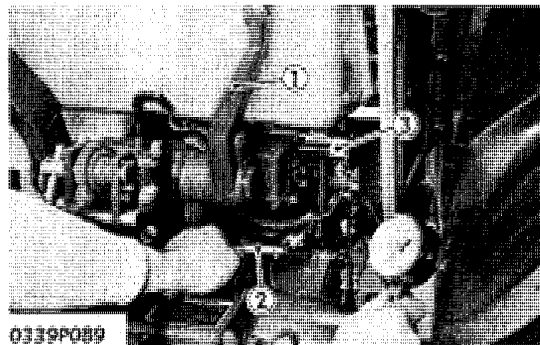


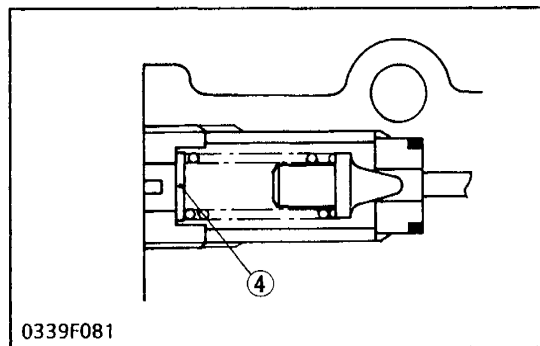
[2] CONTROL VALVE

The control valve of B2150 is the same as that of B9200. The control valve of others is based on this.

CHECKING AND ADJUSTING



0339F089
(1) Lift Arm RH (2) Feedback Holder
(3) Adaptor E (Screw Size PS 3/8") (Included in the tester)



0339F081
(4) Shim (Refer to (12) of Fig. 0339F024 in S.8-13)

Relief Valve Setting Pressure

1. Remove the feedback holder (2) from the lift arm (1).
2. Remove the joint bolt connecting the pipe and control valve. And install the adaptor E instead of the joint bolt. Then set the relief valve setting pressure tester (Code No.: 07916-50045).
3. Start the engine, warm it up, and then set the engine speed at the 2600 rpm.
4. Move the control lever to the "Lift" position, pull the feedback holder (2) to operate the relief valve and read the pressure gauge.
5. If the pressure is not within the factory specifications, adjust with the shim(4).

For disassembling, see page S.8-15.

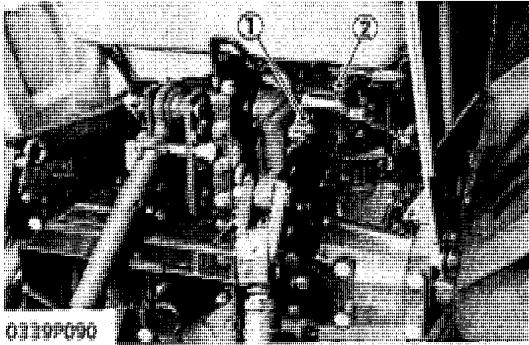
Relief valve setting pressure	Allowable limit	B1550-B1750 B1550HST B1750HST	12.7 to 13.7 MPa 130 to 140 kgf/cm ² 1849 to 1991 psi
		B2150 B2150HST	13.2 to 13.7 MPa 135 to 140 kgf/cm ² 1920 to 1991 psi

(Reference)

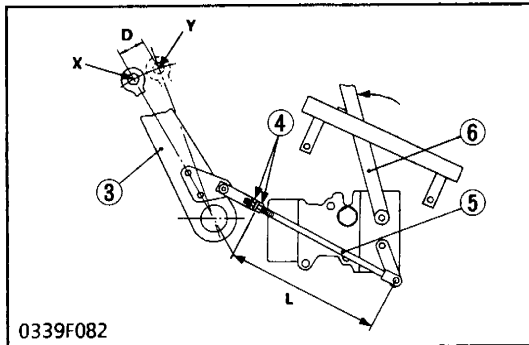
- The relief pressure can be increased by adding shim (4) and decreased by removing shim (4).

