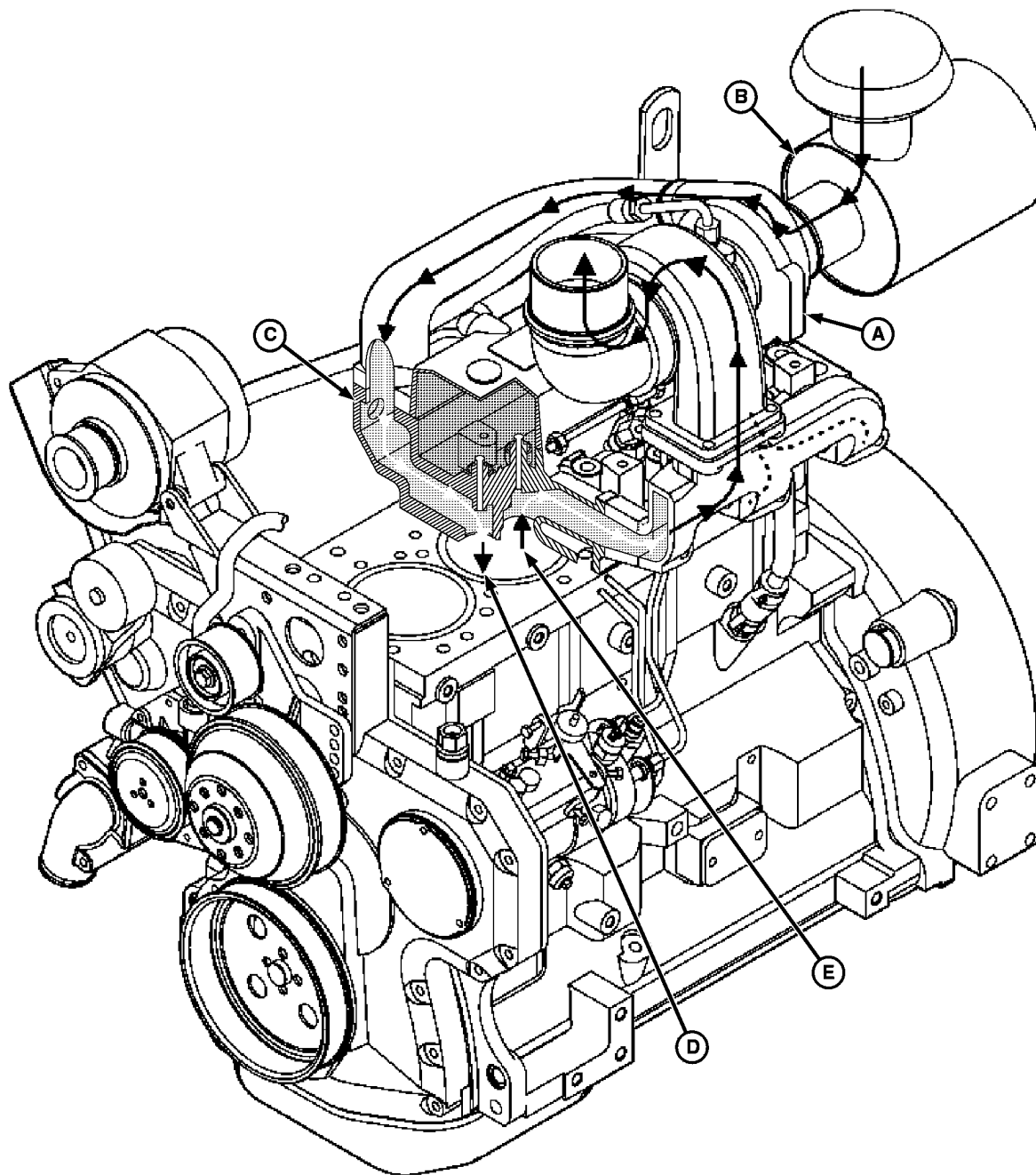


Air Intake and Exhaust System Operation



How Air Intake and Exhaust Systems Work

A—Turbocharger
B—Air Cleaner

C—Intake Side of Cylinder
Head

D—Outside Intake Air

E—Exhaust Air

Engine suction draws dust-laden outside air (D) through an air inlet stack into the air cleaner (B). Air is filtered through dry type primary and secondary (safety) filter elements in the air cleaner canister.

Clean air travels through the air intake hose to the turbocharger (A) and into the intake side of the cylinder head (C).

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Exhaust (E), drives the turbocharger to deliver a larger quantity of air to meet the engine requirements than what could be delivered under naturally aspirated (non-turbocharged) conditions.

through a heat exchanger before it enters the engine. The heat exchanger uses no liquid coolant but relies on air flow to cool the charge air.

On some engines, an air-to-air aftercooler cools the turbocharger compressor discharge air by routing it

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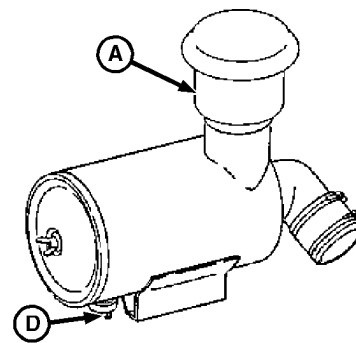
Air Cleaner Operation

Under suction generated by the engine, unfiltered air flows through air inlet tube (A) and is forced into a high-speed centrifugal motion by tilted fins in the element. By this circulating action most of the dust and dirt particles are separated from the air and collected in the dust unloading valve (D).

The remaining dirt is removed as the air flows through the primary element (C) and the secondary (safety) filter (B) before being drawn into the engine.

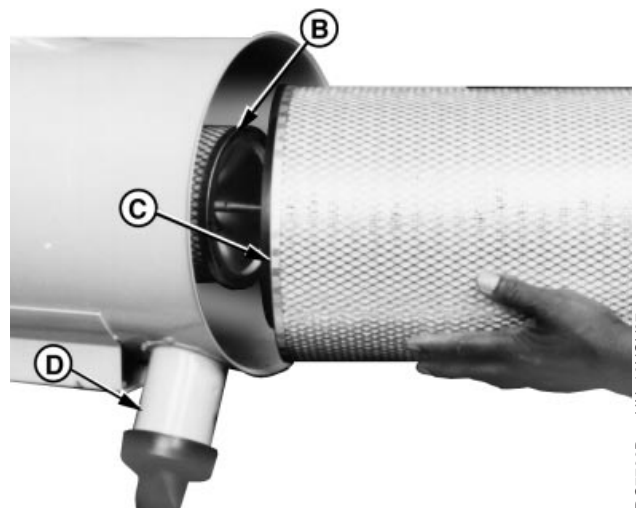
The secondary (safety) filter ensures that, should primary element fail, no unfiltered air is drawn into the engine.

- A—Air Inlet Tube
- B—Secondary (Safety) Filter
- C—Primary Element
- D—Dust Unloading Valve



Air Cleaner Assembly

RG9097 -UN-27MAR98



Air Cleaner Primary and Secondary Elements

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