CAT® Lift Trucks

# Service Manual

## Chassis & Mast

| | |
|---|---|
| **GC15K** | AT81C-00011-up<br>AT81D-00011-up<br>AT81E-00011-up |
| **GC18K** | AT81C-00011-up<br>AT81D-00011-up<br>AT81E-00011-up |
| **GC20K** | AT82C-00011-up<br>AT82D-00011-up<br>AT82E-00011-up |
| **GC20K HP** | AT82C-90011-up<br>AT82D-90011-up<br>AT82E-90011-up |
| **GC25K** | AT82C-00011-up<br>AT82D-00011-up<br>AT82E-00011-up |
| **GC25K HP** | AT82C-90011-up<br>AT82D-90011-up<br>AT82E-90011-up |
| **GC30K** | AT83C-00011-up<br>AT83D-00011-up<br>AT83E-00011-up |

For use with 4G63/4G64 Engine Service Manual and Liquefied Petroleum Gas Supplements.

99719-80150

MidWestTech | Caterpillar GC15K, GC18K, GC20K, GC20K HP, GC25K, GC25K HP, GC30... Order the manual at mid-west-tech.com >

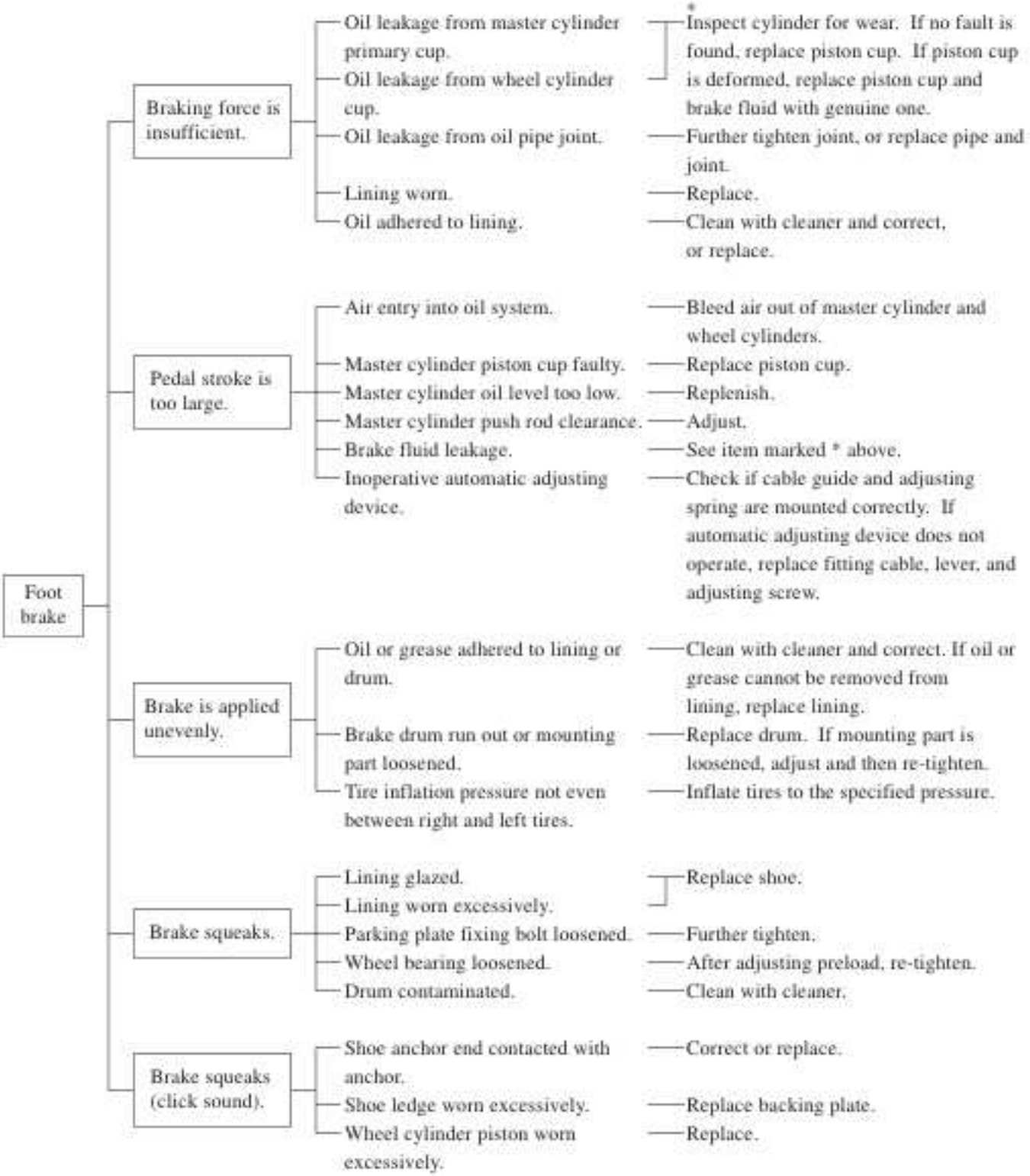
## Battery

| | | |
|---|---|---|
| Tends to run down rapidly | Drive belt slipping | — Readjust. |
| | Stator coil grounded or open-circuited in alternator | — Repair or replace. |
| | Rotor coil open in alternator | — Replace. |
| | Brushes poorly seating on slip rings | — Replace brushes if worn. Clean holder and polish slip rings. |
| | Diode ruptured | — Replace. |
| | Regulated voltage setting too low | — Readjust. |
| | Not enough electrolyte or wrong proportion of acid to water | — Refill and check specific gravity. |
| | Battery cell plates deteriorated (forming, possibly internal short-circuit) | — Replace. |
| | Terminal connections loose | — Clean and retighten. |
