

REPLACEMENT

1. REPLACE TIMING CHAIN COVER OIL SEAL

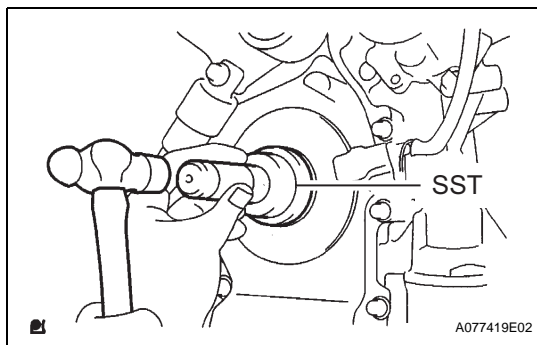
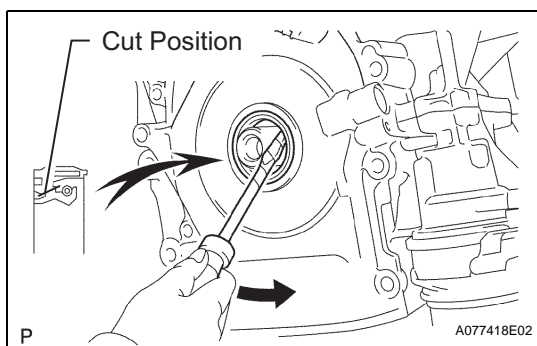
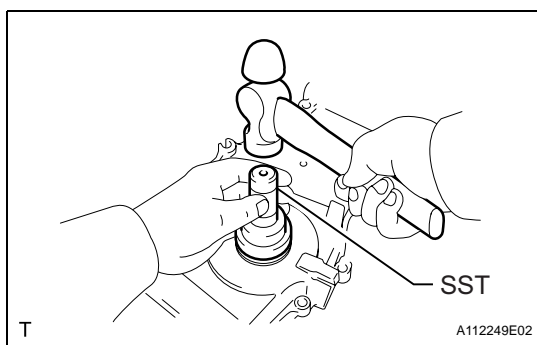
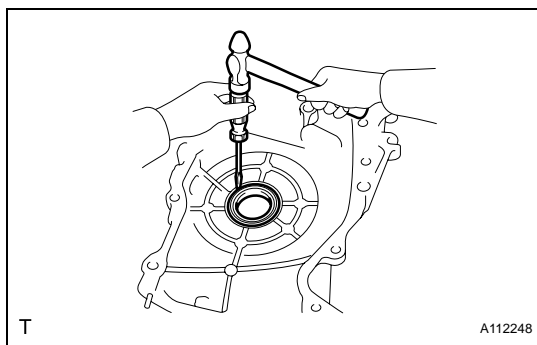
HINT:

There are 2 methods to replace the oil seal.

- (a) If the timing chain cover is removed from the cylinder block:
- (1) Using a screwdriver and hammer, tap out the oil seal.
 - (2) Apply multi-purpose grease to the lip of a new oil seal.

NOTICE:

Keep the lip free of foreign objects.



- (3) Using SST and a hammer, tap in the new oil seal until its surface is flush with the timing chain cover edge.

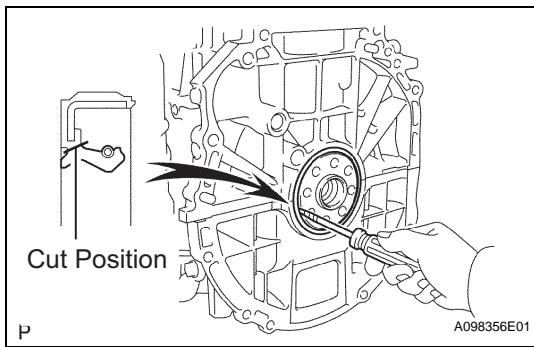
SST 09223-22010

NOTICE:

Do not tap the oil seal at an angle.

- (b) If the timing chain cover oil seal is installed to the cylinder block:
- (1) Remove the fan and generator V belt (see page [EM-6](#)).
 - (2) Remove the crankshaft pulley (see page [EM-25](#)).
 - (3) Using a knife, cut off the lip of the oil seal.
 - (4) Using a screwdriver with its tip wrapped with tape, pry out the oil seal.
- NOTICE:**
After removing, check the crankshaft for damage. If damaged, smooth the surface with 400-grit sandpaper.
- (5) Apply multi-purpose grease to the lip of a new oil seal.
- NOTICE:**
Keep the lip free of foreign objects.
- (6) Using SST and a hammer, tap in the new oil seal until its surface is flush with the timing chain cover edge.
- SST 09223-22010**
- NOTICE:**
Do not tap the oil seal at an angle.
- (7) Install the crankshaft pulley (see page [EM-38](#)).
 - (8) Install the fan and generator V belt (see page [EM-7](#)).

