

## 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

1. Disconnect negative battery cable. Remove engine cover. Using 16-mm spanner wrench, rotate serpentine belt tension arm clockwise about 14 degrees to relieve belt tension. Remove serpentine drive belt. Remove power steering pump pulley, idler pulley, tensioner pulley and crankshaft pulley. Remove upper and lower timing belt covers. See [Fig. 1](#) or [Fig. 2](#).

**NOTE:** Rotate crankshaft clockwise and align timing mark to set No. 1 cylinder to TDC on compression stroke.

2. Ensure timing marks of camshaft sprocket and cylinder head cover are matching. See [Fig. 5](#). On Sedona, support engine with jack and remove engine mounting insulator. On all models, remove auto tensioner. See [Fig. 3](#).

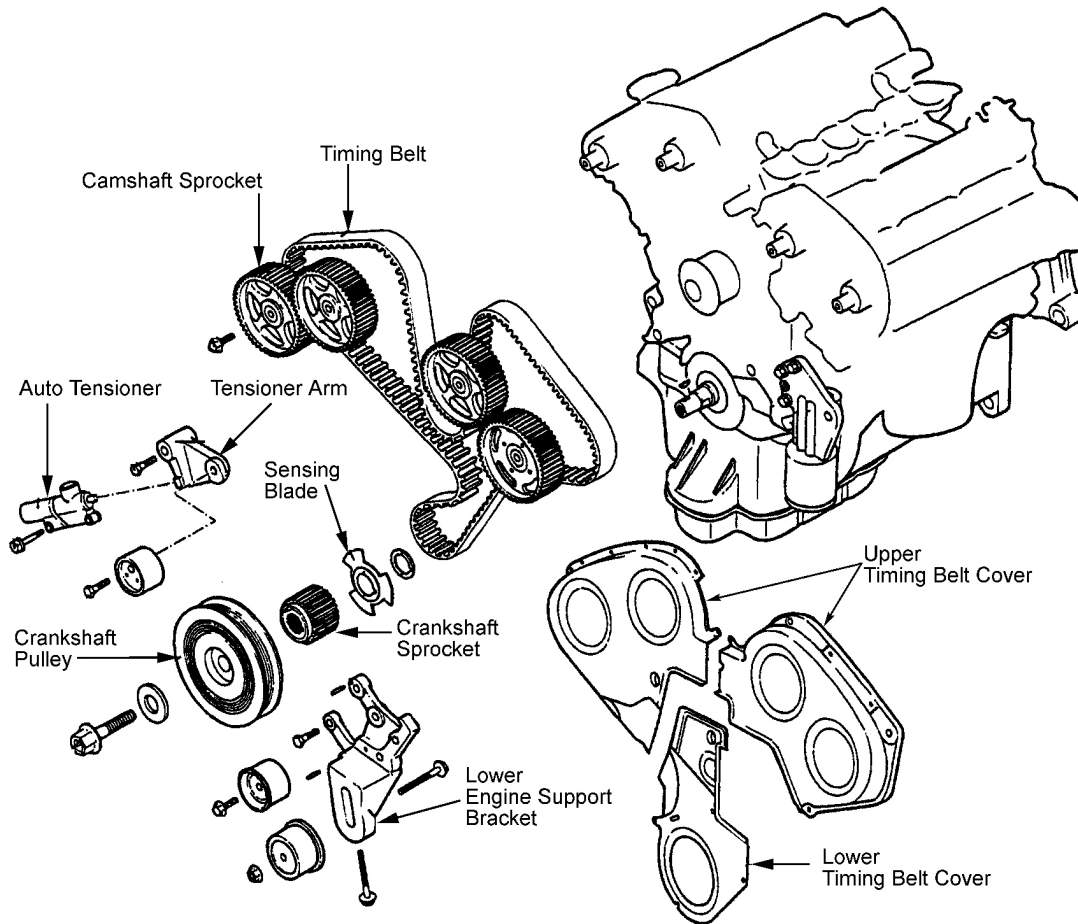
**NOTE:** If timing belt is to be reused, mark rotational direction on belt for reinstallation reference.

**CAUTION:** If either camshaft is set at TDC for cylinder No. 1 at the compression stroke and the corresponding camshaft on the same cylinder head is rotated 180 degrees while the timing belt is removed, intake and exhaust valves may contact each other.

