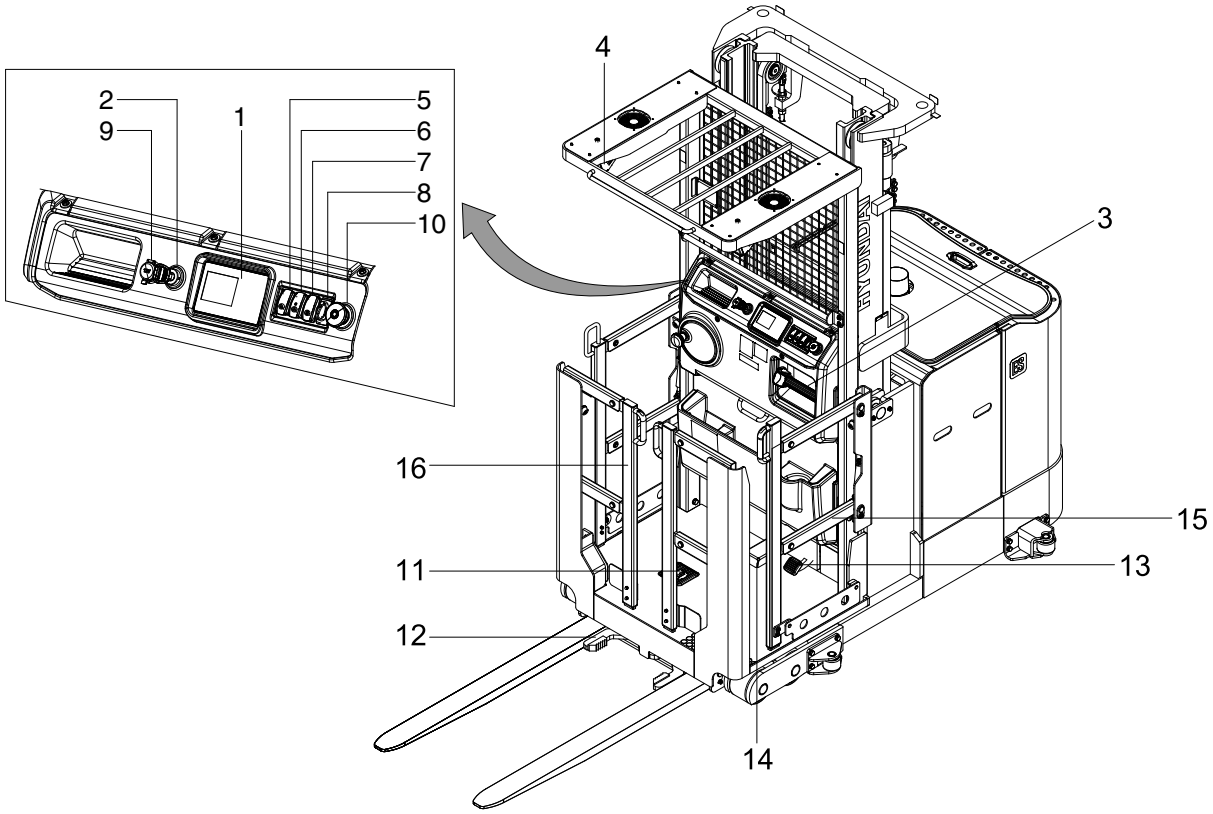
SECTION 2 REMOVAL AND INSTALLATION OF UNIT

GROUP 1 MAJOR COMPONENTS



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1	Display	7	Wire guidance switch (OPT)	13	Pallet clamp pedal
2	Key switch	8	Zone select switch (OPT)	14	Pallet clamp release pedal
3	Multifunction lever	9	Socket (12 V)	15	Side gate
4	Work lamp	10	Emergency switch	16	Rear gate (EU : STD, Other : OPT)
5	Work Lamp switch	11	Dead man switch		
6	Fan switch	12	Pallet clamp		

※ The multifunction lever, steering wheel, display, lamps and all switches, (key, emergency stop, light etc) are located on the console.
Familiarize yourself with the controls and follow safe operating procedures.

GROUP 2 REMOVAL AND INSTALLATION OF UNIT

Remove and install following units as explained in the flow chart.

1. MAST

1) REMOVAL

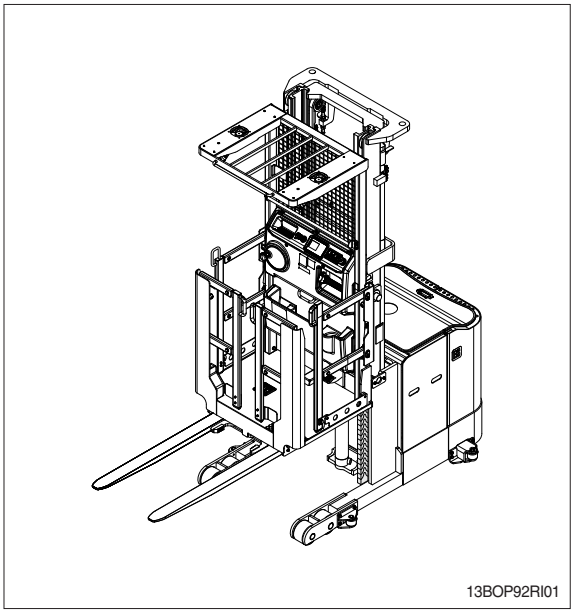
Fork → Mast → Platform & overhead guard → Piping

(1) PREPARATION

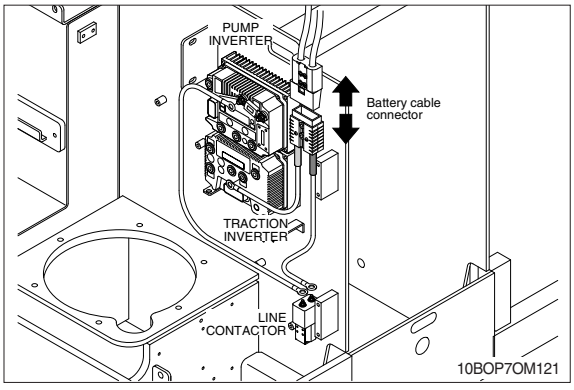
① Lift up the platform from the floor to easy removal of the forks.

② Prop up blocks under the platform in order that it can avoid from unintentional lowering of the platform.

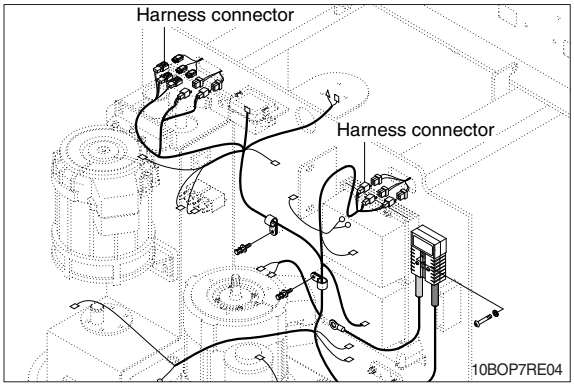
⚠ When propping up the block under the platform, pay careful attention to support it properly so that they can prevent the platform from dropping on the floor.
It can cause to happen unexpected accident such as personal injury or death.



③ Turn the start switch off and then disconnect the battery connector from the order picker truck.



