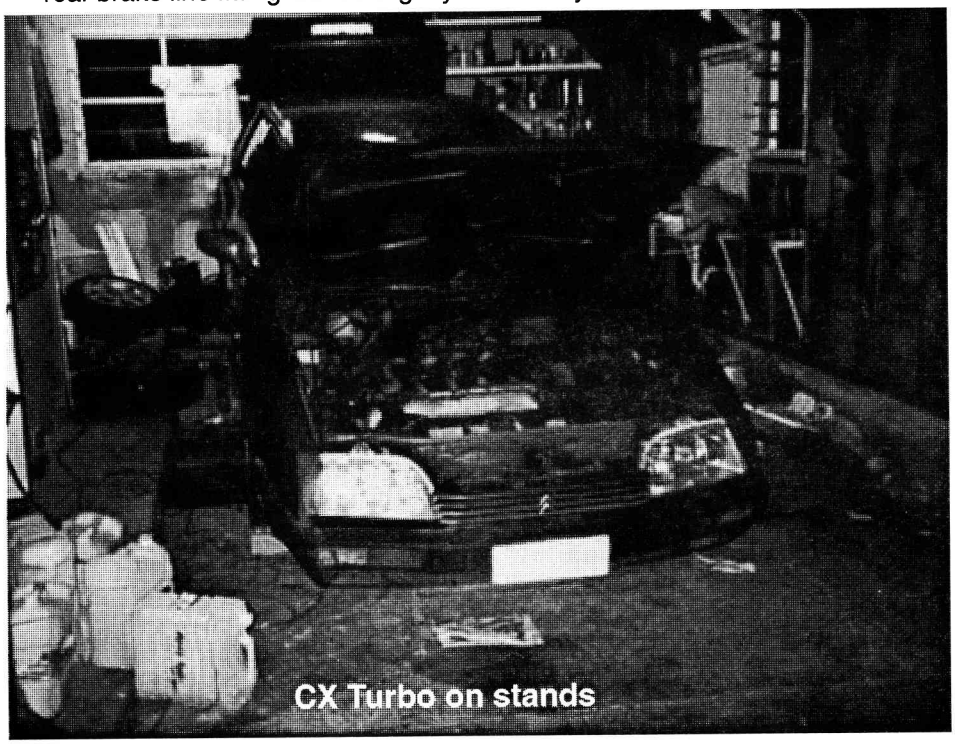
Changing the CX Turbo rear arm bearings

Insight into the CX Turbo by Shane Leviston

Changing the rear arm bearings is a job I've done before. The CX I've just purchased has the right rear wheel leaning, the tyre is scrubbed and the rear suspension groans/ creaks all the time. Doesn't take a lot of brains to realise the rear arm bearings need changing immediately. The car is quite jittery to ride in as well.

I started by putting the car up high in the air at the back so I had a lot of room work in. 6 tonne axle stands do the trick of making sure the car doesn't spatter me (with the trolley jack as backup in case the car somehow moves). Luckily I didn't damage the front air dam. As you can see it's touching the ground.

I released the hydraulic pressure, and removed the road wheel. Looked at the hydraulic lines that would have to be moved, the rear brake line fitting looked slightly rounded, and I hoped they were all sound.



CX Turbo on stands

So here's the steps involved.

1. Removed the ABS sensor.... Yeah right!!!, half an hour's work trying to 'gently' pry/prod/wiggle it out.
2. Remove the brake disk backing plate, shearing one stud off.
3. Unscrewed the rear brake line, held my breath and gently pulled on it. It didn't break, in fact it's incredibly flexible, and covered with a white plastic. Must be the stuff they use to re-pipe cars with in the UK. I could actually undo a fitting next to the height corrector to completely remove the line (with the built-in coil) and move it out of the way.
4. Remove the big bolt

What a seemingly easy statement .....

