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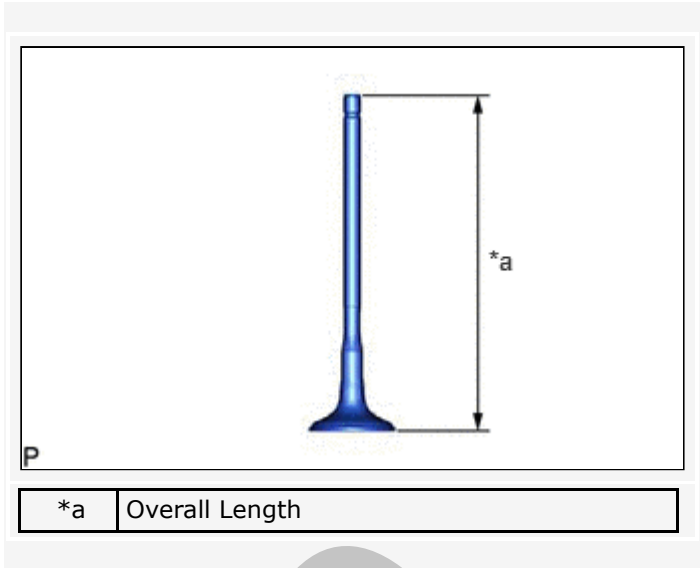
2024 Lexus RX 350 Service and Repair Manual

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(e) Using a vernier caliper, measure the overall length of the exhaust valve.

Standard Overall Length:
108.7 mm (4.28 in.)
Minimum Overall Length:

SPECIFIED CONDITION
108.2 mm 4.26 in



(f) If the overall length is less than the minimum, replace the exhaust valve.

5. INSPECT INTAKE VALVE SEAT

- (a) Apply a light coat of Prussian blue to the valve face.
- (b) Lightly press the valve face against the intake valve seat.

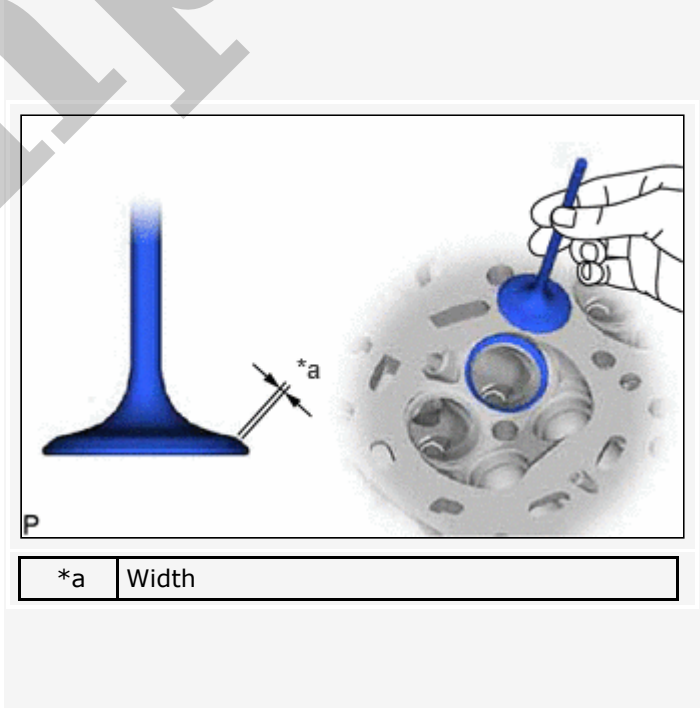
NOTICE:

Do not rotate the intake valve while pressing it.

- (c) Check the valve face and intake valve seat by using the following procedure:
 - (1) If Prussian blue appears 360° around the entire intake valve face, the valve face is concentric.
 - (2) If the valve face is not concentric, replace the intake valve.
 - (3) If Prussian blue appears 360° around the entire intake valve seat, the intake valve seat and valve face are concentric.
 - (4) If the valve face is not concentric, resurface the intake valve seat.
 - (5) Measure the width of the contact area of the intake valve seat and valve face.

Standard Width:

SPECIFIED CONDITION
1.1 to 1.5 mm 0.0433 to 0.0591 in



6. INSPECT EXHAUST VALVE SEAT

- (a) Apply a light coat of Prussian blue to the valve face.
- (b) Lightly press the valve face against the exhaust valve seat.

NOTICE:

Do not rotate the exhaust valve while pressing it.

