

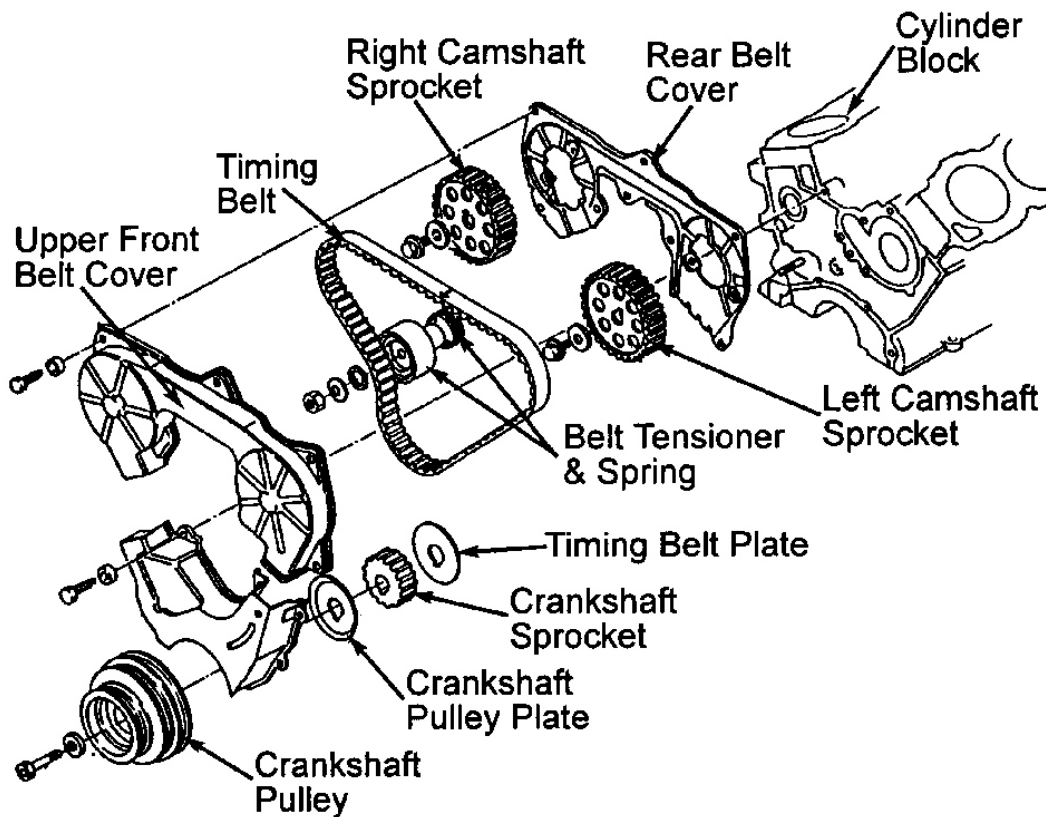
## REMOVAL & INSTALLATION

**CAUTION:** This application is an interference engine. Do not rotate camshaft or crankshaft when timing belt is removed, or engine damage may occur.

### TIMING BELT

#### Removal (200SX & 300ZX)

1. Disconnect negative battery cable. Release fuel pressure from system. Raise and support vehicle. Remove right wheel and engine side cover (if necessary). Drain cooling system. Remove cooling fan duct. Remove engine coolant reservoir. Remove actuator and remove radiator hoses. Do not allow coolant to contact drive belts.
2. Remove front upper and lower belt covers. See **Fig. 1**. Remove drive belts and set No. 1 cylinder at TDC of compression stroke. Remove idler bracket of compressor drive belt and crankshaft pulley. Remove timing belt by removing timing belt tensioner and return spring.