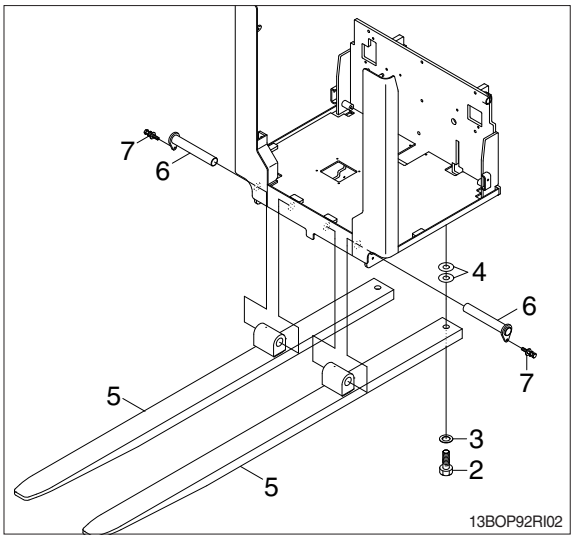
④ Disconnect harnesses.



(2) FORKS

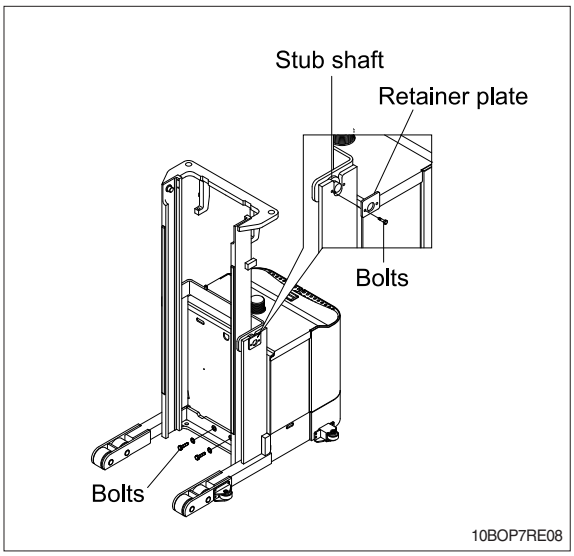
① Loosen and remove bolts (2), washers (3) and shims (4) which are used for fixing the forks (5) under the platform (1).

② Loosen bolts (7), and then remove pins (6) which are used for fixing the forks (8) to the platform (1).



(3) MAST & PLATFORM REMOVAL

① Remove bolts and retainer plates from the left and right sides of truck frame.

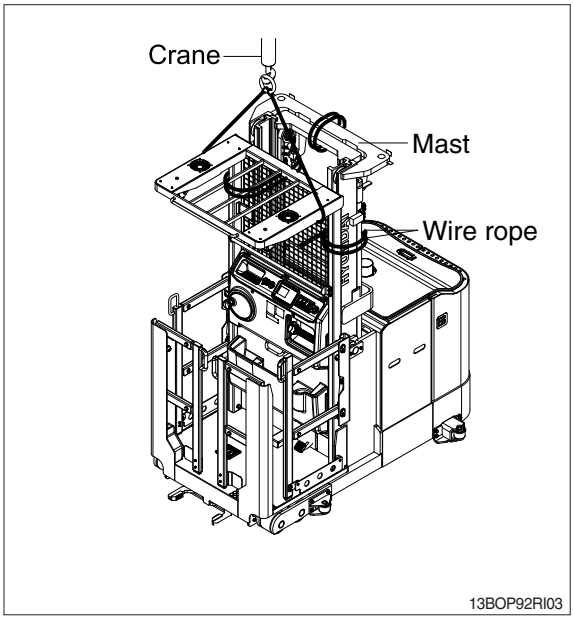


② Raise mast until the stub shafts on the sides of the outer mast rail clear the saddles of the truck frame.

※ Make sure the mast lifts straight up.

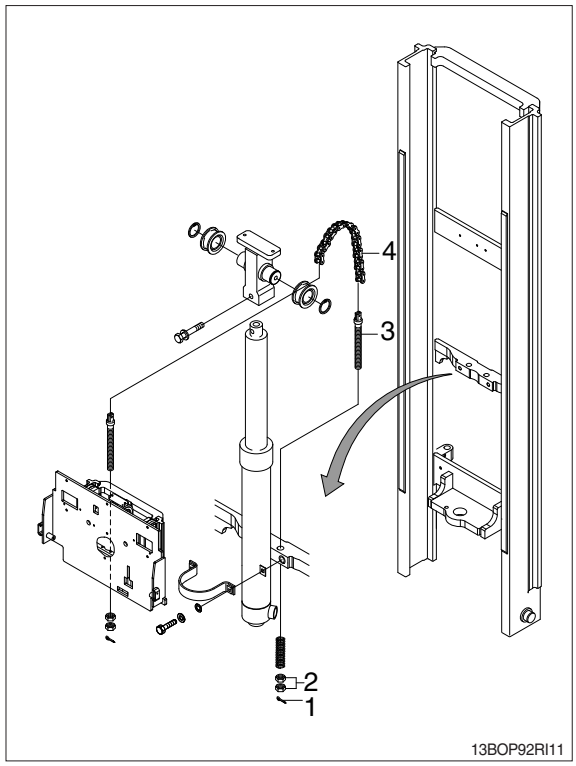
※ Take care to draw out the platform in order that it can not happen damage due to bump between the platform and the inner mast.

③ Inspect all parts of the platform for wear or damage.
Replace the defected parts if necessary.

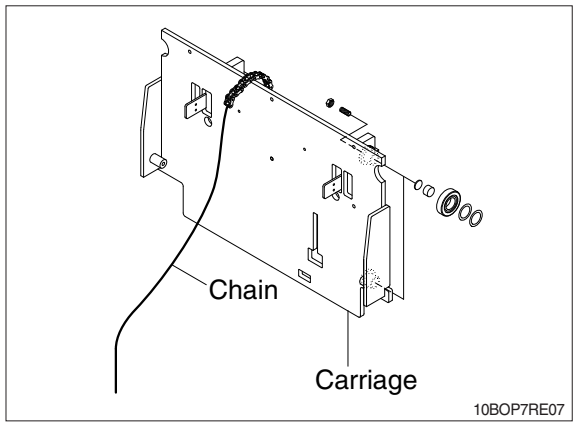


(4) PLATFORM

① While slacking the lift chains (4), loosen and remove split pin (1), nuts (2) from anchor bolt (3) of the chains (4).

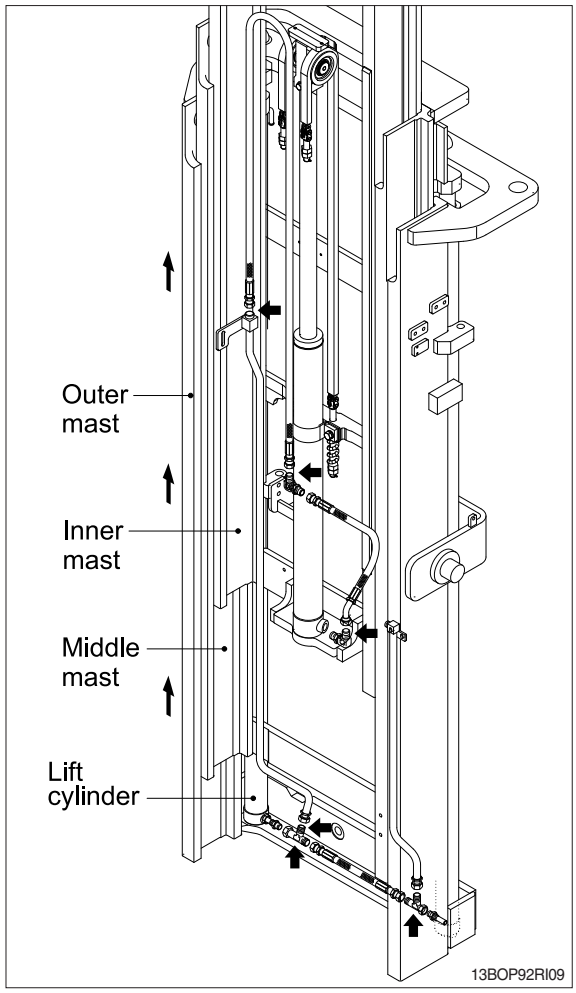


② Pull the chains out of the sheaves and drape them over the front of carriage.



