

RACKIN' 'EM UP

THIS MONTH, WE SHOW YOU HOW TO PERFORM A MANUAL STEERING RACK CONVERSION IN A FIRST-GEN MODEL, AS WELL AS AN OVERVIEW ON CHANGING YOUR WATER PUMP AND THERMOSTAT IN A 202CI INLINE SIX

STORY AND PICS BY LIAM QUIRK

1. First and foremost, you'll need to jack the car up and remove the front wheels. Having a two-post hoist will come in handy, but a trolley jack and some stands will do

2. Remove the fan and fan shroud. The fan shroud is held on by screws along the top, or in our case, some dodgy cable ties courtesy of the previous owners. Pull it free and unbolt the fan from the front of the water pump

3. Moving back under the car, the rack can be disconnected from the strut, as can the lower control arms

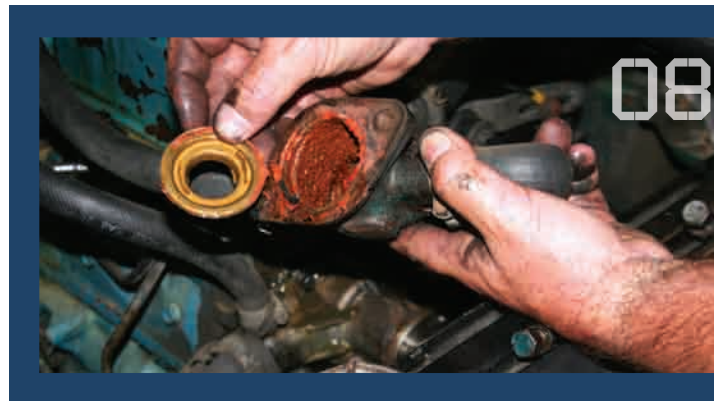
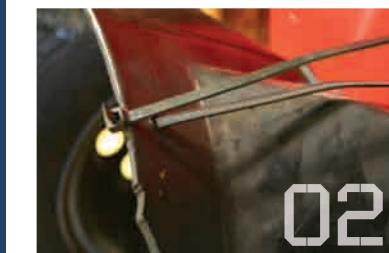
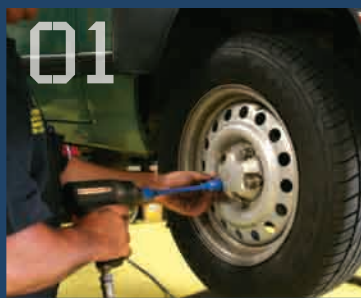
4. We were replacing the wheel bearings at the same time, so off came the rotors for a good machining and behind them went the new bearings. Peter also replaced the brake pads

5. As you can see here, the control arms needed a few new parts, including new bushings and ball joints. The old items are pressed out and new ones inserted in their place, and you can see the new ball joint in the top left with its fresh rubber. Peter from Road and Race Performance once again helped us out immeasurably with the labour

6. Peter shows us the advantage of the new ball joints. The older-style ones don't have this little inlet for the grease. The newer-style ones can be bolted up dry and then have the grease injected via this inlet

7. Disconnect the power steering lines from the rack and unbolt the bracket holding the pump and reservoir. With the lines free, and everything holding the assembly to the block removed, lift it free and place it aside. Don't throw it away, though, as most steering rack suppliers work on an exchange basis

8. While in the engine bay, and with the belts off all the pulleys, unbolt the thermostat housing from the block. Expect a lot of mess. We pulled ours apart to find a gutted thermostat



If there's one thing to remember about first-generation Commodores, it's that they're all old, and old cars require maintenance and care, as well as a big stack of replacement parts as they decay. Our first-gen project car, Project SatinSix, is no exception.

Coming to us as a \$700 banger, there's plenty wrong with this VH Wagon, but there's a lot of good stuff ahead for it, too. But to get to the good stuff, we are faced with a stack of repair and replacement work that needs to be completed before we can get to the fun stuff. In this issue, we'll be

showing you how to go about swapping your steering rack, water pump and thermostat (on a 202ci straight six in this case).

Perhaps the first question many of you have asked is, 'why swap to manual steering?'. There are a couple of reasons for this, with the first being aesthetics inside the engine bay: the less clutter, the better the look. By removing the pump, reservoir and associated hoses, we can dramatically clean up the engine bay when it comes time to smooth it out and repaint it all.

