TC 3000 SERIES
MAINTENANCE MANUAL



Order Number: 812573-006
Revision: A • Printed in Germany

Order the manual at mid-west-tech.com >

CROWN

TABLE OF CONTENTS

SAFETY	PAGE	SERIAL NO. CUT	REV.
Description of Symbols and Indicators	**3**		
Safety Notices	3		
Other indicators	3		
General Safety Instructions	**4**		
Maintenance and Repair Instructions	4		
Maintenance and Repairs	4		
Before Parking the Truck	4		
Before Working on the Truck	4		
Before Starting the Truck	4		
Warning and Instruction Decals on the Truck	5		

INTRODUCTION	PAGE	SERIAL NO. CUT	REV.
General	**9**		
Service Training	9		
Replacement Parts	9		
Additional Attachments and Modifications	9		
Using the Manual	9		
Contact Address	9		
Models	**10**		

LUBRICATION & ADJUSTMENT	PAGE	SERIAL NO. CUT	REV.
Lifting and Jacking up the Truck	**13**		
Lifting the Truck	13		
Lifting the truck with a crane	13		
Lifting the truck with a forklift truck	13		
Jacking up the Truck	14		
Towing the Truck	**15**		
Taking the Truck out of Service	**16**		
Testing Re-Commissioned Trucks	16		
Restoring the Truck to Service	16		
Recommended Lubricants and Accessories	**17**		
Cold Store Trucks	17		
Planned Maintenance	**19**		
Inspection and Lubrication Points	**22**		
Torques	**24**		
Standard Torques	24		
Castor Wheels and Skids	**25**		
Adjusting the Castor Wheels and Skids	26		

DRIVE UNIT	PAGE	SERIAL NO. CUT	REV.
Changing the Transmission Oil	**29**		
Components	**31**		
Replacing the Output Shaft Seal	**32**		
Special Tools Required	**33**		
Preparation	33		
Shaft Seal Removal	33		
Output shaft removal	33		
Output shaft assembly	33		

MidWestTech | Crown TC 3000 Tow Tractor Service Manual | Publication 812573-006 Order the manual at mid-west-tech.com >

TABLE OF CONTENTS

Drive Wheel and Wheel Bolt Replacement **35**
Drive Wheel Disassembly 35
Replacing the Wheel Bolts 35
Drive Wheel Assembly 35
Replacing the Drive Unit **36**
Special Tools Required **36**
Drive Unit Removal 36
Drive Unit Installation 36
Repairing the Drive Transmission Unit **37**
Preparation 38
Drive Transmission Unit Disassembly 38
Output shaft removal 38
Bevel gear and bevel pinion removal 38
Drive Transmission Unit Assembly 39
Bevel pinion and drive pinion assembly 39
Bevel gear assembly 40

ELECTRICAL SYSTEM — PAGE — SERIAL NO. CUT — REV.

General **45**
Wire Colour Code 45
Contact Symbol Abbreviations **46**
Electrical Wiring Diagrams **48**
Components **50**
Operator Menu **54**
Operator Menu **55**
Service Menu **56**
Analyzer Menu - Status & Inputs 57
Analyzer Menu - Outputs 58
Analyzer Menu - Access 2 Inputs 60
Analyzer Menu - Access 3 Inputs 61
Analyzer Menu - Access 3 Inputs 62
Analyzer Menu - Access 5 Inputs 63
Analyzer Menu - Test Outputs 64
Calibration - Rocker & Load Sensor 65
Calibration - Steer System 66
Features 67
Features 68
Features 69
Features 70
Features 71
Hours 72
Events 73
Events 74
Performance 75
Performance 76
Performance 77
Performance 78
Performance 79
Utilities 80
Parameter Setting **81**
Calibration **82**
Selecting the CALIBRATION Menu 82
Calibrating the Traction Potentiometer 82
Steering Calibration 82

MidWestTech | Crown TC 3000 Tow Tractor Service Manual | Publication 812573-006 Order the manual at mid-west-tech.com >

