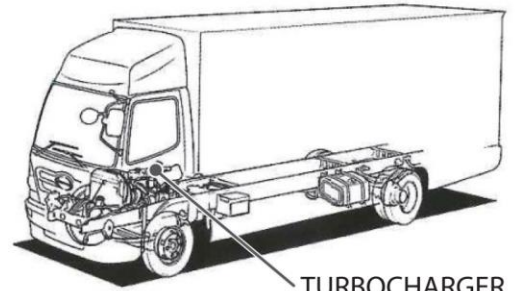


# TURBO-CHARGER



## Function

The turbocharger is a component that compresses the intake air to increase its density before it is fed into the engine, thereby improving the engine's combustion efficiency, horse power, torque, and fuel economy. Turbochargers enable good fuel economy and driving performance. (See Fig.1)

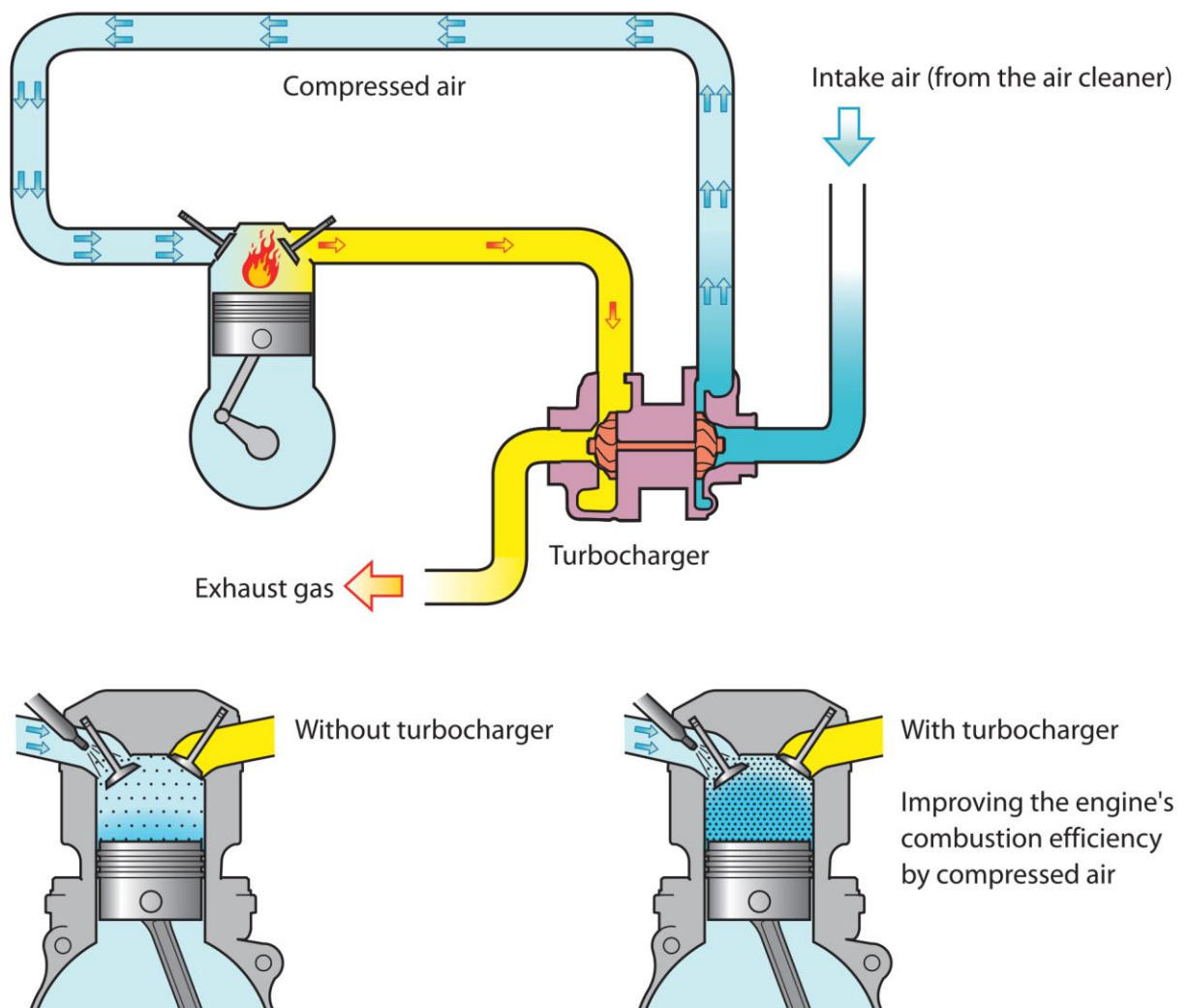


Fig.1 Turbocharger system

## The importance of maintenance

Turbochargers are exposed to harsh operating conditions where the turbine rotates at extremely high rates of rotation (between about 10,000 and 100,000 rpm), which produces very high temperatures. These conditions subject the turbocharger's internal components to wear and degradation. By continuing to use a degraded turbocharger, the turbine shaft, floating metal (bearings), compressor and other components may sustain levels of wear and degradation that can cause damage to the unit itself. As a result, not only can these situations diminish engine performance, but can also cause damage to the engine from broken pieces being sucked into it along with the intake air.

### Turbocharger's inspection items

- Engine oil levels, soilage, viscosity, and leaks
- Coolant levels, soilage, density, and leaks
- Air cleaner clogging, soilage, and damage



Replace the turbocharger if you notice any of the following symptoms during an inspection:

- Oil leak
- Unusual sound during rotation
- Wastegate or variable nozzle linkages are loose.
- Compressor and/or turbine are brushing against their casing.
- Turbine shaft is loose.

## Differences between genuine and aftermarket parts

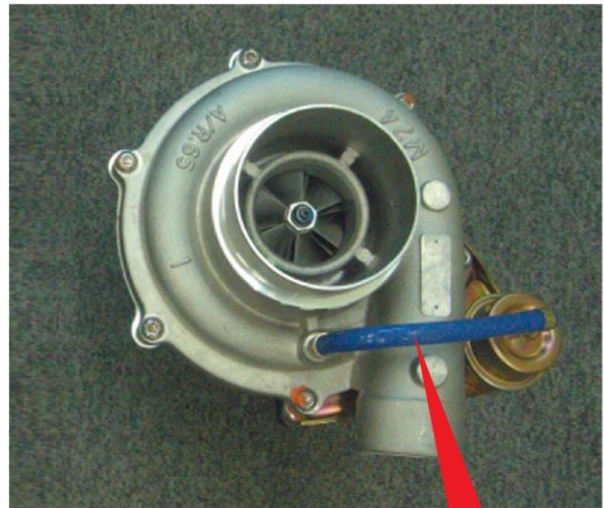
At a glance, aftermarket parts may not appear to be different from genuine parts, but a closer inspection reveals that they use parts that are different from those used in genuine products and do not provide the same levels of quality. (See Fig.4)

Genuine



Reinforced by fiber designed to prevent bursting

Aftermarket parts



No reinforcement possibility of bursting

Fig.4 Hose material