

TN60VA, TN75VA, TN95VA REPAIR MANUAL COMPLETE CONTENTS

SECTION 00 - GENERAL	2
SECTION 10 - ENGINE	2
SECTION 18 - CLUTCH	7
SECTION 21 - TRANSMISSIONS	11
SECTION 23 - FWD TRANSFER BOX AND AUTO FWD	13
SECTION 25 - FRONT AXLE MECHANICAL TRANSMISSION	15
SECTION 27 - REAR AXLE MECHANICAL TRANSMISSION	19
SECTION 31 - MECHANICAL POWER TAKE-OFF	20
SECTION 33 - BRAKES	21
SECTION 35 - HYDRAULIC SYSTEMS	22
SECTION 41 - STEERING	25
SECTION 44 - AXLES AND WHEELS	27
SECTION 50 - CAB CLIMATE CONTROL	28
SECTION 55 - ELECTRICAL SYSTEM	30
SECTION 90 - PLATFORM, CAB, BODYWORK	38

The following pages are the collation of the contents pages from each section and chapter of the TNVA Series Repair manual. Complete Repair part # 87352279.

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 TNVA Series Tractors.

SECTION 00 - GENERAL

BOOK 1 - 87352280

Chapter 1 - General

CONTENTS

Section	Description	Page
	General Instructions	3
	Health and Safety	5
	Precautionary Statements	15
	Safety	16
	Ecology and the Environment	19
	Minimum Hardware Tightening Torques	20
	Federal Emissions Warranty	22
	Consumables	25

SECTION 10 - ENGINE

BOOK 1 - 87352280

Chapter 1 - Engine

CONTENTS

Section	Description	Page
	Specifications	3
	Engine Type	3
	Timing System	4
	Valve Timing Gears	4
	Crankcase and Cylinder Block	5
	Crankshaft and Bearings	6
	Connecting Rod	7
	Piston	8
	Tappet	8
	Rocker Arm and Valve	9
	Rotating Counterweight Dynamic Balancer	9
	Cylinder Head	10
	Tightening Torques	11
	Special Tools	12

SECTION 10 - ENGINE

BOOK 1 - 87352280

Chapter 1 - Engine (Continued)

CONTENTS

Section	Description	Page
	Description and Operation	14
	Sectional Views	14
	Troubleshooting	18
	Overhaul	22
	Engine	22
10 001 10	Removal	22
	Installation	28
10 001 30	Compression Test	29
10 001 54	Disassembly	30
	Assembly	46
	Crank, Main Bearings and Thrust Rings	46
	Rear Cover with Seal and Engine Flywheel	48
	Synchronizing the Timing Gears	49
	Bosch Injection Pump	50
	Cylinder Head	50
	Valve and Rocker Arm	51
	Fuel Injectors	52
	Cooling System Belt	53
	Cylinder Block	54
	Inspection	54
	Crankshaft and Main Bearings	56
	Crankshaft Inspection	56
	Main Bearing Inspection	58
	Main Bearing Cap Bolt Inspection	58
10 102 70	Crankshaft Front Oil Seal	59
	Removal	59
	Installation	60
	Engine Flywheel	61
	Refacing	61
	Flywheel Bolts	61
	Inspection	61

SECTION 10 - ENGINE

BOOK 1 - 87352280

Chapter 1 - Engine (Continued)

CONTENTS

Section	Description	Page
	Connecting Rods	62
	Inspection	62
	Pistons with Rings, Pins, Connecting Rods, Big End Caps and Bearings	63
	Inspection	63
	Assembly	64
	Installation	65
	Valves, Tappets and Camshaft	67
	Valves, Grinding	67
	Dimensions (mm) of Valves and Valve Guides	67
	Valve Timing Check	68
	Tappets Inspection	68
	Camshaft Inspection	69
	Cylinder Head	70
	Inspection	70
	Valve Seats, Grinding	71
10 101 53	Valve Guides, Replacement	72
	Rotating Counterweight Dynamic Balancer	75
	Assembly	76
	Installation	76
10 254 44	Exhaust Pipe	77
	Removal	77
	Installation	77

