



Service Manual

Chassis, Mast

EP13TCA

215AF0001-up

EP15TCA/18TCA

216AF0001-up

EP20TCA

288AD0001-up

4- 2. Rear tyre

4-2-1. Rear tyre - disassembly and reassembly

●EP13TCA-18TCA

Rim bolt and Nut

Hub bolt and Nut

Tightening torque	
68.5 - 78.5 N · m	
{ 7 - 8 kgf · m }	

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

●EP20TCA

Rim bolt and Nut

Hub bolt and Nut

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

Tightening torque	
216 - 264 N · m	
{ 22 - 26.9 kgf · m }	

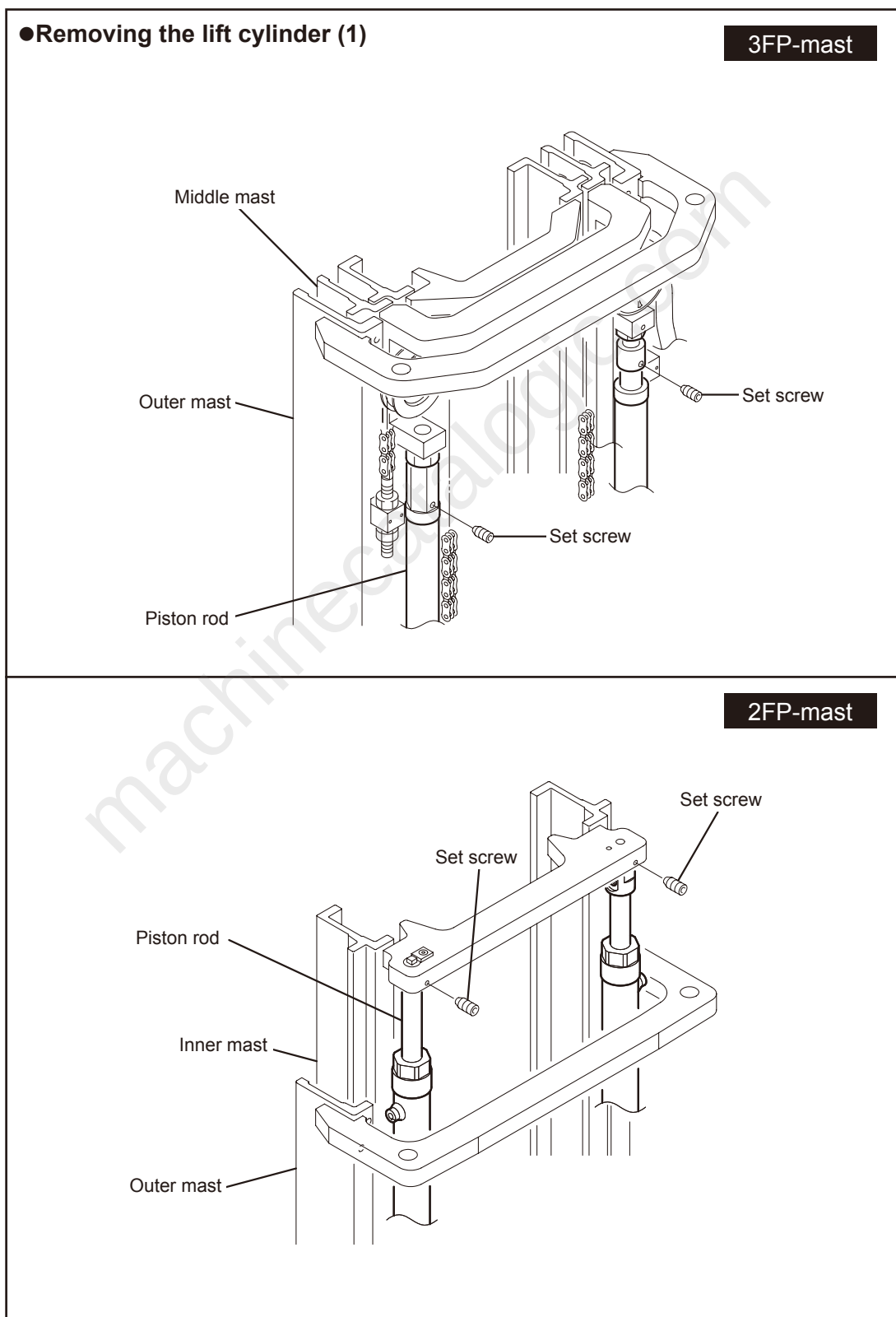
: Tightening torque

4-2-2. Tyre size (rear)

