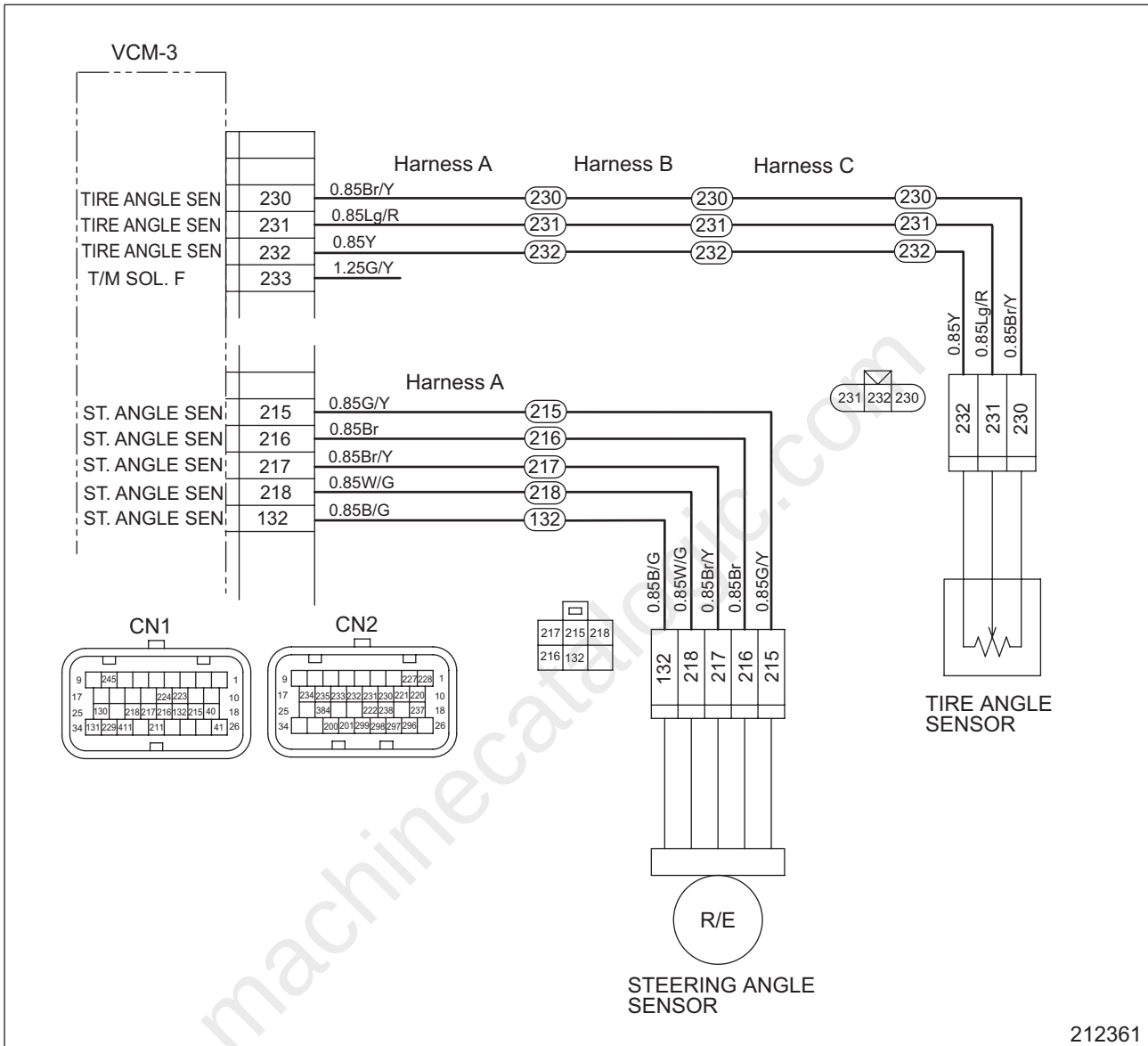




Service Manual

Chassis, Mast & Options

DP100N	T36A-10011-up
DP120N	T37A-10011-up
DP135N	T38A-10011-up
DP150N	T39A-10011-up
DP160N	T40A-10011-up



(3) Tapered roller bearing

Do not remove the outer race unless it is to be replaced with a new one.



When replacing the tapered roller bearing, the outer race and the inner race should be replaced as a set.

