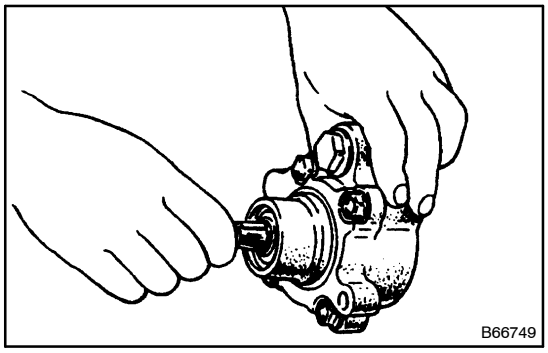
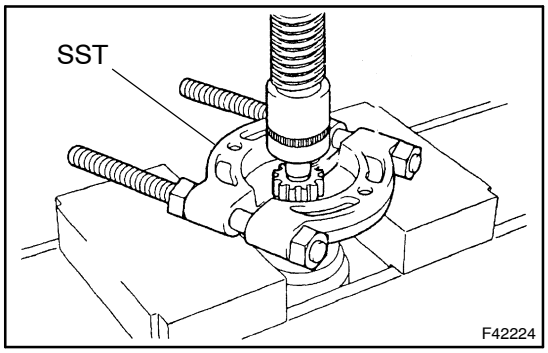
510CS–01

OVERHAUL



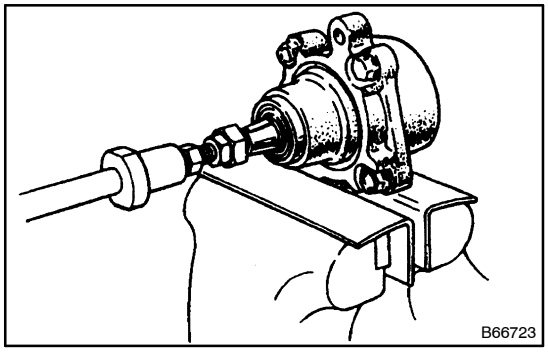
1. INSPECT VANE PUMP ROTATING TORQUE

(a) Check that the smoothly vane pump rotates without abnormal noise.



2. REMOVE VANE PUMP GEAR

(a) Using SST, a 10 mm deep socket wrench and a press, press out the drive gear.
SST 09950–00020

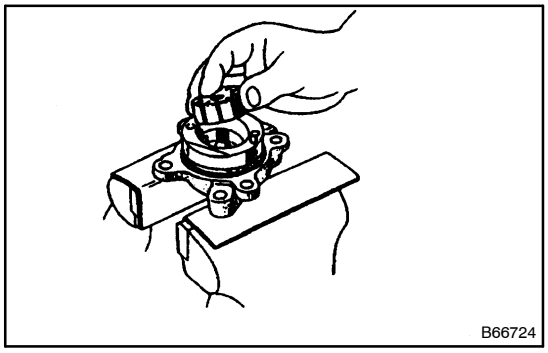


3. REMOVE VANE PUMP SHAFT

(a) Using a snap ring pliers, remove the retainer ring.

CAUTION:
The retainer ring is made of spring steel and so may pops out from the groove when removing. Wear safety glasses during removal.

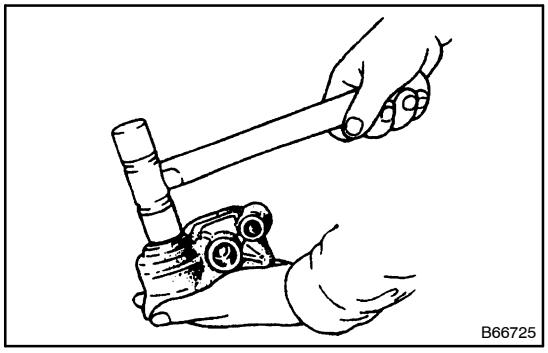
NOTICE:
Do not tighten the vise too tight when clamping the pump in the vise.



