



FORD PERFORMANCE

M-6004-A504
2011-2014 Mustang 5.0L
Chain-drive kit

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FORD PERFORMANCE PARTS

PRIOR TO INSTALLATION READ THESE INSTRUCTION COMPLETELY
For questions, Call the FORD PERFORMANCE Techline 1-800-367-3788

Please visit <https://www.performanceparts.ford.com> for warranty information

Part #	Description	Qty
9L8Z-6C683-A	VCT/camshaft filter	4
BR3Z-6A340-A	Damper bolt	1
BR3Z-6256-G	Intake VCT sprocket	2
BR3Z-6C525-B	Exhaust VCT sprocket	2
BR3Z-6268-A	Secondary timing chain	2
BR3Z-6268-B	Primary timing chain	2
BR3Z-6279-A	VCT phaser bolt	12
BR3Z-6306-A	Crank sprocket	1
BR3Z-6B274-A	Chain guide	1
BR3Z-6M256-A	Chain guide	1
CR3Z-6K255-A	Tensioner arm	2
CR3Z-6L266-A	Primary chain tensioner	2
ML3Z-6K254-A	Secondary chain tensioner	2
ML3Z-6K297-A	Secondary tensioner guide	2
N806183-S437	Oil pump bolt	2
N807033-S439	Damper bolt washer	1
W503282-S437	Chain guide bolt	2
W701501-S	Dowel	1
W714251-S300	Oil pump stud bolt	1
W714252-S300	Oil pump stud bolt	1
W714258-S300	Dowel	3
N807352-S300	Primary tensioner bolt	4

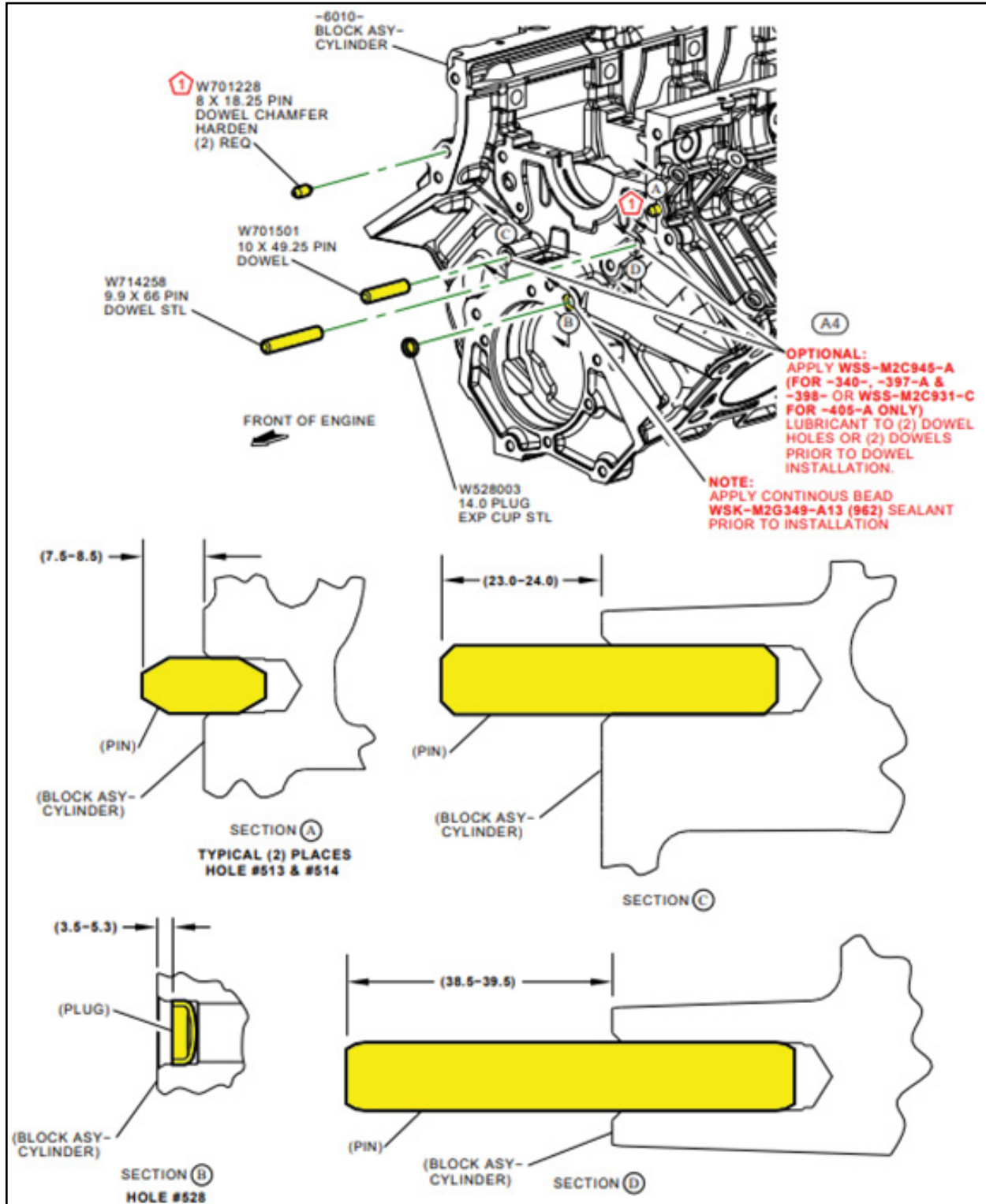
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OIL PUMP ASY (LESS SCREEN & COVER)

**-6621-
PUMP ASY-OIL LESS
SCREEN & COVER
FOR P415 ONLY**

**W714252 (9mm HEX)
M8 X 1.25 X 45 +
10 X 24 PIN & WASHER
HEX PILOT CONICAL
TORQUE 20 Nm THEN
ROTATE 55°- 65° CLOCKWISE**

**W714251 (13mm HEX)
M8 X 1.25 X 52 + 9 X 24 PIN & WSHR
HEX FLNG HD PILOT CONICAL
TORQUE 25 Nm THEN
ROTATE 70°- 80° CLOCKWISE**

**N806183 (8mm HEX)
M6 X 1 X 42.5 BOLT
HEX FLNG HD PILOT
TORQUE 10 Nm THEN
ROTATE 40°- 50° CLOCKWISE
(2) REQ**

**-6621-
PUMP ASY-OIL LESS
SCREEN & COVER
FOR S197 ONLY**

**NOTE:
BACKGROUND DETAIL NOT PICTORIALY
ACCURATE FOR ALL APPLICATIONS**

(CRANKSHAFT)

FRONT OF ENGINE

(BLOCK ASY-CYLINDER)

ASSEMBLY PROCEDURE

1. ROTATE INNER ROTOR OF OIL PUMP ASY (-6621-) TO ALIGN WITH FLATS ON CRANKSHAFT POST AND SLIP OIL PUMP OVER UNTIL SEATED AGAINST BLOCK.
**NOTE:
PUMP MUST BE HELD AGAINST BLOCK UNTIL BOLTS ARE TORQUED.**
2. ROTATE OIL PUMP ASY, ALIGN BOLT HOLES, INSTALL (4) FASTENERS AND SIMULTANEOUSLY TORQUE TO SPECIFICATION.
**NOTE:
FOR PRODUCTION, ROTATION OF CRANKSHAFT DURING TORQUE PROCEDURE IS REQUIRED.**

SINGLE WRENCH METHOD (SERVICE)

1. ROTATE INNER ROTOR OF OIL PUMP ASY TO ALIGN WITH FLATS ON CRANKSHAFT POST AND SLIP OIL PUMP OVER UNTIL SEATED AGAINST BLOCK.
**NOTE:
PUMP MUST BE HELD AGAINST BLOCK UNTIL BOLTS ARE TORQUED.**
2. ROTATE OIL PUMP ASY, ALIGN BOLT HOLES, INSTALL (4) FASTENERS.
3. TORQUE FASTENERS 0 Nm.
4. TORQUE M8 FASTENER W714251 25 Nm, M8 FASTENER W714252 20 Nm AND M6 FASTENERS N806183 10 Nm.
5. ROTATE M8 FASTENER W714251 70°- 80° CLOCKWISE, ROTATE M8 FASTENER W714252 55°- 65° CLOCKWISE AND M6 FASTENERS N806183 40° - 50° CLOCKWISE.

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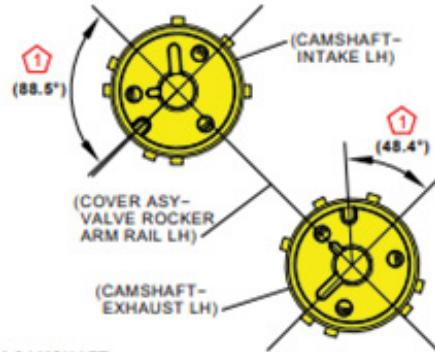
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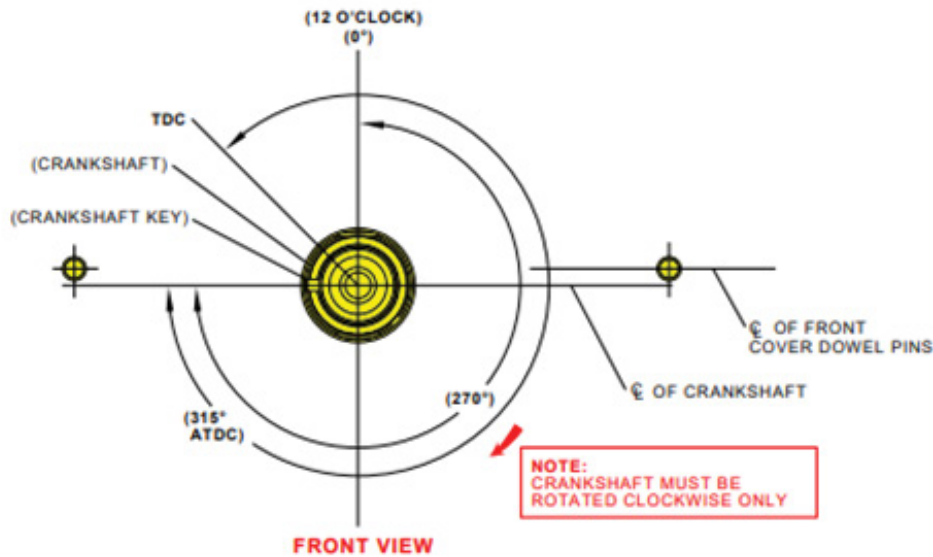
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CRANKSHAFT AND LH CAMSHAFT COMPONENTS (NEUTRAL POSITION)

NOTE:
CRANKSHAFT KEYWAY MUST BE Clocked AT (269°-271° (314°-316° ATDC)).
CAMSHAFT MUST BE Clocked RELATIVE TO CAM COVER RAIL AS SHOWN, PRIOR TO CAM DRIVE COMPONENTS RUNDOWN AND TIGHTENING.



(LEFT BANK CAMSHAFT KEYWAY ORIENTATION)



NOTE:
CRANKSHAFT, CAMSHAFTS, PRIMARY SPROCKETS & CHAINS, MUST BE POSITIONED TO SPECIFICATION SHOWN, PRIOR TO FASTENER INSTALLATION AND PRELIMINARY RUNDOWN.

① REPRESENTS APPROXIMATE CAMSHAFT KEYWAY POSITIONS WHEN CAMSHAFTS ARE IN TDC FIRING POSITION SHOWN.