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**Fig. 1: Exploded View Of Timing Belt & Components**

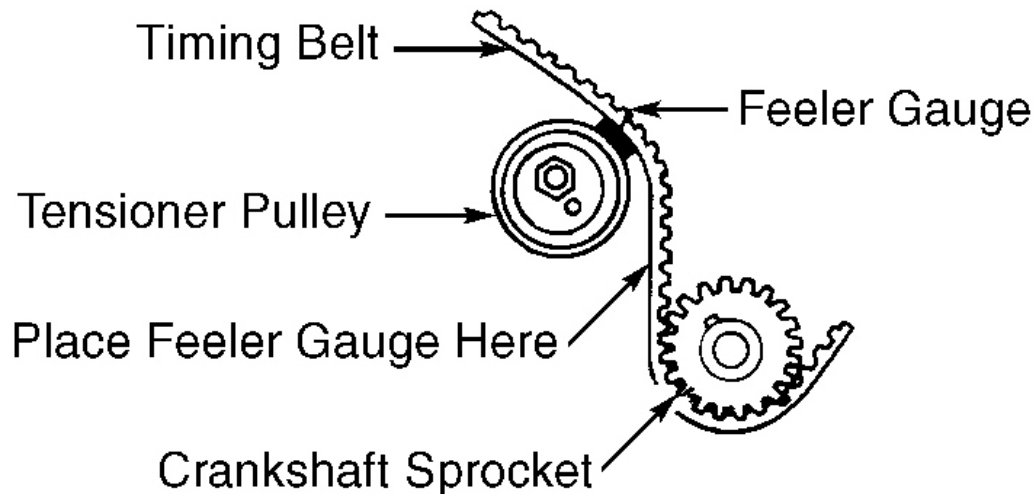
Courtesy of NISSAN MOTOR CO., U.S.A.

**Inspection (200SX & 300ZX)**

Visually inspect condition of timing belt. Inspect for cracks, wear, breaks, and oil/coolant saturation.

**Installation (200SX & 300ZX)**

1. Ensure that piston No. 1 is at TDC of compression stroke. Remove valve covers and loosen all rocker shaft bolts. Do not bend timing belt. Install tensioner and return spring.
2. Turn tensioner clockwise and temporarily tighten lock nut. Install timing belt. Align White lines on timing belt with punch mark on camshaft pulleys and crankshaft pulley. Arrow on timing belt must be pointing toward front belt covers.
3. Using Allen wrench, slowly turn tensioner clockwise and counterclockwise 2 or 3 times. When camshafts and crankshaft marks are aligned, tighten tensioner lock nut. See **Fig. 2** . Ensure that camshaft lobes are correctly positioned. Tighten rocker shaft bolts in 2 stages.
4. Refill and bleed air from cooling system. To complete installation, reverse removal procedures. Adjust drive belts to proper tension.



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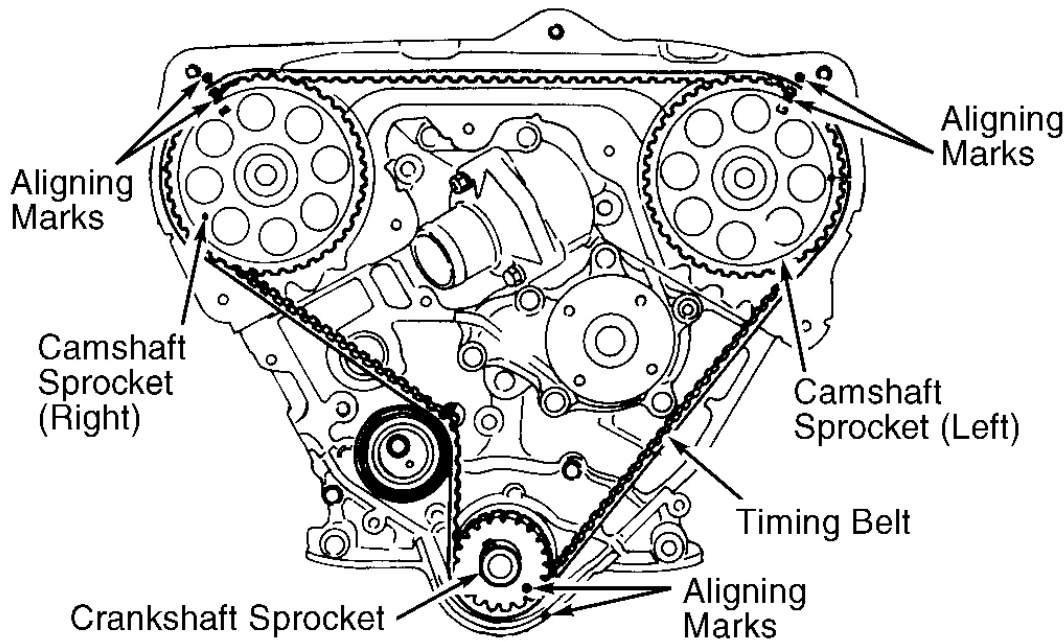
**Fig. 2: Adjusting Timing Belt**

