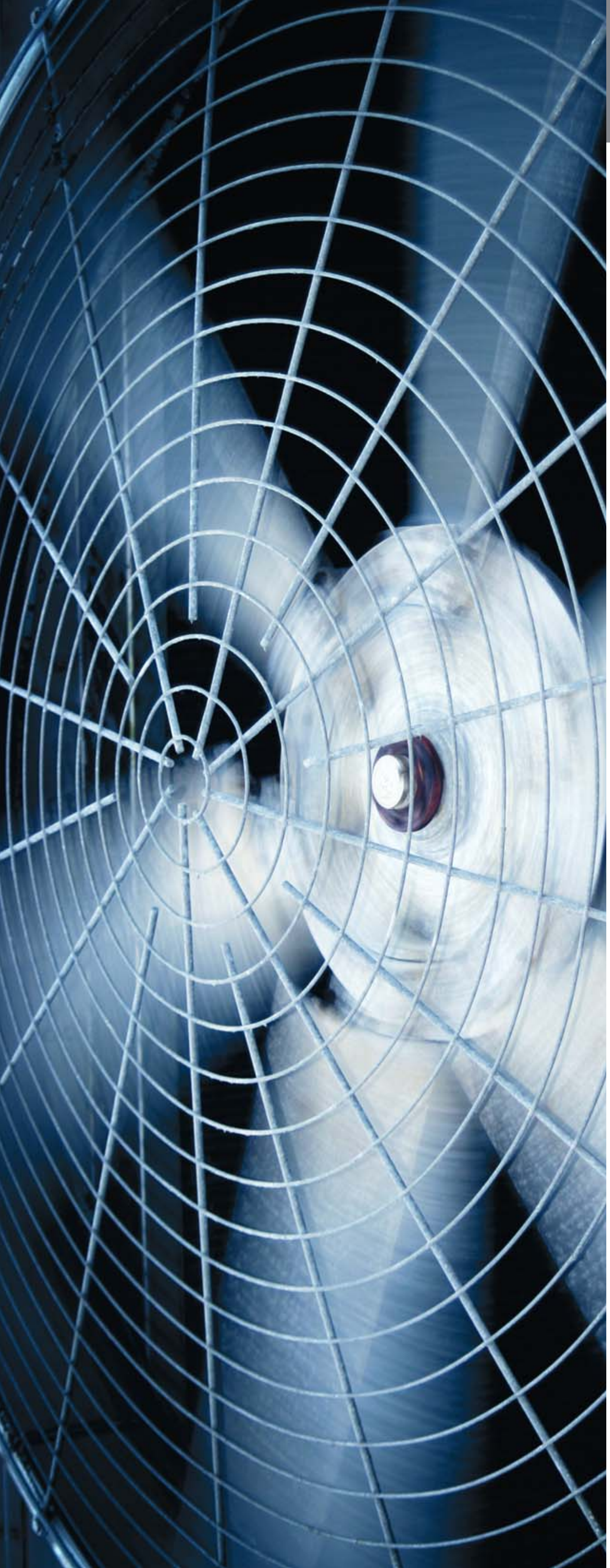

HVAC

HVAC Experience

USCCG is very experienced in the HVAC industry. We've helped many well-known and highly regarded companies to:

- Accelerate change
- Compress order-to-delivery cycle time
- Design and implement executive dashboards
- Gain visibility to critical performance indicators at a glance
- Design plant layouts to improve flexibility and velocity
- Improve accountability and ownership of business attributes
- Improve maintenance systems
- Increase capacity utilization
- Increase employee involvement in meeting departmental or facility objectives
- Lower production costs
- Minimize work in process
- Reduce frequency and/or the time to execute changeovers
- Reduce inventories
- Reduce scrap and rework levels

Processes Worked

- Coil fabrication and copper subassembly
- Compressor manufacturing: scroll, hermetic, semi-hermetic
- Dry/wet paint systems and pre-painted steel
- Electric motors
- Industrial and commercial systems:
  - 4- to 100-ton capacity
  - Fan coil systems, roof-top chillers
  - Ammonia-based systems
- Machining: Okuma, Cincinnati Milacron, Mazuk, Mitsubishi, Mori-Seiki
- Pre-manufactured housing
- Residual heating and air conditioning systems:
  - Split systems 2- to 5-ton capacity
  - Gas, oil, and high efficiency furnaces
- Sheet metal: CNC, Amada, hard tools, etc.

