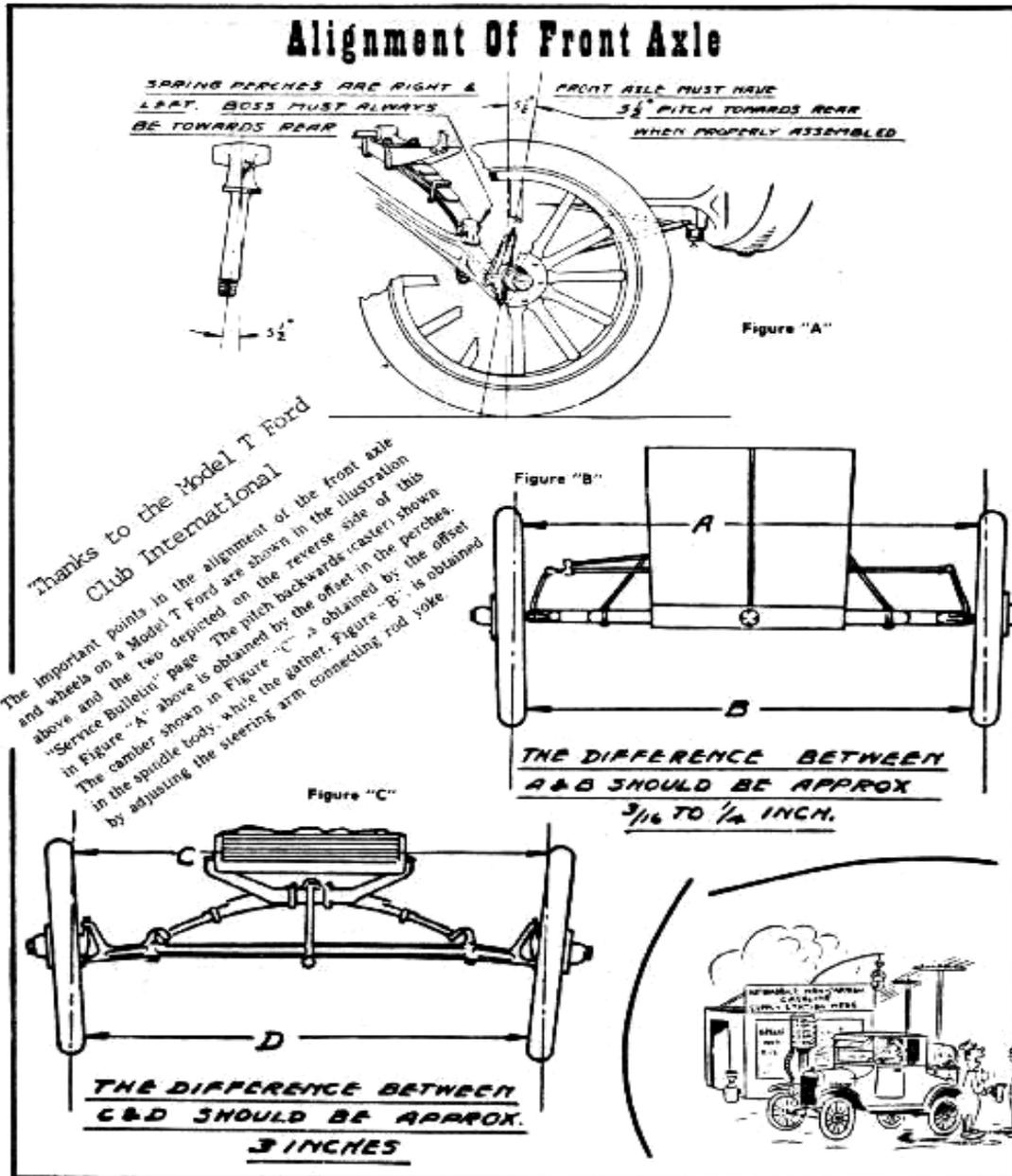




The Drip Pan - Axle & Rear End

Alignment of Front Axle



Axle Seals

Model T Ford Forum: Forum

By [Rick Goelz \(Rickyg\)](#) on Tuesday, December 31, 2002 - 03:51 pm:

I am trying to figure out how to replace the inner seals (behind the bearings) on my 26 coupe,the front came out ok and the bearing even though it hasn't been greased in years.any ideas? Thanks

By [Dave Huson \(Modelt12\)](#) on Tuesday, December 31, 2002 - 07:20 pm:

Rick: When you replace your seals DON'T use the type with the spring steel fingers. If you get them in wrong they can cut an axle in half real fast. If you have a 26/27 you will have the spring steal finger type and you must pull your bearing race out to remove them. Throw the steel finger grease seals as far as you can and get some other type. The suppliers are selling one with neoprene and another one is the old felt that was used in original T times. If you use the felt put in at least 2 and better three on each side.

By [Rick Goelz \(Rickyg\)](#) on Tuesday, December 31, 2002 - 09:22 pm:

Dave,thanks for the info,i am just getting started on this as a retirement project,i have worked on carrs for years but this is a new experience,the 26 coupe i purchased has been badly neglected.Someone removed the rear brakes and removed the rods,i have cleaned the drums and they look almost new.I figure two or three years until its running .

By [Larry Smith \(Lrysmith\)](#) on Tuesday, December 31, 2002 - 10:27 pm:

Rick: If your old spring tensioners are ok, I would use them as opposed to the ones that come with the kit. I have some I bought from Langs, and they are ok. except the leather was pressed out backwards. I don't like Chaffins, because there is too much contact on the axle. If you use the original style kit, you shouldn't have any problem, as long as you use your original tensioners. You can also bend the new ones to fit.

By [Rick Goelz \(Rickyg\)](#) on Tuesday, January 07, 2003 - 08:36 pm:

Dave,do you know of any reason i can't install the new brake linings with aluminum pop-rivets.? I can't figure how to install the small brass rivets that were shipped with the linings.I was planning on drilling out 3/4 of the thickness of the lining ans using a back-up washer.?

