TECHNICAL BULLETIN

VE Commodore Bumper Bar Removal

August 06 **B - 19**

Holden are the first Australian manufacturer to produce a vehicle with a composite (modular) radiator support panel. The VE Commodore features this new design which was developed with input from the IAG Research Centre's staff. It is the product of substantial computer aided design (CAD) focussed on the key objective of reducing collision repair time and subsequent costs.

The information below details the removal and replacement procedures of the front bumper bar, module, rear bumper, and boot floor pan.

Front Bar Cover

Step 1 Remove the 2 clips and 2 x 6 mm bolts retaining the top of the bar cover/grille to the lock panel.

Step 2 Remove the 3 clips that retain the splash tray to the bar cover and the engine

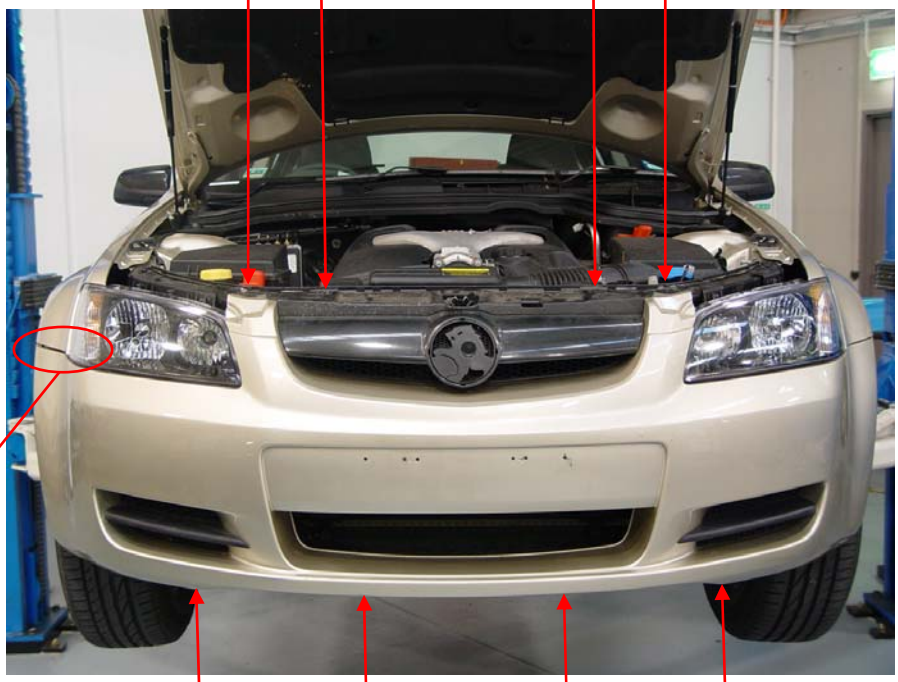


Photo 1

Step 3 The bar cover slots to the guard with caged nuts secured with 2 x 6 mm bolts.

Step 4 Remove the 4 self tapping screws securing the bottom of the bar cover to the engine tray.

Distribution: **Motor Assessing, all states**

Step 5 The bar cover clips into a stay below each headlamp. The tabs can be released by wedging a screw driver between the stay and the cover and gently levering apart. This can be seen in the encircled area in photo 2.

Photo 2

Note - The grille removes with the cover and detaches separately from the vehicle .

The bar cover is now ready to be removed.

Photo 3

Photo 4 shows the stay's location (right side) on the vehicle with the bar removed. It's retained with 2 x 6 mm bolts and needs to be removed to allow access to the headlamp bolts.

Photo 4

Step 6 The front bar impact absorber is attached to the reinforcement by a 6 mm bolt and clip either side. Their location is shown in the encircled area in photo 5.

Photo 5

Radiator Support / Front End Module (FEM)

***NOTE[1]** - The reinforcement beam and windscreen washer bottle remove with the module and can only be separated when detached from the vehicle.

***NOTE[2]** - The radiator and air conditioning core can remain in position when replaceing the module.

***NOTE[3]** - The module is manufactured from a composite material and cannot be repaired.

Step 1 Remove the 4 x 8 mm bolts securing the top of the module to the skirts.

