TOYOTA AIR PUMP

K-C Engine
Corolla (1969-70)
3K-C Engine
Corolla (1970-71)
3R-C Engine
Corona (1968-70)
Hi-Lux (1970)
2M Engine
Crown (1968-71)
2M-B Engine
2000 GT (1970)
4M Engine
Crown (1972-73)
Corona Mk II (1973)
F Engine
Land Cruiser (1968-69 & 1973)

DESCRIPTION

A vane type pump driven by the vehicle engine compresses air and injects it through air manifolds, hoses, and injection tubes into exhaust system at the exhaust valve area.

OPERATION

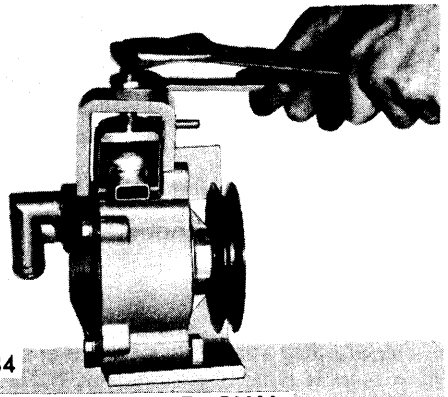
Air is drawn into pump from air cleaner. Air pump forces air through a check valve to air injection manifold and then into exhaust ports directly above exhaust valve heads. Air now unites with exhaust gases in exhaust system and ignites them, thus reducing unburned hydrocarbons to a minimum.

OVERHAUL

DISASSEMBLY

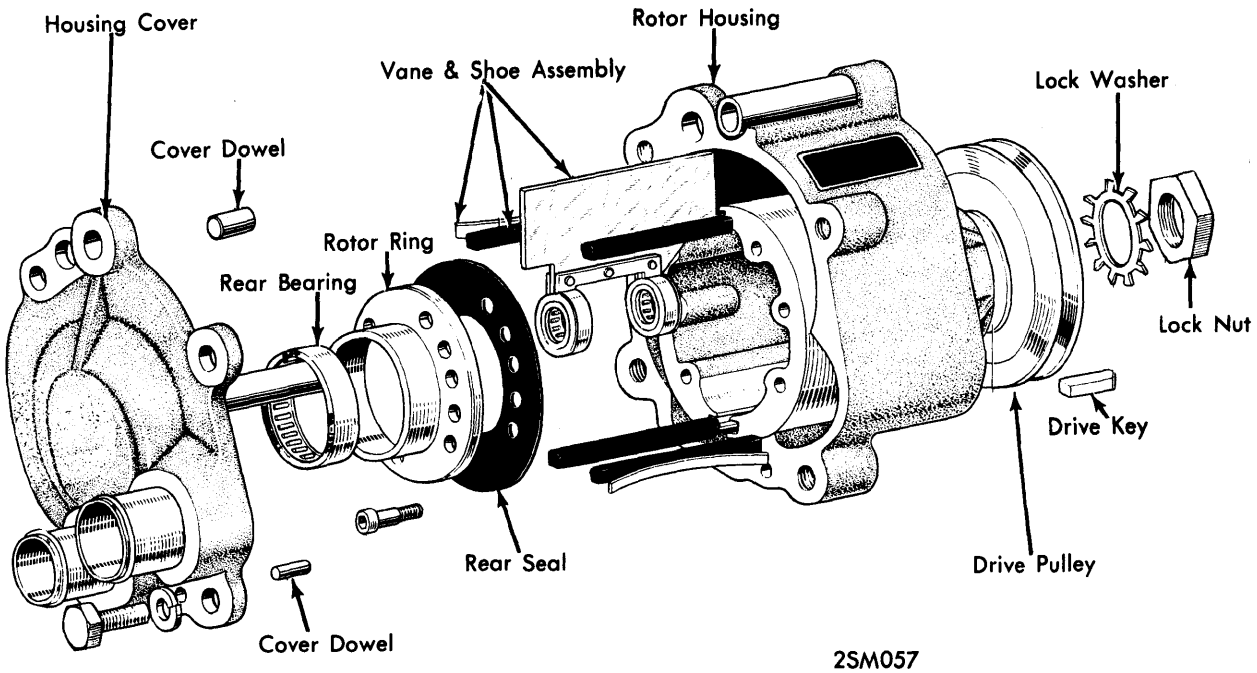
1) To replace relief valve, remove valve with suitable puller (09297-60010). When installing, position new relief valve on pump housing and hold relief valve replacer (09296-60010) on the relief valve. Tap with hammer until valve is seated.

2) Mount pump in suitable holding fixture (09293-60010). *CAUTION — Do not mount pump housing in vise.* With pulley side down, drive out dowels toward pulley. Remove housing cover attaching bolts and cover, by tapping lightly with plastic hammer.



RELIEF VALVE REMOVAL

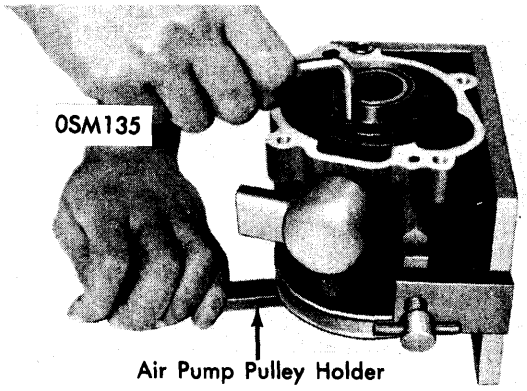
3) Using suitable tool (09298-60010) to hold pulley, remove rotor ring screws. Remove rear rotor ring and bearing assembly, remove rear carbon seal. Remove vane assembly. Remove carbon shoes and springs.