Courtesy of NISSAN MOTOR CO., U.S.A.

**Removal (Maxima & Quest)**

**NOTE:** The manufacturer has revised the timing belt specifications for the VG30E engine for 1993-94 Maxima and 1994 Quest. If timing belt is to be replaced, ensure that new timing belt is compatible with camshaft sprocket, crankshaft sprocket and tensioner spring. See **TECHNICAL SERVICE BULLETIN REVISION** .

1. Disconnect negative battery cable. Raise and support vehicle. Remove covers from below engine. Drain cooling system. Remove right front wheel and engine side cover. Remove accessory drive belts. Remove crankshaft pulley bolt and pulley.
2. Remove upper radiator hose and water inlet hose. Remove A/C compressor idler pulley and bracket. Remove water pump pulley. Remove upper and lower timing belt front covers. See **Fig. 1** .
3. Temporarily install crankshaft pulley bolt so crankshaft can be rotated. Set cylinder No. 1 at TDC of compression stroke by rotating crankshaft until marks on camshaft sprockets align with marks on timing belt upper rear cover, and mark on crankshaft sprocket aligns with mark on front cover housing. See **Fig. 3** .
4. Loosen timing belt tensioner nut. Release tension on belt. Remove timing belt. Check timing belt tensioner, spring and timing belt.



NO. 1 CYLINDER AT TDC  
OF COMPRESSION STROKE

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**Fig. 3: Installing Timing Belt & Sprocket**  
Courtesy of NISSAN MOTOR CO., U.S.A.

**Installation (Maxima & Quest)**

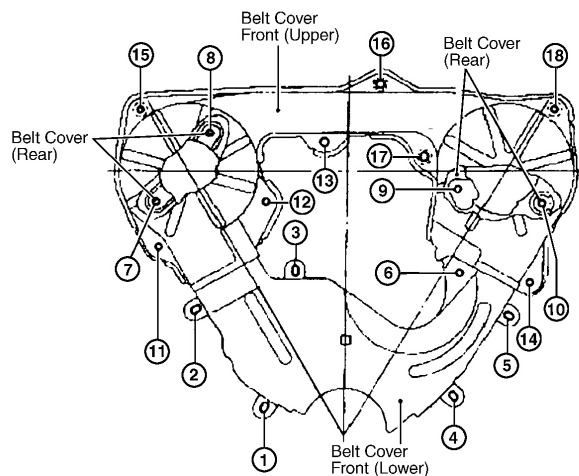
1. Ensure cylinder No. 1 is at TDC of compression stroke. See **Fig. 3** . Install tensioner and return spring if removed. If return spring stud was removed, apply thread lock sealant to threads before installing stud. Insert an Allen wrench into hole in tensioner, turn tensioner fully clockwise, and temporarily tighten lock nut.
2. Install timing belt with arrow on timing belt facing front of engine. Align White lines on timing belt with marks on camshaft sprockets and crankshaft sprocket. White lines ensure correct number of teeth exist between timing marks on sprockets.
3. Loosen tensioner lock nut. Using Allen wrench, rotate tensioner by turning Allen wrench clockwise 70-80 degrees. Temporarily tighten lock nut. Rotate crankshaft clockwise at least 2 revolutions.
4. Return cylinder No. 1 to TDC of compression stroke. Using Push/Pull Gauge (J-38387) or equivalent, apply 22 lbs. (10.0 kg) pressure to timing belt between right camshaft sprocket and tensioner. Hold tensioner in position with Allen wrench, and loosen tensioner lock nut.
5. Place a .0138" (.351 mm) feeler gauge at tensioner pulley and timing belt, and rotate crankshaft until feeler gauge is centered between tensioner pulley and timing belt. See **Fig. 2** . Tighten timing belt tensioner lock nut to specification. See **TORQUE SPECIFICATIONS** .
6. Rotate crankshaft to remove feeler gauge. Rotate crankshaft clockwise at least 2 revolutions until cylinder No. 1 is at TDC of compression stroke. Measure timing belt deflection halfway between camshaft sprockets. If deflection is not .51-.59" (13-15 mm), repeat procedure. To complete installation, reverse removal procedure.
7. Refill and bleed air from cooling system. Adjust drive belts to proper tension.