SECTION 10 - ENGINE

BOOK 1 - 87352280

Chapter 2 - Cooling System

CONTENTS

Section	Description	Page
	Specifications	2
	Special Tools	3
	Description and Operation	4
	Sectional Views	4
	Overhaul	6
	Thermostat	6
	Flushing the System (Models without Cabs)	6
	Flushing the System (Models with Cabs)	7
	Coolant Thermometer	8
	Coolant Pump Drive Belt	8
	Adjustment	8
10 402 11	Coolant Pump	9
	Removal	9
	Installation	10
10 402 28	Disassembly	10
	Assembly	11
10 402 30	Thermostat Valve	12
	Removal	12
	Installation	12
10 406 10	Radiator	13
	Removal	13
	Installation	14

SECTION 10 - ENGINE

BOOK 1 - 87352280

Chapter 3 - Lubrication System

CONTENTS

Section	Description	Page
	Specifications	2
	Description and Operation	3
	Overhaul	4
	Oil Pump	4
	Removal	4
	Installation	4

SECTION 10 - ENGINE

BOOK 1 - 87352280

Chapter 4 - Fuel System

CONTENTS

Section	Description	Page
	Specifications	2
	Special Tools	4
	Description and Operation	6
	Fuel Injection (Bosch) Pump	6
	Turbocharged Models	6
	Cold Start Compensation (All Models)	8
	Thermostatic Switch	8
	Mechanical Cold-start Accelerator (KSB)	8
	Overhaul	9
10 216 10	Fuel Tank	9
	Removal	9
	Installation	10
10 101 60	Injector Sleeves	11
	Inspection	11
	Removal	11
	Installation	11

SECTION 10 - ENGINE

BOOK 1 - 87352280

Chapter 4 - Fuel System (Continued)

CONTENTS

Section	Description	Page
10 218 30	Injectors	13
	Removal	13
	Installation	13
10 246 14	Bosch Fuel Injection Pump	14
	Removal	14
	Installation	17
	Checking the Fuel Injection Pump Timing with the Pump Installed on the Tractor	18
	Lock-time the Fuel Injection Pump with Pump Removed from the Tractor	23
	Fuel Circuit Air Bleeding	28

SECTION 18 - CLUTCH

BOOK 1 - 87352280

Chapter 1 - Clutch

CONTENTS

Section	Description	Page
	Specifications	2
	LUK 11"/11" Clutch	2
	LUK 11" Clutch	2
	Tightening Torques	3
	Special Tools	3
	Description and Operation	4
	Sectional Views	4
	Troubleshooting	6
	Overhaul	7

SECTION 18 - CLUTCH

BOOK 1 - 87352280

Chapter 1 - Clutch (Continued)

CONTENTS

Section	Description	Page
18 110 10	Clutch	7
	Removal	7
	Installation	10
18 110 30	Dual Disk Clutch 11"/11"	11
	Disassembly	11
	Assembly	14
18 110 30	Single Disk Clutch 11" (Fitted with Power Shuttle)	15
	Disassembly	15
	Assembly	15
	Checks, Measurements and Repairs	16
	Dual Disk Clutch	16
	Adjustment of 11"/11" Dual Clutch Release	17
	Adjustment of 11" Single Plate Clutch Release Levers	18
18 100 40	Transmission Clutch Pedal Adjustment	19
	Mechanical PTO Clutch Control Adjustments	20

SECTION 18 - CLUTCH

BOOK 1 - 87352280

Chapter 2 - Servo Assist PTO Control

CONTENTS

Section	Description	Page
	Description of Operation	2
	Sectional Views	2
	Checks, Measurement and Repairs	5
	Adjusting the PTO Clutch Servo Control	5
	Hydraulic PTO Servo Assist Cable Adjustment	6
	Adjusting the PTO Switch	7

SECTION 21 - TRANSMISSIONS

BOOK 2 - 87352281

Chapter 1 - Mechanical Transmission

CONTENTS

Section	Description	Page
	Specifications	2
	Reverser	2
	Creeper Unit	2
	Transmission and Range Gear	2
	Tightening Torques	3
	Special Tools	5
	Description and Operation	9
	Sectional Views	9
	Troubleshooting	13
	Gearbox, Creeper Unit and Reverser	13
	Creeper Unit	14
	Overhaul	15
21 118 10 -	Rear Transmission-Gearbox Casing	15
21 118 12	Removal	15
	Installation	19
21 118 85	Gearbox Transmission Casing	21
	Disassembly	21
	Assembly	27
21 130 10	Gearbox Control Lever	29
	Removal	29
	Installation	29
21 130 11	Range Gear Control Lever	30
	Removal	30
	Installation	30
21 130 52	Shuttle Control Lever	31
	Removal (Models Fitted With Mechanical Transmission)	31
	Installation	31
	Adjustments	32
	Transmission-Gearbox Casing	32

