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 Conversion Calculator

2002 Ford Truck Expedition 2WD V8-4.6L SOHC VIN W

[Vehicle Level](#) → [Engine, Cooling and Exhaust](#) → [Engine](#) → [Timing Chain](#) → [Service and Repair](#) → [Romeo Engine](#) ←

Romeo Engine

Timing Drive Components - Romeo Engine

 ST1329-A	Aligner, Camshaft 303-380 (T91P-6256-A)
 ST1334-A	Aligner, Camshaft Pulley 303-413 (T92P-6256-A)
 ST1335-A	Holding Tool, Crankshaft 303-448 (T93P-6303-A)

Special Tool(s)

Material
Empty table body

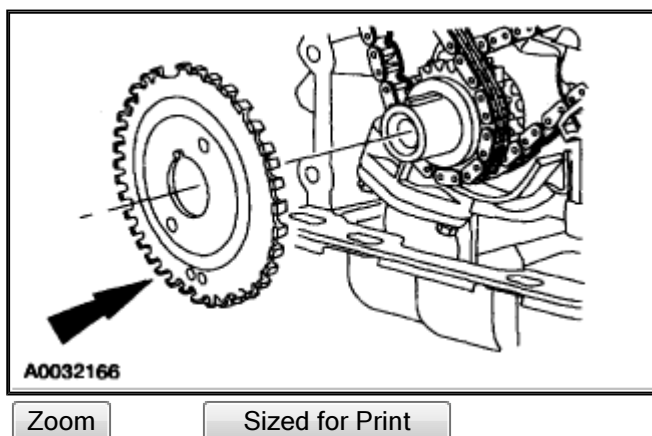
Material	
Item	Specification
Hydraulic Chain Tensioner Retaining Clip	1L3Z-6P250-AA

Zoom Sized for Print

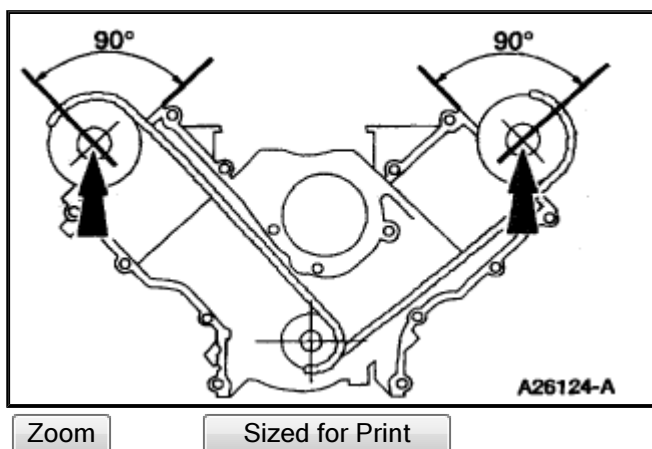
Removal

CAUTION: Since the engine is not free-wheeling, timing procedures must be followed exactly or [piston](#) and valve damage can occur.

