



# Service Repair Manual

## **Model**

235 EXCAVATOR

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Product: EXCAVATOR

Model: 235 EXCAVATOR 64R

Configuration: 235 EXCAVATOR 64R00455-00595 (MACHINE) POWERED BY 3306 ENGINE

## Disassembly and Assembly 235 EXCAVATOR VEHICLE SYSTEMS

Media Number -SEN7057-00

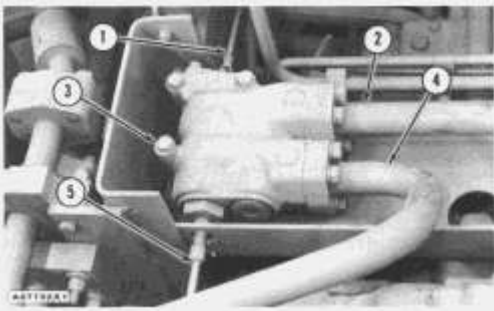
Publication Date -01/12/1974

Date Updated -12/10/2001

### Boom Speed Control Valve

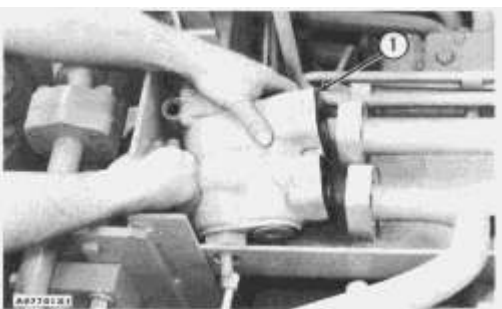
SMCS - 5461-25; 5461-11; 5461-12; 5461-15; 5461-16

### Remove Boom Speed Control Valve



1. Disconnect lines (2), (4) and (5) from valve.
2. Disconnect linkage (1) from valve.
3. Remove bolts (3) and nuts and remove the boom speed control valve.

### Install Boom Speed Control Valve

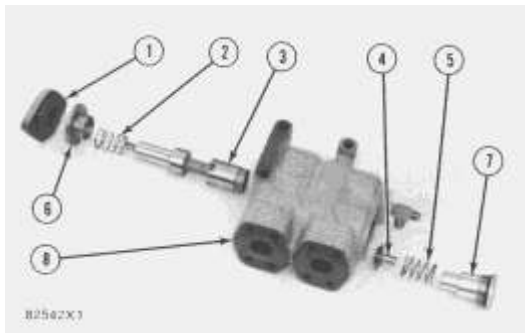


1. Put valve (1) in position on the support and install the bolts.
2. Connect oil lines to valve.
3. Connect linkage to valve.

# Disassemble Boom Speed Control Valve

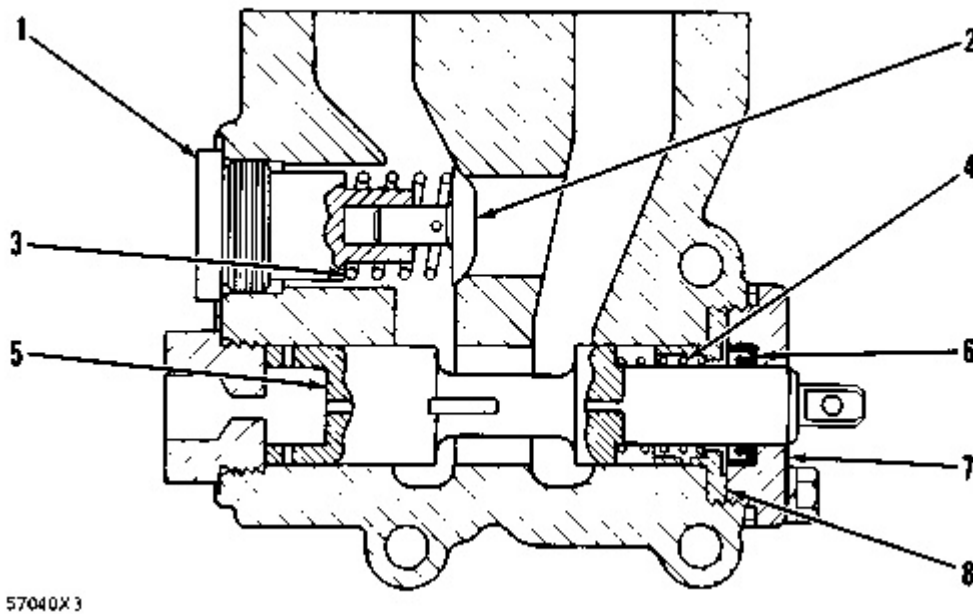
start by:

a) remove boom speed control valve



1. Remove plug (7), spring (5) and valve (4) from the body.
2. Remove cover (1), spacer (6), spring (2) and stem (3) from body (8).
3. Remove the seal from cover (1).

