

SERVICE MANUAL

Boomer™ 3040 CVT / Boomer™ 3045 CVT / Boomer™ 3050 CVT Compact Tractor

PIN ZCMB11001 and above; PIN ZDMB11925 and above

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SERVICE MANUAL

**Boomer™ 3040 CVT [ZCMB11001 -], Boomer™ 3040 CVT [ZDMB11925 -],
Boomer™ 3045 CVT [ZCMB11001 -], Boomer™ 3045 CVT [ZDMB11925 -],
Boomer™ 3050 CVT [ZCMB11001 -], Boomer™ 3050 CVT [ZDMB11925 -]**

Link Product / Engine

Product	Market Product	Engine
Boomer™ 3040 CVT [ZCMB11001 -]	Europe	N844
Boomer™ 3040 CVT [ZDMB11925 -]	Europe	N844
Boomer™ 3045 CVT [ZCMB11001 -]	Europe	N844L
Boomer™ 3045 CVT [ZDMB11925 -]	Europe	N844L
Boomer™ 3050 CVT [ZCMB11001 -]	Europe	N844L
Boomer™ 3050 CVT [ZDMB11925 -]	Europe	N844L

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INTRODUCTION

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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.

Foreword

Boomer™ 3040 CVT	WE
Boomer™ 3045 CVT	WE
Boomer™ 3050 CVT	WE

This repair manual provides the technical information needed to properly service the NEW HOLLAND Boomer 3040, Boomer 3045, Boomer 3050 CVT (Constant Velocity Transmission) model 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.

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 - Important notice regarding equipment servicing

Boomer™ 3040 CVT	WE
Boomer™ 3045 CVT	WE
Boomer™ 3050 CVT	WE

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 information in this manual is up-to-date at the date of the publication. It is the policy of the manufacturer for continuous improvement. Some information could not be updated due to modifications of a technical or commercial type, or changes to the laws and regulations of different countries.

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

Basic instructions Hardware

Boomer™ 3040 CVT	WE
Boomer™ 3045 CVT	WE
Boomer™ 3050 CVT	WE

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.

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.

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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

Torque Wheel Bolt Torques

Boomer™ 3040 CVT	WE
Boomer™ 3045 CVT	WE
Boomer™ 3050 CVT	WE

All models

Front Wheel - Disc-to-Hub: FWD	129 N·m (95 lb ft)
Rear Wheel - Rear Wheel & Disc-to Axle Disc-to Rim .	129 N·m (95 lb ft) 244 N·m (180 lb ft)

Basic instructions Tire ballast and pressures

Boomer™ 3040 CVT	WE
Boomer™ 3045 CVT	WE
Boomer™ 3050 CVT	WE

LIQUID BALLAST (OPTIONAL)

It is a common practice to add weight to the tractor by filling the rear tires with liquid. A calcium chloride (CaCl₂) and water solution is recommended due to its low freezing point and greater density (weight per gallon) than pure water.

Never exceed the total recommended weight for the tractor. Because special equipment is required to fill the tires, consult your NEW HOLLAND Dealer.

Tires should never be filled beyond **75 %**. At **75 %** full, the liquid will come to the valve stem when the valve stem is at its highest point at the top of the wheel.

TIRE PRESSURE

Tire pressure must be considered when adding weights, implements, or attachments to the tractor or damage to the tractor may occur.

The chart below outlines tire inflation pressures.

FRONT TIRE INFLATION PRESSURES		
Tire Type	Tire Size	Inflation Pressure
Agricultural: FWD	8 x 16, 6PR, R1	82.7 - 193.1 kPa (12 - 28 psi) 1.4 - 1.9 bar (12 - 28 psi)
Turf: FWD	27 x 10.5-15, 4PR, R3 27/12LL x 15, 6PR, R3	68.9 - 206.8 kPa (10 - 30 psi) 55.2 - 68.9 kPa (8 - 10 psi)
Industrial	10 x 16.5, 6PR, R4	110.3 - 310.3 kPa (16 - 45 psi)
REAR TIRE INFLATION PRESSURES		
Agricultural	14.9 x 24, 4 PR, R1	82.7 - 96.5 kPa (12 - 14 psi)
Turf	44 x 18-20, 4PR, R3 22.5LL x 16.1, 6PR, R3	82.7 - 137.9 kPa (12 - 20 psi) 41.4 - 55.2 kPa (6 - 8 psi)
Industrial	17.5 x 24, 8PR, R4	82.7 - 179.3 kPa (12 - 26 psi)

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

REAR TIRE LIQUID

600 g/5 lb Gal Solution/CaCl₂

Ballast Weights (Per Tire)

Agricultural	14.9 x 24, 4PR, R1	272 kg (600 lb)
Turf	44 x 18-20, 4PR, R3	249 kg (549 lb)
Industrial (R4)	17.5 x 24, 6PR, R4	272 kg (600 lb)

General specification Tire Pressures

Boomer™ 3040 CVT	WE
Boomer™ 3045 CVT	WE
Boomer™ 3050 CVT	WE

FRONT TIRE INFLATION PRESSURES		
Tire Type	Tire Size	Inflation Pressure
Agricultural:	2WD	5.50 x 16, 4PR, F2
		7.5 x 15, 6 PR
	FWD	7 x 16, 6PR, R1
		8 x 16, 6PR, R1
Turf:	2WD	25 x 8.50-14, 4PR, R3
		27 x 8.50-15, 4PR, R3
	FWD	
Industrial (FWD only)	10 x 16.5, 6PR, R4	

REAR TIRE INFLATION PRESSURES		
Agricultural	13.6 x 24, 4PR, R1	
Turf	44 x 18-20, 4PR, R3	
Industrial (R4)	17.5 x 24, 6PR, R4	

Special tools

Boomer™ 3040 CVT	WE
Boomer™ 3045 CVT	WE
Boomer™ 3050 CVT	WE

Gauge (0-3000 psi)	OEM 1462
Gauge (6000 psi)	OEM 1464
Gauge (300 psi)	OEM 1457
Hose	Procure Locally
Tee Fitting	CNH299061
Adapter	FNH00227
Male Plug	Included with CNH299061
Female Cap	Included with CNH299061
Variseal Installation Tool	293955
Detent Tool	FNH00081
Seal Driver Set	FNH00293
Injector Test	FNH01721
Injector Adapter Set	FNH01728
Clutch Alignment Tool	FNH299006
Engine Compression Test Adapter	FNH00120
Engine Compression Test Gauge Assembly	OEM1074
Oil Pump Port Block Remover Tool	380002888
Oil Pump Port Block Installer Tool	380002887
Oil Pump Port Block Installer Pins	FNH11044
Micrometer	0 - 25 mm (0 - 1 in)
Micrometer	25 - 51 mm (1 - 2 in)
Micrometer	76 - 102 mm (3 - 4 in)
Small Hole Gauge	19 - 25 mm (0.75 - 1 in)
Cylinder Bore Gauge	76 - 102 mm (3 - 4 in)
Cylinder Bore Gauge	25 - 51 mm (1 - 2 in)
HST High Pressure Test Fitting	CNH299007
Engine Oil Pressure Test Fitting	FNH00011
PTO Clutch Pack Pressure Test Fitting	CNH299008
PTO Clutch Pack Press Tool	CNH299009