By [Dave Huson \(Modelt12\)](#) on Wednesday, January 08, 2003 - 12:15 am:

Rick: I really don't know. If you do. try it make sure the washer and peened end don't drag on the drum. It is very common for the new brake lining to be too thick and drag on the drum. try turning your rear wheels and if they are dragging you might see if you can find a garage with a burnish machine(if they still have them ?) that will burnish them for you.

By [Lyndon I \(Lyndon\)](#) on Wednesday, January 08, 2003 - 12:21 am:

I did the rear axles on my '21 a little while ago, is there an easy way to install those felt "seals" ? They were a real tight squeeze.

By [Dave Huson \(Modelt12\)](#) on Wednesday, January 08, 2003 - 12:38 am:

Lyndon: I made some special tools to install them years ago but it is still a very tough job. I like to always install two on each side. One tool is a hollow thick pipe that just fits over the axle and has a two inch tab that just fits between the rivets. The tool That I use the most is a long 22" bridge spike that I ground the end spoon shapped. The spike is square and fits in between the rivets with no problem. Any way I use both but it is still a real job. If you can find a KR Wilson rear axle stand it make the job easier, because you don't have to bend over when you are driving the felt into the axle housings. Someone in your club probably has one.

By [Lyndon I \(Lyndon\)](#) on Wednesday, January 08, 2003 - 02:02 pm:

Dave: I used some of my old traction-engine boiler flue installation tools, one of which is a big spoon-ended chisel like you describe. Sounds like this is just a bear of a job no matter what.

By [Dave Huson \(Modelt12\)](#) on Wednesday, January 08, 2003 - 03:41 pm

Lyndon: You are correct, No matter what it is hard. Before I had my rear end stand I used to do them on the floor and I threw my back out and was laying on the couch for several days unable to move. Make sure that your spoon is no wider than the space between the rivets. and no thicker than the space between the axle and the 1/4 thick 1/2 long sleeve inside the housing.

By [Lyndon I \(Lyndon\)](#) on Wednesday, January 08, 2003 - 07:10 pm

Dave: I was actually able to stand the axle on end with some supports and stand over it to drive in the felts. I have a horrible bad back too and know what you are talking about.

By [Rick Goelz \(Rickyg\)](#) on Friday, January 10, 2003 - 07:33 pm

Dave, I have all of my new bearings and seals, I went with the neoprene I also bought a quantity of the felt washers, should I back up the neoprene seals with felt? My planned series of installation is seal, felt, felt, steel washer, bearing, felt, cap. this is a 26.

By [Dave Huson \(Modelt12\)](#) on Friday, January 10, 2003 - 08:00 pm

Rick: I would put the felts inside the neoprene first.

Dangerous Thrust Washers

By [Bob Sacchi](#) on **Saturday, June 03, 2006 - 08:39 am:**

OK, now I'm thoroughly concerned about this thrust washer thing. I'd hate to lose what little brakes I have. Does anyone have advice on how to change them? For those of us who are mechanically challenged, the more details, the better.

Thanks in advance,
bob

By [Craig Sutton](#) on **Saturday, June 03, 2006 - 09:01 am:**

Bob, You can do it, just take it step by step. Go here:

http://www.model-t-ford.org/manuals/Model_T_Service_Manual_Indexed/Model_T_Service_Manual_Indexed.html (note must be a member of MTFCI to access this – JC)

....and check out chapter XV. Tools you will need are extremely basic (a few sockets and wrenches) except for the Model T wheel puller. Make sure you support the car very well with jack stands when you get it up in the air.

When dad and I did the most recent one, we jacked up the car and unhooked the following items:

Rear wheels (2 nuts and 2 cotter pins) - use a wheel puller for this. Have your floor jack under the rear end and leave it there.

Rear spring shackles (4 nuts)

Brake rods (at the wheels) (2 cotter pins)

Front ball connector on driveshaft (take out your front floorboards) (4 bolts)

If I'm remembering correctly, you can now pull the entire rear end out with the floor jack. It will include the radius rods and driveshaft. This way you can disconnect and reconnect them out from under the car instead of laying on your garage floor. Don't do what we did and have the jack stands inside the triangle - that was dumb! We got it halfway out and I had to remove the radius rods while the 2 of us did some bickering.

If you want to sandblast the axle, leave it all together including the driveshaft. Use duct tape and paper towels to close up the axle ends, any open grease fitting holes, and the transmission side of the driveshaft end.

Axle & Rear End - 3

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Bottom line, we are not responsible for anything. Please read, listen, enjoy, use common sense, and be careful out

Have all your parts bought beforehand and this is a one-weekend deal for a guy. If you're confused on what parts to buy (there are several options for grease seals), just tell the vendor when you call you don't know what goes together and they will help you out. If you're thinking of replacing the bearings while you have it apart, you may want to consider hardened sleeves (buy the removal tool!) and re-using your rollers as long as they are ok. Apparently the new roller bearings don't last. Also, you really don't need to take out the wire and remove the ring gear unless it looks bad. I bought all kinds of extra parts when I did my first axle and they are still on the shelf. Get a gasket kit, the 2 thrust bearings, grease, whatever seals you want, and whatever bearing parts you want.

After the rebuild, fill the rear end with grease up to about an inch below the filler hole and reinstall the axle the same way you took it out. Be sure to safety wire or cotter pin all the nuts and bolts so there are no surprises later.

