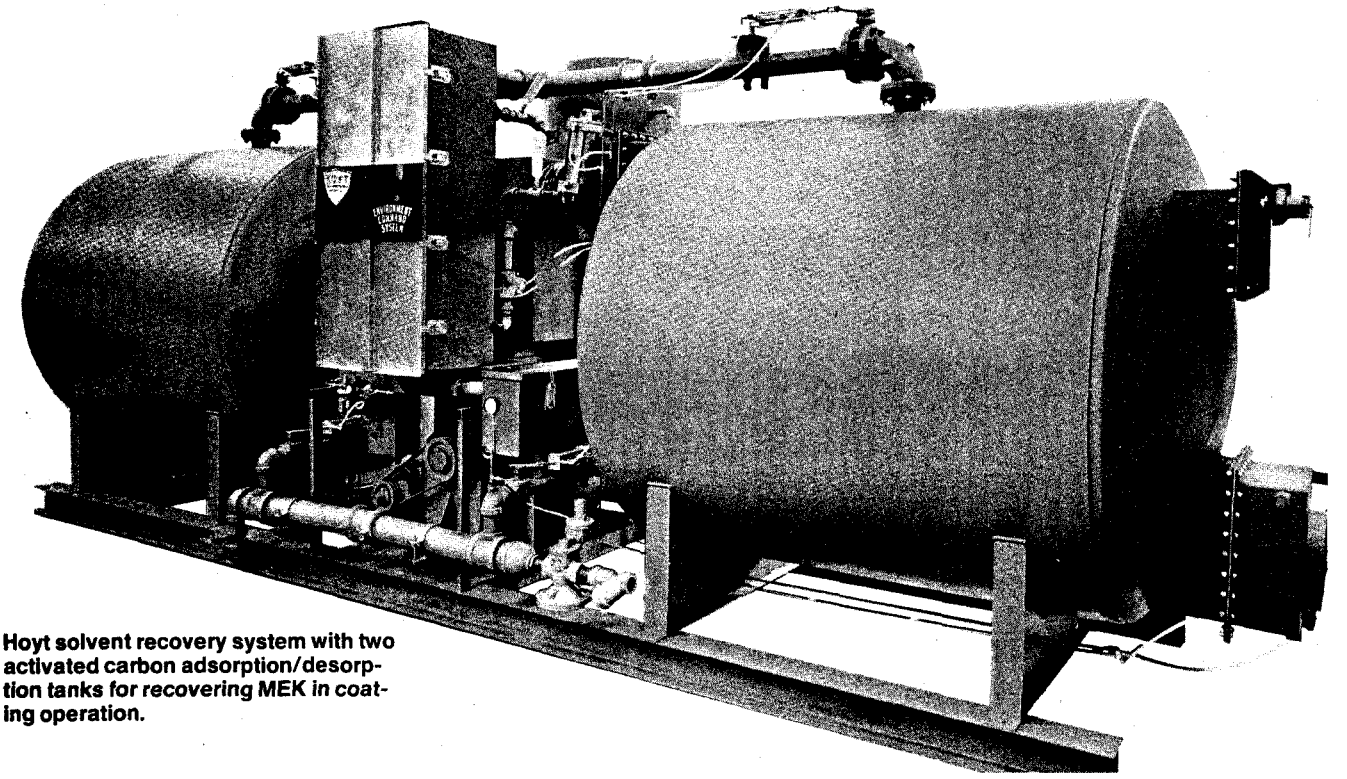
Recover 85 to 95% of solvent usually lost by evaporation.

The Hoyt solvent recovery system can return to your production line 85 to 95% of the solvent that evaporates at emission points throughout the plant. With savings in solvent of this magnitude, the return in solvent cost savings can amortize the full cost of the unit — including services expense — in less than a year. Some manufacturers have reported total payback on their Hoyt recovery system in as little as nine months.

By greatly extending solvent life and reducing solvent inventory required to maintain or increase production — the Hoyt system simplifies solvent purchasing, handling, storage and disposal.

Activated carbon adsorption gives continuous automatic solvent recovery.

In the typical Hoyt system, an activated carbon bed is mounted in one or more processing tanks which serve the function of adsorption and desorption units. Programmable timing controls provide continuous, automatic adsorption and desorption, which can be coordinated with any equipment operation schedule, production shift or work week. The adsorption and desorption cycles can be programmed by means of automatic monitoring and sensing of solvent vapor in the incoming airstream. Constant attention by an operator is not required, and maintenance is minimal. During operation, vapor-laden air from solvent emission points is ducted into the first tank for a preset adsorption period. This unit shuts down automatically before full carbon-bed saturation is reached, to assure optimum removal of vapor from the airstream and to



Hoyt solvent recovery system with two activated carbon adsorption/desorption tanks for recovering MEK in coating operation.

prevent vapor from reentering the in-plant environment.

