3560 / 4460 / 4660 / 5560 / 5860 / 7660 / 9560

Air Cart

SERVICE MANUAL

Part number 47827465
1st edition English
April 2017

SERVICE MANUAL

3560, 4460 , 4660 , 5560 , 5860 , 7660, 9560

Contents

INTRODUCTION

Contents

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(*) See content for specific models

Foreword

Technical information

This information in this manual has been structured using a unique coding environment. This is the way in which technical information is created, stored, and retrieved in the Technical Information Database. The coding has aligned locations with the warranty system.

All hydraulic information is now in Section 35. All Electrical / Electronic information is now in Section 55. Mechanical information is now in the section for that part or system.

Foreword - 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 manufacturer reserves the right to make improvements in design and changes in specifications at any time without notice and without incurring any obligation to install them on units previously sold. Specifications, descriptions, and illustrative material herein are as accurate as known at time of publication but are subject to change without notice.

In case of questions, refer to your Flexi-Coil Sales and Service Networks.

Safety rules

60 Series Air Carts	

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

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

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

⚠ CAUTION

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 minor or moderate injury.

C0104A

⚠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.

Never permit anyone to ride on the machine.

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, shields and handrails are in good condition and properly installed before operating machine. Never operate the machine with shields removed. Always close 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⚠

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.

⚠ 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

⚠Driving on public roads and general transportation safety⚠

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

Comply with local laws and regulations.

Use appropriate lighting to meet local regulations.

Make sure 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.

⚠Fire and explosion prevention⚠

Fuel and oil that is leaked or spilled 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.

⚠General battery safety⚠

Always wear eye protection when working with batteries.

Do not create sparks or have open flame near battery.

Ventilate when charging or using in an enclosed area.

Disconnect Negative (-) first and reconnect Negative (-) last.

When welding on the machine, disconnect both terminals of the battery.

Do not weld, grind or smoke near a battery.

Follow manufacturer's instructions when storing and handling batteries.

CALIFORNIA Proposition 65 Warning Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm. Battery posts, terminals and related accessories contain lead and lead compounds. Wash hands after handling.

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.

Keep out of reach of children and other unauthorized persons.

⚠Reflectors and warning lamps⚠

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

⚠Personal Protection 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⚠

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.

⚠Utility safety⚠

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.

⚠Working at heights ⚠

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.

⚠Implement safety⚠

Make sure the implement is connected to a stable device when activating the hydraulics to fold and unfold the wings.

Always make sure the work area within the radius of the wings is clear of other persons before operating the wing lift system.

Safety rules - Ecology and the environment

Soil, air, and water quality is important for all industries and life in general. When legislation does not yet rule the treatment of some of the substances that advanced technology requires, sound judgment should govern the use and disposal of products of a chemical and petrochemical nature.

Familiarize yourself with the relative legislation applicable to your country, and make sure that you understand this legislation. Where no legislation exists, obtain information from suppliers of oils, filters, batteries, fuels, anti-freeze, cleaning agents, etc., with regard to the effect of these substances on man and nature and how to safely store, use, and dispose of these substances.

Helpful hints

- Avoid the use of cans or other inappropriate pressurized fuel delivery systems to fill tanks. Such delivery systems may cause considerable spillage.
- In general, avoid skin contact with all fuels, oils, acids, solvents, etc. Most of these products 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 you drain fluids such as used engine coolant mixtures, engine oil, hydraulic fluid, brake fluid, etc. Do not mix drained brake fluids or fuels with lubricants. Store all drained fluids safely until you can dispose of the fluids in a proper way that complies with all local legislation and available resources.
- Do not allow coolant mixtures to get into the soil. Collect and dispose of coolant mixtures properly.
- The air-conditioning system contains gases that should not be released into the atmosphere. Consult an air-conditioning specialist or use a special extractor to recharge the system properly.
- Repair any leaks or defects in the engine cooling system 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. Penetrating weld splatter may burn a hole or weaken hoses, allowing the loss of oils, coolant, etc.

Battery recycling

Batteries and electric accumulators contain several substances that can have a harmful effect on the environment if the batteries are not properly recycled after use. Improper disposal of batteries can contaminate the soil, groundwater, and waterways. Flexi-Coil strongly recommends that you return all used batteries to a Flexi-Coil dealer, who will dispose of the used batteries or recycle the used batteries properly. In some countries, this is a legal requirement.

Mandatory battery recycling

NOTE: *The following requirements are mandatory in Brazil.*

Batteries are made of lead plates and a sulfuric acid solution. Because batteries contain heavy metals such as lead, CONAMA Resolution 401/2008 requires you to return all used batteries to the battery dealer when you replace any batteries. Do not dispose of batteries in your household garbage.