SECTION 21 - TRANSMISSIONS

BOOK 2 - 87352281

Chapter 2 - Mechanical Transmission with Splitter

CONTENTS

Section	Description	Page
	Specifications	2
	Reverser	2
	Creeper Unit	2
	Transmission and Range Gear	2
	Splitter	2
	Tightening Torques	3
	Tools	3
	Description and Operation	4
	Sectional Views	4
	Troubleshooting	9
	Gearbox, Creeper Unit and Reverser	9
	Creeper Unit	9
	Splitter Device	9
	Overhaul	10
21 160 31	Splitter Device and Creeper Unit Gearbox, Shafts and Bearings	10
	Removal	10
	Installation	12

SECTION 21 - TRANSMISSIONS

BOOK 2 - 87352281

Chapter 3 - Power Shuttle Transmission with Dual Command (2 Speed Power Shift) Function

CONTENTS

Section	Description	Page
	Specifications	3
	Reverser	3
	Creeper Unit	3
	Transmission and Range Gear	3
	Power Shuttle	4
	Tightening Torques	5
	Special Tools	6
	Description and Operation	10
	Sectional Views	10
	Troubleshooting	15
	Gearbox, Creeper Unit and Reverser	15
	Overhaul	16
21 118 85	Gearbox Transmission Casing	16
	Disassembly	16
	Assembly	17
21 134 46	Power Shuttle Control Valve	18
	Disassembly	18
	Assembly	20
21 134 62	Accumulator	21
	Disassembly	21
	Assembly	21
21 134 70	Gearbox Control Valve Solenoid Valve	22
	Removal	22
	Installation	22
21 134 70	Gearbox Control Valve Solenoid Valve	23
	Removal	23
	Installation	23
21 154 34 -	Clutch Casing	24
21 154 60	Disassembly	24
	Assembly	27

SECTION 21 - TRANSMISSIONS

BOOK 2 - 87352281

Chapter 3 - Power Shuttle Transmission with Dual Command (2 Speed Power Shift) Function (Continued)

CONTENTS

Section	Description	Page
	Calibrations	29
	HH Menu Access	29
	H1 - Clutches A (Lo) and B (Hi) Calibration	31
	H2 - Clutches A (Lo) and B (Hi) Calibration Values Display	34
	H3 - System Configuration	34
	H4 - Software Revision Level	36
	H5 - Control Switches Diagnosis	36
	H6 - Clutch A (LO) Fill Time Modification and Display	39
	H7 - Clutch B (HI) Fill Time Modification and Display	39
	H8 - Deleting Data from the Non-Volatile Memory (NVM) (EEPROM)	40
	H9 - Voltmeter Functions	41
	HA - Clutch Pedal Position and Neutral Switch Display	43
	HB - Transmission Oil Temperature Display	45
	HD - Shuttle Synchroniser Position	45
	HE - Gear Change Adjustments	46
	HF - Faults Stored in the Non-Volatile Storage of the ECU	46
	First Start-up	48
	Diagnostics	49
	ECU Location	49
	Fault Codes	50
	Fault Code Indication	50
	Fault Code Decoding	50
	Wiring Diagram	152
	Power Shuttle Electronic Control Unit Input/Output Wiring Diagram (32 + 16 and 44 + 16)	152
	Control Unit Description and Operation	155
	Ignition	155
	Shift from (High) Forward to Reverse Gear	156
	Shift from Reverse to (High) Forward Gears	157
	Shift from (Low) Forward Gear to Reverse Gear	158
	Shift from Reverse to (Low) Forward Gear	159