After the adsorption cycle is completed, the first tank immediately shifts to the desorption mode and low-pressure steam is passed through the saturated carbon bed. The resulting steam/solvent distillate then travels through a water-cooled condenser and into a separator.

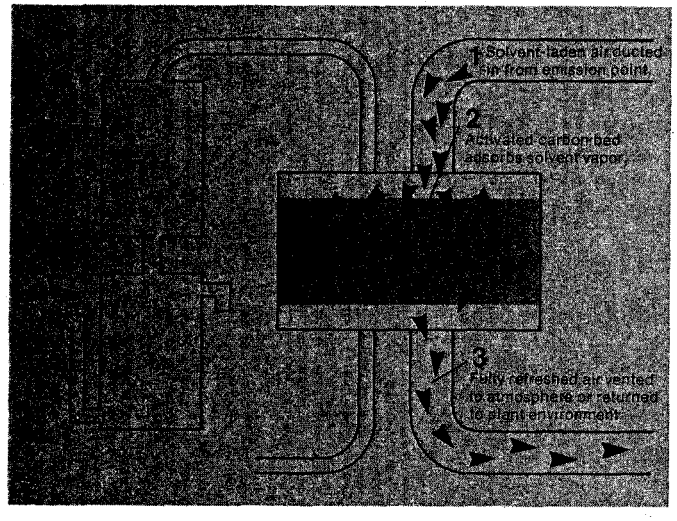
If the solvent is insoluble in water, a separation unit is provided, and the separator tank has outlets for removing the solvent and water layers simultaneously. If the solvent is water soluble, processing or distillation units are available. Recovered solvent can be redrummed, or piped directly to production stations for immediate reuse.

Engineered throughout for economical, safe, dependable operation.

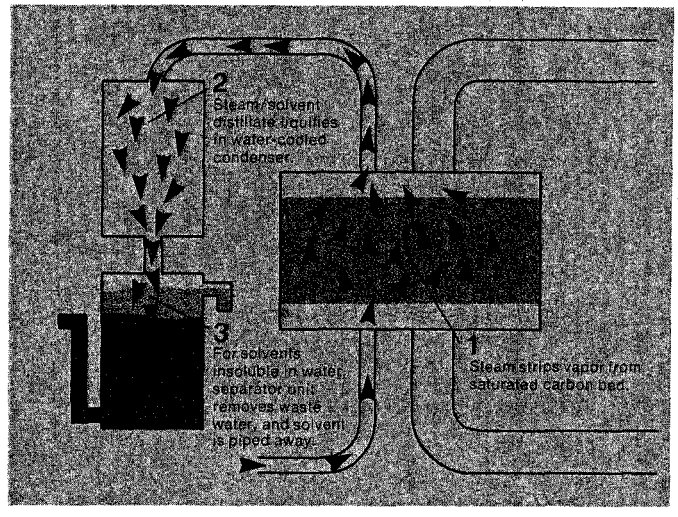
Because there is only one continuously operating component in the Hoyt solvent recovery system — the blower motor — electrical power consumption is minimal. Air requirements for the automatic duct dampers are only 80 psig with intermittent use. The vapor desorption phase uses existing plant steam lines at low pressure.

With over 15 years' experience in solvent recovery systems, and having pioneered in their development, Hoyt is a leader in engineering and building safe, dependable recovery equipment. All pneumatic valves have a safety pressure release. Tanks, blower, inlets and outlets are protected against corrosion. Systems are available for processing both flammable and non-flammable solvents . . . and constructed of phenolic-coated carbon steel, stainless, Monel®, Hastelloy® and titanium or other specialty metals.

Here is the adsorption phase of a recovery tank in the Hoyt solvent recovery system.



In the desorption phase, the same tank reverses its function to initiate solvent recovery.



Solvent Recovery System capabilities and specification chart

In pounds per hour, here is the approximate total solvent recovery capacity of various Hoyt systems handling air-flow rates ranging from 1,500 CFM up to 80,000 CFM:

Air-flow CFM at 100°F.	Approximate Dimensions L x W x H (in.)	Approximate Shipping Weight (lbs.)	Alcohols or Acetone	MIKB, VM&P Naphtha or Toluene	Carbon Tetra-chloride or Xylene	Freons or Methylene Chloride	I.P.A. or M.E.K.	Hexane or Heptane	Perchlor-ethylene	Trichlor-ethylene
1,500	86 x 41 x 90	2,600	67	56	78	78	67	34	157	129
2,300	88 x 69½ x 90	3,900	101	84	118	118	101	50	235	193
3,000	127 x 82 x 90	6,500	135	112	157	157	135	67	313	258
4,000	230 x 76 x 98	8,000	280	240	350	350	280	210	700	525
6,000	254 x 76 x 98	9,500	336	294	420	420	336	252	840	630
8,000	295 x 80 x 104	11,000	392	343	490	490	392	294	980	735
10,000	172 x 152 x 108	14,000	448	392	560	560	448	336	1,120	840
12,000	190 x 152 x 108	17,000	536	469	670	670	536	402	1,340	1,005
14,000	208 x 152 x 108	20,000	616	539	770	770	616	462	1,540	1,155
20,000	300 x 205 x 156	30,000	1,120	980	1,400	1,400	1,120	840	2,800	2,100
40,000	530 x 205 x 156	55,000	2,240	1,960	2,800	2,800	2,240	1,680	5,600	4,200
60,000	410 x 480 x 156	80,000	3,360	2,940	4,200	4,200	3,360	2,520	8,400	6,300
80,000*	530 x 480 x 156	105,000	4,480	3,920	5,600	5,600	4,480	3,360	11,200	8,400

