

TC48DA, TC55DA REPAIR MANUAL COMPLETE CONTENTS

SECTION 00 - GENERAL INFORMATION	2
SECTION 10 - ENGINE	3
SECTION 18 - CLUTCH	11
SECTION 21 - TRANSMISSION	12
SECTION 23 - FWD DRIVELINE	19
SECTION 25 - FWD FRONT AXLE	20
SECTION 27 - DIFFERENTIAL, REAR AXLE	21
SECTION 31 - POWER TAKE-OFF (PTO)	23
SECTION 33 - BRAKES	24
SECTION 35 - HYDRAULIC SYSTEM	24
SECTION 41 - STEERING	28
SECTION 44 - WHEELS AND TIRES	30
SECTION 55 - ELECTRICAL SYSTEM	31
SECTION 90 - PLATFORM	39

The following pages are the collation of the contents pages from each section and chapter of the TC48DA, TC55DA Repair manual. Complete Repair part # 87357371.

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

The sections listed above are the sections utilized for the TC48DA, TC55DA Tractors.

SECTION 00 - GENERAL INFORMATION

BOOK 1 - 87357372

Chapter 1 - General Information

CONTENTS

Section	Description	Page
	Precautionary Statements	2
	Safety	3
	Safety Decals	6
	Instruction Decals	9
	Decal Placement Guide	12
	Ecology and the Environment	14
	Universal Symbols	15
	General Information	16
	Minimum Hardware Tightening Torques	17
	Lubrication	19
	Lubrication and Maintenance Chart	21
	Lubrication Fittings	22
	Diesel Fuel	22
	Specifications	23
	Transmission Speeds	26
	General Dimensions	31
	Wheel Tread Settings	34
	Front Axle (2WD) Adjustable	34
	Liquid Ballast	38
	Tire Pressure	38
	Rear Tire Liquid	38

SECTION 10 - ENGINE

BOOK 1 - 87357372

Chapter 1 - Engine Dismantling Sequence

CONTENTS

Section	Description	Page
	Specifications	6
	Metric Bolt Torque Specifications	10
	Special Tools	11
	Compression Test and Tools	12
	Description of Operation – General Information	13
	Troubleshooting	14
	Cylinder Head and Valve Train Components	18
	Cylinder Block Assembly	18
	Engine	20
	Removal	20
	Installation	21
	Overhaul	22
	Engine	22
	Alternator	22
	Removal	22
	Cooling Fan and Pulley	22
	Removal	22
	Glow Plug and Connector	22
	Removal	22
	Nozzle/Holder	23
	Removal	23
	Fuel Injection Pipe	23
	Removal	23
	Injector	23
	Removal	23
	Water Pump	23
	Removal	23
	Cover/Intake Manifold/Exhaust Manifold	24
	Removal	24
	External Oil Pipe	24
	Removal	24
	Rocker Assembly	25
	Removal	25

SECTION 10 - ENGINE

BOOK 1 - 87357372

Chapter 1 - Engine Dismantling Sequence (Continued)

CONTENTS

Section	Description	Page
	Cylinder Head	25
	Removal	25
	Tappets	25
	Removal	25
	Fuel Stop Solenoid	26
	Removal	26
	Timing Gear Cover	26
	Removal	26
10 106	Timing Gears and Camshaft	28
	Removal	28
	Front End Plate	29
	Removal	29
10 102	Oil Sump	29
	Removal	29
	Oil Suction Pipe and Strainer	30
	Removal	30
10 110	Balancer Assembly	30
	Removal	30
10 105	Connecting Rods, Bearings and Pistons, Rings	31
	Removal	31
10 103	Flywheel	31
	Removal	31
	Backplate and Oil Seal	32
	Removal	32
	Crankshaft and Main Bearings	32
	Removal	32
	Rocker Arm Assembly	33
	Disassembly	33
	Inspection and Repair	33
10 106	Timing Gear	34
	Inspection	34
	Camshaft	34
	Disassembly	34
	Inspection	34

SECTION 10 - ENGINE

BOOK 1 - 87357372

Chapter 1 - Engine Dismantling Sequence (Continued)

