



# TECHNICAL SERVICE BULLETIN

## Upper Engine Ticking/Tapping Noise At Idle

**26-2256**

18 June 2026

This bulletin supersedes 25-2572. Reason for update: update the Parts List to correct the part number LC3Z-6006-L to LC3Z-6781-A, remove the flex plate bolts AL3Z-6379-BA from the parts list as these bolts are in kit LC3Z-6781-A, update the claim quantity of the part number W709771-S440 to 9 pieces (F-650/F750-Engine Replacement), W715068-S437 to 4 pieces, W712861-S439 to 8 pieces(F-Super Duty Pickup And Chassis Cab-Engine Replacement) / 8 pieces (F-53 Motorhome/F-59 Stripped Chassis Cab/F-650,F750 Engine Replacement) / W714286-S442 to 4 pieces (F-Super Duty Pickup And Chassis Cab-Camshaft and Tappet Repair / F-Super Duty Pickup And Chassis Cab-Engine Replacement), include 1 fuel injector seal kit to the Camshaft and Tappet repair lists, include 4 pieces of W520114-S440 to the E Series-Camshaft and Tappet Repair list, and update the engine oil part numbers XO-5W30-Q1SP and CXO-5W30-LSP6.

**Model:**

<b>Ford</b> 2021-2025 E-Series	Engine: 7.3L
2021-2025 F-650/F-750	Engine: 7.3L
2020-2025 F-53 Motorhome/F-59 Commercial Stripped Chassis	Engine: 7.3L
2020-2025 F-Super Duty	Engine: 6.8L (2023-2025) Engine: 7.3L

**Markets:** North American markets only

**Issue:** Some of the vehicles listed in the Model statement above may exhibit an upper engine ticking or tapping noise at idle. Customers may also report experiencing rough engine performance, engine misfire, or a MIL with DTCs P0301-P0308 in the PCM. This may be due to camshaft and/or valve tappet having excess wear within the engine assembly.

**Action:** For vehicles that meet all of the criteria in the Issue and Model statements, follow the Service Procedure to diagnose the vehicle.

**Parts - F-Super Duty Pickup And Chassis Cab - Camshaft And Tappet Repair**

Service Part Number	Claim Quantity	Description	Note
LC3Z-6250-D	1	Camshaft/Tappet Service Kit	
W715106-S439	2	Engine Mount Through Bolts	
W709771-S440	2	Transmission Mount Nuts	
DS7Z-19D690-A	1	Air Conditioning (A/C) Condenser Line Gasket and Seal O Ring	
W715131-S442	1	Transmission Cooler Bolt (10R Transmission Only)	
FOPZ-9229-A	1	Fuel Injector Seal Kit	1 Kit Includes 10 Seal O Rings
W714717-S439	2	Y Pipe To Muffler Bolts (Pickup Only)	

W719575-S900	2	Y Pipe To Muffler Bolts (Chassis Cab Only)	
W706447-S437	3	Power Steering Pump Bolt (2020-2022 Only)	
W715068-S437	4	Power Steering Pump Bolt (2023-2025 Only)	
W714286-S442	4	Exhaust Hanger Bolts (2023-2025 Only)	
F1AZ-6731-BD	1	Engine Oil Filter	
LC3Z-8C387-A	1	Front Timing Cover Gasket	
W716090-S437	4	Exhaust Manifold Heat Shield Bolts	
F1VY-8255-A	1	Thermostat Housing O-Ring Gasket	

