
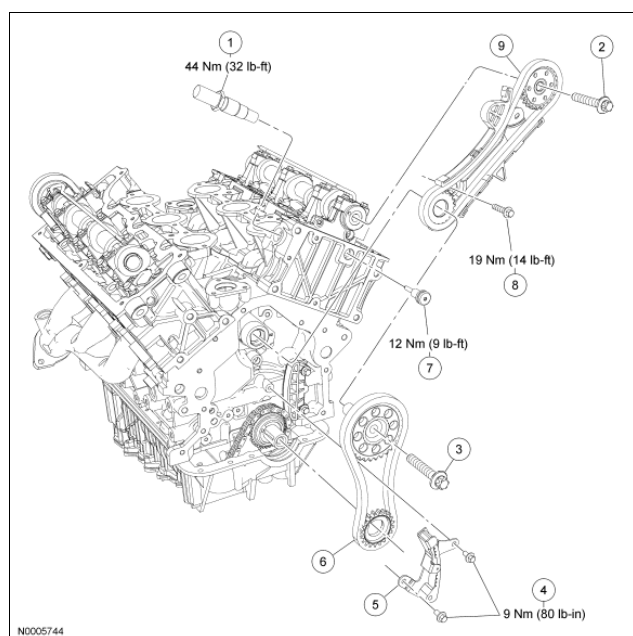


Camshaft Drive Cassette — LH  [Printable View \(577 KB\)](#)

Special Tool(s)

ST1777-A	Holding Tool, Camshaft Sprocket 303-564 (T97T-6256)
ST1778-A	Adapter for 303-564 303-578 (T97T-6256-A)
ST2694-A	Holding Tool, Crankshaft 303-674



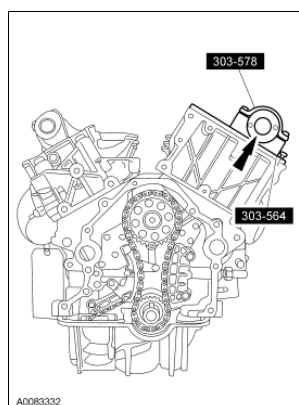
Item	Part Number	Description
1	6K254	Hydraulic chain tensioner
2	6M276	Camshaft sprocket bolt
3	6M276	Jackshaft sprocket bolt
4	W500011	Primary chain tensioner bolts (2 required)
5	6M271	Primary chain tensioner
6	—	Primary chain and sprocket assembly
7	6U001	LH cassette upper bolt
8	W500110	LH cassette lower bolt
9	6M289	LH cassette

Removal

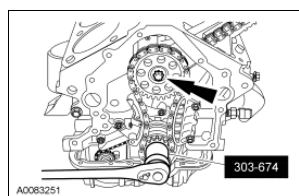
1. Remove the valve covers. For additional information, refer to [Valve Cover — RH](#) and [Valve Cover — LH](#) in this section.
2. Remove the fuel rail. For additional information, refer to [Section 303-04A](#) .
3. Remove the engine front cover. For additional information, refer to [Engine Front Cover](#) in this section.
4. Remove the thermostat housing. For additional information, refer to [Section 303-03](#) .
5. Remove all of the roller followers. For additional information, refer to [Camshaft Roller Follower](#) in this section.
6. **NOTE:** You must retime the LH and RH camshafts when either camshaft is disturbed.

Turn the crankshaft clockwise to position the number one cylinder at top dead center (TDC).

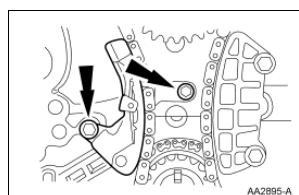
7. Remove the LH hydraulic chain tensioner.
8. Remove the LH camshaft sprocket bolt.
 - Install the special tools and tighten the bolts to 10 Nm (89 lb-in).
 - Remove the LH camshaft sprocket bolt.



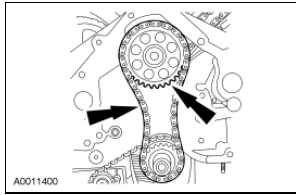
9. Using the special tool to prevent the crankshaft from turning, remove the jackshaft sprocket bolt.



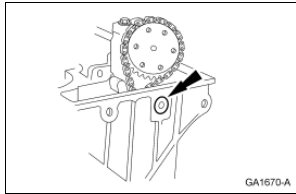
10. Remove the bolts and the primary chain tensioner.



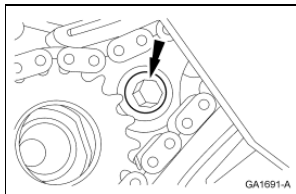
11. Remove the primary chain and sprockets as an assembly.



12. Remove the LH cassette upper bolt.



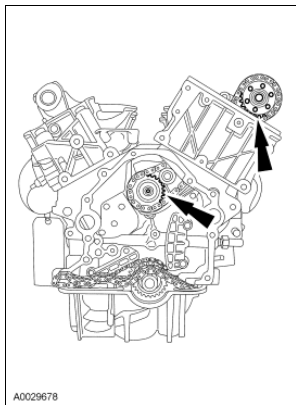
13. Remove the LH cassette lower bolt and the LH cassette.



