snorkel

AB60J



SERVICE & MAINTENANCE MANUAL

Part Number 0182752-000
September 2024

MidWestTech | Snorkel AB60J Articulating Boom Lift Service and Maintenance Manual | Pu... Order the manual at mid-west-tech.com >

TABLE OF CONTENTS

Section 1 General Information

Component Identification 10
Rotation Bearing 11
Turntable Component Location 12
Kubota V2403 Turbo Diesel T4F Engine 12
Right Side 12
Left Side 14
Kubota WG2503 Dual Fuel Engine 15
Right Side 15
Left Side 17
Serial Number Locations 18
Working Envelope 19
Safety Precautions 20
Operator's Manual Procedures 21
Technical Bulletins 21
Wire Code and Function Chart 22
Abbreviations List 27

Section 2 Specifications

General Specifications 30
Drive Motor Specifications 31
Gear Hub Box Specifications 31
Drive Brake Specifications 31
Gear Type Flow Divider 31
Engine Specifications 32
Kubota V2403 Turbo Diesel 32
Kubota WG2503 Dual Fuel 32
Variable Displacement Hydraulic Pump Specifications 33
Battery Specifications 33
Swing Drive Specifications 34
Fastener Torque Chart 35
Standard System 35
Metric System 36

Section 3 Hydraulic Components

Chassis Hydraulic Component Location 38
Chassis Hoses 39
Steer Valve 40
Steer Cylinder 41
Transmission Valve 42
Flow Divider Sub-Assembly 43
Gear Type Flow Divider 44
Motion Control Valve 45
Turntable Hydraulics 46
Hydraulic Oil Filter 48
Hydraulic Pump 49
Side Port 49
Rear Port 50

MidWestTech | Snorkel AB60J Articulating Boom Lift Service and Maintenance Manual | Pu... Order the manual at mid-west-tech.com >

Coupler Installation 51
Swing Drive 52
Components 52
Assembly 54
Motion Control Valve 55
Proportional Control Valve 56
Override Handle Side 56
Non-Override Handle Side 57
Return Manifold 58
Non-Proportional Control Valve 59
Dual Relief Anti-Cavitation Valve 61
Dump Valve 62
Speed Shift Valve 63
Pressure Manifold 64
Centerpost 65
Main and Riser Boom Lift Cylinder 66
Boom Extend Cylinder 67
Master Level Cylinder 68
Slave Level Cylinder 69
Jib Boom Cylinder 70

Section 4 Electrical Components
Turntable Electrical 72
Kubota V2403 Turbo Diesel T4F Engine 72
Left Side 72
Right Side 73
Kubota WG2503 Dual Fuel Engine 74
Left Side 74
Right Side 75
Battery 76
12 Volt 550 CCA Fillable 76
Disconnect Switch 77
Emergency Power Unit 78
Lower Control Box 79
Kubota V2403 Turbo Diesel T4F Engine 79
Front Panel 79
Internal Wiring 81
Inner Panel 82
Inner Panel Wiring 84
Display 85
Kubota WG2503 Dual Fuel Engine 86
Front Panel 86
Internal Wiring 88
Inner Panel 89
Inner Panel Wiring 91
Overload and CAN Interface Wiring 92
Murphy Display 93
Booms Electrical Components 94
Boom Extend Limit Switch 95

MidWestTech | Snorkel AB60J Articulating Boom Lift Service and Maintenance Manual | Pu... Order the manual at mid-west-tech.com >

Boom Lift Limit Switch 96
Upper Control Box 97
Kubota V2403 Turbo Diesel T4F Engine 97
External Components 97
Wiring 98
Kubota WG2503 Dual Fuel Engine 99
External Components 99
Wiring 100
Snorkel Guard and Overload Wiring 101
All Engines 103
Internal Components 103
Foot Switch 105
Joystick 106
Drive / Steer 106
Lift / Swing 108
AC Power to Platform 110
Harnesses 111
Engine Harness 111
Kubota V2403 T4F Engine 111
Wiring 111
Pinout Legend 112
Kubota WG2503 Dual Fuel Engine 113
Wiring 113
Pinout Legend 114
Glow Plug Harness 115
Kubota V2403 T4F Engine 115
Wiring 115
Pinout Legend 116
Turntable Harness 117
Wiring 117
Pinout Legend 118
Lower Control Box Harness 119
Internal Wiring Harness 119
Pinout Legend 120
Boom Harness 121
18/19 Number 1 and 2 121
12 / 8 122
Pinout Legend 123
Upper Control Box 125
Power Harness 125
Control Wire Harness 126
Overload Harness 127
Main Boom Extend Limit Switch Harness 128
Boom Lift Limit Switch Harness 129

