

---

# 5610S, 6610S, 7610S, 7010, 8010 REPAIR MANUAL COMPLETE CONTENTS

SECTION 00 - GENERAL .....	2
SECTION 10 - ENGINE .....	3
SECTION 18 - CLUTCH .....	7
SECTION 21 - TRANSMISSION SYSTEMS .....	8
SECTION 23 - FRONT AXLE TRANSFER BOX .....	9
SECTION 25 - FRONT AXLE - FOUR WHEEL DRIVE .....	10
SECTION 27 - MECHANICAL REAR WHEEL DRIVE .....	10
SECTION 31 - POWER TAKE-OFF .....	11
SECTION 33 - BRAKING SYSTEM .....	12
SECTION 35 - HYDRAULIC SYSTEM .....	13
SECTION 41 - STEERING SYSTEM .....	15
SECTION 44 - FRONT AXLE - TWO WHEEL DRIVE .....	16
SECTION 55 - ELECTRICAL SYSTEMS .....	16

The following pages are the collation of the contents pages from each section and chapter of the 5610S, 6610S, 7610S, 7010, and 8010 Tractor Repair manual. Complete Repair part # 87032901.

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 5610S, 6610S, 7610S, 7010, and 8010 Tractors.

---

# SECTION 00 - GENERAL

BOOK 1 - 87032902

## Chapter 1 - General

### CONTENTS

Description	Page
HEALTH AND SAFETY PRECAUTIONS .....	2
ACIDS AND ALKALIS .....	3
ADHESIVES AND SEALERS - see Fire .....	3
ANTIFREEZE - see Fire, Solvents e.g. Isopropanol, Ethylene Glycol, Methanol. ....	3
ARC WELDING - see Welding. ....	4
BATTERY ACIDS - see Acids and Alkalis. ....	4
BRAKE AND CLUTCH FLUIDS (Polyalkylene Glycols) - see Fire. ....	4
BRAZING - see Welding. ....	4
CHEMICAL MATERIALS - GENERAL - see Legal Aspects. ....	4
DO'S .....	4
DO NOTS .....	5
CORROSION PROTECTION MATERIALS - see Solvents, Fire. ....	5
DUSTS .....	5
ELECTRIC SHOCK .....	5
EXHAUST FUMES .....	6
FIBRE INSULATION - see Dusts. ....	6
FIRE - see Welding, Foams, Legal Aspects. ....	6
FIRST AID .....	6
FOAMS - Polyurethane - see Fire. ....	6
FUELS - see Fire, Legal Aspects, Chemicals - General, Solvents. ....	7
GAS CYLINDERS - see Fire. ....	7
GENERAL WORKSHOP TOOLS AND EQUIPMENT .....	8
LEGAL ASPECTS .....	8
LUBRICANTS AND GREASES .....	8
PAINTS - see Solvents and Chemical Materials - General. ....	9
SOLDER - see Welding. ....	9
SOLVENTS - see Chemical Materials - General Fuels (Kerosene), Fire. ....	10
SUSPENDED LOADS .....	10
WELDING - see Fire, Electric Shock, Gas Cylinders. ....	10

---

# SECTION 10 - ENGINE

BOOK 1 - 87032902

## Chapter 1 - Diesel Engines

### CONTENTS

Section	Description	Page
	Specifications .....	2
	Fault Finding .....	12
	Description and Operation .....	17
	Cylinder Head Assembly .....	17
	Camshaft Assembly .....	17
	Crankshaft Assembly .....	17
	Connecting Rods .....	17
	Pistons .....	17
	Manifolds .....	18
	Cylinder Block Assembly .....	18
	Timing Gears .....	18
	Lubrication System .....	19
	Diesel Engine Strip-down .....	19
	Separating the Tractor .....	21
	Disassembly and Overhaul .....	26
	Cylinder Head, Valves, and Related Parts .....	26
	Rocker Shaft .....	29
	Cylinder Head .....	29
	Valve Inserts .....	32
	Valve Guides .....	34
	New Valve Guide Stem Seals .....	34
	Valve Springs .....	36
	Rocker Shaft .....	37
	Cylinder Head .....	38
	Engine Front Cover and Timing Gear .....	39
	Oil Pan .....	43
	Connecting Rods, Bearings, Pistons, and Rings .....	43
	Connecting Rod Bushings .....	45
	Cylinder Block .....	47
	Cylinder Bore .....	49
	Sleeves .....	50
	Balancer .....	58
	Main Bearing .....	60
	Flywheel .....	61
	Rear Cover Plate .....	62

