BOOMER 3040, 3045, 3050 CVT SERVICE MANUAL COMPLETE CONTENTS

SECTION 00 - GENERAL INFORMATION	2
SECTION 10 - ENGINE	4
SECTION 21 - TRANSMISSION	11
SECTION 25 - FWD FRONT AXLE	15
SECTION 27 - DIFFERENTIAL AND REAR AXLE	18
SECTION 31 - POWER TAKE-OFF (PTO) SYSTEMS	19
SECTION 33 - BRAKES	22
SECTION 35 - HYDRAULIC SYSTEM	23
SECTION 41 - STEERING	27
SECTION 50 - CLIMATE CONTROL	30
SECTION 55 - ELECTRICAL	34
SECTION 90 - PLATFORM	47

The following pages are the collation of the contents pages from each section and chapter of the Boomer 3040, 3045, 3050 CVT Service manual. Complete Service part # 84126849.

The sections used through out all New Holland product Service manuals may not be used for each product. Each Service manual will be made up of one or several books. Each book will be labeled as to which sections are in the overall Service manual and which sections are in each book.

The sections listed above are the sections utilized for the Boomer 3040, 3045, 3050 CVT Tractors.

SECTION 00 - GENERAL INFORMATION

BOOK 1 - 84126850

Chapter 1 - General Information

Page	Description	Section
3	Introduction	
4	Precautionary Statements	
4	Personal Safety	
4	Machine Safety	
4	Information	
5	Technical Information	
5	Hardware	
5	General	
5	Plating	
5	Nut Tightening	
5	Locknuts	
5	Jam Nuts	
5	Thread Lubrication	
6	Safety	
6	Precautionary Statements	
6	The Tractor	
6	Servicing the Tractor	
7	Operating the Tractor	
7	Driving the Tractor	
8	Operating the PTO	
8	Diesel Fuel	
9	Safety Decals	
11	Instruction Decals	
	General Information	
	Universal Symbols	
	Specifications	
	Engine	
	Capacities	
	Air Conditioning System	
	Cooling System	
	Electrical System	

SECTION 00 - GENERAL INFORMATION

BOOK 1 - 84126850

Chapter 1 - General Information (Continued)

Section	Description Pa	age
	Fuel System	18
	Brakes	19
	Steering	19
	Power Take-off	19
	Hydraulic Lift System	19
	Transmission	20
	Transmission Speeds - kph (mph)	20
	Cast Iron Weights	21
	Drawbars	21
	3 Point Hitch	21
	Tires	22
	Wheel Bolt Torques	22
	General Dimensions	23
	Special Tools	30
	Tire Ballast and Pressures	32
	Liquid Ballast (Optional)	32
	Tire Pressure	32
	Rear Tire Liquid	32

BOOK 1 - 84126850

Chapter 1 - Engine

Section	Description	е
	Specifications	6
	General	6
	Cylinder Block	6
	Cylinder Head	7
	Piston	7
	Piston Pin	8
	Piston Ring	8
	Connecting Rod	9
	Crankshaft	9
	Camshaft1	1
	Valves	1
	Push Rods	2
	Rocker Arm	2
	Lubrication System	3
	Cooling System	3
	Torque Specification	4
	Metric Bolt Torque Specifications	5
	Special Tools	6
	Compression Test and Tools	7
	Description of Operation	8
	Troubleshooting	9
	Cylinder Head and Valve Train Components	3
	Separating the Tractor at the Engine - Front Transmission Box	4
	Removal 2	4
	Separating the Tractor at the Engine/Frame	7
	Installation	9
	Attaching the Front Transmission Box to the Engine	3
	Overhaul - Engine 3	7
	Fuel Injector and Glow Plug	7
	Removal 3	7
	Oil Pressure Switch 3	7

BOOK 1 - 84126850

Chapter 1 - Engine (Continued)

