



TOOL FACTS

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IN LINE LUBRICATORS

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Because of their design characteristics all percussion air tools require some form of lubrication to reduce the friction and heat that can lead to premature wear of internal moving parts and/or possible failure of those parts. For construction and rental applications the most common device used to provide lubrication is the in-line lubricator or oiler.

In-line oilers were designed to efficiently lubricate air tools and other pneumatic equipment downstream from the compressor. The oiler provides lubrication that allows the moving parts such as pistons, tappets and valves to operate freely with a minimum amount of friction. This reduced friction allows parts to perform to their design specifications eliminating the possibility of premature wear and failure that can occur from heat build up. The flow of lubrication also acts as an internal cleansing system that deters natural dirt and contamination, which is found in most air systems, from easily becoming stuck on internal surfaces and interfering with the performance of the tool. This natural cleansing affect of lubrication is important for all tools and can be further enhanced greatly by periodic flushing of the tool with some form of low flashpoint solvent.

In most typical air systems a lubricator is installed right after the compressor and it “mists” the airflow with oil on its path to the tool. While each construction or rental air system tends to be unique, it is very important to pay close attention to it. The size and condition of all hose and fittings, the pressure setting of the compressor (measured at the panel gauge), the length of hose being used, and the location of the in-line oiler all help to reach the optimum objective of having 90 PSI of clean, well lubricated air at the tool, however far downstream from the compressor it may be.

How many different types of in-line lubricators are there? In this edition of “Tool Facts” we will discuss the two types, “pressure feed” and “constant feed” oilers, and how they both work.

PRESSURE FEED PNEUMATIC LUBRICATORS

Pressure feed pneumatic tool lubricators have the shape of a small football. They consist of an aluminum housing that contains two large reservoirs with a large filler hex cap that is located on the topside. Directly inside the hex filler cap you will find a metering valve. The valve is numbered to indicate different settings that allow for adjustments to the amount of oil being emitted into the system and the tool itself. There is also a sight glass on the side of the unit to let you see when the oil is getting low.

The two reservoirs are the most important part of the whole system. The upper chamber where the metering valve is also holds the oil. The metering valve controls the amount of oil entering the air system and also allows air to enter the upper chamber and pressurize it to the same pressure as the rest of the system. The lower chamber is simply a passageway for the air to enter and exit the lubricator.

The lubricator works in this manner. The upper chamber is pressurized to the same pressure as the lower chamber. When the tool is turned on, by depressing the throttle, the air rushes through the lower chamber of the lubricator. When air flow is sufficient the pressure in the lower chamber drops. This difference in chamber pressures allows the oil in the upper chamber to be pushed into the lower chamber and into the air stream, which sends lubrication to the tool. After a short time with the tool running and the air flowing the pressure in the two chambers will equalize again and at that point oil will no longer enter the air stream. This is why pressure feed of oilers are well suited for tools that are periodically cycled on and off.

CONSTANT FEED PNEUMATIC TOOL LUBRICATORS

At this point you may be asking, “What is the difference between pressure feed and constant feed lubricators?” And, “Where do we use constant feed lubricators?”

Constant feed lubricators are used on continuous running air tools such as rock drills and air motors. These tools are run continuously and not constantly cycled on and off. Because these tools run for extended lengths of time they require more lubrication. A constant feed lubricator is designed to push oil to the tool “constantly”.

While constant feed lubricators look the same as pressure feed units and have the same metering valves that can be adjusted they do differ in design and operation. The difference is that a constant feed lubricator is equipped with a check valve that connects the upper and lower chambers. When the air supply is shut off, meaning the throttle to the tool is closed, both the upper and lower chambers will equalize to the line air pressure (90 PSIG). As long as the two chambers are at equal pressure no oil will be emitted. So, the purpose of the check valve is to insure that the upper chamber is at an even pressure of 90 PSIG.

When the throttle is open, and air starts to flow to the tool, the lower chamber pressure drops to 85 PSIG, lower than the upper chamber. This allows the upper oil filled chamber, which remains at 90 PSIG, to push oil into the lower air chamber and into the air system and this will continue as long as the throttle is open or until the oil chamber is empty.

Hopefully this short explanation of in-line oilers is informative and will help you understand the necessity of using in-line oilers to maximize your tool performance and cut down on repair bills.