

HYDROSTATIC PUMP (SJC)

Description

The SJC hydrostatic pump is a fully proportional dual piston pump in one pump casing. The endcaps are removable to gain access to the rotating assemblies.

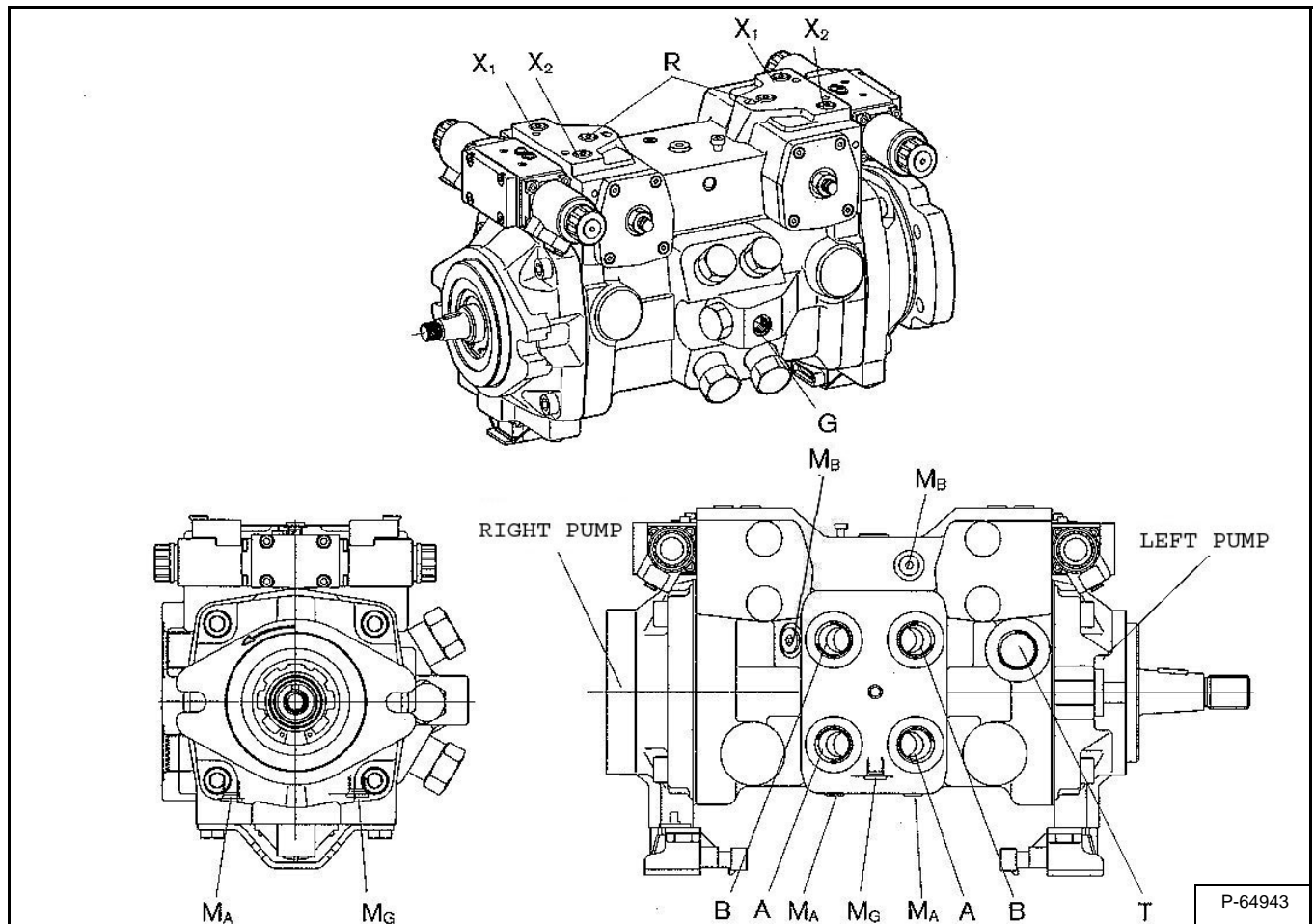
The hydraulic controllers are fed charge pressure from an external charge pump. 12 volt electrical solenoids shift a spool in the hydraulic controller that directs flow to a servo piston.

