SERVICE MANUAL

Backhoe Loaders LB75.B - LB90 - LB110 - LB115.B

NEW HOLLAND
CONSTRUCTION

PROPRIETARY NOTICE

The contents of this manual are proprietary data of New Holland Construction. Reproduction or use of any part for other than the operation and maintenance of New Holland Construction equipment is permissible only if expressly authorized in writing by New Holland Construction.
Additional copies may be obtained from your New Holland Construction Dealer. Address requests for copies to your Dealer and refer to the publication number appearing on the bottom of the manual cover.

COMPANY POLICY

Company policy, which is one of continuous improvement, reserves the right to change prices and to make changes in design and specification at any time without notice and without obligation to modify units previously built.
All data given in this book is subject to production variations. Dimensions and weights are approximate only and the illustrations do not necessarily show machines in standard condition. For exact information about any particular machine please consult your New Holland Construction Dealer.

PARTS AND ACCESSORIES

Genuine parts and accessories have been specifically designed for these machines.
We would like to point out that "non-genuine" parts and accessories have NOT been examined and released by the Company. The installation and or use of such products could have negative effects upon the design characteristics of your machine and thereby affect its safety. The company is not liable for any damage caused by the use of "non-genuine" parts and accessories.

MODEL CODES

The range of machines listed may not be available in all countries or markets therefore, for the latest information consult your local New Holland Construction Dealer.

MODEL	ENGINE TYPE - H.P.
LB75.B	92 hp / 69 kw Naturaly Aspirated
LB90	98 hp / 73 kw Turbocharged
LB110	108 hp / 79 kw Turbocharged
LB115.B	108 hp / 79 kw

OWNER ASSISTANCE

We at New Holland and your New Holland dealer want you to be completely satisfied with your investment. Normally any problems with your equipment will be handled by your dealer's Service Department. Sometimes, however, misunderstandings can occur. If your problem has not been handled to your satisfaction, we suggest the following.

1. Contact the owner or General Manager of the dealership, explain the problem, and request assistance. When additional assistance is needed, your dealer has direct access to our office.

2. If you cannot obtain satisfaction by doing this, contact the New Holland Construction office and provide them with:

- Your name, address, and telephone number
- Machine model and serial number
- Dealership name and address
- Machine purchase date and amount of use
- Nature of problem

NEW HOLLAND CONSTRUCTION

245 E North Ave

Carol Stream, IL 60188

Ph # (630) 260-4000

When contacting New Holland, be aware that your problem will likely be resolved in the dealership using the dealer's facilities, equipment, and personnel. So it is important that your initial contact be with the dealer.

SPARE PARTS

To maintain operating efficiency, use NEW HOLLAND original spare parts.
When ordering parts, give the following information:

- Machine model
- Machine and engine serial numbers
- Part number from the Parts Catalog

TO THE OWNER:

The warranty coverage that is extended to your machine is explained in the Warranty and Limitation of Liability form. Your dealer will provide you with a copy of the warranty and retain a copy which you have signed. After you read the warranty, ask your dealer to explain any points that you may not understand.

The machine was designed to power and propel itself. It is intended to move material in the normal and customary applications.

Do not modify or alter or permit anyone else to modify or alter this machine or any of its components mechanical function with first consulting an authorized New Holland Construction dealer. If you have any questions regarding machine modifications, contact New Holland Construction, 245 E. North Ave., Carol Stream, IL 60188.

Your safety and the safety of those around you depend upon the care and good judgment you use while operating this equipment. Read the safety precautions carefully.

After you have operated the machine for 50 hours, take your machine and this manual to your selling dealer. He will perform the factory recommended 50-hour service. You will be responsible for the cost of lubricants, fluids, filters and other items replaced as part of normal maintenance. Prior to taking the machine to your selling dealer for service, it is recommended that you contact them to determine any other charges for which you may be responsible.

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

CAUTION: THIS SYMBOL IS USED THROUGHOUT THIS BOOK WHENEVER PERSONAL SAFETY IS INVOLVED. TAKE TIME TO READ AND FOLLOW THE INSTRUCTIONS. BE CAREFUL!

CAUTION: PICTURES IN THIS MANUAL MAY SHOW PROTECTIVE SHIELDING OPEN OR REMOVED TO BETTER ILLUSTRATE A PARTICULAR FEATURE OR ADJUSTMENT.

BE CERTAIN, HOWEVER, TO CLOSE OR REPLACE ALL SHIELDING BEFORE OPERATING THE MACHINE.

IMPROVEMENTS

New Holland Construction is continually striving to improve its products. We reserve the right to make improvements or changes when it becomes practical and possible to do so, without incurring any obligation to make changes or additions to the equipment sold previously.

PRECAUTIONARY STATEMENTS

PERSONAL SAFETY

Throughout this manual and on machine decals, you will find precautionary statements ("CAUTION", "WARNING", and "DANGER") followed by specific instructions. These precautions are intended for the personal safety of you and those working with you. Please take the time to read them.

CAUTION: THE WORD "CAUTION" IS USED WHERE A SAFE BEHAVIORAL PRACTICE ACCORDING TO OPERATING AND MAINTENANCE INSTRUCTIONS AND COMMON SAFETY PRACTICES WILL PROTECT THE OPERATOR AND OTHERS FROM ACCIDENT INVOLVEMENT.

WARNING: THE WORD WARNING DENOTES A POTENTIAL OR HIDDEN HAZARD WHICH HAS A POTENTIAL FOR SERIOUS INJURY. IT IS USED TO WARN OPERATORS AND OTHERS TO EXERCISE EVERY APPROPRIATE MEANS TO AVOID A SURPRISE INVOLVEMENT WITH MACHINERY.

DANGER: THE WORD "DANGER" DENOTES A FORBIDDEN PRACTICE IN CONNECTION WITH A SERIOUS HAZARD.

FAILURE TO FOLLOW THE "CAUTION", "WARNING", "DANGER", AND "STOP" INSTRUCTIONS MAY RESULT IN SERIOUS BODILY INJURY OR DEATH.

MACHINE SAFETY

Additional precautionary statements ("ATTENTION" and "IMPORTANT") are followed by specific instructions. These statements are intended for machine safety.

ATTENTION: The word "ATTENTION" is used to warn the operator of potential machine damage if a certain procedure is not followed.

IMPORTANT: The word "IMPORTANT" is used to inform the reader of something he needs to know to prevent minor machine damage if a certain procedure is not followed.

SAFETY RULES

This symbol is your safety alert sign. It means **ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!**

Read and heed all safety instruction carrying the signal words **WARNING** and **DANGER**.

STUDY THE OPERATION AND MAINTENANCE INSTRUCTION MANUAL THROUGHLY BEFORE STARTING, OPERATING, MAINTAINING, FUELING OR SERVICING THIS MACHINE.

