

Johnson Controls Saves Over \$500,000 Using New Blast Equipment

Metal parts are often cleaned with abrasive blasting methods. Paint, rust, and corrosion are removed this way, as seen in the "before" and "after" parts shown on the right. Michael Bentley at Johnson Controls, a Wheeling, Illinois-based manufacturer and refurbisher of compressor parts, was using an older model wheel blaster to clean metal parts. Growing business and labor cost concerns in their blasting process led Michael to contact **AGSCO Corporation** to help solve the problem.



Details of the Old Process

- Parts are mounted on a "basket" (see at right) with a skewer to hold them in place (30 min)
- Then the basket is placed in an oven and heated to 700°F (1 hour)
- Basket is cooled down and loaded into the blast machine (15 min)
- Blasting operation (30 min)
- Transfer to shaker table and removal of all abrasive (30 min)
- Dismantling and blow-down of parts from the basket (30 min)
- Rust preventative applied to parts for storage



Labor Cost Calculation- Old Process

The economics of the existing process was studied by Richard Feichtner, a Process Engineer in the plant. In the process, 30 units per week was the maximum output. Using 40 man hours per week for 30 units per week, equals 1.33 man hours per unit or \$113.33 labor cost/unit or **\$164,000 per year**.

New and Improved Process

Seeing a chance for improvement Michael and Richard recommended the purchase of a new Viking Model 7260T Table Blaster. With the new blasting unit the resulting process was simplified and shortened to allow more pieces to be blasted at a time. In addition, since the parts could be placed directly onto the table to be blasted, tremendous labor savings were enjoyed versus the old process of mounting them on a holding basket. A final benefit is that media is easily blown out of any crevices using a



quick blast of compressed air versus the time spent moving parts through the antiquated “shaker table” process.

Labor Cost Calculation- New and Improved Process

The Improved Process allows for a production rate of **28 units per day** (versus 6 per day) or 140 units per week (versus 30 per week) with an associated labor cost of **\$34,963 per year (versus \$164,000)**

Summary of Savings

Raw Labor Savings (\$164,000-\$34,963)	= \$129,037 per year
Decreased electricity usage per year	= \$ 10,000 per year
Decreased gas usage per year	= \$ 15,000 per year
Decreased media usage (change from stainless cut wire to steel shot)	= \$ 5,000 per year
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Total Savings	= \$159,037 per year

Less Capital Equipment Cost: \$120,000 equipment acquisition/5 years = \$24,000 per year

Net Savings = Savings Per Year (\$159,037) Less Capital Cost Per Year (\$24,000) = \$135,037.

Calculated over the amortization period of 5 years, results in a **5 year Savings of \$675,184.**