



Service Manual

Chassis & Mast

EP10/14/15/18(H)CA1(J)

EP20/25(H)CA1(J),EP28CA1(J)

EP30CA1(J)

221E20001-up 256E00792-up

241C10001-up 257C01120-up

251AC2001-up

6- 3. Inspection and adjustment



Wheel brake is very important for safe operation.
Always replace Wheel brake whenever it is damaged.

6-3-1. Wheel brake - inspection and adjustment

1. Check for Brake drum inner surface streaks, uneven wear, and cracks.

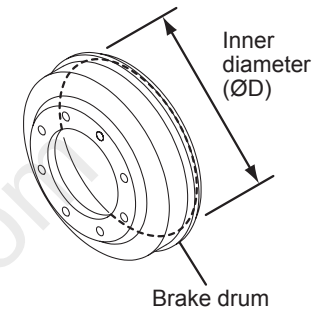


If there are streaks or partial wear, repair or replace Brake drum based on the allowable limits in the table below.

● Inner diameter of Brake drum

Applicable model	Specified dimension(ØD)	Repair limit (ØD)
EP10CA1-18CA1	10-inch (254mm)	256mm
EP20CA1-28CA1	11-inch (279.4mm)	281.4mm
EP30CA1	310mm	312mm

● Inspecting Brake drum



2210036

6-3-2. Shoe and lining - inspection and replacement

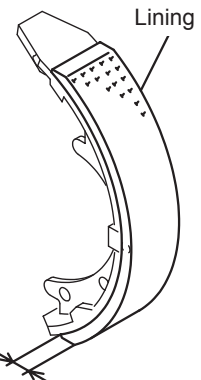
1. Measure the thickness of Lining
 - ▶ If Lining is worn to less than 1.5mm, replace it.



Measure Lining at the point with the most wear.

2. Check for stains, burnout and deterioration.
 - ▶ If you find any abnormalities, replace Lining.
3. Check for cracks and damage.
 - ▶ If you find any burrs, remove them.
 - ▶ If you find any abnormalities, replace lining.

