

SERVICE MANUAL

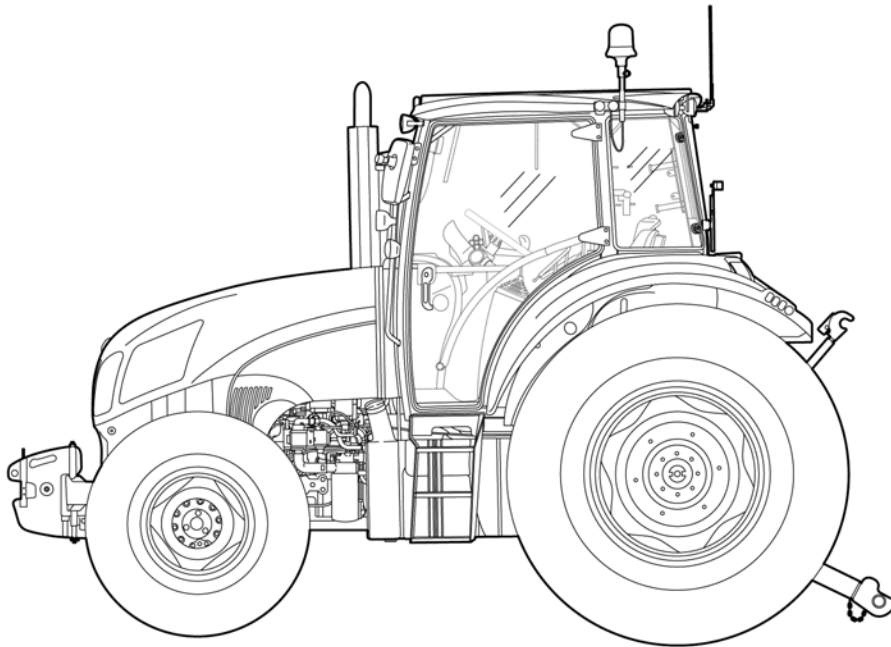
T5.95 / T5.105
T5.115
Tractor

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SERVICE MANUAL



T5.105

T5.115

T5.95

Link Product / Engine

Product	Market Product	Engine
T5.105	Europe	F5DFL413B*A006
T5.105	North America	F5DFL413B*A006
T5.105	International Region	F5DFL413B*A006
T5.115	North America	F5DFL413A*A002
T5.115	International Region	F5DFL413A*A002
T5.115	Europe	F5DFL413A*A002
T5.95	Europe	F5DFL413C*A003
T5.95	International Region	F5DFL413C*A003
T5.95	North America	F5DFL413C*A003

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INTRODUCTION

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Advice

IMPORTANT NOTICE

All maintenance and repair work described in this manual must be performed exclusively by NEW HOLLAND AGRICULTURE service technicians, in strict accordance with the instructions given and using any specific tools necessary. Anyone performing the operations described herein without strictly following the instructions is personally responsible for any eventual injury or damage to property.

Safety rules SAFETY REGULATIONS

TO PREVENT ACCIDENTS

Most accidents or injuries that occur in workshops are the result of non-observance of simple and fundamental safety regulations.

For this reason, IN MOST CASES THESE ACCIDENTS CAN BE AVOIDED: by foreseeing possible causes and consequently acting with the necessary caution and care.

Accidents may occur with all types of vehicle, regardless of how well it was designed and built.

A careful and judicious service technician is the best guarantee against accidents.

Precise observance of the most basic safety rule is normally sufficient to avoid many serious accidents.

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

GENERAL

- Carefully follow specified repair and maintenance procedures.
- Do not wear rings, wristwatches, jewellery, unbuttoned or loose articles of clothing such as: ties, torn clothing, scarves, open jackets or shirts with open zips that may remain entangled in moving parts.
It is advised to wear approved safety clothing, e.g: non-slip footwear, gloves, safety goggles, helmets, etc.
- Do not carry out repair operations with someone sitting in the driver's seat, unless the person is a trained technician who is assisting with the operation in question.
- Operate the vehicle and use the implements exclusively from the driver's seat.
- Do not carry out operations on the vehicle with the engine running, unless 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 must be carried out using extreme care and attention.
- Service steps 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 indicate that the vehicle is being serviced. Block the machine and all equipment which should be raised.
- Do not check or fill fuel tanks, accumulator batteries, nor use starting liquid when smoking or near naked flames, as these fluids are inflammable.
- Brakes are inoperative if manually released for repair or maintenance purposes.
In such cases, the machine should be kept constantly under control using blocks or similar devices.
- The fuel nozzle should always be in contact with the filling aperture. Maintain this position until filling operations are completed in order to avoid possible sparks caused by the accumulation of static electricity.
- Only use specified towing points for towing the tractor, connect parts carefully. Make sure that all pins and/or locks are secured in position before applying traction.
Never remain near the towing bars, cables or chains that are operating under load
- Transport vehicles that cannot be driven using a trailer or a low-loading platform trolley, if available.
- When loading or unloading the vehicle from the trailer (or other means of transport), select a flat area capable of sustaining the trailer or truck wheels, firmly secure the tractor to the truck or trailer and lock the wheels in the position.
- Electric heaters, battery-chargers and similar equipment must only be powered by auxiliary power supplies with efficient ground insulation to avoid electrical shock hazards.
- Always use suitable hoisting or lifting devices when raising or moving heavy parts.
- Take extra care if bystanders are present.
- Never pour gasoline or diesel oil into open, wide and low containers.
- Never use gasoline, diesel oil or other inflammable liquids as cleaning agents. Use non-flammable non-toxic proprietary solvents.
- Wear safety goggles with side guards when cleaning parts with compressed air.
- Limit the air pressure to a maximum of **2.1 bar (30.5 psi)**, according to local regulations.