CONTENTS

Section	Description	Page
	Oil Pump	35
	Disassembly	35
	Inspection	35
	Assembly (see Idler Gear)	35
10 101	Cylinder Head	36
	Disassembly	36
	Inspection and Repair	36
	Valves	37
	Valve Guides	37
	Valve Seat	38
	Valve Springs	39
	Rocker Arms	40
	Push Rods	41
	Cylinder Block	42
	Inspection and Repair	42
	Piston and Piston Rings	43
	Disassembly	43
	Inspection	43
	Connecting Rods	45
	Pistons, Rings and Connecting Rod	47
	Assembly	47
10 103	Crankshaft Main Bearing and Thrust Washer	48
	Removal and Inspection	48
	Crankshaft Bearing (Bushing)	49
	Inspection	49
	Removal	50
	Replacement	50
	Crankshaft Main Bearing	51
	Installation	51
	Port Block	51
	Removal	51
	Installation	51
10 103	Crankshaft and Bearing Holder	52
	Installation	52

SECTION 10 - ENGINE

BOOK 1 - 87357372

Chapter 1 - Engine Dismantling Sequence (Continued)

CONTENTS

Section	Description	Page
	Relief Valve	52
	Installation	52
	Rear Oil Seal	53
	Installation	53
	Back Plate/Flywheel Housing	53
	Installation	53
10 103	Flywheel	53
	Inspection and Repair	53
	Flywheel	54
	Installation	54
10 105	Pistons and Connecting Rods	54
	Installation	54
10 110	Balancer Assembly	55
	Installation	55
	Oil Suction Pipe and Suction Strainer	56
	Installation	56
	Oil Sump	56
	Installation	56
10 106	Camshaft and Camshaft Gear	56
	Installation	56
10 106	Idle Gear, Oil Pump and Injection Timing	57
	Installation	57
10 102	Timing Gear Case	58
	Front Oil Seal and Steering Pump Seal	58
	Replacement	58
	Timing Gear Case	59
	Installation	59
	Crankshaft Pulley	60
	Installation	60
	Injection Pump	60
	Installation	60
10 101	Head Gasket Selection	61
	Head Gasket Selection Chart	61

SECTION 10 - ENGINE

BOOK 1 - 87357372

Chapter 1 - Engine Dismantling Sequence (Continued)

CONTENTS

Section	Description	Page
	Cylinder Head	61
	Assembly	61
10 106	Valve Clearance Adjustment	63
	Head Cover	63
	Installation	63
	Intake/Exhaust Manifolds	63
	Installation	63
	External Oil Tube	64
	Installation	64
	Oil Pressure Switch	64
	Installation	64
	Alternator and Temperature Sender Switch	64
	Installation	64
	Glow Plug and Connector	65
	Installation	65
	Nozzle/Holder Assembly	65
	Installation	65
	Return Pipe and Injection Pipe	65
	Installation	65
	Hydraulic Oil Pump	66
	Installation	66
	Power Steering Pump	66
	Installation	66
10 304	Description of Operation - Engine Lubrication System	67
10 206	Oil Filter	70
	Construction and Function	70
	Maintenance	70
10 304	Oil Pump	70
	Removal	70
	Inspection	70
	Installation and Adjustment	71
	Engine Oil Pressure Check	72

SECTION 10 - ENGINE

BOOK 1 - 87357372

Chapter 1 - Engine Dismantling Sequence (Continued)

CONTENTS

Section	Description	Page
	Oil Pressure Relief Valve	73
	Removal	73
	Installation	73
	Oil Consumption	73
10 400	Description of Operation - Cooling System	74
	Maintenance	76
	Coolant	76
	Radiator Cap	76
10 402	Thermostat	77
10 402	Water Pump	77
10 414	Cooling Fan	77
	Radiator	78
	Removal	78
	Inspection	79
	Installation	80
10 402	Water Pump	82
	Removal	82
	Inspection and Repair	83
	Installation	83
10 402	Thermostat	84
	Removal	84
	Inspection and Repair	85
	Installation	85
	Oil Cooler	86
	Removal	86
	Installation	86

