SP 3500 SERIES

AC Traction

MAINTENANCE MANUAL



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CROWN

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Lift Chains

Lift chains are highly important components on fork lift trucks. The chain system on your mast was designed for efficient, reliable transmission of lifting force from hydraulic cylinder(s) to the mast, platform (if present) and forks. Safe, uninterrupted use of your lift truck depends on the proper care and maintenance of the lift chains.

Most complaints of unsatisfactory chain performance can be traced directly to inadequate maintenance. Highly stressed precision chains require periodic maintenance to deliver maximum service life.

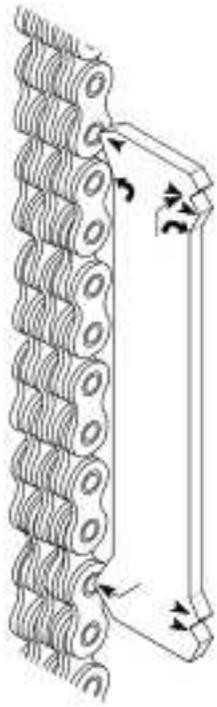
Inspection

After every 100 hours of truck operation, lift chains should be inspected and lubricated. When used in an extremely corrosive environment, inspect chains every 50 working hours. During inspection, check for the following:

Wear

As the chain flexes on and off pulleys, the joints gradually wear.

The "stretch" a chain develops during usage is due to material being worn off of pin outside diameter and pin hole inside diameter on the inside plates.



Roller and Leaf
Chain Wear Scale

Figure 16844

Chain wear can be measured by using a 106440 wear scale or a steel tape (Refer to Figure 16844). When chains have elongated 3%, as represented on scale "A" (19 mm [0.75 in] or 25 mm [1.0 in] pitch chain) or scale "B" (16 mm [0.625 in] pitch chain) of the wear scale, they should be discarded. On chain with 19 mm (0.75 in) between pins, for example, 305 mm (12.0 in) of chain contains 16 pitches or links. When 16 pitches measure 314 mm (12.375 in) the chain should be replaced. On chain with 16 mm (0.625 in) between pins, 20 pitches or links equal 318 mm (12.5 in). When 20 pitches measure 327 mm (12.875 in) the chain should be replaced. Crown currently uses 16 mm (0.625 in) pitch (20 links in 318 mm [12.5 in]), 19 mm (0.75 in) pitch (16 links in 305 mm [12.0 in]) and 25 mm (1.0 in) pitch (12 links in 305 mm [12.0 in]) chain. When checking chain wear, be sure to measure a segment of chain that operates over a pulley. Do not repair chain(s) by cutting out the worn section and splicing in a new piece. If part of a chain is worn, replace lift chain(s). If truck has a matched set of lift chains replace both chains at same time.

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This electrical diagram index lists wiring diagrams with the area or component(s) of the truck covered by each diagram. Exceptions indicated are listed below.

Title	Page Number	Revision
Schematic - Power Unit W/Options	DIA-7535-002	01 - 6/08
Schematic - Platform W/Options	DIA-7535-003	01 - 6/08
Schematic - Power Unit W/PDS Options	DIA-7535-004	01 - 6/08
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Schematic - Power Unit	DIA-7535-006	01 - 6/08
Schematic - Platform	DIA-7535-007	01 - 6/08
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Power Unit Distribution Panel	DIA-7535-009	02 - 6/08
Power Unit Distribution Panel W/PDS	DIA-7535-010	01 - 6/08
Platform Modules Access 1 & 4	DIA-7535-011	01 - 6/08
Platform Modules Access 1 & 4 Forks First Option	DIA-7535-012	01 - 6/08
Platform Modules Access 1 & 4 W/PDS	DIA-7535-013	01 - 6/08
Control Pod And Light Switches	DIA-7535-014	01 - 6/08
Control Pod And Light Switches Forks First Option	DIA-7535-015	01 - 6/08
Overhead Guard Lights/Fans	DIA-7535-016	01 - 6/08
Overhead Guard Lights/Fans Forks First Option	DIA-7535-017	01 - 6/08
Traction Control Module Access 3	DIA-7535-018	01 - 6/08
Traction Control Module Access 3 W/PDS	DIA-7535-019	01 - 6/08
Steering Control Module Access 5	DIA-7535-020	01 - 6/08
Steering Control Module Access 5 W/PDS	DIA-7535-021	01 - 6/08
Hydraulics & Optional MMS	DIA-7535-022	01 - 6/08
Guidance Control Module Access 6 (Optional	DIA-7535-023	01 - 6/08
PDS/FSB1 Option	DIA-7535-024	02 - 6/08
PDS/FSB1 & Forks First Option	DIA-7535-025	01 - 6/08
Freezer Conditioning (Optional)	DIA-7535-026	01 - 6/08
Freezer Conditioning Forks First Optional	DIA-7535-027	01 - 6/08
Power Cables	DIA-7535-028	01 - 6/08
Wire Harnesses	DIA-7535-029	01 - 6/08