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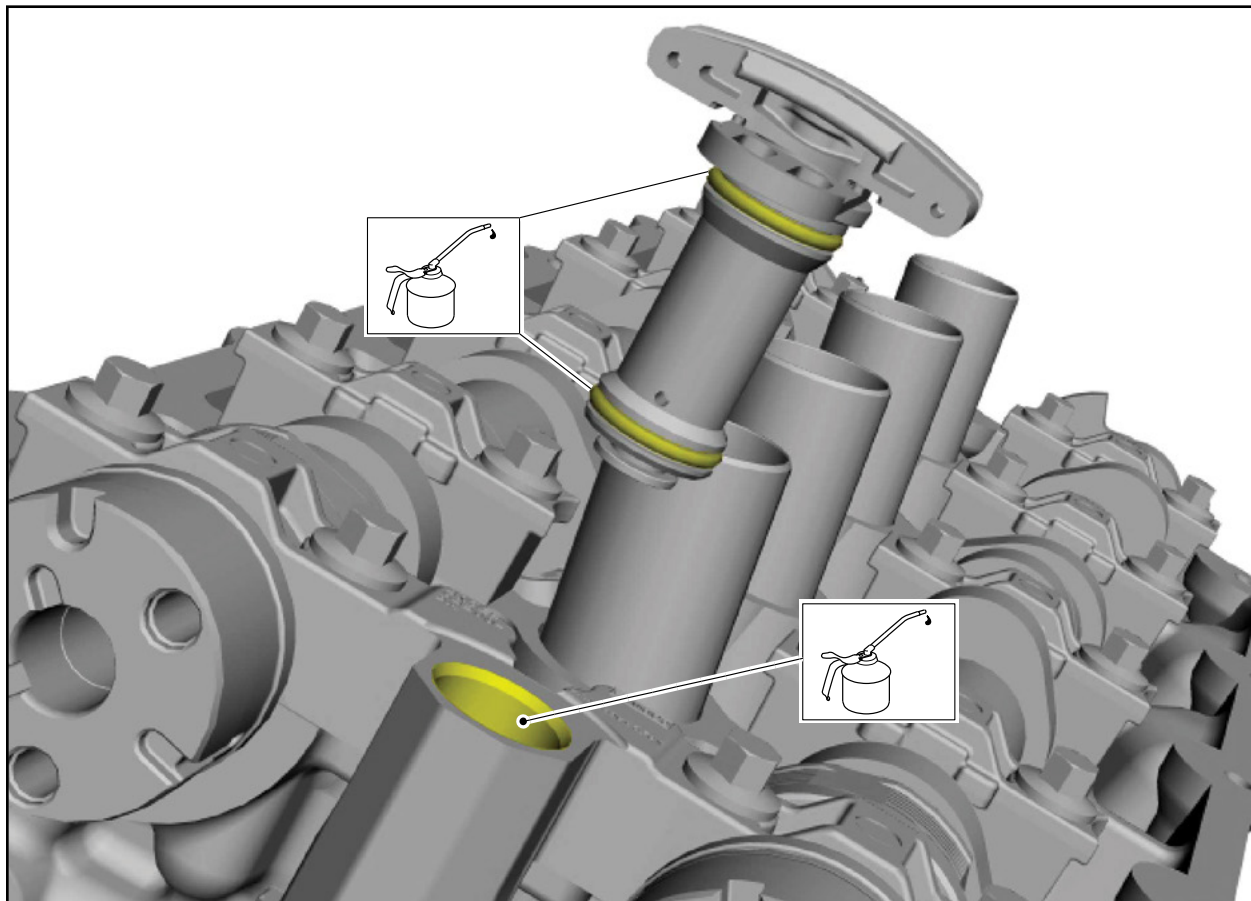
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NOTE: Do not remove the secondary timing chain tensioner shipping clip, until instructed to do so.

NOTE: The secondary timing chain tensioner and shoe are of a new design. The secondary timing chain tensioner is shorter than the previous design and does not extend through the bottom of the camshaft mega cap. The new design shoe has tabs that contact the front of the mega cap when installed.

Apply clean engine oil to the secondary timing chain tensioner O-ring seals and mega cap bore.



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**SECONDARY CHAIN TENSIONER ASY LH, TIMING CHAIN
GUIDE AND ENGINE OIL FILTER**

S197 _____ SHOWN
P415 _____ TYPICAL

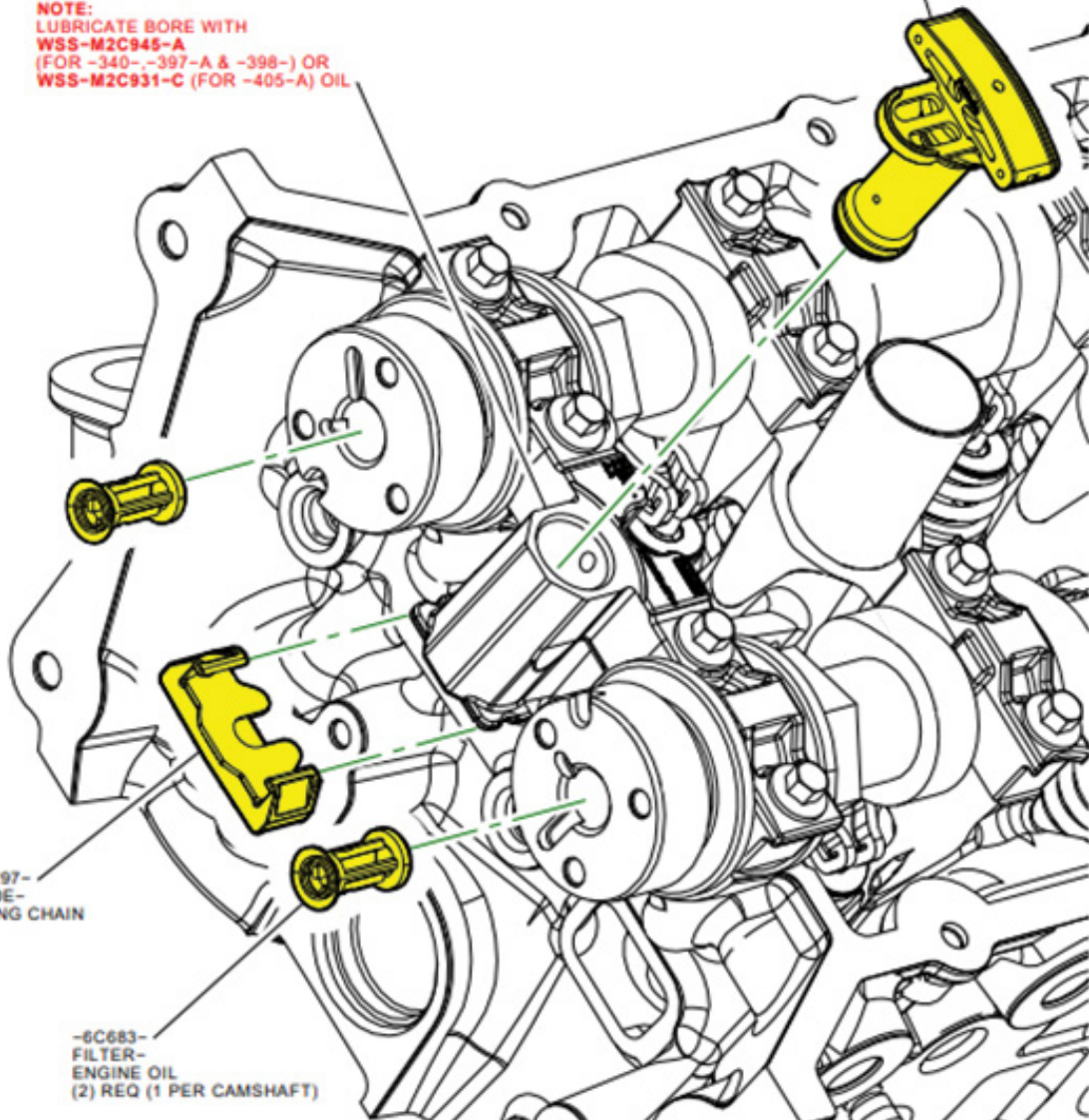
-6C270-
TENSIONER ASY-
SECONDARY CHAIN

(CAP ASY-CAMSHAFT
BEARING FRONT)

NOTE:
LUBRICATE BORE WITH
WSS-M2C945-A
(FOR -340-, -397-A & -398-) OR
WSS-M2C931-C (FOR -405-A) OIL

-6K297-
GUIDE-
TIMING CHAIN

-6C683-
FILTER-
ENGINE OIL
(2) REQ (1 PER CAMSHAFT)



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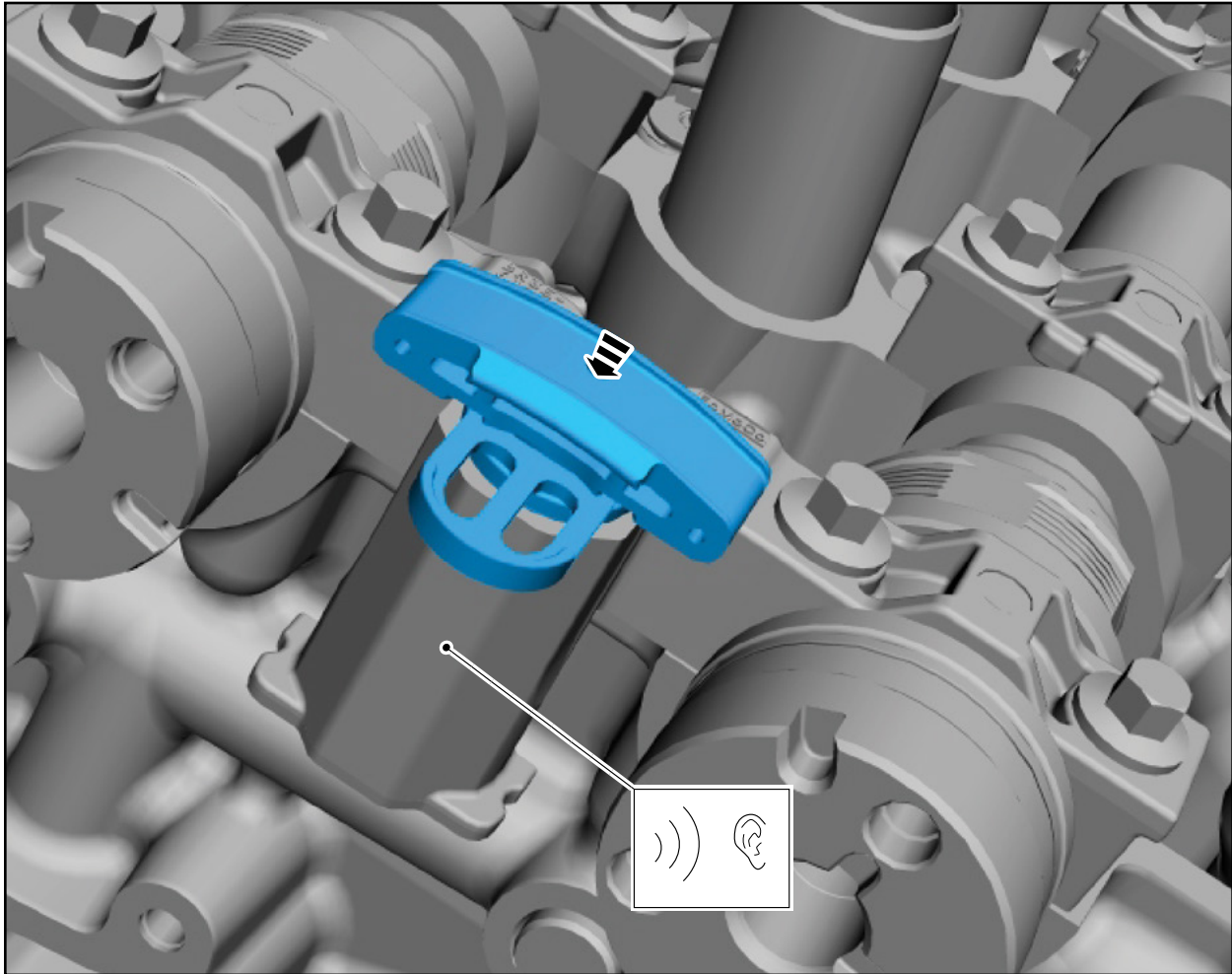


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Install the secondary timing chain tensioner by pushing it down all the way until a snap is heard and the tensioner is seated all the way down the mega cap bore.