The servo piston strokes the swash plate in the rotating group. The rotating group generates flow to the A or B ports on the hydrostatic pump. The flow from the A and B ports is sent to the hydrostatic drive motors where forward or reverse drive motor rotation is obtained.

There are swash plate angle sensors on the bottom of the pump that monitor swash plate movement.

Ports are labeled on the hydrostatic pump casting.

Figure 30-41-1



A,B Service Line Ports (High Pressure Outlet Ports to Drive Motors)

T1 Case Drain Port

MA Operating Pressure of "A" Port

MB Operating Pressure of "B" Port

R Air Bleed Port

X1,X2 Control Pressure Gauge Port

G Charge Pressure Inlet Port

MG Gauge Port For Charge Pressure

HYDROSTATIC PUMP (SJC) (CONT'D)

Hydraulic Controller Removal And Installation

The loader's right hand side hydraulic controller can be removed with the hydrostatic pump still in the loader. The loader's left hand side hydraulic controller can only be removed when the hydrostatic pump is separated from the engine / hydrostatic pump cast mount.

Controller solenoids can be bled of trapped air in the controller. This should be performed when hydraulic controllers are replaced, removed or uncommanded oscillations in the controls are present.

Raise the lift arms and install an approved lift arm support device. (See Installing on Page 10-20-1.)

Place the loader on jack stands. (See Procedure on Page 10-10-1.)



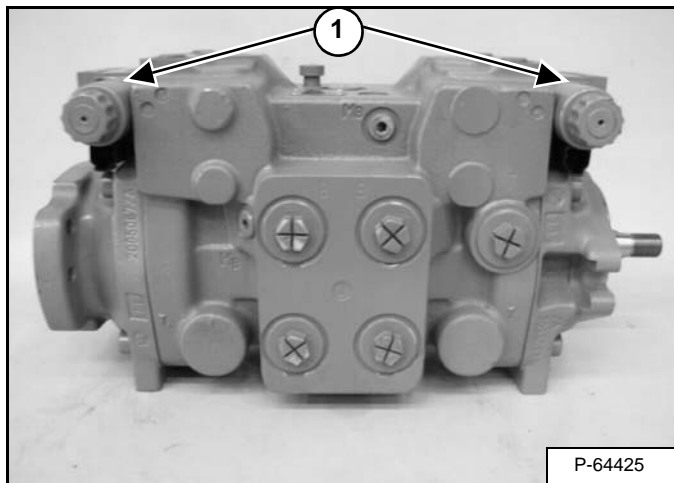
WARNING

Put jackstands under the front axles and rear corners of the frame before running the engine for service. Failure to use jackstands can allow the machine to fall or move and cause injury or death.

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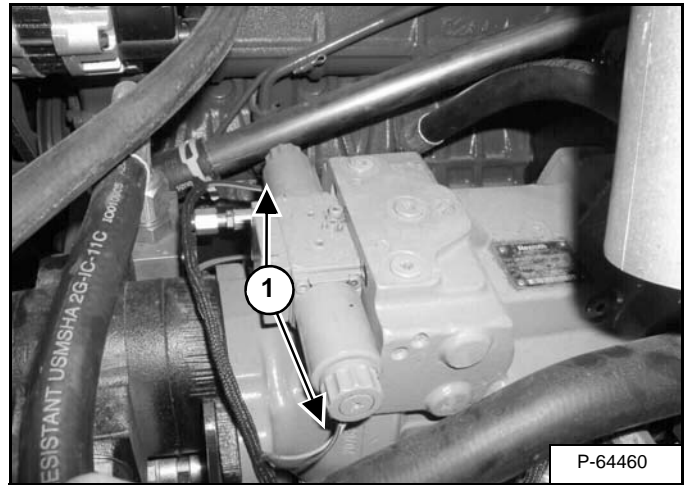
Raise the operator cab. (See Raising on Page 10-30-2.)

Figure 30-41-2



Locate the two hydraulic controllers (Item 1) [Figure 30-41-2] on the hydrostatic pumps.

Figure 30-41-3



Disconnect all of the electrical harness connectors (Item 1) [Figure 30-41-3] from the loader harness.