3. Unbolt timing belt tensioner pulley, and remove timing belt.

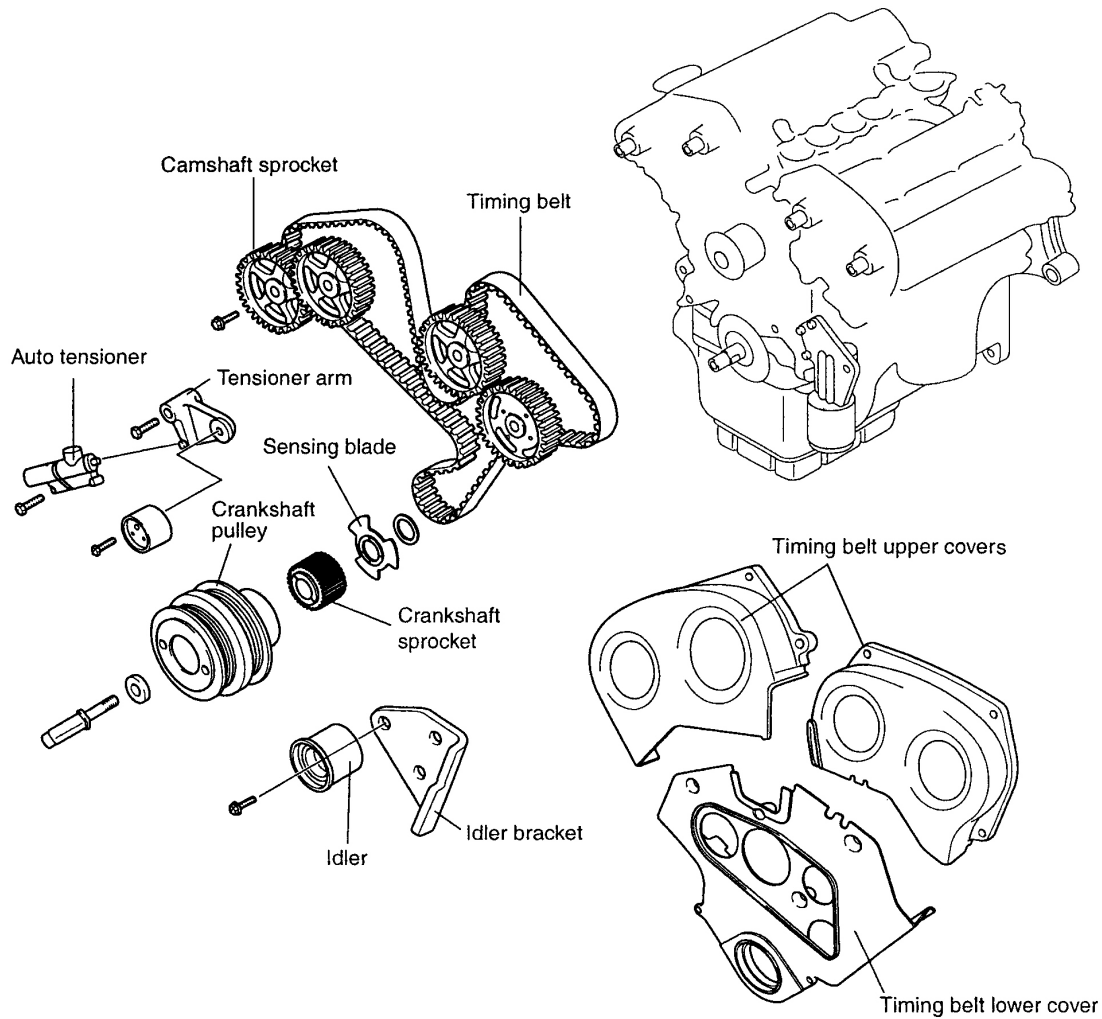
2004 Kia Sorento EX

HYUNDAI & KIA '3.0L & 3.5L V6 - DOHC



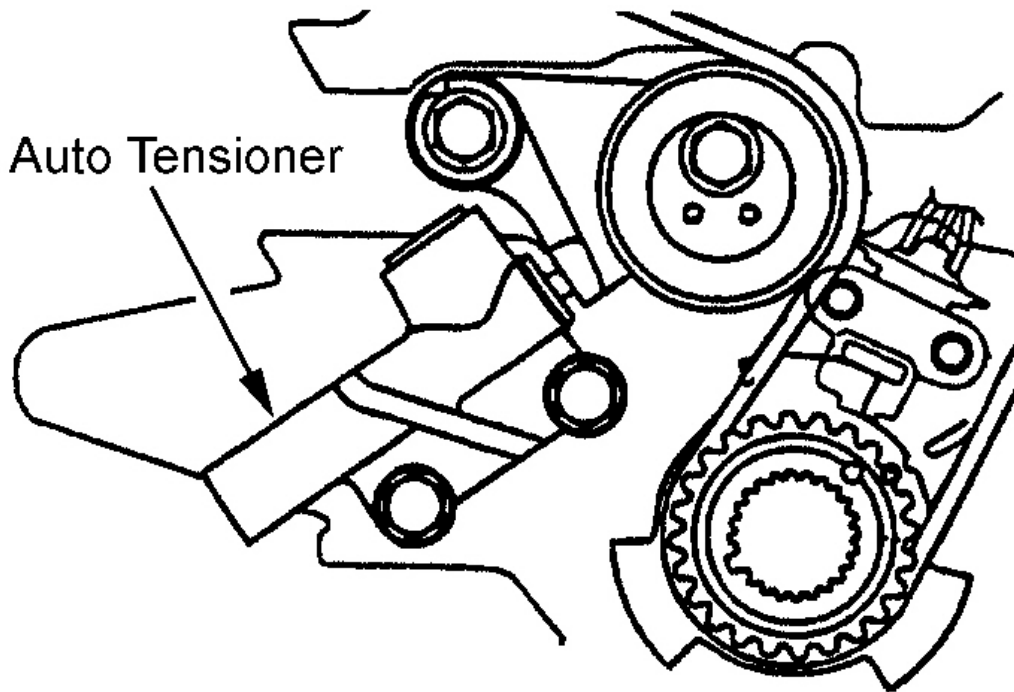
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**Fig. 1: Exploded View Of Timing Belt & Components (Amanti, Sedona, XG300 & XG350)  
Courtesy of HYUNDAI MOTOR CO.**



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**Fig. 2: Exploded View Of Timing Belt & Components (Sorento)**  
Courtesy of KIA MOTORS AMERICA, INC.



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**Fig. 3: Removing Auto Tensioner**  
 Courtesy of HYUNDAI MOTOR CO.

