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# BUDGET BLASTING

IT'S HARD TO KNOW WHERE TO START WHEN YOU FIRST LOOK AT MODIFYING YOUR COMMODORE. IN FACT, IT'S OFTEN HARD TO KNOW WHERE TO CONTINUE ONTO NEXT EVEN AFTER THE FIRST FEW PURPOSEFUL MODS YOU DO.

DESPITE AUSTRALIA'S COMPARATIVELY SMALL MARKETPLACE, WE'RE INUNDATED WITH CHOICE WHEN IT COMES TO POWERING UP OUR PRIDE AND JOY. WHETHER IT BE FOR YOUR ENGINE, YOUR BOX OR YOUR DIFF, YOU CAN REST ASSURED THAT YOU'LL HAVE NO TROUBLE FINDING SOMETHING TO SPEND YOUR LIFE'S SAVINGS ON. BUT IT DOESN'T HAVE TO COST YOU THE EARTH TO GET MORE FROM YOUR COMMODORE.

OVER THE NEXT FIVE PAGES, WE'VE ASSEMBLED A WIDE RANGE OF GREAT PARTS AND IDEAS TO GET YOU MOVING FASTER, STOPPING BETTER AND GENERALLY JUST HAVING A BETTER TIME BEHIND THE WHEEL. THERE'RE 20 THINGS TO CHECK OUT AND EVENT A FEW SUGGESTED COMPANIES ALONG THE WAY TO GIVE YOU AN EVEN BETTER HEAD START.

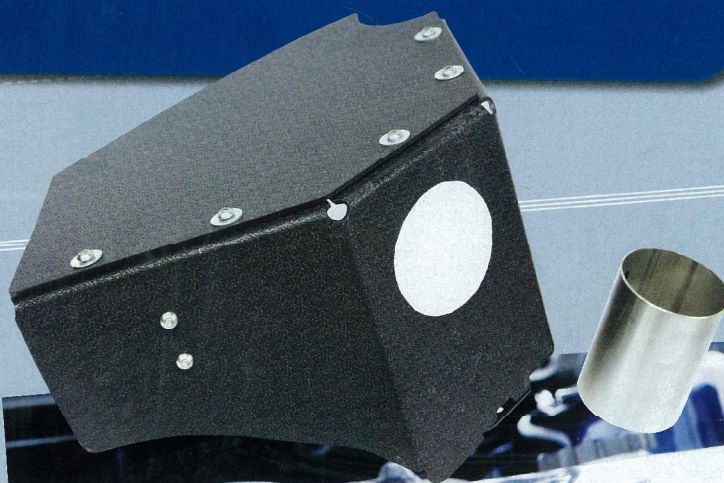
## AIR INTAKE

**Suggested retailers**  
SS Inductions - [www.ssinductions.com.au](http://www.ssinductions.com.au)  
Castle Hill Exhaust  
- [www.castlehillsexhaust.com.au](http://www.castlehillsexhaust.com.au)

As we all know by now, cold air equals more power. There are many cold air intake kits on the market to suit just about every engine option ever available in a Commodore.

For V6 owners, the supercharged V6 intake is a cheap and effective way of gaining power or for an enclosed pod filter setup, Mace Engineering have fabricated their own pod enclosure which channels all the outside cool air inside the pod box and is available for VL sixes right through to later model Holden V8s. A Mace airbox will set you back around \$250-\$300, depending on your engine.

For the LS-series owners, there are many popular 'OTRCAI' (Over The Radiator Cool Air Intake) units available in just about any shape or colour from a variety of manufacturers. Budget up to \$500 for a good OTR and filter which might seem a little pricey, are well worth the gains in throttle response and power you will notice not to mention a touch more induction noise.



## SHIFT KIT

**Suggested retailers**

Rocket Industries - [www.rocketind.com](http://www.rocketind.com)  
Craig's Automatics - [www.craigsaautos.com.au](http://www.craigsaautos.com.au)

Firming up the shifts on your automatic box is great way of getting more power to the ground and shaving of a few tenths at the strip, not to mention making it feel like a much more potent 'box. Another good thing about the shift kit is it's quite inexpensive with RRP's usually floating under the \$150 mark.

Transgo and B&M are a good place to start looking for 4L60 and 4L60E kits with installation within reach of the competent DIY'er and well worth the half day in the garage.



