

Coolant Test

Inspection

1.
 1. Inspect the coolant color:
 - Change in color of coolant may indicate that incorrect coolant may have been added to the system. Use of incorrect coolant degrades the corrosion protection. The addition of Motorcraft® Premium Antifreeze/Coolant or Motorcraft® Specialty Green Engine Coolant to the Motorcraft® Yellow Antifreeze/Coolant may cause the color to appear light green. Addition of Motorcraft® Orange Antifreeze/Coolant may cause the color to appear light orange. The addition of Motorcraft® Premium Antifreeze/Coolant or Motorcraft® Specialty Green Engine Coolant to the Motorcraft® Yellow Antifreeze/Coolant may cause the color to appear light green to murky green-brown. The addition of Motorcraft® Gold Antifreeze/Coolant, however, may not change the color or appearance of yellow-colored coolants. Detection of contamination with Motorcraft® Gold Antifreeze/Coolant is determined by the presence of nitrite. If contamination with Motorcraft® Gold Antifreeze/Coolant is suspected, test the coolant with the 3-Way HD Antifreeze Coolant Test Kit. Follow the nitrite testing directions in the kit to determine if nitrite is present in the system. If nitrite is present, flush the system and refill with the correct mixture of distilled water and the relevant Motorcraft® Concentrated Antifreeze/Coolant.
Refer to: Engine Cooling System Flushing - Without Oil or Transmission Fluid Contamination (303-03B Engine Cooling - 6.7L Power Stroke Diesel, General Procedures).
 - A darker yellow with the presence of debris could indicate a commercially available stop leak may have been used and could result in loss of coolant flow to critical parts of the engine. If sediment is present in the coolant sample, flush the system and refill with the correct mixture of distilled water and Motorcraft® Yellow Concentrated Antifreeze/Coolant.
Refer to: Engine Cooling System Flushing - Without Oil or Transmission Fluid Contamination (303-03B Engine Cooling - 6.7L Power Stroke Diesel, General Procedures).
 - A light or reddish brown color indicates that rust may be present in the cooling system. Flush the system and refill with the correct mixture of distilled water and Motorcraft® Yellow Concentrated Antifreeze/Coolant. Refer to Cooling System Flushing - Without Oil Contamination
Refer to: Engine Cooling System Flushing - Without Oil or Transmission Fluid Contamination (303-03B Engine Cooling - 6.7L Power Stroke Diesel, General Procedures).
 - An iridescent sheen on top of the coolant could indicate a trace of oil is entering the system. For engine diagnosis, refer to Section 303-00. Flush the cooling system and refill with the correct mixture of distilled water and Motorcraft® Yellow Concentrated Antifreeze/Coolant.
Refer to: Engine Cooling System Flushing - With Oil or Transmission Fluid Contamination (303-03B Engine Cooling - 6.7L Power Stroke Diesel, General Procedures).
 - A milky brown or reddish color may indicate that engine oil or transmission fluid is entering the cooling system. Pressure test the cooling system. Refer to the Component Tests in this section. If engine oil is suspected, the cause of the leak may be internal to the engine. For engine diagnosis, refer to Section 303-00. If transmission fluid is suspected, install a new transmission cooler. Refer to Section 307-02. Flush the cooling system and refill with the correct mixture of distilled water and Motorcraft® Yellow Concentrated Antifreeze/Coolant.
Refer to: Engine (303-00 Engine System - General Information, Diagnosis and Testing).
Refer to: Transmission Fluid Cooler - 6.7L Power Stroke Diesel (307-02 Transmission Cooling - 6.7L Power Stroke Diesel).
Refer to: Engine Cooling System Flushing - With Oil or Transmission Fluid Contamination (303-03B Engine Cooling - 6.7L Power Stroke Diesel, General Procedures).
 2. For the shaded area, drain the quantity listed and fill the cooling system with undiluted Motorcraft® Yellow Concentrated Antifreeze/Coolant. For the unshaded area, drain the quantity listed and fill the cooling system with distilled water.

Volume in Quarts and Temperature in Fahrenheit

Desired Concentration and Freeze Point

System Volume: 31.7Quarts			40 %	45 %	50 %	55 %	60 %
			-15 °F	-24 °F	-34 °F	-46 °F	-58 °F
Current Concentration and Freeze Point	30 %	2 °F	4.5	6.8	9.1	11.3	13.6
	35 %	-6 °F	2.3	4.9	7.3	9.8	12.2
	40 %	-15 °F	--	2.6	5.3	7.9	10.6
	45 %	-24 °F	3.5	--	2.9	5.8	8.6
	50 %	-34 °F	6.3	3.2	--	3.2	6.3
	55 %	-46 °F	8.6	5.8	2.9	--	3.5
	60 %	-58 °F	10.6	7.9	5.3	2.6	--

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3. For the shaded area, drain the quantity listed and fill the cooling system with undiluted Motorcraft® Yellow Concentrated Antifreeze/Coolant. For the unshaded area, drain the quantity listed and fill the cooling system with distilled water.

Volume in Liters and Temperature in Celsius

System Volume: 30.0 Liters			Desired Concentration and Freeze Point				
			40 %	45 %	50 %	55 %	60 %
			-26 °C	-31 °C	-37 °C	-43 °C	-50 °C
Current Concentration and Freeze Point	30 %	-17 °C	4.3	6.4	8.6	10.7	12.9
	35 %	-21 °C	2.3	4.6	6.9	9.2	11.5
	40 %	-26 °C	--	2.5	5.0	7.5	10.0
	45 %	-31 °C	3.3	--	2.7	5.5	8.2
	50 %	-37 °C	6.0	3.0	--	3.0	6.0
	55 %	-43 °C	8.2	5.5	2.7	--	3.3
	60 %	-50 °C	10.0	7.5	5.0	2.5	--

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