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Water Woes

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Managing Moisture in Compressed Air

Condensed water is an inevitable side effect of using an air compressor, especially if the compressor is located in a damp, cool environment. Most of the water collects at the bottom where it can be drained off, but some finds its way into the hose and through the tool. For this reason, all tool manufacturers recommend putting a few drops of lubricating oil in the tool's connector before use to mitigate moisture-caused rust.

All compressors accumulate condensed water, which can rust a compressor's tank if not drained regularly. Drain it by opening a valve on the bottom of the tank. It's good practice to drain the tank after every use.

Performance-wise, the amount of moisture passed through the hose isn't a huge issue for fastening tools, but water traveling through sprayers applying paint or a final finish to a project can ruin the finish.

To prevent this sort of thing from happening, water can be handled a couple of ways. For shops with air plumbing, water traps can be installed at low points in the airline to collect water through gravity. A drain valve at the bottom of the trap releases collected water.

To keep liquids from entering tools, an inline filter – installed between the compressor and tool – helps minimize the amount of water traveling through the hose.

For hoses, you can install an inexpensive inline water filter that collects not only water but also any dust or small debris, such as tiny rust flakes from the compressor that are sent through the hose (see photo, above). These filters simply install between the hose and the tool or two sections of hose.

A filter can also be installed permanently near a compressor, with all air being filtered no matter which hose or tool is attached. The Campbell Hausfeld model shown here includes an auxiliary pressure regulator.

For a more permanent solution, a larger filter can be mounted to the wall and installed at any point in an air line to either a hose or rigid plumbing. These are larger filter assemblies with higher capacity for trapping water and debris, but they function the same way as an inline filter. Some of these, such as the one shown at right, include an auxiliary regulator that can be used in place of the one on the compressor. This can be handy when mounted away from the compressor and closer to the work area or, if using multiple hoses or plumbed air lines, each line can be regulated separately. High-end versions can include an oiler, useful for shops that use air tools frequently (but not sprayers) to constantly keep them lubricated.