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MODEL:

2955 & 3155 Tractors

Volume 1 of 2

**SERVICE
MANUAL**

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**2955 AND 3155 TRACTORS
TECHNICAL MANUAL
TM-4449 (MARCH-89)**

SECTION CONTENTS IN GROUPS – REPAIR

05 – SAFETY

10 – GENERAL

- 05 – Specifications
- 10 – Predelivery, delivery and after-sales inspections
- 15 – Lubrication and service
- 20 – Tune-up
- 25 – Tractor separation

20 – ENGINE, VISCOUS FAN DRIVE AND FAN

- 05 – Radiator, viscous fan drive and fan

30 – FUEL AND AIR INTAKE SYSTEM

- 05 – Fuel tank, auxiliary tank and water trap
- 10 – Cold weather starting aids
- 15 – Speed control linkage
- 20 – Air cleaner

40 – ELECTRICAL SYSTEM

- 05 – Wiring harnesses
- 10 – Controls and instruments (without SOUND-GARD body)
- 15 – Controls and instruments (with SOUND-GARD body)
- 20 – Lighting system
- 25 – Starting motor
- 30 – Alternator

50 – POWER TRAIN

- 05 – Clutch operating systems
- 10 – Engine clutch
- 15 – Hi-Lo shift unit
- 20 – Creeper transmission
- 25 – Transmission – console shift
- 30 – Transmission – center shift
- 35 – Synchronized transmission and transmission oil pump
- 40 – Differential
- 45 – Final drives
- 50 – PTO
- 55 – Front PTO
- 60 – Front wheel drive u.j. drive shaft and disk clutch

60 – STEERING SYSTEM AND BRAKES

- 05 – Hydrostatic steering
- 10 – Steering cylinder (without front wheel drive)
- 15 – Hydraulic brakes
- 20 – Handbrake

70 – HYDRAULIC SYSTEM

- 05 – Valves
- 10 – Hydraulic pumps
- 15 – Rockshaft
- 25 – Selective control valves (spool type)
- 30 – Selective control valves (poppet valve type)

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SECTION CONTENTS IN GROUPS (REPAIR)

70 – HYDRAULIC SYSTEM (CONTD.)

- 35 – ISO breakaway couplers
- 40 – ISO quick couplers
- 45 – Remote cylinder

80 – MISCELLANEOUS

- 05 – Front axle
- 10 – Front and rear wheels

90 – OPERATOR'S STATION

- 05 – Safe handling of refrigerants
- 06 – Servicing air conditioning system
- 07 – Compressor (up to tractor serial no. 663 473L)
- 08 – Compressor (from tractor serial no. 663 474L)
- 09 – Components of air conditioning system
- 10 – Cab ventilation and heating
- 15 – Operator's seats
- 20 – SOUND-GARD body
- 25 – 4-post ROLL-GARD
- 30 – 2-post ROLL-GARD

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Section 10 GENERAL

05 — SPECIFICATIONS

Specifications		2955	3155
Specifications	05-1	X	X
– Serial number plates	05-1	X	X
– Product identification number	05-1	X	X
– Engine serial number	05-1	X	X
– Transmission serial number	05-2	X	X
– Front wheel drive axle serial number	05-3	X	X
– SOUND-GARD body serial number	05-3	X	X
– ROLL-GARD serial number	05-3	X	X
– Model serial numbers	05-3	X	X
– Engine	05-4	X	X
– Engine clutch	05-5	X	X
– Cooling system	05-5	X	X
– Fuel system	05-5	X	X
– Electrical system	05-6	X	X
– Synchronized transmission	05-6	X	X
– Hi-Lo shift unit	05-6	X	X
– Creeper transmission	05-6	X	X
– Differential and final drives	05-6	X	X
– Differential lock	05-7	X	X
– PTO	05-7	X	X
– PTO speeds	05-7	X	X
– Front PTO	05-7	X	X
– Front wheel drive	05-8	X	X
– Hydrostatic steering	05-8	X	X
– Foot brakes	05-8	X	X
– Hand brake	05-8	X	X
– Hydraulic system	05-8	X	X
– Rockshaft	05-8	X	X
– Ground travel speeds	05-8	X	X
– Front and rear wheels	05-9	X	X
– Dimensions and weights	05-9	X	X
– Capacities	05-9	X	X
– Standard torques for hardware	05-10	X	X

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10 – PREDELIVERY, DELIVERY AND AFTER-SALES INSPECTIONS

Special tools	10-1
Specifications	10-2
Capacities	10-3
Torques for hardware	10-3
Predelivery inspection	10-4
Delivery inspection	10-24
After-sales inspection	10-25

15 - LUBRICATION AND SERVICE

Capacities and service intervals	15-1
Lubricants and service intervals	15-2
General	15-3
Diesel engine oil	15-3
Transmission/hydraulic oil	15-4
Oil for front wheel drive axle	15-4
EP multi-purpose grease	15-5
Storing lubricants	15-5
Brake fluid for hydraulic operated clutch	15-5
Engine coolant	15-6
Checking engine oil level	15-6
Changing engine oil	15-7
Changing engine oil filter	15-7
Checking fuel filter	15-8
Replacing fuel filter	15-8
Replacing coolant	15-9
Checking transmission/hydraulic system oil level	15-10
Changing transmission/hydraulic oil	15-11
Replacing transmission/hydraulic oil filter element	15-12
Replacing hydraulic oil return flow filter	15-12
Replacing hydrostatic steering filter (without SOUND-GARD body or ROLL-GARD	15-13

2955

3155

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15 – LUBRICATION AND SERVICE (Contd.)

Cleaning hydraulic pump filter strainer	15-13
Replacing brake fluid (with hydraulic operated clutch)	15-13
Checking axle housing oil level	15-14
Checking oil level in wheel hub housings	15-14
Changing front axle oil	15-14
Cleaning lubricating points	15-15
Lubricating clutch throw-out bearing on mechanical operated clutch	15-15
Lubricating front axle and front wheel bearings (without front wheel drive)	15-16
Lubricating front axle (with front wheel drive)	15-16
Lubricating universal-jointed drive shaft (with front wheel drive)	15-17
Lubricating rear axle bearings	15-17
Lubricating front PTO	15-17
Lubricating three-point hitch	15-18

2955	3155
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20 – TUNE-UP

		2955	3155
Specifications	20-1	X	X
Preliminary engine testing	20-2	X	X
Checking air cleaner element	20-3	X	X
Checking air intake system connections for leaks	20-3	X	X
Checking crankcase vent tube for clogging	20-3	X	X
Cleaning radiator side panels and grille screens	20-3	X	X
Cleaning radiator and oil cooler	20-4	X	X
Cleaning condensor	20-4	X	X
Checking radiator cap	20-4	X	X
Checking radiator for leaks	20-4	X	X
Checking thermostats	20-5	X	X
Checking fuel transfer pump	20-5	X	X
Checking fuel filter	20-5	X	X
Checking fuel tank	20-6	X	X
Checking auxiliary fuel tank	20-6	X	X
Checking water trap	20-6	X	X
Checking fuel injection pump adjustment	20-6	X	X
Checking engine slow and fast idle speeds	20-7	X	X
Checking speed control linkage adjustment	20-8	X	X
Checking batteries	20-8	X	X
Checking fan belt tension	20-8	X	X
Checking compressor belt tension	20-9	X	X
Checking neutral start system	20-9	X	X
Checking operation of starting motor	20-9	X	X
Checking lighting system	20-10	X	X
Final engine check	20-10	X	X
Checking tractor operation	20-10	X	X