Special tools

Boomer™ 3040 CVT	WE
Boomer™ 3045 CVT	WE
Boomer™ 3050 CVT	WE

Gauge - (0-3000 psi) Procure Locally

Gauge - (6000 psi) Procure Locally

Gauge - (300 psi) Procure Locally

Hose Procure Locally

Tee Fitting **CNH299061**

Adapter **FNH00227**

Male Plug Included with **CNH299061**

Female Cap Included with **CNH299061**

Variseal Installation Tool **380000836**

Detent Tool **FNH00081**

Seal Driver Set **FNH00293**

Injector Test **FNH01721**

Injector Adapter Set **FNH01728**

Injector Cleaning Kit **FNH01720**

Engine Compression Test Adapter . . . **FNH00120**

Engine Compression Test Gauge Assembly . . **OEM1074**

Oil Pump Port Block Remover Tool **FNH11097**

Oil Pump Port Block Installer Tool **FNH00117**

Oil Pump Port Block Remover Sleeve (Pair) . . **FNH11099**

Oil Pump Port Block Installer Pins **FNH11044**

Micrometer **0 - 25 mm (0 - 1 in)**

Micrometer **25 - 51 mm (1 - 2 in)**

Micrometer **76 - 102 mm (3 - 4 in)**

Small Hole Gauge **19 - 25 mm (0.75 - 1 in)**

Cylinder Bore Gauge **76 - 102 mm (3 - 4 in)**

Cylinder Bore Gauge **25 - 51 mm (1 - 2 in)**

Engine Oil Pressure Test Fitting **380002904**

PTO/FWD Oil Pressure Test Fitting **380001862**

Hydraulic contamination

Contamination in the hydraulic system is a major cause of the malfunction of hydraulic components. Contamination is any foreign material in the hydraulic oil.

Contamination can enter the hydraulic system in several ways:

- When you drain the oil or disconnect any line
- When you disassemble a component
- From normal wear of the hydraulic components
- From damaged seals or worn seals
- From a damaged component in the hydraulic system

All hydraulic systems operate with some contamination. The design of the components in this hydraulic system permits efficient operation with a small amount of contamination. An increase in this amount of contamination can cause problems in the hydraulic system.

The following list includes some of these problems:

- Cylinder rod seals that leak
- Control valve spools that do not return to neutral
- Movement of control valve spools is difficult
- Hydraulic oil that becomes too hot
- Pump gears, housing, and other parts that wear rapidly
- Relief valves or check valves held open by dirt
- Quick failure of components that have been repaired
- Slow cycle times are slow. The machine does not have enough power.

If your machine has any of these problems, check the hydraulic oil for contamination.

There are two types of contamination: microscopic and visible.

Microscopic contamination occurs when very fine particles of foreign material are suspended in the hydraulic oil. These particles are too small to see or feel. Microscopic contamination can be found by identification of the following problems or by testing in a laboratory.

Examples of problems caused by microscopic contamination:

- Cylinder rod seals that leak
- Control valve spools that do not return to neutral
- The hydraulic system has a high operating temperature

Visible contamination is foreign material that can be found by sight, touch, or odor. Visible contamination can cause a sudden failure of components.

Examples of problems caused by visible contamination:

- Particles of metal or dirt in the oil
- Air in the oil
- Dark or thick oil
- Oil with an odor of burned oil
- Water in the oil

If you find contamination, use a portable filter to clean the hydraulic system.

General specification

Boomer™ 3040 CVT	WE
Boomer™ 3045 CVT	WE
Boomer™ 3050 CVT	WE

	Boomer 3040	Boomer 3045	Boomer 3050
ENGINE			
Type/Model	Diesel/N844	Diesel/N844	Diesel/N844
Engine Gross Horsepower	29.8 kW (40.5 Hp)	33.6 kW (46 Hp)	33.6 kW (46 Hp)
Cylinders	4	4	4
Bore	84 mm (3.31 in)	84 mm (3.31 in)	84 mm (3.31 in)
Stroke	90 mm (3.54 in)	100 mm (3.94 in)	100 mm (3.94 in)
Displacement	2.0 l (122.0 in³)	2.2 l (134.3 in³)	2.2 l (134.3 in³)
Compression Ratio	22.5:1	22.5:1	22.5:1
Firing Order	1-3-4-2	1-3-4-2	1-3-4-2
Low Idle Speed	1025 RPM	1025 RPM	1050 RPM
Maximum Speed:			
High Idle	2850 RPM	2850 RPM	3050 RPM
Rated	2600 RPM	2600 RPM	2800 RPM

Consumables

Boomer™ 3040 CVT	WE
Boomer™ 3045 CVT	WE
Boomer™ 3050 CVT	WE

Lubricant	Type and Description	Part Number	Container Size
Engine Oil	NEW HOLLAND AMBRA SUPER GOLD SSL ENGINE OIL 10W-40	86994335	9.46 l (2.5 US gal)
	NEW HOLLAND AMBRA AUTO SUPREME 10W-30	86641050	18.93 l (5 US gal)
	NEW HOLLAND AMBRA SUPER GOLD 10W-30	9613313	0.946 l (1 US qt)
		86641052	3.785 l (1 US gal)
		9613314	9.46 l (2.5 US gal)
		9673508DS	18.93 l (5 US gal)
	NEW HOLLAND AMBRA SUPER GOLD HSP ENGINE OIL 30	9613286	0.946 l (1 US qt)
		86641043	3.785 l (1 US gal)
		9613289	9.46 l (2.5 US gal)
		86641044	18.93 l (5 US gal)
	NEW HOLLAND AMBRA SUPER GOLD HSP ENGINE OIL 40	9624812DS	208.2 l (55 US gal)
	NEW HOLLAND AMBRA SUPER GOLD 15W-40	86641081	0.946 l (1 US qt)
		86641082	3.785 l (1 US gal)
		86641084	9.46 l (2.5 US gal)
		86641083	18.93 l (5 US gal)
Transmission Oil	NEW HOLLAND AMBRA MULTI TRAN	86639558	3.785 l (1 US gal)
	NEW HOLLAND AMBRA MULTI BIO S	86639559	9.46 l (2.5 US gal)
		86639560	18.93 l (5 US gal)
		86994341	9.46 l (2.5 US gal)
		86994341	9.46 l (2.5 US gal)
Hydraulic Oil	NEW HOLLAND AMBRA MULTI G 134™ HYDRAULIC TRANSMISSION OIL	9624655DS	0.946 l (1 US qt)
		9624656DS	3.785 l (1 US gal)
		9624450	9.46 l (2.5 US gal)
		9624451	18.93 l (5 US gal)
Grease	NEW HOLLAND AMBRA GR-9 MULTI-PURPOSE GREASE	9613310	TUBE - 14 OZ.
Coolant	ESE-M97B18-D, Ethylene Glycol Coolant Concentrate	FGCC2701DS	3.785 l (1 US gal)