**Removal (Pathfinder & Pickup)**

**NOTE:** The manufacturer has revised the timing belt specifications for the VG30E engine for 1994 Pathfinder and Pickup. If timing belt is to be replaced, ensure that new timing belt is compatible with camshaft sprocket, crankshaft sprocket and tensioner spring. See **TECHNICAL SERVICE BULLETIN REVISION** .

**CAUTION:** DO NOT bend or twist timing belt. Prevent oil and coolant from contacting timing belt and sprockets. Install timing belt when engine is cold. If cylinder head is installed and timing belt is disconnected, DO NOT rotate camshaft or crankshaft; valves will contact pistons, resulting in bent valves.

1. Remove covers from below engine. Drain and remove radiator. Remove cooling fan and water pump pulley. Remove accessory drive belts. Remove spark plugs. Remove distributor protector. Remove A/C compressor idler pulley and bracket.
2. Remove fresh air tube from cylinder head cover. Remove thermostat housing coolant hose. Remove crankshaft pulley bolt and pulley. Remove upper and lower timing belt front covers. See **Fig. 4** . Temporarily install crankshaft pulley bolt to rotate crankshaft.
3. Set cylinder No. 1 at TDC of compression stroke by aligning marks on camshaft sprockets with marks on timing belt upper rear cover, and mark on crankshaft sprocket with mark on front cover housing. See **Fig. 5** . Loosen timing belt tensioner. Remove timing belt. Check timing belt tensioner, spring and timing belt.