**Parts - F-Super Duty Pickup And Chassis Cab - Engine Replacement**

Service Part Number	Claim Quantity	Description
6006	1	Engine Long Block - Refer To The Parts Catalog For The VIN Specific Application
LC3Z-6781-A	1	Engine Installation Service Kit
W715106-S439	2	Engine Mount Through Bolts
W709771-S440	2	Transmission Mount Nuts
DS7Z-19B596-A	1	Air Conditioning (A/C) Condenser Line Gasket And Seal O Ring
W712861-S439	8	Engine Support Insulator Bracket Bolt
W711336-S441	6	LH/RH Engine Support Insulator Bracket Nuts
W714717-S439	2	Y Pipe To Muffler Bolts (Pickup Only)
W719575-S900	2	Y Pipe To Muffler Bolts (Chassis Cab Only)
W706447-S437	3	Power Steering Pump Bolt (2020-2022 Only)
W715068-S437	4	Power Steering Pump Bolt (2023-2025 Only)
W714286-S442	4	Exhaust Hanger Bolts (2023-2025 Only)
LC3Z-12A227-A	1	Crankshaft Sensor Ring
W716090-S437	4	Exhaust Manifold Heat Shield Bolts

**Parts - E-Series - Camshaft And Tappet Repair**

Service Part Number	Claim Quantity	Description	Note
LC3Z-6250-D	1	Camshaft/Tappet Service Kit	
FOPZ-9229-A	1	Fuel Injector Seal Kit	1 Kit Includes 10 Seal O Rings
W520114-S440	4	LH/RH Engine Mount Nuts	
9W7Z-19B596-A	1	Air Conditioning (A/C) Condenser Gasket And Seal O Ring	
391308-S102	1	Transmission Dipstick Tube O-Ring	

W715068-S437	3	Power Steering Pump Bolt	
F1AZ-6731-BD	1	Engine Oil Filter	
LC3Z-8C387-A	1	Front Timing Cover Gasket	
W716090-S437	4	Exhaust Manifold Heat Shield	
F1VY-8255-A	1	Thermostat Housing O Ring Gasket	

#### Parts - E-Series - Engine Replacement

Service Part Number	Claim Quantity	Description	
6006	1	Engine Long Block - Refer To The Parts Catalog For The VIN Specific Application	
LC3Z-6781-A	1	Engine Installation Service Kit	
W715068-S437	3	Power Steering Pump Bolt (2023-2025 Only)	
9W7Z-19B596-A	2	Air Conditioning (A/C) Condenser O-Ring	
391308-S102	1	Transmission Dipstick O-Ring	
W520114-S440	4	LH/RH Engine Mount Nut	
N807479-S102	2	Transmission Support Mount Nut	
BC2Z-3F887-A	1	Power Steering O-Ring	
N807218-S441	8	Engine Mount Bolt	
W714735-S439	8	Engine Mount Bolt	
LC3Z-12A227-A	1	Crankshaft Sensor Ring	
W716090-S437	4	Exhaust Manifold Heat Shield Bolts	

#### Parts - F-650/F-750 - Camshaft And Tappet Repair

Service Part Number	Claim Quantity	Description	Note
LC3Z-6250-D	1	Camshaft/Tappet Service Kit	
W715106-S439	2	Engine Mount Through Bolts	
W709771-S440	9	Transmission Mount Nut	
9W7Z-19B596-A	2	Air Conditioning Condenser Line Gasket and Seal O Ring	
391308-S102	1	Transmission Dipstick Seal O Ring	
FOPZ-9229-A	1	Fuel Injector Seal Kit	1 Kit Includes 10 Seal O Rings
W716090-S437	4	Exhaust Manifold Heat Shield Bolts	
F1VY-8255-A	1	Engine Thermostat Housing O-Ring Gasket	
F1AZ-6731-BD	1	Engine Oil Filter	
LC3Z-8C387-A	1	Front Cover Gasket	

**Parts - F-650/F-750 - Engine Replacement**

Service Part Number	Claim Quantity	Description
6006	1	Engine Long Block - Refer To The Parts Catalog For The VIN Specific Application
LC3Z-6781-A	1	Engine Installation Service Kit
9W7Z-19B596-A	2	Air Conditioning (A/C) Condenser Line Gasket And Seal O Ring
391308-S102	1	Transmission Dipstick O-Ring
LC3Z-12A227-A	1	Crankshaft Sensor Ring
W716090-S437	4	Exhaust Manifold Heat Shield Bolts
W715106-S439	2	Engine Mount Through Bolts
W712861-S439	8	Engine Support Insulator Bracket Bolts
W709771-S440	9	LH/RH Engine Mount Bracket/Transmission Support insulator nuts

