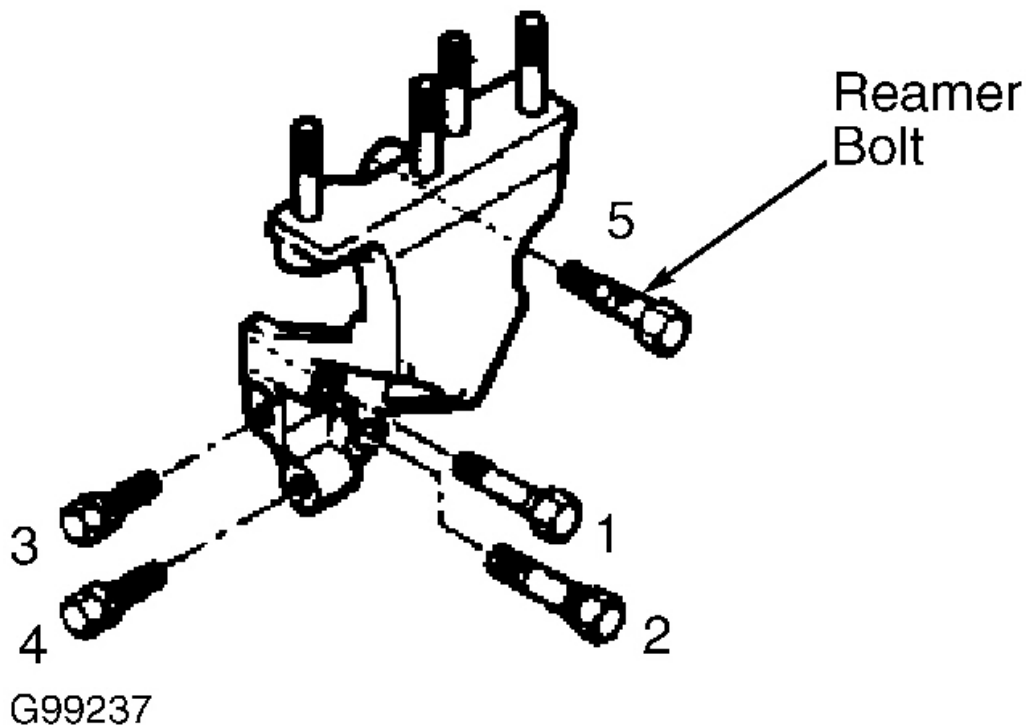


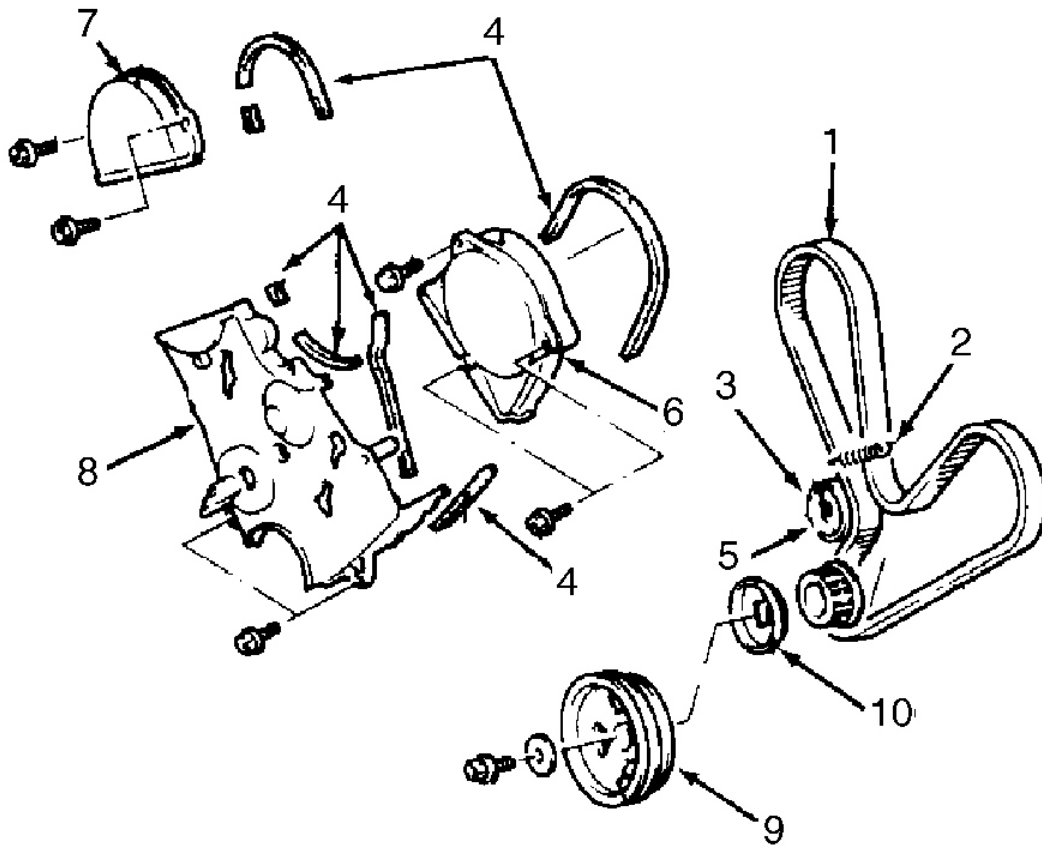
TIMING BELT**Removal (Diamante SOHC)**

1. Remove left front and left side splash shields. Using engine hoist, lift engine just enough to remove weight from engine mounts. Remove drive belts. Remove A/C tensioner pulley and bracket. Remove engine mount bracket bolts in sequence. Lubricate reamer bolt with penetrating oil before and during removal. See **Fig. 7** . Remove power steering pump, leaving hoses attached.

**Fig. 7: Removing Engine Support Bracket**

Courtesy of MITSUBISHI MOTOR SALES OF AMERICA, INC.

2. Remove engine support bracket. Remove crankshaft pulley. Remove timing belt covers. Remove flange from crankshaft. See **Fig. 8** . Rotate crankshaft to align all timing marks. See **Fig. 9** . Loosen belt tensioner bolt, and rotate belt tensioner counterclockwise to release belt tension.

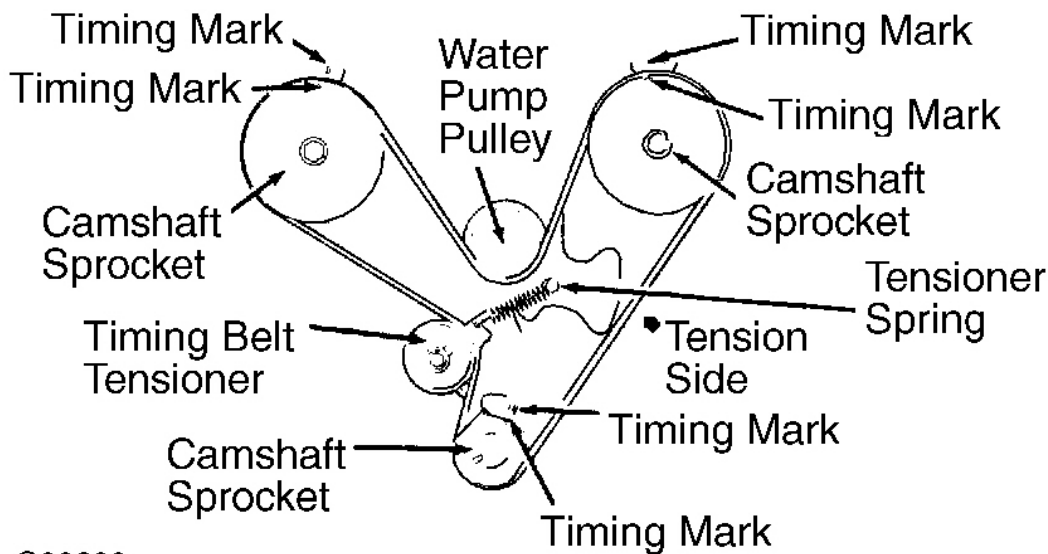


MONTERO & RAIDER

- | | |
|------------------------|----------------------------|
| 1. Timing Belt | 6. No. 2 Upper Outer Cover |
| 2. Tensioner Spring | 7. No. 1 Upper Outer Cover |
| 3. Belt Tensioner Bolt | 8. Lower Outer Cover |
| 4. Gasket | 9. Crankshaft Pulley |
| 5. Belt Tensioner | 10. Flange |

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**Fig. 8: Exploded View Of Timing Belt Components (Montero & Pickup; Other SOHC Are Similar)
Courtesy of MITSUBISHI MOTOR SALES OF AMERICA, INC.**