Step 2 Remove the head-lamps to access the 6 mm bolts on either side skirt.

Windscreen washer bottle.

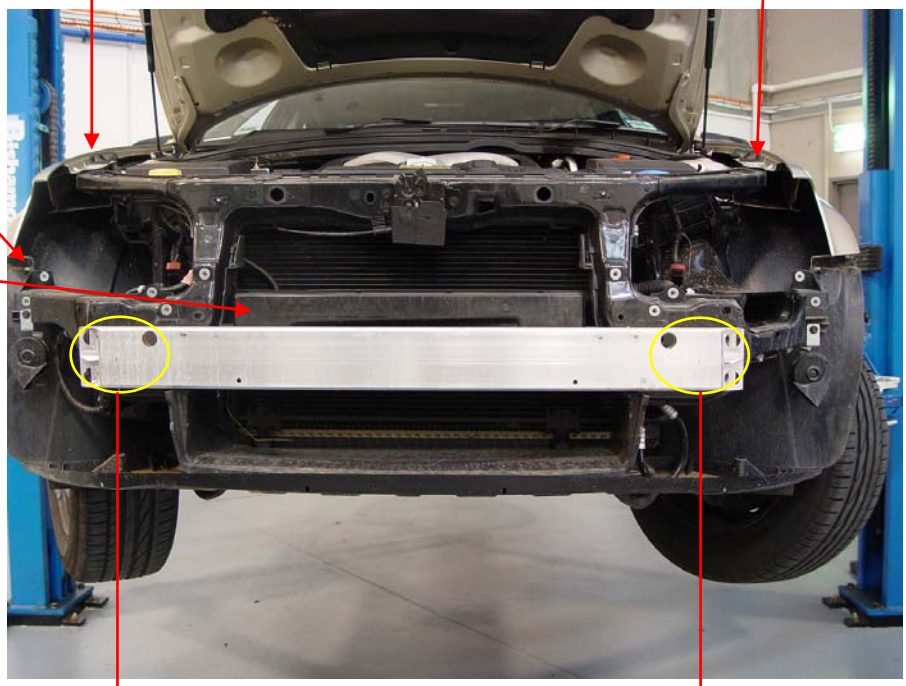


Photo 6

Step 4 The wiring harness is clipped in several places on the top of the module and below the headlamps. Re-lease the clips and pull the harness back.

Disconnect horns and bonnet lock.

Step 3 Remove the 6 x 8 mm bolts securing the bar reinforcement/module to the chassis rail face.

Step 5 The radiator is secured at 4 points; at the bottom - the left and right sides of the engine cradle and at the top - the left and right sides of the module. To release the radiator from the module, place a screw driver under the tab as shown in photo 7 and manipulate upwards.

Remember, it is not necessary to remove the radiator to replace the module.

The module is now ready to be removed.