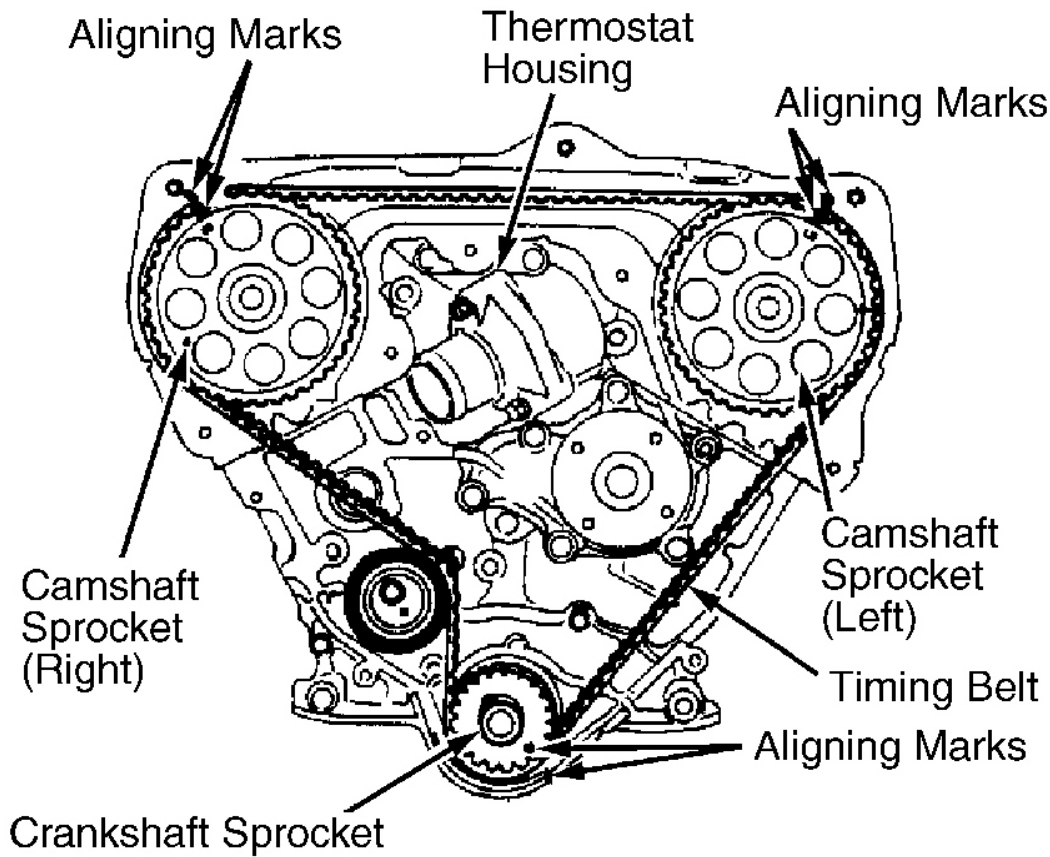
Tightened Parts	Section	Parts Tightened With Bolts
	① ② ③ ④ ⑤ ⑬	② ③ Cylinder Block ⑤ ⑬ Compressor Bracket ① ④ Oil Pump
	⑥	Water Pump Mounting Bolt
	⑦ ⑧ ⑨ ⑩	Cylinder Head
	⑮ ⑯ ⑰ ⑱ ⑲ ⑳ ㉑	⑮ ⑯ ⑰ ⑱ Welded Nuts ⑲ ⑳ Cylinder Head ㉑ Water Outlet

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**Fig. 4: Removing & Installing Timing Belt Covers**  
 Courtesy of NISSAN MOTOR CO., U.S.A.

### Installation (Pathfinder & Pickup)

1. Ensure cylinder No. 1 is at TDC of compression stroke. See **Fig. 5** . Install tensioner and return spring if removed. If return spring stud was removed, apply thread lock sealant to threads before installing stud. Insert an Allen wrench into hole in tensioner, turn tensioner fully clockwise, and temporarily tighten lock nut.
2. Install timing belt with arrow on timing belt facing front of engine. Align White lines on timing belt with marks on camshaft sprockets and crankshaft sprocket. White lines ensure correct number of teeth exist between timing marks on sprockets.
3. Loosen tensioner lock nut. Using Allen wrench, rotate tensioner by turning Allen wrench clockwise 70-80 degrees. Temporarily tighten lock nut. Rotate crankshaft clockwise at least 2 revolutions.
4. Return cylinder No. 1 to TDC of compression stroke. Using Push/Pull Gauge (J-38387), apply 22 lbs. (10.0 kg) pressure to timing belt between right camshaft sprocket and tensioner. Hold tensioner in position with Allen wrench, and loosen tensioner lock nut.
5. Place a .0138" (.351 mm) feeler gauge at tensioner pulley and timing belt, and rotate crankshaft until feeler gauge is centered between tensioner pulley and timing belt. See **Fig. 2** . Tighten timing belt tensioner lock nut to specification. See **TORQUE SPECIFICATIONS** .
6. Rotate crankshaft to remove feeler gauge. Rotate crankshaft clockwise at least 2 revolutions until cylinder No. 1 is at TDC of compression stroke. Measure timing belt deflection halfway between camshaft sprockets. If deflection is not .51-.59" (13-15 mm), repeat steps 4) and 5). To complete installation, reverse removal procedure.



NO. 1 CYLINDER AT TDC  
ON COMPRESSION STROKE

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**Fig. 5: Installing Timing Belt & Sprocket**  
Courtesy of NISSAN MOTOR CO., U.S.A.