



Operation & Maintenance Manual

MC/FC

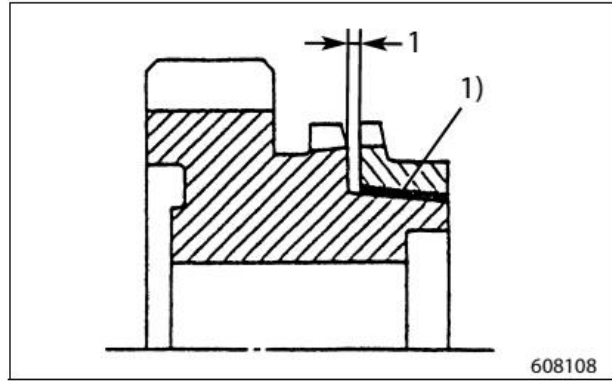
GP15N	T25C-55001-59999	DP15ND(MC)	T16D-54001-63999	DP25ND(MC)	T18C-70001-8999
GP15ZN	T34-52001-59999	DP15NT(MC)	T16D-54001-63999	DP25NT(MC)	T18C-70001-8999
GP18N	T25C-75001-79999	DP15NDS(MC)	T16D-54001-63999	DP25NDS(MC)	T18C-70001-8999
GP18ZN	T34-72001-79999	DP15NTS(MC)	T16D-54001-63999	DP25NTS(MC)	T18C-70001-8999
GP20CN	T34-22001-29999	DP15N(FC)	T16D-64001-69999	DP25N(FC)	T18C-90001-99999
GP20N	T17D-10001-19999	DP18ND(MC)	T16D-74001-83999	DP30ND(MC)	T14E-10001-19999
GP20ZN	T35-10001-19999	DP18NT(MC)	T16D-74001-83999	DP30NT(MC)	T14E-10001-19999
GP25N	T17D-60001-69999	DP18NDS(MC)	T16D-74001-83999	DP30NDS(MC)	T14E-10001-19999
GP25ZN	T35-60001-69999	DP18NTS(MC)	T16D-74001-83999	DP30NTS(MC)	T14E-10001-19999
GP30N	T13F-40001-49999	DP18N(FC)	T16D-84001-89999	DP30N(FC)	T14E-20001-29999
GP35N	T13F-60001-6999	DP20CND(MC)	T16D-24001-27999	DP35ND(MC)	T14E-80001-89999
GPE15N(MC)	T34-00001-18999	DP20CNT(MC)	T16D-24001-27999	DP35NT(MC)	T14E-80001-89999
GPE15N(FC)	T34-19001-19999	DP20CNDS(MC)	T16D-24001-27999	DP35NDS(MC)	T14E-80001-89999
GPE18N(MC)	T34-40001-48999	DP20CNTS(MC)	T16D-24001-27999	DP35NTS(MC)	T14E-80001-89999
GPE18N(FC)	T34-49001-49999	DP20CN(FC)	T16D-28001-29999	DP35N(FC)	T14E-90001-99999
GPE20CN(MC)	T34-30001-38999	DP20ND(MC)	T18C-20001-3999		
GPE20CN(FC)	T34-39001-39999	DP20NT(MC)	T18C-20001-3999		
GPE20N(MC)	T17D-20001-37999	DP20NDS(MC)	T18C-20001-3999		
GPE20N(FC)	T17D-38001-39999	DP20NTS(MC)	T18C-20001-3999		
GPE20ZN(MC)	T35-20001-37999	DP20N(FC)	T18C-40001-49999		
GPE20ZN(FC)	T35-38001-39999				
GPE25N(MC)	T17D-70001-87999				
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GPE25ZN(MC)	T35-70001-87999				
GPE25ZN(FC)	T35-88001-89999				
GPE30N(MC)	T13F-10001-19999				
GPE30N(FC)	T13F-20001-29999				
GPE35N(MC)	T13F-80001-89999				
GPE35N(FC)	T13F-90001-99999				

Original Instructions

Keep this manual in your lift truck as a ready reference

99710-36130

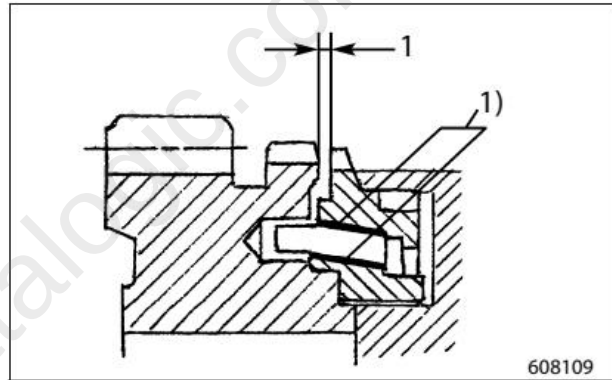
- (2) Check cones for wear or damage.
- (3) Measure the axial clearance between the gear and synchronizer ring.