Section	Description	Page
	Temperature Sending Switch and Alternator	37
	Removal	37
	Fan, Water Pump, and External Oil Tube	38
	Removal	38
	Air Inlet Manifold	38
	Removal	38
	Rocker Arm Shaft and Support Bracket	39
	Removal	39
	Cylinder Head	39
	Removal	39
	Valve Tappet	39
	Removal	39
	Fuel Shutoff Solenoid	40
	Removal	40
	Engine Timing Gear Cover, Timing Gears, and Cam Shaft	40
	Timing Gear Cover Removal	40
	Timing Gears and Camshaft	42
	Removal	42
	Oil Sump	43
	Removal	43
	Oil Suction Pipe and Strainer	43
	Removal	43
	Balancer Assembly	44
	Removal	44
	Connecting Rods, Bearings, and Pistons, Rings	44
	Removal	44
	Flywheel	45
	Removal	45
	Backplate and Oil Seal	45
	Removal	45
	Crankshaft and Main Bearings	45
	Removal	

BOOK 1 - 84126850

Chapter 1 - Engine (Continued)

Section	Description	Page
	Cylinder Head	46
	Disassembly	46
	Inspection and Repair	46
	Valve Seats	47
	Valves	48
	Valve Guides	49
	Valve Springs	50
	Rocker Arms	50
	Push Rods	51
	Cylinder Head	51
	Assembly	51
	Cylinder Block	52
	Pistons	52
	Disassembly and Inspection	52
	Piston Rings	55
	Connecting Rods	55
	Pin to Bushing Clearance	56
	Connecting Rod Bearing	57
	Clearance Check	57
	Pistons, Rings, and Connecting Rod	58
	Assembly	58
	Crankshaft - Main Bearing and Thrust Washer	59
	Removal and Inspection	59
	Crankshaft	60
	Bearing (Bushing)	61
	Replacement	61
	Main Bearing	62
	Assembly	62
	Port Block	63
	Removal	63
	Installation	63
	Timing Gear	64

BOOK 1 - 84126850

Chapter 1 - Engine (Continued)

Section	Description Pa	ge
	Camshaft	64
	Disassembly	64
	Inspection	64
	Assembly	65
	Flywheel	65
	Timing Gear Housing	66
	Front Oil Seal and Steering Pump Seal	66
	Replacement	66
	Crankshaft and Bearing Holder	67
	Installation	67
	Rear Oil Seal and Backplate	67
	Installation	67
	Flywheel	68
	Installation	68
	Pistons and Connecting Rods	68
	Installation	68
	Balancer Assembly (N844 and N844L Engines)	69
	Installation	69
	Balancer Shims	69
	Oil Suction Pipe and Suction Strainer	70
	Installation	70
	Oil Sump	70
	Installation	70
	Camshaft and Camshaft Gear	70
	Installation	70
	Idler Gear, Oil Pump, and Injection Timing	71
	Installation	71
	Timing Gear Cover	71
	Installation	71
	Crankshaft Pulley	71
	Installation	71

BOOK 1 - 84126850

Chapter 1 - Engine (Continued)

Section	Description	Page
	Fuel Injection Pump	72
	Installation	72
	Hydraulic Oil Pump	72
	Installation	72
	Power Steering Pump	73
	Installation	73
	Head Gasket Selection	73
	Selection Chart	73
	Cylinder Head	74
	Installation	74
	Valve Clearance	74
	Adjustment	74
	Valve Cover	75
	Installation	75
	Water Pump and Cooling Fan	75
	Installation	75
	External Oil Tube	75
	Assembly	75
	Glow Plug and Connector	76
	Installation	76
	Fuel Injector	76
	Installation	76
	Fuel Piping	76
	Installation	76
	Alternator and Temperature Sender Switch	77
	Installation	77
	Exhaust Manifold	77
	Installation	77
	Description of Operation - Engine Lubrication System	78
	Oil Filter	81
	Construction and Function	81
	Maintenance	81

BOOK 1 - 84126850

Chapter 1 - Engine (Continued)