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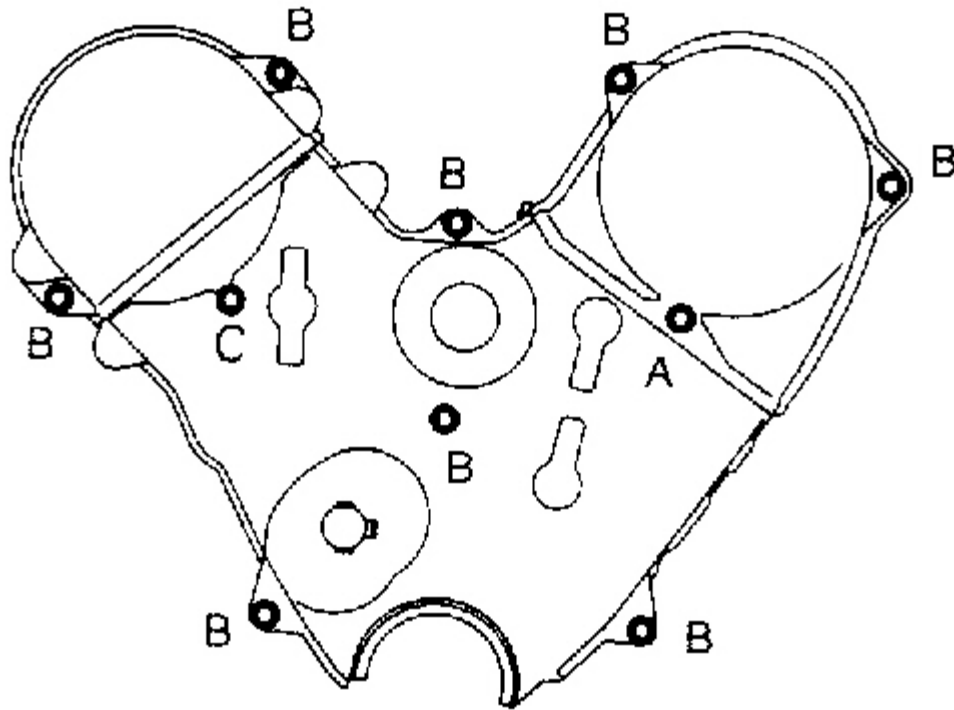
Fig. 9: Aligning Timing Marks (SOHC)

Courtesy of MITSUBISHI MOTOR SALES OF AMERICA, INC.

3. If reusing timing belt, mark belt to indicate direction of belt rotation. Loosen tensioner bolt. Pry tensioner counterclockwise to relieve belt tension. While holding tensioner, tighten tensioner bolt. Remove timing belt.

Installation

1. If original belt is to be reinstalled, install in original running direction. Install timing belt onto crankshaft sprocket, then around left camshaft sprocket, with all slack removed from tension side of belt. Route timing belt onto water pump pulley, right camshaft sprocket, and tensioner. Apply torque to rear camshaft pulley to tighten belt. Ensure all timing marks are aligned.
2. Install flange onto crankshaft. Loosen belt tensioner bolts slightly, and allow tensioner to apply belt tension. Using Crankshaft Socket (MD998716-01), rotate crankshaft 2 revolutions clockwise. **DO NOT** rotate counterclockwise. Realign all timing marks. Tighten belt tensioner bolts to specification. Using belt tension gauge, measure belt tension halfway between crankshaft sprocket and camshaft sprocket on side opposite belt tensioner.
3. Belt tension should be 44-66 lbs. (20-30 kg). To install remaining components, reverse removal procedure. Install proper length bolts in timing belt covers. See **Fig. 10**. Tighten bolts to specification. See appropriate **TORQUE SPECIFICATIONS** table.



Note: Bolt measurements indicated in millimeters.

Thread Diameter & Length

A - 6x60mm

B - 6x20mm

C - 6x55mm

G90H05812

Fig. 10: Timing Belt Cover Bolt Lengths Id (Montero & Pickup)
 Courtesy of MITSUBISHI MOTOR SALES OF AMERICA, INC.

Removal (Montero & Pickup)

1. Drain cooling system. Disconnect upper radiator hose. Remove upper radiator shroud. Remove cooling fan and fan clutch assembly. Remove cooling fan pulley. Remove drive belts. Remove power steering pump, leaving hoses connected. Set power steering pump aside.

2. Remove power steering pump brackets. Remove A/C tensioner pulley and mounting bracket. Remove A/C compressor with hoses connected, and remove mounting bracket. Remove cooling fan bracket assembly. Note location and length of bolts for reassembly reference.
3. Remove upper timing belt covers and gaskets. See **Fig. 8** . Remove lower timing belt cover and gaskets. Using Holder (MB998747) and a used "V" belt, remove crankshaft pulley bolt. Remove crankshaft pulley.

NOTE: "V" belt will be damaged by tool. DO NOT use engine "V" belt to hold crankshaft pulley unless belt is to be replaced.

4. Remove flange. See **Fig. 8** . Rotate crankshaft to align all timing marks. See **Fig. 9** . Loosen belt tensioner bolt, and rotate belt tensioner counterclockwise to relieve belt tension.
5. If reusing timing belt, place arrow on belt to indicate belt running direction. Remove timing belt and belt tensioner. If camshaft sprocket requires removal, install Holder (MB990775) onto camshaft sprocket. Remove retaining bolt and camshaft sprocket. Remove rear timing belt cover if necessary.

