



Service Manual

Chassis & Mast

MC

DP60NM

T20D-00011-up

DP70NM

T20D-10011-up, AT20D-40011-up

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1.4 Removing Pipes/Hoses, Oil Cooler, and Radiator

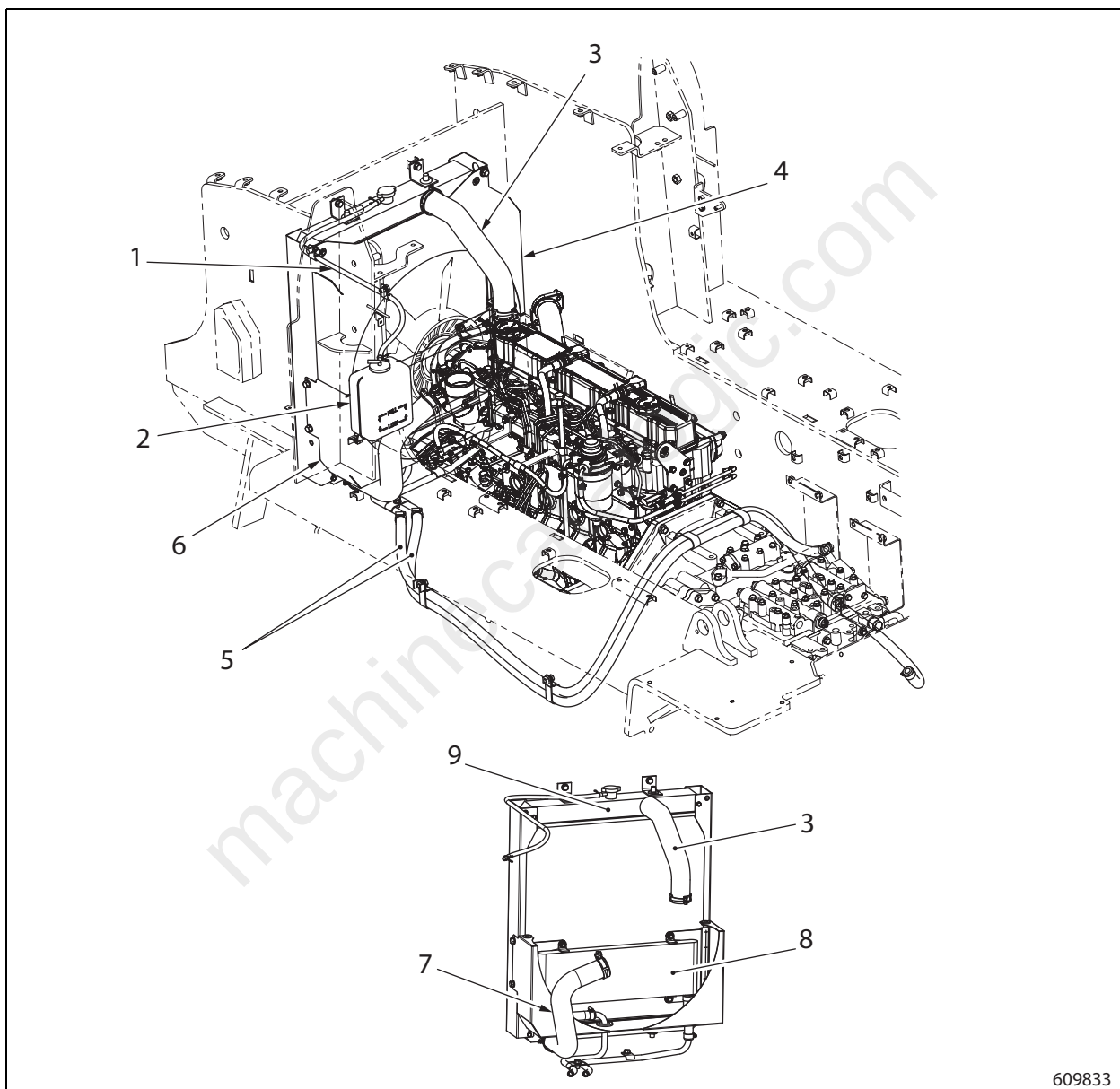
Preparation

⚠ CAUTION

- DO NOT open the drain cock when the coolant is hot.
- Antifreeze/coolant is poisonous. Keep it in the container for disposal. Ask a hazardous waste company for disposal.

