

TC31DA, TC34DA REPAIR MANUAL COMPLETE CONTENTS

SECTION 00 - GENERAL INFORMATION	2
SECTION 10 - ENGINE	3
SECTION 18 - CLUTCH	10
SECTION 21 - GEAR TRANSMISSION	11
SECTION 25 - FWD AXLE	14
SECTION 27 - DIFFERENTIAL, REAR AXLE	17
SECTION 29 - HYDROSTATIC TRANSMISSION	18
SECTION 31 - POWER TAKE-OFF SYSTEMS	22
SECTION 33 - BRAKES	24
SECTION 35 - HYDRAULIC SYSTEM	24
SECTION 41 - STEERING SYSTEMS	27
SECTION 44 - WHEELS AND TIRES	29
SECTION 55 - ELECTRICAL SYSTEM	30
SECTION 90 - PLATFORM	36

The following pages are the collation of the contents pages from each section and chapter of the TC31DA, TC34DA Repair manual. Complete Repair part # 87531021.

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 TC31DA, TC34DA Tractors.

SECTION 00 - GENERAL INFORMATION

BOOK 1 - 87531022

Chapter 1 - General Information

CONTENTS

Section	Description	Page
	Precautionary Statements	2
	Personal Safety	2
	Machine Safety	2
	Information	2
	Safety	3
	Precautionary Statements	3
	The Tractor	3
	Servicing the Tractor	3
	Operating the Tractor	4
	Driving the Tractor	4
	Operating the PTO	5
	Diesel Fuel	5
	Safety Frame (ROPS)	5
	Decals	6
	Safety Decals	6
	Instruction Decals	8
	Ecology and the Environment	12
	Helpful Hints	12
	International Symbols	13
	Specifications	14
	General Dimensions	20
	Minimum Hardware Tightening Torques	23
00 400	Lubrication and Maintenance	25
	Lubrication	25
	Liquid Ballast (Optional)	27
	Tire Pressure	27
	Rear Tire Liquid	27

SECTION 10 - ENGINE

BOOK 1 - 87531022

Chapter 1 - Engine Systems

CONTENTS

Section	Description	Page
	Specifications	6
	Engine Bolt Torque Specifications	14
	Engine Fuel System Bolt Torque Specifications	14
	Metric Bolt Torque Specifications	15
	Special Tools	16
	Compression Test and Tools	16
	Description of Operation – General Information	17
	Cylinder Head and Valve Train Components	18
	Cylinder Block Assembly	18
	Troubleshooting	20
	Overhaul	24
	Engine	24
	Preparation	24
	Fuel Injector and Glow Plug	25
	Removal	25
	Oil Pressure Switch	26
	Removal	26
	Temperature Sending Switch and Alternator	26
	Removal	26
	Fan, Water Pump and External Oil Tube	26
	Removal	26
	Head Cover	27
	Removal	27
	Rocker Arm Shaft and Support Bracket	27
	Removal	27
10 101	Cylinder Head	28
	Removal	28
	Valve Tappet	28
	Removal	28
	Fuel Shutoff Solenoid	28
	Removal	28
	Timing Gear Cover	29
	Removal	29

SECTION 10 - ENGINE

BOOK 1 - 87531022

Chapter 1 - Engine Systems (Continued)

CONTENTS

Section	Description	Page
10 106	Timing Gears and Camshaft	30
	Removal	30
10 102	Oil Sump	30
	Removal	30
	Oil Suction Pipe and Strainer	31
	Removal	31
	Connecting Rods, Bearings, Pistons and Rings	31
	Removal	31
10 103	Flywheel	32
	Removal	32
	Backplate and Oil Seal	32
	Removal	32
	Front Crankshaft Gear	32
	Removal	32
	Crankshaft and Main Bearings	33
	Removal	33
10 101	Cylinder Head	34
	Disassembly	34
	Inspection and Repair	34
	Valve Seats	35
	Inspection and Repair	35
	Valves	36
	Inspection and Replacement	36
	Valve Guides	37
	Inspection and Replacement	37
	Valve Springs	38
	Inspection and Replacement	38
	Rocker Arms	38
	Inspection and Replacement	38
	Push Rods	39
	Inspection and Replacement	39
	Cylinder Block	40
	Inspection	40

SECTION 10 - ENGINE

BOOK 1 - 87531022

Chapter 1 - Engine Systems (Continued)