Model	Size
EP13TCA-15TCA	15 x 4 1/2-8-12PR(Std)
	15 x 4 1/2-8 SOLID(Opt)
EP18TCA	15 x 4 1/2-8 SOLID(Std)
EP20TCA	16 x 6-8-10PR(Std)
	16 x 6-8 SOLID(Opt)

7d-1-2. Lift cylinder - removal : 2FP-mast (2-stage duplex), 3FP-mast (3-stage triplex)

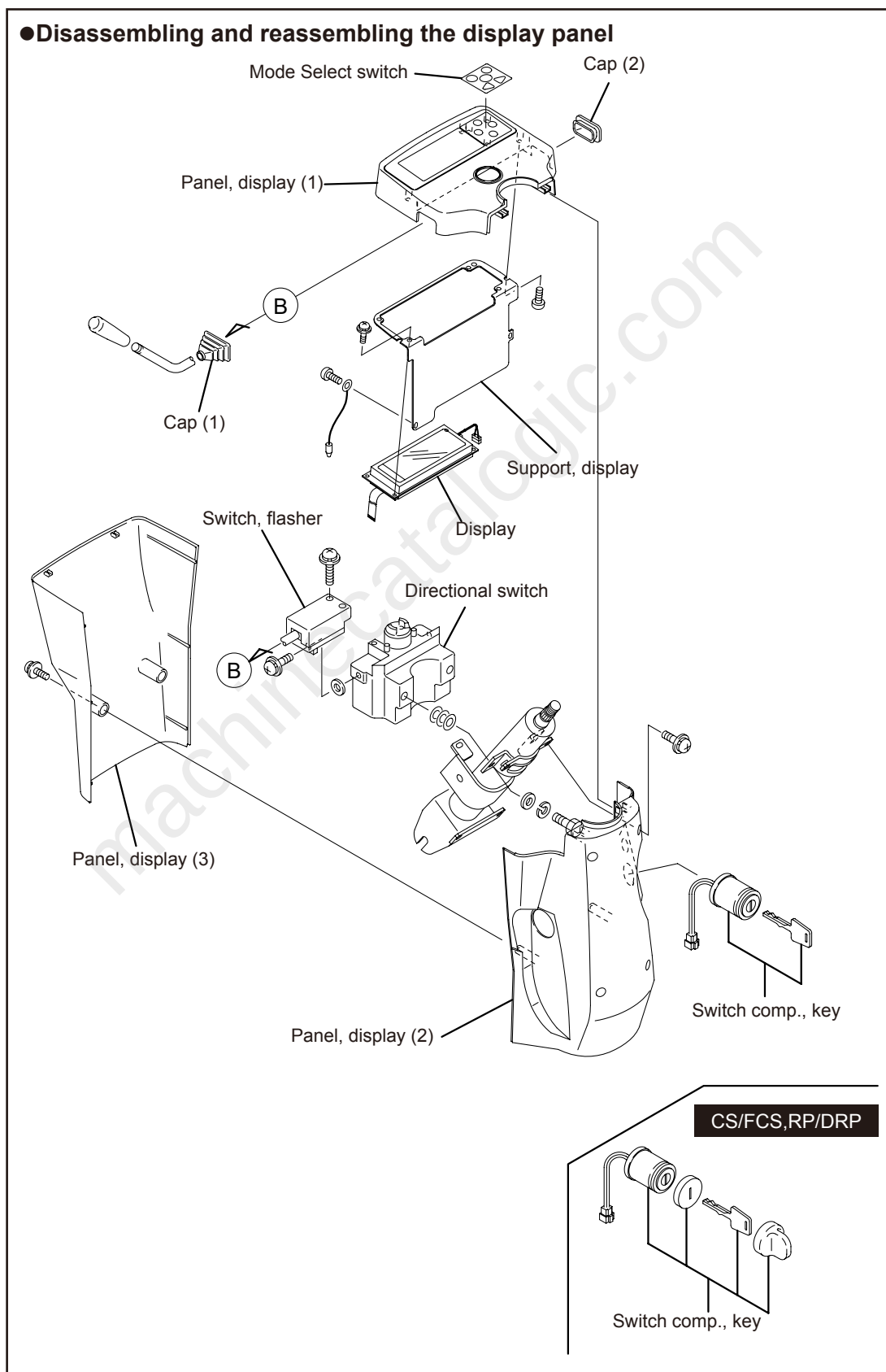
1. Pull the lift lever backward to raise the middle/inner mast about 50 mm.
2. Support the middle/inner mast with a wire rope or wood block.
3. Remove set screws that fix the piston rod.