Shim Code No.	Thickness	Pressure Variance
67156-3668-0	0.2 mm	690 kPa 7 kgf/cm ² 100 psi
67156-3666-0	0.3 mm	980 kPa 10 kgf/cm ² 142 psi
67156-3667-0	0.8 mm	2.65 MPa 27 kgf/cm ² 384 psi

DISASSEMBLING AND ASSEMBLING



(1) Feedback Holder (2) Control Valve



(3) Lift Arm (4) Adjusting Nut
(5) Feedback Rod (6) Control Lever

Removing Control Valve

1. Remove the joint bolts connecting the pipes to the control valve.
2. Remove the feedback holder mounting screws on the lift arm RH.
3. Remove the grip rubber from the control lever.
4. Remove the control valve mounting screws, and remove the control valve.

(When reassembling)

- Use care not to damage the O-ring.
- Tighten the feedback holder mounting screws after moving the feedback holder (1) to the direction of the smaller end of the lift arm (3).

Tightening torque	Control valve mounting screws	23.5 to 27.5 N·m 2.4 to 2.8 kgf·m 17.4 to 20.2 ft-lbs
	Pipe eye joint bolts	53.9 to 68.6 N·m 5.5 to 7.0 kgf·m 39.8 to 50.6 ft-lbs

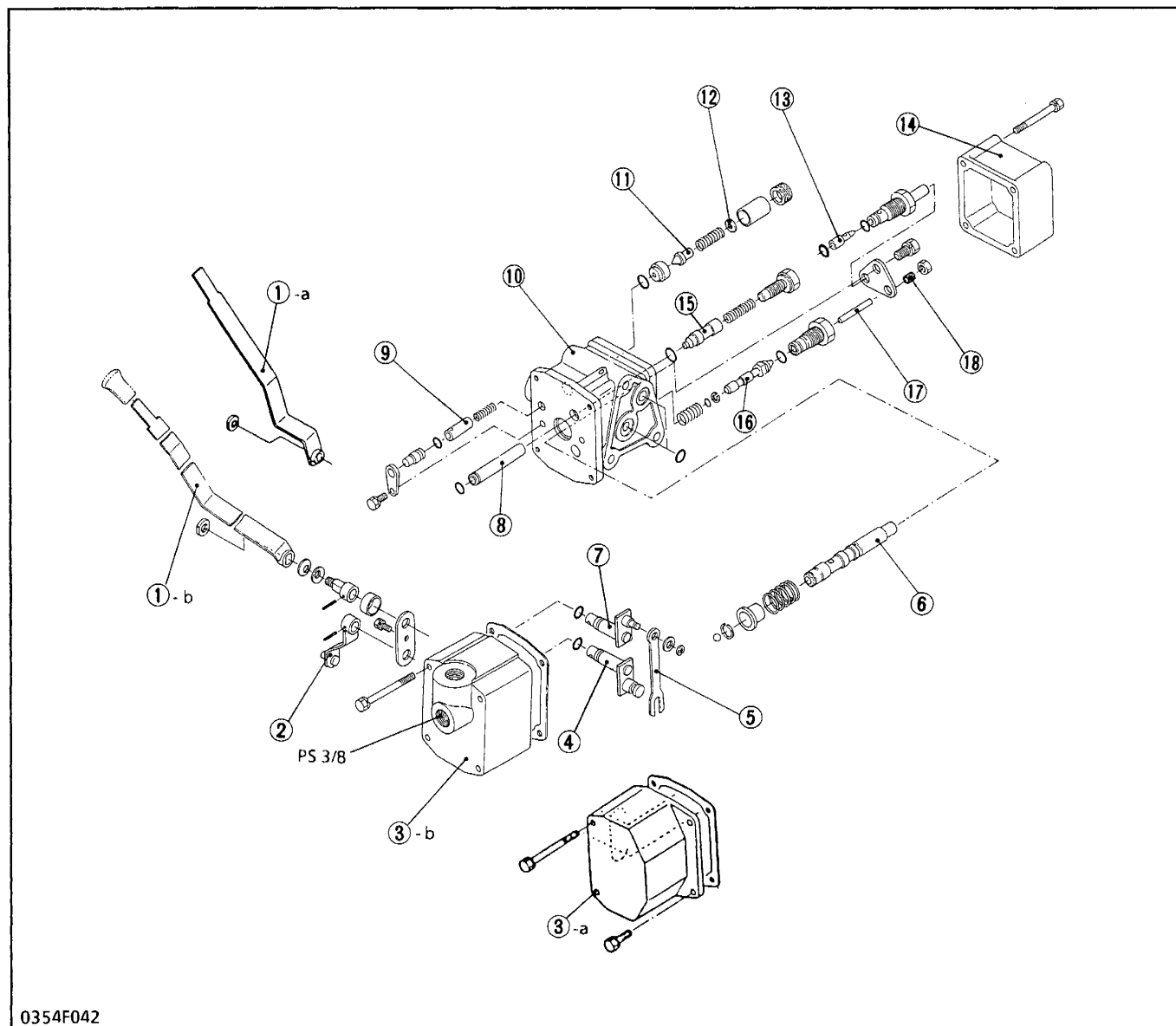
■ IMPORTANT

- Adjust the feedback rod length to avoid damaging the differential case with the hydraulic arm.

- 1) Turn the nuts (4) so that the length "L" becomes to be the following.

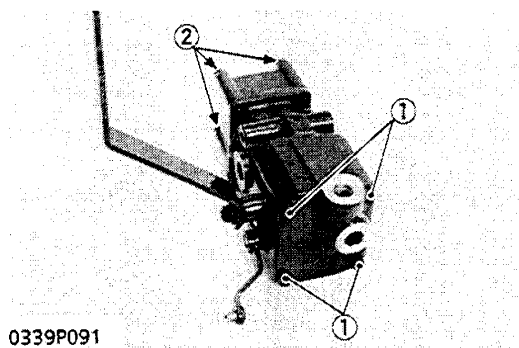
	Length "L"
B1550.B1750 B1550HST B1750HST	180 mm, 7.1 in.
B2150 B2150HST	208 mm, 8.2 in.

- 2) Start the engine and move the control lever to the rear end. At this time, the lift arm is lifted to max. height (X).
