

# SERVICE MANUAL

## T1560 / T1570 Compact Tractors

Print No. 84205613A



**NEW HOLLAND**

**AGRICULTURE**

## SECTION 00 - GENERAL INFORMATION

### Chapter 1 - General Information

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# INTRODUCTION

This repair manual provides the technical information needed to properly service the New Holland T1560 and T1570 tractor. Use this manual in conjunction with the operator's manual for complete operation, adjustment, and maintenance information.

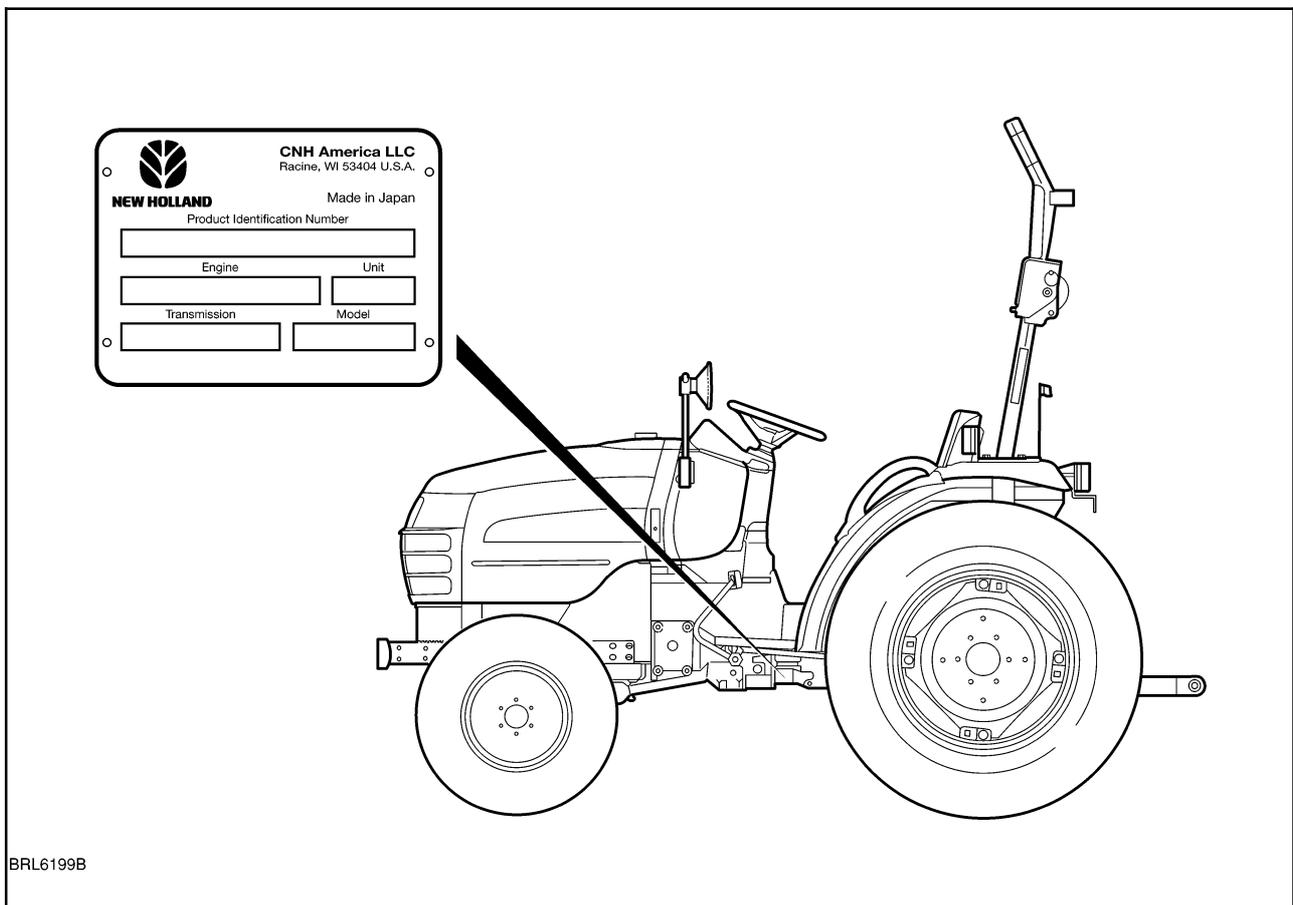
On New Holland equipment, left and right are determined by standing behind the unit, looking in the direction of travel.

**PLEASE READ CAREFULLY:**

A PRODUCT IDENTIFICATION PLATE is located on the *left-hand side of the transmission housing*. The numbers on the plate are important in the event your tractor should require future service. For your convenience, have your dealer record these numbers in the appropriate spaces below.

New Holland North America, Inc. is continually striving to improve its products. We reserve the right to change prices, specification, or equipment at any time without notice.

All data given in this book is subject to production variations. Dimensions and weights are approximate only, and the illustrations do not necessarily depict tractors in standard condition. For exact information about any particular tractor, please consult your New Holland dealer.

**T1560 & T1570 ID PLATE LOCATION**

## INTERNATIONAL SYMBOLS

As a guide to the operation of your tractor, various universal symbols have been utilized on the instruments, controls, switches, and fuse box. The symbols are shown below with an indication of their meaning.