Drain the coolant by loosening the drain cock at the bottom of the radiator.

Removal sequence



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- | | |
|--------------------------|--------------------------------|
| 1. Vent hose | 6. Lower cowl |
| 2. Reserve tank | 7. Radiator lower hose |
| 3. Radiator upper hose | 8. Torque converter oil cooler |
| 4. Upper cowl | 9. Radiator |
| 5. Torque converter hose | |

5. Removing Steering Valve

- (1) Remove the cover from the steering column.
- (2) Disconnect hoses (4 places) from the steering valve.
- (3) Remove bolts and remove the steering valve.

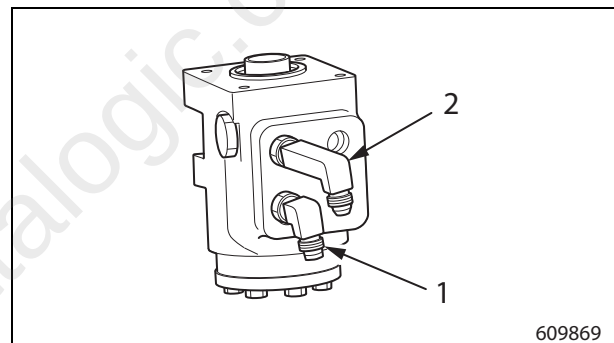
6. Installing Steering Valve

To install follow the removal sequence in reverse and also follow the instructions below:

- Apply grease on the serrated portion at the lower part of the steering shaft.
- To install hoses on the steering valve, remove the steering valve.
- Tighten the mounting bolts to the specified torque.
- When installing hoses on the steering valve, pay attention to the orientation.

Special tool	Part number
Hose remover	91K67-00400

- (1) Install P port connector and O-ring.
- (2) Install T port connector and O-ring.

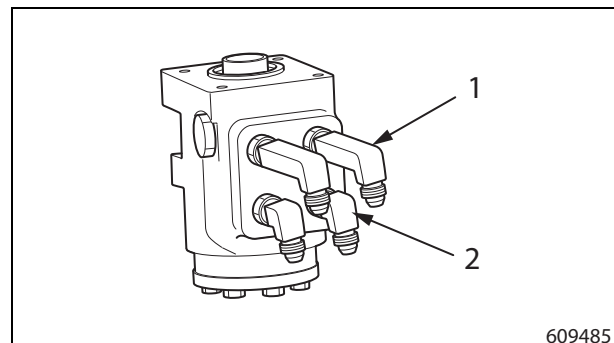


1. P port connector

2. T port connector

Item	Tightening torque
P port connector	63 to 77 N·m (6.42 to 7.85 kgf·m) [46.47 to 56.79 lbf·ft]
T port connector	63 to 77 N·m (6.42 to 7.85 kgf·m) [46.47 to 56.79 lbf·ft]

- (3) Install L and R port connectors and O-rings.



1. L port connector

2. R port connector

Item	Tightening torque
L port connector	63 to 77 N·m (6.42 to 7.85 kgf·m) [46.47 to 56.79 lbf·ft]
R port connector	63 to 77 N·m (6.42 to 7.85 kgf·m) [46.47 to 56.79 lbf·ft]