(4) Lower cover of the steering knuckle

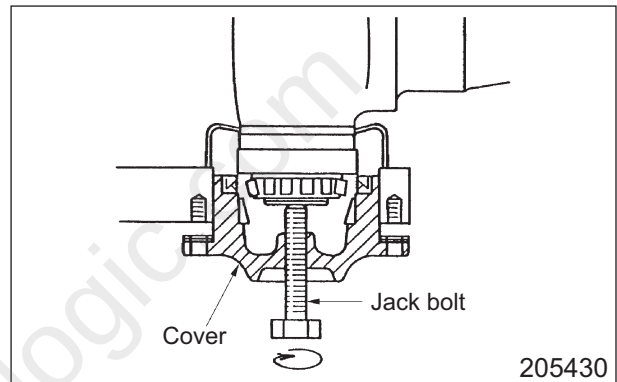
(a) Prepare a jack bolt.

Jack bolt	Nominal diameter	16 mm (0.63 in.)
	Pitch	1.5 mm (0.059 in.)
	Thread length	100 mm or more (3.94 in. or more)

(b) Remove the plug at the center of the cover.

(c) Remove six (6) cover fixing bolts.

(d) Drive-in the jack bolt into the plug hole to pull the cover out.



4.3 Reassembly

To reassemble, follow the disassembly sequence in reverse and observe the following.

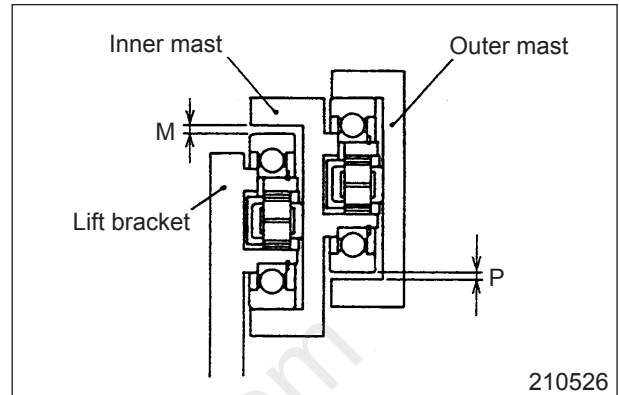
1. Front and rear clearance between mast and lift bracket

- (1) Select and assemble the main roller in an appropriate manner in order that the clearances P and M are within the dimensions as shown below throughout the height range.

P and M, clearances between main roller and rolling surface	0.5 to 2.8 mm (0.02 to 0.11 in.)
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If the specified value can not be achieved, replace the main roller.

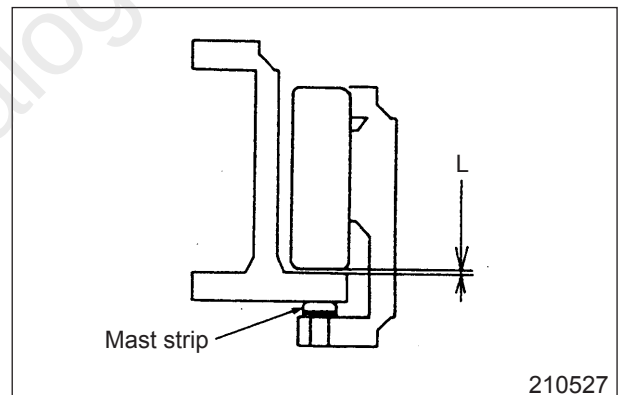
Main roller size	S	203 mm (7.99 in.)
	M	205 mm (8.07 in.)
	L	207 mm (8.15 in.)



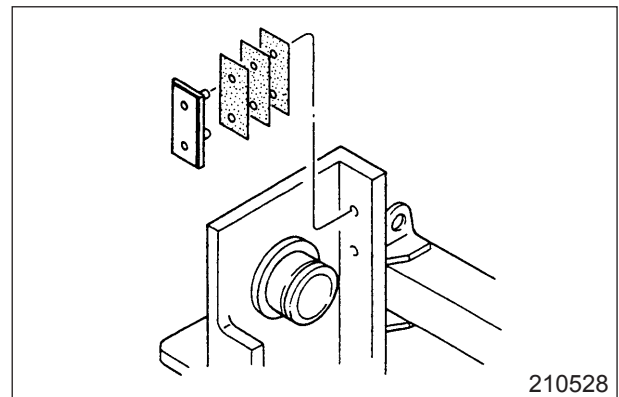
2. Installing mast trip

- (1) Install to make the front and rear clearance between outer and inner masts within the specified dimension at the maximum height range.

Clearance L	0.5 to 1.5 mm (0.02 to 0.06 in.)
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- (2) If the clearance of mast strip (L) is not within the specified value, adjust with the shims.

