SP 3400 Series
Maintenance Manual



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CROWN

TABLE OF CONTENTS

SAFETY	PAGE	SER-NR. CUT	REV.
Symbols Used in the Manual	**3**		
Safety Symbols	3		
General Symbols	3		
Fork direction	3		
General Safety Instructions	**4**		
Maintenance and Repair Instructions	4		
Maintenance and Repair	4		
Before Parking the Truck	4		
Before Working on the Truck	4		
Before Starting the Truck	5		
Warning and Instruction Decals on the Truck	5		
Control of Hazardous Energy	**7**		
Battery	7		
Safety Rules	7		
Battery Removal	8		
Battery Installation	8		
Lockout - Tagout	8		
Brake	9		
Capacitance	10		
Hydraulic System	10		
Depressurising the hydraulic system	10		
Accumulator	11		
Lifting and Blocking	12		
Required tools	12		
Raising the Side	12		
Raising the Drive Wheel	13		
Blocking Masts	14		
Cleaning Methods	**15**		

INTRODUCTION	PAGE	SER-NR. CUT	REV.
General	**19**		
Operating Instructions	19		
Service Training	19		
Ordering Spare Parts	19		
Using the Manual	**20**		
Data Plate	**20**		
Model Number	**21**		
Truck Data Number	**22**		

LUBRICATION & ADJUSTMENT	PAGE	SER-NR. CUT	REV.
General	**27**		
Charts	**30**		
Componentry	**40**		
Accumulator	40		
ALM1			
Status Alarm	40		
BRES1, BRES2 (Option)			
Battery Restraint Switch	40		
BRK1			

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Brake 40
BRS1
Brake Switch 40
CHS1, CHS2
Chain Slack Switches (TT Mast Only) 42
CHS3, CHS4
Chain Slack Switches 42
CV1
Check Valve (only 3427 / 3422) 42
CV2
Check Valve 42
CV3
Check Valve 42
Cylinder
Free Lift (TT Mast Only) 42
Cylinder
Mast 42
DCM
Display Module 44
DPS
Display Switch 44
DTS1
Drive / Tow Switch 44
ECR1
Steering Command Encoder 44
ECR2
Steering Feedback Encoder 44
ECR3
Traction Speed Encoder 44
ECR4
Lift Height Sensor 44
ED1
Emergency Disconnect Main Contactor 46
ED2
Emergency Disconnect Traction & Steering Contactor . . . 46
EDS
Emergency Disconnect Switch 46
Fan
Operator Fan 46
FILTER
Return 46
FNS
Fan Switch 46
FS
Forward Switch 46
FU1
Lights and Fan Fuse 48
FU2
Control Fuse 48
FU3
Options Fuse 48
FU4
Manual Brake Fuse 48
FU5

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Brake Outer Coil Fuse 48
FU6
Brake Inner Coil Fuse 48
FU8
Pump Motor 1 Fuse 48
FU9
Pump Motor 2 Fuse 48
FU10
Steer Module Fuse 50
FU11
Freezer Condition Power Unit Fuse 50
FU12
Freezer Condition Platform Fuse 50
FU13
Traction Motor Fuse 50
GCM
Guidance Control Module 50
GTS1, GTS2, GTS3, GTS4
Side Gate Switches 50
GTS5, GTS6 (SAA Only - not shown)
Rear Gate Switches 50
GUS
Guidance Switch 50
HN1
Horn 52
HN2
Back-Up or Travel Alarm 52
HNS1
Horn Switch 52
HSLCS
High Speed Lower Cutout Switch 52
HSRCS
High Speed Raise Cutout Switch 52
HTS24
610 mm (24 in.) Height Limit Switch 54
HTS60
1525 mm (60 in.) Height Limit Switch 54
HTS120
3050 mm (120 in.) Height Limit Switch 54
HTS150
3810 mm (150 in.) Height Limit Switch 54
HTS180
4570 mm (180 in.) Height Limit Switch 56
K1
Power Up Relay 56
K2
Module Power 56
K5
Steer Motor Relay 56
K11
Freezer Condition Relay 56
K12
Freezer Condition Relay 56
KYS

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Hydraulic Circuits

These pages contain a brief description of the hydraulic circuits for SP trucks which are typical of current standard units. Your unit may vary. Refer to section HYD in this manual for appropriate schematic.