(5) PIPING

① Remove the return hoses and clamps attached to the cylinder.
② Remove the return hoses from the connector.
③ Remove hose assembly, connector, down safety valve from the lift cylinder.
④ Disconnect hose assembly from the flow regulator.

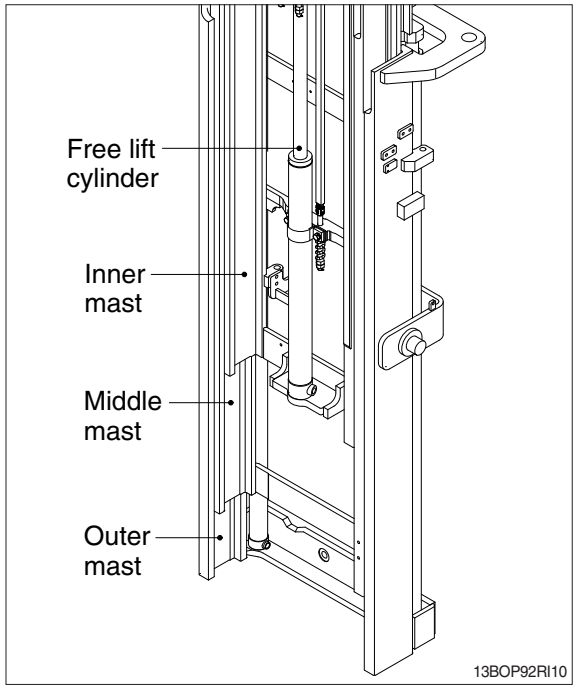


(6) LIFT CYLINDER

① Loosen hexagonal bolts and remove washers securing the lift cylinders to inner mast.
② Bind the lift cylinder with overhead hoist rope and pull up so that the rope has no slack or binding.

⚠ Make sure that the lift cylinder be tightened firmly for safety.

③ Loosen and remove hexagon nuts and cylinder band securing cylinder to outer mast.
④ Using an overhead hoist, slowly raise the inner mast high enough to clear lift cylinder.
⑤ Using an overhead hoist, draw out lift cylinder carefully and put down on the work floor.

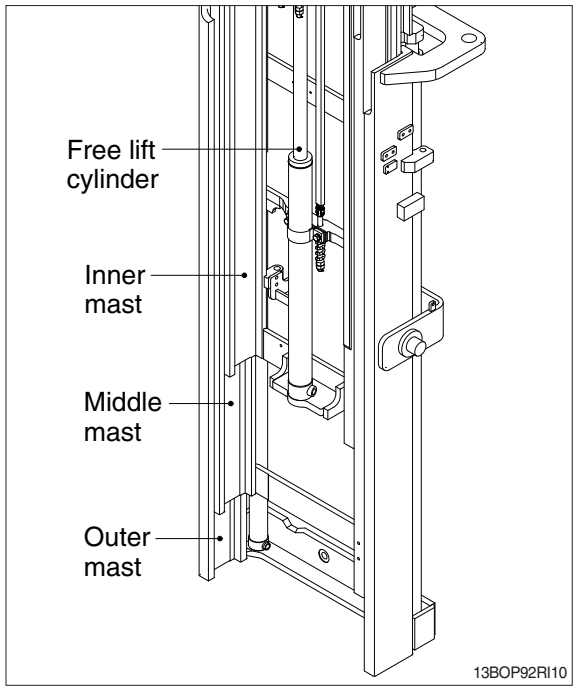


(7) INNER MAST

① Using an overhead hoist raise the inner mast straight and carefully draw out of outer mast section.

⚠ Be careful the mast not to swing or fall.

② Using an universal puller, remove the load rollers.



2) INSTALLATION

After assembling mast components totally without piping connections, install mast assembly to the equipment.

※ Installation procedure for each of mast component is the reverse of the removal procedure.

(1) LIFT CYLINDER INSTALLATION AND ADJUSTMENT

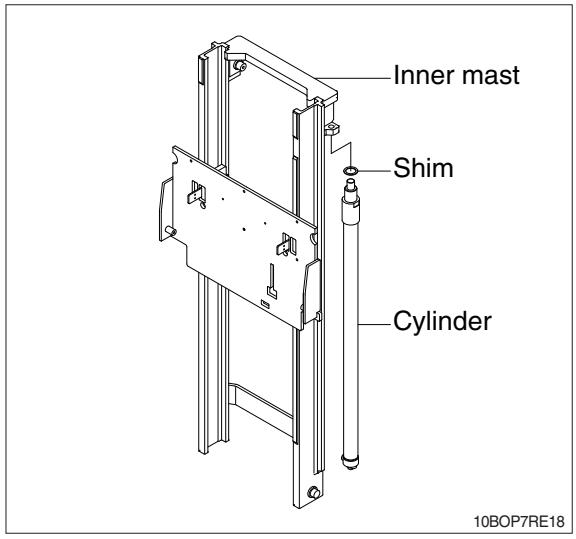
① Assemble the lift cylinder inside the outer mast, then tighten the stopper bolt. If the cylinder assembly has been replaced, adjust as follows so that the left and right cylinders are synchronized at the maximum lifting height.

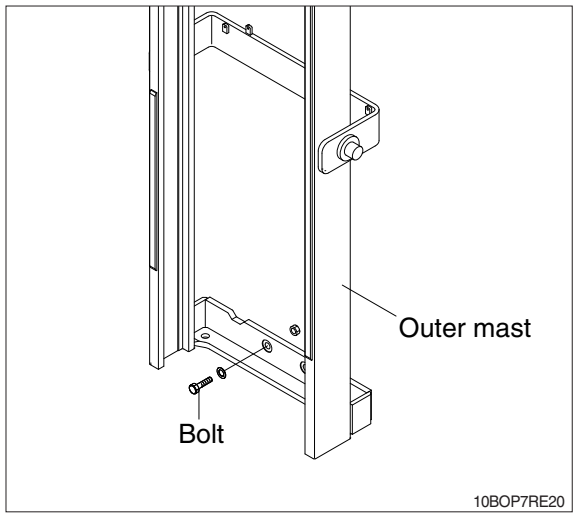
② Assemble the cylinder rod to the inner mast, and check the left-to-right play of the mast at the maximum lifting height.

※ If play is to LEFT, install adjustment shim to LEFT cylinder.

※ If play is to RIGHT, install adjustment shim to RIGHT cylinder.

