

FARMALL® 50A
FARMALL® 60A
FARMALL® 70A
Tier 4B (final)
Tractor

SERVICE MANUAL

Part number 47866582

1st edition English
December 2015





SERVICE MANUAL

Farmall® 50A
Farmall® 60A
Farmall® 70A

Click on the image link below for the full version of the service manual



Link Product / Engine

Product	Market Product	Engine
Farmall® 50A Compact tractor, 2WD, 50 HP, TIER 4B (FINAL)	North America	R 753 IE4
Farmall® 50A Compact tractor, 4WD, 50 HP, TIER 4B (FINAL)	North America	R 753 IE4
Farmall® 60A Compact tractor, 4WD, 60 HP, TIER 4B (FINAL)	North America	R 753 IE4
Farmall® 60A Compact tractor, 2WD, 60 HP, TIER 4B (FINAL)	North America	R 753 IE4
Farmall® 70A Compact tractor, 4WD, 70 HP, TIER 4B (FINAL)	North America	R 753 IE4
Farmall® 70A Compact tractor, 2WD, 70 HP, TIER 4B (FINAL)	North America	R 753 IE4

Contents

INTRODUCTION

Engine.....	10
[10.001] Engine and crankcase	10.1
[10.103] Crankshaft and flywheel.....	10.2
[10.202] Air cleaners and lines	10.3
[10.206] Fuel filters	10.4
[10.216] Fuel tanks	10.5
[10.310] Aftercooler.....	10.6
[10.400] Engine cooling system	10.7
Clutch	18
[18.100] Clutch mechanical release control	18.1
[18.110] Clutch and components	18.2
Transmission.....	21
[21.114] Mechanical transmission	21.1
[21.130] Mechanical transmission external controls.....	21.2
[21.140] Mechanical transmission internal components.....	21.3
[21.145] Gearbox internal components.....	21.4
[21.200] Dropbox	21.5
Four-Wheel Drive (4WD) system	23
[23.314] Drive shaft.....	23.1
Front axle system	25
[25.100] Powered front axle	25.1
[25.102] Front bevel gear set and differential	25.2
[25.108] Final drive hub, steering knuckles, and shafts	25.3
[25.310] Final drives	25.4
[25.400] Non-powered front axle	25.5

Rear axle system	27
[27.100] Powered rear axle.....	27.1
[27.106] Rear bevel gear set and differential.....	27.2
[27.120] Planetary and final drives	27.3
Power Take-Off (PTO)	31
[31.101] Rear mechanical control	31.1
[31.110] One-speed rear Power Take-Off (PTO)	31.2
[31.114] Two-speed rear Power Take-Off (PTO)	31.3
Brakes and controls	33
[33.120] Mechanical service brakes	33.1
Hydraulic systems	35
[35.000] Hydraulic systems.....	35.1
[35.100] Main lift system.....	35.2
[35.104] Fixed displacement pump.....	35.3
[35.204] Remote control valves	35.4
[35.300] Reservoir, cooler, and filters.....	35.5
[35.355] Hydraulic hand control	35.6
[35.359] Main control valve.....	35.7
Steering	41
[41.101] Steering control	41.1
[41.200] Hydraulic control components.....	41.2
[41.206] Pump.....	41.3
[41.216] Cylinders	41.4
Wheels	44
[44.511] Front wheels.....	44.1
[44.520] Rear wheels.....	44.2
Electrical systems	55
[55.000] Electrical system	55.1

[55.024] Transmission control system	55.2
[55.048] Rear Power Take-Off (PTO) control system	55.3
[55.100] Harnesses and connectors.....	55.4
[55.201] Engine starting system	55.5
[55.301] Alternator.....	55.6
[55.302] Battery.....	55.7
[55.404] External lighting	55.8
[55.405] External lighting switches and relays	55.9
[55.408] Warning indicators, alarms, and instruments	55.10
[55.512] Cab controls.....	55.11
[55.DTC] FAULT CODES.....	55.12
Platform, cab, bodywork, and decals	90
[90.100] Engine hood and panels	90.1
[90.110] Operator platform less cab	90.2
[90.116] Fenders and guards.....	90.3
[90.118] Protections and footboards.....	90.4



INTRODUCTION

Foreword

This repair manual provides the technical information needed to properly service the model tractors. Use this manual in conjunction with the operator's manual for complete operation, adjustment, and maintenance information

On CASE IH equipment, left and right are determined by standing behind the unit, looking in the direction of travel.