Lift Circuit - One Speed Lift

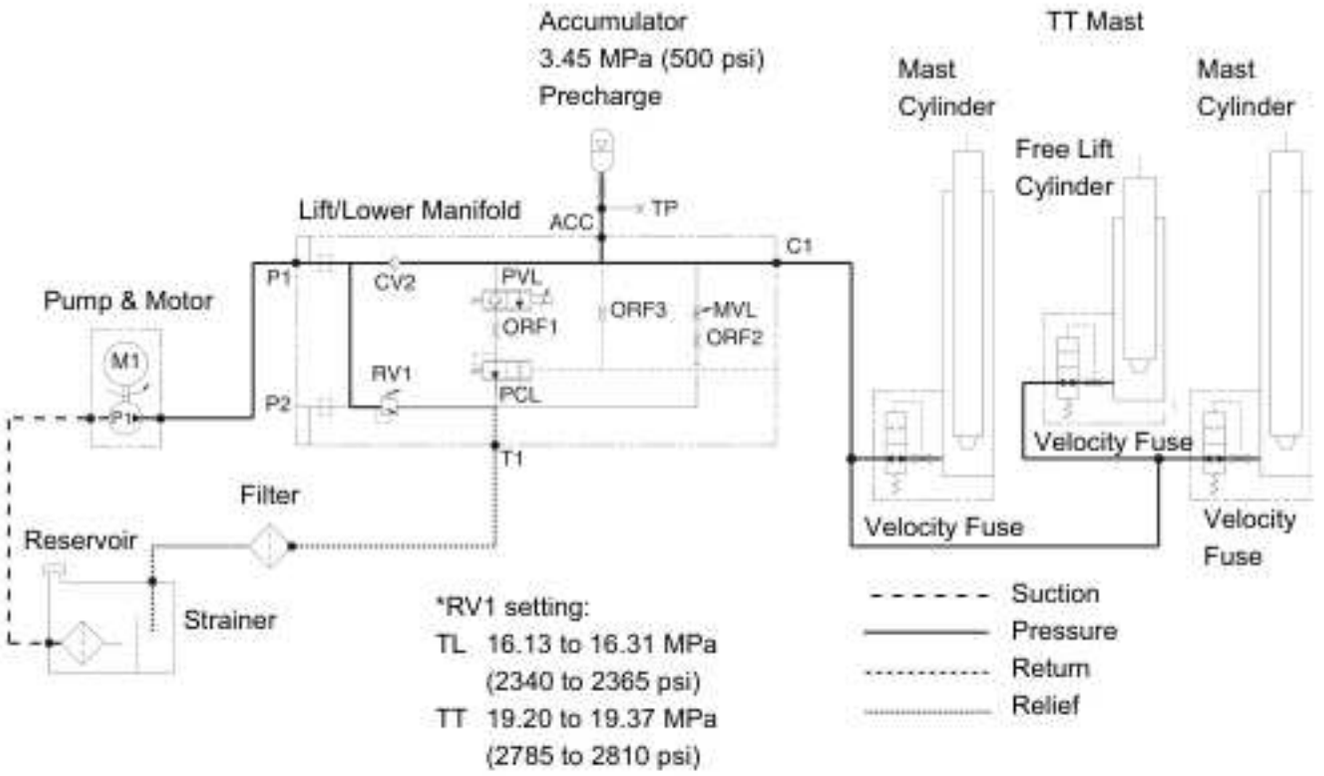
When lift is selected, oil is drawn from the hydraulic reservoir to hydraulic pump P1. P1 supplies pressurized oil to the lift/lower manifold block. Oil enters the manifold block through port P1 and goes directly to check valve CV2. Oil passes through the manifold block until it exits port C1. Pressurized oil enters the lift cylinders and begins to extend the mast.

Relief Valve Operation

During lift function, relief valve RV1 monitors hydraulic pressure. If oil pressure exceeds the relief pressure setting, the relief valve is forced open, allowing pressurized oil to bypass the lift circuit. From the relief valve, oil exits from the manifold block through port T1. From port T1, oil passes through the return line filter then back to the reservoir.

Accumulator Operation

The accumulator is used as a shock absorber for the lift/lower hydraulic system. If the platform is stopped suddenly, the change in oil flow exerts pressure on the hydraulic system. The accumulator absorbs this oil pressure change by using a gas pressurized bladder located within the accumulator. The bladder acts as a pillow to the pressurized oil, cushioning the applied pressure within the hydraulic circuit. The typical symptom of a bad or de-pressurized accumulator is abrupt starting and stopping of the platform during lift or lower.