SECTION 10 - ENGINE

BOOK 1 - 87357372

Chapter 2 - Fuel Systems

CONTENTS

Section	Description	Page
	Specifications	2
	Standards for Adjusting the Injection Pump	2
	Torque Specifications	3
	Special Tools	3
10 242	Description of Operation – Injection Pump	4
	Troubleshooting – General	6
	Troubleshooting – Fuel Injectors	9
	Troubleshooting – Governor	10
	Troubleshooting – Engine Breather Valve	11
10 244	Fuel Variation Mechanism	12
	Delivery Valve Assembly	13
10 244	CTD (Compact Timing Device) Mechanism	13
10 236	Pumping Elements	15
10 214	Delivery Valves	17
10 214	Injection Pump	19
	Removal	19
	Repair	21
	Installation	21
10 230	Timing and Governor Adjustments	22
	Installation (New Pump or Drive Component)	22
	Spill-Timing Procedure	23
	Fuel Flow Chart	28
	Bleeding the Fuel System	29
	Fuel Screw/High Idle Adjustment	29
10 230	Governor	30
	Disassembly	32
	Assembly	33
	Adjustments	35
10 218	Injectors	36
	Removal	37
	Disassembly	38
	Assembly/Adjustment	38
	Engine Breather Valve (Non Turbocharged Engines)	39
	Removal	40
	Installation	40

SECTION 10 - ENGINE

BOOK 1 - 87357372

Chapter 3 - Turbocharger

CONTENTS

Section	Description	Page
	Specifications	2
	Troubleshooting	2
	Lubrication	4
	Turbocharger	5
	Removal	5
	Inspection Before Disassembly	6
	Disassembly	7
	Inspection	9
	Checking the Rotor For Movement	15
	Start-Up Lubrication	16
	Intake Air System	16
	Exhaust System	16
	Initial Start of Turbocharger After Installation	16

SECTION 18 - CLUTCH

BOOK 1 - 87357372

Chapter 1 - Clutch

CONTENTS

Section	Description	Page
	Specifications	2
	Metric Bolt Torque Specifications	3
	Bolt Torques	3
	Special Tools	3
	Description of Operation	4
	Troubleshooting	5
	Overhaul	6
21 114	Separating the Tractor at Clutch Housing/Engine	6
	Clutch	16
	Removal	16
	Inspection	17
	Clutch Release Bearing	18
	Inspection	18
	Clutch	18
	Installation	18
	Attaching the Tractor at Clutch Housing/Engine	20
	Clutch Pedal Adjustment	29
	Clutch Pedal Maximum Travel Adjustment	29

SECTION 21 - TRANSMISSION

BOOK 2 - 87357373

Chapter 1 - EHSS Transmission

CONTENTS

Section	Description	Page
	Specifications	5
	Metric Bolt Torque Specifications	6
	Special Tools	7
	Description of Operation	9
	Powerflow	11
	Hydraulic Flow Diagrams TC55DA (PIN Number HX11751 and Below)	17
	Neutral Position	18
	Forward Position	20
	Reverse Position	22
	Lube Cutoff Valve Operation TC55DA (PIN Number HX11751 and Below)	25
	Inching Pedal Up (Fluid Flow Stop)	25
	Lube Cutoff Valve Operation TC55DA (PIN Number HX11751 and Below)	27
	Inching Pedal Depressed (Fluid Flow Stop)	27
	Hydraulic Flow Diagrams TC55DA (PIN Number HX11752 and Above)	29
	Neutral Position	30
	Forward Position	32
	Reverse Position	34
	Lube Cutoff Valve Operation TC55DA (PIN Number HX11752 and Above)	37
	Inching Pedal Depressed	37
	System Relief Valve Assembly Operation TC55DA (PIN Number HX11751 and Below)	39
	System Relief Valve Assembly Operation TC55DA (PIN Number HX11752 and Above)	41
	EHSS Manifold Valve TC55DA (PIN Number HX11752 and Above)	42
	System Relief Valve (PIN Number HX11752 and Above)	42
	Low Pressure Relief Valve (PIN Number HX11752 and Above)	43
	Oil Cooler Relief Valve (PIN Number HX11752 and above)	43
	Oil Cooler Relief Valve Components	43
	Adjustment	44
	EHSS - System Relief Valve (PIN Number HX11751 and Below)	44
	EHSS - System Relief Valve (PIN Number HX11752 and Above)	45
	EHSS - Low Pressure Relief Valve (ALL PIN Numbers)	47

