

SERVICE MANUAL

Boomer™ 20 / Boomer™ 25 Compact Tractor

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SERVICE MANUAL

Boomer™ 20

Boomer™ 25

Link Product / Engine

Product	Market Product	Engine
Boomer™ 20	Europe	S3L2
Boomer™ 25	Europe	S3L2

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INTRODUCTION

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Foreword

This repair manual provides the technical information needed to properly service the NEW HOLLAND models Boomer 20 and 25 tractors. 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.

Foreword - Important notice regarding equipment servicing

All repair and maintenance work listed in this manual must be carried out only by qualified dealership personnel, strictly complying with the instructions given, and using, whenever possible, the special tools.

Anyone who performs repair and maintenance operations without complying with the procedures provided herein shall be responsible for any subsequent damages.

The manufacturer and all the organizations of its distribution chain, including - without limitation - national, regional, or local dealers, reject any responsibility for damages caused by parts and/or components not approved by the manufacturer, including those used for the servicing or repair of the product manufactured or marketed by the manufacturer. In any case, no warranty is given or attributed on the product manufactured or marketed by the manufacturer in case of damages caused by parts and/or components not approved by the manufacturer.

The manufacturer reserves the right to make improvements in design and changes in specifications at any time without notice and without incurring any obligation to install them on units previously sold. Specifications, descriptions, and illustrative material herein are as accurate as known at time of publication but are subject to change without notice.

In case of questions, refer to your NEW HOLLAND Sales and Service Networks.

International symbols

As a guide to the operation of the machine, 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		PTO		Position Control
	Alternator charge	KAM	Keep alive memory	N	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 (RPM 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 dis-engaged		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		Pressurised! Open carefully		Malfunction! See Operator's Manual
			Warning ! Corrosive substance				Malfunction! (alternative symbol)

Safety rules

**CALIFORNIA
PROPOSITION 65 WARNING**

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.

Battery post, terminals and related accessories contain lead and lead compounds.

Wash hands after handling

BT09A213 1

Safety rules

Personal safety



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible death or injury.

Throughout this manual you will find the signal words DANGER, WARNING, and CAUTION followed by special instructions. These precautions are intended for the personal safety of you and those working with you.

Read and understand all the safety messages in this manual before you operate or service the machine.

 DANGER indicates a hazardous situation that, if not avoided, will result in death or serious injury.

 WARNING indicates a hazardous situation that, if not avoided, could result in death or serious injury.

 CAUTION indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

FAILURE TO FOLLOW DANGER, WARNING, AND CAUTION MESSAGES COULD RESULT IN DEATH OR SERIOUS INJURY.

Machine safety

NOTICE: Notice indicates a situation that, if not avoided, could result in machine or property damage.

Throughout this manual you will find the signal word Notice followed by special instructions to prevent machine or property damage. The word Notice is used to address practices not related to personal safety.

Information

NOTE: Note indicates additional information that clarifies steps, procedures, or other information in this manual.

Throughout this manual you will find the word Note followed by additional information about a step, procedure, or other information in the manual. The word Note is not intended to address personal safety or property damage.

Safety rules - Ecology and the environment

Soil, air, and water quality is important for all industries and life in general. When legislation does not yet rule the treatment of some of the substances that advanced technology requires, sound judgment should govern the use and disposal of products of a chemical and petrochemical nature.

Familiarize yourself with the relative legislation applicable to your country, and make sure that you understand this legislation. Where no legislation exists, obtain information from suppliers of oils, filters, batteries, fuels, anti-freeze, cleaning agents, etc., with regard to the effect of these substances on man and nature and how to safely store, use, and dispose of these substances.

Helpful hints

- Avoid the use of cans or other inappropriate pressurized fuel delivery systems to fill tanks. Such delivery systems may cause considerable spillage.
- In general, avoid skin contact with all fuels, oils, acids, solvents, etc. Most of these products contain substances that may be harmful to your health.
- Modern oils contain additives. Do not burn contaminated fuels and or waste oils in ordinary heating systems.
- Avoid spillage when you drain fluids such as used engine coolant mixtures, engine oil, hydraulic fluid, brake fluid, etc. Do not mix drained brake fluids or fuels with lubricants. Store all drained fluids safely until you can dispose of the fluids in a proper way that complies with all local legislation and available resources.
- Do not allow coolant mixtures to get into the soil. Collect and dispose of coolant mixtures properly.
- The air-conditioning system contains gases that should not be released into the atmosphere. Consult an air-conditioning specialist or use a special extractor to recharge the system properly.
- Repair any leaks or defects in the engine cooling system or hydraulic system immediately.
- Do not increase the pressure in a pressurized circuit as this may lead to a component failure.
- Protect hoses during welding. Penetrating weld splatter may burn a hole or weaken hoses, allowing the loss of oils, coolant, etc.

Battery recycling

Batteries and electric accumulators contain several substances that can have a harmful effect on the environment if the batteries are not properly recycled after use. Improper disposal of batteries can contaminate the soil, groundwater, and waterways. NEW HOLLAND strongly recommends that you return all used batteries to a NEW HOLLAND dealer, who will dispose of the used batteries or recycle the used batteries properly. In some countries, this is a legal requirement.



Mandatory battery recycling

NOTE: The following requirements are mandatory in Brazil.

Batteries are made of lead plates and a sulfuric acid solution. Because batteries contain heavy metals such as lead, CONAMA Resolution 401/2008 requires you to return all used batteries to the battery dealer when you replace any batteries. Do not dispose of batteries in your household garbage.

Points of sale are obliged to:

- Accept the return of your used batteries
- Store the returned batteries in a suitable location
- Send the returned batteries to the battery manufacturer for recycling

Basic instructions hardware

General

Your tractor has been built using metric hardware.

NOTE: *Be sure to use the hardware specified when using tapped holes, as trying to install a metric bolt in an inch thread, or an inch bolt in a metric thread, will damage the thread.*

Certain hardware must be tightened to specific torque specifications. If specific torque specifications are not noted, tighten the hardware to the standard torque chart specification listed in this manual.

Plating

Hardware used on NEW HOLLAND balers is plated with zinc chromate (gold color). Gold colored hardware has different torquing requirements from unplated or zinc plated (silver color) hardware because of the difference in the coefficient of friction of the plating material. The torque charts in this manual list the correct specifications for gold, silver, and unplated bolts.

Nut tightening

Whenever possible, the nut should be tightened, not the head of the bolt. When tightening using the bolt head, the clamp load can be lost because some of the torque applied twists the bolt instead of tensioning (stretching) it. The tension on the bolt is what holds the joint together.

Approximately 90% of the torque applied during assembly goes to overcoming friction between the parts. The other 10% is used to tension (stretch) the bolt. After assembly, the frictional forces disappear, which is the basis for the saying 'If it does not fail during assembly, it will not fail in service.' The bolt may later fail due to other factors, but not from being over tightened.

Locknuts

Most locknuts are coated with a special lubricant that is dry to the touch. Anytime a locknut is used, a lower than normal torque is required. Refer to the torque charts in this manual for specific values.

Jam nuts

When using a jam nut to lock a regular nut, the jam nut should be installed first and tightened to one half the recommended torque, then held in place while installing a regular nut to the recommended torque.

Thread lubrication

The addition of antiseize compound, Molykote, oil, graphite, or any other lubricant to a bolt decreases the friction between it and a nut. This makes it necessary to reduce the recommended torque to prevent over tensioning of the bolt. When using the torque charts in this manual, decrease the value by 20% whenever a lubricant is used.

Torque - Standard torque data for hydraulic connections

General information

- Hydraulic connections require a minimum assembly torque in order to provide zero leakage at rated pressure with adequate fatigue resistance. Over-torquing of a hydraulic connection can also lead to leakage or failure. For some connections, NEW HOLLAND requires a different torque value than is listed in the ISO and SAE standards.
- The torque values in this document should be used whenever possible or applicable.

NOTICE: Always follow the instructions in this manual for specific torque values when you service components. The information in this section is for general guidance only when a procedure contains no specific torque value.

Tolerance

- The tolerance for all torque values is $\pm 10\%$. This tolerance must include all assembly variation, not only the torque wrench repeatability.

Lubrication

Application of grease or other lubricants to hydraulic connectors should be avoided. If clean hydraulic oil is already on the connection, it is not required to remove the oil. Generally, application of grease:

- May cause a significant change in the torque required to properly tighten the connection.
- May reduce the connection's resistance to vibration.
- Excessive grease may displace an elastomer seal during tightening.
- Grease extrusion when connection is tightened may be mistaken for leakage.