4. REMOVE ROTOR, VANES, CAM RING AND SIDE PLATE

(a) Remove the front body, rotor and vanes.

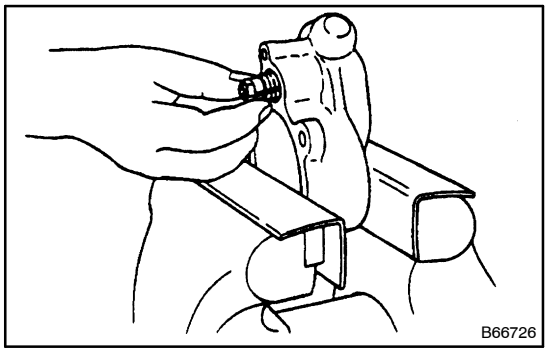
NOTICE:
Be careful that the rotor and vanes do not fall out.



(b) Using a plastic hammer, the rear body and remove the cam ring, side plate and spring.

NOTICE:

Do not grip the side plate with pliers, because this could damage it.

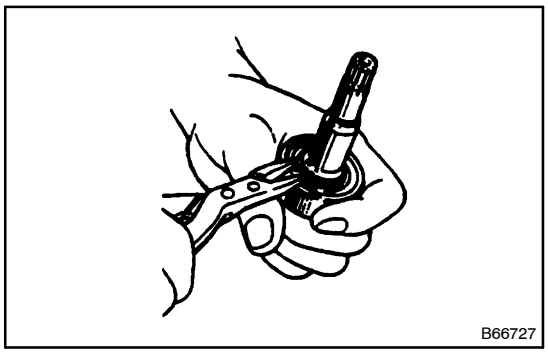


5. REMOVE FLOW CONTROL VALVE

(a) Remove the plug, spring and frow control valve assy.

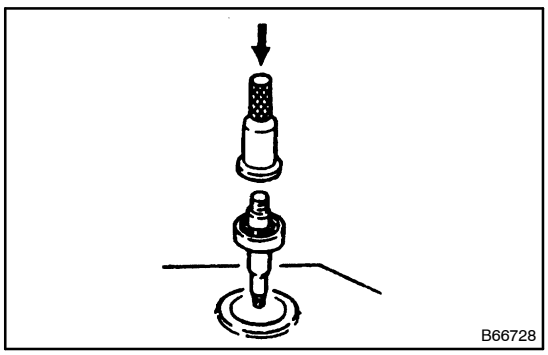
NOTICE:

Be careful not to drop, scratch or nick the flow control valve.

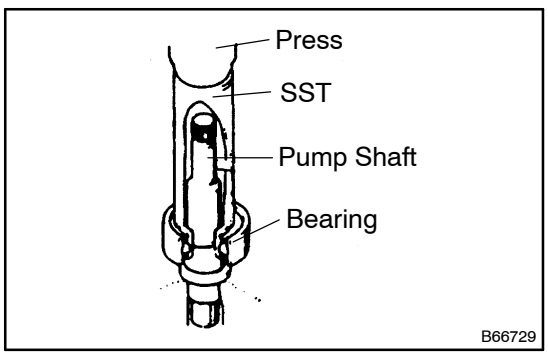


6. REMOVE VANE PUMP SHAFT BEARING

(a) Using snap ring pliers, remove the snap ring.