- Do not run the engine in confined spaces without suitable ventilation.
- Do not smoke, use naked flames, or cause sparks in the area when fuel filling or handling highly inflammable liquids.
- Never use naked flames for lighting when working on the machine or checking for leaks.
- All movements must be carried out carefully when working under, on or near the vehicle and wear protective equipment: helmets, goggles and special footwear.
- When carrying out checks with the engine running, request the assistance of an operator in the driver's seat. The operator must maintain visual contact with the service technician at all times.
- If operating outside the workshop, position the vehicle on a flat surface and lock in position. If working on a slope, lock the vehicle in position and move to a flat area as soon as is safely possible.
- Damaged or bent chains or cables are unreliable. Do not use them for lifting or towing. Always use suitable protective gloves when handling chains or cables.
- Chains should always be safely secured. Ensure that fastening device is strong enough to hold the load foreseen. No persons should stop near the fastening point, trailing chains or cables.
- Maintenance and repair operations must be carried out in a CLEAN and DRY area, eliminate any water or oil spillage immediately.
- Do not create piles of oil or grease--soaked rags as they represent a serious fire hazard; store them in a closed metal container. Before starting the vehicle or implements, make sure that the driver's seat is locked in position and always check that the area is free of persons or obstacles.
- Empty pockets of all objects that may fall unobserved into the vehicle parts when disassembled.
- In the presence of protruding metal parts, use protective goggles or goggles with side guards, helmets, special footwear and gloves.
- Handle all parts carefully, do not put your hands or fingers between moving parts, wear suitable safety clothing -- safety goggles, gloves and shoes.

WELDING OPERATIONS

- When welding, use protective safety devices: tinted safety goggles, helmets, special overalls, gloves and footwear. All persons present in the area where welding is taking place must wear tinted goggles. NEVER LOOK AT THE WELDING ARC IF YOUR EYES ARE NOT SUITABLY PROTECTED.
- Where possible, remove the part or tool that requires arc welding from the tractor.
- Disconnect both battery leads. Isolate the cable ends to avoid contact with each other and the tractor.
- Position the welder ground clamp as near as possible to the area where welding is taking place.
- Remove the electronic control units located on the tractor if welding is to be carried out near these control units.
- Never allow welding cables to lay on, near or across any electrical wiring or electronic component while welding is in progress.
- Metal cables tend to fray with repeated use. Always use suitable protective devices (gloves, goggles, etc.) when handling cables.

START UP

- Never start the engine in confined spaces that are not equipped with adequate ventilation for exhaust gas extraction.
- Never place the head, body, limbs, feet, hands or fingers near fans or rotating belts.

ENGINE

- Always loosen the radiator cap slowly before removing it to allow any remaining pressure in the system to be discharged. Coolant should be topped up only when the engine is stopped or idle if hot.
- Never fill up with fuel when the engine is running, especially if hot, in order to prevent the outbreak of fire as a result of fuel spillage
- Never check or adjust fan belt tension when the engine is running. Never adjust the fuel injection pump when the vehicle is moving.

- Never lubricate the vehicle when the engine is running.

ELECTRICAL SYSTEMS

- If it is necessary to use auxiliary batteries, remember that both ends of the cables must be connected as follows: (+) with (+) and (-) with (-).
- Avoid short-circuiting the terminals. GAS RELEASED FROM BATTERIES IS HIGHLY INFLAMMABLE.
- During charging, leave the battery compartment uncovered to improve ventilation.
- Never check the battery charge using "jumpers" (metal objects placed on the terminals).
- Avoid sparks or flames near the battery zone to prevent explosion hazards.
- Before servicing operations, check for fuel or current leaks. Eliminate any eventual leaks before starting work.
- Never charge batteries in confined spaces. Make sure that there is adequate ventilation in order to prevent accidental explosion hazards as a result of the accumulation of gases released during charging operations.
- Always disconnect the battery before performing any kind of servicing 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. Check for leaks using a piece of cardboard, NEVER USE HANDS.
- If any liquid penetrates skin tissue, call for medical aid immediately
- Serious skin infections may result if medical attention is not given.
- Use the specific tools when checking pressure values on the hydraulic system.