NEW HOLLAND products generally use O-Ring Boss (ORB) connectors that have Teflon™-coated O-rings, eliminating the need for O-ring lubrication during installation. For connections which are made into aluminum manifolds or with stainless steel connectors, it may be required to apply a lubricant to prevent galling.

Use of **LOCTITE®** and other thread-locking compounds is prohibited. These compounds:

- May cause a significant change in the torque required to properly tighten the connections.
- Reduce the serviceability of the joint.
- May prevent the O-ring from properly sealing if the compound gets on the O-ring.

Torque values for metric O-Ring Boss (ORB) port connections

Metric thread	S-Series *		L-Series **	
	Ferrous N·m (lb ft) ± 10 %	Non-Ferrous N·m (lb ft) ± 10 %	Ferrous N·m (lb ft) ± 10 %	Non-Ferrous N·m (lb ft) ± 10 %
M8 x 1	10.5 (7.7)	6.3 (4.6)	8.5 (6.3)	5 (3.7)
M10 x 1	21 (15.5)	12.5 (9.2)	15.5 (11.4)	9.3 (6.9)
M12 x 1.5	37 (27.3)	22 (16.2)	27 (19.9)	16 (11.8)
M14 x 1.5	47 (34.7)	28 (20.7)	37 (27.3)	22 (16.2)
M16 x 1.5	58 (42.8)	35 (25.8)	42 (31)	25 (18.4)
M18 x 1.5	74 (54.6)	44 (32.5)	47 (34.7)	28 (20.7)
M22 x 1.5	105 (77.4)	63 (46.5)	63 (46.5)	38 (28)
M27 x 2	178 (131.3)	107 (78.9)	105 (77.4)	63 (46.5)
M30 x 2	225 (166)	135 (99.6)	136 (100.3)	82 (60.5)
M33 x 2	325 (239.7)	195 (143.8)	168 (123.9)	101 (74.5)
M42 x 2	345 (254.5)	207 (152.7)	220 (162.3)	132 (97.4)
M48 x 2	440 (324.5)	264 (194.7)	273 (201.4)	164 (121)
M60 x 2	525 (387.2)	315 (232.3)	330 (243.4)	198 (146)

* S-Series connectors are used with O-Ring Face Seals (ORFS).

** L-Series connectors are used with 37 ° flare.

Torque values for metric O-Ring Boss (ORB) port plugs

Metric thread	Ferrous		Non-ferrous
	Internal hex N·m (lb ft) ± 10 %	External hex N·m (lb ft) ± 10 %	N·m (lb ft) ± 10 %
M8 x 1	8.5 (6.3)	10.5 (7.7)	6.3 (4.6)
M10 x 1	16 (11.8)	21 (15.5)	12.5 (9.2)
M12 x 1.5	23 (17)	37 (27.3)	22 (16.2)
M14 x 1.5	47 (34.7)	47 (34.7)	28 (20.7)
M16 x 1.5	58 (42.8)	58 (42.8)	35 (25.8)
M18 x 1.5	74 (54.6)	74 (54.6)	44 (32.5)
M22 x 1.5	105 (77.4)	105 (77.4)	63 (46.5)
M27 x 2	178 (131.3)	178 (131.3)	107 (78.9)
M30 x 2	225 (166)	225 (166)	135 (99.6)
M33 x 2	325 (239.7)	325 (239.7)	195 (143.8)
M42 x 2	345 (254.5)	345 (254.5)	207 (152.7)
M48 x 2	440 (324.5)	440 (324.5)	264 (194.7)
M60 x 2	525 (387.2)	525 (387.2)	315 (232.3)

Torque values for port connections (British Standard Pipe Parallel (BSPP) thread ports and stud ends)

	Metric tube Outside Diameter (OD) mm (in)		Ferrous		Non-Ferrous	
BSPP thread G- Gas; A- medium coarse threads	S-Series *	L-Series **	S-Series N·m (lb ft) ± 10 %	L-Series N·m (lb ft) ± 10 %	S-Series N·m (lb ft) ± 10 %	L-Series N·m (lb ft) ± 10 %
G 1/8 A	–	6 (0.236)	–	21 (15.5)	–	12.5 (9.2)
G 1/4 A	6 (0.236) or 8 (0.315)	8 (0.315) or 10 (0.394)	63 (46.5)	53 (39.1)	38 (28)	32 (23.6)
G 3/8 A	10 (0.394) or 12 (0.472)	12 (0.472)	95 (70.1)	84 (62)	57 (42)	50 (36.9)
G 1/2 A	16 (0.630)	15 (0.591) or 18 (0.709)	136 (100.3)	105 (77.4)	82 (60.5)	63 (46.5)
G 3/4 A	20 (0.787)	22 (0.866)	210 (154.9)	210 (154.9)	126 (92.9)	126 (92.9)
G 1 A	25 (0.984)	28 (1.102)	400 (295)	400 (295)	240 (177)	240 (177)
G 1 1/4 A	30 (1.181)	35 (1.378)	525 (387.2)	525 (387.2)	315 (232.3)	315 (232.3)
G 1 1/2 A	38 (1.496)	42 (1.654)	660 (486.8)	660 (486.8)	396 (292.1)	396 (292.1)

* S-Series connectors are used with O-Ring Face Seals (ORFS).

** L-Series connectors are used with 37 ° flare.

Torque values for metric port connections (Metric face-seal ports and stud ends)

	Metric tube Outside Diameter (OD) mm (in)		Ferrous		Non-Ferrous	
Metric thread	S-Series *	L-Series **	S-Series N·m (lb ft) ± 10 %	L-Series N·m (lb ft) ± 10 %	S-Series N·m (lb ft) ± 10 %	L-Series N·m (lb ft) ± 10 %
M10 x 1	–	4 (0.157)	–	21 (15.5)	–	12.5 (9.2)
M12 x 1.5	4 (0.157)	6 (0.236)	47 (34.7)	32 (23.6)	28 (20.7)	19 (14)
M14 x 1.5	5 (0.197)	7 (0.276)	63 (46.5)	53 (39.1)	38 (28)	32 (23.6)
M16 x 1.5	7 (0.276)	9 (0.354)	84 (62)	63 (46.5)	50 (36.9)	38 (28)
M18 x 1.5	8 (0.315)	11 (0.433)	105 (77.4)	84 (62)	63 (46.5)	50 (36.9)
M20 x 1.5	10 (0.394)	–	147 (108.4)	–	88 (64.9)	–
M22 x 1.5	12 (0.472)	14 (0.551)	158 (116.5)	147 (108.4)	95 (70.1)	88 (64.9)
M26 x 1.5	–	18 (0.709)	–	210 (154.9)	–	126 (92.9)
M27 x 1.2	16 (0.630)	–	210 (154.9)	–	126 (92.9)	–
M33 x 2	20 (0.787)	23 (0.906)	400 (295)	400 (295)	240 (177)	240 (177)
M42 x 2	25 (0.984)	30 (1.181)	525 (387.2)	525 (387.2)	315 (232.3)	315 (232.3)
M48 x 2	32 (1.260)	36 (1.417)	630 (464.7)	630 (464.7)	396 (292.1)	396 (292.1)

* S-Series connectors are used with O-Ring Face Seals (ORFS).

** L-Series connectors are used with 37 ° flare.

Torque values for Inch O-Ring Boss (ORB) port non-adjustable connections

SAE dash size	UN/UNF thread size	Inch tube OD mm (in)	S-Series *		L-Series **	
			Ferrous N·m (lb ft) ± 10 %	Non- Ferrous N·m (lb ft) ± 10 %	Ferrous N·m (lb ft) ± 10 %	Non- Ferrous N·m (lb ft) ± 10 %
2	5/16-24	3.18 (0.125)	—	—	8.5 (6.3)	5 (3.7)
3	3/8-24	4.76 (0.187)	15.5 (11.4)	9.3 (6.9)	10.5 (7.7)	6.3 (4.6)
4	7/16-20	6.35 (0.250)	37 (27.3)	22 (16.2)	19 (14)	11.5 (8.5)
5	1/2-20	7.94 (0.313)	42 (31)	25 (18.4)	26 (19.2)	15.5 (11.4)
6	9/16-18	9.52 (0.375)	47 (34.7)	28 (20.7)	32 (23.6)	19 (14)
8	3/4-16	12.7 (0.500)	89 (65.6)	53 (39.1)	53 (39.1)	32 (23.6)
10	7/8-14	15.88 (0.625)	121 (89.2)	73 (53.8)	63 (46.5)	38 (28)
12	1-1/16-12	19.05 (0.750)	178 (131.3)	107 (78.9)	100 (73.8)	60 (44.3)
14	1-3/16-12	22.22 (0.875)	225 (166)	135 (99.6)	131 (96.6)	79 (58.3)
16	1-5/16-12	25.4 (1.000)	283 (208.7)	170 (125.4)	156 (115.1)	94 (69.3)
20	1-5/8-12	31.75 (1.250)	300 (221.3)	180 (132.8)	210 (154.9)	126 (92.9)
24	1-7/8-12	38.1 (1.500)	388 (286.2)	233 (171.9)	220 (162.3)	132 (97.4)
32	2-1/2-12	50.8 (2.000)	388 (286.2)	233 (171.9)	315 (232.3)	189 (139.4)

* S-Series connectors are used with O-Ring Face Seals (ORFS).