- (c) Check the valve face and exhaust valve seat by using the following procedure:

8. INSPECT CYLINDER HEAD EXHAUST VALVE COMPRESSION SPRING

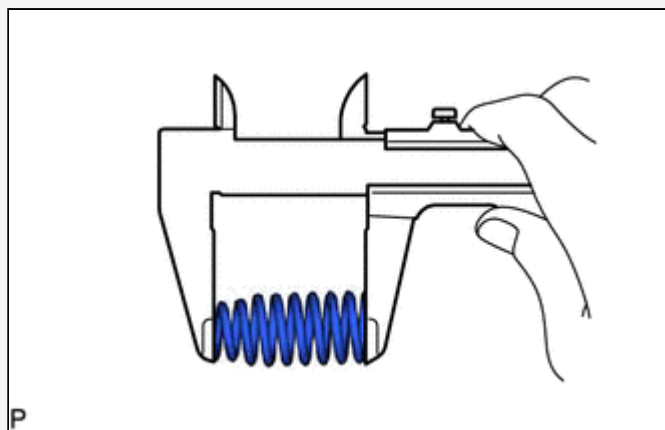
- (a) Using a vernier caliper, measure the free length of the cylinder head exhaust compression spring.

Standard Free Length:

SPECIFIED CONDITION
57.78 mm 2.27 in

NOTICE:

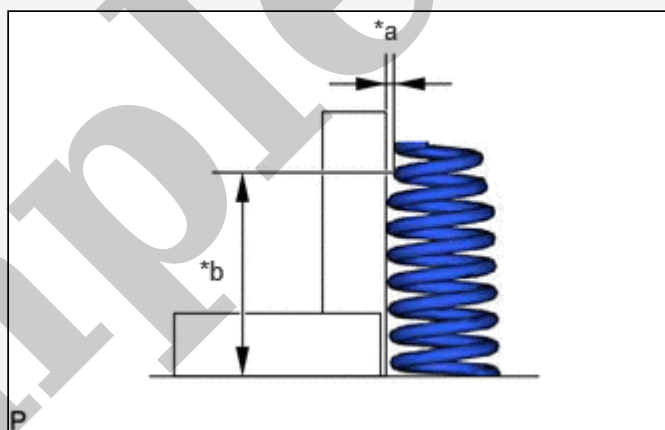
Compression springs come in 2 different lengths. Make sure all compression springs are the same length when replacing them.



- (b) Using a steel square, measure the deviation of the cylinder head exhaust compression spring.

Maximum Deviation (Reference):

SPECIFIED CONDITION
1.0 mm 0.0394 in



*a	Deviation
*b	40 mm (1.57 in.)

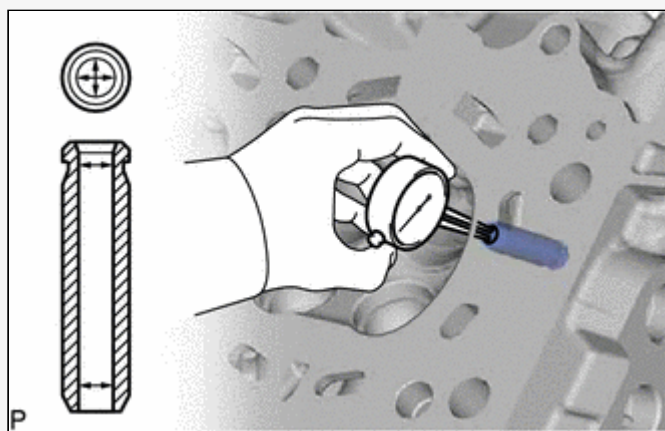
- (c) If the deviation is more than the maximum, replace the cylinder head exhaust compression spring.

9. INSPECT VALVE GUIDE BUSH OIL CLEARANCE

- (a) Using a caliper gauge, measure the inside diameter of the valve guide bush.

Standard Valve Guide Bush Inside Diameter:

