TC035–02

REASSEMBLY

1. INSTALL BEARING HOUSING

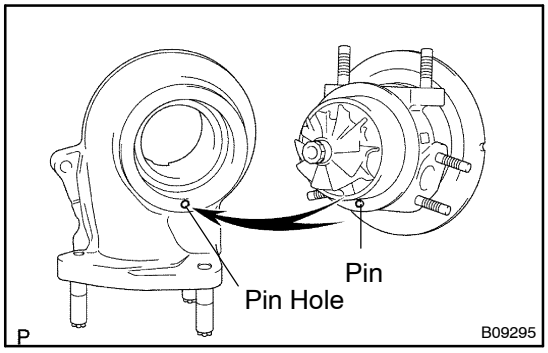
(a) Install the snap ring to the turbocharger.

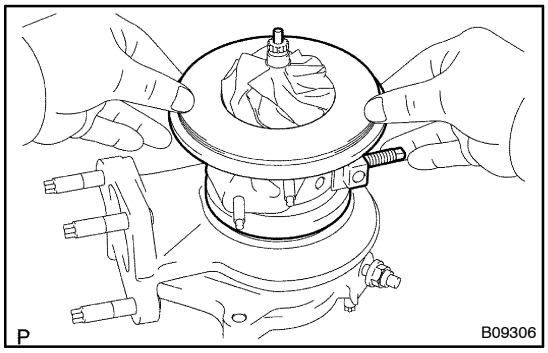
HINT:

In advance, put the snap ring through the bearing housing.

(b) Install a new O–ring to the bearing housing.

(c) Align the pin of the turbine housing with the pin hole of the bearing housing.





(d) Install the bearing housing to the turbine housing.

NOTICE:

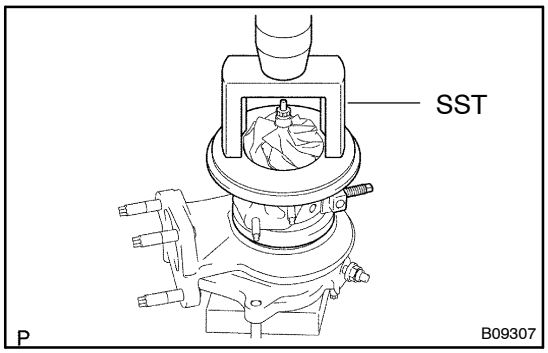
- **Install the bearing housing straight, and be careful not to damage the turbine wheel.**
- **In case of having difficulty of pressing in the bearing housing to install with a hand due to hard engagement, apply the procedure (c).**

HINT:

Apply a little penetrate rust prevention lubricant onto the engagement section to make installation easier.

(e) In case that the engagement of the bearing housing is hard, using SST and a press, install the bearing housing while checking the smooth rotation of the impeller wheel.

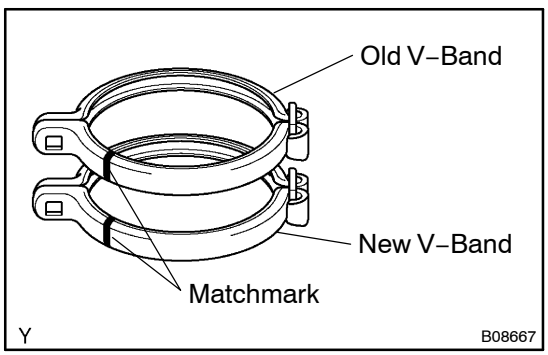
SST 09350–32014 (09351–32070)

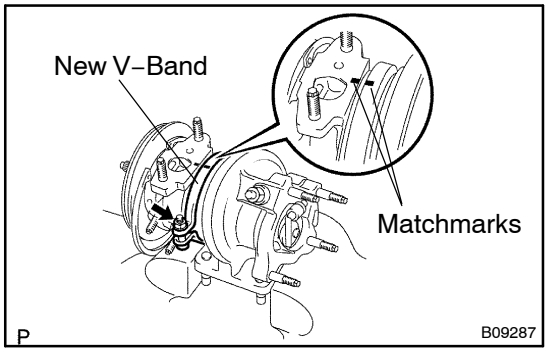


NOTICE:

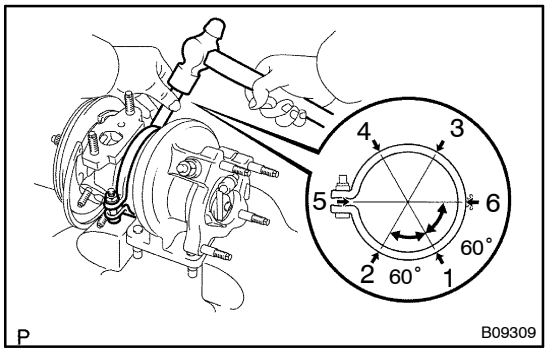
- **Do not hold the turbine housing with the stud bolts.**
- **Be sure to install the bearing housing straight without tilting as the shaft may bent and cause the irregular noise.**
- **Press in the bearing housing slowly. When the rotation of the impeller wheel becomes heavy, return the press immediately and do the operation again.**
- **After installed, check that the turbine shaft turns smoothly.**

(f) Place a new and old (used) V–bands in line, then reprint the matchmark position on the old V–band to the new one.

