

Early Riser[®] 1215
Rigid Mounted Planter

SERVICE MANUAL

Part number 47598057

1st edition English

January 2014



Contents

INTRODUCTION

Hydraulic systems.....	35
[35.000] Hydraulic systems.....	35.1
[35.359] Main control valve.....	35.2
[35.946] Frame positioning lifting.....	35.3
[35.745] Vacuum system hydraulic circuit.....	35.4
[35.746] Marking system hydraulic circuit.....	35.5
Wheels.....	44
[44.530] Carrying and transport wheels.....	44.1
[44.532] Lift assist wheels.....	44.2
Electrical systems.....	55
[55.100] Harnesses and connectors.....	55.1
[55.516] Seeding control system.....	55.2
[55.785] Precision farming system.....	55.3
[55.DTC] FAULT CODES.....	55.4
Metering system.....	61
[61.901] Metering mechanical drive.....	61.1
[61.904] Product metering.....	61.2
Chemical applicators.....	63
[63.110] Granular chemical system.....	63.1
Planting.....	79
[79.100] Product handling and delivery drive system.....	79.1
[79.103] Planting vacuum system.....	79.2
[79.104] Planting marking system.....	79.3
[79.105] Planting tool.....	79.4



INTRODUCTION

Contents

INTRODUCTION

Safety rules	3
Safety rules	4
Safety rules - Ecology and the environment	10
Basic instructions - Important notice regarding equipment servicing	11
Basic instructions - Shop and assembly	12
Basic instructions - Electrical testing	14
Torque – Hydraulic Tubes and Fittings	25
Torque – Fasteners	26
Special tools	28
Product identification	29
Product identification	30
Product identification - Theory of operation	32

Safety rules


Personal safety





This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible death or injury.

Throughout this manual you will find the signal words DANGER, WARNING, and CAUTION followed by special instructions. These precautions are intended for the personal safety of you and those working with you.

Read and understand all the safety messages in this manual before you operate or service the machine.

 DANGER indicates a hazardous situation that, if not avoided, will result in death or serious injury.

 WARNING indicates a hazardous situation that, if not avoided, could result in death or serious injury.

 CAUTION indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

FAILURE TO FOLLOW DANGER, WARNING, AND CAUTION MESSAGES COULD RESULT IN DEATH OR SERIOUS INJURY.

Machine safety

NOTICE: Notice indicates a situation that, if not avoided, could result in machine or property damage.

Throughout this manual you will find the signal word Notice followed by special instructions to prevent machine or property damage. The word Notice is used to address practices not related to personal safety.

Information

NOTE: Note indicates additional information that clarifies steps, procedures, or other information in this manual.

Throughout this manual you will find the word Note followed by additional information about a step, procedure, or other information in the manual. The word Note is not intended to address personal safety or property damage.

Safety rules

WARNING

Unexpected machine movement!

Disengage power, shut down the tractor, and be sure that all moving parts have stopped before servicing, adjusting, cleaning, or unclogging the equipment.
Failure to comply could result in death or serious injury.

W0924A

WARNING

Escaping fluid!

Hydraulic fluid or diesel fuel leaking under pressure can penetrate the skin and cause infection or other injury. To prevent personal injury: Relieve all pressure before disconnecting fluid lines or performing work on the hydraulic system. Before applying pressure, make sure all connections are tight and all components are in good condition. Never use your hand to check for suspected leaks under pressure. Use a piece of cardboard or wood for this purpose. If injured by leaking fluid, see your doctor immediately.

Failure to comply could result in death or serious injury.

W0178A

Understand that your safety and the safety of other persons is measured by how you service and operate this machine. Know the positions and operations of all controls before you try to operate. **MAKE SURE YOU CHECK ALL CONTROLS IN A SAFE AREA BEFORE STARTING YOUR WORK.**

READ THIS MANUAL COMPLETELY AND MAKE SURE YOU UNDERSTAND THE CONTROLS. All equipment has a limit. Make sure you understand the stability and load characteristics of this machine before you start to operate.

NOTE: Safety messages in this section point out specific safety hazards which can be encountered during the normal operation and maintenance of your machine. These safety messages also give possible ways of dealing with these conditions.

The safety information given in this manual does not replace safety codes, insurance needs, federal, state and local laws. Make sure your machine has the correct equipment needed by the local laws and regulations.

Additional safety messages are used in the text of the manual to indicate specific safety hazards. See your dealer for more information if you have any questions.

Case IH is continuing to work for your safety by making machines with better protection and by giving these rules for safe operation.

General safety rules

Use caution when operating the machine on slopes. Raised equipment, full tanks and other loads will change the center of gravity of the machine. The machine can tip or roll over when near ditches and embankments or uneven surfaces.

Travel speed must be such that complete control and machine stability is maintained at all times. Reduce speed when turning, crossing slopes and when on rough, slick or muddy surfaces.