Control Modules **84**
General 84
Power Fuses 84
Servicing and Replacing the Control Modules **85**
Discharging the Capacitors 85
Servicing the Control Modules 85
Replacing Control Modules 85
Removal 85
Assembly 85
Event Codes - Access 3 ..... **87**
Event Codes - Access 5 ..... **94**
Drive Motor **102**
Drive Motor Disassembly 103
Drive Motor Assembly 103
Repairing the Drive Motor 104
Preparation 104
Dismantling the Rotor Assembly 104
Assembling the Rotor Assembly 104
Final task: 104
Steer Motor **105**
Special Tools Required 106
Steer Motor Disassembly 106
Steer Motor Assembly 106
Repairing the Steer Motor 106
Preparation 106
Steer Motor Disassembly 106
Steer Motor Assembly 106
Final tasks: 106
Battery **107**
General 107
Charging the Battery 107
Replacing the Battery 107
Contactors - Inspection and Repairs **108**
Inspection 108
Contacts 108
Coils 108
Springs 108
Servicing 109
Dismantling 109
Assembly 109
Control Module Safety Test **110**
General 110
Required tools 110
Carrying out the PMT 110
Testing Access 3 (TCM) 110
Testing Access 5 (SCM) 110

BRAKE SYSTEM **PAGE** **SERIAL NO. CUT** **REV.**

Electromechanical Brake **115**
General 115
Servicing the Brake 115
Measuring the air gap 115
Repairing the Brake 116
Installing a wear part kit 116

MidWestTech | Crown TC 3000 Tow Tractor Service Manual | Publication 812573-006 Order the manual at mid-west-tech.com >

Lifting and Jacking up the Truck

CAUTION

Scalding risk from battery acid!

- ***You must remove the battery before transporting the truck.***

This will prevent possible battery acid leakage in the truck and resulting material or personal damage.

Lifting the Truck

WARNING

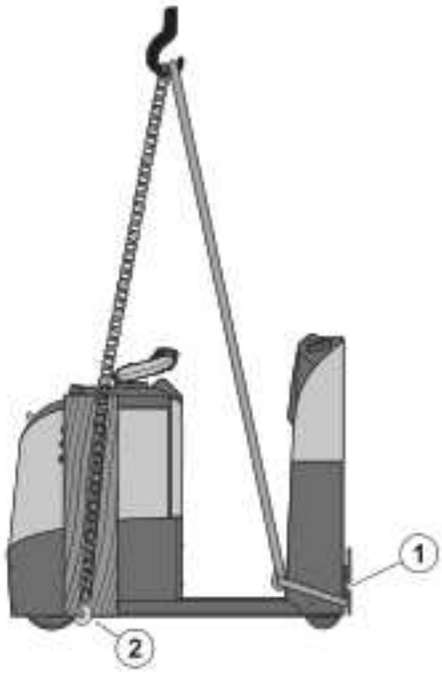
Truck tipovers and falling loads can cause death!

- *Make sure the lifting truck or crane as well as the lifting gear have sufficient capacity.*

Information on the capacity required can be found on the truck data plate under "Truck Weight Less Battery" and "Battery Weight".

Lifting the truck with a crane

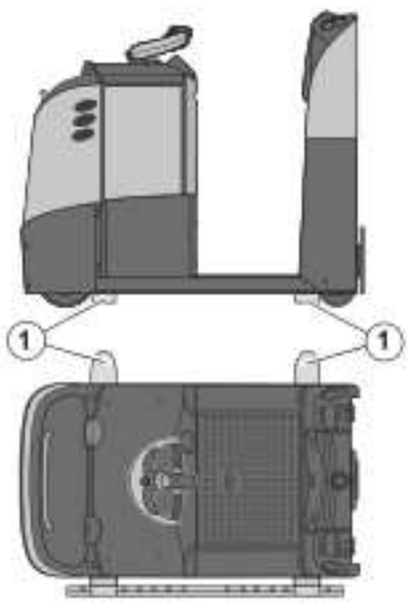
1. Remove the battery
2. Attach chains and hooks (2) to the cutouts in the floorboard in front of the battery compartment (see Fig.TC465).
3. Push a thin board on either side between the truck and the chain.
4. Attach lifting slings around the tow hitch (1) (see Fig.TC465).



