How a diesel engine works

0:22

In diesel engines the operating cycle starts

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with clean air being drawn into the cylinder,

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not a fuel - air mixture as in a conventional gasoline engine.

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The motion of the piston compresses the air,

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heating it to a high temperature.

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When the piston nears the top of the cylinder,

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fuel is injected under high-pressure

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through a number of precisely machined holes

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in the tip of the fuel injector.

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The fuel enters the engine in the form of a fine spray

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and the surface of each droplet quickly begins to vaporize

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on its path through the hot air.

1:02

Spontaneous ignition takes place

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without the need for a spark

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and rapid expansion of the combusting mixture

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increases the pressure in the cylinder,

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forcing the piston down and powering the vehicle.

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When the piston is close to its lowest position,

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the exhaust valve starts to open and the exhaust stroke

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then drives the spent gases out of the combustion chamber

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and the cycle starts again.

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In conventional gasoline engines, a mixture of fuel AND air

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is drawn into the cylinder, compressed by the motion of the piston

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and ignited by a spark as the piston nears the top of the cylinder.

**1:43**

**The resulting combustion generates pressure**

1:45

which forces the piston down to power the vehicle.