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25 – TRACTOR SEPARATION

		2955	3155
Special tools	25-1	X	X
Specifications	25-5	X	X
Torques for hardware	25-5	X	X
Capacities	25-9	X	X
Standard torques for hardware	25-10	X	X
Important notes	25-13	X	X
Removing tractor front end	25-14	X	X
Installing tractor front end	25-22	X	X
Separating between engine and clutch housing	25-25	X	X
Joining tractor between engine and clutch housing	25-36	X	X
Removing engine	25-40	X	X
Installing engine	25-41	X	X
Removing clutch housing	25-42	X	X
Installing clutch housing	25-44	X	X
Removing transmission	25-45	X	X
Installing transmission	25-55	X	X
Removing final drives	25-60	X	X
Installing final drives	25-70	X	X
Removing rockshaft	25-74	X	X
Installing rockshaft	25-77	X	X
Removing front axle	25-79	X	X
Installing front axle	25-80	X	X
Removing front wheel drive axle	25-83	X	X
Installing front wheel drive axle	25-85	X	X
Removing SOUND-GARD body or ROLL-GARD	25-87	X	X
Installing SOUND-GARD body or ROLL-GARD	25-97	X	X
Removing front PTO	25-100	X	X
Installing front PTO	25-101	X	X

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DIFFERENTIAL LOCK

- Operation Hand or foot operated
- Disengaged Automatically as soon as traction has equalized

PTO

- Type Independent of transmission, can be engaged and disengaged under load
- PTO speeds at engine speed of:
- 2070 rpm on 2955 tractors 540 rpm
- 2414 rpm on 3155 tractors 540 rpm
- 2172 rpm on 2955 tractors 1000 rpm
- 2407 rpm on 3155 tractors 1000 rpm
- interchangeable

PTO SPEEDS

at engine speed

540 rpm shaft

1000 rpm shaft

2955 Tractors

– 800 rpm	209 rpm	368 rpm
– 1500 rpm	391 rpm	691 rpm
– 2070 rpm	540 rpm	953 rpm
– 2172 rpm	567 rpm	1000 rpm
– 2300 rpm	600 rpm	1059 rpm
– 2460 rpm	642 rpm	1133 rpm

3155 Tractors

– 900 rpm	201 rpm	374 rpm
– 1500 rpm	336 rpm	623 rpm
– 2400 rpm	537 rpm	997 rpm
– 2407 rpm	538 rpm	1000 rpm
– 2414 rpm	540 rpm	1003 rpm
– 2560 rpm	573 rpm	1064 rpm

FRONT PTO

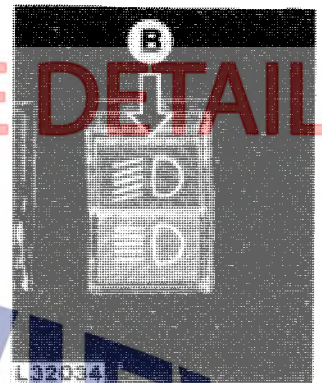
- Type Independent of transmission, can be engaged and disengaged under load
- Control Electric/hydraulic solenoid switch
- PTO speed at an engine speed of:
- 2172 rpm (counterclockwise)
- PTO clutch Hydraulically operated “wet” disk clutch
- PTO brake Hydraulically operated “wet” disk brake

CHECKING LIGHTING SYSTEM

See Operator's Manual.

Check adjustment of headlights and adjust, when necessary.

A—Light switch
B—Dimmer switch

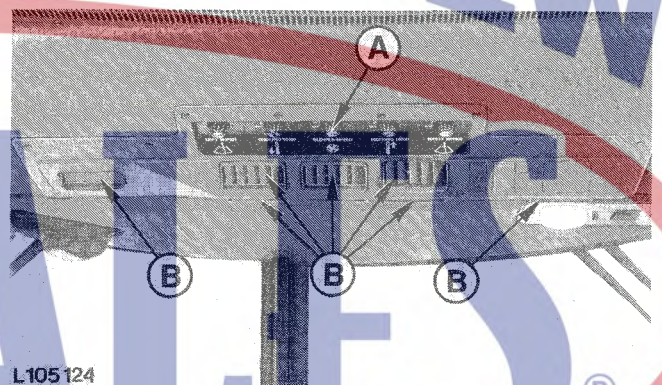


L32039, L32034-LB61010AE-011086

CHECKING FAN SWITCH (With SOUND-GARD Body)

Open air louvers (B).

Check function of three-stage cab ventilation and heater fan switch (A).



L105124-LB61010AE-011086

CHECKING HEATER CONTROL SWITCH (With SOUND-GARD Body)

With engine running at operating temperature, turn control switch to the right and wait until warm air enters cab through the air louvers.



L105125-LB61010AE-011086

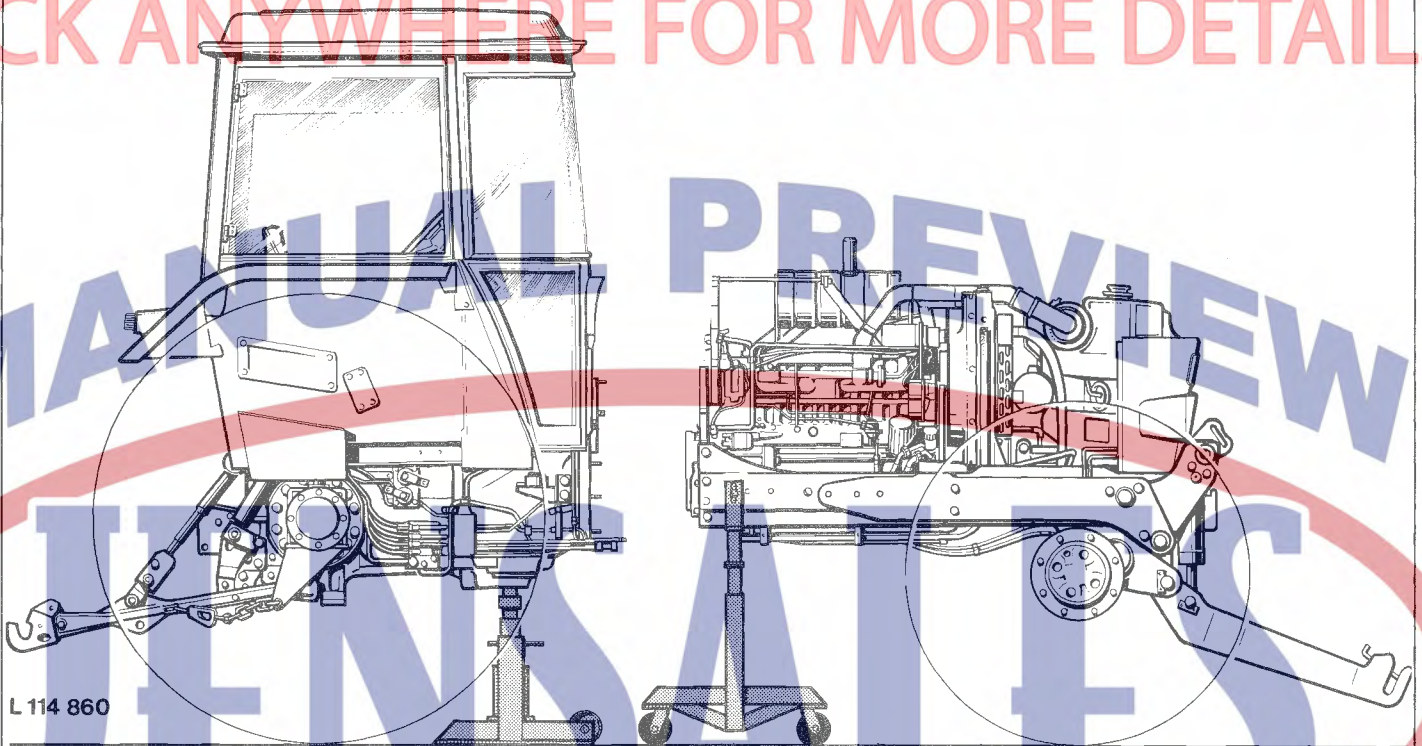
CHECKING THERMOSTAT SWITCH (Tractors with Air Conditioning System)

With fan switched on, turn infinitely adjustable switch to the right and wait until cool air enters cab through the air louvers.