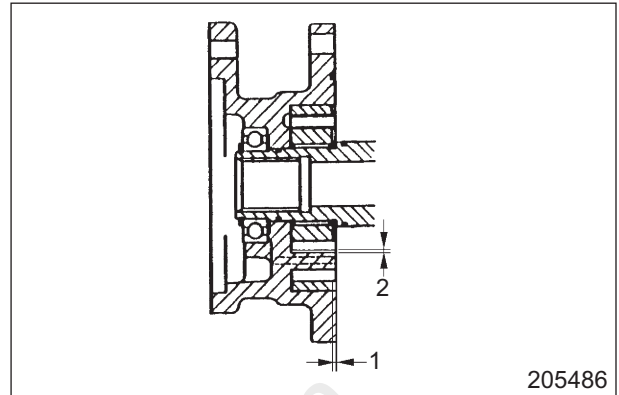


3-SPEED POWERSHIFT TRANSMISSION

4.2.2 Inspection

- (1) Oil pump
 - (a) Put the internal gear and pump gear in the pump case, and measure top clearance 2.
 - (b) Using a dial indicator, measure side clearance 1 between the gears and pump case.

Side clearance 1 mm (in.)	Standard value	0.040 to 0.078 (0.00157 to 0.00307)
	Service limit	0.09 (0.0035)
Top clearance 2 mm (in.)	Standard value	0.3 to 0.345 (0.0118 to 0.0136)
	Service limit	0.35 (0.0138)



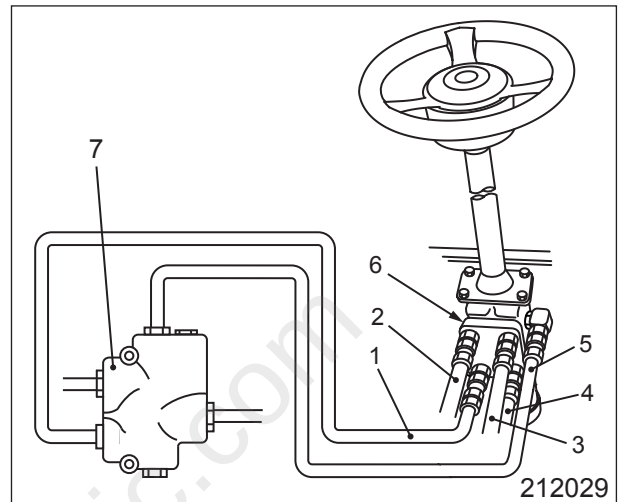
- (2) Stator shaft
 - (a) Check the splines for wear or damage.
 - (b) Check the oil passages for clogging.
- (3) Friction plates and mating plates
 - (a) Check for sign of seizure, uneven contact, warpage or excessive wear.
 - (b) Check the splines for wear or damage.
- (4) Clutch drums
 - (a) Check the mating plate sliding surfaces for wear or damage.
 - (b) Check the clutch piston sliding surfaces for wear or damage.

3. Procedure and Suggestions for Removal and Installation

3.1 Removal and Installation of Steering Valve Piping

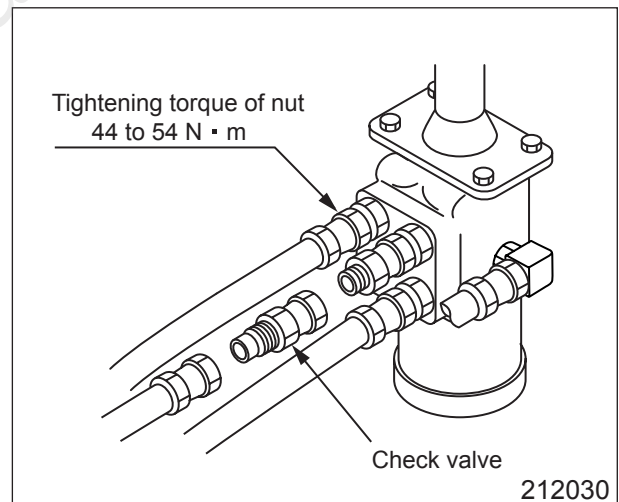
Major components

- 1 Hose (from priority valve to steering valve P port)
- 2 Hose (from steering valve T port to control valve T2 port)
- 3 Hose (from steering valve L port to power cylinder L port)
- 4 Hose (from steering valve R port to power cylinder R port)
- 5 Hose (from load sensing LS port to priority valve LS port)
- 6 Steering valve
- 7 Priority valve



Suggestions for disassembly and reassembly

- (1) The important point in servicing the hydraulic system is to proceed your operation in a clean environment and never allow any abrasive matters entering inside the system.
- (2) On reassembly be sure to place a new replacement O-ring in any section that has installed an O-ring before disassembly.
- (3) Hoses of the steering system (especially, in the high-pressure section) are safety parts. These must be replaced with new ones disregarding with or without damage after they have been used for a specified period of time. For the replacement intervals, refer to the Operation & Maintenance Manual.
- (4) When any hose is removed or replaced, use double spanners (wrenches) as required for not applying an excessive force to the mating fitting.



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Caterpillar DP150N Forklift Service Manual (99799-63100)

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