H-L

1. Clearance (H-L)

1) Cone



F-R

1. Clearance (F-R)

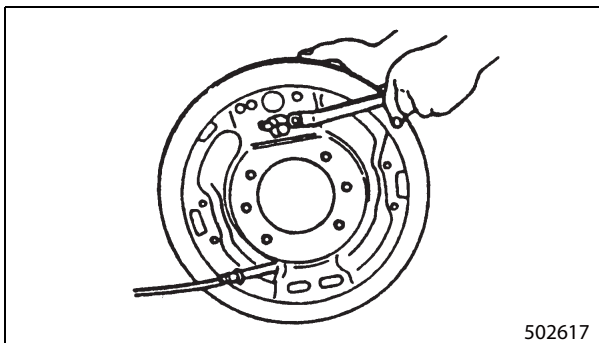
1) Cone

Item		Ref.	Standard	Limit
Axial clearance between gear and ring	H-L	1	1.75 mm (0.0689 in.)	0 mm (0.00 in.)
	F-R	2	1.85 mm (0.0728 in.)	0.25 mm (0.0098 in.)

8.3 Suggestions for Assembly

Wheel cylinder, Installing

Apply liquid gasket to the mounting face of the wheel cylinder before installing and tighten wheel cylinder to specified torque.



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Item	Specified value	
	1 ton class	2, 3 ton classes
Tightening torque	7.8 to 11.8 N·m (0.80 to 1.20 kgf·m) [5.753 to 8.703 lbf·ft]	17.7 to 26.5 N·m (1.80 to 2.70 kgf·m) [13.055 to 19.545 lbf·ft]

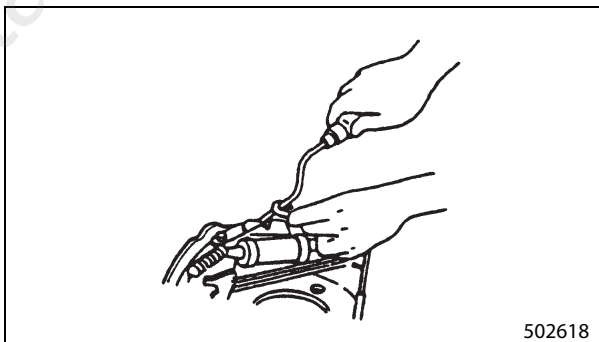
Applying grease

Apply a thin coat of specified brake grease to the following parts:

- Shoe ledge (6 places) (Contact area between backing plate and shoe)
- Anchor pin surface in contact with shoe ends

Shoe and lining, Installing

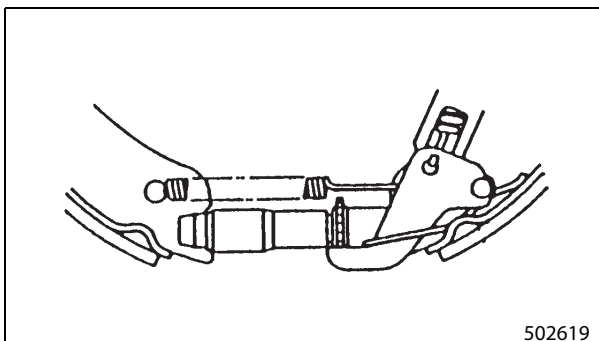
Ensure that each connector link of the wheel cylinder has been correctly inserted into shoe web.



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Return spring, Installing

Using special tool, install return springs to backing plate pins.



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Special tool	Part number
Spring installer	64309-15413

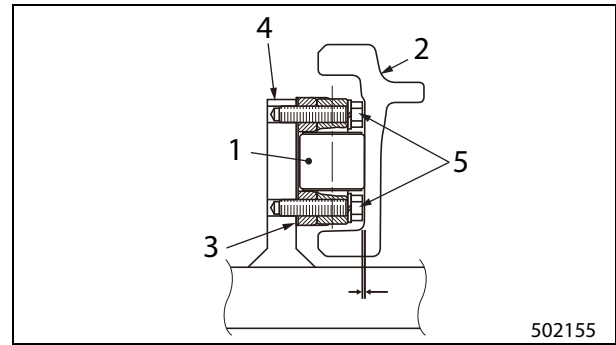
Adjusting clearance between side roller rolling face and inner mast

Measure the clearance between side roller rolling face and inner mast. If the measured clearance does not meet the standard value, adjust the clearance as follows:

Note: For measurement, refer to 14-51 "Inspection and Adjustment".