# Assemble Boom Speed Control Valve



1. Install seal (6) in cover (7) with lip of seal toward inside of cover. Put oil on lip of seal.
2. Install stem (5), spring (4), spacer (8) and cover (7).
3. Install valve (2), spring (3) and plug (1) in the body.

end by:

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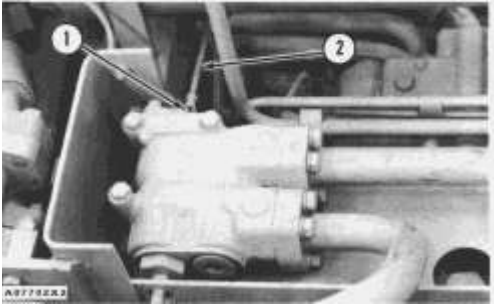
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a) install boom speed control valve

## Adjustment Of Linkage For Boom Speed Control Valve



1. With valve stem (1) fully extended toward linkage (2) and the control knob (3) in the "UP" position, make an adjustment to linkage (2) to get  $2.70 \pm .06$  in. ( $68.58 \pm 1.52$  mm) between control knob (3) and top of nut (4).

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## Disassembly and Assembly 235 EXCAVATOR VEHICLE SYSTEMS

Media Number -SEN7057-00

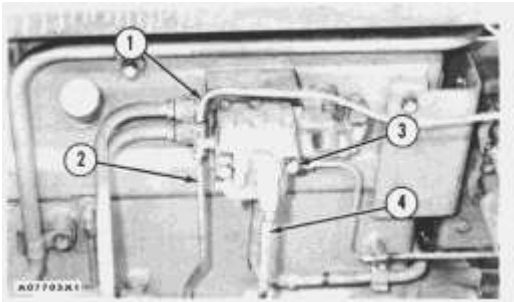
Publication Date -01/12/1974

Date Updated -12/10/2001

### Track Brake Valve

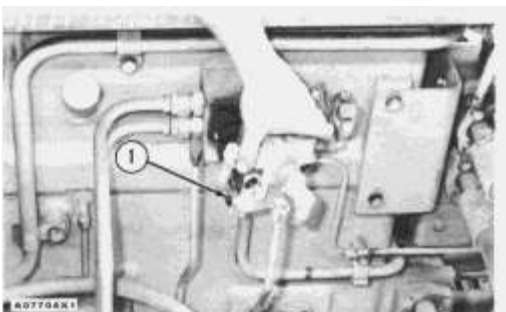
SMCS - 4112-11; 4112-12; 4112-15; 4112-16

### Remove Track Brake Valve



1. Remove oil line (1) from valve.
2. Disconnect oil lines (2) and (4) from valve.
3. Remove bolts (3) that hold the valve in position.
4. Remove the track brake valve.

### Install Track Brake Valve



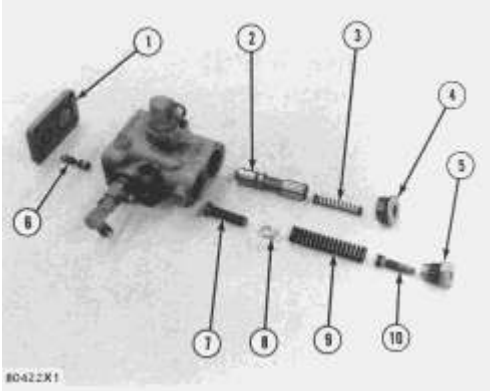
1. Put the track brake valve (1) in position and install bolts.
2. Connect the oil lines to valve.

3. Install oil line on top of valve.

## Disassemble Track Brake Valve

start by:

