



Service Manual

Chassis, Mast & Options

GP40K	T29C-00011-up	DP40K	T19C-00011-up
GP40KL	T29C-50001-up	DP40KL	T19C-50001-up
GP45K	T29C-80001-up	DP45K	T19C-80001-up
GP50K	T33B-50001-up	DP50K	T28B-50001-up

- (2) To install the differential case assembly to the front axle housing, clean the mounting flange surfaces, and apply sealant to the surfaces, then tighten the bolts.
- (3) To install the engine mount nuts, first tighten the nuts until they come in contact with the mounts. From that position, retighten them more 1/4 turn to align the split pin grooves of the nut with the pin hole of the bolt.
- (4) Fill the radiator with antifreeze coolant up to the specified level. Unless otherwise specified, use a solution of 35% concentration. Water should be free from scale forming minerals.
- (5) Fill the transmission, reduction bevel gear and differential, front axle and torque converter with the specified amount (and type) of oil upon adjustment.
- (6) Bleed air out of the brake lines.
- (7) Check the oil level in the hydraulic tank, and add oil, if necessary.
- (8) Inspection after starting the engine
After starting the engine for the first time, observe its running condition. If the engine vibrates excessively, retighten the mounting bolts to see if this tightening has any effect.
- (9) Installation of the overhead guard
Tighten the overhead guard mounting bolts to the following torque.

Tightening torque	14.5 N·m (6.6 kgf·m) [10.7 lbf·ft]
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Service Data

A: Standard value B: Repair or service limit

Unit: mm (in.)

