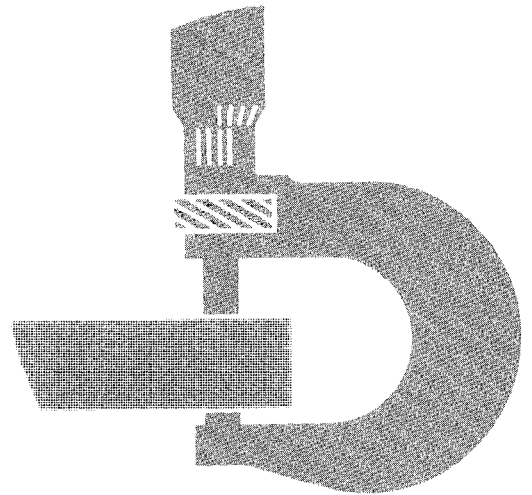


3150 Tractor

TECHNICAL MANUAL





3150 TRACTOR TECHNICAL MANUAL TM-4410

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SPECIFICATIONS

SERIAL NUMBER PLATES

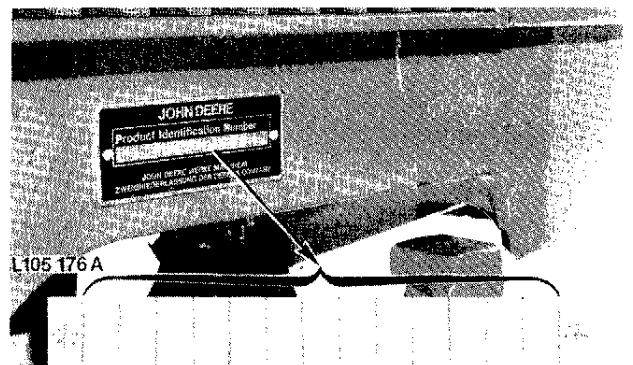
The following illustrations show the serial number plates for tractor major components. The letters and figures on these plates are required for warranty claims and when ordering replacement parts.

TECHDA-LA71005AE-180385

PRODUCT IDENTIFICATION NUMBER

The product identification number plate is located on right-hand side of front axle carrier. The chassis number is stamped in front axle carrier next to the number plate.

NOTE: When ordering tractor parts (excluding engine parts), quote all letters and figures of serial number stamped on this plate.

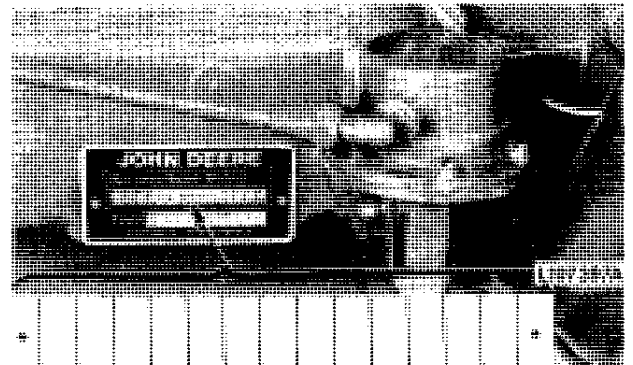


L105176A-LA91005AE-051185

ENGINE SERIAL NUMBER

The engine serial number plate is located on right-hand side of engine block.

NOTE: When ordering engine parts, quote all figures on this plate.

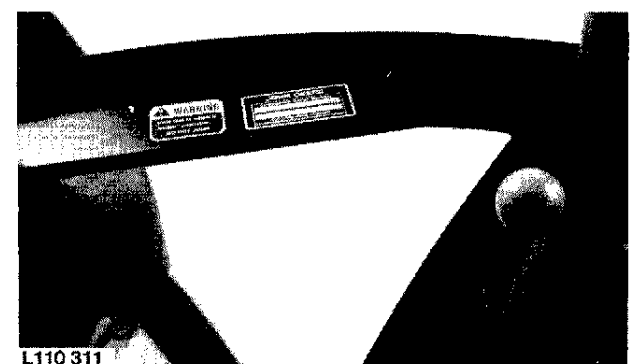


L107397A-LA91005AE-030386

TRANSMISSION SERIAL NUMBER (Tractors with SOUND-GARD Body)

The transmission serial number plate is located on right-hand crossmember of SOUND-Gard Body and on right-hand side of transmission case.