a) remove track brake valve

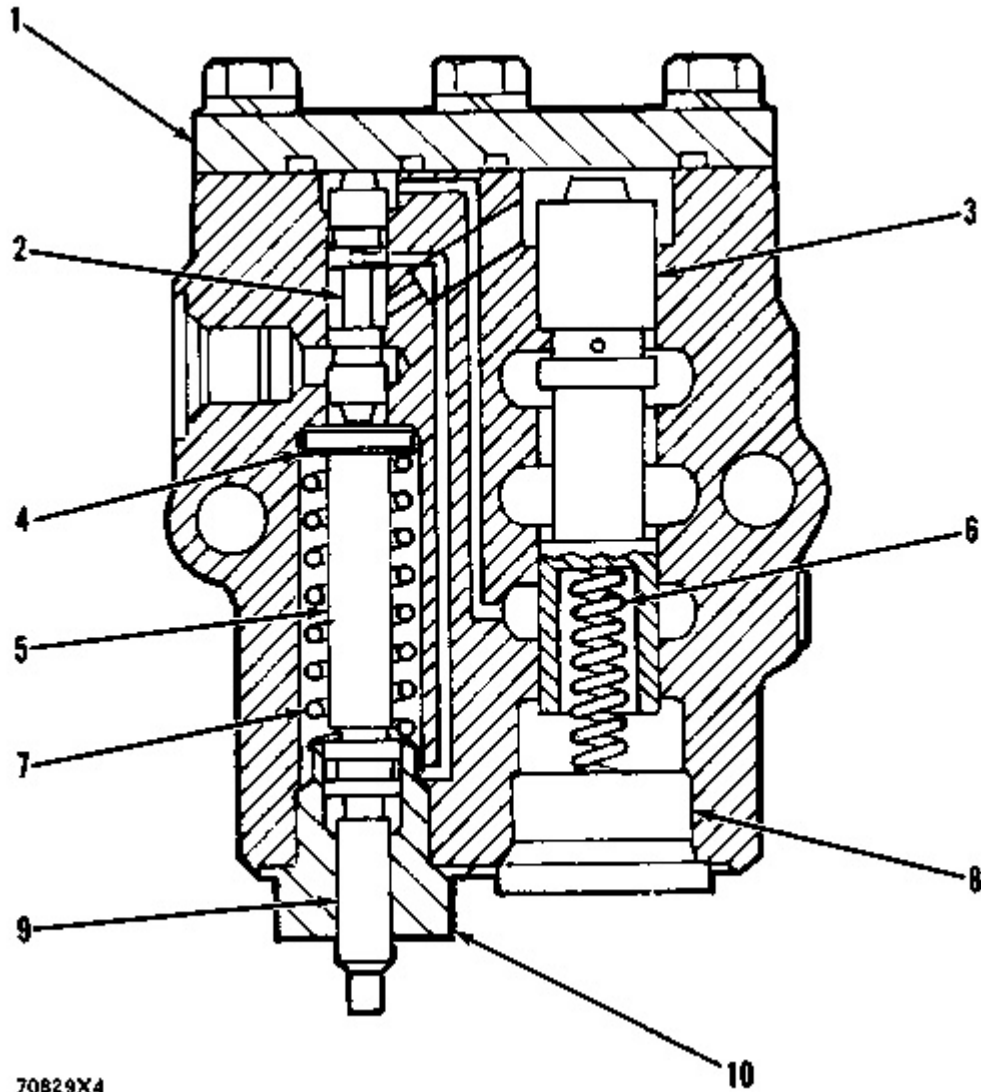


1. Remove the cover (1) and stem (6).

2. Remove plug (4), spring (3), and stem (2).

3. Remove plug (5), plunger (10), spring (9), shims (8), and stop (7). Keep the shims for use during assembly of valve.

## Assemble Track Brake Valve



70B29X4

1. Install the stop (5), shims (4), spring (7), plunger (9), and plug (10). Make sure the O-ring seals are in position on plunger (9) and plug (10).

**NOTE:** The shims (4) should be of correct thickness to cause the parking brake to release when the pilot system pressure is 270 psi (18.98 kg/cm<sup>2</sup>) or higher, and to engage when the pilot system pressure becomes 240 psi (16.87 kg/cm<sup>2</sup>) or lower. Check the adjustment of the valve as follows:

a) Make sure plunger (9) is turned out of valve as far as possible.

b) Push on one of the travel pedals, and check the operation of the parking brakes and the pressure in the pilot system.

c) Make an adjustment to the thickness of shims (4) until the parking brakes engage and release at the correct pressures.

2. Install the stem (2) and cover (1).

3. Install stem (3), spring (6), and plug (8).

end by:

a) install track brake valve



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Media Number -SEN7057-00

Publication Date -01/12/1974

Date Updated -12/10/2001

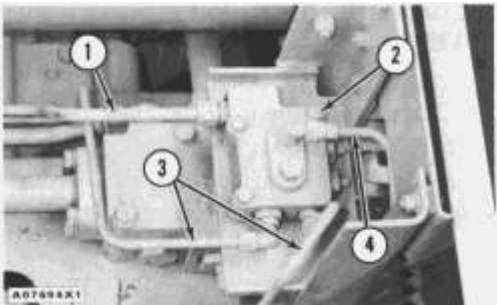
### Boom Vent Valve

SMCS - 5118-12; 5118-15; 5118-16; 5118-11

### Remove Boom Vent Valve

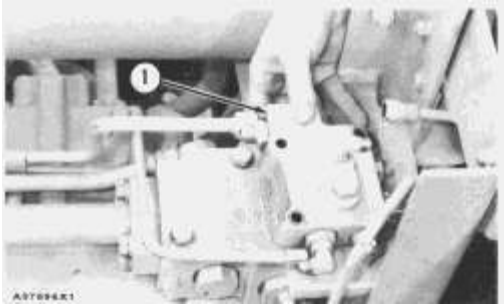


**Do not disconnect any oil lines from the valve until all oil pressure in the main system has been released.**



1. Disconnect the four oil lines (1), (3) and (4) from the valve.
2. Remove the three bolts (2) and remove boom vent valve.

### Install Boom Vent Valve

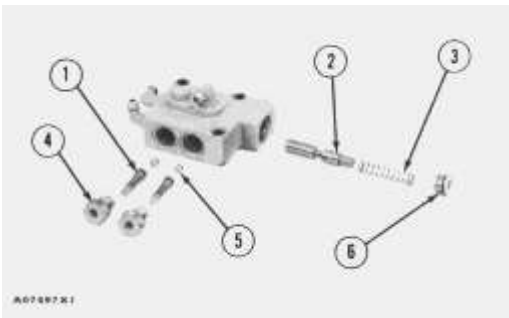


1. Put the boom vent valve (1) in position on the frame.
2. Install the three bolts and nuts that hold valve in place.
3. Connect the four oil lines to the valve.

## **Disassemble Boom Vent Valve**

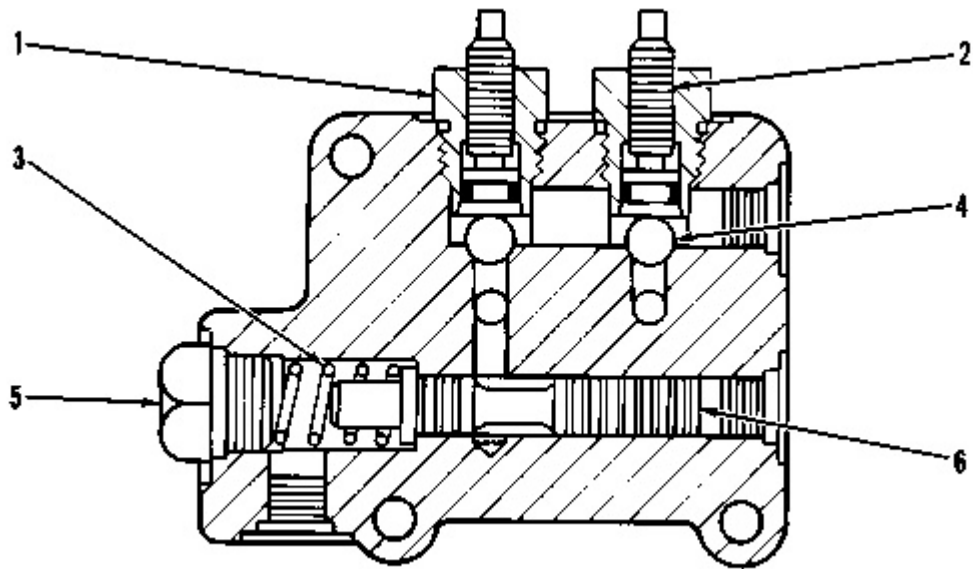
start by:

- a) remove boom vent valve



1. Remove the plug (6), spring (3), and stem (2) from valve.
2. Remove the plugs (4), plungers (1), and balls (5).

## **Assemble Boom Vent Valve**



56468X6

1. Install the balls (4), plungers (2), and plugs (1) in valve body. Tighten the plungers to a torque of  $15 \pm 2$  lb.ft. ( $2.1 \pm 0.3$  mkg).

2. Install stem (6), spring (3) and plug (5).

end by:

a) install boom vent valve.

