

# TOYOTA

## SERVICE BULLETIN

TOYOTA MOTOR SALES, U.S.A., INC.

VOLUME

9

REFERENCE ENGINE \_\_\_\_\_  
NUMBER 021 \_\_\_\_\_  
DATE 05-27-88 \_\_\_\_\_  
MODEL RN \_\_\_\_\_

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### 22R, 22R-E PISTON SLAP NOISE

To minimize piston slap noise during warm-up, the following changes have been made on the 22R, 22R-E piston.

- 1) Piston pin offset changed from:  
0.5 mm ➔ 1.0 mm
- 2) Three (3) different standard size pistons are now available to select the correct piston according to cylinder bore diameter.

#### PRODUCTION EFFECTIVE:

From Engine Number  
22R – 2474411

Production Date  
February, 1988

#### PART NUMBER INFORMATION:

Previous Part Number	New Part Number	Part Name
13101-35031	13101-35032-01	Piston w/Pin (STD, Size 1)
	13101-35032-02	Piston w/Pin (STD, Size 2)
	13101-35032-03	Piston w/Pin (STD, Size 3)
13103-35041	13103-35042	Piston w/Pin 0/S 0.50 mm
13105-35041	13105-35042	Piston w/Pin 0/S 1.00 mm
11401-39446	11401-39447	Cylinder Block Sub-Assembly
11400-35052	11400-35053	Short Block Assembly

New part numbers are interchangeable with previous part numbers.

## 22R, 22R-E PISTON SLAP NOISE (CONT'D)

### **FIELD FIX INFORMATION:**

New part numbers can be used as a field fix for piston slap noise on pre-production changed engines.

**NOTE:** When installing the new pistons on pre-production changed engines, all four pistons MUST be replaced.

### **PISTON SLAP DIAGNOSIS PROCEDURE:**

1. Make sure engine is cold.
2. Start engine and listen for a muffled, hollow, bell-like sound. The noise is present only during cold engine operation.
3. During cold operation with the abnormal noise present, short cylinders and listen for a change in the characteristic of the noise.

**NOTE:** Do not short cylinders for prolonged periods of time.

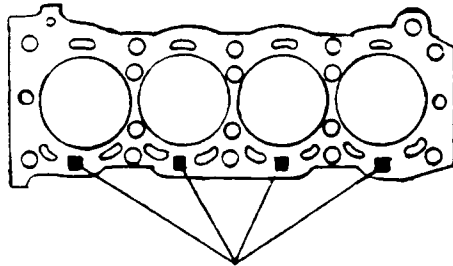
4. Verify that the noise does go away or significantly decreases after the engine has reached normal operating temperature.

## 22R, 22R-E PISTON SLAP NOISE (CONT'D)

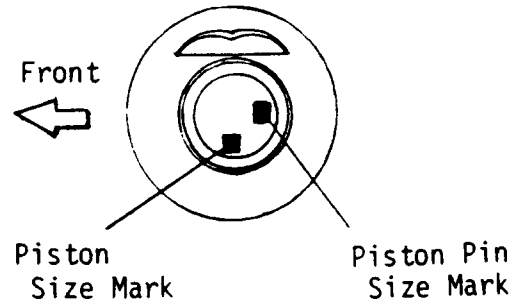
### FIELD FIX PROCEDURE:

- If the cylinder bore is not worn, select and install the piston which has the same bore size mark (1, 2, or 3) as that stamped on the cylinder block.  
(Location of cylinder bore and piston size mark)

← Front



Cylinder Bore  
Size Mark



Piston  
Size Mark

Piston Pin  
Size Mark

- If the cylinder bore mark cannot be identified or the cylinder bore is worn but still in good condition, measure the bore size and use the chart below to select the proper piston.

Piston No.	Piston Diameter	Cylinder Bore Diameter	Piston to Cylinder Wall Clearance
1	91.975-91.985 mm	92.000-92.010 mm	0.015-0.035 mm
2	91.985-91.995 mm	92.010-92.020 mm	
3	91.995-92.005 mm	92.020-92.030 mm	