TC465

Lifting the truck with a forklift truck

1. Remove the battery
2. Position the forks (1) of the truck that is doing the lifting under the chassis of the lift truck (see Fig. TC462).



TC462

MidWestTech | Crown TC 3000 Tow Tractor Service Manual | Publication 812573-006 Order the manual at mid-west-tech.com >

Event Codes - Access 5

Event Code	Tool LED	Operating error LED	Description	Remedy
500	X	-	Controller internal error.	- Replace controller.
501	X	-	Memory error. Parameter changes have been cleared or are no longer stored. The truck can operate, but uses the default settings.	- Re-load the default settings (attention - this resets the default settings of *all* the controllers.): SERVICE MENU > PERFORMANCE > P20 > LOAD FACTORY DEFAULTS - If the error persists after switching the truck off and on again, replace the controller.
502	X	-	Controller internal error.	- Replace controller.
503	X	-	Controller internal error.	- Replace controller.
504	X	-	Controller internal error.	- Replace controller.
505	X	-	Controller internal error.	- Replace controller.
506	X	-	Controller internal error.	- Replace controller.
507	X	-	Open the main contactor.	Access 3 has not closed the main contactor in 1.5 seconds: - In the SERVICE MENU check > EVENTS > E1 > CHRON HISTORY events triggered by Access 3. - For troubleshooting see event code 306, page 87.
508	X	-	Controller internal error.	- Replace controller.
Steering controller hot	-	X	Access 5 heatsink temperature above 75 °C.	- Test the fan: Service Level 3 > Analyzer Menu > A4.1 > FN1. Replace the fan if faulty. - Check the air duct and fan for contamination and foreign bodies. Clean if necessary. - Check Access 5 temperature: If the controller is not hot, the air duct clean and free of foreign bodies and the fan is working, the controller must be faulty. Replace controller.

MidWestTech | Crown TC 3000 Tow Tractor Service Manual | Publication 812573-006 Order the manual at mid-west-tech.com >

Wires and Wire Harnesses

Designation	Description	Order Number
Main Harness	Power Unit	818240
Extension Harness	Power Unit	820615
Horn Harness	Control Handle	811931
Horn Filter Harness	Power Unit	822787
X10 - Handle Harness	Control Handle	818595
CAN Tiller Harness Assy	Tiller	818876
Display Harness	Instrument	818597
Adapter Key Switch	Instrument	820143
Adapter Keypad	Instrument	823383
HPCS Harness	Backrest	818598
HPCS Harness F/C	Backrest	820541
Connection Cable Alarm	Power Unit	822337
Harness Flashing Beacon	Backrest	823320
Access 5 - M3 (-U)	Power Cable	821630-016
Access 5 - M3 (-V)	Power Cable	821630-017
Access 5 - M3 (-W)	Power Cable	821630-018
Access 3/2 - M1 (-W)	Power Cable	821633-080
Access 3/2 - M1 (-V)	Power Cable	821633-081
Access 3/2 - M1 (-U)	Power Cable	821633-072
Access 3/2 (+BF) - Line	Power Cable	821633-073
Access 5 (+B) - Line	Power Cable	821633-015
Access 3/2 (B-) - Access 5 (B-)	Busbar	818816