EM



2. REPLACE ENGINE REAR OIL SEAL

- Using a knife, cut off the lip of the oil seal.
- Using a screwdriver with its tip wrapped with tape, pry out the oil seal.

NOTICE:

After removing, check the crankshaft for damage. If damaged, smooth the surface with 400-grit sandpaper.

- Apply multi-purpose grease to the lip of a new oil seal.

NOTICE:

Keep the lip free of foreign objects.

- Using SST and a hammer, tap in the new oil seal until its surface is flush with the rear oil seal retainer edge.

SST 09223-15030, 09950-70010 (09951-07100)

NOTICE:

- Wipe any extra grease off the crankshaft.
- Do not tap the oil seal at an angle.

3. REPLACE STUD BOLT (for Cylinder Block)

NOTICE:

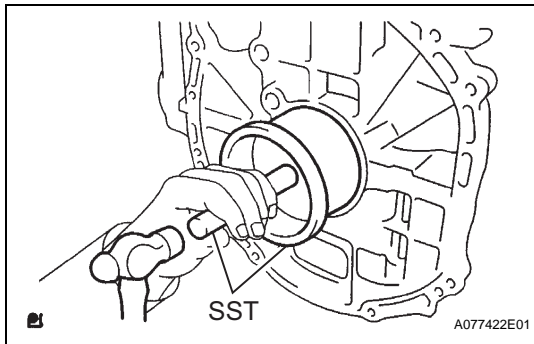
If the stud bolt is deformed or the threads are damaged, replace it.

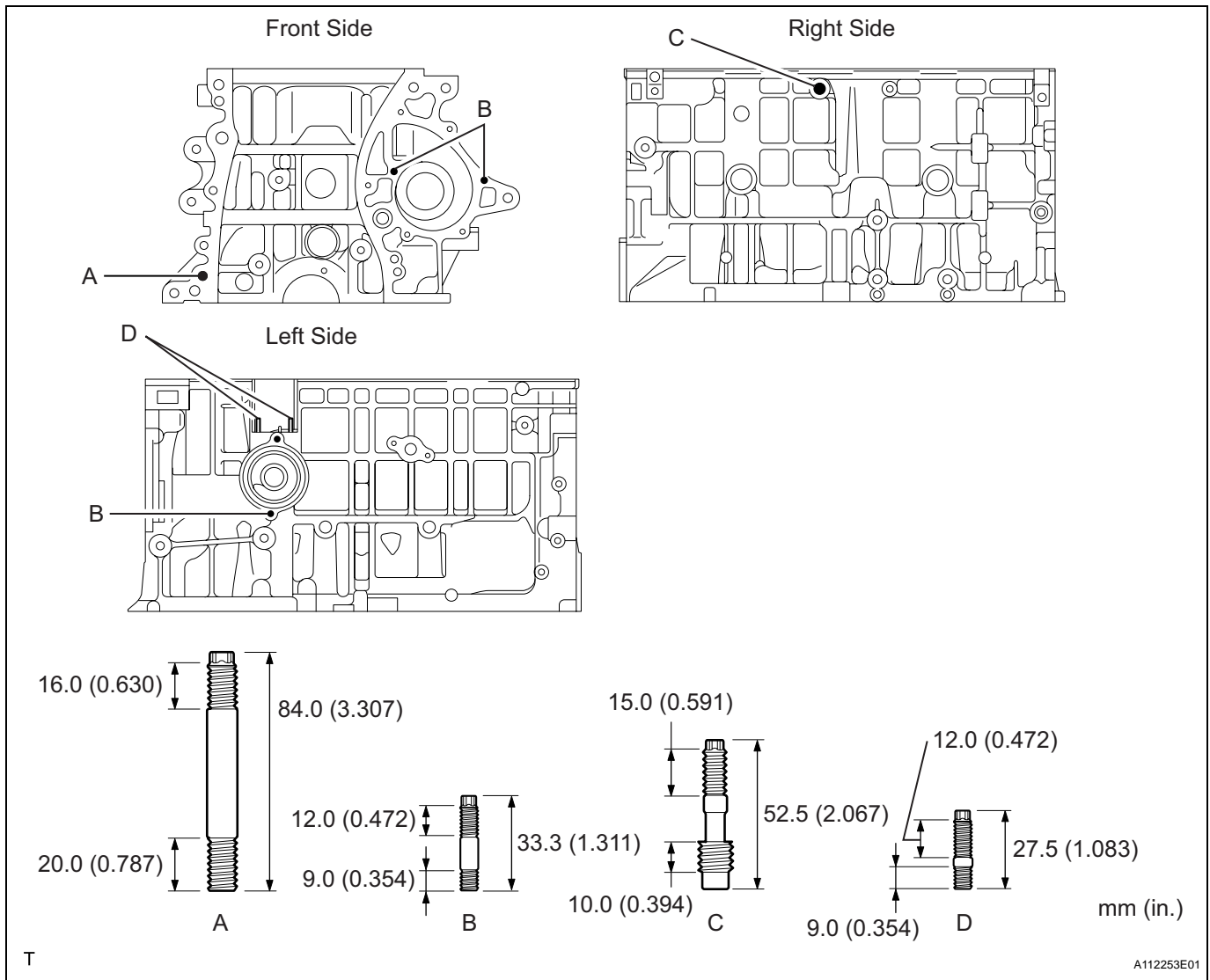
- Remove the 8 stud bolts.
- Install the 8 stud bolts into the cylinder block.

