CASE STUDY

Magnetic Bearing Compressors
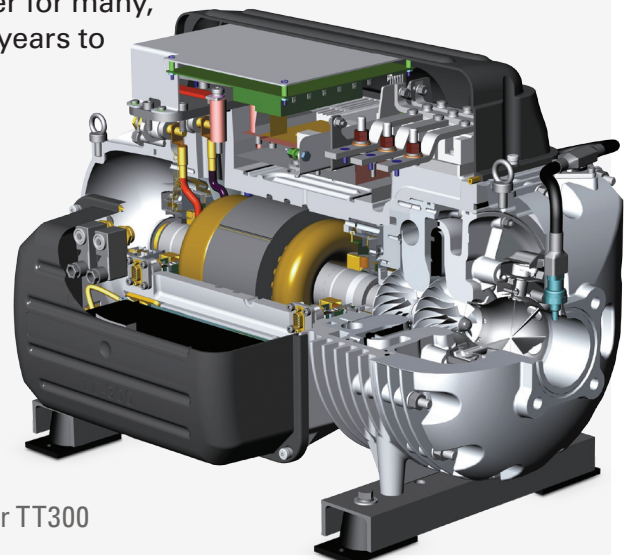
37 York Street

With an aging air conditioning plant, originally installed in 1958, the owners at 37 York Street, Sydney were looking to upgrade to a new cost and energy effective system. With expert consultation from Frigcorp Building Technologies, it was decided to replace the old Trane compressors with new Turbocor TT300 Magnetic Bearing compressors, replacing all TX valves to EXV valves and re-using the existing air-cooled condensers and evaporators.

Given the age of the original plant, it would not have allowed for modern occupancy environments. Modern occupancy in buildings include more heat generation with the use of computers, copiers and office equipment which generally increases the cooling load required in the building. Using the existing evaporators with 134A can help reduce the system capacity by up to 20%. By installing the new EXV valves to evaporator coils, the Turbocor compressors can show efficiencies of up to 80% of its full load.

Since the installation of the new Turbocor magnetic bearing compressors, the plant room is less cluttered as the Turbocor compressor has 50% less footprint and 1/4 to 1/5 the weight of traditional compressors. With its exceptionally quiet operation levels and virtually no vibration, the external plant room noise levels are now near non-existent.

The system now runs at optimum performance levels with minimal disruption. The on-board digital controls and power electronics enables effective monitoring, control and self-diagnosis/ correction of system operation. This has helped to eliminate some OEM control and power panel costs. The Turbocor compressor is optimized for CFC-free HFC-134a, plus high-energy efficiency means reduced greenhouse gas emissions. With totally oil free operation, there are no oil management hardware, controls or downtime costs. With Frigcorp's regular maintenance program, the new magnetic bearing compressors will continue run efficiently, meeting the base buildings air conditioning needs in the most cost and energy effective manner for many, many years to come.

Turbocor TT300