	Thermostart starting aid		Radio		P.T.O.		Position Control
	Alternator charge		Keep alive memory		Transmission in neutral		Draft Control
	Fuel level		Turn signals		Creeper gears		Accessory socket
	Automatic Fuel shut-off		Turn signals -one trailer		Slow or low setting		Implement socket
	Engine speed (rev/min x 100)		Turn signals -two trailers		Fast or high setting		%age slip
	Hours recorded		Front wind-screen wash/wipe		Ground speed		Hitch raise (rear)
	Engine oil pressure		Rear wind-screen wash/wipe		Differential lock		Hitch lower (rear)
	Engine coolant temperature		Heater temperature control		Rear axle oil temperature		Hitch height limit (rear)
	Coolant level		Heater fan		Transmission oil pressure		Hitch height limit (front)
	Tractor lights		Air conditioner		FWD engaged		Hitch disabled
	Headlamp main beam		Air filter blocked		FWD disengaged		Hydraulic and transmission filters
	Headlamp dipped beam		Parking brake		Warning!		Remote valve extend
	Work lamps		Brake fluid level		Hazard warning lights		Remote valve retract
	Stop lamps		Trailer brake		Variable control		Remote valve float
	Horn		Roof beacon		Malfunction! See Operator's Manual		Malfunction! (alternative symbol)
			Warning! Corrosive substance		Pressurised! Open carefully		

# SPECIFICATIONS

	<b>Model T1560</b>	<b>Model T1570</b>
<b>ENGINE</b>		
Type .....	Diesel	Diesel
Engine Gross Horsepower .....	22.4 kw (30 Hp)	24.6 kw (33 Hp)
Cylinders .....	3	3
Bore .....	84mm	84mm
Stroke .....	90mm	90mm
Displacement .....	1.496 litre	1.496 litre
Compression Ratio .....	22,2:1	22,2:1
Firing Order .....	1-2-3	1-2-3
Low Idle Speed .....	950 - 1050 RPM	950 - 1050 RPM
Maximum Speed:		
High Idle .....	3000 RPM	3000 RPM
Rated .....	2800 RPM	2800 RPM
Valve Clearance (Cold):		
Intake .....	0.20mm	0.20mm
Exhaust .....	0.20mm	0.20mm
<b>CAPACITIES</b>		
Fuel Tank .....	30.0 litres	30.0 litres
Cooling System .....	5.0 litres	5.0 litres
Engine Crankcase:		
Less Filter .....	4.0 litres	4.0 litres
With Filter .....	4.5 litres	4.5 litres
Rear Axle & Transmission (Includes Hydraulics)		
9x3 (Gear) .....	30.5 litres	30.5 litres
HST .....	32.5 litres	32.5 litres
Front Axle Final Reduction .....	0.8 litres	0.8 litres
Differential Gear Case .....	1.5 litres	1.5 litres

**Model T1560/Model T1570****COOLING SYSTEM**

Type .....	Pressurised liquid with re-circulating bypass
Water Pump:	
Type .....	Centrifugal
Drive .....	V-Belt
Belt Deflection .....	10mm - 15mm when 5 kg thumb pressure is applied midway between belt pulleys
Fan Diameter .....	340mm
Thermostat:	
Start to Open .....	82°C
Fully Open .....	95°C
Radiator Cap .....	0.9 bar

**ELECTRICAL SYSTEM**

Alternator .....	12-volt, Heavy Duty, 40 amps
Battery .....	12-volt, w/negative ground, 420 cca BCI Group 24
Starting Motor .....	12v, 1.7kW Solenoid Pre-Engaged Reduction

**FUEL SYSTEM**

Fuel Type .....	Diesel
Type of Fuel to Use if Above -6.7°C (20°F) .....	No. 2-Diesel, Cetane Rating: Minimum 40
Type of Fuel to Use if Below -6.7°C (20°F) .....	No. 1-Diesel, Cetane Rating: Minimum 40
Injection Pump:	
Type .....	In-Line
Timing .....	20° - 22° BTDC

**Model T1560/Model T1570****CLUTCH**

Type .....	224mm - Transmission 9 x 3 & HST
Pedal Free-Travel .....	20mm - 30mm

**BRAKES**

Type .....	Wet Disc
Disc (2 per side) .....	155mm x 123mm Diameter

**STEERING**

Type .....	Power
Turns Lock-to-Lock:	
FWD .....	3.2/2.5
Front Wheel Toe-In .....	0 ± 5mm
Turning Radius w/o Brakes: .....	2760mm

**POWER TAKE-OFF**

Type .....	Transmission, single clutch
Shaft:	
Rear PTO (6 Spline) .....	35mm
Mid PTO .....	25.4mm
Engine Speed for 540 RPM Rear PTO Operation	2420 RPM - 9 x 3 Transmission 2465 RPM - HST Transmission
Horsepower PTO Observed .....	22.1 kW (29.7 HP) -      19.0 Kw (25.5 HP) 9 x 3 Transmission      9 x 3 Transmission 20.8 kW (28.0 HP) -      17.9 Kw (24.0 HP) HST Transmission      HST Transmission
Engine Speed for 2000 RPM Optional Mid PTO Operation .....	2377 RPM - 9 x 3 Transmission 2420 RPM - HST Transmission

**HYDRAULIC LIFT SYSTEM**

Type .....	Open Center
Pump Type .....	Gear
Pump Capacity .....	23.3 lpm
System Relief Valve Setting .....	147 ± 5bar (2133 ± 70PSI)