MOST ACCIDENTS ARE CAUSED BY FAILURE OF SOME INDIVIDUAL TO FOLLOW SIMPLE AND FUNDAMENTAL SAFETY RULES OR PRECAUTION. FOR THIS REASON MOST ACCIDENTS CAN BE PREVENTED BY RECOGNIZING THE REAL CAUSE AND DOING SOMETHING ABOUT IT BEFORE ACCIDENT OCCURS. REGARDLESS OF THE CARE USED IN THE DESIGN AND CONSTRUCTION OF ANY TYPE OF EQUIPMENT THERE ARE MANY CONDITIONS THAT CAN'T BE COMPLETELY SAFEGUARDED AGAINST WITHOUT INTERFERING WITH REASONABLE ACCESSIBILITY AND EFFICIENT OPERATION.

CALIFORNIA

PROPOSITION 65 WARNING

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

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IMPORTANT NOTICE

All maintenance and repair operations described in this manual should be carried out exclusively by authorised workshops. All instructions detailed should be carefully observed and special equipment indicated should be used if necessary.
Everyone who carries out service operations described without carefully observing these prescriptions will be directly responsible of deriving damages.

SHIMMING

At each adjustment, select adjusting shims, measure them individually using a micrometer and then sum up recorded values. Do not rely on measuring the whole shimming set, which may be incorrect, or on rated value indicated for each shim.

ROTATING SHAFT SEALS

To correctly install rotating shaft seals, observe the following instructions:

- Let the seal soak into the same oil as it will seal for at least half an hour before mounting;
- Thoroughly clean the shaft and ensure that the shaft working surface is not damaged;
- Place the sealing lip towards the fluid. In case of a hydrodynamic lip, consider the shaft rotation direction and orient grooves in order that they deviate the fluid towards the inner side of the seal;
- Coat the sealing lip with a thin layer of lubricant (oil rather than grease) and fill with grease the gap between the sealing lip and the dust lip of double lip seals;
- Insert the seal into its seat and press it down using a flat punch. Do no tap the seal with a hammer or a drift;
- Take care to insert the seal perpendicularly to its seat while you are pressing it. Once the seal is settled, ensure that it contacts the thrust element if required.;
- To prevent damaging the sealing lip against the shaft, place a suitable protection during installation.

‘O’ RINGS

Lubricate the ‘O’ rings before inserting them into their seats. This will prevent the ‘O’ rings from rolling over and twine during mounting which will jeopardise sealing.

SEALERS

Apply FLEXIBLE GASKET SEALANT 82995770 or a suitable equivalent, over the mating surfaces marked with an X.
Before applying the sealer, prepare the surface as follows:

- remove possible scales using a metal brush;
- thoroughly degrease the surfaces using DEGREASER 82995779, or a suitable equivalent.

BEARINGS

It is advisable to heat the bearings to 80 to 90°C before mounting them on their shafts and cool them down before inserting them into their seats with external tapping.

SPRING PINS

When mounting split socket spring pins, ensure that the pin notch is oriented in the direction of the effort to stress the pin.
Spiral spring pins should not be oriented during installation.

NOTES FOR SPARE PARTS

USE EXCLUSIVELY **GENUINE SPARE PARTS**

Only genuine parts guarantee same quality, life, safety as original components as they are the same as mounted in production.
Only the **genuine spare parts** can offer this guarantee.
All spare parts orders should be complete with the following data:

– Machine model (commercial name) and frame number;
– engine type and number;
– part number of the ordered part, which can be found on the “Microfiches” or the “Spare Parts Catalogue”, which is the base for order processing.

NOTES FOR EQUIPMENT

Equipment which proposes and shows in this manual are as follows:

– studied and designed expressly for use on company machines;
– necessary to make a reliable repair;
– accurately built and strictly tested to offer efficient and long–lasting working means.
– we also remind the Repair Personnel that having these equipment means:
– work in optimal technical conditions;
– obtain best results;
– save time and effort;
– work more safely.

NOTICES

Wear limits indicated for some details should be intended as advised, but not binding values. The words “front”, “rear”, “right hand”, and “left hand” referred to the different parts should be intended as seen from the operator’s seat oriented to the normal sense of movement of the Machine.

HOW TO MOVE THE MACHINE WITH THE BATTERY REMOVED

Cables from the external power supply should be connected exclusively to the respective terminals of the Machine positive and negative cables using pliers in good condition which allow proper and steady contact.
Disconnect all services (lights, wind–shield wipers, etc.) before starting the Machine.
If it is necessary to check the Machine electrical system, check it only with the power supply connected. At check end, disconnect all services and switch the power supply off before disconnecting the cables.

SAFETY RULES

PAY ATTENTION TO THIS SYMBOL

This warning symbol points out important messages involving personal safety. Carefully read the safety rules contained herein and follow advised precautions to avoid potential hazards and safeguard your safety and personal integrity.
In this manual you will find this symbol together with the following key–words:

***WARNING (ATTENZIONE)** – it gives warning about improper repair operations and deriving potential consequences affecting the service technician's personal safety.*

***DANGER (PERICOLO)** – it gives specific warning about potential dangers for personal safety of the operator or other persons directly or indirectly involved.*

TO PREVENT ACCIDENTS

Most accidents and personal injuries taking place in workshops are due from non–observance of some simple and essential prudential rule and safety precautions. For this reason, IN MOST CASES THEY CAN BE AVOIDED. It suffices to foresee possible causes and act consequently with necessary caution and care.

The possibility that an accident might occur with any type of machines should not be disregarded, no matter how well the machine in question was designed and built.

A wise and careful service technician is the best precautions against accidents.

Careful observance of this only basic precaution would be enough to avoid many severe accidents.

DANGER: Never carry out any cleaning, lubrication or maintenance operations when the engine is running.

SAFETY RULES

- Carefully follow specified repair and maintenance procedures.
- Do not wear rings, wristwatches, jewels, unbuttoned or flapping clothing such as ties, torn clothes, scarves, open jackets or shirts with open zips which could get hold into moving parts. We advise to use approved safety clothing such as anti–slipping footwear, gloves, safety goggles, helmets, etc.
- Never carry out any repair on the machine if someone is sitting on the operator's seat, except if they are certified operators to assist in the operation to be carried out.
- Never operate the machine or use attachments from a place other than sitting at the operator's seat.
- Never carry out any operation on the machine when the engine is running, except when specifically indicated.
- Stop the engine and ensure that all pressure is relieved from hydraulic circuits before removing caps, covers, valves, etc.
- All repair and maintenance operations should be carried out with the greatest care and attention.
- Service stairs and platforms used in a workshop or in the field should be built in compliance with the safety rules in force.
- Disconnect the batteries and label all controls to warn that the Machine is being serviced. Block the machine and all equipment which should be raised.
- Never check or fill fuel tanks and accumulator batteries, nor use starting liquid if you are smoking or near open flames as such fluids are flammable.
- Brakes are inoperative when they are manually released for maintenance purposes. In such cases, the machine should be kept constantly under control using blocks or similar devices.
- The fuel filling gun should remain always in contact with the filler neck. Maintain this contact until the fuel stops flowing into the tank to avoid possible sparks due to static electricity buildup.
- Use exclusively specified towing points for towing the Machine. Connect parts carefully. Ensure that foreseen pins and/or locks are steadily fixed before applying traction. Do not stop near towing bars, cables or chains working under load.
- To transfer a failed Machine, use a trailer or a low loading platform trolley if available.
- To load and unload the machine from the transportation mean, select a flat area providing a firm support to the trailer or truck wheels. Firmly tie the machine to the truck or trailer platform and block wheels as required by the forwarder.
- For electrical heaters, battery–chargers and similar equipment use exclusive auxiliary power supplies with a efficient ground to avoid electrical shock hazard.

