6.0 L No Start/Cold

STEP 1: VISUAL INSPECTION OF ENGINE COMPARTMENT	OK	NOT OK	COMMENTS
Inspect the cooling hoses and connections			
Inspect the battery cables and connections			
Inspect the wiring harnesses and connections			
Inspect for fluid leaks *(oil/fuel/coolant)*			

STEP 2: CHECK FLUID LEVELS	OK	NOT OK	COMMENTS
Engine oil			
Coolant			
Miles or hours on the oil			
Verify oil viscosity *(10W30 recommended for temps below 35° F)*			

STEP 3: INTAKE AND EXHAUST RESTRICTION	OK	NOT OK	COMMENTS
Inspect the exhaust system for damage			
Observe the air filter restriction gauge or light			
Inspect the air filter and inlet ducts			

STEP 4: FUEL SUPPLY	OK	NOT OK	COMMENTS
Verify the fuel level			
Check for water in fuel light			
Inspect the fuel filter for contamination			

STEP 5: FUEL SUPPLY PUMP ☑ *Check for voltage and ground with the key on* ☑ *Check fuel supply pressure*

TOOL	SPECIFICATION	READING
0–160 psi Fuel Gauge	E SERIES 38 psi min. F–SUPER DUTY/EXCURSION 45 psi min.	

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STEP 6: FUEL SUPPLY INLET RESTRICTION

☑ *Install a 0–30" Hg vacuum gauge* ☑ *Measure fuel restriction at the HFCM inlet*

TOOL	SPECIFICATION	READING
0–30" Hg Vacuum Gauge	6" Hg max.	

STEP 7: PERFORM GLOW PLUG SYSTEM OPERATION

☑ *Turn the key on and measure the voltage to the GPCM (glow plug control module) –Green Connector Pin 3 –Black Connector Pin 3 and 9*

SPECIFICATION	READING
11.5 volts min.	

☑ *Measure each glow plug resistance to battery ground and record*

GLOW PLUG	GPCM CONNECTOR TO GROUND–SPEC 0 TO 5.5 Ω
#1 (Green Connector Pin – 6)	
#3 (Green Connector Pin – 7)	
#5 (Green Connector Pin – 1)	
#7 (Green Connector Pin – 2)	
#2 (Black Connector Pin – 6)	
#4 (Black Connector Pin – 7)	
#6 (Black Connector Pin – 1)	
#8 (Black Connector Pin – 2)	

STEP 8: CHECK FOR HISTORY AND CURRENT FAULTS

☑ *Using the IDS Scan Tool, retrieve the CMDTCs* ☑ *Perform the KOEO On–Demand Test and Injector Test and record the DTCs*

FAULT CODE	DESCRIPTION

DID ALL SPOOL VALVES "CLICK"?	OK	NOT OK	CYL #'S WITH NO CLICK

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STEP 9: SCAN TOOL DATA MONITORING

☑ *Engine is hard starting or in a no start condition*

☑ *Using the IDS Scan Tool, monitor the below parameters while the engine is cranking*

PARAMETER	SPECIFICATION	READING
Battery Voltage	9.5 volts min.	
FICM Voltage		
FICM Main	44 volts min.	
FICM Sync	YES/NO (should be yes and stay)	
Sync		
ICP Desired	3.5 Mpa min. (500 psi min.)	
ICP Actual		
ICP Volts	.80 volts min.	
Fuel Pulse Width	500 uS–2 mS	
RPM	100 RPM min.	
IPR %	Range 0–50%	
VREF	5 volts	
IAT	Ambient	
BARO	14.1 (varies by location)	
EBP_A	Baro	

STEP 10: BUBBLE TEST

☑ *Remove the secondary fuel filter*

☑ *Fill the housing with fuel to cover the stand pipe*

☑ *Crank the engine with the key off using a remote start switch*

☑ *Monitor the fuel in the housing and watch for air bubbles exiting the top of the stand pipe*

☑ *If air bubbles are present, injector removal and inspection is required*

	YES	NO
AIR BUBBLES PRESENT		

STEP 11: OIL RAIL PRESSURE TEST

☑ *Remove the valve covers*

☑ *Remove the ICP sensor*

☑ *Connect the breakout harness to the IPR valve, apply 12v and ground to close the IPR*

☑ *Apply 100 psi of shop air to the oil rail*

☑ *Listen for air leaks around the stand pipes and injectors*

Note: *Some slight air leaks around injector spool valve area is normal*

	YES	NO
AIR LEAK FOUND		

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STEP 12: IPR VALVE INSPECTION

☑ *Remove the IPR valve*
☑ *Inspect the inlet screen of the IPR valve for debris*
☑ *Any debris on the inlet screen can only be from the high–pressure oil pump and is an indication of a high–pressure oil pump failure*

	YES	NO
METAL FOUND		

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