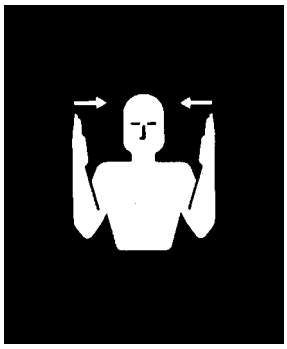
Points of sale are obliged to:

- Accept the return of your used batteries
- Store the returned batteries in a suitable location
- Send the returned batteries to the battery manufacturer for recycling

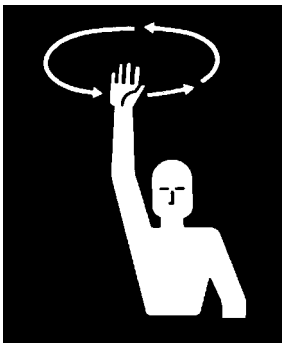
Hand signals

60 Series Air Carts	

It is often necessary to communicate using hand signals in agricultural operations when noise or distance inhibit communication by voice. The **ASAE S351** standard illustrates these hand signals, which provide an easy means of communication, particularly in the interest of safety.

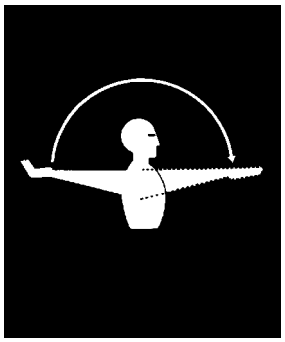


THIS FAR TO GO - Place palms at ear level facing head and move laterally inward to indicate remaining distance to go.



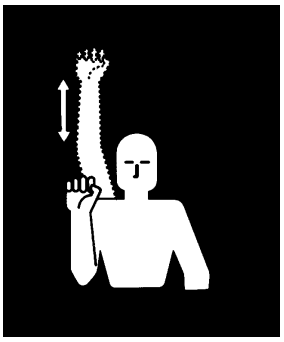
COME TO ME - Raise the arm vertically overhead, palm to the front, and rotate in large horizontal circles.

MOVE TOWARD ME, FOLLOW ME - Point toward person(s), vehicle(s), or unit(s), beckon by holding the arm horizontally to the front, palm up, and motioning toward the body.

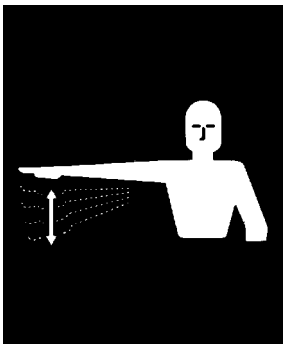


MOVE OUT, TAKE OFF - Face the desired direction of movement; hold the arm extended to the ear; then swing it overhead and forward in the direction of desired movement until it is horizontal, palm down.

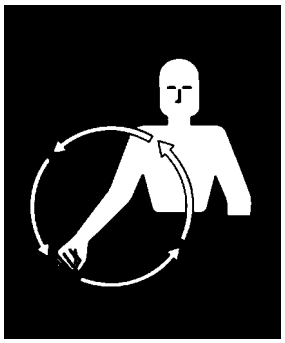
STOP - Raise hand upward to the full extent of the arm, palm to the front. Hold that position until the signal is understood.



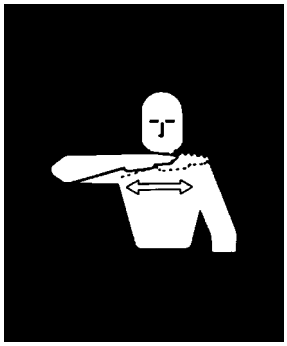
SPEED IT UP, INCREASE SPEED - Raise the hand to the shoulder, fist closed; thrust the fist upward to the full extent of the arm and back to the shoulder rapidly several times.



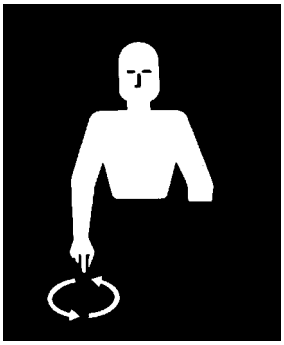
SLOW IT DOWN, DECREASE SPEED - Extend the arm horizontally sidewards, palm down, and wave arm downward



START THE ENGINE - Simulate cranking of vehicles by moving arm in circular motion at waist level.



STOP THE ENGINE - Draw right hand, palm down, across the neck in a "throat cutting" motion from left to right.