SPECIFIED CONDITION
5.510 to 5.530 mm 0.217 to 0.218 in



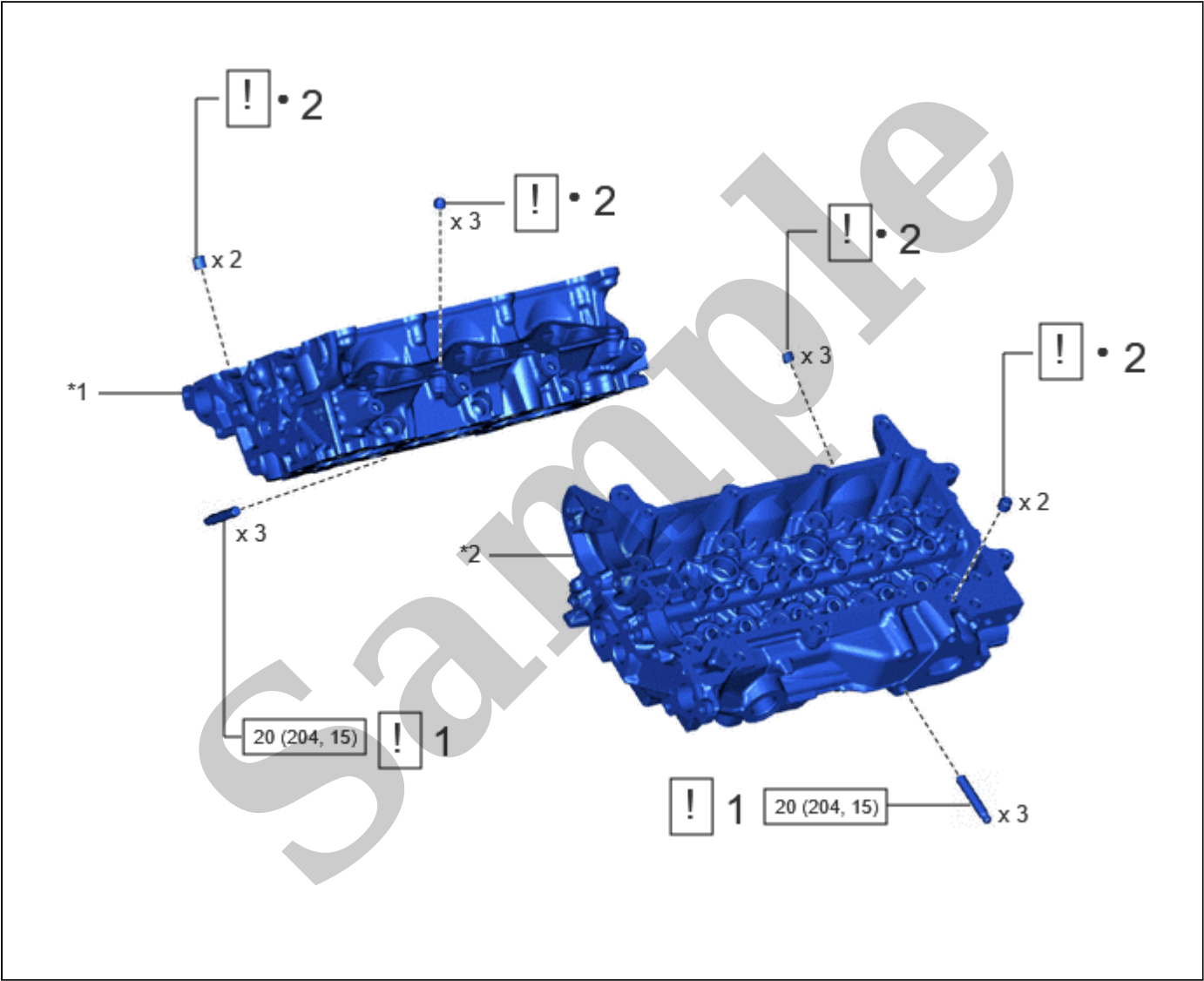
- (b) Subtract the valve stem diameter measurement from the valve guide bush inside diameter measurement.

Last Modified: 10-07-2024	6.11:8.1.0	Doc ID: RM100000002H74Y
Model Year Start: 2024	Model: GX550	Prod Date Range: [12/2023 -]
Title: V35A-FTS (ENGINE MECHANICAL): CYLINDER HEAD: REASSEMBLY; 2024 MY GX550 [12/2023 -]		

REASSEMBLY




CAUTION / NOTICE / HINT





COMPONENTS (REASSEMBLY)



PROCEDURE		PART NAME CODE				
1	STUD BOLT	-	-	INFO	-	-
2	RING PIN	-	-	INFO	-	-

*1	CYLINDER HEAD SUB-ASSEMBLY RH	*2	CYLINDER HEAD SUB-ASSEMBLY LH
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PROCEDURE		PART NAME CODE			
12	CYLINDER HEAD INTAKE VALVE LH	13711G	INFO	-	-
13	CYLINDER HEAD EXHAUST VALVE LH	13715C	INFO	-	-

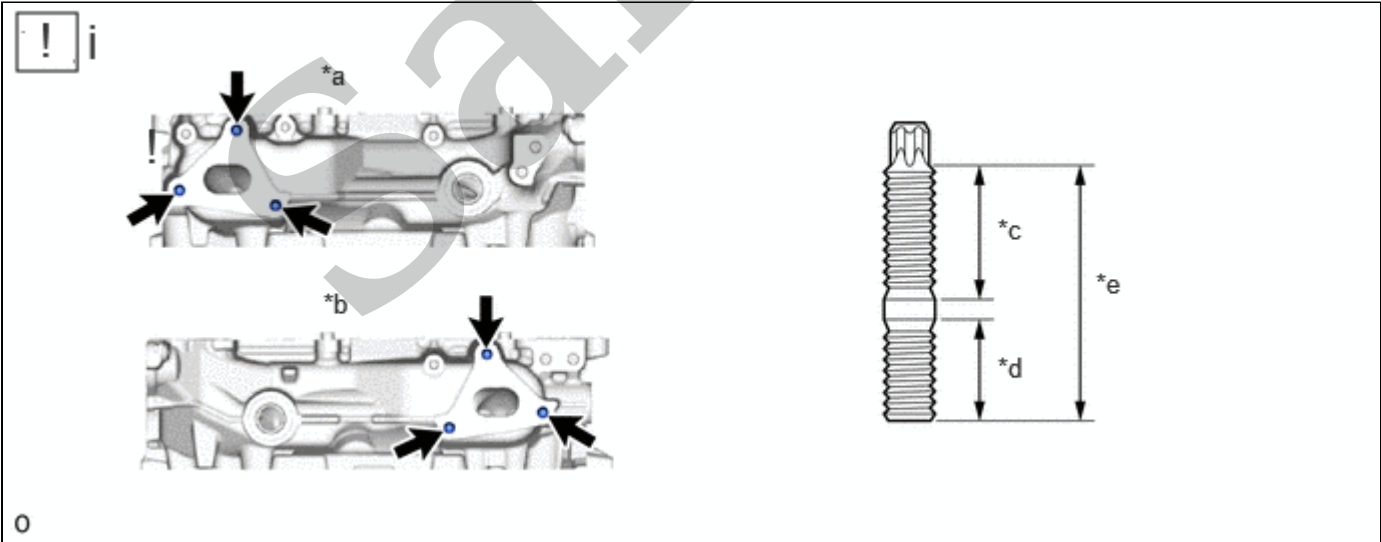
*1	CYLINDER HEAD VALVE SPRING RETAINER LOCK LH	*2	CYLINDER HEAD VALVE SPRING RETAINER LH
*3	CYLINDER HEAD INTAKE COMPRESSION SPRING LH	*4	CYLINDER HEAD EXHAUST COMPRESSION SPRING LH
	N*m (kgf*cm, ft.*lbf): Specified torque		Non-reusable part
	Toyota Genuine Adhesive 1324, Three Bond 1324 or equivalent		Engine oil
★	Precoated part	-	-