---

## SECTION 10 - ENGINE

BOOK 1 - 87032902

### Chapter 1 - Diesel Engines (Continued)

#### CONTENTS

Section	Description	Page
	Oil Pump .....	64
	Oil Filter Support Assembly .....	66
	Crankshaft .....	68
	Balancer Gear .....	69
	Timing Gear .....	70
	Crankshaft .....	71
	Camshaft .....	73
	Camshaft Bearings .....	74
	Overhaul .....	76
	Intake Manifold .....	76
	Exhaust Manifold .....	77
	Testing .....	78
	Engine Break-in (Low Hp Application) .....	78
	Engine Break-in (Other Than Low Hp Application) .....	79

## SECTION 10 - ENGINE

BOOK 1 - 87032902

### Chapter 2 - Engine Cooling System

#### CONTENTS

Section	Description	Page
	Description and Operation .....	2
	Cooling System Overhaul .....	3
	Radiator .....	4
	Thermostat .....	6
	Water Pump .....	7

---

## SECTION 10 - ENGINE

BOOK 1 - 87032902

### Chapter 3 - Air Cleaning System

#### CONTENTS

Section	Description	Page
	Specifications .....	2
	Torque Values .....	2
	Fault Finding .....	2
	Description and Operation .....	2
	Inner Element .....	6

## SECTION 10 - ENGINE

BOOK 1 - 87032902

### Chapter 4 - Fuel System

#### CONTENTS

Section	Description	Page
	Specifications .....	2
	Torque Values .....	2
	Special Tools .....	2
	Fault Finding .....	3
	Diesel Engines .....	3
	Fuel System .....	6
	Description and Operation .....	6
	Injectors .....	15
	Fuel Injection Pump – Adjustments .....	15
	Idle Speed Adjustment .....	16
	Maximum No-load Speed Adjustment .....	17
	DPS Fuel Injection Pump – Removal .....	18
	DPS Fuel Injection Pump Timing (Non-Emissionized Engine) .....	20
	DPS Fuel Injection Pump – Installation .....	22
	DP 200 Series Fuel Injection Pump .....	24
	Special Tools .....	25
	DP200 Series Fuel Injection Pump .....	28

---

## SECTION 10 - ENGINE

BOOK 1 - 87032902

### Chapter 4 - Fuel System (Continued)

#### CONTENTS

Section	Description	Page
	DP200 Series Fuel Injection Pump Shaft Lock Timing .....	32
	Alternative Method for Removing the DP200 Series Fuel Injection Pump .....	37
	Alternative Method for Installing the DP200 Series Fuel Injection Pump .....	45
	Fuel Injectors .....	47
	Overhaul .....	47
	Fuel Injector Testing .....	48
	Inspection and Repair .....	51
	Electric Lift Pump .....	54
	Main Fuel Tank .....	55
	Auxiliary Fuel Tank .....	56

## SECTION 10 - ENGINE

BOOK 1 - 87032902

### Chapter 5 - Turbocharger

#### CONTENTS

Section	Description	Page
	Specifications .....	2
	Turbocharger .....	3
	Fault Finding .....	5
	Overhaul .....	7

---

## SECTION 18 - CLUTCH

BOOK 1 - 87032902

### Chapter 1 - Single Clutches

#### CONTENTS

Section	Description	Page
	Description and Operation .....	2
	Operation .....	4
	Adjustments .....	5
	Overhaul .....	5
	Single Clutch Setting Procedure .....	10
	Inspection and Repair .....	13
	Installation .....	14

## SECTION 18 - CLUTCH

BOOK 1 - 87032902

### Chapter 2 - Servicing Clutch Associated Parts

#### CONTENTS

Section	Description	Page
	Specifications and Special Tools .....	2
	Torque Values .....	2
	Clutch Pedal Free-play (Travel) .....	2
	Special Tools .....	3
	Clutch Pilot Bearing .....	4
	Clutch Release Bearing .....	5
	Clutch Release Shaft Bushings .....	6
	Clutch Pedal Bushings .....	6

---

## SECTION 21 - TRANSMISSION SYSTEMS

BOOK 1 - 87032902

### Chapter 1 - 8 x 2 Transmission

#### CONTENTS

Section	Description	Page
	Specifications, Tightening Torques and Special Tools .....	2
	8x2 Non-synchromesh Transmission .....	2
	Torque Values .....	2
	Special Tools .....	3
	Tractor Specifications .....	4
	Ground Speeds .....	4
	Transmission - Description and Operation .....	8
	Introduction to Transmission Overhaul .....	10
	Gear Shift Levers and Covers - Overhaul .....	10
	Start Inhibitor Switch .....	12
	Transmission Front End - Overhaul .....	12
	Inspection and Repair .....	18