## SHORT SHIFTER

### Suggested retailers

Rip Shift - [www.ripshift.com](http://www.ripshift.com)  
Rocket Industries - [www.rocketind.com](http://www.rocketind.com)  
SXD - [www.sxd.com.au](http://www.sxd.com.au)

Missing a shift is not only embarrassing and detrimental to a decent ET at the track, it's easy to do while the adrenalin is pumping and all you want to do is win. Sometimes you reach for the third cog and all you get is a whole lotta nothing.

Rip Shift and Billet Products both have a range of shifter mechanisms that not only shorten your shift travel by as much as 40-percent, but make the shift from second to third gear an absolute breeze. Available for the Tremec and Getrag T5's, T56 and ZF gearboxes, these are an absolute must for the manually shifted Commodore. Prices start from the \$449 mark for the 5-speeder, and go up to \$549 for the 6-cog boxes.

## ROCKERS

### Suggested retailers

Yella Terra - [www.yellaterra.com.au](http://www.yellaterra.com.au)  
Mace Engineering - [www.maceengineering.com.au](http://www.maceengineering.com.au)  
Rocket Industries - [www.rocketind.com](http://www.rocketind.com)

Upgrading rockers is a popular mod for V6 and supercharged V6 owners that mimics the effects an aftermarket camshaft has but at a fraction of the cost. Yella Terra and Mace Engineering are two common companies to turn to and offer a variety of ratio choices for varying performance gains. Gaining an increase of up to 15rwkW is not uncommon on Ecotec engines with 1.9:1 and above ratios, while the engine typically feels more willing to rev than standard.

For all engines, a better engineered set of rockers will help provide more valvetrain stability at higher RPM no matter the ratio and adjustable items are mandatory for anyone running a solid bump stick.

Prices start from the \$450 mark for a reworked set of factory rockers up to \$1,000 and beyond for a Yella Terra premium performance adjustable set.

## DIFF GEARS

### Suggested retailers

Diff Trans - [www.difftrans.com](http://www.difftrans.com)

Most Commodores that rolled out of the Elizabeth manufacturing plant were fitted with 3.08:1 ratio diff' gears, meaning they were a great compromise between performance and fuel economy but for us power hungry Commodore owners, a ratio swap to 3.7:1, 3.9:1 or even 4.11:1 will net a considerable difference at the track and make your Commodore launch off the line like never before.

The downside is the RPM you will gain when cruising on the freeway, but those with a T56 6-speed probably won't even notice. A brand new set of gears for a Borg Warner diff' will cost around \$600-700 with most ratios usually costing within a few lobsters of each other.

## HEADERS

### Suggested Retailers

Pacemaker - [www.pacemaker.com.au](http://www.pacemaker.com.au)  
DiFilippo - [www.darrendifilippo.com.au](http://www.darrendifilippo.com.au)  
Lukey - [www.lukey.com.au](http://www.lukey.com.au)

A set of free flowing pipes are a must for anybody chasing a serious increase in engine power. Depending on the style of the header, most gains occur in the lower part of the rev range with a whole heap of more torque readily available for an easier-to-drive car. Again, depending on the car, gains of up to 30hp have been seen by using a high quality header, while up to 10hp on a V6.

Pricing varies depending on the car, but hudget between \$600 for a six banger and up to \$1,000 for top shelf V8 headers to suit the Holden 5L and LS-series.

## EXHAUST

### Suggested retailers

Lukey - [www.lukey.com.au](http://www.lukey.com.au)  
DiFilippo - [www.darrendifilippo.com.au](http://www.darrendifilippo.com.au)  
Pacemaker - [www.pacemaker.com.au](http://www.pacemaker.com.au)

Complementing a set of headers is the upgrading of the exhaust system itself.

By increasing the diameter of the pipe used, you gain the ability to expel

the gas more efficiently, which is a fancy way of saying more power.

By going to a 2.25in or 2.5in system for a mild V6, up to a 3in system for a forced 6-cylinder and dual 2.5in pipes for a V8, horsepower gains similar to the fitting of extractors can be experienced depending on the condition of the original exhaust system.

Not only to you get more right foot entertainment, but you can actually hear the engine note of your car (as well as everyone else).