- Always use lifting equipment and similar of appropriate capacity to lift or move heavy components.
- Pay special attention to bystanders.
- Never pour gasoline or diesel oil into open, wide and low containers.
- Never use gasoline, diesel oil or other flammable liquids as cleaning agents. Use non–flammable non–toxic proprietary solvents.
- Wear protection goggles with side guards when cleaning parts using compressed air.
- Do not exceed a pressure of 2.1 bar, in accordance with local regulations.
- Do not run the engine in a closed building without proper ventilation.
- Do not smoke, use open flames, cause sparks in the nearby area when filling fuel or handling highly flammable liquids.
- Do not use flames as light sources when working on a machine or checking for leaks.
- Move with caution when working under a Machine, and also on or near a Machine. Wear proper safety accessories: helmets, goggles and special footwear.
- During checks which should be carried out with the engine running, ask an assistant to seat at the operator's seat and keep the service technician under visual control at any moment.
- In case of operations outside the workshop, drive the Machine to a flat area and block it. If working on an incline cannot be avoided, first block the Machine carefully. Move it to a flat area as soon as possible with a certain extent of safety.
- Ruined or plied cables and chains are unreliable. Do not use them for lifting or trailing. Always handle them wearing gloves of proper thickness.
- Chains should always be safely fastened. Ensure that fastening device is strong enough to hold the load foreseen. No persons should stop near the fastening point, trailing chains or cables.
- The working area should be always kept CLEAN and DRY. Immediately clean any spillage of water or oil.
- Do not pile up grease or oil soaked rags, as they constitute a great fire hazard. Always place them into a metal container.
  Before starting the Machine or its attachments, check, adjust and block the operator's seat. Also ensure that there are no persons within the Machine or attachment operating range.
- Do not keep into your pockets any object which might fall unobserved into the Machine's inner compartments.
- Whenever there is the possibility of being reached by ejected metal parts or similar, use protection eye mask or goggles with side guards, helmets, special footwear and heavy gloves.
- Wear suitable protection such as tinted eye protection, helmets, special clothing, gloves and footwear whenever it is necessary to carry out welding procedures. All persons standing in the vicinity of the welding process should wear tinted eye protection. NEVER LOOK AT THE WELDING ARC IF YOUR EYES ARE NOT SUITABLY PROTECTED.
- Metal cables with the use get frayed. Always wear adequate protections (heavy gloves, eye protection, etc.)
- Handle all parts with the greatest caution. Keep your hands and fingers far from gaps, moving gears and similar. Always use approved protective equipment, such as eye protection, heavy gloves and protective footwear.

START UP

- Never run the engine in confined spaces which are not equipped with adequate ventilation for exhaust gas extraction.
- Never bring your head, body, arms, legs, feet, hands, fingers near fans or rotating belts.

ENGINE

- Always loosen the radiator cap very slowly before removing it to allow pressure in the system to dissipate. Coolant should be topped up only when the engine is stopped or idle if hot.
- Do not fill up fuel tank when the engine is running, mainly if it is hot, to avoid ignition of fires in case of fuel spilling.
- Never check or adjust the fan belt tension when the engine is running.
  Never adjust the fuel injection pump when the Machine is moving.
- Never lubricate the Machine when the engine is running.

ELECTRICAL SYSTEMS

- If it is necessary to use auxiliary batteries, cables must be connected at both sides as follows: (+) to (+) and (–) to (–). Avoid short–circuiting the terminals. GAS RELEASED FROM BATTERIES IS HIGHLY FLAMMABLE. During charging, leave the battery compartment uncovered to improve ventilation. Avoid checking the battery charge by means of “jumpers” made by placing metallic objects across the terminals. Avoid sparks or flames near the battery area. Do no smoke to prevent explosion hazards.
- Prior to any service, check for fuel or coolant leaks. Remove these leaks before going on with the work.
- Do not charge batteries in confined spaces. Ensure that ventilation is appropriate to prevent accidental explosion hazard due to build–up of gasses relieved during charging.
- Always disconnect the batteries before performing any type of service on the electrical system.

HYDRAULIC SYSTEMS

- Some fluid slowly coming out from a very small port can be almost invisible and be strong enough to penetrate the skin. For this reason, NEVER USE YOUR HANDS TO CHECK FOR LEAKS, but use a piece of cardboard or a piece of wood to this purpose. If any fluid is injected into the skin, seek medical aid immediately. Lack of immediate medical attention, serious infections or dermatosis may result.
- Always take system pressure readings using the appropriate gauges.

WHEELS AND TIRES

- Check that the tiers are correctly inflated at the pressure specified by the manufacturer. Periodically check possible damages to the rims and tires.
- Keep off and stay at the tyre side when correcting the inflation pressure.
- Check the pressure only when the Machine is unloaded and tires are cold to avoid wrong readings due to over–pressure. Do not reuse parts of recovered wheels as improper welding, brazing or heating may weaken the wheel and make it fail.
- Never cut, nor weld a rim with the inflated tyre assembled.
- To remove the wheels, block both front and rear Machine wheels. Raise the Machine and install safe and stable supports under the Machine in accordance with regulations in force.
- Deflate the tyre before removing any object caught into the tyre tread.
- Never inflate tires using flammable gases as they may originate explosions and cause injuries to bystanders.

REMOVAL AND INSTALLATION

- Lift and handle all heavy components using lifting equipment of adequate capacity. Ensure that parts are supported by appropriate slings and hooks. Use lifting eyes provided to this purpose. Take care of the persons near the loads to be lifted.
- Handle all parts with great care. Do not place your hands or fingers between two parts. Wear approved protective clothing such as safety goggles, gloves and footwear.
- Do not twine chains or metal cables. Always wear protection gloves to handle cables or chains.

PRODUCT IDENTIFICATION

The Backhoe Loader and its major components are identified by serial numbers and letters for recognition in After Sales Service. The following information provides the locations of these identification plates, stamped numbers and examples of what can be found on the machine.

VEHICLE SERIAL NUMBER (1), Figure 1.

