



Service Manual

Chassis & Mast

MC/FC

GP15N	T25C-50001-up	GPE15N	T25C-58001/68001-up
GP15ZN	T34-50011-up	GPE15ZN	T34-58011/68001-up
GP18N	T25C-70001-up	GPE18N	T25C-78001/88001-up
GP18ZN	T34-70001-up	GPE18ZN	T34-78001/88001-up
GP20CN	T34-20001-up	GPE20CN	T34-28001/38001-up
GP20N	T17D-00011-up	GPE20N	T17D-08011/18001-up
GP20ZN	T35-00011-up	GPE20ZN	T35-08011/18001-up
GP25N	T17D-50001-up	GPE25N	T17D-58001/68001-up
GP25ZN	T35-50001-up	GPE25ZN	T35-58001/68001-up
GP30N	T13F-30011-up	GPE30N	T13F-38011/48001-up
GP35AN	T13F-50001-up	GPE35AN	T13F-58001/68001-up

DP15N	T16D-50001/60001-up
DP18N	T16D-70001/80001-up
DP20CN	T16D-85001/87001-up
DP20N	T18C-00011/10001-up
DP25N	T18C-50001/60001-up
DP30N	T14E-30011/40001-up
DP35AN	T14E-50001/60001-up

For use with S4Q2, S4S and K15/K21/K25 Engine
Service Manuals.

99719-35120

- (5) Put a check mark in the check box in the T/M (F) or T/M (R) * solenoid and press “Write.” (Fig. 2-11)
- (6) As the same as above (4), check “YES” when the write validity check box is displayed and also check “OK” when the write completed check box is displayed.
 - Do not check ON for both statuses of Forward and Backward at the same time to avoid the risk of damaging the controller.

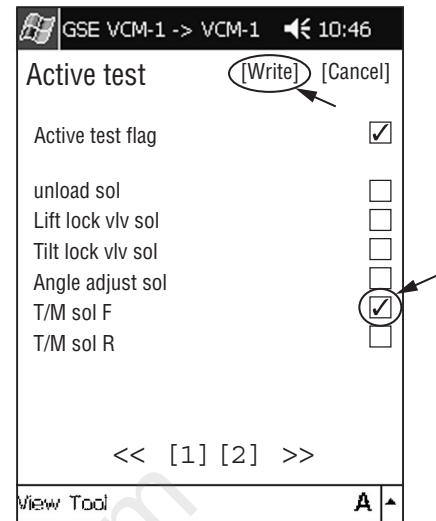


Fig. 2-11 Active Test Check Screen

- (7) Press “I/O Monitor” on the view menu which displayed by touching “View” bar of service tool screen (Fig. 2-12) and select Page [2] of I/O Monitor (Fig. 2-13).

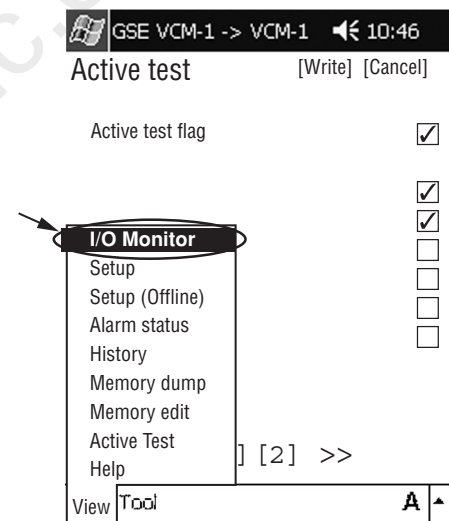


Fig. 2-12 View Menu (I/O Monitor Selection Screen)

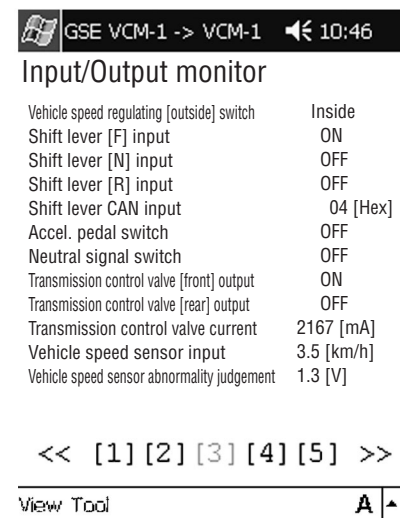


Fig. 2-13 I/O Monitor [2]

FRONT AXLE AND REDUCTION DIFFERENTIAL

(2) Hub bearing preload adjustment and lock nut

- (a) Install the nut hand-tight with a socket wrench (special tool).