- 3) Then move the lift arm (3) to the upper end (Y) by hand and measure the play "D".
If the play "D" is not between 10 mm and 20 mm (0.4 in. and 0.8 in.), adjust with the nuts (4) so that the play "D" becomes between 10 mm and 20 mm (0.4 in. and 0.8 in.).



0354F042

- | | | | |
|---|---------------------------|----------------------------|--------------------------------|
| (1)-a Control Lever (B1550-B1750-B1550HST-B1750HST) | (4) Feedback Lever Shaft | (10) Valve Body | (16) Check Valve 2 Poppet |
| (1)-b Control Lever (B2150-B2150HST) | (5) Spool Drive Lever | (11) Relief Valve Poppet | (17) Push Rod |
| (2) Feedback Arm | (6) Spool | (12) Adjusting Shim | (18) Screw (Neutral Adjusting) |
| (3)-a Valve Cover (B1550-B1750-B1550HST-B1750HST-B2150) | (7) Control Lever Shaft | (13) Check Valve 1 Poppet | |
| (3)-b Valve Cover (B2150HST) | (8) Pipe (B2150HST) | (14) Relief Cover | |
| | (9) Unload Valve 2 Poppet | (15) Unload Valve 1 Poppet | |



0339P091

(1) Screws

(2) Screws

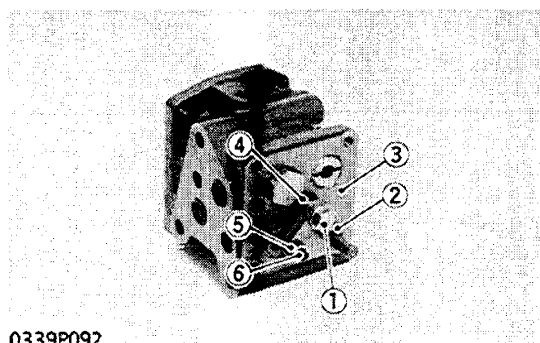
Covers

1. Remove four screws (1) for mounting the valve cover.
2. Remove the valve cover and pipe for connecting the valve body and valve cover.
3. Remove four screws (2) for mounting the relief cover.

(When reassembling)

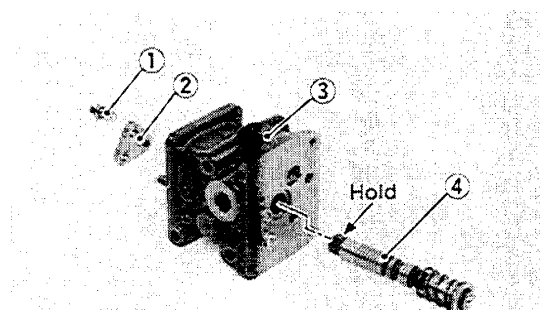
Tightening torque	Cover mounting screws (1) (2)	7.8 to 11.7 N·m 0.8 to 1.2 kgf·m 5.8 to 8.7 ft·lbs
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This photo. shows the control valve of B2150HST.