CAUTION / NOTICE / HINT

- HINT:
- Use the same procedure for the Bank 1 side and Bank 2 side.
 - The following procedure is for the Bank 2 side.

PROCEDURE

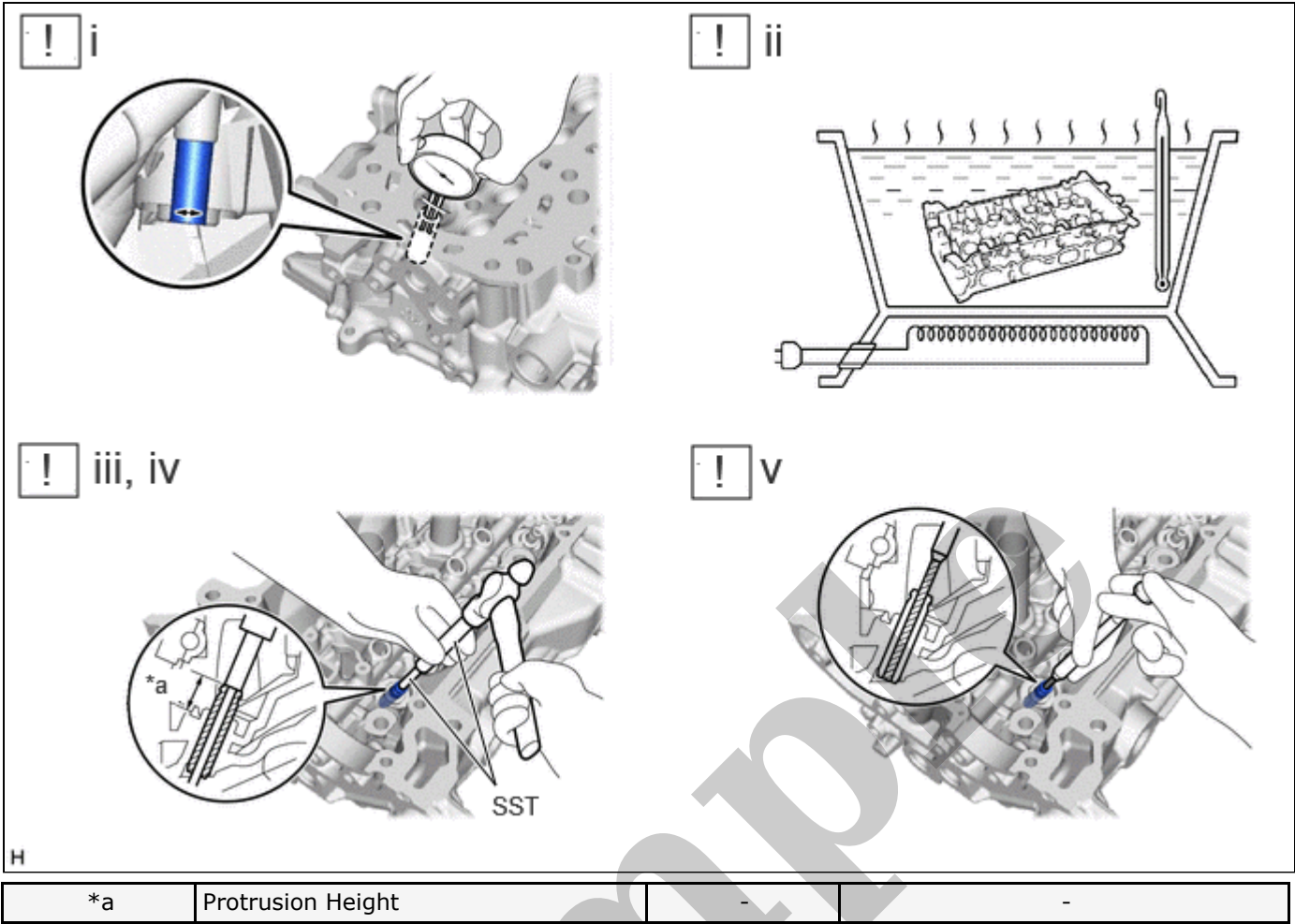
1. INSTALL STUD BOLT



*a	for Bank 1	*b	for Bank 2
*c	22.5 mm (0.886 in.)	*d	20 mm (0.787 in.)
*e	46 mm (1.81 in.)	-	-