● Inspecting Shoe and lining



212E052

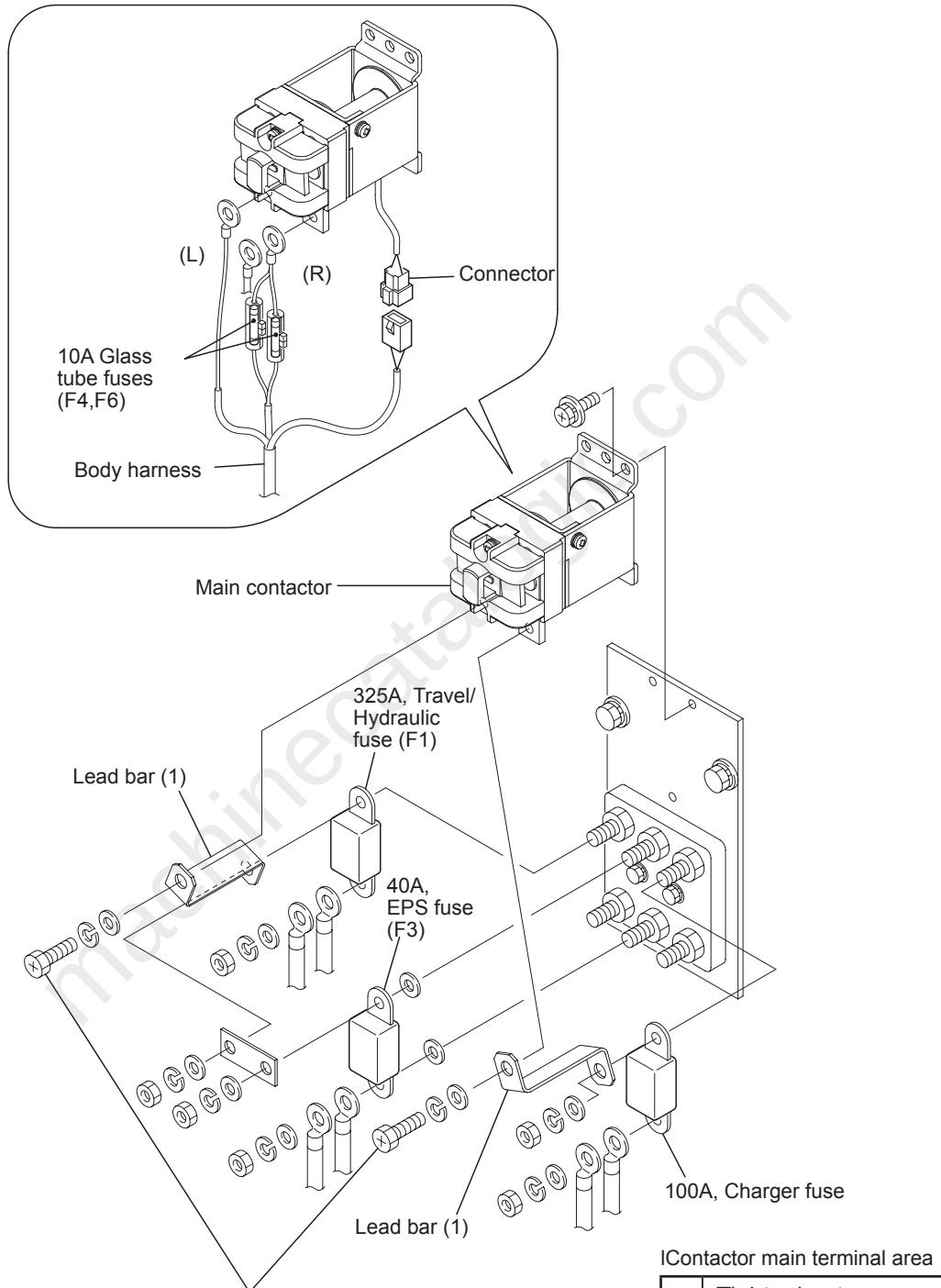
MEMO

A blank sheet of white paper with horizontal ruling lines. The word "MEMO" is printed in bold black capital letters at the top left corner. A diagonal watermark reading "machinecatalogic.com" is visible across the center of the page.

2. Remove Main contactor and Fuses.

1. Disconnect wiring connectors of Main contactor and lead wires.
2. Refer to the diagram below and remove Main contactor and all fuses.

●Removing Main contactor and Fuse



 : Tightening torque

IContactor main terminal area

Tightening torque
6.4 - 7.4 N · m
{0.65 - 0.75 kgf · m}
Use a bolt included attached on Main contactor.

221W1026

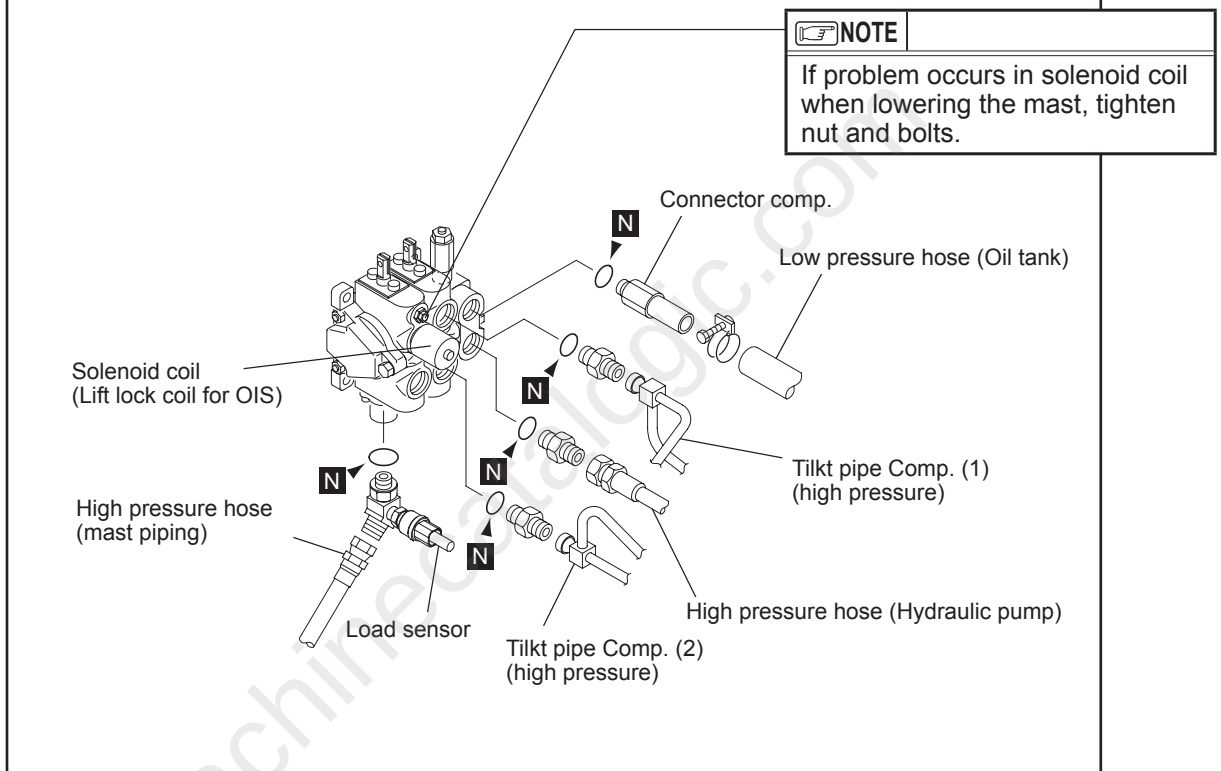
* Install Main contactor and fuse in reverse order of removal.

