CAT® Lift Trucks

Service Manual

Chassis & Mast

EC15K, EC18K, EC18KL

A3EC1-10200-up
A3EC1-20200-up
A3EC1-30200-up
A3EC2-40200-up

EC20K, EC25K

A3EC2-10200-up
A3EC2-20200-up
A3EC2-30200-up
A3EC2-40200-up
A3EC2-80200-up

EC25KE, EC25KL, EC30K

A3EC3-10200-up
A3EC3-20200-up
A3EC3-30200-up
A3EC3-40200-up
A3EC3-80200-up

EC30KL

A3EC4-40200-up

99759-83110

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Disassembly

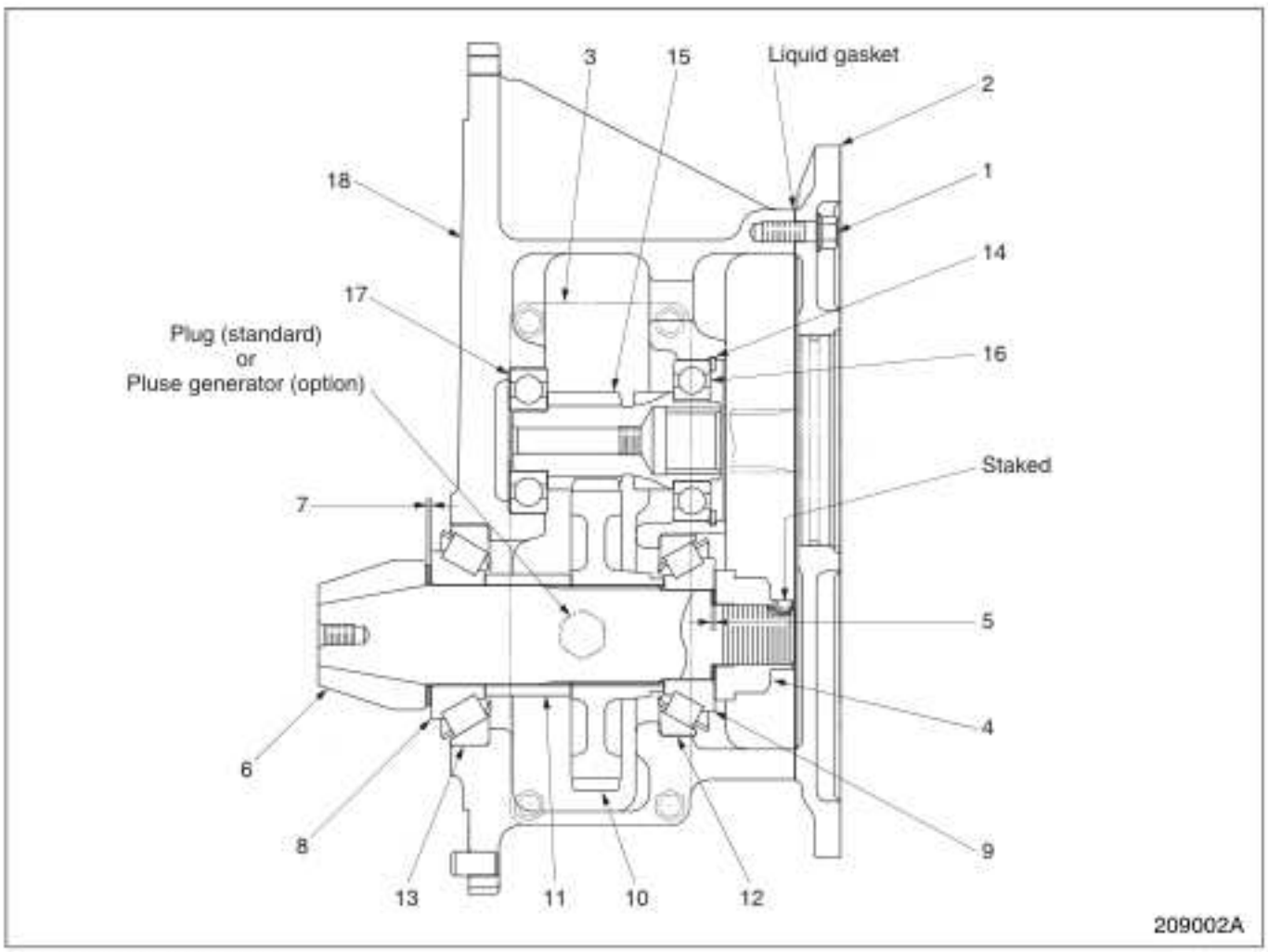
Start by:

(1) Remove the drain plug on the front axle housing to let the oil drain out.

(2) Disconnect the connectors of the traction motor harnesses and pulse generator harness.

(3) Remove the traction motor, reduction and differential assembly and transfer assembly as one unit, from the front axle housing.

(4) Separate the three assemblies removed in step (3) from each other.



Disassembly sequence

1 Bolt
2 Transfer cover
3 Side cover with pulse generator, or plug
4 Nut
5 Shim

Remove parts 6 and 8 as a unit.

6 Bevel pinion shaft
7 Shim
8 Bearing cone
9 Bearing cone
10 Output gear
11 Spacer
12 Bearing cup
13 Bearing cup
14 Snap ring

Remove parts 15 to 17 as a unit.