The Serial Number is stamped on the top of the right hand main frame, in front of the right hand loader post, in position (1). . . . . .
*Example: *000005017**

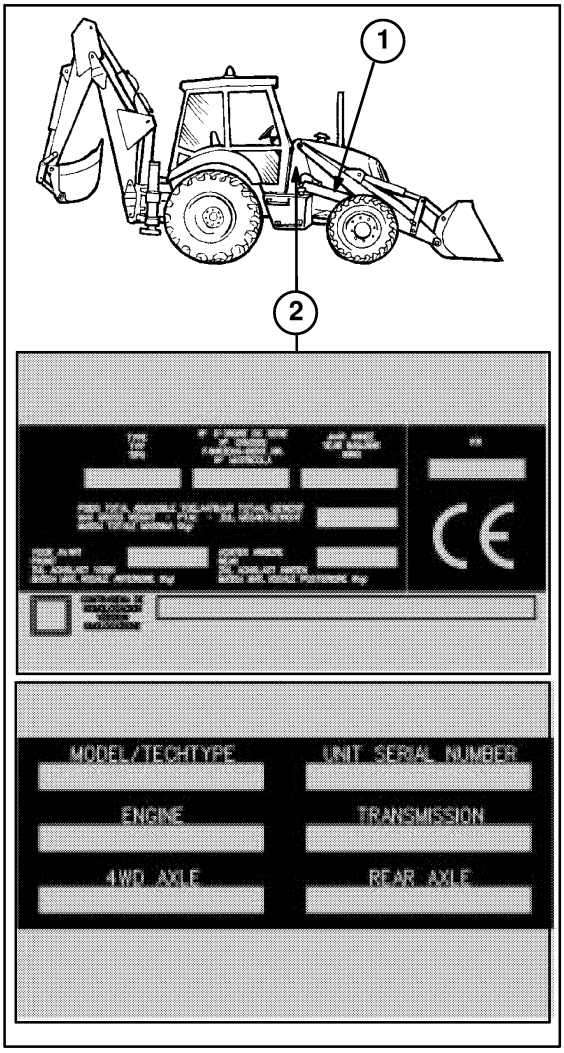
VEHICLE IDENTIFICATION PLATE'S (2), Figure 1.

The machine identification plate's are located on the right–hand loader post, as shown at position (2). Record the data of your machine below.

MODEL/TECHNICAL TYPE _____
*Example: *699.510.700**

UNIT SERIAL NO. _____
*Example: *000005017**

YEAR _____
*Example: *1995**



1

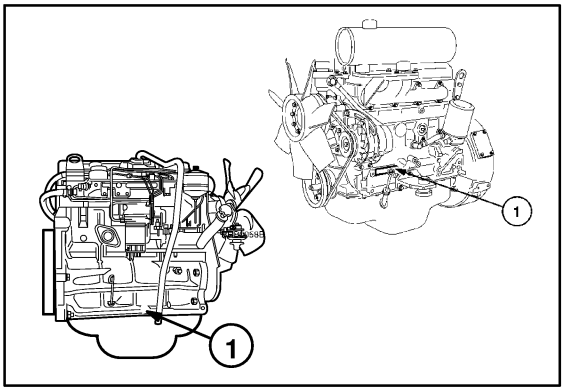
ENGINE IDENTIFICATION, Figure 2.

The engine identification information is located on the right hand engine sump rail. Record the information below for quick reference.

MODEL NO._____
*Example: *EA5**

SERIAL NO._____
*Example: **57018**

DATE CODE._____
*Example:*5J25*=5(1995),J(September),25(Day)*



2

FRONT WHEEL DRIVE IDENTIFICATION

The serial number and axle type is printed on the plate (1), located on the front of the axle housing. Record the information below for quick reference.

AXLE TYPE _____

*Example: *26–18**

SERIAL NO. _____

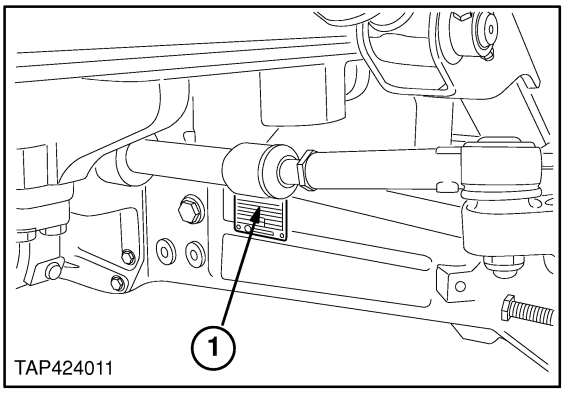
*Example: *000102**

ROTATION_____

Example: LH = Left Hand RH = Right Hand

RATIO_____

Example: 12.33 to 1 – 12.8 to 1



3

TRANSMISSION, P/SHUTTLE

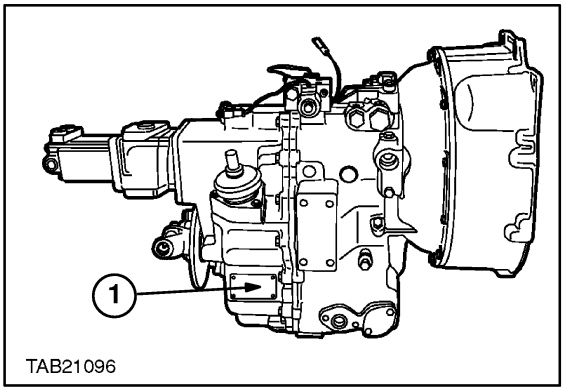
The serial number and type is printed on the plate (1), on the lower right side of the transmission. Record the information below for quick reference.

MODEL NO. _____

*Example: *COM–T4–2025**

SERIAL NO. _____

*Example: *15647 E95 01**



4

TRANSMISSION, P/SHIFT Figure 5

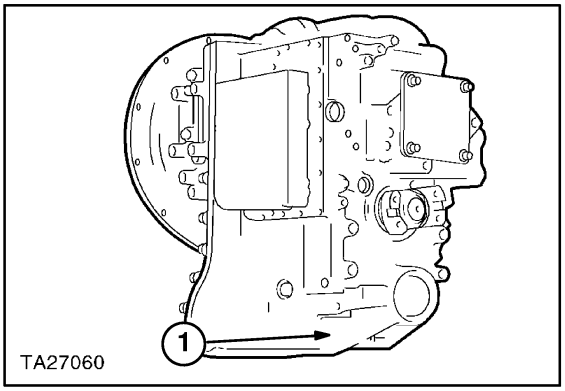
The serial number and type is printed on the plate (1), on the lower right side of the transmission. Record the information below for quick reference.

MODEL NO. _____

*Example: *GT PRODUCTION **

SERIAL NO. _____

*Example: *TBEA 419323 09/96**



5

REAR AXLE IDENTIFICATION, Figure 6

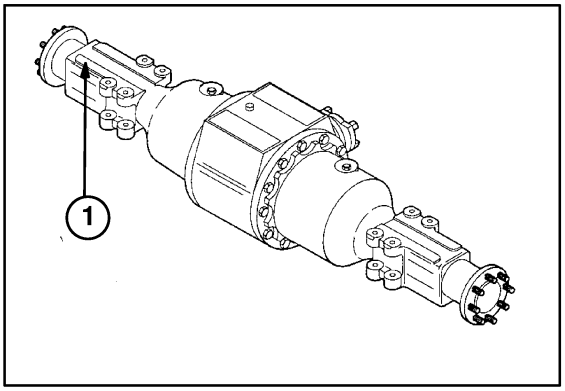
The serial number (1) is stamped on the left side of the rear axle housing. Record the serial number below for quick reference.