(1) Using E10 "TORX" socket wrench, install the stud bolts.

Torque:
20 N·m {204 kgf·cm, 15 ft·lbf}



(1) Using a caliper gauge, measure the exhaust valve guide bush bore diameter of the cylinder head sub-assembly.

Standard cylinder bore diameter:
10.285 to 10.306 mm (0.405 to 0.406 in.)

Select a New Guide Bush (STD or O/S 0.05)

BUSH SIZE	SPECIFIED CONDITION
STD	10.333 to 10.344 mm (0.40681 to 0.40724 in.)
O/S 0.05	10.383 to 10.394 mm (0.40878 to 0.40921 in.)

HINT:

- If the bush bore diameter of the cylinder head sub-assembly is more than 10.306 mm (0.406 in.), machine the bush bore to the dimension of 10.335 to 10.356 mm (0.407 to 0.408 in.) to install an O/S 0.05 valve guide bush.
- If the bush bore diameter of the cylinder head sub-assembly is more than 10.356 mm (0.408 in.), replace the cylinder head sub-assembly.

(2) Heat the cylinder head to 80 to 100°C (176 to 212°F).

CAUTION:

- Do not touch the cylinder head sub-assembly without wearing protective gloves, as it may get very hot during operation.
- Be sure to wear protective gloves to avoid burns.

(3) Place the cylinder head sub-assembly on wooden blocks.

CAUTION:

Be sure to wear protective gloves.

(4) Using SST, tap in new exhaust valve guide bushes to the specified protrusion height.

(2) Heat the cylinder head sub-assembly to 80 to 100°C (176 to 212°F).

CAUTION:

- Do not touch the cylinder head sub-assembly without wearing protective gloves, as it may get very hot during operation.
- Be sure to wear protective gloves to avoid burns.

(3) Place the cylinder head sub-assembly on wooden blocks.

CAUTION:

Be sure to wear protective gloves.

(4) Using SST, tap in new intake valve guide bushes to the specified protrusion height.

SST: 09201-10000

09201-01050

SST: 09950-70010

09951-07100

Standard protrusion height:


19.35 to 19.6 mm (0.762 to 0.772 in.)

(5) Using a sharp 5.5 mm reamer, ream the valve guide bushings to obtain the specified clearance.

Standard oil clearance:

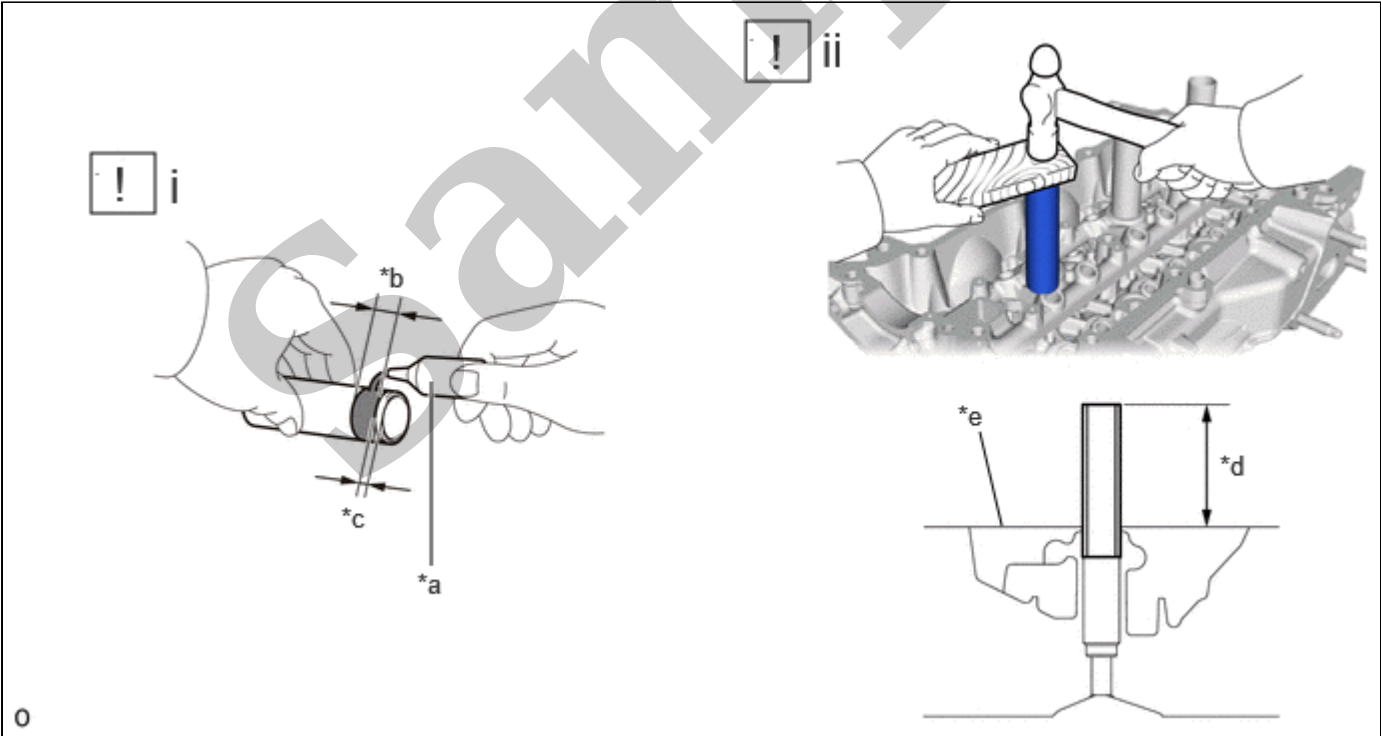
0.025 to 0.060 mm (0.000984 to 0.00236 in.)