Capacities

Boomer™ 3040 CVT	WE
Boomer™ 3045 CVT	WE
Boomer™ 3050 CVT	WE

All models

CAPACITIES

Fuel Tank	49.2 l / 13 US gal
Cooling System	9.0 l / 9.6 US qt
Engine Crankcase: With Filter	6.0 l / 6.3 US qt
Rear Axle & Transmission (Includes Hydraulics)	35.2 l / 9.3 US gal
Front Axle Differential/ Final Reduction Gear Case	5.3 l / 5.6 US qt

General specification

Boomer™ 3040 CVT	WE
Boomer™ 3045 CVT	WE
Boomer™ 3050 CVT	WE

Air conditioning system

	Boomer 3040	Boomer 3045	Boomer 3050
Compressor make/model . . .	SANDEN/SD5H11	SANDEN/SD5H11	SANDEN/SD5H11
Bore	35 mm	35 mm	35 mm
Stroke	22.6 mm	22.6 mm	22.6 mm
Number of Cylinders	5	5	5
Refrigerant . .	R-134a	R-134a	R-134a
Capacity	1.1 kg (2.4 lb)	1.1 kg (2.4 lb)	1.1 kg (2.4 lb)
Oil	SP-20 (or equivalent)	SP-20 (or equivalent)	SP-20 (or equivalent)
Capacity . .	135 ml (4.56 US fl oz)	135 ml (4.56 US fl oz)	135 ml (4.56 US fl oz)
Rotation . .	Clockwise	Clockwise	Clockwise
Blower Motor . .	3 Speed-Electric	3 Speed-Electric	3 Speed-Electric
Number of Interior Vents . .	Switch 8	Switch 8	Switch 8

	Boomer 3040	Boomer 3045	Boomer 3050
COOLING SYSTEM			
Type.	Pressurized Liquid with Recirculating Bypass	Pressurized Liquid with Recirculating Bypass	Pressurized Liquid with Recirculating Bypass
Water Pump:			
Type.	Centrifugal	Centrifugal	Centrifugal
Drive.	V-Belt	V-Belt	
Belt.			
Deflection.	10 - 15 mm (7/16 - 9/16 in) when 9 - 11 kg (20 - 25 lb) thumb pressure is applied midway between belt pulleys	10 - 15 mm (7/16 - 9/16 in) when 9 - 11 kg (20 - 25 lb) thumb pressure is applied midway between belt pulleys	10 - 15 mm (7/16 - 9/16 in) when 9 - 11 kg (20 - 25 lb) thumb pressure is applied midway between belt pulleys
Fan Diameter. . . .	410 mm (16.1 in)	410 mm (16.1 in)	410 mm (16.1 in)
Number of Fan Blades.	6	6	6
Thermostat:			
Start to Open. . . .	80 °C (176 °F)	80 °C (176 °F)	80 °C (176 °F)
Fully Open.	95 °C (203 °F)	95 °C (203 °F)	95 °C (203 °F)
Radiator Cap. . . .	0.9 bar (13 psi)	0.9 bar (13 psi)	0.9 bar (13 psi)
Antifreeze.	Ethylene Glycol	Ethylene Glycol	Ethylene Glycol

	Boomer 3040	Boomer 3045	Boomer 3050
ELECTRICAL SYSTEM			
Main System Protection.	80 A Maxifuse	80 A Maxifuse	80 A Maxifuse
Number Fuses for Circuit Protection.	23	23	23
Alternator.	12 V , Heavy Duty, 55 A	12 V , Heavy Duty, 55 A	12 V , Heavy Duty, 55 A
Battery type.	12 V , w/ negative ground, 420 cca	12 V , w/ negative ground, 420 cca	12 V , w/ negative ground, 420 cca
Starter HP (KW) Ratin.	2.0 kW (2.7 Hp)	2.0 kW (2.7 Hp)	2.0 kW (2.7 Hp)
Battery Rating Amp Hrs.	64 - 69 A·h	64 - 69 A·h	64 - 69 A·h
Starting Motor.	Solenoid Pre-Engaged Reduction	Solenoid Pre-Engaged Reduction	
FUEL SYSTEM			
Fuel Type.	Diesel	Diesel	Diesel
Type of Fuel to Use if Above 40 °F	No. 2-Diesel, Cetane Rating: Minimum 40	No. 2-Diesel, Cetane Rating: Minimum 40	No. 2-Diesel, Cetane Rating: Minimum 40
Type of Fuel to Use if Below 40 °F	No. 1-Diesel, Cetane Rating: Minimum 40	No. 1-Diesel, Cetane Rating: Minimum 40	No. 1-Diesel, Cetane Rating: Minimum 40
Injection Pump:			
Type.	In-Line	In-Line	
Timing.	21 ° BTDC	21 ° BTDC	

	Boomer 3040	Boomer 3045	Boomer 3050
BRAKES			
Type.	Wet Disc	Wet Disc	
3 Disc Diameter. . . .	175 mm x 143 mm Diameter (6.9 in x 5.6 in)	175 mm x 143 mm Diameter (6.9 in x 5.6 in)	175 mm x 143 mm Diameter (6.9 in x 5.6 in)
STEERING			
Type.	Power	Power	Power
Pump Flow@Rated RPM.	19.34 l/min (5.11 US gpm)	19.34 l/min (5.11 US gpm)	19.34 l/min (5.11 US gpm)
Turns Lock-to-Lock:			
FWD.	4.3 R to L and 3 L to R	4.3 R to L and 3 L to R3	4.3 R to L and 3 L to R
Super Steer.	4.3	4.3	4.3
Front WheelToe-In.	0 - 5 mm (0 - 13/64 in)	0 - 5 mm (0 - 13/64 in)	0 - 5 mm (0 - 13/64 in)
Turning Radius w/o Brakes:			
FWD.	3238.5 mm (127.5 in)	3238.5 mm (127.5 in)	3238.5 mm (127.5 in)
Super Steer.	2870.2 mm (113 in)	2870.2 mm (113 in)	2870.2 mm (113 in)
Max. Turn Angle.			
4WD	54 °	54 °	54 °
4WDSS	75 °	75 °	75 °
Front to rear axle ratio.	1.67 to 1	1.67 to 1	1.67 to 1
POWER TAKE-OFF			
Type.	Independent	Independent	Independent
Shaft:			
Rear PTO.	35 mm (1-3/8 in)	35 mm (1-3/8 in)	35 mm (1-3/8 in)
Mid PTO.	25.4 mm (1 in)	25.4 mm (1 in)	25.4 mm (1 in)
Engine Speed for 540 RPM Rear	2409 RPM -	2409 RPM -	2409 RPM
PTO Operation.			
Horsepower Rear PTO Observed.	23 kW (30.8 Hp)	25.8 kW (34.6 Hp)	28.7 kW (38.5 Hp)
Horsepower Mid PTO Observed.	19.3 kW (26 Hp)	22.3 kW (30 Hp)	24.6 kW (36 Hp)
Engine Speed for 2000 RPM Mid	2407 RPM	2407 RPM	2407 RPM
PTO Operation.			
Direction of Rotation (As viewed from rear of tract)			
. . .Rear PTO.	Clockwise	Clockwise	Clockwise
Mid PTO.	Counter-clockwise	Counter-clockwise	Counter-clockwise
HYDRAULIC LIFT SYSTEM			
Type.	Open Center	Open Center	
Pump Type.	Gear	Gear	
Pump Capacity.	36.9 l/min (9.7 US gpm)	36.9 l/min (9.7 US gpm)	39.8 l/min (10.5 US gpm)
System Relief Valve Setting.	171.6 bar (2488 psi)	171.6 bar (2488 psi)	171.6 bar (2488 psi)
Number of Rear Remotes Available.	3 (optional)	3 (optional)	3 (optional)
Number of Mid Remotes Available.	2 (optional)	2 (optional)	2 (optional)