Section 5 Engine Components
Kubota V2403 Turbo Diesel T4F Engine 132
Right View 132
Left View 133

MidWestTech | Snorkel AB60J Articulating Boom Lift Service and Maintenance Manual | Pu... Order the manual at mid-west-tech.com >

FASTENER TORQUE CHART

Metric System

Capscrew	Grade 8.8					Grade 10.9				
Size	In-LBS Dry	In-LBS Lubed	FT-LBS Dry	FT-LBS Lubed	Clamp Load (lb)	In-LBS Dry	In-LBS Lubed	FT-LBS Dry	FT-LBS Lubed	Clamp Load (lb)
M4 - 0.7	27	20			861	36	24			1,173
M5 - 0.8	55	41			1,394	72	60			1,895
M6 - 1.0	93	70			1,971	132	96			2,686
M8 - 1.25	228	168	19	14	3,591	312	228			4,889
M8 - 1.0	240	180	20	15	3,844	336	252			5,232
M10 - 1.5			37	28	5,693			51	38	7,744
M10 - 1.25			39	30	6,008			54	41	8,171
M12 - 1.75			65	49	8,273			89	66	11,257
M12 - 1.25			71	53	9,037			96	72	12,297
M14 - 2.0			103	77	11,285			140	107	15,354
M14 - 1.5			114	85	12,263			155	114	16,691
M16 - 2.0			162	122	15,404			221	166	20,963
M16 - 1.5			173	129	16,388			236	177	22,311
M18 - 2.5			222	167	19,423			235	176	
M18 - 1.5										
M20 - 2.5			317	236	24,042			428	321	32,720
M20 - 1.5			350	262	26,695			479	358	36,316
M22 - 2.5			428	321	30,651			452	339	
M22 - 1.5										
M24 - 3.0			546	409	34,642			745	557	47,141
M24 - 2.0			594	446	37,676			811	605	51,277
M27 - 3.0			796	597	45,039			1,084	811	61,292
M27 - 2.0			863	645	58,785			1,173	848	66,226
M30 - 3.5			1084	811	55,054			1,475	1106	74,915
M30 - 3.0			1121	841	56,908			1,527	1143	77,444
M30 - 2.0			1202	900	60,932			1,630	1224	82,917

Rev D

Torque chart information:

- Consult manufacturers' specific recommendations, when available.
- The chart may be used with both coarse and fine thread fasteners lightly lubricated.
- Increase torque by 20% when multiple tapered tooth (shake proof) lock washers are used.
- Foot/pound equivalent may be obtained by dividing by 12.
- Inch/pound equivalent may be obtained by multiplying by 12.
- Newton/meter equivalent may be obtained by multiplying inch/pound by 0.1130.
- Newton/meter equivalent may be obtained by multiplying foot/pound by 1.3558.

MidWestTech | Snorkel AB60J Articulating Boom Lift Service and Maintenance Manual | Pu... Order the manual at mid-west-tech.com >

BOOMS AND CYLINDERS REMOVAL

Main Boom Lift Cylinder Removal

See reference drawing on page 205.