Section	Description	Page
	Oil Pump	81
	Removal	81
	Inspection	81
	Installation and Adjustment	82
	Engine Oil Pressure	83
	Check	83
	Oil Pressure Relief Valve	84
	Removal	84
	Installation	84
	Oil Consumption	84
	Description of Operation - Cooling System	85
	Maintenance	87
	Coolant	87
	Radiator Cap	87
	Thermostat	88
	Water Pump	88
	Cooling Fan	88
	Overhaul - Cooling System	89
	Radiator	89
	Removal	89
	Inspection and Repair	90
	Installation	90
	Water Pump	91
	Removal	91
	Inspection and Repair	93
	Installation	93
	Thermostat	94
	Removal	94
	Inspection and Repair	94
	Installation	95
	Cab Heater	95
	Installation	95

BOOK 1 - 84126850

Chapter 2 - Fuel Systems

Section	Description	Page
	Specifications	
	Standards for Adjusting the Injection Pump	4
	Torque Specifications	4
	Special Tools	4
	Description of Operation - Injection Pump	5
	Troubleshooting	7
	General	7
	Fuel Injectors	10
	Governor	11
	Fuel Variation Mechanism	12
	Delivery Valve Assembly	
	CTD (Compact Timing Device) Mechanism	
	Pumping Elements	
	Delivery Valves	
	Injection Pump	17
	Removal	17
	Repair	
	Installation	
	Calibration/Adjustments	20
	Fuel Pump	20
	Installation (New Pump or Drive Component)	20
	Spill-timing Procedure	21
	Fuel Screw/High Idle	25
	Adjustment	25
	Auto Bleed	26
	Fuel Lift Pump	27
	Removal	27
	Inspection	27
	Installation	27
	Specifications	27
	Troubleshooting	27

BOOK 1 - 84126850

Chapter 2 - Fuel Systems (Continued)

CONTENTS

Section	Description Pa	ge
	Description of Operation - Governor	28
	Governor	28
	Disassembly	30
	Assembly	31
	Adjustments	33
	Injectors	34
	Removal	35
	Disassembly	36
	Assembly/Adjustment	
	Engine Breather Valve	37
	Removal	38
	Installation	38
	Troubleshooting - Engine Breather Valve	39

SECTION 21 - TRANSMISSION

BOOK 1 - 84126850

Chapter 1 - CVT Transmission

Section	Description	Page
	Front Transmission Box	2
	Separating the Front Transmission Box from the Differential Housing	2
	Installing the Front Transmission Box to the Differential Housing	4
	Front Transmission Box	7
	Disassembly	7
	Assembly	13
	Forward/Reverse Shuttle Clutch	20
	Disassembly	20
	Assembly	23

SECTION 21 - TRANSMISSION

BOOK 1 - 84126850

Chapter 2 - Rear Transmission

Section	Description	Page
	Bolt Torque Specifications	3
	Metric Bolt Torque Specifications	4
	Special Tools	5
	Description of Operation	6
	Variator	7
	PIV (ARON) Valve	9
	General Operation	9
	Operating Speeds	10
	Overhaul	
	Variator	
	Removal	
	Inspection	19
	Hydraulic Pump	20
	Removal	20
	Disassembly	20
	Inspection	21
	Assembly	23
	Variator Output Speed Sensor	24
	Removal	24
	Testing	25
	Hydraulic Oil Pressure Sensor	26
	Removal	26
	Testing	26
	G-Rotor Pump Inner Filter	27
	Removal	27
	Inspection	27
	Rear PTO/FWD Hydraulic Valves	27
	Removal	27
	Secondary Pulley Output Shaft	28
	Removal	28
	Inspection	29

SECTION 21 - TRANSMISSION

BOOK 1 - 84126850

Chapter 2 - Rear Transmission (Continued)

