1306A–01

ON–VEHICLE INSPECTION

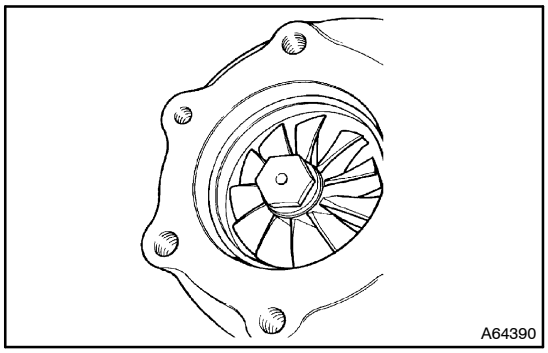
1. INSPECT TURBOCHARGER EXTERIOR AND INSTALLATION

(a) Visually check for missing or loose nuts and bolts.
(b) Visually check for loose or damaged intake and exhaust pipes.
(c) Visually check for damaged oil supply and drain lines.
(d) Visually check for cracked or deteriorating turbocharger housings.
(e) Visually check for external oil or coolant leakage.

Correct all the problems about the installation. If the turbocharger parts are damaged, overhaul the unit after the remaining procedures of this troubleshooting about the installation.

CAUTION:

Operation of the turbocharger without the intake pipe and air cleaner connected can result in personal injury and also damage to the equipment, such as foreign objects entering the turbocharger.


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2. INSPECT TURBINE WHEEL AND HOUSING

(a) Remove the ducting from the turbine outlet. Using a flash–light, check the rub on the turbine wheel and housing, evidence of oil leakage or damage due to foreign objects. Damage to the turbine, due to foreign objects, is not usually visible through the turbine outlet unless the damage becomes severe.

(1) Check for rub on the wheel and housing.

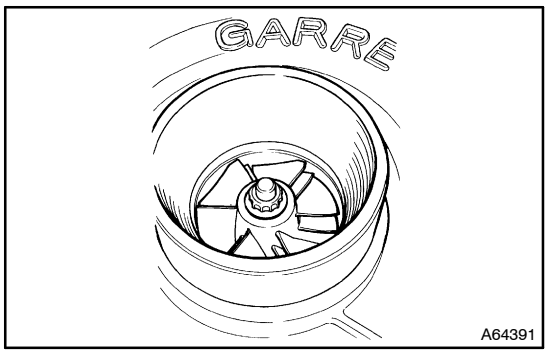
If wheel rub is found when the housing is securely attached to the hardware, then the turbocharger is way be damaged internally and must be overhauled.

(2) Check for oil leakage.

If oil deposits are found, determine whether the oil has come from the engine exhaust or the turbocharger center housing.
If the oil has come from the engine, consult the chapter of ENGINE MECHANICAL and correct the problem. If oil deposits on the wheel are heavy, the turbocharger should be disassembled, cleaned, and overhauled, as necessary.

(3) Check for damage due to foreign objects.

If the turbine is obviously damaged due to foreign objects, the turbocharger must be overhauled. Such damage destroys the wheel's balance and causes internal damage to the seal bores and journal bearings. Be sure to find the source of the foreign object. In many cases, the object has come from the engine, and the engine may have damage, as well.



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3. INSPECT COMPRESSOR WHEEL AND HOUSING

(a) Remove the ducting from the compressor inlet. Using a flash–light, check the rub on the compressor wheel and housing, evidence of oil leakage and damage due to foreign objects.

(1) Check for rub on the wheel and housing.

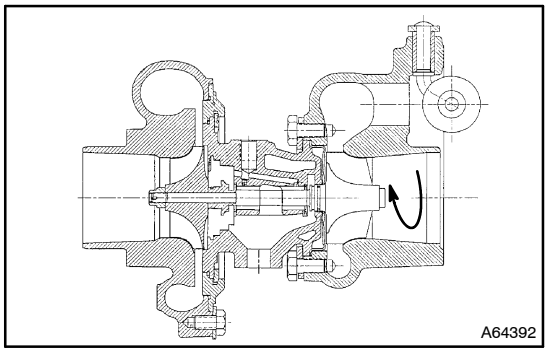
If wheel rub is found when the housing is securely attached to the hardware, then the turbocharger is way be damaged internally and must be overhauled.

(2) Check for oil leakage.

Oil leakage into the compressor can be caused by long periods of idling on a restricted oil drain line, a restricted air intake system, and frequent use of the engine as a brake. In this case, nothing is wrong with either the engine or the turbocharger, but frequent clean–up of the compressor wheel and housing is recommended.

(3) Check for damage due to foreign objects.

If the compressor wheel has been damaged by foreign objects, overhaul the turbocharger.



4. INSPECT ROTATING ASSEMBLY FOR NOISE OR EXCESSIVE PLAY

If no damage is visible in the turbine and compressor areas, spin the rotating assembly by hand. It should spin freely without drag or grinding noise.