Never permit anyone to ride on the machine.

Some illustrations in this manual will show shields or cover panels removed for purposes of clarity. **DO NOT** operate this machine with any of the shields or cover panels removed.

Be careful when checking singulator spools for wear. The spools have sharp edges that can cut your hands.

Wear gloves and be careful when inspecting or replacing the furrow firming points. The disks are sharp and could cut or scrape hands.

Never operate the machine under the influence of alcohol, drugs or while otherwise impaired.

Pay attention to overhead power lines and hanging obstacles. High voltage lines may require significant clearance for safety.

Hydraulic oil or diesel fuel leaking under pressure can penetrate the skin, causing serious injury or infection.

DO NOT use your hand to check for leaks. Use a piece of cardboard or paper.

Stop engine, remove key and relieve the pressure before connecting or disconnecting fluid lines.

Make sure all components are in good condition and tighten all connections before starting the engine or pressurizing the system.

If hydraulic fluid or diesel penetrates the skin, seek medical attention immediately.

Continuous long term contact with hydraulic fluid may cause skin cancer. Avoid long term contact and wash the skin promptly with soap and water.

Keep clear of moving parts. Loose clothing, jewelry, watches, long hair and other loose or hanging items can become entangled in moving parts.

Wear protective equipment when appropriate.

DO NOT attempt to remove material from any part of the machine while it is being operated or components are in motion.

Make sure all guards and shields are in good condition and properly installed before operating machine. Never operate the machine with shields removed. Always closed access doors or panels before operating the machine.

Dirty or slippery steps, ladders, walkways and platforms can cause falls. Make sure these surfaces remain clean and clear of debris.

A person or pet within the operating area of a machine can be struck or crushed by the machine or its equipment. DO NOT allow anyone to enter the work area.

Raised equipment and/or loads can fall unexpectedly and crush persons underneath. Never allow anyone to enter the area underneath raised equipment during operation.

Review this manual before each season of use.

Never allow anyone unfamiliar, untrained, or complacent to operate the implement.

Use extreme care when cleaning, filling, or adjusting the implement.

DO NOT enter tank unless another person is present.

DO NOT work around rotating equipment. Loose clothing, rings, watches, etc. may get caught and cause serious injury.

Air and air hoses

Compressor hoses may move unexpectedly when suddenly disconnected.

Use proper air nozzles. Never use compressed air to clean off clothes or otherwise direct it toward yourself.

General maintenance safety

Keep area used for servicing the machine clean and dry. Clean up spilled fluids.

Service machine on a firm level surface.

Install guards and shields after servicing the machine.

Close all access doors and install all panels after servicing the machine.

Do not attempt to clean, lubricate, clear obstructions or make adjustments to the machine while it is in motion or while the engine is running.

Always make sure working area is clear of tools, parts, other persons and pets before you start operating the machine.

Unsupported hydraulic cylinders can lose pressure and drop the equipment causing a crushing hazard. Do not leave equipment in a raised position while parked or during service, unless securely supported.

Incorrect towing procedures can cause accidents. When towing a disabled machine follow the procedure in this manual. Use only rigid tow bars.

Stop the engine, remove key and relieve the pressure before disconnecting or connecting fluid lines.

Stop the engine and remove key before disconnecting or connecting electrical connections.

Replace damage or worn tubes, hoses, electrical wiring, etc.

When welding follow the instructions in the manual. Always disconnect battery before welding on machine. Always wash your hands after handling battery components.

Wheels and tires

DANGER

Explosion hazard!

Welding to a wheel can create an explosive air and gas mixture. Removing air from the tire or loosening the tire on the wheel (breaking the bead) will NOT eliminate the hazard. ALWAYS remove the tire completely from the wheel before welding.

Failure to comply will result in death or serious injury.

D0033A

Make sure tires are correctly inflated. Do not exceed recommended load or pressure. Follow instruction in the manual for proper tire inflation.

Tires are heavy. Handling tires without the proper equipment could cause death or serious injury.

Never weld on a wheel rim with a tire installed. Always remove tire completely from rim prior to welding.

Always have a qualified tire technician service the tires and rims. If a tire has lost all pressure, take the tire and rim to a tire shop or your dealer for service. Explosive separation of the tire can cause serious injury.

Driving on public roads and general transportation safety (if applicable)

The Slow Moving Vehicle (SMV) sign is located at the rear of the implement.

Comply with local laws and regulations.

Use appropriate lighting to meet local regulations.

Make sure the Slow Moving Vehicle (SMV) emblem and/or Speed Indicator Symbol (SIS) is visible.

Use safety chains for trailed equipment when provided with machine or equipment.

Lift implements and attachments high enough above ground to prevent accidental contact with road.

When transporting equipment or machine on a transport trailer, make sure it is properly secured. Be sure the SMV or SIS on the equipment or machine is covered while being transported on a trailer.