** L-Series connectors are used with 37 ° flare.

Torque values for inch O-Ring Boss (ORB) port adjustable connections

SAE dash size	UN/UNF thread size	Inch tube OD mm (in)	S-Series *		L-Series **	
			Ferrous N·m (lb ft) ± 10 %	Non- Ferrous N·m (lb ft) ± 10 %	Ferrous N·m (lb ft) ± 10 %	Non- Ferrous N·m (lb ft) ± 10 %
2	5/16-24	3.18 (0.125)	—	—	8.5 (6.3)	5 (3.7)
3	3/8-24	4.76 (0.187)	10.5 (7.7)	9.3 (6.9)	10.5 (7.7)	6.3 (4.6)
4	7/16-20	6.35 (0.250)	21 (15.5)	21 (15.5)	19 (14)	11.5 (8.5)
5	1/2-20	7.94 (0.313)	42 (31)	25 (18.4)	26 (19.2)	15.5 (11.4)
6	9/16-18	9.52 (0.375)	47 (34.7)	28 (20.7)	32 (23.6)	19 (14)
8	3/4-16	12.7 (0.500)	89 (65.6)	53 (39.1)	53 (39.1)	32 (23.6)
10	7/8-14	15.88 (0.625)	121 (89.2)	73 (53.8)	63 (46.5)	38 (28)
12	1-1/16-12	19.05 (0.750)	178 (131.3)	107 (78.9)	100 (73.8)	60 (44.3)
14	1-3/16-12	22.22 (0.875)	225 (166)	135 (99.6)	131 (96.6)	79 (58.3)
16	1-5/16-12	25.4 (1.000)	285 (210.2)	170 (125.4)	156 (115.1)	94 (69.3)
20	1-5/8-12	31.75 (1.250)	300 (221.3)	180 (132.8)	210 (154.9)	126 (92.9)
24	1-7/8-12	38.1 (1.500)	388 (286.2)	233 (171.9)	220 (162.3)	132 (97.4)
32	2-1/2-12	50.8 (2.000)	388 (286.2)	233 (171.9)	315 (232.3)	189 (139.4)

* S-Series connectors are used with O-Ring Face Seals (ORFS).

** L-Series connectors are used with 37 ° flare.

Torque values for inch O-Ring Boss (ORB) port plugs

SAE dash size	UN/UNF thread size	Ferrous		Non-Ferrous
		Internal hex N·m (lb ft) ± 10 %	External hex N·m (lb ft) ± 10 %	N·m (lb ft) ± 10 %
2	5/16-24	7.5 (5.5)	12.5 (9.2)	7.5 (5.5)
3	3/8-24	14.5 (10.7)	21 (15.5)	12.5 (9.2)
4	7/16-20	21 (15.5)	37 (27.3)	22 (16.2)
5	1/2-20	28 (20.7)	42 (31)	25 (18.4)
6	9/16-18	47 (34.7)	47 (34.7)	28 (20.7)
8	3/4-16	89 (65.6)	89 (65.6)	53 (39.1)
10	7/8-14	116 (85.6)	116 (85.6)	70 (51.6)
12	1-1/16-12	176 (129.8)	176 (129.8)	106 (78.2)
14	1-3/16-12	247 (182.2)	247 (182.2)	148 (109.2)
16	1-5/16-12	284 (209.5)	284 (209.5)	170 (125.4)
20	1-5/8-12	357 (263.3)	357 (263.3)	214 (157.8)
24	1-7/8-12	441 (325.3)	441 (325.3)	265 (195.5)
32	2-1/2-12	536 (395.3)	536 (395.3)	322 (237.5)

Torque values for four-bolt flange connections (Metric Screws, Class 10.9)

Metric size mm	Imperial size in	Screw code 61	Code 61 N·m (lb ft) ± 10 %	Screw code 62	Code 62 N·m (lb ft) ± 10 %
13	1/2	M8 x 1.25	34 (25.1)	M8 x 1.25	34 (25.1)
19	3/4	M10 x 1.5	74 (54.6)	M10 x 1.5	74 (54.6)
25	1	M10 x 1.5	74 (54.6)	M12 x 1.75	137 (101)
32	1-1/4	M10 x 1.5	74 (54.6)	M12 x 1.75	137 (101)
				M14 x 1.5	189 (139.4)
38	1-1/2	M12 x 1.75	137 (101)	M16 x 2	310 (228.6)
51	2	M12 x 1.75	137 (101)	M20 x 2.5	575 (424.1)
64	2-1/2	M12 x 1.75	137 (101)	M24 x 3	575 (424.1)
76	3	M16 x 2	310 (228.6)	M30 x 3.5	680 (501.5)
89	3-1/2	M16 x 2	310 (228.6)	—	—
102	4	M16 x 2	310 (228.6)	—	—
127	5	M16 x 2	310 (228.6)	—	—

Torque values for four-bolt flange connections (Metric Screws, Class 8.8)

Metric size mm	Imperial size in	Screw code 61	Code 61 N·m (lb ft) ± 10 %	Screw code 62	Code 62 N·m (lb ft) ± 10 %
13	1/2	M8 x 1.25	29 (21.4)	M8 x 1.25	29 (21.4)
19	3/4	M10 x 1.5	57(42)	M10 x 1.5	57(42)
25	1	M10 x 1.5	57(42)	M12 x 1.75	100 (73.8)
32	1-1/4	M10 x 1.5	57(42)	M12 x 1.75	100 (73.8)
				M14 x 1.5	160 (118)
38	1-1/2	M12 x 1.75	100 (73.8)	M16 x 2	250 (184.4)
51	2	M12 x 1.75	100 (73.8)	M20 x 2.5	500 (368.8)
64	2-1/2	M12 x 1.75	100 (73.8)	M24 x 3	575 (424.1)
76	3	M16 x 2	250 (184.4)	M30 x 3.5	680 (501.5)
89	3-1/2	M16 x 2	250 (184.4)	—	—
102	4	M16 x 2	250 (184.4)	—	—
127	5	M16 x 2	250 (184.4)	—	—

Torque values for four-bolt flange connections (Inch Screws, Grade 8)

Metric size mm	Imperial size in	Screw code 61	Code 61 N·m (lb ft) ± 10 %	Screw code 62	Code 62 N·m (lb ft) ± 10 %
13	1/2	5/16-18	34 (25.1)	5/16-18	34 (25.1)
19	3/4	3/8-16	63 (46.5)	3/8-16	63 (46.5)
25	1	3/8-16	63 (46.5)	7/16-14	97 (71.5)
32	1-1/4	7/16-14	97 (71.5)	1/2-13	158 (116.5)
38	1-1/2	1/2-13	158 (116.5)	5/8-11	310 (228.6)
51	2	1/2-13	158 (116.5)	3/4-10	473 (348.9)
64	2-1/2	1/2-13	158 (116.5)	–	–
76	3	5/8-11	310 (228.6)	–	–
89	3-1/2	5/8-11	310 (228.6)	–	–
102	4	5/8-11	310 (228.6)	–	–
127	5	5/8-11	310 (228.6)	–	–

Tapered thread connection tightening

British Standard Pipe Taper (BSPT) thread size (inch)	National Pipe Thread Fuel (NPTF) thread size (inch)	Turns from finger tight
1/8-28	1/8-27	2 - 3
1/4-19	1/4-18	2 - 3
3/8-19	3/8-18	2 - 3
1/2-14	1/2-14	2 - 3
3/4-14	3/4-14	2 - 3
1-11	1-11 1/2	1.5 - 2.5
1-1/4-11	1-1/4-11 1/2	1.5 - 2.5
1-1/2-11	1-1/2-11 1/2	1.5 - 2.5
2-11	2-11 1/2	1.5 - 2.5