SECTION 23 - FWD TRANSFER BOX AND AUTO FWD

BOOK 2 - 87352281

Chapter 1 - FWD Transfer Box

CONTENTS

Section	Description	Page
	Specifications	3
	FWD Electrohydraulic Engagement	3
	Drive Shaft Data	3
	Tightening Torques	4
	Special Tools	5
	Description of Operation	7
	Sectional Views	7
	Troubleshooting	11
	Overhaul	12
23 101 26	Drive Shafts and Guard	12
	Disassembly (Mod. TN70NA or TN75NA)	12
	Assembly	14
23 101 26	Drive Shafts and Guard (Mod. TN60VA, TN75VA, TN95VA)	15
	Disassembly	15
	Assembly	15
23 101 40 –	Drive Gear Housing Assembly	16
23 202 50	Removal	16
	Installation	17
23 101 42	Drive Gear Housing Removed	18
	Disassembly	18
	Assembly	19
23 202 52	Drive Gear Housing Removed	20
	Removal	20
	Installation	21

SECTION 23 - FWD TRANSFER BOX AND AUTO FWD

BOOK 2 - 87352281

Chapter 1 - FWD Transfer Box (Continued)

CONTENTS

Section	Description	Page
	Calibrations	22
	HH Menu Access	22
	H3 - System Configuration	23
	H4 - Software Revision Level	25
	H5 - Control Switch Diagnostics	25
	H8 - Deleting Data from the Non-Volatile Memory (NVM) (EEPROM)	26
	H9 - Voltmeter Functions	27
	HD - FWD Engagement Position	28
	HF - Faults Stored In the Non-volatile Storage of the ECU	28
	First Start-up	30
	Diagnostics	31
	ECU Location	31
	Fault Codes	32
	Automatic FWD Fault Codes Indication	32
	Fault Code Decoding	32
	Wiring Diagram	70
	PTO and FWD Electronic Control Unit Input/Output	70

SECTION 25 - FRONT AXLE MECHANICAL TRANSMISSION

BOOK 3 - 87352282

Chapter 1 - Front Axle Mechanical Transmission (SuperSteer™ Axle)

CONTENTS

Section	Description	Page
	Specifications	3
	Tightening Torques	5
	Special Tools	8
	Description and Operation	12
	Sectional Views	12
	Troubleshooting	16
	Hydraulically Controlled Differential Lock - Front Axle	16
	Overhaul	17
25 100 30	Front Axle Assembly	17
	Removal	17
	Installation	20
25 102 15	Pinion and Front Axle Differential Housing	21
	Removal	21
	Installation	23
25 102 20	Front Axle Differential Drive	25
	Disassembly	25
	Assembly	26
25 102 24	Front Axle Differential	27
	Overhaul	27
25 104 34	Front Differential Lock Clutch Assembly	28
	Disassembly	28
	Assembly	30
25 108 30	Front Epicyclic Final Drive With Brake	31
	Disassembly	31
	Assembly	32
	Wheel Hub Seal With Front Brakes	33
	Disassembly	33
	Assembly	34
25 108 30	Front Epicyclic Final Drive	35
	Disassembly	35
	Assembly	36

SECTION 25 - FRONT AXLE MECHANICAL TRANSMISSION

BOOK 3 - 87352282

Chapter 1 - Front Axle Mechanical Transmission (SuperSteer™ Axle) (Continued)

CONTENTS

Section	Description	Page
	Wheel Hub Seal Replacement Less Front Brakes	38
	Disassembly	38
	Assembly	38
25 108 38	Wheel Hubs and Steering Knuckle	39
	Disassembly	39
	Assembly	39
25 108 46	Steering Knuckle Pins and Bearings	41
or 25 108 47	Disassembly	41
	Assembly	41
25 108 85	Steering Sensor Replacement	42
	Disassembly	42
	Assembly	42
	Adjustments	42
	Steering Sensor	42
	Pinion	43
	Differential	44
	Pinion Backlash	46

SECTION 25 - FRONT AXLE MECHANICAL TRANSMISSION

BOOK 3 - 87352282

Chapter 2 - Front Axle Mechanical Transmission

CONTENTS

Section	Description	Page
	Specifications	3
	Tightening Torques	5
	Special Tools	8
	Description and Operation	14
	Sectional Views	14
	Troubleshooting	20
	Overhaul	21
25 100 30	Front Axle, Assembly	21
	Removal	21
	Installation	25
25 100 19	Front Axle Pivot Bushings	27
	Replacement	27
41 216 18	Front Axle Steering Cylinder	28
	Disassembly	28
	Assembly	29
25 100 34	Wheel Hubs and Steering Knuckle	30
	Removal	30
	Installation	31
25 108 30	Front Epicyclic Final Drive	32
	Disassembly	32
	Assembly	34
25 102 15	Front Axle Differential Housing (For Models Without Brakes)	36
	Removal	36
	Installation	37
25 102 20 and 25 102 24	Hydraulically Controlled Differential Lock With Pinion (For Models Without Brakes)	39
	Disassembly	39
	Assembly	41
25 104 34	Front Axle Mechanical Differential Lock (Models Without Brakes)	43
	Disassembly (Pinion Removed)	43
	Assembly	44