SECTION 21 - TRANSMISSION

BOOK 2 - 87357373

Chapter 1 - EHSS Transmission (Continued)

CONTENTS

Section	Description	Page
	Oil Cooler and Lubrication Circuit Pressure Test (PIN Number HX11752 and Above)	48
	EHSS Inching Pedal Potentiometer	49
	EHSS Control Valve Solenoid	51
	Solenoid Test	51
	Troubleshooting	54
	Overhaul	56
	EHSS Control Valve Solenoid	56
	Disassembly	56
	Inspection	56
	Assembly	56
21 116	EHSS Transmission	57
	Removal - Separating the Tractor at Clutch Housing/Engine	57
	Installation - Attaching the Tractor at Clutch Housing/Engine	65
	Clutch Housing	74
	Disassembly	74
	Main Transmission	75
	Disassembly - Separating the Transmission/Differential	75
	Inspection	90
	Assembly	91
	Shuttle Clutch	111
	Disassembly	111
	Inspection	117
	Assembly	118
	Synchronizers	123
	Disassembly	124
	Inspection	130
	Assembly	132
	EHSS Schematics - PIN Number HX11751 and Below	137
	Complete EHSS Schematic - TC55DA (PIN Number HX11751 and Below)	139
	1st or 2nd Gear, High and Forward Schematic - TC55DA (PIN Number HX11751 and Below)	140

SECTION 21 - TRANSMISSION

BOOK 2 - 87357373

Chapter 1 - EHSS Transmission (Continued)

CONTENTS

Section	Description	Page
	1st or 2nd Gear, Low and Forward Schematic – TC55DA (PIN Number HX11751 and Below)	142
	1st or 2nd Gear, High and Reverse Schematic – TC55DA (PIN Number HX11751 and Below)	144
	1st or 2nd Gear, Low and Reverse Schematic – TC55DA (PIN Number HX11751 and Below)	146
	3rd or 4th Gear, High and Forward Schematic – TC55DA (PIN Number HX11751 and Below)	148
	3rd or 4th Gear, Low and Forward Schematic – TC55DA (PIN Number HX11751 and Below)	150
	3rd or 4th Gear, High and Reverse Schematic – TC55DA (PIN Number HX11751 and Below)	152
	3rd or 4th Gear, Low and Reverse Schematic – TC55DA (PIN Number HX11751 and Below)	154
	EHSS Schematics – PIN Number HX11752 and Above	156
	Complete EHSS Schematic – TC55DA (PIN Number HX11752 and Above)	157
	1st or 2nd Gear, High and Forward Schematic – TC55DA (PIN Number HX11752 and Above)	158
	1st or 2nd Gear, Low and Forward Schematic – TC55DA (PIN Number HX11752 and Above)	160
	1st or 2nd Gear, High and Reverse Schematic – TC55DA (PIN Number HX11752 and Above)	162
	1st or 2nd Gear, Low and Reverse Schematic – TC55DA (PIN Number HX11752 and Above)	164
	3rd or 4th Gear, High and Forward Schematic – TC55DA (PIN Number HX11752 and Above)	166
	3rd or 4th Gear, Low and Forward Schematic – TC55DA (PIN Number HX11752 and Above)	168
	3rd or 4th Gear, High and Reverse Schematic – TC55DA (PIN Number HX11752 and Above)	170
	3rd or 4th Gear, Low and Reverse Schematic – TC55DA (PIN Number HX11752 and Above)	172

SECTION 21 - TRANSMISSION

BOOK 2 - 87357373

Chapter 1 - EHSS Transmission (Continued)

