



REAR ENDED

STORY BY LIAM QUIRK PICS BY BEN HOSKING



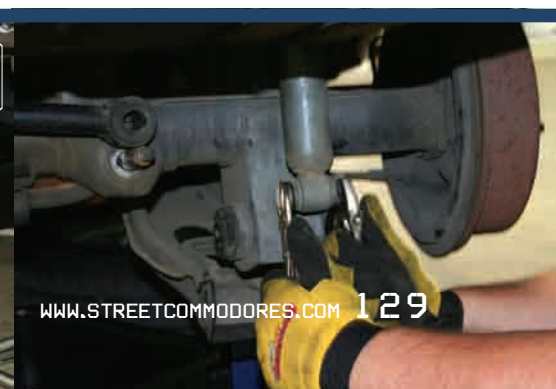
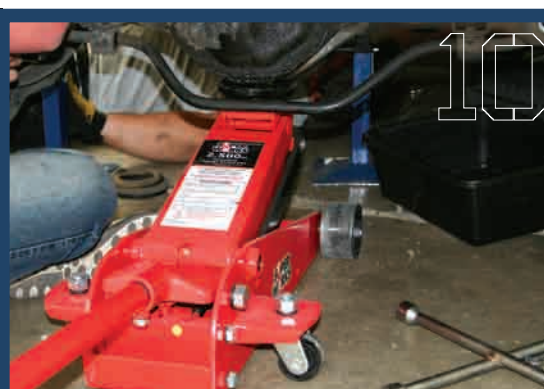
At the hands of any enthusiast the factory driveline components are sure to fail, if nothing else, quicker than they would with grandma and grandpa. At the hands of a P-plater, the Borg Warner drum-brake differential that lived at the rear end of my VL for 19 years was never going to last long. The previous owners were not the burnout machines I made them out to be – all damage sustained to the diff was of my doing (and partly my old man's).

I'd always wanted discs all 'round, and as my drum diff neared the end of its life it seemed like a great time to

upgrade. It was as much a need as it was a want. You know it as well as I do, standard VL brakes are pathetic at best.

My mates would jokingly open windows and fly their jackets out the door to slow me down, sometimes going so far as to open the entire door. My uncle, an engineer, joked about cutting holes in the floor to brake, ala The Flintstones. Discs all 'round had to make for a safer ride, and the fact that the diff was clunky and about to cark it further motivated me to rip it out.

Out of this DIY, we are aiming for improved braking performance and a happier diff. Watch as we rip the diff out as a pre-emptive strike, and instantly improve braking performance.



01. Make sure you're working on a flat, hard surface. With the car firmly on the ground, crack the wheel nuts. Chock the front wheels, and then jack up the car by the diff centre. Make sure your jack is dead in the middle, otherwise the car maybe become unstable

02. With the car in the air, place your stands under the factory jacking points. Completely undo the wheel nuts, remove the wheels and slowly lower the car onto the stands. Rope in a mate or two to ensure the car comes down properly onto the stands

03. Unbolt the stabiliser bar at either side of the car. Pull this out of the way and remove the Panhard bar

04. Loosen the lower control arms. If the bolts are tight, which ours were, douse them with WD40 or a similar lubricating compound. It may be necessary to hybrid a tool for extra leverage

05. Disconnect the brake lines. The easiest way is probably to disconnect the mainline – it lives near the fuel pump. Again, not having been undone for 19-odd years, ours needed a good drink of WD40. Have a drip-tray handy for obvious reasons

06. This is a good time to disconnect your handbrake cable. The whole cable needs to be changed as the disk and drum cables aren't interchangeable. Take the handbrake off slowly, and loosen the bolts as shown. The cable should just drop out

07. You will need to get the cable through the lower control arms to remove the diff. The line is connected to the drums via a hook, and the easiest way to undo it is to take the drum housing off. This comparison shows the difference between the old drum cable on the left and the brand-new item we picked up from Holden

