SERVICE MANUAL

T4030F / T4040F / T4050F / T4060F

Tier 3

Tractor

T4030F with cab PIN ZCJD09263 - ZDJD10118; T4030F with cab PIN Z8JD05996 - ZCJD10540;
T4030F without cab PIN ZCJD10424 - ZDJD10174; T4030F without cab PIN Z8JD07917 - ZCJD10183;
T4040F with cab PIN ZCJD10607 - ZDJD10900; T4040F with cab PIN Z8JD07561 - ZCJD10129;
T4040F without cab PIN ZCJD09629 - ZDJD10408; T4040F without cab PIN Z8JD05909 - ZCJD10250;
T4050F with cab PIN ZCJD07769 - ZDJD10461; T4050F with cab PIN Z7JD01006 - ZCJD10886;
T4050F without cab PIN ZCJD11040 - ZDJD09876; T4050F without cab PIN Z8JD06807 - ZCJD10135;
T4060F with cab PIN ZBJD14608 - ZDJD11085; T4060F without cab PIN ZCJD06222 - ZDJD11528

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SERVICE MANUAL

T4030F With cab - Model Year 2012 [ZCJD09263 - ZDJD10118], T4030F With cab [Z8JD05996 - ZCJD10540], T4030F Without cab - Model Year 2012 [ZCJD10424 - ZDJD10174], T4030F Without cab [Z8JD07917 - ZCJD10183], T4040F With cab - Model Year 2012 [ZCJD10607 - ZDJD10900], T4040F With cab [Z8JD07561 - ZCJD10129], T4040F Without cab - Model Year 2012 [ZCJD09629 - ZDJD10408], T4040F Without cab [Z8JD05909 - ZCJD10250], T4050F With cab - Model Year 2012 [ZCJD07769 - ZDJD10461], T4050F With cab [Z7JD01006 - ZCJD10886], T4050F Without cab - Model Year 2012 [ZCJD11040 - ZDJD09876], T4050F Without cab [Z8JD06807 - ZCJD10135], T4060F With cab [ZBJD14608 - ZDJD11085], T4060F Without cab [ZCJD06222 - ZDJD11528]

Link Product / Engine

Product	Market Product	Engine
T4030F With cab [Z8JD05996 - ZCJD10540]	North America	F5AE9484B
T4030F Without cab [Z8JD07917 - ZCJD10183]	North America	F5AE9484B
T4030F With cab - Model Year 2012 [ZCJD09263 - ZDJD10118]	North America	F5AE9484B
T4030F Without cab - Model Year 2012 [ZCJD10424 - ZDJD10174]	North America	F5AE9484B
T4040F With cab [Z8JD07561 - ZCJD10129]	North America	F5AE9484G
T4040F Without cab [Z8JD05909 - ZCJD10250]	North America	F5AE9484G
T4040F With cab - Model Year 2012 [ZCJD10607 - ZDJD10900]	North America	F5AE9484G
T4040F Without cab - Model Year 2012 [ZCJD09629 - ZDJD10408]	North America	F5AE9484G
T4050F With cab [Z7JD01006 - ZCJD10886]	North America	F4CE9484
T4050F Without cab [Z8JD06807 - ZCJD10135]	North America	F4CE9484
T4050F With cab - Model Year 2012 [ZCJD07769 - ZDJD10461]	North America	F4CE9484
T4050F Without cab - Model Year 2012 [ZCJD11040 - ZDJD09876]	North America	F4CE9484
T4060F With cab [ZBJD14608 - ZDJD11085]	North America	F4CE9484
T4060F Without cab [ZCJD06222 - ZDJD11528]	North America	F4CE9484

Contents

INTRODUCTION

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.

Clutch - 18

Clutch and components - 110

T4030F With cab - Model Year 2012 [ZCJD09263 - ZDJD10118], T4030F With cab [Z8JD05996 - ZCJD10540], T4030F Without cab - Model Year 2012 [ZCJD10424 - ZDJD10174], T4030F Without cab [Z8JD07917 - ZCJD10183], T4040F With cab - Model Year 2012 [ZCJD10607 - ZDJD10900], T4040F With cab [Z8JD07561 - ZCJD10129], T4040F Without cab - Model Year 2012 [ZCJD09629 - ZDJD10408], T4040F Without cab [Z8JD05909 - ZCJD10250], T4050F With cab - Model Year 2012 [ZCJD07769 - ZDJD10461], T4050F With cab [Z7JD01006 - ZCJD10886], T4050F Without cab - Model Year 2012 [ZCJD11040 - ZDJD09876], T4050F Without cab [Z8JD06807 - ZCJD10135], T4060F With cab [ZBJD14608 - ZDJD11085], T4060F Without cab [ZCJD06222 - ZDJD11528]