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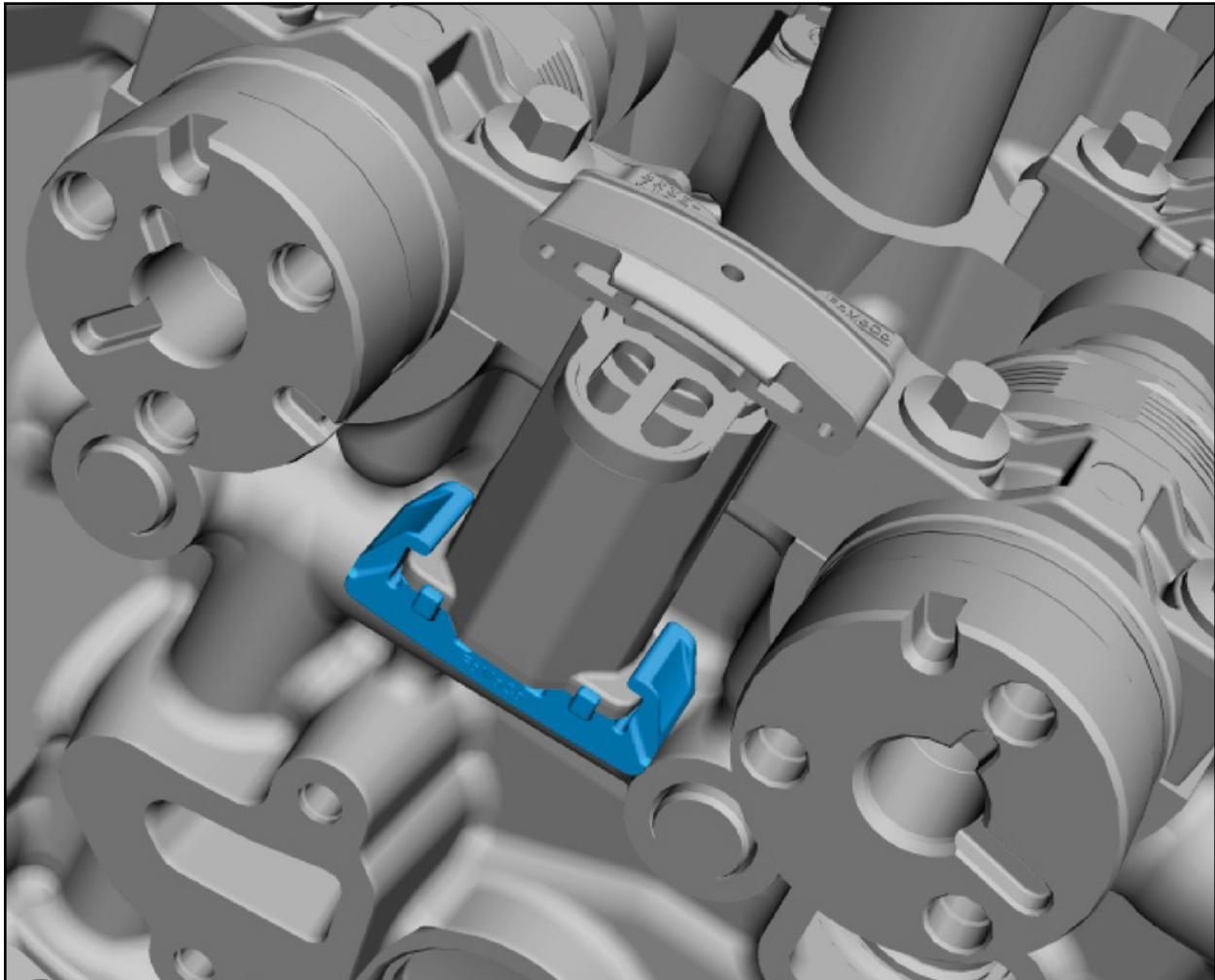


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Install the secondary timing chain tensioner shoe.



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LH SECONDARY CHAIN CAMSHAFT INTAKE TO EXHAUST AND ENGINE VARIABLE CAMSHAFT TIMING ASY

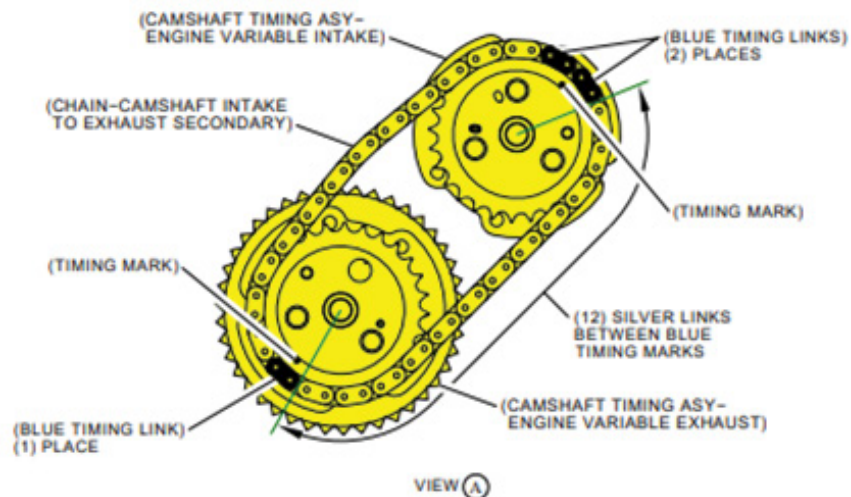
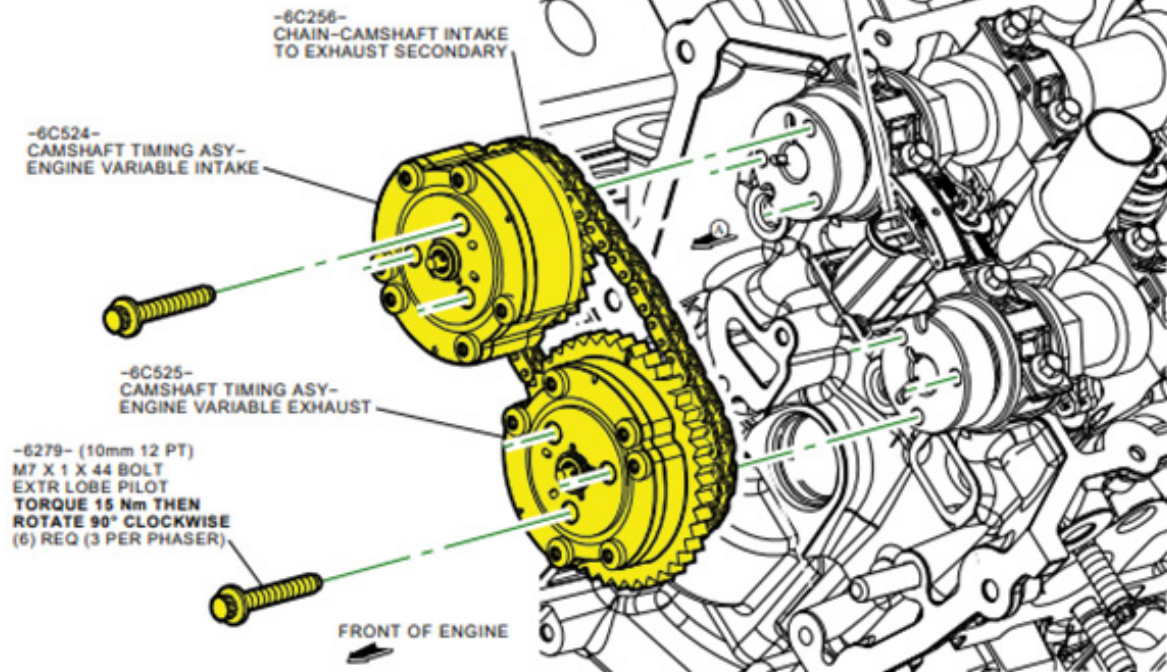
NOTE:
PRE-ASSEMBLE SECONDARY CHAIN TO INTAKE & EXHAUST VCT UNITS. MARKED LINK PLATES LINE UP WITH TIMING MARKS ON ON BOTH INTAKE & EXHAUST VCT UNITS. ALIGN AS SHOWN IN VIEW A.

S197 _____ SHOWN
P415 _____ TYPICAL

(TENSIONER ASY-SECONDARY CHAIN)

NOTE:
REMOVE CLIP AFTER VCT AND SECONDARY CHAIN INSTALLATION. PUSH DOWN AND DISENGAGE

(HEAD ASY-CYLINDER LH)



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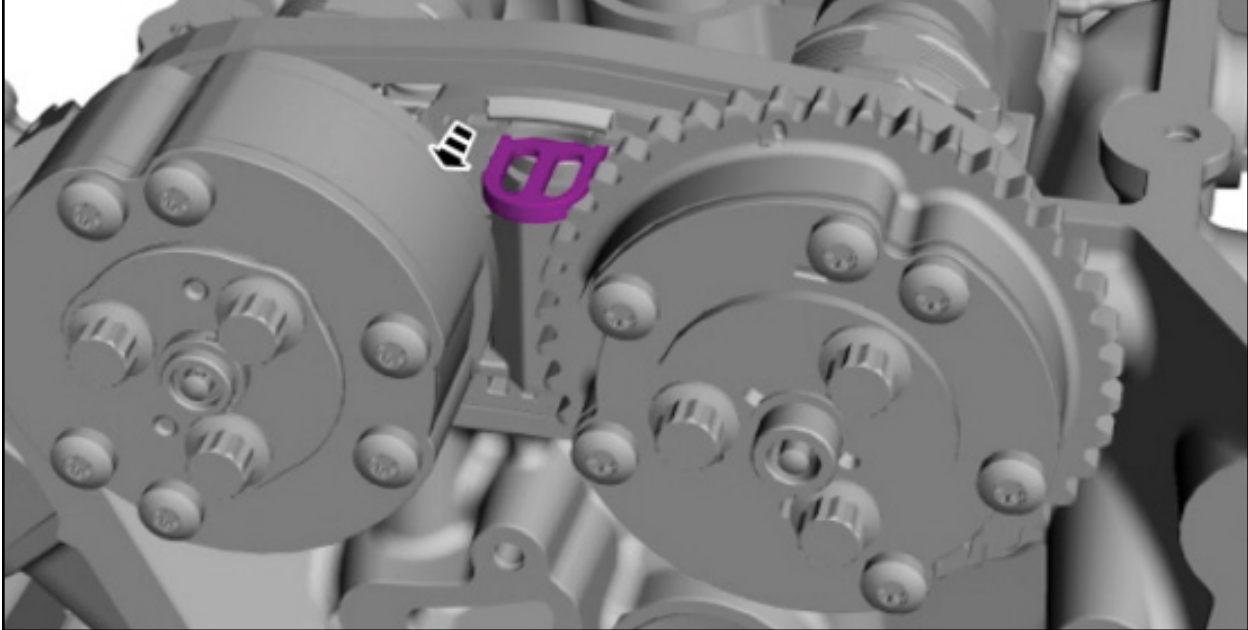