Be aware of overhead structures or power lines and make sure the machine and/or attachments can pass safely under.

Travel speed should be such that complete control and machine stability is maintained at all times.

Slow down and signal before turning.

Pull over to allow faster traffic to pass.

Follow correct towing procedure for equipment with or without brakes.

⚠️ Reflectors and warning lamps ⚠️

Flashing amber warning lamps must be used when operating on the public roads.

⚠️ Fire and explosion prevention ⚠️

Fuel or oil leaked or spills on hot surfaces or electrical components can cause a fire.

Crop materials, trash, debris, bird nests or flammable material can ignite on hot surfaces.

Always have a fire extinguisher on or near the machine.

Make sure the fire extinguisher(s) is maintained and serviced according to the manufacturer's instructions.

At least once each day and at the end of the day remove all trash and debris from the machine especially around hot components such as engine, transmission, exhaust, battery, etc. More frequent cleaning of your machine may be necessary depending on the operating environment and conditions.

At least once each day, remove debris accumulation around moving components such as bearings, pulleys, belts, gears cleaning fan, etc. More frequent cleaning of your machine may be necessary depending on the operating environment and conditions.

Inspect the electrical system for loose connections or frayed insulation. Repair or replace loose or damaged parts.

Do not expose the machine to flames, burning brush or explosives.

Promptly investigate any unusual smells or odors that may occur during operation of the machine.

⚠️ Personal Protective Equipment (PPE) ⚠️

Wear personal protective equipment such as hard hat, safety glasses or goggles, heavy gloves, hearing protection, protective clothing, etc.

⚠️ Do Not Operate tag ⚠️

Before you start servicing the machine, attach a 'Do Not Operate' warning tag to the machine in an area that will be visible.

⚠️ Hazardous chemicals ⚠️

⚠️ WARNING

Chemical hazard!

Wear protective clothing and a face shield when working with chemicals. Do not allow chemicals to contact skin or eyes. Always follow the chemical manufacturer's instructions.

Failure to comply could result in death or serious injury.

W0052A

⚠ WARNING**Chemical hazard!**

Misuse including excessive application rate, uneven application, spray drift, and label violations can cause injury to crops, livestock, persons, and the environment. Follow all instructions on the container label. Always operate spray equipment according to the chemical manufacturer's instructions. Failure to comply could result in death or serious injury.

W0053A

If you are exposed to or come in contact with hazardous chemicals you can be seriously injured. The fluids, lubricants, paints, adhesives, coolant, etc. required for the function of your machine can be hazardous. They may be attractive and harmful to domestic animals as well as humans.

Material Safety Data Sheets (MSDS) provide information about the chemical substances within a product, safe handling and storage procedures, first aid measures and procedures to be taken in the event of a spill or accidental release. MSDS are available from your dealer.

Before you service your machine check the MSDS for each lubricant, fluid, etc. used in this machine. This information indicates the associated risks and will help you service the machine safely. Follow the information in the MSDS, on manufacturer containers, as well as the information in this manual when servicing the machine.

Dispose of all fluids, filters and containers in an environmentally safe manner according to local laws and regulations. Check with local environmental and recycling centers or your dealer for correct disposal information.

Store fluids and filters in accordance with local laws and regulations. Use only appropriate containers for the storage of chemicals or petrochemical substances.

Keep out of reach of children or other unauthorized persons.

Additional precautions are required for applied chemicals. Obtain complete information from the manufacturer or distributor of the chemicals before using them.

In case of fire involving chemicals, chemical containers or equipment containing chemicals, remain upwind and avoid exposure to smoke from the fire.

⚠ Precaution when using chemicals ⚠

Agricultural chemicals can be dangerous. These chemicals include fertilizers, fungicides, herbicides and pesticides or insecticides. These may be in liquid, dust or granular form. Rubber gloves, chemical respirator, goggles and/or other protective clothing may be required for certain chemicals.

Improper selection or use can injure people, animals, plants and soils. Care must be exercised to avoid damage to other people's property.

Chemicals can be used in one or more of the following ways:

- Treated seeds
- Added to seed in seed hopper
- Applied with granular feeding mechanisms
- Applied with dusting or spraying equipment

When adjusting, servicing, cleaning and storing machines that have chemical materials associated with them, use the same degree of care that is required for the initial handling of these chemicals.

When chemicals have been used in a machine, it is of utmost importance to inform all employees, service personnel and others of any potential chemical hazard and required safety precautions before they come in contact with the machine, its contents or the applied material.

⚠ Utility safety (Self-propelled machines and applicable attachment and accessories) ⚠

When digging or using ground engaging equipment, be aware of buried cables and other services. Contact your local utilities or authorities, as appropriate to determine the locations of services.