**Model T1560/T1570 - 9x3 Transmission****TRANSMISSION SPEEDS**

		(2800 RPM Engine Speed with 11.2 x 24 Rear Tyres)
Gear Position:		
1 <sup>st</sup> .....		1.30 KPH (0.81 MPH)
2 <sup>nd</sup> .....		1.94 KPH (1.21 MPH)
3 <sup>rd</sup> .....		2.78 KPH (1.73 MPH)
4 <sup>th</sup> .....		4.14 KPH (2.57 MPH)
5 <sup>th</sup> .....		6.11 KPH (3.79 MPH)
6 <sup>th</sup> .....		8.79 KPH (5.46 MPH)
7 <sup>th</sup> .....		10.58 KPH (6.57 MPH)
8 <sup>th</sup> .....		15.65 KPH (9.72 MPH)
9 <sup>th</sup> .....		23.04 KPH (14.32 MPH)
Reverse 1 .....		1.94 KPH (1.21 MPH)
Reverse 2 .....		6.11 KPH (3.79 MPH)
Reverse 3 .....		15.65 KPH (9.72 MPH)

**Model T1560/T1570 - Hydrostatic Transmission****TRANSMISSION SPEEDS**

		(2800 RPM Engine Speed with 11.2 x 24 Rear Tyres)
Gear Position:		
Low .....		0-6.30 KPH (0 - 3.91 MPH)
Mid .....		0-13.07 KPH (0 - 8.12 MPH)
High .....		0-26.66 KPH (0 - 16.56 MPH)
Reverse Low .....		0-4.41 KPH (0 - 2.74 MPH)
Reverse Mid .....		0-9.15 KPH (0 - 5.68 MPH)
Reverse High .....		0-18.66 KPH (0 - 11.59 MPH)

**Model T1560/Model T1570****DRAWBARS**

Fixed/Clevis ..... Standard

**TYRES****FRONT:**

Agricultural FWD: ..... 7x14, 4PR JIS

Turf FWD: ..... 25x8.50-14, 4PR Turf JIS

**REAR:**

Agricultural ..... 11.2x24, 4PR JIS

Turf ..... 13.6x16, 4PR Turf JIS

**WHEEL BOLT TORQUES**

Front Wheel—

Disc-to-Hub:

FWD ..... 115 Nm (85lbs.ft)

Rear Wheel—

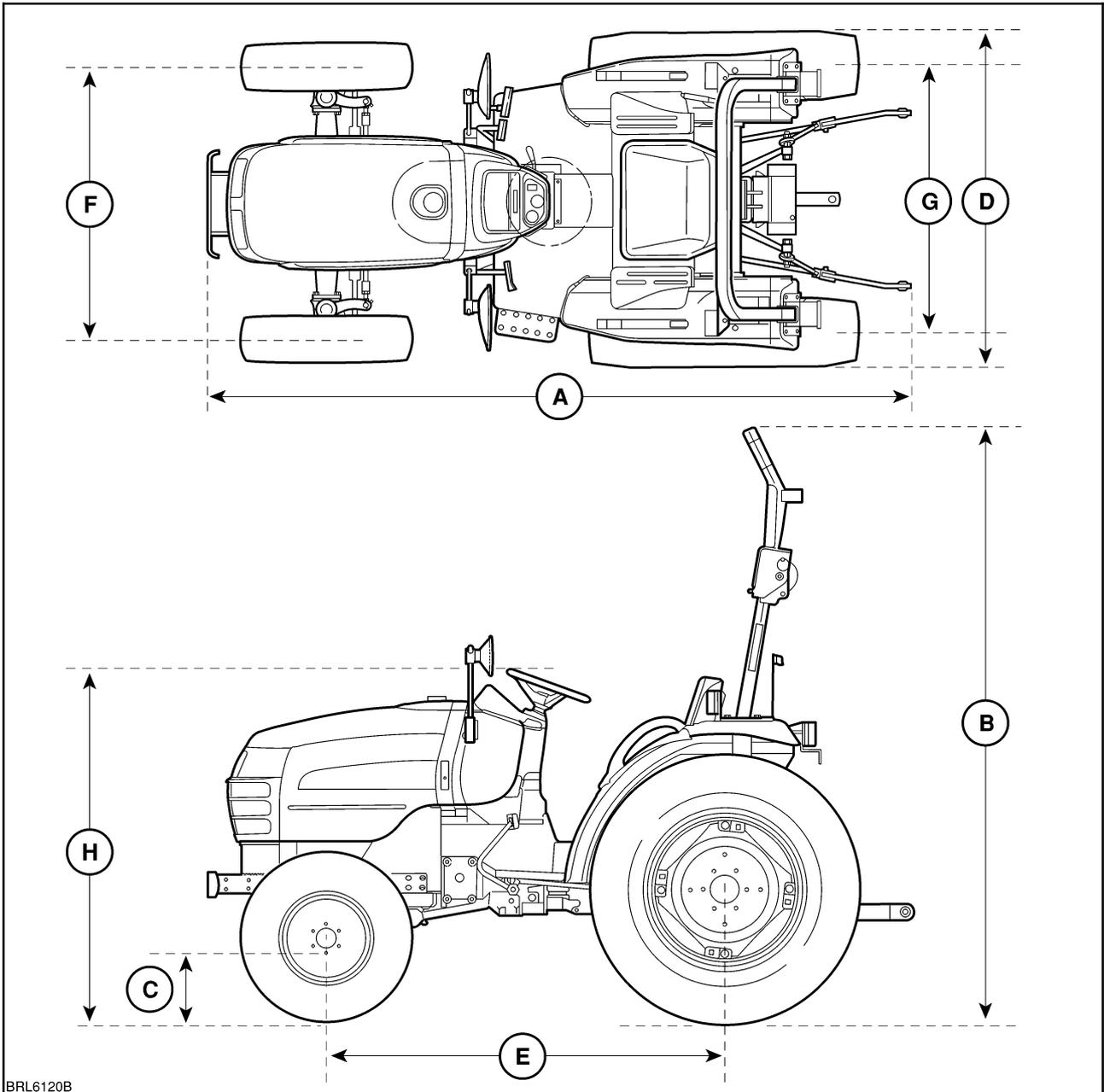
Disc-to Axle ..... 129 Nm (95lbs.ft)