If I forgot anything somebody else will speak up. Craig

By [alan ky](#) on **Saturday, June 03, 2006 - 09:33 am:**

i just finished mine last night new washers and seals,new bearing sleeves and moved outer bearings to the inside inside to the out check your spring shackle bushings while your at it mine were shot with the bushing driver they were easy to install dont be suprised if your old washers fall out when you split the rear mine did

By [Bob Jablonski](#) on **Saturday, June 03, 2006 - 10:44 am:**

Roller bearing diameter (new) is .500

Measure random rollers in the bearing. One end may be worn compared to the other end. That will show which end of that bearing had the weight (outer) of the axel. Those can be used with the larger diameter rollers towards the load

Some will accept bearings that measure .495 (.005 wear).

Pinion roller bearings new were .0562 diameter

By [Bob Sacchi](#) on **Saturday, June 03, 2006 - 12:29 pm:**

Excellent information, all!! Thank you again!!

Bob

By [DaGunny](#) on **Saturday, June 03, 2006 - 10:48 pm:**

Couple more pictures

http://www.model-t-ford.org/projects/rearend_rebuild_web/rearend_rebuild.html

Submitted by: Dennis Sanford

Clean Off Grease on Frame and Brakes

Rub off with a rag dipped in clear turpentine and polish with crude oil.

Do not let the turpentine stay on any longer than necessary.

Axle & Rear End - 4

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Greasing the Universal Joint

All mechanics know the amount of time that can be wasted in turning down ten or twelve cupfuls of hard grease into the universal joint, especially when the operation has to be repeated on many cars in the course of the day's work.

The mechanic should cut off the head of a cylinder head bolt, and weld this head onto the top of a grease cup cap. This cap can then be turned with a speed wrench and used for filling up the universal joint, after which the regular cap is replaced.

See Also Model T Ford and the Microwave Oven

Helicoil – The Hard Way

If it is possible, THAT's the way it will be done. Example – Front Axle Threads – On my car, they were almost nonexistent, therefore enters my first Helicoil experience. I'm sure those who know me are saying – this article really needs to go no farther – However, it does.

My ever faithful brother volunteered to assist me (I really assisted him) in cutting the threads and in sorting the coils – “Beautiful Job”. Back home, the assembly is started (spindles are already rebushed. The new bolt goes through the top part of the axle, through the spindle and threads into the bottom of the axle. Boy, HOME FREE, slicker than a flat June but, I thought, and that's when someone turned on the fan.

The bolt head had stopped 3/8 of an inch from the axel, and being from a “if it don't fit – force it” family tat's exactly what happened. The harder I turned, the harder it was to turn. Of course, while this was going on the axel was attached to the frame. After a couple of turns, the thought occurred that the bottom axel should receive an inspection. YEP, you guessed it, while standing on my head, two rings of the coil were looking at me. Well, I'll just back the bolt out and call Prestley to see what I did wrong. I don't mind calling Prestley because he has such a diplomatic way of telling you.

After two turns of the wrench everything came to a halt again. And still being from the same family I managed to turn the bolt two more turns. At this point I didn't need Prestley to tell me I was in deep trouble. I just didn't know how deep.

What had happened was the end of the Helicoil stuck into the bolt and the back of the threads and I was in the process of threading the coil back through the brass busing of the spindle. At this point my logical solution was to take the axel off the car – into the vice – back the coil clean through bushing. But after that was accomplished thence the end of the bolt was, with the coil still hooked tight in the spindle, between the bushings sill on the axel. HA!!! Cut the bolt in half and knock the stuck half out with the ruined busing – GREAT!!! My hacksaw went across that bolt like a BB on a marble floor.

Ever faithful – white hat brother enters again – cuts the bolt with his belt sander, we know the bolt out and HAY! I made it back to ground zero.

But now what ... I call the nice folks at Bob's Antique Auto Parts to complain that the threads did not go up the bolt far enough. Bob explained that the threads of the axel stop about 1/4 of an inch from the edge on the inside of the axel. The smooth part of the bolt just above the threads should snug into this area for additional support.

And sure enough, with a new bushing, new bolt, and a new Helicoil – recessed 1/4 inch – and a few beers everything worked out just fine – THE HARD WAY.

Pete Cobb

Housing Cap Removal

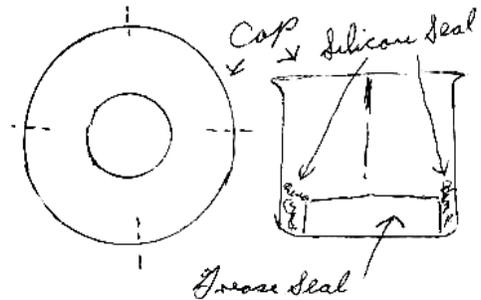
If you have trouble getting the caps which hold the outer felt on the "T" rear end to stay on, slot them with a hacksaw and use a hose clamp around them.

Nolan Renfro (198?)

Modern Seal for Model T Rear Axle

One way to help curb the grease leaks that are common to the Model T rear axles is to install a modern grease seal. This can be done in the following manner. Saw four slits in the rear axle cap as in the illustration. Then install the seal with a thick coat of silicone seal. Then install the cap in place and hold it with a hose clamp.

The number of the seal is C/R10766 or 450628
Hugo Richter



Rear End - Oil or Grease

Back End, Grease or Oil? [Model T Ford Forum: Forum](#)

By [Gregory James Stevens \(Greg\)](#) on Thursday, January 06, 2005 - 12:25 am

A conversation recently was as follows, "you should not use grease in a 2 speeder as the grease does not get all throughout the selectors".

We both agreed the because we live in a hot climate the self leveling grease will nearly always be "fluid", so it may not be the problem we thought. This started when I mentioned to another T owner that I had just replaced the oil with Castrol SL Heavy, a self leveling grease. My point was to lessen the chance of an oil leak around the hubs and brakes. The reason for doubting the performance of grease was that there are "3 pins in the 2 speed diff which may not be lubricated". I can't really explain this any better as I have no idea of these 3 pins?