Totally Customized Approach

Our approach is totally customized for each client and situation and will typically include some or all of the following components and/or methodologies:

- Cycle time improvement
- Inventory and physical asset management
- Line balancing (equipment, resources)
- Maintenance, engineering and indirect support effectiveness
- Management/supervisory effectiveness
- Problem identification and resolution
- Process/equipment control and calibration
- Process mapping and optimization
- Resource and demand planning
- Sales and operations planning
- Statistical process control
- Structure and decision making
- Visual management techniques

Client Benefits

These tools and techniques enable us to deliver a wide range of benefits to our clients.

1. Improved asset utilization
2. Improved customer service
3. Improved labor productivity
4. Improved manufacturing flexibility
5. Improved visibility and accountability to a host of maintenance indicators
6. Increased equipment uptime
7. Increased throughput
8. Lower operating cost
9. Reduced process cycle time

USCCG

HVAC

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Our Work

Let's take a look at some of our work with HVAC manufacturers. Each of the following solutions was totally customized and implemented by USCCG professionals using proprietary techniques and methodologies to meet the unique needs of individual clients. Here are some highlights from three real engagements.

Case History # 1

Leading producer of high efficiency compressors for commercial and residential use needed to increase throughput

Our Assignment: Help client meet demand without further capital investment

Our Approach:

1. Conducted two-week feasibility study to identify and quantify potential savings
2. Reviewed entire assembly process from front-end planning to product shipping
3. Worked with plant personnel to identify and eliminate or minimize production impediments
4. Discovered new efficiencies in mixed-model scheduling, service department support, and preventive maintenance
5. Significantly enhanced component part flows
6. Installed total quality management system
7. Revamped layout of equipment and work centers

The Results:

1. Increased units produced per line hour 23%
2. Increased overall productivity 32%
3. Reduced scrap cost per compressor 73%
4. Reduced overtime cost per compressor 22%
5. Reduced number of production changeovers 15%
6. Client saved over $10.5 million

Case History # 2

Manufacturer of commercial refrigeration and air conditioning systems needed to consolidate operations in order to maintain its competitive advantage

Our Assignment: Develop their future state plan including footprint requirements, a manufacturing strategy for equipment placement, and design of mixed model production lines to improve flexibility, thereby favorably impacting manning requirements and direct manufacturing costs

Our Approach:

1. Conducted two-week feasibility study to identify and quantify benefits of potential improvements
2. Developed extensive product/equipment flexibility and capacity matrices
3. Working with client personnel, created Value Stream Maps and completed Process Task Analysis to define the current and future state alternatives
4. Conducted working sessions with the management teams to illustrate and select from best alternatives
5. Developed detailed floor layouts with discrete and shared value streams to optimize process flows while balancing equipment utilization
6. Defined labor requirements by area using scalable tools based on volume and mix changes

The Results:

1. Identified labor savings of $3.2 million on an annual basis
2. Reduced square footage requirements by 30% as compared to the status quo
3. Developed mixed model assembly lines to increase velocity while reducing unit cost and capital equipment requirements

Case History # 3

Manufacturer of heating and air conditioning systems and accessories for commercial and residential use, struggling to meet increased demand, needed to increase throughput

Our Assignment: Improve plant performance to meet 45% increase in customer orders

Our Approach:

1. Conducted two-week feasibility study to identify and quantify benefits of potential improvements
2. Installed crewing/capacity planning for better line balancing
3. Instituted daily planning process to increase productivity per shift
4. Revised floor plan to reduce handling, WIP, and cycle times
5. Revised incoming material inspection procedures to improve quality at the source
6. Reduced nonvalue-added activities

The Results:

1. Increased productivity 19-41% per assembly line
2. Reduced crewing 13-25%
3. Reduced WIP 24%
4. Reduced manufacturing cycle time 39-62% per production line
5. Client saved $900,000 annually, while meeting aggressive production targets

These results are fairly typical of what we've been able to accomplish in the HVAC industry. You can review other case histories by visiting our web site at www.usccg.com.

For more information contact us at **(800) 888-8872** or www.usccg.com.

USC Consulting Group

First we make it work. Then we make it last.®

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When it comes to HVAC, we can make you comfortable in almost any business climate

USC Consulting Group: An experienced professional resource for mid- to large-scale manufacturers of all types