CONTENTS

Section	Description	Page
10 105	Pistons	41
	Disassembly and Inspection	41
	Piston Rings	43
	Disassembly and Inspection	43
	Connecting Rods	43
	Disassembly and Inspection	43
	Connecting Rod Bearing Oil Clearance Check	45
	Pistons, Rings and Connecting Rod	46
	Assembly	46
10 103	Main Bearing and Thrust Washer	47
	Removal and Inspection	47
	Crankshaft	47
	Inspection	47
	Crankshaft Bearing (Bushing)	48
	Inspection	48
	Replacement	49
	Crankshaft Front Gear, Main Bearings and Thrust Washers	49
	Assembly	49
	Port Block	51
	Removal	51
	Installation	51
10 106	Timing Gear	51
	Inspection	51
	Camshaft	52
	Disassembly	52
	Inspection	52
	Assembly	52
10 103	Flywheel	53
	Inspection and Repair	53
10 102	Timing Gear Housing	53
	Front Oil Seal and Steering Pump Seal	53
	Replacement	53

SECTION 10 - ENGINE

BOOK 1 - 87531022

Chapter 1 - Engine Systems (Continued)

CONTENTS

Section	Description	Page
10 103	Crankshaft and Bearing Holder	54
	Installation	54
	Rear Oil Seal and Backplate	54
	Installation	54
	Flywheel	55
	Installation	55
10 105	Pistons and Connecting Rods	55
	Installation	55
	Oil Suction Pipe and Suction Strainer	56
	Installation	56
	Oil Sump	56
	Installation	56
10 106	Camshaft and Camshaft Gear	57
	Installation	57
10 106	Idler Gear, Oil Pump and Injection Timing	57
	Installation	57
	Timing Gear Cover	57
	Installation	57
	Crankshaft Pulley	58
	Installation	58
	Fuel Injection Pump	58
	Installation	58
	Power Steering Pump	58
	Installation	58
10 101	Head Gasket Selection	59
	Cylinder Head	59
	Assembly	59
10 106	Valve Clearance Adjustment	60
	Head Cover	60
	Installation	60
	Water Pump and Cooling Fan	60
	Installation	60

SECTION 10 - ENGINE

BOOK 1 - 87531022

Chapter 1 - Engine Systems (Continued)

CONTENTS

Section	Description	Page
	External Oil Tube	61
	Installation	61
	Glow Plug and Connector	61
	Installation	61
	Fuel Injector	61
	Installation	61
10 218	Fuel Piping	62
	Installation	62
	Alternator and Temperature Sender Switch	62
	Installation	62
	Exhaust Manifold	62
	Installation	62
10 304	Description of Operation – Engine Lubrication System	63
10 206	Oil Filter	66
	Construction and Function	66
	Maintenance	66
10 304	Oil Pump	66
	Removal	66
	Inspection	66
	Installation and Adjustment	67
	Engine Oil Pressure Check	68
	Oil Pressure Relief Valve	68
	Removal	68
	Installation	68
	Oil Consumption	69
10 400	Description of Operation – Cooling System	70
	Maintenance	72
	Coolant	72
	Radiator Cap	72
10 402	Thermostat	73
10 402	Water Pump	73
10 414	Cooling Fan	73

SECTION 10 - ENGINE

BOOK 1 - 87531022

Chapter 1 - Engine Systems (Continued)

CONTENTS

Section	Description	Page
	Overhaul	74
10 406	Radiator	74
	Removal	74
	Inspection and Repair	76
	Installation	76
10 402	Water Pump	78
	Removal	78
	Inspection and Repair	79
	Installation	79
10 402	Thermostat	80
	Removal	80
	Inspection and Repair	81
	Installation	81

SECTION 10 - ENGINE

BOOK 1 - 87531022

Chapter 2 - Fuel System

CONTENTS

Section	Description	Page
	Specifications	3
	Fuel Injection Pump Specifications	4
	Special Tools	4
	Troubleshooting - General	5
	Troubleshooting - Fuel Injectors	8
	Troubleshooting - Governor	9
10 242	Description of Operation - Injection Pump	10
	Effective Stroke	11
10 244	Fuel Variation Mechanism	11
	Delivery Valve	12
	Injection Quantity Adjustment Mechanism	13

SECTION 10 - ENGINE

BOOK 1 - 87531022

Chapter 2 - Fuel System (Continued)

