Service Manual



WF3000 Series

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Table of Contents

MA – SAFETY	PAGE	SER-NO. CUT	REV.
Safety Symbols used in the Manual	3		

ITD – INTRODUCTION	PAGE	SER-N0. CUT	REV.
General Maintenance and Repair Safety Notes	3		
Maintenance and Repair	3		
Before Leaving the Truck	4		
Before Carrying out Work on the Truck	4		
Before Operating the Truck	4		
Warnings and Labels on the Truck	4		
General	7		
Operating Instructions	7		
Service Training	7		
Ordering Spare Parts	7		
Using the Manual	7		
Model-Number	8		

M1 – LUBRICATION AND ADJUSTMENT	PAGE	SER-N0. CUT	REV.
Raising And Towing The Truck	11		
Raising With Another Forklift Truck	11		
Lifting by Crane	12		
Towing the Truck	13		
Component Access	14		
Maintenance	16		
Recommended Lubricants and Oils	16		
Lubricants	16		
Cold Store Trucks	16		
Taking the truck out of service	16		
Bringing the truck back into service	16		
Lubricant Table	17		
Adjuvants Table	18		
Truck Tilt Settings	22		
Testing and Adjusting the Lateral Inclination	22		
Lowering Plumb Test	22		

M2 – HYDRAULICS	PAGE	SER-N0. CUT	REV.
Hydraulic Symbols	27		
Hydraulics	31		
Hydraulic Reservoir Capacity	31		
Changing the Hydraulic oil and Hydraulic Filter	31		
Hydraulic system	33		
Function	33		
Lifting (see diagram)	33		
Lowering (see diagram)	34		
MOTOR AND PUMP ASSEMBLY	35		
Hydraulic Lines and Fittings	35		
General Rules for Hydraulic Lines and Connections	35		
Bleeding the Hydraulic System	35		
Drift Test	35		
Proportional function:	35		
REMOVAL	35		
MOTOR	36		
PUMP	36		
After replacing the pump:	36		

MidWestTech | Crown WF3000 Pedestrian Powered Stacker Service Manual | Publicat... Order the manual at mid-west-tech.com >

M2 – HYDRAULICS	PAGE	SER-N0. CUT ..... REV.
Replacing the relief valve	**37**	
Relief valve test and setting	**37**	
Hydraulic System Troubleshooting	38	

M3 – DRIVE UNIT	PAGE	SER-N0. CUT ..... REV.
Gear Unit	**41**	
Drive unit, general	**42**	
Drive unit removal	42	
Drive motor removal	42	
Motor disassembly	43	
Motor assembly	43	
Drive motor assembly	45	
Gear unit disassembly	46	
General	46	
Preparation	46	
Draining the oil	46	
Drive unit removal	46	
Gear unit cover removal	46	
Gear unit disassembly	47	
Gear unit assembly	47	
Gear unit cover installation	49	
Adding Oil	49	
Drive unit installation	49	

M4 – ELEKTRICS	PAGE	SER-N0. CUT ..... REV.
Electrics - General	**53**	
Wire Colour Codes	53	
Abbreviations	54	
Electrical Symbols	57	
Electrical Components	**58**	
Traction Pod (POT, FS, RS)	58	
Fast / Slow Travel Switch (HSS)	58	
Safety Reverse Switch (SAS)	58	
Brake Switch (BRS)	58	
Override Switch (ORS)	58	
Raise / Lower Switches (RAS, LOS)	59	
Limit Switch (LMS)	59	
Horn Switch (HNS)	59	
Key Switch (KYS)	59	
Emergency Disconnect (BD)	59	
Fuses (FU)	59	
OPTION Thermal Switch (THS)	59	
Thermal switch (THS2)	59	
Hydraulic Control Module (HCM)	59	
Unigage (BDI)	59	
Integrated Charger	59	
Plug Holder (PC)	59	
Drive motor (M1)	59	
Hydraulic Motor (M2)	60	
Main Contactor (Line/LC)	60	
Lift Contactor (P/P1+P2)	60	
Electromagnetic Brake (BRK)	60	
Terminal Board (TB)	60	
Travel Alarm Driver (DR)	60	
Aux. Hydraulic Switch (SLS/SRS)	60	

