



The Drip Pan – Engine & Transmission

Air Cleaner Assembly & Engine Sealing

Henry Ford's marvelous car was designed in a era where trips were short, the speed low, and the driver was expected to pay close attention to the maintenance of his mechanical steed. Today we drive our T's long distance, at high speeds, and we are used to the relatively maintenance free modern car.

One of the best ways to improve the longevity of any car engine, particularly one that is being worked hard (Model T going 45 mph), is keep the guts of the engine CLEAN. This means an air cleaner, and sealing up the other holes that allow dirt to enter the engine interior.

The later model T's have more room under the hood than the early cars. I don't think this installation will work on the brass era cars. I installed a Briggs & Stratton washable foam air cleaner which was used on a 8 hp industrial engine. The base of the air cleaner was a slip fit on a short length of exhaust pipe tubing. The tubing was welded to the top of a cut down Model T hot air tube. The completed assembly mounts to the hood clash strip using a existing hole, so no permanent modification was necessary.

For those who aren't inclined to build their own, there is a line of very popular washable screen air cleaners made by the K&N Company which are use in motocross motorcycles. Several of these look as though they would fit in the confined space of a Model T engine room. These filters have a rubber tube molded into the base which slips over the carburetor inlet. No modification to the T carburetor should be necessary. See your favorite motorcycle dealer.

When the pistons are going up and down inside the engine, they cause air and dirt to cycle in and out of the crankcase. This air is pumped through any of the available openings, which in the case of the T are the oil filler cap and the two holes which allow the throttle rod to pass through the block. I filled the cavity inside the top of the oil filler cap with a chunk of open cell foam. The valve cover has a thin piece of the same foam sandwiched between the cover and the gasket. This has a slit in it to allow the throttle rod to pass through.

The last hole to plug was in between the number 2 and 3 cylinders. This was done by using a third piece of open cell foam which was glued to the cylinder block on the inside of the engine. This piece also has a slit to allow the throttle rod to pass through. The adhesive used was RTV silicone, but any good gasket adhesive which will stand up to the oil will work.

Contributor Unknown

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Air Cleaner for a Model T

Gary Vriezen, Lone Star T's Newsletter, April 2005

Make your Model T breathe easier by installing an air cleaner.

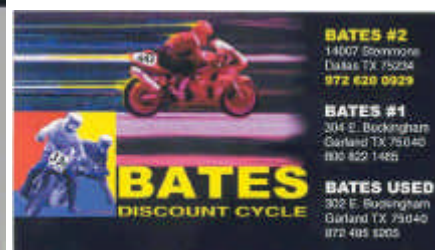
See photo 4 for the assembled unit and photo 1 for the parts to the filter.

Here are the parts required:

The most difficult part is the steel adapter shown in the drawing, see photo 2. The dimensions are not too critical, they are shown in photo 5. The one that is most important is the 1.475 diameter at the rear of the adapter. See photo 3 for a better view of how the adapter fits here. This dimension will have to be verified when the air filter is purchased as I have found some variations in the spring size that fits this area of the adapter.

It might be a good idea to have the air cleaner in hand before making the rear of the adapter so the spring can be measured and the adapter made accordingly. The air filter is made by Uni, is available at Bates Discount Cycle, they have three stores in the Metroplex, see the copy of their business card below for the location nearest to you. The stock number of the filter is U-401, it is called a Sock Filter. The cost is around \$10.00 as of this writing. See the copy showing the label from the filter I purchased last week. The cycle shop also sells an aerosol can of oil to use on the foam to trap the dirt and dust as the air passes through the foam. This is easier to use than oiling the foam and then having to blot out most of the oil so it does not run out of the foam onto the garage floor.

Now, you ask, how does the filter fit into the Model T? The small part of the adapter goes into the back of the carburetor, the foam sleeve will back up against the front of the transmission cover. The spring will hold the filter sandwiched between the carb and the transmission cover. The choke linkage will be close to the worm gear clamp, be sure to place the clamp away from the choke linkage. It fits almost like it was made to go there! I have used a filter like this for over 12 years, the foam sock is finally getting old and frittering away, so it was time for a new one.



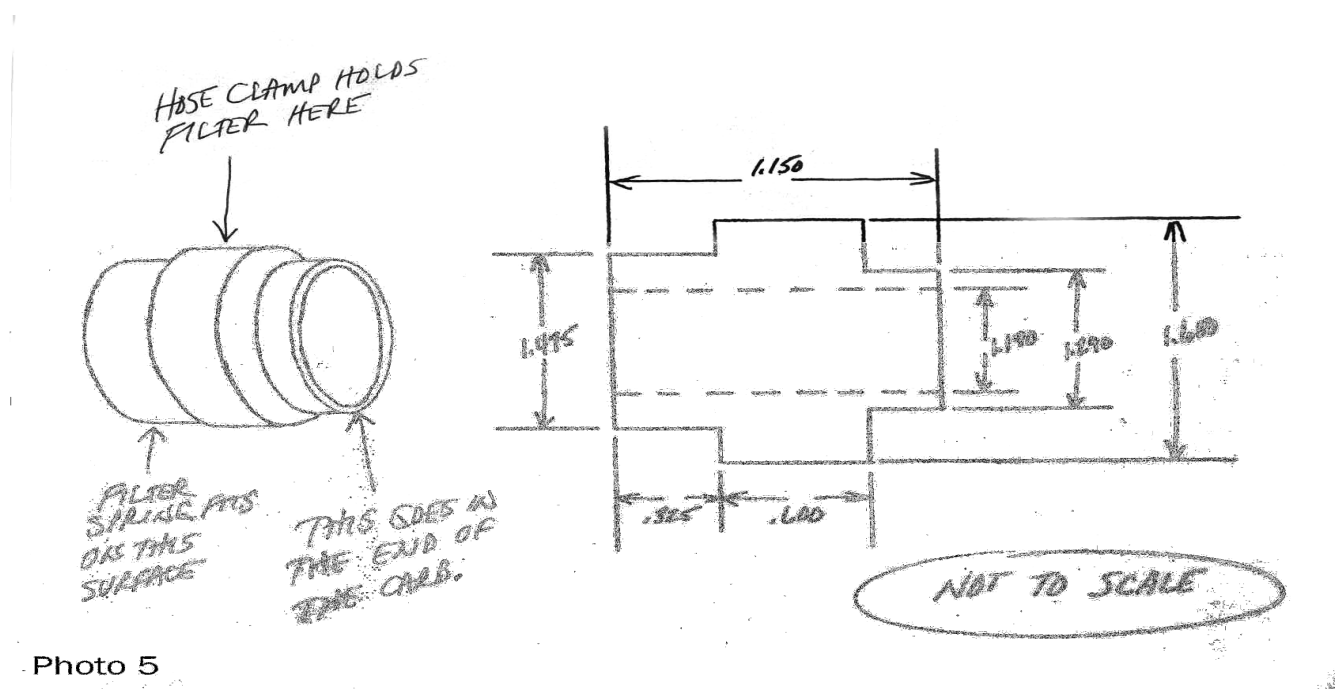
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Air Cleaner Installation Continued



Adjusting Transmission Bands

To adjust the transmission brake bands quickly, place a tire iron, or a screwdriver, against the transmission band washer, and pry the lugs of the band together. Then the nut on the transmission band screw can be easily tightened or loosened with the fingers. Care should be taken to lock the nut with the washer; having the projection on the washer engage the groove on the nut.

Author Unknown

Building an Early Type Drive Shaft

I have recently built an early style driveshaft for my 1917 "T". The trouble all began when I tried to mesh the ring gear with the pinion gear. I couldn't get the pinion gear to go in far enough. Upon inspection I found I had overlooked the fact that an early style driveshaft bearing housing is longer than the later style. I had to disassemble the driveshaft and face off the housing to the correct length. The reason the early style is longer is because there is a ridge on early rear end housings which fit into the veering housing which is not on later style housings.