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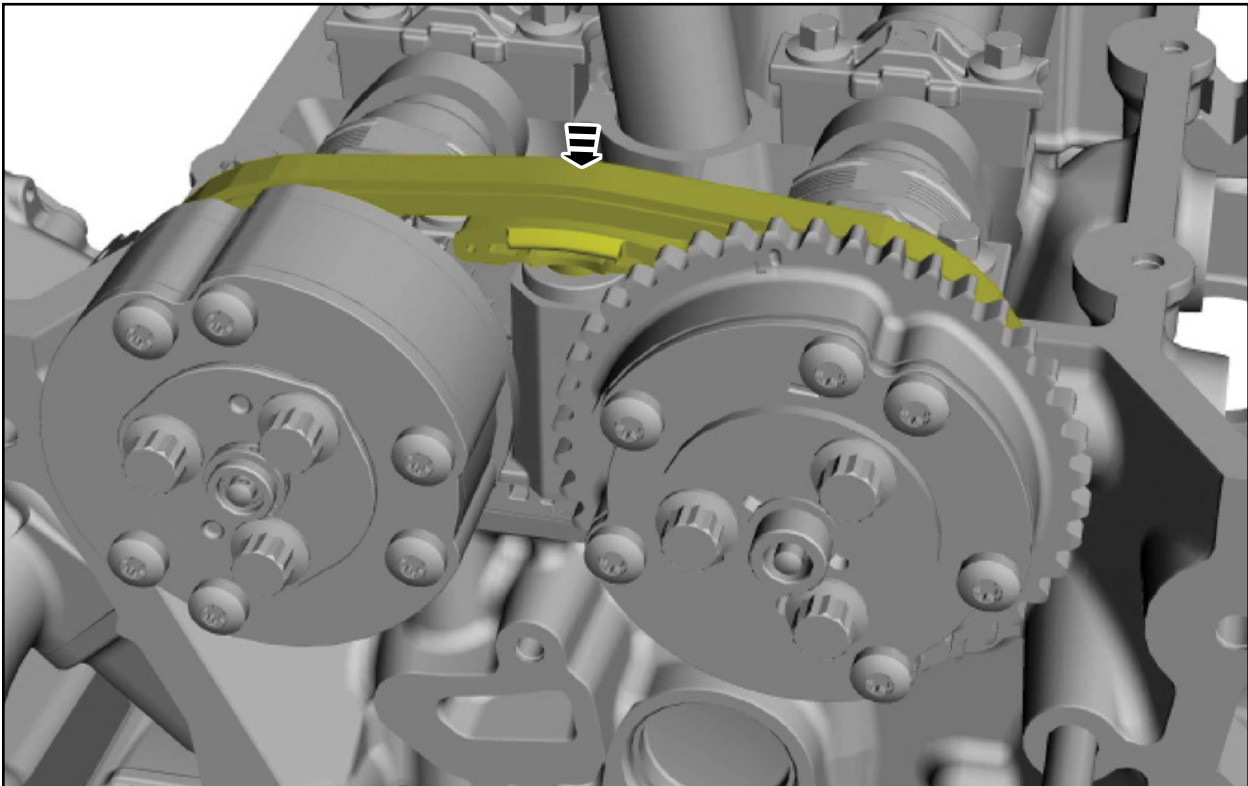
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Remove and discard the secondary timing chain tensioner shipping clip.



Activate the secondary timing chain tensioner by pressing down on the secondary timing chain and tensioner top shoe until it bottoms out, let go of the tensioner and it will spring up putting tension on the chain.



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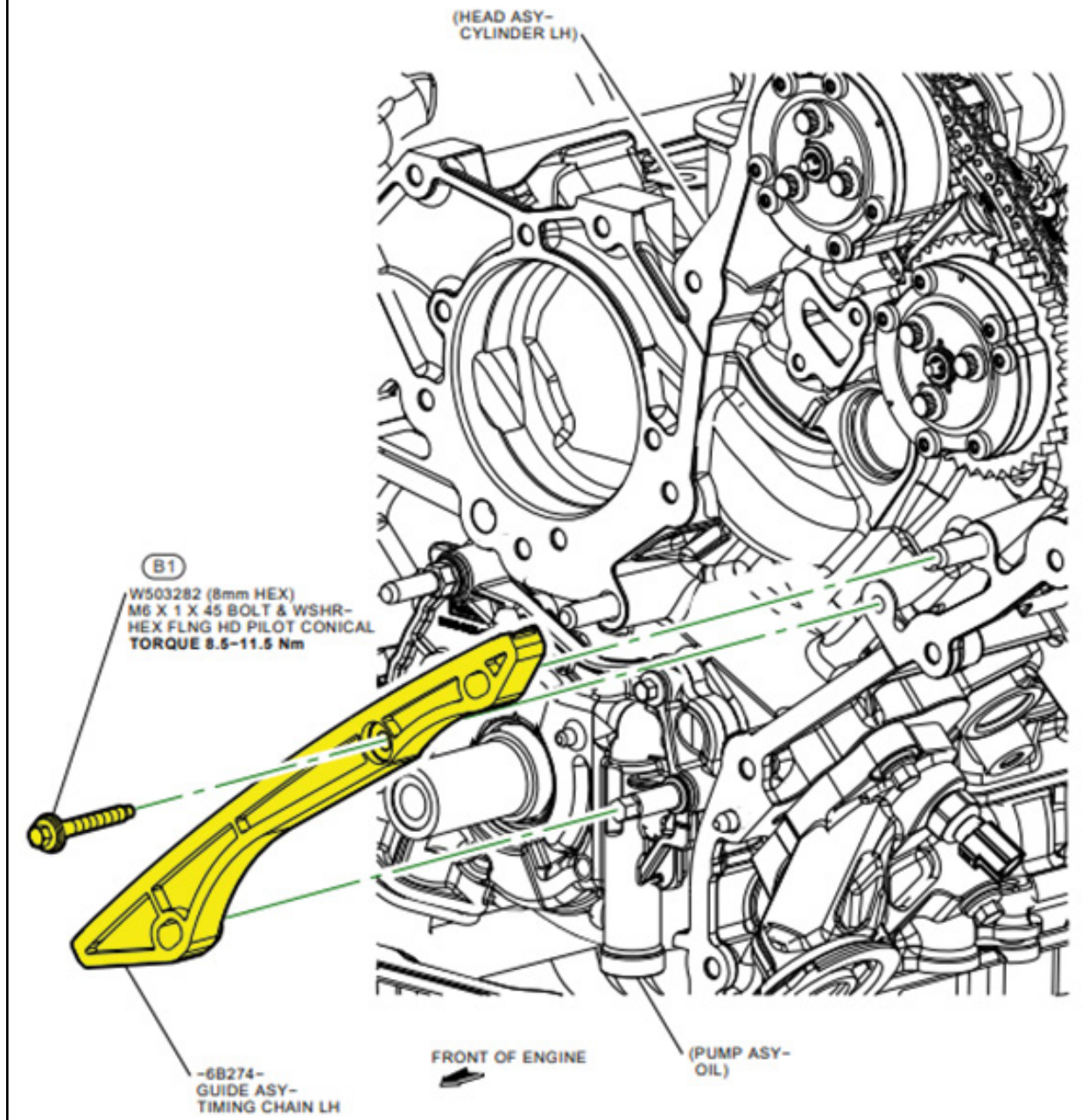
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TIMING CHAIN GUIDE ASY LH

S197 _____ SHOWN
P415 _____ TYPICAL



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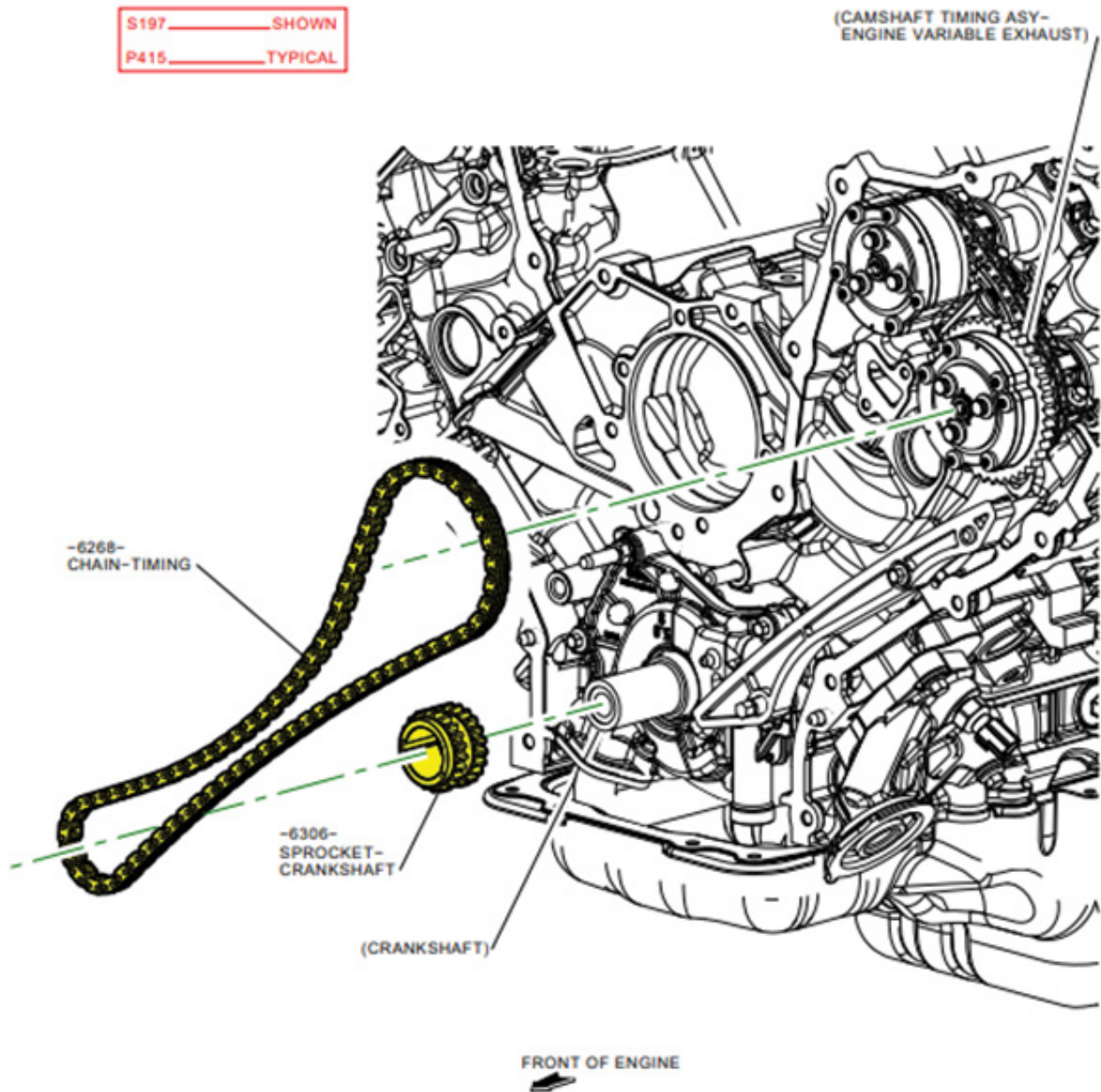


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CRANKSHAFT SPROCKET AND TIMING CHAIN