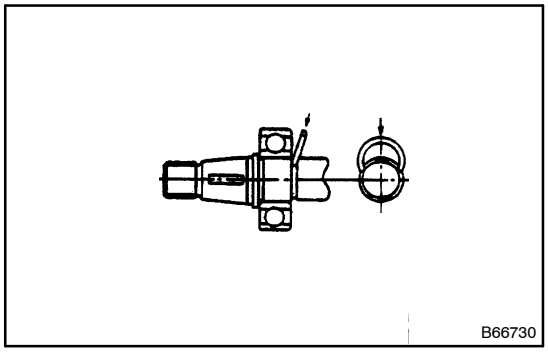


(b) Using a press and SST, and press out the bearing.
SST 09632–36010

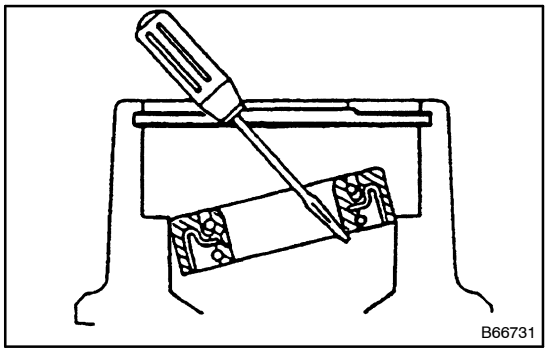


7. INSTALL VANE PUMP SHAFT BEARING

(a) Using a press and SST, press in the bearing.
SST 09632–36010



(b) Install the snap ring.



8. REMOVE OIL SEAL AND NEEDLE ROLLER BEARING

(a) Using a screwdriver, pry out the oil seal.

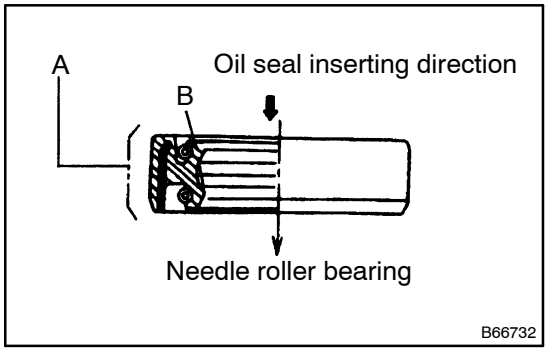
NOTICE:

Do not scrape or damage the inside of the front body.

(b) Remove the needle roller bearing.

9. INSTALL NEEDLE ROLLER BEARING

(a) Using a press, press in the needle roller bearing.



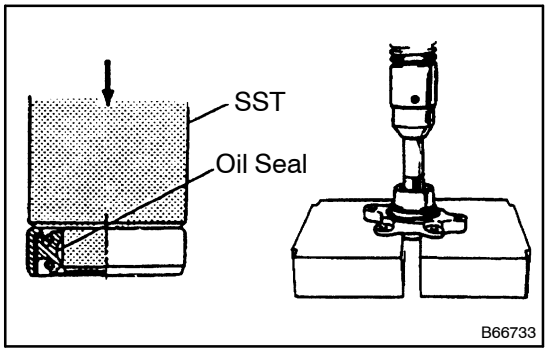
10. INSTALL OIL SEAL

(a) Oil seal inserting direction.

(b) Insert the oil seal as shown in the illustration.

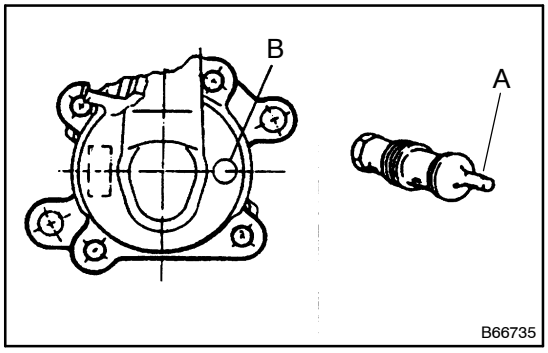
NOTICE:

In order to prevent oil leakage from oil seal due to lip wear, apply lithium base grease to A and B.



(c) Using SST and a press, press in the oil seal into the front body.

SST 09950–60010, (09951–00320), 09950–70010 (09951–07100)



11. INSTALL FLOW CONTROL VALVE

(a) Apply fluid to the valve and check to see that it smoothly falls into the valve hole by its own weight.

If the result is not as specified, replace the flow control valve assy.