Section	Description	Page
	Park Lock Control	30
	Removal	30
	Inspection	
	Primary Pulley Oil Distribution Pipe	
	Removal	
	Inspection	32
	Transmission Release Control	32
	Removal	32
	Inspection	33
	Drive Pinion	34
	Removal	34
	Inspection	35
	Planetary Reduction Gear	35
	Disassembly	35
	Inspection	36
	Assembly	37
	Drive Pinion	39
	Installation	39
	Transmission Release Control	39
	Installation	39
	Primary Pulley Oil Distribution Pipe	40
	Installation	40
	Park Lock Control	41
	Installation	41
	Secondary Pulley Output Shaft	42
	Installation	42
	Rear Pto/Fwd Hydraulic Valves	43
	Installation	43
	G-rotor Pump Inner Filter	43
	Installation	43

SECTION 21 - TRANSMISSION

BOOK 1 - 84126850

Chapter 2 - Rear Transmission (Continued)

Section	Description	Page
	Hydraulic Oil Pressure Sensor	44
	Installation	44
	Variator Output Speed Sensor	44
	Installation	44
	Hydraulic Pump	44
	Installation	44
	Variator	45
	Installation	45
	SECTION 21 - TRANSMISSION	
	BOOK 1 - 84126850	
	Chapter 3 - CVT Transmission Control Components	
	CONTENTS	
Section	Description	Page
	CVT Transmission Sensors, Valves and Switches	2

SECTION 25 - FWD FRONT AXLE

BOOK 2 - 84126851

Chapter 1 - FWD Front Axle, SuperSteer[™] and Sensitrack[™]

Section	Description	Page
	Specifications	
	Front to Rear Axle Ratio	
	Boomer 3040, Boomer 3045, and Boomer 3050	
	Bolt Torque Specifications	6
	Special Tools	6
	Description of Operation - FWD Front Axle	
	FWD Front Axle	
	Troubleshooting	
	Lubrication	
	Lubricate Every 50 Hours - SuperSteer™	10
	Lubricate Every 50 Hours - Standard FWD	10
	Overhaul - Standard FWD Axle	
	Standard FWD Axle	
	Removal	
	Installation	
	Gear Reduction Drop Box	
	Disassembly	
	Front Axle and Differential	
	Disassembly	
	Drive Pinion	
	Disassembly	
	Front Axle	
	Inspection	
	Differential	
	Inspection	
	Gear Reduction-Drop Box	
	Inspection	
	Drive Pinion	
	Assembly	
	Differential Gear	
	Assembly	
	Axle and Differential	
	Assembly	19

SECTION 25 - FWD FRONT AXLE

BOOK 2 - 84126851

Chapter 1 - FWD Front Axle, SuperSteer[™] and Sensitrack[™] (Continued)

Section	Description Pa	age
	Differential Case Bearing Preload	20
	Check and Adjustment	20
	Gear Reduction Box	21
	Assembly	21
	Bevel Gear-to-Pinion Backlash	23
	Check	23
	Description of Operation - SuperSteer/Sensitrack	24
	SuperSteer	24
	Sensitrack	25
	Automatic Position (Engaged)	26
	Automatic Position (Disengaged)	27
	Full Time Front Wheel Drive (Locked Down)	27
	SuperSteer Front Axle	27
	Overhaul - SuperSteer Axle	30
	SuperSteer Axle	32
	Removal	32
	Gear Reduction-Drop Box	35
	Disassembly	35
	Front Axle and Differential	38
	Disassembly	38
	Drive Pinion	38
	Disassembly	38
	Front Axle	39
	Inspection	39
	Differential	39
	Inspection	39
	Gear Reduction-Drop Box	39
	Inspection	39
	Drive Pinion	40
	Assembly	40
	Differential Gear	40
	Assembly	40

SECTION 25 - FWD FRONT AXLE

BOOK 2 - 84126851

Chapter 1 - FWD Front Axle, SuperSteer[™] and Sensitrack[™] (Continued)

CONTENTS

Section	Description	Page
	Axle and Differential	41
	Assembly	41
	Differential Case Bearing Preload	42
	Check and Adjustment	42
	Gear Reduction Box	43
	Assembly	43
	Bevel Gear-To-Pinion Backlash	
	Check	45
	SuperSteer Axle	46
	Installation	