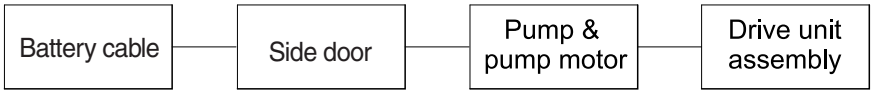
· Shim thickness : 1.0mm(0.04in)





2. POWER TRAIN ASSEMBLY

1) REMOVAL



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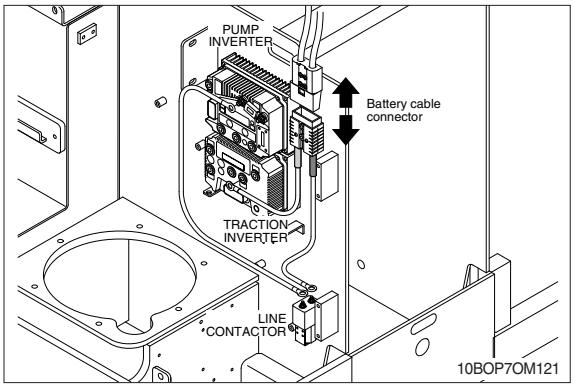
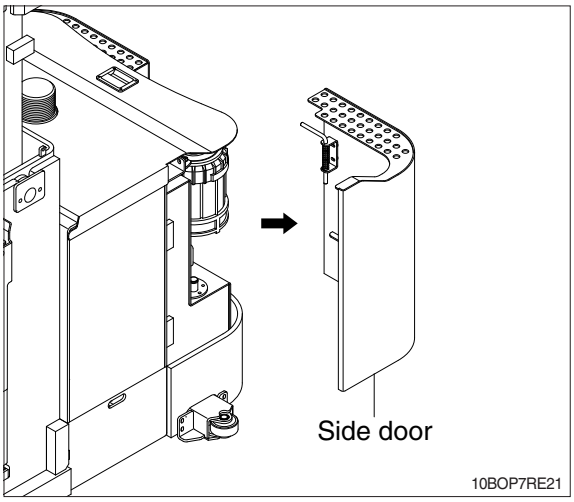
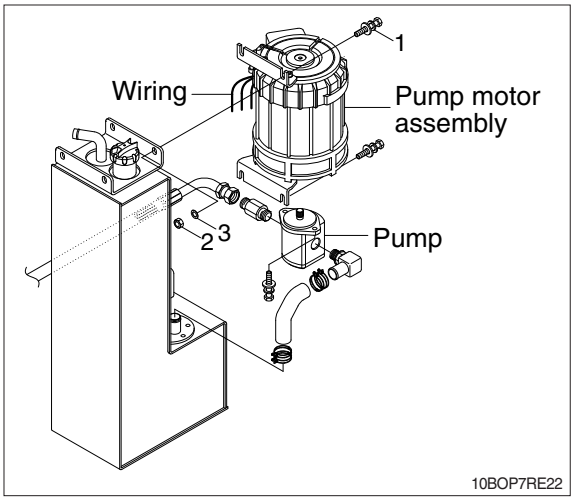
(1) Disconnect the battery cable.



(2) After loosening the bolts of the hinges, remove the side door.

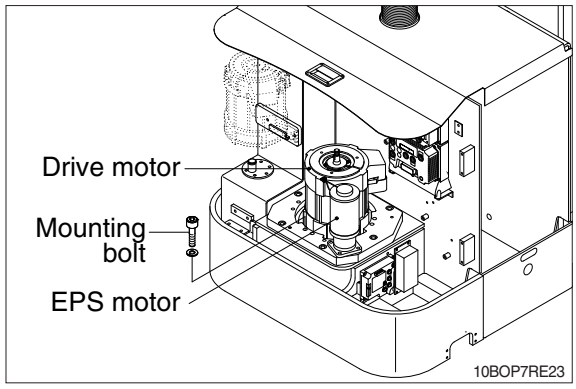


(3) Disconnect the hose, pipe and wiring from pump & motor assembly.
Loosen mounting bolts (1), nuts (2), and washers (3) from frame and then take out the pump & motor assembly.

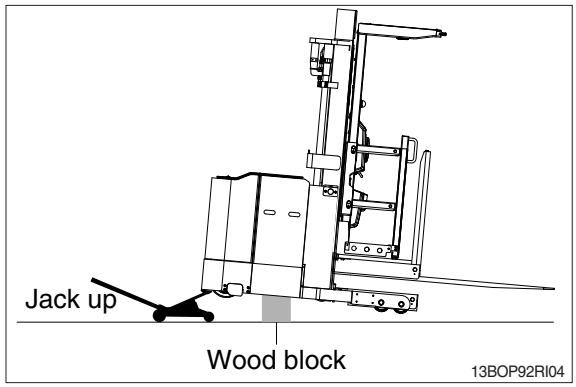


(4) Disconnect the wiring.
① Drive motor wiring
② EPS motor wiring

(5) Loosen mounting bolts for the drive unit assembly.

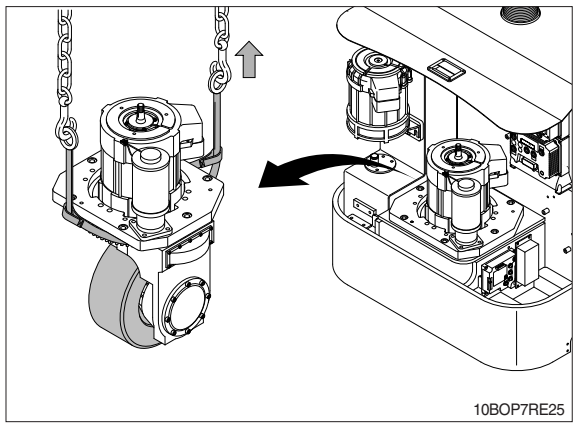


(6) Lift up the frame and support both side of frame with wood block.



(7) Hang up the drive unit assembly using overhead hoist or overhead crane.

※ When hanging up the drive unit assembly, it should be maintained weight balance so that it can prevent the drive unit assembly from wobble or swing.



2) INSTALLATION

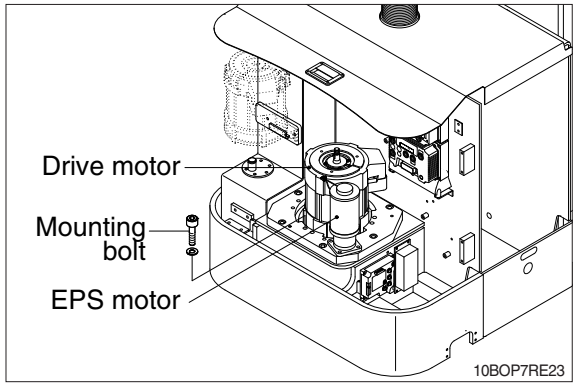
Installation is in the reverse order to removal, but be careful of following points.