Torque

| Item | Specified Condition |
|------|-----------------------------------|
| A | 5.0 N*m (51 kgf*cm, 44 in.*lbf) |
| B | 21.5 N*m (219 kgf*cm, 16 ft.*lbf) |
| C | 5.0 N*m (51 kgf*cm, 44 in.*lbf) |
| D | 5.0 N*m (51 kgf*cm, 44 in.*lbf) |

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4. REPLACE TIGHT PLUG (for Cylinder Block)

NOTICE:

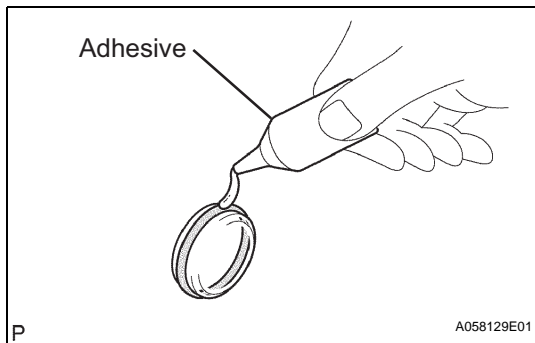
If water leaks from the tight plug or the plug corrodes, replace it.

- Remove the 2 tight plugs from the engine front and rear side.
- Apply adhesive around new tight plugs.

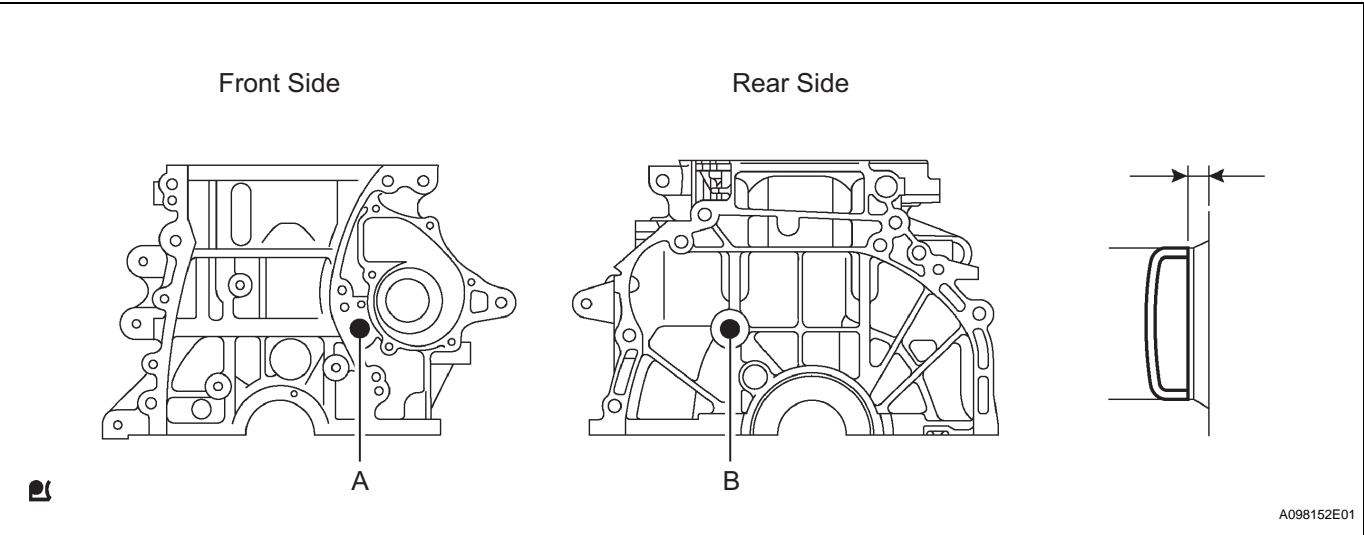
Adhesive:

Toyota Genuine Adhesive 1342, Three Bond 1342 or Equivalent

- Using SST, install the 2 tight plugs.
SST 09950-60010 (09951-00200), 09950-70010 (09951-07100)
Standard depth



| Item | Specified Condition |
|------|------------------------------------|
| A | 1.7 to 2.7 mm (0.067 to 0.106 in.) |
| B | 2.2 to 3.2 mm (0.087 to 0.126 in.) |



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5. REPLACE RING PIN (for Cylinder Block)

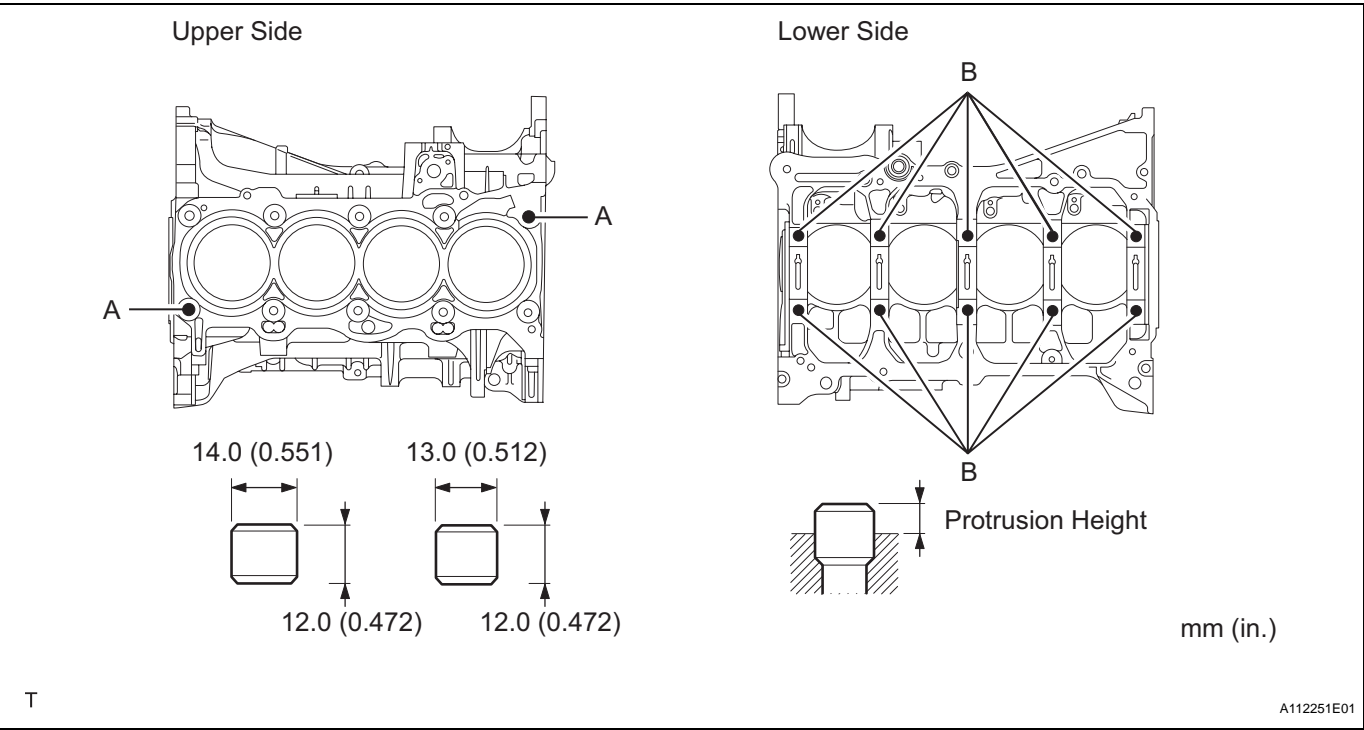
NOTICE:

It is not necessary to remove with head pin unless it is being replaced.

- (a) Remove the 12 ring pins.
- (b) Using a plastic-faced hammer, install 12 new ring pins.