CONTENTS

Section	Description	Page
	EHSS Controller Activation	174
	Controller Activation	174
	Potentiometer	174
	Ground Sources	174
	Modulation Time Chart	176
	EHSS Controller	177
	Removal	177
	EHSS Controller Testing - TC55DA (PIN Number HX11752 and Above)	178
	1st or 2nd Gear, High and Forward Circuit	178
	1st or 2nd Gear, Low and Forward Circuit	178
	1st or 2nd Gear, High and Reverse Circuit	178
	1st or 2nd Gear, Low and Reverse Circuit	179
	3rd or 4th Gear, High and Forward Circuit	179
	3rd or 4th Gear, Low and Forward Circuit	179
	3rd or 4th Gear, High and Reverse Circuit	180
	3rd or 4th Gear, Low and Reverse Circuit	180
	Activation Circuit	180
	Installation	181
	Shuttle Switch (Forward/Reverse)	181
	Removal	182
	Testing	183
	Installation	183
	Transmission Modulation Switches	184
	Removal (ALL Switches)	184
	Testing	184
	Installation (ALL Switches)	185
	Troubleshooting Shiftability	186
	Description of Operation	186
	Breakout Box Connection to Tractor	187
	Test Procedures - Switches	188

SECTION 21 - TRANSMISSION

BOOK 2 - 87357373

Chapter 1 - EHSS Transmission (Continued)

CONTENTS

Section	Description	Page
	Potentiometer Function	196
	Adjustment - EHSS Inching Pedal Linkage	196
	Adjustment - Potentiometer	198
	Modulation Explanation	198
	Wiring Diagram - EHSS Circuit	200
	General Overall Troubleshooting	201
	EHSS Electrical Troubleshooting (Range)	201
	EHSS Electrical Troubleshooting (Main Gear and Shuttle)	202
	EHSS Electrical Troubleshooting (Potentiometer)	203
	EHSS Concern Report	204

SECTION 21 - TRANSMISSION

BOOK 2 - 87357373

Chapter 2 - SSS 12x12 Gear Transmission

CONTENTS

Section	Description	Page
	Specifications	3
	Metric Bolt Torque Specifications	4
	Special Tools	5
	Description of Operation	5
	Powerflow	8
	Troubleshooting	12
	Overhaul	13
	Clutch Housing	13
	Disassembly	13
	Main Transmission	16
21 148 63	Input Shaft Retainer	16
	Disassembly	16

SECTION 21 - TRANSMISSION

BOOK 2 - 87357373

Chapter 2 - SSS 12x12 Gear Transmission (Continued)

CONTENTS

Section	Description	Page
	Shuttle Shaft Retainer	17
	Disassembly	17
	Input Shaft	18
	Disassembly	18
	Reverse Idler Shaft and Gear	18
	Disassembly	18
	Shift Rails	19
	Disassembly	19
	Countershaft	21
	Disassembly	21
	Main Shaft	23
	Disassembly	23
	Shuttle Gears	27
	Disassembly	27
	Inspection	30
	Main Transmission	31
	Range Gear Shifter	31
	Assembly	31
	Main Shaft	34
	Assembly	34
	Range Gears	38
	Assembly	38
	Range Gear Shift Fork	40
	Assembly	40
	Countershaft	41
	Assembly	41
	PTO Shaft	43
	Assembly	43
	Shift Rails	44
	Assembly	44
	Reverse Idler	48
	Assembly	48

SECTION 21 - TRANSMISSION

BOOK 2 - 87357373

Chapter 2 - SSS 12x12 Gear Transmission (Continued)

CONTENTS

Section	Description	Page
	Input Shaft	48
	Assembly	48
	Input Shaft Retainer	50
	Assembly	50
	Attaching the Transmission / Differential	51
	Clutch Housing	53
	Assembly	53
	Synchronizers – Main Gears	55
	Main Transmission Gears/Synchronizer	56
	Disassembly	56
	Synchronizers	62
	Inspection	62
	Main Transmission Gears/Synchronizer	64
	Assembly	64
	Synchronizers – Shuttle Gears	69
	Transmission Shuttle Gears/Synchronizer	70
	Disassembly	70
	Synchronizers	74
	Inspection	74
	Main Transmission Gears/Synchronizer	76
	Assembly	76