MODEL NO. _____

*Example: *85801201**

DATE CODE_____

Example: 5D05=5(1995), D(APRIL), 05(DAY)



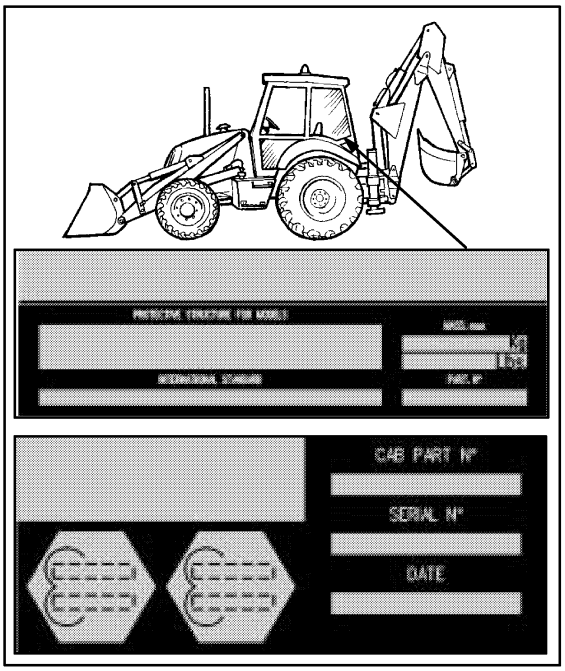
6

CAB IDENTIFICATION PLATES, Figure 7

The cab serial number and details are printed on the certification plate's on the rear left hand window. Record the serial number below for quick reference.

Serial No. _____

Date Code_____



7

IMPORTANT ECOLOGICAL CONSIDERATIONS

The following are recommendations which may be of assistance:

- Become acquainted with and ensure that you understand the relative legislation applicable to your country.
- Where no legislation exists, obtain information from suppliers of oils, fuels, antifreeze, cleaning agents, etc., with regard to their effect on man and nature and how to safely store, use and dispose of these substances.

HELPFUL HINTS

1. Avoid filling tanks using jerry cans or inappropriate pressurised fuel delivery systems which may cause considerable spillage.
2. In general, avoid skin contact with all fuels, oils, acids, solvents, etc. Most of them contain substances which can be harmful to your health.
3. Modern oils contain additives. Do not burn contaminated fuels and/or waste oils in ordinary heating systems.
4. Avoid spillage when draining off used engine coolant mixtures, engine, gearbox and hydraulic oils, brake fluids, etc. Do not mix drained brake fluids or fuels with lubricants. Store them safely until they can be disposed of in a proper way to comply with local legislation and available resources.
5. Modern coolant mixtures, i.e. antifreeze and other additives, should be replaced every two years. They should not be allowed to get into the soil but should be collected and disposed of safely.
6. Do not open the Air–Conditioning system yourself. It may contain gasses which should not be released into the atmosphere. Your air conditioning specialist has a special equipment for discharging and charging the system.
7. Repair any leaks or defects in the engine cooling or hydraulic system immediately.
8. Do not increase the pressure in a pressurised circuit as this may lead to a catastrophic failure of the system components.
9. Protect hoses during welding as penetrating weld splatter may burn a hole or weaken them, causing the loss of oils, coolant, etc.

SERVICE TECHNIQUES

GENERAL

Clean the exterior of all components before carrying out any form of repair. Dirt and abrasive dust can reduce the efficient working life of a component and lead to costly replacement.

Time spent on the preparation and cleanliness of working surfaces will pay dividends in making the job easier and safer and will result in overhauled components being more reliable and efficient in operation.

Use cleaning fluids which are known to be safe. Certain types of fluid can cause damage to 'O' rings and cause skin irritation. Solvents should be checked that they are suitable for the cleaning of components and also that they do not risk the personal safety of the user.

Replace 'O' rings, seals or gaskets whenever they are disturbed. Never mix new and old seals or 'O' rings, regardless of condition. Always lubricate new seals and 'O' rings with hydraulic oil before installation.

When replacing component parts, use the correct tool for the job.

HOSES AND TUBES

Always replace hoses and tubes if the cone end or the end connections on the hose are damaged.

When installing a new hose, loosely connect each end and make sure the hose takes up the designed position before tightening the connection. Clamps should be tightened sufficiently to hold the hose without crushing and to prevent chafing.

After hose replacement to a moving component, check that the hose does not foul by moving the component through the complete range of travel.

Be sure any hose which has been installed is not kinked or twisted.

Hose connections which are damaged, dented, crushed or leaking, restrict oil flow and the productivity of the components being served. Connectors which show signs of movement from the original swagged position have failed and will ultimately separate completely.

A hose with a chafed outer cover will allow water entry. Concealed corrosion of the wire reinforcement will subsequently occur along the hose length with resultant hose failure.

Ballooning of the hose indicates an internal leakage due to structural failure. This condition rapidly deteriorates and total hose failure soon occurs.

Kinked, crushed, stretched or deformed hoses generally suffer internal structural damage which can result in oil restriction, a reduction in the speed of operation and ultimate hose failure.

Free-moving, unsupported hoses must never be allowed to touch each other or related working surfaces. This causes chafing which reduces hose life.

'O' RING FLAT FACE SEAL FITTINGS

When repairing 'O' ring face seal connectors, the following procedures should be observed.

⚠ WARNING ⚠

NEVER DISCONNECT OR TIGHTEN A HOSE OR TUBE THAT IS UNDER PRESSURE. IF IN DOUBT, ACTUATE THE OPERATING LEVERS SEVERAL TIMES WITH THE ENGINE SWITCHED OFF PRIOR TO DISCONNECTING A HOSE OR TUBE.

1. Release the fittings and separate the hose or tube assembly, then remove and discard the 'O' ring seal from the fitting.
2. Dip a new 'O' ring seal into clean hydraulic oil prior to installation. Install a new 'O' ring into the fitting and, if necessary, retain in position using petroleum jelly.
3. Assemble the new hose or tube assembly and tighten the fitting finger tight, while holding the tube or hose assembly to prevent it from turning.
4. Use two suitable wrenches and tighten the fitting to the specified torque according to the size of the fitting. Refer to the following torque chart.

NOTE: *To ensure a leak-free joint is obtained, it is important that the fittings are not over or under torqued.*

'O' RING FLAT FACE SEAL FITTING TORQUE VALUES

Nominal O.D (in.)	Tube (mm)	Dash Size	Thread Size In.	Swivel Nut Torque lbf. Ft	Nm
0.250	6.35	-4	9/16-18	12	16
0.375	9.52	-6	11/16-16	18	24
0.500	12.70	-8	13/16-16	37	50
0.625	15.88	-10	1-14	51	69
0.750	19.05	-12	1 3/16-12	75	102
0.875	22.22	-14	1 3/16-12	75	102
1.000	25.40	-16	1 7/16-12	105	142
1.250	31.75	-20	1 11/16-12	140	190
1.500	38.10	-24	2-12	160	217

SEALER SPECIFICATIONS

The following sealers should be used as directed in the manual:

SEALERS	PART NUMBER	TRADE DESCRIPTION
Anaerobic sealer	82995770/1	LOCTITE GASKET ELIMINATOR 518
RTV silicone sealer	82995775/6	LOCTITE SUPERFLEX 593, 595 or 596 LOCTITE ULTRA BLUE 587 DOW CORNING SILASTIC 732 GENERAL ELECTRIC RTV 103 OR 108
Pipe sealant	82995768	PST 592 PIPE SEALANT WITH TEFLON
Thread-locking compound	82995773	LOCTITE 271 THREADLOCKER/SEALANT (red)

HARDWARE TORQUE VALUES

Check the tightness of hardware periodically.