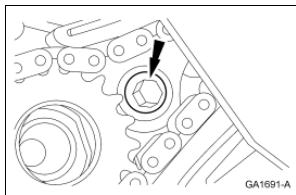
Installation

1. **NOTE:** The camshaft chain sprockets must be oriented correctly.

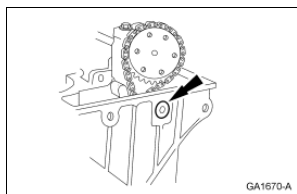
Position the LH cassette.



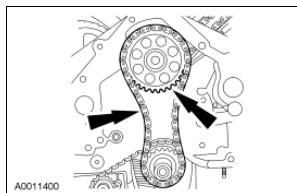
2. Install the LH cassette lower bolt.
• Tighten to 19 Nm (14 lb-ft).



3. Install the LH cassette upper bolt.
• Tighten to 12 Nm (9 lb-ft).

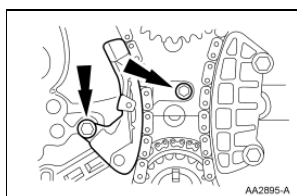


4. Install the jackshaft chain and sprockets as an assembly.



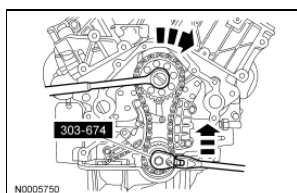
5. Install the jackshaft chain tensioner and the bolts.

- Tighten to 9 Nm (80 lb-in).



6. Using the special tool to prevent the crankshaft from turning, tighten the jackshaft sprocket bolt in 2 stages.

- Stage 1: Tighten to 45 Nm (33 lb-ft).
- Stage 2: Tighten an additional 90 degrees.



7. Loosely install the camshaft sprocket bolt.

8. **NOTE:** You must retime the LH and RH camshafts when either camshaft is disturbed.

NOTE: Install the LH hydraulic chain tensioner during camshaft timing.

Retime the LH and RH camshafts. For additional information, refer to [Camshaft Timing](#) in this section.

9. Install the camshaft roller followers. For additional information, refer to [Camshaft Roller Follower](#) in this section.

10. Install the thermostat housing. For additional information, refer to [Section 303-03](#) .

11. Install the engine front cover. For additional information, refer to [Engine Front Cover](#) in this section.

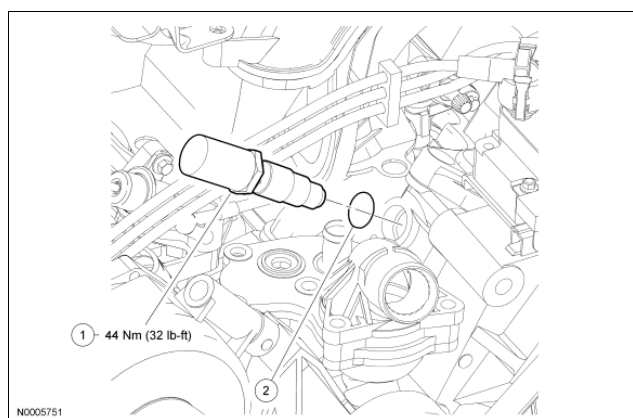
12. Install the fuel rail. For additional information, refer to [Section 303-04A](#) .

13. Install the valve covers. For additional information, refer to [Valve Cover — RH](#) and [Valve Cover — LH](#) in this section.
-

Hydraulic Timing Chain Tensioner — LH  [Printable View \(197 KB\)](#)

Material

Item	Specification
Motorcraft SAE 5W-30 Premium Synthetic Blend Motor Oil XO-5W30-QSP (US); Motorcraft SAE 5W-30 Super Premium Motor Oil CXO-5W30-LSP12 (Canada); or equivalent	WSS-M2C929-A



Item	Part Number	Description
1	6K524	LH hydraulic chain tensioner
2	—	LH hydraulic chain tensioner O-ring seal

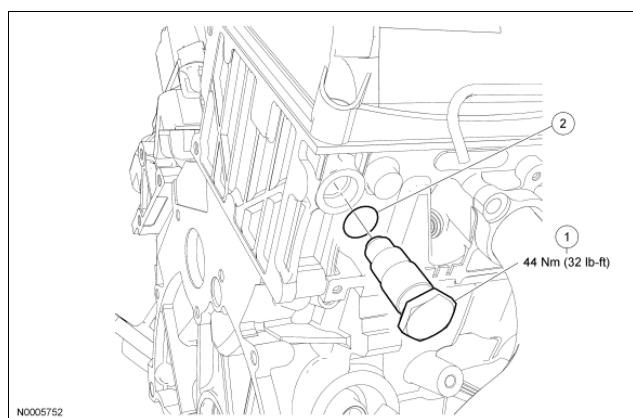
Removal and Installation

- Remove the hydraulic chain tensioner.
 - To install, tighten to 44 Nm (32 lb-ft).
- NOTE:** Lubricate the new O-ring seal with clean engine oil.
Remove and discard the O-ring seal.
- To install, reverse the removal procedure.