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Hydraulic Troubleshooting Chart (Continued)		
Symptom	Probable Cause	Remedy
Lift pump & motor over-heating *	Relief valve setting too high	Reset relief valve. Refer to hydraulic maintenance section M2.4.
	Battery is discharged	Check battery under load. Check battery voltage (from ACCESS 1, Level 2, scroll to A2.4.3 Battery). If battery discharge is too deep, adjust performance menu P9 BDI setting.
	Exceeding capacity load	Check load weight.
	Worn or damaged pump & motor	Inspect pump & motor. Repair or replace.
	Fluid level low	Inspect fluid level. Fill system to proper level. Refer to section M2.0.
Failure of platform to raise and lower smoothly	Lift chains not adjusted properly	Adjust chains.
	Mast and/or platform binding	Inspect mast & platform for damage, wear, etc.
	Hydraulic component malfunction	Inspect pump, motor, valve, cylinder, etc. for damage, leaks, wear, etc.
	Accumulator malfunction	Refer to section M2.6.
	Air trapped in cylinder	Bleed.
* Be sure the truck has been performing its normal duty cycle at this time.		

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- Check the condition of the steer motor brushes (1) and inspect the commentator. Refer to Figure 23044.



Figure 23044

- Check the fluid level (1) of the steering gearbox. Refer to Figure 23045.

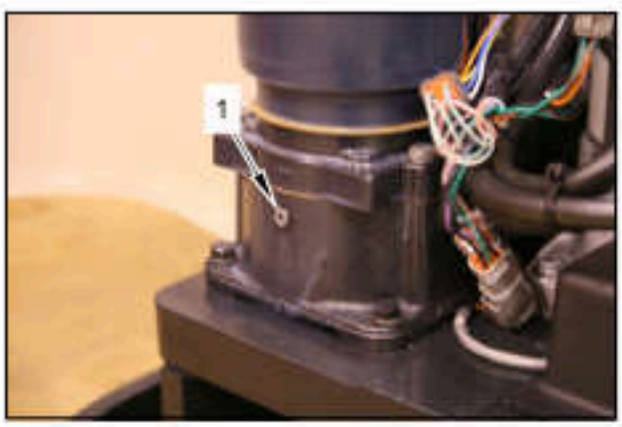


Figure 23045

- Check to be sure the drive unit stud mounting bolts (1) are secure (two mounting bolts are hidden behind the pump in the photo). Refer to Figure 23046.

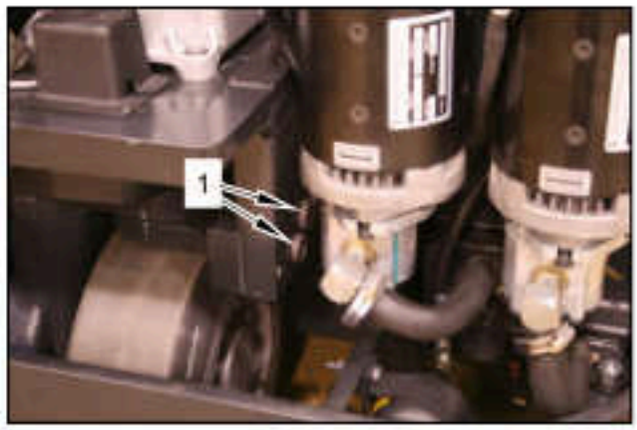


Figure 23046

- Lubricate the drive unit thrust bearing. The thrust bearing lubrication fitting is shown in Figure 23047.