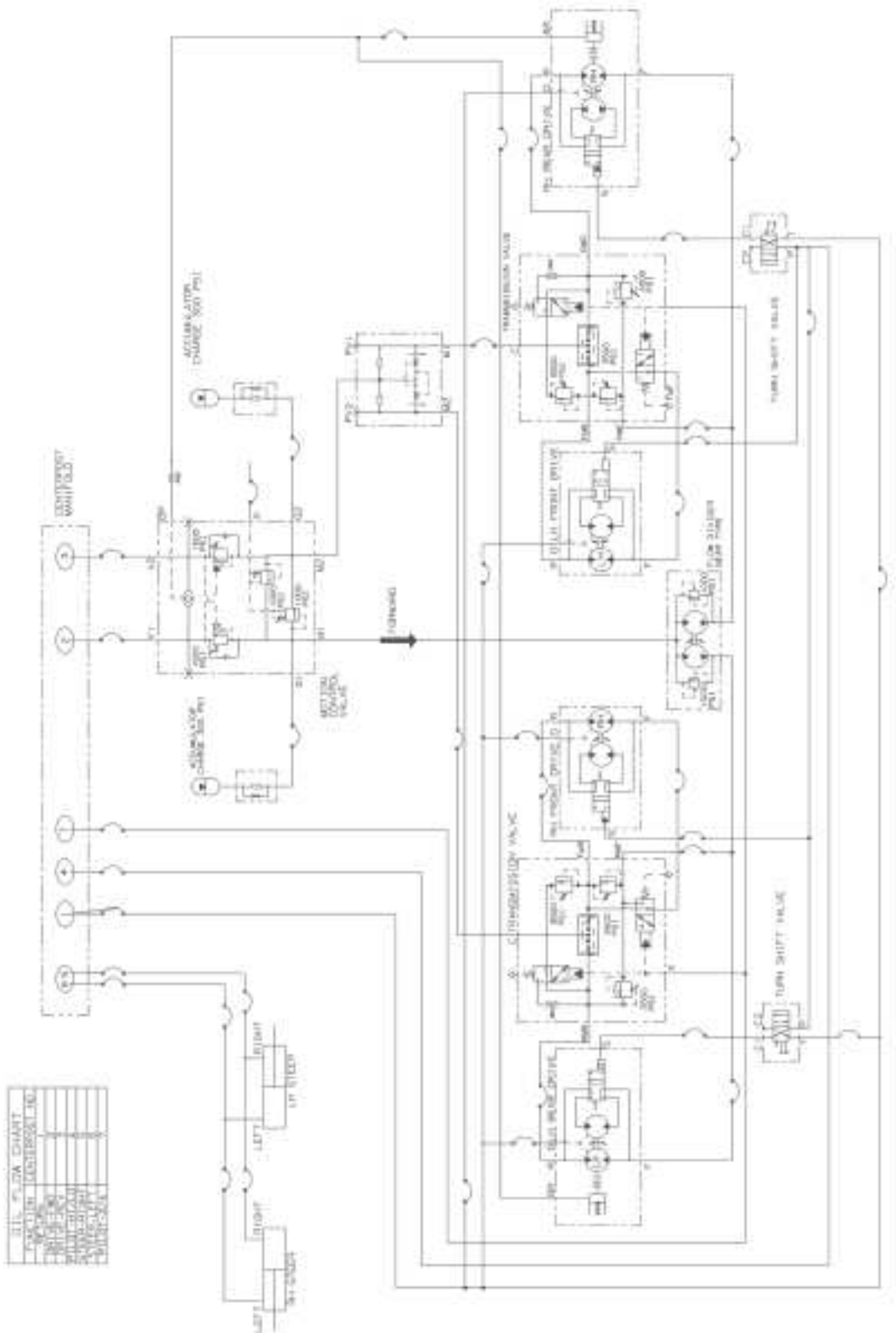
1. Lower the riser boom (item 1) completely.
2. Raise the main boom (item 12) approximately 3 feet above the front of counterweight to access the main boom cylinder rod end pin and retainers.
3. Using a hoist and sling capable of supporting the main boom secure the main boom (item 12).
4. Place a 4x4 wooden block across the follower bars (item 11).
5. Cap the main boom lift cylinder (item 8) and plug the hoses to the main boom lift cylinder.
6. Remove the main boom lift cylinder rod end pin and retainers (item 9) and carefully lower rod end onto 4x4 wooden block.
7. Using a ratchet strap capable of lifting the main boom lift cylinder, remove the base end pin and retainers (item 7).
8. With another person, carefully remove the main boom lift cylinder (item 8) from the machine.

Note: Reverse the procedure to reinstall the main boom lift cylinder using anti-seize on the pins and stainless tie wire on the retainers.