	Boomer 3040	Boomer 3045	Boomer 3050
TRANSMISSION			
Transmission Type. . .	CVT	CVT	CVT
TRANSMISSION SPEEDS-KPH(MPH)			
Forward Min @ rated speed (AG)	0.43 km/h (0.27 mph)	0.43 km/h (0.27 mph)	0.48 km/h (0.28 mph)
Forward Max @ rated speed (AG)	30.16 km/h (18.70 mph)	30.16 km/h (18.70 mph)	32.48 km/h (20.18 mph)
Reverse Min @ rated speed (AG)	0.42 km/h (0.26 mph)	0.42 km/h (0.26 mph)	0.45 km/h (0.27 mph)
Reverse Max @ rated speed (AG)	29.94 km/h (18.60 mph)	29.94 km/h (18.60 mph)	32.24 km/h (20.03 mph)
Forward Min @ rated speed (R4)	0.42 km/h (0.26 mph)	0.42 km/h (0.26 mph)	0.46 km/h (0.28 mph)
Forward Max @ rated speed (R4)	29.85 km/h (18.54 mph)	29.85 km/h (18.54 mph)	32.15 km/h (19.98 mph)
Reverse Min @ rated speed (R4)	0.42 km/h (0.26 mph)	0.42 km/h (0.26 mph)	0.45 km/h (0.27 mph)
Reverse Max @ rated speed (R4)	29.63 km/h (18.41 mph)	29.63 km/h (18.41 mph)	31.91 km/h (19.83 mph)
Forward Min @ rated speed (Turf)	0.39 km/h (0.24 mph)	0.39 km/h (0.24 mph)	0.42 km/h (0.26 mph)
Forward Max @ rated speed (Turf)	27.81 km/h (17.28 mph)	27.81 km/h (17.28 mph)	29.95 km/h (18.61 mph)
Reverse Min @ rated speed (Turf)	0.39 km/h (0.24 mph)	0.39 km/h (0.24 mph)	0.42 km/h (0.26 mph)
Reverse Max @ rated speed (Turf)	27.6 km/h (17.15 mph)	27.6 km/h (17.15 mph)	29.72 km/h (18.47 mph)
Forward Min @ rated speed (Galaxy Turf Special)	0.38 km/h (0.23 mph)	0.38 km/h (0.23 mph)	0.41 km/h (0.25 mph)
Forward Max @ rated speed (Galaxy Turf Special)	27.04 km/h (16.80 mph)	27.04 km/h (16.80 mph)	29.12 km/h (18.09 mph)
Reverse Min @ rated speed (Galaxy Turf Special)	0.38 km/h (0.23 mph)	0.38 km/h (0.23 mph)	0.41 km/h (0.25 mph)
Reverse Max @ rated speed (Galaxy Turf Special)	29.84 km/h (16.68 mph)	29.63 km/h (16.68 mph)	28.9 km/h (17.96 mph)

Weight

Boomer™ 3040 CVT	WE
Boomer™ 3045 CVT	WE
Boomer™ 3050 CVT	WE

CAST IRON WEIGHTS	Boomer 3040	Boomer 3045	Boomer 3050
Front End: Ag, R-4 & Turf Tires with FWD, & SuperSteer	(2) weights @ 29.7 kg (65.5 lb) each Optional (2) weights @ 45 kg (99 lb) each	(2) weights @ 29.7 kg (65 lb) each Optional (2) weights @ 45 kg (99 lb) each	(2) weights @ 29.7 kg (65 lb) each Optional (2) weights @ 45 kg (99 lb) each
Standard FWD Axle: (with extension bracket)	(5) weights @ 26 kg (57 lb) each Total 26 kg (300 lb) Or (5) weights @ 45 kg (99 lb) each Total 225 kg (496 lb)	(5) weights @ 26 kg (57 lb) each Total 26 kg (300 lb) Or (5) weights @ 45 kg (99 lb) each Total 225 kg (496 lb)	(5) weights @ 26 kg (57 lb) each Total 26 kg (300 lb) Or (5) weights @ 45 kg (99 lb) each Total 225 kg (496 lb)
SuperSteer Axle: (with extension bracket and adapter bracket) . . .	(2) weights @ 26 kg (57 lb) (3) weights @ 45 kg (99 lb) Total 420 lb	(2) weights @ 26 kg (57 lb) (3) weights @ 45 kg (99 lb) Total 420 lb	(2) weights @ 26 kg (57 lb) (3) weights @ 45 kg (99 lb) Total 420 lb
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	(4) weights (2) per wheel @ 34 kg (75 lb) each
Turf Tires	---	---	---
Ag. Tires	(4) weights (2) per wheel @ 48 kg (106 lb) each	(4) weights (2) per wheel @ 48 kg (106 lb) each	(4) weights (2) per wheel @ 48 kg (106 lb) each

General specification

Boomer™ 3040 CVT	WE
Boomer™ 3045 CVT	WE
Boomer™ 3050 CVT	WE

DRAWBARS

	Boomer 3040	Boomer 3045	Boomer 3050 Boomer 50D
Swinging/ Extendible	Standard	Standard	Standard

3 POINT HITCH

	Boomer 3040	Boomer 3045	Boomer 3050 Boomer 50D
Category Type	I	I	I
Position Control Type	Hydraulic	Hydraulic	Hydraulic
Drop Rate Control	Standard	Standard	Standard
Maximum Lift Capacity @ ball ends Kg (lb)	1606 kg (3541 lb)	1606 kg (3541 lb)	1606 kg (3541 lb)
Lift Capacity @ 24 in Behind Kg (lb)	1059 kg (2330 lb)	1059 kg (2330 lb)	1059 kg (2330 lb)

	Boomer 3040	Boomer 3045	Boomer 3050 Boomer 50D
TIRES FRONT:			
Agricultural: FWD	8x16, 6PR, R1	8x16, 6PR, R11	8x16, 6PR, R11
Turf: FWD	27x10.50-15, 4PR, R3 27/12LL x 15	27x10.50-15, 4PR, R3 27/12LL x 15	27x10.50-15, 4PR, R3 27/12LL x 15
Industrial: FWD	10x16.5, 6PR, R4	10x16.5, 6PR, R4	10x16.5, 6PR, R4
REAR: Agricultural	14.9x24, 4PR, R1	14.9x24, 4PR, R1	14.9x24, 4PR, R1
Turf	44x18-20, 4 PR, R3	44x18-20, 4 PR, R3	44x18-20, 4 PR, R3
Industrial	17.5x24, 8PR, R4	17.5x24, 8PR, R4	17.5x24, 8PR, R4
Galaxy Turf Special	22.5 LL x 16	22.5 LL x 16	22.5 LL x 16

Dimension General

Boomer™ 3040 CVT	WE
Boomer™ 3045 CVT	WE
Boomer™ 3050 CVT	WE

	Boomer 3040	Boomer 3045	Boomer 3050
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(1)-LENGTH Overall (w/Vertical 3 pt. Hitch) - mm (in.)

