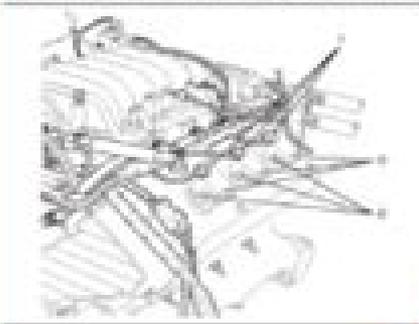


# Holden Jackaroo 1991-2006 Workshop Manual

## Legend

- (1) Crankshaft Pulley
- (2) Generator
- (3) Auto Tensioner
- (4) Idle Pulley
- (5) Cooling Fan Pulley
- (6) Water Pumping Oil Pump
- (7) Drive Belt
- (8) Air Compressor Compressor

12. Remove green coating of pump pulley.
13. Remove fan pulley and bracket assembly.
14. Remove idle pulley assembly.
15. Remove auto tensioner assembly.
16. Remove crankshaft pulley using 3-0040-0103-0 crankshaft holder.
17. Remove timing belt covers from the right bank side to the left bank side in order.
18. Remove ignition coil assemblies for the left side bank.



## Legend

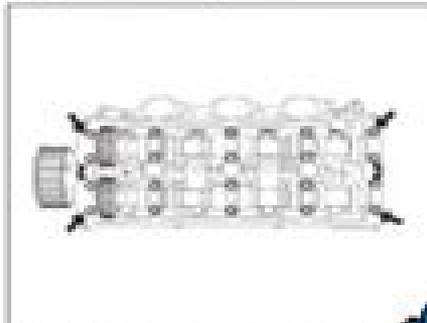
- (1) Ignition Coil Connectors
- (2) Bolt
- (3) Ignition Coil Assemblies

19. Remove cylinder head cover assembly.

## Installation

1. Install cylinder head cover assembly.
  - Clean the cylinder head and cylinder head gasket surfaces of oil and sealing materials.
  - Apply sealant (RTV or equivalent) of lead diameter 2-3 mm to right piece of gasket area of crankshaft bracket on front and rear sides.

- The cylinder head cover must be installed within 5 minutes after sealant application to prevent premature hardening of sealant.



- Tighten bolts to the specified torque.  
Torque : 8 Nm (0.8 kg-m/5.9 ft-lb)



2. Install ignition coil assemblies and tighten the fixing bolts to the specified torque.  
Torque : 4 Nm (0.4 kg-m/3.0 ft-lb)
3. Install timing belt covers from left bank side to right bank side, and tighten the fixing bolts and nut to the specified torque.  
Torque : 10 Nm (1.0 kg-m/7.4 ft-lb)
4. Install crankshaft pulley and tighten the fixing bolt using 3-0040-0103-0 crankshaft holder to the specified torque.  
Torque : 107 Nm (11.2 kg-m/77.9 ft-lb)

## Removal



## Legend

- (1) Engine Assembly
- (2) Crankshaft Pulley
- (3) Timing Belt Cover
- (4) Timing Belt
- (5) Compressor with Oil Pan
- (6) Oil Pan
- (7) Oil Strainer
- (8) Oil Pump Assembly
- (9) Cylinder Body Side Bolt
- (10) Oil Gallery
- (11) Flywheel
- (12) Rear Oil Seal Retainer
- (13) Connecting Rod Cap
- (14) Crankshaft Main Bearing Cap
- (15) Crankshaft and Main Bearing

1. Remove engine assembly.
  - Refer to removal procedure for Engine Assembly in this manual.
2. Remove timing belt.
  - Refer to removal procedure for Timing Belt in this manual.
3. Remove oil pump assembly.
  - Refer to removal procedure for Oil Pump in this manual.
4. Remove cylinder body side bolts.
5. Remove oil gallery.
6. Remove flywheel.
7. Remove rear oil seal retainer.
  - Refer to removal procedure for Rear Oil Seal in this manual.

8. Remove oil pan and strainer.
  - Refer to removal procedure for Oil Pan and Oil Strainer in this manual.
9. Remove oil pan with O-ring.
10. Remove oil strainer assembly with O-ring.



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**Robert Maddox, Mike Stubblefield, John  
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