

# Technical Bulletin 57

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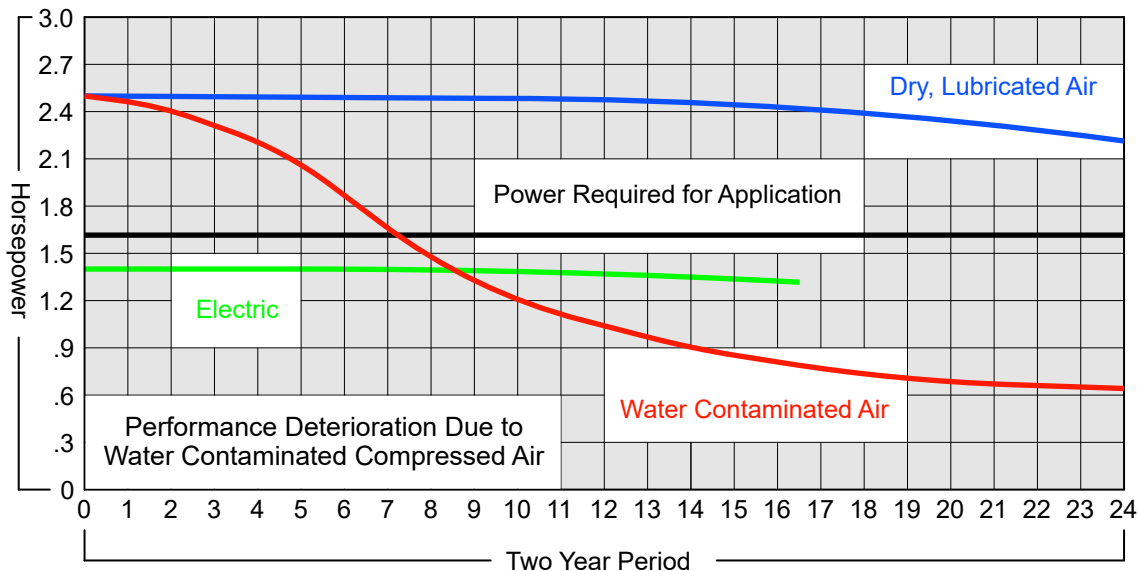
## Air Tool Performance Deterioration Due to Water-Contaminated Compressed Air

by Brian S. Elliott

Most shop managers and plant engineers are aware that water can be damaging to an air tool; however, few are aware of just how significant the damage can be to the production operations at hand. To better illustrate the impact water contamination can have on production, the graph below shows how the performance of an air tool will deteriorate when it operates on water-contaminated air versus dry, lubricated air. The black line represents the power required for the application. The red and blue lines represent two identical pneumatic angle grinders placed into the same service at the same time. The green line shows an electric grinder placed into the same service as the pneumatic grinders.

The grinder which used dry, lubricated air (blue) provided consistent power well into the third year of operation. The performance of the grinder using the wet air (red) starts to deteriorate in the first month of operation. By month nine, it had dropped below the performance of the electric grinder (green), by month thirteen, the power output wasn't strong enough to be effective and by month nineteen, the operator could stall the grinder with very little effort. The electric grinder (green) provided consistent power until it failed completely in month sixteen. It should be noted that the grinder operating on dry, lubricated air (blue) produced suitable power well past 60 months, or over five years.

The catch is that the grinder operating on wet air was able to meet the requirements of the application for nearly 9 months and remained fairly effective for another four months. After thirteen months of operation, most companies wouldn't really consider the air tool to be new and therefore, are unaware of the premature failure. In short, the tool drops off their radar screen. The costs associated with this premature failure, however, do not.



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