POWER ASSIST SYSTEMS VANE PUMP(for 1GR-FE) REASSEMBLY

# **CAUTION / NOTICE / HINT**

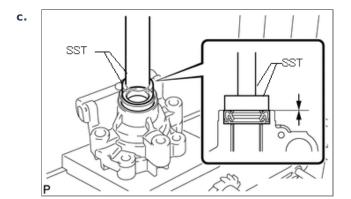
#### **NOTICE:**

When installing parts, coat the parts indicated by arrows with power steering fluid. Click hereSteering>POWER ASSIST SYSTEMS>VANE PUMP(for 1GR-FE)>COMPONENTS

# **PROCEDURE**

# **■** 1.INSTALL VANE PUMP HOUSING OIL SEAL

- a. Coat the inside surface of the bushing in the vane pump front housing with power steering fluid.
- **b.** Coat the lip of a new vane pump housing oil seal with MP grease.



Using SST and a press, press in the vane pump housing oil seal.

#### SST

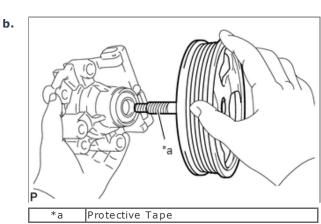
09950-60010 (09951-00280) 09950-70010 (09951-07100)

## **NOTICE:**

- Do not damage the vane pump housing oil seal
- Make sure that the vane pump housing oil seal is installed facing in the correct direction as shown in the illustration.

# **2.INSTALL VANE PUMP SHAFT WITH PULLEY**

a. Apply power steering fluid to the sliding surfaces of the vane pump shaft with pulley.



Gradually insert the vane pump shaft with pulley.

#### NOTICE:

Do not damage the lip of the vane pump housing oil seal in the vane pump front housing.

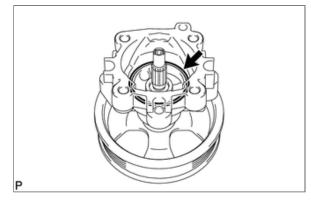
# HINT:

Wrap protective tape around the splines of the vane pump shaft with pulley in order to prevent damage to the vane pump housing oil seal.

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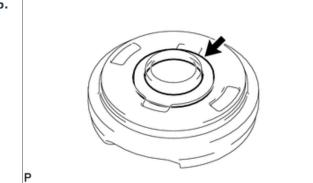
# 3.INSTALL VANE PUMP FRONT SIDE PLATE

a.



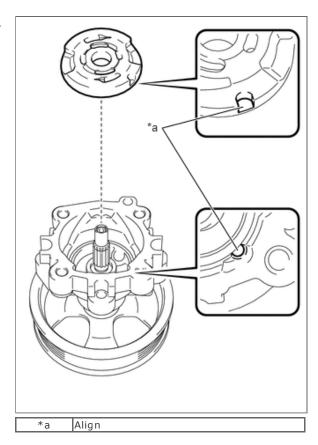
Coat a new O-ring with power steering fluid and install it to the vane pump front housing.





Coat a new O-ring with power steering fluid and install it to the vane pump front side plate.

c.



Align the notch of the vane pump front side plate with that of the vane pump front housing and install the vane pump front side plate.

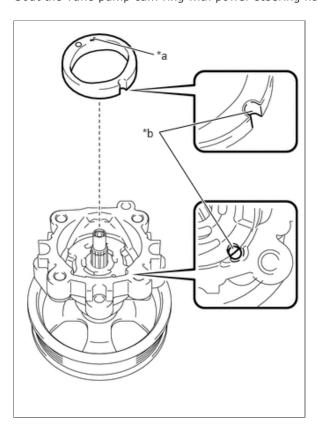
# **NOTICE:**

Make sure that the vane pump front side plate is installed facing in the correct direction.

# 4.INSTALL VANE PUMP CAM RING

a. Coat the vane pump cam ring with power steering fluid.





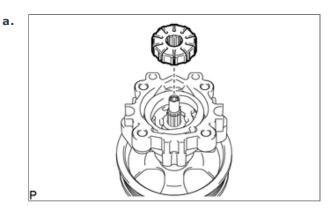
*a	Inscribed Mark
*b	Align

Align the notch of the vane pump cam ring with that of the vane pump front side plate and install the vane pump cam ring with the inscribed mark facing upward.

#### NOTICE

Make sure that the vane pump cam ring is installed facing in the correct direction.

