

Cross-member Removal and Replacement

Mark Olson

One thing led to another with the front end of B382000081, and I wound up with all my front suspension parts pulled off my cross-member. I couldn't bear to put all those nicely restored, painted and new parts on that old, rusty cross-member, with that old, rusty steering rack, so I decided to pull it out and clean it up too. Thanks to advice from Norm Miller, this job turned out to be not too bad. I also developed a new technique that can make cross-member removal and replacement a lot easier than it's been in the past. I started the cross-member part of the project with all the front suspension parts removed. The only things left attached to the cross-member were the brake lines and the steering rack. Per Norm's advice, I put penetrating oil into the tops of the cross-member bolt holes in the frame rails inside the engine compartment and let them soak for a few days. I unhooked the right and left brake lines from the cross-member brackets and plugged them with vacuum line plugs. I unhooked the brake line that runs across the cross-member from the block on the fender-well and plugged the block with a caliper bleeder screw. (Thanks again to Norm for that tip.) I plugged that end of the cross-member line with a vacuum line cap as well. I'd made sure I had plenty of well positioned rags, so I didn't have too much brake fluid mess to deal with.

I removed the lower pinch-bolt from the steering column, so the steering rack spline could slide out of the steering column. That bolt has to be removed, not just loosened.

I tied a plank to the bottom of the cross-member using the lower A-arm brackets. I placed a floor jack under the cross-member and removed the four cross-member bolts. I had a friend slowly lower the jack while I went back and forth to each side, ensuring that nothing was binding.

Balancing the odd shaped cross-member was a very difficult job. Getting it out wasn't too bad, but it was pretty obvious to me that putting it back in would require two burly friends to hold it in place while I tried to line up the holes, and I really wasn't looking forward to that job.

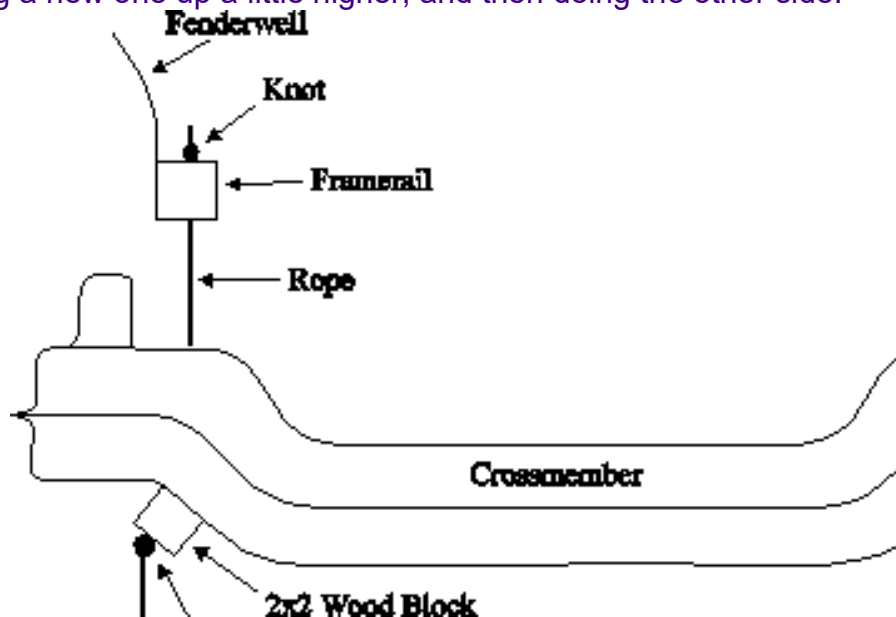
I cleaned out the bolt holes in the frame rails, getting them ready for the reinstallation. I removed the steering rack from the cross-member, cleaned it up, filled it with 90wt. gear oil and painted it. I tried cleaning the cross-member, gave up and took it to Component Finishing in Santa Clara for bead-blasting and powder-coating. After I got the cross-member back, I put the steering rack back onto the cross-member, set it so that it was halfway between the locks, and made sure the steering wheel in the car was set to straight ahead.