Removal:

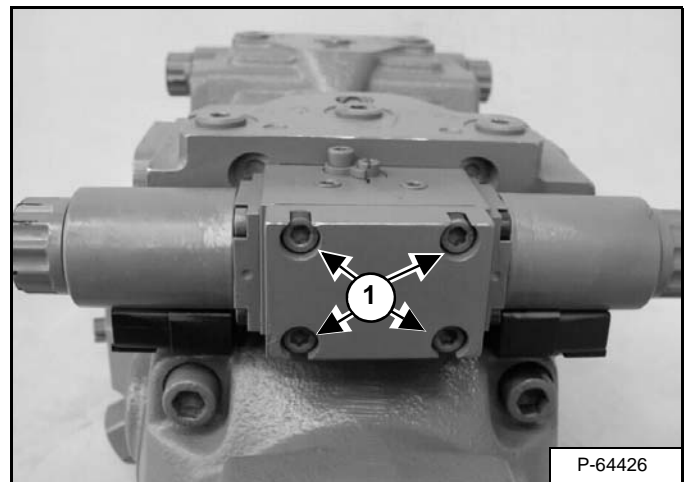


IMPORTANT

When repairing hydrostatic and hydraulic systems, clean the work area before disassembly and keep all parts clean. Always use caps and plugs on hoses, tubelines and ports to keep dirt out. Dirt can quickly damage the system.

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Figure 30-41-4

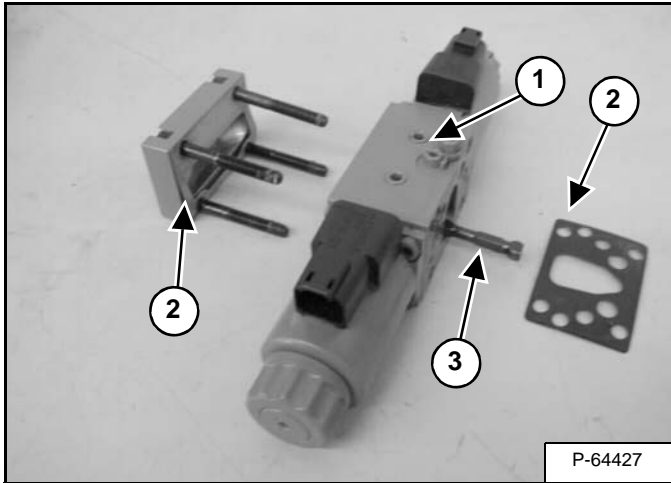


Remove the four mount bolts (Item 1) [Figure 30-41-4] from the hydraulic controller.

HYDROSTATIC PUMP (SJC) (CONT'D)

Hydraulic Controller Removal And Installation (Cont'd)

Figure 30-41-5

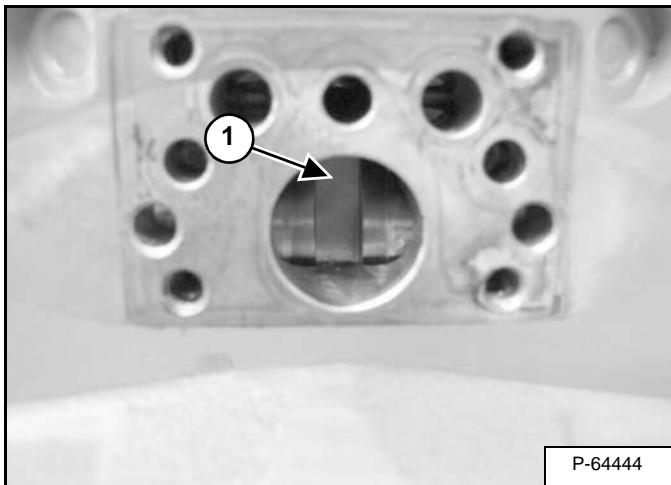


Remove the controller (Item 1) [Figure 30-41-5] from the pump.

Remove the controller gaskets (Item 2) [Figure 30-41-5] from the pump.