I guess the question is, "is SL Heavy from Castrol, suitable for the Ruckstell 2 speed diff a 1918 T, it is the later backend I believe? Thanks. Greg

By [Norman T. Kling \(Sdntk\)](#) on Thursday, January 06, 2005 - 09:40 am

Use SAE90 or SAE120 gear oil. Pour some into the Ruckstell carrier when the axle is assembled to get the parts lubricated before you drive it. When the car is parked some will seep into the Ruckstell, but it takes time to get there. I wouldn't use anything heavier than SAE120 in a 2 speed. Use a drip pan and put seals in the outer axles if leakage is a problem. The important thing is lubrication, not necessary no leaks unless yours is a show car and will not be driven. Norm

By [Richard Gould \(Rgould\)](#) on Thursday, January 06, 2005 - 10:49 am

I personally never understood why grease was used in a rear end. I tried it once years ago, and all I noticed was a decrease in performance due to the drag. Still had leaks on the wheels. I concur with Norm regarding the Ruckstell, I have used SAE 140 on a Henry rear end. Re the oil leaks, the neoprene seals work, but don't load up on the lube when installing the outer roller bearings or you will still get leakage for a while. It doesn't take that much to keep everything slippery.

By [Norman T. Kling \(Sdntk\)](#) on Thursday, January 06, 2005 - 12:19 pm

Not only will it cause drag, but the centrifugal force from the ring gear will throw it out away from the working parts and it will take time for it to work its way back to the bottom. With gear oil, the ring gear dips into the oil and the force splashes it all around in a very similar way to the engine oil system. Norm

By [bill siebert \(Steamboat\)](#) on Thursday, January 06, 2005 - 01:03 pm

Be sure to check the container to see if the stuff is corrosive to brass or bronze. Some of the super gear oils use additives which can attack non-ferrous metals. The oil should be either API/GL3 or GL4.

By [Gregory James Stevens \(Greg\)](#) on Thursday, January 06, 2005 - 10:58 pm

OK, looks like it is drain and change, again. I did check with the old guy who advised me to change to the SL Heavy, and no it does not contain any harmful to the non ferrous components, and it is an EP grease. Thanks Greg

Removing Front Axle King Pin Bushings

If you are rebuilding the front axle on your T, the king pin bushings may be removed by clamping the spindle in the vise and using a pipe wrench to unscrew the bushing. This works on nearly all spindles because the machine marks are fairly deep and act like a coarse thread.

Prior to pressing the new bushings into the spindle, ream them to the new shaft size. This should leave the hole large enough for the reamer pilot to enter after they are pressed in. To prevent scarring the spindles, pad the vise jaws.

Hugo Richter (1984)

Repairing the Ford Rear Axle

When rebuilding a Model T rear axle, the outside rear axle bearings receive little attention. The metal cups over the ends of the rear axle, which holds the felt seal (or new neoprene seal) often become oversized and fit loosely over the axle housing. I have found that even new replacement cups have a tendency to become oversized after removal and replacement a few times. The solution to this problem is relatively simple: slot the sides of the cup in four places with a hack saw (only cut about 1/2 inch into the cup) and use a strap type radiator hose clamp around the outside of the cup to hold it in place. This allows the felt or neoprene seals to fit tighter and allows for easy removal when necessary.

Another messy task when maintaining a Model T rear axle is filling the grease cups for the outside bearings, and then lubricating the bearings by screwing down the grease cups. The solution to this messy job is also quite simple. Go to your local auto parts store and ask for replacement grease fittings with a 1/8th R pipe thread (this is the same thread size as the grease cup fitting itself. Take the base of the grease cup and thread the INSIDE of the grease cup base with a 1/8 R tap. Then take the new grease fitting and screw it into the base of the old grease cup. Screw the base of the grease cup into the axle housing, grease the bearing if necessary, and screw the grease cup lid onto the base.

What you have is an original appearing grease cup with a modern grease fitting installed, which can be easily lubricated with a modern type of grease gun. The mess is over!!

Russ Furstenow, From T-Time in Canyon Country
LST Newsletter April 2000

Ruckstell

Model T Ford differentials, particularly Ruckstell, will be the subject this month to along with the various Ruckstell seminars scheduled. Where can I find a Ruckstell Axle and how much should I give for one are questions most often asked. These are hard questions to answer. If I run across one for a good buy, I buy it. By a 'good buy' I mean one that looks to be all there, small drum or large, for around \$250 (without drive shaft). From there the price goes UP! Generally about \$500 will get a useable one. 'Useable' meaning it could be run for awhile, but to put it in prime condition, a month's work and about \$300 worth of available parts and perhaps a couple trips to your local machine shop will be required. Most rebuilders favor a 3x2 Ring and Pinion ratio, and there goes a hundred bucks to start. The unit is well worth the effort when completed and should last indefinitely and will increase in value as well as making driving the T safer and more enjoyable. The Ruckstell is the best multi-speed for the Model T. (Those were the good ole' days ... Ed)

Lubrication of the Ruckstell: Use 1 quart of 250W or SAE 140. Note the W and SAE. 400 W is a little on the thick side for proper lube of the planetary gear pins. Some T parts dealers recommend using 2 quarts of 400 W -- too much and too thick. Also, some recommend SAE 90 being thick enough. I don't think so. The 250 W or SAE 140 is all I will use, and it's proven in many thousands of miles of service.

Check the quantity of the lube at least once a year or more often if you drive a lot. Don't be surprised if your differential case is over-full and you have to let some drain out when the plug is removed. Engine oil has, of course, run down the drive shaft tube and diluted the differential lube. The first sign of too much lube in the differential is when the brake drums start to throw oil out of them. Assuming the ball cap bushing is not overly worn, same for bushing behind the U joint, about all you can do is keep the U joint cavity filled with grease to act as a dam. Not wheel bearing grease, but rather, chassis lube - so the U joint will receive proper

Axle & Rear End - 7

lubrication. Don't allow the differential lubricant to become overly diluted, that is, more than a few ounces of engine oil - if so, replace with new lube. Since there is no drain hole, it must be siphoned out - heating the center section of the case helps.

