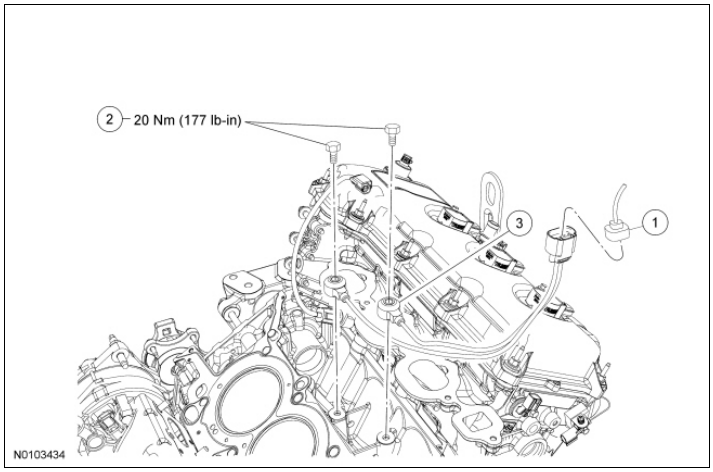
Knock Sensor (KS) - 3.5L GTDI

NOTE: LH cylinder head removed from art for clarity.



Item	Part Number	Description
1	14A464	Knock Sensor (KS) electrical connector
2	W704749	KS bolts
3	12A699	KS

Removal and Installation

1. Remove the coolant inlet pipe. For additional information, refer to Coolant Inlet Pipe - 3.5L Gasoline Turbocharged Direct Injection (GTDI) in Section 303-03 .

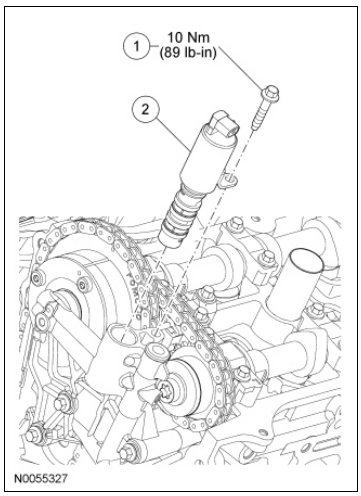
2. Remove the fuel rail. For additional information, refer to Fuel Rail - 3.5L GTDI in Section 303-04A .

3. Disconnect the Knock Sensor (KS) electrical connector.

4. Remove the 2 bolts and the KS .
   - To install, tighten to 20 Nm (177 lb-in).

5. To install, reverse the removal procedure.

Variable Camshaft Timing (VCT) Oil Control Solenoid



Item	Part Number	Description
1	W500215	Variable Camshaft Timing (VCT) oil control solenoid bolt
2	6B297	VCT oil control solenoid

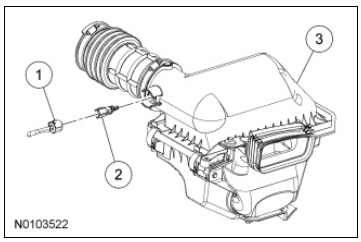
Removal and Installation

1. Remove the LH or RH valve cover. For the 3.5L engine, refer to Section 303-01A . For the 3.5L Gasoline Turbocharged Direct Injection (GTDI) engine, refer to Section 303-01B .

2. Remove the bolt and the Variable Camshaft Timing (VCT) oil control solenoid.
   - To install, tighten to 10 Nm (89 lb-in).

3. To install, reverse the removal procedure.

Intake Air Temperature (IAT) Sensor

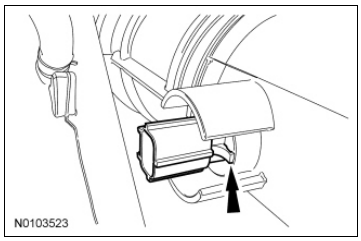


Item	Part Number	Description
1	14A464	Intake Air Temperature (IAT) sensor electrical connector
2	12A697	IAT sensor
3	9600	Air Cleaner (ACL) assembly

Removal and Installation

1. Disconnect the Intake Air Temperature (IAT) sensor electrical connector.

2. Remove the IAT sensor.
   - Lift the tab and turn the IAT sensor counterclockwise to remove.

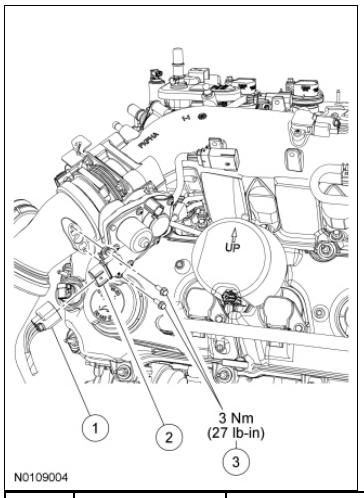


3. To install, reverse the removal procedure.
   - Make sure the IAT sensor tab is fully seated during installation.

Turbocharger Boost Pressure (TCBP) / Charge Air Cooler Temperature (CACT) Sensor

Material

Item	Specification
Motorcraft® SAE 5W-20 Premium Synthetic Blend Motor Oil (US); Motorcraft® SAE 5W-20 Super Premium Motor Oil (Canada) XO-5W20-QSP (US); CXO-5W20-LSP12 (Canada)	WSS-M2C945-A