#### Inspection

Inspect timing belt for wear on edges of drive teeth. Inspect the belt for signs of oil contamination, cracks, separation, worn or missing teeth, or hardened Black surface. Replace belt if worn, damaged or contaminated. Inspect belt tensioner pulley for smooth rotation. Replace if defective. Check timing belt auto tensioner for leaks. Replace if necessary.

#### Installation

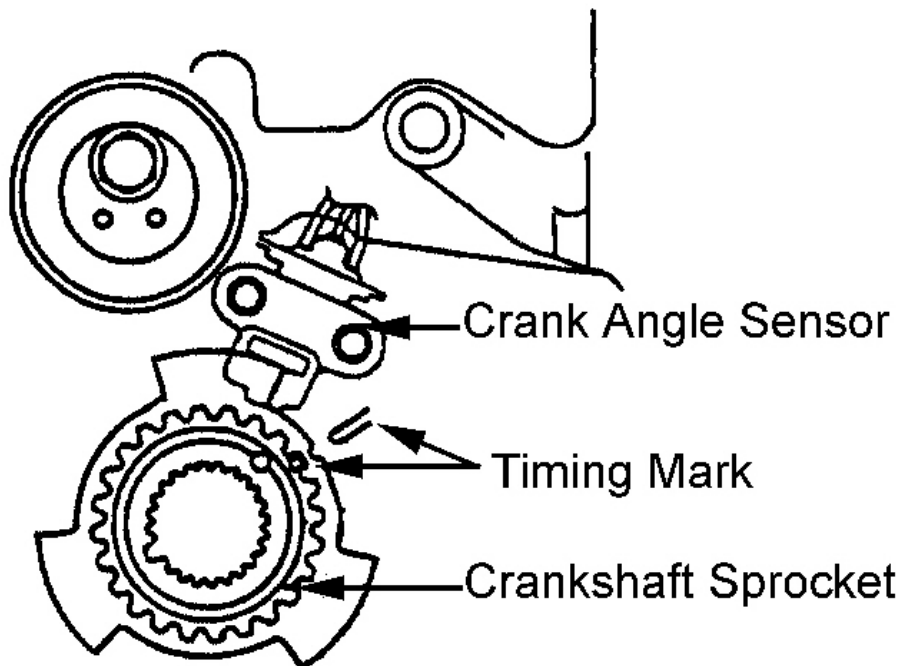
1. Install timing belt idler pulley to engine support lower bracket. Install tensioner arm, shaft and washer to cylinder block. Tighten tensioner arm bolt to specification. See **TORQUE SPECIFICATIONS** .