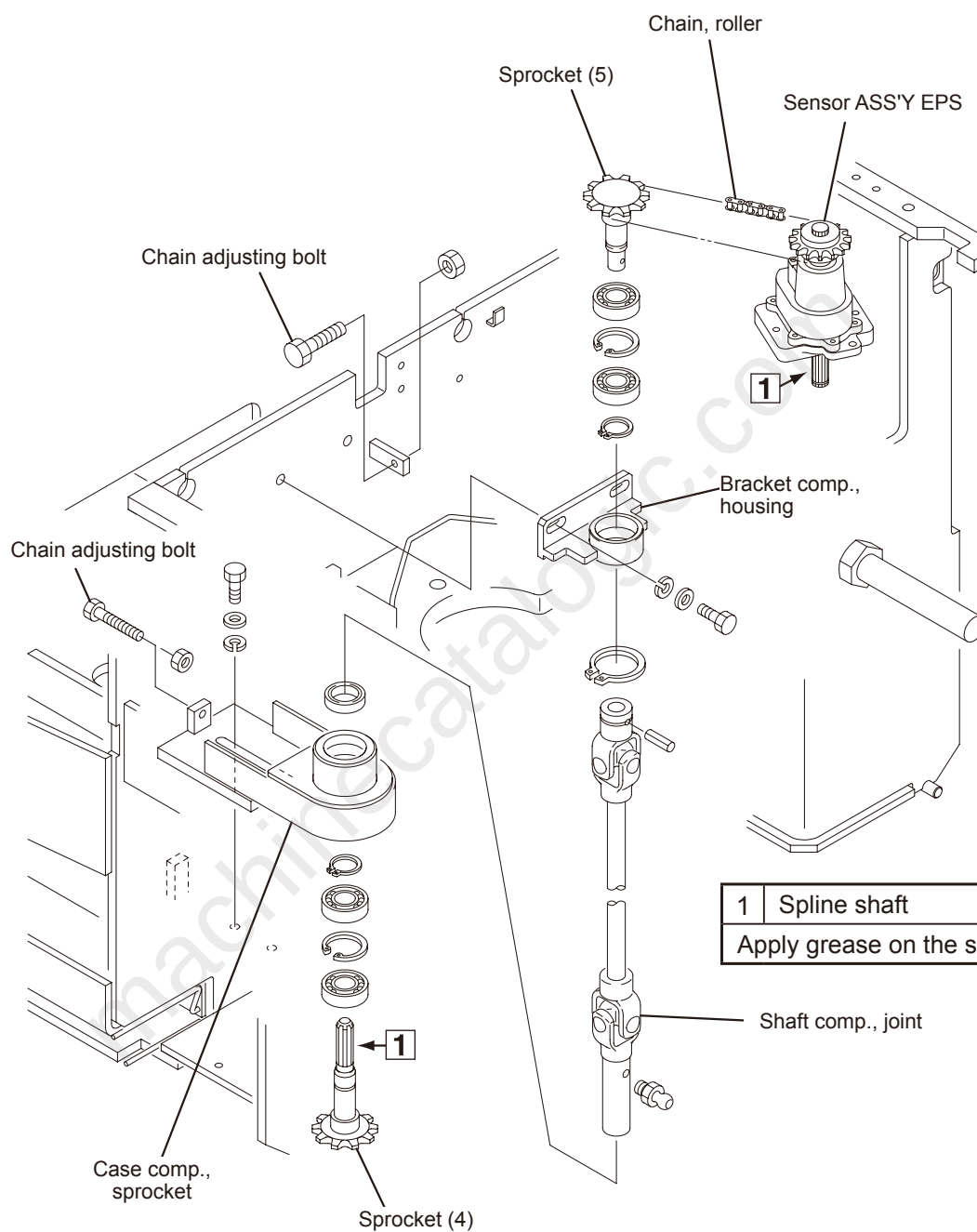
10c. DISPLAY PANEL AND DIRECTIONAL SWITCH