**Parts - F-53 Motorhome/F-59 Stripped Chassis Cab - Camshaft And Tappet Repair**

Service Part Number	Claim Quantity	Description	Note
LC3Z-6250-D	1	Camshaft/Tappet Service Kit	
W715106-S439	2	Engine Mount Through Bolts	
W709771-S440	2	Transmission Mount Nuts	
FOPZ-9229-A	1	Fuel Injector Seal Kit	1 Kit Includes 10 Seal O rings
1W1Z-19E889-BB	1	Air Conditioning Condenser Line O Rings	1 Kit Includes 6 Seal O Rings
F1AZ-6731-BD	1	Engine Oil Filter	
LC3Z-8C387-A	1	Front Timing Cover Gasket	
W716090-S437	4	Exhaust Manifold Heat Shield Bolts	
F1VY-8255-A	1	Thermostat Housing O-Ring Gasket	

**Parts - F-53 Motorhome/F-59 Stripped Chassis Cab - Engine Replacement**

Service Part Number	Claim Quantity	Description
6006	1	Engine Long Block - Refer To The Parts Catalog For The VIN Specific Application
LC3Z-6781-A	1	Engine Installation Service Kit
W715106-S439	2	Engine Mount Through Bolts
W709771-S440	2	Transmission Mount Nuts
W712861-S439	8	Engine Support Insulator Bracket Bolts
W711336-S441	6	Engine Mount To Chassis Nuts
1W1Z-19E889-BB	1	Air Conditioning Condenser Line Gasket And Seal O Ring

LC3Z-12A227-A	1	Crankshaft Sensor Ring
W716090-S437	4	Exhaust Manifold Heat Shield Bolts

**Parts - All Vehicles - Parts To Inspect And Replace Only If Necessary**

Service Part Number	Claim Quantity	Description	Note
LC3Z-8507-A	Only If Necessary (Up To 1)	Water Pump Gasket	All Vehicles Except F-Super Duty, 7.3L Engine Only
PC3Z-8507-A	Only If Necessary (Up To 1)	Water Pump Gasket	F-Super Duty, 6.8/7.3L Engine
F2AZ-6397-A	Only If Necessary (Up To 4)	Engine Dowel Pins	6.8/7.3L Engine
5L7Z-7D285-A	Only If Necessary (Up To 2)	Transmission Cooler Seals	6R140 Only
5L7Z-7J324-A	Only If Necessary (Up To 2)	Transmission Cooler Line Seals	F-Super Duty 6.8/7.3L
LC3Z-12286-D	Only If Necessary (Up To 8)	Ignition Spark Plug Wire	All Vehicles
W717468-S439	Only If Necessary (per arrangement)	Bumper/Grill Stud Fastener	