If the clearance is too large, increase shims thickness (d) as required.

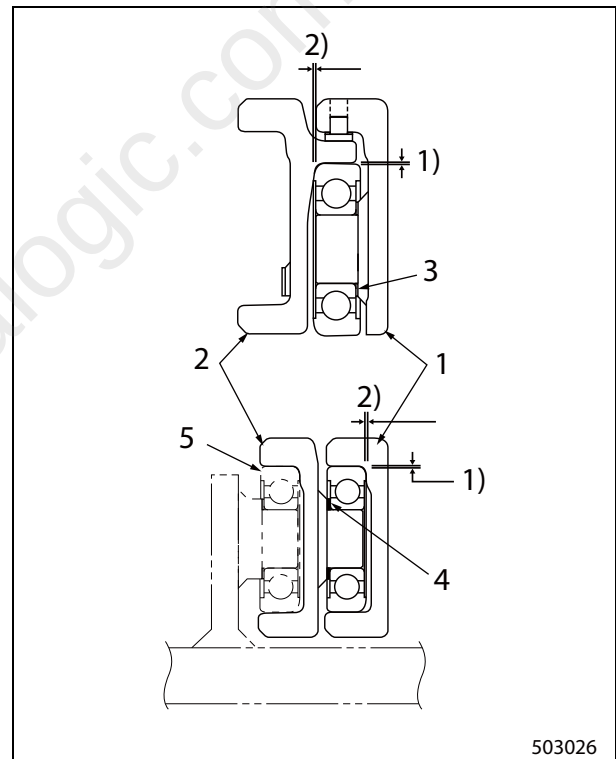
Note: At the factory, shim thickness (d) is usually adjusted to 1 mm (0.04 in.) for shipping.



- 1. Side roller
- 2. Inner mast
- 3. Shim (d)
- 4. Lift bracket
- 5. Roller mounting bolt

2.12 Installing Mast Rollers (All Mast Models)

Mast rollers are identical in shape and size with lift bracket lower rollers.



- 1. Outer mast
- 2. Inner mast
- 3. Shim (e)
- 4. Shim (f)
- 5. Lift bracket lower roller
- 1) Clearance between main roller rolling face and mast
- 2) Clearance between main roller side face and mast

Ref.	Item	Standard
1)	Clearance between main roller rolling face and mast	1 mm (0.04 in.) or less
2)	Clearance between main roller side face and mast	0.1 to 0.5 mm (0.004 to 0.020 in.)

6. Axle Assembly, Installing

For installation, follow the removal sequence in reverse and observe the instructions below:

- (1) Using shims, adjust the total front and back clearance to be 0.8 mm (0.032 in.) or less.

