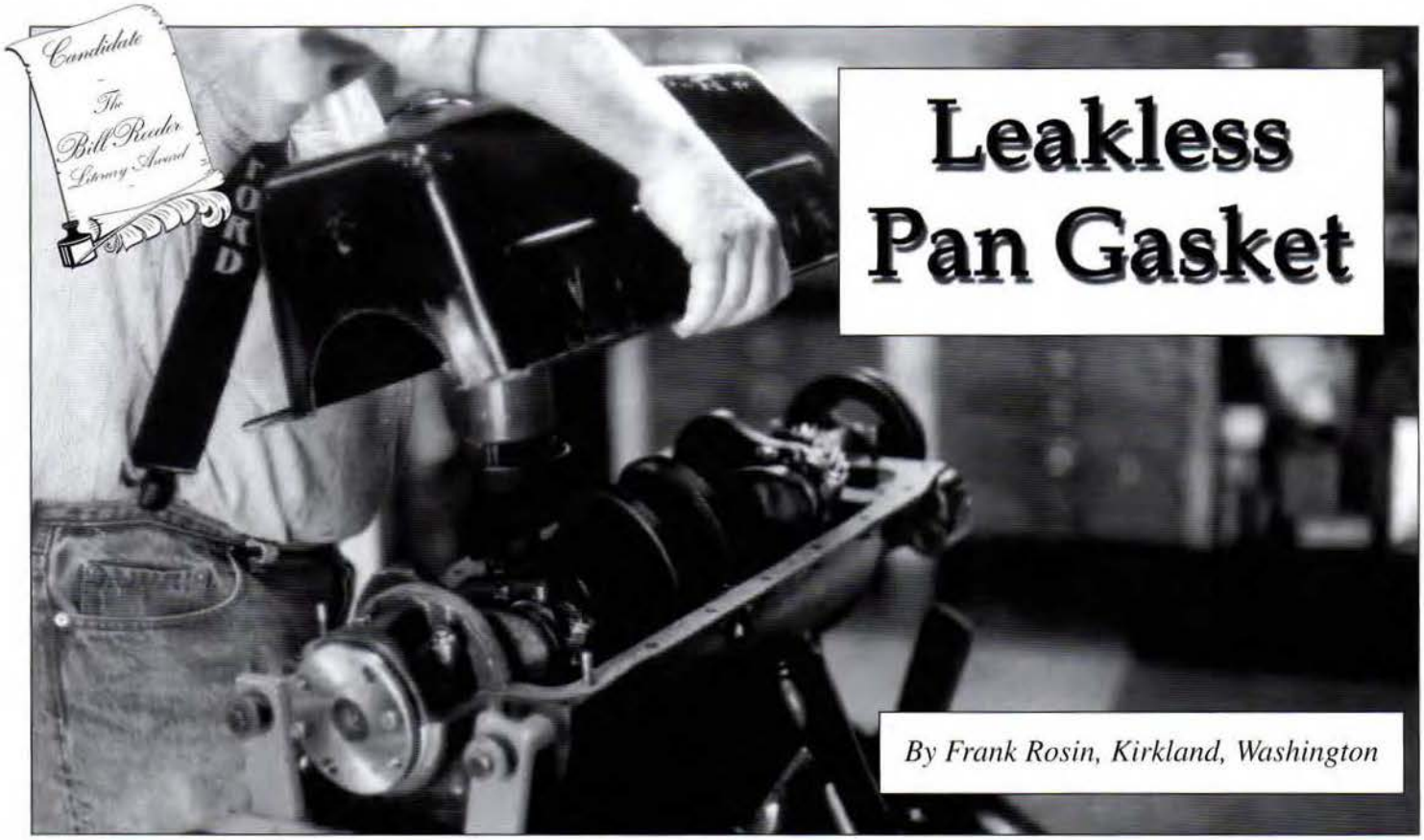


Leakless Pan Gasket

By Frank Rosin, Kirkland, Washington

Leakless pan gasket? You bet! Our Model A Ford engines can be plagued with oil leaks, but it is not necessary to have an Exxon Valdez under our car. There may be a drip now and then no matter what we do, but it need not come from the pan gasket.

Gary Duff, who belongs to the Evergreen A's in Seattle, a long-time engine re-builder and machinist, was kind enough to share his method of installing the pan gasket. Many cars in our area do indeed have a leakless pan gasket using engines that he has rebuilt. The ones I have done remain leakless also. This procedure will work on an A or B engine, on the engine stand in the shop, or from underneath with the engine still in the car.

(A) You will need to make four guide pins from some 5/16 x 18 bolts about 1 1/2 inches long if you don't already have them in your tool box. They will come in handy when putting on the valve cover as well as the engine pan. Simply cut the heads off the bolts. Bevel the cut edges slightly with a file or grinder. Cut a slot in the top with a hacksaw so they can be removed with a screwdriver after the parts are in place.

