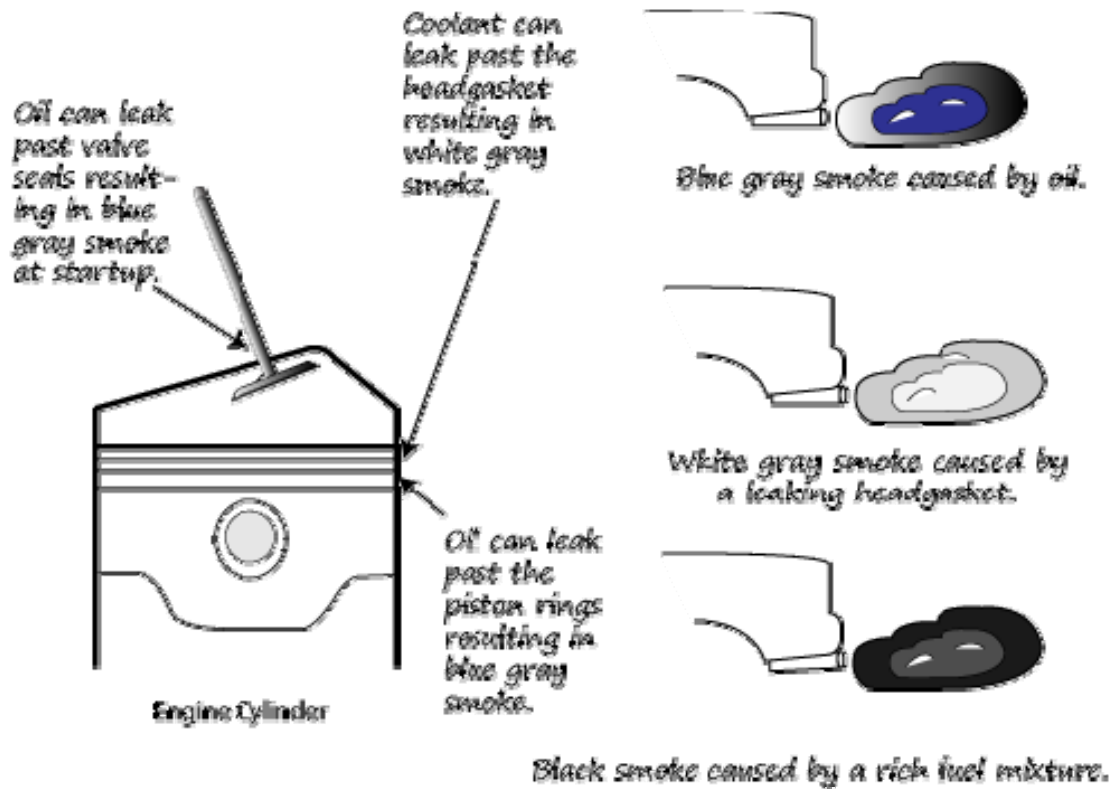


Exhaust Color Diagnosis



Blue/Gray Smoke: Blue/gray exhaust smoke is an indication of oil burning in the combustion chamber. These are possible symptoms and causes:

Valve Seals: Leaking valve seals will cause blue/gray smoke at startup because oil leaks past the seals into the cylinder after the engine shut down.

Valve Guides: Excessive clearance between the valve stem and the valve guide allows oil to leak past the gap into the cylinder.

Piston Rings: Worn or damaged piston rings will cause blow-by resulting in blue/gray smoke.

Worn Cylinder Walls: Worn cylinder walls cause blow-by resulting in blue/gray smoke.

PCV System: A stuck closed PCV valve will cause excessive crankcase pressure resulting in blue/gray smoke.

Black Smoke: Black exhaust smoke is an indication of rich fuel condition. These are possible causes:

Fuel Injectors: A leaking or dripping fuel injector will cause a rich fuel condition.

Fuel Pressure Regulator: A stuck closed fuel pressure regulator will cause a rich fuel condition.

Fuel Return: A restricted fuel return line will cause a rich fuel condition.

White/Gray Smoke: White exhaust smoke is an indication that coolant is burning in the combustion chamber. These are possible causes:

Cylinder Head: A crack in the cylinder head (around the coolant jacket) will cause coolant to enter the combustion chamber.

Engine Block: A crack in the deck of an engine block near the coolant jacket will cause coolant to enter the combustion chamber.

Head Gasket: A damaged or blown head gasket will cause coolant to enter the combustion chamber resulting in white/gray smoke coming from the tailpipe.