L105126-LB61010AE-011086

SEPARATING BETWEEN ENGINE AND CLUTCH HOUSING



DISCONNECTING BATTERY GROUND STRAPS

On tractors with SOUND-GARD body or ROLL-GARD, remove batteries.



REMOVING ENGINE HOOD

If necessary, remove exhaust pipe and when equipped, air pre-cleaner, radiator side screens and grilles.

Before removing hood, disconnect lightbar cables at connector.

Swing hood upward from the front. Remove quick-lock pin (A) at gas pressure cylinder (B).



05 – RADIATOR, VISCOUS FAN DRIVE AND FAN

Torques for hardware	05-1
Special tools	05-1
Draining coolant	05-1
Removing air intake line	05-1
Removing bottom coolant hose	05-2
Removing top coolant hose	05-2
Removing condenser	05-2
Removing oil cooler	05-2
Removing radiator	05-3
Installing radiator	05-3
Removing viscous fan drive	05-3
Removing fan	05-4
Replacing fan or compressor V-belt	05-4
Checking fan V-belt tension	05-5
Checking compressor V-belt tension (with air conditioning system)	05-5

2955

3155

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FUEL AND AIR INTAKE SYSTEM – REPAIR

NOTE: The fuel transfer pump, fuel filter, Stanadyne DB2 and Roto Diesel DBA4 fuel injection pumps and fuel injection nozzles for these tractors are dealt with in component Technical Manual CTM-4, 3179, 4239 and 6359 Engines.

05 – FUEL TANK, AUXILIARY FUEL TANK AND WATER TRAP

Draining fuel	05-1
Removing fuel tank	05-1
Removing auxiliary fuel tank	05-2
Repairing fuel tank and auxiliary fuel tank	05-2
Installing fuel tank and auxiliary fuel tank	05-2
Water trap, exploded view	05-3

10 – COLD WEATHER STARTING AIDS

Torques for hardware	10-1
Electric ether starting fluid aid, exploded view	10-1
Manual ether starting fluid aid, exploded view	10-2
Electric starting aid, exploded view	10-2
Fuel pre-heater, exploded view	10-3

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15 – SPEED CONTROL LINKAGE

Specifications	15-1
Speed control linkage, exploded view (without SOUND-GARD Body or ROLL-GARD) ..	15-1
Speed control linkage, exploded view (with SOUND-GARD Body or ROLL-GARD)	15-2
Adjusting speed control rod	15-3
Adjusting foot throttle lever (with SOUND- GARD Body or ROLL-GARD)	15-4
Adjusting hand throttle lever	15-4
Adjusting hand throttle lever friction resistance (with SOUND- GARD Body or RG2 ROLL-GARD)	15-4

20 – AIR CLEANER

Air cleaner, exploded view	20-1
Installing air cleaner	20-1

	2955	3155
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ELECTRICAL SYSTEM – REPAIR

05 – WIRING HARNESSSES

		2955	3155
Special tools	05-1	x x	x x
Disconnecting electrical circuit	05-1	x	x
Disconnecting point – Engine wiring harness	05-1	x	x
Engine wiring harness (up to serial no. 629 299L)	05-2	x	x
Engine wiring harness (from serial no. 629 300L)	05-3	x	x
Dash wiring harness (without SOUND-GARD Body or ROLL-GARD up to serial no. 629 299L)	05-4	x	x
Dash wiring harness (without SOUND-GARD Body or ROLL-GARD from serial no. 629 300L)	05-5	x	x
Dash wiring harness (with SOUND-GARD Body or ROLL-GARD up to serial no. 645 248L)	05-6	x	x
Dash wiring harness (with SOUND-GARD Body or ROLL-GARD from serial no. 645 249L)	05-7	x	x
Disconnecting point – Transmission wiring harness	05-8	x	x
Transmission wiring harness (without SOUND-GARD Body or ROLL-GARD)	05-9	x	x
Transmission wiring harness (with SOUND-GARD Body or ROLL-GARD)	05-10	x	x
Disconnecting point – Cab wiring harness	05-10	x	x
SOUND-GARD Body wiring harnesses	05-11	x	x
Four-post ROLL-GARD wiring harness	05-12	x	x
Fender wiring harness (up to serial no. 629 299L)	05-13	x	x
Fender wiring harness (from serial no. 629 300L)	05-14	x	x
Front PTO wiring harness	05-15	x	x
Wiring harness for ammeter and engine oil pressure gauge	05-16	x	x
Removing a snap connector (dia. 3.5 mm; 0.14 in.)	05-17	x	x
Removing a snap connector (dia. 2 mm; 0.08 in.)	05-17	x	x
Removing a snap connector (dia. 1.6 mm; 0.06 in.)	05-17	x	x
Stripping cable ends	05-18	x	x
Crimping snap connectors	05-18	x	x

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10 – CONTROLS AND INSTRUMENTS (Without SOUND-GARD Body)

Special tools	10-1
Specifications	10-1
Controls and instruments	10-2
Instrument cluster	10-2
Removing instrument cluster	10-3
Instrument cluster, exploded view	10-3
Replacing bulbs	10-4
Fuses	10-5
Controls and instruments, exploded view	10-6
Replacing magnetic sending unit of engine speed meter	10-7
Installing neutral start switch	10-7

15 – CONTROLS AND INSTRUMENTS (With SOUND-GARD Body)

Special tools	15-1
Specifications	15-1
Controls and instruments	15-2
Control light panel	15-2
Removing left and right-hand dash panel housings	15-3
Left-hand dash panel housing, exploded view	15-3
Right-hand dash panel housing, exploded view	15-4
Replacing bulbs	15-5
Fuses	15-6
Fuse for emergency lighting	15-7
Controls and instruments, exploded view	15-7
Replacing magnetic sending unit of engine speed meter	15-8
Installing neutral start switch	15-8

3155

Special tools	15-1	x	x
Specifications	15-1	x	x
Controls and instruments	15-2	x	x
Control light panel	15-2	x	x
Removing left and right-hand dash panel housings	15-3	x	x
Left-hand dash panel housing, exploded view	15-3	x	x

Fuses	15-6	X	X
Fuse for emergency lighting	15-7	X	X
Controls and instruments, exploded view	15-7	X	X
Replacing magnetic sending unit of engine speed meter	15-8	X	X
Installing neutral start switch	15-8	X	X

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20 – LIGHTING SYSTEM

Aiming head lamps	20-1
Adjusting head lamps	20-1

25 – STARTING MOTOR

Special tools	25-1
Specifications	25-1
Torques for hardware	25-1
Starting motor, sectional view	25-2
Starting motor, removal	25-2
Disassembly	25-3
Solenoid switch, removal	25-3
Carbon brush plate, removal	25-3
Armature, removal	25-3
Starting motor, exploded view	25-4
Snap ring, removal	25-5
Cleaning parts	25-5
Testing armature for grounds	25-5
Testing armature for short circuit	25-5
Testing armature for open circuit	25-6
Turning commutator down	25-6
Testing commutator for out-of-roundness	25-6
Testing field winding for ground circuits	25-6
Field winding, removal	25-7
Making open circuit test for field windings	25-7
Installing field winding	25-8
Checking carbon brush plate for grounds	25-8
Testing carbon brushes	25-8
Replacing carbon brushes	25-9
Engaging lever, installation	25-9
Testing armature end play	25-9
Lubrication of starting motor (before and during assembly)	25-10