1. Remove the engine front cover.

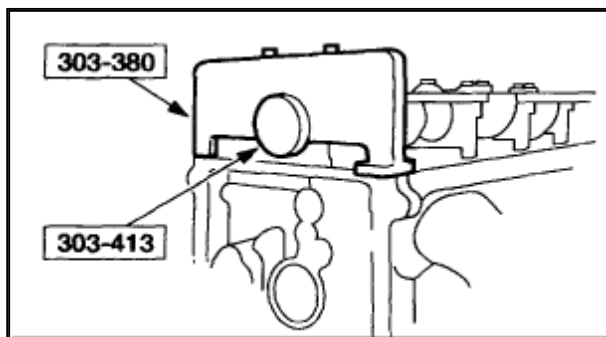


2. Remove the crankshaft sensor ring from the [crankshaft](#).



3. Rotate the [crankshaft](#) until the timing mark on the RH camshaft sprocket is

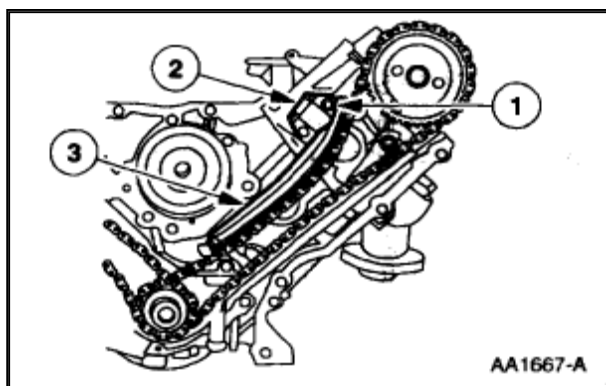
approximately at the 11 o'clock position and the timing mark on the LH camshaft sprocket is approximately at the 12 o'clock position.



Zoom

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4. Install the special tools on the [camshaft](#).



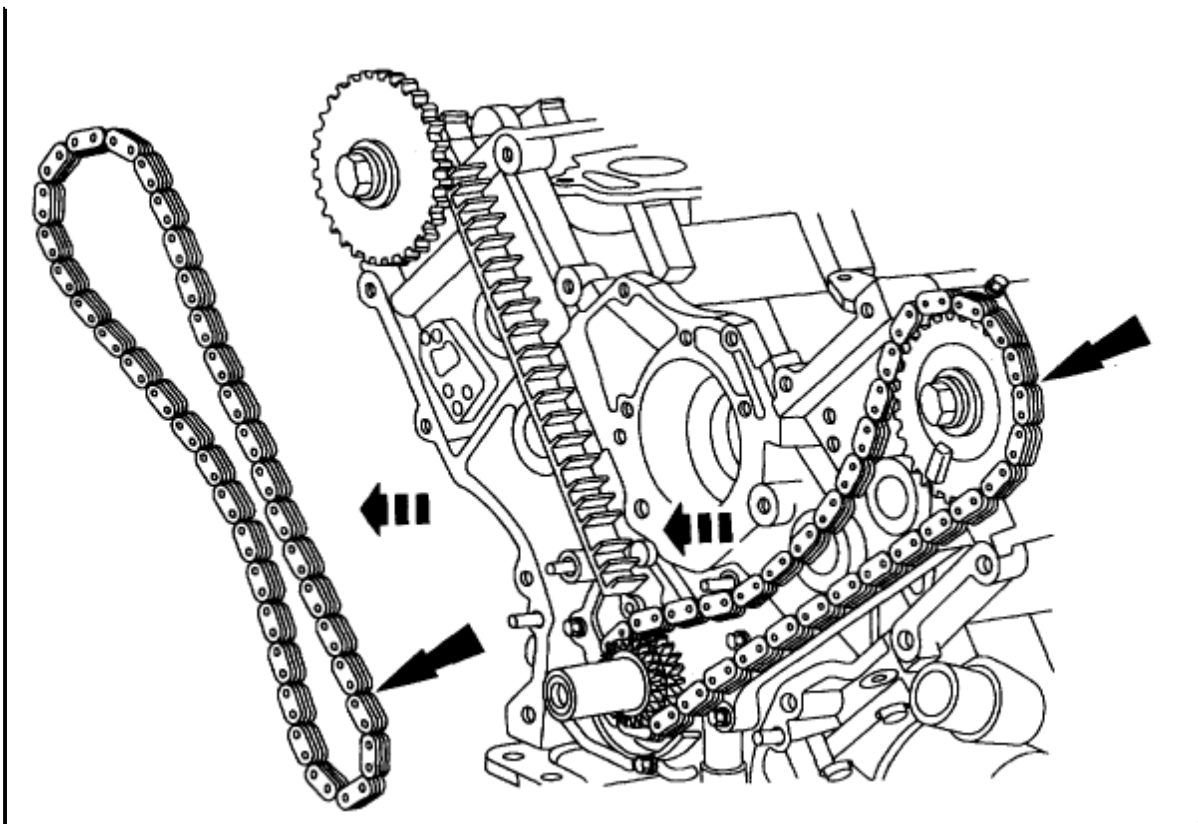
Zoom

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5. Remove the timing chain tensioning system from both timing chains.