SECTION 25 - FRONT AXLE MECHANICAL TRANSMISSION

BOOK 3 - 87352282

Chapter 2 - Front Axle Mechanical Transmission (Continued)

CONTENTS

Section	Description	Page
21 108 85	Front Axle Steering Sensor	45
	Replacement	45
25 102 15	Pinion With Differential Front Axle (Models With Brakes)	46
	Removal	46
	Installation	49
25 102 20 and 25 102 24	Pinion With Mechanically Controlled Differential Lock (Models With Brakes)	51
	Overhaul	51
	Assembly	53
	Front Axle Pinion	54
	Disassembly	54
	Assembly	54
25 104 34	Mechanical Differential Lock (Electro-hydraulically Controlled)	55
	Disassembly (Pinion Removed)	55
	Assembly	56
	Adjustments	57
	Pinion (For Models Without Brakes)	57
44 511 80	Leading Drive Wheels Toe-in Check	61
	Front Axle Steering Sensor	62
	Pinion (Models With Brakes)	63

SECTION 27 - REAR AXLE MECHANICAL TRANSMISSION

BOOK 3 - 87352282

Chapter 1 - Rear Axle Mechanical Transmission

CONTENTS

Section	Description	Page
	Specifications	2
	Pinion and Differential	2
	Final Drive	3
	Tightening Torques	4
	Special Tools	7
	Description and Operation	11
	Sectional Views	11
	Troubleshooting	14
	Pinion and Differential	14
	Final Drive	14
	Hydraulically Controlled Differential Lock	15
	Overhaul	16
27 106 16	Rear Transmission Gearbox	16
	Disassembly	16
	Assembly	19
27 120 10 -	RH or LH Lateral Final Drive Housing Assembly	22
27 120 20	Removal	22
	Installation	23
27 120 34	Drive Wheel Shaft	24
	Disassembly	24
	Assembly	25
27 120 32	Epicyclic Final Drive	26
	Removal	26
	Installation	26
	Adjustments	27
27 110 10	Adjusting the Position of Differential Lock Engagement Sleeve	27
	Adjusting the Pinion	28
	Adjustment of the Clearance Between the Side and Planetary Pinion Teeth	31

SECTION 31 - MECHANICAL POWER TAKE-OFF

BOOK 3 - 87352282

Chapter 1 - Mechanical Power Take-off

CONTENTS

Section	Description	Page
	Specifications	2
	Special Tools	5
	Tightening Torques	6
	Description and Operation	8
	Sectional Views	8
	Troubleshooting	12
	Overhaul	13
31 112 20	Mechanical PTO	13
	Disassembly	13
	Assembly	15

SECTION 33 - BRAKES

BOOK 3 - 87352282

Chapter 1 - Brakes

CONTENTS

Section	Description	Page
	Specifications	2
	Tightening Torques	3
	Description and Operation	5
	Sectional Views	5
	Special Tools	7
	Troubleshooting	9
	Overhaul	11
33 202 60	Right or Left Hand Brake	11
	Removal	11
	Installation	11
33 202 46	Brake Hydraulic Pump	13
	Removal	13
	Installation	14
	Service Brakes Control Pedals Stroke Adjustment (Tractors with Cabs)	15
33 202 04	Brake Hydraulic System Air Bleeding	17
33 110 40 -	Parking Brake	20
33 110 44	Removal	20
	Installation	21
	Adjustments	21
33 110 08	Handbrake Control Stroke Adjustment	21