Torque values for banjo bolt connections (Copper washer style)

Bolt thread (metric)	Hex size (mm)	Torque N·m (lb ft) ± 10 %
M8 x 1.25	13	13 (9.6)
M10 x 1.25	17	16 (11.8)
M12 x 1.5	17	40 (29.5)
M14 x 1.5	19	45 (33.2)
M16 x 1.5	22	48 (35.4)
M18 x 1.5	24	50 (36.9)
M20 x 1.5	27	73 (53.8)
M22 x 1.5	32	73 (53.8)
M24 x 1.5	32	73 (53.8)

Torque values for O-Ring Face Seals (ORFS) connections

SAE dash size	UN/UNF thread size	Inch tube OD (mm)	Metric tube OD (mm)	Hex size (mm) (Reference only)	* Swivel nut torque N·m (lb ft) ± 10 %	** Swivel nut torque N·m (lb ft) ± 10 %
4	9/16-18	6.35	6	17	27 (19.9)	27 (19.9)
5	5/8-18	7.94	8	19	34 (25.1)	34 (25.1)
6	11/16-16	9.52	10	22	44 (32.5)	44 (32.5)
8	13/16-16	12.7	12	24	65 (47.9)	65 (47.9)
10	1-14	15.88	16	30	100 (73.8)	100 (73.8)
12	1-3/16-12	19.05	20	36	150 (110.6)	131 (96.6)
14	1-5/16-12	22.23	22	41	163 (120.2)	131 (96.6)
16	1-7/16-12	25.4	25	41	210 (154.9) ***	131 (96.9)
20	1-11/16-12	31.75	30	50	280 (206.5) ***	178 (131.3)
24	2-12	38.1	38	60	375 (276.6) ***	210 (154.9)

* High/Medium-pressure applications > 50 bar (725 psi).

** Low-pressure applications < 50 bar (725 psi).

*** It is recommended to use a four-bolt flange connection instead of O-Ring Face Seals (ORFS) sizes "16" and up.

Torque values for 37 ° flare connections - Joint Industry Council (JIC)

SAE dash size	UN/UNF thread size	Metric tube OD (mm)	Inch tube OD (mm)	Swivel nut torque N·m (lb ft) ± 10 %
2	5/16-24	—	3.18	8.25 (6.1)
3	3/8-24	—	4.76	11.5 (8.5)
4	7/16-20	6	6.35	15.5 (11.4)
5	1/2-20	8	7.94	20 (14.8)
6	9/16-18	10	9.52	25 (18.4)
8	3/4-16	12	12.7	52 (38.4)
10	7/8-14	16	15.88	81 (59.7)
12	1-1/16-12	20	19.05	112 (82.6)
14	1-3/16-12	—	22.22	133 (98.1)
16	1-5/16-12	25	25.4	155 (114.3)
20	1-5/8-12	30/32	31.75	180 (132.8)
24	1-7/8-12	38	38.1	225 (166)
32	2-1/2-12	50	50.8	348 (256.7)

Torque values for 30 ° flare, 60 ° cone connections

Nominal size (mm)	British Standard Pipe Parallel (BSPP) thread size	Hex size (mm)	Swivel nut torque N·m (lb ft) ± 10 %
5, 6, 6.3	G 1/4	17	25 (18.4)
8, 9, 10	G 3/8	19	34 (25.1)
12, 12.5	G 1/2	22	64 (47.2)
15, 16, 19	G 3/4	30	132 (97.4)
25	G 1	36	196 (144.6)
31.5, 32	G 1-1/4	46	225 (166)
38	G 1-1/2	50	255 (188.1)
50, 51	G 2	65	316 (223.1)

Basic instructions - Shop and assembly

Shimming

For each adjustment operation, select adjusting shims and measure the adjusting shims individually using a micrometer, then add up the recorded values. Do not rely on measuring the entire shimming set, which may be incorrect, or the rated value shown on each shim.

Rotating shaft seals

For correct rotating shaft seal installation, proceed as follows:

1. Before assembly, allow the seal to soak in the oil it will be sealing for at least thirty minutes.
2. Thoroughly clean the shaft and check that the working surface on the shaft is not damaged.
3. Position the sealing lip facing the fluid.

NOTE: *With hydrodynamic lips, take into consideration the shaft rotation direction and position the grooves so that they will move the fluid towards the inner side of the seal.*

4. Coat the sealing lip with a thin layer of lubricant (use oil rather than grease). Fill the gap between the sealing lip and the dust lip on double lip seals with grease.
5. Insert the seal in its seat and press down using a flat punch or seal installation tool. Do not tap the seal with a hammer or mallet.
6. While you insert the seal, check that the seal is perpendicular to the seat. When the seal settles, make sure that the seal makes contact with the thrust element, if required.
7. To prevent damage to the seal lip on the shaft, position a protective guard during installation operations.

O-ring seals

Lubricate the O-ring seals before you insert them in the seats. This will prevent the O-ring seals from overturning and twisting, which would jeopardize sealing efficiency.

Sealing compounds

Apply a sealing compound on the mating surfaces when specified by the procedure. Before you apply the sealing compound, prepare the surfaces as directed by the product container.

Spare parts

Only use CNH Original Parts or NEW HOLLAND Original Parts.

Only genuine spare parts guarantee the same quality, duration, and safety as original parts, as they are the same parts that are assembled during standard production. Only CNH Original Parts or NEW HOLLAND Original Parts can offer this guarantee.

When ordering spare parts, always provide the following information:

- Machine model (commercial name) and Product Identification Number (PIN)
- Part number of the ordered part, which can be found in the parts catalog

Protecting the electronic and/or electrical systems during charging and welding

To avoid damage to the electronic and/or electrical systems, always observe the following practices:

1. Never make or break any of the charging circuit connections when the engine is running, including the battery connections.
2. Never short any of the charging components to ground.
3. Always disconnect the ground cable from the battery before arc welding on the machine or on any machine attachment.
 - Position the welder ground clamp as close to the welding area as possible.
 - If you weld in close proximity to a computer module, then you should remove the module from the machine.
 - Never allow welding cables to lie on, near, or across any electrical wiring or electronic component while you weld.
4. Always disconnect the negative cable from the battery when charging the battery in the machine with a battery charger.

NOTICE: *If you must weld on the unit, you must disconnect the battery ground cable from the machine battery. The electronic monitoring system and charging system will be damaged if this is not done.*

5. Remove the battery ground cable. Reconnect the cable when you complete welding.

WARNING

Battery acid causes burns. Batteries contain sulfuric acid.

Avoid contact with skin, eyes or clothing. Antidote (external): Flush with water. Antidote (eyes): flush with water for 15 minutes and seek medical attention immediately. Antidote (internal): Drink large quantities of water or milk. Do not induce vomiting. Seek medical attention immediately. Failure to comply could result in death or serious injury.

W0111A

Special tools

The special tools that NEW HOLLAND suggests and illustrate in this manual have been specifically researched and designed for use with NEW HOLLAND machines. The special tools are essential for reliable repair operations. The special tools are accurately built and rigorously tested to offer efficient and long-lasting operation.

By using these tools, repair personnel will benefit from:

- Operating in optimal technical conditions
- Obtaining the best results
- Saving time and effort
- Working in safe conditions

General specification - Tractors with Hydrostatic Transmission (HST)

