

### 33. UPPER FRAME

#### 1.9 CONTROL VALVE

(The procedure concerns the E18B mini-excavator control valve)

##### REMOVAL

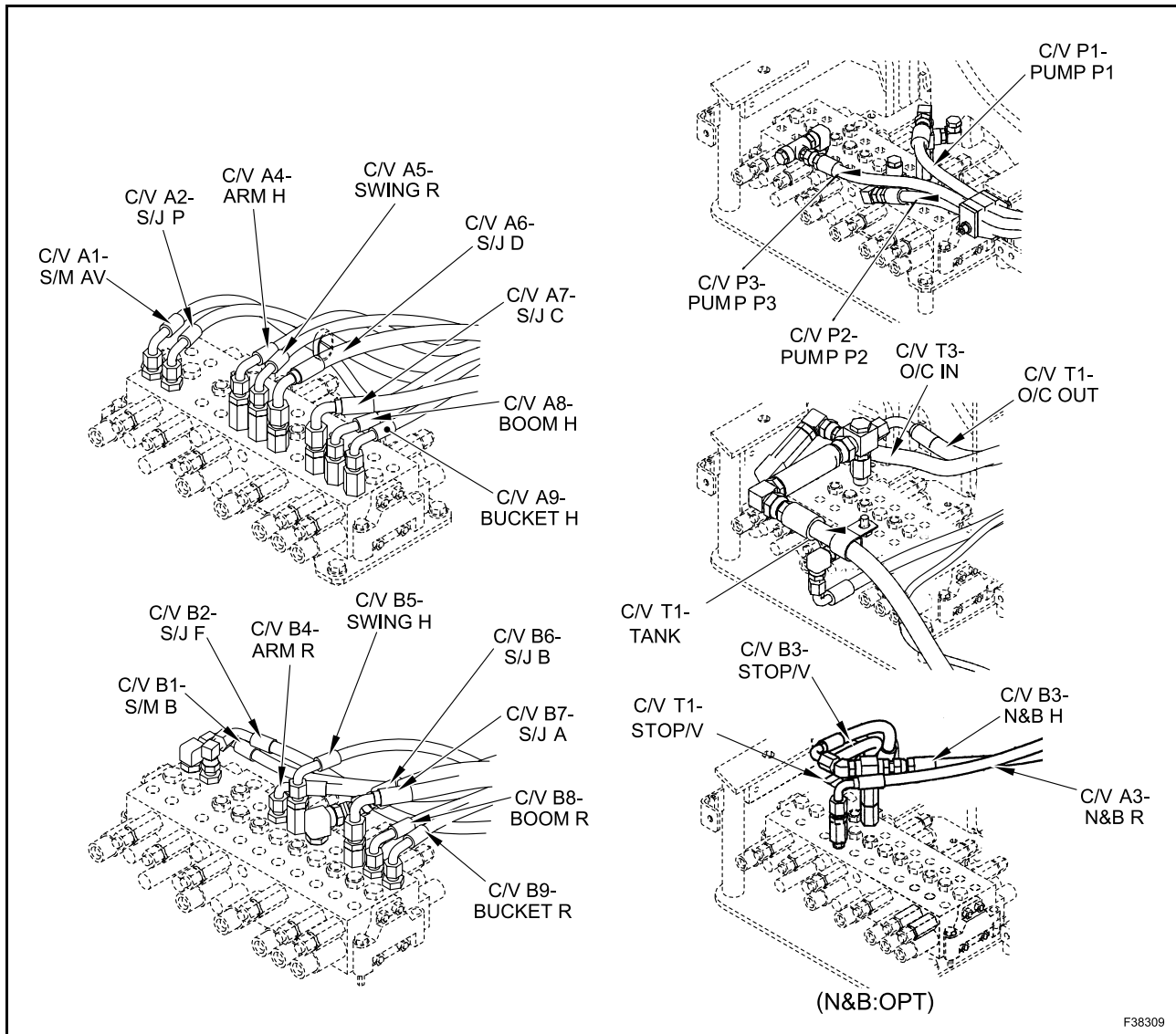
Remove the left side guard.

Remove the rubber floor mat and the iron floor mat.