SECTION 23 - FWD DRIVELINE

BOOK 3 - 87357374

Chapter 1 - FWD Driveline

CONTENTS

Section	Description	Page
	Description of Operation – Front Wheel Drive Gearbox	2
	Lubrication	3
	Troubleshooting	3
	Overhaul	4
	Front Wheel Gearbox	4
	Removal	4
	Front Wheel Gearbox	5
	Counter Gear Removal	5
	Disassembly	5
	Inspection	5
	Assembly	6
	Counter Gear	6
	Installation	6

SECTION 25 - FWD FRONT AXLE

BOOK 3 - 87357374

Chapter 1 - FWD Front Axle

CONTENTS

Section	Description	Page
	Specifications	2
	Front to Rear Axle Ratio	2
	Metric Bolt Torque Specifications	5
	Special Tools	5
25 100	Description of Operation – 4WD Front Axle	6
	Troubleshooting	7
	Maintenance	9
	Overhaul	10
	4WD Axle	10
	Removal	10
	Installation	11
25 108	Gear Reduction Drop Box	12
	Disassembly	12
25 102	Front Axle and Differential	15
	Disassembly	15
	Drive Pinion	16
	Disassembly	16
	Differential	17
	Inspection	17
	Gear Reduction Drop Box	17
	Inspection	17
	Drive Pinion	18
	Assembly	18
	Differential Gear	18
	Assembly	18
	Differential Case Bearing Preload Check and Adjustment	19
	Ring Gear-To-Pinion Backlash Check and Adjustment	19
	Axle and Differential	22
	Assembly	22
25 108	Gear Reduction Box	23
	Assembly	23
	Bevel Gear-To-Pinion Backlash Check	26

SECTION 27 - DIFFERENTIAL, REAR AXLE

BOOK 3 - 87357374

Chapter 1 - Differential

CONTENTS

Section	Description	Page
	Specifications	2
	Bolt Torque Specifications	3
	Metric Bolt Torque Specifications	3
	Special Tools	4
	Description of Operation - Differential and Rear Axle	5
27 110	Differential	6
27 110	Differential Lock	6
27 126	Rear Axle	7
	Overhaul	8
27 106	Differential	8
	Removal	8
	Disassembly	11
	Inspection	11
	Assembly	12
	Installation	13
	Drive Pinion	15
	Removal	15
	Disassembly	15
	Inspection	17
	Assembly	18

SECTION 27 - DIFFERENTIAL, REAR AXLE

BOOK 3 - 87357374

Chapter 2 - Rear Axle

CONTENTS

Section	Description	Page
27 126	Overhaul	2
	Rear Axle	2
	Removal	2
	Disassembly	3
	Inspection	6
	Assembly	7
27 126	Final Pinion	11
	Removal	11
	Disassembly	12
	Inspection	15
	Assembly	16
	Installation	19

SECTION 31 - POWER TAKE-OFF (PTO)

BOOK 3 - 87357374

Chapter 1 - Power Take-Off (PTO)

CONTENTS

Section	Description	Page
	Specifications	2
	Metric Bolt Torque Specifications	3
	Special Tools	4
	Description of Operation	5
31 110	Rear PTO – Power Flow Diagram	6
31 104	EHSS Transmission – Hydraulic Fluid Flow to the PTO Clutch Assembly	7
	SSS Transmission – Hydraulic Flow to the PTO Clutch Assembly	8
	PTO Clutch Engaged	9
	PTO Clutch Disengaged	10
	Troubleshooting	11
	Pressure Testing	12
	Test Procedure	12
	Adjustment	12
	PTO Clutch Control Valve	13
31 104 82	Removal	13
	Disassembly	14
	Inspection	14
	Assembly	15
	Installation	16
	PTO Clutch	16
	Removal	16
	Disassembly	16
	Inspection	18
	Assembly	20
	PTO Systems	24
	Removal	24
	Inspection	30
	Installation	30