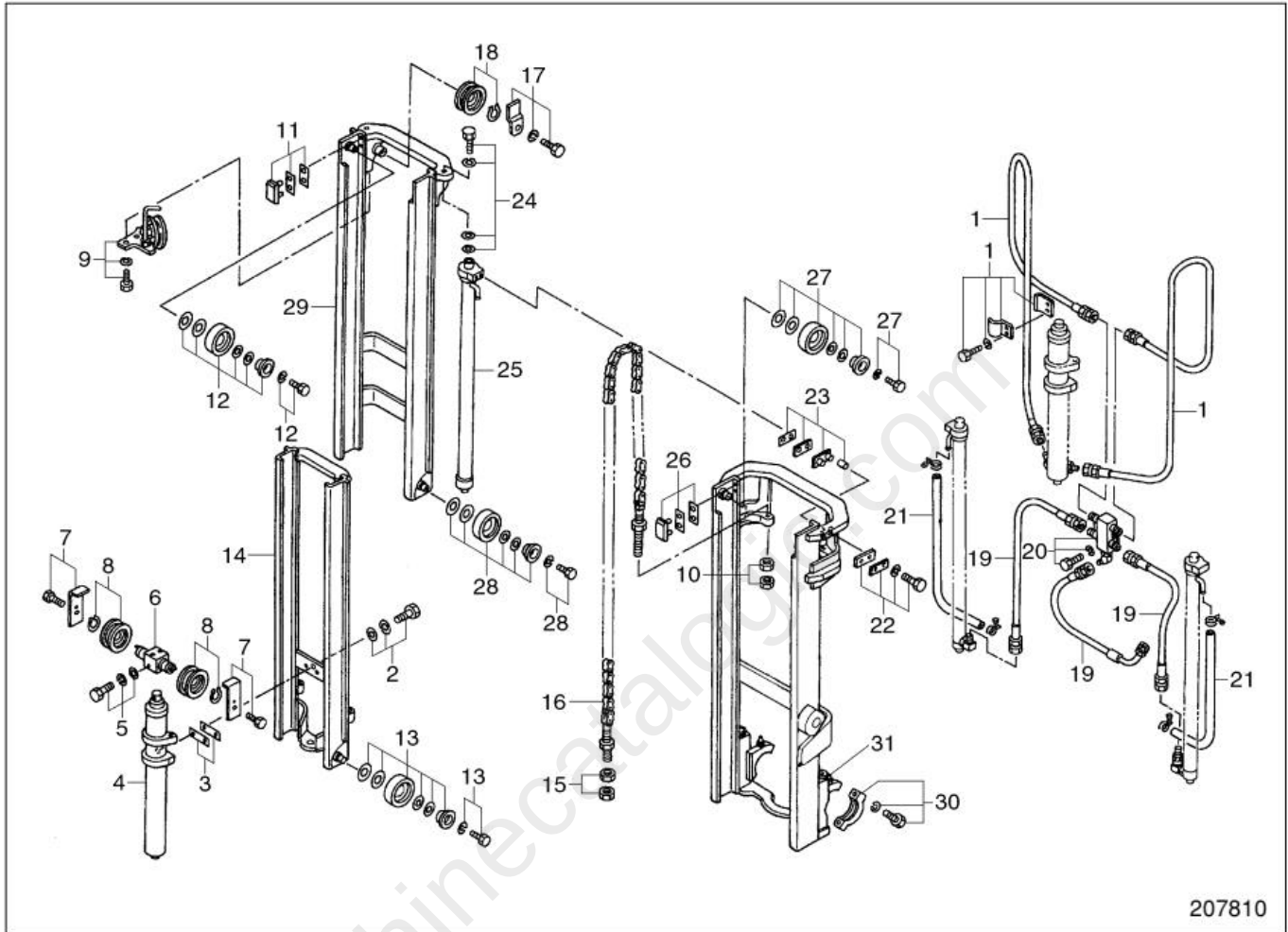
Item		Truck Model	GP40K, GP40KL, GP45K DP40K, DP40KL, DP45K	GP50K DP50K
Oscillating angle (each side)		A	3°	
Toe-in		A	0	
Caster		A	0°	
Camber		A	1°	
Length of tie rod (center to center of ball studs)	Left 1	A	550.7 (21.68)	
	Right 2	A	543.6 (21.40)	
As installed length (thread length) of ball studs	Left 3	A	14.35 (0.56)	
	Right 4	A	10.8 (0.43)	
Tightening torque of tie rod end lock nuts 5 N·m (kgf·m) [lbf·ft]		A	98 (10) [72.3]	
Tightening torque of knuckle stopper bolt lock nuts 6 N·m (kgf·m) [lbf·ft]		A	16.7 (1.7) [12.3]	
Back-and-forth play of axle center pin 7 (total)		A	0.8 (0.031)	
		B	1.2 (0.05)	
Tightening torque of bearing support mounting bolts 8 N·m (kgf·m) [lbf·ft]		A	291 (29.7) [215]	
Tightening torque of tie rod ball joint castle nuts 9 N·m (kgf·m) [lbf·ft]		A	157 (16) [116]	
Steering angle	Inside 10	A	83°	
	Outside 11	A	56°33'	

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Triplex Mast

Disassembly



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Sequence

- | | | | |
|----|---|----|---------------------------------------|
| 1 | Hose for first lift cylinder, Clamp, Bolt, Washer | 16 | Lift chain (for second lift cylinder) |
| 2 | Bolt, Washer | 17 | Chain guard, Bolt |
| 3 | Shims | 18 | Snap ring, Chain wheel |
| 4 | First lift cylinder | 19 | Hose, Band |
| 5 | Stopper bolt, Washer | 20 | Joint, Connector, Bolt, Washer |
| 6 | Chain wheel support | 21 | Hose, Clamp |
| 7 | Chain guard, Plug | 22 | Bolt, Seat, Cushion, Collar |
| 8 | Snap ring, Chain wheel | 23 | Cushion, Shims, Bracket |
| 9 | Pulley bracket, Pulley, Bar, Bolt | 24 | Bolt, Washer, Shims |
| 10 | Nut (chain for second lift cylinder) | 25 | Second lift cylinder |
| 11 | Mast strip, Shims | 26 | Mast strip, Shims |
| 12 | Main roller, Shims | 27 | Main roller, Shims |
| 13 | Main roller, Shims | 28 | Main roller, Shims |
| 14 | Inner mast | 29 | Middle mast |
| 15 | Nuts | 30 | Cap, Bolt, Washer |
| | | 31 | Outer mast, Grease nipple |