Standard protrusion height

| Item | Specified Condition |
|------|---------------------|
| A | 6.0 mm (0.236 in.) |
| B | 5.0 mm (0.197 in.) |



6. REPLACE STRAIGHT PIN (for Cylinder Block)

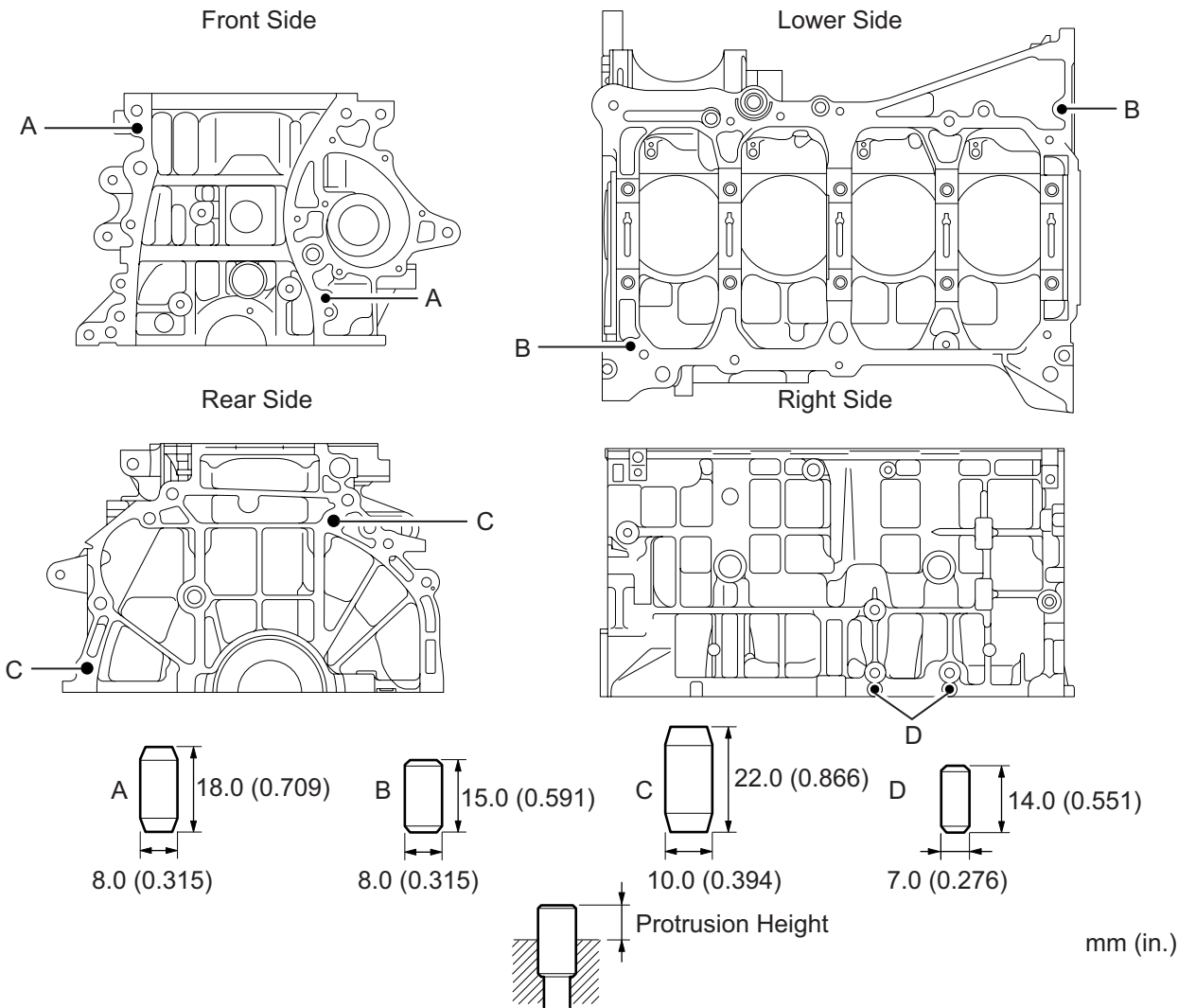
NOTICE:

It is not necessary to remove with straight pin unless it is being replaced.

- (a) Remove the 8 straight pins.
- (b) Using a plastic-faced hammer, install 8 new straight pins.

Standard protrusion height

| Item | Specified Condition |
|------|---------------------|
| A | 8.0 mm (0.315 in.) |
| B | 7.5 mm (0.295 in.) |
| C | 12.0 mm (0.472 in.) |
| D | 5.0 mm (0.197 in.) |



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