CAUTION

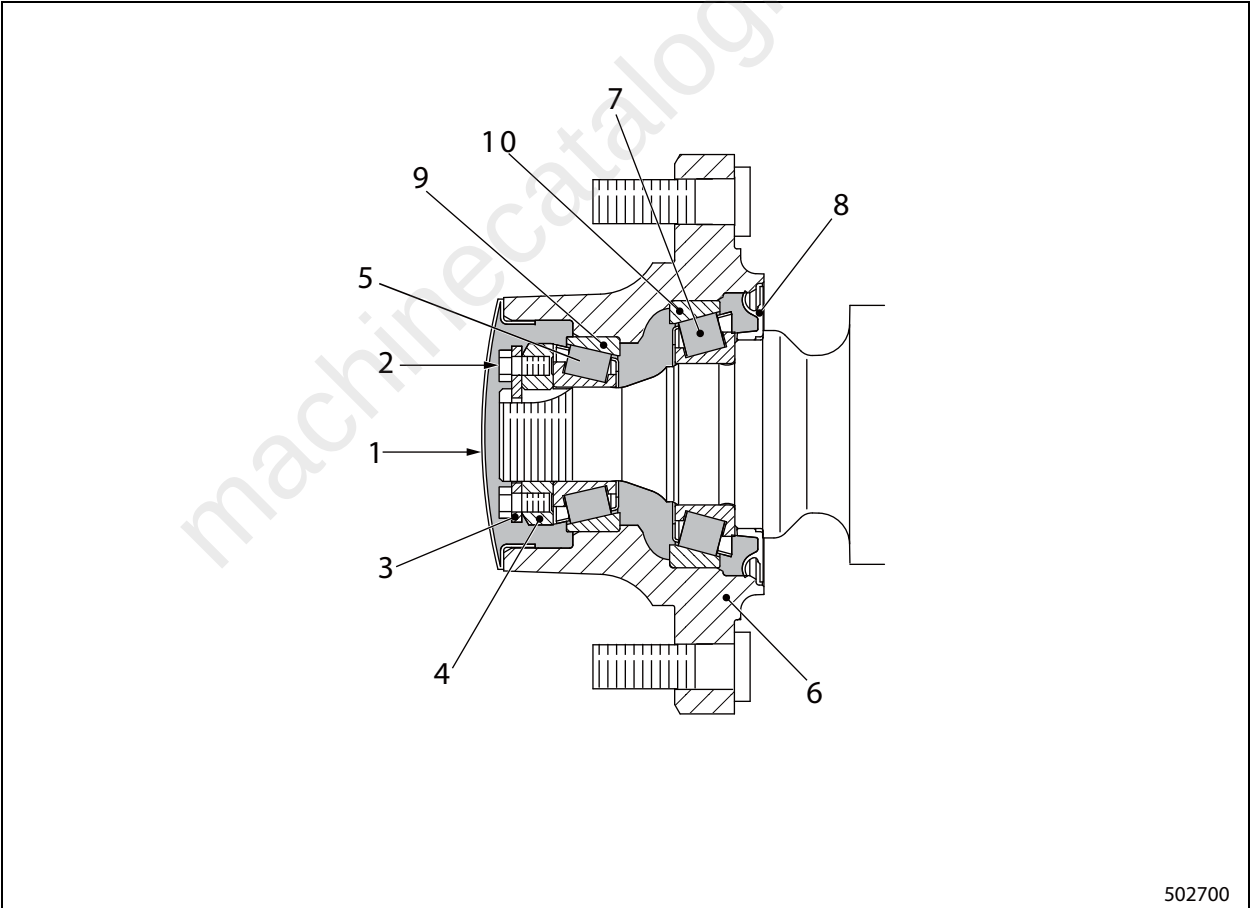
Place shims equally at the front and back.

- (2) Apply "AUTOLEX A" grease or equivalent through grease nipple.
- (3) Tighten the bolts to the specified torque.

Item	Specified value
Tightening torque	247.4 to 334.8 N·m (25.23 to 34.14 kgf·m) [182.473 to 246.936 lbf·ft]

7. Wheel Hub, Disassembling

7.1 Disassembly Sequence



- 1. Hub cap
- 2. Bolt
- 3. Lockplate
- 4. Locknut (hexagon nut)
- 5. Tapered roller bearing (inner race)
- 6. Hub (with tapered roller bearing outer race)
- 7. Tapered roller bearing (inner race)
- 8. Oil seal
- 9. Tapered roller bearing (outer race)
- 10. Tapered roller bearing (outer race)

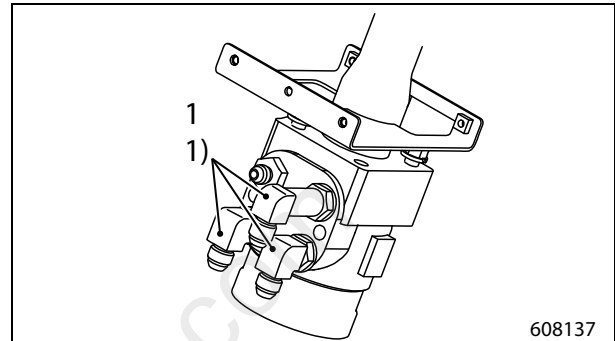
6. Steering Valve, Removing

- (1) Remove the cover from the steering column.
- (2) Disconnect four hoses from the steering valve.
- (3) Remove bolts and remove the steering valve.

7. Steering Valve, Installing

For installation, follow the removal sequence in reverse and observe the instructions below:

- (1) Apply grease to serrated portion at the lower part of the steering shaft.
- (2) Tighten mounting bolts to the specified torque.
- (3) Pay attention to the orientation when installing the elbow on the steering valve. Also be sure to tighten to the specified torque.