Nolan Renfro

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Changing Connecting Rods

Ford connecting rods can be changed, without removing cylinder head! Remove cap from lower end of connecting rod. Pull piston down until bottom ring snaps out of the cylinder. Take cotter out or piston pin clamp screw. Remove piston pin clamp screw with a Tee-Wrench.

Piston pin can usually be pushed out with fingers. But if not take 14 inches of 5/16 inch steel rod and bend it L-shaped, with the 2-inch short end at right angles with the 12-inch long end. Put a nut on the short end of this pry bar, and use it to force out the piston pin.

To replace the lower piston ring in the cylinder, compress the ring with a scissors type of ring squeezer, which can be bought or made up in the shop. Removing spark plug makes it easier to push the piston up into cylinder.

Have used this method for over two years, making average time of 35 minutes per connecting rod.

Ford Dealer and Service Field, June 1926 - From Frank Martin, Conshohocken, PA

Check That Oil with a Dipstick

It's no secret - especially as we get older (and some of us have already long passed that point) - that checking the oil can be a real pain in the back. Who among us hasn't already rigged up a long rod with some gadget to open the oil cocks. And sure there is the \$16 sight gage - but you still must get down and kinda' under. I'll be happy to sell you mine. The dip stick is the answer; Why didn't Henry think of it?

Now you can go buy one for 26 bucks, but the real T imagineers never buy anything that can be rigged from parts around the shop, picked up for next-to-nuthin' at the last swap meet, or found down at the local hardware store. Here's what's working well for me - and cost me less than a case of diet coke on sale. And it's an easy Sunday afternoon project.

Get a dipstick from about anything. Mine was a nice new chrome one from a 454 Chevy - \$2 at Pate. You're going to cut it pretty short anyway, so the length is not important. Remove the crank case oil cock (T3079N for the purist) and take it and your dip stick to your hardware store. Use the upper oil cock to reduce the oil loss, but eventually you will screw the plumbing into the lower hole. Show the hardware person what you are trying to do, and you will leave the store with three new brass pieces: a tee, a short extension to connect the tee into the hole in the case, and an adaptor that will connect the bottom of the dip stick casing to the tee. The oil cock will fill the third hole in the tee, if you still want it. If not, get an elbow instead of the tee.

You will need to bend carefully the dip stick casing about 70-80 degrees with about a 6-8 inch radius - a loose curve that will allow the dip stick to slide down the tube without binding. Determine where you want the dip stick handle to be (mine is just above the carb) and that will determine how long you want the casing to be. Cut it off before you connect it all together to keep the trash out of the casing and, hence, out of your engine oil. Either bolt or weld a support bracket to attach your casing to one of the engine bolts (not to the body). Stick the dip stick down the casing to see how much you now need to cut off. Taper the end slightly to make it work easier and to reduce wear. I won't insult you by telling you how to calibrate the new dip stick.

That's all there is to it ... except when you have your T out for a tour and all of your friends are standing around, open your hood and pull out your shiny new dipstick. Hold it up as if you are checking your oil. It's a real conversation starter - as if we really needed one?

Glen C., Lone Star T Newsletter November 1996

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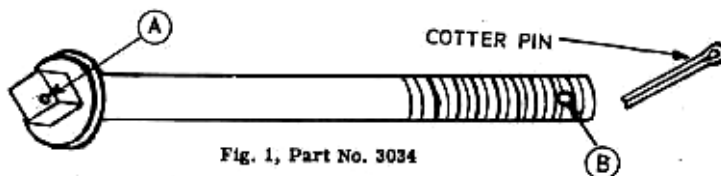
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Cleaning the Vaporizer Heating Plate

Approximately every five thousand miles it is advisable to remove and clean the vaporizer heating plate. This plate can be easily removed by removing the four exhaust manifold cover screws, loosening the vapor outlet tube nut and moving the cover away from the manifold.

Ford Instruction Manual

Crank Shaft Main Bearing Bolts – Indexing the Cotter Pin Hole



When new, the bearing bolts have a small pyramid or tip of metal protruding from the top of one corner as shown (A) above. This protrusion is in line with the cotter pin hole (B).

Sometimes the pyramid has been defaced, and is not visible. If this is the case, then a center punch mark can be made in one corner of the square bolt head so as to line-up with the cotter pin hole.

The cotter pin holes in the rear main bearing bolts are at 90 degrees to the crank shaft. Use 3/32" x 1" cotters in all main bearing bolts.

Frank Fitzpatrick, Model T Times

Crankshaft Counterweights

Ever since my fiber gear shucked its teeth a few months ago I have been living with a metal timing gear. Due to a fitment problem with the camshaft I cannot get the gear to run perfectly quiet. Not the fault of the gear. Yet, the gear noise, which is an intermittent clatter at certain speeds, serves a purpose: It alerts me to the harmonic vibration periods inherent in the T crankshaft. They do exist in every car. But what about my engine?

The repro Dunn-type counterweights are supposed to get rid of vibration. My counterweights were mounted with great care, and then the crank was spin-balanced. I saw with my own eyes the crank spinning several thousand rpm on the Stewart balancing machine. It was perfect dynamic balance. And this is the way I've been running- with some annoying noise as the backlash of the timing gear gets slapped against once or so every other revolution. At around 25 there is a faint clatter. At about 33 mph the noise returns but louder. The clatter passes away upon further acceleration, but at 42 the clatter returns and has become _very pronounced_. Like a boiler shop. Above 45 the noise disappears again. Interestingly, whenever the clatter is loudest the tension side of the fan belt _vibrates_ visibly, whipping to and fro. The belt whip is yet another manifestation, in my opinion, of the severe harmonic vibration present in the counterweighted crankshaft. The counterweights do not stop harmonic vibration.

So, the question is- do the counterweights _worsen_ the harmonic vibrations?

Only one way to find out: Take off the weights. I did Result: The _nasty_ vibrations are gone. The clatter remains, but MUCH reduced in sharpness. It is present over wider brackets of engine speed, but the noise and belt whip is never so strong as it was with the counterweights.

Continued – next page

I have decided of course, that the counterweights are counterproductive. They are permanently retired from service. The weights' large mass caused a tuning effect- where the light harmonic vibrations were damped out, only to be concentrated or amplified strongly at certain critical engine speeds. A mere matter of tuning. What the Model T needs, is a harmonic balancer (damper).

What MY car needs is a better fit of the timing gear. My custom camshaft has small but fatal defect: the shoulder that the gear is supposed to press-fit upon is too skinny by about 10 thou. So the gear cannot be accurately centered- it is a matter of chance and luck when the cam nut is torqued down whether the gear

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gets moved off center. I need to pull out this \$\$\$ camshaft and have the shoulder built up somehow. Metal spraying? Returning the camshaft is not an option. I like it very much except for this one little defect.

So it goes that one person's mistake (cam shoulder) becomes another person's higher education in the inherent harmonic vibration of the Model T crankshaft!

Reid

Bear in mind that the T crank is very skinny- which adds to the whipping effect- it's like a spring being alternately coiled and released by the individual explosions. Naturally, the #1 and #1 cylinders can "wind up" the crank more than the other cylinders closer to the flywheel.

Posted by Reid Welch on November 17, 1999 at 22:29:55: Model T Forum Page

Dead Timer Roller

After all the driving had been done at the last Texas T Party, it was necessary to drive the Model T one more time for this year's picture. The car started with the usual one pull of the crank, ran for a couple of seconds then died as if out of gasoline. Two or three repetitions of this then not a whisper, not a buzz from the coils. The gasoline tank was full just thirty miles earlier. The gasoline had not been shut off. A simple check verified that there was power to the coils from the ignition switch.

The problem was solved by replacing the timer roller and cleaning the timer interior. It seems that the oil had caked around the rivet which forms the axle of the timer roller, effectively insulating the rolling element from the remainder of the roller assembly. No ground, no buzz, no ignition, no start!