	Model Boomer 20 - Hydrostatic	Model Boomer 25 - Hydrostatic
ENGINE		
Type	Diesel	Diesel
Model	S3L	S3L2
Engine Gross Horsepower	17 kW (23 Hp)	20 kW (27 Hp)
Cylinders	4	4
Bore	78 mm (3.07 in)	78 mm (3.07 in)
Stroke	78.5 mm (3.09 in)	92 mm (3.62 in)
Displacement	1.125 l (69 in³)	1.318 l (80 in³)
Compression Ratio	22.0:1	20.0:1
Firing Order	1-3-2	1-3-2
Low Idle Speed	970±30 RPM	970±30 RPM
Maximum Speed:		
High Idle	29000±20 RPM	2900±20 RPM
Rated	2700 RPM	2700 RPM
Valve Clearance (Cold)		
Intake	0.020 - 0.050 mm (0.0008 - 0.0020 in)	0.020 - 0.050 mm (0.0008 - 0.0020 in)
Exhaust	0.050 - 0.085 mm (0.0020 - 0.0033 in)	0.050 - 0.085 mm (0.0020 - 0.0033 in)
CAPACITIES		
Fuel Tank	25 l (6.6 US gal)	25 l (6.6 US gal)
Cooling System	3.8 l (1.0 US gal)	3.8 l (1.0 US gal)
Engine Crankcase:		
With Filter	4 l (1.10 US gal)	4 l (1.10 US gal)
Rear Axle & Transmission (Includes Hydraulics)		
HST	20 l (5.28 US gal)	20 l (5.28 US gal)
Front Axle	3 l (1 US gal)	3 l (1 US gal)
COOLING SYSTEM		
Type	Pressurized Liquid with Recirculating Bypass	Pressurized Liquid with Recirculating Bypass
Water Pump:		
Type	Centrifugal	Centrifugal
Drive	V-Belt	V-Belt
Belt Deflection	10 - 12 mm (0.39 - 0.47 in) when 10 kg (22 lb) pressure is applied midway between belt pulleys	10 - 12 mm (0.39 - 0.47 in) when 10 kg (22 lb) pressure is applied midway between belt pulleys
Fan Diameter	356 mm (14 in)	356 mm (14 in)
Thermostat:		
Start to Open	76.5 °C (170 °F)	76.5 °C (170 °F)
Fully Open	90 °C (194 °F)	90 °C (194 °F)
Radiator Cap	90 kPa (13 psi)	90 kPa (13 psi)

	Model Boomer 20 - Hydrostatic	Model Boomer 25 - Hydrostatic
ELECTRICAL SYSTEM		
Alternator	12 V, Heavy Duty, 50 A	12 V, Heavy Duty, 50 A
Battery	12 V, w/ negative ground, 660 cca BCI Group 34	12 V, w/ negative ground, 660 cca BCI Group 34
Starting Motor	Solenoid Pre-Engaged Reduction	Solenoid Pre-Engaged Reduction
FUEL SYSTEM		
Fuel Type	Diesel	Diesel
Type of Fuel to Use if Above 4 °C (40 °F)	No. 2-Diesel, Cetane Rating: Minimum 40	No. 2-Diesel, Cetane Rating: Minimum 40
Type of Fuel to Use if Below 4 °C (40 °F)	No. 1-Diesel, Cetane Rating: Minimum 40	No. 1-Diesel, Cetane Rating: Minimum 40
Injection Pump:		
Type	In-Line	In-Line
Timing	19 ° BTDC	17 ° BTDC
BRAKES		
Type	Wet Disc	Wet Disc
2 Disc per Side	223 mm (8.78 in) x 174 mm (6.85 in)	223 mm (8.78 in) x 174 mm (6.85 in)
STEERING		
Type	Power	Power
Turns Lock-to-Lock:		
FWD	3 L to R 3.30 R to L	3 L to R 3.30 R to L
Front Wheel		
Toe-In	0 - 5 mm (0 - 0.20 in)	0 - 5 mm (0 - 0.20 in)
Turning Radius w/o Brakes:		
FWD	2.5 m (8 ft) Right turn 2.5 m (8 ft) Left turn	2.5 m (8 ft) Right turn 2.5 m (8 ft) Left turn
POWER TAKE-OFF		
Type	Independent	Independent
Shaft Size:		
Rear PTO	35 mm (1.4 in)	35 mm (1.4 in)
Mid PTO	25.4 mm (1 in)	25.4 mm (1 in)
Engine Speed for 540 RPM Rear PTO Operation	2603 RPM (2603 RPM)	2603 RPM (2603 RPM) - HST Transmission
Engine Speed for 2000 RPM Mid PTO operation	2660 RPM (2660 RPM)	2660 RPM (2660 RPM)
Horsepower PTO Observed	12.9 kW (18 Hp)	15.1 kW (21 Hp)
POWER TAKE-OFF		
Engine Speed for 2000 RPM Mid PTO Operation	2660 RPM - HST	2660 RPM - HST

	Model Boomer 20 - Hydrostatic	Model Boomer 25 - Hydrostatic
Direction of Rotation (As viewed from rear of tractor)		
Rear PTO	Clockwise	Clockwise
Mid PTO	Clockwise	Clockwise
HYDRAULIC LIFT SYSTEM		
Type	Open Center	Open Center
Pump Type	Gear	Gear
Pump Capacity	27.1 (7 US gal)	27.1 (7 US gal)
System Relief Valve Setting	14997 kPa (2175.1 psi)	14997 kPa (2175.1 psi)
TRANSMISSION SPEEDS (HYDROSTATIC)		
	(2700 RPM Engine Rated Speed with 33 x 12–16.5 Rear tires	(2700 RPM Engine Rated Speed with 33 x 12–16.5 Rear tires
Gear Position:		
Low	0 - 5.23 km/h (0 - 3.251 mph)	0 - 5.23 km/h (0 - 3.251 mph)
High	0 - 10.69 km/h (0 - 6.64 mph)	0 - 10.69 km/h (0 - 6.64 mph)
Reverse Low	0 - 5.23 km/h (0 - 3.25 mph)	0 - 5.23 km/h (0 - 3.25 mph)
Reverse High	0 - 10.69 km/h (0 - 6.64 mph)	0 - 10.69 km/h (0 - 6.64 mph)
CAST IRON WEIGHTS		
Front End:		
With weight extension bracket installed	(5) weights @ 26 kg (60 lb) each	(5) weights @ 26 kg (60 lb) each
With weight extension bracket installed	Optional (3) weights @ 45 kg (100 lb) each	Optional (3) weights @ 45 kg (100 lb) each
Rear Wheel:		
R-4 Tires	(4) weights (2) per wheel @ 34 kg (75 lb) each	(4) weights (2) per wheel @ 34 kg (75 lb) each
Turf Tires	NA	NA
Ag. Tires	(4) weights (2) per wheel @ 48 kg (106 lb) each	(4) weights (2) per wheel @ 48 kg (106 lb) each
DRAWBARS		
Extendible	Standard	Standard
TIRES		
FRONT		
Turf:	23.5 x 8.5–12 4PR, R3	23.5 x 8.5–12 4PR, R3
Industrial:	23.5 x 8.5–12 4PR, R4	23.5 x 8.5–12 4PR, R4
REAR:		
Turf	33 x 12.00–16.5 4PR, R3	33 x 12.00–16.5 4PR, R3
Industrial	33 x 12.00–16.5, 4PR, R4	33 x 12.00–16.5, 4PR, R4

	Model Boomer 20 - Hydrostatic	Model Boomer 25 - Hydrostatic
WHEEL BOLT TORQUES		
Front Wheel --- Disc-to-Hub:		
FWD	93 - 108 N·m (69 - 80 lb ft)	93 - 108 N·m (69 - 80 lb ft)
Rear Wheel --- Disc-to Axle	176 - 196 N·m (130 - 145 lb ft)	176 - 196 N·m (130 - 145 lb ft)
ROPS ATTACHING BOLT TORQUES		
ROPS to Rear Axle	85 N·m (63 lb ft)	85 N·m (63 lb ft)
Seat Belt	49 - 54 N·m (36 - 40 lb ft)	49 - 54 N·m (36 - 40 lb ft)

