SERVICE BULLETIN

Classification:	Reference:	Date:
EM03-001a	NTB03-093a	March 19, 2004

CAUTION DURING ENGINE OR TRANSMISSION REPLACEMENT

This bulletin amends NTB03-093. This version amends the Service Information. Please discard all paper copies of the earlier version.

APPLIED VEHICLES: All Nissan

SERVICE INFORMATION

Improper or incorrect service and repair procedures may cause damage to new or repaired parts and components.

- Damage to repaired or replaced engine, transmission, or other components caused by improper procedures during repair or replacement is not covered by warranty.
- This TSB contains information to help you avoid damaging these parts and components.

Cylinder Block – Transmission Dowel Pins

1. Alignment dowels are installed between the cylinder block and transmission.
    - They ensure accurate alignment of the crankshaft to the transmission input shaft.
2. If you replace an engine or transmission you must make sure the dowels are installed correctly during re-assembly.

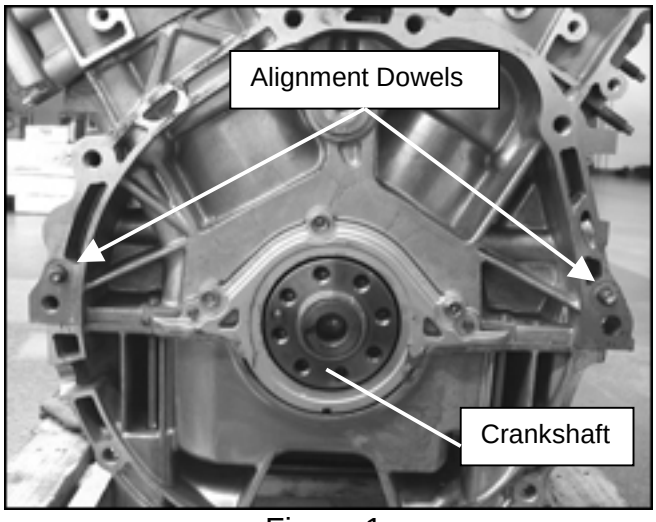

Figure 1

- Improper alignment caused by missing dowels may cause vibration, oil leaks or breakage of drive-train components.

Crankshaft – Drive Plate / Flywheel Alignment Dowel Pin

1. Most late model engines have an alignment dowel installed in the rear of the crankshaft.
   - This dowel is used to properly align (locate) the drive plate or flywheel with the crankshaft.

2. If you replace an engine that uses this dowel, make sure it is installed during re-assembly.

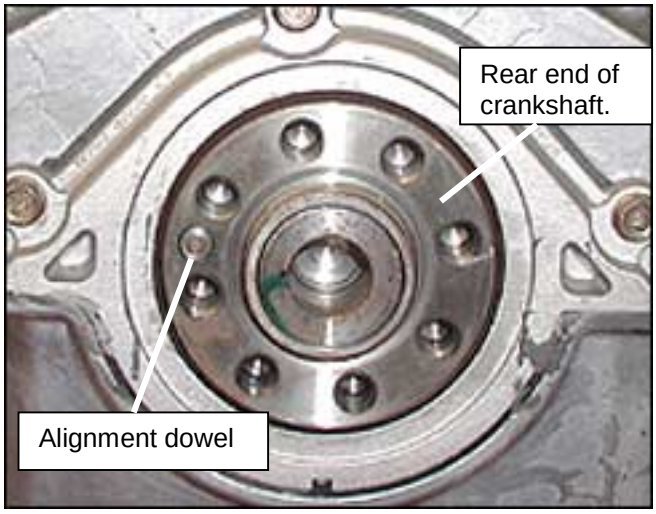

Figure 2

3. On engines that use this dowel:
   - During re-assembly, the drive plate or flywheel locating hole must be aligned with this dowel for proper operation of the engine control system.
   - If not aligned (clocked) correctly, rough running and MIL "ON" will occur.