5. INSTALL SPARK PLUG TUBE



NOTICE:

When using a new cylinder head sub-assembly, the spark plug tubes must be replaced.



*a	Adhesive	*b	1.0 to 7.0 mm (0.0394 to 0.276 in.)
*c	0 to 1.0 mm (0 to 0.0394 in.)	*d	Standard Protrusion Height
*e	Cylinder Head Casting Surface	-	-

(1) Apply adhesive onto the shaded area of a new spark plug tube.

Adhesive:

Toyota Genuine Adhesive 1324, Three Bond 1324 or equivalent.

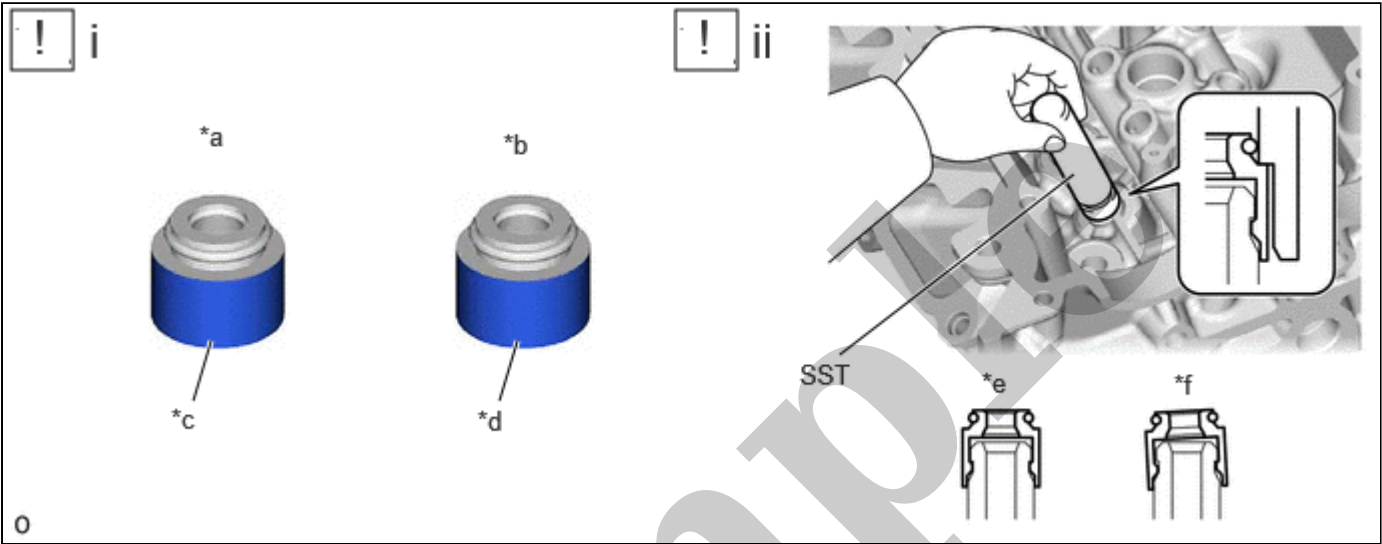
- Adhesive:
Toyota Genuine Adhesive 1324, Three Bond 1324 or equivalent
- (2) Using a 6 mm hexagon wrench, install the No. 1 straight screw plugs LH with head.

Torque:
25 N·m {255 kgf·cm, 18 ft·lbf}

NOTICE:
Do not expose the No. 1 straight screw plug LH with head to engine oil for at least 1 hour after installing it.