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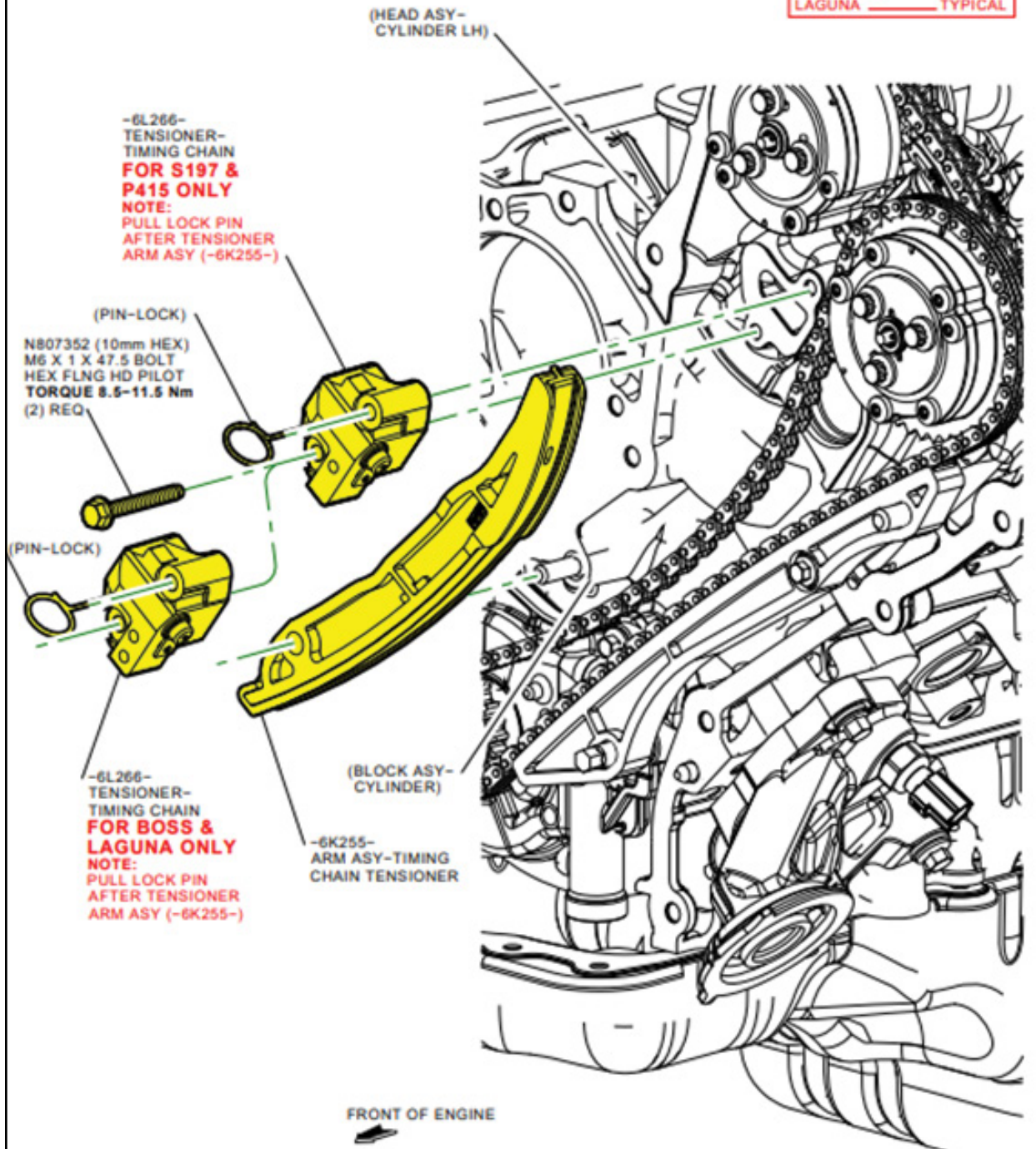
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**TIMING CHAIN TENSIONER ARM ASY AND
TIMING CHAIN TENSIONER LH**

S197 _____ SHOWN
P415/BOSS/
LAGUNA _____ TYPICAL



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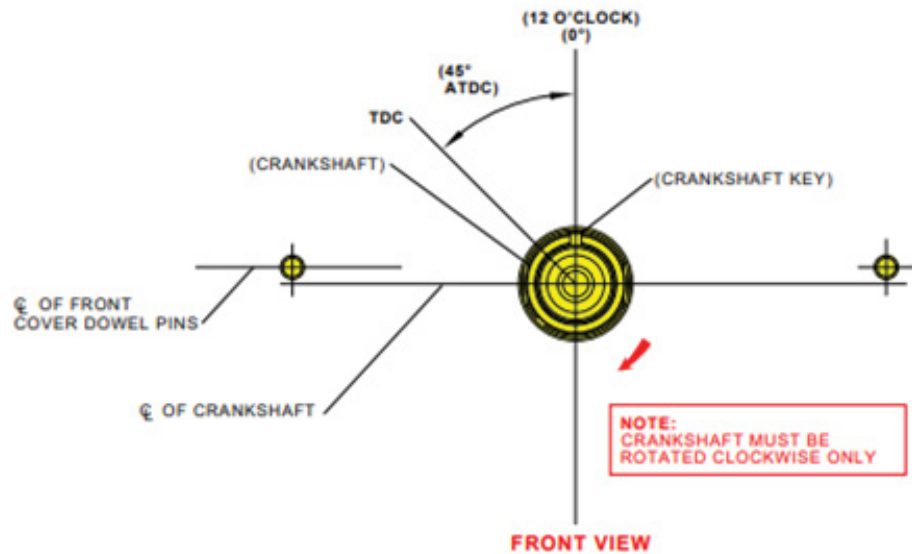
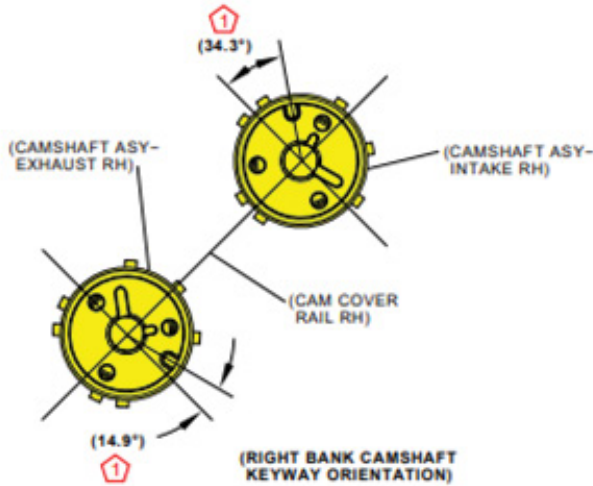
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CRANKSHAFT AND RH CAMSHAFT COMPONENTS (NEUTRAL POSITION)

NOTE:
CRANKSHAFT KEYWAY MUST BE CLOCKED AT (12 O'CLOCK 0° (44°-46° ATDC)).
CAMSHAFT D-SLOTS MUST BE CLOCKED RELATIVE TO CAM COVER RAIL AS SHOWN, PRIOR TO CAM DRIVE COMPONENTS RUNDOWN AND TIGHTENING.



NOTE:
CRANKSHAFT, CAMSHAFTS, PRIMARY SPROCKETS & CHAINS, MUST BE POSITIONED TO SPECIFICATION SHOWN, PRIOR TO FASTENER INSTALLATION AND PRELIMINARY RUNDOWN.

1 REPRESENTS APPROXIMATE CAMSHAFT KEYWAY POSITIONS WHEN CAMSHAFTS ARE IN TDC FIRING POSITION SHOWN.

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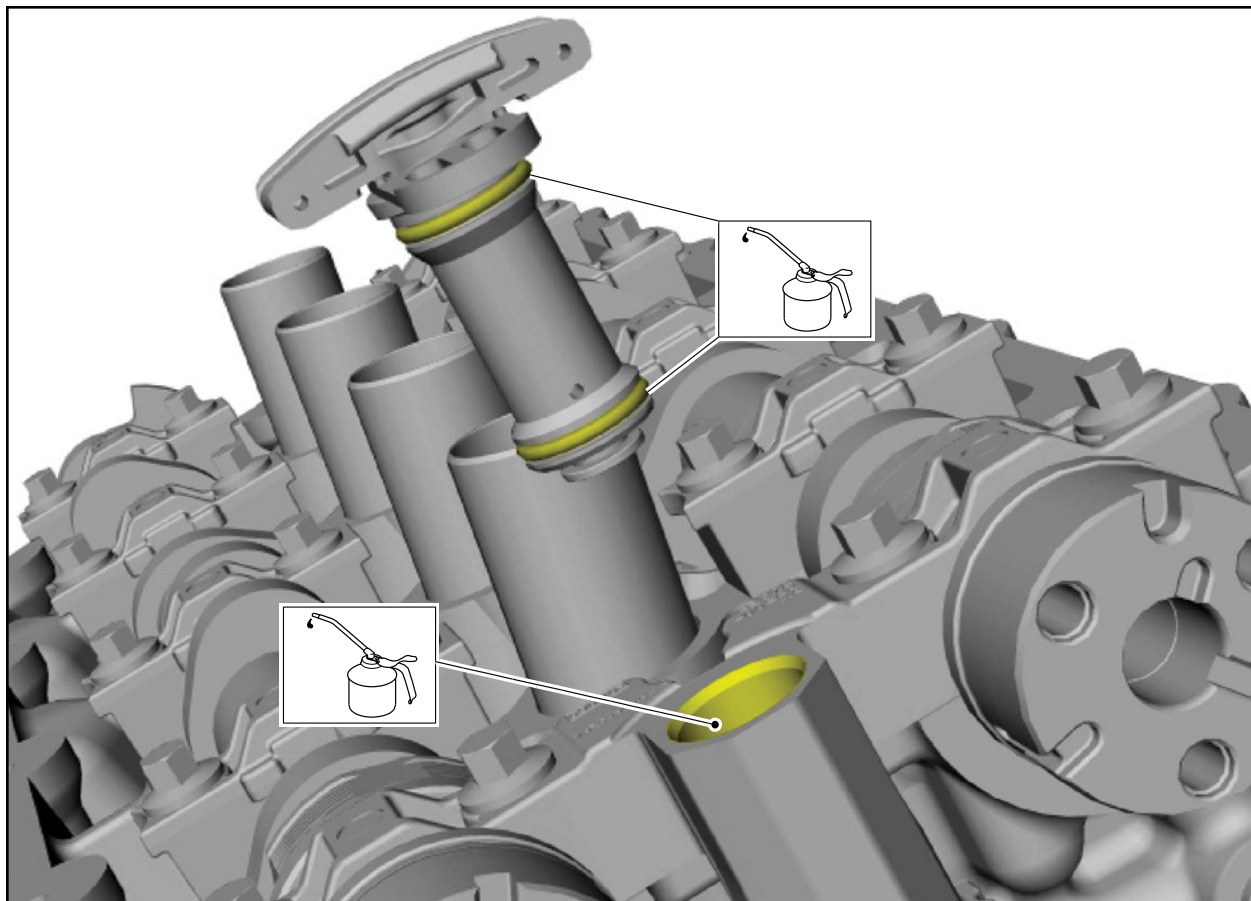
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NOTE: Do not remove the secondary timing chain tensioner shipping clip, until instructed to do so.

NOTE: The secondary timing chain tensioner and shoe are of a new design. The secondary timing chain tensioner is shorter than the previous design and does not extend through the bottom of the camshaft mega cap. The new design shoe has tabs that contact the front of the mega cap when installed.

Apply clean engine oil to the secondary timing chain tensioner O-ring seals and mega cap bore.