15 Input gear
16 Ball bearing
17 Ball bearing
18 Transfer case

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Brake Pedal Adjustment

Set the dimensions A, B, and C to the specified values.

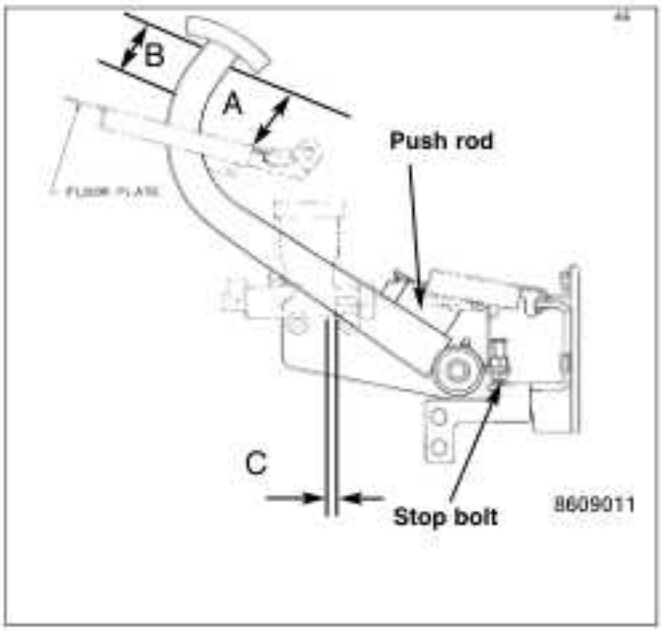
After the shoe linings have been replaced, turn the adjusting screw as far as it will go (until the clearance becomes zero) and back it off by the amount of rotation shown below.

EC15K - 18KL: 19 clicks

EC20K - 30KL: 16 clicks

Height from floor to pedal (A)	98mm ± 3 mm 1 ton 80mm ± 3mm 2/3 ton
Stroke (to a point where brakes start to apply) (B)	3 to 10 (0.12 to 0.4)
Clearance between piston and push rod (C)	0.5 to 2.8 (0.02 to 0.11)

Unit: mm (in.)

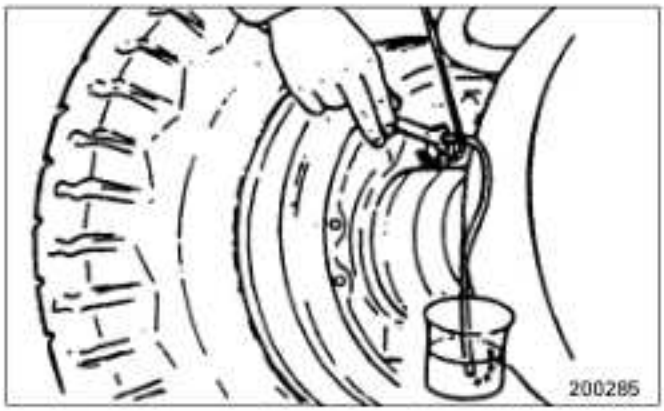


Bleeding Air Out of Brake Fluid Line

Whenever any part of the brake fluid line is disconnected in servicing work, an air bleeding operation must be performed to complete the job. Air trapped in any part of the fluid line will cause the brake pedal to feel spongy.

Air Bleeding Operation Procedure:

1. Tie a flexible tube, such as a vinyl pipe, to the bleeder screw on the wheel cylinder. Insert the free end of the tube into a vessel filled with brake fluid.
2. Pump the brake pedal and depress it all the way. While keeping the pedal depressed, loosen the bleeder screw. When air bubbles cease to come out, tighten the screw. Repeat this process until nothing but brake fluid flows into the vessel.
3. Repeat procedure at each wheel brake, and fill up the brake fluid reservoir to level.



NOTE

Be sure that the reservoir never becomes empty of fluid at any time during the procedure.

Use specified brake fluid. Avoid mixing different brands of brake fluid before and after filling up the reservoir.

Brake Test

After completion of necessary adjustments, test the brake force by operating the truck at a speed of 10 km/h (6.2 mph). Refer to Manual Adjustment for necessary readjustment.

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Rear Axle

Complaint	Possible Cause	Remedy
Hard steering	Low pump pressure	Check pressure, replace pump as needed
	Damaged mechanical linkage	Replace
	Dry mechanical linkage joints	Lubricate
	Mechanical joints too tight	Readjust
	Kingpin bearings improperly preloaded	Readjust
Truck wanders	Damaged or worn mechanical linkage	Replace
	Loose cylinder piston	Replace cylinder rod
Truck drifts	Damaged or worn mechanical linkage	Replace
	Tire diameter differs between right and left	Replace tire
Erratic steering	Loose cylinder piston	Replace cylinder rod
Excessive freeplay at steered wheels	Damaged or worn linkage between cylinder and steered wheels	Replace
Axle shimmy	Excessive clearance between the kingpin and its bearings	Repair or replace
	Worn or damaged hub bearing	Replace
Rear tires wear prematurely or unevenly	Tire on one side differs in kind or brand from that on the other side	Replace tires

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