**CAUTION: Use care to avoid bending crankshaft sensing blade of crank angle sensor.**

2. Install crankshaft sprocket and align timing mark. See **Fig. 4** . Install camshaft sprocket and adjust installation positions as shown. See **Fig. 5** and **Fig. 6** . Install auto tensioner to oil pump case. Ensure that

auto tensioner set pin is completely assembled. Align timing marks of each sprocket.

3. Install timing belt in this order: crankshaft sprocket, idler pulley, left exhaust camshaft sprocket, left intake camshaft sprocket, water pump pulley, right intake camshaft sprocket, right exhaust camshaft sprocket, and tensioner pulley.
4. Ensure timing marks are correctly aligned. Install tensioner pulley. Pull set pin from auto tensioner.
5. Rotate crankshaft 2 revolutions clockwise. Wait 5 minutes. Measure projected load of auto tensioner in TDC. Ensure projected length is .15-.18" (3.8-4.5 mm). See [Fig. 7](#) . Recheck timing marks at each sprocket to ensure each sprocket is in correct position. If not, repeat installation of timing belt and auto tensioner.

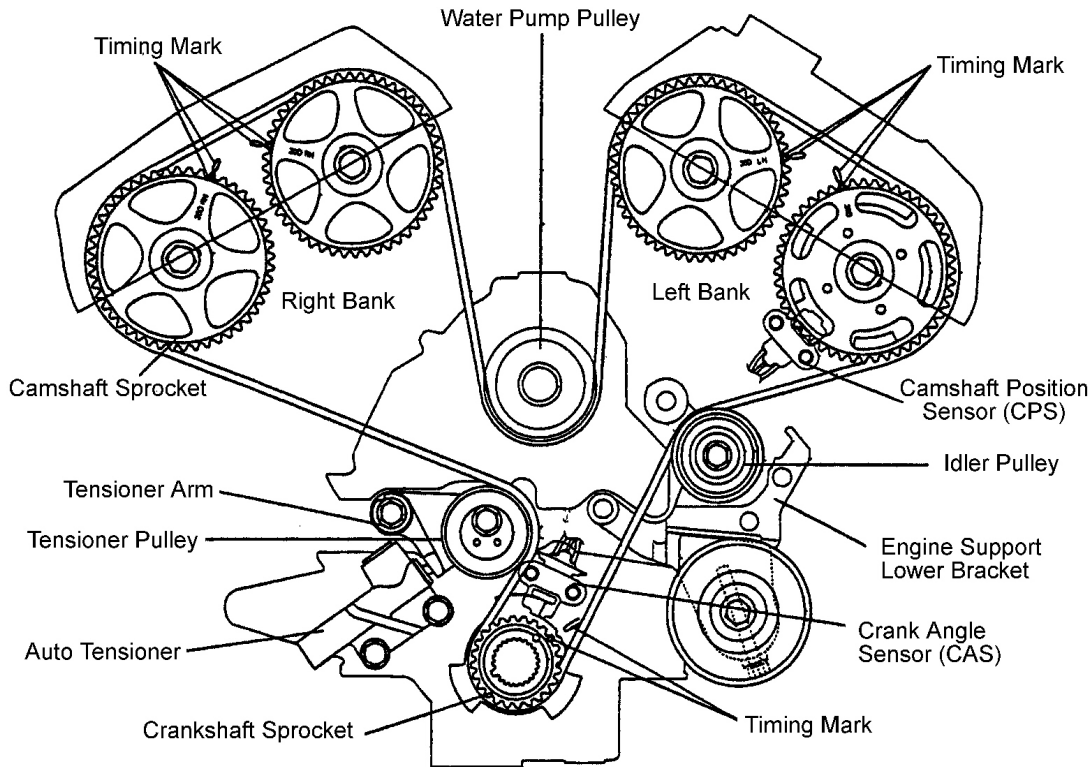


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**Fig. 4: Aligning Crankshaft Sprocket Timing Marks**  
Courtesy of HYUNDAI MOTOR CO.