2955

x x

3155

x x

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30 – ALTERNATOR

		2955	3155
Specifications	30-1	x	x
Torques for hardware	30-1	x	x
Alternator, sectional view	30-2	x	x
Alternator, removal	30-2	x	x
Removing brush holder with regulator	30-3	x	x
Alternator, disassembly	30-3	x	x
Stator, removal	30-3	x	x
Diode plate, removal	30-3	x	x
Alternator, exploded view	30-4	x	x
Testing rotor for short circuit	30-5	x	x
Testing rotor for grounds	30-5	x	x
Testing slip rings and rotor pole for radial runout	30-5	x	x
Turning down slip rings	30-5	x	x
Testing stator coil for short circuit	30-6	x	x
Testing stator coil for grounds	30-6	x	x
Replacing carbon brushes	30-6	x	x
Replacing ball bearings	30-7	x	x
Checking positive diodes	30-7	x	x
Checking negative diodes	30-8	x	x
Testing exciting diodes	30-8	x	x
Diode plate, installation	30-9	x	x
Soldering stator coils	30-9	x	x
Pressing ball bearing onto rotor shaft	30-9	x	x
Pressing rotor into drive end frame	30-9	x	x
Alternator, assembly	30-10	x	x
Installing brush holder with regulator	30-10	x	x
Installing fan and belt pulley	30-10	x	x
Fan belt, adjusting	30-11	x	x

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Section 50 POWER TRAIN – REPAIR

NOTE: The front wheel drive axle for these tractors has model designation APL-350 and is dealt with in component Technical Manual CTM-4422 for APL-300 and APL-700 Series Front Wheel Drive Axles.

05 – CLUTCH OPERATING SYSTEMS

		2955	3155
Specifications	05-1	x	x
Torques for hardware	05-1	x	x
Hydraulic Operated Clutch			
– Draining clutch operating system	05-2	x	x
– Removing dash panel at panel support	05-2	x	x
– Removing clutch pedal	05-2	x	x
– Upper clutch operating system, exploded view	05-3	x	x
– Removing slave cylinder	05-4	x	x
– Removing throw-out bearing	05-4	x	x
– Removing ring piston	05-4	x	x
– Removing guide sleeve	05-4	x	x
– Slave cylinder, exploded view	05-5	x	x
– Repairing slave cylinder	05-6	x	x
– Installing slave cylinder	05-6	x	x
– Adjusting rear stop screw	05-7	x	x
– Preliminary adjustment of piston rod clearance	05-7	x	x
– Preliminary adjustment of front stop screw	05-7	x	x
– Filling system with brake fluid	05-8	x	x
– Bleeding clutch operating system	05-9	x	x
– Adjusting master cylinder piston	05-10	x	x
– Adjusting front stop screw	05-11	x	x
– Checking clutch operating system	05-11	x	x

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05 – CLUTCH OPERATING SYSTEMS (CONTD.)**Mechanical Operated Clutch**

– Clutch operating system, exploded view	05-12
– Removing clutch operating system	05-13
– Installing inner bushing and oil seal	05-13
– Installing outer oil seal and bushing	05-13
– Installing clutch fork and throw-out bearing	05-14
– Adjusting clutch pedal free travel	05-15

2955

3155

10 – ENGINE CLUTCH

Special tools	10-1
Specifications	10-1
Torques for hardware	10-2
Functional test of engine clutch	10-3
Engine clutch, sectional view	10-4
Measuring clearance between pressure plate and flywheel friction face	10-5
Removing engine clutch	10-5
Checking thickness of clutch disk	10-5
Checking wear of pressure plate	10-6
Checking flywheel	10-7
Checking wear of flywheel friction face	10-7
Checking disengagement movement of pressure plate	10-8
Checking torsion damper of independent PTO	10-8
Clutch assembly, exploded view (repair kit)	10-8
Assembling pressure plate and housing	10-9
Installing clutch disk	10-9
Installing clutch assembly	10-9
Installing clutch throw-out ring	10-10
Final assembly	10-10

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15 – HI-LO SHIFT UNIT

		2955	3155
Special tools	15-1	X	X
Specifications	15-1	X	X
Torques for hardware	15-3	X	X
Hi-Lo shift unit, sectional view (2955 tractors)	15-4	X	X
Hi-Lo shift unit, sectional view (3155 tractors)	15-5	X	X
Removing Hi-Lo shift unit	15-6	X	X
Removing planetary gear	15-6	X	X
Disassembling Lo brake	15-6	X	X
Disconnecting clutch drum from planet pinion carrier	15-6	X	X
Disassembling Hi clutch	15-7	X	X
Removing Hi clutch piston	15-7	X	X
Repairing control valve assembly	15-7	X	X
Hi-Lo shift unit, exploded view (2955 tractors)	15-8	X	X
Hi-Lo shift unit, exploded view (3155 tractors)	15-9	X	X
Transmission shift cover and control valve assembly, exploded view	15-10	X	X
Installing manifold cover	15-11	X	X
Replacing brake housing or brake piston seal rings	15-11	X	X
Installing brake piston	15-11	X	X
Assembling Lo brake	15-11	X	X
Compressing Lo brake Belleville springs	15-12	X	X
Installing piston	15-12	X	X
Installing Hi clutch Belleville springs	15-12	X	X
Compressing Hi clutch Belleville springs	15-12	X	X
Assembling planet pinion carrier	15-13	X	X
Installing clutch disks	15-13	X	X
Securing planet pinion carrier to clutch drum	15-13	X	X
Inserting planetary gear into brake housing	15-13	X	X
Installing Hi-Lo shift unit	15-14	X	X

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20 – CREEPER TRANSMISSION

Specifications	20-1
Torques for hardware	20-1
Creeper transmission, sectional view	20-2
Removing creeper transmission	20-3
Removing shifter rod and shifter fork	20-3
Removing bearing quill	20-3
Removing double gear	20-4
Removing transmission input shaft	20-4
Removing synchronizer assembly	20-4
Creeper transmission, exploded view	20-5
Control lever linkage, exploded view	20-6
Installing synchronizer assembly	20-6
Installing transmission input shaft and gears	20-7
Determining taper roller bearing preload	20-7
Installing double gear	20-8
Installing bearing quill	20-8
Installing detent ball and spring in hub carrier	20-8
Installing shifter rod and shifter fork	20-8
Installing locking pin	20-9
Installing creeper transmission assembly	20-9

2955

3155

25 – TRANSMISSION – CONSOLE SHIFT

Torques for hardware	25-1
Removing shift console	25-1
Removing shift lever assembly	25-2
Preparatory work	25-3
Removing shifter shafts	25-3
Transmission shift linkage, exploded view	25-4
Installing bushings and oil seals	25-5
Installing bottom shifter shafts	25-5
Installing shifter shafts	25-6
Installing detent balls	25-6

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25 – TRANSMISSION – CONSOLE SHIFT (CONTD.)