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## Disassembly and Assembly

### 235 EXCAVATOR VEHICLE SYSTEMS

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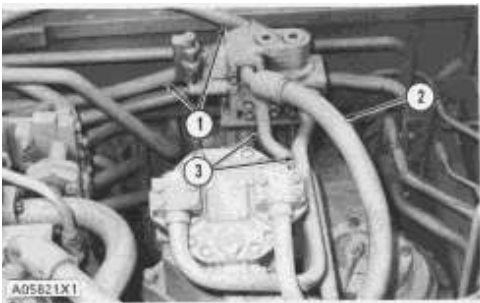
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Date Updated -12/10/2001

## Swing Combiner And Relief Valve

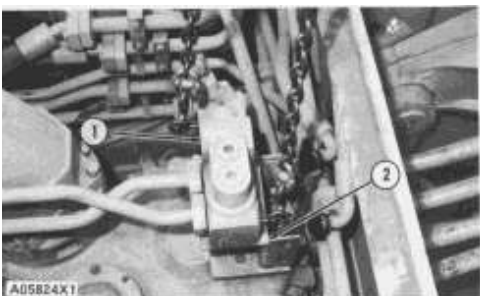
SMCS - 5054-12; 5054-15; 5054-16; 5054-11

### Remove Swing Combiner And Relief Valve



1. Disconnect five lines (1), (2) and (3) from the combiner and relief valve.
2. Put plugs in the openings of the lines.
3. Remove bolts that hold the valve to bracket.
4. Install two 7/8"-14 NC forged eyebolts. Fasten a hoist and remove swing combiner and relief valve. Weight is 60 lb. (27 kg).

### Install Swing Combiner And Relief Valve



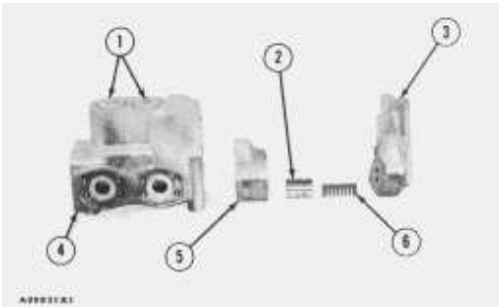
1. Put swing combiner and relief valve (1) in position and install bolts that hold it to the bracket (2).
2. Remove the plugs for oil lines.

3. Connect the oil lines to the valve.

## Disassemble Swing Combiner And Relief Valve

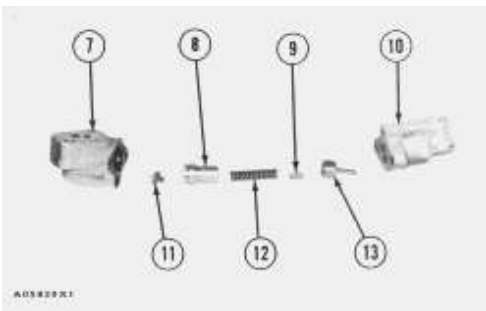
start by:

a) remove swing combiner and relief valve



1. Remove relief valve body (3), spring (6), valve (2) and body (5) from body (4).

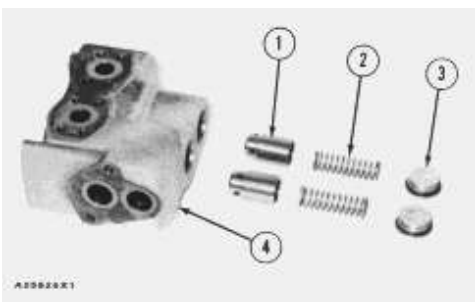
2. Remove plugs (1), springs and valves from body (4).



3. Remove bolts that hold the relief valves (7) and (10) together.

4. Remove valve (11), stop (8), spring (12), shims (9) and valve (13) from the bodies.

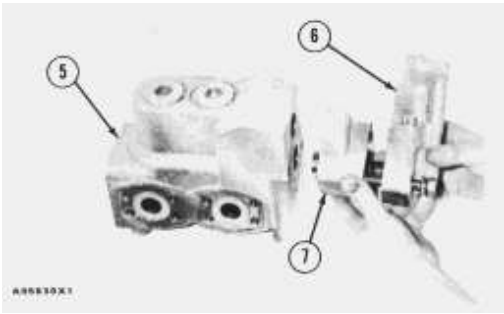
## Assemble Swing Combiner And Relief Valve