# **■** 5.INSTALL VANE PUMP ROTOR

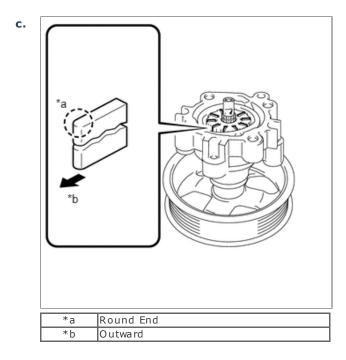


Install the vane pump rotor to the vane pump front housing.

#### HINT:

The vane pump rotor can be installed with either side facing upward.

**b.** Coat the 10 vane pump plates with power steering fluid.



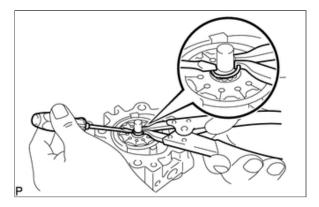
Install the vane pump plates with the round end facing outward.

#### NOTICE:

Make sure that the vane pump plates are installed facing in the correct direction.

6.INSTALL VANE PUMP SHAFT SNAP RING

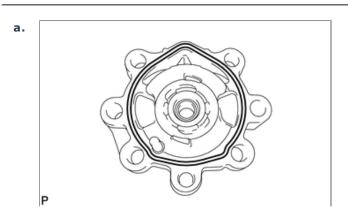
a.



Using a screwdriver and snap ring expander, install a new vane pump shaft snap ring to the vane pump shaft.

- Do not widen the vane pump shaft snap ring more than necessary.
- Check that the vane pump shaft snap ring is securely fitted into the groove.
- Do not damage the vane pump rotor or the shaft of the vane pump shaft with pulley.

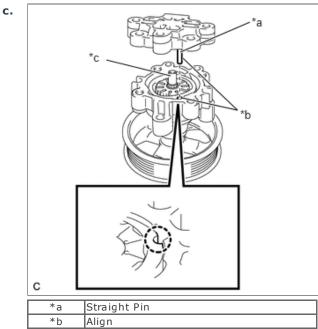
# 7.INSTALL VANE PUMP REAR HOUSING



Coat a new O-ring with power steering fluid.

Install the O-ring it to the vane pump rear housing.

Securely insert the O-ring into the groove of the vane pump rear housing.



*a	Straight Pin
*b	Align

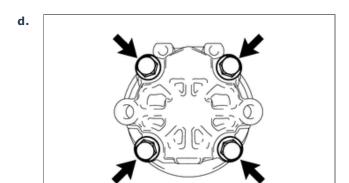
Align the straight pin of the vane pump rear housing with the notches of the vane pump cam ring, vane pump front side plate and vane pump front housing.

#### **NOTICE:**

Check that the O-ring has not come out of the groove and install the vane pump rear housing.

#### HINT:

Apply power steering fluid to the end of the vane pump shaft with pulley.



Install the vane pump rear housing with the 4 bolts.

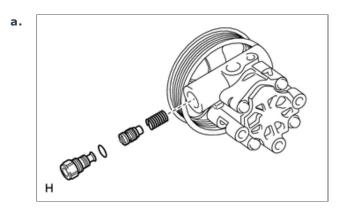
#### **Torque:**

22 N\*m (224 kgf\*cm, 16 ft.\*lbf)



Click hereSteering>POWER ASSIST SYSTEMS>VANE PUMP(for 1GR-FE)>INSPECTION

#### 9.INSTALL FLOW CONTROL VALVE ASSEMBLY



Coat the flow control valve assembly and flow control compression spring with power steering fluid.

- b. Install the flow control compression spring and flow control valve assembly to the vane pump front housing.
- c. Coat a new O-ring with power steering fluid and install it to the pressure port union.
- **d.** Install the pressure port union to the vane pump front housing.

## **Torque:**

69 N\*m (704 kgf\*cm, 51 ft.\*lbf)

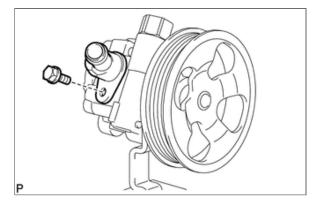
### **■ 10.INSTALL POWER STEERING SUCTION PORT UNION**

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a. Coat a new O-ring with power steering fluid.

**b.** Install the O-ring to the power steering suction port union.

c.



Install the power steering suction port union to the vane pump assembly with the bolt.

#### **Torque**

12 N\*m (122 kgf\*cm, 9 ft.\*lbf)

# HINT:

In order to prevent the O-ring from deviating, insert the power steering suction port union while rotating it.

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