Several have told me about the 'Neutral' their Ruckstells have. Ruckstells don't and were not designed to have a 'neutral.' They do, however, have a point where they are neither in low (Ruckstell) or high. They can't operate in both gears at once. The shifter does not have a neutral either and if they are working properly are either in low or high position - nothing in between. (I have seen a type of shifter handle that had a detent or notch to hold the shifter mechanism on the differential case in a 'neutral' position for some special purpose I suppose. If your Ruckstell has a 'neutral' you've got problems and compete overhaul is indicated.

It seems about one in ten Model T drivers fully understand the shifting operation of the Ruckstell. More damage is done to a unit by these ham-fisted individuals than by anything else. Generally, it's best to shift them when the T is moving and two fingers is all that's required, releasing the clutch - NOT pushing low band. The details of the throttle setting, etc., are too lengthy to go into here, but keep in mind, until you understand exactly how the unit operates, don't risk destroying it. Who knows, perhaps we need a Seminar on 'Driving with the Ruckstell.'

From: 1981 Pedal Pusher (Bob P.)

Ruckstell Rear End

The following article was pulled off E-bay by Dennis Sanford. Ad was by Stan Howe.

HERMAN AND THE NEW RUCKSTELL REAREND FOUR SPEEDS FOR FORD

She was right, he knew it, and he knew she knew he knew she was because she hadn't said one word about it. They got home and Freida got the girls cleaned up and he and the boys got the chores done and they had supper and nobody said a word about getting a Ruckstell. He figured the girls didn't know, Einar was smart enough to keep his mouth shut and Torvald was still so proud of driving the T out of the mud hole he hadn't given any thought as to why they got stuck to begin with.

Herman had started the light plant before they went out to milk and instead of shutting it off after they got done eating and lighting a lamp to save on the gas to run the light plant he let it run. What the Hell. He could throw away more money by accident than most men could when they were trying to spend it. After supper Einar and Torvald went out to feed the pigs and shut them and the chickens up for the night, the girls were in the back room taking a bath and trying to get the last of the mud out of their hair before they went to bed, Freida had put the triplets to bed and the house was pretty quiet for once, so Herman reached up on the top of the cabinet a got down the Monkey Ward catalog and turned to the pages on the Ford Accessories. He hadn't looked there for a while, since the crops had been a little better he'd been buying a new Ford every year or two and had just been having the Ford man put on the Hasslers when he bought it instead of putting them on himself and hadn't been adding the things like he did a few years ago. He saw somebody had been writing in the catalog on the Ford pages, it must be Einar. He'd been telling Herman he wanted a Ford of his own and Herman could see how he was going to fix it all up with speed equipment and fancy fall-der-all. "Well," he thought, "It won't be long and he'll be wanting to run around nights on his own and be taking Tillie dancing, I'd better be thinking about getting him an old Ford to fix up on his own."

He looked down the page and there it was, just what the Ford man in town had been talking bout. FOUR SPEEDS FOR FORD--RUCKSTELL It had been a while since he'd read the Monkey Ward catalog and didn't realize they had Ruckstells. "By Golly," he said to himself, "Here's the way to get out of the whole deal." "Instead of taking the Ford in and having the Ford man put one in, I'll order one from Monkey Ward and the boys and I will put it in ourselves." "I can tell Freida I really didn't need one but thought it would be good for the boys to learn to do a little mechanic work on a Ford, since they both know how to drive." Then too, it was a little cheaper from the catalog and he was going to have to buy new coats and shoes for two girls and that was going to cost, too.

It came in a wooden crate and weighed enough it took him a good toss to get it in the back seat. Ruckstell Axle--Four Speeds for Ford. Right there on the side of the box. He could hardly wait for the boys to get home from school. Herman almost opened it a couple times but decided he'd better wait for the boys. He went and did some of their chores so they could get started. He swept the floor of the barn down and ran the Ford in, got some blocks from the wood pile, got his tools out and laid them on the bench and stood in the door

Axle & Rear End - 8

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of the barn and rolled a Prince Albert and waited for them to come. When he saw them come up out of the draw he yelled at them to hurry up and come and change their clothes and come help.

Einar pried open the wooden crate and there it was. There was a whole new left housing, a bunch of gears and plates and a big bearing and a book on how to do it. Torvald grabbed the instructions and started reading while Herman and Einar jacked up the Ford and blocked it. Herman ran off the nuts on the spring shackles while Einar took the bolts out of the bell housing at the back of the transmission. Torvald disconnected the brake rods and took off the hubcaps and pulled the cotter pins and backed off the axle nuts. In fifteen minutes they had the whole rear end out and had the wheel puller on the wheels. A couple good whacks and the wheels were off. They grabbed the rear end and set it up on the bench. Einar took out the little 5/16 bolts holding the two halves together and Herman took out the driveshaft spool bolts. They pulled the radius rods to make it easier to work around and in ten more minutes they had the whole thing pulled apart. Torvald told them to make sure they kept the babbitt washer and the spacer washer so they wouldn't have to reset the ring gear and pinion. There were pictures of just how every thing went together and he couldn't believe how easy it was. Einar unbolted the ring gear from the old spider gear carrier and bolted it on the new carrier. He slipped the right side axle through the hole and laid the spider gears in on top of it. The left axle fit right into the other side and the three little pins with the gears on them, the big planetary gear and then the bronze plate and washer went right on without a hitch. There was a little sack with the bolts and washers and some wire to safety wire the bolts with and some cotter pins for the others. They slipped on the change gear, dabbed a little grease on the shifter plate and stuck it inside the housing before putting the big bearing on and then turned the gears and watched how it made the axles go around slower when it was in Ruckstell low and how they went faster when it was in Ruckstell high. Damndest thing he'd ever seen and about the easiest thing he'd ever worked on. Everything was nice made, the parts looked good, he could see why they were selling so many of these. If this worked as good as everybody said they did, he'd feel good about spending the money for it.