Use the following charts to determine the correct torque when checking, adjusting or replacing hardware on the Backhoe Loader.

IMPORTANT: *DO NOT use the values listed in the charts if a different torque value or tightening procedure is specified in this manual for a specific application. Torque values listed are for general use only.*

Make sure fastener threads are clean and not damaged.

NOTE: *A torque wrench is necessary to properly torque hardware.*

MINIMUM HARDWARE TIGHTENING TORQUES

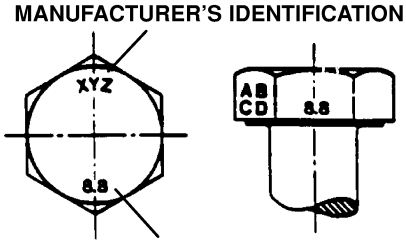
IN FOOT POUNDS – LBF. FT (NEWTON-METRES – Nm) FOR NORMAL ASSEMBLY APPLICATIONS

METRIC HARDWARE AND LOCKNUTS

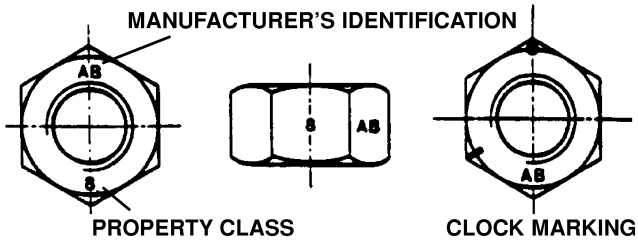
NOMINAL SIZE	CLASS 5.8		CLASS 8.8		CLASS 10.9		LOCKNUT CL.8 W/CL8.8 BOLT
	UNPLATED	PLATED W/ZnCr	UNPLATED	PLATED W/ZnCr	UNPLATED	PLATED W/ZnCr	
M4	15* (1.7)	19* (2.2)	23* (2.6)	30* (3.4)	33* (3.7)	42* (4.8)	16* (1.8)
M6	51* (5.8)	67* (7.6)	79* (8.9)	102* (12)	115* (13)	150* (17)	56* (6.3)
M8	124* (14)	159* (18)	195* (22)	248* (28)	274* (31)	354* (40)	133* (15)
M10	21 (28)	27 (36)	32 (43)	41 (56)	45 (61)	58 (79)	22 (30)
M12	36 (49)	46 (63)	55 (75)	72 (97)	79 (107)	102 (138)	39 (53)
M16	89 (121)	117 (158)	137 (186)	177 (240)	196 (266)	254 (344)	97 (131)
M20	175 (237)	226 (307)	277 (375)	358 (485)	383 (519)	495 (671)	195 (265)
M24	303 (411)	392 (531)	478 (648)	619 (839)	662 (897)	855 (1160)	338 (458)

NOTE: Torque values shown with * are inch pounds.

IDENTIFICATION
HEX CAP SCREW AND CARRIAGE BOLTS
CLASSES 5.6 AND UP



HEX NUTS AND LOCKNUTS
CLASSES 05 AND UP



MINIMUM HARDWARE TIGHTENING TORQUES

IN FOOT POUNDS – LBF. FT (NEWTON-METRES – Nm) FOR NORMAL ASSEMBLY APPLICATIONS

INCH HARDWARE AND LOCKNUTS

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

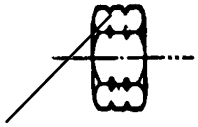
NOTE: Torque values shown with * are inch pounds.

IDENTIFICATION
CAP SCREWS AND CARRIAGE BOLTS

SAE GRADE 2 | SAE GRADE 5 | SAE GRADE 8

REGULAR NUTS | SAE GRADE 5 HEX NUTS | SAE GRADE 8 HEX NUTS

LOCKNUTS



GRADE IDENTIFICATION

GRADE A NO NOTCHES

GRADE B ONE CIRCUMFERENTIAL NOTCH

GRADE C TWO CIRCUMFERENTIAL NOTCHES

GRADE IDENTIFICATION

GRADE A NO MARKS

GRADE B THREE MARKS

GRADE C SIX MARKS

MARKS NEED NOT BE LOCATED AT CORNERS

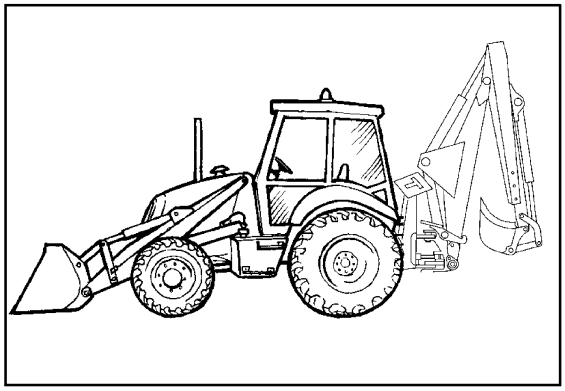
GRADE IDENTIFICATION

GRADE A NO MARK
GRADE B LETTER B
GRADE C LETTER C

SECTION 00 – SPECIFICATIONS

Chapter 2 – GENERAL SPECIFICATIONS

This section is divided into parts which itemise the specifications for the various models:
NOTE: *All performance figures in this section are based on machines with standard buckets, and will vary dependant upon the type of machine and any options that may be fitted.*



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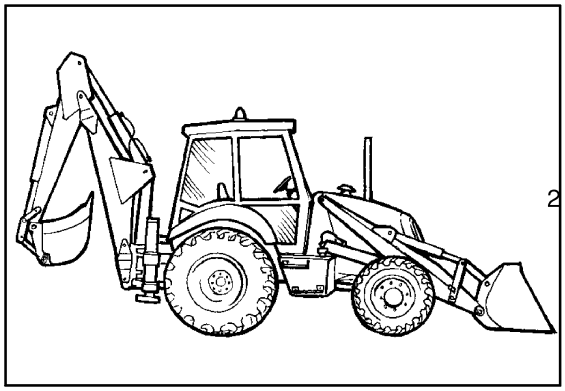