**Parts - All Vehicles - Chemicals And Lubricants**

Service Part Number	Claim Quantity	Description	Note
VC-13-G	As Needed	Motorcraft® Yellow Concentrated Antifreeze/Coolant (All Markets Except Canada)	
CVC-13-G	As Needed	Motorcraft® Yellow Concentrated Antifreeze/Coolant (Canada Only)	
XO-5W30-Q1SP	As Needed	Motorcraft® SAE 5W-30 Synthetic Blend Motor Oil	All Markets Except Canada
CXO-5W30-LSP6	As Needed	Motorcraft® SAE 5W-30 Super Premium Motor Oil	Canada Only
PM-4-A	As Needed	Motorcraft® Brake Parts Cleaner - Volatile Organic Compound (VOC) Compliant (All Markets Except Canada)	
PM-4-B	As Needed	Motorcraft® Metal Brake Parts Cleaner (Not Compliant With Low Volatile Organic Compound Requirements) (All Markets Except Canada)	
CPM-4-A	As Needed	Motorcraft® Brake Parts Cleaner - Volatile Organic Compound (VOC) Compliant (Canada Only)	
XL-5-A	As Needed	Motorcraft® Multi-Purpose Grease Spray	
TA-357	As Needed	Motorcraft® High Performance Engine RTV Silicone	
ZC-30-A	As Needed	Motorcraft® Silicone Gasket Remover	
ZC-20	As Needed	Motorcraft® Engine Shampoo and Degreaser	
ZC-31-B	As Needed	Motorcraft® Metal Surface Prep Wipes	
XL-22	As Needed	Motorcraft® High Temperature Power Steering Fluid	

XT-12-QULV	As Needed	Motorcraft® MERCON® ULV Automatic Transmission Fluid	10R100, 10R140 Transmissions
XT-10-QLVC	As Needed	Motorcraft® MERCON® LV Automatic Transmission Fluid	6R100, 6R140 Transmissions
YN-12-D	As Needed	Motorcraft® PAG Refrigerant Compressor Oil	

**NOTE: All other parts instructed by the WSM to inspect and replace as necessary should be claimed outside of this article**

**Claim Quantity** refers to the total number of individual pieces required to repair the vehicle. This may differ from the number of service part number packages due to the unit of issue (UOI).

**As Needed** indicates the part is necessary but amount of the part may vary and/or is not a whole number. Parts can be billed out as non-whole numbers, including less than 1.

**Only If Necessary** indicates the part is not mandatory. Refer to the Service Procedure to determine the inspection/inclusion criteria.

**Warranty Status:** Warranty coverage limits and policies are not altered by a TSB. Warranty coverage limits are determined by the identified causal part.

#### Labor Times

Description	Operation No.	Time
2021-2025 E-Series 7.3L: Retrieve DTCs, Perform Cylinder Balance, Swap Plug, Wire and Coil (Fail) Complete Repair Outside Of This Article	262256A	0.7 Hrs