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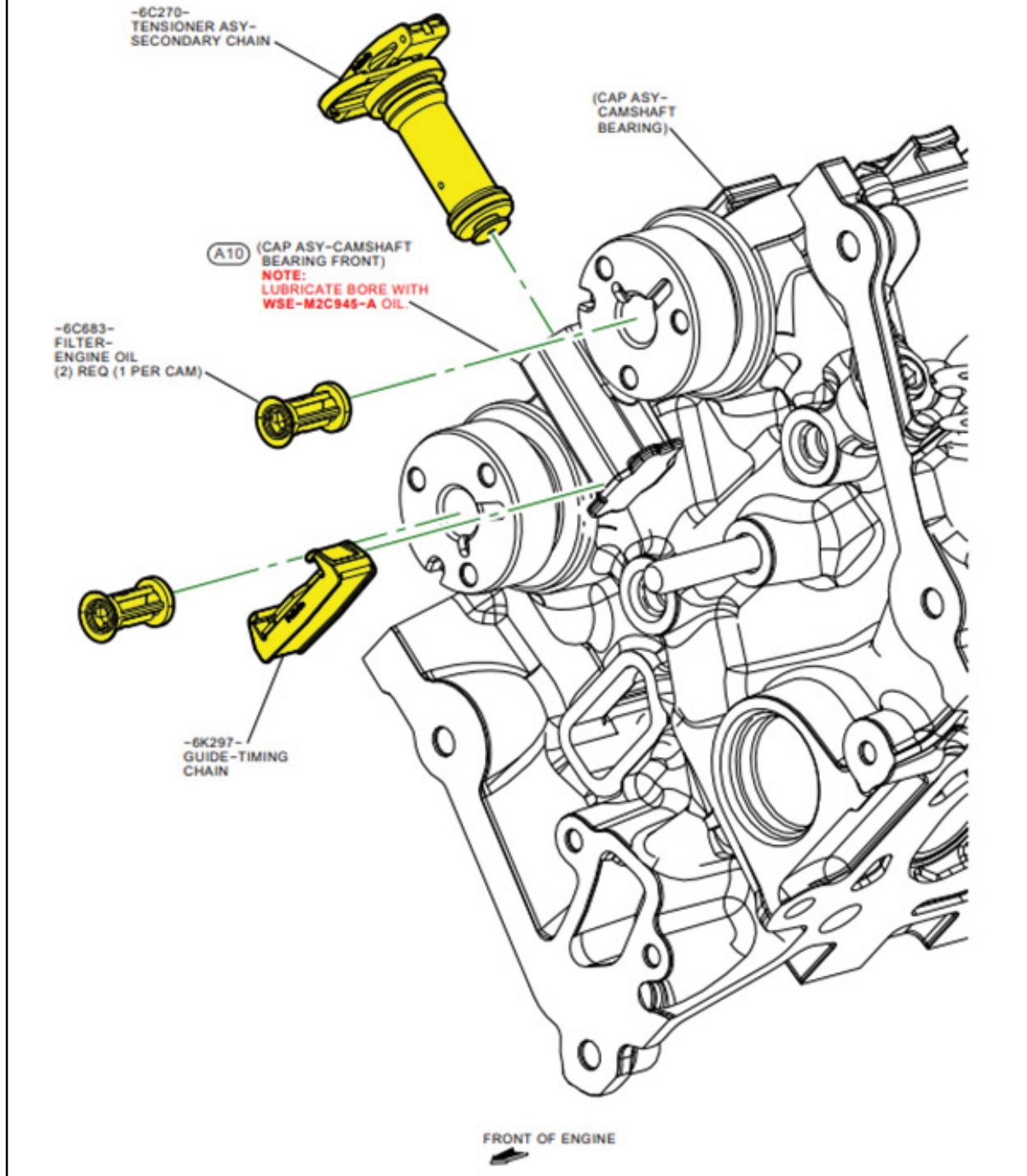


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SECONDARY CHAIN TENSIONER ASY RH, TIMING CHAIN GUIDE AND ENGINE OIL FILTER



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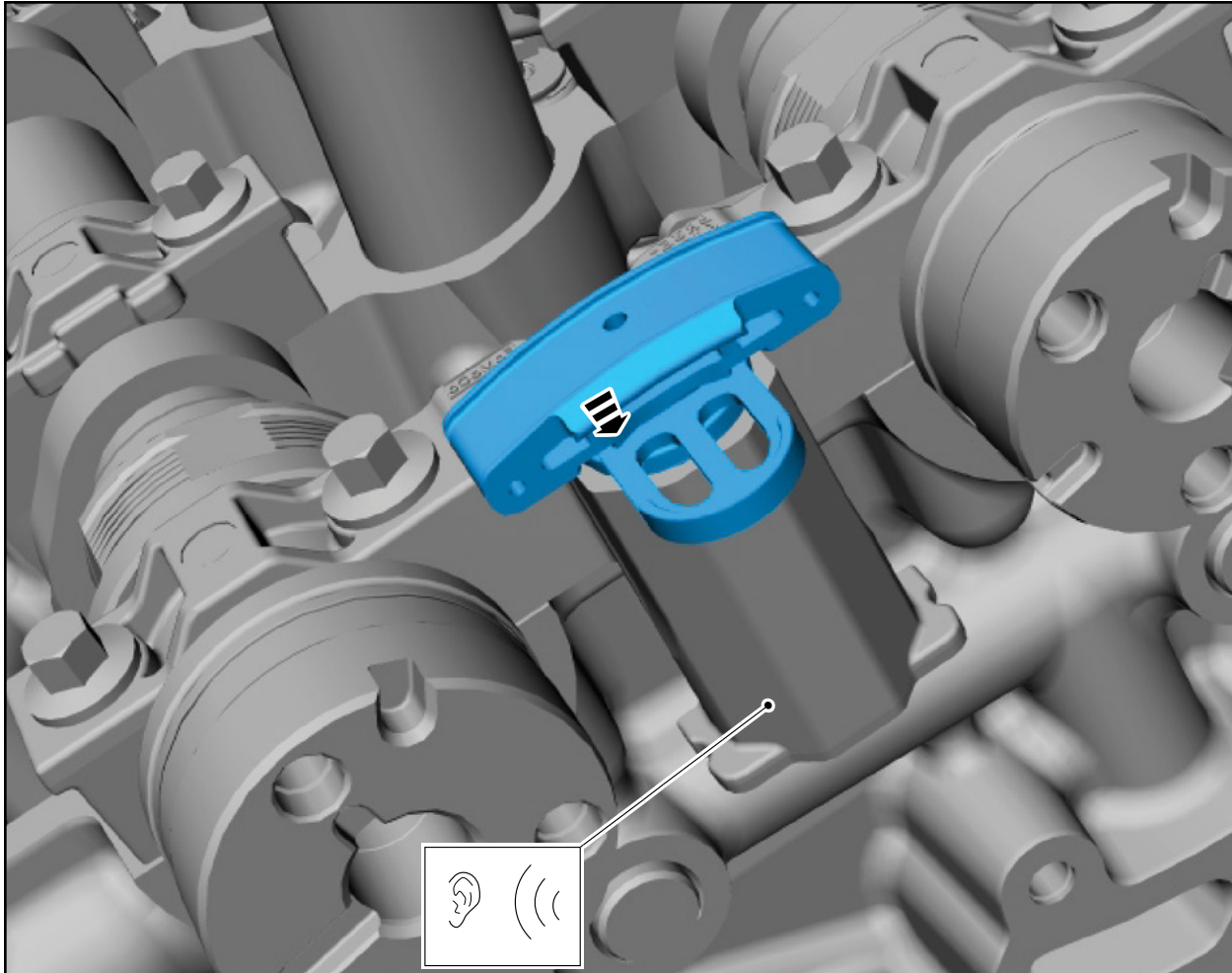


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Install the secondary timing chain tensioner by pushing it down all the way until a snap is heard and the tensioner is seated all the way down the mega cap bore.



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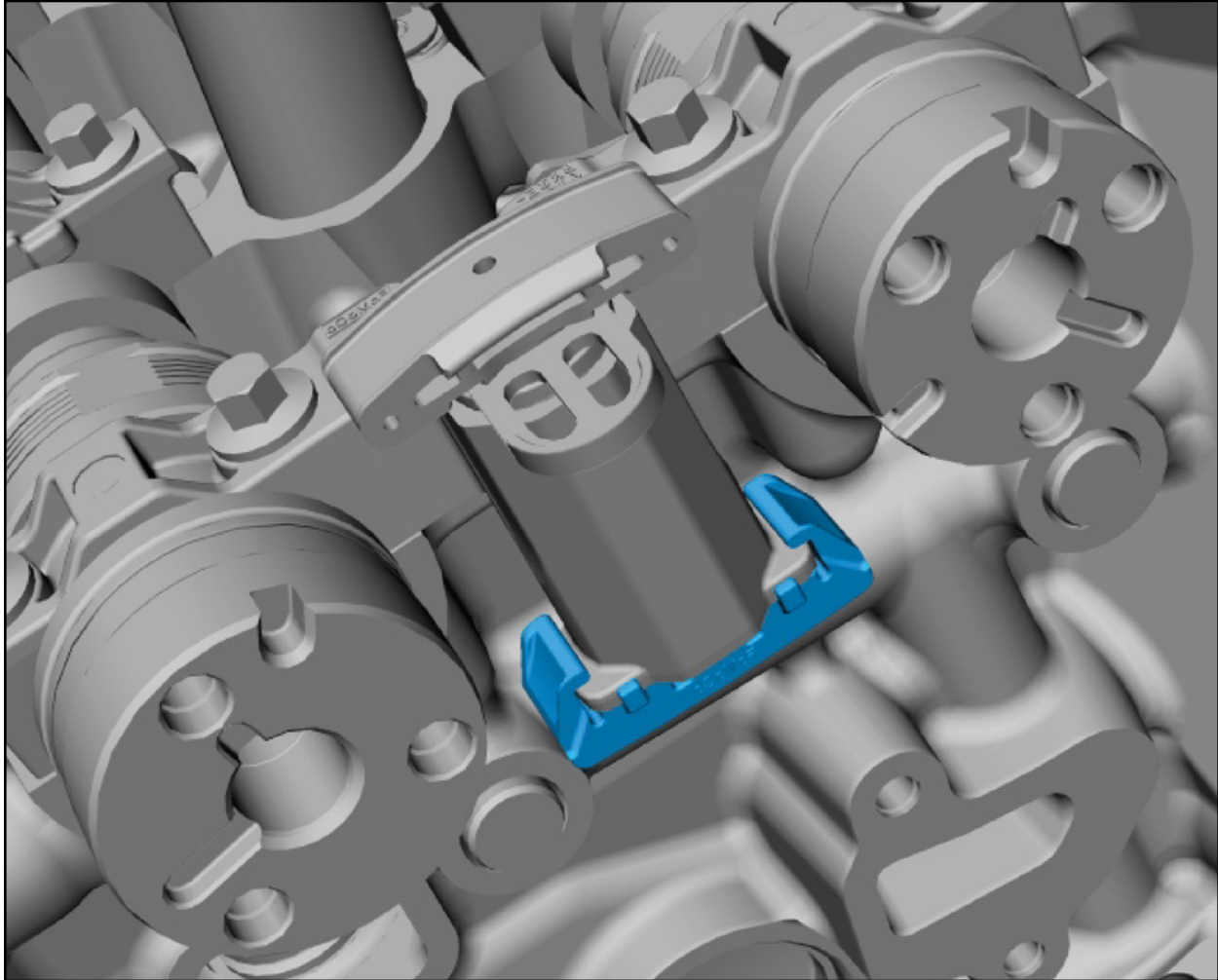


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Install the secondary timing chain tensioner shoe.