The nut undid incredibly easily, I left it unscrewed to the point where it was level with the end of the bolt -thinking that I may have to hit it with the hammer to get it out. On my CX2400 and the CX2200 wreck this big bolt has simply pressed out with my finger. I rapidly discover I can't even TURN the bolt in this bloody car. 2 hours of work with the hammer, rattle gun and a lot of cursing later, and I still hadn't even been able to turn the bolt..... Hmmm, how the hell am I going to do this??

Cutting the whole arm out with a blow torch is looking like the only possibility :-(

Using the impact sockets, a ratchet bar with a 2 metre long section of tube with me hanging off the end of it I finally managed to move the bolt. Another half hour's work with the rattle gun had the bolt loose enough to the point where it could be turned with a mere spanner ... As I turned the bolt though the arm would move up and down with it.

Now I had the bolt turning, I'll try to pull it out. Yeah right, after belting it with big hammers, prying at it, swearing etc... It hadn't moved in the slightest. I grabbed a high tensile bolt and welded that to the head of it. Using a tube socket I tried to use it as a puller. The idea being the bolt welded to it would have its nut screwed down against the socket making a crude puller. Broke the weld several times before shearing the high tensile bolt in half... Bloody hell, how the hell am I going to get this out???

I had a break and came back to it one night during the week. Cut the broken bolt off and grinded the head of the bolt back flat. I'd been down to my father's the night before and picked out the biggest bolt I could find with a nice fine thread on it. The bolt is nearly as big as the suspension bolt. I ground the edges of this down so the head of the bolt was like a dome. Then I welded this to the suspension bolt. The weld had a lot of depth (as I'd 'V'ed it out by grinding the other bolt head down). Same principle as before. Only problem is none of my sockets would fit onto the bolt, its diameter was too large to fit through them. Searched around and found the big driveshaft nut socket would fit, but I'd need about 40 washers or a bit of tubing to get up to the thread. Couldn't find anything so used a stack of ring spanners to use the distance up

I did the bolt nut up on the puller as tight as I could, the bolt didn't move. I got under the car and belted sh!t out of the other end of the bolt. I could then do the puller up another fraction of a turn before I went red in the face with effort and all my veins popped out ;-)

Underneath, belted it with a hammer, another fraction of a turn etc...

Next problem. As I couldn't use my tube sockets, I could only extract the suspension bolt about 1cm before I ran out of depth using the standard depth socket. I used the anti roll bar clamps for more depth About 1/2hour later the bolt was out!!!! The impossible was done.The bolt with the second bolt welded to it. That's a wheel stud just to give you an idea of the bolt size !!

The next night I thought I'd tackle the arm. Using the socket extension bar I belted the tube out that the bearings mounted on.

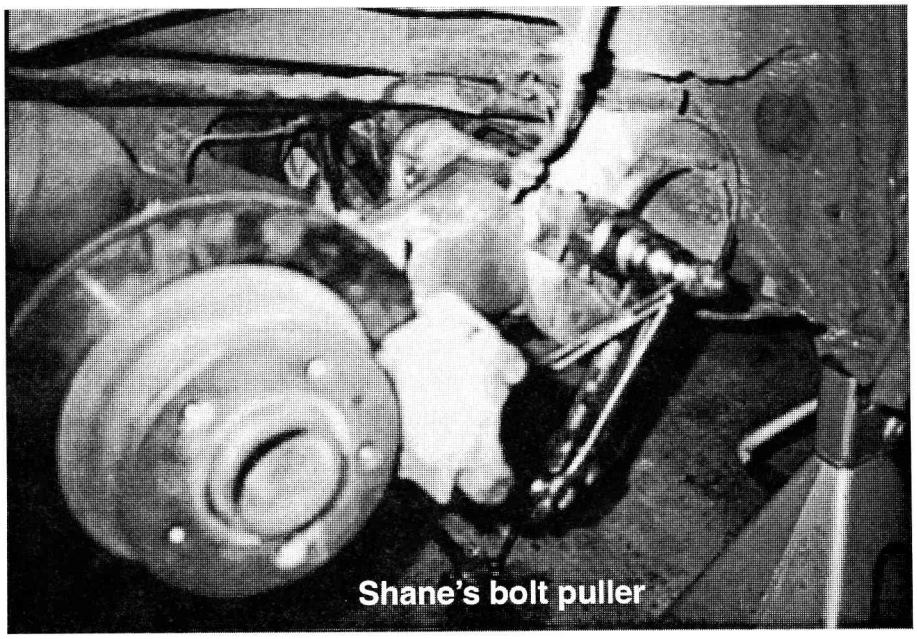
The only thing that even hints that there was once bearings there is the half eaten away bearing shell. There's not a hint of grease to be found anywhere. I'm positive this was lubricated with salty water when assembled last .