NOTE: In addition to serial number of transmission and transmission type, this serial number plate also specifies differential and front wheel drive gear ratios.



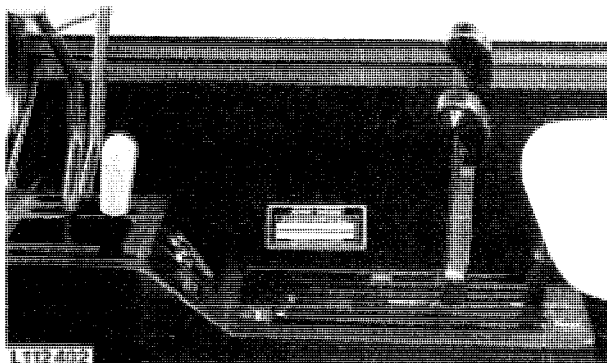
L110311-LA91005AE-030386

Specifications

TRANSMISSION SERIAL NUMBER (Tractors with ROLL-GARD)

The transmission serial number plate is located next to the right-hand side of shift console and on right-hand side of transmission case.

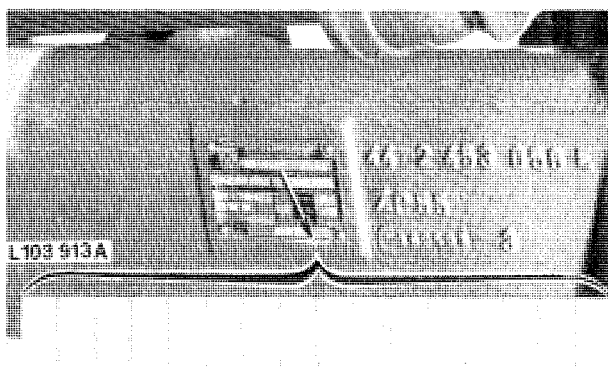
NOTE: In addition to serial number of transmission and transmission type, this serial number plate also specifies differential and front wheel drive gear ratios.



L112402-LA91005AE-051185

FRONT WHEEL DRIVE AXLE SERIAL NUMBER

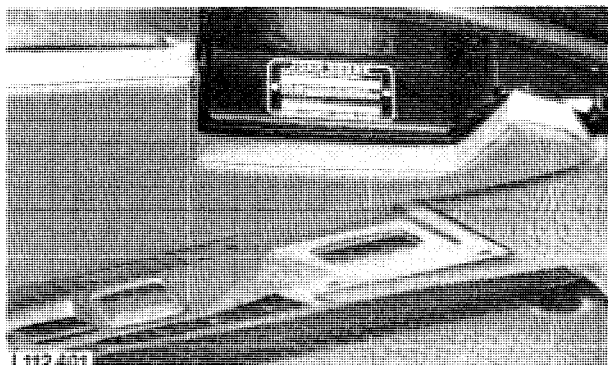
The front wheel drive axle serial number plate is located on rear of right-hand axle half.



L103913A-LA71005AE-180385

SOUND-GARD BODY SERIAL NUMBER

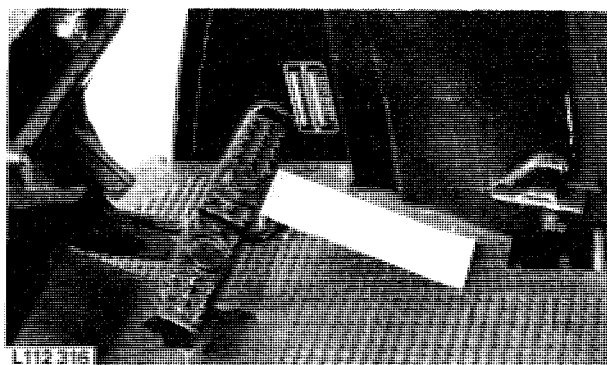
With operator's cab door open, cab serial number plate is visible in roof recess as you enter the cab.