Foreword Ecology and the environment

Soil, air, and water are vital factors of agriculture and life in general. When legislation does not yet rule the treatment of some of the substances which are required by advanced technology, common sense should govern the use and disposal of products of a chemical and petrochemical nature.

NOTICE: *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, filters, batteries, 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.
- Agricultural consultants will, in many cases, be able to help you as well.

Helpful hints

- Avoid filling tanks using cans or inappropriate pressurized fuel delivery systems which may cause considerable spillage.
- In general, avoid skin contact with all fuels, oils, acids, solvents, etc. Most of them contain substances which 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 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.
- 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 properly.
- Do not open the air-conditioning system yourself. It contains gases which should not be released into the atmosphere. Your CASE IH dealer or air conditioning specialist has a special extractor for this purpose and will have to recharge the system properly.
- Repair any leaks or defects in the engine cooling 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 as penetrating weld splatter may burn a hole or weaken them, allowing the loss of oils, coolant, etc.

Safety rules

PRECAUTIONARY STATEMENTS

Personal Safety

Throughout this manual and on machine signs, you will find precautionary statements ("DANGER", "WARNING", and "CAUTION") 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.

Machine Safety

The precautionary statement ("IMPORTANT") is followed by specific instructions. This statement is intended for machine safety.

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

Information

NOTE: Instructions used to identify and present supplementary information.

Legal obligations

This machine may be equipped with special guarding or other devices in compliance with local legislation. Some of these require active use by the operator. Therefore, check local legislation on the usage of this machine.

Accident prevention

Most accidents or injuries that occur in workshops are the result of a non compliance to simple and fundamental safety regulations. In most case, accidents can be avoided by foreseeing possible causes and consequently acting with the necessary caution and care.

Accidents may occur with all types of machines, regardless of how well the machine in question was designed and built.

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

Decisive awareness of the most basic safety rule is normally sufficient to avoid many serious accident.

Safety requirements for fluid power systems and components - Hydraulics (European standard PR EM 982)

WARNING

Avoid injury!

Before you start any work on the unit:

- Park the unit on a hard, level surface.
- Apply the parking brake.
- Completely lower the attachments.
- Relieve all the hydraulic system pressure.
- Shut down the engine.
- Remove the ignition key.
- Secure the unit with wheel chocks.
- Turn the battery isolator switch to the OFF position.

Failure to comply could result in death or serious injury.

W1371A

Flexible hose assemblies must not be constructed from hoses which have been previously used as part of a hose assembly.

Do not weld hydraulic piping.

When flexible hoses or piping are damaged, replace them immediately.

It is forbidden to modify a hydraulic accumulator by machining, welding or any other means.

Before removing hydraulic accumulators for servicing, the liquid pressure in the accumulators must be reduced to zero.

Pressure check on hydraulic accumulators shall be carried out by method recommended by the accumulator manufacturer.

Care must be taken not to exceed the maximum allowable pressure of the accumulator. After any check or adjustment there must be no leakage of gas.

Safety rules

A careful operator is the best operator. Most accidents can be avoided by observing certain precautions. To help prevent accidents, read and take the following precautions before operating this tractor. Equipment should be operated only by those who are responsible and instructed to do so.

The tractor

1. Read the Operator's Manual carefully before using the tractor. Lack of operating knowledge can lead to accidents.
2. Use an approved roll bar and seat belt for safe operation. Overturning a tractor without a roll bar can result in death or injury. If your tractor is not equipped with a roll bar and seat belt, see your CASE IH Dealer.
3. Always use the seat belt. The only instance when the seat belt should not be used is if the roll bar has been removed from the tractor or folding ROPS is in down position.
4. If a front end loader is to be installed, always use a FOPS (Falling Object Protective Structure) canopy to avoid injury from falling objects.
5. Use the handrails and step plates when getting on and off the tractor to prevent falls. Keep steps and platform cleared of mud and debris.
6. Do not permit anyone but the operator to ride on the tractor. There is no safe place for extra riders.
7. Keep all safety decals clean of dirt and grime, and replace all missing, illegible, or damaged safety decals. See the list of decals in the Decal section of this manual.