10c-1. Disassembly and reassembly

10c-1-1. Display panel - disassembly and reassembly



●Disassembling and reassembling the steering linkage (3)



1	Spline shaft	G
Apply grease on the spline shaft.		

G : Apply grease

9- 2. Inspection and adjustment

9-2-1. Rotor comp. (Traction/Hydraulic motor) - inspection and replacement

▶ 1 Inspection for damage

1. Check the rotor comp. for damage, especially for burning.

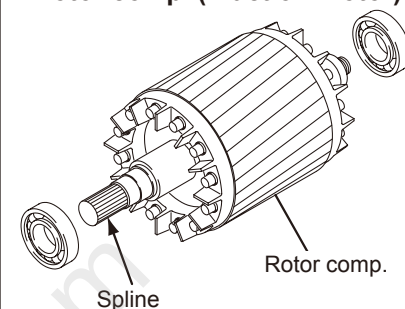
➔ If it is damaged, replace it.

▶ 2 Inspection of spline

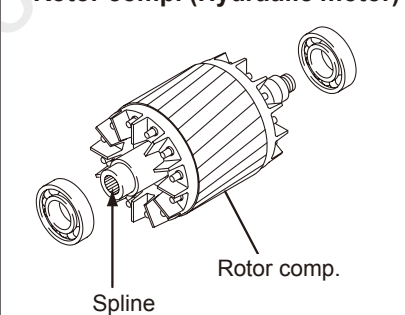
1. Check for wear of spline.

➔ If it is extremely worn, replace it.

●Rotor comp. (Traction motor)



●Rotor comp. (Hydraulic motor)

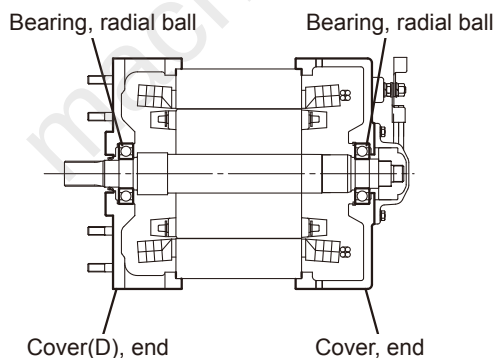


▶ 3 Inspection of ball bearing

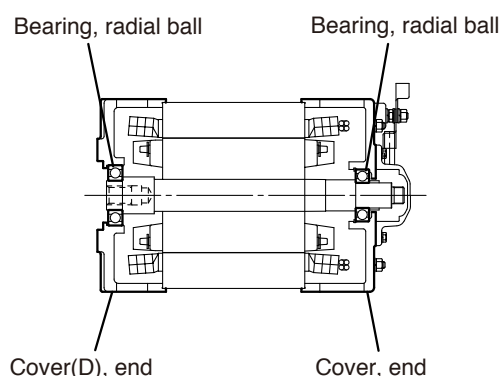
1. Check fitting part of the bearing in the "cover, end" and the "cover(D), end".

➔ If loose, replace them.

●Inspection of fitting parts (Traction motor)

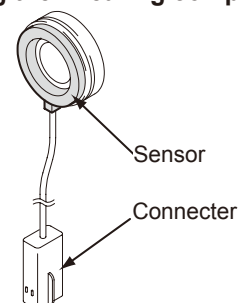


●Inspection of fitting parts (Hydraulic motor)

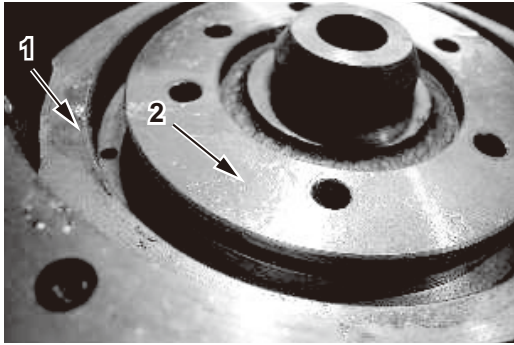


- When replacing the "bearing comp., sensor", be very careful not to damage the sensor. If the sensor is damaged, the motor will not operate correctly.
- Because the bearing sensor is very sensitive for the static electricity, do not touch any terminals in the connector directly.