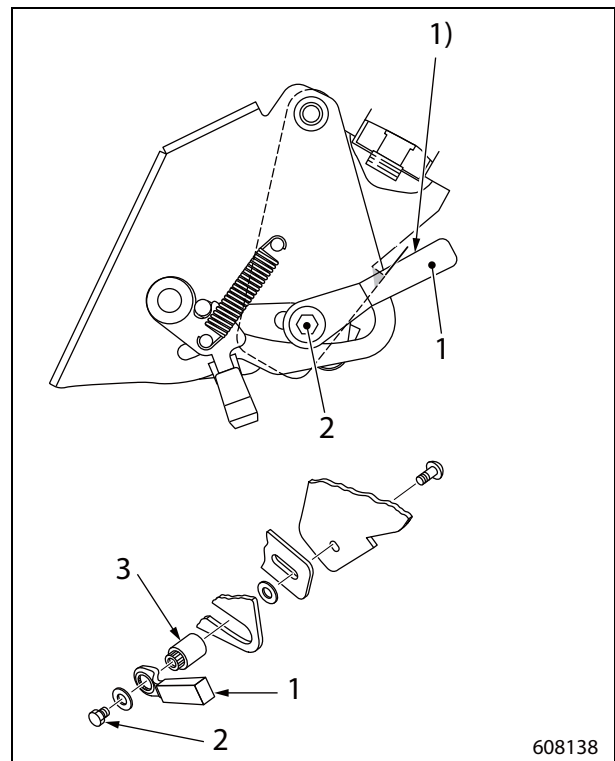
1. Elbow

1) Install the elbow facing downward

Ref.	Item	Tightening torque
1	Elbow	34 to 39 N·m (3.5 to 4.0 kgf·m) [25.08 to 28.76 lbf·ft]

8. Tilt Lock Lever, Disassembling

- (1) Make a matchmark across tilt lock lever and nut 3 for proper installation at assembly.
- (2) Remove lever mounting bolt 2 and remove tilt lock lever.



1. Tilt lock lever

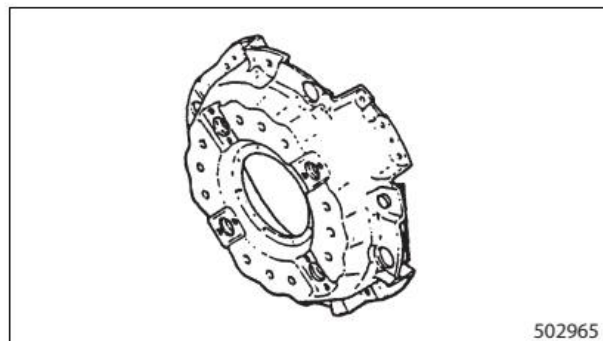
2. Lever mounting bolt

3. Nut

1) Lever face

Clutch cover

Check the clutch cover for distortion, cracks, deformation and wear.

**Release levers**

Check each release lever for wear or damage on the contact and sliding surfaces.

7. Pressure Assembly, Assembling

For assembly, follow the disassembly sequence in reverse.

7.1 Suggestions for Assembly

Bolt tightening torque

- Tighten the bolts with strap fixing washers 3 to the torque specified below.

Item	Tightening torque
Strap fixing washer mounting bolt	39 to 59N·m (4.0 to 6.0 kgf·m) [28.76 to 43.52 lbf·ft]

- Tighten the bolts that hold locking plates 1 to the torque specified below.

Item	Tightening torque
Lockplate mounting bolts	5.8 to 7.8 N·m (0.59 to 0.80 kgf·m) [4.278 to 5.753 lbf·ft]

Applying grease

Apply molybdenum disulfide grease (Never Seez or equivalent) to the pressure plate of the dry type clutch at the following places.

- Contact surfaces of release lever and pressure plate.
- Contact surfaces of release lever and lever support.

Also apply anti-seize and lubricating compound (Never Seez grease) to the following parts.

- Support nut threaded portion
- Support nut spherical portion

Ref.	Lubricating places and oil changes	Lubrication/greasing	Replace interval
10	Rear axle mount bushing (front and rear)	Multi-purpose grease	Every 3 or every 500 hours, whichever comes first
11	Oil change (engine)	Engine oil	Every 3 months or 500 hours (Incl. first month or 200 hours after purchase of new truck)
12	Universal joints (front and rear)	Multi-purpose grease	Every 6 months or every 1000 hours, whichever comes first
13	Oil change (front axle)	Differential oil	
3	Oil change (Powershift transmission truck)	Differential oil	
3	Oil change (Manual transmission truck)	Transmission oil	
14	Oil change (Hydraulic tank)	Hydraulic oil	Every 12 months or 2000 hours, whichever comes first
15	Oil change (reserve tank)	Brake oil	Every 12 months or 2000 hours, whichever comes first

Full Version Available

Caterpillar DP25ND Forklift Service and Operator Manual (99719-38210)

Caterpillar DP25ND Forklift service manual, covers engine, hydraulics, wiring, and drive systems. Searchable PDF download.

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