		2955	3155
Adjusting shifter fork for 3rd and 4th gear	25-7	X X	X X
Adjusting shifter fork for 1st and 2nd gear	25-7	X X	X X
Installing top shifter shafts	25-8	X	X
Adjusting shifter forks for ranges II, I and reverse	25-9	X	X
Final assembly	25-9	X	X
Assembling shift lever assembly	25-10	X X	X X
Installing connecting rods	25-11	X	X
Adjusting connecting rods	25-11	X	X

30 – TRANSMISSION – CENTER SHIFT

Torques for hardware	30-1	X
Preparatory work	30-1	X
Removing shifter shafts	30-1	X
Installing shifter shafts	30-2	X
Installing detent balls	30-2	X
Adjusting shifter fork for 3rd and 4th gear	30-3	X
Adjusting shifter fork for 1st and 2nd gear	30-3	X
Adjusting shifter fork for ranges II, I and reverse	30-4	X
Final assembly	30-4	X

35 – SYNCHRONIZED TRANSMISSION AND TRANSMISSION OIL PUMP

Special tools	35-1	X	X
Special tool (self-manufacture)	35-1	X	X
Specifications	35-2	X	X
Torques for hardware	35-5	X	X
Synchronized transmission – preparatory work	35-6	X	X
Removing transmission bearing quill	35-6	X	X
Removing countershaft	35-6	X	X

**35 – SYNCHRONIZED TRANSMISSION AND
TRANSMISSION OIL PUMP (CONTD.)**

		2955	3155
Removing differential drive shaft	35-7	X	X
Removing reverse gear	35-8	X	X
Installing reverse gear	35-8	X	X
Removing intermediate gear	35-8	X	X
Replacing intermediate shaft needle bearing	35-8	X	X
Installing intermediate shaft	35-9	X	X
Determining intermediate shaft taper roller bearing preload	35-9	X	X
Cone point adjustment	35-10	X	X
Differential drive shaft, exploded view	35-11	X	X
Replacing needle bearing race	35-11	X	X
Installing differential drive shaft	35-12	X	X
Adjusting differential drive shaft preload	35-13	X	X
Adjusting differential drive shaft rolling drag torque	35-13	X	X
Installing differential	35-14	X	X
Replacing needle bearing of hollow drive shaft	35-14	X	X
Checking synchronizer rings	35-14	X	X
Countershaft, exploded view	35-15	X	X
Assembling synchronizer assembly	35-15	X	X
Assembling transmission drive shaft	35-16	X	X
Disassembling range shaft	35-17	X	X
Assembling range shaft	35-18	X	X
Adjusting range shaft preload	35-19	X	X
Installing countershaft	35-20	X	X
Installing bearing quill	35-20	X	X
Installing snap ring	35-21	X	X
Installing transmission bearing quill	35-21	X	X
Adjusting countershaft preload	35-22	X	X
Checking countershaft rolling drag torque	35-22	X	X
Final assembly	35-22	X	X

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**35 – SYNCHRONIZED TRANSMISSION AND
TRANSMISSION OIL PUMP (CONTD.)**

Transmission oil pump – preparatory work	35-23
Removing transmission oil pump	35-23
Replacing needle bearings	35-23
Separating pump housing	35-23
Assembling hollow drive shaft	35-24
Installing gears	35-24
Joining transmission oil pump halves	35-24
Installing O-ring	35-24
Installing transmission oil pump	35-25
Final assembly	35-25

2955**3155****40 – DIFFERENTIAL**

Specifications	40-1
Torques for hardware	40-1
Preparatory work	40-2
Removing shifter shaft lever	40-2
Removing differential lock	40-2
Shifting brake disk	40-2
Removing differential	40-3
Checking thrust washers	40-3
Assembling differential housing	40-3
Installing differential	40-4
Installing bearing quilts	40-4
Adjusting preload	40-4
Adjusting backlash	40-4
Installing differential lock	40-5
Final assembly	40-5

45 – FINAL DRIVES

Special tools (self-manufacture)	45-1
Specifications	45-1
Torques for hardware	45-2
Right-hand final drive assembly, sectional view	45-2
Removing final drives	45-3
Removing planet pinion carrier	45-3
Removing snap ring from planet pinion carrier	45-3
Removing rear axle	45-3

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45 – FINAL DRIVES (CONTD.)

		2955	3155
Final drive assembly, exploded view	45-4	x x	x x
Positioning rear axle upright	45-5	x x	x x
Installing outer oil seal and taper roller bearing cone	45-5	x	x
Assembling final drive	45-6	x	x
Installing planet pinion carrier	45-6	x	x
Adjusting rolling drag torque	45-7	x x	x x
Inserting locking plate	45-7	x x	x x
Final assembly	45-7	x	x

50 – PTO

Special tools	50-1	x	x
Specifications	50-1	x	x
Torques for hardware	50-3	x	x
PTO, sectional view	50-3	x	x
Removing bearing quill with PTO shaft	50-4	x	x
Removing PTO shaft with gear	50-4	x	x
Installing double gear and countershaft	50-4	x	x
Installing bearing quill with PTO shaft	50-4	x	x
PTO, exploded view	50-5	x	x
Removing shifter lever detent cover	50-6	x	x
Separating shifter sleeve and valve spool	50-6	x	x
PTO control valve and shift lever detent, exploded view	50-7	x	x
Checking control valve springs	50-8	x	x
Adjusting spring pretension	50-9	x	x
Preparing to remove PTO clutch	50-9	x	x
Removing PTO clutch	50-10	x	x
Removing oil manifold with PTO brake	50-10	x	x

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50 – PTO (CONTD.)

Removing disk clutch compression spring	50-10	X	X
Removing PTO clutch piston	50-10	X	X
PTO clutch, exploded view	50-11	X	X
Removing PTO brake piston	50-12	X	X
Assembling PTO clutch	50-12	X	X
Installing PTO brake	50-12	X	X
Installing PTO clutch	50-13	X	X

55 – FRONT PTO

Special tools	55-1	X	X
Specifications	55-1	X	X
Torques for hardware and repair adjustment data	55-2	X	X
Front PTO, sectional view	55-3	X	X
Removing front PTO shaft	55-4	X	X
Removing bearing quill	55-4	X	X
Removing input shaft	55-4	X	X
Removing intermediate shaft assembly	55-4	X	X
Removing PTO clutch	55-5	X	X
Removing oil manifold with PTO brake	55-5	X	X
Removing disk clutch compression spring	55-5	X	X
Removing PTO clutch piston	55-5	X	X
Removing PTO brake piston	55-6	X	X
Front PTO, exploded view	55-6	X	X
PTO clutch and brake, exploded view	55-7	X	X
Front PTO housing, exploded view	55-8	X	X
Oil lines	55-9	X	X
Installing modulation valve	55-10	X	X
Installing oil manifold with PTO brake	55-10	X	X
Assembling PTO clutch	55-10	X	X
Installing PTO clutch	55-10	X	X
Installing intermediate shaft assembly	55-11	X	X
Assembling front PTO	55-11	X	X
Determining preload of taper roller bearings of input shaft and PTO shaft	55-12	X	X
Installing bearing quill	55-12	X	X
Inserting connector	55-12	X	X
Solenoid valve, exploded view	55-13	X	X
Assembling solenoid valve	55-13	X	X
Installing front PTO shaft	55-14	X	X
Adjusting hand shift lever	55-14	X	X

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		2955	3155
60 – FRONT WHEEL DRIVE U.J. DRIVE SHAFT AND DISK CLUTCH			
Special tools	60-1	X	X
Specifications	60-1	X	X
Torques for hardware	60-2	X	X
Removing u.j. drive shaft anti-wrap guards	60-2	X	X
Removing universal-jointed drive shaft	60-2	X	X
Removing snap rings	60-3	X	X
Driving bearing cups out of connecting flange	60-3	X	X
Driving bearing cups out of u.j. drive shaft	60-3	X	X
Removing universal joint	60-3	X	X
Universal-jointed drive shaft, exploded view	60-4	X	X
Installing universal-joint	60-4	X	X
Installing first bearing cup in u.j. drive shaft	60-5	X	X
Installing second bearing cup in u.j. drive shaft	60-5	X	X
Installing bearing cups in connecting flange	60-5	X	X
Installing snap rings	60-6	X	X
Disk clutch, sectional view	60-6	X	X
Removing oil pan	60-7	X	X
Solenoid switch and oil pan, exploded view	60-7	X	X
Removing plastic bushing and backup ring	60-8	X	X
Removing bearing quill	60-8	X	X
Pulling out clutch shaft	60-8	X	X
Removing disk clutch	60-9	X	X