Hugo Richter, Lone Star T Newsletter 1988

Does Your "T" Creep?

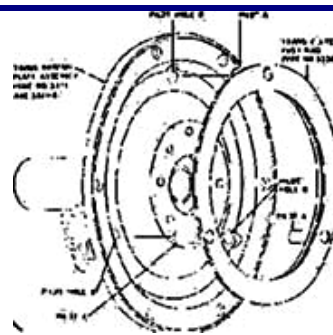
One of the reasons for this irritating situation is described below:

Most "T" enthusiasts are familiar with these two parts. For some mysterious reason a great number of these parts were produced where Pilot Hole B was not large enough to provide Pilot A to have the proper clearance. This will result in preventing one of the Pilots A from entering into Hole B when the clutch pedal is depressed to neutral, thus preventing the clutch plates at that area from fully disengaging.

You should be able to hold Part 3336 at various angles and place into holes in Part 3321 without any binding. If this cannot be done, then it becomes necessary to enlarge the 3 holes in Part 3321 shown as B.

Before assembling your transmission make sure that this situation is checked.

From August 1998 Riverside Corono MTFCA Newsletter



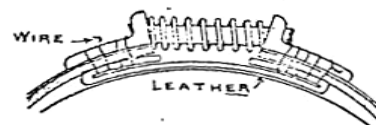
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Emergency Band Lining

Sometimes one burns out a reverse or slow speed lining when miles from nowhere, but in such cases, an emergency repair can be made by using a leather or fabric strap, about the width of the bands, holding over the ends of strap and placing it across the top of the drum, where it should be tied to the lugs with wire. This makes a good temporary repair.



E.A. Carpenter, Rapidan, VA

Exhaust Pipe Packing Nut

For years, the exhaust pipe packing nut continued to come loose, and the fumes would almost choke me before I could get the engine stopped. Had the nut wired on, and even had holes bored through the angles for wires to be passed through and fastened to screw eye fasteners to side of body to keep nut from turning. Bought a special wrench for screwing up this nut. Had several garage men tighten up the nut, and they always assured me that it would not give further trouble. They put emery, asbestos, fine wire and what-not on the threads –but with no effect.

Had the trouble until a mechanic asked me if I had tried salt. Made a thick paste of fine salt and filled the threads in the nuts and the threads on the end of exhaust manifold and screwed nut up tightly. Has been there a year now and have never budged.

S.R. Howard, Hillsboro, OH

Fix That Sediment Bulb Fuel Leak

One of the aggravating problems one has with a Model T is a fuel leak. One of the most common fuel leaks can be found where the sediment bulb is screwed into the gas tank. I have found that Teflon tape can be used successfully, but this is not a guaranteed repair. A permanent repair can be accomplished by filling the threads on the sediment bulb with solder. First, remove the sediment bulb and thoroughly clean the threads on the bulb which screws into the tank. Next, once the threads are clean, "tin" the threads with solder. While the sediment bulb is hot, fill the threads with solder and then quench the bulb with warm water. If you have a power wire brush wheel, remove the excess solder so the top of the threads can be seen. Now screw the bulb back into the gas tank and any leaks should be a thing of the past.

Author unknown, From T-Time in Canyon Land ~2000.

Fuel Bulb ('26 Coupe)

Model T Ford Forum: Forum

By [Kenneth S. Foster \(Foster26coupe\)](#) on Wednesday, July 02, 2003 - 12:06 pm

I'm rebuilding a '26 coupe fuel bulb. Any advice to ensure it doesn't leak and operates properly is appreciated. Does anyone know what the lead washers in the various T parts catalogs replace? Is it the washer under the drain plug assembly or the smaller thick washer in the valve assembly? Is using soap the moving parts the preferred way to ensure no leaks? Should any modern gasket or sealant materials be used? Thanks, Ken Foster

By [Michael Perigo \(Mperigo\)](#) on Wednesday, July 02, 2003 - 02:13 pm:

Ken, I getting ready to do the same thing. Glad you asked! Mike

By [David M. Coleman \(Davecoleman\)](#) on Wednesday, July 02, 2003 - 02:44 pm:

Me too!! I assume you're talking about the sediment bowl and shutoff the comes directly from the fuel tank, into the engine compartment. My old one leaks like a sieve (esp. the rotary shutoff valve). I purchased a new one from one of the vendors (Lampost) but they were candid in noting that 'they all leak ... the new one will probably just leak less.' I am going to see if my machine shop guys can cut an o-ring groove on the widest portion of the tapered cylinder ... and hope that will work. I will report progress, if any. d

By [Dave Huson \(Modelt12\)](#) on Wednesday, July 02, 2003 - 04:28 pm

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The lead washer goes against the screen. The screen is on the outlet. The best bet is to go to Napa and get a new one. Why take a chance on burning up your car with a leaky sediment bowl. By the way I think the last one I bought cost about \$14.00, and I have never had one leak yet.

By [Dave Huson \(Modelt12\)](#) on Wednesday, July 02, 2003 - 04:31 pm

Please see application of sediment bowl on a 27 you can use the same one on ANY year.

By [William Alexander \(Springerpete\)](#) on Wednesday, July 02, 2003 - 04:43 pm

Hi- I got a new one from Lang's and it has modern neoprene seals. Does NOT LEAK a drop. Bill

By [Dave Huson \(Modelt12\)](#) on Wednesday, July 02, 2003 - 04:47 pm

Kenneth, If you decide to go with a new sediment bowl, you can get a brass elbow at Napa or a cast iron one at any plumbing shop. The cast iron is cheaper. I have used both and see no difference. This one is cast iron. I have had it in about 7 or 8 years with no leaks. I have one in a 12 for 25 years with still no leaks.

By [John H \(26tourer\)](#) on Wednesday, July 02, 2003 - 07:35 pm

For those that want to use a modern sediment bowl and need a part number, use a John Deere AM3100T. It looks the same as the pics below. No leaks in my fuel system since I installed mine. I used teflon tape for thread sealing. John H

By [Fred Houston - Broken Arrow, OK \(Fredhouston\)](#) on Thursday, July 03, 2003 - 12:31 am

Another approach that works and retains the original is to Quik Poly the original valve in the open position and install a modern shutoff in the line near the carb.

By [David M. Coleman \(Davecoleman\)](#) on Monday, July 21, 2003 - 10:14 pm

Dave and John: Thanks for the pixs and John Deere part number. I received the reproduction sediment bowl (1926 tudor) and was so disappointed w/ it's construction that I returned it without ever installing it. The vendor understood and was very kind. The Deere unit is an easy installation and while not original, doesn't look out of place. I suppose someone will laugh at it, but in the meantime it's picking up lots of small crap from the tank and the carb is running infinitely better. Again, thanks!!
dave

By [David M. Coleman \(Davecoleman\)](#) on Monday, July 21, 2003 - 10:16 pm

Dave and John: Thanks for the pixs and John Deere part number. I received the reproduction sediment bowl (1926 tudor) and was so disappointed w/ it's construction that I returned it without ever installing it. The vendor understood and was very kind. The Deere unit is an easy installation and while not original, doesn't look out of place. I suppose someone will laugh at it, but in the meantime it's picking up lots of small crap from the tank and the carb is running infinitely better. Again, thanks!!
dave

By [Dave Huson \(Modelt12\)](#) on Tuesday, July 22, 2003 - 09:11 am

In case anyone else is having the same problem and there are no John Deere stores near by, the number for the Napa sediment bowl is 730-2356. If you go into a Napa Store and ask for a sediment bowl you will only get a vacant look. Napa calls their sediment bowls, STRAINER - FUEL. Many clerks can't find the strainers in their books if you ask for a sediment bowl. I suspect that other parts stores are the same way.