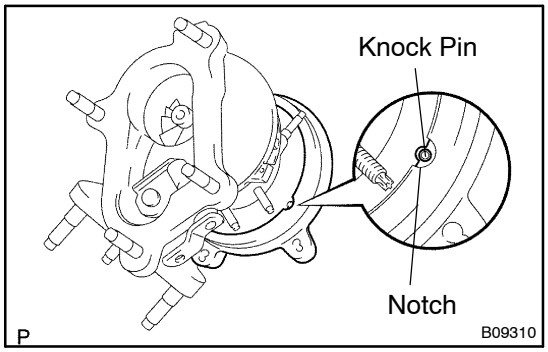




(g) Align the matchmarks on the V–band, turbine housing and bearing housing, and temporarily tighten a new nut.
Torque: 4.8 N·m (49 kgf·cm, 42 in.·lbf)

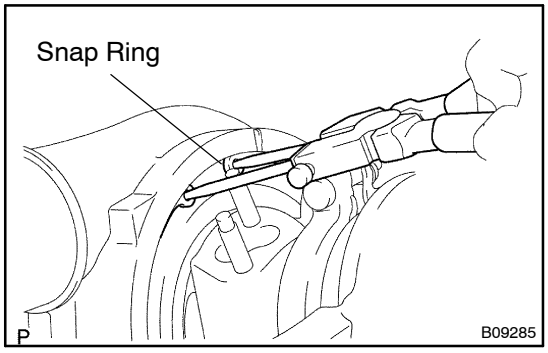


(h) Using a brass bar and hammer, hit 2 or 3 times lightly at each place in order of 1 through 5.
(i) Tighten the nut more.
Torque: 4.8 N·m (49 kgf·cm, 42 in.·lbf)
(j) Using a brass bar and hammer, hit 2 or 3 times lightly at each place of 1 and 4.
(k) Tighten the nut completely.

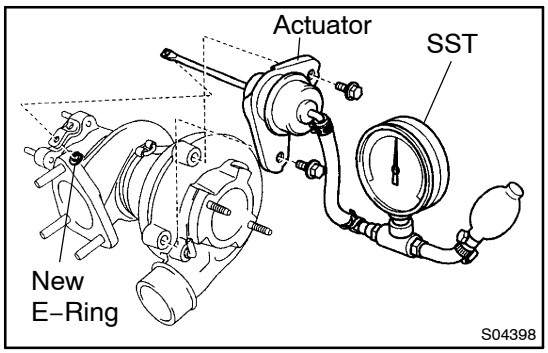


2. INSTALL COMPRESSOR HOUSING
(a) Align the knock pin of the bearing housing with the notch of the compressor housing, and install them.

NOTICE:
- **Do not make the impeller wheel interfere with the compressor housing.**
- **Check that the turbine shaft truns smoothly.**



(b) Using snap ring pliers, install the snap ring to the compressor housing.

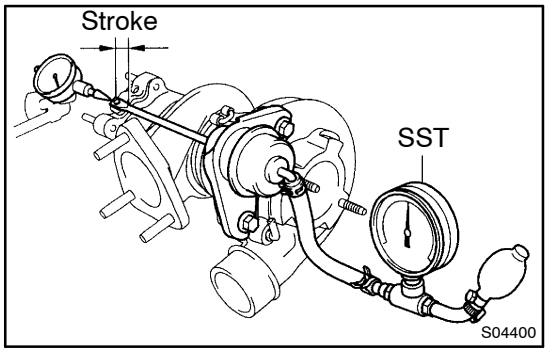


3. INSTALL ACTUATOR
(a) Using SST, apply pressure to the actuator.
SST 09992–00241

NOTICE:
Never apply more than 147 kPa (1.50 kgf/cm^2, 21.3 psi) of pressure to the actuator.

(b) Connect the actuator push rod to the waste gate valve link with a new E–ring.
(c) Install the actuator with the 2 bolts.
Torque: 19.1 N·m (195 kgf·cm, 14 ft·lbf)

(d) Remove the SST.