WHEELS AND TYRES

- Check that the tyres are correctly inflated at the pressure specified by the manufacturer. Periodically check possible damages to the rims and tyres.
- Stand away from (at the side of) the tire when checking inflation pressure.
- Only check pressure when the vehicle is unloaded and the tires are cold, to avoid incorrect readings as a result of over-pressure.
- Do not re-use parts of recovered wheels as incorrect welding or brazing may heat the material, causing it to weaken and eventually damage or break the wheel.
- Never cut, nor weld a rim with the inflated tyre assembled.
- When removing the wheels, lock both the front and rear vehicle wheels.
- Always position support stands when raising the vehicle, in order to conform to current safety regulations.
- Deflate the tyre before removing any object caught into the tyre tread.
- Never inflate tires using inflammable gases; this could cause an explosion and put operator safety at risk.

REMOVAL AND RE-FITTING

- Lift and handle all heavy parts using suitable lifting equipment and make sure that all slings and hooks are correctly secured.
- Handle all parts carefully during lifting operations, keep an eye on the personnel working near the load to be lifted. Never insert hands or fingers between parts, always wear approved accident prevention clothing (goggles, gloves and work boots).
- Avoid twisting chains or metal cables and always wear safety gloves when handling cables or chains.

Basic instructions

SHIMMING

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

ROTATING SHAFT SEALS

For correct rotating shaft seal installation, proceed as follows:

- thoroughly clean the shaft and check that the working surface on the shaft is not damaged;
- position the sealing lip facing the fluid; with hydrodynamic lips, take into consideration the shaft rotation direction and position the grooves so that they will deviate the fluid towards the inner side of the seal;
- coat the sealing lip with a thin layer of lubricant (use oil rather than grease) and fill the gap between the sealing lip and the dust lip on double lip seals with grease;
- insert the seal in its seat and press down using a seal installer; do not tap the seal with a hammer or mallet;
- whilst inserting the seal, check that it is perpendicular to the seat; once settled.
- to prevent damaging the seal lip on the shaft, position a protective guard during installation operations.

O--RING SEALS

Lubricate the O--RING seals before inserting them in the seats, this will prevent them from overturning and twisting, which would jeopardise sealing efficiency.

SEALING COMPOUNDS

Apply one of the following sealing compounds on the mating surfaces marked, on this manual, with an X: **RTV 1473**, **RHODORSIL® CAF 1** or **LOCTITE PLASTIC GASKET**.

Before applying the sealing compound, prepare the surfaces as follows:

- remove any incrustations using a wire brush;

- **⚠ WARNING**

Chemical hazard!

Always wear protective clothing and goggles when cleaning with solvents, acids, or alkaline chemical agents. Always follow the chemical manufacturer's instructions.

Failure to comply could result in death or serious injury.

W0180A

thoroughly de-grease the surfaces using one of the following cleaning agents: trichlorethylene, Diesel fuel or a water and sodium hydroxide (**NaOH** , also known as caustic soda) solution.

BEARINGS

When installing bearings it is advised to:

- heat the bearings to 80 ÷ 90 °C before fitting on the shafts;
- allow the bearings to cool before installing them.

SPRING PINS

When fitting split socket elastic pins, ensure that the pin notch is positioned in the direction of the force required to stress the pin.

Spiral spring pins do not require special positioning.

IMPORTANT NOTES

Wear limit values indicated for certain parts are recommended, but not binding. The terms “front”, “rear”, “right-hand” and “left-hand” (when referred to different parts) are intended as seen from the driving position with the tractor in the normal direction of movement.

MOVING THE TRACTOR WITH THE BATTERY REMOVED

External power supply cables should only be connected to the respective positive and negative cable terminals, using efficient clamps that guarantee adequate and secure contact. Disconnect all services (lights, windshield wipers, etc.) before starting the vehicle. If the vehicle electrical system requires checking, carry out operations with the power supply connected; Once checking is completed, disconnect all services and switch off the power supply before disconnecting the cables.

Basic instructions for arc-welding on tractors with electronic lift

ATTENTION: *Observe the following precautions when carrying out arc welding on a tractor fitted with an electronic lift.*

- *Where possible, remove the part or implement that requires arc welding from the tractor.*
- *Disconnect both battery leads. Isolate the cable ends to avoid contact with each other and the tractor.*
- *Position the welder ground clamp as near as possible to the area where welding is to take place.*
- *Remove the electronic control units located on the tractor if welding is to be carried out near these control units.*
- *Never allow welding cables to lay on, near or across any electrical wiring or electronic component while welding is in progress.*

Special tools NOTES FOR EQUIPMENT

The tools that NEW HOLLAND AGRICULTURE propose and illustrate in this manual are:

- specifically researched and designed for use with NEW HOLLAND AGRICULTURE vehicles;
- necessary to make reliable repair;
- accurately built and strictly tested to offer efficient and long--lasting working means.