08. Unbolt the tailshaft. The four bolts shouldn't be overly hard to undo. Prop it up with a jack stand

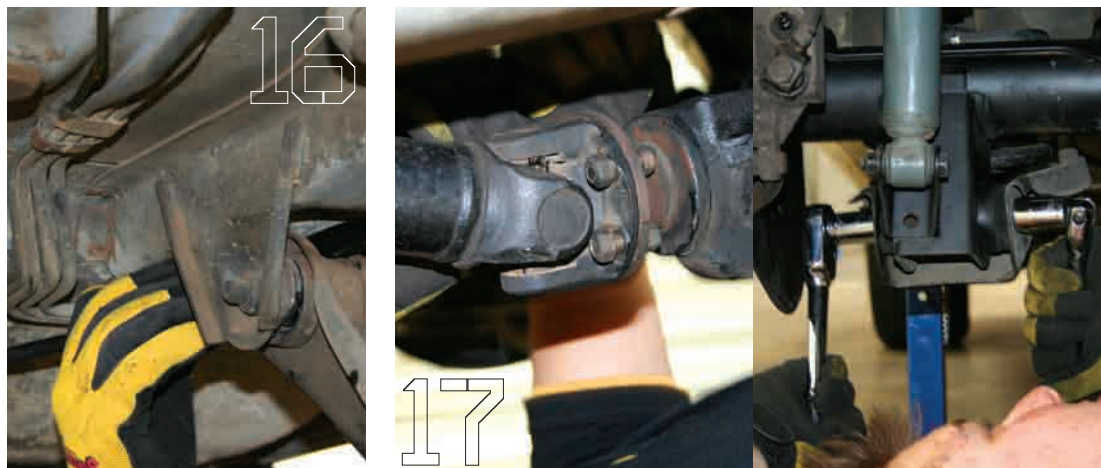
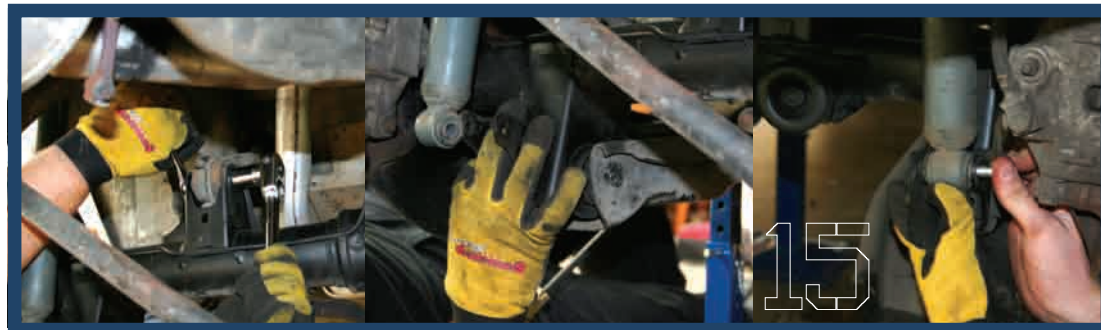
09. Now unbolt the upper control arms. Refer back to remedy in steps four and five if the bolt is stubborn

10. Get the trolley jack back out and place it under the centre of the diff. Jack it up just enough to take the weight of the diff, and unbolt your shocks. With the shocks clear, and all ancillaries disconnected, slowly roll the diff out from under the car





DIY



After you're happy that the brakes are properly bled and the wheels are firmly in place you can call your diff installed. I found that the diff drove a lot smoother with the fresh oil in there, and the annoying groan and thump between gears had all but gone. Braking had improved out of sight – the new brakes allow for later braking and a newfound confidence in the car. The new diff looks and works a whole lot better than the old item, which we're yet to dispose of. Just remember kids – neutral bangers, hard launches and burnouts will kill your new diff just as quickly as it did your old one. Enjoy! *SC*



11. Here's one we prepared earlier. The car it came out of had a mere 34,000km on it. We gave it a lick of paint to dress it up a tad, and thought it a good idea to change the oil

12. Remove the filler cap and place a drip tray under the diff. Roll the diff so that the cap is on the bottom, allowing all the fluid to drain out. We didn't see it necessary to remove the whole casing, but you can if you're keen

13. This is the rubbish that came out. Black and murky, you would wonder if it had ever been changed. Fill the diff back up through the filler hole and replace the cap

14. Keeping the diff level so as not to spill diff oil everywhere, place the new diff onto the trolley jack and slowly roll it under the car. Line the diff up with the shocks, upper and lower control arms and other anchorage devices

15. Start bolting the diff back in. We started with the upper control arms, then the lower control arms and then moved onto the shocks

16. We finally attached the Panhard rod and stabiliser bar. It was probably a better idea to install the brake line before this point, but it wasn't impossible. Leave yourself as much slack as possible and connect it to the hooks behind the disks. Finetune the tension in the handbrake line by tightening the main bolt until it grips tight and you are confident that it is safe

17. Bolt up the tailshaft and bleed the brakes. Jack the car up again to remove the jack stands and replace the wheels. With the stands clear, lower the car and double-check all of the bolts. Regardless of how tight you previously did them up, some of the bolts will be loose so it is vital that you tighten them up again

18. Turn on the car and test that your handbrake and all four discs work properly. Slowly work the diff in and thoroughly test that the system is connected properly. Once you're happy with the performance, and are positive that everything is working 100 percent, hit the streets