## SECTION 21 - TRANSMISSION SYSTEMS

BOOK 1 - 87032902

### Chapter 2 - 16 x 4 Dual Command (Dual Power) Transmission

#### CONTENTS

Section	Description	Page
	Specifications .....	2
	Torque Values .....	2
	Special Tools .....	2
	Fault Finding .....	3
	Dual Command Transmission - Description and Operation .....	5
	Disassembly .....	12
	Planetary Gear Set Shimming Procedure .....	17
	Pressure Testing .....	19



---

## SECTION 21 - TRANSMISSION SYSTEMS

BOOK 1 - 87032902

### Chapter 3 - Reduction Gearbox Assembly

#### CONTENTS

Section	Description	Page
	Specifications, Tightening Torques, and Special Tools .....	2
	Specifications .....	2
	Tightening Torques .....	2
	Special Tools .....	2
	Reduction Gearbox - Description and Operation .....	3
	Reduction Gearbox Overhaul .....	5

## SECTION 23 - FRONT AXLE TRANSFER BOX

BOOK 1 - 87032902

### Chapter 1 - Front Axle Transfer Box

#### CONTENTS

Section	Description	Page
	Specifications .....	2
	Clearances and Tolerances .....	2
	Shim Thickness Available .....	2
	Oil Capacity .....	2
	Special Tools .....	2
	Torque Values .....	2
	Description and Operation .....	3
	Overhaul .....	5

---

## SECTION 25 - FRONT AXLE-FOUR WHEEL DRIVE

BOOK 1 - 87032902

### Chapter 1 - Four Wheel Drive

#### CONTENTS

Section	Description	Page
	Specifications .....	2
	Clearances and Tolerances .....	2
	Shim Thickness Available .....	2
	Oil Capacity .....	3
	Special Tools .....	3
	Torque Values .....	3
	Description and Operation .....	4
	Adjustment .....	6
	Hub and Planetary Reduction Gear Assembly - Overhaul .....	7
	Axle Shafts - Overhaul .....	15
	Steering Swivel Pin Bearings - Overhaul .....	19
	Steering Cylinder and Track Rods – Overhaul .....	24
	Front Axle – Removal and Installation .....	28
	Differential Crown Wheel and Pinion Assembly – Overhaul .....	31
	Drive Shaft - Overhaul .....	44

## SECTION 27 - MECHANICAL REAR WHEEL DRIVE

BOOK 2 - 87032903

### Chapter 1 - Rear Axle

#### CONTENTS

Section	Description	Page
	Specifications .....	2
	Rear Axle Shaft Bearing Pre-load Spacers .....	2
	Differential Bearing Pre-load Spacers .....	2
	Clearances and Tolerances .....	2
	Torque Values .....	3
	Oil Capacity .....	3
	Special Tools .....	4

---

## SECTION 27 - MECHANICAL REAR WHEEL DRIVE

BOOK 2 - 87032903

### Chapter 1 - Rear Axle (Continued)

#### CONTENTS

Section	Description	Page
	Maximum Permissible Rear Axle Loading with Ballast and Mounted Equipment . . . . .	4
	Fault Finding . . . . .	5
	Description and Operation . . . . .	6
	Final Reduction Gear Assembly (Planetary Gear) . . . . .	8
	Separating the Tractor Between the Front Transmission and the Rear Axle . . . . .	9
	Rear Axle Shaft Assembly – Overhaul . . . . .	10
	Planetary Gear Assembly and Axle Housing – Overhaul . . . . .	14
	Differential and Differential Lock Assembly – Overhaul . . . . .	17
	Differential Lock Control Linkage – Overhaul . . . . .	20
	Drive Pinion Assembly – Overhaul . . . . .	22
	Adjustments . . . . .	25
	Rear Axle Assembly Final Reduction Drop Trumpet (Drop Box) – Component Overhaul . . . . .	30

## SECTION 31 - POWER TAKE-OFF

BOOK 2 - 87032903

### Chapter 1 - Power Take-Off Systems

#### CONTENTS

Section	Description	Page
	Specifications . . . . .	2
	Clearances and Tolerances . . . . .	2
	Shim Thickness Available . . . . .	2
	Torque Values . . . . .	2
	Special Tools . . . . .	3
	PTO – Fault Finding . . . . .	4
	Description and Operation . . . . .	6
	Mechanically Operated P.T.O. Clutch . . . . .	7
	P.T.O. Clutch Oil Flow – Disengaged . . . . .	7