If you are doing the pan while the engine is in the car you will need a retainer to fit the 1/8 pipe threaded hole in the side of the engine to hold the oil pump in place. The retainer is a small pipe fitting tapped to hold a machine screw. The retainer is screwed into the threaded hole and then the machine screw inside the retainer is tightened to hold the oil pump in place. This retainer has been the subject of previous articles in *The Restorer* and other publications. Later the retainer is removed and the regular pipe plug is put in the hole.

(B) You will need two kinds of adhesives, three if the engine is in the car, and some lacquer thinner for cleaning. These adhesives are used in very small amounts. This is the key...use very small amounts and only in the places necessary. They are Permatex Aviation Form-A-Gasket Sealant, Permatex Ultra Copper, and some contact cement only if the engine is in the car. DURO is one among many contact cements that seems to work well.

Since I am presently rebuilding a B engine, I have photographed the steps on the B. There is no difference between the A and B engines in doing this gasket installation with two small exceptions. These will be explained as we go along. The same Model A cork gasket set is used for both.



Four guide pins, oil pump retainer.



Adhesives and Lacquer Thinner



(C) Clean the surface of the block and dent free surface of the pan with lacquer thinner. Purchase a Model A cork gasket set which fits properly. There are pan gaskets on the market that are about a half an inch too short. (D) The cork gasket must fit exactly against the main pulley at the front of the engine using a guide pin to line up the gasket. You may have to trim the gasket for an exact fit, but it usually is correct and no fitting is necessary. This fit is critical to keep the front of the engine leak free.



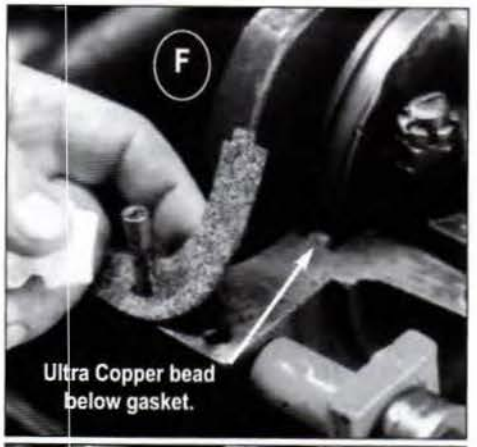
(E) The cork gasket needs to be trimmed at the rear of the engine to fit into the groove of the rear main cap. Use a guide pin to line up the gasket. It will be too long so trimming here is necessary. Take some time with this as the tabs must fit well.



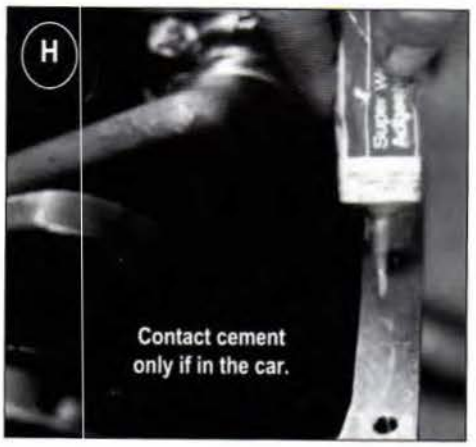
(F) (G) Apply a small bead of Ultra Copper both above and below the tabs on the rear of the cork gasket.

(H) If the engine is in the car, *and only if the engine is in the car*, a small bead of contact cement is applied to the block surface to hold the gasket in place. Use only enough cement to hold the gasket in place. Use guide pins to line the gasket up with the bolt holes because once gasket is in place, it is not going to move.

(I) If you are doing a B engine you will need to cut a small plug for a gasket hole that is not used, one on each side. There will be a small amount of gasket material that was trimmed off when fitting the tabs to make this plug. It is not necessary to plug holes on an A engine.

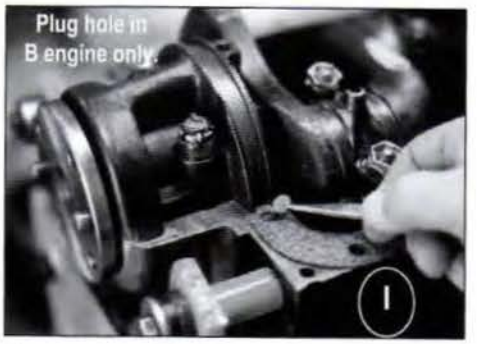






(J) Cut the long rectangular rear cork seal exactly 6 11/16 inches long (7 11/16 if a B engine). If your pan gasket set has a rear seal too short for a B engine rear main, a longer one is available from the suppliers and must be used to do the B.