Servicing the tractor

1. The cooling system operates under pressure which is controlled by the radiator cap. It is dangerous to remove the cap while the system is hot. Always turn the cap slowly to the first stop and allow pressure to escape before removing the cap entirely.
2. Keep any type of open flame away from the tractor and do not smoke while refuelling. Wait for the engine to cool before refueling.
3. Keep the tractor and equipment, particularly brakes and steering, maintained in a reliable and satisfactory condition to ensure your safety and comply with legal requirements.
4. Keep open flame or cold weather starting aids away from the battery to prevent fires or explosions. Use jumper cables according to instructions to prevent sparks which could cause explosion.
5. Stop the engine before performing any service on the tractor.
6. Escaping hydraulic/diesel fluid under pressure can penetrate the skin causing serious injury. If fluid is injected into the skin, obtain medical attention immediately or gangrene may result.
 - Do not use your hand to check for leaks.
 - Use a piece of cardboard or paper to search for leaks.
 - Stop the engine and relieve pressure before connecting or disconnecting lines.
 - Tighten all connections before starting the engine or pressurizing lines.
7. Do not modify or permit anyone else to modify or alter this tractor or any of its components or functions without first consulting a CASE IH Dealer.
8. The fuel oil in the injection system is under high pressure and can penetrate the skin. Unqualified persons should not remove or attempt to adjust a pump, injector, nozzle, or any other part of the fuel injection system. Failure to follow these instructions can result in serious injury.
9. Continuous long-term contact with used engine oil may cause skin cancer. Avoid prolonged contact with used engine oil. Wash skin promptly with soap and water.

10. Some components of your tractor, such as gaskets and friction surfaces (brake linings, clutch linings, etc.) may contain asbestos. Breathing asbestos dust is dangerous to your health. You are advised to have any maintenance or repair on such components carried out by an authorized CASE IH Dealer. However, if service operations are to be undertaken on parts that contain asbestos, the essential precautions listed below must be observed:
 - Work out of doors or in a well ventilated area.
 - Dust found on the tractor or produced during work on the tractor should be removed by extraction, not by blowing.
 - Dust waste should be dampened, placed in a sealed container, and marked to ensure safe disposal.
 - If any cutting, drilling, etc. is attempted on materials containing asbestos, the item should be dampened and only hand tools or low speed power tools used.

Operating the tractor

1. Before starting the tractor, apply the parking brake, place the PTO lever in the 'OFF' position, the lift control lever in the down position, the remote control valve levers in the neutral position, and the transmission in neutral.
2. Always sit in the tractor seat when starting the engine or operating controls. Do not start the engine or operate controls while standing beside the tractor.
3. Do not bypass the neutral start switches. Consult your CASE IH Dealer if your neutral start controls malfunction. Use jumper cables only in the recommended manner. Improper use can result in tractor runaway.
4. Avoid accidental contact with the gear shift lever while the engine is running, as this can cause unexpected tractor movement.
5. Before getting off the tractor, disengage the PTO, turn the engine off, and apply the parking brake. Never get off the tractor while it is in motion.
6. Do not park the tractor on a steep incline.
7. Do not operate the tractor engine in an enclosed building without adequate ventilation. Exhaust fumes can cause death or illness.
8. If the power steering or engine ceases operating, stop the tractor immediately.
9. Pull only from the drawbar or the lower link drawbar in the down position. Use only a drawbar pin that locks in place. Pulling from the tractor rear axle or any point above the axle may cause the tractor to upset.
10. If the front end of the tractor tends to rise when heavy implements are attached to the three-point hitch, install front end or front wheel weights. Do not operate the tractor with a light front end.
11. Always set the hydraulic selector lever in position control when attaching or transporting equipment. Ensure hydraulic couplers are properly mounted and will disconnect safely in case of accidental detachment of implement.
12. Do not leave equipment in the raised position.
13. Use the flasher/turn signal lights and Slow Moving Vehicle (SMV) signs when traveling on public roads both day and night (unless prohibited by law).
14. When operating at night, adjust lights to prevent blinding oncoming drivers.

Driving the tractor

1. Watch where you are going, especially at row ends, on roads, around trees and low hanging obstacles.
2. To avoid upsets, drive the tractor with care and at a safe speed. Use extra caution when operating over rough ground, when crossing ditches or slopes, and when turning corners.
3. To provide two-wheel braking, lock tractor brake pedals together when transporting on roads.
4. Do not coast or free wheel down hills. Use the same gear when going downhill as is used when going uphill.
5. Any towed vehicle with a total weight exceeding that of the towing tractor should be equipped with brakes for safe operation.
6. If the tractor becomes stuck or the tires become frozen to the ground, back up the tractor to prevent upset.
7. Always check overhead clearance, especially when transporting the tractor.
8. When operating at night, adjust lights to prevent blinding oncoming drivers.

Operating the Power Take-Off (PTO)