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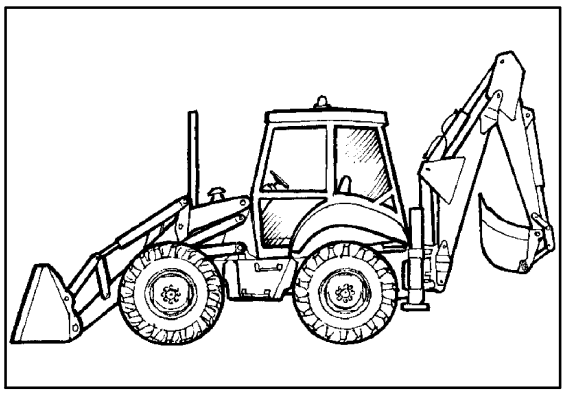


3

Models LB75.B LB90
Refer to pages 11 to 22

Models LB110
Refer to pages 23 to 34

Models LB115.B
Refer to pages 35 to 44

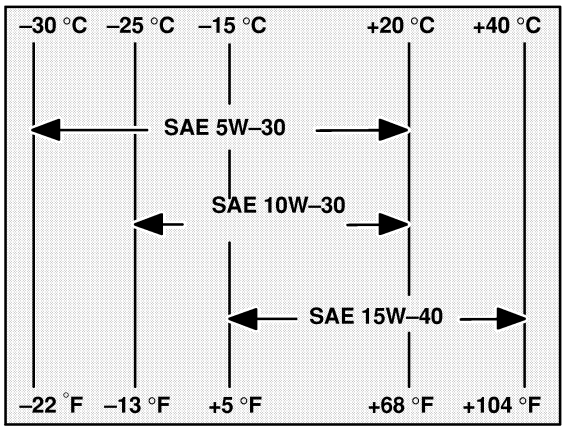
LUBRICANTS

Choose the correct oil viscosity grade from the chart on the right to suit the conditions.

NOTE: *In areas where prolonged periods of extreme temperatures are encountered, local engine lubricant practices are acceptable; such as the use of SAE 5W in extreme low temperatures or SAE 50 in extreme high temperatures.*

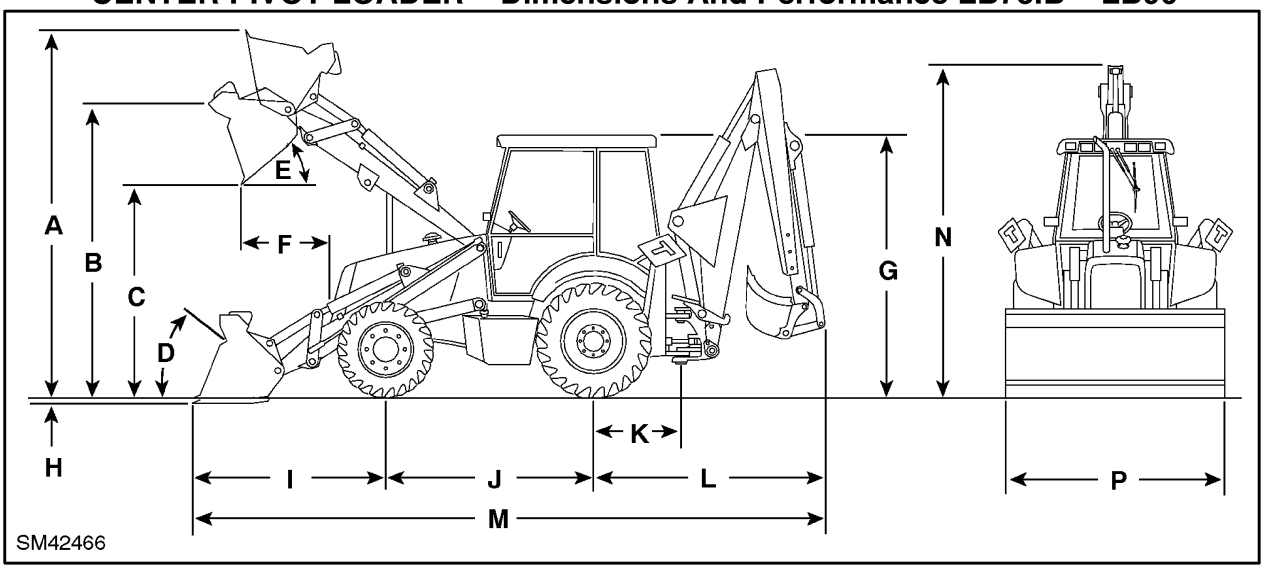
Sulphur in Fuel

The engine oil change period is shown in the maintenance section. However, locally available fuel may have a high sulphur content, in which case the engine oil change period should be adjusted.



RECOMMENDED FLUIDS AND APPLICATION	NEW HOLLAND SPECIFICATION	INTERNATIONAL SPECIFICATION	MODELS	APPROXIMATE QUANTITY
ENGINE – OIL				Litres (US gals)
Ambra Super Gold (15W40)	NH 330 G	API CF-4/SG	75 to 108 hp	12 (3.2)
Ambra Super Gold (10W30)	NH 324 G	CCMC D4	75 to 108 hp	12 (3.2)
COOLING SYSTEM				Litres (US gals)
Ambra Agriflu 50%	NH 900 A	Antifreeze	75 to 108 hp	24 (6.36)
Water 50%		H_2O	75 to 108 hp	24 (6.36)
HYDRAULIC SYSTEM		API GL4,ISO 32/46		Litres (US gals)
Ambra Multi G (10W30)	NH 410 B	MIL–L–2105 D	75 to 108 hp	137 (36.3)
Hydrosystem Biodegradable	NH 646 H BS		75 to 108 hp	137 (36.3)
POWERSHUTTLE TRANS				Litres (US gals)
Ambra Multi G (10W30)	NH 410 B	API GL4,ISO 32/46	75 to 108 hp	18 (4.7)
POWERSHIFT TRANS				Litres (US gals)
Ambra Hydrodex 3	NH 530 B	ATF	75 to 108 hp	18 (4.7)
FRONT & REAR AXLE				Litres (US gals)
Ambra Multi G (10W30)	NH 410 B	API GL4,ISO 32/46	75 to 92 hp	5.5 (1.5)
			108 hp 4WS	10 (2.6)
2WD/4WD, 4WS AXLE HUBS				Litres (US Pint)
Ambra Multi G (10W30)	NH 410 B	API GL4,ISO 32/46	75 to 108 hp	1.0 (0.3)
BRAKE OIL				litres (US Pint)
Ambra LHM	NH 610 A		75 to 108 hp	1.0 (0.3)
FUEL				Litres (US gals)
Diesel	Cetane40 (minimum)		75 to 108 hp	128 (28)
GREASE GENERAL				
Ambra GR 75MD	NH 720 A	NLGI 2	75 to 108 hp	As required
Dry Molycoat Grease		NLGI 00	75 to 108 hp	As required