**ROPS ATTACHING BOLT TORQUES**

ROPS to Rear Axle ..... 75 N·m (55lbs.ft)

Seat Belt ..... 47.4 N·m (35lbs.ft)

**GENERAL DIMENSIONS FOR T1560 & T1570**



BRL6120B

**Model T1560/T1570**

**(A)—LENGTH: (3 pt. Horizontal)**

4WD

Turf Tyres .....	2825mm
Ag. Tyres .....	2825mm

**(B)— TO TOP OF ROPS:**

Turf Tyres .....	2425mm
Ag. Tyres .....	2490mm

**(C)- MINIMUM GROUND CLEARANCE:**

Turf Tyres .....	250mm
Ag. Tyres .....	310mm

**GENERAL DIMENSIONS Contd:****Model T1560/T1570****(D)—WIDTH: REAR AXLE:****Outside to Outside:**

Turf Tyres .....	1510mm (Narrow setting)
Ag. Tyres .....	1387mm (Narrow setting)

**(E)—WHEEL BASE:**

FWD .....	1600mm
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**(F)— FRONT WHEEL CENTRES:**

Turf Tyres .....	1100mm
Ag. Tyres .....	1150mm

**(G)— REAR WHEEL CENTRES:**

Turf Tyres .....	1390mm
Ag. Tyres .....	1500mm

**(H)— HEIGHT TO TOP OF STEERING WHEEL:**

Turf Tyres .....	1350mm
Ag. Tyres .....	1415mm

**WHEEL TREAD SETTINGS:***FRONT:*Agricultural:

FWD	
9x3 Transmission .....	1100mm
HST Transmission .....	1100mm

Turf:

FWD	
9x3 Transmission .....	1150mm
HST Transmission .....	1150mm

*REAR:*Agricultural:

FWD	
9x3 Transmission .....	1070mm
HST Transmission .....	1070mm

Turf:

FWD	
9x3 Transmission .....	1120mm
HST Transmission .....	1120mm

**WEIGHT:**

With ROPS &amp; Ag Tyres:

FWD .....	HST	9 x 3
Ag Tyres .....	1056 kg 2328 lbs	1050 kg 2315 lbs
Turf Tyres .....	1048 kg 2311 lbs	1042 kg 2298 lbs

# MINIMUM HARDWARE TIGHTENING TORQUES

IN FOOT POUNDS (NEWTON-METERS) FOR NORMAL ASSEMBLY APPLICATIONS

## INCH HARDWARE AND LOCKNUTS

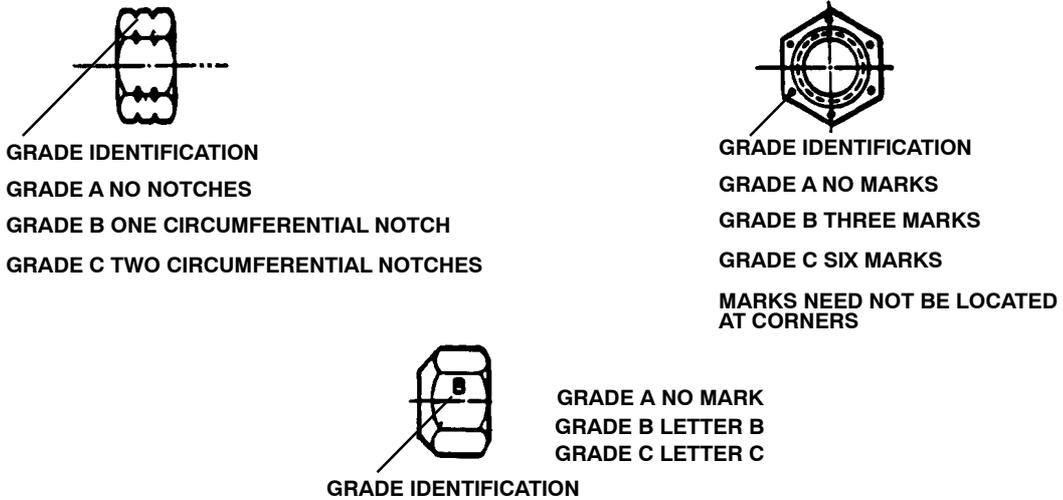
NOMINAL SIZE	SAE GRADE 2		SAE GRADE 5		SAE GRADE 8		LOCKNUTS		NOMINAL SIZE
	UNPLATED or PLATED SILVER	PLATED W/ZnCr GOLD	UNPLATED or PLATED SILVER	PLATED W/ZnCr GOLD	UNPLATED or PLATED SILVER	PLATED W/ZnCr GOLD	GR.B w/GR5 BOLT	GR.C w/GR8 BOLT	
1/4	55* (6.2)	72* (8.1)	86* (9.7)	112* (13)	121* (14)	157* (18)	61* (6.9)	86* (9.8)	1/4
5/16	115* (13)	149* (17)	178* (20)	229* (26)	250* (28)	324* (37)	125* (14)	176* (20)	5/16
3/8	17 (23)	22 (30)	26 (35)	34 (46)	37 (50)	48 (65)	19 (26)	26 (35)	3/8
7/16	27 (37)	35 (47)	42 (57)	54 (73)	59 (80)	77 (104)	30 (41)	42 (57)	7/16
1/2	42 (57)	54 (73)	64 (87)	83 (113)	91 (123)	117 (159)	45 (61)	64 (88)	1/2
9/16	60 (81)	77 (104)	92 (125)	120 (163)	130 (176)	169 (229)	65 (88)	92 (125)	9/16
5/8	83 (112)	107 (145)	128 (174)	165 (224)	180 (244)	233 (316)	90 (122)	127 (172)	5/8
3/4	146 (198)	189 (256)	226 (306)	293 (397)	319 (432)	413 (560)	160 (217)	226 (306)	3/4
7/8	142 (193)	183 (248)	365 (495)	473 (641)	515 (698)	667 (904)	258 (350)	364 (494)	7/8
1	213 (289)	275 (373)	547 (742)	708 (960)	773 (1048)	1000 (1356)	386 (523)	545 (739)	1

NOTE: Torque values shown with \* are inch pounds.