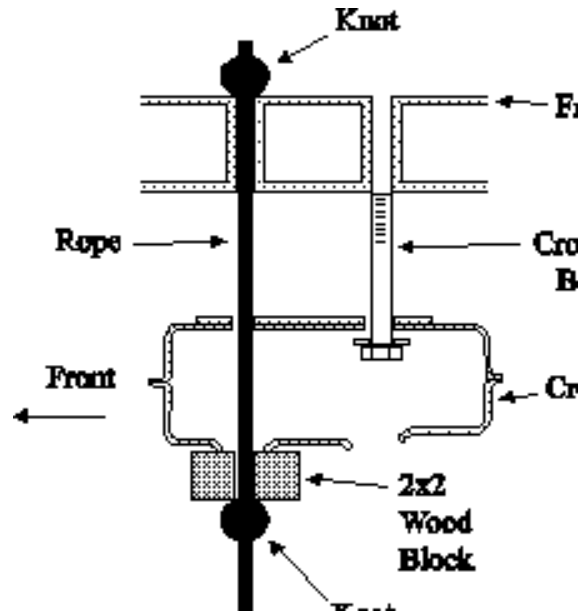
With the cross-member and steering rack ready to go, I was dying to put it back in, but none of my burly neighbors were available for days. At my house,

impatience is the mother of invention, so I tried to figure out a safe, easy way to install (and remove) a cross-member.

I discovered that the cross-member would balance on cotton ropes that fit through the front mounting holes, so I got two three foot sections of rope, tied a knot in one end of each and put a little masking tape on the other ends to make the threading job a little easier. I drilled holes a little bigger than the rope through a couple of short pieces of 2x2 so I could knot the rope to suspend the cross-member under the car, without the knot pulling up into the cross-member.

I threaded the ropes through the front cross-member bolt holes in the frame rails from above. I then threaded the rope through the front bolt holes in the cross-member from above and finally through the blocks of wood. I then lifted one side of the cross-member up off the ground, slid the block up the rope, and had my 11 year old daughter, Jill, tie a knot in the rope. We repeated the process on the other side to get the cross-member suspended off the ground. We then walked the cross-member up the ropes, lifting one side up a little, untying the old knot and tying a new one up a little higher, and then doing the other side.





When the cross-member was hanging just below the frame rails, it was a simple task to slide the steering rack spline into the steering column and install the rear cross-member bolts, as the ropes through the front holes were acting as alignment pins. I removed the wood blocks and pulled the ropes out of the front cross-member bolt holes and installed the front bolts, torqued them down, and I was done. Of course, I checked the torque after a couple of days to make sure it was bolted on real well. I also replaced and tightened the steering column pinch-bolt.

Another good tip from Norm was to use duct tape to tape the socket to the extension so that you don't accidentally knock your socket off inside the cross-member, which would result in a no fun job trying to fish it out. Also you want to be very careful not to lose the cross-member bolt inside of the cross-member, which would be an equally bad problem.

I didn't use this technique to remove the cross-member, but it should work. Make sure you put the ropes through the front holes, as the cross-member won't balance on the back ones.

I did not try this on a cross-member that still had it's suspension parts in place. If someone is in a position to try this, it would be nice to hear a report on how well it works in that situation.

This technique turned this job from a three person job into a one and one half person job. (I'm glad Jill doesn't read tech tips yet. I'm not sure how she'd like being called a half a person.) I hope that this tech tip helps you make this job a lot easier and more convenient for you than it might have been.

Late addition: Someone suggested that adding boat deck cleats to the wooden blocks would be a good way to turn this into a one person job. If anyone tries this, please let me know by sending me an email [here](#).

Mark Olson 2/28/95

Update 1-6-03:

I recently removed the front end complete with all parts on it. I did read Mark Olson's tip. The method I used was to use the transmission adapter bolted solid

to my floor jack. The jack has a large lift height plus the extra height of the adaptor works well. I did bolt a piece of angle iron to one side to be able to balance the unit. The adaptor does have a tie down chain wich works well. As it is basically balanced in the center one doesn't want to jerk the jack around but must be slow and easy getting it in position.From here it is relatively easy. I used some small diameter rod through the front holes from the top and this enabled to line up the bolt holes . I installed the 2 rear bolts and then removed the jack and installed the 2 front bolts.I was installing a much modified front end and found a problem. As the crossmember was not the one originally on the car, the holes were just slightly off.If this was caused by something in the past or just one of those things I wouldn't know.However I solved this by removing a minute bit of metal from all 4 openings. I do mean a very small amount. With a bit of juggling I was able to get the bolts in. I use the tape to the socket idea an also put a piece of tape over the bolt head to make sure it is tight in the socket.I also tie a piece of dental floss onto the bolt. This saved me a couple of times when the bolt came out of the socket."previous to putting tape over bolt head". I just pulled on the dental floss and out it came.

Chuck Ingram

62 Alpine

65 Tiger

64 Spirit of Lister.

Back to the [Classic Tiger Home Page](#).