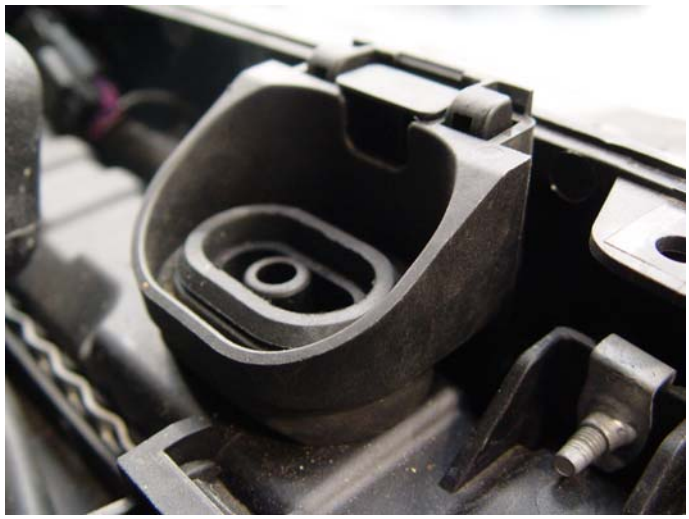


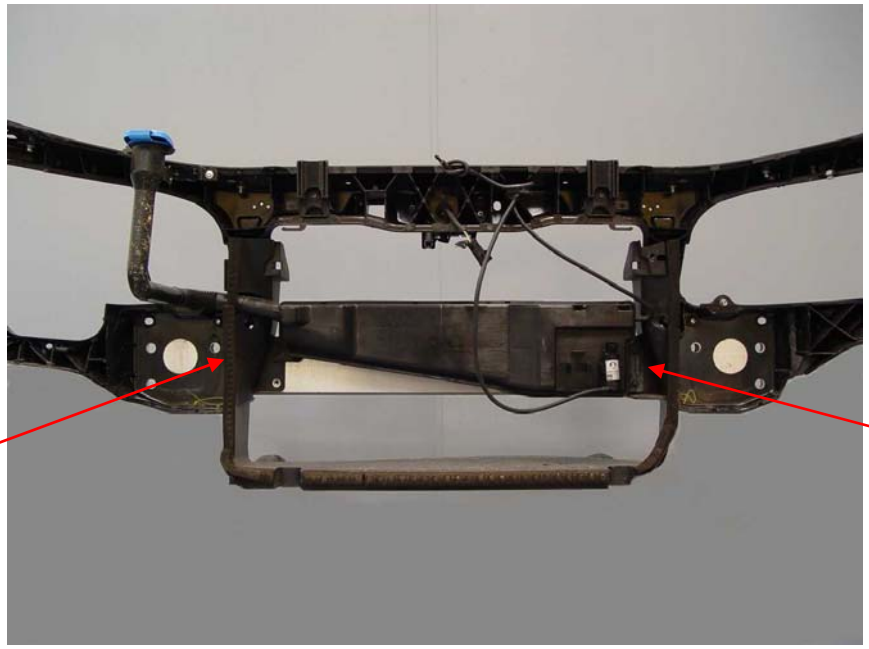
Photo 7

Photo 8 shows the front of the vehicle with the module removed.

Photo 8

Dismantling The Module

Remove the 2 bolts either side of the module to release the bar reinforcement.



Remove the 2 bolts on the vehicle's right and the single bolt on the left to release the washer

Photo 9

Allowances

Item	R & R	Paint	List		Item	R & R	Paint	List
Front Bar	1.00		$250.00		Radiator Support Module	0.50		$150.00
Grille		1.10	$72.50		Front Bar Reinforcement	0.30		$110.00
Front Bar & Dis. & Ass	2.00				Windscreen Washer Bottle	0.20		$25.00
Front Bar Impact Absorber	0.20		$15.90		Horns	0.10		$19.90
Bar Cover Corner Stay (ea)	0.10		$6.75		Release Wiring	0.30		
Headlamp	0.40		$190.00		Release Radiator	0.10		
Bonnet Lock & Cable	0.20				Unitary Allowance	5.40		

Rear Bar

***NOTE** - Rear bar can be removed with the tail lamps left in the vehicle.

Photo 10

Step 1 Remove the 3 clips retaining the bottom of the cover to the vehicle.

Lamp removed to show how the cover is retained at this point. Clips will release when slight pressure is applied.

Step 2 From inside the wheel arch, remove the phillips headed screw securing the bar to the quarter panel and the 2 clips securing the bar to the inner splash tray.

Rear Bar Reinforcement

The reinforcement is retained to the brackets with 2 x 8 mm nuts either side of the vehicle. The brackets are retained to the vehicle body with 2 x 8 mm bolts.

