

Ford 3.5 EcoBoost/Duratec

Value Added Quality Improvements from JASPER®

Issue / Concern:

JASPER Solution:

Timing Chain Failure

- JASPER® updates all Roller design primary chains to the improved Silent chain design. This prevents excessive wear that is common with the roller chains.
- Silent chain updates include: replacement of chain guides; VVT; Crank Gear.

Water Pump Failure

- 100% installation of latest design water pump for transverse-mounted applications.

Piston & Rings

- Stronger, JASPER-engineered pistons have a smooth, fully-machined, anodized crown which provides a thermal barrier and reduces carbon buildup.
- JASPER's piston design includes additional oil return holes (14 total) for increased oil drain back, to reduce oil consumption and prevent the oil rings from sticking.
- JASPER installs a robust, two-piece 2.0mm oil ring for improved oil control.
- JASPER piston rings include a steel top ring that has a larger surface area of 1.5MM and a coating for longevity and less friction.
- JASPER's steel top ring has an increased axial height for better sealing and heat conductivity.
- An additional accumulator groove is machined into the piston to decrease the pressure between the first and second ring land, preventing the upper (compression) ring from unseating at higher RPMs.
- **EcoBoost only:** JASPER-engineered pistons are forged aluminum to increase strength and durability.

Cylinder Bores

- 100% torque plate honing of engine block utilizing a torque plate and specially-designed, ARP2000® bolts, provides cylinder wall geometry that matches the cylinder head as a complete running assembly for improved ring sealing.
- JASPER-designed pistons have a 30% wider piston skirt surface area to improve durability and promote scuff resistance.

**3 Year/100,000 Mile
Nationwide
Parts & Labor Warranty**



Remanufactured in the U.S.A.

Full warranty disclosure available at
www.jasperengines.com or upon request.
Specifications subject to change without notice.

815 Wernsing Road • P.O. Box 650 • Jasper, IN 47547-0650
(800) 827-7455 • Fax (812) 634-1820 • www.jasperengines.com

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Value Added Quality

Improvements from JASPER®

Cam Bore Wear	<ul style="list-style-type: none">• Camshafts are spray welded and machined to exact tolerances.• Cam bores are machined with a specially designed, coolant fed CNC machine. These processes will maintain tight specification on bore alignment, size, and surface finish.
Cam Lobe Wear	<ul style="list-style-type: none">• All camshaft lobes are given a Manganese Phosphate coating to assist in added wear protection.
Main and Rod Bearing Wear	<ul style="list-style-type: none">• 100% installation of a proprietary anti-friction wear resistant polymer coating on bearings to aid in dry start up and increased longevity.
Head Gasket Failure	<ul style="list-style-type: none">• JASPER installs a thicker, fluoroelastomer coated MLS (Multi-layer steel) head gasket.• Block and heads are resurfaced to a 50–150 Rz finish.• 100% installation of NEW torque to yield head bolts.
Rod Bearing Failure	<ul style="list-style-type: none">• 100% installation of high-strength, Class 12.9 rod bolts to eliminate stretching, which can lead to bearing failure.
Low Oil Pressure/ Knocking	<ul style="list-style-type: none">• Crankshafts are machined and micro polished to exact tolerances for improved bearing oil clearance and reduced wear.
Valve Guide Wear	<ul style="list-style-type: none">• 100% installation of NEW nitrided valves for improved heat resistance and reduced valve guide wear.• EcoBoost Only: 100% installation of Inconel exhaust valves with a Stellite face to withstand the heat generated by this turbo GDI engine.
Runability Issues and Fuel Leaks	<ul style="list-style-type: none">• 100% live-run tested to verify proper timing, compression, vacuum and oil pressure.• 100% tested intake and exhaust cam actuators to verify proper performance.• 100% black light leak tested to ensure the unit is leak free.

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