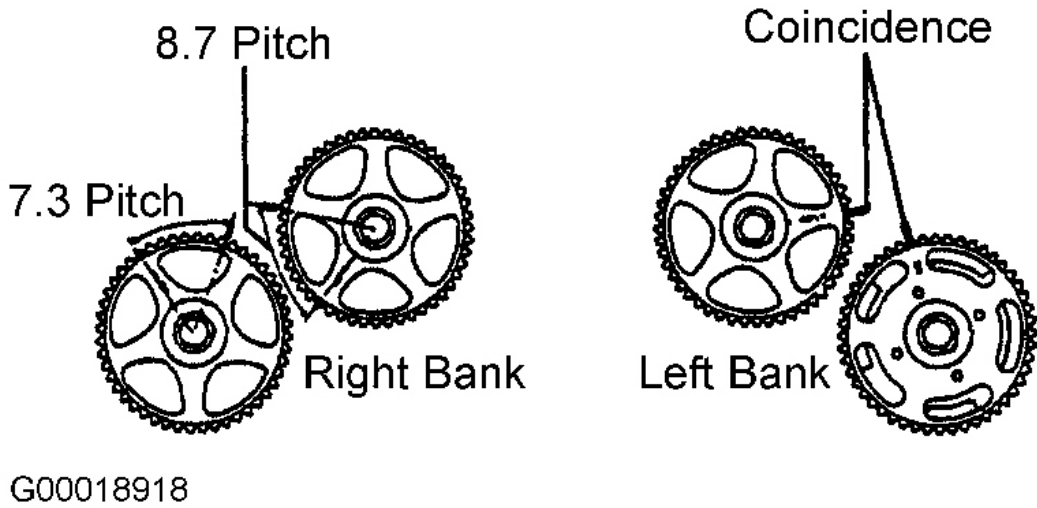
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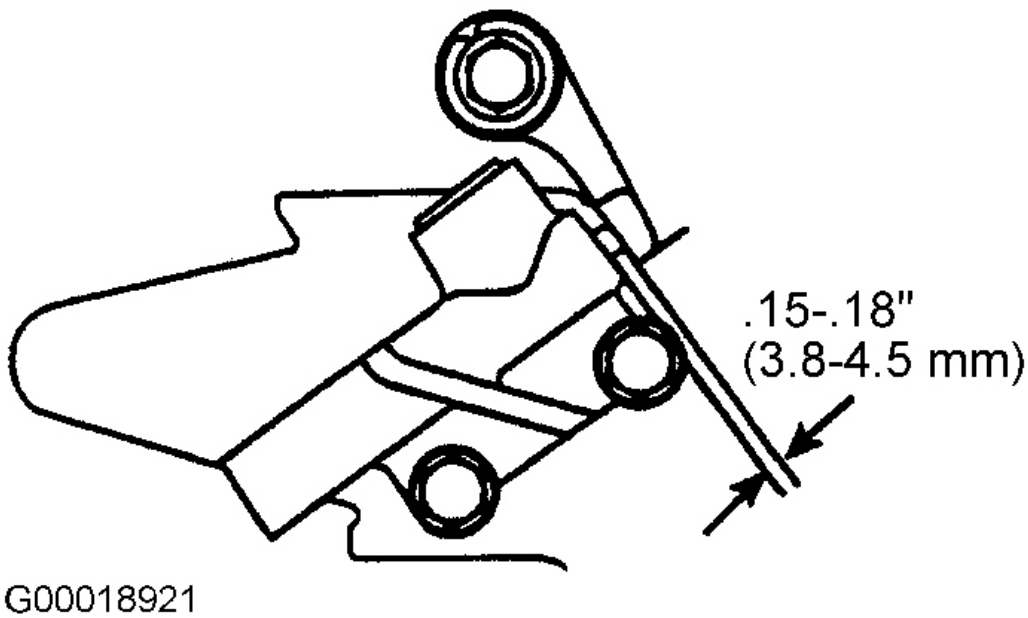


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**Fig. 5: Aligning Camshaft Timing Marks**  
Courtesy of HYUNDAI MOTOR CO.



**Fig. 6: Camshaft Sprocket Initial Installation**  
Courtesy of HYUNDAI MOTOR CO.



**Fig. 7: Checking Timing Belt Tensioner Projected Length**

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**Courtesy of HYUNDAI MOTOR CO.**