# PULLEY SIZE

## Suggested retailers

Yella Terra - [www.yellaterra.com.au](http://www.yellaterra.com.au)  
Mace Engineering  
- [www.maceengineering.com.au](http://www.maceengineering.com.au)  
FIT - [www.v6supercharged.com.au](http://www.v6supercharged.com.au)

For L67 owners, the cheapest and quickest modification would be the supercharger pulley swap. Swapping the blower pulley for a smaller diameter enables the internal rotors to spin at a faster rate, effectively making more usable boost.

Pulleys are measured in both size and PSI ratings with typical boost ratings ranging from 9 to 23psi (which is exploring the upper limits of the poor Eaton M90). The good thing about pulley kits is they are cheap and easy to install, with just about any L67 owner being able to change over their own pulley. Expect to pay anywhere from \$300 up to \$700 depending where you shop, with three main suppliers being Yella Terra, Mace Engineering and FIT.

# CAM

Depending on the work shop and the engine you have, a camshaft swap isn't an impossible mod for \$1k and under. A typical VL RB30 can get good gains with a bump stick swap and is an easy affair, often without the head or even the engine to come out of the car. There are many workshops that offer a cam swap for the RB30 without even needing to adjust the ECU, saving more coin while offering room for improvement later on. Maatouks Racing offer sub-\$1000 cam solutions with their on-track results speaking for themselves.

A cam swap for most other engines can be had for under the \$1000 mark, but due to the ECU remap that follows, you'll see the cost well past the \$1k price range. Cam and chip packages for the Holden 5L can pop up from time to time around the \$1k mark but exclude installation. For the competent mechanic, a cam install is a piece of cake and can do wonders for giving the sluggish 5L a new lease on life.

## Suggested retailers

Crow Cams - [www.crowcams.com.au](http://www.crowcams.com.au)  
Mace Engineering  
- [www.maceengineering.com.au](http://www.maceengineering.com.au)

# SUSPENSION

## Suggested retailers

Wholesale Suspension - 02 9831 8825  
K-Mac - [www.k-mac.com.au](http://www.k-mac.com.au)

Before getting all set on replacing the springs and shocks, owners of first and second-gen Commodores should consider a full re-bushing of all of the suspension components before anything else. It might not make the car look any lower, but it will save tyre life and will firm up the on-road feeling, making a much smoother ride at the same time.

If the bushes have already been changed, a set of lower range springs and shocks can be fitted to just about any Commodore (VY and lower) for under the \$1k mark. Don't expect anything too fancy, but a firmer spring and shock with a reduced ride height will do wonders and be worth every penny.

There's a large number of companies offering both price-set packages and individual items and it's often just a matter of looking for the company with the best reputation before handing over your cash.

# TUNE

The factory Commodore Delco ECU is regarded as being a very capable unit and more than able to be tuned to suit just about any kind of performance scenario. Using specialised software such as Kalmaker (for the earlier-generation engines), the ECU is able to be cracked and remapped while retaining the legalities of keeping the cars OEM equipment.

LS-series tuning is great way of unlocking more power and is the perfect way to complement a new exhaust and intake modification - usually with spectacular results. There's two distinct schools of thought on the benefits and misgivings on MAF and MAF-less tuning, but either can cost as little as \$600 for a basic tune. Where more complicated mapping is required, factor around \$1000+.

Typical gains on a normal set of mods can see an LS1 reach 220-230rwkw with makes for quite a tempting modification. Drivability will also increase and so can fuel economy, depending on the tuner (and your right foot after the work is done!). Picking a reputable tuner is the key for getting the most out of the tune, with the emphasis here on 'Do it once, do it right' and 'Cheap work is not good and good work is not cheap'.

## Suggested retailers

CHE - [www.castlehillesexhaust.com.au](http://www.castlehillesexhaust.com.au)  
Russo Performance  
- [www.russoperformance.com.au](http://www.russoperformance.com.au)  
Sam's Performance  
- [www.samsperformance.com.au](http://www.samsperformance.com.au)  
Higgins Race Engines - 03 9768 3902  
SAS - 02 9748 1300  
HORSEPOWER FACTORY  
- [www.hp-f.com.au](http://www.hp-f.com.au)

## THROTTLE BODY

### Suggested retailers

CAPA - [www.capa.com.au](http://www.capa.com.au)  
Mace Engineering - [www.maceengineering.com.au](http://www.maceengineering.com.au)  
Plazmaman - [www.plazmaman.com](http://www.plazmaman.com)  
Rocket Industries - [www.rocketind.com](http://www.rocketind.com)

While a throttle body won't unleash a stampede of wild horses under the bonnet, it can increase throttle response and make up for a tenth over the quarter.