CENTER PIVOT LOADER – Dimensions And Performance LB75.B – LB90



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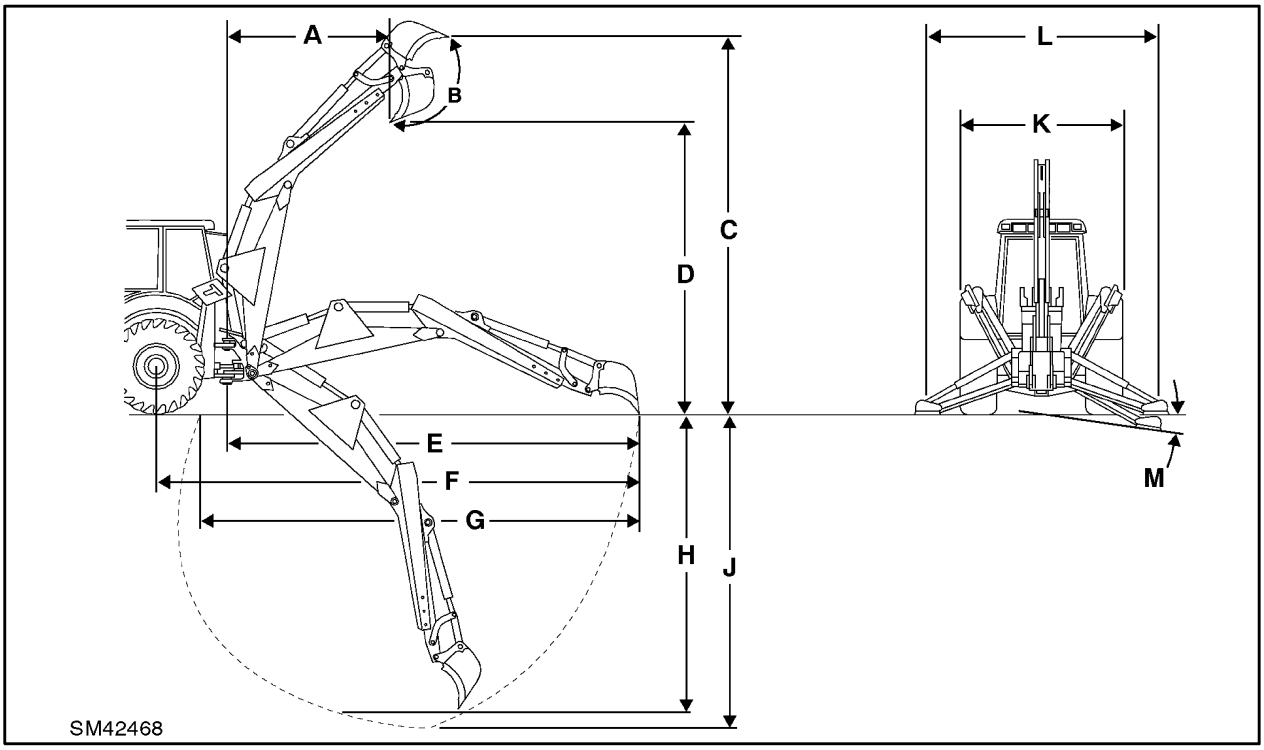
(PER SAE J 732 C) WITH TIRES **2WD FRONT = 11L–16SLF3 REAR = 19.5–24 R4**
4WD FRONT = 12–16.5 REAR = 19.5L–24 R4

With Four Wheel Drive (Bucket 1.3 yd³)

A. Overall Operating height	2WD 4270mm (14ft 0in) – 4WD 4284mm (13ft 9in)
Lift Capacity at Maximum Height	2WD 3530 kg (7780 lbs) – 4WD 3560 kg (7832 lbs)
Breakout Force	2WD 6324kg (13938 lbs) –4WD 6355 kg (13981 lbs)
B. Height to Hinge Pin Full Raise	4WD 3456mm (11ft 8in)
C. Dump Height	4WD 2718mm (8ft 11in)
D. Maximum Roll back at ground level	40°
E. Dump Angle	45°
F. Reach fully raised	795mm (2ft 6in)
G. Height to Top Of Cab(Rops)	2885mm (9ft 4in)
H. Digging Depth	2WD 146mm (6.0in) – 4WD 130mm (5.1in)
I. Center line of axle to Bucket Lip at ground level	2WD 2007mm (6ft 5in) – 4WD 1997mm (6ft 5in)
J. Wheelbase	2175mm (7ft 1in)
K. Center Line of rear axle to center line of swing post	1120mm (3ft 6in)
L. Center Line of rear axle to edge of backhoe bucket	2934mm (9ft 5in)
M. Overall Length	2WD 7040mm (23ft 1in) – 4WD 7040mm (23ft 1in)
N. Overall Height Lip of Bucket to top of Boom	3973mm (12ft 9in)
P– Overall Width With Bucket	2250mm (7ft 3in)
P– Overall Width Less Bucket	2170mm (7ft 1in)
– Weight of machine Loader/Backhoe*	
*example (4WD, 6 in 1 Bucket, Counterweights)	7800 kg (17191 lbs)

CENTER PIVOT BACKHOE – DIMENSIONS AND PERFORMANCE



5

(PER SAE J 49) WITH TIRES FWD FRONT = 12–16.5 REAR = 19.5L–24 R4

			Standard Dipper	H.E.D. Extended
A.	Loading Reach		1683mm (5ft 5in)	2657mm (8ft 6in)
B.	Bucket Rotation		204°	204°
C.	Operating Height, Fully Raised		5504mm (17ft.9in)	6250mm (20ft 3in)
D.	Loading Height Maximum		3705mm (12ft.2in)	4453mm (14ft 8in)
E.	Reach from Swing Post Pivot		5540mm (18ft.2in)	6651mm (21ft 10in)
F.	Reach from Rear Axle		6660mm (21ft.10in)	7771mm (25ft.6in)
G.	Maximum Length of Surface Excavation		6050mm (19ft.7in)	7190mm (23ft 4in)
H.	Maximum Digging Depth			
	To Achieve a 0.6m (2ft) Flat Bottom Trench		4234mm (13ft.11in)	5447mm (17ft 11in)
	To Achieve a 2.4m (8ft) Flat Bottom Trench		3854mm (12ft.8in)	5160mm (16ft 11in)
J.	Maximum Digging Depth		4468mm (14ft.7in)	5466mm (17ft 11in)
K.	Stabilizer Spread – Transport		2260mm (7ft.4in)	2260mm (7ft.4in)
L.	Stabilizer Spread –		3230mm (10ft 7in)	3230mm (10ft 7in)
M.	Stabilizer Pad Levelling Angle		14°	14°
–	Swing Arc		180°	180°
–	Maximum digging force (general purpose bucket)			
	crowd cylinder		4181 kg (9217 lbs)	2822 kg (6221 lbs)
	bucket cylinder		5810 kg (12808 lbs)	5810 kg (12808 lbs)
–	Lift capacity through dipper arc –	(SAE)	2575 kg (5680 lbs)	1555 kg (3435 lbs)
–	Lift capacity, dipper 3.66m (12ft) above ground	(SAE)	2700 kg (5956 lbs)	1585 kg (3500 lbs)
–	Lift capacity at 4.2m (14ft) above ground	(SAE)	1495 kg (3295 lbs)	955 kg (2110 lbs)
–	Extendible dipper extension length		–	1.05m (3ft 5in)