L112401-LA91005AE-051185

ROLL-GARD SERIAL NUMBER

The ROLL-GARD serial number plate is located on the longitudinal support.



L112316-LA91005AE-051185

Specifications

MODEL SERIAL NUMBERS

Fuel injection pump, fuel injection nozzles, alternator, starting motor, hydrostatic steering valve, air conditioning system compressor (when equipped) and hydraulic pump have serial numbers to facilitate identification of different makes of a given unit.

TECHDA-LA71005BE-180385

Specifications

ENGINE

Number of cylinders	6
Cylinder liner bore	106.5 mm (4.19 in.)
Stroke	110 mm (4.33 in.)
Displacement	5883 cm ³ (359 cu.in.)
Compression ratio	17.4 : 1
Max. torque at 1400 rpm	392 Nm (289 ft-lb)
Firing order	1-5-3-6-2-4
Valve clearance (engine hot or cold)	
– Intake valve	0.35 mm (0.014 in.)
– Exhaust valve	0.45 mm (0.018 in.)
Slow idle speed	880 to 920 rpm
Fast idle speed	2510 to 2610 rpm
Rated engine speed	2400 rpm
Working speed range	1400 to 2400 rpm
Engine speed for PTO operation	2400 rpm
Flywheel horsepower at engine rated speed of 2400 rpm	
– According to DIN 70 020	82 kW (112 hp)
PTO* horsepower at engine rated speed of 2400 rpm	
– According to SAE J 816 b	71 kW (95 hp)
Lubrication system	Full internal force feed system with full flow filter

* With the engine run in (above 100 hours of operation) and at operating temperature (engine and transmission), measured by means of a dynamometer
Permissible variation $\pm 5\%$

TECHDA-LA91005AE-051185

Specifications

ENGINE CLUTCH

- Type Single dry disk clutch with torsion damper, foot-operated

COOLING SYSTEM

- Type Pressurized system with centrifugal pump
- Temperature regulation Two thermostats

FUEL SYSTEM

- Type Direct injection
- Fuel injection pump timing to engine TDC
- Fuel injection pump type Distributor type with two pistons
Stanadyne no. DB2 4378
- Air cleaner Dry-type air cleaner with secondary (safety) element

ELECTRICAL SYSTEM

- Batteries 2 x 12 volt, 88 Ah
- Alternator with internal regulator 14 volt, 55 amps.
- Starting motor 12 volt, 3 kW (4 hp)
- Battery terminal grounded negative

SYNCHRONIZED TRANSMISSION

- Type Synchronized transmission
- Gear selections 8 forward and 4 reverse
- Gear shifting Two forward groups and one reverse group;
Synchronized forward and reverse shifting within groups

HI-LO SHIFT UNIT

- Type Hydraulic gear reduction unit which can be shifted under load with "wet" multiple disk clutch and brake packs.
- Travel speed decreases in each gear by approx. 20 %
- Shifting to reduced (Lo) speed hydraulic
- Shifting to normal (Hi) speed preloaded cup springs

TECHDA-LA71005DE-180385

Specifications

DIFFERENTIAL AND FINAL DRIVES

- Type of differential spiral bevel gears
- Type of final drive planetary reduction drive

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 2400 rpm 540/1000 rpm, interchangeable
- PTO clutch hydraulically operated "wet" disk clutch
- PTO brake hydraulically operated "wet" disk brake

FRONT PTO

- Type independent of transmission, can be engaged and disengaged under load
- Control electrical/hydraulic solenoid switch
- PTO speed at an engine speed of 2175 rpm 1000 rpm
- PTO clutch hydraulically operated "wet" disk clutch
- PTO brake hydraulically operated "wet" disk brake

PTO SPEEDS

at engine speed	540 rpm shaft	1000 rpm shaft
- 900 rpm	202 rpm	375 rpm
- 2100 rpm	472 rpm	875 rpm
- 2400 rpm	540 rpm	1000 rpm
- 2500 rpm	562 rpm	1041 rpm
- 2610 rpm	587 rpm	1087 rpm