Special tool needed

Truck Model Item	1 ton class	2, 3 ton classes
Socket wrench	91268 - 00800	03703 - 59001

- (b) Rotate the hub and tap its periphery with a soft-head mallet for snug assembling.
- (c) Fully tighten the lock nut to obtain hub bearing preload within the specified limits.

Notice: To check the hub bearing preload, hook a spring scale on the hub bolt, then pull it to measure the tangential force of the hub bolt.

Unit: N (kgf) [lbf]

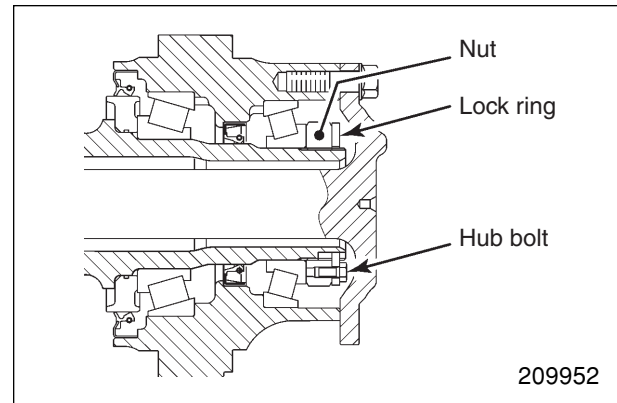
Truck Model Item	1 ton class	2, 3 ton classes
Tangential force of hub bolt (increment from when preload is zero)	5.6 to 56 (0.6 to 5.7) [1.2 to 12.5]	4.5 to 45 (0.5 to 4.6) [1.0 to 10.1]
Starting torque of hub rotation (increment from when preload is zero)	0.5 to 4.9 N·m (0.05 to 0.5 kgf·m) [0.35 to 3.7 lbf·ft]	

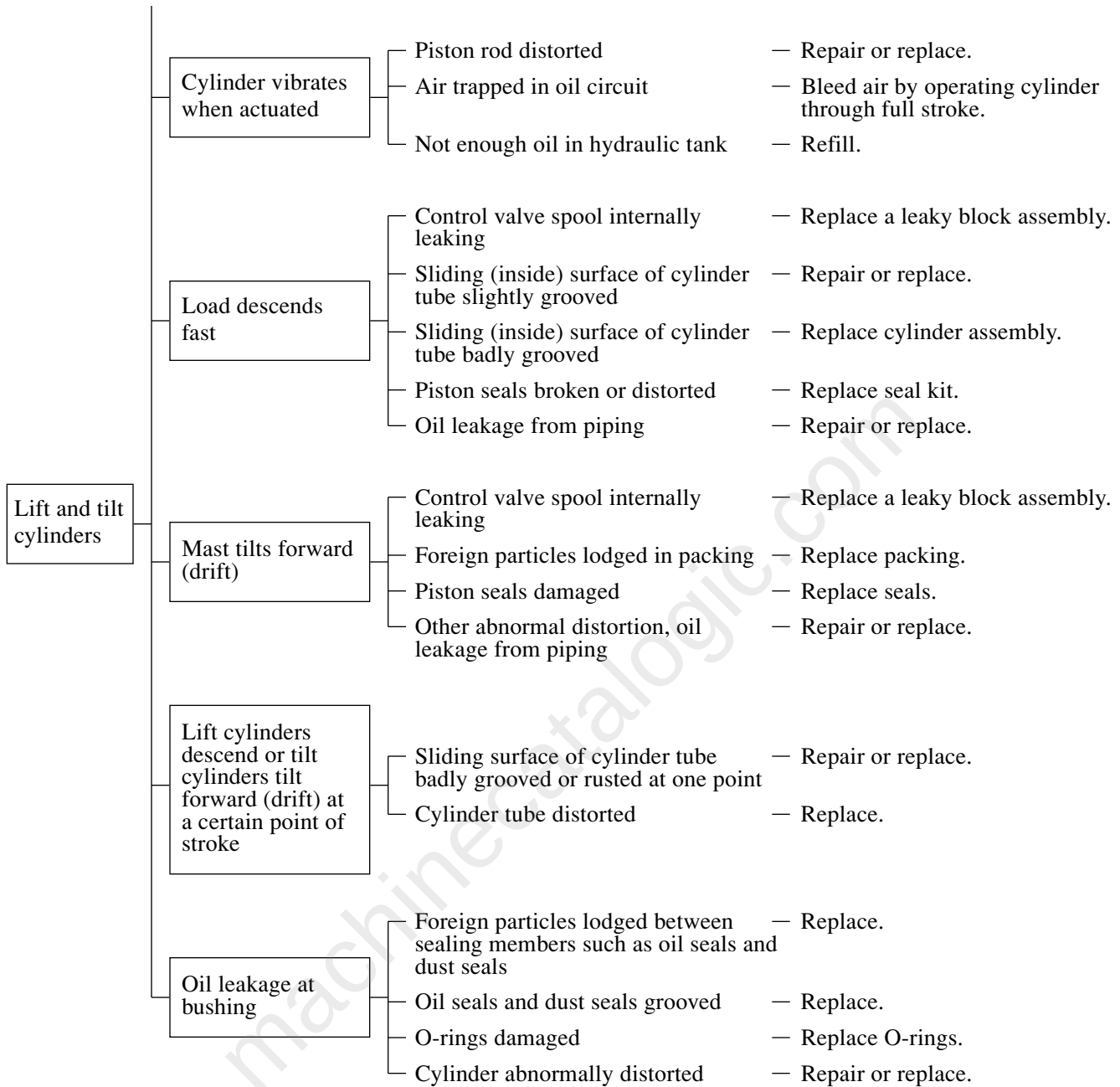
- (d) Fit the lock ring into place and tighten the lock bolt.
- (e) Check the preload again.