MidWestTech | Crown WF3000 Pedestrian Powered Stacker Service Manual | Publicat... Order the manual at mid-west-tech.com >

M4 – ELEKTRICS	PAGE	SER-N0. CUT ..... REV.
Remote Control Toggle Switch (ECS)	60	
Aux. Hydraulic Valves (SVA1/SVA2)	60	
Horn (HN)	60	
Main Circuit Board (MAIN PCB)	60	
Hydraulic Circuit Board (HYD PCB)	60	
Travel Alarm (ALM)	60	
Receiver	60	
Transmitter	60	
SEM0 Traction Controller	**64**	
General	64	
Precautionary Measures	64	
Functional Characteristics	64	
Speed control	64	
Reduced speed ranges	64	
Downhill speed control	64	
Regenerative braking	64	
Anti Roll Down Function	65	
Hourmeter	65	
Self-Diagnostic System	65	
Monitored Circuits	65	
Safety Mechanisms	65	
Incorrect polarity	65	
Wiring Errors	65	
Temperature protection	65	
Start sequence	65	
Protection rating	65	
Maintenance	66	
Replacing the SEM0 Traction Controller	**67**	
Parameter Setting after Replacing the Traction Controller	67	
Preparatory Measures	67	
Adjustment	67	
Status LED	69	
Programmer	**70**	
General	70	
Crown Handset P/N 793548 (Includes Cord)	70	
Operating SEM0 Controller Menu	**71**	
General	71	
Menu structure	71	
Menu Functions	72	
PARAMETER CHANGE	72	
TEST	72	
ALARMS	72	
PROGRAM VACC	72	
CONFIG	72	
Functions Menu, general	73	
Parameter Change Menus	74	
Settings and Error Messages	75	
Tester Menu	80	
TESTER Menu	81	
Alarms Menu	82	
ALARMS Menu	83	
Calibrating the Traction Pod Potentiometer, PROGRAM VACC menu	86	
Preparatory Measures	86	
Calibration	86	
Config. Menu	87	
CONFIG Menu	88	

MidWestTech | Crown WF3000 Pedestrian Powered Stacker Service Manual | Publicat... Order the manual at mid-west-tech.com >

- Attach a warning tag to the control handle to advise others that the truck is being serviced.
- Chock the drive wheel and load wheels.
- Remove the front cover from the drive unit to access the hydraulic components.
- Disconnect the power cables from the pump motor. Insulate the wire ends to prevent sparking.
- Disconnect all the hydraulic supply lines and/or electrical connections that obstruct you when removing the motor/pump unit.
- Remove the strap (and where applicable the spacer) which fixes the pump motor to the chassis. Undo the clamp that fixes the motor/pump assembly to the reservoir.
- Remove the motor/pump assembly from the reservoir and take it to a suitable work area for further dismantling.

MOTOR

Refer to Chapter 4, "Electrics", for pump motor maintenance and repair instructions.

PUMP

The hydraulic pump cannot be serviced and can only be replaced as a complete assembly. Before fitting a new pump, make sure that the pump and all its hydraulic components are clean. Install a new suction filter (see section on changing the hydraulic oil and filter).

After replacing the pump:

- Use clean, filtered hydraulic oil (at least 10 micron) to replenish the reservoir.
- Never run the pump without oil.
- Start the installed pump unladen (pressure side open) and leave it to pump hydraulic fluid for max. 20 seconds. This will ensure the pump is bled and that there is sufficient lubrication. Close the pressure side again as soon as the oil emerges without bubbles. Bleed the entire system (see Chapter 8, Cylinder Bleeding and Flushing).
- If the oil is still foaming after approx. 20 seconds, the system must be checked (see "Hydraulic System Troubleshooting Table" on following page).
- Check the connections again for leaks once the system has reached operating temperature.

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Maintenance

Maintenance of the SEM0 traction controller is restricted to external cleaning and checking the torques of the nuts securing the power cable connecting bolts.