9. INSTALL CYLINDER HEAD VALVE SPRING SEAT LH

10. INSTALL CYLINDER HEAD INTAKE VALVE STEM OIL SEAL LH



*a	Intake Side	*b	Exhaust Side
*c	Gold	*d	Gray
*e	Correct	*f	Incorrect

- (1) Apply a light coat of engine oil to new cylinder head intake valve stem oil seals.

NOTICE:
Pay attention when installing the intake and exhaust valve stem oil seals. For example, installing the intake valve stem oil seal to the exhaust side or installing the exhaust valve stem oil seal to the intake side can cause installation problems later.

HINT:
The intake valve oil seals are gold and the exhaust valve oil seals are gray.

- (2) Using SST, push in the cylinder head intake valve stem oil seals.

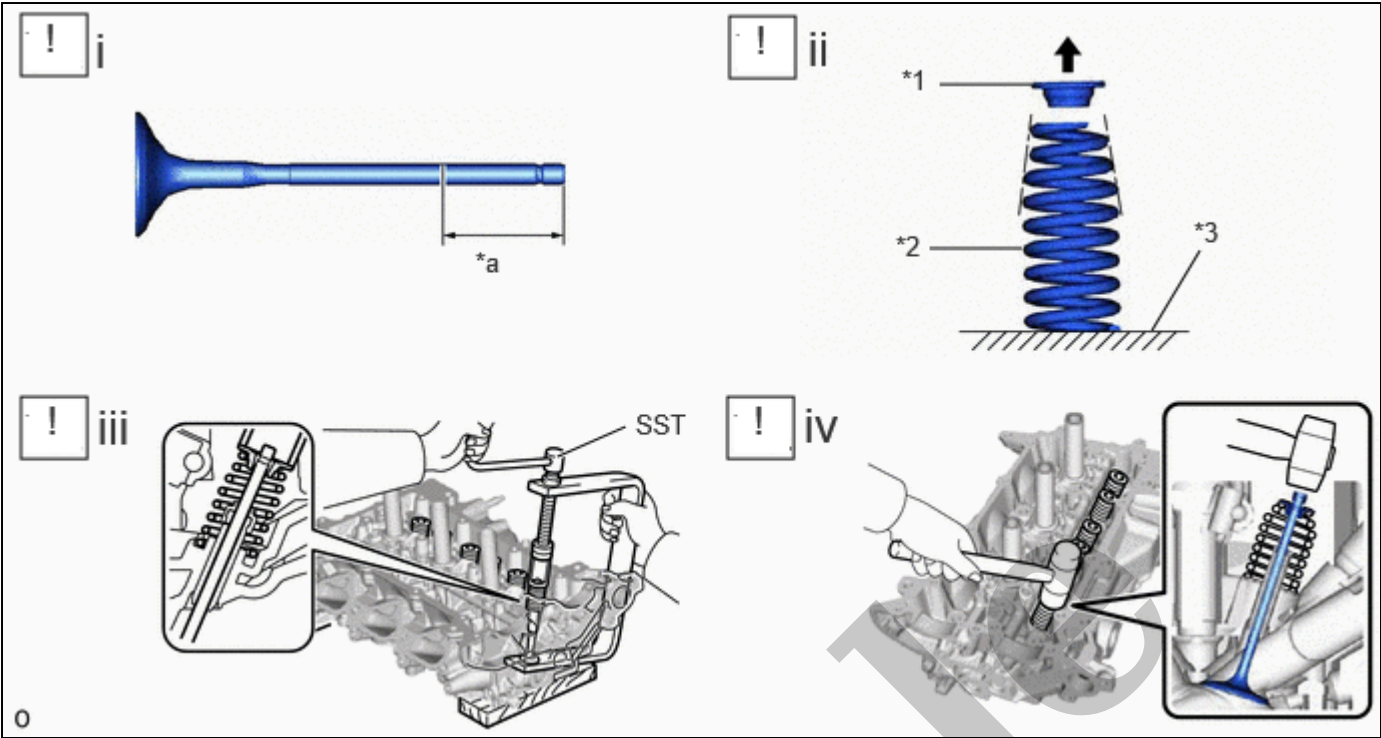
SST: 09201-41020

NOTICE:
Failure to use SST will cause the seal to be damaged or improperly seated.

11. INSTALL CYLINDER HEAD EXHAUST VALVE STEM OIL SEAL LH

- (a) Use the same procedure for the cylinder head exhaust valve stem oil seal LH and cylinder head intake valve stem oil seal LH.

12. INSTALL CYLINDER HEAD INTAKE VALVE LH



*1	Cylinder Head Valve Spring Retainer LH	*2	Cylinder Head Exhaust Compression Spring LH
*3	Cylinder Head Sub-assembly	-	-
*a	30 mm (1.18 in.) or more	-	-
	Top	-	-

- (1) Apply a sufficient coat of engine oil to the tip area of the cylinder head exhaust valve LH shown in the illustration.
- (2) Install the cylinder head exhaust valve LH, cylinder head exhaust compression spring LH and cylinder head valve spring retainer LH to the cylinder head sub-assembly.