STD FWD

AG Tires	3098 mm (122 in)	3098 mm (122 in)	3098 mm (122 in)
R4 Tires	3098 mm (122 in)	3098 mm (122 in)	3098 mm (122 in)
Turf Tires	3098 mm (122 in)	3098 mm (122 in)	3098 mm (122 in)
Galaxy Turf Special	3098 mm (122 in)	3098 mm (122 in)	3098 mm (122 in)

	Boomer 3040	Boomer 3045	Boomer 3050
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SUPERSTEER

AG Tires	3288 mm (129.4 in)	3288 mm (129.4 in)	3288 mm (129.4 in)
R4 Tires	3288 mm (129.4 in)	3288 mm (129.4 in)	3288 mm (129.4 in)
Turf Tires	3288 mm (129.4 in)	3288 mm (129.4 in)	3288 mm (129.4 in)
Galaxy Turf Special	N/A	N/A	N/A

Boomer 3040	Boomer 3045	Boomer 3050
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(2) - WHEEL BASE:

FWD	1887 mm (74.3 in)	1887 mm (74.3 in)	1887 mm (74.3 in)
SuperSteer	2057 mm (81.0 in)	2057 mm (81.0 in)	2057 mm (81.0 in)

Boomer 3040	Boomer 3045	Boomer 3050
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(3) - WIDTH: Rear Axle-Outside

AG Tires - 14.9 x 24 Dished In	1687 mm (66.4 in)	1687 mm (66.4 in)	1687 mm (66.4 in)
Dished Out	2090 mm (82.3 in)	2090 mm (82.3 in)	2090 mm (82.3 in)
R4 Tires - 17.5 x 24 Dished In	1876 mm (73.9 in)	1876 mm (73.9 in)	1876 mm (73.9 in)
Dished Out	2184 mm (86 in)	2184 mm (86 in)	2184 mm (86 in)
Turf Tires - 44-18 x 20 Dished In	1819 mm (71.6 in)	1819 mm (71.6 in)	1819 mm (71.6 in)
Dished Out	1841 mm (72.5 in)	1841 mm (72.5 in)	1841 mm (72.5 in)
Galaxy Turf Special - 22.5LL x 16 Dished In	NA	NA	NA
Dished Out	2131 mm (83.9 in)	2131 mm (83.9 in)	2131 mm (83.9 in)

Boomer 3040	Boomer 3045	Boomer 3050
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(4)-GROUND CLEARANCE - mm (in.) (at * CL)

AG TIRES			
Std. FWD Minimum	318 mm (12.5 in)	318 mm (12.5 in)	318 mm (12.5 in)
Location (SUPERSTEER Clutch)	274 mm (10.8 in)	274 mm (10.8 in)	274 mm (10.8 in)
Front Axle Crop Clearance	403 mm (15.6 in)	403 mm (15.6 in)	403 mm (15.6 in)
Rear Axle Crop Clearance	433 mm (17.0 in)	433 mm (17.0 in)	433 mm (17.0 in)

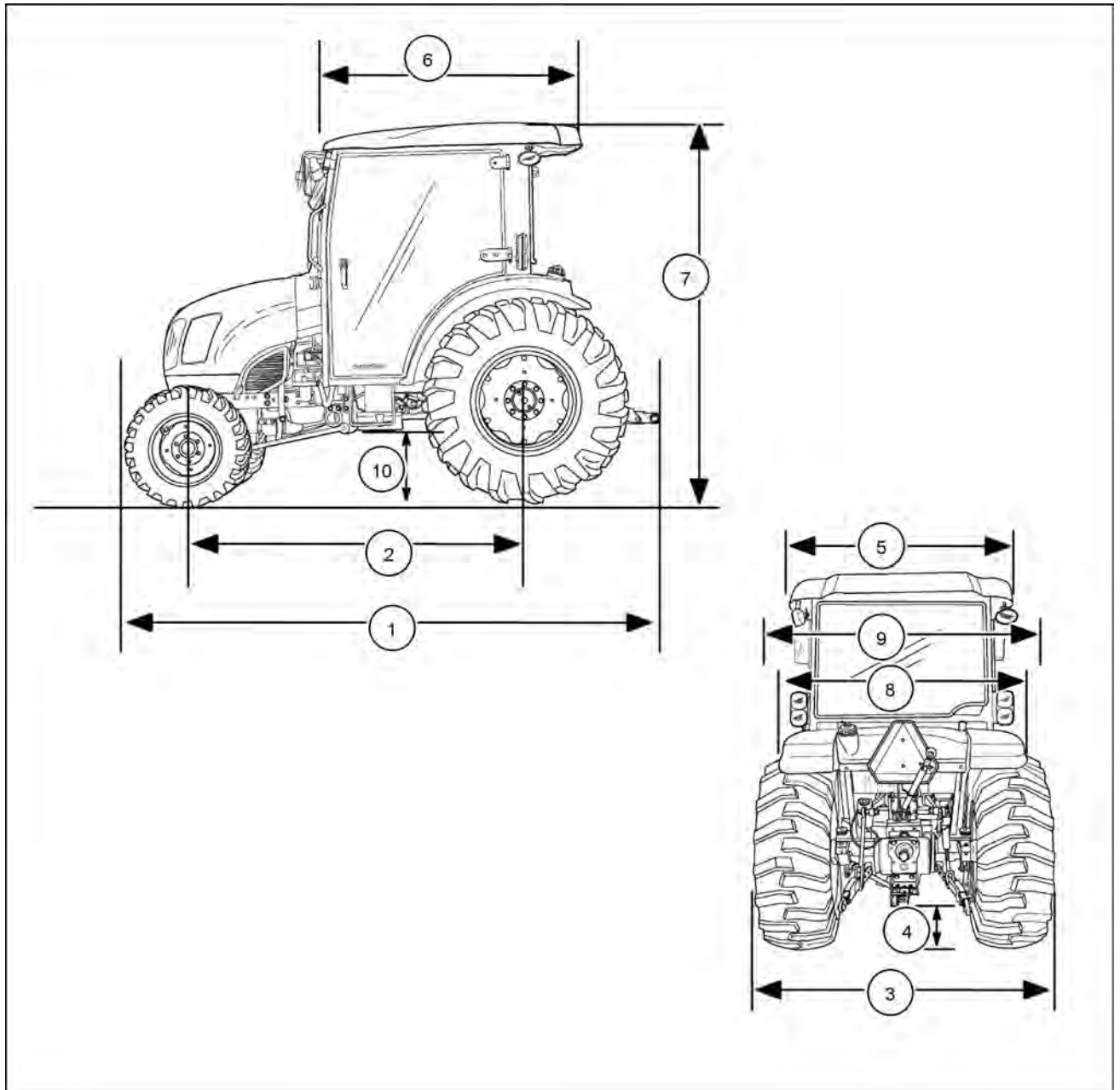
Boomer 3040	Boomer 3045	Boomer 3050
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R4 TIRES			
Std. FWD Minimum	302 mm (11.9 in)	302 mm (11.9 in)	302 mm (11.9 in)
Location (SUPERSTEER Clutch)	266 mm (10.8 in)	266 mm (10.8 in)	266 mm (10.8 in)
Front Axle Crop Clearance	395 mm (15.6 in)	395 mm (15.6 in)	395 mm (15.6 in)
Rear Axle Crop Clearance	417 mm (16.4 in)	417 mm (16.4 in)	417 mm (16.4 in)
TURF TIRES			
Std. FWD Minimum	280 mm (11.0 in)	280 mm (11.0 in)	280 mm (11.0 in)
Location (SUPERSTEER Clutch)	223 mm (8.8 in)	223 mm (8.8 in)	223 mm (8.8 in)
Front Axle Crop Clearance	352 mm (13.9 in)	352 mm (13.9 in)	352 mm (13.9 in)
Rear Axle Crop Clearance	395 mm (15.6 in)	395 mm (15.6 in)	395 mm (15.6 in)
GALAXY TURF SPECIAL			
Std. FWD Minimum	262 mm (10.3 in)	262 mm (10.3 in)	262 mm (10.3 in)