They had to quit. Ford & Henry came out to the barn and said Mama said it was time to milk and eat supper and what were they doing anyway. They washed their hands in some gas and then water and lye soap and Torvald and Einar went to milk. Herman told them maybe after supper they'd come back out and finish up. He'd thought it would take them two or three nights but the way it was going they just might put it back in tonight. They boys could stay up a little late.

The boys milked faster than they ever had. Supper was barely over when they had their feed buckets in their hands and went to feed. In twenty minutes they were back out to the barn. Herman got out his axle sleeve puller and pulled the sleeve out of the old axle housing and put it in the Ruckstell housing. They slid the new housing over the axle, put the shifter in its spot and bolted it tight. Ready to go back in!! Since the floor boards were already out of the Ford it was easy to roll the driveshaft under the car and stab the u joint in the square hole in the end of the transmission shaft. Einar put the bolts back in the bell housing, attaching the shifter at the same time, while Herman and Torvald bolted up the rear spring and put the brake rods back on. Herman was surprised how quick Torvald was to see how everything fit together and how it worked. "Maybe he'd never be a farmer," Herman said to himself, "But he's a smart boy for 13, he'll do OK." "Maybe he'll be the Ford man someday."

Einar took a couple turns on the low band and cut a little hole in the floorboards and put them back in the Ford while Herman and Torvald filled the Ruckstell with grease. "Let's try it on the blocks and make sure it all works," Herman said to the boys and fired up the Ford. They watched as the wheels spun on the high gear and then how they slowed down when it shifted to low. "Let's take her for a run," he said and they let it down off the blocks and backed out of the garage.

It was just beyond belief. He'd only been going to go down to the end of their lane and back but he just had to see how it pulled Jorgenson hill in Ruckstell low. Of course, they didn't have all the weight in there they would with Freida and the girls, but it came all the way to the top on the high gear and came up the hill faster than he'd ever come up it in a Ford before!! When they got to the top of the hill he pulled over and stopped and let Einar take it back down to the bottom of the hill and back up. Even the brakes were better. When you put it in Ruckstell low, it had more brakes as well as more power. "A Hell of a Deal," he thought, "Just a Hell of a Deal."

"You know, boys," he said, "I'll bet if you ordered these from Monkey Ward you could make a pretty good dollar on a Saturday putting one in and it wouldn't be long before you'd have money enough to buy yourself a Ford of your own." "The Norwegian Shepherder's Ball will be coming up again the end of May and

I think I know a boy who would like to have a Ford of his own to take a certain girl home from the dance." "I'll talk to mama and see what she thinks but it wouldn't take much to throw up a little garage for you to work in and with what tools I've got and what you might get for a birthday or something you might do alright." "Everybody in the country has a Ford and they all need a Ruckstell like this one." "You might do a little more too, there's always some way to improve a Ford, whether to make it run better or look better." "Torvald could even paint a sign that said 'Yustermierson Brothers--Ford Repairs' after you got going a little." We'd better take mama and the girls to town tomorrow and get the girls new coats and shoes and show mama how nice our Ford runs with our Ruckstell. Then I'll talk to her and see if it wouldn't be all right to put up a little garage and spend a little something for a Ford book or two and get you going on this.

The little Ford never missed a beat on the way home. Herman let Torvald drive, he still had a little trouble with the gas but by the time they got home he was shifting the Ruckstell like he'd been driving one for years. The lights shone bright on the edges of the road where the grass was just starting to turn green and in the moonlight they could see the fields where there would be grain growing again before long. "By the time school's out," he said to the boys as they headed for the house, "We'll have the best Ford shop in the county." Just don't say anything to mama until after we go to town tomorrow. She'll be in a good mood when we get home and I'll talk to her after the little ones are in bed and see what she thinks about all of this." He pulled Torvald's cap off and ruffled his hair. "Better wash the grease off your face before you go to bed," he said, "There'll be lots of girls in town tomorrow and you want to look you best for them." He winked at Einar as they went in the door. He'd sleep good tonight.

This is very close to the best original Ruckstell I have even seen. It is a big drum for a 1926/1927 but of course will fit all years of Model T's if you run the big brake drums on the back with 440:21 wheels or 30 x 3 1/2 if you change the brake drum on the wood wheels. There is very little wear on any of the Ruckstell parts. There is a little scoring of the bronze plate and the hardened plate that runs against it but if you are going to put less than 100,000 miles on your T I can't see where it could ever be a problem. There was a bit of scoring on the spider carrier and the spider gears--probably from being stuck in the mud or snow sometime and spinning one wheel--so I am going to install a better set. In most Ruckstells the pins and planetary gears are pretty worn. These are as tight as any I have ever seen. The sliding gear shows very little wear as does everything else. The shifter may have been replaced at some time as most of the big drums had the long nose shifter, this is the short one and has a chunk broken out of the housing, which you can see in the pictures. I don't think it would ever cause a problem but you may want to repair it or find a long nose housing. The axles have the nicest bearing surfaces I have ever seen, the gears are nearly perfect and the threads are OK but not perfect. This is one of the only Ruckstells I have ever seen in 50 years of fooling with T stuff that you could still read the numbers clearly on the ends of the pin housings. Look at the close up of how clear the number 3 is. Usually the number is worn away by the planetary gears turning.

The housings are very nice, they have been sandblasted and hot tanked so they are clean and ready to go back together.