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By [Rick Goelz \(Rickyg\)](#) on Tuesday, July 22, 2003 - 10:50 am

Dave, the nice thing about using a cast iron ell is that as it rusts itself in place ,you just hit it with a hammer and it will break into pieces, that is why cast iron is almost always used in steam heating system, a plumber with a big hammer is an expert at removing stuck fittings. Rick



Submitted by: Dennis Sanford

Front Crankshaft Seals

Front crankshaft seals can be a bummer on the Model T. If you want to filter those oil drips, just use the felt half-seals that come with the gasket set! However, if you would rather keep the oil on the inside of the engine you need to use the hard white rope seals that are made for the 1938-1948 Ford V-8. These are used with about 100 percent success. Be sure to use a 1 1/4 inch socket to force the seal into position, tapping it quite hard with a hammer. Then use a sharp knife and cut each end off about 1/32 of an inch above the block, also do the same thing to the engine oil pan. You will want to improve the seal by putting a small amount of gasket cement in the groove before putting the seal in the groove. Ask for part number NAPA #5V762. Throw the gasket away and use the two half seals!

Courtesy of Herb Z, Sunflower State Crankers

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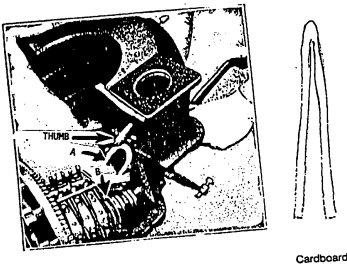
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Gear Clearance

An easy way to establish gear clearance is to use the four part bill of lading such as used by motor freight companies. Cut the form into strips, and keep the alternating layers of paper and carbon in their original order. Feed the strips between the gear teeth, adding layers until the paper "writes". Measure the clearance, make corrections as needed and repeat the measurement process until the desired clearance is achieved.

Ralph Zajicek

Hogs Head Installation ... You Don't Need 3 Hands!



Need Three Hands When Installing Hogs Head? Not So!!! Says Ralph. Cut a piece of cardboard 1-inch wide and 6-inches long. Fold in middle. Slip this piece of cardboard between clutch release ring (A) and pivot arm. The clutch ring will now stay in place while the hogs head is now erect in place and the clutch ring will slip into the clutch shift groove (B). Slide cardboard where thumb is in figure.

Ralph Zajicek

How I Made a Head Gasket for a Riley Multi-Ford Head

Needing a new head gasket for my Riley multi-Ford head, and discovering that a stock head gasket would not work (the valve portion of the combustion chamber is much larger than a regular Ford head and the valves in this engine are much too large for a stock gasket). I decided I would try my hand at making one. I carried a piece of the old gasket to a local firm that sells and fabricates gaskets and gasket materials. They were able to identify the old gasket as being made of Klingerit 1000. This material is made of two layers of an asbestos like material with a layer of fine mesh wire between them, and is about 1/16 of an inch thick. The first step in making the gasket is to lay the material on the head and with a very small ball peen hammer mark the rear head bolt holes. Punch these out with a gasket punch or very carefully with the head bolts. Then mark and punch out the rest of the head bolt holes. The next step is to mark the water passage holes and cut them out. The large holes I cut out with a very sharp small wood chisel after making them with the hammer. The small "steam holes" can be drilled with an electric drill or carefully punched out. The next step is the valve and combustion chamber. these can be cut out with the wood chisel. The wood chisel cuts should be made on a piece of smooth hard wood. The last step is to smooth all the cuts up with a small file. The cost of the material was less than \$8 and this gasket worked very well with no combustion or water leaks.

Wally Shipley

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Installing a '26-'27 Brake Drum in an Early Type Engine

It is possible to use the 26-27 type brake drum in an early style engine but there are modifications. The advantage to using the later style drum is because the clutch lugs which wear, and are hard to repair on the early style drums, are replaceable on the later style.

In order to use the later style drum you not only have to have the drum but also the drive plate (or pressure plate) and the six special bolts which attach the pressure plate to the brake drum. The bolt pattern on the later style drum is closer to the center by just a smidgen.

If you want to make use of the wider brake band you have to use the 26-27 type transmission housing. You can install the early style pedals so it won't be obvious to the casual observer. The early style transmission cover will fit over the wide band but just barely clears. In my own car I turned the drum down to the same width as the early type.

Nolan Renfro

Installing Hand Crank Bushing (after it is assembled in the engine)

I was asked if it is possible to install the hand crank bushing into the crankcase after it is assembled to the engine. My experience had been with a bushing machined for a light press fit. "No Problem" I said. After hearing a report that this was possible but barely when using a new bushing from one of our suppliers, I recently tried the same thing with a new bushing from a Model T parts supplier.

The first try had to be abandoned because it is impossible to generate sufficient force with simple tools. The bushing as supplied is rolled into a cylinder from thick sheet. The result is a part which is not truly round. It was necessary to machine for a distance of 1-5/16 inches from the end to remove some material from the high spots. Approximately .005 inch was removed. It was possible to install the bushing from the engine end by using a piece of 5/8 inch diameter all thread rod, two nuts to fit the rod, a washer, oil on the threads and two wrenches to fit the nuts. Even so, approximately 100 ft. lb. torque is required to fully seat the bushing.

Hugo Richter

Irregular Firing (spark plugs)

When one cylinder alone loses power it may often be traced to the spark plugs, especially if they are of different makes and the points are of variable distances apart. The current may be of sufficient strength to jump across the points which are not over 1-64 inch apart, but those too far apart offer so much resistance that the spark is diminished. It seems reasonable to believe that the use of one make of plugs in all the cylinders of a motor at one time would be most practically in as much as they would be most apt to promote more uniform firing, owing to their similarity of construction. It is possible, however, to adjust almost any combination of different makes of spark plugs so that no difference in the regularity could be detected.

Gas Power Magazine, October 1913

Main Bearings, Cam Bearings

Main Bearings ... Countersink the holes which take oil to the main bearings. This will allow more oil to be available. It will also be a place for lint to build up, so keep your oil changed!

Nolan Renfro

Cam Bearings ... The special bolts which hold the cam bearings in place sometimes will allow the bearings to move causing end play, so you must be careful, and perhaps shim, under the ends or sides to take up "lost" space.

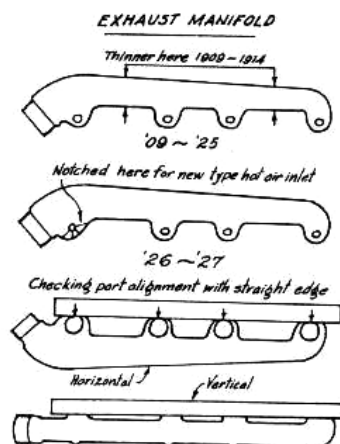
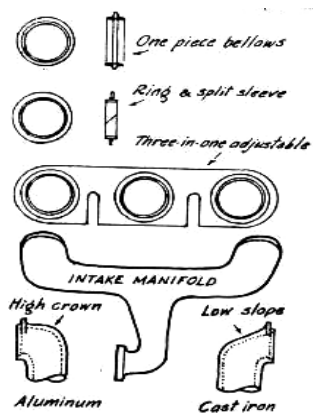
Contributor Unknown

Many Fold Problems of the Manifold

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There are two basic types of exhaust manifolds, one for the early ('09-'25) and one for the late ('26-'27) Model T. These are shown here and differ slightly as indicated. The first thing to check in selecting or examining the existing manifold, is the horizontal alignment of all four exhaust ports. These manifolds are cast iron and the expansion direction is toward the rear in use (in the direction of the flow of hot gasses). Since the manifold is secured by clamps with stud nuts, this natural thermal expansion will cause distortion at the number 4 cylinder port, and usually after many cycles of heat and cooling "warps" it out – of-center to the block ports. Excessive "warping" will ruin a manifold and may cause the ring and sleeve type manifold gaskets to be impossible to install. This situation brought about the many varieties of adjustable three-in-one manifold gaskets available. Originally the gaskets were one-piece, being made of a single piece of corrugated copper, one for each port. Later came the two-piece ring and sleeve, and for "warped" manifolds came the three-in-one adjustable.

