

Copper Crush Gaskets

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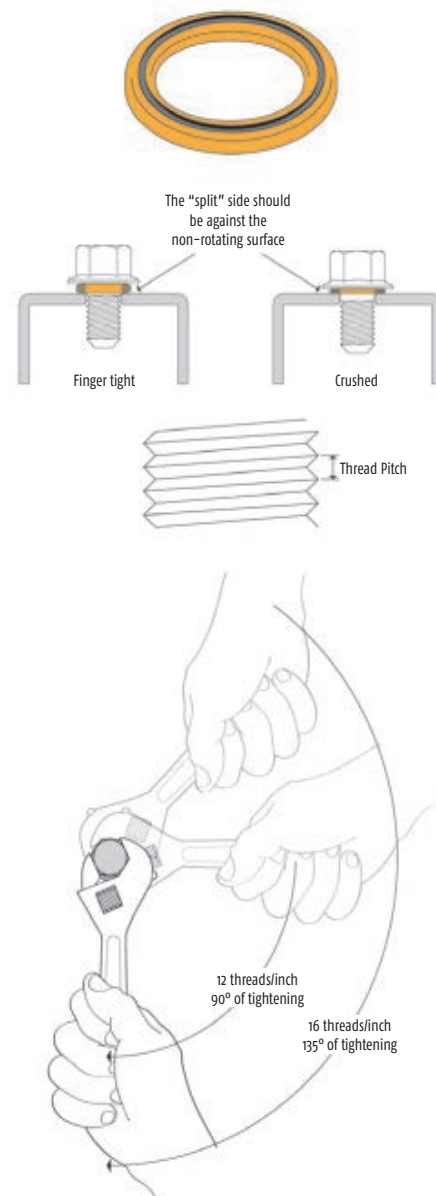
AN900 COPPER CRUSH GASKETS are commonly used on Lycoming and Continental engines, and they usually cost less than a dollar. You should not reuse one of these gaskets, so you will want to have the sizes you need when doing your annual/periodic inspections and other engine work.

The AN900 annular gaskets are made from soft copper, which has been wrapped in a tubular 1/8-inch wide by 3/32-inch thick cross section around an asbestos core. As you examine one of the gaskets you will note one side is smooth and the other has the slot or split where the copper was formed around the core. This split side should always be placed against the surface that is not moved or rotated when the parts are assembled. The size of the gasket is defined by the inside diameter in 16ths. In other words, the 5/8-inch gasket for the oil temperature sensor on my Lycoming is an AN900-10, for 10/16- or 5/8-inch inside diameter. A common gasket on older Cessna 182s is the oil pressure screen on the Continental O-470, which uses an AN900-28 (1-3/4 inches). It should be replaced at every oil change, when the screen is inspected and cleaned. It is penny wise and potentially pound foolish to reuse the old gasket. These gaskets are good to 500°F and 200 psi.

These soft gaskets are often referred to as “crush” washers or gaskets because they are physically deformed and crush into place as the parts are assembled. This feature helps to conform to mildly uneven surfaces. So how much do you “crush” it during installation? Interestingly, this is one item not installed to a certain torque value, but rather to a certain number of degrees of tightening rotation. You need to know the thread pitch of the plug or sensor you are installing. Thread pitch is the number of threads per inch. Simply measure a quarter inch of the threads with a ruler or vernier calipers and count the number of included threads. Multiply by four and you have the threads per inch, or their pitch. Now go to a table of rotation values for the angle of turn. I usually use the table in the back of the *Lycoming Overhaul Manual* (Table III), but most all aviation mechanic handbooks will have the data. For example, for a pitch of 12 threads per inch, the torque value is 90 degrees, and for a 16 pitch it is 135 degrees after making finger tight contact.

Let's go through the sequence of installing a crush-type copper asbestos gasket. First, the threads should be lightly lubricated. Install the gasket with the unbroken surface against the flange of the plug or part being tightened against the seal. Turn the part until the sealing surfaces are in contact, and then tighten to the angle of turn listed for the appropriate thread size.

Note that there are also aluminum asbestos crush gaskets, and their angle of turn is usually twice that of the copper type. Also, the AN900 designation is being replaced by MS35769, but the dash numbers are not in a logical sequence, so you will need to look up the correct sizes. For instance, an AN900-10 is replaced by an MS35769-11.



Finally, since there is nothing to “lock” this gasket seal in place, you will probably have to safety wire the part in place to prevent vibration from backing off the crush on the gasket and resulting in a leak.



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