Installation:

Figure 30-41-6

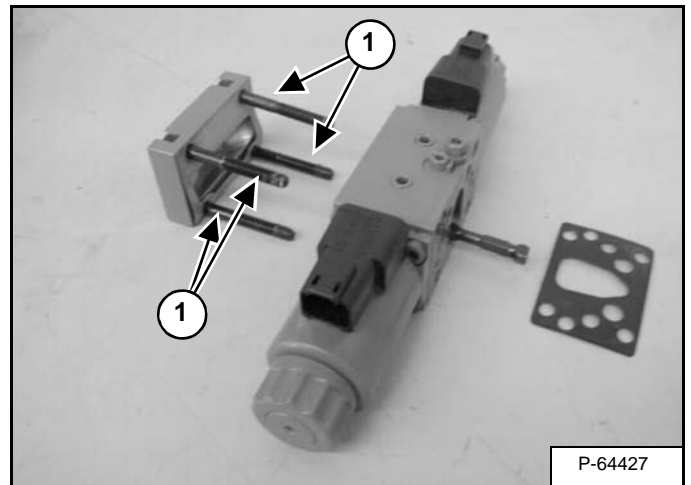


Be sure the feedback lever (Item 3) [Figure 30-41-5] is in the center of the servo piston groove (Item 1) [Figure 30-41-6].

Use a small amount of grease on a new gasket and install the gasket on the hydraulic controller (Item 1) [Figure 30-41-5].

Be sure the pump surface is clean.

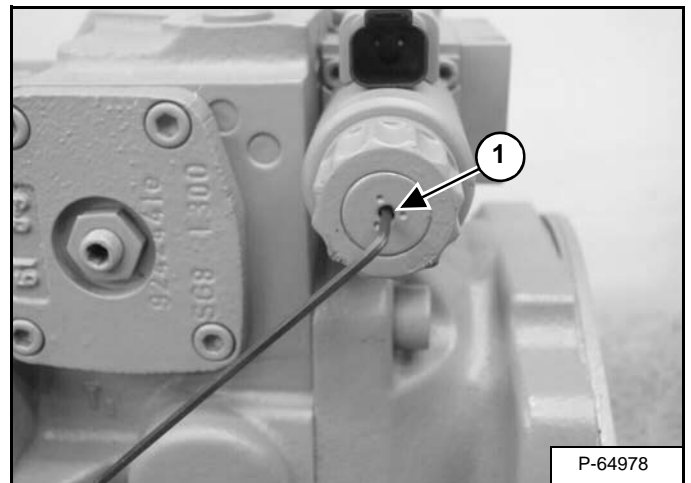
Figure 30-41-7



Alternately tighten bolts (Item 1) [Figure 30-41-7] to 10,4 N•m (7.7 ft-lb) torque. Ensure bolts are tight to specifications.

NOTE: When a hydraulic controller is replaced, the hydrostatic pumps must be calibrated. (See Hydraulic Controller Neutral Adjustment on Page 30-41-28.)

Figure 30-41-8



With the engine running and the loader on jack stands: Bleed the trapped air in the controller by loosening the small set screw (Item 1) [Figure 30-41-8] a maximum of 2 turns. Leave the screw loose until oil comes dripping out of the set screw. Tighten set screw to 2 N•m (18 in-lb) torque.

Repeat the bleeding procedure for all of the solenoids.

HYDROSTATIC PUMP (SJC) (CONT'D)

Removal And Installation

IMPORTANT

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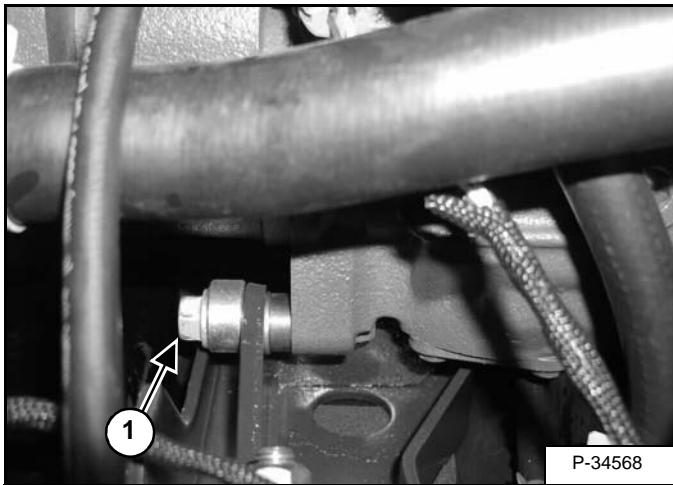
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Remove the engine / hydrostatic pump assembly from the loader. (See Engine Removal And Installation on Page 70-10-9.)