This is a COMPLETE Ruckstell setup. Both axle housings, both axles, all the gears, bearings, etc., everything you need except the ring gear and pinion to put this in your car. Two of the ring gear bolts were broken when I took this apart to clean it up so I will include a new Chaffin's ring gear bolt set with this. (\$40.00 plus shipping) You could either use the ring gear and pinion set out of the rear end you have now or do what I would do, buy new set of high speed gears and put them in. That is the best set up you can have for a roadster or speedster, the standard gears are better if you have a sedan or coupe as there is not a lot of extra power available to pull the taller gears and you will end up running in Ruckstell low too much of the time.

I will put new from Chaffins hardened axle sleeves and new bearings in the housings, both inner and outer. (Not the ball bearing, it doesn't need replacement) so it will be all ready to go. I will ship it with the Ruckstell unit correctly assembled so you can pop it apart, install the axles and your ring gear, set up the ring & pinion clearance and roll it under the car and go. You may not be quite as quick as Herman and the boys, but it shouldn't take more than an easy afternoon to have it installed plus whatever time it takes to paint it.

There is no shift lever or rod or rod holder & no driveshaft or radius rods. You will need to find a shift lever (Chaffins for a new one) and use the drive shaft and radius rods off your old rear end. If you are switching from a small drum to this you will need the later style radius rods as they are different from the early small drum style.

Axle & Rear End - 10

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Bottom line, we are not responsible for anything. Please read, listen, enjoy, use common sense, and be careful out

You should also buy the Ruckstell book from the Model T Ford Club of America (MTFCA.com) if you have never set one of these up before and I will include free a copy of the RUCKSTELL--FOUR FORWARD SPEEDS FOR FORD booklet that I have reprinted.

Happy Bidding!! May the best man and the deepest pockets win!!! Bid early, bid high and bid often!!! Like Yogi Says, "For people who like this kind of thing, this is the kind of thing they like." You will like this Ruckstell. Buy it now and you will be ready to tour in the spring. In Model T days they said Fords had two speeds: Too slow and not enough power. Ruckstells solve both of those problems.

Also, thanks for the bunches of emails about Herman and Freida and their adventures with their Ford and their family. With the boys opening their own shop, I'm sure they will find lots of things to improve on their Fords. There may someday be a book about the adventures, at this point it is just a fun way to do a description on ebay. Enjoy, and Happy Holidays to you and yours.



On Nov-26-03 at 22:19:29 PST, seller added the following information:

I got a nice email from a follow Model T'er who said the little break in the shifter housing can easily and economically be fixed by a guy who has done several others. I'll send his email along to anybody who wants it.

On Dec-02-03 at 08:15:02 PST, seller added the following information:

Axle & Rear End - 11

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Howdy, here are two more pictures of the Ruckstell. I had an email questioning whether this was really an old Ruckstell that was taken apart that was all complete or whether I was building it up out of parts. Here is the way it looked when I took it apart. This is as I was getting ready to pull the bronze thrust plate and pulling the planetary gear away from the case. I took several pictures of it as I was taking it apart, if you want, I will include them for you to check assembly. These things are pretty straight forward, they can really only go together one way and don't take any special tools to put back together. The bearing is about the only thing that ever goes wrong with them if you put it together right and that bearing is available from your local parts store. New Departure (GM) still makes a bearing that interchanges. This bearing looks good but if you want to spend another \$45 you could put a new one in. They are about \$80 from the T suppliers.

The other thing is that you absolutely must use the correct hardened bolts for the ring gear bolts. Even grade 8 bolts will not stand the stress of the holding the ring gear on. You also need the bolt heads with the safety wire holes in them. Do NOT use lock washers or you will be looking for a new ring gear and pinion if you should happen to break a ring gear bolt. The wire keeps the bolt from coming out and floating around in the oil looking for something to get caught up in. These bolts have to be so tight you don't have any muscle left so you need Chaffin's good bolt set or you can break the bolts tightening them. By the way, here is an old time trick. Before you put the ring gear bolts in, hacksaw a slot in the thread end. That way if you do break one off tightening it, you can just screw it out with a little screwdriver from the back side of the ring gear instead of taking the ring gear off and tryin to "easyout" a hardened bolt. In the Ruckstells I have rebuilt I look the bolts over pretty closely before I use the old ones. I think the \$40 is a good investment. If you look at the picture you can see how this goes together, the bolts go through from the left side, through the bronze plate, through the planetary gear, through the spider gear case and into the ring gear. They are the long bolts in the bolt picture. There is a LOT of stress on those 5/16 bolts. I had a couple extra ring gear bolts I could have put with this but I figured if two of them were already broken in this set some of the others might be about ready to go. So you get a new set from Chaffin's, I get the old set to throw in my "Ruckstell parts" box.

Stan Howe



Just a couple shots of some parts stacked up and about ready to go back in. A couple of the differential cases still have to be beadblasted



Axle & Rear End - 12

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Six thrust plates done and ready to go back to work. The one on the lower left is a new one in the later Eaton style as opposed to the earlier Hall Scott type in the top row. Notice that they reduced the number of lubrication holes to try to get more strength.

This shows how it all goes together.



Assembled except for the ring gear and housing. The mechanism fits into the "bell housing" and the ring gear fits over the bell, it all bolts together and goes in the differential housing.