- 1 Remove the bolts.
- 2 Remove the [timing chain tensioners](#).
- 3 Remove the [timing chain tensioner](#) arms.

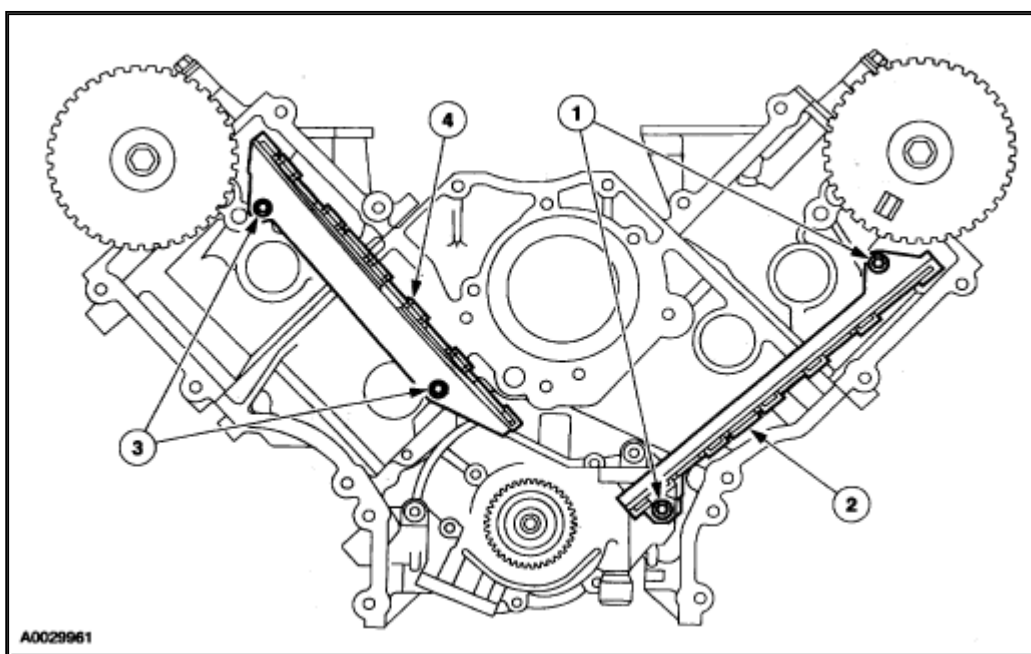




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6. Remove the timing chains and crankshaft sprocket.



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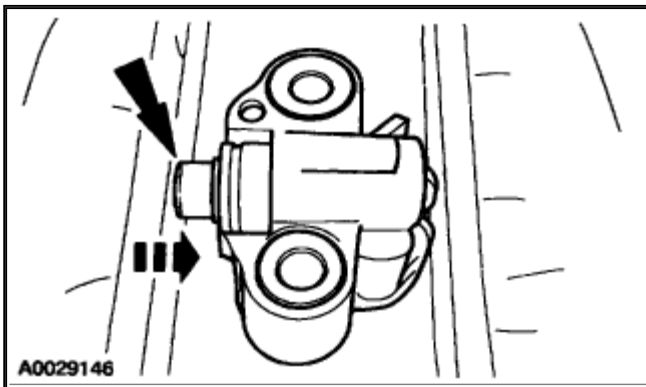
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7. Remove the [timing chain guides](#).

- 1 Remove the bolts.
- 2 Remove the LH [timing chain guide](#).
- 3 Remove the bolts.
- 4 Remove the RH [timing chain guide](#).

Installation

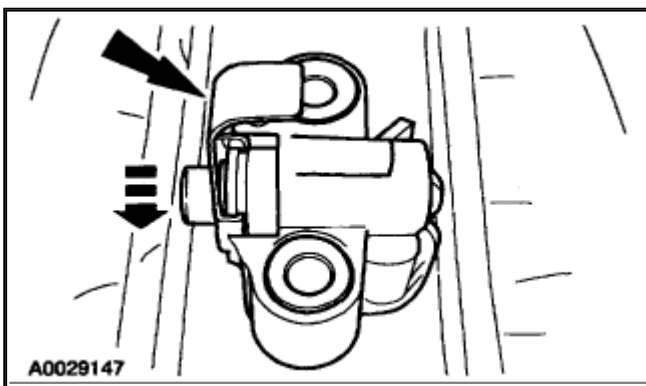


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1. **CAUTION:** Timing and procedures must be followed exactly or damage to valves and pistons will result.