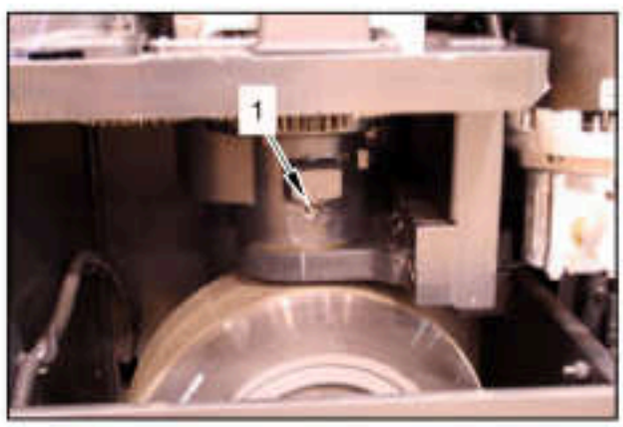
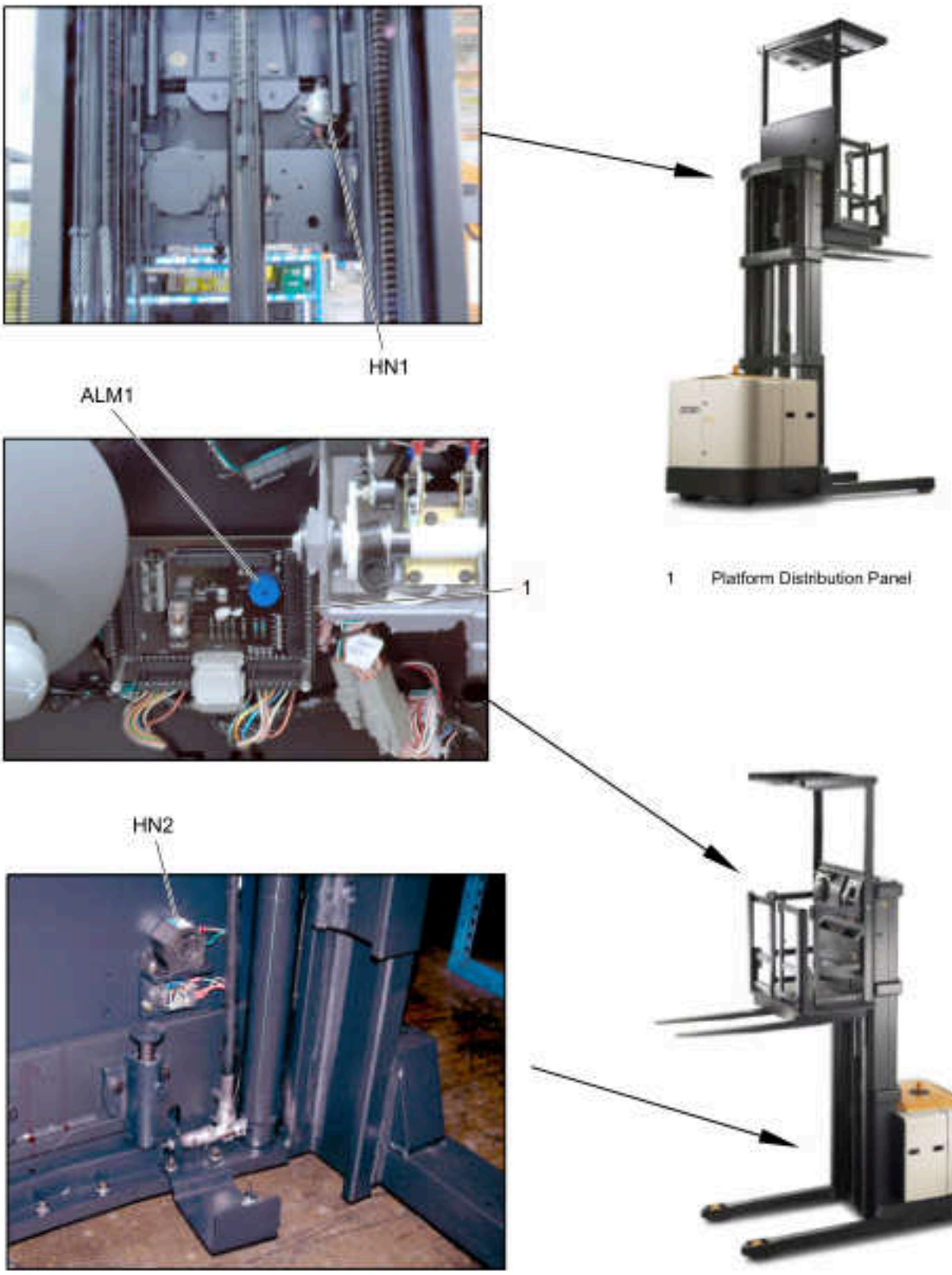


Figure 23047

- Check to be sure the drive tire is not flat spotted or chunked. Look for debris like shrink wrap or banding that could be wrapped around the drive axle.
- Check for bent or damaged outriggers.
- Check the condition of the load wheels and bearings.Remove any debris that might be wrapped around the load wheel.

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1 Platform Distribution Panel

Figure 23425

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