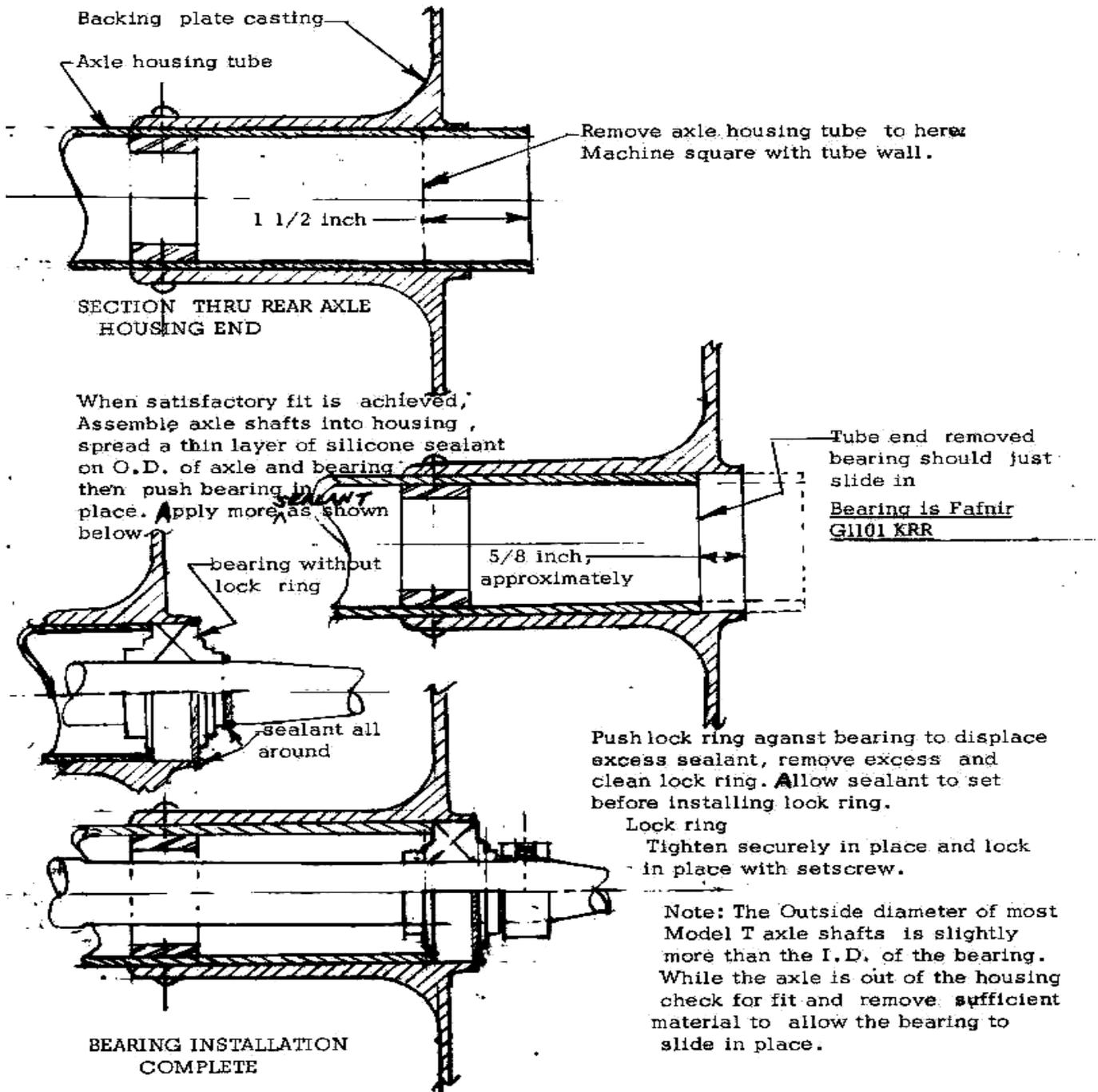
Axle & Rear End - 13

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Stop Rear Axle Grease Leaks with a Modern Sealed Bearing

STOP REAR AXLE GREASE LEAKS WITH A MODERN SEALED BEARING



Tapered Roller Bearing for the Ruckstell

The bearing number P-211 used in the Ruckstell is a ball bearing, New Departure No. 0212, or equal. A good tapered roller bearing will provide more reliable service. For interchangeability Timken inner race or cone no. 39236 cone and cup no. 39433 will work.

Regardless of which kind of bearing is used, the inner race should be a very light press fit on P-139 bronze end plate. I have seen and tried using a bronze end plate which had the hub knurled to establish a suitable fit. This is quite unsatisfactory. The knurling cannot adequately carry the load, and the bearing inner race will loosen in a very short time. If you should receive a new bronze end plate with the knurled hub, refuse it. It will not last very long.

Hugo Richter

The Model T Ford and the Microwave Oven (Greasing the T Rear End)

How many times have you tried to add differential grease to your "T" rear end, only to end up with more on the outside than on the inside? That small funnel you made from your wife's kitchen aluminum foil will work much better if you'll warm, thereby thinning the lubricant before trying to add it. This is particularly helpful if your using the heavy 140 weight.

There are many ways to accomplish this but the slickest (no pun intended) is with the help of your microwave oven. Start with a small amount, 2/3 cup, in a non-metallic container. A cream pitcher from a discarded melmac dish set works great for me. You'll have to experiment with the amount of time and temperature setting for your microwave. Start with a low temperature and short time setting (20 seconds) until you get it right. Your wife's assistance (and permission) may be helpful at this point. Warm to the temperature of sipable coffee and it will pour like 20 weight engine oil. Good Luck.

Dave Rosenow

Tighten T Main Rear Bearing

On page 110 of November 1926 issue, a dealer asks for information on tightening the rear main bearings of improved Fords. We do the work in the following manner: Remove lower pan and extract cotter pins from bearing cap bolts. Also remove wire from cap screws holding fly wheel to crank shaft.

Remove cap screw with socket extension and ratchet handle (only one cap screw need be removed). Remove bearing bolts with special wrench, or (if no special wrench is available) take Ford wrench No. 5Z-153 and bend handle, at about a 15 degree angle, 3 or 4 inches from socket end. After making proper fit of bearing cap, replace fly wheel cap screw and require.

If there are shims under the bearing cap, it may not be necessary to remove the cap screw from the fly wheel. Just loosen bolts, pull out sufficient shims, and retighten bolts.

We thank you, Mr. Dan Fowler, for your interesting explanation of your method of adjusting rear main bearing caps.

Contributor Unknown