Make sure the machine has sufficient clearance to pass in all directions. Pay special attention to overhead power lines and hanging obstacles. High voltage lines may require significant clearance for safety. Contact local authorities or utilities to obtain safe clearance distances from high voltage power lines.

Retract raised or extended components, if necessary. Remove or lower radio antennas or other accessories. Should a contact between the machine and an electric power source occur the following precautions must be taken: Stop the machine movement immediately. Apply the park brake, stop the engine and remove the key. Check if you can safely leave the cab or your actual position without contact with electrical wires. If not, stay in your position and call for help. If you can leave your position without touching lines, jump clear of the machine to make sure you do not make contact with the ground and the machine at the same time. Do not permit anyone to touch the machine until power has been shut off to the power lines.

Electrical storm safety

Do not operate machine during an electrical storm.

If you are on the ground during an electrical storm, stay away from machinery and equipment. Seek shelter in a permanent, protected structure.

If an electrical storm should strike during operation, remain in the cab. Do not leave the cab or operator's platform. Do not make contact with the ground or objects outside the machine.

Mounting and dismounting

Mount and dismount the machine only at designated locations that have handholds, steps or ladders.

Do not jump off the machine.

Make sure steps, ladders and platforms remain clean and clear of debris and foreign substances. Injury may result from slippery surfaces.

Face the machine when mounting and dismounting.

Maintain a three-point contact with steps, ladders and handholds.

Never mount or dismount from a moving machine.

Do not use the steering wheel or other controls or accessories as handholds when entering or exiting the cab or operator's platform.

Working at heights (if applicable)

When the normal use and maintenance of the machine requires working at heights: Correctly use installed steps, ladders and railings. Never use ladders, steps or railings while the machine is moving. Do not stand on surfaces which are not designed as steps or platforms.

Do not use the machine as a lift, ladder or platform for working at heights.

Noise level safety

Planter fans operate at **80 - 85 dB**, measured three feet (**3 ft**) from the fan.

Exposure to loud noises can cause hearing damage. Always wear hearing protection when operating noisy equipment or when working in a noisy environment.

Decommission safety

When the machine is taken out of service because it is damaged beyond repair or has reached the end of its useful life, disassembly, scrapping and/or recycling of components, fluids, etc. must be performed only by a qualified technician using service instructions and in compliance with local laws and regulations.

Safety rules - 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 required by advanced technology, sound judgment should govern the use and disposal of products of a chemical and petrochemical nature.

NOTE: *The following are recommendations that 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 that may cause considerable spillage.
- In general, avoid skin contact with all fuels, oils, acids, solvents, etc. Most of them contain substances that may be harmful to your health.
- Modern oils contain additives. Do not burn contaminated fuels and or waste oils in ordinary heating systems.
- Avoid spillage when 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 that 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.

Basic instructions - Important notice regarding equipment servicing

All repair and maintenance work listed in this manual must be carried out only by qualified dealership personnel, strictly complying with the instructions given, and using, whenever possible, the special tools.

Anyone who performs repair and maintenance operations without complying with the procedures provided herein shall be responsible for any subsequent damages.

The manufacturer and all the organizations of its distribution chain, including - without limitation - national, regional, or local dealers, reject any responsibility for damages caused by parts and/or components not approved by the manufacturer, including those used for the servicing or repair of the product manufactured or marketed by the manufacturer. In any case, no warranty is given or attributed on the product manufactured or marketed by the manufacturer in case of damages caused by parts and/or components not approved by the manufacturer.

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

In case of questions, refer to your CASE IH Sales and Service Networks.

Basic instructions - Shop and assembly

Shimming

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

Rotating shaft seals

For correct rotating shaft seal installation, proceed as follows:

1. Before assembly, allow the seal to soak in the oil it will be sealing for at least thirty minutes.
2. Thoroughly clean the shaft and check that the working surface on the shaft is not damaged.
3. Position the sealing lip facing the fluid.

NOTE: *With hydrodynamic lips, take into consideration the shaft rotation direction and position the grooves so that they will move the fluid towards the inner side of the seal.*

4. Coat the sealing lip with a thin layer of lubricant (use oil rather than grease). Fill the gap between the sealing lip and the dust lip on double lip seals with grease.
5. Insert the seal in its seat and press down using a flat punch or seal installation tool. Do not tap the seal with a hammer or mallet.
6. While you insert the seal, check that the seal is perpendicular to the seat. When the seal settles, make sure that the seal makes contact with the thrust element, if required.
7. To prevent damage to the seal lip on the shaft, position a protective guard during installation operations.

O-ring seals

Lubricate the O-ring seals before you insert them in the seats. This will prevent the O-ring seals from overturning and twisting, which would jeopardize sealing efficiency.

Sealing compounds

Apply a sealing compound on the mating surfaces when specified by the procedure. Before you apply the sealing compound, prepare the surfaces as directed by the product container.