| | Open or loose connection between starter switch and regulator IG terminal | — Repair. |
| | Fuse blown, or loosely set in holder | — Replace and repair. |
| | Open or loose connection between F terminals of regulator and alternator | — Repair. |
| Tends to get overcharged | Regulator IG and F terminals shorted or miswired | — Repair. |
| | Poor grounding of regulator F terminal | — Repair. |
| | Pressure coil open-circuited in regulator | — Replace. |
| | Regulated voltage too high | — Readjust. |



MidWestTech | Caterpillar GC15K, GC18K, GC20K, GC20K HP, GC25K, GC25K HP, GC30... Order the manual at mid-west-tech.com >

## Troubleshooting

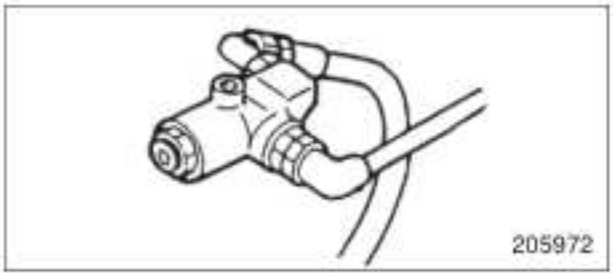





MidWestTech | Caterpillar GC15K, GC18K, GC20K, GC20K HP, GC25K, GC25K HP, GC30... Order the manual at mid-west-tech.com >

## Flow Regulator Valve

Measure the lowering speed with rated load. If the speed is out of specification, repair or replace the flow regulator valve. For the specification of lowering speed, refer to "GROUP 13 SERVICE DATA".




### Bleeding Lift Cylinder

Air trapped in the lift cylinder will automatically open the check valve and flow out of the cylinder when compressed. Therefore, there is no need to bleed the lift cylinder.

## Testing (Cylinder Drist Test)

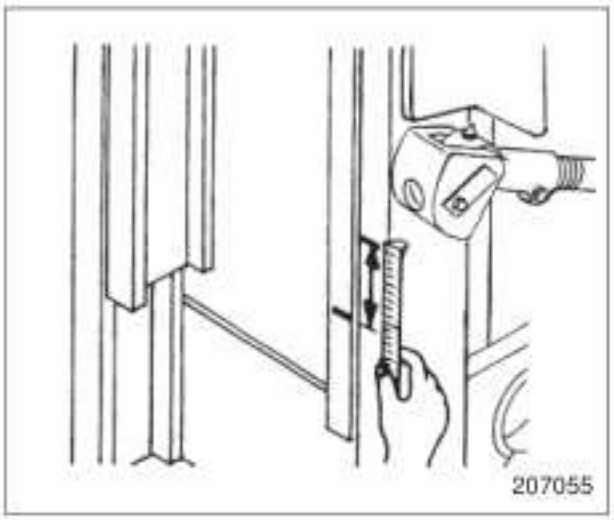
**1. Lift cylinder drift test**

(1) Pick up a load equal to the rated value, tilt the mast to vertical position, raise the forks 1 to 1.5 m (3.3 to 4.9 ft), and stop the engine.