Compress the tensioner plunger, using a vise.

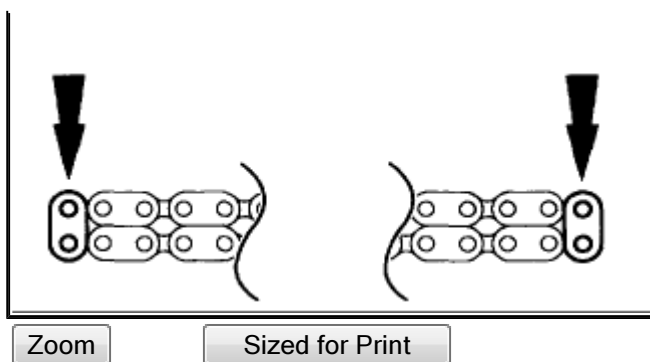


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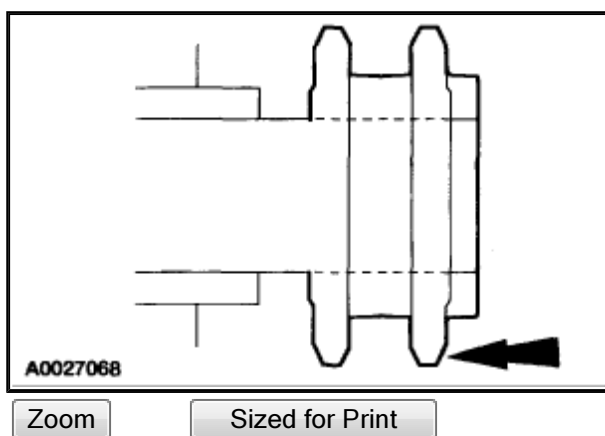
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2. Install a retaining clip on the tensioner to hold the plunger in during installation.