General specification - Tractor with mechanical transmission

	Model Boomer 20 - Mechanical	Model Boomer 25 - Mechanical
ENGINE		
Type	Diesel	Diesel
Model	S3L	S3L2
Engine Gross Horsepower	17 kW (23 Hp) @ 2700 RPM	20 kW (27 Hp) @ 2700 RPM
Cylinders	3	3
Bore	78 mm (3.07 in)	78 mm (3.07 in)
Stroke	92 mm (3.62 in)	92 mm (3.62 in)
Displacement	1.126 l (68.65 in³)	1.318 l (80.4 in³)
Compression Ratio	22.0:1	22.0:1
Firing Order	1-3-2	1-3-2
Low Idle Speed	1000 RPM	1000 RPM
Maximum Speed:	2900 RPM	2900 RPM
High Idle	2900 RPM	2900 RPM
Rated	2700 RPM	2700 RPM
Valve Clearance (Cold)		
Intake	0.25 mm (0.010 in)	0.25 mm (0.010 in)
Exhaust	0.25 mm (0.010 in)	0.25 mm (0.010 in)
CAPACITIES		
Fuel Tank	25.0 l (6.6 US gal)	25.0 l (6.6 US gal)
Cooling System	3.8 l (4.0 US qt)	3.8 l (4.0 US qt)
Engine Crankcase:		
With Filter	4.2 l (4.4 US qt)	4.2 l (4.4 US qt)
Rear Axle & Transmission (Includes Hydraulics)	24 l (6.3 US gal)	24 l (6.3 US gal)
Front Axle	3.0 l (3.2 US qt)	3.0 l (3.2 US qt)
COOLING SYSTEM		
Type	Pressurized Liquid with Recirculating Bypass	Pressurized Liquid with Recirculating Bypass
Water Pump:		
Type	Centrifugal	Centrifugal
Drive	V-Belt	V-Belt
Belt Deflection	10 - 13 mm (0.4 - 0.5 in) when 10 kg (22 lb) pressure is applied midway between belt pulleys	10 - 13 mm (0.4 - 0.5 in) when 10 kg (22 lb) pressure is applied midway between belt pulleys
Fan Diameter	340 mm (13.4 in)	340 mm (13.4 in)
Thermostat:		
Start to Open	76.5 °C (170 °F)	76.5 °C (170 °F)
Fully Open	90 °C (194 °F)	90 °C (194 °F)
Radiator Cap	90 kPa (13 psi)	90 kPa (13 psi)
ELECTRICAL SYSTEM		
Alternator	12 V, Heavy Duty, 50 A	12 V, Heavy Duty, 50 A
Battery	12 V, w/ negative ground, 560 cca BCI Group 85	12 V, w/ negative ground, 560 cca BCI Group 85
Starting Motor	Solenoid Pre-Engaged Reduction	Solenoid Pre-Engaged Reduction
FUEL SYSTEM		
Fuel Type	Diesel	Diesel
Type of Fuel to Use if Above 4 °C (40 °F)	No. 2-Diesel, Cetane Rating: Minimum 40	No. 2-Diesel, Cetane Rating: Minimum 40

	Model Boomer 20 - Mechanical	Model Boomer 25 - Mechanical
Type of Fuel to Use if Below 4 °C (40 °F)	No. 1-Diesel, Cetane Rating: Minimum 40	No. 1-Diesel, Cetane Rating: Minimum 40
Injection Pump:		
Type	In-Line	In-Line
Timing	19 ° BTDC	17 ° BTDC
Injector pressure	14700 kPa (2132 psi)	14700 kPa (2132 psi)
BRAKES		
Type	Wet Disc	Wet Disc
2 Disc per Side	114 mm (4.5 in) x 84 mm (3.3 in)	114 mm (4.5 in) x 84 mm (3.3 in)
STEERING		
Type	Power	Power
Turns Lock-to-Lock:	3.0 L to R 3.0R to L	3.0 L to R 3.0R to L
Turn angle	Right turn 47 - 41 ° (47 - 41 °) Left turn 47 - 41 ° (47 - 41 °)	Right turn 47 - 41 ° (47 - 41 °) Left turn 47 - 41 ° (47 - 41 °)
Front Wheel		
Toe-In	0 - 7.65 mm (0 - 0.30 in)	0 - 7.6 mm (0 - 0.30 in)
Turning Radius w/o Brakes:		
FWD	2591 mm (102 in) Left turn 2591 mm (102 in) Right turn	2591 mm (102 in) Left turn 2591 mm (102 in) Right turn
Steering pump flow	4.0 l/min (1.1 US gpm)	4.0 l/min (1.1 US gpm)
Steering System Relief Valve Setting	8826 kPa (1280 psi)	8826 kPa (1280 psi)
POWER TAKE-OFF		
Type	Independent	Independent
Shaft Size:		
Rear PTO	35 mm (1.4 in)	35 mm (1.4 in)
Mid PTO	25.4 mm (1 in)	25.4 mm (1 in)
Engine Speed for 540 RPM Rear PTO Operation	2430 RPM	2430 RPM
Engine Speed for 2000 RPM Mid PTO Operatio	2479 RPM	2479 RPM
Horsepower PTO Observed	NA	NA
Direction of Rotation (As viewed from rear of tractor)		
Rear PTO	Clockwise	Clockwise
Mid PTO	Clockwise	Clockwise
HYDRAULIC LIFT SYSTEM		
Type	Open Center	Open Center
Pump Type	Gear	Gear
Pump Capacity	26.0 l/min (6.9 US gpm)	26.0 l/min (6.9 US gpm)
System Relief Valve Setting	14997 kPa (2175 psi)	14997 kPa (2175 psi)
Lift capacity at lift arm ball ends	650 kg (1433 lb)	650 kg (1433 lb)
Lift capacity at 609 mm (24 in) behind lift arm ball ends	480 kg (1058 lb)	480 kg (1058 lb)
TRANSMISSION SPEEDS (Mechanical)		
	(2700 RPM Engine Rated Speed	(2700 RPM Engine Rated Speed
Gear Position:		
Forward 1st Low	1.25 km/h (0.78 mph)	1.25 km/h (0.78 mph)
Forward 2nd Low	2.11 km/h (1.31 mph)	2.11 km/h (1.31 mph)

	Model Boomer 20 - Mechanical	Model Boomer 25 - Mechanical
Forward 3rd Low	4.34 km/h (2.70 mph)	4.34 km/h (2.70 mph)
Reverse Low	2.24 km/h (1.39 mph)	2.24 km/h (1.39 mph)
Forward 1st High	5.18 km/h (3.22 mph)	5.18 km/h (3.22 mph)
Forward 2nd High	8.75 km/h (5.44 mph)	8.75 km/h (5.44 mph)
Forward 3rd High	18.02 km/h (11.20 mph)	18.02 km/h (11.20 mph)
Reverse High	9.30 km/h (5.78 mph)	9.30 km/h (5.78 mph)
CAST IRON WEIGHTS		
Front End:		
With weight extension bracket installed.	(5) weights @ 26 kg (60 lb) each	(5) weights @ 26 kg (60 lb) each
Rear Wheel:		
R-4 Tires	NA	NA
Turf Tires	NA	NA
DRAWBARS		
Extendible	Standard	Standard
TIRES		
FRONT		
Ag	23x10.5-12, 107 A8TL,R1	23x10.5-12, 107 A8TL,R1
Turf:	23 x 8.50-12, 6PR, R3	23 x 8.50-12, 6PR, R3
Industrial:	23 x 8.50-12, 6PR, R4	23 x 8.50-12, 6PR, R4
Flotation	250/60-12, 110 A6	250/60-12, 110 A6
Garden Pro	220/55R12, 82A8	220/55R12, 82A8
AG Narrow 1	6-12, 4PR	6-12, 4PR
AG Narrow 2	6-12, 4PR	6-12, 4PR
REAR:		
Ag	255/75-15.3, 119 A8TL,R1	255/75-15.3,, 119 A8TL,R1
Turf	33 x 12.50-16.5, 4PR, R3	33 x 12.50-16.5, 4PR, R3
Industrial	12.00-16.5, 10PR, R4	12.00-16.5, 10PR, R4
Flotation	380/55-17, 138 A8	380/55-17, 138 A8
Garden Pro	280/70R16, 112A8	280/70R16, 112A8
AG Narrow 1	9.5-16, 6PR	9.5-16, 6PR
AG Narrow 2	9.5-16, 6PR	9.5-16, 6PR
WHEEL BOLT TORQUES		
Front Wheel --- Disc-to-Hub:		
FWD	93 - 108 N·m (69 - 80 lb ft)	93 - 108 N·m (69 - 80 lb ft)
Rear Wheel --- Disc-to-Axle	177 - 196 N·m (131 - 145 lb ft)	177 - 196 N·m (131 - 145 lb ft)
ROPS ATTACHING BOLT TORQUES		
ROPS to Rear Axle	85 N·m (63 lb ft)	85 N·m (63 lb ft)
Seat Belt	49 N·m (36 lb ft)	49 N·m (36 lb ft)

General specification

Fatty Acid Methyl Ester Biodiesel (Biodiesel Fuel) consists of a family of fuels derived from vegetable oils treated with methyl esters.

NOTICE: Biodiesel Fuel blends are approved for your engine only if they comply with **EN14214** Specification Standards or **ASTM D6751**.

NOTICE: It is imperative that you check which blend is approved for your engine with your NEW HOLLAND dealer. Be aware that the use of Biodiesel Fuel that does not comply with the Standards mentioned above could lead to severe damage to the engine and fuel system of your machine. The use of fuels that are not approved may void NEW HOLLAND Warranty coverage.

Biodiesel fuel usage conditions

NOTICE: The Biodiesel Fuel must meet the fuel Specification mentioned above.

Biodiesel Fuel must be purchased from a trusted supplier that understands the product and maintains good fuel quality. Biodiesel Fuel must be pre-blended by the supplier. Mixing Biodiesel Fuels on-site can result incorrect mixture that can lead to problems with both engine and fuel system.