3. Periodic Replacement Parts

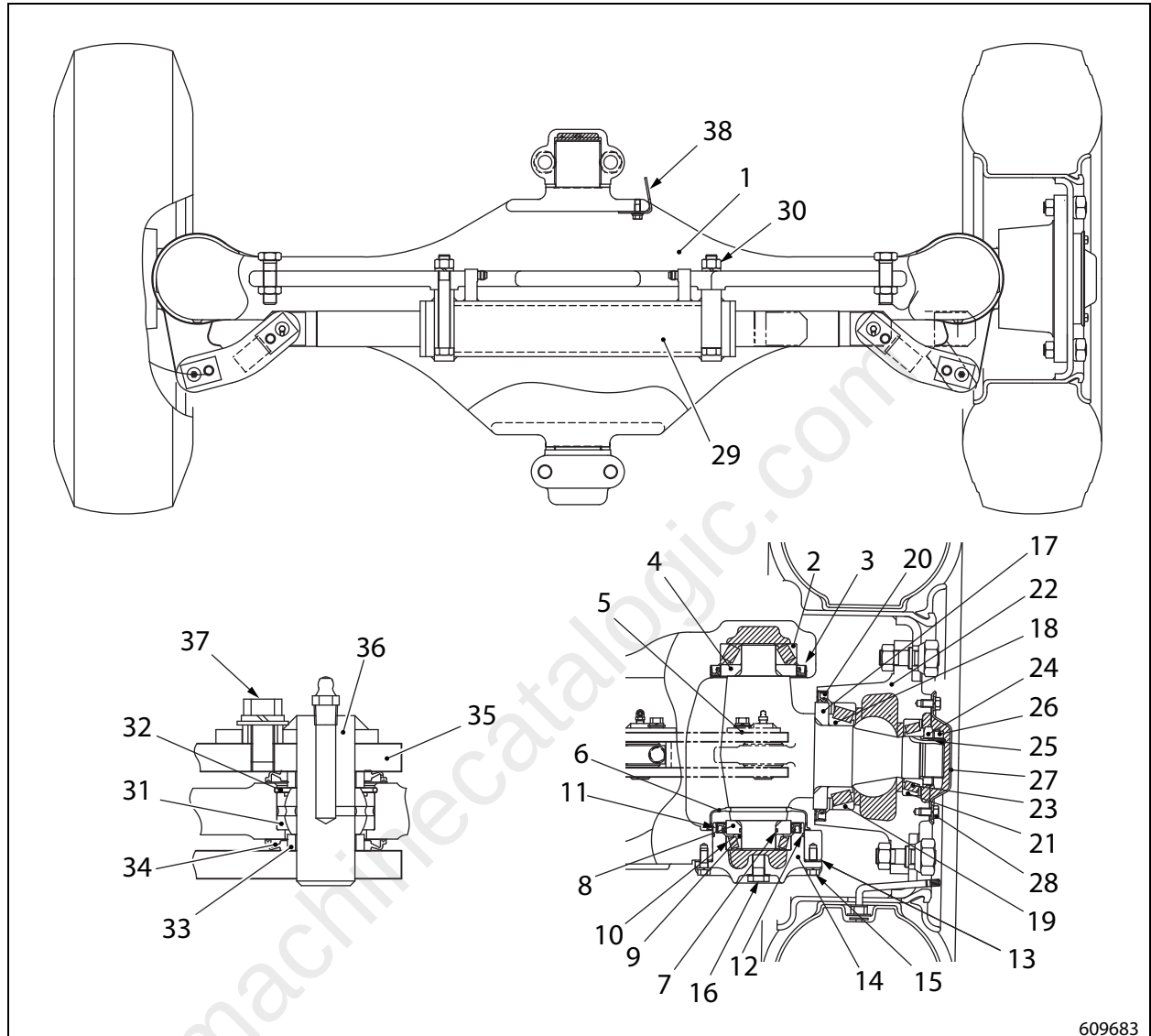
The safety critical parts (marked with *) and elements for safe operation listed below must be replaced at every specified periods.