Installation

1. Install rear timing belt cover. Tighten bolts to specification. See appropriate **TORQUE SPECIFICATIONS** table. Install camshaft sprockets (if removed). Using holder, hold camshaft and tighten retaining bolt to specification.
2. Install belt tensioner and spring. Ensure spring is secured on pin of water pump and engaged in hole of belt tensioner, with hook of spring pointing away from cylinder block.
3. Rotate belt tensioner counterclockwise as far as possible, and temporarily tighten bolt. Align all timing marks with No. 1 cylinder at TDC of compression stroke. See **Fig. 9** .
4. Install timing belt onto crankshaft sprocket first, then onto left camshaft sprocket, with all slack removed from tension side of belt. Route timing belt onto water pump pulley, right camshaft sprocket, and tensioner. Remove any slack from belt by rotating left and then right camshaft sprockets counterclockwise.
5. Ensure belt is installed in original direction of rotation, and all timing marks are aligned. Install flange on crankshaft. Loosen belt tensioner bolts slightly, and allow tensioner to apply belt tension.
6. Using Crankshaft Socket (MD998716), rotate crankshaft 2 revolutions clockwise. DO NOT rotate counterclockwise. Realign all timing marks. Tighten belt tensioner bolts to specification. Using belt tension gauge, measure belt tension halfway between crankshaft sprocket and camshaft sprocket on side opposite belt tensioner.
7. Belt tension should be 57-84 lbs. (26-38 kg). To install remaining components, reverse removal procedure. Install bolts in proper holes. See **Fig. 10** . Tighten bolts to specification. See appropriate **TORQUE SPECIFICATIONS** table.

Removal (Diamante DOHC)

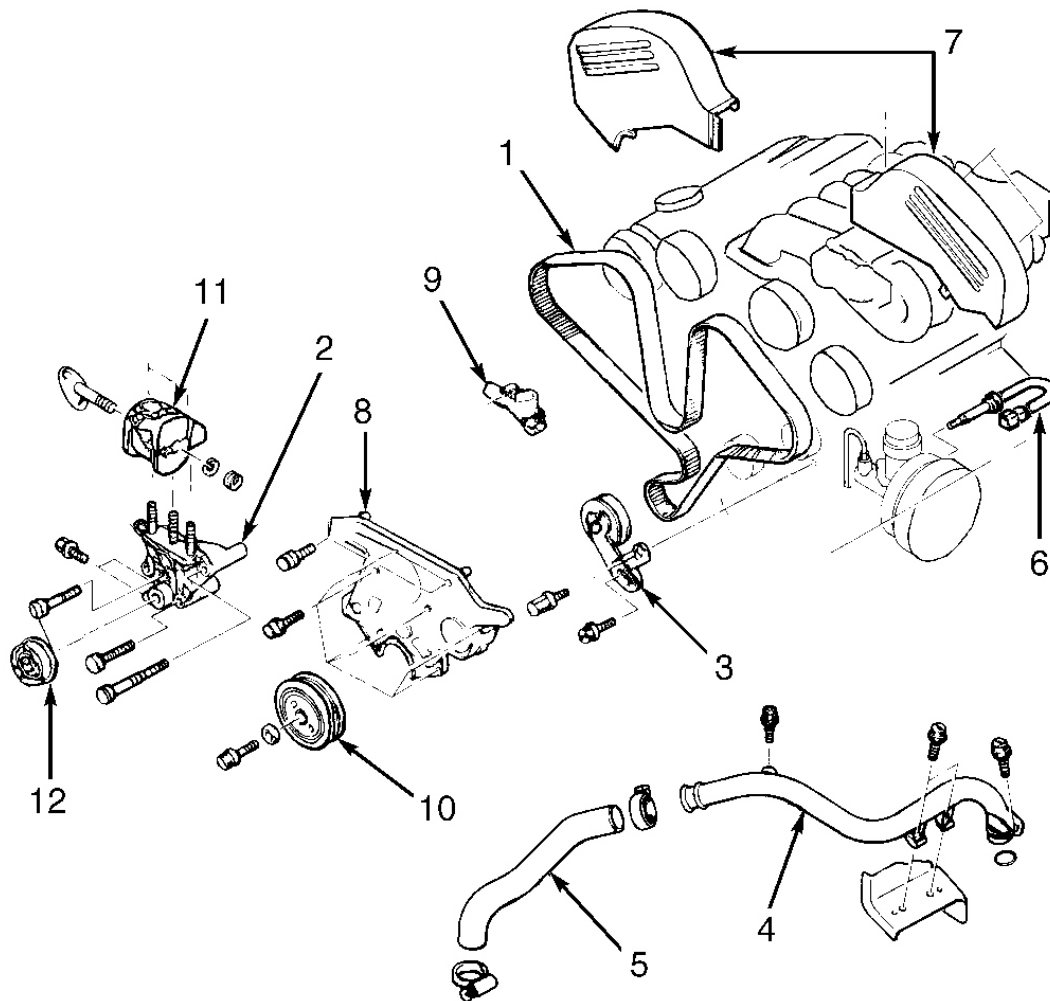
1. Disconnect negative battery cable. Remove left front and left side splash shields. Using engine hoist, lift engine to remove weight from engine mounts. Remove alternator and drive belt tensioner assembly. Remove crankshaft pulley. On vehicles with ABS, remove overflow tank and bracket.
2. Remove engine mount bracket bolts in sequence. Lubricate reamer bolt with penetrating oil before and