Engine performance is affected by the use of Biodiesel Fuel. There may be up to **12 %** reduction in power or torque depending on the blend used.

NOTICE: DO NOT modify the engine and/or injection pump settings to recover the reduced performance.

The reduced power must be accepted if using any Biodiesel Fuel blend.

Some modification may be required to allow your engine to run Biodiesel Fuel. Consult you dealer for complete information on these modifications.

Biodiesel Fuel has a higher cloud point than Diesel Fuel.

NOTICE: The use of high Biodiesel Fuel blends are not recommended in cold weather conditions.

With Biodiesel Fuels, it may be necessary to change the engine oil, engine oil filter and fuel filter elements more frequently than with Diesel Fuels. Biodiesel Fuel can remove rust and particles from the inside of on-site fuel storage tanks that would normally adhere to the sides of the tank. Like particle deposits that commonly occur with Diesel Fuel, these particles can become trapped by the machine fuel filters, causing blockage and shortening filter life. In cold weather, this is more likely to happen. Consult your NEW HOLLAND dealer for information on cold weather operation and proper maintenance intervals when using any Biodiesel Fuel blend.

When handling Biodiesel Fuel, care must be taken not to allow water into the fuel supply. Biodiesel Fuel will actually attract moisture from the atmosphere.

Fuel tanks must be kept as full as possible to limit the amount of air and water vapors in them. It may be necessary to drain the fuel filter water tap more frequently.

Potential oxidation and stability could be a problem with the fuel stored in the machine.

NOTICE: Machines must not be stored for more than three months with Biodiesel Fuel blends in the fuel system.

If long storage periods are necessary, the engine must run on Diesel Fuel for 20 hours to flush the Biodiesel Fuel out of the engine fuel system prior to storage.

NOTICE: Biodiesel Fuel must not be stored in on-site storage tanks for more than three months.

Any spillage of Biodiesel Fuel must be cleaned up immediately before it can cause damage to the environment and the paint finish of the machine.

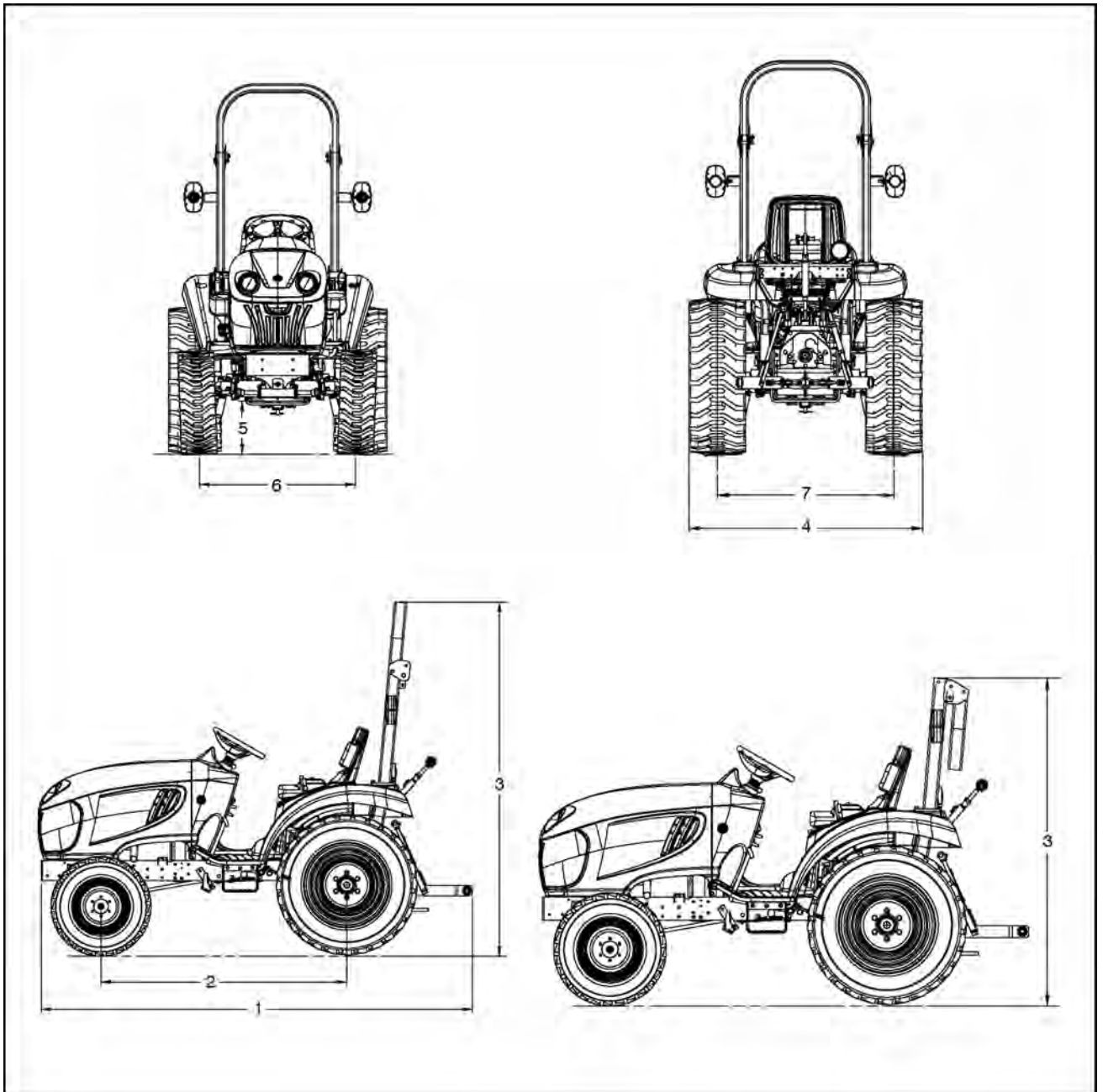
Before using Biodiesel Fuel blends you should consult with your dealer to receive full information about the approved blend for your machine and any detailed conditions of its usage.

NOTICE: Be aware that not fulfilling the requirements and conditions of Biodiesel Fuel usage will void your machine's NEW HOLLAND Warranty coverage.

Dimension

	Model Boomer 20	Model Boomer 25
(1) - LENGTH:		
FWD:		
	2632 mm (103.6 in)	2632 mm (103.6 in)
(2) - WHEEL BASE:		
FWD	2500 mm (98.4 in)	2500 mm (98.4 in)
(3) - Top of ROPS - Folding:		
Ag Tires: 255/75-15.3		
Up Position	2110 mm (83.1 in)	2110 mm (83.1 in)
Down Position	1705 mm (67.1 in)	1705 mm (67.1 in)
Ind. Tires: 12.00 x 16.5		
Up Position	2127 mm (83.7 in)	2127 mm (83.7 in)
Down Position	1722 mm (67.8 in)	1722 mm (67.8 in)
Turf Tires: 33x 12.50-16.5		
Up Position	2125 mm (83.6 in)	2125 mm (83.6 in)
Down Position	1720 mm (67.7 in)	1720 mm (67.7 in)
Flotation Tires: 380/55-17		
Up Position	2147 mm (84.5 in)	2147 mm (84.5 in)
Down Position	1742 mm (68.6 in)	1742 mm (68.6 in)
Garden Pro: 280/70R16		
Up Position	2110 mm (83 in)	2110 mm (83 in)
Down Position	1742 mm (68.6 in)	1742 mm (68.6 in)
AG Narrow 1: 9.5-16		
Up Position	2123 mm (84 in)	2123 mm (84 in)
Down Position	1742 mm (68.6 in)	1742 mm (68.6 in)
AG Narrow 2: 9.5-16		
Up Position	2123 mm (84 in)	2123 mm (84 in)
Down Position	1742 mm (68.6 in)	1742 mm (68.6 in)
(4) - WIDTH:		
Rear Axle - Outside to Outside of tire:		
Ag Tires: 255/75-15.3	1236 mm (48.7 in)	1236 mm (48.7 in)
Ind. Tires: 12.00 x 16.5	1276 mm (50.2 in)	1276 mm (50.2 in)
Turf Tires: 33x 12.50-16.5	1276 mm (50.2 in)	1276 mm (50.2 in)
Flotation Tires: 380/55-17	1392 mm (54.8 in)	1392 mm (54.8 in)
Garden Pro: 280/70R16	1180 mm (46 in)	1180 mm (46 in)
AG Narrow 1: 9.5-16	1146 mm (0.0 in)	1146 mm (0.0 in)
AG Narrow 2: 9.5-16	1226 mm (48 in)	1226 mm (48 in)