Inching Pedal Adjustment

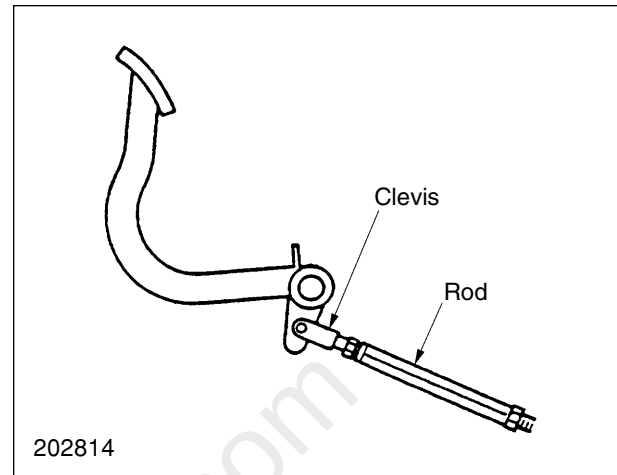
1. Adjusting brake

- (1) Bleed air out of the brake lines from the reserve tank through master cylinder to the wheel cylinders.

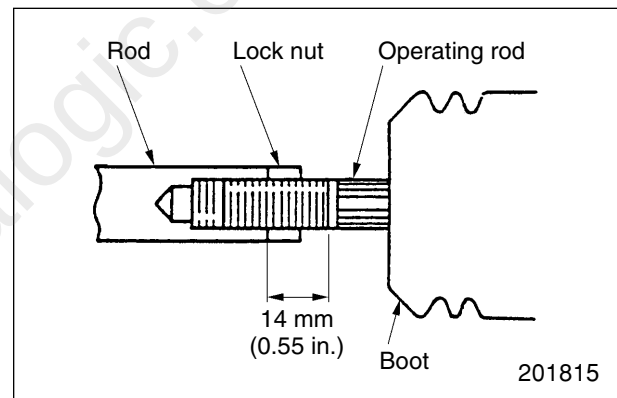
NOTE

For bleeding, refer to page 10-25 in the "GROUP 10 BRAKE SYSTEM."

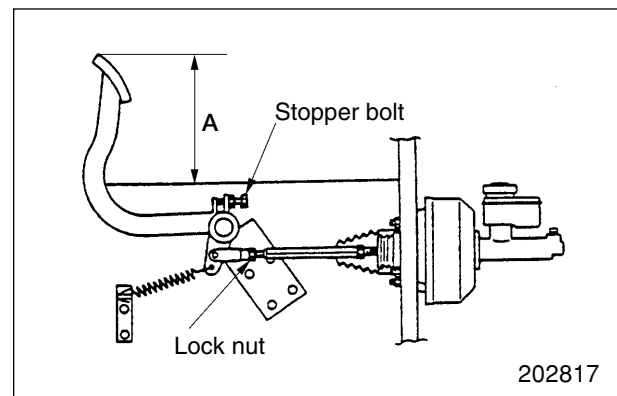
- (2) Screw the rod fully into the clevis on the brake pedal side.



- (3) Screw the lock nut on the operating rod of booster. Screw the operating rod into the rod until the remaining thread length measures 14 mm (0.55 in.) and tighten the lock nut.



- (4) Adjust the brake pedal height A to 223 mm (8.8 in.) by turning the operating rod, and tighten the lock nut on the pedal side.
- (5) Decrease the brake pedal height A to 220 mm (8.7 in.) by the stopper bolt (until the operating rod push the booster slightly).