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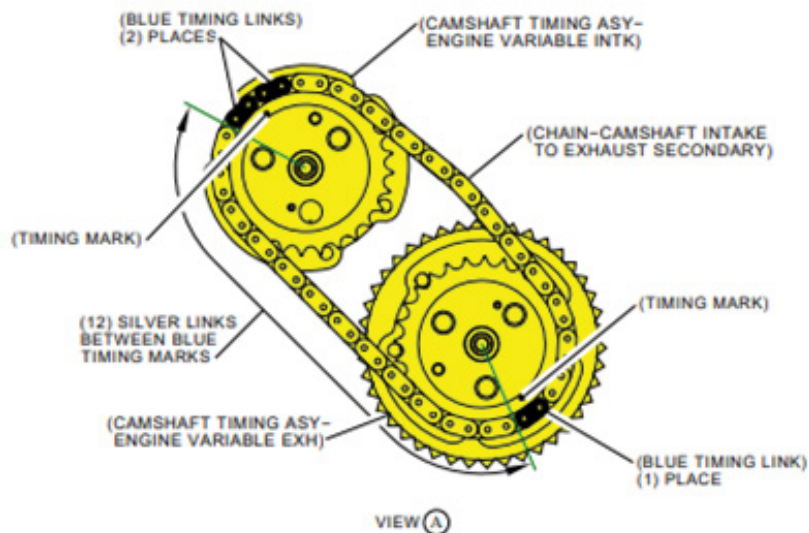
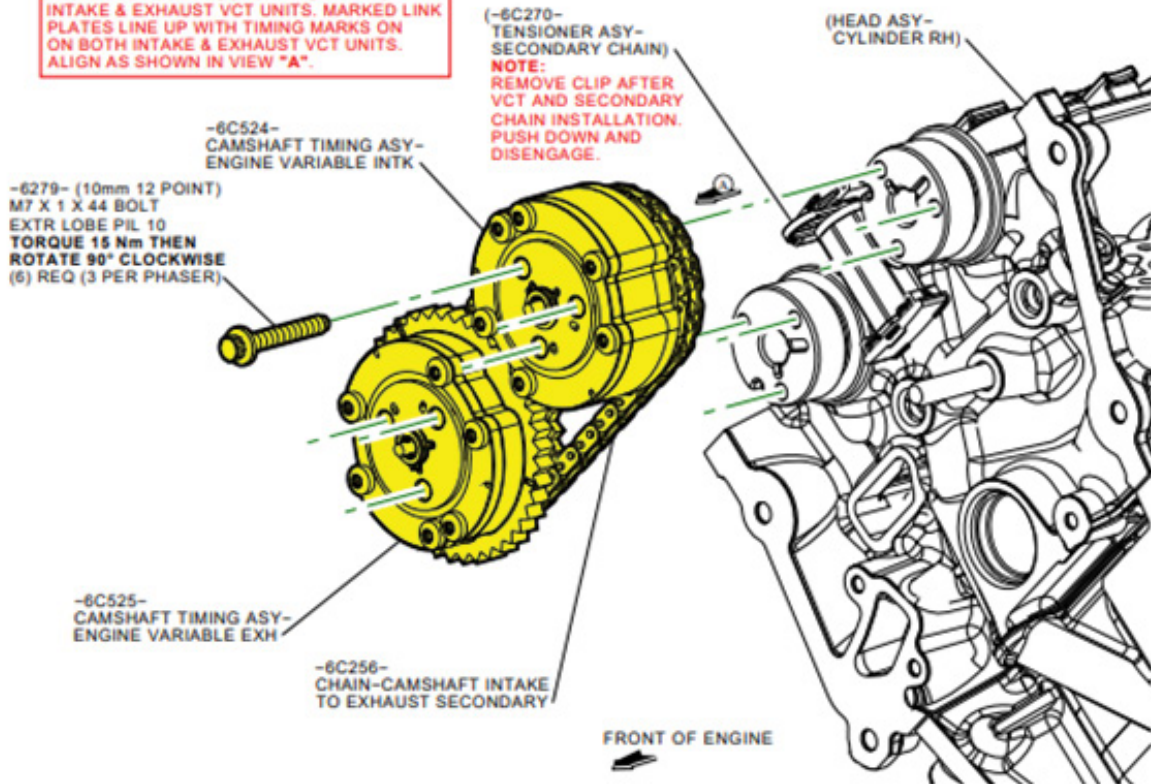
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RH SECONDARY CHAIN CAMSHAFT INTAKE TO EXHAUST AND ENGINE VARIABLE CAMSHAFT TIMING ASY

NOTE:
PRE-ASSEMBLE SECONDARY CHAIN TO INTAKE & EXHAUST VCT UNITS. MARKED LINK PLATES LINE UP WITH TIMING MARKS ON ON BOTH INTAKE & EXHAUST VCT UNITS. ALIGN AS SHOWN IN VIEW "A".



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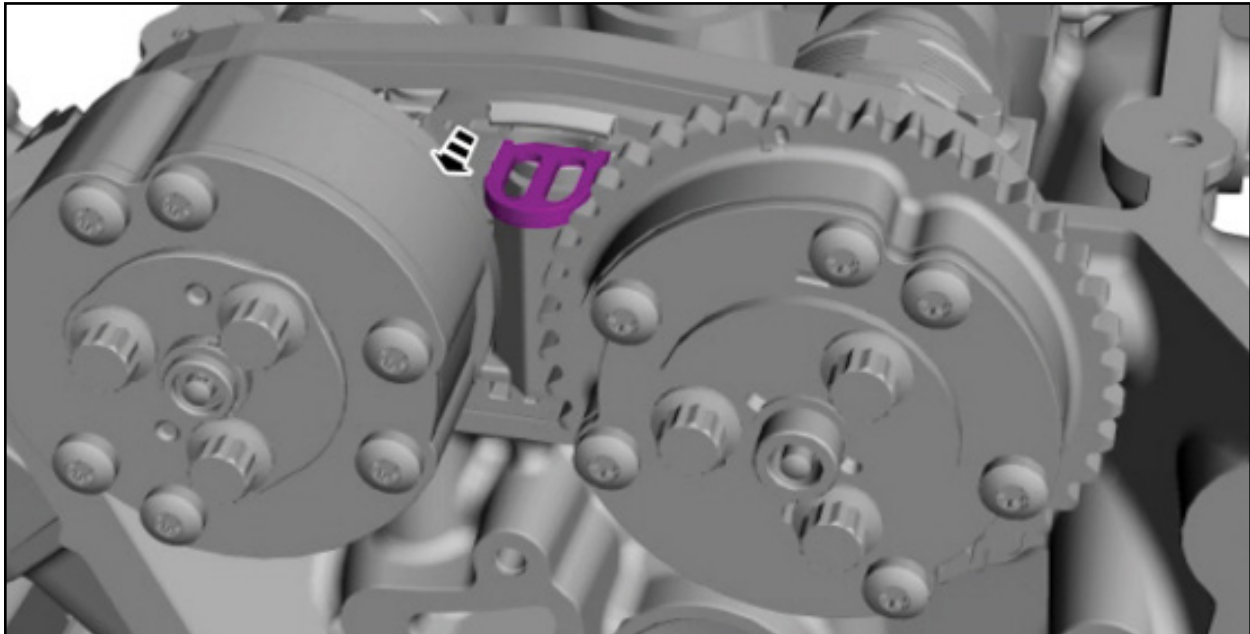


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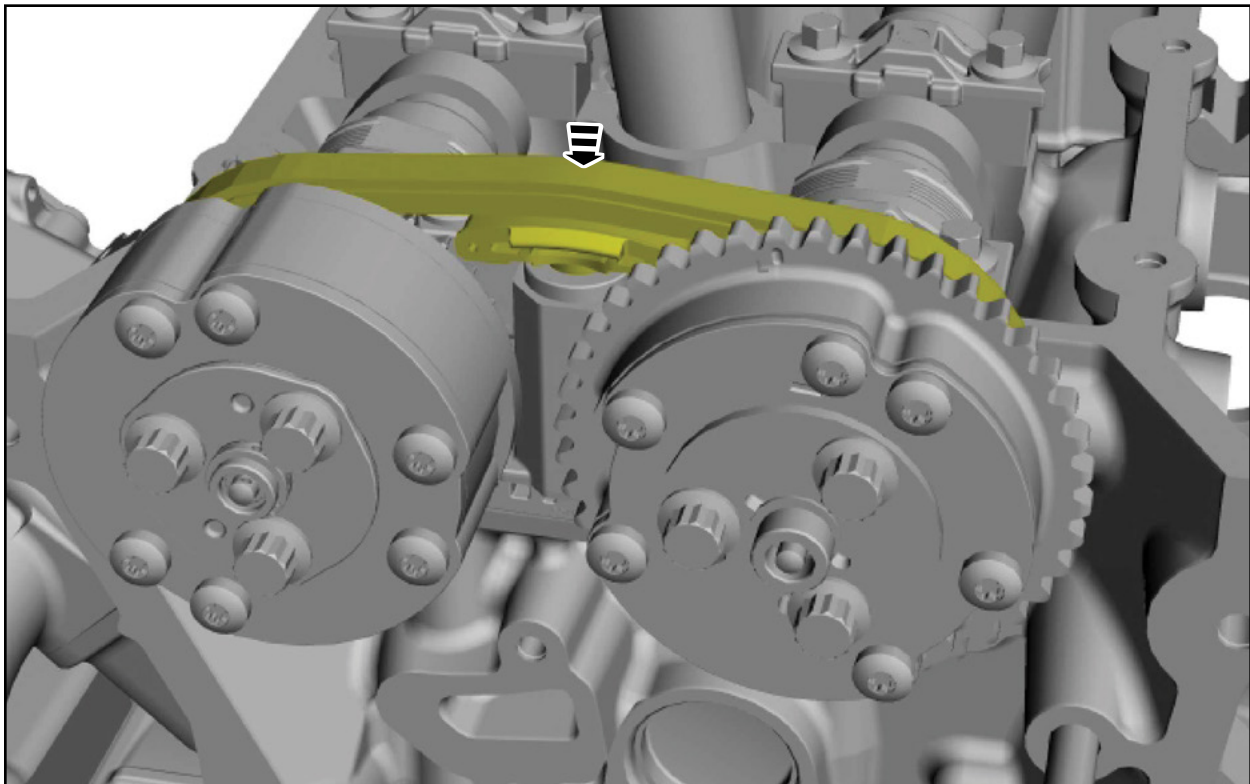
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Remove and discard the secondary timing chain tensioner shipping clip.



Activate the secondary timing chain tensioner by pressing down on the secondary timing chain and tensioner top shoe until it bottoms out, let go of the tensioner and it will spring up putting tension on the chain.



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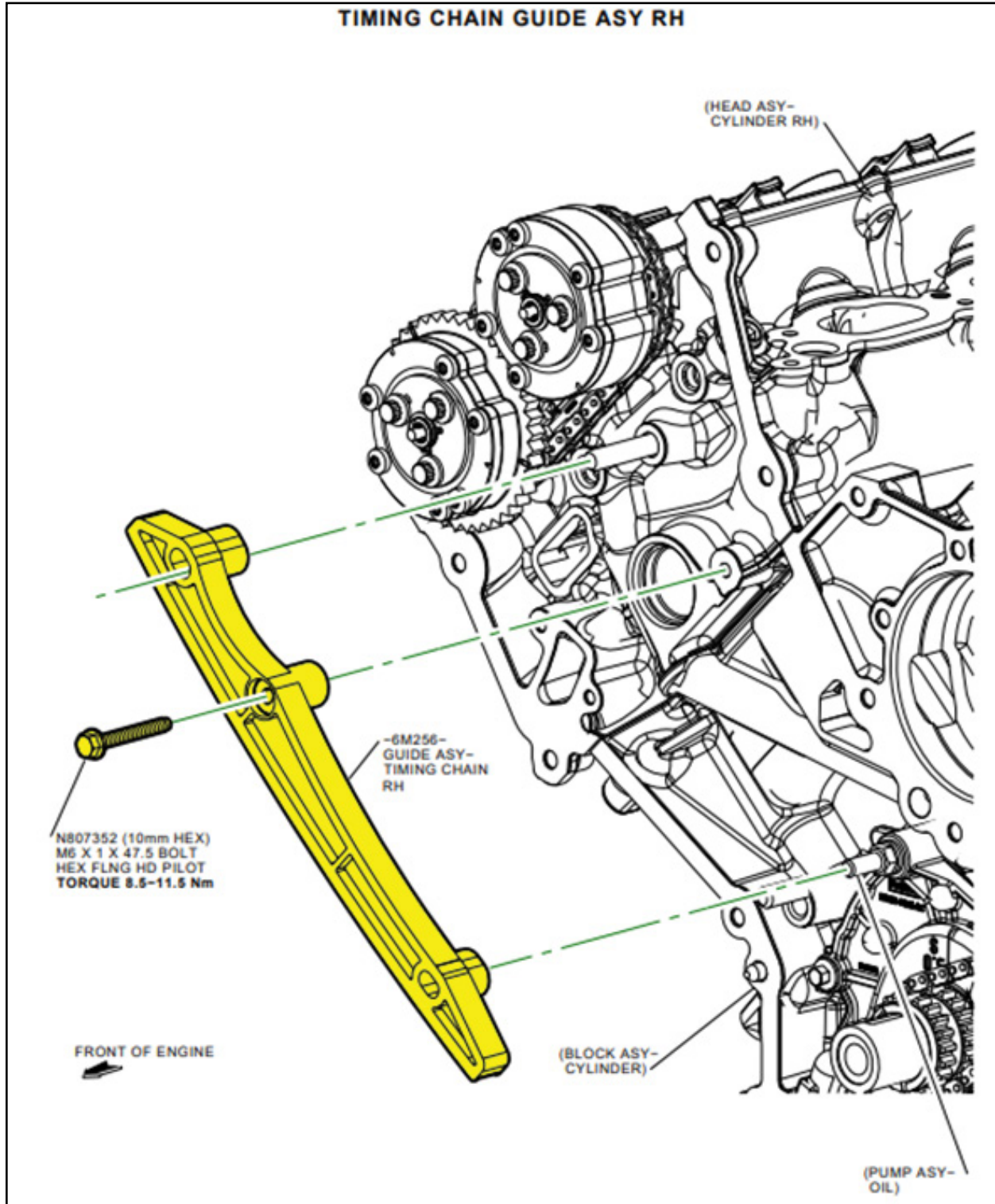