LOWER EQUIPMENT - Make circular motion with either hand pointing to the ground.

RAISE EQUIPMENT - Make circular motion with either hand at head level.

Safety signs

The following safety signs are on your machine as a guide for your safety and for the safety of those working with you. Walk around the machine and note the content and the location of all safety signs before you operate your machine.

Keep all safety signs clean and legible. Clean safety signs with a soft cloth, water, and gentle detergent.

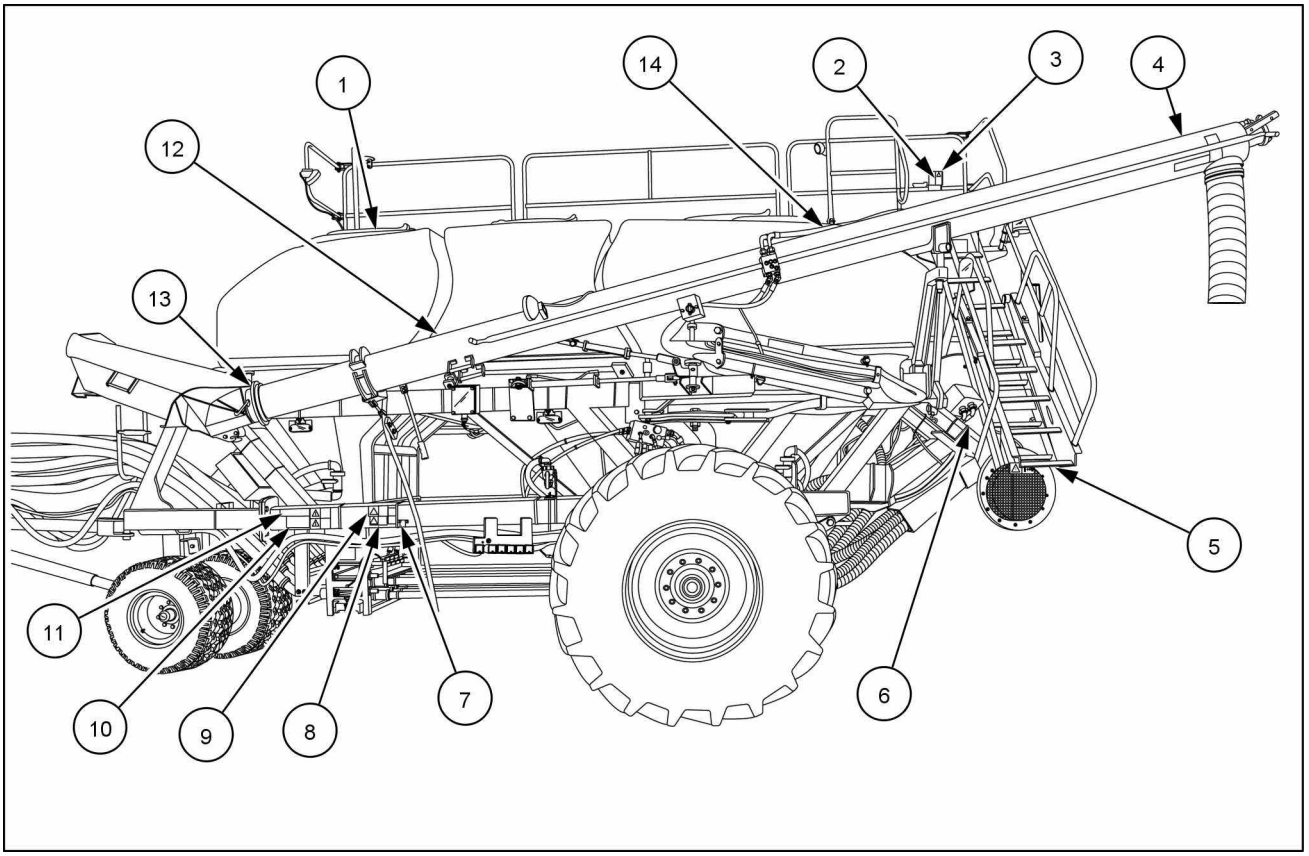
NOTICE: *Do not use solvent, gasoline, or other harsh chemicals. Solvents, gasoline, and other harsh chemicals may damage or remove safety signs.*

Replace all safety signs that are damaged, missing, painted over, or illegible. If a safety sign is on a part you or your dealer replaces, make sure that you or your dealer install the safety sign on the new part. See your dealer for replacement safety signs.


Safety signs that display the “Read operator’s manual” symbol direct you to the operator’s manual for further information regarding maintenance, adjustments, or procedures for particular areas of the machine. When a safety sign displays this symbol, consult the appropriate page of the operator’s manual.