Spare parts

Only use CNH Original Parts or CASE IH Original Parts.

Only genuine spare parts guarantee the same quality, duration, and safety as original parts, as they are the same parts that are assembled during standard production. Only CNH Original Parts or CASE IH Original Parts can offer this guarantee.

When ordering spare parts, always provide the following information:

- Machine model (commercial name) and Product Identification Number (PIN)
- Part number of the ordered part, which can be found in the parts catalog

Protecting the electronic and/or electrical systems during charging and welding

To avoid damage to the electronic and/or electrical systems, always observe the following practices:

1. Never make or break any of the charging circuit connections when the engine is running, including the battery connections.
2. Never short any of the charging components to ground.
3. Always disconnect the ground cable from the battery before arc welding on the machine or on any machine attachment.
 - Position the welder ground clamp as close to the welding area as possible.
 - If you weld in close proximity to a computer module, then you should remove the module from the machine.
 - Never allow welding cables to lie on, near, or across any electrical wiring or electronic component while you weld.
4. Always disconnect the negative cable from the battery when charging the battery in the machine with a battery charger.

NOTICE: *If you must weld on the unit, you must disconnect the battery ground cable from the machine battery. The electronic monitoring system and charging system will be damaged if this is not done.*

5. Remove the battery ground cable. Reconnect the cable when you complete welding.

Special tools

WARNING

Battery acid causes burns. Batteries contain sulfuric acid.

Avoid contact with skin, eyes or clothing. Antidote (external): Flush with water. Antidote (eyes): flush with water for 15 minutes and seek medical attention immediately. Antidote (internal): Drink large quantities of water or milk. Do not induce vomiting. Seek medical attention immediately.

Failure to comply could result in death or serious injury.

W0111A

The special tools that CASE IH suggests and illustrate in this manual have been specifically researched and designed for use with CASE IH machines. The special tools are essential for reliable repair operations. The special tools are accurately built and rigorously tested to offer efficient and long-lasting operation.

By using these tools, repair personnel will benefit from:

- Operating in optimal technical conditions
- Obtaining the best results
- Saving time and effort
- Working in safe conditions

Basic instructions - Electrical testing

Connector inspection

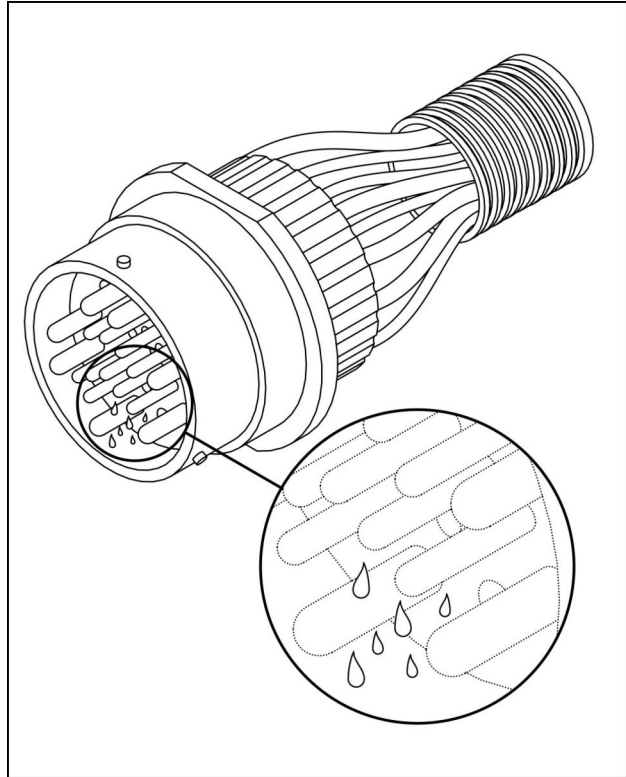
During troubleshooting, always inspect the condition of the pins and cavities on the mating male and female connectors:

- Check for moisture in the connectors.
- Check for corrosion on the pins and in the cavities.
- Check for bent, broken or recessed pins.

Moisture saturated connector

Poor system performance can be caused by moisture in a connector; however, moisture within a connector cannot be seen. If moisture is suspected, use contact cleaner or a heat gun at a low setting to dry the connector. Inspect and, if required, replace the connector cover to remove the source of the moisture.

NOTE: Do not use compressed shop air to dry the connectors. Shop air is often moisture-saturated due to condensation.