	Model Boomer 20	Model Boomer 25
(5) - MINIMUM GROUND CLEARANCE (under drawbar support):		
Ag Tires: 255/75-15.3	225 mm (8.86 in)	225 mm (8.86 in)
Ind. Tires: 12.00 x 16.5	242 mm (9.53 in)	242 mm (9.53 in)
Turf Tires: 33x 12.50-16.5	240 mm (9.45 in)	240 mm (9.45 in)
Flotation Tires: 380/55-17	262 mm (10.31 in)	262 mm (10.31 in)
Garden Pro: 280/70R16	220 mm (9 in)	220 mm (9 in)
AG Narrow 1: 9.5-16	238 mm (9 in)	238 mm (9 in)
AG Narrow 2: 9.5-16	238 mm (9 in)	238 mm (9 in)



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Consumables

Lubricant	Type and Description	Part Number	Container Size
Engine Oil	NEW HOLLAND AMBRA SUPER GOLD 10W-30	104104A1	0.946 l (1 US qt)
		139033A1	3.785 l (1 US gal)
		104106A1	18.93 l (5 US gal)
	NEW HOLLAND AMBRA SUPER GOLD 15W-40	407410R2	0.946 l (1 US qt)
		139034A1	3.785 l (1 US gal)
		407414R2	18.93 l (5 US gal)
Transmission/Hydraulic Oil	NEW HOLLAND AMBRA MULTI G 134™ HYDRAULIC TRANSMISSION OIL	404787A1	18.93 l (5 US gal)
	NEW HOLLAND AMBRA F200A HYDRAULIC FLUID	B17805	18.93 l (5 US gal)
Front Axle/Gear Oil	NEW HOLLAND AMBRA HYPOIDE 90	87299775	0.946 l (1 US qt)
		87299136	18.93 l (5 US gal)
Grease	NEW HOLLAND AMBRA GR-9 MULTI-PURPOSE GREASE	132096A1	Tube 14 oz
Coolant	Ethylene Glycol Coolant Concentrate		

Capacities

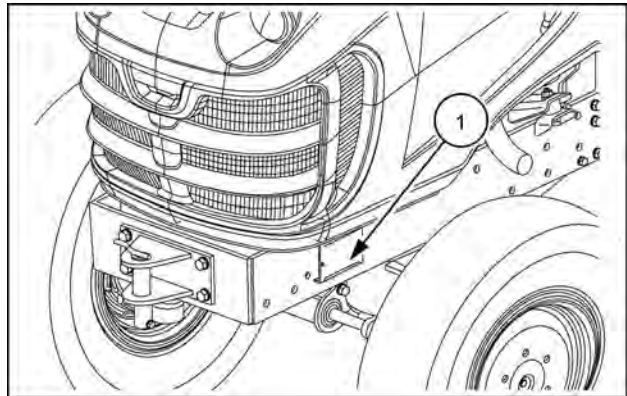
CAPACITIES		
Fuel Tank	25.0 l (6.6 US gal)	25.0 l (6.6 US gal)
Cooling System	3.8 l (4.0 US qt)	3.8 l (4.0 US qt)
Engine Crankcase:		
With Filter	4.2 l (4.4 US qt)	4.2 l (4.4 US qt)
Rear Axle & Transmission (Includes Hydraulics)	24 l (6.3 US gal)	24 l (6.3 US gal)
Front Axle	3.0 l (3.2 US qt)	3.0 l (3.2 US qt)

Product identification

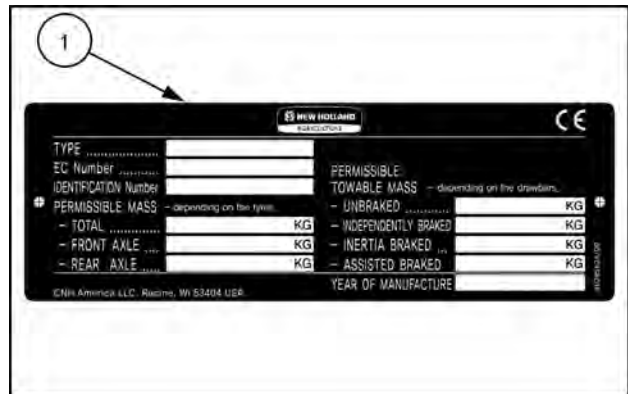
The machine and major components are identified with Product Identification Number (PIN) plates. You should supply the PIN plate data to your NEW HOLLAND dealer when requesting parts or service, and also to identify the machine in case of theft.

Product Identification Number (PIN) plate

The machine PIN Plate **(1)** is located on the left-hand side of the frame.



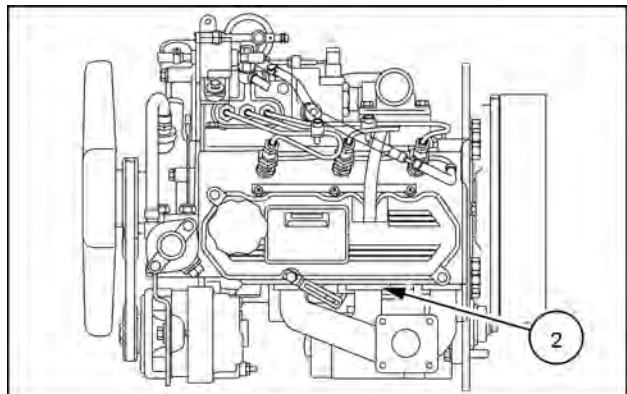
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NHIL13CT00853AA 2

Engine Product Identification Number (PIN) plate

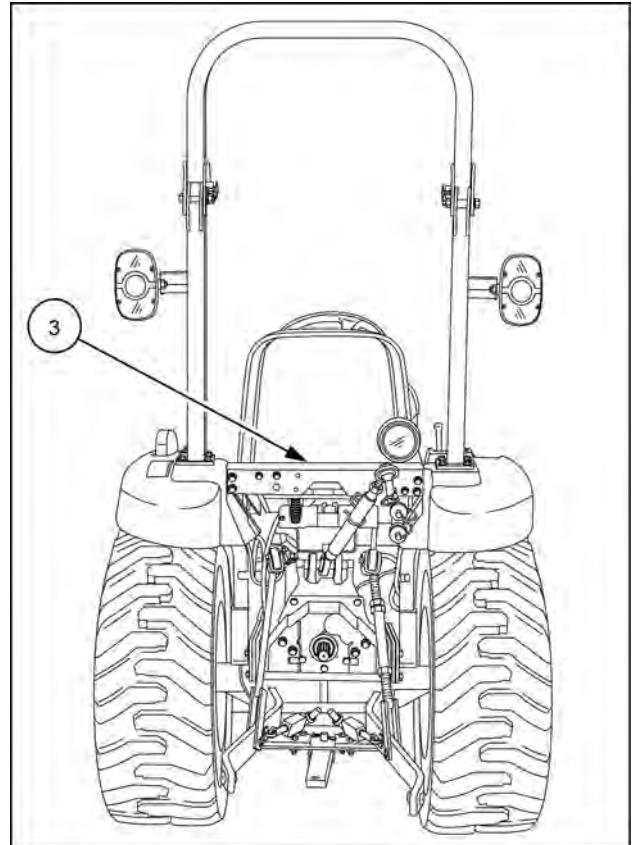
The engine PIN plate **(2)** is located on the rearward end of the engine valve cover.



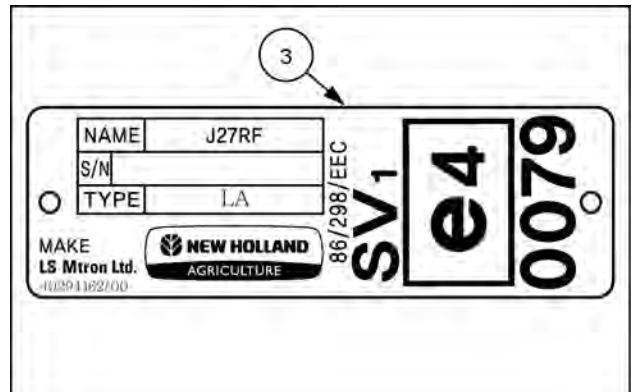
NHIL16CT00204AA 3

Roll Over Protective Structure (ROPS) Product Identification Number (PIN)

The Roll Over Protective Structure (ROPS) PIN plate (3) is located on the ROPS cross brace behind the fuel tank.



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NHIL13CT00854AA 5

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