### IDENTIFICATION CAP SCREWS AND CARRIAGE BOLTS



### LOCKNUTS



## METRIC BOLT TORQUE SPECIFICATIONS

Bolt Size	Grade No.	Coarse Thread			Fine Thread		
		Pitch (mm)	Foot-Pounds	Newton Meters	Pitch (mm)	Foot-Pounds	Newton-Meters
M6	4T, 4.8	1.0	3.6 - 5.1	4.9 - 6.9	-----	-----	-----
	7T, 8T, 8.8		6.1 - 8.3	8.3 - 11.3			
	10T, 11T		8.6 - 11.6	11.7 - 15.7			
M8	4T, 4.8	1.25	9.4 - 12.3	12.7 - 16.7	1.0	11.2 - 14.9	15.2 - 20.2
	7T, 8T, 8.8		16.7 - 21.0	22.6 - 28.4		19.6 - 25.3	26.5 - 34.3
	10T, 11T		21.0 - 26.8	28.5 - 36.3		22.4 - 29.7	30.4 - 40.2
M10	4T, 4.8	1.5	18.8 - 24.6	25.5 - 33.3	1.25	21.0 - 26.8	28.5 - 36.3
	7T, 8T, 8.8		32.5 - 41.3	44.1 - 55.9		36.2 - 46.3	49.0 - 62.8
	10T, 11T		39.8 - 51.3	54.0 - 69.6		42.7 - 54.2	57.9 - 73.5
M12	4T, 4.8	1.75	27.5 - 34.8	37.3 - 47.1	1.25	31.8 - 40.5	43.1 - 54.9
	7T, 8T, 8.8		48.5 - 61.5	65.7 - 83.3		54.9 - 69.4	74.5 - 94.1
	10T, 11T		68 - 85.6	92 - 116		73.1 - 93.7	99 - 127
M14	4T, 4.8	2.0	46.3 - 59.3	62.8 - 80.4	1.5	51.4 - 64.4	69.7 - 87.3
	7T, 8T, 8.8		76.8 - 97.4	104 - 132		85.6 - 109	116 - 148
	10T, 11T		102.6 - 129	139 - 175		110 - 136	149 - 185
M16	4T, 4.8	2.0	63.5 - 81.2	86 - 110	1.5	67.2 - 84.9	91 - 115
	7T, 8T, 8.8		110 - 136.5	149 - 185		116 - 142	157 - 193
	10T, 11T		151.3 - 188	205 - 255		162 - 199	220 - 270
M18	4T, 4.8	2.0	83.4 - 104	113 - 141	1.5	96.7 - 120	131 - 163
	7T, 8T, 8.8		145 - 174	196 - 236		169 - 206	230 - 280
	10T, 11T		203 - 246	275 - 333		220 - 270	299 - 367
M20	4T, 4.8	2.5	106 - 133	144 - 180	1.5	126 - 155	171 - 211
	7T, 8T, 8.8		177 - 214	240 - 290		203 - 245	275 - 333
	10T, 11T		268 - 252	363 - 441		293 - 358	397 - 485

# LUBRICANTS

## RECOMMENDED LUBRICANTS AND COOLANTS

RECOMMENDED FLUIDS AND APPLICATION	NEW HOLLAND SPECIFICATION	INTERNATIONAL SPECIFICATION	MODELS	APPROXIMATE QUANTITIES
ENGINE OIL Ambra Mastergold (15W40) Ambra Mastergold (10W30)	NH 330 H NH 324 H	API CH4 ACEA-E5	T1560 and T1570	4.0 Litres (4.5 litres with filter)
COOLING SYSTEM Ambra Agriflu 50% Water 50%	NH 900 A	Anti-freeze H2O	T1560 and T1570	5 Litres
TRANSMISSION REAR AXLE and HYDRAULIC OIL Ambra Multi G (10W30) Gear Transmission  Hydrostatic Transmission	NH410B	API GL4, ISO 32/46 MIL-L-2105 D	T1560 and T1570 T1560 and T1570	32.5 Litres  31.5 Litres
4WD FRONT AXLE OIL Ambra Multi G (10W30)	NH410B	API GL4, ISO 32/46 MIL-L-2105 D	T1560 and T1570	3.1 Litres
FUEL - DIESEL		No.1-D or 2-D (ASTM D975)	T1560 and T1570	30 Litres
GREASE Ambra GR75MD	NH 720 A	NLGI-2	All	As required

# ADJUSTMENTS

## TYRE INFLATION PRESSURE

FRONT TYRE INFLATION PRESSURES		
Tyre Type	Tyre Size	Inflation Pressure
Agricultural: FWD	7-14, 4PR.	0.6 - 1.8 bar (8 - 26 PSI)
Turf: FWD	25 X 8.50-14, 4PR.	0.6 - 1.5 bar (8 - 22 PSI)
REAR TYRE INFLATION PRESSURES		
Agricultural	11.2-24, 4PR.	0.8 - 1.2 bar (12 - 18 PSI)
Turf	13.6-16, 4PR.	0.8 - 1.0 bar (12 - 14 PSI)