Torque Converter Pilot (A/T)
Pilot Bushing (M/T)

1. Either bushing above is "pressed" into the rear of the crankshaft.
   - This ensures proper alignment at re-assembly.
2. Some automatic transmission equipped vehicles use a torque converter pilot.
   - It supports the torque converter.
3. Some manual transmission equipped vehicles use a pilot bushing.
   - This bushing supports the end of the transmission input shaft.

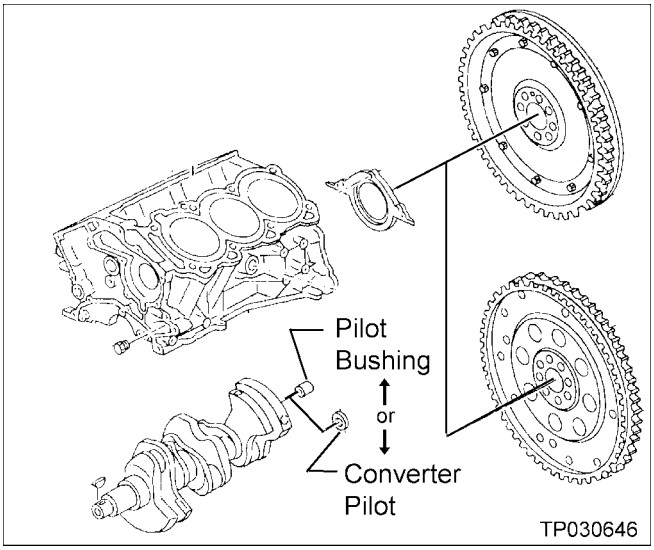

Figure 3

4. If you replace an engine (or an engine crankshaft) on a vehicle that uses a Pilot Bushing or Converter Pilot, you must make sure that the correct pilot is installed: Automatic Transmission pilot Vs Manual Transmission pilot.
   - Vibration and/or hard shifting may result if the correct pilot is not installed.

Debris in the Intake and Exhaust System

1. Whenever an engine (short or long block) is replaced or repaired, note the following:

    - You must make sure that the intake and exhaust system components are cleaned out.

    - They must be completely free of debris, water, or other “foreign material.”

    - Anything like that left in the intake or exhaust system will probably cause engine damage.

    - If a piston or valve was broken on the old engine, it is likely that metal debris will be found in both the intake and exhaust systems.

2. Review the following cleaning recommendation for the intake and exhaust systems when you replace or repair an engine:
    - Visually inspect for debris, water, or other foreign material inside the **entire** intake system, from the air filter intake through the intake manifold; clean as needed.
    - Inspect the intake manifold “runners” from the cylinder head side. Make sure that no particles of metal (broken pieces of piston, valve, etc) have stuck to the walls of the runners.
    - Visually inspect the “flange” portion of the manifold, where it attaches to the head. Make sure there are no scratches or burrs that might cause a bad seal seal.
    - Visually inspect the “power valves” inside the intake manifold (if applicable). Make sure all retaining screws that attach the “butterflies” to the shaft are in place and tight.
    - Make sure the exhaust ports are clean and free of debris.
    - Inspect the entire exhaust system for debris or other foreign material. Clean or replace as needed.

Oil Pressure at “New or Repaired” Engine Start-Up

Before a new service engine is started for the first time, “prime” the oil system as follows:

1. After filling, allow a few minutes for the oil to drain down to the oil pan before measuring.
    - Be sure the vehicle is level.
    - Confirm the oil is filled to the “H” (full) mark on the dipstick.

      NOTE: Some models require as much as 10 minutes wait time for oil to drain to the pan. See the LU or MA section of the appropriate Service Manual (ESM).

2. Remove the fuse for the fuel pump.

3. Crank the engine for about 10 seconds or until the oil pressure warning light goes out.

   (Do not crank the engine for more then 10 seconds at a time.)

4. Reinstall the fuel pump fuse and start the engine.

5. Inspect for oil, fuel, or water leaks.

6. Confirm normal engine and transmission operation.

Final Quality Check:

Inspect your work to confirm that all wires, hoses, trim, etc. are properly located and secure. This helps to prevent comebacks and unhappy customers.