Inspection

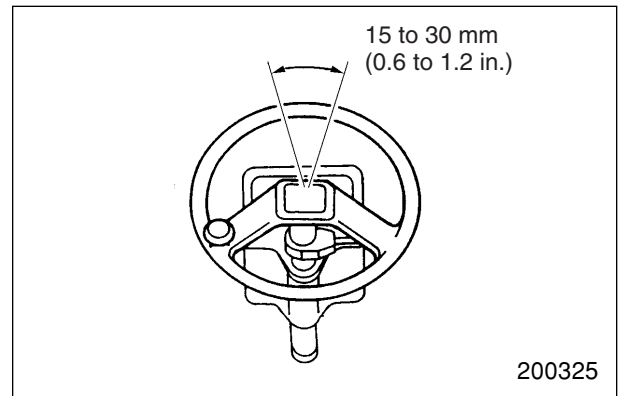
Steering wheel free play

With the engine running at idling speed, measure the free play at the wheel rim.

NOTE

Do not confuse the movement of control valve spool of 170 to 175 mm (6.7 to 6.9 in.) measured on the wheel rim with the free play.

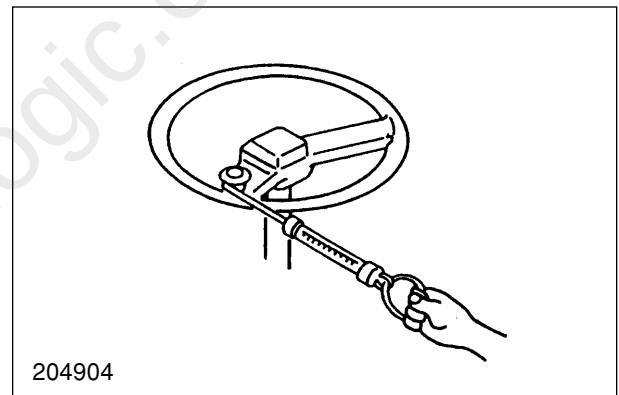
If the free play is out of this range, correct it by remedying the causes stated in the “Troubleshooting” section on the next page.



Steering effort

- (1) Set the parking brake, and run the engine, until the water temperature gauge pointer moves into the white zone, to warm up the hydraulic oil.
- (2) Hook a spring balancer to the rim or spoke of the steering wheel, and turn the wheel. Read the balancer indication when the wheel begins to turn in both directions.

Steering effort (at steering wheel rim)	10 N·m (1 kgf·m) [7.4 lbf·ft]
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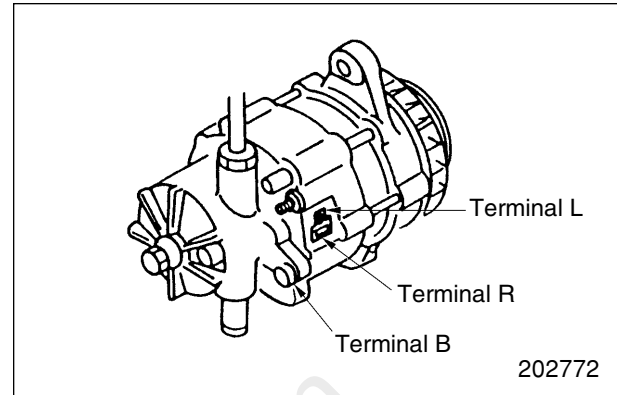
Relief pressure adjustment

Refer to the “GROUP 12 HYDRAULIC SYSTEM” the relief pressure adjustment procedure.

Precautions for servicing charging system (with alternator)

The alternator is equipped with a built-in IC (integrated circuit) voltage regulator. When servicing the charging system, pay attention to the following precautions:

- (1) Do not reverse the polarity of the battery.
- (2) Do not disconnect the battery terminal while the engine is running.
- (3) Do not ground the terminal L.
- (4) Do not short the terminals L and R.
- (5) Do not direct a blast of steam cleaner to the alternator. Remember, a blast of steam will damage the IC regulator.



Full Version Available

Caterpillar GP45K Forklift Service, Operator and Schematic Manual (99739-36130)

Caterpillar GP45K Forklift service manual, covers hydraulics, wiring, power train, engine, and schematics. Searchable PDF download.

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