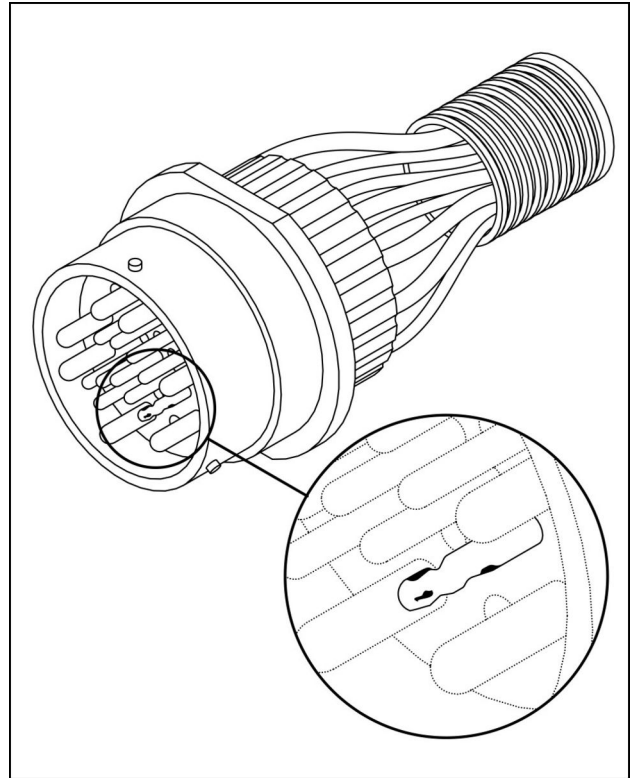


RCIL06PTR107BAA 1

INTRODUCTION

Corroded pins or cavities

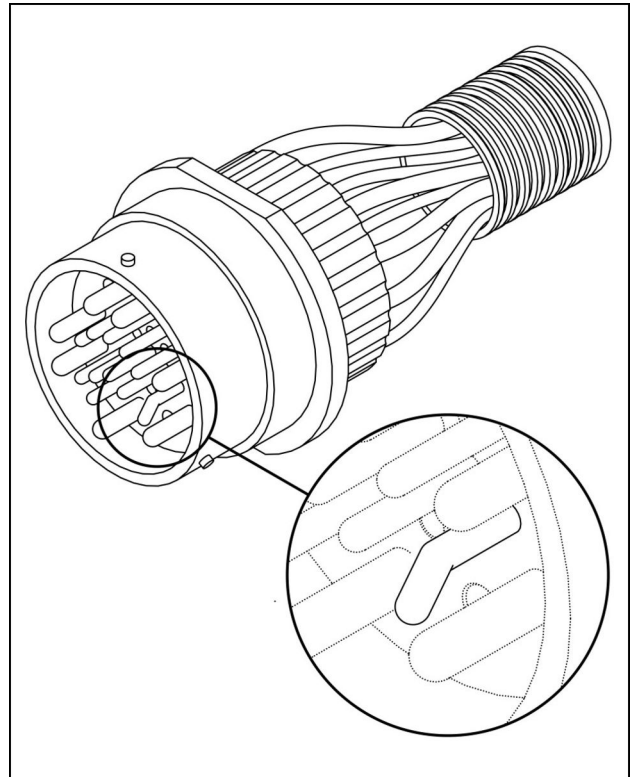
Inspect the pins and cavities for corrosion which can cause a weak electrical connection between the mating connectors. If corrosion is present, replace the affected pins and cavities.



RCIL06PTR105BAA 2

Bent pin

Inspect the pins on the male connector. If a pin is bent and will not properly mate with its cavity in the female connector, replace the pin.