(2) Scribe a line on the mast column, and measure the drift of lift cylinder (drop) for 15 minutes.

Unit: mm (in.)/15 min

| Item \ Truck Model | GC15K/18K GC20K/25K | GC30K |
|---|---|---|
| Lift cylinder drift (rated load) | 50 (2.0), maximum | 40 (1.6) |



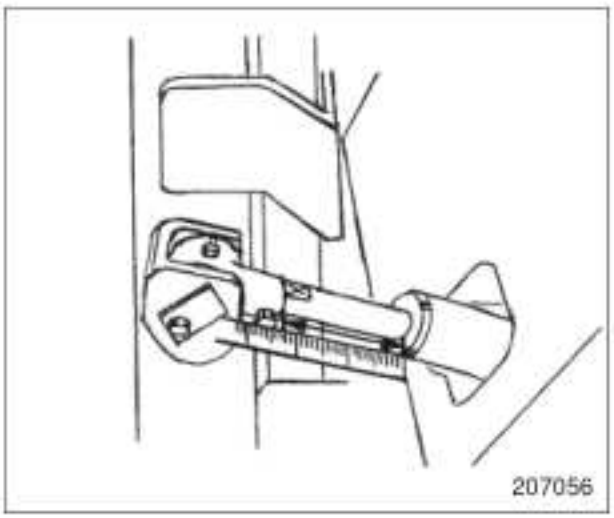

**2. Tilt cylinder drift test**

(1) Pick up a load equal to the rated value, tilt the mast to vertical position, raise the forks about 50 cm (20 in.), and stop the engine.

(2) Measure the drift of tilt cylinder for (extension) 15 minutes.

Unit: mm (in.)/15 min

| Item \ Truck Model | GC15K GC18K | GC20K GC25K | GC30K |
|---|---|---|---|
| Tilt cylinder drift (rated load) | 22 (0.9) | 20 (0.8) | 15 (0.6) |