2. Disconnect pipes and hoses shown in the following illustration.



Before removing a high pressure hose or a high pressure pipe, push Lift lever forward for several times (fork downward operation) while keeping the key switch ON, and remove the pressure inside the pipe. Do not perform any lever operation other than the lift downward lever operation, because the pressure is applied when oil hydraulic motors are operated.

● Disconnecting Hydraulic pipe and Hose

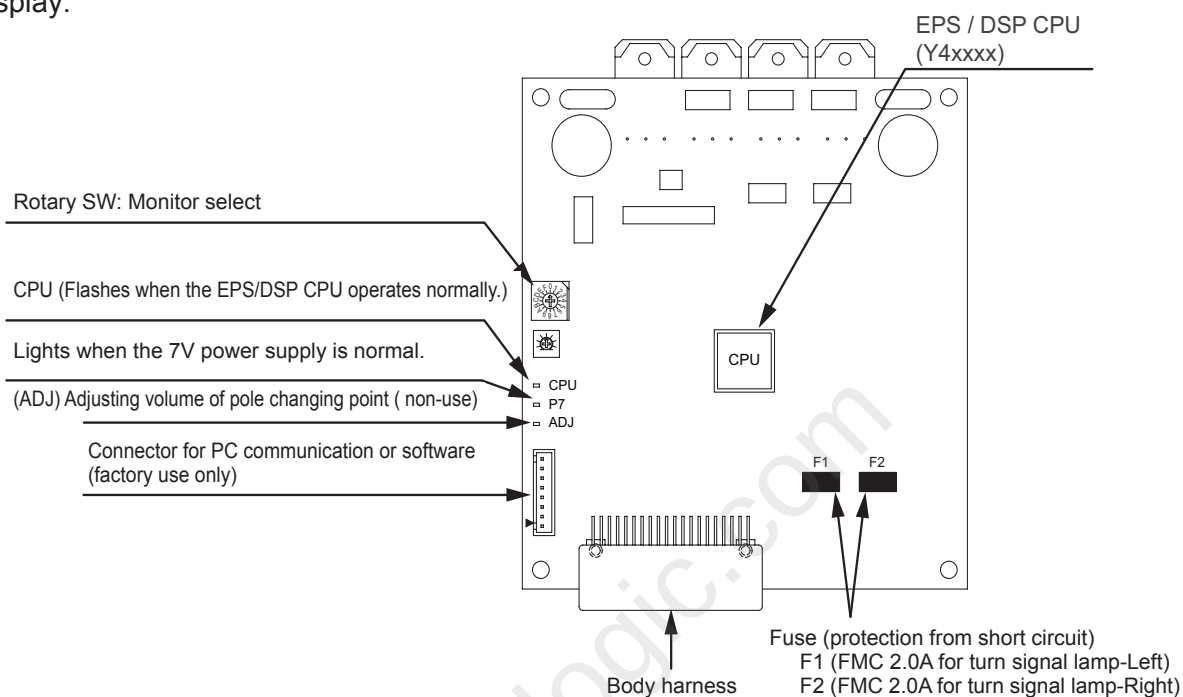


Do not touch the terminals of load sensor by dry hand.

3. Remove Snap pins and Valve pins to remove Valve linkage.

10b-1-2. EPS controller

This controls data shared between each board and the display.



221W1030E



Even when the key is turned OFF, the battery sends current to EPS controller. Before working, always disconnect Battery plug.