●Replacing the "Bearing comp., sensor"



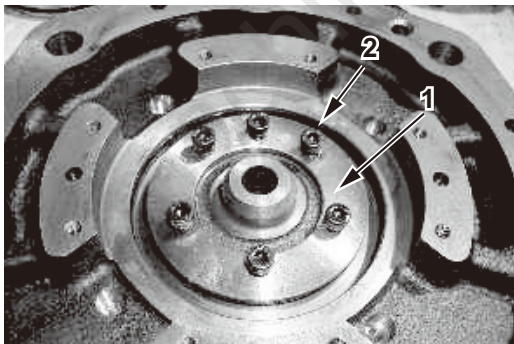
5. Install the piston inner sleeve in the transfer cover.



(1)Transfer cover
(2)Piston inner sleeve

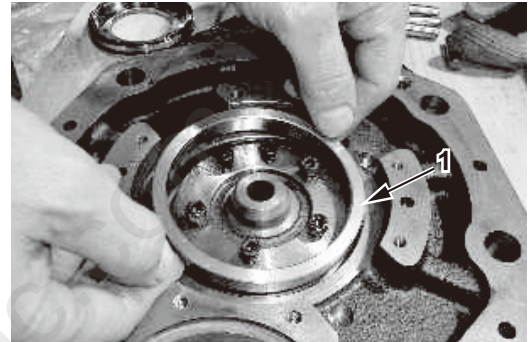
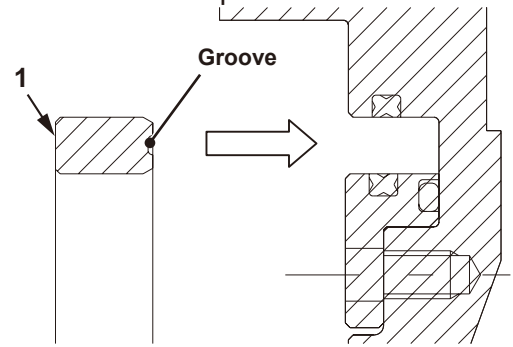
6. Tighten the piston inner sleeve temporarily after apply LOCTITE # 262 or equivalent to the hex socket screw (M5 × 0.8) (6 pieces).

L	Glue	LOCTITE [#262] or equivalent
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(1)Piston inner sleeve
(2)Hex socket screw

7. Install the brake piston.



(1)Brake piston



NOTE

Pay attention to the direction of the groove of the brake piston when installing.

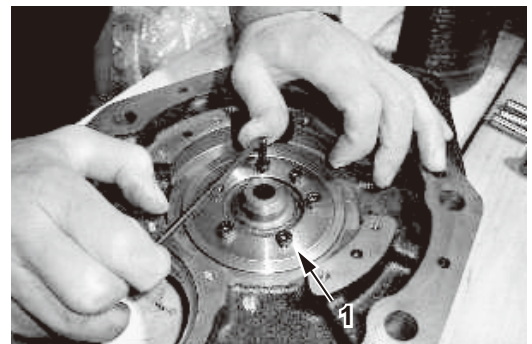


NOTE

Confirm the complete insertion.