4. ADJUST ACTUATOR PUSH ROD STROKE

NOTICE:

Never apply more than 147 kPa (1.50 kgf/cm^2, 21.3 psi) of pressure to the actuator.

(a) Using a dial indicator, set the dial indicator in a straight line with the actuator push rod.

(b) Using SST, apply 119 kPa (1.21 kgf/cm^2, 17.2 psi) of pressure to the actuator, and measure the actuator push rod stroke.

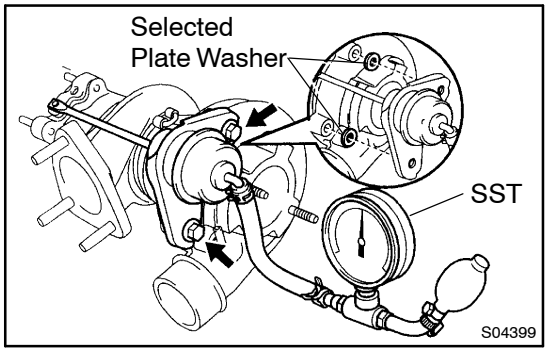
SST 09992–00242

(c) From the table below select the plate washer thickness to match the stroke measured in (b) above.

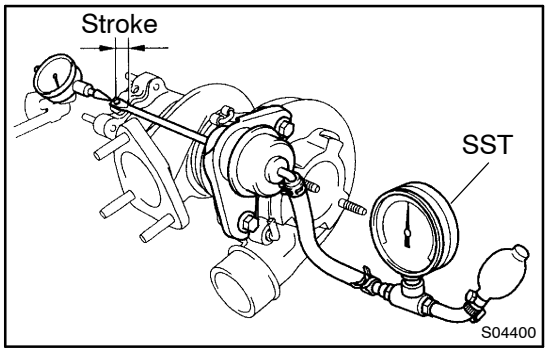
Stroke measurement mm (in.)	Required plate washer thickness mm (in.)
1.20 – 1.70 (0.0472 – 0.0669)	None required
1.71 – 2.20 (0.0673 – 0.0866)	0.5 (0.020)
2.21 – 2.70 (0.0870 – 0.1063)	1.0 (0.039)
2.71 – 3.20 (0.1067 – 0.1260)	1.5 (0.059)
3.21 – 3.70 (0.1264 – 0.1457)	2.0 (0.079)
3.71 – 4.20 (0.1461 – 0.1654)	2.5 (0.098)
4.21 – 4.70 (0.1657 – 0.1850)	3.0 (0.118)
4.71 – 5.20 (0.1854 – 0.2047)	3.5 (0.138)
5.21 – 5.70 (0.2051 – 0.2244)	4.0 (0.157)
5.71 – 6.20 (0.2248 – 0.2441)	4.5 (0.177)
6.21 – 6.70 (0.2445 – 0.2638)	5.0 (0.197)
6.71 – 7.20 (0.2642 – 0.2827)	5.5 (0.217)
7.21 – 7.70 (0.2839 – 0.3031)	6.0 (0.236)
7.71 – 8.20 (0.3035 – 0.3228)	6.5 (0.256)

NOTICE:

- **Use a combination of plate washers of 0.5 mm (0.020 in.), 1.0 mm (0.039 in.), 2.0 mm (0.079 in.) and 3.0 mm (0.118 in.) thickness to achieve the required thickness.**
- **Use the same thickness of plate washer for the 2 locations between the actuator and compressor housing.**
- **If the plate washer thickness exceeds 3.5 mm (0.138 in.), replace the actuator installation bolts with the bolts from the kit part.**



(d) Using SST, apply approx. 119 kPa (1.21 kgf/cm^2, 17.2 psi) of pressure to the actuator, and install the selected plate washers between the actuator and compressor housing with the 2 bolts.
Torque: 19.1 N·m (195 kgf·cm, 14 ft·lbf)



(e) Using SST, apply approx. 113 kPa (1.13 kgf/cm^2, 16.1 psi) of pressure to the actuator, and measure the actuator push rod stroke.
SST 09992–00242
Standard stroke: 1.20 – 1.70 mm (0.0472 – 0.0669 in.)

If the stroke is outside specifications, reselect the plate washers.

5. INSTALL ACTUATOR HOSE

6. APPLY YELLOW PAINT

Apply yellow paint from the actuator bolts to the actuator bracket to indicate that they have been correctly installed.

7. INSTALL BEARING HOUSING SIDE PLATE TO TURBOCHARGER

Install a new gasket and the side plate with the 2 bolts.
Torque: 12 N·m (122 kgf·cm, 9ft·lbf)