



UNLEASHING THE FURY WITHIN

LOOKING TO SQUEEZE MORE POWER OUT OF YOUR MACHINE? TAKE A GOOD HARD LOOK AT THAT HIGHLY RESTRICTIVE GAS-EXTRACTION SYSTEM KNOWN AS THE FACTORY EXHAUST. LET'S RID THIS VS V6 OF ITS POWER-ROBBING ASTHMATIC RESTRICTION AND UNLEASH A FEW EXTRA HIDDEN PONIES

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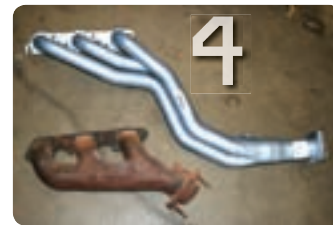
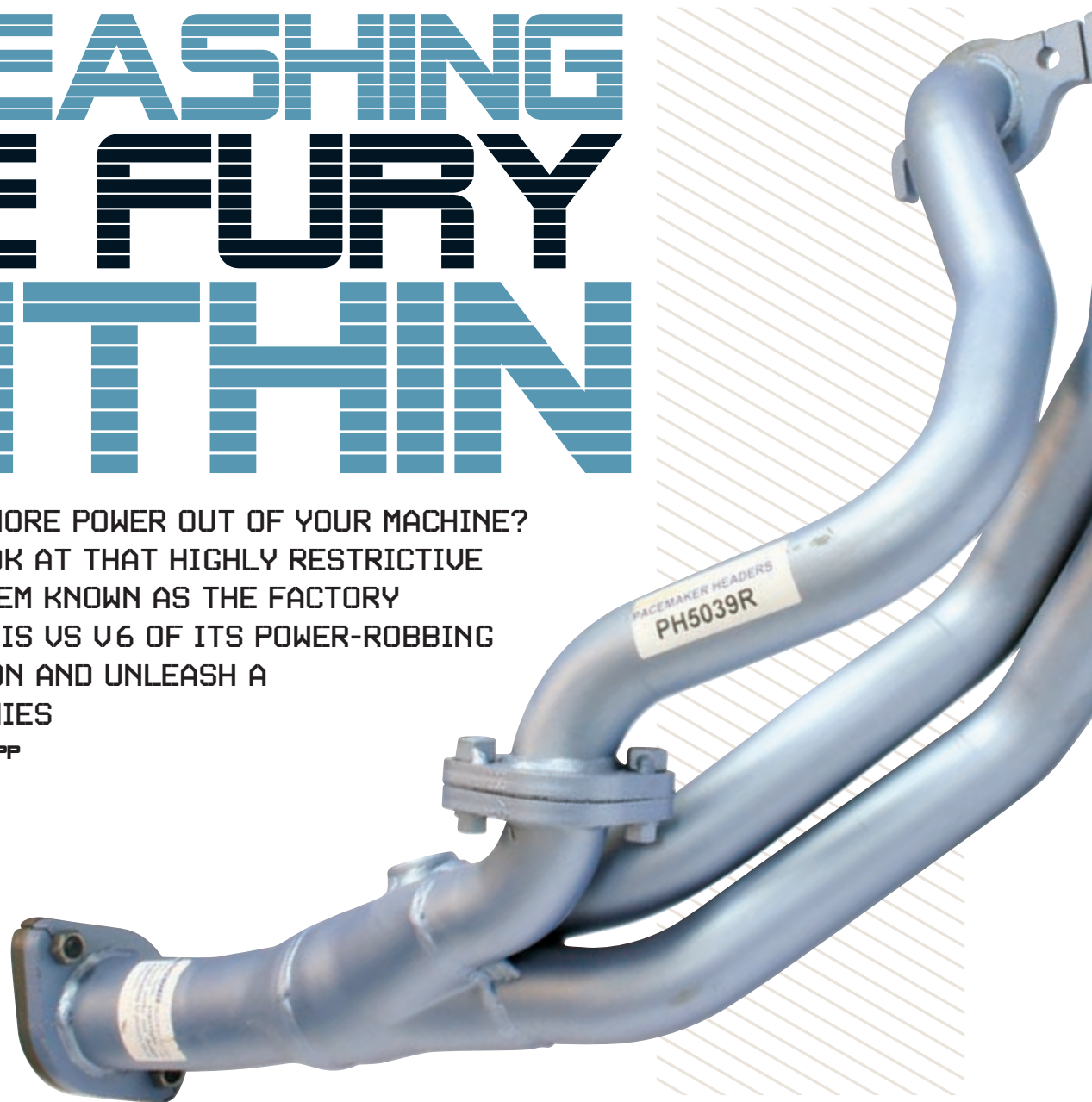
1. The first step is to get those nasty and highly restrictive cast headers off by undoing the 13mm bolts holding them on. Remove them all along with the dipstick and dipstick tube.