No.	Periodic Replacement Parts	Replacement periods			Remarks
		Every specified year	Every specified month	Every specified hours	
1	* Master cylinder and wheel cylinder repair kit parts	1		2400	
2	* Brake booster repair kit parts	1		2400	
3	* Stop light switch	2		4800	
4	* Vacuum pump hose	1 to 2		2400 to 4800	
5	* High pressure hoses for loading/unloading operation	1 to 2		2400 to 4800	
6	* Rubber parts for power cylinder	2		4800	
7	* Power steering hose	2		4800	
8	* Lift chain	2		4800	
9	* Fuel hose	2		4800	
10	Engine oil filter element		3	500	Also 1 month after delivery
11	Fuel filter element		6	500	Also 1 month after delivery
12	Hydraulic tank return filter		6	1200	Also 1 month after delivery
13	Air cleaner element		6	1200	Clean every 2 weeks
14	Engine coolant	1		2400	

Note: "*" indicates safety critical parts.

8. Assembling Rear Axle

8.1 Assembly Sequence



1.27 Service Data

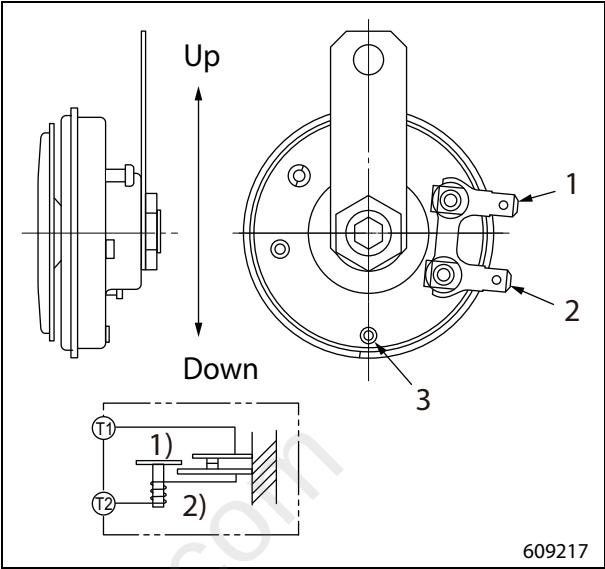
Item				Specification
Chain length (20 links)		Standard		635 mm (25.00 in.)
		Limit		654 mm (25.75 in.)
Main roller outside diameter	S	Standard		149 mm (5.87 in.)
	M	Standard		150 mm (5.91 in.)
	L	Standard		151 mm (5.94 in.)
Side roller external diameter		Standard		58 mm (2.28 in.)
Simplex Mast size (reference)	1	Width of outer mast	Standard	850 mm (33.46 in.)
	2	Width of inner mast	Standard	692 mm (27.24 in.)
	3	Width of lift bracket	Standard	564 mm (22.20 in.)
Mast	4	Clearance between main roller rolling face and mast	Standard	1.0 mm (0.039 in.) or less
	5	Clearance between main roller side face and mast	Standard	0.2 to 1.0 mm (0.008 to 0.039 in.)
	6	Clearance between mast and mast strip	Standard	0.2 to 1.0 mm (0.008 to 0.039 in.)
Lift bracket	4	Clearance between main roller rolling face and inner mast	Standard	1.0 mm (0.039 in.) or less
	7	Clearance between side roller rolling face and inner mast	Standard	0.2 to 1.0 mm (0.008 to 0.039 in.)
Distortion of finger bar, guide bar		Standard		5 mm (0.20 in.) or less
Mast support bolt		Tightening torque		490 ± 49 N·m (49.97 ± 5.0 kgf·m) [361.41 ± 36.14 lbf·ft]
Tilt cylinder socket bolt		Tightening torque		261 ± 13 N·m (26.61 ± 1.33 kgf·m) [192.50 ± 9.59 lbf·ft]
Lift chain nut		Tightening torque		385 ± 38.5 N·m (39.3 ± 3.93 kgf·m) [283.96 ± 28.40 lbf·ft]

5.4 Horn

Apply the specified voltage to both terminals of the horn, T-1 and T-2, and check if the horn activates.
If the horn does not sound or sounds strange, replace the horn.
Operating voltage: DC 12V

Note:

- (1) Orient the horn as shown when installing.
- (2) Horn terminals T-1 and T-2 do not have a polarity.