Hydraulic Timing Chain Tensioner — RH  [Printable View \(191 KB\)](#)

Material

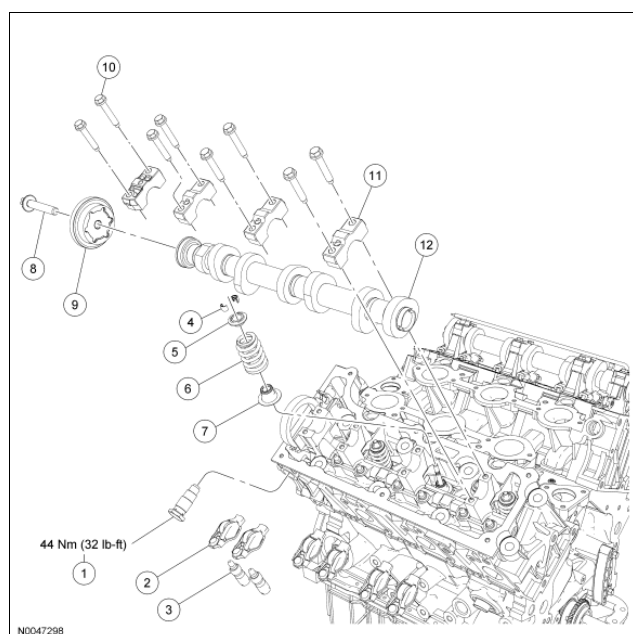
Item	Specification
Motorcraft SAE 5W-30 Premium Synthetic Blend Motor Oil XO-5W30-QSP (US); Motorcraft SAE 5W-30 Super Premium Motor Oil CXO-5W30-LSP12 (Canada); or equivalent	WSS-M2C929-A



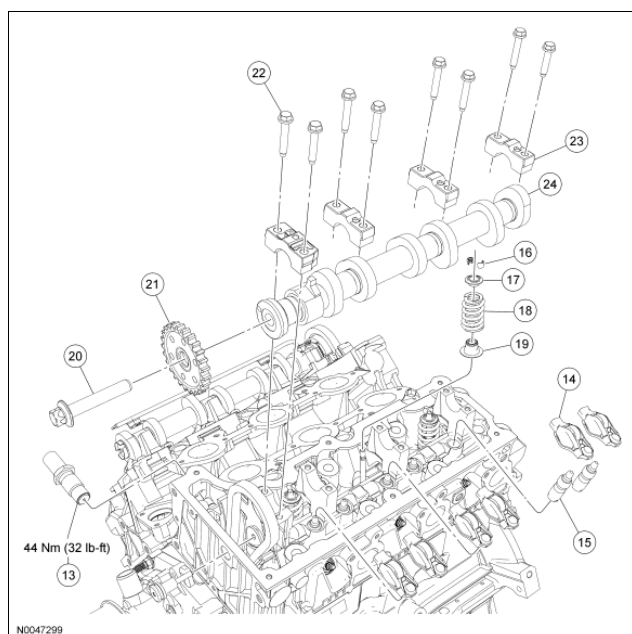
Item	Part Number	Description
1	6K254	RH hydraulic chain tensioner
2	—	RH hydraulic chain tensioner O-ring seal

Removal and Installation

- Remove the hydraulic chain tensioner.
 - To install, tighten to 44 Nm (32 lb-ft).
- NOTE:** Lubricate the new O-ring seal with clean engine oil.
Remove and discard the O-ring seal.
- To install, reverse the removal procedure.

Valve Train Components — Exploded View  [Printable View \(452 KB\)](#)

Item	Part Number	Description
1	6K254	RH hydraulic chain tensioner
2	6529	Camshaft roller follower (6 required)
3	6C501	Hydraulic lash adjuster
4	6518	Valve spring retainer key (12 required)
5	6A536	Valve spring retainer (6 required)
6	6513	Valve spring (6 required)
7	6571	Valve seal (6 required)
8	6M276	RH camshaft sprocket bolt
9	6256	RH camshaft sprocket
10	W702341	Camshaft bearing cap bolt (8 required)
11	6A258	Camshaft bearing cap (4 required)
12	6250	RH camshaft



Item	Part Number	Description
13	6K254	LH hydraulic chain tensioner
14	6529	Camshaft roller follower (6 required)
15	6C501	Hydraulic lash adjuster
16	6518	Valve spring retainer key (12 required)
17	6A536	Valve spring retainer (6 required)
18	6513	Valve spring (6 required)
19	6571	Valve seal (6 required)
20	6M276	LH camshaft sprocket bolt
21	6M267	LH camshaft sprocket
22	W702341	Camshaft bearing cap bolt (8 required)
23	6A258	Camshaft bearing cap (4 required)
24	6A274	LH camshaft

1. For additional information, refer to the procedures in this section.