2. Once the bolts are removed, unplug the spark-plug leads. Make sure you note which lead went where to avoid dramas later on.

3. The two lower bolts that connect the headers to the Y-piece can be removed. These can be very tight, so be mindful when these buggers crack as mashed fingers and bleeding knuckles usually result.

4. Next, remove the two O₂ sensors. These are 19mm screw-in sensors that bolt to the exhaust to measure output gasses for the ECU. Once these are unbolted, the factory headers can now be removed. Take care when manoeuvring the headers out of the engine bay not to damage any spark plugs or surrounding engine-bay components.

5. Now comes time for the Pacemakers to come out of their packet. First, we will fit the passenger-side header as it is the easiest of the sides to fit. Using the new gasket and bolts provided, fit the header with the gasket on to the cylinder head. Again, be careful of those pesky spark plugs not to bump and crack the ceramic. Make sure to re-fit the dipstick and dipstick tube!



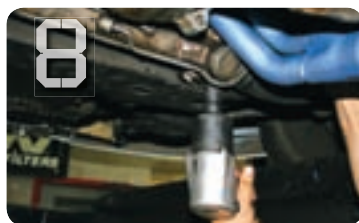
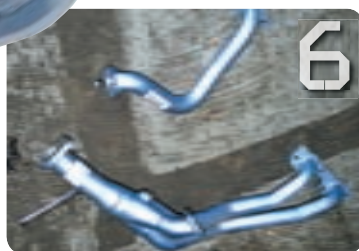
The first port of call for someone looking to squeeze more power out of their machine is to take a good hard look at that highly restrictive gas-extraction system known as the factory exhaust. A vehicle's factory exhaust system is a highly restrictive and cost-effective design.

All vehicles in Australia have to adhere to certain Australian Design Rules, or ADRs, which limit the amount of noise and emissions a vehicle produce. This is just one variable vehicle manufacturers take into consideration when designing a factory system.

Some vehicles respond better to exhaust upgrades than others. The Commodore V6 header has gone through a series of changes throughout its life from the initial VN series. It is a perfect example of just how bad a factory exhaust header can be. It had a terrible design that not only looked downright disturbing, but was a total antonym to efficiency.

In this two-part tech article, we will look at replacing the entire exhaust system of a VS Acclaim V6 to a more efficient free-flowing system that will unleash a few more ponies as well as give the six-banger a more tonal presence.





6. The driver's side exhaust is a slightly trickier task, and the Pace-maker header features a detachable primary pipe for easier installation. Remove the separate pipe as shown.

7. To fit the driver's side extractor into the engine bay, the steering rack needs to be dropped in order to fit the flanged pipe through. The first step to do this is to remove the locking clip on the steering-rack end. After this, tap the ball joint with a hammer to separate the rack from the hub. Persistence pays big dividends here!

8. There are two 19mm bolts holding the power-steering rack to the K-frame. Remove these two bolts. There is a nut on the other side, so use a 19mm spanner to hold them in one place.

9. This now leaves the steering knuckle to undo. There are two 12mm bolts clamping the steering shaft to the rack. Undo those and the rack can then be dropped in order to fit the Pacemakers through.

10. Now, manoeuvre the extractor from underneath the car into the engine bay. The steering shaft should fit in between the two primary pipes and the one that was disconnected before.

11. The third primary pipe can now be re-attached. Feed it up from underneath and bolt it back up to the flange.

12. The extractor can now be attached to the cylinder head using the bolts and gasket provided by Pacemaker.

13. The extractors have now been fitted, so it's time to refit the power steering rack. Refitting the power steering rack is done by performing the exact opposite procedures used in its removal. Check all clearances by moving the steering wheel to the limit of its travel. Ensure no rubbing is taking place between the extractors and steering components or any transmission, brake or fuel lines.

14. The final step is to refit the O₂ sensors. The driver's side O₂ sensor will bolt straight up with no modification needed. The passenger side sensor will need to be lengthened about 20cm. This is just a matter of extending the four wires in the loom.

With the extractors now on, it's time to move on to the rest of the system. But not in this issue. Keep an eye out for the rest of the exhaust as the Performance Exhaust Centre is going to make a custom masterpiece of many welds and mandrel-bent pieces. *SC*

The VS Ecotec is probably one of the hardest models of V6 Commodore to get any sort of extractors to fit. Pacemaker manufactures only a single set of headers for the VS sporting relatively small 1.5in diameter primary outlets. The three pipes then travel into a single 2in-round secondary pipe.

Those who own VN–VR models can have larger 1 5/8in primaries as well as VT models onwards. Competition models featuring 1.75in primaries are also available for VT models onwards for those chasing serious power out of their Ecotec. Let's get this show on the road and get this VS breathing a little easier.