SECTION 25 - FWD FRONT AXLE

BOOK 2 - 84126851

Chapter 2 - 4WD CVT Transmission

Section	Description	Page
	4WD Engage/Disengage Theory of Operation	
	Engage	
	Disengage	
	Oil Flow	
	4WD Engagement	
	4WD Disengagement	
	4WD Engage/Disengage Troubleshooting	
	Mechanical Operation	
	Engage	
	Disengage	
	4WD Pressure Test	

SECTION 27 - DIFFERENTIAL AND REAR AXLE

BOOK 2 - 84126851

Chapter 1 - Differential

Section	Description	Page
	Specifications	2
	Bolt Torque Specifications	2
	Metric Bolt Torque Specifications	3
	Special Tools	4
	Description of Operation	5
	Differential	6
	Differential Lock	6
	Overhaul	7
	Differential	7
	Removal	7
	Inspection	10
	Installation	11
	Drive Pinion	15
	Removal	
	Secondary Pulley Output Shaft - Removal	15
	Park Lock Control - Removal	
	Primary Pulley Oil Distribution Pipe	18
	Removal	18
	Inspection	18
	Transmission Release Control - Removal	18
	Inspection	20
	Installation	20
	Replacement Shim Amount (S2) Calculation	21
	Ring Gear and Pinion Gear Pattern Specification and Adjustment	29
	Transmission Release Control - Installation	30
	Primary Pulley Oil Distribution Pipe	30
	Installation	30
	Park Lock Control - Installation	31
	Secondary Pulley Output Shaft - Installation	

SECTION 27 - DIFFERENTIAL AND REAR AXLE

BOOK 2 - 84126851

Chapter 2 - Rear Axle

CONTENTS

Section	Description	Page
	Rear Axle	2
	Removal	2
	Disassembly	
	Seal Removal Tool	
	Inspection	7
	Assembly	8
	Installation	12

SECTION 31 - POWER TAKE-OFF (PTO) SYSTEMS

BOOK 2 - 84126851

Chapter 1 - Power Take-Off (PTO) Systems

Section	Description	Page
	Specifications	
	PTO Hydraulic System	
	PTO Clutch	
	Metric Bolt Torque Specifications	
	Special Tools	
	Description of Operation	6
	Rear PTO	
	Power Flow Diagram for the CVT Transmission	
	PTO Activation Electrohydraulic Circuit	
	Un-switched Battery Power Stud	
	Cab Power Relay	
	Switched Battery Power Stud	
	PTO Activation Switch	
	Transmission Control Unit	
	PTO Clutch Solenoid	10

SECTION 31 - POWER TAKE-OFF (PTO) SYSTEMS

BOOK 2 - 84126851

Chapter 1 - Power Take-Off (PTO) Systems (Continued)

Section	Description	Page
	ADIC Instrument Cluster	10
	Rear PTO Speed Sensor	10
	PTO Activation Electrohydraulic Circuit Troubleshooting	11
	Hydraulic Fluid Flow	12
	PTO Clutch Assembly	12
	Pressure Testing	13
	PTO Hydraulic Block	13
	Test Procedure	13
	Overhaul	15
	PTO Hydraulic Block	15
	Removal	15
	Disassembly	16
	Inspection	
	Assembly	17
	Installation	18
	PTO Cover	19
	Removal	19
	PTO Cover Components	21
	Inspection	25
	PTO Cover Components	26
	Assembly	27
	Installation	31
	PTO Clutch	33
	Removal	33
	PTO Clutch Components	36
	Disassembly	37
	Inspection	39
	PTO Clutch Components	41
	Assembly	42
	Installation	46
	Rear PTO Inductive Speed Sensor	48
	Testing	48
	Replacement	48

Thanks very much for your reading,

Want to get more information,

Please click here, Then get the complete
manual



NOTE:

If there is no response to click on the link above, please download the PDF document first, and then click on it.

Have any questions please write to me: admin@servicemanualperfect.com