1. Install valve (1), springs (2) and plugs (3) in body (4).

2. Install valve, shims, spring, stop and valve in relief valve bodies (6).

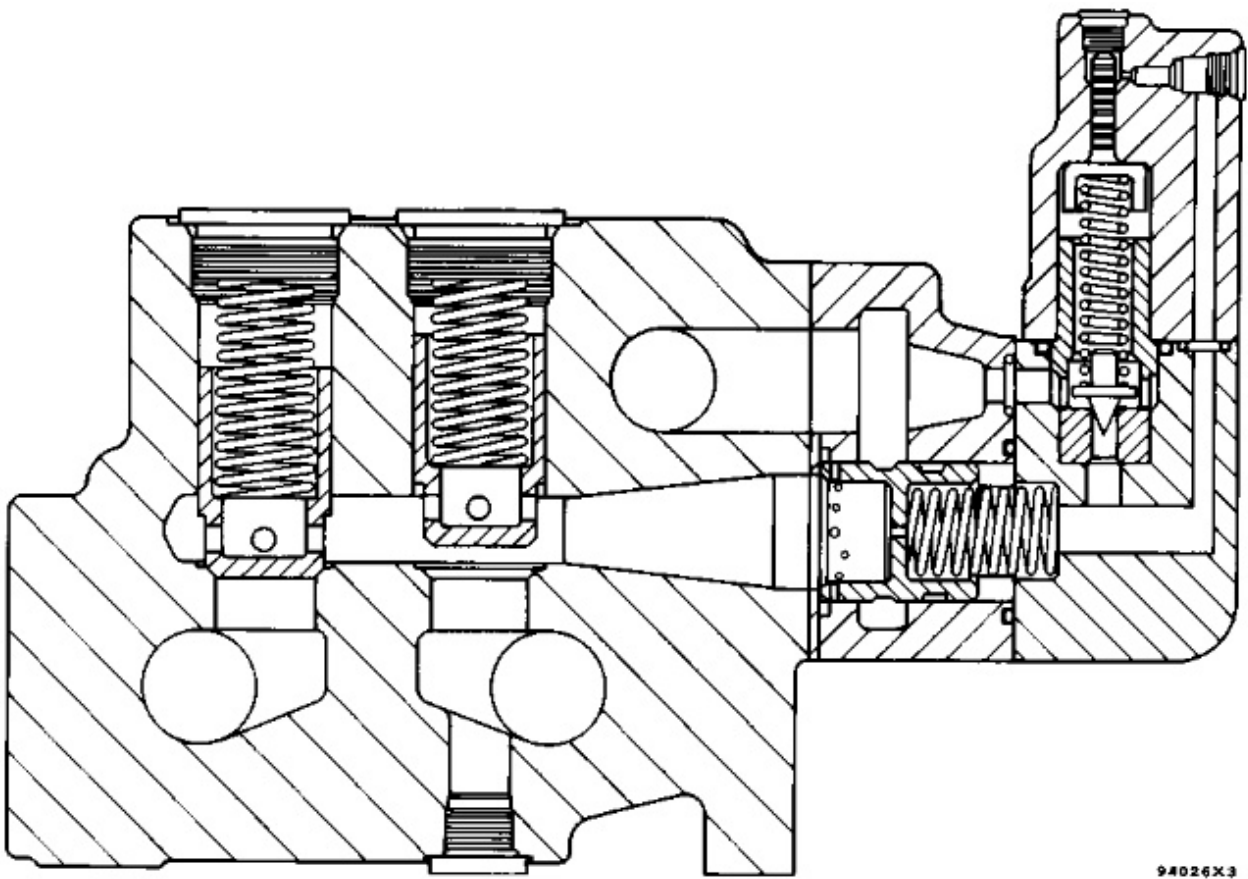
3. Install bolts that hold the relief valve bodies together.



4. Install valve, spring, body (7) and relief valve body (6) on body (5).

end by:

a) install swing combiner and relief valve



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## Disassembly and Assembly 235 EXCAVATOR VEHICLE SYSTEMS

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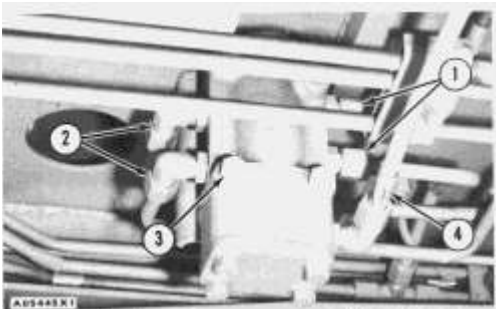
Publication Date -01/12/1974

Date Updated -12/10/2001

### Pump Selector Valve

SMCS - 5120-12; 5120-15; 5120-16; 5120-11

### Remove Pump Selector Valve



1. Disconnect the two oil outlet lines (2) from the valve.
2. Disconnect oil inlet lines (1) and return line (4) from the valve.
3. Remove the three bolts (3) and nuts that hold the valve in place. Remove the pump selector valve.