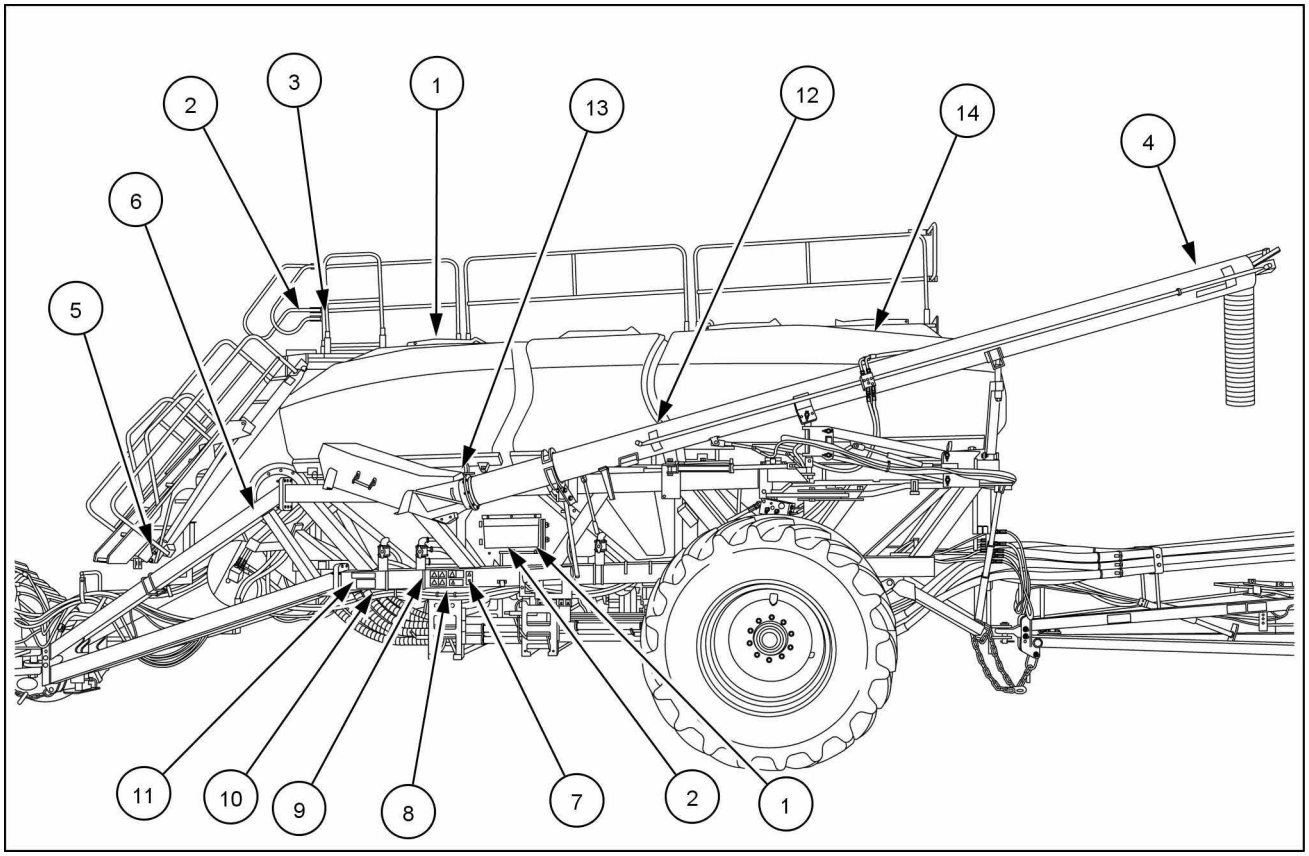

Safety signs that display the “Read service manual” symbol direct you to the service manual. If you doubt your ability to perform service operations, contact your dealer.