**NOTE:** Do not underinflate or overinflate tyres. Do not exceed maximum inflation pressure listed.



## SECTION 10 - ENGINE

### Chapter 1 - Engine

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## SPECIFICATIONS

<b>GENERAL</b>	<b>T1560</b>	<b>T1570</b>
Gross Engine in Kw(Hp)	22.4 (30)	24.6 (33)
PTO in Kw(Hp)		
w/9 x 3	17.7 (23.7)	26.0 (34.8)
w/HST	17.2 (23.1)	19.0 (25.5)
Engine Model	N843	N843
Number of Cylinders	3	3
Bore x Stroke in mm	84 x 90	84 x 90
Displacement in Litres	1.496	1.496
Compression Ratio	22.2:1	22.2:1
Rated Speed in rpm	2800	2800
Muffler Location	Under Hood	Under Hood
Firing Order	1-2-3	1-2-3
Low Idle Speed in rpm	1000 - 1100	1000 - 1100
High Idle Speed in rpm	3000	3000
Cylinder Arrangement	In-line Vertical	In-line Vertical
Valve Arrangement	Overhead	Overhead
<b>CYLINDER BLOCK</b>		
Bore Standard in mm	84 - 84.019	84 - 84.019
Bore Maximum in mm	84.2	84.2
Head Surface Warp Standard in mm	0.05	0.05
Head Surface Warp Maximum in mm	0.12	0.12
<b>CYLINDER HEAD</b>		
Head Warp in mm		
Standard	0.05	0.05
Maximum	0.12	0.12
Valve Seat Width in mm		
Standard Intake	1.66 - 1.87	1.66 - 1.87
Exhaust	1.66 - 1.73	1.66 - 1.73
Maximum	2.5	2.5
Valve Seat Face Angle	45°	45°
Valve Seat Sink in mm		
Standard	0.85 - 1.15	0.85 - 1.15
Maximum	1.8	1.8

<b>PISTON</b>	<b>T1560</b>	<b>T1570</b>
Diameter in mm		
Standard	83.948 - 83.963	83.948 - 83.963
Minimum	83.7	83.7
Bore Clearance in mm		
Standard	0.038 - 0.072	0.038 - 0.072
Maximum	0.25	0.25
Piston Pin Bore in mm		
Standard	27.999 - 28.005 (1.10231 - 1.1026)	27.999 - 28.005 (1.10231 - 1.1025)
Maximum	28.02 (1.1031)	28.02 (1.1031)
Piston Pin Clearances in mm (in.)		
Standard	-0.001 +0.007	-0.001 +0.007
Maximum	0.02	0.02
<b>PISTON PIN</b>		
Diameter in mm		
Standard	27.996 - 28.0	27.996 - 28.0
Maximum	27.98	27.98
Pin-to-Bushing Clearance in mm		
Standard	0.01 - 0.025	0.01 - 0.025
Maximum	0.08	0.08
<b>PISTON RING END GAP</b>		
1st Compression in mm		
Standard	0.2 - 0.35	0.2 - 0.35
Maximum	1.0	1.0
2nd Compression in mm		
Standard	0.20 - 0.40	0.20 - 0.40
Maximum	1.0	1.0
Oil Ring in mm		
Standard	0.20 - 0.40	0.20 - 0.8
Maximum	1.0	1.0

<b>PISTON RING COMPRESSION RING TO GROOVE SIDE CLEARANCE</b>	<b>T1560</b>	<b>T1570</b>
1st Compression in mm		
Standard	0.07 - 0.11	0.07 - 0.11
Maximum	0.25	0.25
2nd Compression in mm		
Standard	0.04 - 0.08	0.04 - 0.08
Maximum	0.25	0.25
Oil Ring in mm (in.)		
Standard	0.02 - 0.06	0.02 - 0.06
Maximum	0.15	0.15
<b>PISTON RING WIDTH</b>		
1st Compression in mm	2.0	2.0
2nd Compression in mm	1.5	1.5
Oil Ring in mm	4.0	4.0
<b>CONNECTING ROD</b>		
Rod Twist in mm		
Standard	< 0.08	< 0.08
Maximum	> 0.2	> 0.2
Rod Bend in mm		
Standard	< 0.05	< 0.05
Maximum	> 0.15	> 0.15
Rod Side Play in mm		
Standard	0.1 - 0.3	0.1 - 0.3
Maximum	0.7	0.7
Crankshaft Bearing Clearance in mm		
Standard	0.035 - 0.085	0.035 - 0.085
Maximum	0.2	0.2

<b>CRANKSHAFT</b>	<b>T1560</b>	<b>T1570</b>
Journal Diameter in mm		
Standard	67.957 - 67.97	67.957 - 67.97
Minimum	67.9	67.9
Crankpin Diameter in mm		
Standard	51.964 - 51.975	51.964 - 51.975
Minimum	51.9	51.9
Runout in mm		
Standard	< 0.03	< 0.03
Maximum	> 0.06	> 0.06
End Play in mm		
Standard	0.1 - 0.4	0.1 - 0.4
Minimum	0.5	0.5
Thrust Washer Thickness in mm		
Standard	2.95 - 3.0	2.95 - 3.0
Maximum	2.8	2.8
<b>CAMSHAFT</b>		
Cam Height - Valve mm		
Standard	34.441 - 34.5076	34.441 - 34.5076
Minimum	34.1	34.1
Bend in mm		
Standard	< 0.03	< 0.03
Maximum	> 0.1	> 0.1
Cam Height - Fuel mm		
Standard	42.99 - 43.01	42.99 - 43.01
Minimum	42.8	42.8
<b>VALVES</b>		
Stem Diameter - Intake in mm		
Standard	6.955 - 6.97	6.95 - 6.97
Minimum	6.89	6.89
Stem Diameter - Exhaust in mm		
Standard	6.94 - 6.955	6.94 - 6.955
Minimum	6.84	6.84
Guide Clearance - Intake in mm		
Standard	0.03 - 0.06	0.03 - 0.06
Maximum	> 0.2	> 0.2
Guide Clearance-Exhaust in mm		
Standard	0.05 - 0.075	0.05- 0.075
Maximum	> 0.25	> 0.25
Valve Margin in mm		
Standard	0.775 - 1.075	0.775 - 1.075
Allowable Limit	0.5	0.5