A throttle body for an LS1 can set you back up to \$1,000 for the larger 90mm units while the smaller 80mm size will cost around the \$800 mark. A 70mm V6 or V8 throttle body is a relatively cheap upgrade for those of you with early V6 and Holden V8 owners, with prices around the \$200 mark making for a cheap way of setting yourself up for any future engine upgrades. CAPA specialises in throttle bodies for the LS series V8 and Mace engineering have a wide variety of choice for the V6 and V8 engine owner.



## RADIATOR

The standard Commodore radiator isn't well known for its ability to put up with long periods of abuse, so anybody wishing to enter their cars in events such as Powercruise, Summernats or any kind of track work should invest in a rugged, alloy radiator.

Second generation radiators are particularly bad and after a few years can suffer from plastic failure, leaving you stranded by the side of the road or worse still, cooking your engine from a hard session on the track. LCW.com.au make a wide variety of alloy radiators that are not only fully functional, but look sensational. Price varies from model to model and can cost up to \$900 for a burnout-ready example. Just Alloy Radiators also stock a large variety and cover every model from the VL Commodore right through to VX costing as little as just \$400.

### Suggested retailers

Just Alloy Radiators - [www.alloyradiators.com.au](http://www.alloyradiators.com.au)  
LCW - [www.lcw.com.au](http://www.lcw.com.au)  
PWR - [www.pwr.com.au](http://www.pwr.com.au)

## OIL COOLERS

### Suggested retailers

PWR - [www.pwr.com.au](http://www.pwr.com.au)  
Rocket Industries - [www.rocketind.com](http://www.rocketind.com)  
Craig's Automatics - [www.craigsaautos.com.au](http://www.craigsaautos.com.au)

A cooler gearbox is a happy gearbox and it's a great idea to fit a transmission cooler for those who like to give their Commodore a good hiding. The internal transmission cooler in your radiator is fine for day to day use, but when your engine temperature starts to rise and gearbox fluid heats up, gearbox performance and life expectancy suddenly take a dive and you can find yourself in a whole world of trouble.

Fitting a heavy duty transmission cooler is not only easy, but a cost effective way of reducing both the gearbox temperature and the engine temperature, giving you a win-win situation. Expect to pay anywhere up to \$500 for a decent cooler and lines which is a hell of a lot cheaper than an automatic rebuild. Holden have a great unit that you can get over the counter at your local Holden spare parts department for a reasonable price.

## OIL CHANGE / SERVICE

There is no point spending money on all that performance gear when your engine which is in dire need of a service. Engines like the Aussie 5L are well known for their ability to pick up notice-

able amounts of power after replacing worn ignition components such as the dizzy - gaining as much as 20rwkW!

Leads, spark plugs, filters, fuel pumps and even injectors are a great start to restoring your engine back to the way it should be and are often over looked by those chasing more power. Our very own SC project 'STREET' gained around 10rwkW from a swap to Royal Purple

engine oil on a back to back dyno run which is a good example of the kind of gains a simple oil swap can give you.

Regardless of what easy and cheap power gains a good service will give your Commodore, it's good insurance too!

### Suggested retailers

Royal Purple - [www.royalpurple.com.au](http://www.royalpurple.com.au)  
Valvoline - [www.valvoline.com.au](http://www.valvoline.com.au)  
Nulon - [www.nulon.com.au](http://www.nulon.com.au)

## BRAKES

While bigger brakes means more coin, many DIYers are choosing to use the VT brake upgrade for their first and second-generation Commodores with great results.

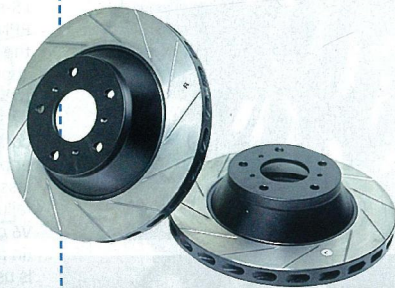
The entire setup, including twin-piston calipers and a VT master cylinder can usually be had for under \$500 which gives you room for a new set of slotted or cross drilled discs. The VT brake upgrade is a must for those with VS or earlier Commodores that have had a power increase, as the standard brakes are not known for their ability to do multiple, high speed stops. Specialised Vehicle Enhancements have an off-the-shelf kit including new slotted rotors for \$495 which is worth every cent for those wishing to chalk up some track time. Keep in mind that any VB-VP conversion will require a pair of hub adaptors.