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TIMING CHAIN GUIDE ASY RH



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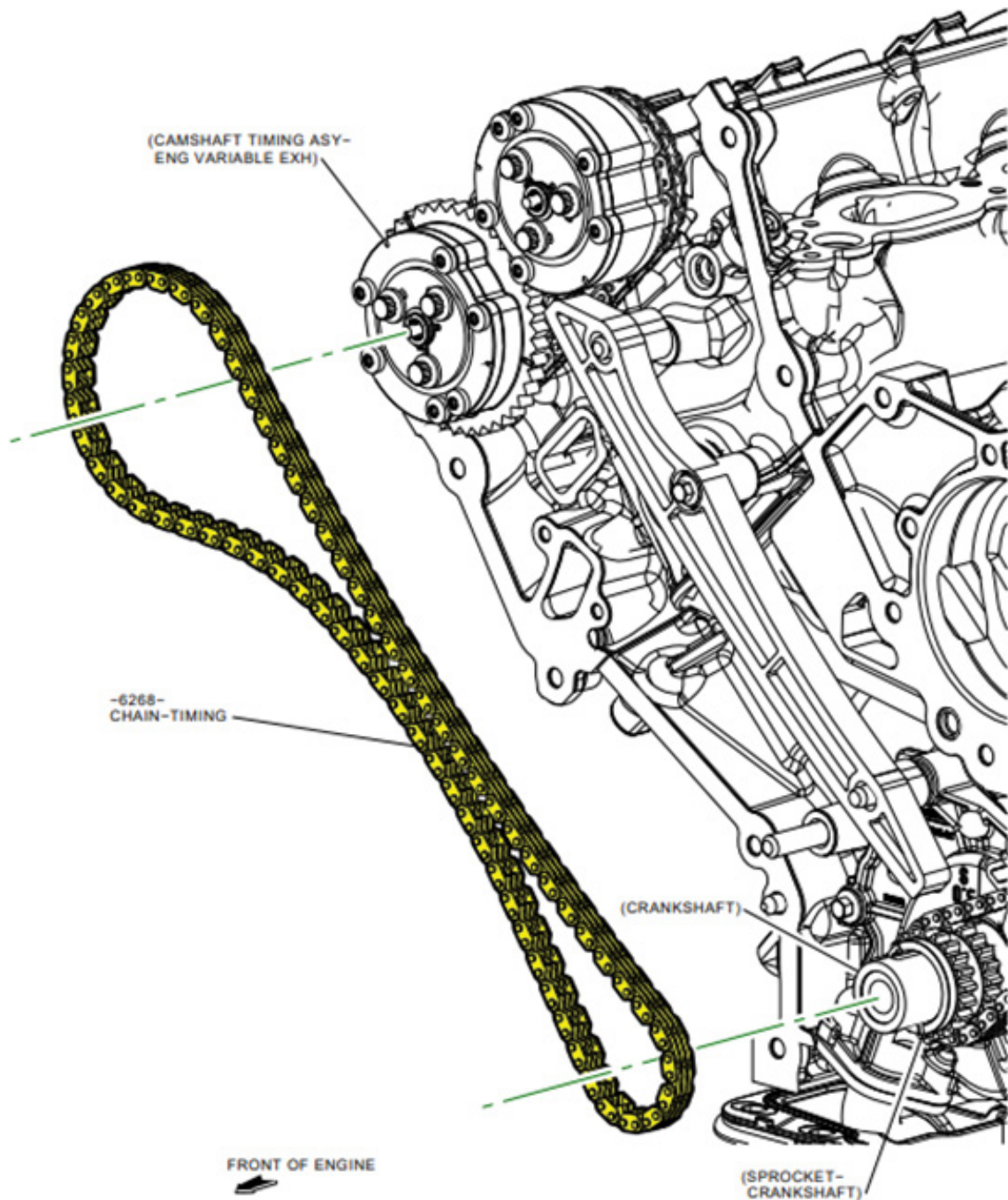


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TIMING CHAIN



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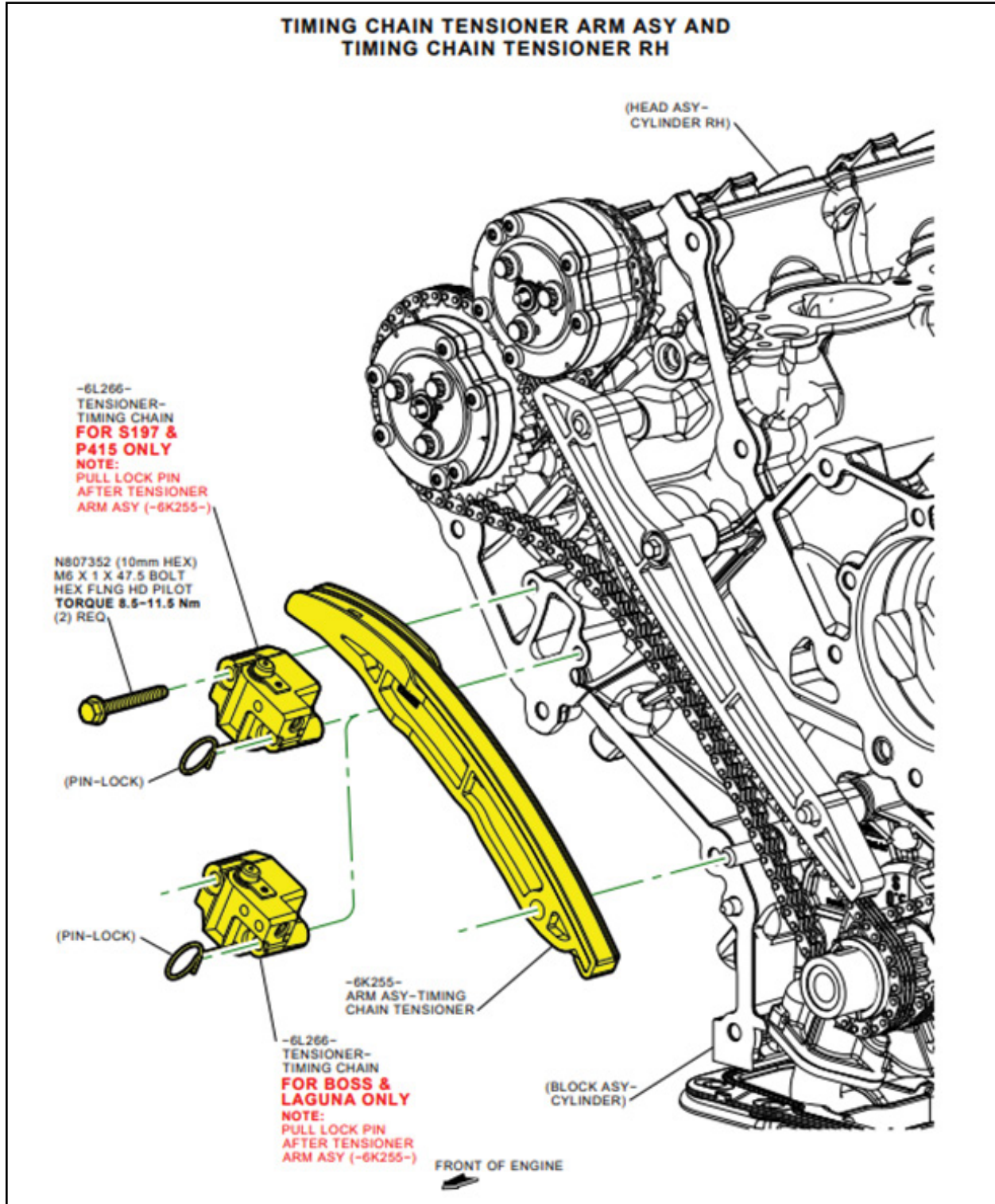


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**TIMING CHAIN TENSIONER ARM ASY AND
TIMING CHAIN TENSIONER RH**



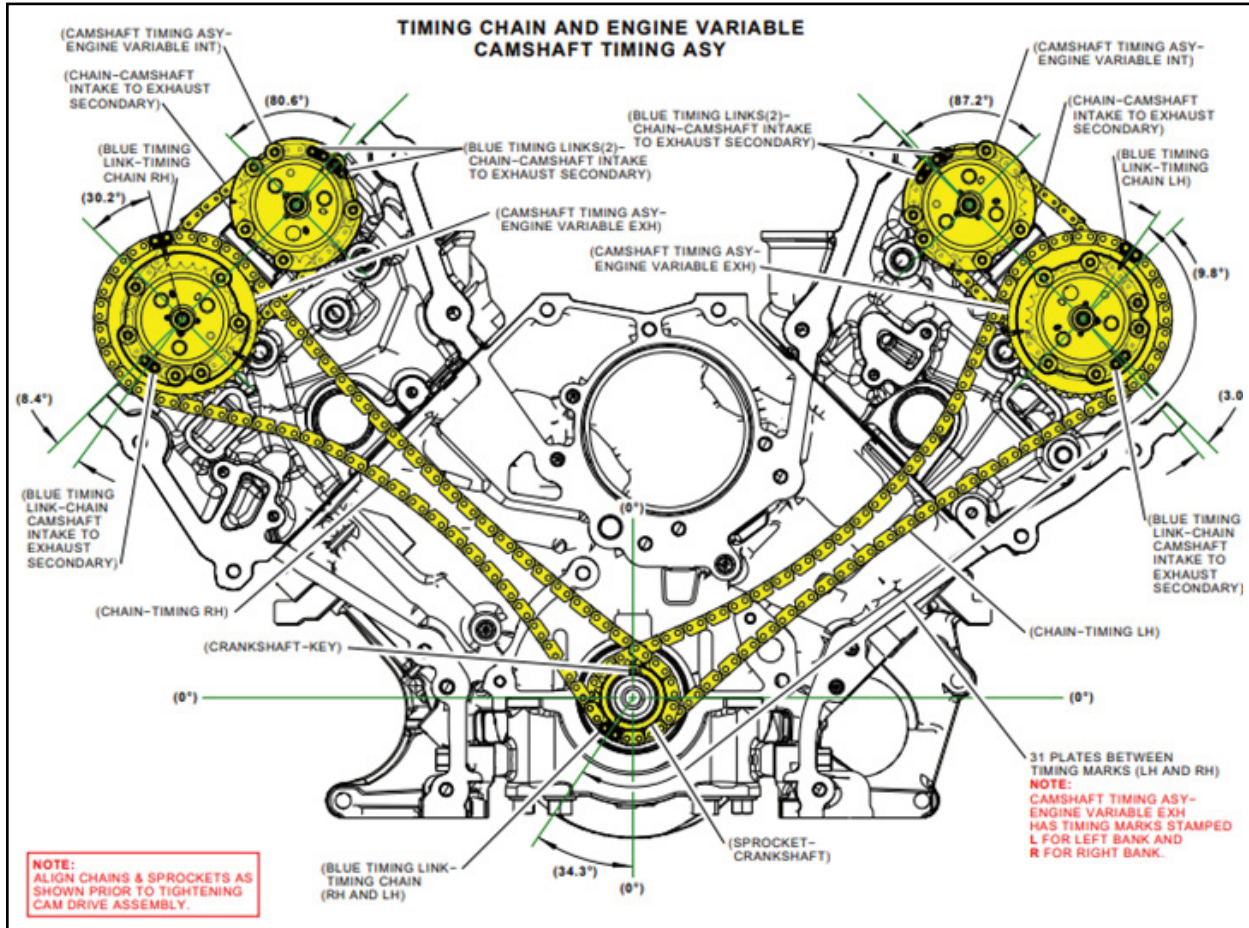
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