during removal. See **Fig. 7** . Remove Timing belt covers. Turn crankshaft clockwise to align all timing marks. Loosen center bolt on tensioner pulley to relieve belt tension. Remove belt. Mark running direction if belt is to be reused.

Removal (3000GT DOHC)

1. Remove lower splash shields. Remove cruise control actuator (if equipped). Remove drive belts. Remove alternator. Remove drive belt tensioner assembly.
2. Using Holder (MB990767) and Adapter Bolts (MD998754), remove crankshaft pulley. See **Fig. 11** . Disconnect brake fluid level sensor. Remove upper timing belt covers. Support engine. Remove front engine mount through-bolt and front engine mount.

NOTE: **Apply penetrating lubricant to reamer bolt during removal, because bolt may be seized in engine support bracket.**



- | | |
|-----------------------------|-----------------------------|
| 1. Timing Belt | 7. Upper Timing Belt Covers |
| 2. Engine Support Bracket | 8. Lower Timing Belt Cover |
| 3. Belt Tensioner | 9. Automatic Tensioner |
| 4. Turbo Air Hose | 10. Crankshaft Pulley |
| 5. Turbo Air Pipe | 11. Engine Mount Bracket |
| 6. Brake Fluid Level Sensor | 12. Drive Belt Idler Pulley |

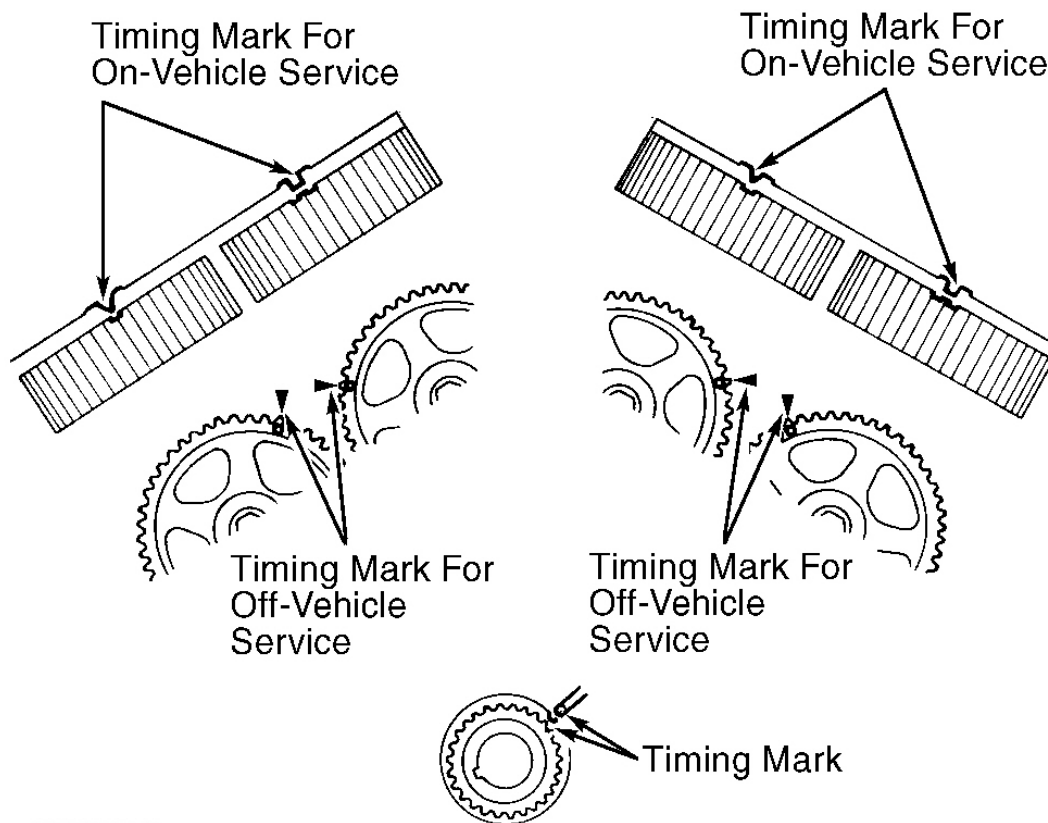
92D00011

Fig. 11: Exploded View Of Timing Belt Components (DOHC)
 Courtesy of MITSUBISHI MOTOR SALES OF AMERICA, INC.