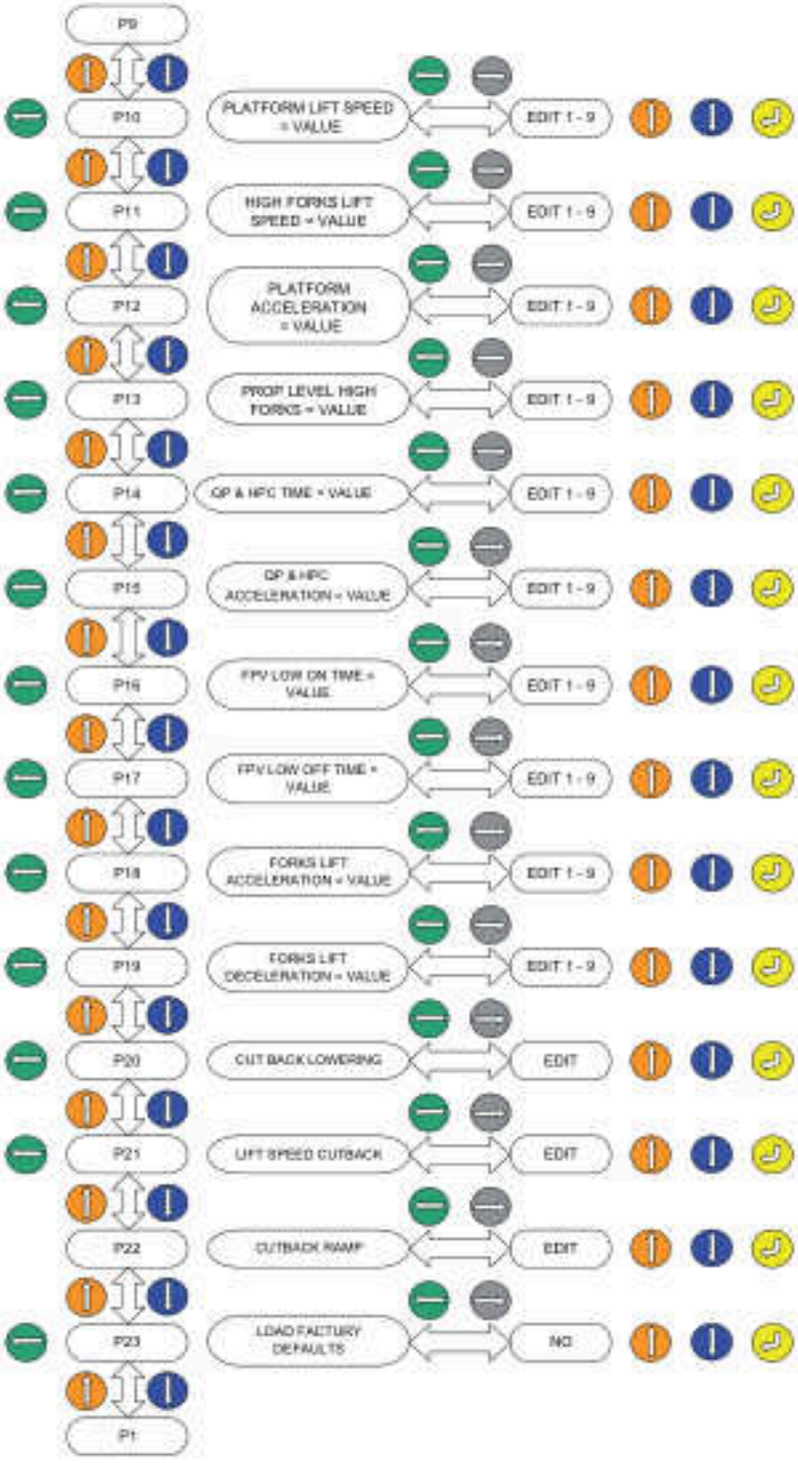
Fuses and Fuse Holders

Designation	Description	Order Number
FU1	Fuse 1, 10 A, +BV	805751-001
FU2	Fuse 2, 10 A, +BV(AK)	805751-001
FU3	Fuse 3, 10 A, Power Supply	805751-001
FU7	Fuse 7, 400 A, Access 3/2	816300
FU8	Fuse 8, 30 A, Access 5	816301
FU1 Holder	Signal Fuse Holder	805752
FU2 Holder	Signal Fuse Holder	805752

MidWestTech | Crown TC 3000 Tow Tractor Service Manual | Publication 812573-006 Order the manual at mid-west-tech.com >