CONTENTS

Section	Description	Page
10 244	CTD (Compact Timing Device) Mechanism	13
10 214	Delivery Valves	15
10 214	Injection Pump	17
	Removal	17
	Repair	18
	Installation	19
	Timing and Governor Adjustment	20
10 230	Original Pump and Drive Components	20
	Installation	20
	New Pump or Drive Component	21
	Installation	21
	Spill-Timing Procedure	22
	Bleeding the Fuel System	26
	Fuel Setting - Adjustment	28
	Fuel Screw/High Idle	28
10 230	Description of Operation - Governor	29
	Governor	31
	Disassembly	31
	Assembly	32
10 218	Description of Operation - Injectors	34
	Injectors	35
	Removal	35
	Disassembly	36
	Assembly and Adjustment	36
	Engine Breather Valve	37
	Removal	38
	Installation	38
	Troubleshooting	39

SECTION 18 - CLUTCH

BOOK 1 - 87531022

Chapter 1 - Clutch

CONTENTS

Section	Description	Page
	Troubleshooting	3
	Specifications	4
	Special Tools	5
	Description of Operation – Single Clutch	6
	HST Transmission	6
	Adjustments	8
	Free-Play	8
	Overhaul	9
	Single Clutch	9
	Removal	9
	Inspection	9
	Installation	10
	Description of Operation – Double Clutch	11
	9 x 3 Gear Transmission	11
	Adjustments	12
	Free-Play	12
	PTO Clutch	12
	Overhaul	13
	Double Clutch	13
	Disassembly	13
	Inspection	15
	Assembly	15
	Double Clutch Adjustments	16
	Servicing Clutch-Related Components	17
	Clutch Pilot Bearing (9 x 3 Transmission Only)	17
	Removal	17
	Installation	17

SECTION 18 - CLUTCH

BOOK 1 - 87531022

Chapter 1 - Clutch (Continued)

CONTENTS

Section	Description	Page
	Clutch Dimensions	18
	Clutch Release Bearing	19
	Removal	19
	Inspection	19
	Assembly	20
	Clutch Linkage Components	20
	Clutch Cross Shaft Bushings	20
	Removal	20
	Assembly	21
	Clutch Pedal Bushings	22
	Removal	22
	Assembly	22

SECTION 21 - GEAR TRANSMISSION

BOOK 2 - 87531023

Chapter 1 - Gear Transmission

CONTENTS

Section	Description	Page
	Specifications	3
	General Bolt Torque Specifications	4
	Special Tools	5
	Description of Operation	6
	Powerflow	9
	Initial Power Flow - Transmission Input	11
	Initial Power Flow - PTO Input	12
	FWD Power Flow	13
	Overhaul	14
	Transmission Preparation	14
21 114	Separating the Tractor at Clutch Housing/Engine	14
	Separating Clutch Housing/Transmission	21

SECTION 21 - GEAR TRANSMISSION

BOOK 2 - 87531023

Chapter 1 - Gear Transmission (Continued)

CONTENTS

Section	Description	Page
	Separating Transmission/Differential	21
	Clutch Housing	22
21 148 63	Disassembly	22
	Shift Rails	23
	Removal	23
	Main Shaft and Gears	23
	Removal	23
	PTO Countershaft and Gears	24
	Removal	24
	Countershaft and Gears	24
	Removal	24
	Reverse Idler Shaft and Gear	25
	Removal	25
	FWD Shift Rail	25
	Removal	25
	FWD Driveshaft and Gear	26
	Removal	26
	Rear Main Shaft and Gears	26
	Removal	26
	Range Gear Shift Rail, Arm and Fork	26
	Removal	26
	Drive Pinion and Gears	26
	Removal	26
	Inspection	27
	Assembly	27
	Preparation	27
	Drive Pinion and Gears	28
	Installation	28
	Range Gear Shift Rail, Arm and Fork	28
	Installation	28
	Rear Main Shaft and Gears	29
	Installation	29

SECTION 21 - GEAR TRANSMISSION

BOOK 2 - 87531023

Chapter 1 - Gear Transmission (Continued)

CONTENTS

Section	Description	Page
	FWD Driveshaft and Gear	29
	Installation	29
	FWD Shift Rail	30
	Installation	30
	Reverse Idler Shaft and Gear	30
	Installation	30
	Countershaft and Gears	31
	Installation	31
	PTO Countershaft and Gears	31
	Installation	31
	Main Shaft and Gears	33
	Installation	33
	Shift Rails	34
	Installation	34
	Clutch Housing	35
	Assembly	35
	Transmission Differential	36
	Assembly	36
	Clutch Housing/Transmission	37
	Assembly	37
	Clutch Housing/Engine	38
	Assembly	38
	Main Shift Lever	46
	Removal	47
	Inspection	47
	Assembly	48