---

## SECTION 31 - POWER TAKE-OFF

BOOK 2 - 87032903

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

#### CONTENTS

Section	Description	Page
	P.T.O. Clutch Oil Flow - Engaged .....	9
	P.T.O. Pressure Test .....	12
	Pressure Regulating Valve Test .....	12
	Cooling and Lubrication Circuit Relief Valve Test .....	13
	P.T.O. Clutch – Overhaul .....	13
	P.T.O. Shafts and Gears – Overhaul .....	19
	Single Speed Shafts and Gears - Overhaul .....	19
	Two-speed Shafts and Gears – Overhaul .....	21
	16x4 Dual Command (Power) Transmission .....	28

## SECTION 33 - BRAKING SYSTEM

BOOK 2 - 87032903

### Chapter 1 - Braking System

#### CONTENTS

Section	Description	Page
	Specifications .....	2
	Special Tools .....	2
	Fault Finding .....	2
	Torque Values .....	2
	Description and Operation .....	3
	Disc Brake Assembly – Overhaul .....	5
	Parking Brake Assembly – Overhaul .....	6
	Brake Pedal and Linkage – Overhaul .....	7

---

## SECTION 35 - HYDRAULIC SYSTEM

BOOK 2 - 87032903

### Chapter 1 - Hydraulic Circuits

#### CONTENTS

Section	Description	Page
	Specifications .....	2
	Special Tools .....	4
	Clearances and Tolerances .....	5
	Torque Values .....	6
	Fault Finding .....	7
	Description and Operation .....	9
	Hydraulic Component - General Description .....	33

## SECTION 35 - HYDRAULIC SYSTEM

BOOK 2 - 87032903

### Chapter 2 - Hydraulic Pumps

#### CONTENTS

Section	Description	Page
	Fixed Displacement Transmission Mounted (Tandem Gear) Type Pump .....	2
	Description and Operation .....	2
	Overhaul .....	4
	Fixed Displacement Engine Mounted (Single Gear) Type Pump .....	11
	Description and Operation .....	11
	Overhaul .....	12

---

## SECTION 35 - HYDRAULIC SYSTEM

BOOK 2 - 87032903

### Chapter 3 - Remote Control Circuit

#### CONTENTS

Section	Description	Page
	Description and Operation .....	2
	Remote Valve Circuit Oil Flow .....	3
	Remote Control Valve - Overhaul .....	22
	Remote Control Valve Coupler - Overhaul .....	30

## SECTION 35 - HYDRAULIC SYSTEM

BOOK 2 - 87032903

### Chapter 4 - Component Overhaul

#### CONTENTS

Section	Description	Page
	Oil Cooler - Overhaul .....	2
	Pressure Regulating Valve - Overhaul .....	2
	Hydraulic Lift Cover - Overhaul .....	6
	Priority Valve Pack - Overhaul .....	11
	Hydraulic Lift Cylinder Assembly - Overhaul .....	14

## SECTION 35 - HYDRAULIC SYSTEM

BOOK 2 - 87032903

### Chapter 5 - Adjustments and Testing

#### CONTENTS

Section	Description	Page
	Draft Control Main Spring Adjustment .....	2
	Draft Control Linkage Adjustment .....	2
	Position Control Linkage Adjustment .....	3
	Remote Control Valve External Linkage Adjustment .....	4
	Pressure Testing .....	4

---

## SECTION 41 - STEERING SYSTEM

BOOK 2 - 87032903

### Chapter 1 - Hydrostatic Steering System

#### CONTENTS

Section	Description	Page
	Specifications .....	2
	Fault Finding .....	5
	Description and Operation .....	6
	Oil Flow .....	10

## SECTION 41 - STEERING SYSTEM

BOOK 2 - 87032903

### Chapter 2 - Component Overhaul

#### CONTENTS

Section	Description	Page
	Steering Motor .....	2
	Steering Cylinder – Two Wheel Drive .....	13
	Steering Cylinder – Four Wheel Drive .....	19
	Flow Control Valve - Power Steering Pump (Where Installed) .....	23
	Transmission Mounted Tandem Pump .....	24
	Engine Mounted Power Steering Pump (Where Installed) .....	30
	Steering System Testing .....	32