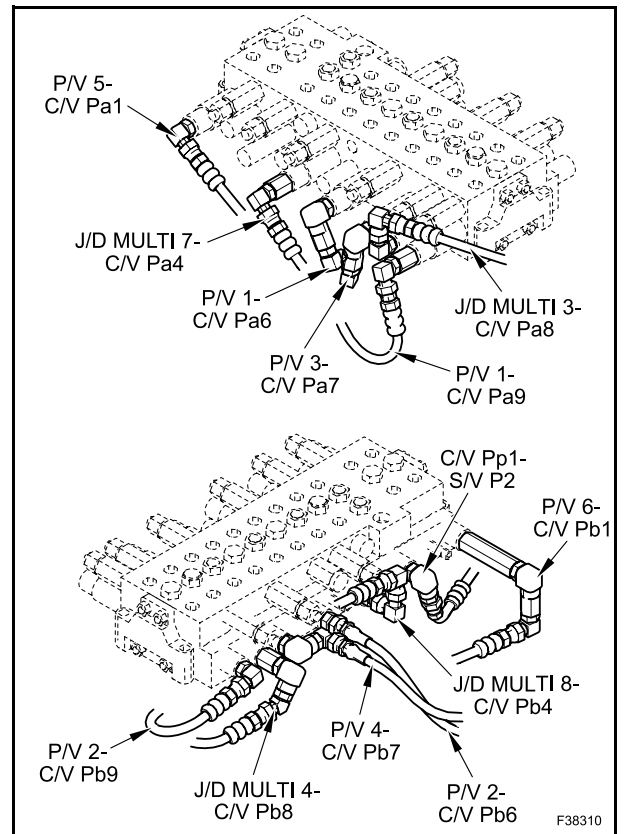
Release the possible residual pressure from the system and from the hydraulic oil tank.

Disconnect all the hoses connecting to the control valve, and attach blind plugs and tags recording the installation place.

Disconnect all the main hydraulic hoses.



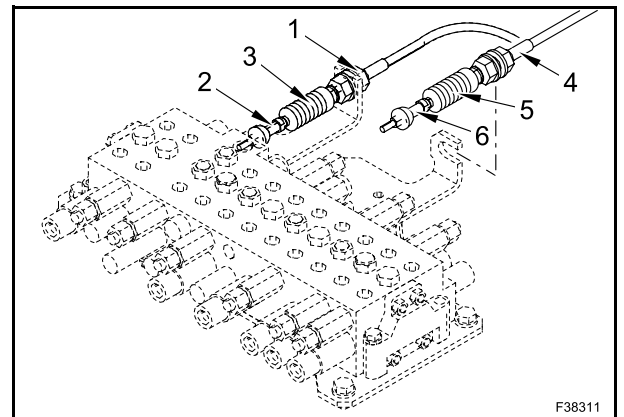
Disconnect all the main pilot hoses.



Disconnect the cables.

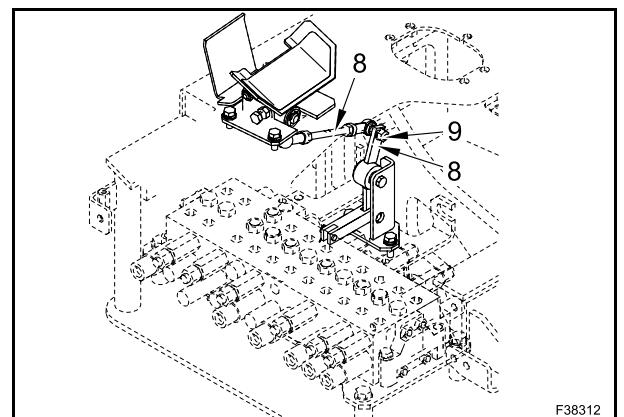
Loosen the nut (1) and turn the rod end (2) to disconnect the dozer cable (3).

Loosen the nut (4) and turn the rod end (6) to disconnect the swing cable (5).



Disconnect the nibbler and breaker control pedal.

Remove the nut (7) to disconnect the rod (9) from the lever (8).