(1) Drive unit mounting bolts : 6EA
- Tightening torque : 13.2~16.2kgf · m (95.5~117.1lbf · ft)

(2) Drive unit bracket mounting bolt : 6EA
- Tightening torque : 13.2~16.2kgf · m (95.5~117.1lbf · ft)

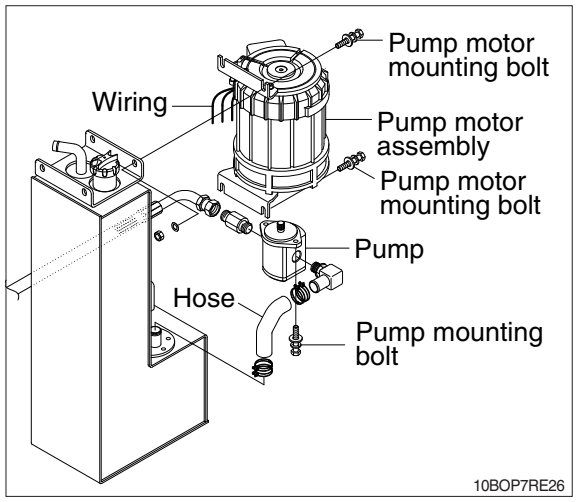
(3) Drive motor mounting bolts : 6EA
- Tightening torque : 3.7~4.5kgf · m (26.8~32.5lbf · ft)

(4) EPS motor mounting bolts : 4EA
- Tightening torque : 7.5~9.1kgf · m (54.2~65.8lbf · ft)



(5) Pump motor mounting bolts : 4EA
- Tightening torque : 6.5kgf · m (47lbf · ft)

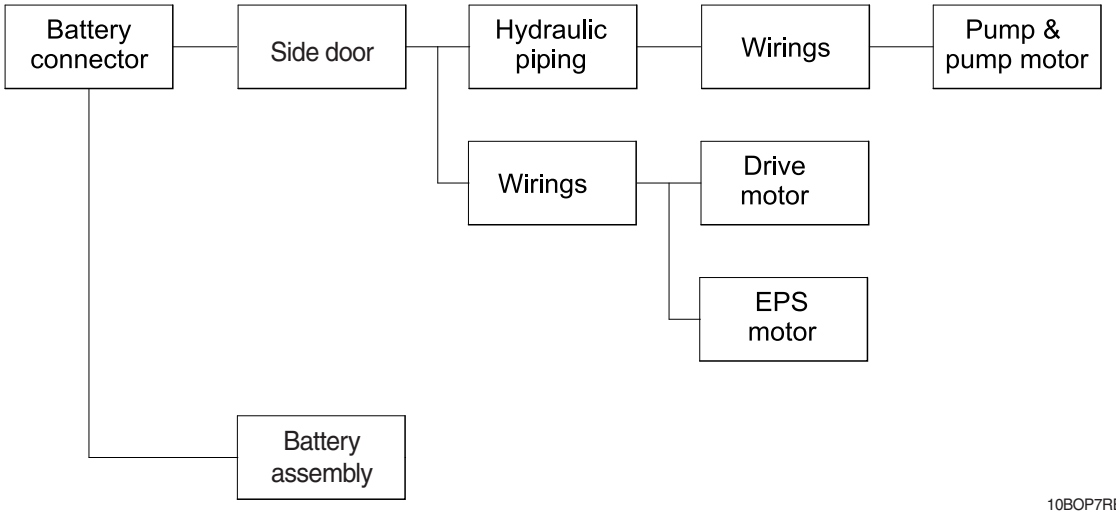
(6) Pump mounting bolts : 2EA
- Tightening torque : 5kgf · m (63.2lbf · ft)



3. ELECTRICAL COMPONENTS

Before removing each component, disconnect cables and earth lines attached to the component.

1) REMOVAL



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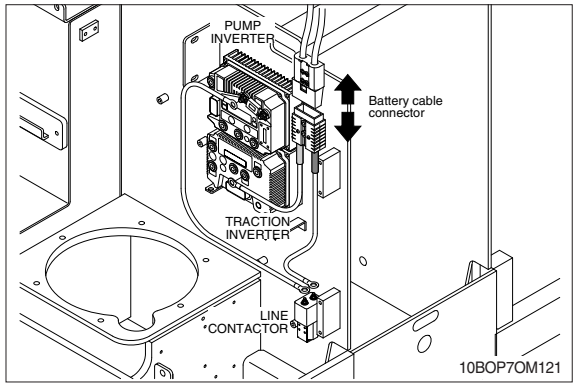
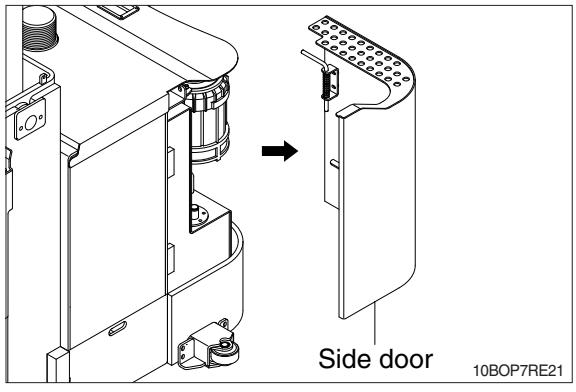
(1) PUMP MOTOR

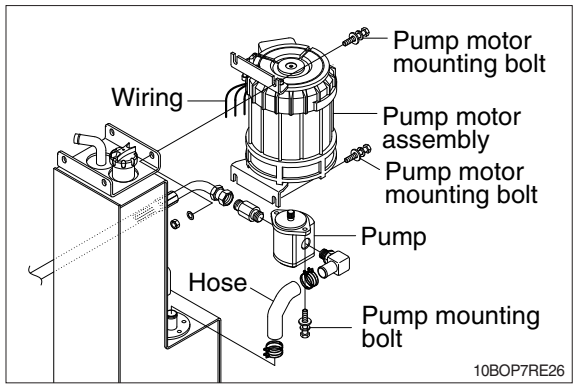
① Disconnect the battery cable.



② After loosening the bolts of the hinges, remove the side door.

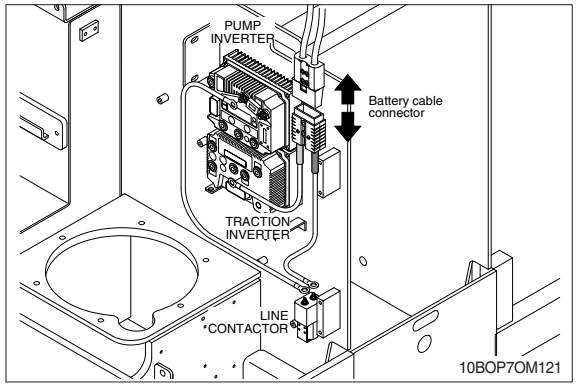


③ Disconnect the hoses, pipes and wiring from pump & motor assembly.
Loosen mounting bolts from frame and then take out the pump & motor assembly.

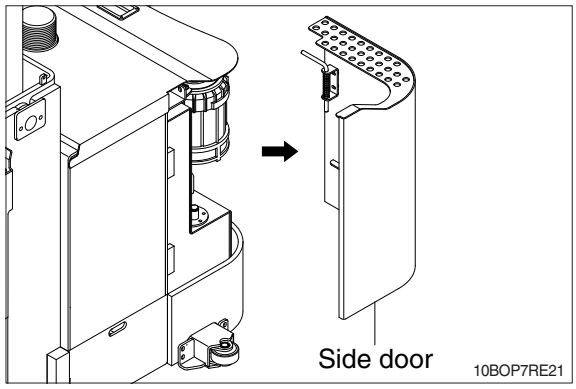


(2) DRIVE MOTOR

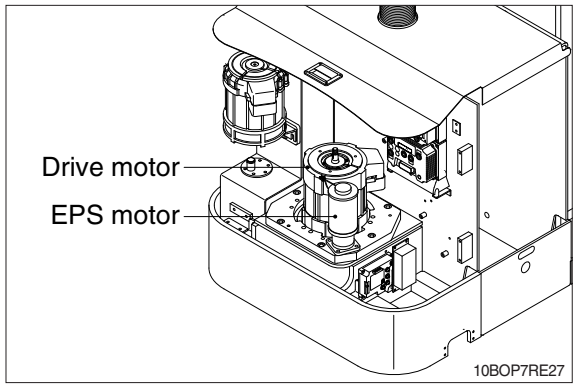
① Disconnect the battery cable.