* Hoyt systems handling larger air-flow rates are available.

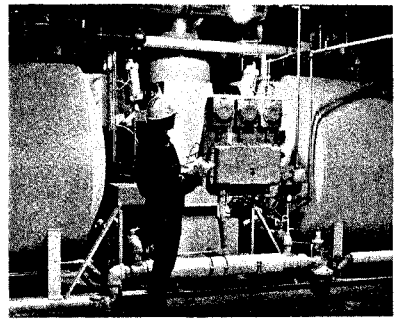
System sizes and configurations to handle most commercial solvents.
Regardless of your solvent-laden air-flow rate, Hoyt has a package system that can handle it — from 700 cfm to 80,000 cfm. Systems can be custom engineered. When you need expanded recovery capability, additional tanks can be quickly installed. Adsorption/desorption tanks can be positioned end-to-end, side-by-side, or stacked one over the other. This means that Hoyt can provide a system configuration to accommodate your plant layout and the available floor space.

In an electronics plant, vapor from trichlorethylene baths used to clean printed circuit boards is ducted to Hoyt solvent recovery system (background), which recovers 95% of solvent formerly lost by evaporation.

Recover a wide range of solvents.
Hoyt can process 95% of the solvents used in industry today, including alcohols and ketones, halogenated compounds and hydrocarbons. These include:

Acetone
Benzene
n-Butyl acetate
n-Butyl alcohol
Carbon tetrachloride
Chloroform
Cyclohexane
Dimethyl formamide
Ethyl acetate
Ethyl alcohol
Ethylene dichloride
Freon
Heptane
Hexane
Isobutyl acetate
Isobutyl alcohol
Isopropyl alcohol
Methyl acetate
Methyl alcohol
Methyl cellosolve
Methyl ethyl ketone
Methyl isobutyl ketone
Methylene chloride
Pentane
Perchlorethylene
Propyl alcohol
Tetrahydrofuran
Toluene
1,1,1-Trichlorethane
Trichlorethylene
Trichloro trifluorethane
VM&P Naphtha
Xylene

A broad cross-section of industry uses Hoyt systems.
Hoyt solvent recovery systems are used in such manufacturing processes as film coating and cleaning fabric coating, paper impregnating and lacquering, laminating, textile solvent scouring, rotogravure printing, costume jewelry degreasing, blade treatment. Othe products benefitting from Hoyt solvent recovery technology include insulated cable, asbestos fiber, leather cloth, pressure-sensitive tape, frozen fruit juices, rubber-dipped goods, surgical bandages, razor blades, pharmaceuticals, laminates, copying papers, food thickeners and electronic components.



At a chemical processing plant, technician checks automatic controls on Hoyt solvent recovery system used to recover isopropyl alcohol.

Companies using Hoyt systems include:

Alcoa
Alice Jewelry
Armbrust Chain Co.
American Cyanamid Co.
American Hoechst Corp.
American Tobacco Co.
Anderson & Sons, Inc.
Andrex Mills
Anson, Inc.
The Armstrong Rubber Co.
Artisan Industries Inc.
Bentley Machinery Inc.
Bernz-O-Matic Corp.
Bruckner Machinery Corp.
Burlington Industries, Inc.
Collins & Aikman
Concord Fabrics, Inc.
Coro, Inc.
Dante Electric Mfg. Co.
David Gessner Co.
Davidson Rubber Company
Door Woolen
Eastman Kodak Co.
Everflex Products, Inc.
George Hamilton Corp.
Gillette Co.
Guild Metal Products Inc.
IBM
Marine Colloids, Inc.
Millipore Corp.
Monarch Finishing
Monocraft Products Co.
Norton
PPG
Raytheon
RCA Corporation
Riggs & Lombards, Inc.
Robbins Co.
Royalmetal Corp.
Spring Mills Inc.
Stamina Mills Inc.
Standard Brands
Stauffer Chemical Co.
J. P. Stevens & Co., Inc.
Sunkist Growers, Inc.
Sylvania Electric Products, Inc.
J. L. Thompson Fastener & Machine Co.
3M
Western Electric Co.
Whiting & Davis Co.
Woolrich Woolen Mills

For further technical information and a free Hoyt Solvent Recovery Analysis Form, please contact:

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