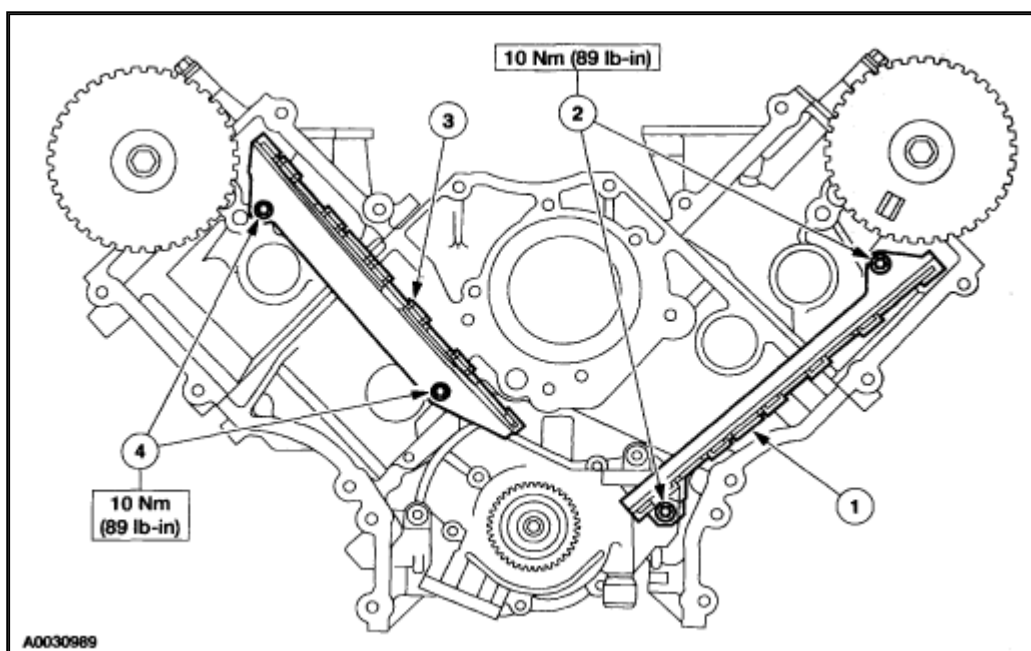




3. If the copper links are not visible, mark one link on one end and one link on the other end, and use as timing marks.



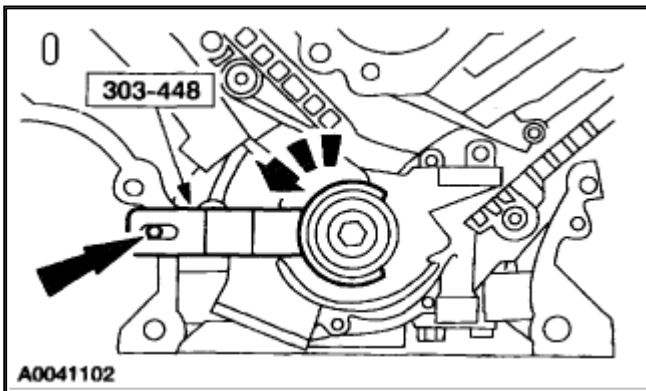
4. Install the crankshaft sprocket, marking sure the flange faces forward.



[Zoom](#)[Sized for Print](#)

5. install the [timing chain guide](#).

- 1 Position LH [timing chain guide](#).
- 2 Install and tighten the bolts.
- 3 Position the RH [timing chain guide](#).
- 4 Install and tighten the RH bolts.

[Zoom](#)[Sized for Print](#)

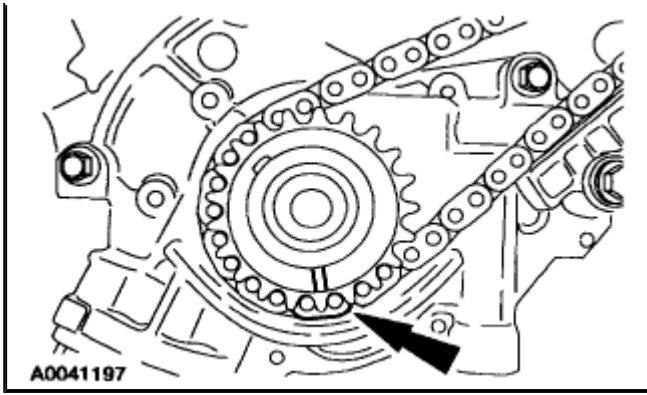
6. **CAUTION:** Unless otherwise instructed, do not rotate either the [crankshaft](#) or the camshafts, when the timing chains are removed and the cylinder heads are installed. Severe [piston](#) and valve damage will occur.

NOTE: The [number one cylinder](#) is at Top Dead Center (**TDC**) when the stud on the engine block fits into the slot in the handle of the special tool.

Using the special tool, position the [crankshaft](#) so the [number one cylinder](#) is at TDC.

- Remove the special tool.