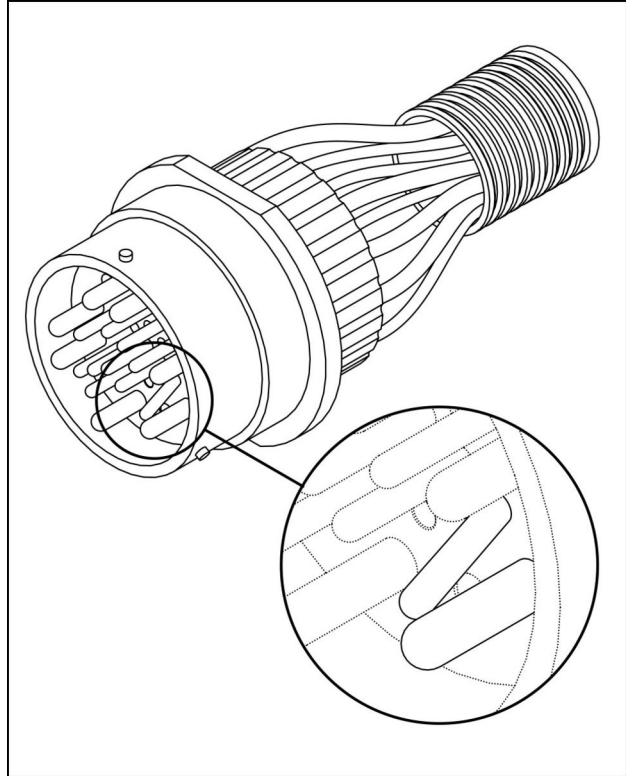


RCIL06PTR103BAA 3

INTRODUCTION

Touching pins

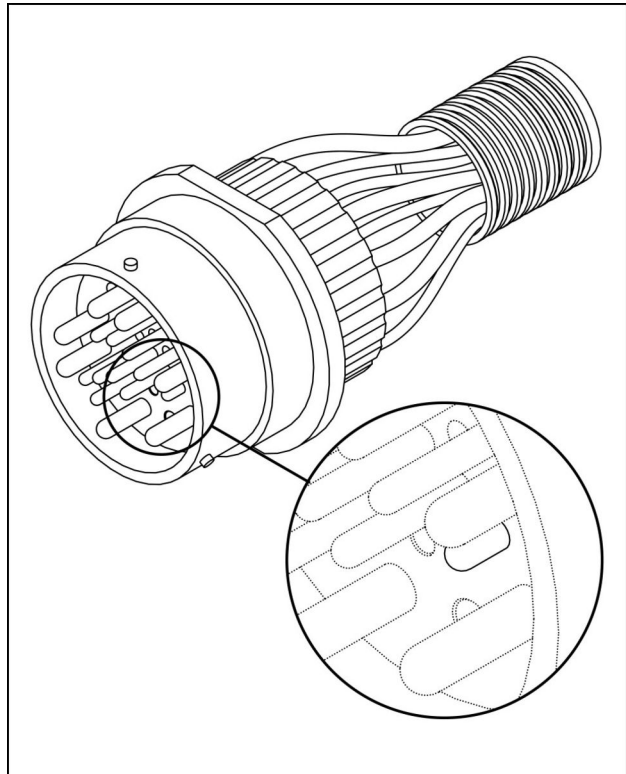
Inspect the pins on the male connector. If a pin is bent to the point where it is shorted to another pin within the connector, replace the pin.



RCIL06PTR104BAA 4

Recessed pin

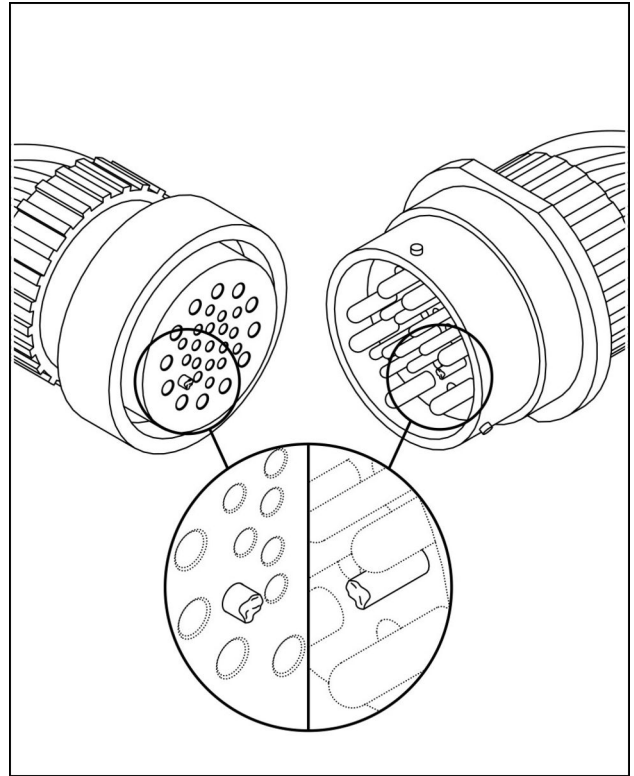
Inspect the male connector for recessed pins, where the pin is pushed back into the connector body, providing minimal contact when the two connectors are joined. If a pin is recessed, push the pin into the connector body from the back of the connector. Join and male and female connectors and reinspect the pin. If the pin is recessed again, replace the male connector.



