



Industrial Vacuum Systems

Budget Upgrades its Central Vacuum System

Budget Car Rental at McCarran International Airport, Las Vegas, prepared to relocate their support services from existing facilities to a new Consolidated Car Rental Facility (CCRF). They needed an energy-efficient, cost-effective central vacuum system that would keep pace with a high volume of rental car returns.

Client Challenge

After 10 years of use, the original AutoVac central vacuum system was still fully operational but outdated. The system consisted of three separate vacuum systems which had to be turned on and off manually as business fluctuated. Productivity suffered and costly energy bills cut into profits. Moving into a new facility, Budget wanted a state-of-the-art system that would maximize productivity and minimize operating costs.

The AutoVac Solution

Working closely with Budget's planning group, AutoVac designed an extremely energy efficient, user friendly central vacuum system that automatically adjusts to traffic flow. Two new 25 hp Hi-Flow turbines provide Vacuum-on-Demand to as many as 22 simultaneous users. These turbines supply suction to one precision-engineered piping system so any of the 33 hose drops along the line can be used at any given time. This flexibility allows employees to pull a car up to any unoccupied vacuum station, eliminating delays and expediting the process.

Three detailing stations are conveniently tied to the same central vacuum system to allow for wet extraction after carpets are shampooed. Piping is also integrated with fueling islands so cars can be refueled while being vacuumed. This parallel tasking increases throughput and simplifies staffing requirements.

The key to the system's energy efficiency is AutoVac's advanced motor control technology – Vacuum IQ™. To ensure maximum energy efficiency, the vacuum producers are controlled by AutoVac's Vacuum IQ™ program. Vacuum IQ™'s variable frequency drive technology and customized software work dynamically with the exhausters' motors to ensure optimum energy efficiency. The Vacuum IQ™ software constantly monitors demand for suction along the line and adjusts the frequency of the motors so the suction produced always matches vacuum demand, thereby maximizing the system's electrical efficiency.



Budget Car Rental Facility
McCarran International Airport
Las Vegas, Nevada

CHALLENGE

Design and implement a highly efficient and cost-effective central vacuum system for Budget's new Consolidated Car Rental Facility.

SOLUTION

Install a highly efficient, reliable central vacuum system that serves up to 33 hoses and 22 simultaneous users while consuming a fraction of the energy as the old system.

RESULTS

- **Reduced energy consumption**
- **Improved process throughput**
- **Increased productivity**
- **Lowered operating cost**
- **Efficient 24 hour operation**

Vacuum Logic™ management software allows authorized personnel to monitor and manipulate the entire system remotely via internet connection. Parameters can be set for multiple shifts so the system runs during designated hours and then automatically powers off. Vacuum Logic's™ proactive maintenance software notifies personnel in real time whenever the system requires attention.

Operating Conditions Call for Special Considerations

Like so many Las Vegas businesses, Budget's McCarran Airport operation is open 24 hours a day, every day, to accommodate around-the-clock travelers. Employees and equipment face extreme temperatures that fluctuate dramatically. Summer afternoons can soar past 120 degrees Fahrenheit while winter nights plummet to single digits. AutoVac installed powerful air coolers in the motor control cabinets to keep equipment running smoothly.

System Summary

- Two 600Series centrifugal exhausters, 25hp each
- One 600Series Filter Separator
- One 600Series Centrifugal Primary Separator
- Custom engineered piping system with No-Clog™ technology, consisting of more than 1,000 linear feet
- Vacuum drops located along eight vacuum lanes, integrated with 12 fueling and three detailing stations
- Custom hangers designed and manufactured by AutoVac engineering team as well as ergonomic hose assemblies, nozzles and stanchions
- Vacuum IQ™ motor control with variable frequency drive technology and proprietary software
- Vacuum Logic™ remote monitoring software program
- System operates at 79 decibels at 10 feet while operating at full speed, 72 decibels at idle with Vacuum IQ™.

“Our new AutoVac vacuum system now operates 24/7 and serves three times as many users at a fraction of the previous operating costs.”

*- Steve Badilla,
General Manager*

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