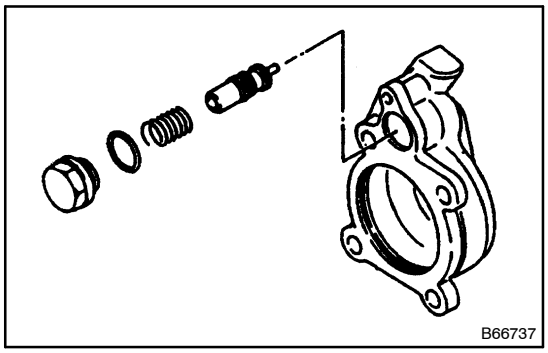
NOTICE:

There are three different valve diameters, therefore be careful that the mark on both valve and the pump body are always matched.

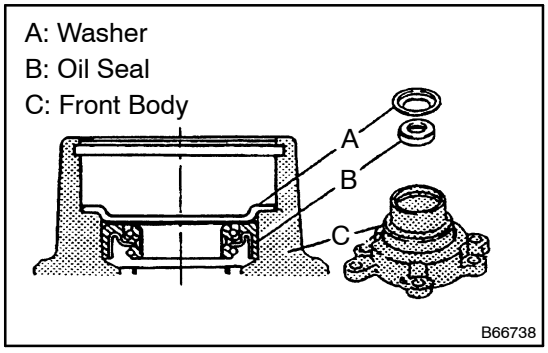
A Valve: Number of lines

B Body: Numeral

Matchmark	A	II	I	
	B	0	1	2

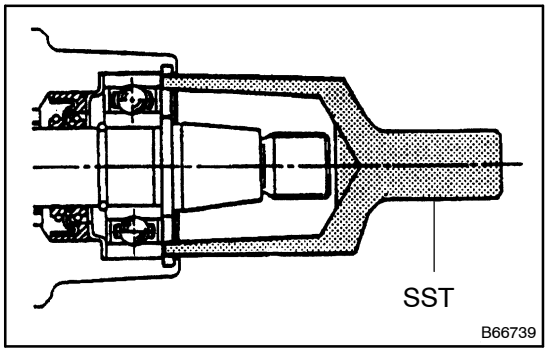


(b) Install the flow control valve assy and spring, as shown in the illustration, and then tighten the plug.
Torque: 63.7 N·m (650 kgf·cm, 47 ft·lbf)

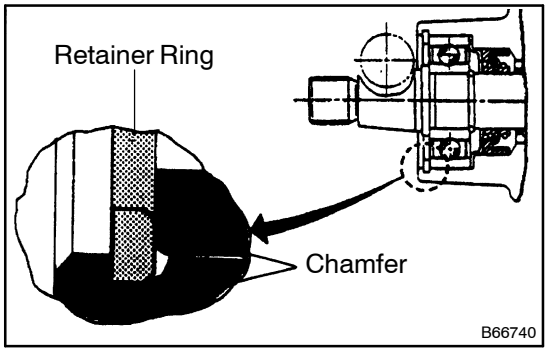


12. INSTALL PUMP SHAFT INTO THE FRONT BODY

(a) Install the washer, as shown in the illustration.



(b) Using SST, press in the pump shaft with bearing into the front body.
SST 09632–36010



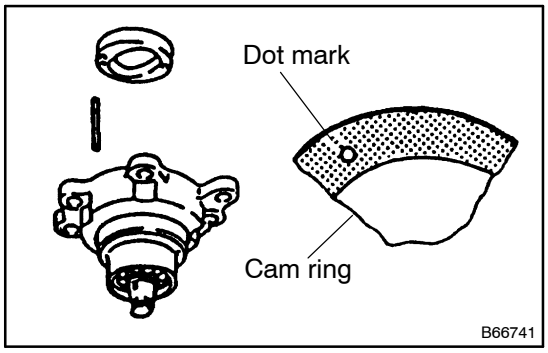
(c) Using a snap ring pliers, install the retainer ring.

NOTICE:

When installing the retainer ring, place the chamfer side face towards the ball bearing, as shown in the illustration.