- Remove drive belt idler pulley. Remove engine support bracket bolts in sequence. See **Fig. 7** . Remove engine support bracket. Remove timing belt upper and lower covers, noting length and location of cover bolts.
- If reusing timing belt, place arrow on belt to indicate running direction. Remove timing belt and belt

tensioner. Rotate crankshaft to align all timing marks. See **Fig. 12** . Loosen tensioner center bolt. Remove timing belt.

5. If camshaft sprocket requires removal, hold camshaft with wrench on hexagonal portion of camshaft. Remove camshaft sprocket bolt and camshaft sprocket.



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Fig. 12: Aligning Timing Marks - Initial Alignment (DOHC)
 Courtesy of MITSUBISHI MOTOR SALES OF AMERICA, INC.

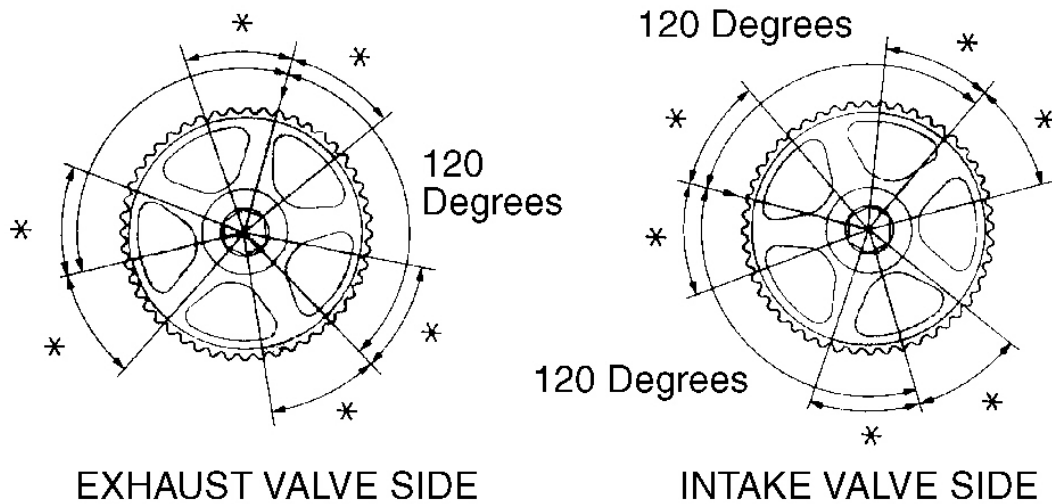
Installation (Diamante & 3000GT DOHC)

1. Install camshaft sprockets (if removed). See appropriate **TORQUE SPECIFICATIONS** table.
2. Place automatic tensioner assembly in a soft-faced vise. Slowly close vise to press rod back into tensioner until both rod and housing holes are aligned. Install a .055" (1.4 mm) diameter wire through both holes.
3. Remove tensioner from vise, and install assembly with wire in place. Install crankshaft sprocket (if removed). Align timing marks on crankshaft and camshaft sprockets. See **Fig. 12** .

CAUTION: Turning camshaft sprockets while No. 1 cylinder is at TDC may damage valve and piston. Use care when aligning timing marks.

4. To lower No. 1 piston from TDC and prevent valve and piston contact, turn crankshaft back 3 sprocket teeth (measured at timing mark). Starting with front bank of cylinders, verify intake and exhaust camshaft timing marks are not within shaded area of figure. See **Fig. 13**.

WARNING: Use care when aligning timing marks. When camshaft sprocket timing marks are in indicated area, camshaft is under valve spring pressure and may rotate suddenly, pinching hand between sprockets.