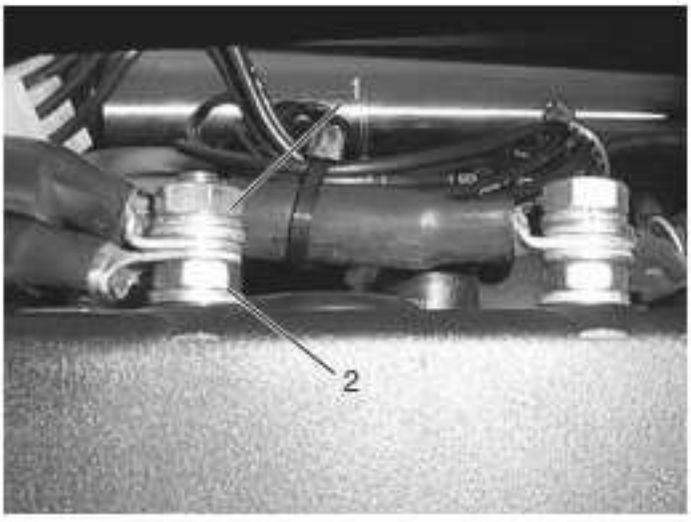
You should also take this opportunity to check the errors listed with the help of the programmer.

WARNING

The SEM 0 traction controller operates at high currents. Particular safety measures are therefore required when handling the controller.

- ***Only use specially trained personnel.***
- ***Use non-fatigue goggles.***
- ***Do not wear loose clothing.***
- ***Do not wear jewelry.***
- ***Only use insulated tools.***

- Disconnect the battery (=EMERGENCY DISCONNECT).
- Jack up the truck.
- Discharge the traction controller capacitors by connecting the BATT- and BATT+ connections over a resistance of approx. 10 Ohm, 5 W.
- Remove the power cable: label the cable if necessary. Secure the bottom nuts (2, Fig. MS519) with a fork wrench. Undo the top nut (1, Fig. MS519).



MS519

Note:

The bottom nut secures the connecting bolt to the power part circuit board and the plastic housing. If this nuts is under-tightened (torque less than 6 Nm), high transition resistances will occur between the circuit board and the bolt. The heat generated can damage the controller and melt the cover near the connecting bolts.

If the bolt is over-tightened (torque greater than 7 Nm), this can result in physical damage to the power part circuit board and the housing.

- **Check the torque for the locknuts (2, Fig. MS519)** of the connecting bolt with a torque wrench: **It should be 6 - 7 Nm.**

  Important: An incorrect torque can damage the circuit board and the housing of the controller.

- Remove any dirt and corrosion from the contact surfaces.
- Wipe down the traction controller with a clean, damp cloth.
- When everything is dry, re-connect the power cables. To do this, secure the bottom nut (2, Fig. MS519) with a fork wrench and tighten only the top nut (1, Fig. MS519). Fit the control lines.
- **For cold store versions:** Apply a coat of Dow Corning® 4 Compound, part no. 053051-006, to the control line connectors.

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Calibration for wet batteries

- Fully charge the battery as indicated by the battery manufacturer in the operating instructions. Measure the acid density in accordance with the battery manufacturer's maintenance instructions to check if the battery is actually 100% charged. Faulty battery cells will make calibration impossible.
- Operate the truck as usual under normal operating conditions until the battery is empty: both LEDs of the BDI will flash and the lift cutout system will be triggered.
- Leave the battery for at least 10 to12 hours (one hour at the very minimum!).
- After this interval measure the acid density on at least three different battery cells. The smallest recorded value is the one you need.
- Compare the recorded density with the density specified by the manufacturer for an 80% discharged battery (20% residual capacity).
- If the battery is more than 80% discharged (less than 20% residual capacity), set the potentiometer on the back of the BDI to direction **K**.
- If the battery is less than 80% discharged (more than 20% residual capacity), set the potentiometer on the back of the BDI to direction **U**.
- Re-charge the battery and check the calibration. If necessary, repeat this process.

Discharge Terminal Voltage Setting (volts/cell)

K	L	M	N	O	P	Q	R	S	T	U
1.57	1.63	1.68	1.73	1.78	1.82	1.84	1.86	1.89	1.91	1.93

E20-GB

Wet batteries (industrial batteries)

Maintenance-free batteries

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