TECHDA-LA91005BE-051185

Specifications

FRONT WHEEL DRIVE

- Type hydraulically controlled, shift under load with "wet" disk clutch
- Control electrical/hydraulic solenoid switch
- Drive engagement preloaded cup springs
- Drive disengagement hydraulic

HYDROSTATIC STEERING

- Type without mechanical linkage between steering valve and front wheels

FOOT BRAKES

- Rear brake self-adjusting, hydraulically operated "wet" disk brakes

HANDBRAKE

- Type mechanically operated band-type locking brake acting on the differential

HYDRAULIC SYSTEM

- Type closed, constant pressure system
- System pressure when pump pistons idle 16000 kPa (160 bar; 2320 psi)
- Operating pressure 14000 kPa (140 bar; 2050 psi)
- Hydraulic pump 8-piston pump with variable displacement

ROCKSHAFT

- Regulation load control, load-and-depth control, float position
- Control via draft links

- FRONT HITCH controlled by selective control valve

- GROUND TRAVEL SPEEDS see Operator's Manual

TECHDA-LA91005CE-051185

Specifications

FRONT AND REAR WHEELS

- Tires, tread widths, tire pressures
and ballast weights see Operator's Manual

DIMENSIONS AND WEIGHTS see Operator's Manual

CAPACITIES

Fuel tank 134.0 liters (35.4 U.S. gal.)
 - Auxiliary tank 52.0 liters (13.7 U.S. gal.)
 Cooling system
 - with ROLL-GARD 17.0 liters (4.5 U.S. gal.)
 - with SOUND-GARD Body 19 liters (5 U.S. gal.)
 Crankcase with filter 11.5 liters (3.0 U.S. gal.)
 Transmission/hydraulic system (including
 oil reservoir and oil cooler)
 - Initial filling 55.0 liters (14.5 U.S. gal.)
 - Oil change 47.0 liters (12.4 U.S. gal.)
 Front wheel drive
 - Front axle housing 7.0 liters (1.85 U.S. gal.)
 - Wheel hub housing, each 0.75 liters (0.2 U.S. gal.)

TECHDA-LA91005DE-051185

STANDARD TORQUES FOR HARDWARE

**Recommended torques in Nm and ft-lb
for hose and pipeline connections**

A	B		C	
	Nm	ft-lb	Nm	ft-lb
3/8-24 UNF	7,5	5,5	8	6
7/16-20 UNF	10	7	12	9
1/2-20 UNF	12	9	15	11
9/16-18 UNF	15	11	25	18
3/4-16 UNF	25	20	45	35
7/8-14 UNF	40	30	60	45
1-1/16-12 UNC	60	45	100	75
1-3/16-12 UNC	70	50	120	90
1-5/16-12 UNC	80	60	140	105
1-5/8-12 UNC	110	80	190	140
1-7/8-12 UNC	150	110	220	160

A-Thread size

B-With O-rings

C-With cone

L 110 192

L110192-LA71005AE-260385

Specifications

**Recommended torques in Nm and ft-lb for
UNC and UNF cap screws**

A	10.9 C		12.9 D	
	Nm	ft-lb	Nm	ft-lb
1/4	15	10	20	15
5/16	30	20	40	30
3/8	50	35	70	50
7/16	80	55	110	80
1/2	120	85	170	120
9/16	180	130	240	175
5/8	230	170	320	240
3/4	400	300	580	425
7/8	600	445	930	685
1	910	670	1400	1030
1-1/8	1240	910	1980	1460
1-1/4	1700	1250	2800	2060

L 110 193

A-Head marking
(identifying strength)
B-Thread O.D. (in.)

C-Tempered steel high strength
bolts and cap screws
D-Tempered steel extra high
strength bolts and cap screws

*NOTE: A variation of ± 10% is permissible for all
torques indicated in this chart.*

Torque figures indicated above and in the specification sections of this manual are valid for non-greased or non-oiled threads and heads unless otherwise specified. Therefore, do not grease or oil bolts or cap screws unless otherwise specified in this manual.