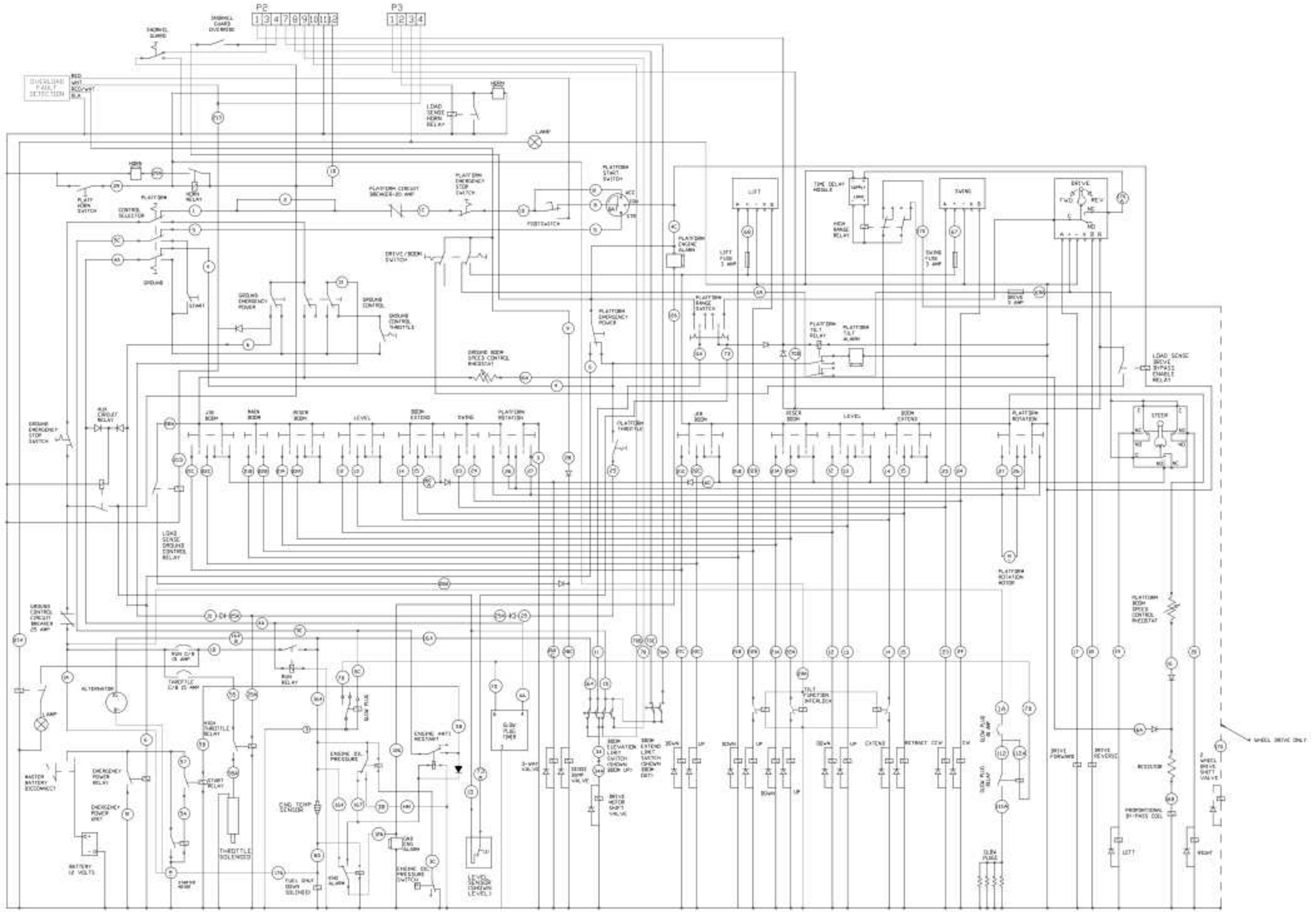
MidWestTech | Snorkel AB60J Articulating Boom Lift Service and Maintenance Manual | Pu... Order the manual at mid-west-tech.com >

HYDRAULIC SCHEMATIC

Chassis



MidWestTech | Snorkel AB60J Articulating Boom Lift Service and Maintenance Manual | Pu... Order the manual at mid-west-tech.com >



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