Remove the control handle linkage from the hydrostatic pump. (See Linkage Removal And Installation on Page 50-100-7.)

Remove the hydraulic pump from the hydrostatic pump. (See HYDRAULIC PUMP (STANDARD) on Page 20-60-1.)

Figure 30-41-9

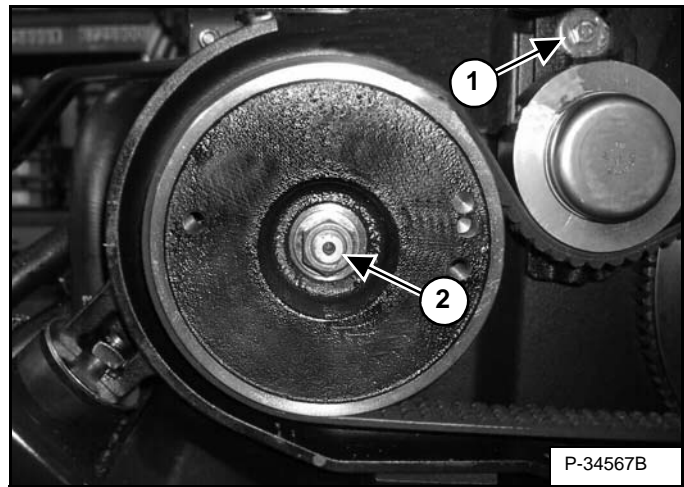


Remove the hydrostatic pump mounting bolt (Item 1) [Figure 30-41-9] and washer(s).

Installation: Tighten the mounting bolt to 125 - 135 N•m (90 - 100 ft-lb) torque.

NOTE: Mounting bolt (Item 1) [Figure 30-41-9] is a special purpose bolt, replace with genuine Bobcat parts only.

Figure 30-41-10

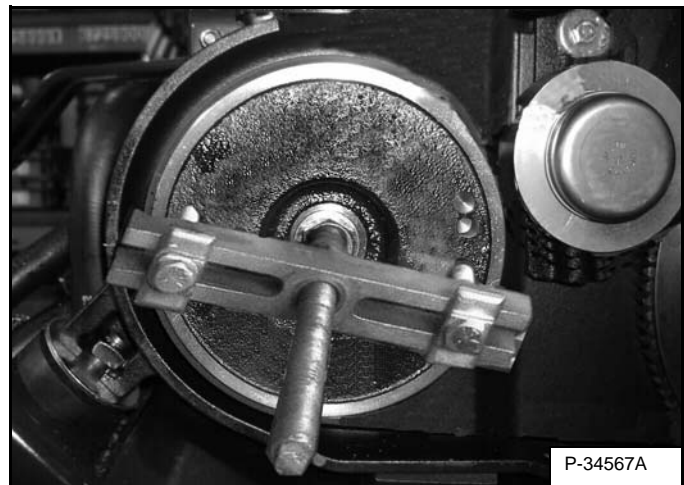


Loosen the drive belt tensioner (Item 1) [Figure 30-41-10] and remove the drive belt.

Remove the hydrostatic pump drive pulley mounting nut (Item 2) [Figure 30-41-10] and washer.

Installation: Tighten the pump pulley mounting nut to 237 - 271 N•m (175 - 200 ft-lb) torque.

Figure 30-41-11

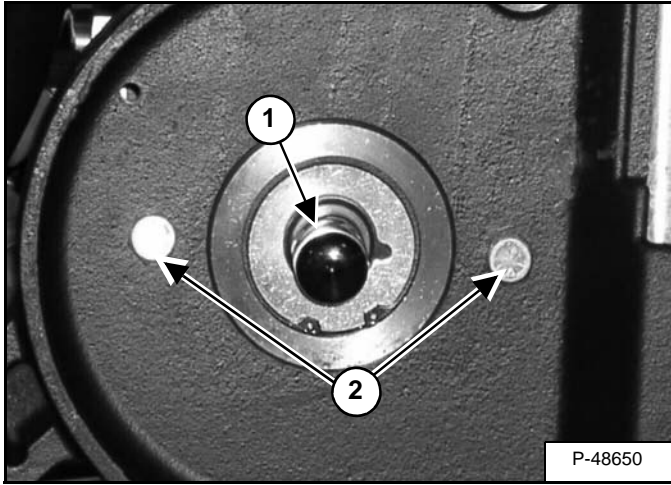


Install a puller on the hydrostatic pump drive pulley and remove the pulley from the pump shaft [Figure 30-41-11].