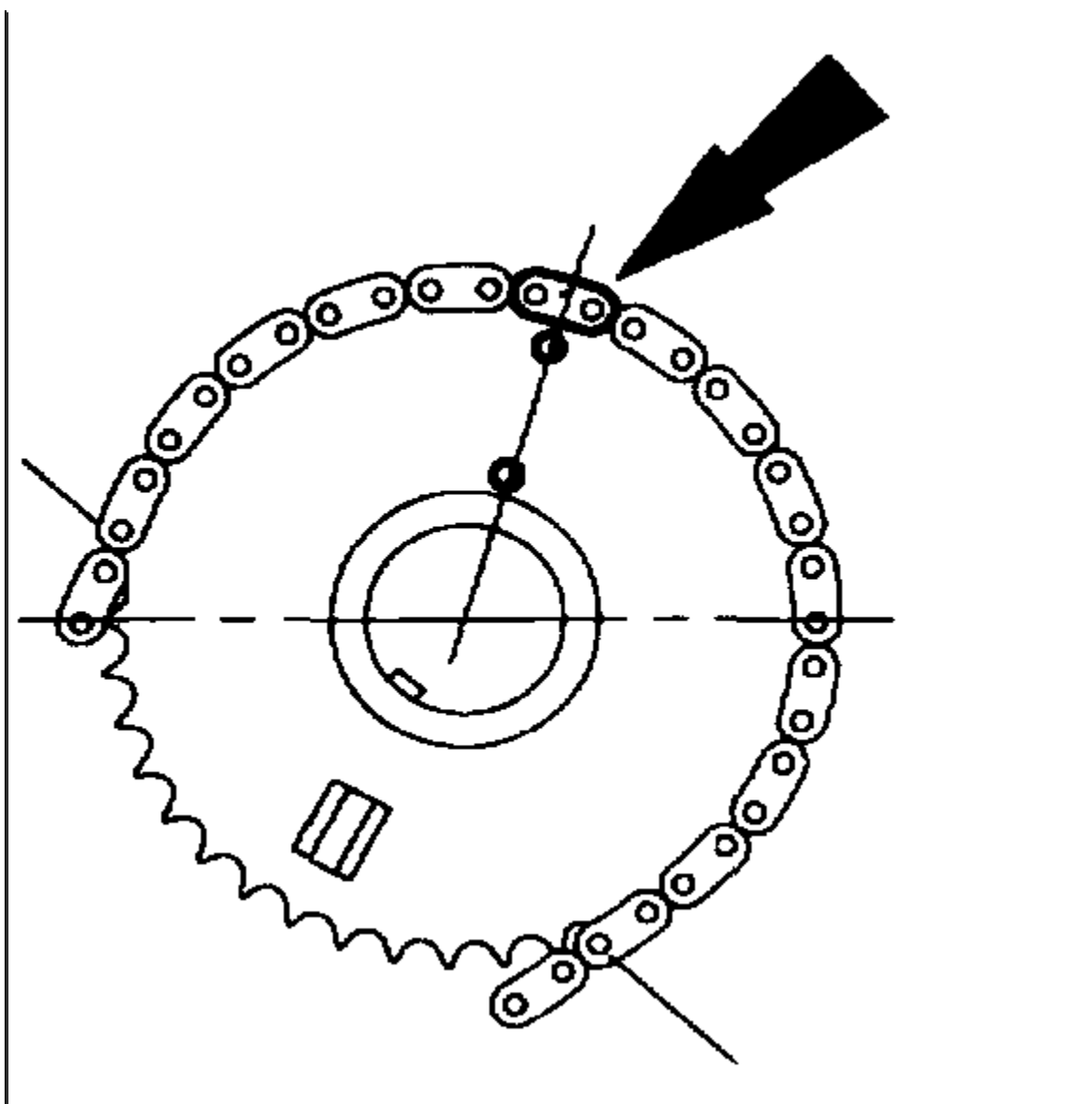


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8. Position the LH (inner) timing chain on the crankshaft sprocket, aligning the copper (marked) link with the timing mark on the sprocket.

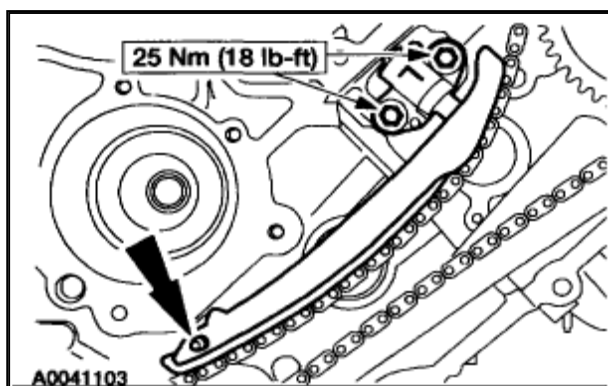




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9. Install the LH timing chain on the camshaft sprocket, aligning the copper (marked) link with the timing marks on the sprocket.