	Boomer 3040	Boomer 3045	Boomer 3050
Location (SUPERSTEER Clutch)	228 mm (9.0 in)	228 mm (9.0 in)	228 mm (9.0 in)
Front Axle Crop Clearance	357 mm (14.1 in)	357 mm (14.1 in)	357 mm (14.1 in)
Rear Axle Crop Clearance	377 mm (14.8 in)	377 mm (14.8 in)	377 mm (14.8 in)

* CL - Center Line of Tractor

	Boomer 3040	Boomer 3045	Boomer 3050
CAB DIMENSIONS:			
mm (in.)			
	1486 mm (58.5 in)	1486 mm (58.5 in)	1486 mm (58.5 in)
(5) - Width - Cab			
	1676 mm (66 in)	1676 mm (66 in)	1676 mm (66 in)
(6) - Length - Cab			
(7) - Height - Cab			
AG Tires FWD	2303 mm (90.65 in)	2303 mm (90.65 in)	2303 mm (90.65 in)
R4 Tires FWD	2292 mm (90.25 in)	2292 mm (90.25 in)	2292 mm (90.25 in)
Turf Tires FWD	2226 mm (87.65 in)	2226 mm (87.65 in)	2226 mm (87.65 in)
Galaxy Tires FWD	2242 mm (88.25 in)	2242 mm (88.25 in)	2242 mm (88.25 in)
	1486 mm (58.5 in)	1486 mm (58.5 in)	1486 mm (58.5 in)
(8) - Width - Standard Fenders			
	1727 mm (68 in)	1727 mm (68 in)	1727 mm (68 in)
(9) - Width - with Mirrors Extended			
Roof Overhang Length (rear)	330 mm (13 in)	330 mm (13 in)	330 mm (13 in)
Number of Steps (per tractor)	2 mm	2 mm	2 mm
(10) - Step Height			
AG Tires FWD	490 mm (19.3 in)	490 mm (19.3 in)	490 mm (19.3 in)
R4 Tires FWD	480 mm (18.9 in)	480 mm (18.9 in)	480 mm (18.9 in)
Turf Tires FWD	414 mm (16.3 in)	414 mm (16.3 in)	414 mm (16.3 in)
Galaxy Tires FWD	429 mm (16.9 in)	429 mm (16.9 in)	429 mm (16.9 in)
Cab Head Height			
Center of Seat to Inner Roof	972 mm (38.25 in)	972 mm (38.25 in)	972 mm (38.25 in)



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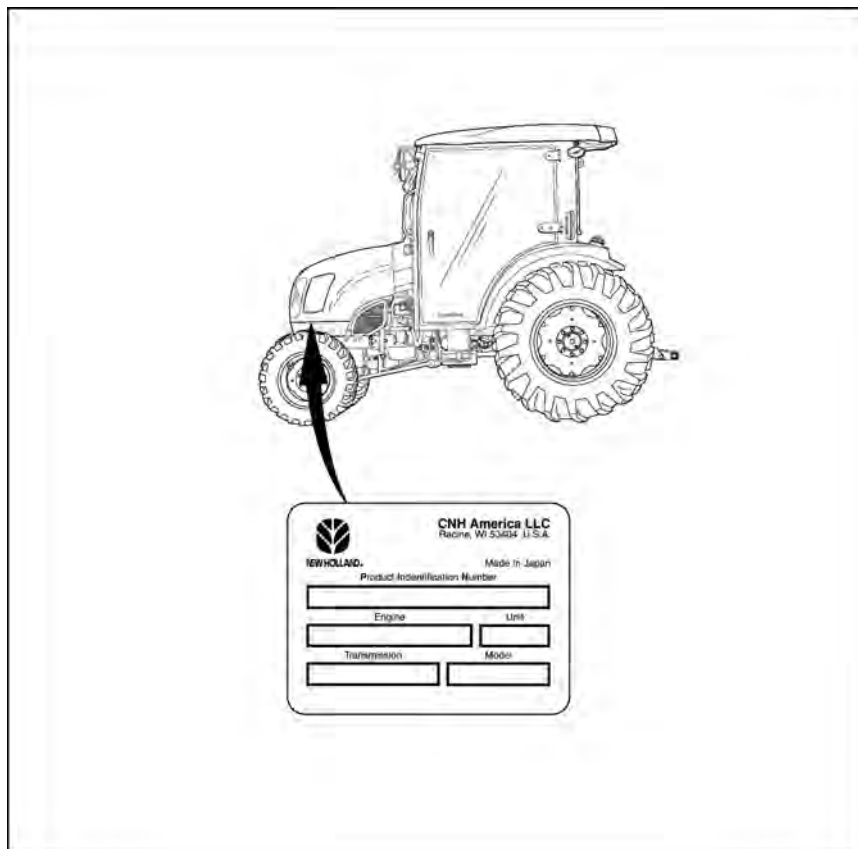
Product identification General information