HYDROSTATIC PUMP (CONT'D)

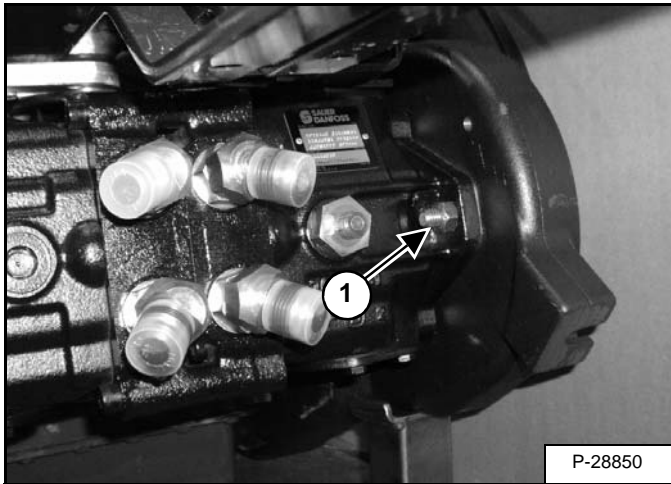
Removal And Installation (Cont'd)

Figure 30-41-12



Installation: Install the key in the hydrostatic pump shaft (Item 1) [Figure 30-41-12] before installing the pump drive pulley.

Figure 30-41-13



Hold the nut (Item 1) [Figure 30-41-13] on the two hydrostatic pump mounting bolts (Item 2) [Figure 30-41-12].

Remove the two hydrostatic pump mounting bolts from the pump and drive belt housing.

Installation: Tighten the pump mounting bolts to 88 - 95 N•m (65 - 70 ft-lb) torque.

Reverse the removal procedure to install the hydrostatic pump assembly.

Hydrostatic Pump Startup

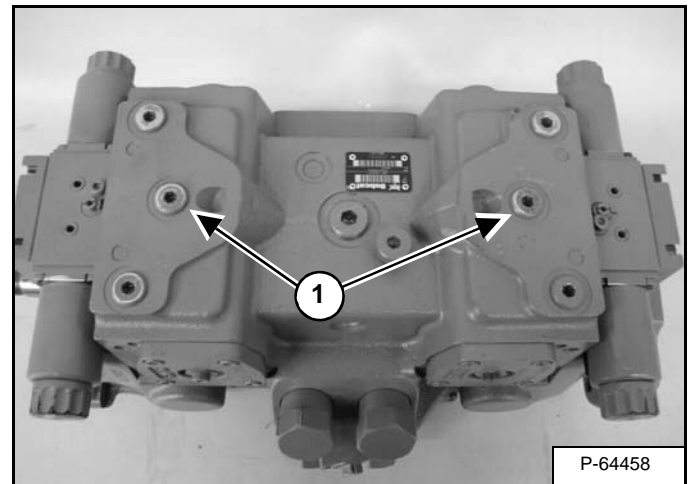
Before putting a hydrostatic pump back into operation, the hydrostatic pump should be filled with hydrostatic fluid. This should be performed when installing a new hydrostatic pump or a pump that has been disassembled.

Starting a hydrostatic pump dry may cause premature wear or permanent pump damage.

Under normal operation, the charge pump will keep the hydrostatic pumps filled.

Filling the hydrostatic pump is best done by removing a plug at the top of the hydrostatic pump. A clean funnel should be used to avoid washing contaminants into the hydrostatic pump. The goal is to fill the hydrostatic pump as much as possible before startup.