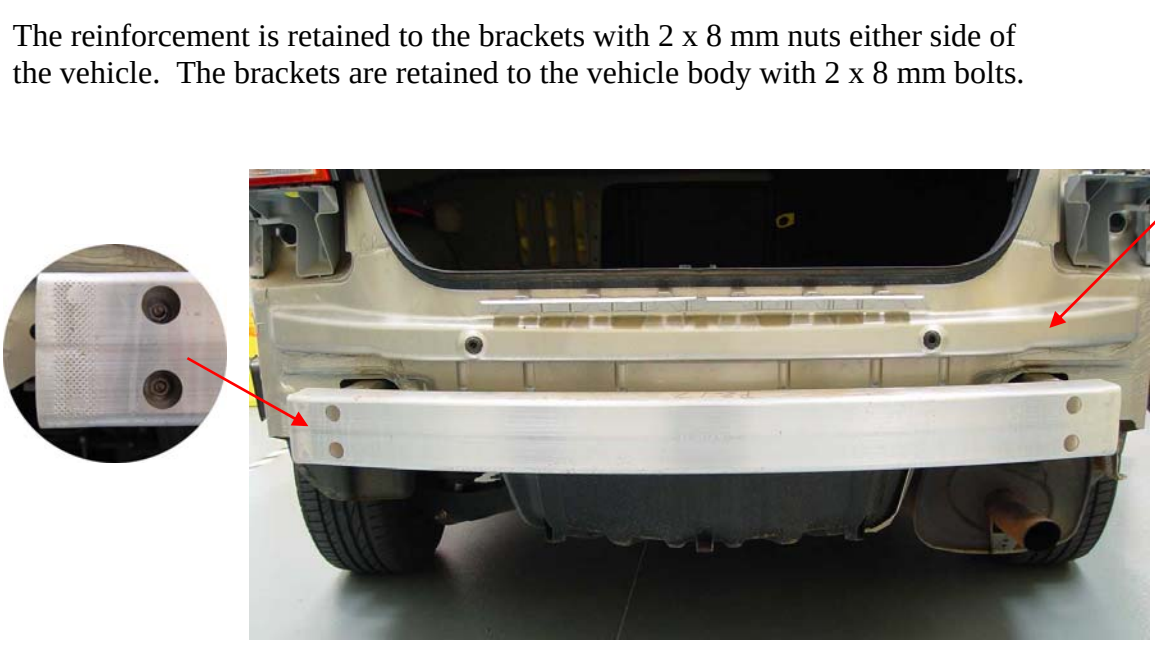


Photo 11

Boot Floor/Spare Wheel Well

The boot floor/spare wheel well is urethaned in position. No time has been allowances have been constructed for its removal however, a time similar to windscreen replacement could be considered.

Photo 12

Rear Time Allowances

Item	R & R	Paint	List
Rear Bar	0.60	2.80	$375.00
Rear Bar & Dis. & Ass.	0.90		
Tail Lamp	0.20		$150.00
Rear Bar Reinforcement	0.20		$150.00
Reinforcement Brackets (each)	0.20		$29.50

Battery Location

The battery is located in the nearside of the boot compartment as shown in photo 12.

The engine may be jump started by connecting to the 12-volt battery jumper cable connections located in the near side of the engine compartment.

Photo 13

Positive jump start connection

Negative jump start connection

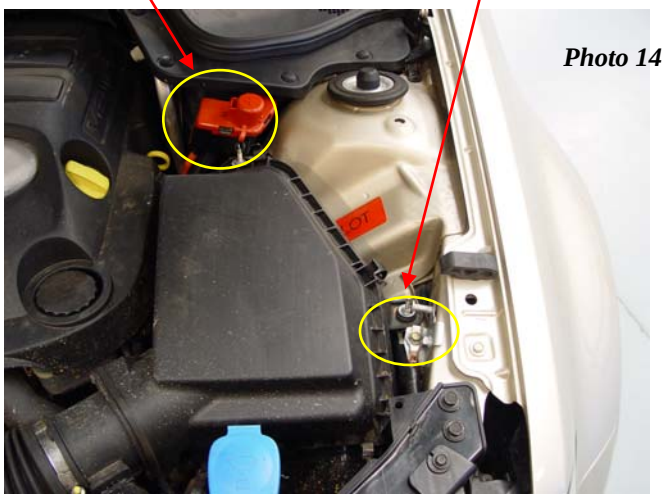


Photo 14

If you have any further enquiries, please feel free to contact IAG Research Centre on 02 9292-6843 or internally 26843.