(3) Drain plug

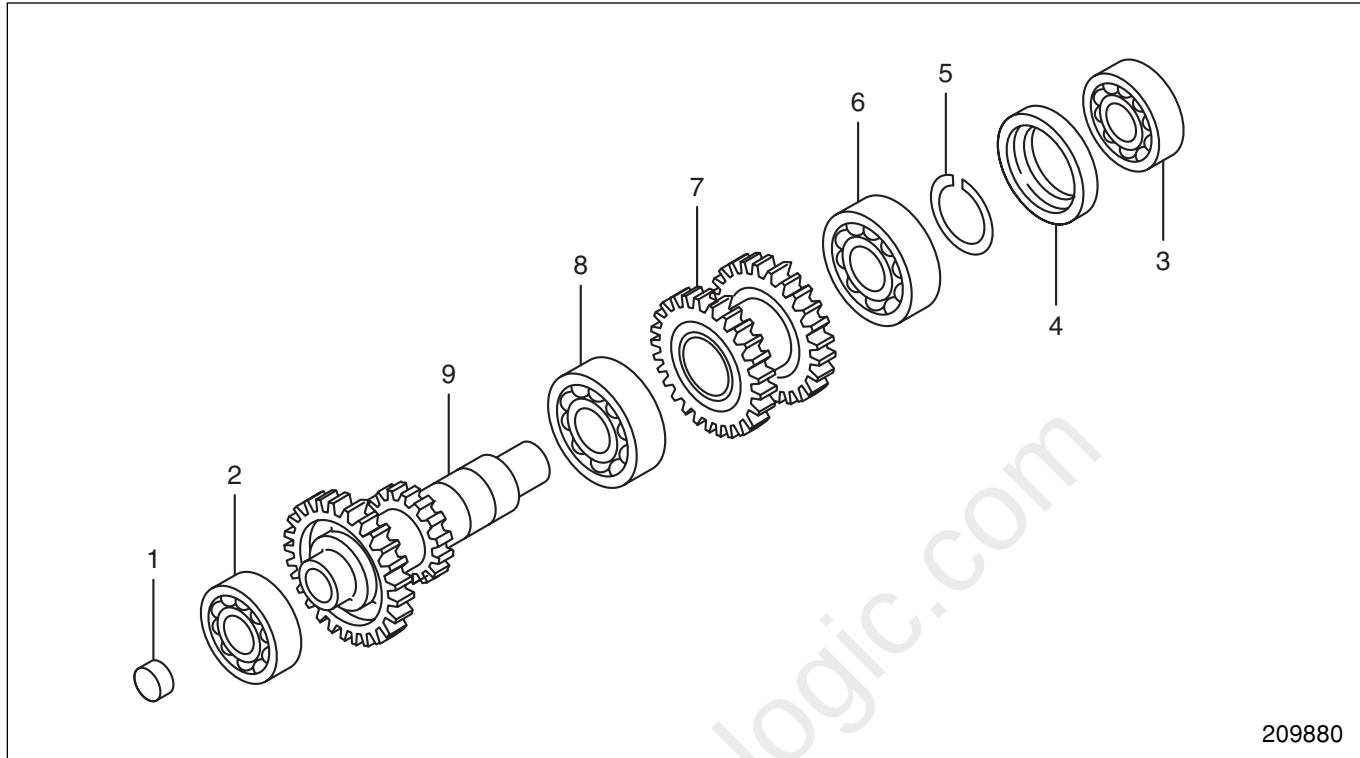
- (a) Tighten the drain plug to the specified torque.