CAUTION:

The retainer ring is made of spring steel and so may pops out from the groove when installing. Wear safety glasses during installation.



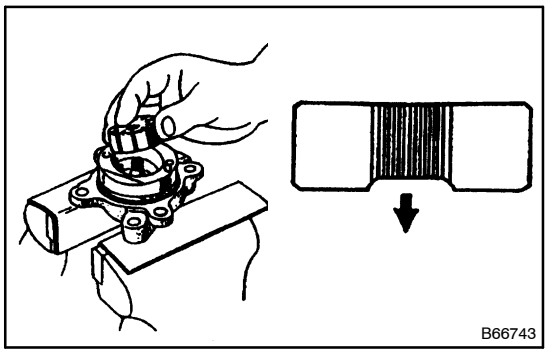
13. INSTALL CAM RING, ROTOR AND VANE.

(a) Install the dowel into the front body.

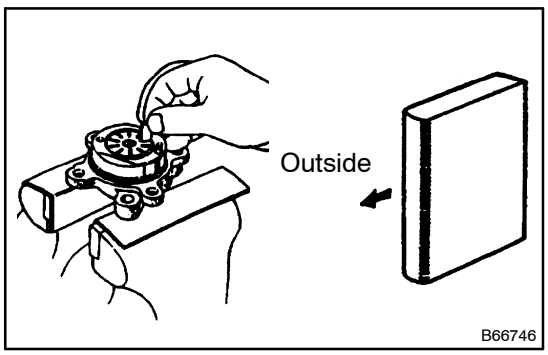
(b) Install the cam ring with the dowel hole aligned with the dowel.

NOTICE:

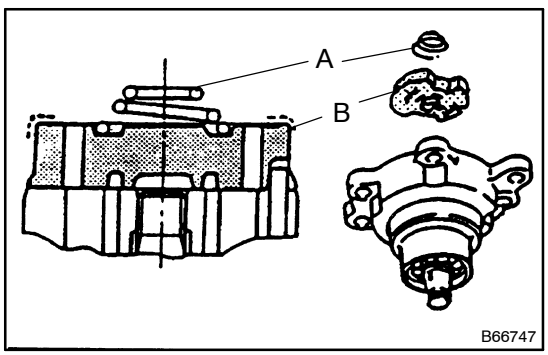
At this time, make sure that the dot mark in the side surface is positioned toward the rear body.



(c) Install the rotor with the cut spline side facing the front body.



(d) Install the vanes with the rounded part facing outward.



14. INSTALL SIDE PLATE AND SPRING

(a) Place the side plate on the cam ring with the dowel hole aligned with the dowel.

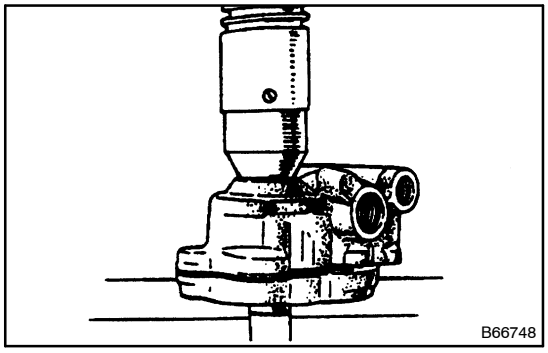
(b) Place the spring on the side plate hole, as shown in the illustration.

A: Spring

B: Side plate

NOTICE:

Apply lithium–base grease to A.



15. INSTALL VANE PUMP HOUSING REAR

(a) Apply lithium–base grease to the O–ring and install the O–ring into the pump housing rear.

(b) Using a press, press the rear body until it contacts the front body.

(c) Tighten the bolts to the specified torque.
Torque: 32.0 N·m (326 kgf·cm, 24 ft·lbf)

16. INSTALL VANE PUMP GEAR TO THE PUMP SHAFT

(a) Tighten the lock nut to the specified torque.
Torque: 73.5 N·m (750 kgf·cm, 54 ft·lbf)