If your manifold is warped in either the vertical plane over 1/8 inch, or in the horizontal plane over 1/4 inch scrap it. The three-in-one gasket being exposed in the cross section of the exhaust outlet will burn out in short order.

The intake manifold gives almost no problems as it does not receive the high temperature directly which the exhaust manifold must endure. You may encounter the problem of fitting the high-crown type intake manifold on our block under the later type ('15-'27) exhaust manifold – it will not fit as the tops of the ports (crown) on the intake manifold "strike" the under side of the exhaust manifold and the respective ports will not align properly. Only the low-slope type intake manifold (cast iron) will fit. The very early aluminum ('09-'10) goose-neck intake manifold, not shown here, was the high crown pattern and was used (as the later aluminum type, '11-'14), with the "thinner" exhaust manifold.

C.W. Worth Owen, Nations Capital Chapter, MTFCI

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Model T Oil Pump, Rear Cam Installing Using VW Pump

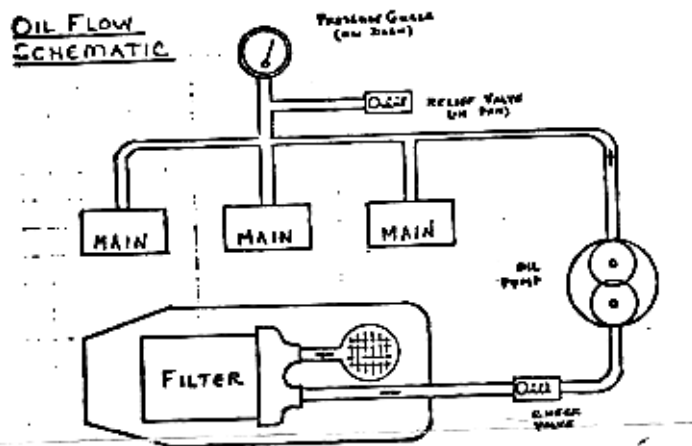
An adaptation of the technique presented in the October, 1921 issue of "Ford Owner & Dealer" magazine.

National tours, longer trips, and freeway minimum speed limits have forced the Model T to the upper limits of its splash system oiling capability. As a result, the Model T owner (particularly the speedster owner) may want to consider the installation of a completely internal pressure oil system. High speed reliability may be achieved in the Model T Ford by installing a full pressure oil system.

This article deals primarily with the internal installation of the oil pump, however a few words are in order here regarding full pressure oiling. The full pressure oil system requires that holes be drilled in the crankshaft from the main bearings to the rod bearings. Some of the advertisers of the "Vintage Ford" provide crankshaft drilling service. Probably the best approach is the installation of a drilled 'A' crankshaft, however the heavier, late Model T crankshaft may be successfully drilled. Crankshaft drilling techniques are described on page 148 of the "Model T Ford in Speed & Sport." The single hole technique is recommended.

The "handy" Model T hobbyist can drill his own crankshaft, however, a radial drill press is desirable and extreme care must be exercised to prevent drill breakage and to achieve proper alignment.

To provide room for the oil pump the field coils and magnets must be removed.



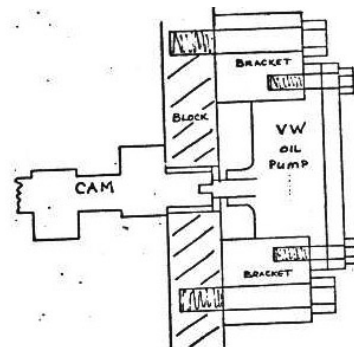
Oil Pump Preparation – Use 40 hp, VW gear pump; capacity is more than ample yet case is thinner. Buy a new pump, they're cheap. Also buy a VW pump cover plate; get a flat one if possible, otherwise part of the turned out lip will need to be removed (hack saw). Next, remove the gears and use hack saw to cut away approximately 3/8 inch of the aluminum case which forms the drive gear bushing (see drawing). Use small machine bolts to attach cover to pump. Note that three of these bolts thread directly into the mounting bracket described later (use a nut on the other). Next thread the pump inlet and outlet holes to accept brass flare fittings for 1/4 inch tubing.

Camshaft Preparation – If you plan to have your camshaft ground, it must be done prior to the oil pump installation as the rear camshaft centering hole is removed to provide the pump drive. Using an acetylene torch, heat the back 3/4 inch of the rear cam bearing journal to a cherry red and let cool slowly to remove the hardness. Saw off journal, leaving a length of 1-5/16 inch. Cut the 3/16 inch slot shown in the diagram with a hack saw and file. Keep it neat, but a loose fit here is not only desirable, but necessary.

It would probably be possible (and preferable) to use one of the new carbide hack saw blades to accomplish the above without removing the hardness. The shortening of the pump shaft in order to lengthen the rear cam bearing journal would also be advisable. This is how I will do it next time, however, the technique described above is simple and it works. I have over 3000 miles on y T and recently removed the cam for inspection and could see no signs of wear.

Block Preparation – Since the oil pump shaft is a smaller diameter than the cam shaft, a two piece rear cam bushing must be installed to insure that the oil pump shaft is centered.

Take your block, cam, oil pump, and new rear cam bushing down to your local auto machine shop and have the two piece bushing installed as shown.



Pump Mounting Bracket – The mounting bracket is the most difficult part. Basically, the problem is providing a mounting surface 1-1/2 inch from, an exactly parallel to, the field coil mounting surface on the back of the block. The four small perimeter machine screws (mentioned above) are used to attach the pump to the bracket, then two 3/8 inch NF bolts are used to attach bracket and pump to the block. Use steel, cast or aluminum stock, 1-1/2 inch thick, 4 inches wide, and approximately 6 inches long. Cut a rough opening into one side of the stock, deep enough that 3 of the case machine screws may be threaded into the stock. Drill, thread the holes and mount pump on the stock. Using the pump shaft and its bushing as a centering guide, continue to make hack saw cuts on the stock until the bracket and pump do not hit the flywheel, crankshaft, or transmission cover housing. Also, space should be left to drill two block mounting holes in the stock. One will fit one of the field coil mounting holes; the other you need to drill and tap in the block. Use a touch of epoxy on the threads of all bolts which can't be locked by other means.

Output from the Pump – goes three places (see schematic):

- 1) To the main bearings.
- 2) To the oil gauge.
- 3) To a relief valve (45# relief valve may be removed for a 6 cyl. Chevy oil pump, and cover plate.)

Input to the Pump – An aluminum accessory racing pan may be used and the oil line routed as follows:

- 1) Use a screened oil pick up from a late model engine.
- 2) From the pick up, route through a full-flow modern heavy duty filter. This filter and bracket is completely hidden in the aluminum pan. The pan will need to be removed for placement, however, every 6000 miles on a T isn't that often.
- 3) Route the line to the oil pump and install a check valve in the line on the input side of the pump (either side would be fine).
- 4) The above mentioned relief valve will fit very nicely in the pan as well.

If you do not use the accessory oil pan, the hook up would be the same with the filter omitted and the oil pick up and relief valve can reside in the lower part of the pan in the space where the field coils and magnets normally reside.

Use steel hydraulic brake lines with double flaring. The steel lines are as easy to work as the copper and provide a more durable installation. Locating a double flare tool might be a problem.

Not an easy job by any means but well worth the effort.

Fred Houston, From T Bone Times

Motor & Drive Shaft, U-Joint

When putting the motor and drive shaft back together, pack the grease around the U-joint before assembly. This is much easier than trying to pack it through the grease hole.

Jim Mullen, thru Joe McCreary, from Zack Troxel

Also, hold the male end of the U-joint with a loop of wire instead of your fingers. If the motor slips, you are not joined to the car by mashed fingers.