2021-2025 E-Series 7.3L: Retrieve DTCs, Perform Cylinder Balance, Swap Plug, Wire and Coil (Pass) Using Scan Tool Cancel Cylinders, Remove And Inspect Oil Filter (Pass), Remove Cylinder Heads And Inspect Camshaft And Tappets And Engine Block Cylinder Walls (Pass), Re-assemble Vehicle (Do Not Use With Any Other Labor Operations)	262256B	10.4 Hrs
2021-2025 E-Series 7.3L: Retrieve DTCs, Perform Cylinder Balance, Swap Plug, Wire and Coil (Pass) Using Scan Tool Cancel Cylinders, Remove And Inspect Oil Filter (Fail), Replace Engine Long Block (Do Not Use With Any Other Labor Operations)	262256C	18.0 Hrs
2021-2025 E-Series 7.3L: Retrieve DTCs, Perform Cylinder Balance, Swap Plug, Wire and Coil (Pass) Using Scan Tool Cancel Cylinders, Remove And Inspect Oil Filter (Pass), Remove Cylinder Heads And Inspect Camshaft And Tappets And Engine Block Cylinder Walls, Replace Camshaft And All Valve Tappets (Do Not Use With Any Other Labor Operations)	262256D	18.5 Hrs
2021-2025 E-Series 7.3L: Retrieve DTCs, Perform Cylinder Balance, Swap Plug, Wire and Coil (Pass) Using Scan Tool Cancel Cylinders, Remove And Inspect Oil Filter (Pass), Remove Cylinder Heads And Inspect Camshaft And Tappets And Engine Block Cylinder Walls Replace Engine Long Block (Do Not Use With Any Other Labor Operations)	262256E	20.9 Hrs
2020-2025 F-Super Duty: Retrieve DTCs, Perform Cylinder Balance, Swap Plug, Wire and Coil (Fail). Complete Repair Outside Of This Article (Do Not Use With Any Other Labor Operations Outside Of This Article)	262256F	0.6 Hrs
2020-2025 F-Super Duty: Retrieve DTCs, Perform Cylinder Balance, Swap Plug, Wire and Coil (Pass) Using Scan Tool Cancel Cylinders, Remove And Inspect Oil Filter (Pass) Remove Cylinder Heads And Inspect Camshaft And Tappets And Engine Block Cylinder Walls (Pass) Re-assemble Vehicle (Can Be Claimed With L)	262256G	9.6 Hrs
2020-2025 F-Super Duty: Retrieve DTCs, Perform Cylinder Balance, Swap Plug, Wire and Coil (Pass) Using Scan Tool Cancel Cylinders, Remove And Inspect Oil Filter (Fail) Replace Engine Long Block (Can Be Claimed With L)	262256H	16.6 Hrs
2020-2025 F-Super Duty: Retrieve DTCs, Perform Cylinder Balance, Swap Plug, Wire and Coil (Pass) Using Scan Tool Cancel Cylinders, Remove And Inspect Oil Filter (Pass), Remove Cylinder Heads And Inspect Camshaft And Tappets And	262256J	20.9 Hrs