Boomer™ 3040 CVT	WE
Boomer™ 3045 CVT	WE
Boomer™ 3050 CVT	WE

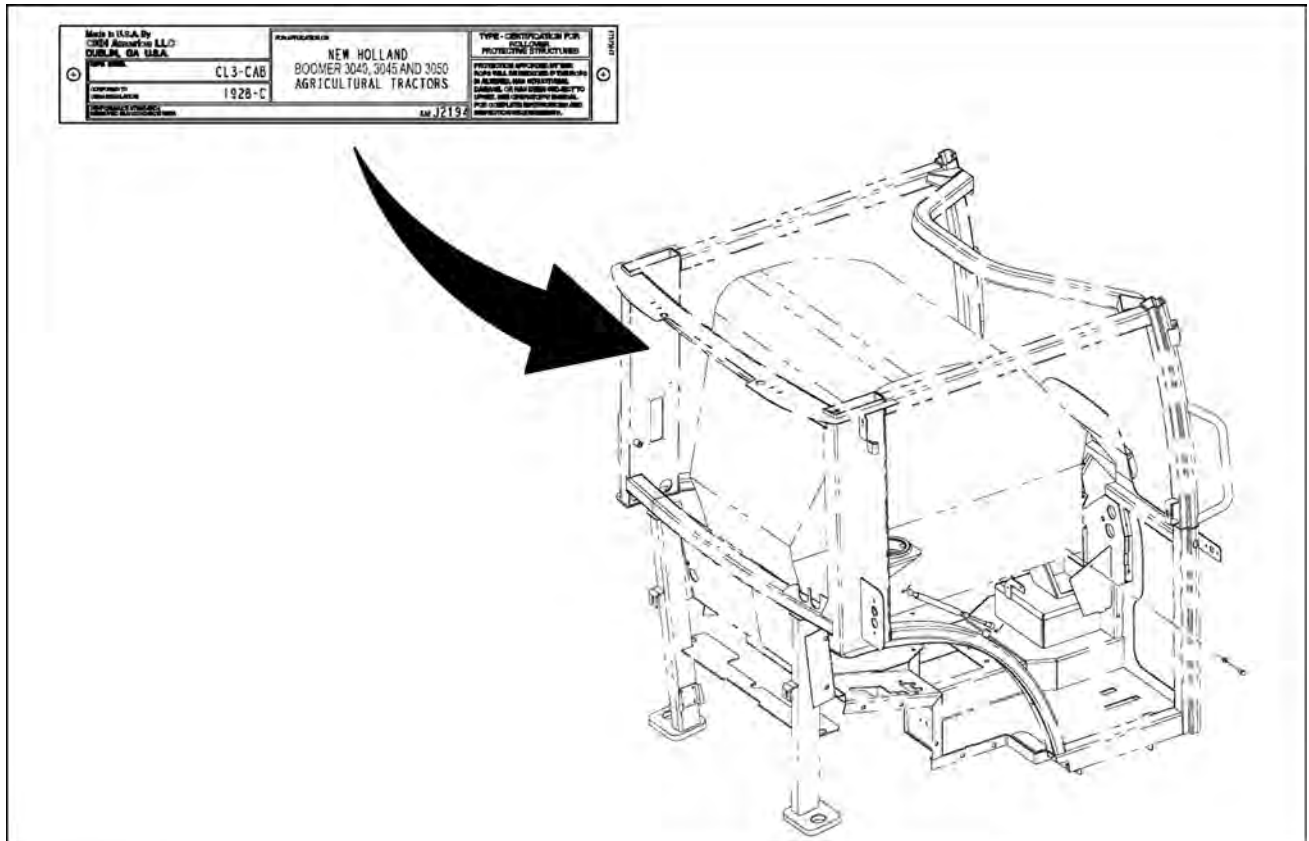
PLEASE READ CAREFULLY:

performed by your dealer, refer to the DELIVERY REPORT checklist found at the back of this manual. Keep one copy as your record of the service performed. The other copy should be removed from the manual and kept by your dealer. MAKE SURE THAT BOTH COPIES ARE COMPLETED AND THAT YOU AND THE DEALER SIGN BOTH COPIES.

A PRODUCT IDENTIFICATION PLATE is located on the left-hand side of the front frame.



76076252N 1



76083738N & 660 2

A CAB IDENTIFICATION PLATE is located inside on the left rear pillar of the cab. The identification numbers on these plates 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.

CNH America LLC is continually striving to improve its products. We reserve the right to change prices, specifications, 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.

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SERVICE MANUAL

Engine

**Boomer™ 3040 CVT [ZCMB11001 -], Boomer™ 3040 CVT [ZDMB11925 -],
Boomer™ 3045 CVT [ZCMB11001 -], Boomer™ 3045 CVT [ZDMB11925 -],
Boomer™ 3050 CVT [ZCMB11001 -], Boomer™ 3050 CVT [ZDMB11925 -]**

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**Boomer™ 3040 CVT [ZCMB11001 -], Boomer™ 3040 CVT [ZDMB11925 -],
Boomer™ 3045 CVT [ZCMB11001 -], Boomer™ 3045 CVT [ZDMB11925 -],
Boomer™ 3050 CVT [ZCMB11001 -], Boomer™ 3050 CVT [ZDMB11925 -]**

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(*) See content for specific models

Engine - General specification

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Boomer™ 3045 CVT	WE
Boomer™ 3050 CVT	WE

	Boomer 3040	Boomer 3045	Boomer 3050
Engine Model	ISM N844	ISM N844L	ISM N844L
Number of Cylinders	4	4	4
Bore x Stroke	84 mm x 90 mm (3.31 in x 3.54 in)	84 mm x 100 mm (3.31 in x 3.94 in)	84 mm x 100 mm (3.31 in x 3.94 in)
Displacement	1995 cm ³ (121.7 in ³)	2216 cm ³ (135.2 in ³)	2216 cm ³ (135.2 in ³)
Compression Ratio	22.5:1	22.5:1	22.5:1
Rated Speed	2600 RPM	2600 RPM	2800 RPM
Muffler			Horizontal
Firing Order	1-3-4-2	1-3-4-2	1-3-4-2
Low Idle Speed	1050 RPM	1050 RPM	1050 RPM
Maximum No-Load Speed	2825 RPM	2825 RPM	3025 RPM
Cylinder Arrangement	In-Line Vertical	In-Line Vertical	In-Line Vertical
Valve Arrangement	Overhead	Overhead	Overhead
Compression Pressure at 200 RPM(cylinder speed)	29.4 ± 1.8 bar (427 ± 50 psi)	29.4 ± 1.8 bar (427 ± 50 psi)	29.4 ± 1.8 bar (427 ± 50 psi)
Variation between cylinders			