Sometimes this gasket is a little too thick to fit into the groove. In this case, you can squeeze the cork in your bench vice, first one half and then the other half, as the vice is probably not wide enough to do the entire gasket. The gasket will remain compressed long enough to fit into the groove. **Do not soak this gasket in oil**. We do not want this gasket soaked with oil, it is the rope gasket at the front of the pan and timing gear cover that needs to be soaked in oil.



If you wish, you can soak this rear cork seal in water and allow it to dry in a tuna fish can. It will retain a circular shape which conforms to the groove in the rear main cap when dry. This is really not necessary because it is not difficult to make this gasket fit and stay in place.

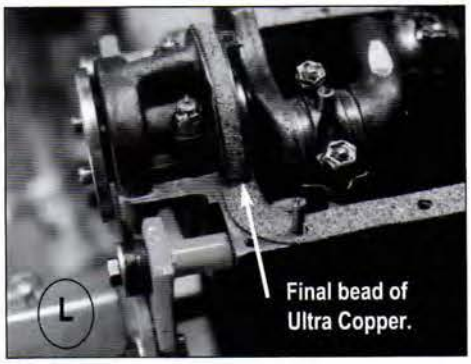


(K) Apply a very thin film of Ultra Copper in the cap groove and fit the cork gasket. It may seem a tad long, but it will fit.

(L) After the cork is in place put a small final bead of Ultra Copper at the joint between it and the pan gasket.



(M) At the front of the engine a small dab of Permatex Aviation Gasket Sealer is placed first on the top of each of the rope

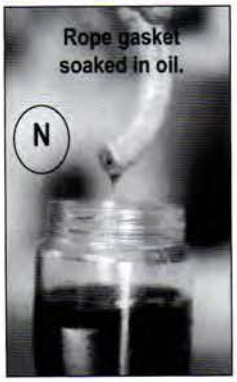


gasket ends and then a dab on the top of the pan gasket.

Notice that no other Ultra Copper or Aviation Gasket material is used. The pan gasket is **put on dry on all** other surfaces.



(N) Take a rope gasket that has been soaking several days in a jar of engine oil and place it in the groove at the front of the pan. It can either be pounded lightly in place with a socket that is about the right size to fit the curve (O) or rolled in with a round bar (P).



(Q) Trim the rope gasket with a sharp single-edge razor blade about 1/16 inch above the pan surface. The same applies to the timing gear cover rope gasket if you have had the timing gear cover off. If you are just replacing the pan and pan gasket without removing the timing gear cover, it is not necessary to change the timing gear cover rope gasket half, as long as it is in good shape and not leaking.

There is an alternate O ring gasket to replace the rope gasket available. It requires removing the crankshaft for installation and is beyond the scope of this article. Besides, I want to show that a quality leakless installation can be done easily with traditional materials.

(R) Now the oil pump is put in place. Use the retainer made from a pipe fitting tapped to hold a machine screw if the engine is in the car. The oil pump will stay in place if the engine is on an engine stand upside down without the retainer.

(S) Using the four guide pins in the corners, front and rear of the block, the pan may be eased into place. If your guide pins are longer than 1 1/2 inches it may be difficult to get the pan in place in the car because of the front cross member. In this case get the pan almost in place and then insert the guide pins in front and rear of the block through four pan bolts holes, then slide the pan all the way home.

(T) Put in the pan bolts and tighten them evenly. Remove the guide pins and put bolts in those locations. About five or six foot-pounds is enough. It would be wise



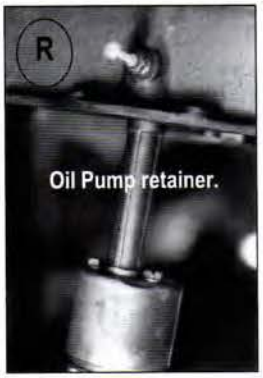
to put the flywheel housing dust cover in place first before inserting pan bolts at the rear of the pan to avoid dropping a bolt into the housing. Any of the pan bolts or timing cover bolts that do not go into blind holes in the oil chamber should have a small amount of Permatex Aviation Gasket Sealer on the threads to prevent oil from seeping out.

Remember that the rope gaskets at the crank pulley have been soaking in oil. The pressure on these gaskets when the pan is bolted down will force some of that





soaked oil out over the first few miles of driving. From then on, after that small amount of oil is wiped up, you will have a truly leakless pan gasket using regular materials and a minimum amount of adhesives. There is no sticky goo to ooze out and get on your fingers. There is no sticky or hard cement to remove or chip away at some future date when the pan is off once again for some other engine work. Most of all, your pan gasket does not leak oil!





This does work and it is simple. Give it a try next time you remove and replace a pan. You'll be pleased with the leakless result!