8. Tighten hex socket screws (6 pieces).

	Tightening torque	5.5 ~ 8 Nm
L	Glue	LOCTITE [#262] or equivalent



(1)Hex socket screw

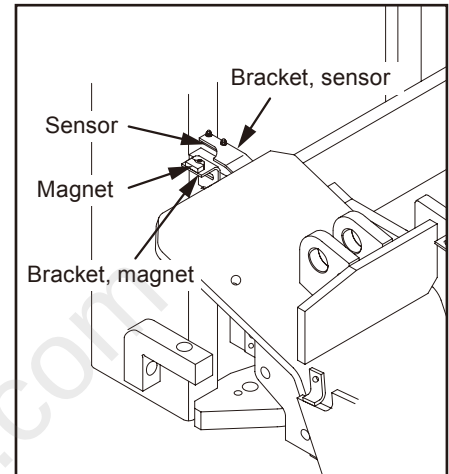
11. LASER POINTER (OPTION)

11- 1. Adjustment

11-1-1. Fork level - adjustment

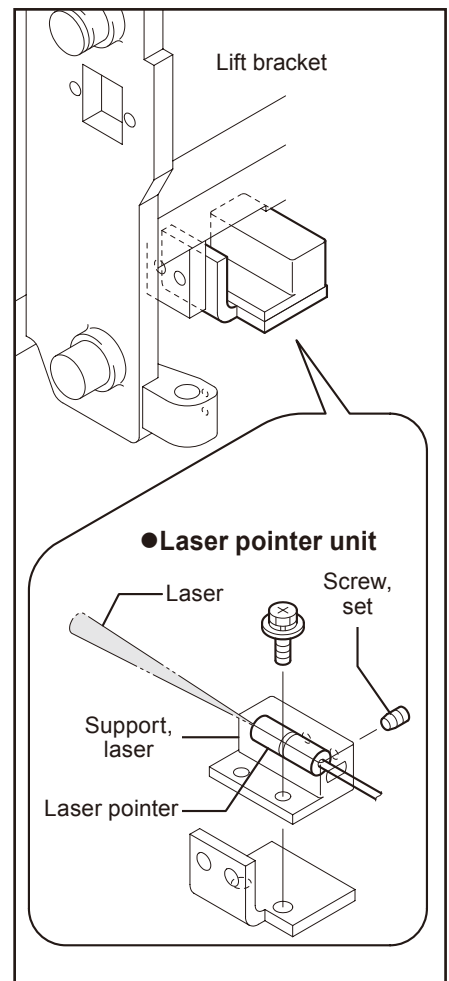
1. Raise forks to a height for easy work, and level them.
 2. Adjust the positions of the leveling sensor and the magnet to light on the laser beam.
- ➔ When the laser beam light on, the fork leveling indicator is shown on the display.

Adjustment position	Within ± 1.25 degree of the fork leveling position
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11-1-2. Laser optical axis - adjustment

1. Park the lift truck face to the pallet.
Distance between the pallet and the tip of the fork should be about 30 to 50 mm.
2. Level the fork horizontally.
3. Turn on the laser pointer.
Raise the fork to fit to the opening of the pallet.
4. Adjust the angle and height of the laser beam to show the correct position on the side of the pallet.
If the "LINE" type is used, the laser line should hit the center of the beam of the pallet.
If the "Dot" type is used, the laser point should hit the upper board of the pallet..
5. Adjust the axis of the laser light by turning the "Screw, set" on the side of the laser unit.
6. Make sure if the fork can be inserted into the pallet normally after indicating the position by the laser pointer.



INTRODUCTION

- ▶ Most accident happens due to the disregard of basic safety rules or precautions. In order to prevent accidents from happening, the factors responsible for accidents must be avoided beforehand.

For this reason, please read this manual and fully understand the precautions for safety and the proper procedures and directions for inspection and maintenance before starting operation.

Performing maintenance and repair without adequate knowledge may cause inadvertent accidents.

- ▶ It is not possible to cover all the possible cases of accidents in this "Service Manual-Controller-". Therefore, attention should be given to precautions other than the ones mentioned in this "Service Manual-Controller-". Especially, when repair and maintenance work which are not covered in this "Service Manual-Controller-" are carried out, always work under the direction of an instructor who understands the matter.

Full Version Available

Caterpillar EP20TCA Forklift Service Manual (99N19-60100)

Caterpillar EP20TCA service manual, covers traction motor, controller, hydraulics, wiring, and service data. Downloadable PDF format.

[VIEW THE FULL MANUAL](https://machinecatalogic.com/caterpillar-ep20tca-forklift-service-manual-99n19-60100/)

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