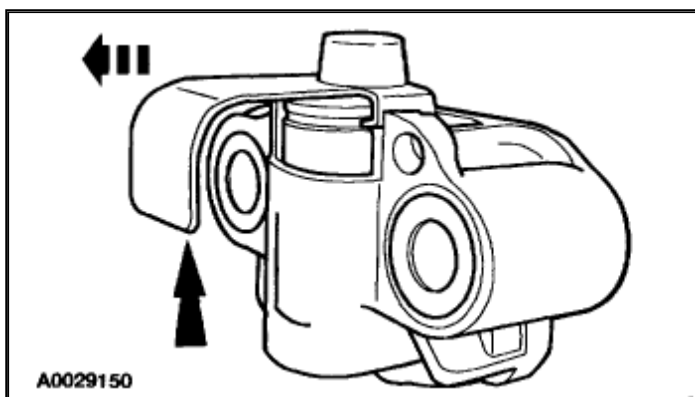


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- 10. **NOTE:** The LH [timing chain tensioner](#) arm has a bump near the dowel hole for identification.

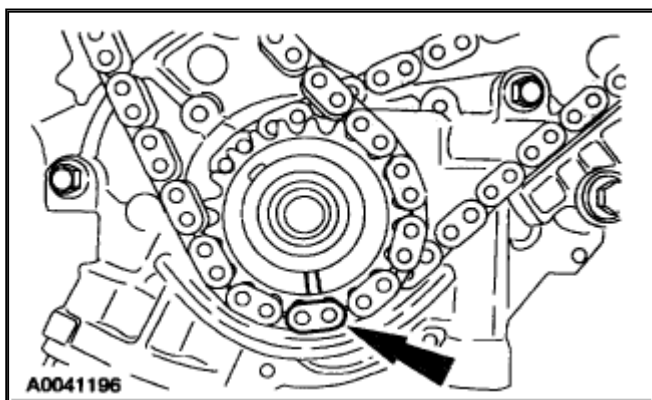
Position the LH [timing chain tensioner](#) arm on the dowel pin and install the LH timing chain tensioner.



Zoom

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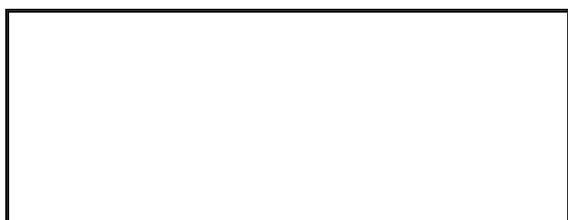
- 11. Remove the retaining clip from the LH [timing chain tensioner](#).

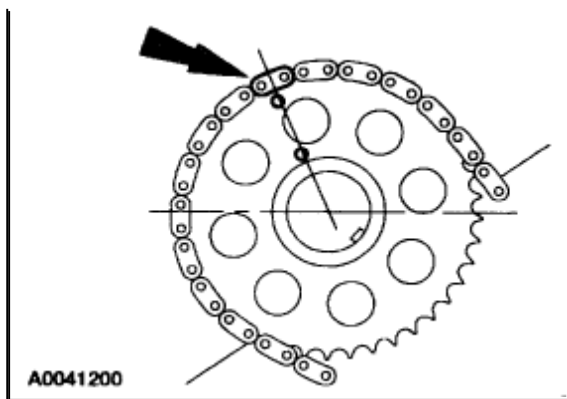


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- 12. Position the RH (outer) timing chain on the crankshaft sprocket, aligning the copper (marked) link with the timing mark on the sprocket.