John (Three Fingers) Albright

Mounting Transmission Bands

When mounting new bands, remove the old bands by taking a cold chisel and placing the chisel on top of the old brass rivet, between the steel band and the cloth band. Hit the cold chisel with a hammer and the rivet will "fall out" of the band. When mounting the new band, take a 2"X2" piece of pine and round off one end of the board. Mount one end of the band leaving some overlap of the band material. Place the rivet into the mounting hole and place the band on the end of the piece of pine, allowing the rivet to penetrate the end of the pine board. Then take the band and turn it over and place the head of the rivet on a piece of steel, and with a small ball peen hammer, pound the two ends of the rivet over. Make sure the rivet is "counter sunk" with the ball peen hammer. Do the same thing to the other end of the band and then push the remainder of the band material into the steel band. Do not rivet the band material to the steel band by going around the band in order.

Russ Fustenow, From T-Time in Canyon Country, reproduced in LST Newsletter 2000

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Need New Valves & Don't Want to Pay a Fortune and Chevy Valves

There is a good supply available and they can be had for little or nothing. Use Model A Ford valves. Check with some of your friends in the Model A Club, they usually have some old valves that are too short or the heads are ground too thin. Model A valves are longer and have slightly larger heads than Model T valves, so if the stems are not worn too much they make good replacement Model T valves. Use the original Ford valves if possible. They were made from austenitic steel (non magnetic). These are extremely hard to drill or cut with a hacksaw. However, once you get a set of these valves installed, your valve problems are over for a long time.

Royce Peterson, Lone Star T Newsletter, 1990

When installing small block Chevy valves in my T, it was found that the Chevy valve spring retainer had an inner spring seat diameter which perfectly fits the T valve spring. This makes it possible to use the stock Chevy retainer and keepers and avoid drilling a hole in the valve stem. I turned down the outside of the retainers to the OD of the T spring to tighten them up, but this actually isn't necessary.

John Witt

Oil Leak - Pedal Shaft

Pedal shaft material: O-ring seal 5/8" O.D., 12/16" I.D., 3/32" wall, Sears 42-22514.

Procedure: Grease pedal shaft with white grease. Slide O-ring on shaft. Insert pedal and pedal shaft into transmission cover. Install pedal support bracket. Simultaneously work pedal as you tighten the bolt and nut. No other modifications required.

Irwin Harris

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Oil Pan Leaks

Don't use lock washers on the bolts which hold the inspection plate on the oil pan. Oil will seep down the threads and leak. I wrapped a little kite string around mine and they don't leak a drop!

Nolan Renfro, From Lone Star Ts News (19??)

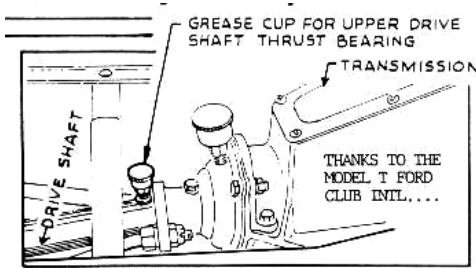
Want to keep peace with the wife and get that oily spot off the garage floor in one fell swoop? Well, if your problem is oil leaking past the bolts on the lower pan, this little should help.

First, get some ordinary cotton string. Several feet will be needed. Next, squeeze a dab of silicon sealant into your hand, then pull the string through the silicon several times, completely saturating the string in the process. Then, hang the string up to dry. After letting the string dry completely, take your "rubberized" string and crawl under Liz. Ponder for a moment all the drops oil hanging from each pan bolt head and how nice it will be to be rid of them! One at a time, back each bolt out about an eighth of an inch. Wrap several turns of your rubber string under each bolt head, then retighten the bolt. Trim the exposed string ends and proceed to the next bolt, repeating the process until the job is finished.

Fred Houston, From the Tulsa T-Bone Times

One Method of Preventing a Noisy Differential

The small grease cup, indicated by the arrow, is located slightly to the rear of the universal joint at the upper end of the drive shaft housing, as shown by the arrow in the sketch.



There is a babbit thrust bearing located in this area that controls the longitudinal movement of the drive shaft (end play).

Very few Model T owners realize that this bearing is involved in maintaining the correct mesh of the drive shaft and the differential ring gear. Any slight amount of wear on the collar of this babbit bearing will cause the gears in the differential to become noisy.

It is somewhat a mystery as to why Henry Ford equipped his T's with this small size grease cup at this very important area where lubrications is most essential. Use a good grade of soft grease and insert a grease cup full to the bearing at least every 200 miles.

Contributor Unknown

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Poor Idle and Low Speed Operation

PROBLEM: Poor Idle and Low Speed Operation

CAUSE: Worn throttle shaft and carburetor body allowing an intake air lead

CURE: Eliminate throttle shaft slop by re-bushing worn shaft and boring carb body

The procedure outlined below describes repairs on my Holley NH, but would work on any carburetor.

- 1) Disassemble your carburetor and determine the correct throttle shaft diameter at an unworn portion. The subject "NH" has a 1/4 inch diameter shaft.
- 2) Hobby supply stores, like Michael's, stock a precision thin-wall brass tubing in various diameters. The "NH" will need 1/4 inch I.D. tube.
- 3) Cut with a tube cutter to exactly match the wear on each end of the throttle shaft without interfering with the fit of the throttle plate. Dry fit the bushings and plate now to make sure. Slide the shank of a 1/4 inch drill into the tubing before cutting to provide a backup for the tube cutter. This will prevent crushing the thin walls.
- 4) Fix the new bushings in place with a two-part mix epoxy. This will be heat and gasoline resistant.
- 5) Now prepare the carburetor body. Align the body in a drill press vise with a 1/4 inch drill passing through the stock throttle shaft bore with the drill motor OFF. Set the depth stop so you don't drill through. The bottom of the carb casting. Retract the drill, chuck a 9/32 inch bit and drill the bore. If available, a reamer would be a better choice here.
- 6) Blow out the metal chips, reassemble the carburetor and listen to that "T" idle!

P.S. Replacement oversize throttle shafts are available. The repair described above will also preserve the original appearance of the carburetor.

Hugo Richter

Premature Retirement

My first Model T retired prematurely because a gasketed joint had not been properly tightened. Can this happen again to me, or anyone? It will happen unless we check and tighten all the gasketed joints before it does. In terms of oil lost, the transmission cover joints top the list. To make things worse, it is easy to overlook the starter mount, the bendix cover bolts and the magneto post. These dispose of oil real fast.

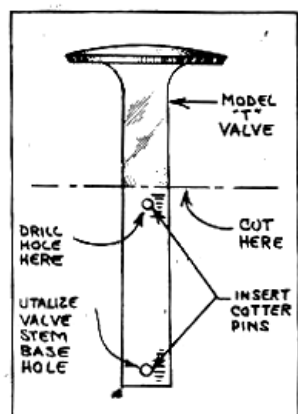
Bolted gasketed joints loosen because the gaskets seem to lose some of their resilience and take a new set. If the bolting is left loose too long, some of the gasket material may be worn away from vibration. If tightening does not work, the only solution is the installation of a new gasket.

When all the rest is done, check the joint at the rear of the block where the transmission cover and pan all meet. A leak here may be cured by packing with cotton string or cord.

Prevention of oil leaks may avoid a trip on the vulture wagon sometime.

Hugo Richter

Recycle a "T" Valve



On a number of early cars and trucks the fan drive pulley is held to the crankshaft with a stud. These studs had large hexagonal heads which are hollow and pinned in place. It was not uncommon for such pins to break off. When this happened the mechanics of the day would have to remove the radiator and jack up the front of the engine to get the front of the engine to get the front support plates removed. This made a simple repair quite a big job, but the stud would not come out any other way. It was possible to repair the stud, in its place, by making use of an old, extra Model T Ford valve. First the old pin was driven from the stud with a punch. Then the Model T valve stem was cut at a distance that was 1/8-inch longer than the outside diameter of the stud. These valves had one hole at the bottom of the stem. Another was drilled near the top of the cut off section. A cotter pin was then put through one of the holes, after which the modified valve stem would be driven into the stud. After it was through, a second cotter pin was slid through the other hole. The cotter pins hold the valve stem in place, suitably locking the pulley in position. As an added benefit, future repairs are made even easier, requiring only the removal of a cotter pin to replace the valve stem serving as a lock pin.