SECTION 25 - FWD AXLE

BOOK 2 - 87531023

Chapter 1 - SuperSteer

CONTENTS

Section	Description	Page
	Specifications	3
	Torque Specifications	4
	Front to Rear Axle Ratio	5
	Special Tools	8
25 100	Description of Operation - SuperSteer, Front Axle and Sensitrack	8
	Automatic Position (Engaged)	9
	Automatic Position (Disengaged)	9
	Full Time Front Wheel Drive (Locked Down)	9
	SuperSteer Front Axle	10
	Sensitrack	12
	Removal	12
	Disassembly	13
	Inspection and Repair	13
	Assembly	14
	Cable Adjustment	17
	Installation	17
25 100	SuperSteer Axle	18
	Removal	18
	SuperSteer Axle Components	21
25 108	Reduction Gear - Drop Box	22
	Removal	22
	Disassembly	24
	Reduction Gear Box Assembly	25
	Seal Installation	25
	Front Axle and Differential	27
25 102	Disassembly	27
	Drive Pinion	28
	Disassembly	28
	Front Axle	28
	Inspection and Repair	28
	Differential	29
	Inspection	29

SECTION 25 - FWD AXLE

BOOK 2 - 87531023

Chapter 1 - SuperSteer (Continued)

CONTENTS

Section	Description	Page
	Front Axle and Differential	29
	Assembly	29
	Differential Gear	30
	Assembly	30
	Axle and Differential	30
	Assembly	30
	Ring Gear-To-Pinion	31
	Backlash Check and Adjustment	31
	SuperSteer Axle	35
	Installation	35
	Crankshaft Pulley	36
	Installation	36
	Steering Stops	37
	Adjustment	37

SECTION 25 - FWD AXLE

BOOK 2 - 87531023

Chapter 2 - Standard FWD Axle

CONTENTS

Section	Description	Page
	Specifications	2
	Four Wheel Drive	2
	Bolt Torque Specifications	3
	Troubleshooting	4
	Description of Operation	5
	Standard Front-Wheel Drive Axle	5
	Removal	7
25 102	Front Axle and Differential	8
	Disassembly	8
	Drive Pinion	9
	Disassembly	9
	Front Axle	10
	Inspection and Repair	10
	Differential	11
	Inspection and Repair	11
	Front Axle and Differential	11
	Assembly	11
	Differential Gear	12
	Assembly	12
	Axle and Differential	12
	Assembly	12
	Ring Gear-To-Pinion	13
	Backlash Check and Adjustment	13
	Front Wheel Drive Axle	15
	Installation	15
	Reduction Gear – Drop Box	17
	Disassembly	17
	Reduction Gear Box	19
	Seal Installation	19
	Assembly	19
	Steering Stops	21
	Adjustment	21

SECTION 27 - DIFFERENTIAL, REAR AXLE

BOOK 2 - 87531023

Chapter 1 - Differential, Rear Axle

CONTENTS

Section	Description	Page
	Specifications	2
	Ring Gear and Pinion Gear Pattern Specification and Adjustment	2
	Bolt Torque Specifications	3
	Special Tools	3
	Introduction	4
27 110	Description of Operation - Differential Assembly	5
27 110	Differential Lock	6
	Overhaul - Differential Assembly	7
27 106	Differential	7
	Removal	7
	Disassembly	9
	Inspection	9
	Drive Pinion	10
	Removal	10
	Disassembly (with HST Transmission)	10
	Disassembly (with 9 x 3 Transmission)	11
	Assembly and Installation	12
	Differential	13
	Assembly and Installation	13
	Description of Operation - Rear Axle	15
	Overhaul - Rear Axle	16
	Rear Axle	16
	Removal	16
27 126	Disassembly	17
	Inspection	20
	Assembly	20