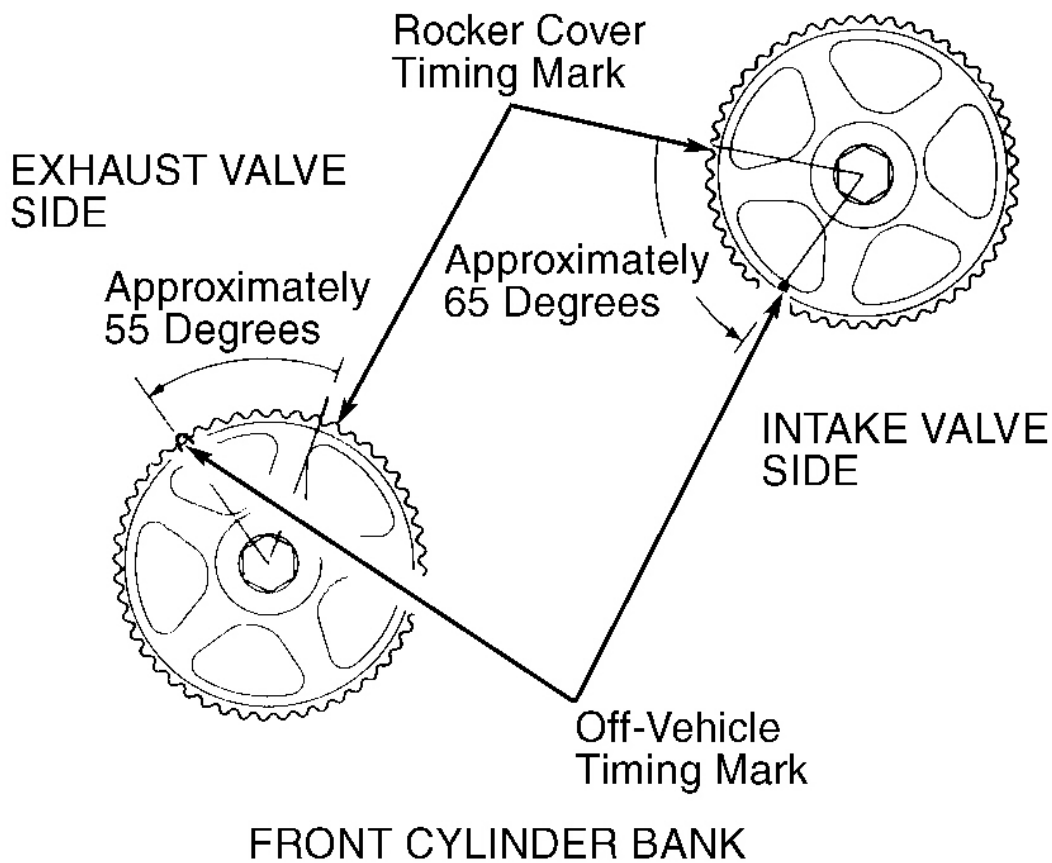
* : Approximately 35 Degrees

FRONT CYLINDER BANK

G92H00013

Fig. 13: Aligning Timing Marks To Prevent Valve & Piston Damage (DOHC)
 Courtesy of MITSUBISHI MOTOR SALES OF AMERICA, INC.

5. If camshaft sprocket timing mark is within indicated area, carefully rotate camshaft sprocket until timing mark is located in nearest safe area. See **Fig. 13**.
6. Rotate either camshaft sprocket clockwise to align timing marks as shown in illustration. See **Fig. 14**. If camshaft sprocket is rotated past timing mark, rotate it counterclockwise to realign it. Repeat procedure for other front bank camshaft sprocket.

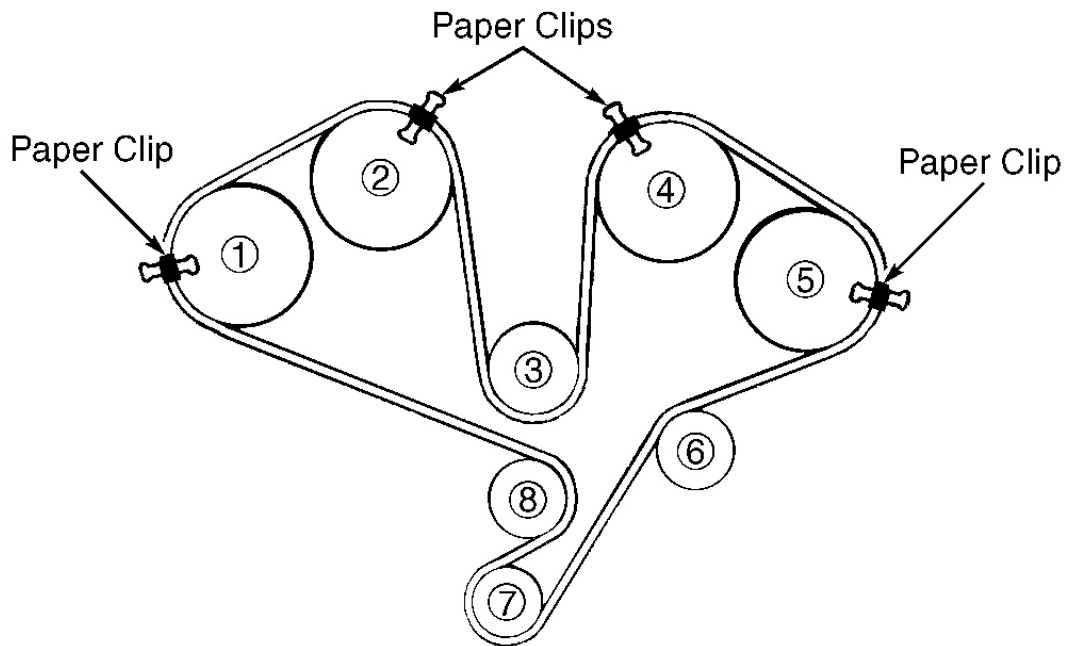


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Fig. 14: Aligning Timing Marks - Final Alignment (DOHC)
 Courtesy of MITSUBISHI MOTOR SALES OF AMERICA, INC.