Clutch - General specification

Luk 11”/11” clutch − general specifications

Type Mechanical Engagement and release mechanism P.T.O. clutch engagement and release mechanism	Single disk, dry plate dual clutch unit Operation: Pedal operated main transmission clutch; hand lever operated P.T.O. clutch Belleville spring disk Spiral springs
Driven plate lining material for main transmission clutch: Driven plate lining material for P.T.O. clutch Driven plate thickness: Main clutch **(9)**, (**Clutch - Sectional view (18.110) Figure 1**) P.T.O. clutch **(11)**, (**Clutch - Sectional view (18.110) Figure 1**) Wear limit	 Cerametallic **9.6 - 10.4 mm** (**0.37795 - 0.4094 in**) **7.3 - 7.9 mm** (**0.2874 - 0.3110 in**) See **Engage and release control tie rod - Adjust (31.101)** and **Engage and release control tie rod - Sectional view (31.101)**
Clearance between main transmission clutch release sleeve and housing Clearance between P.T.O. clutch release sleeve and housing	**0.050 - 0.151 mm** (**0.0020 - 0.0059 in**) **0.060 - 0.136 mm** (**0.0024 - 0.0054 in**)
Release lever coplanarity adjustment	See **Engage and release control tie rod - Sectional view (31.101)**
Clutch control adjustment	See **Engage and release control tie rod - Dynamic description (31.101)**

Luk 11” clutch − general specifications

Type Mechanical Engagement and release mechanism	Single dry plate clutch Operation with pedal Spiral springs
Driven plate lining material for P.T.O. clutch Driven plate thickness for P.T.O. clutch **(1)**, (**Clutch - Sectional view (18.110) Figure 2**) Driven plate wear limit Clearance between clutch release sliding sleeve and support	Cerametallic pads **7.3 - 7.9 mm** (**0.2874 - 0.3110 in**) See **Engage and release control tie rod - Adjust (31.101)** **0.050 - 0.151 mm** (**0.0020 - 0.0059 in**)

Clutch - Torque

Tightening torques

Parts to be tightened	Thread	Tightening torque
11 in/**11 in** clutch/flywheel retaining bolts	**M8 x 1.25**	**20 - 25 N·m** (**15 - 18 lb ft**)
Release command fork securing bolt **(7)**, (**Clutch - Sectional view (18.110) Figure 1**)	**M16 x 1.5**	**136 - 165 N·m** (**100 - 122 lb ft**)
Clutch casing/engine retaining nuts **(3)**, (**Clutch - Sectional view (18.110) Figure 1**)	**M12 x 1.25**	**117 - 129 N·m** (**86 - 95 lb ft**)
Nut for sleeve cover fixing stud **(6)**, (**Clutch - Sectional view (18.110) Figure 1**)	**M8 x 1.25**	**20 - 25 N·m** (**15 - 18 lb ft**)

Clutch - Special tools

Tools

NOTICE: *The operations described in this section must only be performed with the ESSENTIAL tools marked with an (X). To work safely and efficiently and obtain the best results, it is also necessary to use the recommended specific tools listed below and certain other tools, which are to be made according to the drawings included in this manual.*

List of specific tools required for the various operations described in this section

	380000236	Tractor disassembly trolley
X	380001760	Pin for centring and adjustment of **11 in**/ **11 in** clutches
X	**380000293**	Clutch adjustment gauge (with **294073**)
	380000256	Set of wrenches for adjustment of levers in **11 in**/ **11 in** LUK clutches
X	**380001613**	Axle-engine support bracket

Clutch - Sectional view

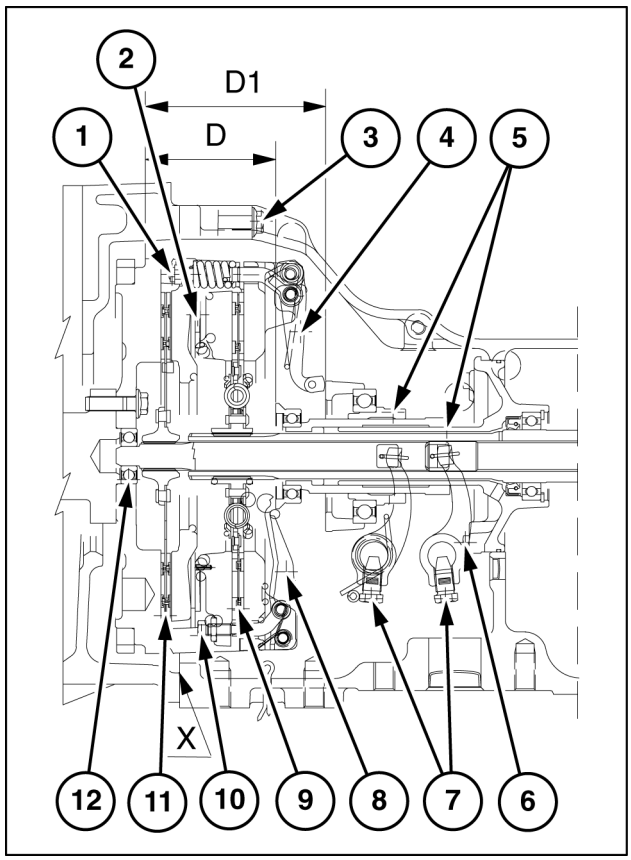
Longitudinal section of LUK 11"/11" clutch