### Install Pump Selector Valve

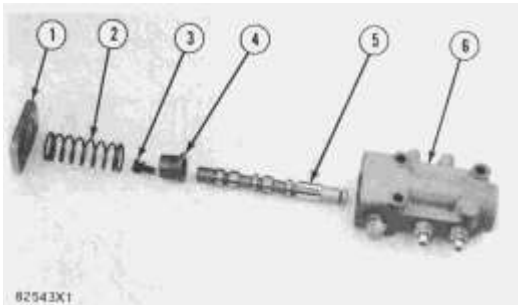


1. Put the pump selector valve (1) in position and install the three bolts and nuts.
2. Connect the two oil inlet lines and the return line to valve.
3. Connect the two oil outlet lines to the valve.

## Disassemble Pump Selector Valve

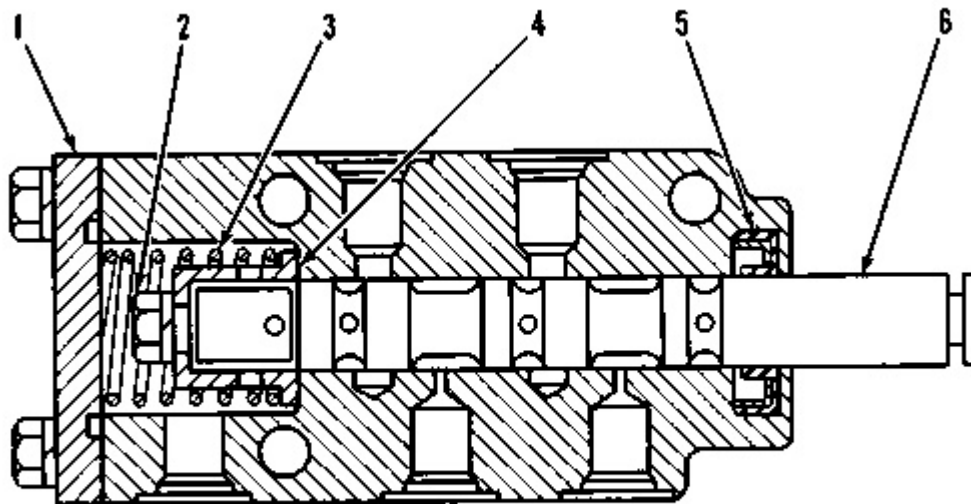
start by:

a) remove pump selector valve



1. Remove the cover (1), spring (2) and valve stem (5).
2. Remove the seal from valve body (6).

## Assemble Pump Selector Valve



5438BX3

1. Install the seal (5) in valve body with the lip of seal toward cover (1). Put clean oil on lip of seal.
2. Put the retainer (4) in position on valve stem (6) and install bolt (2).
3. Install the valve stem (6), spring (3) and cover (1).

end by:

a) install pump selector valve

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## Disassembly and Assembly 235 EXCAVATOR VEHICLE SYSTEMS

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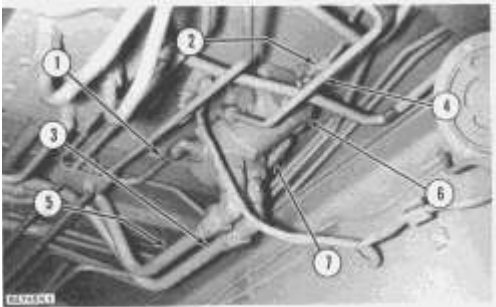
Publication Date -01/12/1974

Date Updated -12/10/2001

### Safety Valve

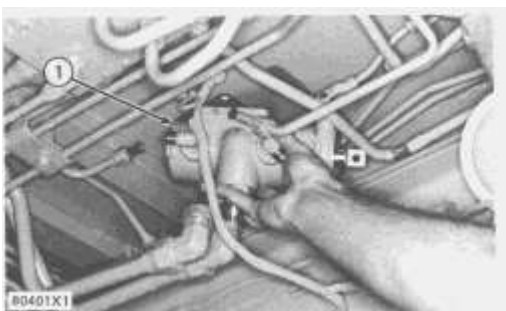
SMCS - 5065-12; 5065-15; 5065-16; 5065-11

### Remove Safety Valve



1. Disconnect the five oil lines (1), (3), (4), (5), and (7) from the valve.
2. Disconnect the linkage (2) from valve.
3. Remove the three bolts that hold the valve to the floor plate. Remove safety valve (6).

### Install Safety Valve

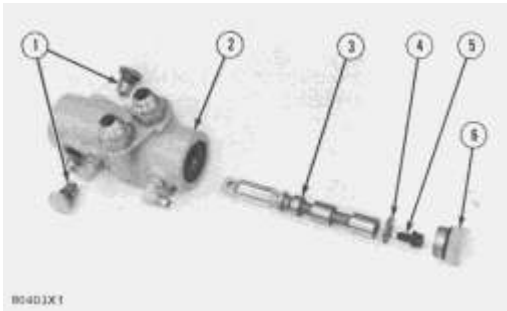


1. Put the safety valve (1) in position, and install the three bolts that hold it to the floor plate.
2. Connect the linkage to the valve.
3. Connect the five oil lines to the valve.