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Special tools	60-1
Specifications	60-1
Torques for hardware	60-2
Removing u.j. drive shaft anti-wrap guards	60-2
Removing universal-jointed drive shaft	60-2
Removing snap rings	60-3
Driving bearing cups out of connecting flange	60-3
Driving bearing cups out of u.j. drive shaft	60-3
Removing universal joint	60-3
Universal-jointed drive shaft, exploded view	60-4
Installing universal-joint	60-4
Installing first bearing cup in u.j. drive shaft	60-5
Installing second bearing cup in u.j. drive shaft	60-5
Installing bearing cups in connecting flange	60-5
Installing snap rings	60-6
Disk clutch, sectional view	60-6
Removing oil pan	60-7
Solenoid switch and oil pan, exploded view	60-7
Removing plastic bushing and backup ring	60-8
Removing bearing quill	60-8
Pulling out clutch shaft	60-8
Removing disk clutch	60-9

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**60 – FRONT WHEEL DRIVE U.J. DRIVE
SHAFT AND DISK CLUTCH (CONTD.)**

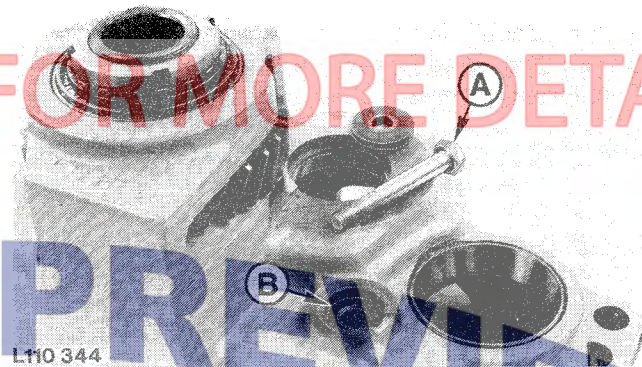
		2955	3155
Removing disk clutch housing	60-9	X	X
Lifting clutch drum out of clutch hub	60-9	X	X
Removing upper snap ring	60-10	X	X
Removing Belleville springs	60-10	X	X
Removing clutch disk pack	60-10	X	X
Removing lower snap ring	60-10	X	X
Removing release piston	60-11	X	X
Removing seal ring	60-11	X	X
Disk clutch assembly, exploded view	60-12	X	X
Installing seal ring	60-13	X	X
Installing release piston	60-13	X	X
Installing lower snap ring	60-13	X	X
Installing chamfered pressure ring	60-13	X	X
Installing clutch disks	60-14	X	X
Installing spacer ring	60-14	X	X
Installing upper pressure ring	60-14	X	X
Aligning clutch disk pack	60-15	X	X
Positioning Belleville springs	60-15	X	X
Installing upper snap ring	60-15	X	X
Installing friction washer	60-16	X	X
Installing clutch drum in clutch hub	60-16	X	X
Assembling disk clutch housing	60-16	X	X
Adjusting taper roller bearings	60-17	X	X
Installing taper roller bearing cone in clutch housing	60-17	X	X
Installing disk clutch	60-18	X	X
Installing bearing quill	60-18	X	X
Sliding backup ring and plastic bushing on clutch shaft	60-18	X	X
Installing universal-jointed drive shaft	60-18	X	X

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REMOVING REVERSE GEAR

Remove cap screw (A) and press out shaft (B).



INSTALLING REVERSE GEAR

Tighten cap screw (F) to 55 Nm (40 ft-lb).

A-Shaft

B-Taper roller bearing

C-Reverse gear

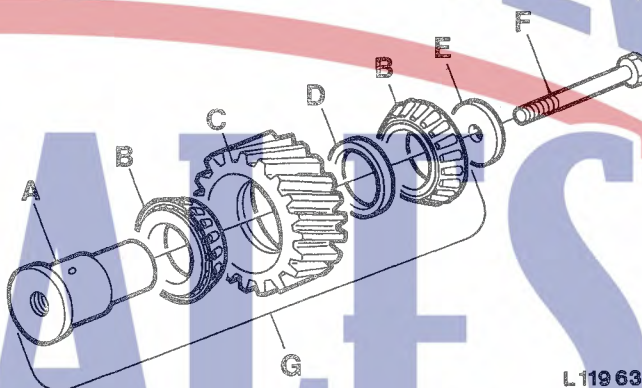
D-Spacer

E-Thrust washer

F-Cap screw

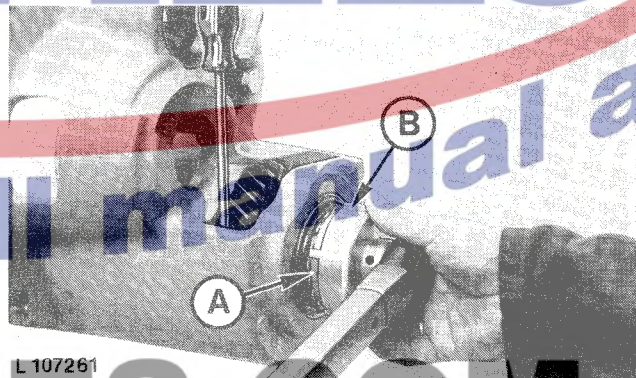
G-Repair kit

NOTE: The repair kit (G) is supplied adjusted.



REMOVING INTERMEDIATE GEAR

Loosen slotted nut (A) with ring nut socket KML10008 (B).



REPLACING INTERMEDIATE SHAFT NEEDLE BEARING

Remove snap ring (A).

Press out connecting sleeve (D) with needle bearing (B) from intermediate shaft (E) by means of PTO shaft (C).

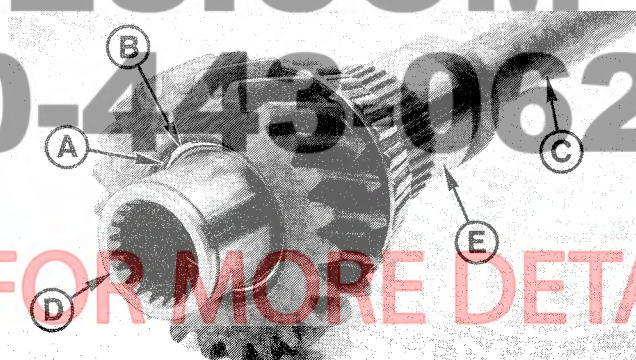
A-Snap ring

B-Needle bearing

C-PTO shaft

D-Connecting sleeve

E-Intermediate shaft



STEERING SYSTEM AND BRAKES – REPAIR

NOTE: The steering cylinders on tractors equipped with front wheel drive are dealt with in Technical Manual – Front Wheel Drive Axles APL-300 and 700 Series.

05 – HYDROSTATIC STEERING

		2955	3155
Special tools	05-1	X	X
Specifications	05-1	X	X
Torques for hardware	05-1	X	X
Steering valve, sectional view	05-2	X	X
Removing steering wheel	05-2	X	X
Removing dash cover from bracket	05-3	X	X
Removing steering valve (with SOUND-GARD body or ROLL-GARD)	05-3	X	X
Removing steering valve (without SOUND-GARD body or ROLL-GARD)	05-3	X	X
Removing metering unit cover	05-3	X	X
Removing metering unit	05-4	X	X
Removing suction valves	05-4	X	X
Removing valve spool and sleeve	05-4	X	X
Disassembling valve spool and sleeve	05-5	X	X
Removing leaf springs	05-5	X	X
Removing snap ring	05-5	X	X
Removing gland bushing seal	05-6	X	X
Removing O-ring out of housing	05-6	X	X
Removing O-ring and seal ring out of gland bushing	05-6	X	X
Removing upper seal ring out of gland bushing	05-6	X	X
Removing double-acting shock valves	05-7	X	X
Removing check valve	05-7	X	X
Steering valve, exploded view	05-8	X	X
Installing check valve	05-9	X	X
Installing double-acting shock valves	05-9	X	X
Assembling valve spool and sleeve	05-10	X	X
Arranging leaf springs	05-10	X	X
Installing leaf springs	05-10	X	X

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05 - HYDROSTATIC STEERING (CONTD.)