Engine Block Cylinder Walls, Replace Camshaft And all Valve Tappets (Do Not Use With Any Other Labor Operations Outside Of This Article)		
2020-2025 F-Super Duty: Retrieve DTCs, Perform Cylinder Balance, Swap Plug, Wire and Coil (Pass) Using Scan Tool Cancel Cylinders, Remove And Inspect Oil Filter (Pass), Remove Cylinder Heads And Inspect Camshaft And Tappets And Engine Block Cylinder Walls, Replace Engine Long Block (Do Not Use With Any Other Labor Operations Outside Of This Article)	262256K	19.4 Hrs
2020-2025 F-Super Duty: Additional Time To Perform 360 Degree Camera Alignment If Equipped (Can Be Claimed With Operations G and H)	262256L	0.5 Hrs
2020-2025 F-53 Motorhome Chassis / F-59 Commercial Stripped Chassis: Retrieve DTCs, Perform Cylinder Balance, Swap Plug, Wire and Coil (Fail) Complete Repair Outside Of This Article	MT262256M	Actual Time Up To 0.7 Hrs
2020-2025 F-53 Motorhome Chassis / F-59 Commercial Stripped Chassis: Retrieve DTCs, Perform Cylinder Balance, Swap Plug, Wire and Coil (Pass) Using Scan Tool Cancel Cylinders, Remove And Inspect Oil Filter (Pass) Remove Cylinder Heads And Inspect Camshaft And Tappets And Engine Block Cylinder Walls (Pass), Re-assemble Vehicle (Do Not Use With Any Other Labor Operations)	MT262256N	Actual Time Up To 10.7 Hrs
2020-2025 F-53 Motorhome Chassis / F-59 Commercial Stripped Chassis: Retrieve DTCs, Perform Cylinder Balance, Swap Plug, Wire and Coil (Pass) Using Scan Tool Cancel Cylinders, Remove And Inspect Oil Filter (Fail), Replace Engine Long Block	MT262256P	Actual Time Up To 17.6 Hrs
2020-2025 F-53 Motorhome Chassis / F-59 Commercial Stripped Chassis: Retrieve DTCs, Perform Cylinder Balance, Swap Plug, Wire and Coil (Pass) Using Scan Tool Cancel Cylinders, Remove And Inspect Oil Filter (Pass), Remove Cylinder Heads And Inspect Camshaft And Tappets And Engine Block Cylinder Walls, Replace Camshaft And all Valve Tappets	MT262256Q	Actual Time Up To 22.2 Hrs.
2020-2025 F-53 Motorhome Chassis / F-59 Commercial Stripped Chassis: Retrieve DTCs, Perform Cylinder Balance, Swap Plug, Wire and Coil (Pass) Using Scan Tool Cancel Cylinders, Remove And Inspect Oil Filter (Pass), Remove Cylinder Heads And Inspect Camshaft And Tappets And Engine Block Cylinder Walls, Replace Engine Long Block	MT262256R	Actual Time Up To 20.4 Hrs
2021-2025 F650/F-750 - Retrieve DTCs, Inspect Ignition Coil Wires And Spark Plugs For Damage (Fail), Complete Repair Outside Of This Article	MT262256S	Actual Time Up To 0.7 Hrs
2021-2025 F650/F-750 - Retrieve DTCs, Perform Cylinder Balance, Swap Plug, Wire and Coil (Pass) Using Scan Tool Cancel Cylinders, Remove And Inspect Oil Filter (Pass), Remove Cylinder Heads And Inspect Camshaft And Tappets And Engine Block Cylinder Walls (Pass), Re-assemble Vehicle (Do Not Use With Any Other Labor Operations)	MT262256T	Actual Time Up To 10.2 Hrs
2021-2025 F650/F-750 - Retrieve DTCs, Perform Cylinder Balance, Swap Plug, Wire and Coil (Pass) Using Scan Tool Cancel Cylinders, Remove And Inspect Oil Filter (Fail), Replace Engine Long Block	MT262256U	Actual Time Up To 15.0 Hrs
2021-2025 F650/F-750 - Retrieve DTCs, Perform Cylinder Balance, Swap Plug, Wire and Coil (Pass) Using Scan Tool Cancel Cylinders, Remove And Inspect Oil Filter (Pass), Remove Cylinder Heads And Inspect Camshaft And Tappets And Engine Block Cylinder Walls, Replace Camshaft And all Valve Tappets	MT262256V	Actual Time Up To 23.2 Hrs
2021-2025 F650/F-750 - Retrieve DTCs, Perform Cylinder Balance, Swap Plug, Wire and Coil (Pass) Using Scan Tool Cancel Cylinders, Remove And Inspect Oil Filter (Pass), Remove Cylinder Heads And Inspect Camshaft And Tappets And Engine Block Cylinder Walls, Replace Engine Long Block	MT262256W	Actual Time Up To 21.4 Hrs
All vehicles: For Long Block Replacement Only – Prior Approval	262256X	0.3 Hrs