SECTION 33 - BRAKES

BOOK 3 - 87357374

Chapter 1 - Brakes

CONTENTS

Section	Description	Page
	Specifications	2
	Metric Bolt Torque Specifications	3
	Troubleshooting	4
33 120	Description of Operation - Brakes	5
31 120	Brake Operation	6
33 110	Parking Brake	7
	Overhaul	8
33 120	Brakes	8
	Removal and Installation	8
	Inspection	10
	Assembly and Installation	11
	Adjustment	13

SECTION 35 - HYDRAULIC SYSTEM

BOOK 3 - 87357374

Chapter 1 - Hydraulic System

CONTENTS

Section	Description	Page
	Specifications	5
	Metric Bolt Torque Specifications	6
	Special Tools	7
35 100	Description of Operation - Hydraulic Systems	8
	Flow Priority	9
	Hydraulic System	10
	Hydraulic Fluid Filter	10
35 080	Combination System Relief - Diverter Valve Manifold Assembly (EHSS Model)	11
35 200	Control Valve Assembly (HPL)	13
	Combination System Relief - Diverter Valve Manifold Assembly (SSS Models)	13

SECTION 35 - HYDRAULIC SYSTEM

BOOK 3 - 87357374

Chapter 1 - Hydraulic System (Continued)

CONTENTS

Section	Description	Page
35 210	Neutral Position – Fluid Flow	15
35 210	Raising Position – Fluid Flow	16
35 210	Lowering Position – Fluid Flow	17
	Bypass Spool – Fluid Flow	18
35 183	Drop Rate Control Valve	19
35 108	Linkage Operation – Position Control	19
35 108	Position Control Operation – Neutral Position to Raise	20
	Position Control Operation – Raise Position to Neutral Position	20
	Position Control Operation – Neutral Position to Lowering Position	20
35 112	Linkage Operation – (draft control)	21
	Linkage Operation – Top Link Sensing Raise	21
	Linkage Operation – Top Link Sensing Lower	22
	Varying Draft Control Settings	22
35 124	Linkage Operation – Combining Position and Draft Control Settings	23
	Troubleshooting	24
	Pressure Testing	26
	Main System Relief Valve	26
	Inlet Restriction Test	28
	Pump Efficiency Test	29
35 110	Overhaul – Lift Cylinder	31
	Lift Cylinder	31
	Removal	31
	Disassembly	34
	Inspection and Repair	35
	Assembly	36
	Installation	38
	Drop Rate Control Valve	39
	Removal	39
	Disassembly	39
	Inspection	39
	Assembly	39

SECTION 35 - HYDRAULIC SYSTEM

BOOK 3 - 87357374

Chapter 1 - Hydraulic System (Continued)

CONTENTS

Section	Description	Page
	Hydraulic Control Valve	40
	Removal	40
	Disassembly	40
	Inspection	41
	Assembly	42
	Installation	43
35 180	Combination System Relief Valve and Diverter Valve Assemblies	44
	Removal	44
	Disassembly	45
	Inspection	45
	Assembly	46
	Installation	47
	Adjustments	48
35 124	HPL Linkage	48
	Adjustment Procedure	48
	Draft Control	49
	Draft Control Rod	50
	Adjustment Procedure	50
	Top Link Main Spring	51
	Adjustment Procedure	51
	Control Lever	51
	Adjustment Procedure	51
	Control Lever Neutral	51
	Adjustment Procedure	51
35 304	Description of Operation - Hydraulic Pump and Filter	52
35 304	Hydraulic Pump	53
	Removal	53
	Disassembly	55
	Inspection and Repair	55
	Assembly	56
	Installation	57

SECTION 35 - HYDRAULIC SYSTEM

BOOK 3 - 87357374

Chapter 1 - Hydraulic System (Continued)