Figure 30-41-14



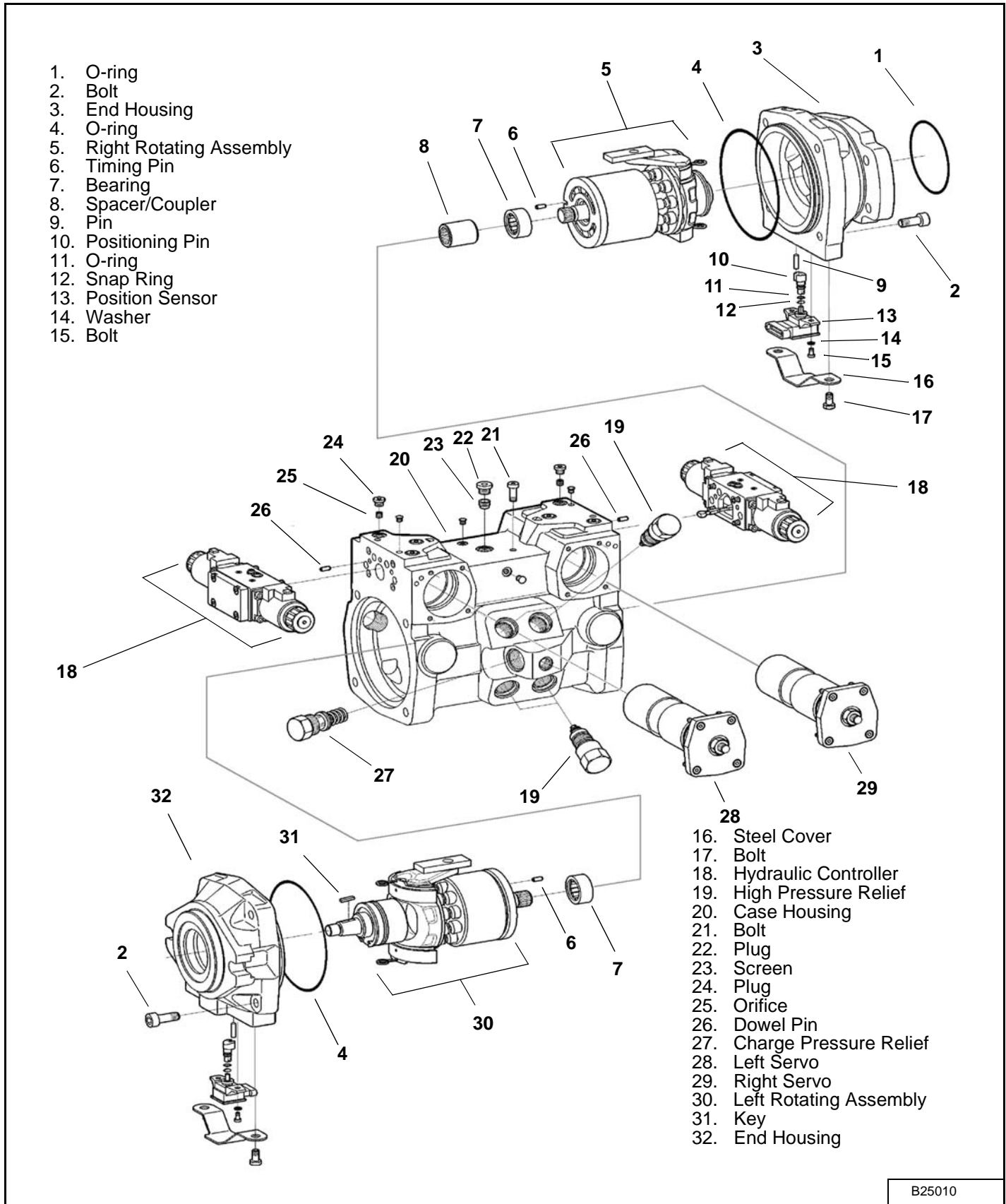
Remove the air bleed plugs (Item 1) [Figure 30-41-14].

BEFORE STARTUP: Fill one of the air bleed ports with new hydraulic oil until the hydraulic oil flows out of the other air bleed port. This will remove trapped air in the hydrostatic pumps before startup.

Assembly: Tighten plugs to 25 N•m (18 ft-lb) torque.

HYDROSTATIC PUMP (SJC) (CONT'D)

Parts Identification



B25010