Item	Part Number	Description
1	14A464	Turbocharger Boost Pressure (TCBP)/ Charge Air Cooler Temperature (CACT) sensor electrical connector
2	9F479	TCBP / CACT sensor
3	W506843	TCBP / CACT sensor screws

Removal

NOTE: Turbocharger Boost Pressure (TCBP)/ Charge Air Cooler Temperature (CACT)sensor and the Manifold Absolute Pressure (MAP)/Intake Air Temperature 2 (IAT2) sensor are not interchangeable.

1. Disconnect the TCBP / CACT sensor electrical connector.

2. Remove the 2 screws and the TCBP / CACT sensor.

Installation

1. Lubricate the TCBP / CACT sensor O-ring seal with clean engine oil.

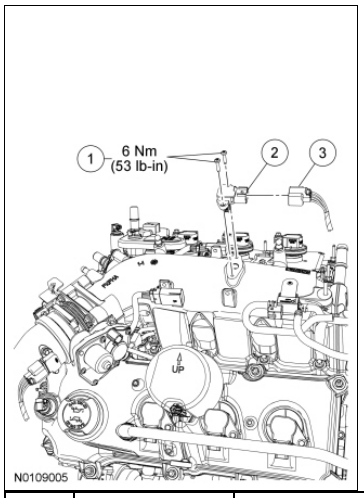
2. Install the TCBP / CACT sensor and the 2 screws.
   - Tighten to 3 Nm (27 lb-in).

3. Connect the TCBP / CACT sensor electrical connector.

Manifold Absolute Pressure (MAP) / Intake Air Temperature 2 (IAT2) Sensor

Material

Item	Specification
Motorcraft® SAE 5W-20 Premium Synthetic Blend Motor Oil (US); Motorcraft® SAE 5W-20 Super Premium Motor Oil (Canada) XO-5W20-QSP (US); CXO-5W20-LSP12 (Canada)	WSS-M2C945-A



Item	Part Number	Description
1	W505565	Manifold Absolute Pressure (MAP)/ Intake Air Temperature 2 (IAT2) sensor screws
2	9F479	MAP / IAT2 sensor
3	14A464	MAP / IAT2 sensor electrical connector

Removal

NOTE: The Turbocharger Boost Pressure (TCBP)/Charge Air Cooler Temperature (CACT) sensor and the Manifold Absolute Pressure (MAP)/ Intake Air Temperature 2 (IAT2) sensor are not interchangeable.

1. Disconnect the MAP / IAT2 sensor electrical connector.

2. Remove the 2 screws and the MAP / IAT2 sensor.

Installation

1. Lubricate the MAP / IAT2 sensor O-ring seal with clean engine oil.

2. Install the MAP / IAT2 sensor and the 2 screws.
   - Tighten to 6 Nm (53 lb-in).

3. Connect the MAP / IAT2 sensor electrical connector.

Alignment Specifications

Item	LH	RH	Total/Split
Front			
Camber (All vehicles except Gasoline Turbocharged Direct Injection (GTDI))	-0.4° ± 0.75°	-0.5° ± 0.75°	0.10° ± 0.75° [a]
Camber (GTDI vehicles)	-0.5° ± 0.75°	-0.6° ± 0.75°	0.10° ± 0.75° [b]
Caster	3.3° ± 0.75°	3.5° ± 0.75°	-0.2° ± 0.75° [b]
Toe (positive value is toe in, negative value is toe out)	-	-	+0.10° ± 0.20°
Rear			
Camber (All vehicles except GTDI)	-0.80° ± 0.75°	-0.80° ± 0.75°	-
Camber (GTDI vehicles)	-1.00° ± 0.75°	-1.00° ± 0.75°	-
Toe (positive value is toe in, negative value is toe out), All Vehicles	0.12° ± 0.20°	0.12° ± 0.20°	0.24° ± 0.20°
Thrust Angle	-	-	0.0° ± 0.30°

[a] Camber Total/Split = LH Camber - RH Camber
[b] Caster Total/Split = LH Caster - RH Caster

General Specifications

Item	Specification
Ride Height	
Front	52 mm (2.05 in) ± 10 mm (0.39 in)
Rear	26 mm (1.02 in) ± 10 mm (0.39 in)
Front (GTDI vehicles)	42 mm (2.05 in) ± 10 mm (0.39 in)
Rear (GTDI vehicles)	16 mm (0.63 in) ± 10 mm (0.39 in)

Torque Specifications