Dave Rosenow (Lone Star T Newsletter, 1988)

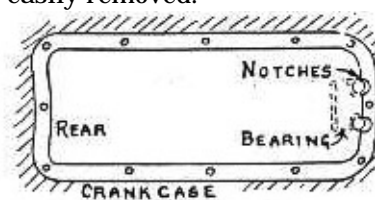
Removing Front Bearing Cap

It is generally considered that a front main bearing cap cannot be removed, without taking the engine out of the car. Yet it can be done by cutting notches in the front end of the crank case lower opening. These two notches allow the front bearing bolts to drop out, and then the cap can be easily removed.

When cutting these notches, use care not to cut them too large or difficulty will be experienced when assembling the engine in making an oil tight joint.

It is somewhat better to use two gaskets, as the lower plate has only about 1/8 inch coverage, where notches have been cut. These notches are cut V-shaped with hacksaw, and then rounded out with a file.

Emerson H. Babcock, Watertown, NY



Repair Crank Case Ball Socket

On many Model T's, the ball socket on the crankcase, the ball cap and the ball on the wishbone are worn enough to allow a Model T to wander down the road and to shimmy at the slightest inclination. It is extremely difficult to replace the ball socket on the crankcase as this item is riveted and brazed to the crankcase, so what is there to do to correct this problem?

A very easy solution includes a quarter, a ball peen hammer and an old crankcase with a worn out ball socket. Take the quarter and place it in the ball socket and then hit the quarter with the rounded end of the ball peen hammer. What you have just made is an excellent shim for the ball socket which should last the life of the car. This remedy can also be used on the drag link, although smaller coins should be used. Hopefully, your front end will be as tight as new and that old Flivver will not "wander" all over the road, plus you just added \$0.25 to its value.

Russ Furstenow , From T-Time in Canyon Country, reprinted in LST News 2000

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Roller Style Timer Maintenance

If you are still using a roller type timer as a few of us purists are, wash your timer out and dry it, then fill the timer case about 1/3 full of light grease. This helps prevent the two contacts from shorting out when the oil normally used is filled with iron particles due to wear.

Royce Peterson

Roller Style Timer Problems

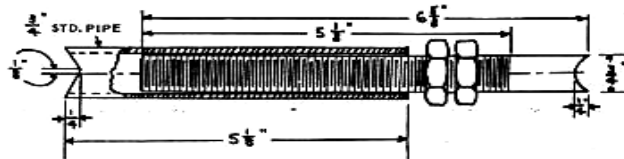
Until recently the TIGER name on a timer was our assurance of a reliable product. This is no longer the case. If you have recently purchased a Tiger Timer, inspect the tension spring for the roller contact. If you find that the spring has less than 21 coils, replace it with the spring from an old timer if possible. If you have access to a micrometer, check the spring outside diameter. The outside diameter of the Ford original springs is .180 inch. The spring wire size is .020 inch. There are 21 coils plus the two end loops. The new springs that I have checked are overstressed for the application, and have been known to break within five miles or less of driving.

Before you install any new timer, it is advisable to chuck it in a lathe and bore the roller path round and concentric with the outside diameter at the flange. This alone will eliminate bouncing of the roller contact and extend the life of the spring. This will also improve engine operation, especially at higher speed. It is advisable to examine the timer roller path every 2000 miles or so, and if any wear appears, then repeat the truing operation.

Proper lubrication is a must for reliable timer performance. Three in One oil is suitable. A mixture consisting of equal parts of kerosene and lubricating oil works quite well.

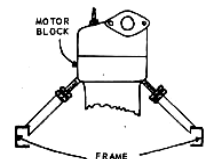
Hugo Richter

Stabilizer for Reducing Motor Vibrations



The above sketch shows dimensions for making and installing "stabilizers." These accessories dampen vibration to a considerable degree and transmit motor vibrations into power.

CAUTION: T's equipped with generators require insulation around battery connection on generator cut-out, or tape should be wrapped around the stabilizer at that point.



Contributor Unknown

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Stopping Those Pesky Fuel Leaks

It seems that just about every Model T has a small leak in the carburetor or the sediment bulb. While I addressed a leak around the threads of the sediment bulb in an earlier issue of a T-Time, the problem of the needle and seat in the carburetor and the "tapered" shut-off on the sediment bulb was not addressed. These two areas have a tendency to leak because of wear and dirt. I've found that "lapping" the needle and seat and the shut-off valve and the sediment bulb body with a mixture of oil and baking soda (YES, baking soda!) stopped even the slightest leaks. I also tried thinning down toothpaste with water, yet found this compound was TOO harsh and the leaks continued.

If you have an early brass carburetor, lap the metal needle into the seat and then replace the metal needle with a neoprene needle. It will never leak again!!!

Author unknown, From T-Time in Canyon Land ~2000.

Subtle Engine Discrepancies

Evidently some of the tooling used in manufacturing engines before the move to the Highland Park plant produced questionable results.

In the process of restoring an engine block for a 1913 Model T some discrepancies have appeared.

It did not seem that there was sufficient space adjacent to the nut for a wrench at one front main bearing. A small amount of grinding in that area outside the cylinder wall solved the problem.

When the camshaft was installed the large timing gear projected into the space to be occupied by the cover plate. I concluded that the front camshaft bearing had the locating hole incorrectly positioned. A comparison with other camshaft bearings showed that this bearing was correct. Measurement of the camshaft flange and the timing gear verified that these were correct. Conclusion: the locating hole for the retaining screw is approximately 1/8 inch too far forward in the cylinder block. The solution: machine just enough from the mounting face of the large timing gear to provide clearance at the front cover plate. This is the easiest part to custom fit, should it ever need to be replaced.

Continued next page

Subtle Engine Discrepancies (continued)

Step by step everything seemed to be in order until the pan was bolted in place. Now the fourth main bearing could not be seated on the rear flange of the pan. After other fourth mains were tried, it was concluded that the inside radius of the flange on the pan was too small. Grinding this feature to fit the 4th main solved that problem. Here again the choice of what needed to be altered was based on the likelihood that the 4th main would ultimately be replaced. Any part from stock should not fit.

It is possible that this one cylinder block is one that got by. Someone must have assembled it the first time, possibly using brute force. This alone suggests that the workers at that time were accustomed to solving similar problems, either by selecting parts which would work, or by doing some final fitting when such problems appeared.

Hugo Richter, Lone Star T's Newsletter, February 1992

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Summary of Engine Troubles and Their Causes

From the Ford Instruction Book

ENGINE FAILS TO START

1. Gas mixture too lean.
2. Water in gasoline
3. Vibrators adjusted too close.
4. Water or congealed oil in commutator.
5. Magneto contact point (in trans. cover) obstructed with foreign matter.
6. Gasoline supply shut off.
7. Carburetor frozen (in zero weather).
8. Water frozen in gasoline tank sediment bulb.
9. Coil switch off.

ENGINE STOPS SUDDENLY

1. Gasoline tank empty.
2. Water in gasoline.
3. Flooded carburetor.
4. Dirt in carburetor or feed pipe.
5. Magneto wire loose at either terminal.
6. Magneto contact point obstructed.
7. Overheated-account lack of oil or water.
8. Gas mixture too lean.

ENGINE OVERHEATS

1. Lack of water.
2. Lack of oil.
3. Fan belt torn, loose or slipping.
4. Carbon deposit in combustion chamber.
5. Spark retarded too far.
6. Gas mixture too rich.
7. Water circulation retarded by sediment in radiator.
8. Dirty spark plugs.

