Pollution Prevention Fact Sheet
Metal Finishing

Metal Finishing shops can save energy, increase safety, and prevent pollution by using resource-efficient equipment, optimizing processes to avoid waste, and adopting sustainable practices in their day-to-day operations.

Compressed Air Efficiency

Conventional air compressors often suffer from inefficiencies, such as leaks. Energy efficient compressors, coupled with regular inspections to detect and repair leaks, prevent wasted energy. Installing no-loss condensate drains improves retention of compressed air. Variable Frequent Drives (VFDs) match output with demand, adjusting pressure settings to the minimum required improves efficiency.

Safer Degreasers and Solvent Management

Traditional solvents and degreasers contain harmful chemicals that can affect the respiratory and central nervous systems after prolonged exposure. Alternatives like biodegradable and water-based cleaning solutions are much safer for employees and reduce contamination levels and exposure. Solvents in parts washers can often be reclaimed and reused to minimize hazardous waste and disposal costs.

Update Rectifiers

Conventional rectifiers can be inefficient, leading to excess energy consumption and heat generation. Modern rectifier technology has energy-saving features that can lower enegy consumption levels and reduce heat generation. Newer rectifier technology, coupled with routine checks and maintenance, will ensure optimal performance and increase energy effiiciency.

Efficient Spray Systems and Nozzles

Spray systems are crucial for coating and finishing processes. However, they can be inefficient, using more chemicals, water and energy than needed. This can be controlled with high efficiency spray nozzles. Nozzles with automated control systems lead to reduced over-spray, optimized fluid consumption, and adjust spray patterns to better fit the specific purpose based on real-time feedback. This applies to nozzles too!

Efficient Air Knifes

Air knifes often use excessive amounts of compressed air, resulting in high energy consumption and inadequate drying. To achieve optimum air flow and reduce air consumption, high efficiency air knives should be used. They should be properly sized and have automated controls to optimize operations, based on part size and shape. Using more efficient air knives and control technologies will lead to reduced energy use, faster drying times, and lower environmental impact from less compressed air usage.

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