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.

Consumables

	QUANTITY	RECOMMENDED NEW HOLLAND AGRICULTURE PRODUCTS	SPECIFICATION NEW HOLLAND AGRICULTURE	INTERNA- TIONAL SPECI- FICATION
Cooling system:	16 l (4.2 US gal)	Mixture of water and antifreeze NEW HOLLAND AMBRA AGRIFLU at 50 % + 50 %	NH 900 A	-
Windscreen wash reservoir	2 l (0.5 US gal)	Water and Detergent liquid	-	-
Fuel tank:	155 l (40.9 US gal)	Decanted, filtered diesel fuel	-	-
Engine sump: Minimum	6.4 l (1.7 US gal)	NEW HOLLAND AMBRA UNITEK CJ-4 ENGINE OIL SAE 10W-40 or NEW HOLLAND AMBRA UNITEK CJ-4 ENGINE OIL SAE 0W-40	MAT3521	API CJ-4 ACEA E7/E9
Maximum	8.1 l (2.1 US gal)			
Brake control circuit	0.7 l (0.18 US gal)	NEW HOLLAND AMBRA BRAKE LHM	NH 610 A	ISO 7308
Front axle:	4.5 l (1.2 US gal)	NEW HOLLAND AMBRA MULTI G™ HYDRAULIC TRANSMISSION OIL	NH 410 B	API GL4 ISO 32/46 SAE 10W-30
Final drives (each)	1.0 l (0.3 US gal)			
Transmission bevel drive final drives and brakes gearbox hydraulic lift power take-off hydrostatic steering	63 l (16.6 US gal)			
Front hubs	-			
Grease fittings	-	NEW HOLLAND AMBRA GR-9 MULTI-PURPOSE GREASE	NH 710 A	NLGI 2
Air-conditioning refrigerant	650 g (22.9 oz)	-	-	R134A
Air-conditioning compressor oil	0.185 l (0.05 US gal)	-	-	SP10

Part identification

Use solely genuine parts, which guarantee the same quality, duration and safety as the original parts as they are identical to the ones fitted during production.
Only genuine parts can offer this guarantee.

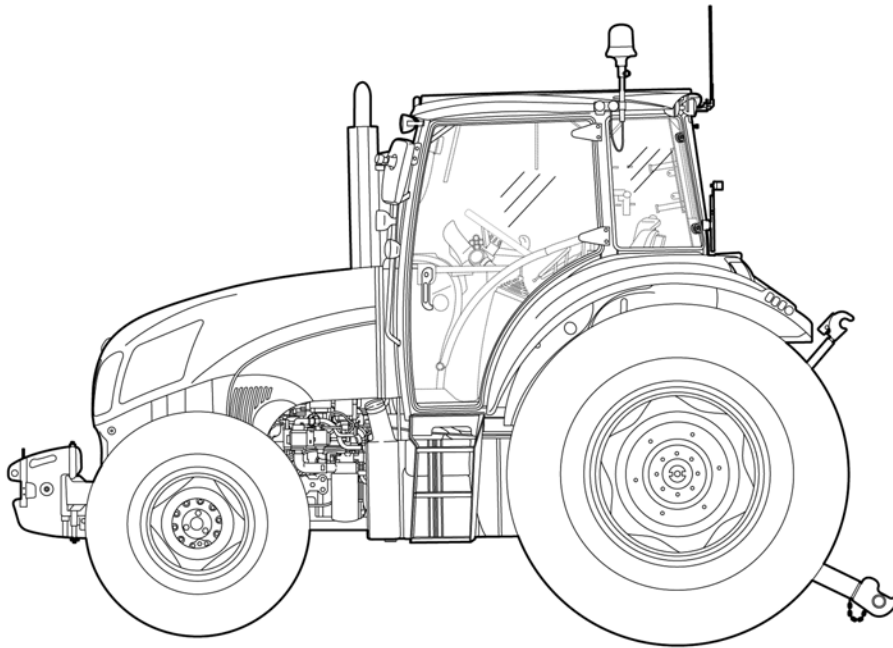
When ordering spare parts, always provide the following information:

- tractor model (commercial name) and frame number;
- engine type and number;
- part number of the ordered part, which can be found in the “Microfiches” or the “Spare Parts Catalogue”, used for order processing.



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Engine



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[10.501] Exhaust Gas Recirculation (EGR) - Diesel Particulate Filter (DPF) exhaust treatment 10.3
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manual**

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