- Repeat steps 4) through 6) for rear cylinder bank camshafts. Align crankshaft timing mark. Install timing belt onto sprockets in sequence. See **Fig. 15** . Use spring-type paper clips to secure belt on sprockets. Use wrenches on camshaft sprocket bolts to prevent camshafts from turning during belt installation.

NOTE: If necessary, crankshaft sprocket may be turned one tooth counterclockwise to aid belt installation.

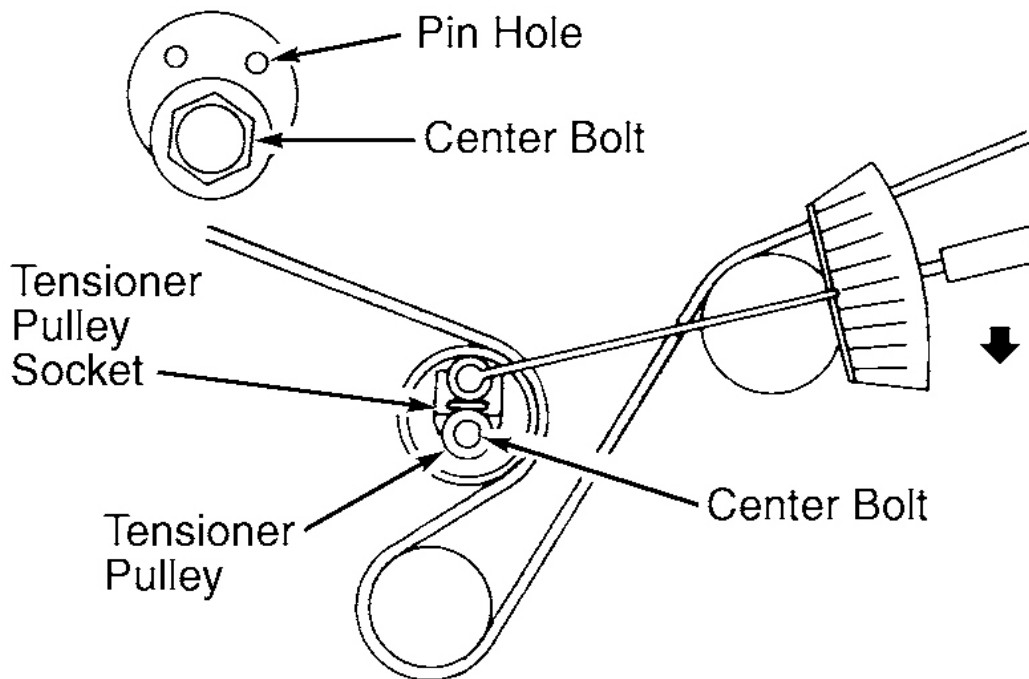


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Fig. 15: Installing Timing Belt (DOHC)

Courtesy of MITSUBISHI MOTOR SALES OF AMERICA, INC.

8. Rotate timing belt tensioner pulley until pin holes are located above center bolt. See **Fig. 16** . Push tensioner pulley against belt, and temporarily tighten center bolt. Ensure all timing marks are aligned, and remove clips.



G92E00016

Fig. 16: Adjusting Timing Belt Tensioner (DOHC)

Courtesy of MITSUBISHI MOTOR SALES OF AMERICA, INC.

9. Rotate crankshaft 1/4 revolution counterclockwise. Rotate crankshaft clockwise until timing marks are realigned. Loosen tensioner center bolt. Using Tensioner Pulley Socket (MD998767), apply approximately 90 INCH lbs. (10 N.m) torque to tensioner pulley to prevent it from turning. See **Fig. 16**. Retighten center bolt to specification. See appropriate **TORQUE SPECIFICATIONS** table. Ensure tensioner pulley does not rotate while tightening center bolt.
10. Rotate crankshaft 2 revolutions clockwise. Wait 5 minutes. Verify wire can still be moved easily, or automatic tensioner rod projects from tensioner body .15-.18" (3.8-4.5 mm). If wire does not move easily, or rod projection is not to specification, repeat steps 6) and 10). Remove wire.
11. To complete installation, reverse removal procedure. Install bolts into correct timing belt cover holes. Install bolts into engine support bracket in reverse order of removal sequence. See **Fig. 7**. Tighten bolts to specification. See **TORQUE SPECIFICATIONS**.

NOTE: Lubricate engine support bracket reamer bolt while it is tightened slowly.