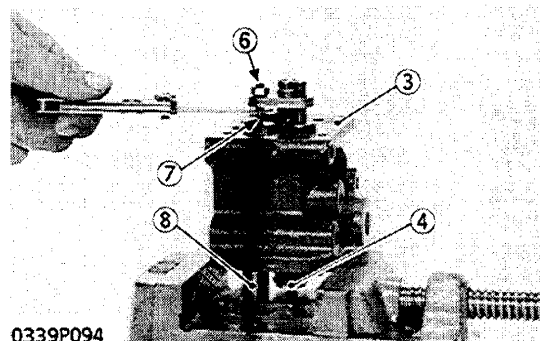


0339P092

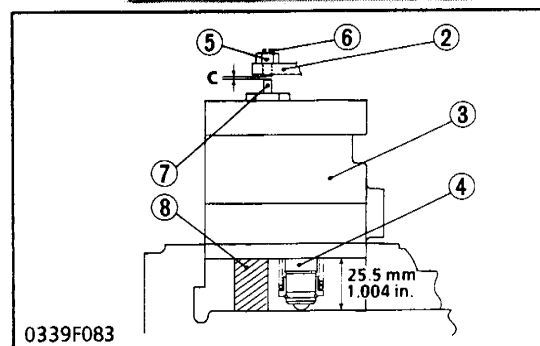
- (1) Screw
(2) Connecting Plate
(3) Valve Body
(4) Spool
(5) Lock Nut
(6) Screw



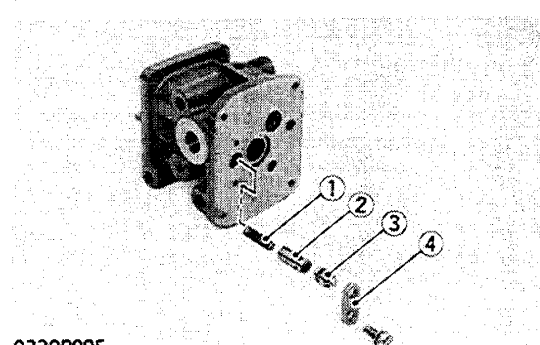
0339P093



0339P094



0339F083



0339P095

Spool

1. Hold the spool (4) with a wrench and remove the screw (1) retaining the connecting plate (2).
2. Pull out the spool (4).

■ IMPORTANT

- Never loosen the lock nut (5) and never displace the screw (6). If the screw (6) is displaced, the control valve will malfunction. For instance, if the screw (6) is loosened and clearance "C" between screw (6) and push rod (7) becomes larger than factory set clearance at the neutral, the implement will not lower the specified height. And if the screw (6) is more screwed in and the clearance "C" is less than factory set clearance at the neutral, the implement will hunt.
- If the screw (6) is displaced or control valve malfunctions, adjust the neutral position with the screw (6) as follows.

(When reassembling)

Tightening torque	Connecting plate retaining screw (1)	23.6 to 27.4 N·m 2.4 to 2.8 kgf·m 17.4 to 20.2 ft-lbs
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■ Adjusting Neutral Position of Control Valve

1. Put a block (8) of 25.5 mm (1.004 in.) height on the vise.
2. Depress the valve body (3) until it touches the block (8) and secure it in a vise so that the machined surface of the valve body (3) is horizontal.
3. Adjust the clearance "C" between screw (6) and push rod (7) to 0.3 to 1.0 mm (0.0118 to 0.0394 in.) with the screw (6). And then, tighten the lock nut (5).

Tightening torque	Lock nut	9.8 to 14.7 N·m 1.00 to 1.50 kgf·m 7.24 to 10.9 ft-lbs
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4. After reassembling and mounting the control valve, check the function of the valve.

- When the control lever is moved to the front end, if the center of the lower link rear end does not lower to the height of about 265 mm (10.4 in.) from the ground, narrow the clearance "C" a little with the screw (6).
- If the implement hunts, expand the clearance "C" a little with the screw (6).