L110193-LA71005AE-260385

Specifications

Recommended torques in Nm and ft-lb for metric cap screws

A	8.8 C		10.9 D		12.9 E	
	Nm	ft-lb	Nm	ft-lb	Nm	ft-lb
M5	7	5	9	6,5	10	8,5
M 6	10	8,5	15	10	20	15
M 8	30	20	40	30	40	30
M 10	50	35	80	60	90	70
M 12	100	75	140	100	160	120
M 14	160	120	210	155	260	190
M 16	240	175	350	260	400	300
M 20	480	355	650	480	780	575
M 24	820	605	1150	850	1350	995
M 30	1640	1210	2250	1660	2700	1990
M 36	2850	2110	4000	2950	4700	3465

L 110 194

(identifying strength)
B-Thread O.D. (mm)

bolts and cap screws
D-Tempered steel extra high
strength bolts and cap screws

NOTE: A variation of ± 10% is permissible for all torques indicated in this chart.

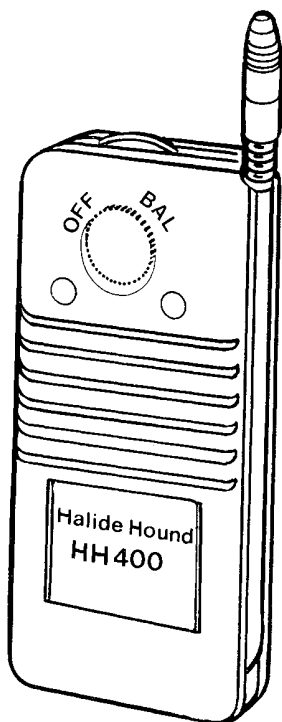
Torque figures indicated above and in the specification sections of this manual are valid for non-greased or non-oiled threads and heads unless otherwise specified. Therefore, do not grease or oil bolts or cap screws unless otherwise specified in this manual.

L110194-LA71005AE-190385

PREDELIVERY, DELIVERY AND AFTER-SALE INSPECTIONS

SPECIAL TOOLS

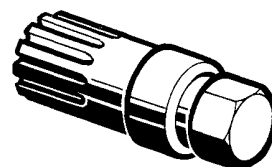
JT 05509



(A)

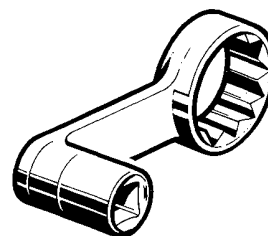
- A-Checking refrigerant lines for leaks (with air conditioning system)
- B-Turning engine for checking valve clearance
- C-Checking specified torques of SOUND-GARD Body or ROLL-GARD mountings

JDE - 83



(B)

KJD 10 138



(C)

L113715

L108 562

L113715,L108562-LA91010AE-030386

SPECIFICATIONS

ENGINE SPEEDS

- Slow idle speed	880 to 920 rpm
- Fast idle speed	2510 to 2610 rpm
- Rated engine speed	2400 rpm

FAN BELT

Fan belt should have 19 mm (3/4 in.) flex with 90 N (20 lb) pull midway between crankshaft and alternator or water pump (use a spring scale).

COMPRESSOR BELT

Compressor belt should have 19 mm (3/4 in.) flex with 60 N (13 lb) pull midway between both pulleys.

BATTERIES

Specific gravity at an acid temperature of 20° C (68° F)

- Normal and arctic conditions	1.28
- Tropical conditions	1.23

TOE-IN

- Front wheel toe-in	2 to 5 mm. (5/64 to 13/64 in.)
----------------------------	--------------------------------

BRAKES

- To check brake setting, load each brake pedal for 1 minute with	270 N (60 lb)
- Lowering of a brake pedal within 1 minute at a load of 270 N (60 lb) max	approx. 25 mm (1 in.)
- Handbrake lever setting (third or fourth notch)	110 N (25 lb)