Tightening torque	127.5 ± 9.8 N·m (13.0 ± 1.0 kgf·m) [94.0 ± 7.2 lbf·ft]
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Disassembling Input Gear Assembly



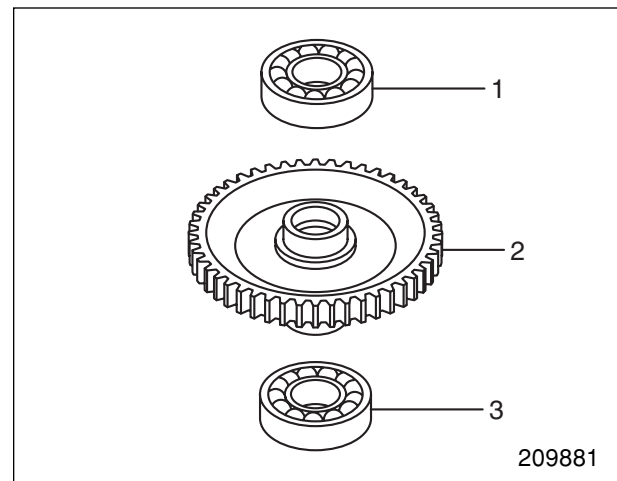
Sequence

- | | |
|----------------|----------------|
| 1 Sealing cap | 6 Ball bearing |
| 2 Ball bearing | 7 Idler gear |
| 3 Ball bearing | 8 Ball bearing |
| 4 Spacer | 9 Input gear |
| 5 Snap ring | |