The second reason is that with our intended Gilmer belt drive that will go

onto the new engine, we would have to do a lot of messing about to adapt the necessary pulleys for it to work. With only six or 7in wheels proposed for the front end, turning the light-nosed VH won't be too hard a task without the aid of the power rack.

With all the parts we needed sourced from our local Supercheap Auto, like the rack, new tie-rod ends, ball joints and wheel bearings, we headed down to our good friend Peter at Road and Race Performance in Rydalmere NSW to do the swap.

9. The water pump can also be un-bolted. The VH's was on its last legs, so luckily we got to it just in time. Replace the gasket and bolt the new one back on

10. The thermostat housing received a silicone gasket and was bolted back in place too. The new, functional thermostat was placed inside and the unit pieced back together

11. Unbolt the intermediate shaft from the rack, and the rack should now only be held in by the bolts securing it to the body. Undo these and drop the rack out. See the old rack on the right compared with the new one on the left that we were able to find from our local Super Cheap Auto store?

12. The intermediate shaft needs to be changed. You can see the differences between the power steering and the manual items, with the manual shaft (on the left) being quite a bit longer

13. To swap the intermediate shafts, climb in under the dash and pull back the rubber cover around the lower section of the steering column. Undo the bolt connecting the intermediate shaft to the rack and pull the old shaft out, bolting the new one in its place. Do this bolt up nice and tight

14. Now throw the new rack up. Mount it firmly in the factory position and bolt it in place. Slot the intermediate shaft into the top of the rack

15. The tie-rod ends were replaced with newer items we got over the counter from Supercheap. The old ones simply unscrew like a bolt, and the new ones screw back on in their place. Replace these now to save doing them later

16. Peter presses the new Nolathane bushes into the control arm, and with them in, we can put the control arm back in its place. The Nolathane items will give a far greater service life than simply replacing them with factory rubber items, not to mention a better ride

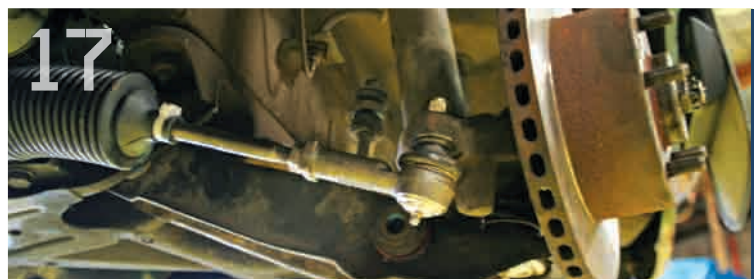
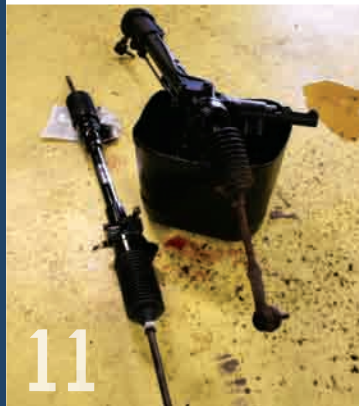
17. The tie-rod ends can be connected back to the strut, and the swaybars reconnected to the control arm

18. The brake assembly is put back together, and the front end is starting to look a little more complete

19. On goes the fan shroud and the fan itself is replaced too. In case you were wondering, yes, we did cable-tie it back in place. We'll have to find a new shroud or fabricate one when the new engine goes in. What an eyesore!

20. With the wheels back on the car, you should be greeted with a view similar to this from underneath

21. The wheels will be terribly out of alignment, so try to get the camber, castor and toe looking as good as you can by sight and drive slowly to your local alignment specialist. As you can see, the car is placed on the hoist and has the camber and castor dialled in and the whole front-end realigned



22. There are two ways of doing the alignment: getting the wheels straight with the rack off centre, or centring the rack and repositioning the steering wheel on top of the column. Peter chose the latter, thereby completing the job

Once you're sure everything is done up tight (it won't take long to double-check everything, and would be great if you had some air tools lying around), stand back and enjoy a tidier bay, no more leaking or groaning power steering pumps and a more physically intense driving experience. By intense, we mean that over the next week or so you'll find yourself using muscles that you either haven't used before or haven't used in years. *SC*