NOTICE:
Install the same parts in the same combination to their original locations.

- (3) Using SST, compress each compression spring and install the 6 cylinder head valve spring retainer locks.

SST: 09202-70020
09202-01010
09202-01020

SST: 09202-00021

- (4) Using a plastic-faced hammer, lightly tap the valve stem tip to ensure a proper fit.

NOTICE:
Be careful not to damage the retainer.

Last Modified: 10-07-2024	6.11:8.1.0	Doc ID: RM100000002H75A
Model Year Start: 2024	Model: GX550	Prod Date Range: [12/2023 -]
Title: V35A-FTS (LUBRICATION): OIL PAN AND OIL LEVEL SENSOR: REMOVAL; 2024 MY GX550 [12/2023 -]		

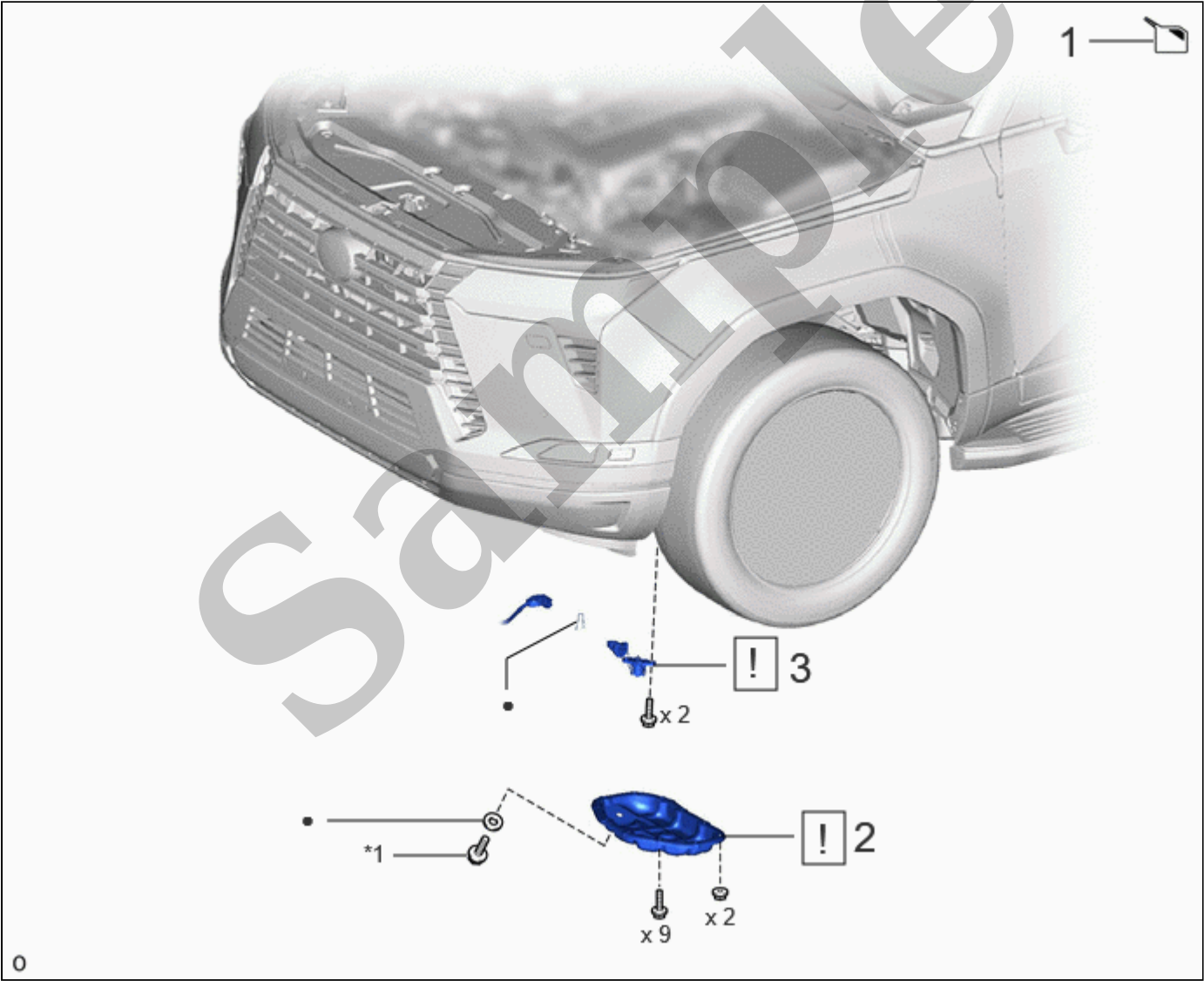
REMOVAL

CAUTION / NOTICE / HINT

CAUTION:
To prevent burns, do not remove the engine oil level sensor while the engine is hot.

CAUTION / NOTICE / HINT

COMPONENTS (REMOVAL)



PROCEDURE		PART NAME CODE		!	📄	⚙️
1	DRAIN ENGINE OIL	-	-	-	INFO	-