**3. Piping**

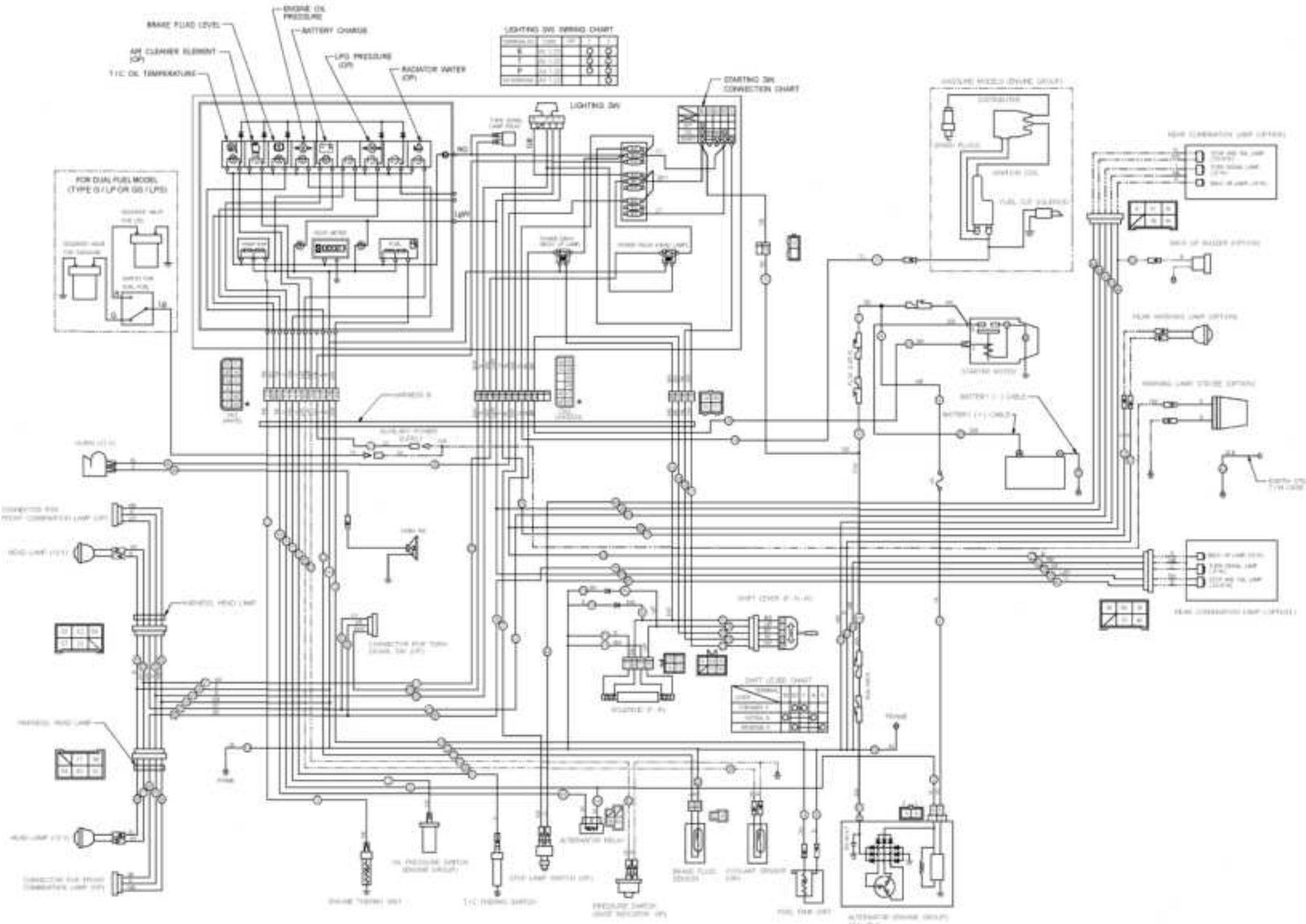
(1) Check each hydraulic circuit for leaks.

(2) Check to make sure that each hose is free from twisting or excessive loops.



MidWestTech | Caterpillar GC15K, GC18K, GC20K, GC20K HP, GC25K, GC25K HP, GC30... Order the manual at mid-west-tech.com >

Electrical Schematic




| WIRE COLOR | CODE |
|---|---|
| BLACK | B |
| WHITE | W |
| RED | R |
| GREEN | G |
| YELLOW | Y |
| BROWN | Br |
| BLUE | L |
| LIGHT GREEN | LG |
| VIOLET | V |

4. MALE SIDE OF CONNECTOR SHOWN.
3. TERMINAL ARRANGEMENT OF CONNECTOR SHOWN BY MARK (•) MUST BE TO CONSOLE BOX INSTRUMENT ARRANGEMENT.
2. CIRCUIT SHOWN BY CHAIN DOUBLE DASH LINE ( —•—•— ) MUST BE OPTIONAL CIRCUIT.

NOTES: 1. UNLESS OTHERWISE SPECIFIED WIRE SIZE MUST BE 1.25mm²

CAT

| Schematic No. | Use for | Truck No. | Serial No. |
|---|---|---|---|
| ES019 - 80150 | 99719 - 80150 | GC15K | AT81C - 00011 - up |
| | | GC18K | AT81C - 00011 - up |
| | | GC20K | AT82C - 00011 - up |
| | | GC20K HP | AT82C - 90011 - up |
| | | GC25K | AT82C - 00011 - up |
| | | GC25K HP | AT82C - 90011 - up |
| | | GC30K | AT83C - 00011 - up |



MidWestTech | Caterpillar GC15K, GC18K, GC20K, GC20K HP, GC25K, GC25K HP, GC30K Forklift Service Manual | Publication 99719-80150

Order the manual at mid-west-tech.com >