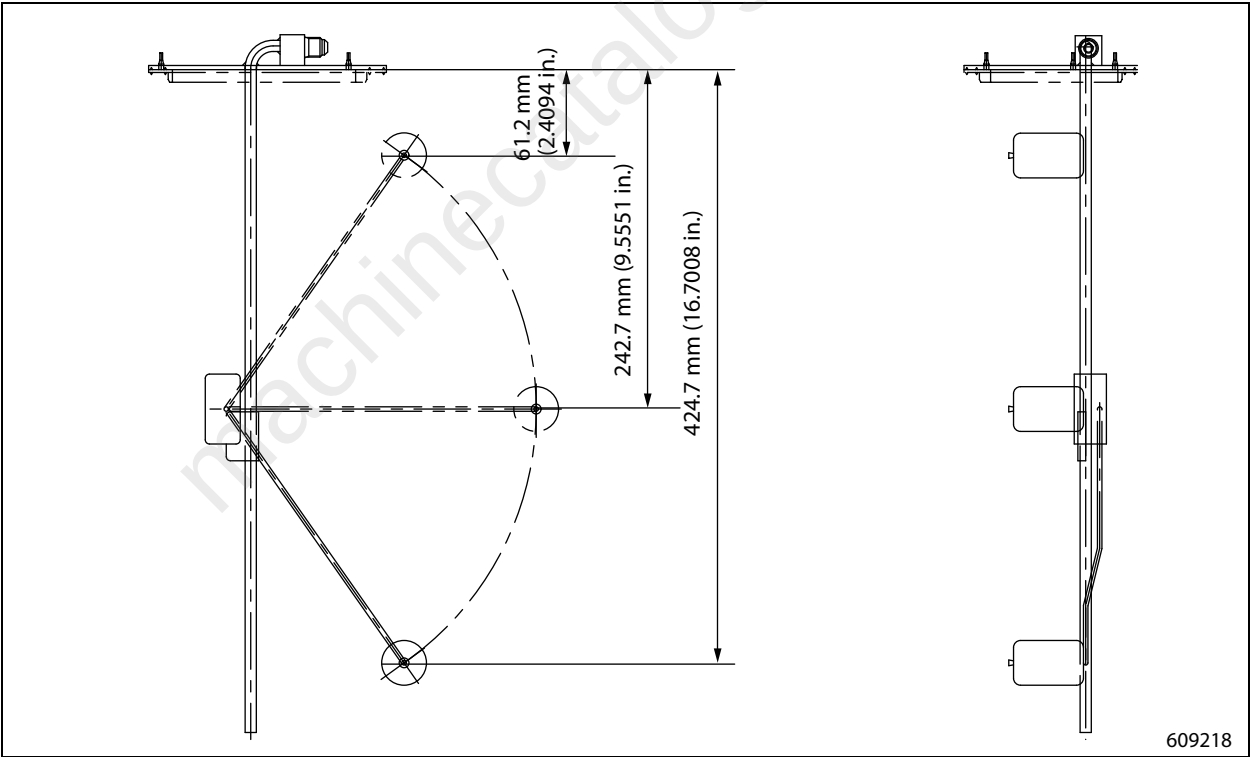
1. T-1

2. T-2

3. Air hole
- 1) Contact

2) Coil

5.5 Tank Unit



Specifications

Float position	E	1/4	1/2	3/4	F
Standard resistance (ohm)	80	(49.5)	32	(19)	10
Tolerance (ohm)	+12 +2	-	±3	-	+1.0 -0.5

Full Version Available

Caterpillar DP60NMS Forklift Service and Operator Manual (99709-27100)

Caterpillar DP60NMS Forklift service manual, covers hydraulics, mast, drive unit, wiring, and diesel systems. Instant PDF download.

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