

Sprinter Brake Upgrade

First of all I take no credit for coming up with this brake upgrade, I merely used an existing idea designed for upgrading brake on a Celica and adapted it to the sprinter. There's not a lot different but I know that if I had it all planned out for me for the sprinter it would have been a little easier. Most of this you can do yourself if you have the appropriate tools, I was lucky as I had access to a mechanics workshop with air tools, bench vice, spring compressors etc. while it may look a little daunting at first it really is quite easy if you have just the tiniest bit of mechanical experience. I was only 18 at the time and second year apprentice mechanic so anyone can do it! I wrote this article a little while after I did the conversion so I may have forgotten a few things but if I have email me and I might be able to clear them up.

Parts needed:

Corona XT130 front struts

Peugeot 604 front disc rotors

Mitsubishi Starion master cylinder

Hilux LN106 callipers

Plus more parts which ill explain later

So you start with the corona struts which are from an XT130. I'm told that there's another model corona strut that works but when I found an XT130 dumped on the side of the road one day it was decided. Saved myself about \$100 on struts by taking them from a dumped car on the side of the road in the middle of the day which got some guy taking photos of me as evidence I spose but anyway, once you got the struts make sure the bolt holes used for mounting the calliper are 90mm apart. This is the important bit.

The parts you need from the strut are the strut itself only, the rest you don't need. The backing plate comes off to fit the calliper, the spring is useless as is the top spring saddle.

When you take the discs off you may as well repack the bearings. It costs you a couple of bucks in seals and some time but I would think everyone would do this anyway but I thought id mention it.

European discs are known for being soft, so you may want to by new ones instead of second hand ones, maybe from DBA. I went for new Brembo's, but this was mainly because I got them for less than \$90 a pair.

The Peugeot discs have a diameter of 273mm whereas the original corona discs are 266mm. You need it to be machined down and any brake shop should be able to do this for you. While your there, get them to machine approx 1.2mm off the disc 'hat' to compensate for the disc being over to one side by approx 1.2 mm when its all bolted up. Some people use spacers in between the calliper and strut but id rather not so I had the disc machined.

Once you have the discs back when you go to bolt the disc to the hub it looks like it will work but the boltholes are a fraction too close to the centre. You could drill the hole out ever so slightly or do as I did and spend 10 mins with a file. Now the hub goes on the struts as with the calliper.

With the struts in the vice and the springs removed take out the wet leg insert. I had after market shocks in my sprinter struts so I wanted to use them. They fitted into the corona strut but were a bit short, I cant remember how much exactly maybe 6mm. All you have to do to overcome this is insert spacers in the bottom, simple.

The next problem is with the top spring saddle. The corona spring saddle does not fit inside the sprinter strut tower so you will need to use the original sprinter top spring saddle off your old struts. This would be ok if the corona springs fitted into the sprinter saddle but they do not. You will most likely be wanting after market springs anyway rather than the stock ones so you will need some custom work to be done. I did not have after market springs in my original struts so I needed custom ones made up. I went to All Springs in Liverpool, if your not near Liverpool you'll need to find another shop that makes up custom springs which shouldn't be too hard anyway. Now what you want is a spring which is the same as the corona spring at the bottom, but the same as the sprinter spring at the top. If you already have after market springs in your sprinter you could just get the spring rewound at the bottom to suite the corona bottom spring saddle.

Here is a picture of what the strut looks like:



Unfortunately I forgot to take a photo while I was doing the conversion but I remembered afterwards when I had the car on the hoist but I couldn't be bothered taking the wheel off. You can still see the custom spring which you may think would be expensive but only cost \$125 for a pair. Note that the factory wheels have been ditched as the brakes will not fit inside the 13-inch rims. I don't not know if they will fit in 14's because I have 15's and they definitely fit in them.

Once the custom springs have been made chuck them on the struts with the sprinter spring saddles on the top, they are now ready to bolt in. Some people say you need to replace the lower control arm with ones from a TA22 Celica because the sprinter ones interfere with the discs. I did not find this to be the case however my lower control arms are not stock, they are in fact rose-jointed for camber adjustment but, using the stock control arms. I cannot see why stock control arms should interfere with the disc as the outer end of mine are identical as you can see in the picture only the inner end is different.



The next thing that needs to be done is the master cylinder. The master cylinder that the Hilux callipers worked with originally had an internal diameter of $15/16^{\text{th}}$ of an inch. If you do not change the master cylinder you will have no pedal feel. The master cylinder off a Mitsubishi Starion bolts straight up to the sprinter. The rear brake pipe will bolt into the master cylinder when you bend it a little. The front pipe however does not reach and a new one will need to be made. This will cost you next to nothing for a brake shop to do but I made mine myself with copper piping and a flaring kit which cost about \$50. The other thing is you need is the little brake pipes that originally went into the hilux callipers to bolt from the calliper to the rubber brake hose. They'll cost like \$5 from a wrecker. Finally I cut and soldered the low-level indicator plug from the old sprinter master cylinder to the Starion one.

So that's it I think. Heres a pic of the final product:



As you can see there isn't much room between the lower control arm and the disc but they do not touch. If however they do for some reason, I can't see why it would be a problem to grind a small amount off. Or, use TA22 control arms if you think its necessary however I cannot confirm these will work. There are probably a few things ive missed so if you have any questions email me and ill try and help you out.

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