<EPS controller model>

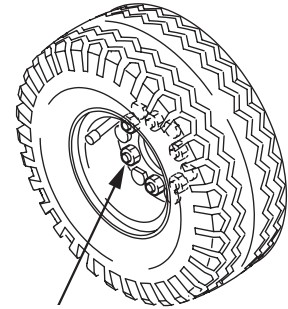
Applicable model	Vehicle body specification	EPS controller model	Printed board model
EP10CA1 - 28CA1	STD	CU114-50	PB112-40x / PB113-50x
	CS	CU114-52	PB112-41x / PB113-51x
EP30CA1	STD	CU114-51	PB112-42x / PB113-52x
	CS	CU114-53	PB112-43x / PB113-53x

4- 2. Inspection and adjustment

4-2-1. Hub nut - inspection

1. Check for damage.
2. Check for loose bolts and nuts.
- ▶ Tighten any loose bolts or nuts.

●Inspecting Hub nut



Hub nut

212E034

▶ Front

Tightening torque (M12)	
[EP10CA1-14CA1]	89-108 N·m {9-11 kgf·m}
Tightening torque (M16)	
[EP15CA1/18CA1]	216-264 N·m {22-27 kgf·m}
Tightening torque (M18)	
[EP20CA1-30CA1]	315-385 N·m {32-39 kgf·m}

▶ Rear

Tightening torque (M12)	
88.2-108 N·m {9-11 kgf·m}	

4-2-2. Rim and Rim bolt - inspection

1. Check for damage.
2. Check for looseness.
- ▶ Tighten any loose bolts.

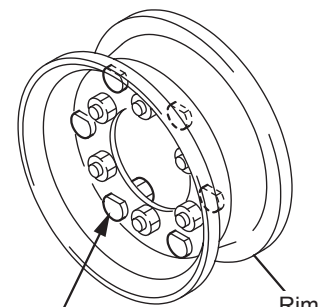
NOTE

The following models do not have Rim bolts:

Front :EP15CA1-30CA1

Rear :EP20CA1-28CA1

●Inspecting Rim and Rim bolt



Rim bolt

Rim

212E035

▶ Front

Tightening torque	
[EP10CA1-14CA1]	68.5-78.5 N·m {7-8 kgf·m}

▶ Rear

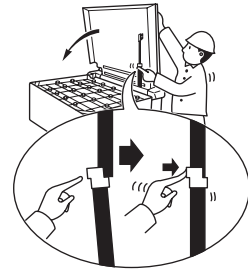
Tightening torque	
[EP10CA1-18CA1/30CA1]	68.5-78.5 N·m {7-8 kgf·m}

<EP10CA1 to 28CA1>

Push the yellow stopper at the midway point of Gas spring, and then close Battery cover.

After closing Battery cover, apply Cover catch.

Closing battery cover

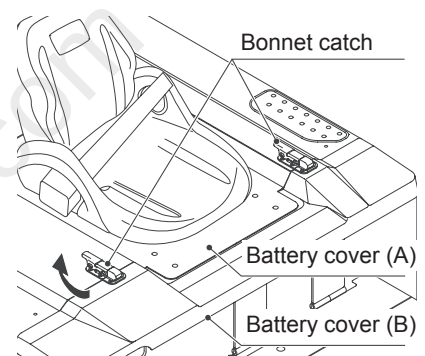


221W082E

<EP30CA1>

Close Battery cover (B). Push the yellow stopper at the midway point of Gas spring, and then close Battery cover (A).

After closing both Battery covers (B) and (A), make sure to lock with Bonnet catch.



221W1035E

CAUTION

When closing the battery cover, be careful not to pinch hands or fingers between the cover and case.

WARNING

- While charging, do not disconnect receptacle or power supply plugs or the battery plug.
- While charging, do not operate hydraulic levers or Accelerator pedal.
- If the charging is interrupted halfway, make sure to push "STOP" button, and then first disconnect the power supply plug, and then disconnect the battery charging plug.

WARNING

- Do not touch any part of the charger, plug, or cable with wet hands. The charger operates with high voltage and touching it with wet hands can cause electrical shock.
- Wipe off moisture or wear rubber gloves.

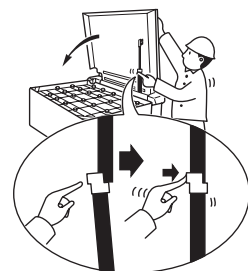
NOTE

Low temperature conditions may activate the automatic supplementary charge function in order to provide heat insulation for the battery after holiday weekends during the cold season.

"Standard charging completion fees .. yen" is displayed. (Fee indicator is optional)

Charging is finished. After pushing "STOP" button, be sure to disconnect Charging plug and AC plug.

Closing battery cover



221W082E

Full Version Available

Caterpillar EP28CA1(J) Forklift Service Manual (99759-6R110)

Caterpillar EP28CA1(J) forklift service manual, covers hydraulics, mast, drive unit, wiring, and controller diagnostics. Searchable PDF download.

VIEW THE FULL MANUAL

<https://machinecatalogic.com/caterpillar-ep28ca1j-forklift-service-manual-99759-6r110/>