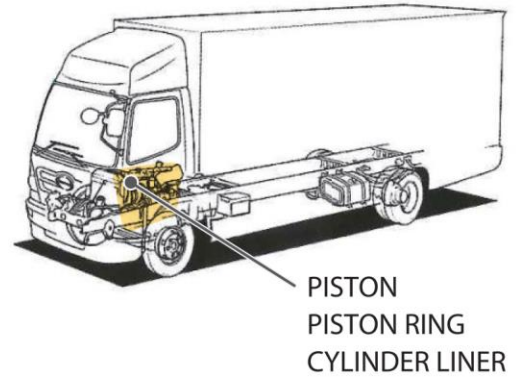


PISTON PISTON RING CYLINDER LINER



Function

The pistons, piston rings, cylinder liners are attached in equal number to the cylinder block of the engine. The vertical movement of the pistons driven by energy from fuel combustion is transmitted as driving (rotational) power to the crankshaft. The cylinder liner supports the vertically moving piston. The piston ring seals the gap between the piston and cylinder liner to prevent any loss in transmission efficiency while working to even lubrication oil that attaches to the inner surface of the cylinder liner and preventing oil from rising upward. Pistons, piston rings and cylinder liners are important parts that make up the inside of an engine. (See Fig.1)

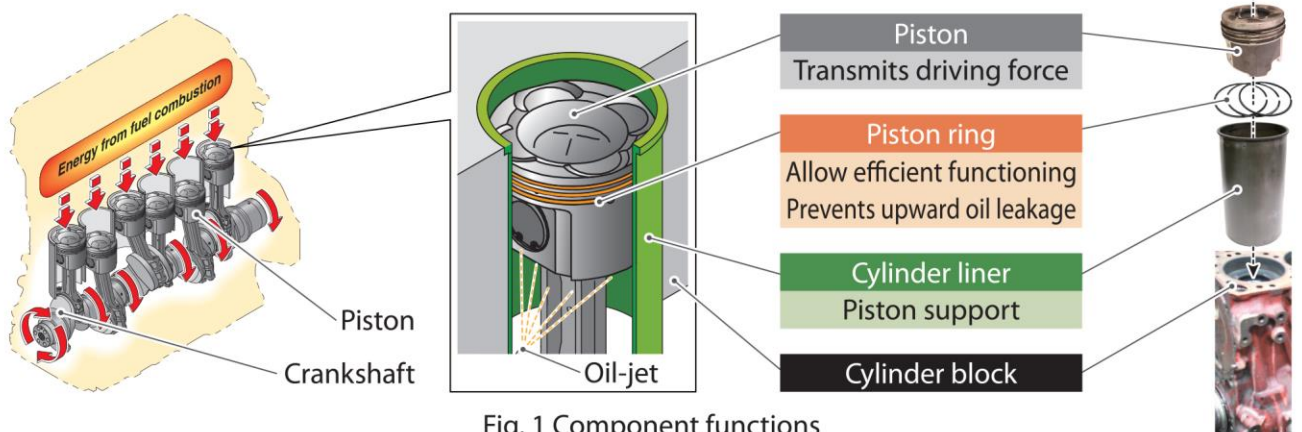
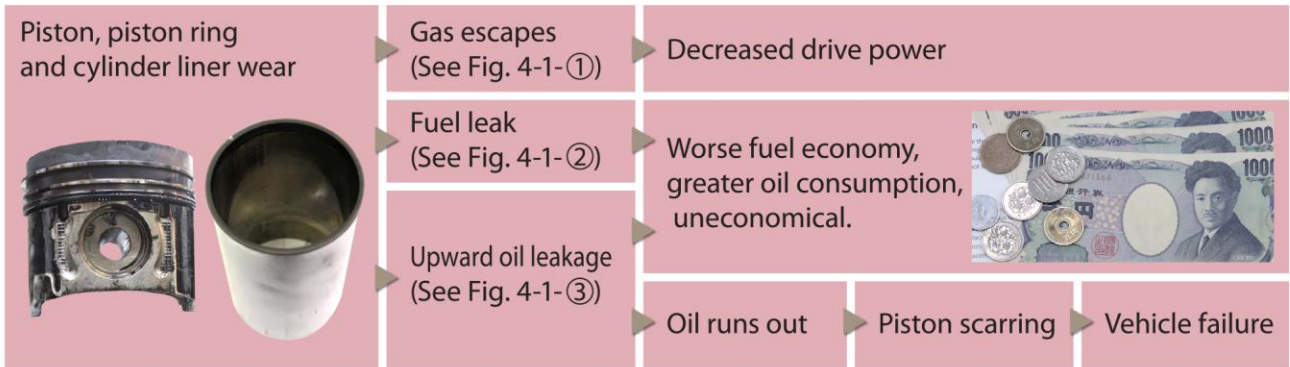


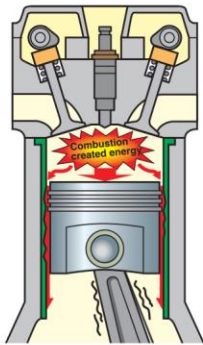
Fig. 1 Component functions

The importance of maintenance & replacement

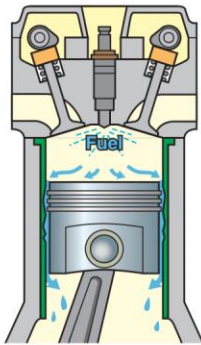
Pistons, piston rings and cylinder liners inevitably suffer wear and tear as they are exposed to mini-explosions in the combustion chamber and friction as they rub against each other to generate sufficient drive power. If these components are used beyond what they can withstand, this can reduce drive power generation as well as result in more fuel and oil consumption. If used beyond that point, and an engine runs out of oil, it can result in piston scarring, piston damage and cause a vehicle to fail. (See Fig. 4-1)



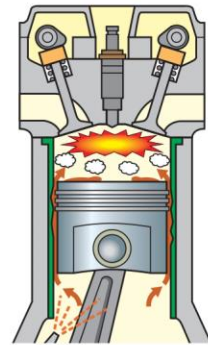
Decreased drive power	Worse fuel consumption	Worse oil consumption
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<Fig. ① Gas escaping>



<Fig. ② Fuel leakage>



<Fig. ③ Upward oil leakage>

Fig. 4-1 Mechanisms for piston-related engine problems