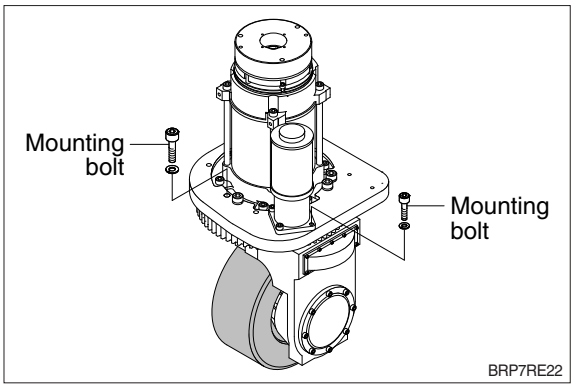
② After loosening the bolts of the hinges, remove the side door.



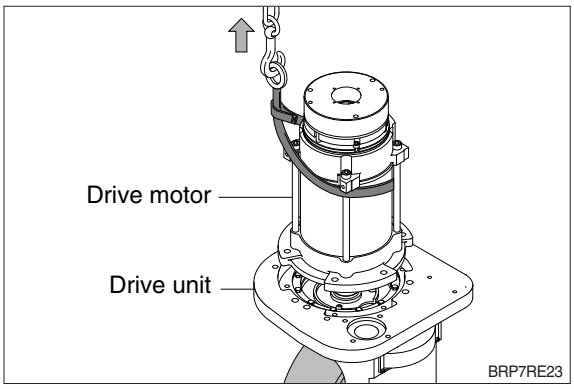
③ Disconnect wirings from the following motors.
a. Drive motor
b. EPS motor



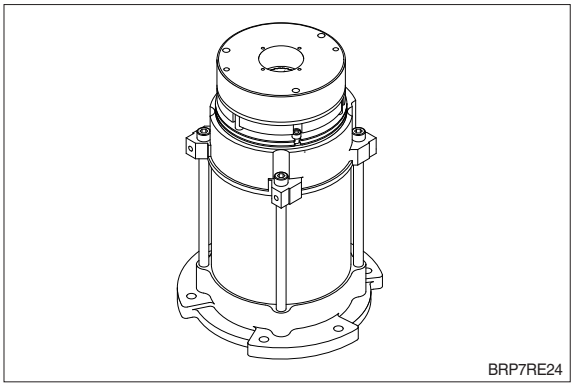
④ Remove bolts to fix the motor and drive unit.



⑤ Tie wire rope around the drive motor and lift up slowly.

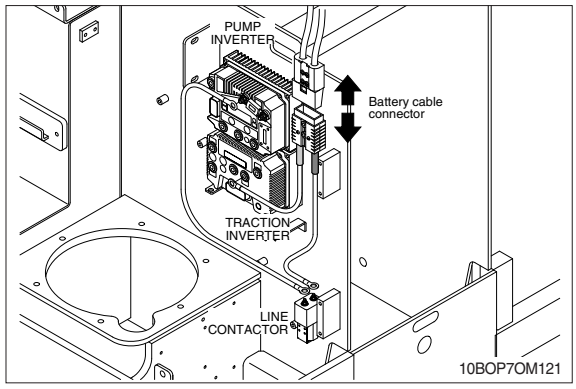


⑥ Put the motor on the clean work bench.

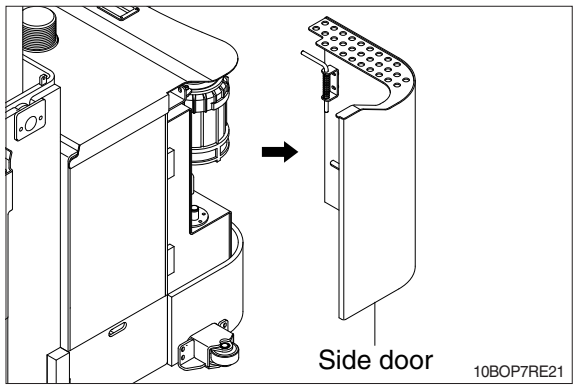


(3) EPS MOTOR

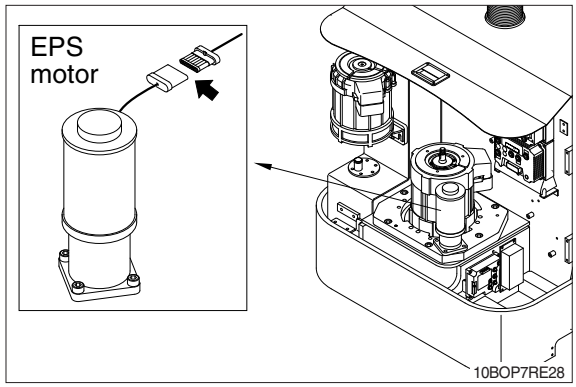
① Disconnect the battery cable.



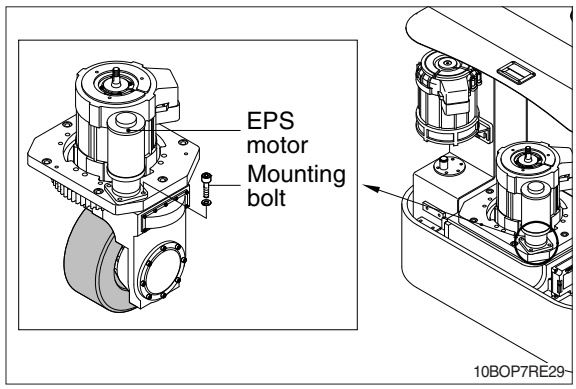
② After loosening the bolts of the hinges, remove the side door.



③ Disconnect wirings.



④ Loosen bolts and remove EPS motor assembly.



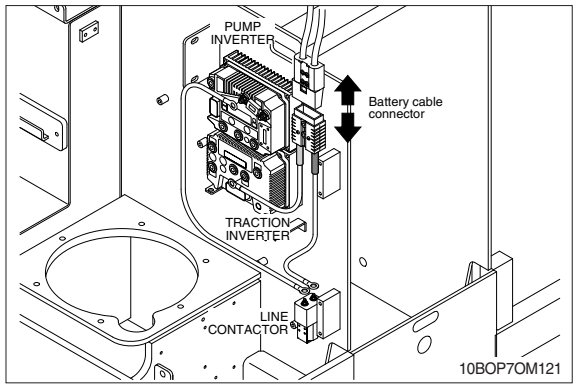
(4) BATTERY REMOVAL

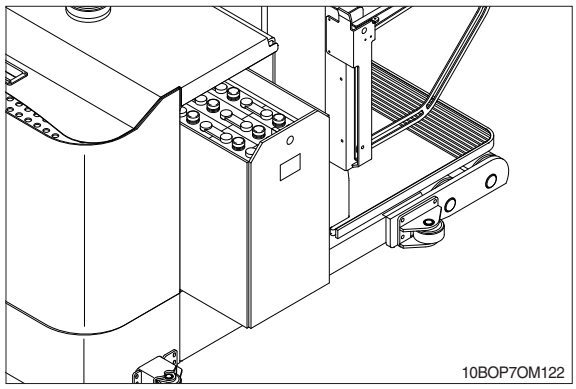
① Turn off the key.