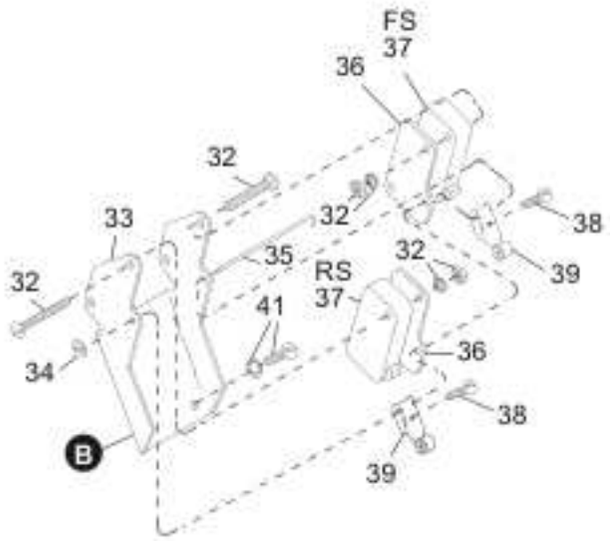
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Component Replacement

FS and RS

(Refer to Illustration 3234)



3234

- Remove three screws and lock washers (41).
- Move switch and bracket assembly over top of cams and out.
- Remove mounting bolts (32) of switch to be replaced.
- Transfer wires to replacement switch and tighten screws.
- Assemble switch, insulator and spacer.
- Secure in place with screws, lock washers and nuts.
- Move switch and bracket assembly under cam, on top of posts and secure in place.
- Adjust both switches as described in Adjustments.

Actuator Arm

(Refer to Illustration 3234)

- Remove three (3) screws and lock washers (41).
- Move switch and bracket assembly over top of cams and out.
- Remove nut (34) from rod (35) and slide rod out until actuator (39) to be replaced can be removed.
- Remove adjusting screw (38) and install in replacement actuator.
- Slide rod into switch bracket, aligning actuator over switches so rod goes through pivot point.
- Install nut.
- Move switch and bracket assembly under cam, on top of mounting posts and secure in place.
- Adjust both switches as described in Adjustments.

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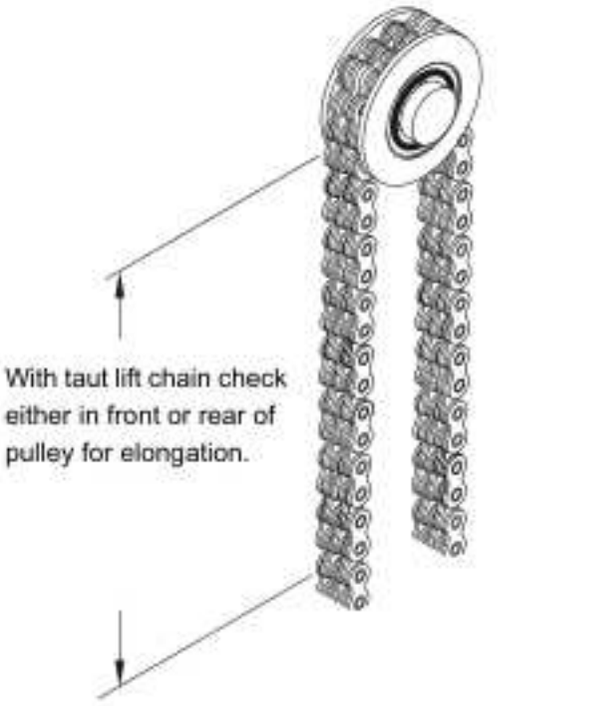
Chain wear can be measured with a wear gauge (Crown No. 106440) or a steel tape measure (see Fig. 2771).



2771

The Crown wear gauge has to scales: scale "A" is used for 19.05 mm (0.75 inch) pitch chains and 25.4 mm (1 inch) pitch chains. Scale "B" is used for 15.88 mm (0.625 inch) pitch chains.

Before testing the chain elongation it is important to tension the lift chain if necessary. For non-detachable lift chains the weight of the fork carriage or mast is sufficient. If the lift chain is detached it must be kept taut during measurement.



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The chain elongation test must cover at least ten links (if a a steel tape measure is used), over at least three different points in a section of the chain which always passes over a pulley during operation.

Chain Elongation			
Chain Pitch	**Number of Links**	**Length New**	**Wear Limit**
25.4 mm 1 inch	12	305 mm 12 inch	314 mm 12.375 inch
19.05 inch 0.75 inch	16	305 mm 12 inch	314 mm 12.375 inch
15,88 mm 0.625 inch	20	318 mm 12.5 inch	327 mm 12.875 inch

If just one of the faults mentioned in this chapter is detected, chains together with their chain anchors

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