RCIL06PTR106BAA 5

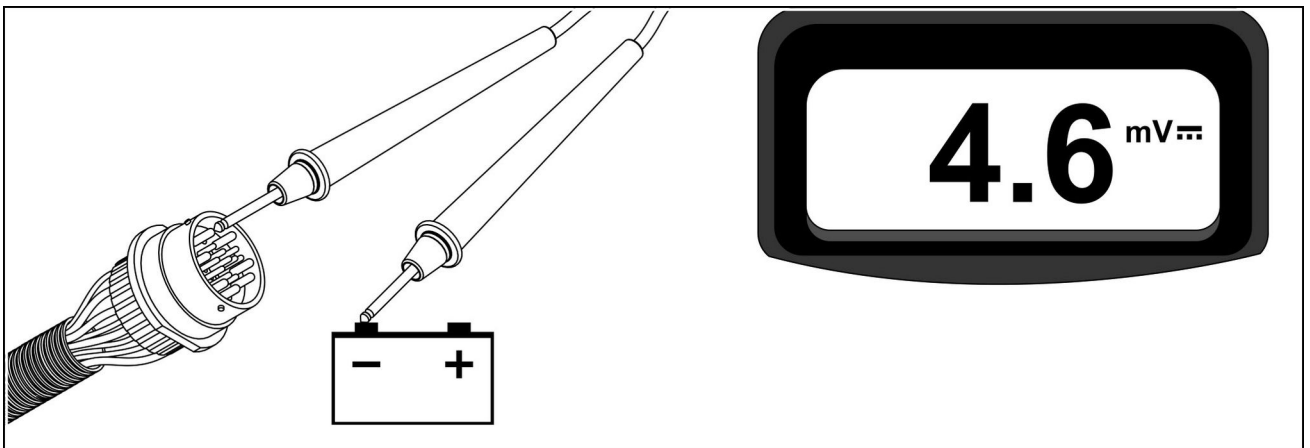
Broken pin

Inspect the male connector for broken pins, where the pin remains with its female cavity, providing minimal contact when the two connectors are joined.



RCIL06PTR108BAA 6

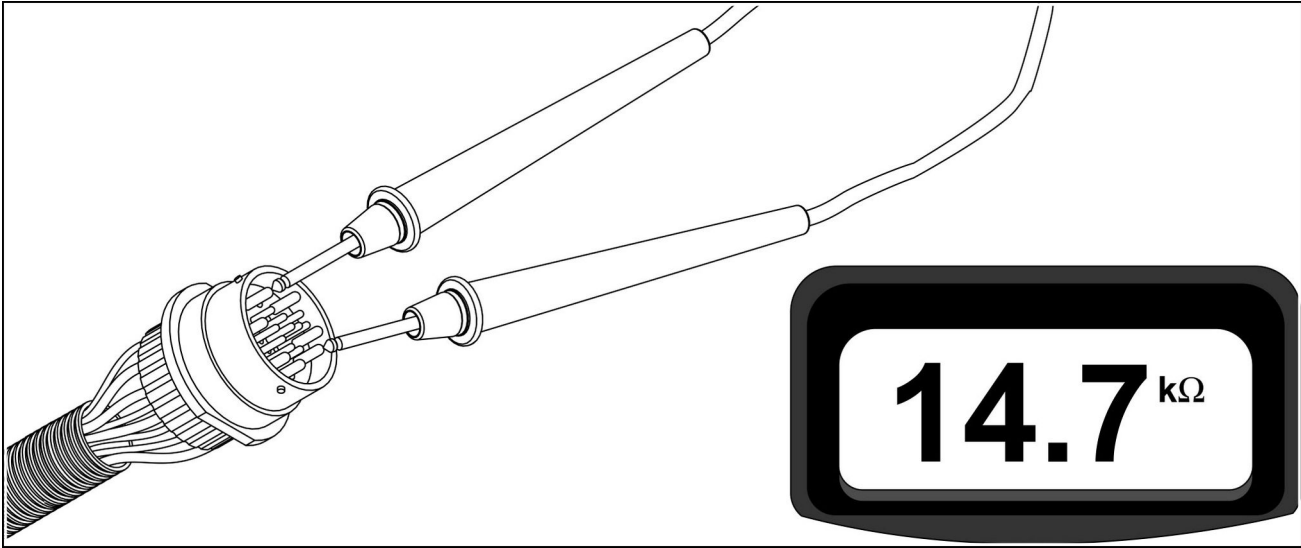
Measuring voltage



RCIL06PTR019CAA 7

1. Select the DC voltage function on the multimeter.
2. Turn system power ON.
3. Touch the positive (+) lead of the multimeter to the pin or cavity that is being tested. Touch the negative (-) lead to a reliable source of tractor battery ground.
4. Read the displayed measurement.

Measuring resistance



RCIL06PTR018CAA 8

To accurately measure small resistances, the internal resistance of the multimeter must be subtracted from the measured resistance. To find the internal resistance of your multimeter:

- Turn the multimeter ON.
- Choose the lowest ohm scale on your multimeter.
- Touch the test leads together to display the internal resistance of the meter.
- Subtract this value from any measured resistance when testing, or use the ZERO function on the multimeter to automatically subtract the internal resistance of the meter.

Turn system power OFF.

1. Disconnect both ends of the circuit or component to be tested.
2. Touch one lead to one end of the circuit or component.

NOTE: Some components – e.g., relays, solenoids – are equipped with diodes which require that the positive (+) test lead and the negative (-) test lead are used at specific connecting points. Always follow the instructions from the troubleshooting procedure when testing these components.

3. Touch the other lead to the other end of the circuit or component.
4. Read the displayed measurement.

Thank you so much for reading.
Please click the “Buy Now!”
button below to download the
complete manual.



After you pay.

You can download the most
perfect and complete manual in
the world immediately.

Our support email:

ebooklibonline@outlook.com