Installing cross pin	05-10
Installing thrust bearing	05-11
Installing upper seal ring in gland bushing	05-11
Positioning seal ring and O-ring in gland bushing	05-11
Installing O-ring in housing	05-11
Installing gland bushing seal	05-12
Installing valve spool and sleeve	05-12
Installing suction valves	05-12
Installing distributor plate and drive shaft	05-12
Assembling metering unit	05-13
Installing spacer rings in rotor	05-13
Installing metering unit cover	05-13
Adjusting double-acting shock valves	05-14
Steering column, exploded view (without SOUND-GARD body or ROLL-GARD)	05-15
Steering column, exploded view (with SOUND-GARD body or ROLL-GARD)	05-15
Installing steering unit	05-16

10 - STEERING CYLINDER - WITHOUT FRONT WHEEL DRIVE

Special tools	10-1
Torques for hardware	10-1
Supporting tractor safely	10-2
Disconnecting hydraulic lines	10-2
Disconnecting tie rod	10-2
Removing axle knee	10-2
Removing steering cylinder	10-3
Single-acting steering cylinder, sectional view	10-3
Disassembling steering cylinder	10-4
Replacing wiper seal and cupped seal ring	10-4
Assembling steering cylinder	10-4

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20 – HANDBRAKE

Specifications	20-1
Preparatory work	20-1
Removing brake shaft	20-1
Removing brake band support screw	20-1
Separating brake band	20-2
Removing brake band retaining pin	20-2
Removing brake band arm and brake band parts	20-2
Handbrake (with SOUND-GARD body or ROLL-GARD), exploded view	20-3
Handbrake (without SOUND-GARD body or ROLL-GARD), exploded view	20-4
Repairing brake linings and brake disk	20-5
Installing brake band	20-5
Final assembly	20-5
Adjusting handbrake	20-6
Adjusting handbrake indicator light sending unit	20-8

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Specifications	20-1
Preparatory work	20-1
Removing brake shaft	20-1
Removing brake band support screw	20-1
Separating brake band	20-2
Removing brake band retaining pin	20-2
Removing brake band arm and brake band parts	20-2
Handbrake (with SOUND-GARD body or ROLL-GARD), exploded view	20-3
Handbrake (without SOUND-GARD body or ROLL-GARD), exploded view	20-4
Repairing brake linings and brake disk	20-5
Installing brake band	20-5
Final assembly	20-5
Adjusting handbrake	20-6
Adjusting handbrake indicator light sending unit	20-8

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Section 70 HYDRAULIC SYSTEM – REPAIR

05 – VALVES

		2955	3155
Specifications	05-1	x	x
Removing bypass valve of transmission oil filter	05-2	x	x
Installing bypass valve	05-2	x	x
Removing surge relief valve in clutch housing	05-2	x	x
Replacing seat of surge relief valve	05-2	x	x
Checking pressure control valve	05-3	x	x
Assembling pressure control valve	05-3	x	x
Checking check valve of lube oil circuit	05-4	x	x
Checking return flow filter check valve (when equipped)	05-4	x	x
Checking change-over valve – oil return (when equipped)	05-5	x	x

10 – HYDRAULIC PUMPS

Special tools	10-1	x	x
Specifications	10-2	x	x
Torques for hardware	10-3	x	x

40 cm³ (2.4 cu. in.) Hydraulic Pump

– Hydraulic pump (without through drive), exploded view	10-4	x	x
– Hydraulic pump (with through drive), exploded view	10-5	x	x
– Removing pump drive	10-6	x	x
– Checking pump shaft end play	10-7	x	x
– Disassembling pump	10-7	x	x
– Removing taper roller bearings	10-7	x	x
– Checking pump shaft	10-7	x	x
– Checking inlet valves	10-8	x	x
– Removing discharge valve seats	10-8	x	x
– Installing discharge valve seats	10-8	x	x
– Installing pump shaft oil seals	10-8	x	x

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10 – HYDRAULIC PUMPS (CONTD.)

– Assembling pump shaft	10-9
– Pump cover, exploded view	10-9
– Replacing shut-off valve	10-9
– Assembling shut-off valve	10-10
– Removing adjusting screw	10-10
– Removing crankcase outlet valve and stroke control valve	10-11
– Installing pump cover	10-11
– Installing pump pistons	10-12
– Installing pump drive	10-12
– Installing hydraulic pump	10-13
– Final assembly	10-13
– Adjusting hydraulic pump	10-13

15 – ROCKSHAFT

Special tools	15-1
Specifications	15-1
Torques for hardware	15-3
Removing rockshaft cylinder linkage	15-4
Removing rockshaft cylinder	15-4
Removing rockshaft piston	15-4
Installing set of seals	15-4
Replacing pressure and discharge valves	15-5
Removing surge relief valve	15-5
Installing surge relief valve	15-5
Replacing check valve	15-6
Installing rockshaft cylinder and valve linkage	15-6
Replacing flow control valve	15-7
Replacing bearing bushings	15-7
Installing rockshaft	15-7
Installing rockshaft piston	15-7
Installing rockshaft cylinder	15-8
Installing lift arms	15-8
Preassembling rockshaft cam	15-8
Installing rockshaft cam	15-9
Adjusting lift limit	15-9
Preassembling rockshaft cylinder linkage	15-9
Installing rockshaft cylinder linkage	15-10

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15 - ROCKSHAFT (CONTD.)

Assembling rate-of-drop screw	15-10	X	X
Installing rate-of-drop screw	15-10	X	X
Replacing load control arm	15-10	X	X
Replacing cam follower	15-11	X	X
Installing cam follower	15-11	X	X
Final assembly	15-11	X	X
Replacing load control shaft	15-12	X	X
Reconditioning bearing block	15-12	X	X
Securing sway blocks	15-13	X	X
Replacing additional rockshaft cylinder	15-13	X	X
Replacing bearings of additional rockshaft cylinder	15-13	X	X
Disassembling additional rockshaft cylinder	15-14	X	X
Replacing seal ring and wiper seal	15-14	X	X
Three-point hitch (3155 tractors), exploded view	15-15		X
Three-point hitch (2955 tractors), exploded view	15-16	X	
Installing center link bracket	15-17	X	X
Control lever, exploded view (with SOUND-GARD Body or ROLL-GARD)	15-18	X	X
Selector lever, exploded view (with SOUND-GARD Body or ROLL-GARD)	15-18	X	X
Control lever, exploded view (without SOUND-GARD Body or ROLL-GARD)	15-19	X	X
Selector lever, exploded view (without SOUND-GARD Body or ROLL-GARD)	15-19	X	X
Rockshaft Adjustment			
(With SOUND-GARD Body or ROLL-GARD)	15-20	X	X
– Adjusting load control arm	15-21	X	X
– Adjusting selector lever	15-21	X	X
– Adjusting valve clearance	15-22	X	X
– Adjusting control lever	15-23	X	X
– Adjusting beginning of lift with load control	15-24	X	X
– Rate-of-drop adjustment	15-24	X	X
– Load and depth functional test	15-24	X	X
– General functional test	15-25	X	X
– Adjusting movement of control lever	15-25	X	X

