

# University of Washington – Industrial Assessment Center

Caitlin DeShazo-Couchot, Harris Nakajima, and Jack Philbrick

## Introduction to the UW IAC

### Objective

The University of Washington Industrial Assessment Center (IAC) is one of 33 universities supported by the US Department of Energy (DOE) across the country. The University of Washington IAC provides plant assessments at no cost to eligible mid-sized manufacturers and then provides a confidential report on potential savings, improvements, and optimizations (all of which will have their implementation costs partially covered by the DOE).

### Methods

Assessments are confidential, non-regulatory, and have non-obligatory. The team tours the facility and takes notes on observations of equipment, processes, and data and then finds the most beneficial ways the facility could reduce costs on their energy consumption and labor optimization. These findings are further researched and reported to the facility. It is then up to them if they choose to implement, if any, the energy-saving recommendations.

### Goals

The objective of the UW IAC, alongside all other IAC chapters, is to provide companies ways to reduce their environmental impact with a financial incentive to do so. The UW IAC has many students which focus on specialized areas the company can cutback on resources or optimize their facility. Through this program, the results are companies with a limited ecological footprint and students entering their careers with knowledge in energy-savvy tools, resources, and processes.



Affiliated organizations are the University of Washington, the Washington NASA Space Grant Consortium, and the Sensors, Energy, and Automation Laboratory.



Action Photo of the WA NASA Space Grant Recipients within the UW IAC Caitlin DeShazo-Couchot, Jack Philbrick, and Harris Nakajima giving recommendations at a facility.



Example of our team performing and conducting tests on equipment in a facility.



Network of IAC in universities across the US.

## Maximizing Efficiency and Reducing Excess Usage of Air Compressors

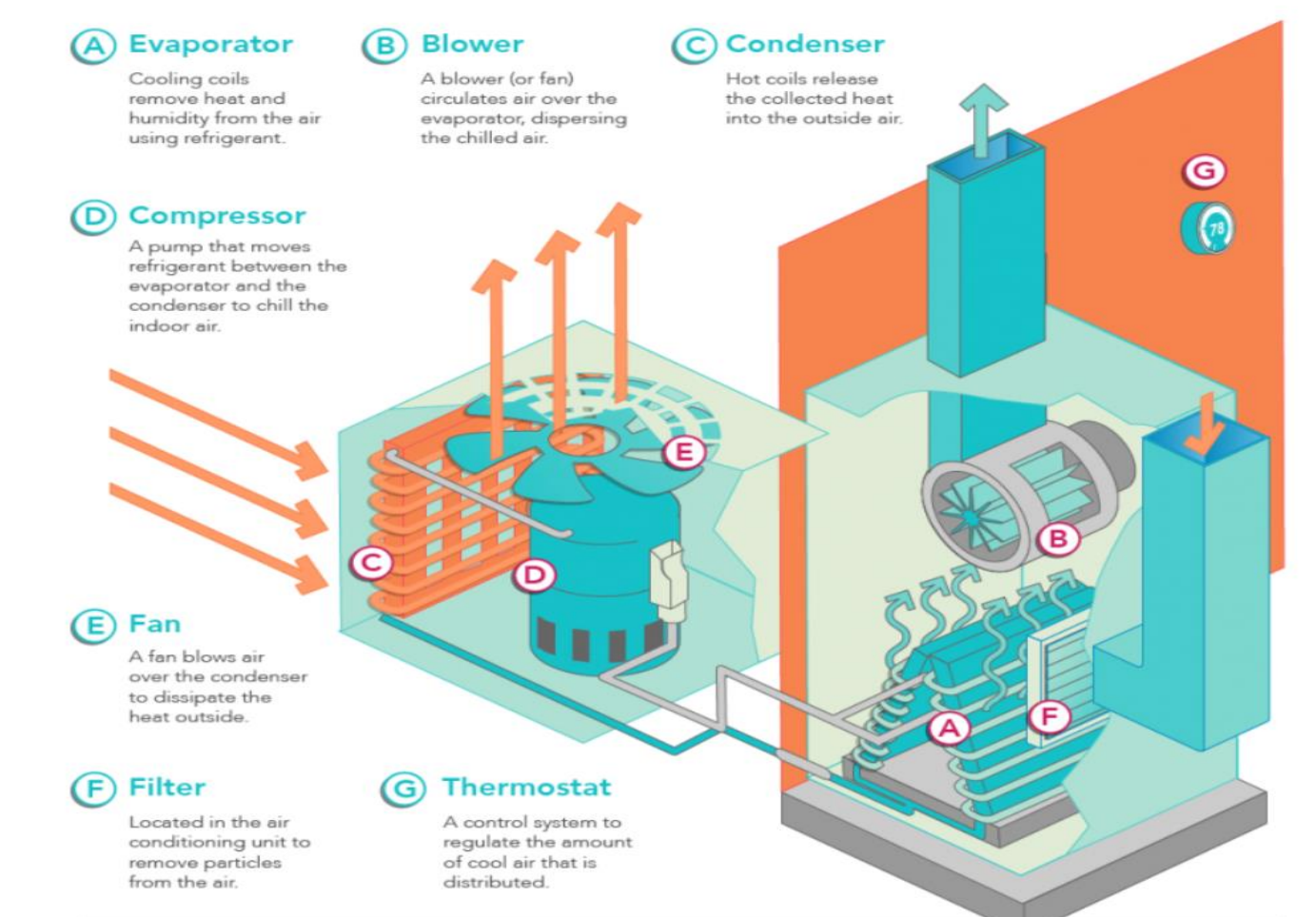
Energy consumed by air compressors can be one of the largest expenses within a manufacturing facility. It is important that facilities operate air compressors at maximum efficiency while reducing excess use. In order to meet the requirements of each unique facility, separating end uses with different pressure requirements helps optimize the amount of energy required to run a facility.



An oil injected rotary screw air compressor.

## Regulating and Improving HVAC for Reduced Energy Consumption

It is common for manufacturing facilities to program their thermostats with generous setback temperatures, especially those controlling the in-plant office temperature. One facility we visited in the past had a non-programmable thermostat in their in-plant office, meaning the thermostat could not operate within a schedule but only operate within temperature parameters.



Demonstration of air conditioning system and how they can best be improved within facilities.

## Improving Processes and Methods With IIOT and Automation

Through novel Industrial technologies, manufacturers can automate systems to optimize utility use and production. This sphere of secure technology utilizes machine learning, data engineering, and programming to create solutions unique to each company's needs. To do this, technologies such as sensor arrays, probing devices, and cloud computing networks are recommended to facilities.



Automated print and label machine recommended to one facility, which improved productivity and limited energy.