Disassembling Output Gear

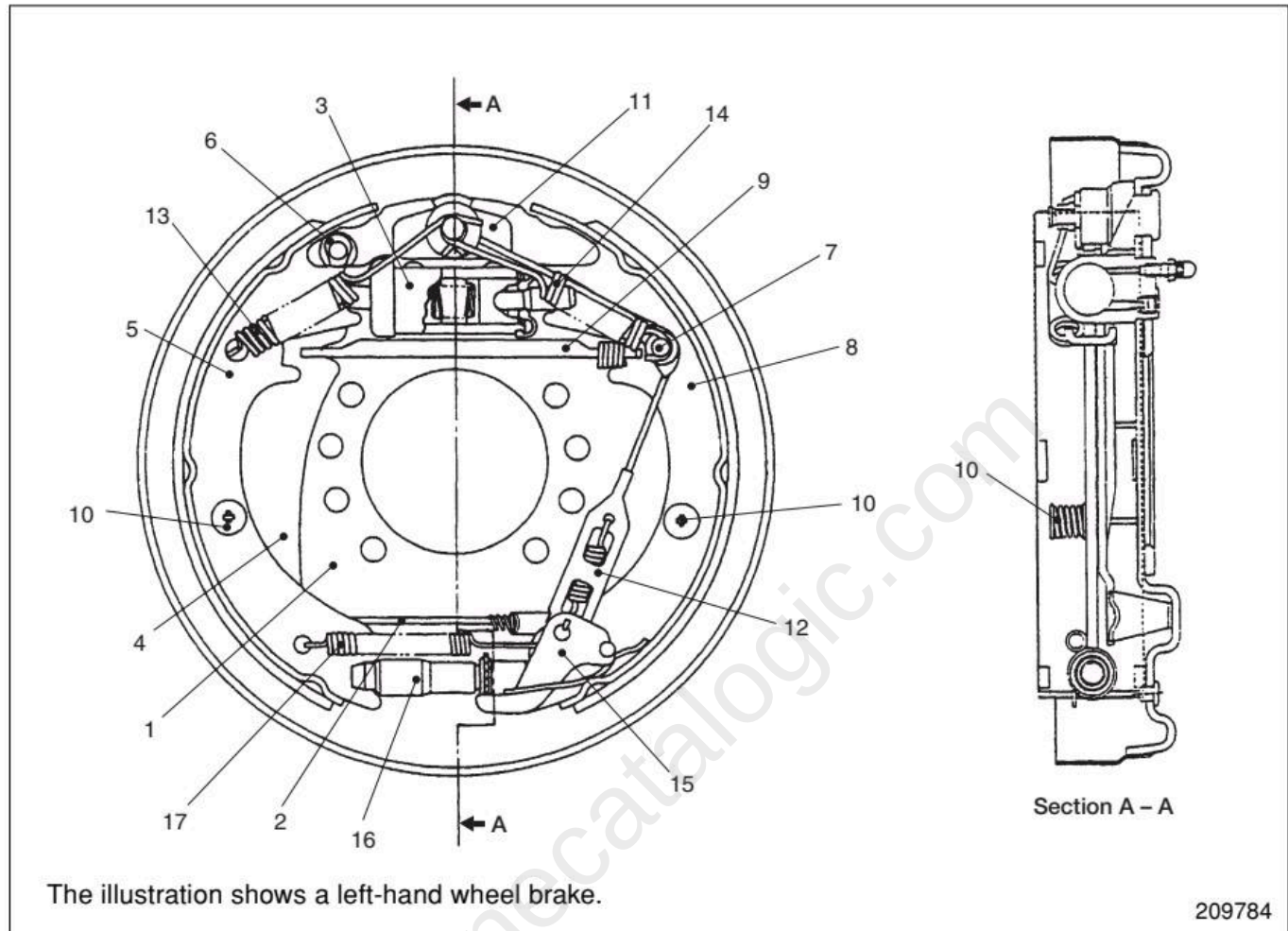
Sequence

- 1 Ball bearing
- 2 Output gear
- 3 Ball bearing



BRAKE SYSTEM

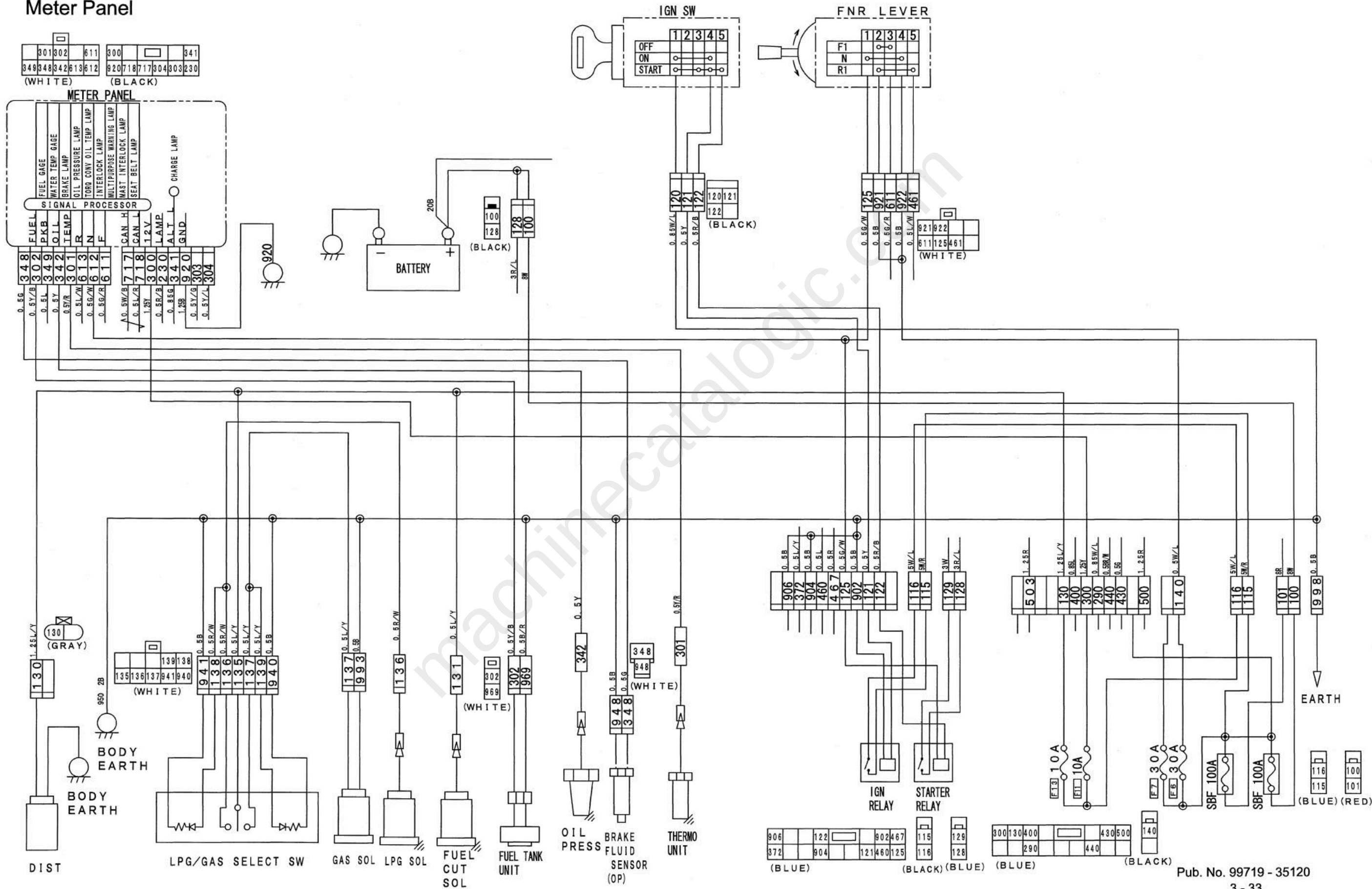
2, 3 ton classes



Sequence

- | | |
|--|--------------------------------------|
| 1 Backing plate assembly | 9 Strut, Anti-rattling spring |
| 2 Parking brake cable, Snap ring | 10 Pin, Hold-down spring, Cup |
| 3 Wheel cylinder | 11 Shoe guide plate |
| Prepare Parts 4, 5 and 6 in assembly beforehand. | 12 Cable with spring |
| 4 Parking brake lever | 13 Return spring (primary) |
| 5 Primary shoe and lining assembly | 14 Return spring (secondary) |
| 6 Retainer, Washer | 15 Adjusting lever, Adjusting spring |
| Prepare Parts 7 and 8 in assembly beforehand. | 16 Adjusting screw |
| 7 Pin, Sheave, Washer | 17 Return spring |
| 8 Secondary shoe and lining assembly | |