Performance

From page 78

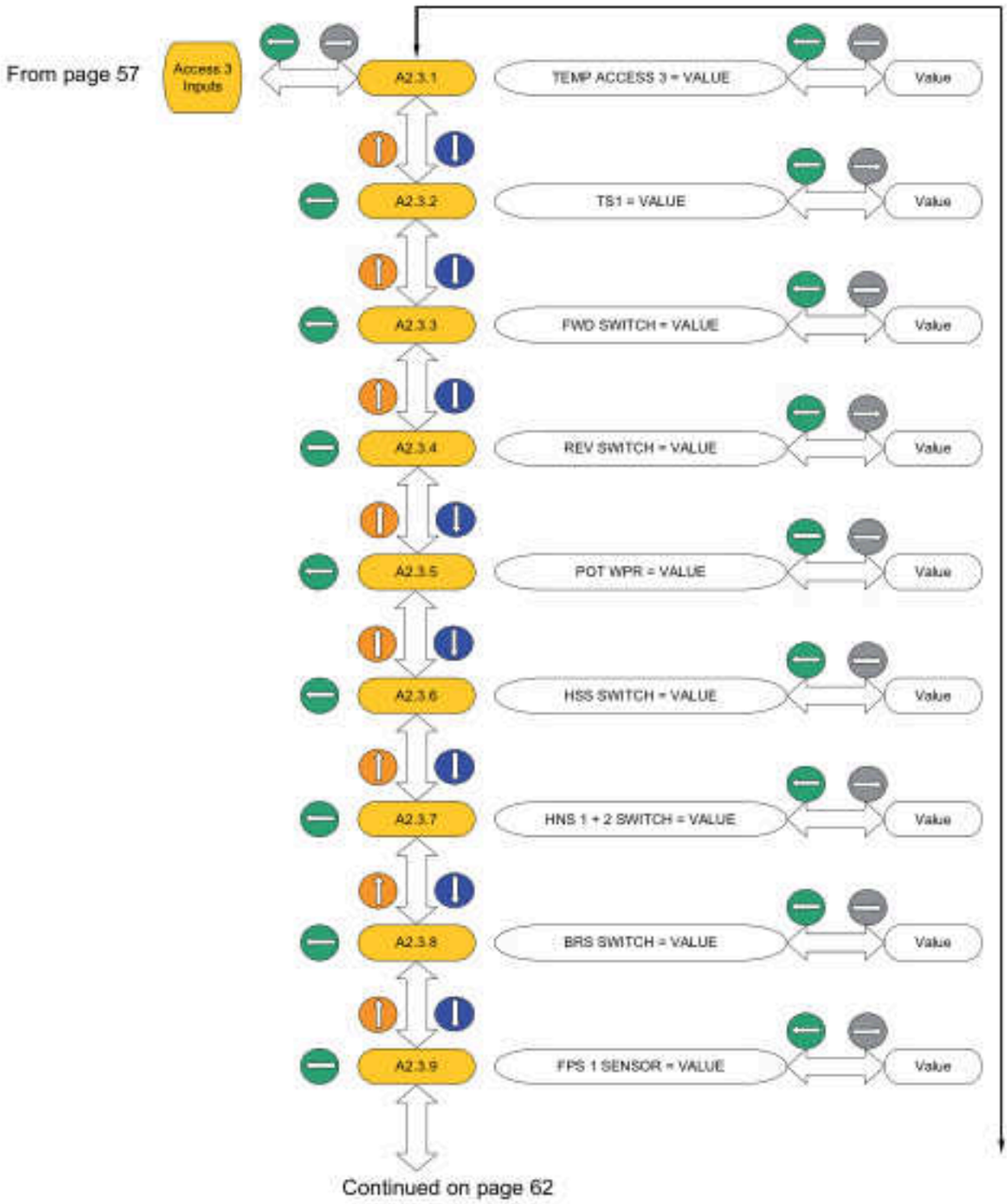


Continued on page 75

TC460

MidWestTech | Crown TC 3000 Tow Tractor Service Manual | Publication 812573-006 Order the manual at mid-west-tech.com >

Analyzer Menu - Access 3 Inputs



TC442

MidWestTech | Crown TC 3000 Tow Tractor Service Manual | Publication 812573-006 Order the manual at mid-west-tech.com >