The bearing races are all chewed up, and the inner bearing sections are stuck to the tube. I don't know how I'll move them, but I'll give it a bash. The usual go in Australia if the bearing races are chewed out is to replace the arm. However there are no other cars in Australia fitted with ABS and the casting is different. The tube the bearings mount on has the inner race of one bearing effectively welded to it by rust, and the bearing race in the arm looked like it was a part of the casting than a separate bearing race.

To get the inner bearing from the tube, I grinded it as far through as I was game without damaging it in two places, then hit it with the air chisel, knocking the two halves off.

To remove the bearing race in the arm was going to be very fun ... I first bent the largest Stanley screwdriver I have so that if I passed it through the arm it would touch the back of the bearing race (I usually use my father's tools to make 'special tools' but I couldn't be bothered driving to his house). Without doubt I could have belted the bearing races until I was old and grey without it moving ... What I did was run a couple of beads of weld around both bearing races getting them red hot, this expanded them to the point where I was able to belt them out. Now they were apart I drilled a hole in the arm casting and fitted a grease nipple.

Now another interesting problem ... How do I get the new bearing races in??? Taking the arm inside with the intention of throwing it in the oven went down like a lead balloon Noooooooooooo, 'The Boss' wasn't having a bar of that LOL ... I got told to take that bloody greasy arm back out to the shed in no uncertain terms ;-)



Shane's bolt puller

I got a little butane torch and with this heated the alloy arm, a 30mm sidchrome thin walled socket fits perfectly inside the arm housing, it's like it was made for the job of thumping the bearing races in. I belted the bearing races home (not owning a press). They installed really well without burring or getting damaged.

I packed the new bearings and fitted them. Hooked the grease gun up to the fitting and pumped grease into the arm until it started passing the bearings (it took a surprising amount). Then fitted the seals and got it ready to fit to the car.

The arm will go back into the car with difficulty, the bloody anti-roll bar did it's utmost to ensure it was difficult to get back in. Everything simply bolts back together. However in my case the rear brake line had been cross threaded on a previous occasion ... Now I find out why it's rounded and damaged looking. I screwed it in a couple of turns with my fingers and finished off with the spanner. I've worked with hydraulics long enough to know it wasn't right - it just 'felt' wrong. It looked ok as I screwed it down ... Of course the bloody thing leaked badly. I ended up using vice grips to undo the hydraulic line. Another hour of trying to get the bloody mongrel thing to screw in without cross threading, I finally tightened it down with the vice grips. No doubt about it, whoever cross threaded it previously should have run a tap down into the caliper or replaced it. Next time I pull the mongrel apart I'll have a spare caliper from my wreck ready to fit, I will need to order in a new piece of hydraulic line.

Finally lower the car off the ramps, the intention was to take it for a drive. Of course now I didn't have any hydraulic pressure. Another half hour of cursing and fiddling still hadn't built up any pressure, I'd tried pulling the centre from the reservoir and priming the pump -nope. What I ended up getting the pump to prime was pulling the feed hose to the pump, ramming a funnel into it and holding it up high, several bubbles appeared and it started pumping again.

The car rides enormously better now, but pulls a little to the left. I won't set the centre position of the steering until I've changed the bearings on the other rear swing arm.

Phew, all done !!