Meter Panel

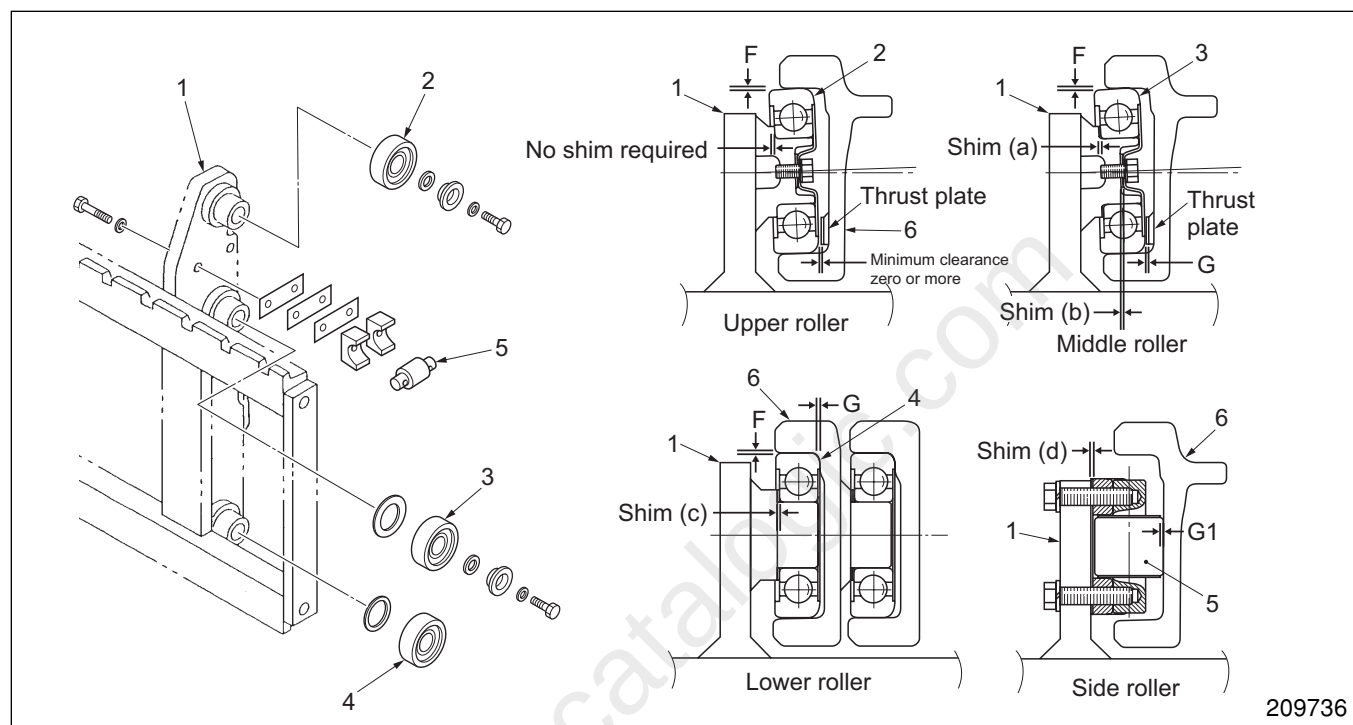


Duplex Mast Reassembly

Follow the disassembly sequence in reverse. Be careful with the followings.

Suggestions for Reassembly

1. Installing Lift Bracket Rollers



Sequence

- | | | |
|------------------------------|-------------------------------|----------------|
| 1 Lift bracket | 3 Lift bracket middle rollers | 5 Side rollers |
| 2 Lift bracket upper rollers | 4 Lift bracket lower rollers | 6 Inner mast |

The lift bracket has three main roller bearings at one side and a side roller at both sides as shown. Clearances F, G and G1 must be maintained between these rollers and thrust surface of the inner mast for smooth operation.

• Clearance G

Clearance between roller side surface and inner mast thrust surface (right-to-left play):

Clearance G is used for determining the correct amount of shims at the bearing seat.

Move the lift bracket to the top of the inner mast and press the bracket to either the leftmost or rightmost position. Take measurements of clearance G between the side surface of roller and inner mast.

Notice: It is not necessary to adjust the lift bracket upper roller with shims.

Adjust the clearance to the specification with shims (a) and (b) for the middle roller and with shim (c) for the lower roller.

Clearance G	0.1 to 0.5 mm (0.004 to 0.020 in.)
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• Clearance F

Clearance between roller circumference and inner mast thrust surface (back-to-front play):

Clearance F is used for determining the proper size of the rollers.

Select appropriate diameter rollers so that the clearance meets the specification. Make sure the rollers rotate smoothly when installed.

Clearance F	1.0 mm (0.04 in.) or less
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• Clearance G1

Clearance between side roller circumference and inner mast side roller thrust surface:

Move the side roller to the upper end of the inner mast and press the lift bracket to either the leftmost or rightmost position.

Take measurement of clearance G1 between the roller circumference and inner mast.

Adjust the clearance with shims to the specification.

Clearance G1	0.1 to 0.5 mm (0.004 to 0.020 in.)
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Full Version Available

Caterpillar GPE15ZN Forklift Service Manual (99719-35120)

Caterpillar GPE15ZN forklift service manual, covers wiring, controller, hydraulics, mast and drive systems. Searchable PDF download.

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