② Release the lock screw of side support in frame.

③ Disconnect the battery connector.

④ Pull out the battery and using a battery hanger, carefully raise the battery assembly.





2) INSTALLATION

Installation is in the reverse order to removal, but be careful of following points.

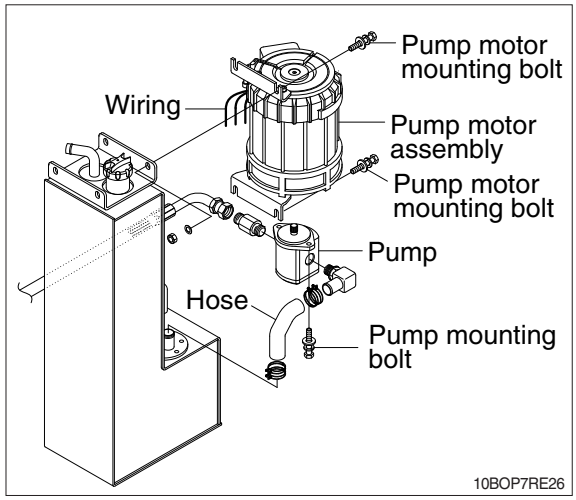
(1) PUMP MOTOR

① Pump motor mounting bolts : 4EA

· Tightening torque : 6.5kgf · m
(47lbf · ft)

② Hydraulic pump mounting bolts : 2EA

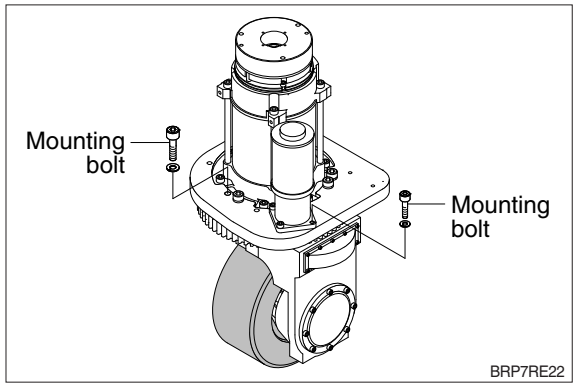
· Tightening torque : 5kgf · m
(36.2lbf · ft)



(2) DRIVE MOTOR

① Mounting bolts between drive motor and drive unit.

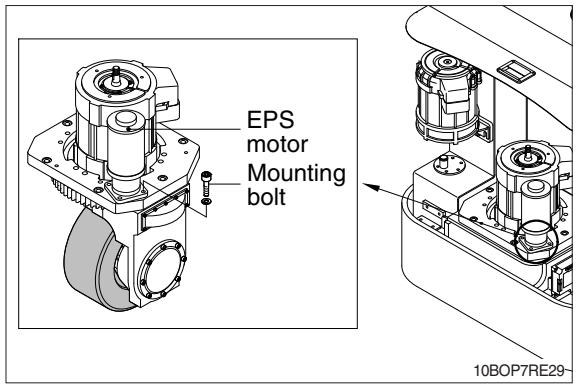
· Tightening torque : 3.7~4.5kgf · m
(26.8~32.5lbf · ft)



(3) EPS MOTOR

① EPS motor mounting bolts.

· Tightening torque : 7.5~9.1kgf · m
(54.2~65.8lbf · ft)

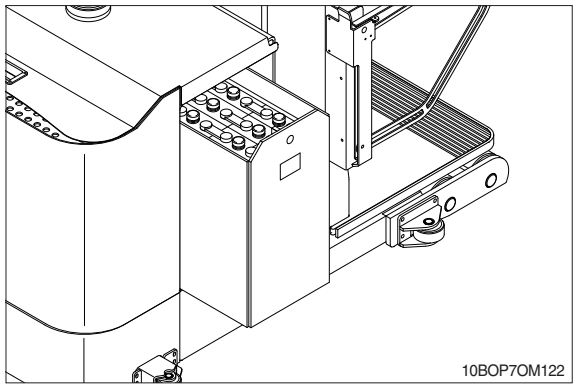


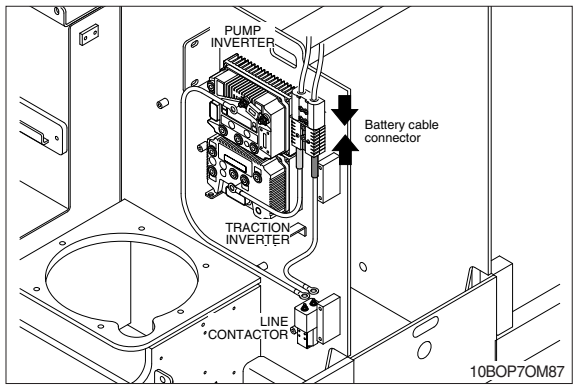
(4) BATTERY INSTALLATION

① Using a battery hanger, carefully push in the battery assembly in the battery assembly compartment.

② Adjust the lock screw of side support in frame.

③ Connect the battery connector.





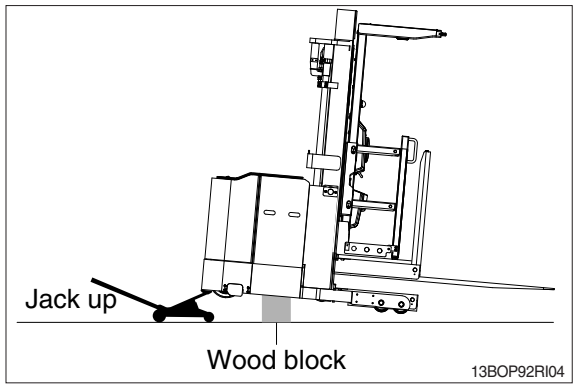
4. TIRE & WHEEL ASSEMBLY

1) REMOVAL

(1) DRIVE TIRE & WHEEL ASSEMBLY

① Lift up lower side of the frame and put on the wooden blocks under the both side of the frame.

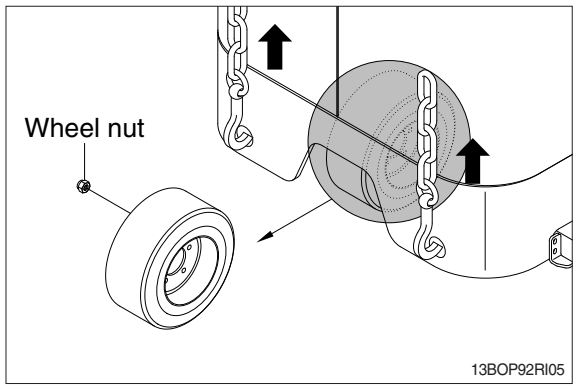
※ Lift up until the tire clear off the ground.



② Remove wheel nuts attaching the drive wheel and take off the drive wheel assembly.