AIR INJECTION PUMP (EXPLODED VIEW)

TOYOTA AIR PUMP (Cont.)

4) To replace bearing in rotor ring, position rotor ring on press with bearing part number facing upward. Using suitable tool (09295-66010) press out bearing.



REAR ROTOR RING REMOVAL

5) To replace pulley, straighten lock washer tab. Remove lock nut. Using suitable puller remove pulley. *NOTE — Lock nut is left hand thread.* Further disassembly of rotor from pump housing is not recommended. If any component of rotor housing requires replacement, entire housing must be replaced.

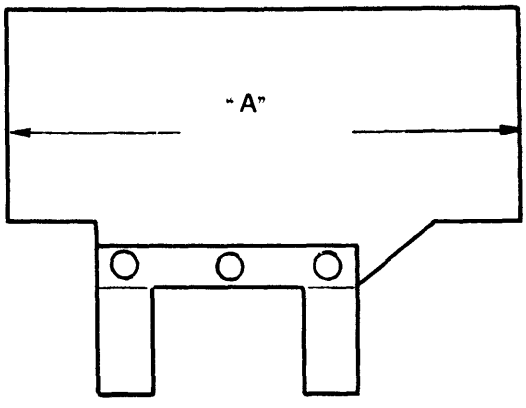
CLEANING & INSPECTION

NOTE — Do not immerse housing, rotor and housing cover in solvent as bearings are permanently lubricated.

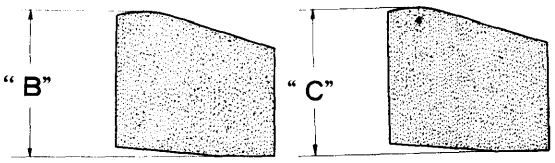
1) Remove carbon dust and grease from housing, rotor and housing cover. Clean pivot shaft, rear bearing and vane assembly with a suitable solvent.

2) Inspect internal surface of housing for wear or damage by vanes and rotor. If excessively worn, replace. Inspect vane bearing for defect. If defective, replace vane assembly and housing cover assembly.

3) Inspect rear bearing for defect. If defective, replace rear bearing and housing cover assembly. Inspect vane for deformation, wear and damage. Minimum length of vane is 2.35".



VANE INSPECTION



CARBON SHOE INSPECTION

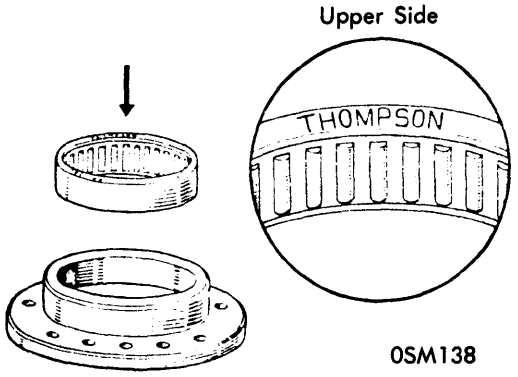
4) Inspect carbon shoes for cracks, wear or damage. Referring to illustration, minimum dimension "B" of shoe installed with spring should be .16" and minimum dimension "C" of shoe installed without spring should be .19".

5) Minimum thickness of rear seal is .016". Inspect shoe spring. Height, at center when placed on flat surface, should be more than .12". Inspect housing cover for cracks or discoloration of pivot shaft. Inspect front bearing for wear.

REASSEMBLY

1) Press rear bearing in with marked side up. Lubricate vane bearings and rear bearing with air pump grease or equivalent. Install pulley, lock washer and lock nut, secure lock nut.

2) Using suitable tool (09298-60010) to hold pulley, insert vanes into housing (blades 180° apart). Position one vane between intake and exhaust chambers as an aid to installing housing cover.

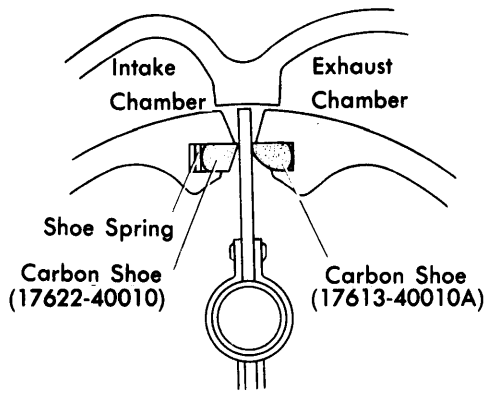


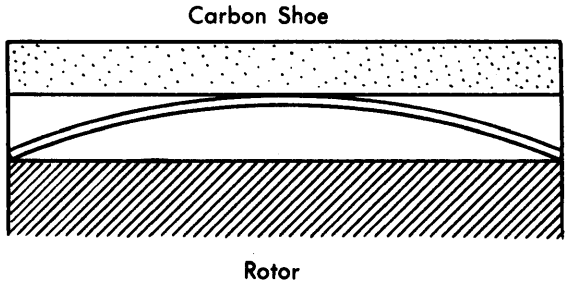
REAR BEARING INSTALLATION

3) Install carbon shoes. Higher one, which is colored white on one end, should be installed in shallowest shoe slot with its colored end toward housing cover side. Install shoe springs into deepest shoe slot with curved surface positioned toward carbon shoe.

4) Position rear seal and rotor ring in place, tighten screws diagonally to 2.7-4.0 ft. lbs. Install housing cover assembly. Loosely tighten attaching bolts. Install dowels toward pulley, then torque attaching bolts diagonally to 7.2-10.3 ft. lbs. *NOTE — If new vanes were installed, chirping or squeaking may result during initial operation.*

TOYOTA AIR PUMP (Cont.)





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CARBON SHOE INSTALLATION