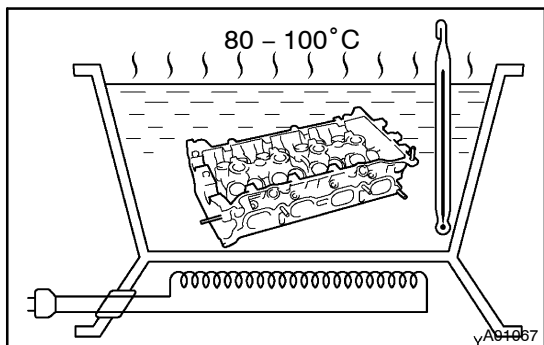
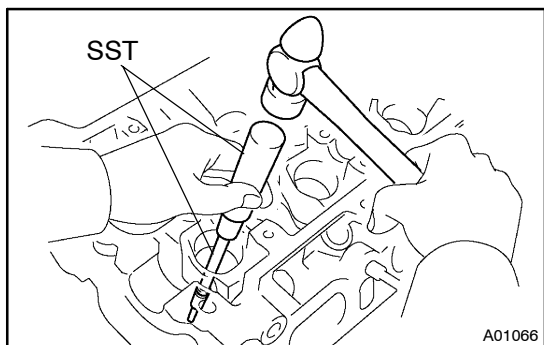




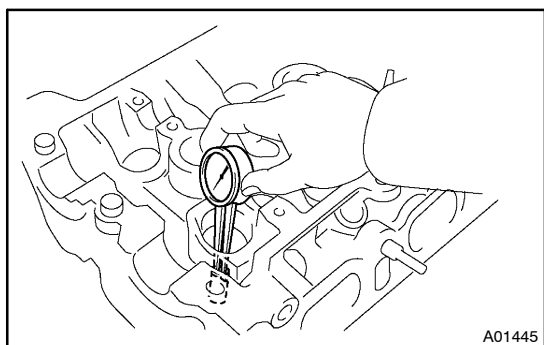
REPLACEMENT

REPLACE VALVE GUIDE BUSHINGS

- (a) Gradually heat the cylinder head to 110 – 130 °C (230 – 266 °F).



- (b) Using SST and a hammer, tap out the guide bushing.
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- (c) Using a caliper gauge, measure the bushing bore diameter of the cylinder head.

Both intake and exhaust

Bushing bore diameter mm (in.)	Bushing size
10.285 – 10.306 (0.4049 – 0.4057)	Use STD
10.335 – 10.356 (0.4068 – 0.4077)	Use O/S 0.05

- (d) 1ZZ-FE:

Select the new guide bushing (STD or O/S 0.05).

If the bushing bore diameter of the cylinder head is greater than 10.306 mm (0.4057 in.), machine the bushing bore to the following dimension:

10.335 – 10.356 mm (0.4068 – 0.4077 in.)

If the bushing bore diameter of the cylinder head is greater than 10.356 mm (0.4077 in.), replace the cylinder head.

- (e) 1ZZ-FE:

Gradually heat the cylinder head to 80 – 100 °C (176 – 212 °F).

Both intake and exhaust

Bushing bore diameter mm (in.)	Bushing size
10.488 – 10.506 (0.4129 – 0.4136)	Use STD
10.538 – 10.556 (0.4149 – 0.4156)	Use O/S 0.05

(f) 2ZZ-GE:

Select the new guide bushing (STD or O/S 0.05).

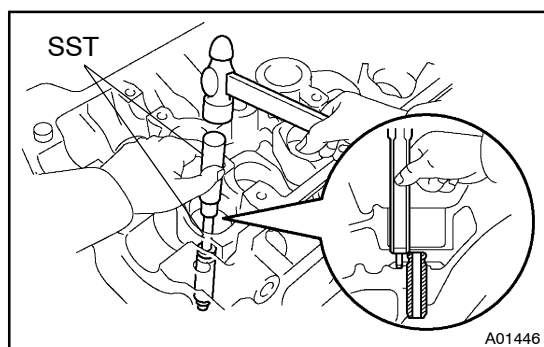
If the bushing bore diameter of the cylinder head is greater than 10.506 mm (0.4136 in.), machine the bushing bore to the following dimension:

10.538 – 10.556 mm (0.4149 – 0.4156 in.)

If the bushing bore diameter of the cylinder head is greater than 10.556 mm (0.4156 in.), replace the cylinder head.

(g) 2ZZ-GE:

Gradually heat the cylinder head to 110 – 130 °C (230 – 266 °F).



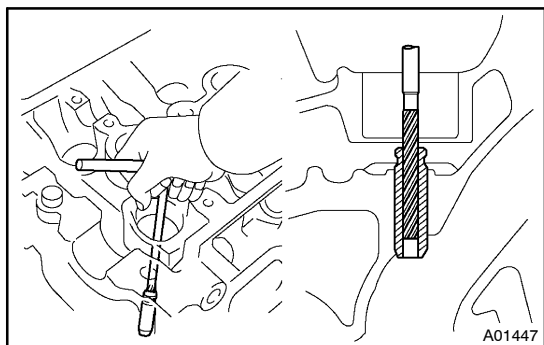
(h) Using SST and a hammer, tap in a new guide bushing to the specified protrusion height.

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Protrusion height:

1ZZ-FE 8.7 – 9.1 mm (0.342 – 0.358 in.)

2ZZ-GE 15.3 – 15.7 mm (0.602 – 0.618 in.)



(i) Using a sharp 5.5 mm reamer, ream the guide bushing to obtain the standard specified clearance (See page EM-49) between the guide bushing and valve stem.