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40 – ISO QUICK COUPLERS

ISO quick coupler, exploded view	40-1
Replacing backup ring and O-ring	40-1

45 – REMOTE CYLINDER

Specifications	45-1
Torques for hardware	45-1
Removing cover	45-2
Removing piston	45-2
Removing piston rod guide	45-2
Overhauling piston rod guide	45-2
Assembling stop rod	45-3
Installing seal	45-3
Installing piston rod guide	45-3
Installing piston	45-3
Installing cover	45-4
Bleeding remote cylinder	45-4

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Group 25

SELECTIVE CONTROL VALVES – SPOOL TYPE

SPECIFICATIONS

		Dimensions of New Parts
O.D. of valve spool at V-packing area		9.96 to 10.00 mm (0.388 to 0.390 in.)
Valve spool spring		
– Free length		approx. 26 mm (1.02 in.)
– Spring tension at a length of 15 mm (0.59 in.)		210 to 260 N (49 to 58 lb)
Detent spring		
– Free length		approx. 30 mm (1.18 in.)
– Spring tension at a length of 17 mm (0.7 in.)		170 to 210 N (38 to 46 lb)

SCVS-LB77025AE-010487

TORQUES FOR HARDWARE

Selective control valve to rockshaft manifold, cap screws	20 Nm (14 ft-lb)
End cover to valve housing, hex. socket screws	15 Nm (11 ft-lb)
Rockshaft manifold to bracket, cap screws	50 Nm (35 ft-lb)

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Section 80 MISCELLANEOUS

NOTE: Group 05 deals only with the front axle of tractors not equipped with front wheel drive. The front axle on tractors equipped with front wheel drive is dealt with in Technical Manual – Front Wheel Drive Axles APL-300 and 700 Series.

05 – FRONT AXLE

Specifications	05-1	X	
Torques for hardware	05-1	X	
Removing front axle	05-1	X	
Front axle, exploded view	05-2	X	
Pressing bearing pin and bushing into front axle carrier	05-3	X	
Pressing bushing in axle center	05-3	X	
Pressing bushings in axle knees	05-3	X	
Installing knuckle and spindle assemblies	05-3	X	
Installing steering arms	05-3	X	
Adjusting knuckle and spindle assembly axial play	05-4	X	
Checking toe-in	05-4	X	
Adjusting toe-in	05-4	X	

10 – FRONT AND REAR WHEELS

Special tools	10-1	X	
Torques for hardware	10-1	X	
Removing front wheel	10-2	X	
Removing wheel hub	10-2	X	
Front wheel (8-hole type), exploded view	10-3	X	
Front wheel (6-hole type), exploded view	10-4	X	

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10 – FRONT AND REAR WHEELS (CONTD.)

		2955	3155
Installing oil seal	10-5	x	x
Installing wheel hub	10-5	x	x
Adjusting wheel bearings	10-5	x	x
Installing front wheel	10-5	x	x
Removing snap ring (with rack-and-pinion axle)	10-6	x	x
Removing rear wheel (with rack-and-pinion axle)	10-6	x	x
Rear wheel, exploded view (with rack-and-pinion axle)	10-7	x	x
Assembling wheel rim (cast rear wheels with rack-and-pinion or flanged axle)	10-8	x	x
Installing wheel sleeve half (with rack-and-pinion axle)	10-8	x	x
Installing a rear wheel (with rack-and-pinion axle)	10-8	x	x
Installing a rear wheel (with flanged axle)	10-8	x	x

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OPERATOR'S STATION – REPAIR

05 – SAFE HANDLING OF REFRIGERANTS

Safety precautions	05-1
Safety equipment	05-1
Safe handling and storage of pressure gas containers	05-2
Welding and soldering regulations	05-2
Cleaning the air conditioning system	05-3
Discharging refrigerant	05-3
Handling refrigerant	05-3
Charging the system	05-4

06 – SERVICING AIR CONDITIONING SYSTEM

Special tools	06-1
Specifications	06-1
Discharging the system	06-2
Evacuating the system	06-3
Charging the system	06-4
Adding refrigerant to a partially discharged system	06-5
Leakage test	06-6
Checking oil level in compressor	06-7
Adding refrigerant oil	06-7
Oil capacity in other components	06-8

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**07 – COMPRESSOR (Up to Tractor Serial
No. 663 473L)**

Special tools	07-1
Specifications	07-3
Torques for hardware	07-3
Compressor clutch assembly, sectional view	07-4
Compressor clutch assembly, exploded view	07-5
Removing compressor	07-6
Shaft seal leak test	07-6
Discharge to suction side leak test	07-7
Removing lock nut	07-8
Removing hub and drive plate	07-8
Removing shaft seal seat	07-9
Removing shaft seal assembly	07-9
Removing V-belt pulley with bearing	07-10
Removing coil housing	07-10
Installing V-belt pulley with bearing	07-11
Installing O-ring for seal ring seat	07-11
Installing shaft seal ring assembly	07-12
Installing rear bearing shield	07-12
Installing front bearing shield	07-13
Positioning drive key	07-13
Installing hub and drive plate	07-14
Installing compressor	07-14
Tensioning compressor V-belt	07-15

2955

3155

**08 – COMPRESSOR (From Tractor Serial
No. 663 474L)**

Special tools	08-1
Specifications	08-2
Torques for hardware	08-2
Removing compressor	08-3
Checking compressor charge	08-4
Checking shaft seal	08-6
Disassembling compressor	08-7
Repairing valve plates	08-9
Repairing cylinder and piston	08-9

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10 – VENTILATION AND HEATING

Ventilation and heating, exploded view	10-1
Removing fan assembly and radiator	10-2
Removing heater core (tractors with air conditioning system)	10-2
Removing hot water hoses	10-2
Removing air filter	10-3
Removing air circulation filter	10-3
Cab platform heating, exploded view	10-4
Shut-off valve, cab platform heating	10-5

15 – OPERATOR'S SEATS

Operator's seat DS44/90A with two-post ROLL-GARD, exploded view	15-1
Operator's seat DS44/2H-4 with two-post ROLL-GARD, exploded view	15-2
Personal posture seat with four-post ROLL-GARD, exploded view	15-3
Personal posture seat with SOUND- GARD body, exploded view	15-4
Personal posture seat base with SOUND- GARD body or ROLL-GARD, exploded view	15-5

20 – SOUND-GARD BODY

Special tools	20-1
Torques for hardware	20-1
Removing SOUND-GARD body	20-2
Removing door	20-2
Door stop and handle, exploded view	20-3
Removing SOUND-GARD body outer roof	20-3
Outer roof, exploded view	20-4
Removing inner roof	20-4
Inner roof, exploded view	20-5
Installing inner roof	20-6
Headliner, exploded view	20-6
Cab frame, exploded view	20-7
Cab windows, exploded view	20-8

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20 – SOUND-GARD BODY – Contd.

Rear window (from tractor serial no. 631 622L), exploded view	20-9
Side windows (from tractor serial no. 631 622L), exploded view	20-10
Removing windows	20-11
Installing windows	20-11
Removing right-hand windshield wiper motor	20-12
Removing left-hand windshield wiper motor	20-12
Windshield wiper motor, exploded view	20-12
Mounting brackets, exploded view	20-13
Removing and installing mountings	20-13

25 – 4-POST ROLL-GARD

Torques for hardware	25-1
Removing 4-Post ROLL-GARD	25-1
4-Post ROLL-GARD, exploded view	25-2
Mounting brackets, exploded view	25-3
Removing and installing ROLL-GARD mountings	25-3

30 – 2-POST ROLL-GARD

Torques for hardware	30-1
Repairing 2-Post ROLL-GARD	30-1
2-Post ROLL-GARD, exploded view	30-2

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