SECTION 29 - HYDROSTATIC TRANSMISSION

BOOK 2 - 87531023

Chapter 1 - Hydrostatic Transmission

CONTENTS

Section	Description	Page
	Specifications	5
	Hydrostatic Transmission	5
	Bolt Torques	5
	Minimum Hardware Tightening Torques	6
	Special Tools	8
	Troubleshooting	9
	Description of Operation - Hydrostatic Transmission	10
29 202	Hydrostatic Transmission	10
29 212	Variable Displacement Pump	12
29 212	Fixed Displacement Motor	13
	Fluid Flow	14
	Neutral Position	14
	Forward Position	15
	Reverse Position	16
	HST Charge Circuit	17
	Overhaul - Hydrostatic Transmission	18
	Separating the Tractor Between the Engine and Clutch Housing	18
	Attaching the Tractor at Engine and Clutch Housing	22
	Separating the Tractor Between the Hydrostatic Transmission and the Rear Axle Center Housing	29
	Hydrostatic Unit	29
	Removal	29
	Hydrostatic Gearbox	30
	Removal	30
	Hydrostatic Unit and Gearbox	30
	Installation	30
29 202	Hydrostatic Pump	34
	Disassembly	34
	Hydrostatic Motor	35
	Disassembly	35
	Hydrostatic Motor Shaft	37
	Disassembly	37

SECTION 29 - HYDROSTATIC TRANSMISSION

BOOK 2 - 87531023

Chapter 1 - Hydrostatic Transmission (Continued)

CONTENTS

Section	Description	Page
	Charge Pump	37
	Disassembly	37
	Swash Plate	38
	Disassembly	38
	Inspection	39
	Hydrostatic Pump	42
	Assembly	42
	HST Piston Pump Cylinder Block	43
	Assembly	43
	HST Motor Cylinder Block	45
	Assembly	45
29 130	Port Block – Neutral and Feed Valves	46
	Disassembly	46
	Inspection	46
	Assembly	46
	Neutral Valve	47
	Disassembly	47
	Inspection	47
	Assembly	47
	Charge Pump Relief Valve	47
	Disassembly	47
	Inspection	47
	Assembly	47
	High Pressure Relief Valve	48
	Removal	48
	Installation	48
	Hydrostatic Pump and Port Block	48
	Assembly	48
	Motor and Port Block	50
	Assembly	50

SECTION 29 - HYDROSTATIC TRANSMISSION

BOOK 2 - 87531023

Chapter 1 - Hydrostatic Transmission (Continued)

CONTENTS

Section	Description	Page
	HST Cooler Check Valve	51
	Disassembly	51
	Inspection	51
	Assembly	51
	Pressure Tests	52
	High Pressure Relief Valve	52
	High Pressure Relief Valve Access (Alternate Method)	53
	Charge Pump Relief Valve	54
	Description of Operation – Gearbox	56
29 300	Hydrostatic Transmission Gearbox	56
	HST	57
	Gearbox Power Flow	57
	Overhaul – Gearbox	61
	Gearbox	61
	Removal	61
	Gearbox Case	62
	Removal	62
	PTO Input Shaft	62
	Disassembly	62
	Transmission Input Shaft	62
	Disassembly	62
	FWD Shift Rod	63
	Disassembly	63
	FWD Drive Shaft	63
	Disassembly	63
	Rear Main Shaft	63
	Disassembly	63
	Range Gear Shifter Rod	64
	Disassembly	64
	Drive Pinion Shaft	64
	Disassembly	64

SECTION 29 - HYDROSTATIC TRANSMISSION

BOOK 2 - 87531023

Chapter 1 - Hydrostatic Transmission (Continued)

CONTENTS

Section	Description	Page
	PTO Countershaft	64
	Disassembly	64
	Gearbox Components	65
	Inspection	65
	Drive Pinion	66
	Assembly	66
	PTO Countershaft	66
	Assembly	66
	Range Gear Shifter Rod	66
	Assembly	66
	Rear Main Shaft	67
	Assembly	67
	FWD Main Shaft	67
	Assembly	67
	Transmission Input Shaft	68
	Assembly	68
	PTO Input Shaft	68
	Assembly	68
	Gearbox	68
	Assembly	68
	Adjustments	69
	Rear PTO Link	69
	Adjust	69
	Mid-PTO Link	69
	Adjust	69
	Range Gear Link	69
	Adjust	69
29 200	HST Neutral Position	70
	Adjustment	70
	Treadle Forward Stop	71
	Adjust	71

SECTION 29 - HYDROSTATIC TRANSMISSION

BOOK 2 - 87531023

Chapter 1 - Hydrostatic Transmission (Continued)