<b>VALVES Contd;</b>	<b>T1560</b>	<b>T1570</b>
Valve Clearance (Inlet/Exhaust) in mm	0.2	0.2
Valve Spring-Free Height in mm		
Standard	35	35
Allowable Limit	33.5	33.5
Valve Spring-Squareness in mm		
Standard	< 1.2	< 1.2
Allowable Limit	2.0	2.0
Valve Spring-Compressed Height in mm		
Standard @ 8.1 kg	30.4	30.4
Allowable Limit @ 7 kg	30.4	30.4
Valve Timing - Intake		
Open Before TDC	13°	13°
Close After BDC	43°	43°
Valve Timing - Exhaust		
Open Before TDC	43°	43°
Close After BDC	13°	13°
<b>PUSH RODS</b>		
Length in mm	177.6-178.0	177.6-178.0
Diameter in mm	6.3	6.3
<b>ROCKER ARM</b>		
Shaft Diameter in mm	14.95 - 14.97	14.95 - 14.97
Allowable Limit	14.87	14.87
Shaft to Rocker Clearance in mm		
Standard	0.032 - 0.068	0.032 - 0.068
Allowable Limit	0.2	0.2
<b>LUBRICATION SYSTEM</b>		
Relief Valve - Opening Pressure in Bar	2.4 - 3.4	2.4 - 3.4
Rotor to Vane Clearance in mm		
Standard	0.1 - 0.15	0.1 - 0.15
Allowable Limit	0.25	0.25
Rotor to Cover Clearance in mm		
Standard	0.1 - 0.15	0.1 - 0.15
Allowable Limit	0.2	0.2

**COOLING SYSTEM**

Type of System .....	Pressurized liquid w/recirculating by-pass
Water Pump:	
Type .....	Centrifugal
Drive .....	V-belt
Belt Deflection (tension) .....	5 to 10mm when 5 kg is applied midway between pulleys
Fan Diameter .....	340 mm
Thermostat:	T1560/T1570
Starts to Open .....	82°C
Fully Open .....	95°C
Radiator Cap Pressure	
Rating .....	0.9 bar (13 psi)
Coolant .....	Ethylene glycol and water in a 50/50 mixture
Capacity .....	5.0 Litres

## METRIC BOLT TORQUE SPECIFICATIONS

Bolt Size	Grade No.	Coarse Thread			Fine Thread		
		Pitch (mm)	Foot-Pounds	Newton Meters	Pitch (mm)	Foot-Pounds	Newton-Meters
M6	4T, 4.8	1.0	3.6 - 5.1	4.9 - 6.9	-----	-----	-----
	7T, 8T, 8.8		6.1 - 8.3	8.3 - 11.3			
	10T, 11T		8.6 - 11.6	11.7 - 15.7			
M8	4T, 4.8	1.25	9.4 - 12.3	12.7 - 16.7	1.0	11.2 - 14.9	15.2 - 20.2
	7T, 8T, 8.8		16.7 - 21.0	22.6 - 28.4		19.6 - 25.3	26.5 - 34.3
	10T, 11T		21.0 - 26.8	28.5 - 36.3		22.4 - 29.7	30.4 - 40.2
M10	4T, 4.8	1.5	18.8 - 24.6	25.5 - 33.3	1.25	21.0 - 26.8	28.5 - 36.3
	7T, 8T, 8.8		32.5 - 41.3	44.1 - 55.9		36.2 - 46.3	49.0 - 62.8
	10T, 11T		39.8 - 51.3	54.0 - 69.6		42.7 - 54.2	57.9 - 73.5
M12	4T, 4.8	1.75	27.5 - 34.8	37.3 - 47.1	1.25	31.8 - 40.5	43.1 - 54.9
	7T, 8T, 8.8		48.5 - 61.5	65.7 - 83.3		54.9 - 69.4	74.5 - 94.1
	10T, 11T		68 - 85.6	92 - 116		73.1 - 93.7	99 - 127
M14	4T, 4.8	2.0	46.3 - 59.3	62.8 - 80.4	1.5	51.4 - 64.4	69.7 - 87.3
	7T, 8T, 8.8		76.8 - 97.4	104 - 132		85.6 - 109	116 - 148
	10T, 11T		102.6 - 129	139 - 175		110 - 136	149 - 185
M16	4T, 4.8	2.0	63.5 - 81.2	86 - 110	1.5	67.2 - 84.9	91 - 115
	7T, 8T, 8.8		110 - 136.5	149 - 185		116 - 142	157 - 193
	10T, 11T		151.3 - 188	205 - 255		162 - 199	220 - 270
M18	4T, 4.8	2.0	83.4 - 104	113 - 141	1.5	96.7 - 120	131 - 163
	7T, 8T, 8.8		145 - 174	196 - 236		169 - 206	230 - 280
	10T, 11T		203 - 246	275 - 333		220 - 270	299 - 367
M20	4T, 4.8	2.5	106 - 133	144 - 180	1.5	126 - 155	171 - 211
	7T, 8T, 8.8		177 - 214	240 - 290		203 - 245	275 - 333
	10T, 11T		268 - 252	363 - 441		293 - 358	397 - 485