### Repair/Claim Coding

Causal Part:	6500
Condition Code:	42

## Service Procedure

1. Is there an upper end engine tapping/ticking noise present at idle?

- (1). Yes - proceed to Step 2.
- (2). No - this article does not apply. Refer to the WSM for normal diagnostics.

2. For misfire DTCs P0301-P0308, use the FDRS scan tool to perform a cylinder power balance test to identify the suspect cylinder that is exhibiting a misfire. Refer to WSM, Section 303-07. Is there an active cylinder misfire present?

- (1). Yes - proceed to Step 3.
- (2). No - proceed to Step 4.

3. Swap the spark plug, the spark plug wire and the ignition coil on the identified cylinder with a known good cylinder. Does the misfire follow the ignition components to the new cylinder?

- (1). Yes - this article does not apply. Refer to WSM, Section 303-07.
- (2). No - proceed to Step 4.

4. Can the noise be isolated to a specific cylinder using the FDRS scan tool to cancel out cylinders and/or an engine stethoscope?

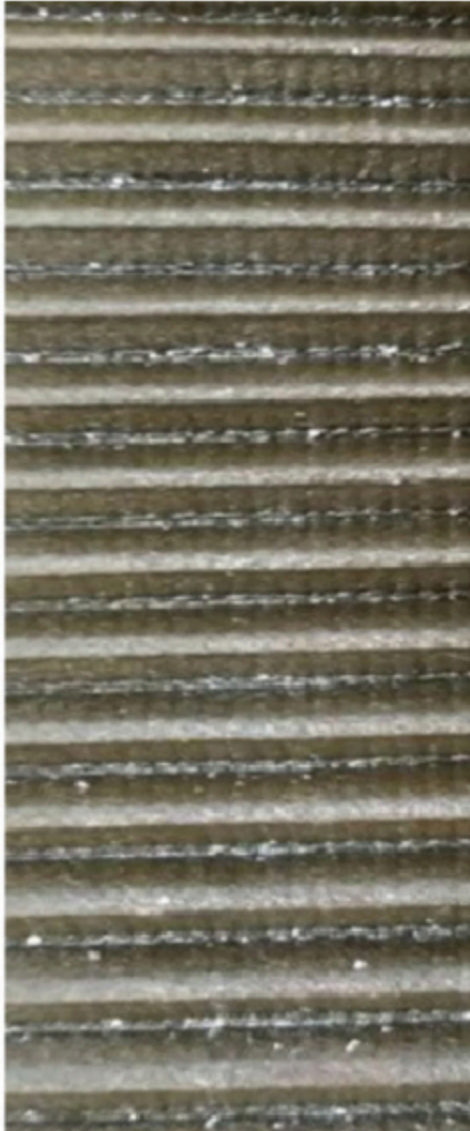
- (1). Yes - proceed to Step 5.
- (2). No - this article does not apply. Refer to the WSM for normal diagnostics.

5. Remove the engine oil filter.

**NOTE: For U.S. and Canadian vehicles which are LTIS program eligible the dealer has the option to continue with this TSB repair or replace the long block assembly under the LTIS program. Those repairs outside of LTIS eligibility and still under New Vehicle Limited Warranty (NVLW), the completion of the procedure outlined in this TSB requires obtaining Prior Approval for long block assembly. This TSB does not require completion of a Cost Cap.**

6. Open the oil filter assembly and separate the oil filter element to expand out on a flat surface. Refer to WSM, Section 303-00, General Procedures for Oil Filter Inspection. Is an excessive amount of metal debris present in the oil filter? (Figure 1)

Figure 1



E336125

- (1). Yes - replace engine long block assembly. Refer to WSM, Section 303-01 for engine removal and installation. Repair is complete.
  - (2). No - proceed to Step 7.
- 7.** Remove both engine cylinder heads. Refer to WSM, Section 303-01 for cylinder head removal and installation.
- 8.** Inspect the camshaft lobes and tappets for damage. Is damage present?
- (1). Yes - proceed to Step 9.
  - (2). No - re-assemble the vehicle, repair is complete. Refer to the WSM for normal diagnostics.

**9.** Inspect the engine for any related collateral damage. Refer to [GSB Various Vehicles - Engine Failure Analysis](#). Is the extent of the damage limited to the valve tappets and/or camshaft?

(1). Yes - install new camshaft and all valve tappets. Refer to [WSM](#), Section 303-01 for camshaft and valve tappet removal and installation.

(2). No - replace engine long block assembly. Refer to [WSM](#), Section 303-01 for engine removal and installation.

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NOTE: The information in Technical Service Bulletins is intended for use by trained, professional technicians with the knowledge, tools, and equipment to do the job properly and safely. It informs these technicians of conditions that may occur on some vehicles, or provides information that could assist in proper vehicle service. The procedures should not be performed by "do-it-yourselfers". Do not assume that a condition described affects your car or truck. Contact a Ford or Lincoln dealership to determine whether the Bulletin applies to your vehicle. Warranty Policy and Extended Service Plan documentation determine Warranty and/or Extended Service Plan coverage unless stated otherwise in the TSB article. The information in this Technical Service Bulletin (TSB) was current at the time of printing. Ford Motor Company reserves the right to supersede this information with updates. The most recent information is available through Ford Motor Company's on-line technical resources.