ENGINE LACKS POWER - RUNS IRREGULARLY

At Low Speeds

1. Poor compression - account leaky valves.
2. Gas mixture too rich or too lean.
3. Spark plugs dirty.
4. Coil vibrator improperly adjusted.
5. Air leak in intake manifold.
6. Weak exhaust valve spring.
7. Too great clearance between valve stem and push rod.
8. Too close gap between spark plug points

At High Speeds

1. Commutator contact imperfect.
2. Weak valve spring.
3. Too much gap in spark plug.
4. Imperfect gas mixture.
5. Vibrator points dirty or burned.

ENGINE KNOCKS

1. Carbon deposit on piston heads.
2. Loose connecting rod bearing.
3. Loose crank shaft bearing.
4. Spark advanced too far.
5. Engine overheated.

Third Hand for Manifold Installation

By Hugo Richter (July 2006)

If you are tired of juggling gasket rings, two manifolds, clamps and nuts to attach manifolds on the Model T engine, here is help. Make two little helpers as pictured below from 1/8 inch thick strap iron 1/2 or 3/4 inch wide. Bend 90 degrees as shown. Drill one hole 25/64 or slightly larger to just touch one leg of the angle. Trim the un-drilled end 1 1/2 inch long under the bend. Make the other end the same as the distance from the hold to the end of a regular manifold clamp. When all of the rings and gaskets are securely in place on the engine block, hold the intake manifold in position with one hand and use the little helpers and nuts to hold the manifold in place as shown in the picture below:



It is now possible to install the exhaust manifold by holding it with one hand while applying two regular clamps at the remaining studs. This will hold both manifolds in place so that the little helpers can be replaced by regular clamps. The next two pictures illustrate this sequence.



This will work provided you have a good exhaust manifold.

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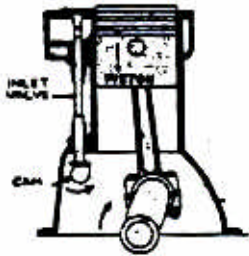
Timer Settings

When running a timer on your Model T, it is imperative that the timer be set properly to obtain the best running condition of your Ford. If the timer rod is not set or bent properly, the timer can advance too far and create knocking, which can destroy the connecting rods. With the spark lever fully retarded, the end of the timer rod passing through the timer MUST be 2 1/2 inches from the center of the bolt that connects the timing gear cover plate. This is the bolt that goes through the oil filler hole. Anything more than 2 1/2 inches will advance the spark too far and possibly create engine damage when the spark lever is advanced.

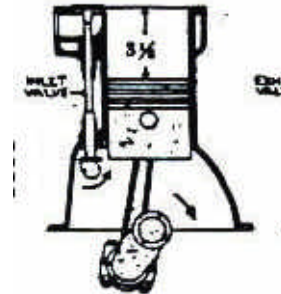
Author Unknown, From T-Time in Canyon Country

Timing Model T Valves

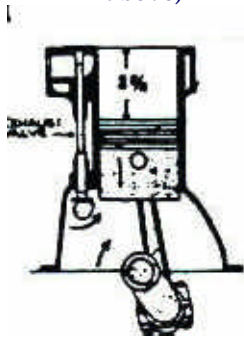
Source unknown, this was a pretty poor copy, if anyone knows where this comes from would appreciate it if you'd check the measurements and let me know if they need correcting. Thanks. Ed. (2/01)



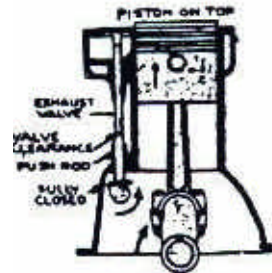
Inlet valve opens 1/16 in. (piston travel) after top center on 1st stroke (as piston is 1/16 in. above cylinder when at top - it is now 1/8 in. above)



Inlet valve closes 3/16 in. after bottom center on 2nd stroke. Measurement from top of cylinder to top of piston being 3-1/8"



Exhaust valve opens 5/16 in. before bottom center on 3rd stroke. Measurement from top of cylinder to top of piston being 3-3/8



Exhaust valve closes on top center of 4th stroke. Note when piston is at top of stroke it is 5/16 in. above cylinder casting.

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Transmission Triple Gears

When rebuilding the Model T Ford transmission, it is important that a careful check be made on the No. 3313 triple gears.

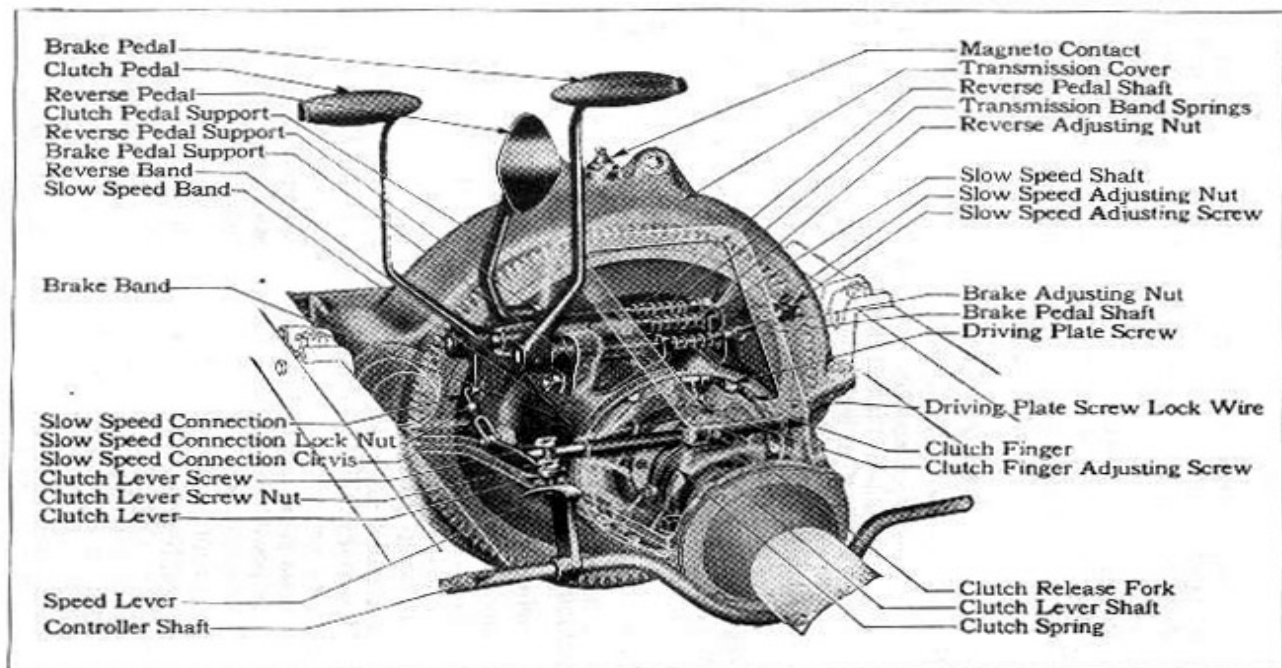
The first gears made were three different diameter gears riveted together. Each gear assembly weighed two pounds. But starting in 1920, the gears were made from ne-piece and there were no rivts. The pitch of the gear teeth and their diameter were the same as those on the older style, but the weight per gear assembly was two and one-quarter pounds.

The triple gear assembly should be used in "sets" of three, one triple gear on each transmission gear shaft (part No. 3315). Depending on the model year of the Model T, either the riveted type or the one-piece type should be selected. If they are mixed, it will cause the engine to vibrate.

If the gear assembly is of the riveted variety, they should be carefully checked for loose rivets. If the rivets are only slight loose, they can be tightened by sing a hammer and punch with a support under the rivet. If the rivets are too loose or worn, new rivets should be installed. The better idea is to replace the gear assembly in its entirety using the new one-piece type.

Contributor Unknown

View of Transmission



The above drawing of Transmission shows clearly the operation of Clutch, Reverse and Brake Pedals. (Cut No. 6)

From the Ford Instruction Manual

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