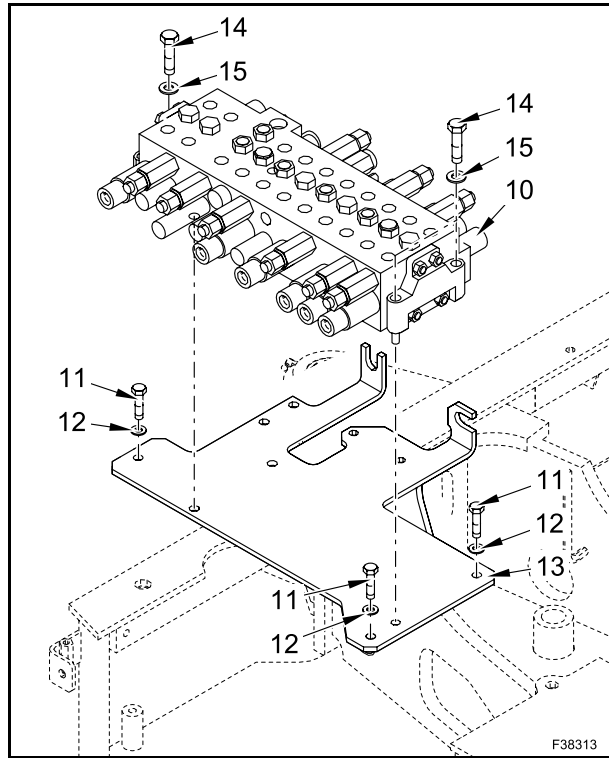
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Loosen and remove the 3 screws (11) with the relevant washers (12). Remove the control valve (10) with the bracket (13).

Bracket and control valve weight: 27 kg (59 lb).

Loosen and remove the 3 screws (14) with the relevant washers (15). Remove the control valve (20) from the bracket (13).

Control valve weight: 23 kg (51 lb).



#### INSTALLATION

Install the control valve by following the removal procedures in reverse sequence.

#### ⚠ CAUTION

Clean the mounting surfaces and make sure to prevent any control valve damage.

Install the control valve (10) on the bracket (13) and secure it with the 3 screws (14) and the washers (15).

- Tightening torque of screws (14) = 33.3 Nm (24.56 lbf•ft).

Assemble the control valve with the bracket on the machine by means of screws (11) and washers (12).

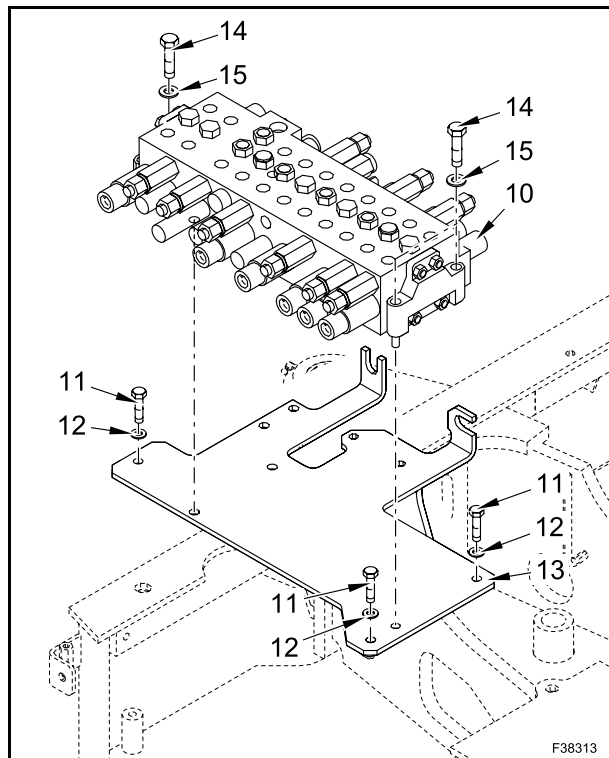
Tightening torque of screws (11) = 65.7 Nm (48.45 lbf•ft).

Remove all plugs.

Connect all hoses to the control valve.

Tighten the hose fittings to prescribed torque:

Thread size	Fitting with O-ring Nm (lbf•ft)	30° flare type fitting Nm (lbf•ft)
1/4	36.3 (26.77)	29.4 (21.68)
3/8	73.5 (54.21)	49 (36.14)
1/2	108 (79.65)	78.5 (57.90)
3/4	162 (119)	118 (87.3)
1	255 (188)	



Operate the working attachment to check the performance.

Check the tank and lines for oil leaks and the oil level inside of the tank.