Engine - Torque

Boomer™ 3040 CVT	WE
Boomer™ 3045 CVT	WE
Boomer™ 3050 CVT	WE

	Boomer 3040	Boomer 3045	Boomer 3050
Engine Model	ISM N844	ISM N844L	ISM N844L
TORQUE SPECIFICATION			
Connecting Rod Cap Bolts	49 - 54 N·m (36 - 40 lb ft)	49 - 54 N·m (36 - 40 lb ft)	49 - 54 N·m (36 - 40 lb ft)
Main Bearing Retaining Bolts	49 - 54 N·m (36 - 40 lb ft)	49 - 54 N·m (36 - 40 lb ft)	49 - 54 N·m (36 - 40 lb ft)
Relief Valve Assembly	59 - 69 N·m (43 - 51 lb ft)	59 - 69 N·m (43 - 51 lb ft)	59 - 69 N·m (43 - 51 lb ft)
Crankshaft Main Bearing Holder Bolts			
Rear Main	25 - 29 N·m (18 - 22 lb ft)	25 - 29 N·m (18 - 22 lb ft)	25 - 29 N·m (18 - 22 lb ft)
Center Mains	49 - 54 N·m (36 - 40 lb ft)	49 - 54 N·m (36 - 40 lb ft)	49 - 54 N·m (36 - 40 lb ft)
Engine Rear Mounting Plate	12 - 17 N·m (9 - 12 lb ft)	12 - 17 N·m (9 - 12 lb ft)	12 - 17 N·m (9 - 12 lb ft)
Flywheel Retaining Bolts	68 - 78 N·m (51 - 58 lb ft)	68 - 78 N·m (51 - 58 lb ft)	68 - 78 N·m (51 - 58 lb ft)
Engine Front Plate	9 - 12 N·m (6 - 9 lb ft)	9 - 12 N·m (6 - 9 lb ft)	9 - 12 N·m (6 - 9 lb ft)
Crankshaft Pulley Nut	274 - 333 N·m (202 - 246 lb ft)	274 - 333 N·m (202 - 246 lb ft)	274 - 333 N·m (202 - 246 lb ft)
Cylinder Head Bolts	98 - 103 N·m (72.3 - 76 lb ft)	98 - 103 N·m (72.3 - 76 lb ft)	98 - 103 N·m (72.3 - 76 lb ft)
Rocker Arm Assembly	27 - 39 N·m (20 - 29 lb ft)	27 - 39 N·m (20 - 29 lb ft)	27 - 39 N·m (20 - 29 lb ft)
Rocker Arm Locknut	11 - 16 N·m (8 - 12 lb ft)	11 - 16 N·m (8 - 12 lb ft)	11 - 16 N·m (8 - 12 lb ft)
Oil Tube Banjo Bolt	9 - 13 N·m (7 - 9 lb ft)	9 - 13 N·m (7 - 9 lb ft)	9 - 13 N·m (7 - 9 lb ft)
Oil Pressure Switch	14 - 20 N·m (10 - 14 lb ft)	14 - 20 N·m (10 - 14 lb ft)	14 - 20 N·m (10 - 14 lb ft)
Rocker Cover Bolts	7 - 12 N·m (6 - 9 lb ft)	7 - 12 N·m (6 - 9 lb ft)	7 - 12 N·m (6 - 9 lb ft)
Glow Plugs	14 - 20 N·m (10 - 14 lb ft)	14 - 20 N·m (10 - 14 lb ft)	14 - 20 N·m (10 - 14 lb ft)
Cooling Fan Bolts	9 - 13 N·m (7 - 9 lb ft)	9 - 13 N·m (7 - 9 lb ft)	9 - 13 N·m (7 - 9 lb ft)
Balancer			
Retaining Bolts	49 - 53.9 N·m (36 - 39 lb ft)	49 - 53.9 N·m (36 - 39 lb ft)	49 - 53.9 N·m (36 - 39 lb ft)

Metric Bolt Torque Specifications

Bolt Size	Grade No.	Coarse Thread Fine Thread		Fine Thread	
		Pitch	Torque	Pitch	Torque
M6	4T		4.9 - 6.9 N·m (3.6 - 5.1 lb ft)		
	7T	1.0	8.3 - 11.3 N·m (6.1 - 8.3 lb ft)		
	10T		11.8 - 15.7 N·m (8.7 - 11.6 lb ft)		
M8	4T		12.7 - 16.7 N·m (9.4 - 12.3 lb ft)		15.2 - 20.1 N·m (11.2 - 14.8 lb ft)
	7T	1.25	22.6 - 28.4 N·m (16.6 - 21.0 lb ft)	1.0	26.5 - 34.3 N·m (19.5 - 25.3 lb ft)
	10T		28.4 - 36.3 N·m (21.0 - 26.8 lb ft)		30.4 - 40.2 N·m (22.4 - 29.7 lb ft)
M10	4T		25.5 - 33.3 N·m (18.8 - 24.6 lb ft)		28.4 - 36.3 N·m (21.0 - 26.8 lb ft)
	7T	1.5	44.1 - 55.9 N·m (32.5 - 41.2 lb ft)	1.25	49.0 - 62.8 N·m (36.2 - 46.3 lb ft)
	10T		53.9 - 69.6 N·m (39.8 - 51.4 lb ft)		57.9 - 73.5 N·m (42.7 - 54.2 lb ft)
M12	4T		37.3 - 47.1 N·m (27.5 - 34.7 lb ft)		43.1 - 54.9 N·m (31.8 - 40.5 lb ft)
	7T	1.75	65.7 - 83.4 N·m (48.5 - 61.5 lb ft)	1.25	74.5 - 94.1 N·m (55.0 - 69.4 lb ft)
	10T		92.2 - 116 N·m (68.0 - 85.4 lb ft)		99.0 - 127 N·m (73.1 - 93.3 lb ft)
M14	4T		62.8 - 80.4 N·m (46.3 - 59.3 lb ft)		69.6 - 87.3 N·m (51.4 - 64.4 lb ft)
	7T	2.0	104 - 131 N·m (76.7 - 96.9 lb ft)	1.5	117 - 148 N·m (86.1 - 109 lb ft)
	11T		139 - 175 N·m (102 - 129 lb ft)		147 - 186 N·m (108 - 137 lb ft)
M16	4T		86.3 - 110 N·m (63.6 - 81.0 lb ft)		91.2 - 115 N·m (67.3 - 84.6 lb ft)
	7T	2.0	140 - 184 N·m (110 - 136 lb ft)	1.5	157 - 192 N·m (116 - 142 lb ft)
	11T		206 - 255 N·m (152 - 188 lb ft)		221 - 270 N·m (163 - 199 lb ft)
M18	4T		114 - 141 N·m (83.9 - 104 lb ft)		131 - 163 N·m (96.9 - 120 lb ft)
	7T	2.0	196 - 235 N·m (145 - 174 lb ft)	1.5	230 - 279 N·m (170 - 206 lb ft)
	11T		275 - 333 N·m (203 - 246 lb ft)		299 - 368 N·m (221 - 271 lb ft)
M20	4T		144 - 179 N·m (106 - 132 lb ft)		172 - 211 N·m (127 - 156 lb ft)
	7T	2.5	240 - 289 N·m (177 - 213 lb ft)	1.5	275 - 333 N·m (203 - 246 lb ft)
	11T		363 - 441 N·m (268 - 325 lb ft)		397 - 485 N·m (293 - 358 lb ft)

Engine - Special tools

Boomer™ 3040 CVT	WE
Boomer™ 3045 CVT	WE
Boomer™ 3050 CVT	WE

Tool No.	Description
FNH01721	Injector Tester
FNH00120	Adapter - Compression Tester
FNH01728	Injector Adapter Set
OEM1074	Compression Test Gauge Assembly
FNH01720	Injector Cleaning Kit
380002887	Port Block Installer
FNH11044	Port Block Installer Pins
380002888	Port Block Remover
380002904	Oil Pressure Test Fitting
Micrometer, Outside	0 - 25 mm (0 - 1 in)
Micrometer, Outside	25 - 51 mm (1 - 2 in)
Micrometer, Outside	76.2 - 101.6 mm (3 - 4 in)
Small Hole Gauge	19 - 25 mm (0.75 - 1 in)
Cylinder Bore Gauge	76.2 - 101.6 mm (3 - 4 in)
Cylinder Bore Gauge	25 - 51 mm (1 - 2 in)

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