CONTENTS

Section	Description	Page
35 300	Sump Tube and Screen Filter	58
	Removal	58
	Inspection	59
	Assembly	59
35 204	Description of Operation - Remote Valves	60
	Switching Between Single and Double Acting Cylinders	61
	Rear Remote Fluid Flow Diagrams	61
	Four Position, Single Spool Rear Remote Valve with Detent Auto Kick-Out and Float	61
	Double-Acting, Three Position, Single Spool Rear Remote Valve (w/o Kick-Out or Float)	64
	Single-Acting, Three position, Single Spool Rear Remote Valve (w/o Kick-Out or Float)	65
	Front Remote (Two Spool) Loader Control Valve Fluid Flow Diagrams	66
	Bucket Control	66
	Bucket Control - Neutral/Lift Control - Neutral	66
	Bucket Control - Dumping/Lift Control - Neutral	67
	Bucket Control - Dumping Regen/Lift Control - Neutral	68
	Bucket Control - Roll Back/Lift Control - Neutral	69
	Bucket Control - Neutral/Lift Control - Raising	70
	Bucket Control - Neutral/Lift Control - Lowering	71
	Bucket Control - Neutral/Lift Control - Float	72
	Two Spool Remote Valve	73
	Removal	73
	Disassembly	74
	Inspection	74
	Assembly	74
	Installation	78
	Overhaul - Rear Remote Valve	79
	Rear Remote (Three Position, Single Spool)	79
	Removal	79

SECTION 35 - HYDRAULIC SYSTEM

BOOK 3 - 87357374

Chapter 1 - Hydraulic System (Continued)

CONTENTS

Section	Description	Page
	Disassembly	84
	Inspection	85
	Assembly	86
	Installation	87
	Rear Remote (Four Position, Single Spool with Detent Kick-Out and Float)	93
	Removal	93
	Disassembly	97
	Inspection	102
	Assembly	103
	Installation	109
	Detent Kick-Out Adjustment	113

SECTION 41 - STEERING

BOOK 4 - 87357375

Chapter 1 - Steering

CONTENTS

Section	Description	Page
	Specifications	2
	Power Steering System	2
	Bolt Torque Specifications	3
	Special Tools	3
	Description of Operation	4
	Power Steering	4
41 204	Power Steering Control Motor	6
41 206	Power Steering Pump	7
41 216	Power Steering Cylinders - Standard FWD	7
41 200	Power Steering Operation - Standard FWD	8
	Fluid Flow - Neutral Position	8

SECTION 41 - STEERING

BOOK 4 - 87357375

Chapter 1 - Steering (Continued)

CONTENTS

Section	Description	Page
41 200	Fluid Flow - Left Turn	9
41 200	Fluid Flow - Right Turn	10
41 200	Manual Operation	11
	Troubleshooting	12
	Pressure Testing	15
	Pump, Steering Motor and Relief Valve	15
	Test	15
	Steering Cylinder	16
	Test	16
	Overhaul	17
	Steering Control Motor	17
	Removal	17
	Disassembly	18
	Inspection	24
	Assembly	24
	Installation	29
41 216	Steering Cylinder - FWD	31
	Removal	31
	Disassembly	32
	Inspection	33
	Assembly	34
41 216	Installation	36
41 206	Power Steering Pump and Reservoir Tank	38
	Pump Removal	38
	Disassembly	39
	Inspection and Repair	39
	Assembly	39
41 206	Installation	40
	Steering Tubes	40

SECTION 44 - WHEELS AND TIRES

BOOK 4 - 87357375

Chapter 1 - Wheels and Tires

CONTENTS

Section	Description	Page
	Description of Operation	2
	Wheel Tread Settings	2
	Front Wheel Settings	2
	Front Axle: (FWD) (not adjustable)	2
	Front Axle: (2WD) (adjustable)	2
	Rear Wheel Settings	3
	Rear Axle: (FWD) and (2WD)	3
	Tractor Weighting	5
	Weighting for Stability	5
	Weight Limitations	5
	Cast Iron Weights (optional)	6
	Front Frame Mounted Weights	6
	Optional Front Weight Extension Bracket	6
	Rear Wheel Weight Installation (Ag./Industrial Tires)	7
	Rear Wheel Weights	7
	Rear Counterweight Bracket (optional)	8
	Ballasting Box	8
	Liquid Ballast (optional)	9
	Tire Pressure	9