(7) Push Rod

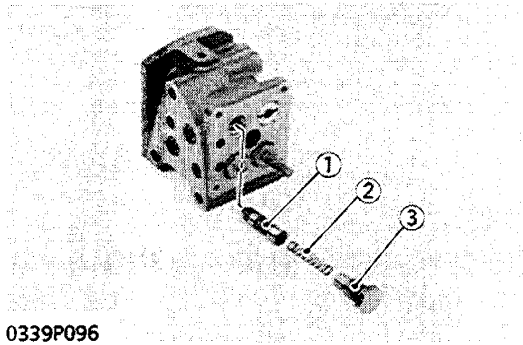
(8) Block

Unload Valve 2

1. Remove the screw mounting the retaining plate (4).
2. Pull out the cover (3), poppet (2) and spring (1) from the valve body.

- (1) Spring
(2) Poppet

- (3) Cover
(4) Retaining Plate

**Unload Valve 1**

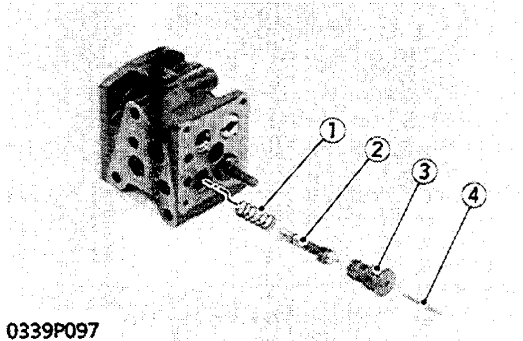
1. Remove the plug (3), spring (2) and poppet (1) from the valve body.

(When reassembling)

Tightening torque	Plug (3)	29.4 to 49.0 N·m 3.0 to 5.0 kgf·m 21.7 to 36.2 ft-lbs
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- (1) Poppet
(2) Spring

- (3) Plug

**Check Valve 2 (for Lowering)**

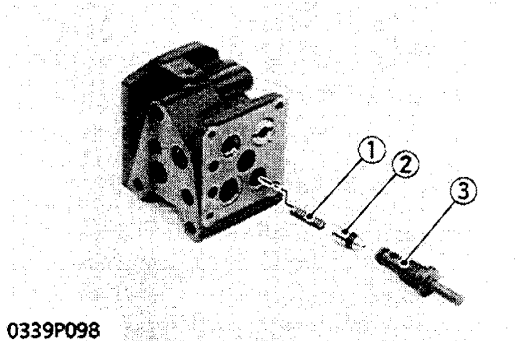
1. Remove the push rod (4), plug 2 (3), poppet (2) and spring (1) from the valve body.

(When reassembling)

Tightening torque	Plug 2 (3)	39.2 to 58.8 N·m 4.0 to 6.0 kgf·m 28.9 to 43.4 ft-lbs
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- (1) Spring
(2) Poppet

- (3) Plug 2
(4) Push Rod

**Check Valve 1**

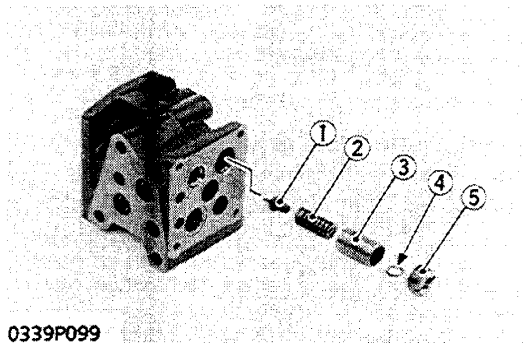
1. Remove the plug 1 (3), poppet (2) and spring (1) from the valve body.

(When reassembling)

Tightening torque	Plug 1 (3)	29.4 to 49.0 N·m 3.0 to 5.0 kgf·m 21.7 to 36.2 ft-lbs
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- (1) Spring
(2) Poppet

- (3) Plug 1

**Relief Valve**

1. Remove the plug (5), adjusting shim (4), collar (3), spring (2) and poppet (1) from the valve body.

(When reassembling)

- After tightening the plug (5), stake it with a punch.

- (1) Poppet
(2) Spring
(3) Collar

- (4) Adjusting Shim
(5) Plug