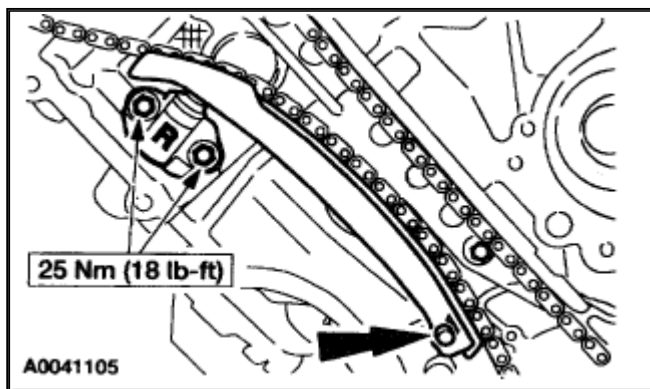




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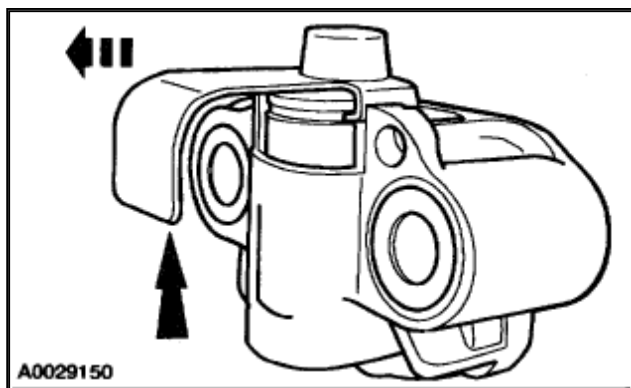
13. Install the RH timing chain on the camshaft sprocket, aligning the copper (marked) link with the timing marks on the sprocket.



Zoom

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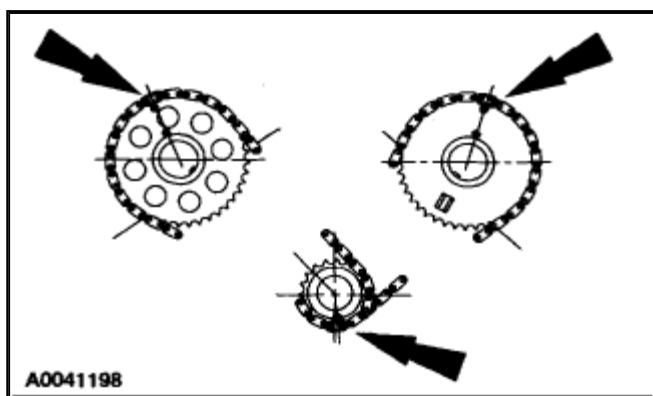
14. Position the RH [timing chain tensioner](#) arm on the dowel pin and install the RH timing chain tensioner.



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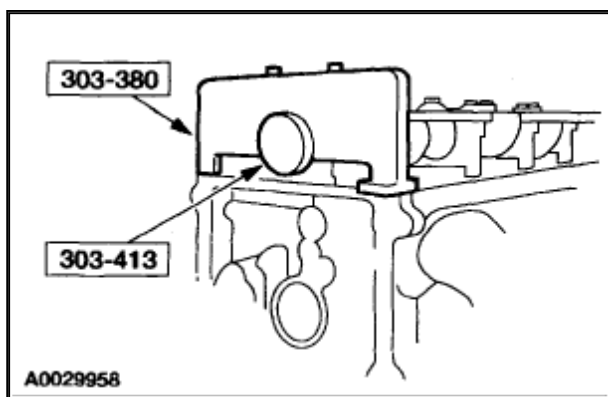
15. Remove the retaining clip from the RH [timing chain tensioner](#).



Zoom

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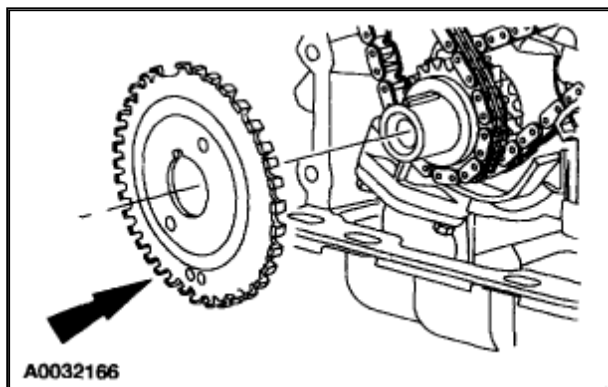
16. Make sure that the copper (marked) chain links are lined up with the dots on the crankshaft sprockets and the camshaft sprocket.



Zoom

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17. Remove special tools from the [camshaft](#).



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18. Install the crankshaft sensor ring on the [crankshaft](#).
19. Install the engine front cover.

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