SECTION 35 - HYDRAULIC SYSTEMS

BOOK 4 - 87352283

Chapter 1 - Rear Mechanical Hydraulic Lift

CONTENTS

Operation	Description	Page
	Specifications	2
	Rear Hydraulic Lift	2
	Implement Hitching Device	4
	Tightening Torques	4
	Special Tools	6
	Description and Operation	7
	Sectional Views	7
	Troubleshooting	16
	Overhaul	18
35 110 40	Lift Internal Controls (With the Lift Removed)	18
	Disassembly	18
	Assembly	21
	Adjustments	22
Op. 35 110 08	Rod Mechanism Adjustments	28
	Lift Arm Descent Speed Adjustments	30
	Upper Stroke Limit Adjustment Check	30
	Operations to be Performed to Adjust the Upper Stroke Limit of the Lift-O-Matic Device	31
35 110 42	Arm Shaft and Lift Cylinder (With the Lift Removed)	32
	Disassembly	32
	Assembly	34
35 114 14	Lift Control Valve D.A. (With Control Valve Removed)	36
	Disassembly	36
	Assembly	39
35 114 30	Lift Pressure Relief Valve	40
	Removal	40
	Installation	40
35 114 32	Settings	40

SECTION 35 - HYDRAULIC SYSTEMS

BOOK 4 - 87352283

Chapter 2 - Open Center System Auxiliary Control Valves

CONTENTS

Operation	Description	Page
	Specifications	2
	Special Tools	2
	Tightening Torques	2
	Specifications	3
	Sectional Views	3
	Overhaul	9
35 204 46	Auxiliary Control Valves (With the Unit Removed)	9
	Disassembly	9
	Assembly	10
	Testing	10

SECTION 35 - HYDRAULIC SYSTEMS

BOOK 4 - 87352283

Chapter 3 - Electronically Controlled Hydraulic Lift

CONTENTS

Section	Description	Page
	Specifications	4
	Electronically Controlled Hydraulic Lift	4
	Implement Hitching Device	5
	Tightening Torques	6
	Special Tools	6
	Description and Operation	8
	Sectional Views	8
	Overhaul	20
35 110 30	Electronically Controlled Hydraulic Lift	20
	Removal	20
	Assembly	22

SECTION 35 - HYDRAULIC SYSTEMS

BOOK 4 - 87352283

Chapter 3 - Electronically Controlled Hydraulic Lift (Continued)

CONTENTS

Section	Description	Page
35 110 53	Draft Sensor Support (With Lift Removed)	24
	Removal	24
	Assembly	24
35 130 30	Lift Electronic Control Center	25
	Removal	25
	Installation	25
35 130 36	Lift Arm Potentiometer	26
	Removal	26
	Installation	27
35 130 56	Draft Sensor	28
	Removal	28
	Installation	29
35 134 42	Electronically Controlled Hydraulic Lift	31
	Disassembly	31
	Assembly	33
35 138 20	Hydraulic Control Valve	35
	Removal	35
	Installation	35
35 138 24	Disassembly	36
	Assembly	37
	Control Valve Block Pin	37
	Disassembly	37
	Non-return Valve	38
	Disassembly	38
	Assembly	38
	Calibrations	39
	Cylinder Safety Valve	39
	Lift	40
	Connection Between the Calibration and Diagnostic Instrument 380000282 to the Diagnostic Connector	42
	Fault Codes	43
	Diagnostics	58
	Front/Rear Electronic Lift Electronic Control Unit Input/Output Wiring Diagram	141

SECTION 35 - HYDRAULIC SYSTEMS

BOOK 4 - 87352283

Chapter 4 - Non-Stop Flow Gear Pump

CONTENTS

Operation	Description	Page
	Specifications	2
	Hydraulic Pump C 42	2
	Bosch 25 Hydraulic Pump	3
	Description and Operation	3
	Sectional View	4
	Overhaul	5
	Lift Oil Pump (With the Pump Removed)	5
	Disassembly	5
	Assembly	6

SECTION 41 - STEERING

BOOK 5 - 87352284

Chapter 1 - Steering

CONTENTS

Operation	Description	Page
	Specifications	2
	Tightening Torques	2
	Tools	2
	Description and Operation	3
	Sectional Views	3
	Troubleshooting	7
	Overhaul	9
41 204 10	Hydrostatic Steering Wheel	9
	Removal	9
	Installation	9
41 204 30	Hydrostatic Steering Control Valve	10
	Removal	10
	Installation	11
41 204 34	Disassembly (with the control valve removed)	12
	Assembly	18
	Bench Testing	28