1. P.T.O. clutch release lever adjuster
2. Belleville spring
3. Bolts and nuts securing clutch casing to the engine
4. Power take-off clutch disengagement levers
5. Release sleeves for main and P.T.O. clutch, complete with thrust bearings
6. Nuts for sleeve cover studs
7. Fork lever retaining bolts
8. Main transmission clutch release levers
9. Main transmission clutch plate
10. Main transmission clutch release lever adjuster
11. Power take-off clutch disk
12. Bearing on flywheel

D = **97.5 mm** (**3.8385 in**). Nominal distance of release levers **(8)** from clutch contact surface on flywheel.

D_1 = **139.5 mm** (**5.4921 in**). Nominal distance of release levers **(4)** from clutch contact surface on flywheel.

NOTE: *When assembling apply sealing compound on surfaces marked with an X as shown in* ***Transmission housing - Reseal (21.114)****.*



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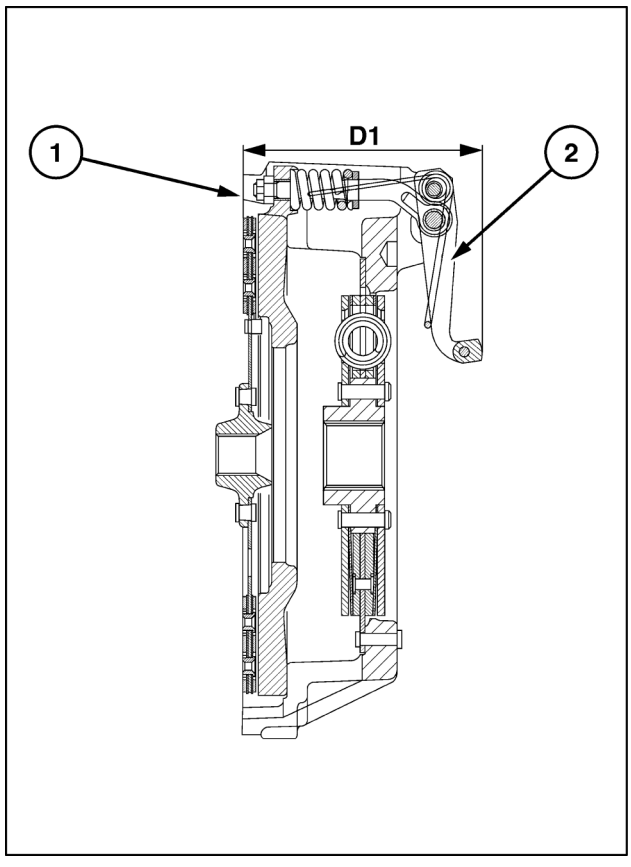
Longitudinal section of 11" LUK clutch

1. Main transmission clutch plate
2. Power take-off clutch disengagement levers

D_1 = **139.5 mm** (**5.4921 in**). Nominal distance of release levers **(2)** from clutch contact surface on flywheel.

NOTICE: *When refitting the clutch, check that the clutch disks are positioned as in the drawing.*



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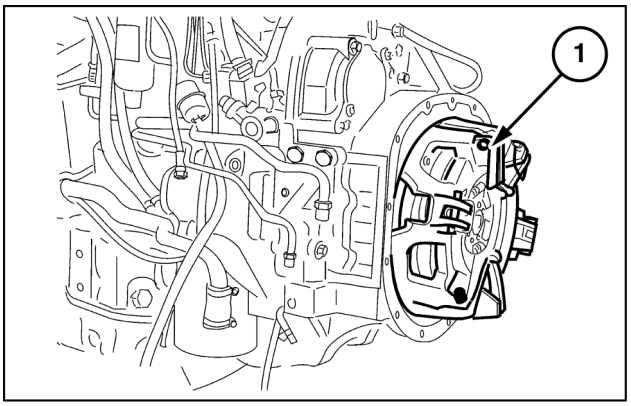
Clutch - Remove

Proceed as follows:

1. Remove the cab as described in **Cab - Remove (90.100)**.
2. Remove the engine, as far as **Engine and crankcase - Remove (10.001) Instruction 23**.
3. Unscrew the retaining screws and remove the clutch **(1)**.



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Clutch - Install

To refit the clutch proceed as follows:

- Position the clutch and secure it.
- Install the engine assembly as described in **Engine and crankcase - Remove (10.001)**.
- Install the cab as described in **Cab - Remove (90.100)**.