---

## SECTION 44 - FRONT AXLE-TWO WHEEL DRIVE

BOOK 2 - 87032903

### Chapter 1 - Two Wheel Drive

#### CONTENTS

Section	Description	Page
	Specifications .....	2
	Clearances and Tolerances .....	2
	Front Axle Track Adjustment .....	2
	Shim Thickness Available .....	2
	Special Tools .....	2
	Torque Values .....	2
	Description and Operation .....	3
	Adjustments .....	4
	Front Wheel Spindle - Overhaul .....	7
	Center Steering Arm - Overhaul .....	10
	Front Axle - Overhaul .....	11

## SECTION 55 - ELECTRICAL SYSTEMS

BOOK 2 - 87032903

### Chapter 1 - Description, Operation and Overhaul

#### CONTENTS

Section	Description	Page
	Specifications - Starting System .....	3
	Components .....	4
	Lamps .....	5
	Torque Values .....	5
	Fault Finding .....	6
	Lighting and Instrumentation Systems .....	6
	Starting System .....	7
	Charging System .....	7
	Alternator .....	8
	Electrical System .....	11
	Precautionary Statements .....	11



---

## SECTION 55 - ELECTRICAL SYSTEMS

BOOK 2 - 87032903

### Chapter 1 - Description, Operation and Overhaul (Continued)

#### CONTENTS

Section	Description	Page
	Description and Operation .....	11
	Wire Harnesses .....	12
	Electrical Components - Description, Operation and Overhaul .....	24
	Instrument Panel .....	24
	Instrument Panel Gauges .....	25
	Instrument Panel Warning Lights .....	26
	Instrument Panel Overhaul .....	28
	Four-Wheel Drive Select Switch .....	32
	Dual Power Switch .....	34
	Key-Start Ignition Switch .....	36
	Lights Switch .....	38
	Horn Switch .....	40
	Warning Flasher Switch .....	41
	Power Take Off Switch .....	42
	Neutral Start Switch .....	44
	Cold Advance Thermostatic Switch .....	45
	Air Cleaner Restriction Switch .....	45
	Fuel/Water Separator Warning Switch .....	47
	Work Lamp Switch .....	47
	Oil Pressure Sender Switch .....	49
	Stop Lamp Switch .....	50
	Turn Signal Switch .....	50
	Main Fuel Tank Sender .....	51
	Auxiliary Fuel Tank Sender .....	51
	Instrument Panel Lights .....	52
	Headlamps .....	53
	Fender Mounted Headlamp .....	53
	External Headlamp Bulb .....	53
	Tail/Warning Lamp .....	54
	Work Lamp Bulb .....	56
	Grille Mounted Headlamps .....	57

---

## SECTION 55 - ELECTRICAL SYSTEMS

BOOK 2 - 87032903

### Chapter 2 - Alternator and Charging System

#### CONTENTS

Section	Description	Page
	Description and Operation .....	2
	Alternator - Overhaul .....	4
	Alternator - Testing .....	8
	Alternator - Component Testing .....	15

## SECTION 55 - ELECTRICAL SYSTEMS

BOOK 2 - 87032903

### Chapter 3 - Starting Motor and System

#### CONTENTS

Section	Description	Page
	Description and Operation .....	2
	Starting System Testing .....	2
	Starting System Circuit Resistance Test .....	3
	Starting Motor - Overhaul .....	4

## SECTION 55 - ELECTRICAL SYSTEMS

BOOK 2 - 87032903

### Chapter 4 - Battery, Servicing and Testing

#### CONTENTS

Section	Description	Page
	Description and Operation .....	2
	Battery - Overhaul .....	3
	Inspection and Servicing .....	4
	Installation .....	5

---

# SECTION 55 - ELECTRICAL SYSTEMS

BOOK 2 - 87032903

## Chapter 5 - Electrical System Diagrams

### CONTENTS

<b>Section</b>	<b>Description</b>	<b>Page</b>
	Legend 1 - Non-Emissionized Engine .....	2
	Table 1 - Non-Emissionized Engine .....	3
	Legend 2 - Emissionized Engine Less Fuel/Water Separator Circuit .....	3
	Table 2 - Emissionized Engine Less Fuel/Water Separator Circuit .....	4
	Legend 3 - Emissionized Engine .....	5
	Table 3 - Emissionized Engine .....	6
	Table 4 - Electrical Diagram Symbols .....	7



**Thanks very much for your reading,  
Want to get more information,  
Please click here, Then get the complete  
manual**

**JustClickHere** 

**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](mailto:admin@servicemanualperfect.com)**