SECTION 41 - STEERING

BOOK 5 - 87352284

Chapter 2 - Non-Stop Flow Gear Pump

CONTENTS

Operation	Description	Page
	Specifications	2
	Hydraulic Pump A 25	2
	Hydraulic Pump A 31 XRP2	3
	Tightening Torques	3
	Description and Operation	4
	Sectional Views	4
	Overhaul	6
41 206 20	Hydrostatic Steering Oil Pump (with the pump removed)	6
	Disassembly	6
	Assembly	6

SECTION 44 - AXLES AND WHEELS

BOOK 5 - 87352284

Chapter 1 - Axles and Wheels

CONTENTS

Section	Description	Page
	Specifications	2
	Sectional View	4
	Tightening Torques	5
	Tools	7
	Troubleshooting	8
	Overhaul	9
44 101 22	Front Axle Hub	9
	Disassembly	9
	Assembly	11
44 101 30	Front Axle	12
	Removal	12
	Installation	14
44 101 46	Stub Axle	15
	Removal	15
	Installation	17
	Adjustments	19
44 511 80	Checking the Alignment of the Leading Wheels	19

SECTION 50 - CAB CLIMATE CONTROL

BOOK 5 - 87352284

Chapter 1 - Heating, Ventilation, and Air Conditioning

CONTENTS

Operation	Description	Page
	Safety Precautions	3
	Specifications	4
	Special Tools	5
	Description and Operation	6
	Main Components	8
	Sanden SD 5H11 Model Compressor	8
	Condenser	9
	Filter/Dryer	9
	Thermostatic Expansion Valve	10
	Electronic Thermostatic Switch (Antifrost)	11
	Evaporator	12
	Warnings for Air Conditioning System Repair Operations	12
	Cab Heating and Ventilation Controls	13
	Ventilation	13
	Electric Fan	13
	Air Filter	13
	Temperature Control Knob	14
	Ignition Switch	14
	Cab Air Conditioning Controls	15
	Temperature Control Knob	15
	Electric Fan Control Knob	15
	Recovery-Recycling and Evacuation-Charging Stations (380000315)	16
50 200 04	Filter/Drying, Recharging and Refrigeration Check	18
	Recycling of Recovered Refrigerant	19
	Discharge of Recovered Oil	20
	Transfer of Decontaminated Refrigerant from Cylinder (19) to an External Cylinder	20
	Evacuation and Charging the Cab Air Conditioning System Using the Evacuation/Charging Station 380000315.	20
	Charging the Graduated Cylinder (31) of the Evacuation/Charging Station	20
	Evacuation of the Cab Air Conditioning System	22

SECTION 50 - CAB CLIMATE CONTROL

BOOK 5 - 87352284

Chapter 1 - Heating, Ventilation, and Air Conditioning (Continued)

CONTENTS

Operation	Description	Page
	Charging the Cab Air Conditioning System (After Evacuation) With New Oil	22
	Charging the Cab Air Conditioning System With Refrigerant (After Evacuation)	22
	Summary of the Air Conditioning System Charging Operations	23
50 200 06	Checking for and Eliminating Any Gas Leaks	25
	Testing for Leaks With Leak Detector 380000314	25
	Checking for Refrigerant Leaks Using an Electronic Leak Detector	26
	Leak Detector (380000314)	26
	Refrigerant Gas Leak Test	26
	Adjustments	27
	Troubleshooting	28
	Visual Inspection of Components	28
	Functional Tests	33
	Checking Air Temperature	33
	Checking for Gas Leaks (with Detector 38000314)	34
	Overhaul	35
50 206 51	Cab Heating/Air Conditioning System	35
	Removal	35
	Installation	38
50 206 54	Cab Heating Unit	39
	Disassembly	39
	Assembly	39
50 206 56	Cab Air Conditioning System Evaporator Unit	40
	Disassembly	40
	Assembly	40
50 206 66	Cab Fan Unit	41
	Disassembly	41
	Assembly	41

SECTION 55 - ELECTRICAL SYSTEM

BOOK 5 - 87352284

Chapter 1 - Instruments

CONTENTS

Section	Description	Page
	Specifications	2
	Analog Instruments	2
	Indicator Light Panel	3
	Transmitters, Sensors and Switches	6
	Electronic Module Instruments	14
	Maintenance	17
	Replacing the Multi-purpose Warning Lights on the Instrument Panel	17