



PCS
PROCESS CONTROL SOLUTIONS



CASE STUDY

Gruenberg Industrial Ovens:

Tailored Thermal Oven System for Efficient Off-Gassing and Enhanced Safety

Situation:

A supplier of equipment and components to the U.S. military and other clients requires a replacement for a basic industrial oven currently used to heat a sensitive, proprietary product in compliance with ISO standards.

Problem:

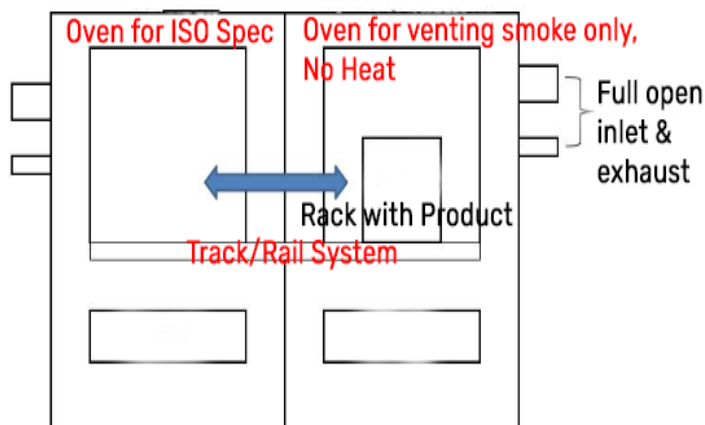
During the initial site visit, several process challenges were identified. The procedure involved a soak period in the oven, followed by removal for cooling and off-gassing. The off-gassing phase emitted toxic smoke, necessitating special safety precautions and the use of a large, continuously operating exhaust hood to ensure proper capture and ventilation.

Solution:

Starting with a blank slate, could we find a way to offer a system that provided the precise temperature cycle required, enhanced safety features for the operators, and as an added bonus, save money by reducing conditioned make up air consumption by the hood?

Conclusion:

A Thermal Product Solutions two-chamber Gruenberg oven system was proposed, featuring an internal rolling rack driven by an actuator to transfer the sample product between a heated zone and a cooling zone. The cooling chamber functioned as a sealed off-gassing area, providing a protective barrier between the operator and the hazardous emissions. To further enhance efficiency, the external exhaust system was directly integrated with the oven for use during the cooling and off-gassing phase, significantly reducing the need for conditioned make-up air and eliminating reliance on the large overhead hood.



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