

Technical Bulletin

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Loss of Mechanic Productivity Due to Water Contamination in Compressed Air

Air compressors in most auto repair shops are not equipped with dryers. Even though shops equipped with compressed air dryers enjoy a significant financial advantage over those without, many owners and managers of auto repair shops don't consider air dryers to be necessary equipment.

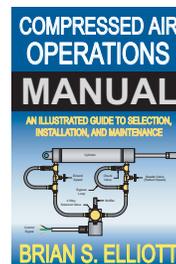
Since many mechanics supply their own air tools, owner/managers don't consider damage to these tools to be an expense. After all, it's the mechanic's responsibility to maintain his personal tools, why should the shop buy a dryer? It's just an expensive piece of equipment that will provide no return, right? Wrong!

Water in compressed air lines is particularly damaging to the internals of air tools. The water flushes out lubricants, forcing the motor to wear prematurely and reducing its effective power. This is a slow, gradual process that even experienced mechanics don't recognize when using these tools on a day-to-day basis. The cost to shop owners and managers comes not in the cost of the tool, but in the form of a loss of productivity by the employee.

For instance, let's take an economy 1/2" air wrench that might be found in any mechanic's toolbox. The chart below shows how the performance deteriorates significantly when used with water-contaminated versus properly dried and lubricated air. Three brand new, identical wrenches were placed into the same service. When the tools were new, they required 5.1 seconds to produce 80 Ft./Lbs. of torque (Blue Line). Two years after the units were placed into service, the tool that received properly processed air still provides good performance, requiring only 1 additional second to achieve 80 Ft/Lbs. (Green Line) The tool that was operated on wet, lubricated air, however, required an additional 6.3 seconds to achieve the torque specification after one year (Violet Line) and the tool operated on unprocessed air required an additional 17 seconds! (Red Line) This loss of performance has a significant effect on the productivity of the typical mechanic. Using the chart to the right, consider what happens if a typical mechanic uses the damaged air wrench 100 times in an 8 hour period: 17 additional seconds per use x 100 uses = 1700 seconds. This is equal to 28.3 minutes, which is equal to 0.47 lost hours per day. Multiply that by 5 days and you will see that it represents 2.36 lost hours per week, or 118 lost hours per year at 50 weeks per employee. At \$45.00 per shop hour this translates to a loss of revenue of \$5312.50 per year, per employee. If you employ five mechanics, then this represents \$26,562.50 per year! That's a lot of money! \$997.00 dollars for a dryer may seem like a big capital expense, however, the investment provides a huge return over the life of the equipment, even if you're not paying for your mechanic's air tools. It should also be noted that this type of loss applies to virtually all types of air tools used in automotive shops today.



Comprehensive information on compressed air systems is provided in the book "Compressed Air Operations Manual" by Brian S. Elliott, ISBN: 0-07-147526-5 Published by the McGraw-Hill Book Co.



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