CONTENTS

Section	Description	Page
	Treadle Rear Stop Adjustment	71
	Cruise Control Adjustment	71
	HST Neutralizer	71
	Removal	72
	Disassembly	72
	Inspection	72
	Assembly	73
	Installation	73

SECTION 31 - POWER TAKE-OFF SYSTEMS

BOOK 3 - 87531024

Chapter 1 - Power Take-Off Systems

CONTENTS

Section	Description	Page
	Description of Operation – Live Power Take-Off	3
	Live Power Take-Off	3
	Power Take-Off Drive – Hydrostatic Transmission	4
	Overhaul – Power Take-Off	5
	Power Take-Off	5
	Removal	5
	Output Shaft	5
	Removal	5
	Rear Countershaft	6
	Removal	6
	Front Countershaft	6
	Removal	6
	Shifter	6
	Removal	6
	Assembly	8
	Front Countershaft	9
	Assembly	9

SECTION 31 - POWER TAKE-OFF SYSTEMS

BOOK 3 - 87531024

Chapter 1 - Power Take-Off Systems (Continued)

CONTENTS

Section	Description	Page
	Rear Countershaft	9
	Assembly	9
	Center Countershaft	9
	Assembly	9
	Output Shaft	9
	Assembly	9
	Description of Operation - Mid-Mount Power Take-Off	11
	Mid-Mount Power Take-Off	11
	Overhaul - Mid-Mount Power Take-Off	12
	Countershaft	13
	Removal	13
	Shifter Arm	13
	Removal	13
	Gear Box	14
	Disassembly	14
	Gear Shifter	14
	Removal	14
	Output Shaft	14
	Removal	14
	Inspection	15
	Gear Box	15
	Assembly	15
	Output Shaft	15
	Installation	15
	Gear Shifter	15
	Installation	15
	Shifter Arm	15
	Assembly	16
	Countershaft	16
	Assembly	16
	Rear PTO Components Assembly	16
	Specifications	17

SECTION 33 - BRAKES

BOOK 3 - 87531024

Chapter 1 - Brakes

CONTENTS

Section	Description	Page
	Description of Operation	2
33 120	Brakes	2
33 110	Parking Brake	4
33 120	Overhaul	5
	Brakes	5
	Removal	5
	Inspection	7
	Assembly	8
	Brake Adjustment	10
	Specifications	11

SECTION 35 - HYDRAULIC SYSTEM

BOOK 3 - 87531024

Chapter 1 - Hydraulic System

CONTENTS

Section	Description	Page
	Specifications	4
	Bolt Torque Specifications	5
	Special Tools	6
35 000	Description of Operation - Hydraulic System	7
	Hydraulic Fluid Filter	9
35 080	Combination System Relief - Diverter Valve Manifold	9
35 200	Control Valve (HPL)	10
	Fluid Flow	11
	Flow Priority	11
35 210	Neutral Position	12
	Raising Position	13
	Lowering Position	14
35 200	Bypass Spool - Closed Position	15
	Bypass Spool - Open Position	15

SECTION 35 - HYDRAULIC SYSTEM

BOOK 3 - 87531024

Chapter 1 - Hydraulic System (Continued)

CONTENTS

Section	Description	Page
35 183	Flow Control Valve	16
35 108	Linkage Operation - Single Lever - Position Control	16
	Position Control Operation	17
	Neutral Position to Raise Position	17
	Raise Position to Neutral Position	17
	Neutral Position to Lowering Position	17
	Troubleshooting	18
	Pressure Testing	20
	Main System Relief Valve	20
	Inlet Restriction Test	21
	Pump Efficiency Test	22
	Overhaul - Lift Cylinder	23
35 110	Lift Cylinder	23
	Removal	23
	Disassembly	24
	Inspection	26
	Assembly	26
	Flow Control Valve	29
	Removal	29
	Disassembly	29
	Inspection	29
	Assembly	29
	Installation	30
35 200	Hydraulic Control Valve (HPL)	31
	Removal	31
	Disassembly	31
	Inspection	32
	Assembly	33
	Installation	34

SECTION 35 - HYDRAULIC SYSTEM

BOOK 3 - 87531024

Chapter 1 - Hydraulic System (Continued)