For later model Commodores, a simple rotor swap could be all you need for increased bite and even a rotor upgrade for a VE will only set you back around \$400, which is cheap insurance in anyone's book.

braidedhoses.com.au offer a great range of stainless braided brake lines that will ensure your stops are consistent and above all else, safe. Factory rubber lines can fail under heavy or sustained load - or through age - and a set of stainless lines prevent this. They're ADR-compliant and will cost you around \$350 a set of four.

### Suggested retailers

Hightek Brakes - 03 9553 1160  
DBA - [www.dba.com.au](http://www.dba.com.au)  
braidedhoses.com.au  
- [www.braidedhoses.com.au](http://www.braidedhoses.com.au)  
SVE - [www.sve.net.au](http://www.sve.net.au)





## INTERCOOLER

Owners of VL Turbos and L67 powered vehicles should consider an intercooler a must for any real performance applications. An intercooler will not only give you more horsepower, but it will also prolong the life of your engine by making it less likely to detonate when winding up the boost a little further.

Off the shelf kits are readily available for the VL turbos which require no body modifications at all, and can cost as little as \$500, but as with most things, you get what you pay for and companies like Plazmaman offer high quality units worth checking out!

L67 owners on the other hand are a little out of luck with even the most basic kit from Mace Engineering blowing the budget by \$100. Yella Terra offer an excellent spread of performance cooling options for the blown V6 including a very smart water cooled setup for those with larger budgets.

**Suggested retailers**  
Plazmaman - [www.plazmaman.com](http://www.plazmaman.com)  
Yella Terra - [www.yellaterra.com.au](http://www.yellaterra.com.au)  
Mace Engineering  
- [www.maceengineering.com.au](http://www.maceengineering.com.au)  
Maatouks Racing - (02) 9771 2166

## BOOST CONTROLLER

**Suggested retailers**  
Turbosmart - [www.turbosmart.com.au](http://www.turbosmart.com.au)

One of the clear advantages of owning a turbocharged car is the easy ability to wind the boost up and make more horsepower. Not bothering with anything too fancy here, VL Turbo owners can get an added shove in the back from fitting a gated boost controller such as the classic Turbosmart Boost Tee.

Fitting could not be any easier and will take the average DIYer around five minutes, setting you back around \$150, which is probably one of the quickest, cheapest and more beneficial mods you can do for your VL Turbo. Be careful though, you don't want to be adding too much boost without the installation of an intercooler and with all that change left over from \$1k, is probably a good idea to consider being your next modification. Visit <http://> for more information.



## CLUTCH

The clutch is often considered the fuse that protects the gearbox in a racing application, which is why the factory clutch isn't the best when it comes to any type of real motorsport or when you start putting more power through them.

Upgrading to a heavy duty clutch is great idea for those wanting more bite and less chance of leaving the line in a haze in clutch smoke and laughing spectators. There are many different types of clutch available, but a limited budget

of only \$1000 means choice is restricted to only a single plate, heavy-duty type unit. This will still be a huge improvement over any factory clutch you should come across, though and many top Australian brands exist, including Xtreme - the same as used in Project Phoenix.

**Suggested retailers**  
Exedy - [www.exedy.com.au](http://www.exedy.com.au)  
Adelaide Clutch  
- [www.australianclutch.com.au](http://www.australianclutch.com.au)  
Textrelia - [www.textrelia.com.au](http://www.textrelia.com.au)



## VALVE SPRINGS

**Suggested retailers**  
Crow Cams - [www.crowcams.com.au](http://www.crowcams.com.au)  
Rocket Industries - [www.rocketind.com](http://www.rocketind.com)  
Mace Engineering - [www.maceengineering.com.au](http://www.maceengineering.com.au)

The standard valve springs found in the LS-series V8 weren't designed with high RPM in mind so anybody wishing to visit the red part of their tach and beyond should seriously consider upgrading their springs.

The Comp Cams 918 spring set is a common swap over and allows for longer periods of high RPM sessions with less chance of valve float or outright failure. Older engines such as the V8 or V6 can benefit from a valve spring swap (in fact, our very own Project Phoenix is using Crow Cams springs), especially when combined with higher ratio rockers in the V6 which can suffer from float. The good news is valve springs are quite cheap and will only set you back around \$500 (not including installation).