**ENGINE BOLT TORQUE SPECIFICATIONS**

<b>Tractor Model</b>	<b>T1560/T1570</b>
Engine Model	N843
Connecting Rod Cap Nuts	49 – 54 Nm (36 – 40 ft-lb)
Main Bearing Retaining Bolts	49 – 54 Nm (36 – 40 ft-lb)
Relief Valve Assembly	49 – 59 Nm (36 – 44 ft-lb)
Crankshaft Main Bearing Holder Bolts Rear Main (Socket Head Bolts) Centre Main (Hex Head Bolts)	25 – 29 Nm (18 – 22 ft-lb) 49 – 54 Nm (36 – 40 ft-lb)
Engine Rear Mounting Plate	22 – 28 Nm (16 – 21 ft-lb)
Flywheel Retaining Bolts	73 – 78 Nm (54 – 58 ft-lb)
Engine Front Plate	9 – 12 Nm (6.5 – 9 ft-lb)
Crankshaft Pulley Nut	274 – 333 Nm (202 – 246 ft-lb)
Cylinder head Bolt	98 – 103 Nm (72 – 76 ft-lb)
Rocker Arm Assembly	27 – 39 Nm (20 – 29 ft-lb)
Rocker Arm Locknut	12 – 16 Nm (9 – 12 ft-lb)
Oil Tube Banjo Bolt	10 – 13 Nm (7 – 9 ft-lb)
Oil Pressure Switch	14 – 20 Nm (11 – 15 ft-lb)
Rocker Cover Bolts	12 – 16 Nm (9 – 12 ft-lb)
Glow Plugs	15 – 20 Nm (11.1 – 15 ft-lb)
Cooling Fan Bolts	9 – 13 Nm (6.5 – 9.6 ft-lb)

**ENGINE FUEL SYSTEM BOLT TORQUE SPECIFICATIONS**

<b>Tractor Model</b>	<b>T1560/T1570</b>
Engine Models	N843
Delivery Valve Holder	39 – 44 Nm (29 – 32.5 ft-lb)
Injector Assembly	59 – 69 Nm (43 – 51 ft-lb)

### SPECIAL TOOLS

Tool No. ....	Description
<b>380002696</b> (replaces 297218)	Adapter - Compression Tester  Compression Test Gauge Assembly, scale 0-21 bar (0-300psi)
<b>380002698</b> (replaces 297216)	Port Block Installer
<b>380002699</b> (replaces 297263)	Port Block Remover
<b>380002700</b> (replaces 297197)	Oil Pressure Test Fitting
Micrometer, Outside	0-1 inch
Micrometer, Outside	1-2 inch
Micrometer, Outside	2-3 inch
Micrometer, Inside	3/4-1 inch
Micrometer, Inside	2-3 inch
Micrometer, Inside	1-2 inch

### COMPRESSION TEST AND TOOLS

Compression test is performed through the glow plug ports. The test adapter tool, 1, is equipped with quick coupler ends for easy installation of the hose and gauge.

The procedures to perform a compression test are as follows:

1. Remove the wire lead from the fuel injection pump solenoid.
2. Remove the glow plug electrical wire and wire connector from top of the glow plugs.
3. Remove all of the glow plugs.

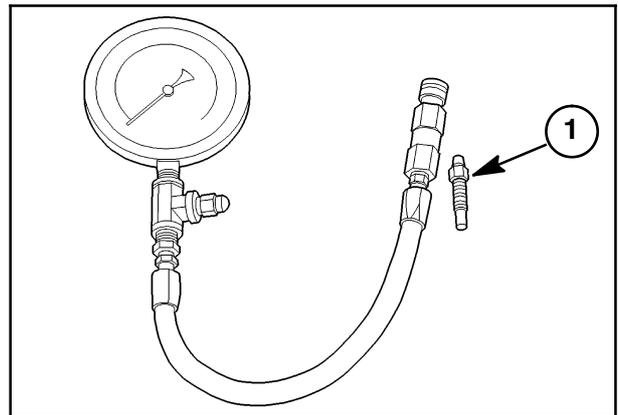
**IMPORTANT:** Be sure all the glow plugs are removed before starting the compression tests.

4. Install the adapter Tool No. **380002696**, hose and gauge assembly in each port and crank the engine until pressure stabilizes. The gauge should read 29.5 bar (427 psi) plus or minus 3.5 bar (50 psi).

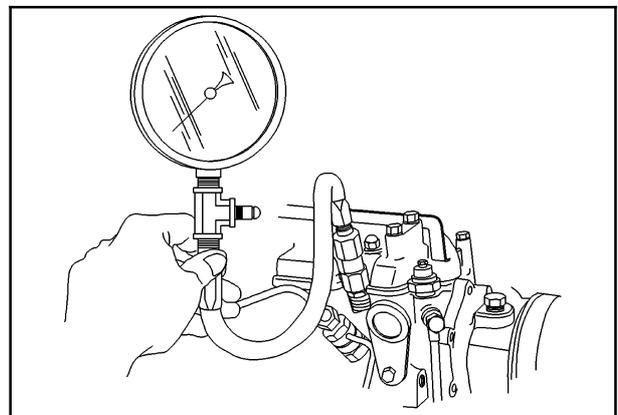
**NOTE:** It may be necessary to remove some injector fuel lines to install the adapter tool.

**NOTE:** There should not be more than 3.5 bar (50 psi) variation between the cylinders.

5. When all three cylinders have been tested, reinstall the glow plugs and electrical connections.



1



2