CONTENTS

Section	Description	Page
35 180	Combination System Relief Valve and Diverter Valve	35
	Removal	35
	Disassembly	35
	Inspection	35
	Assembly	35
	Adjustments	36
35 124	HPL Linkage	36
	Adjustment Procedure	36
	Control Lever	36
	Description of Operation - Hydraulic Pump and Filter	37
35 304	Hydraulic Pump and Filter	37
	Overhaul - Hydraulic Pump	37
	Hydraulic Pump	37
	Disassembly	38
	Inspection	38
	Assembly	38
	Description of Operation - Remote Valves	39
35 204	Remote Valves	39
	Rear (Single Spool) Remote Valve	40
	Front (Double Spool) Remote Valve	40
	Fluid Flow	42
	Neutral Position - Rear (Single Spool) Remote System	42
	Remote Cylinder Extending - Rear (Single Spool) Remote System	43
	Remote Cylinder Retracting - Rear (Single Spool) Remote System	44
	Front (Double Spool) Remote Control System Bucket Control - Neutral and Lift Control - Neutral	45
	Bucket Control - Dumping and Lift Control - Neutral - Front (Double Spool) Remote Control System	46
	Bucket Control - Dumping Regen and Lift Control - Neutral - Front (Double Spool) Remote Control System	47
	Bucket Control - Rollback and Lift Control - Neutral - Front (Double Spool) Remote Control System	48

SECTION 35 - HYDRAULIC SYSTEM

BOOK 3 - 87531024

Chapter 1 - Hydraulic System (Continued)

CONTENTS

Section	Description	Page
	Bucket Control - Neutral and Lift Control - Raising - Front (Double Spool) Remote Control System	49
	Bucket Control - Neutral and Lift Control - Lowering - Front (Double Spool) Remote Control System	50
	Bucket Control - Neutral and Lift Control - Float - Front (Double Spool) Remote Control System	51
	Overhaul - Remote Valves	52
35 204	Rear (Single Spool) Remote Valve	52
	Removal	52
	Disassembly	52
	Inspection	53
	Assembly	53
	Front (Double Spool) Remote Control Valve	53
	Removal	53
	Disassembly	54
	Inspection	56
	Assembly	56

SECTION 41 - STEERING SYSTEMS

BOOK 3 - 87531024

Chapter 1 - Power Steering

CONTENTS

Section	Description	Page
	Specifications	3
	Metric Bolt Torque Specifications	4
	Special Tools	5
	Description of Operation - Power Steering System	6
	Description of Operation - SuperSteer	7
41 204	Power-Steering Control Motor	9
41 206	Power Steering Pump	11
41 216	FWD Power Steering Cylinder	11
41 206	FWD Power Steering Operation	12
41 200	FWD Manual Operation	15
	SuperSteer Power Steering Operation	16
	SuperSteer Manual Operation	19
	Pressure Testing	20
	Pump, Steering Motor and Relief Valve	20
	Steering Cylinder	21
	Steering Stops	21
	Troubleshooting	22
	Overhaul	24
41 204	Power Steering Control Motor	24
	Removal	24
	Disassembly	25
	Inspection	30
	Assembly	31
	Installation	37
41 216	FWD Steering Cylinder	38
	Removal	38
	Disassembly	38
	Inspection	39
	Assembly	39
	Installation	39

SECTION 41 - STEERING SYSTEMS

BOOK 3 - 87531024

Chapter 1 - Power Steering (Continued)

CONTENTS

Section	Description	Page
41 216	SuperSteer Steering Cylinder	40
	Removal	40
	Disassembly	41
	Inspection	42
	Assembly	42
	Installation	43
41 206	Power Steering Pump	45
	Removal	45
	Disassembly	46
	Inspection and Repair	46
	Assembly	46
	Power Steering Tubes	47
	Steering Column	48
	Removal and Disassembly	48
	Assembly and Installation	51
	Adjustable Steering Column	52
	Disassembly	54
	Inspection	55
	Assembly	56

SECTION 44 - WHEELS AND TIRES

BOOK 3 - 87531024

Chapter 1 - Wheels and Tires

CONTENTS

Section	Description	Page
	Wheels and Tires	2
	FWD Tread Setting	2
	Front Wheel Settings	3
	Rear Wheel Settings	3
	Rear Axle Tread Setting	4
	Tractor Weighting	4
	Weighting for Stability	4
	Weighting Limitations	4
	Rear Wheel Weight Installation	6
	Liquid Ballast	7
	Tire Pressure	7
	Rear Tire Liquid	7
	Wheel Nut Torque Specification	8