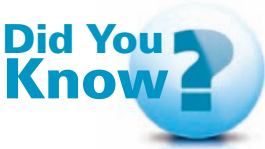


# Rapid ROI:

**Investing In Up-To-Date Technology  
Pays For Itself – *Fast***

**If your local auto service professional has ever replaced your car's factory-installed muffler, or if you've ever done the job yourself on your own vehicle, there's a good chance your car was fitted with a new muffler manufactured by AP Exhaust Products.**





Atlas Copco served as an associate sponsor of Ryan Newman's #39 Haas Automation Chevrolet Impala at the big race in Charlotte, October 16th, 2010.

Founded in 1927 and headquartered today in Goldsboro, North Carolina, AP Exhaust Products manufactures and supplies a complete line of automotive, light truck, SUV and heavy-duty exhaust and emissions products designed to fit and function just like original parts. AP products range from cost-effective OEM-style replacements to polished 304 stainless steel high performance mufflers, as well as exhaust products for over-the-road trucks, busses, agricultural machinery and industrial applications.

Technology and state-of-the-art processes come together to make AP a world class exhaust and emissions company. Working in efficient manufacturing facilities, the company's workforce produces the highest quality parts in a cost-effective manner. With more than 450,000 square feet of manufacturing space and high volume production work cells, the AP facility delivers the parts to meet market demands.

### Manufacturing with Compressed Air

As in practically every modern manufacturing environment, compressed air plays an important role at AP Exhaust Products. "We use compressed air across the whole plant, pretty much whenever we're operating," according to Danny Hammon, Maintenance Supervisor for AP Exhaust Products main manufacturing facility in

Goldsboro. "We'd shut down without compressed air, it's that simple. We have a tube mill that roll forms metal, we have dyna-cutter that cuts tubes to length, and that's just the start. I'd say about 80% of our equipment uses compressed air, and we keep on adding new equipment all the time."

AP had two 100-hp compressors in operation, both about 30 years old. Reliability issues had become increasingly frequent and energy consumption was high due to outdated mechanical designs and control systems. A freestanding compressed air dryer also was having performance and reliability issues leading to excess moisture in the air lines.

### Measuring Upgrade Benefits

"There appeared to be an opportunity for a rapid payback by investing in new energy-efficient equipment at AP," according to Randy Leath, Sales Engineer with Atlas Copco in Wilmington, North Carolina. "Data was needed to back up the hunch. Vange Proimos, owner of AP Exhaust, agreed to let Atlas Copco conduct a survey of his company's existing compressed air installation to find out."

Leath conducted a Measurement Box (or "MBox") study. "An MBox study generates the load profile of a compressed air installation," Leath explains. "We monitor actual compressed air usage in real time over the course of a week as the customer carries on normal operations. By analyzing the results, we are able to identify specific opportunities for system improvements, accurately quantify associated energy savings, and project how soon the project will pay for itself."





## Cost-Saving Solution

Using data derived from the MBox survey, Randy Leath developed a simulated compressor installation. “The simulation matched AP’s actual load profile with two new Atlas Copco compressors,” says Leath. “We recommended a GA90-125WFF fixed-speed compressor to run base loaded and a GA90VSDWFF Variable Speed Drive compressor to run trim. In this manner, compressed air production precisely matches demand. When demand is lower, the fixed speed machine turns off and the VSD machine constantly meets the fluctuating demand.”

Leath explains why he recommended FF – or Full Feature – compressors. “AP had a dryer with reliability problems that led to moisture issues in the air lines. The Full Feature systems have built-in dryers that utilize superior drying technology, reduce energy consumption, and require less floor space compared to a stand alone dryer.”



Annual power consumption and costs were compared for the existing compressor and the recommended replacements:

	Existing	Recommended
Annual power consumption (kWh)	970,734	733,112
Annual running hours	10,929	10,333
Annual cost of power (Dollars)	\$77,659	\$58,649
<b>Annual savings:</b>		<b>\$19,010</b>

## Rebate Provides More Savings

Substantial reductions in energy consumption – 237,622 kWh each year in this case – also benefit power producers by reducing or postponing their need to invest in expanded production capacity. As a result, many energy suppliers offer cash rebates and other financial incentives to companies that invest in new, energy efficient compressed air systems.

Progress Energy, the power supplier for AP Exhaust Products, had such a rebate program in place when AP was looking to upgrade its compressors. After evaluating Atlas Copco’s recommendations, Progress Energy offered AP a cash rebate equal to the first year’s energy savings. With a \$19,000 check from Progress Energy plus \$19,000 in energy savings each year, AP’s project with a total installed cost \$93,136 will pay for itself in less than four years. If energy costs increase, the pay-back period gets even shorter.

**The compressors installed at AP Exhaust Products are from Atlas Copco's WorkPlace series. These units are so quiet in operation that they can be situated right in the work place, rather than in a remote compressor room. The "Full Feature" units AP selected include a rotary screw air compressor, air filtration system, and dryer, all in one compact cabinet. WorkPlace systems are available with fixed speed or variable speed drive compressors.**

### **Additional Solutions and Benefits**

Atlas Copco also supplied AIRnet compressed air piping and fittings for the project. Using the AIRnet system, Atlas Copco connected the new equipment directly to AP's existing air distribution system. AIRnet piping also allowed the old dryer and one of the old compressors to be bypassed but kept on line for backup.

"That AIRnet pipe is just great," says Hammon. "You cut it to length and you don't have to thread it. You just slip the connectors on tighten them up and you're in, quick and easy. You're really ahead of the game when you don't have to thread every single piece of pipe."

While most air compressors are air cooled, AP selected water cooled machines. "We had an existing a closed loop cooling system so it was easy to tap into it and utilize the heat recovered in cooling the compressors," Hammon explains. Atlas Copco installed higher temperature thermostats in the compressors in order to optimize the running temperature as required by AP's closed loop cooling system.

A follow up assessment uncovered a further opportunity to reduce energy costs. "After the equipment was installed," Leath explains, "we discovered there are a few hours between shifts at night when the plant is shut down. Previously AP would just let the compressors run. With Atlas Copco's Elektronikon controller, we were able to program the compressors to turn themselves off during this time to provide additional savings."

### **Takeaway**

"By going with the new Atlas Copco compressors," Hammon concludes, "we were able to upgrade our technology, improve the reliability of our plant, reduce our energy costs, and take advantage of a rebate from our power supplier. It was the right decision, all around."

**The single largest cost involved with an air compressor is energy. Over the life of an air compressor, energy costs substantially more than the equipment itself. Technology improvements have made new air compressors so much more energy efficient that replacing a compressor that's ten or more years old – even one in good working order – typically pays for itself through lower energy costs. Improvements in productivity and reliability associated with new equipment add further savings.**



To learn more about AP Exhaust Products, visit:

<http://www.apexhaust.com/>