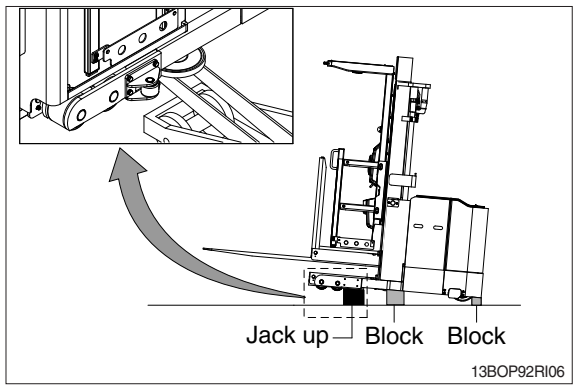
· Wheel nuts : 5EA

※ The condition of the tire affects the stability and performance of the machine.
It should be checked that the tire is happened defects or damage.
When replacing the tire which has defects or homage, it should be replaced with genuine part.



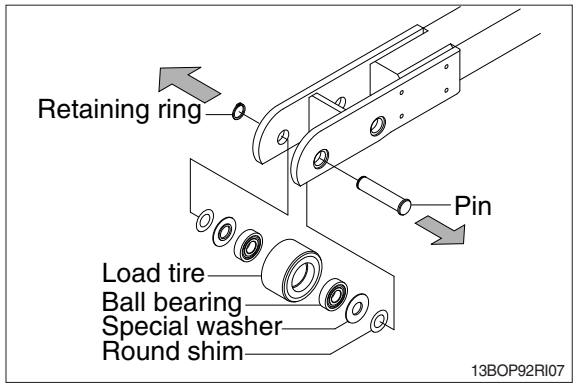
(2) LOAD WHEEL ASSEMBLY

① Lift up leg weld assy and fix the machine with blocks.



② Disassemble load tire assy

- After removing retaining ring, pin, washers and shims, take out load tire assy.
- Remove ball bearings from load tire assy if necessary and replace with new bearings.

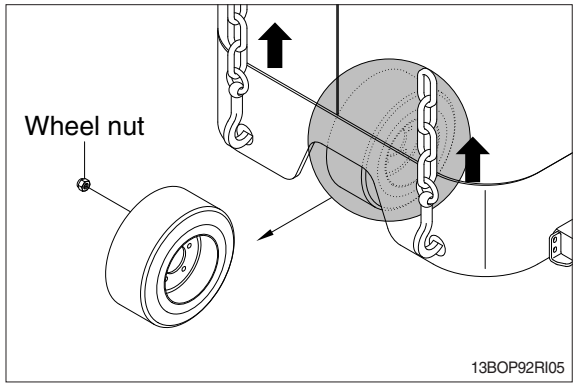


2) INSTALLATION

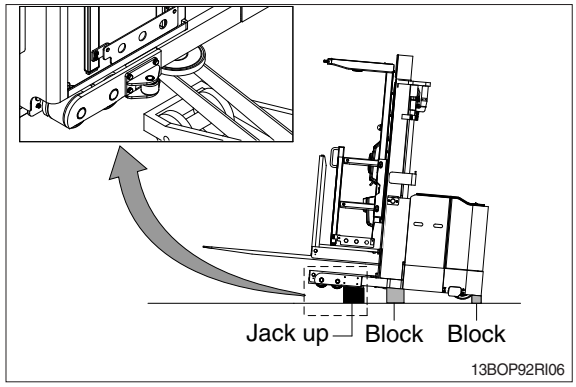
Installation is in the reverse order to removal, but be careful of the following points.

(1) Drive wheel nuts

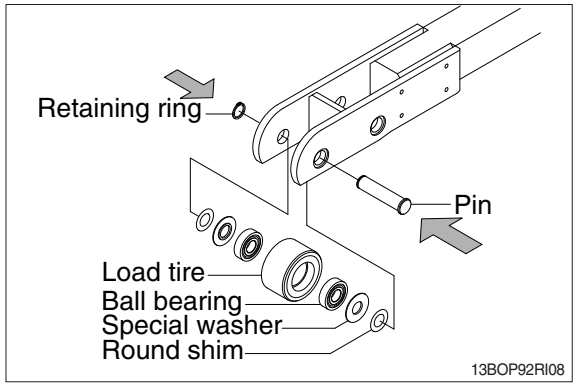
· Tightening torque : 13.5~15.5kgf · m
(98~112lbf · ft)



(2) When assembling bearings in the leg assembly, it should be cleaned on the pin and in the bore of the load tire assy in order to prevent it from scratch or damage.



(3) When inserting shims between wheel box assy and special washer, it should be kept clearance within 0.5 mm.



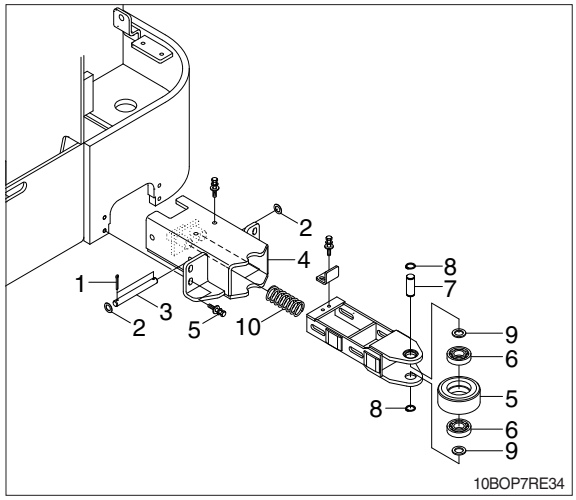
3) FRONT GUIDE ROLLER

(1) Lift up and prop up with wooden block under guide roller bracket.

(2) Remove split pin (1), washers (2) and clevis pin (3) from front bracket assy (4).

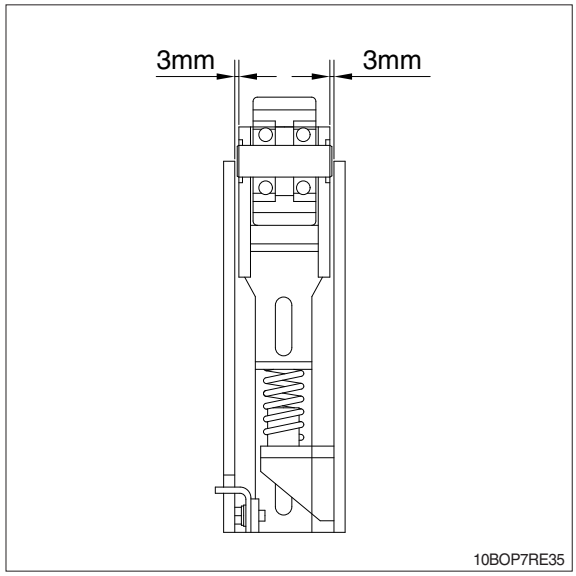
(3) Take out front roller assy which are assembled with guide wheel (5), ball bearings (6) shaft (7), washers (9) and retaining rings (8) pior to disassembling, and then remove the spring (10) from the bracket assy (4).

(4) To disassemble the front roller assy, remove the retaining rings (8), shafts (7), washers (9), and guide wheels (5) including ball bearings (6).



※ After checking condition of the guide wheels and the ball bearings, replace it if necessary.

※ It should be maintained within 3mm gap between front roller weld assy and front bracket assy.



4) REAR GUIDE ROLLER

(1) Loosen and remove bolts (1) from leg assy (7) of the frame.
After taking out rear guide roller assy, remove retaining rings (2), shafts (3), washers (4) and guide rollers (5) including ball bearing (6).

※ After checking condition of the guide wheels and ball bearings, replace it if necessary.