# Disassemble Safety Valve

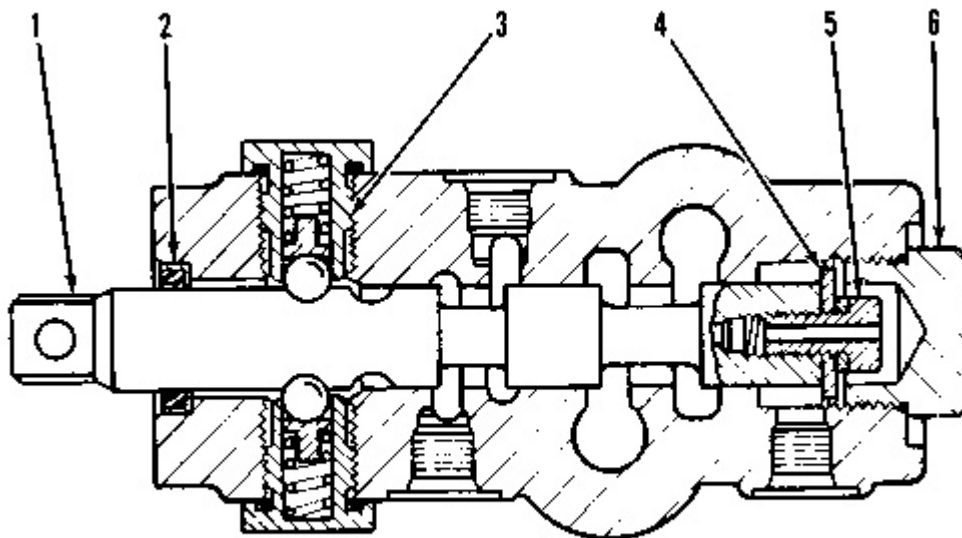
start by:

a) remove safety valve



1. Remove the two detent plug assemblies (1) from the valve body.
2. Remove plug (6) and valve stem (3). Remove the bolt (5) and orifice (4) from stem.
3. Remove the seal from valve body (2).

# Assemble Safety Valve



70830X3

1. Install the seal (2) in valve body with lip of seal toward plug (6). Put clean oil on the lip of seal.
2. Install the bolt (5) and orifice (4) on the valve stem (1).
3. Install valve stem (1) and plug (6).
4. Install detent plug assemblies (3).

end by:

**a) install safety valve**

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## Disassembly and Assembly 235 EXCAVATOR VEHICLE SYSTEMS

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Publication Date -01/12/1974

Date Updated -12/10/2001

# Bucket And Boom Pilot Control Valve

SMCS - 5452-11; 5452-12

## Remove Bucket And Boom Pilot Control Valve



1. Remove the knob from control lever (1).
2. Remove the three covers (2).



3. Remove the foot support (5).
4. Disconnect the oil lines (6) from valve.
5. Remove the three bolts (4) from valve, and the three bolts (3) from support assembly.



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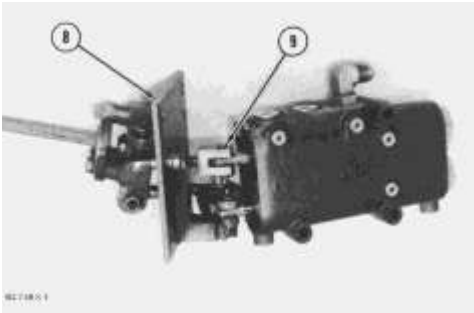
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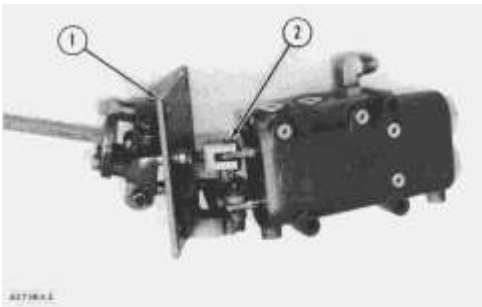
6. Remove the bucket and boom pilot control valve (7).



7. Remove the two cotter pins and pins (9).

8. Remove the support assembly (8) from pilot control valve.

## **Install Bucket And Boom Pilot Control Valve**



1. Put the support assembly (1) in position on pilot control valve. Install the two pins (2) and cotter pins.



2. Put the bucket and boom pilot control valve (3) in position.

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