

Danfoss Turbocor

The Danish firm manufactures oil-free compressors for heating and cooling systems.

Danfoss Turbocor designs and manufactures a wide variety of oil-free, magnetic-bearing compressors that power air and water-cooled heating and cooling systems for large-scale commercial and industrial buildings.

Hotels, hospitals and large data centers are the company's primary market. Other markets include the automotive industry, food and beverage producers, energy and natural resources, marine manufacturers and offshore oil and gas production platforms.

With annual sales nearing USD200 million, Danfoss Turbocor has sold more than 70,000 oil-free compressors globally. It produces motors, pumps, software, electronic controls, valves, heat exchangers, sensors and transmitters, hydronic underfloor heating, energy metering and smart heating devices.

Danfoss executives attribute the company's worldwide market success to the unique design of its products:

- ▶ The absence of oil means there is no lubricant that degrades, resulting in sustained energy efficiency and consistent performance throughout the lifetime of the chiller.

- ▶ The compressors require only low starting current, eliminating

the need for costly high-capacity electrical infrastructure. The compressors work easily with current and next-generation refrigerants and result in lower energy bills while heating and cooling effectively.

- ▶ The compressors are self-monitoring, and the company's proprietary software generates reports and alerts that help avoid failures that may result from power outages or extreme fluctuations.

Danfoss Turbocor's parent company, Danfoss, is headquartered in Nordborg, Denmark. The international company, with sales exceeding USD9 billion, manufactures a variety of valves, motors, compressors, pumps, appliance controls, software and energy transfer stations.

Danfoss bought an interest in Turbocor in the early 1990s and



Danfoss Turbocor has sold more than 70,000 oil-free compressors worldwide, with sales totaling almost USD200 million last year.

eventually acquired 100% ownership of the company in 2013. U.S. operations began in 2006, when Danfoss broke ground in Tallahassee for a plant to manufacture "green" air conditioning compressor systems.

The company's decision to build in Tallahassee's Innovation Park was influenced by several factors, including the presence of the National High Magnetic Field Laboratory. In addition, the company received some USD7 million in tax and startup incentives from local and state government.

Turbocor began manufacturing operations in the new plant in 2009. The company employs around 200. In January 2021, Danfoss Turbocor Compressors announced plans to enlarge its Innovation Park footprint with a USD48-million project that will take place in two phases over the next five years. The company says the expansion will result in 239 high-paying jobs in manufacturing and research, 267 construction jobs and more than 500 indirect permanent jobs.

The first phase will include development of an advanced manufacturing and research plant of approximately 8,300 m². Sonjoy Goswami, vice president of global supply chain

Danfoss Turbocor is planning a USD48-million expansion.

and operations for Turbocor, says the new plant at Innovation Park will create three new product manufacturing lines that will enable a doubling of productivity over five years.

— By Carlton Proctor



Why Florida?

Tallahassee operations President Ricardo Schneider recently outlined why Danfoss chose Florida for its U.S. manufacturing headquarters and why it is expanding its Tallahassee operations.

- ▶ "The presence of the largest magnetic lab in the world is one of the main reasons we are here. We use a lot of magnetic material and employ magnetic science. It makes logical sense for us to be near the kind of expertise that FSU has in that area."

- ▶ "Research and development infrastructure is well-established and strong."

- ▶ "FAMU-FSU College of Engineering supplies Danfoss with a talent pool to draw upon."

- ▶ "Tallahassee and Leon County have been generous with local incentives. For example, the Blueprint Intergovernmental Agency has committed USD2.3 million in sales tax revenue to Danfoss' expansion project."

- ▶ "We are very glad to be anchored in the Tallahassee community, and we are going to continue to generate jobs and generate excitement."



RESEARCH ASSET

IHMC

- ▶ **Description:** The Institute for Human & Machine Cognition (IHMC) is a world-class, non-profit research institute of the State University System of Florida.

- ▶ **Staff:** 149 researchers; 28 to 50 interns, seasonal

- ▶ **Locations:** Pensacola and Ocala

- ▶ **2021-22 Projected Budget:** USD29 million

- ▶ **Average Salary, Full-Time Staff:** USD117,478

- ▶ **Recent Research Project:** A USD31-million study of human health span resilience and performance

- ▶ **Outreach:** Evening lecture series with visiting scientists and engineers in Pensacola and Ocala; STEM-Talk, a bi-weekly podcast.

Co-founded in the late 1980s by CEO Ken Ford, IHMC investigates highly advanced methods for designing and building technological systems that amplify and enhance human cognitive, physical and perceptual capacities.

Research programs encompass artificial intelligence, robotics, human-centered computing, agile and distributed computing and many other fields related to human performance.

Of particular note is IHMC's advanced robotics research lab, which develops humanoid robots and avatars, powered exoskeletons for paraplegic mobility and bipedal and quadrupedal walking.

IHMC's domestic affiliations and joint research projects are extensive and include NASA, the Department of Energy, Department of Defense, Defense Advanced Research Projects Agency, National Institutes of Health and National Science Foundation.

Current international research projects include a collaboration with Monash University Malaysia on development of a smartphone personal health assistant app that prompts patients with chronic heart failure to report electronically to their attending physicians all symptoms, activities, medication administration and meals.

IHMC also has robust international intern programs, says Morley Stone, chief strategic partnership officer. Internship program affiliations include the University of Ferrara in Italy and the University of Hradec Kralove in the Czech Republic.

