

How To Fix Pressure Loss In A Compressed Air System

A big sign of inadequate compressed air pipe is a large pressure drop at the point of use.

For instance, a 1-1/4 inch impact wrench used at 5% duty cycle might only average 3 CFM against the system; that's not much air for even a five or ten horsepower air compressor. However, during the brief instant that tool is used, it will draw 55 CFM, requiring at least a 1 inch pipe. If the pipe is smaller than 1 inch, the result will be an excessive pressure drop.

Pressure drops can occur throughout a compressed air system, starting at the discharge of the air tank. Refrigerated air dryers, filters, lubricators, directional changes of air, etc. all contribute to a pressure drop. Also, a drop in air temperature that naturally occurs in compressed air delivery systems also causes pressure drops.

During periods of low air demand, the pressure down stream will tend to migrate back towards the system pressure, but in periods of higher demand the pressure is lower. As a result, it can be advantageous to have pockets of air storage near the point of use tools. Large pipe down stream can be the source of this air storage providing adequate capacity for intermittent air usage bursts.