NOTE: *New decals are available from your Flexi-Coil dealer.*



SAIL15SE00440FA 1

Tow- behind air cart

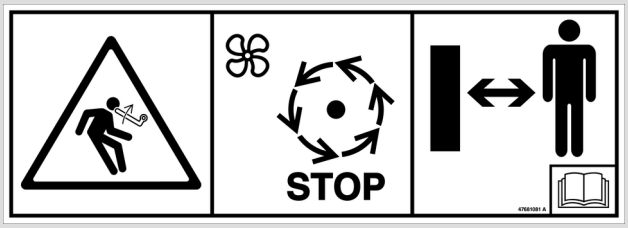


SAIL15SE01087FA 2

Tow - between air cart with auxiliary tank

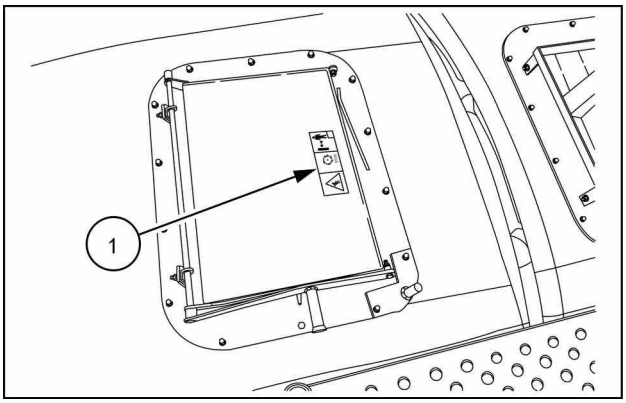
All models

CAUTION
Pressurized tanks apply considerable force to lids.
Never open lids when pressurization fan is operating.
Failure to comply could result in minor or moderate injury.
Quantity: 1 per tank lid
Part number: 47681081



47681081 3

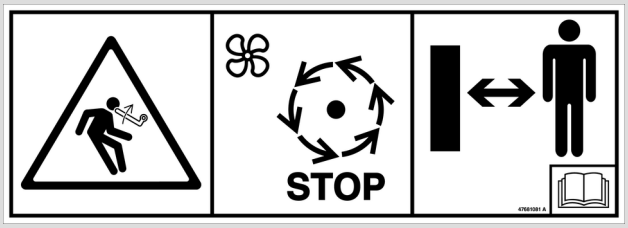
On tank lid **(1)**.



SAIL15SE00397AA 4

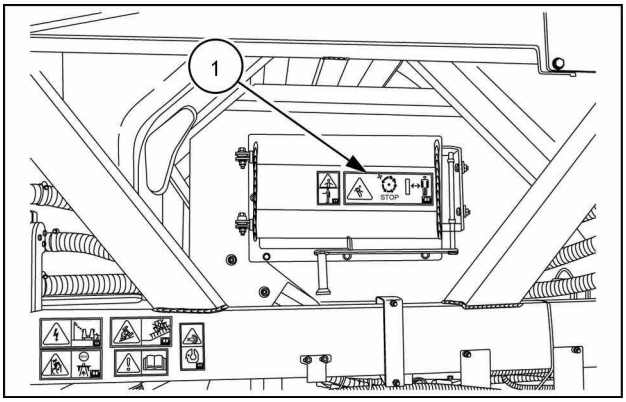
Auxiliary tank models

CAUTION
Pressurized tanks apply considerable force to lids.
Never open lids when pressurization fan is operating.
Failure to comply could result in minor or moderate injury.
Quantity: 1 per auxiliary tank left side door
Part number: 47681081



47681081 5

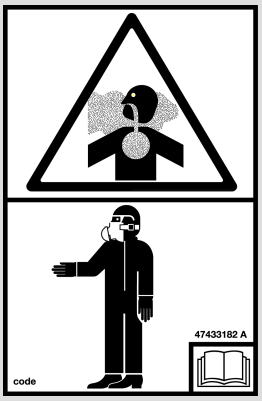
On tank door **(1)**.



SAIL16SE00049AA 6

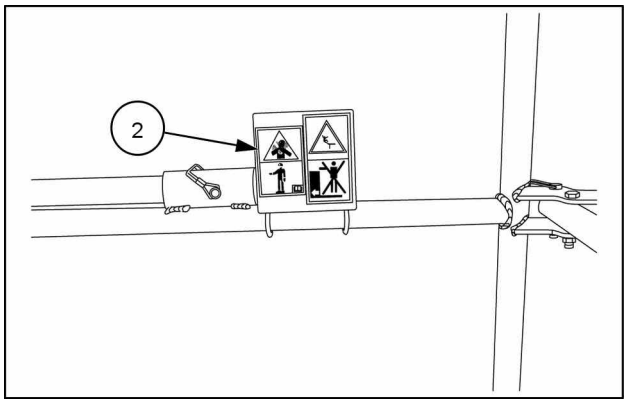
All models

WARNING
Stop fan before opening lid. Do not operate fan with lid open. Avoid exposure to airborne chemicals. Dust and fumes will be exhausted if fan is operated with tank lid open. Chemicals may cause eye, skin or breathing problems. Wear face mask, gloves and goggles. Read and follow chemical suppliers safety instructions. Failure to comply could result in death or serious injury.
Quantity: 1
Part number: 47433182



47433182 7

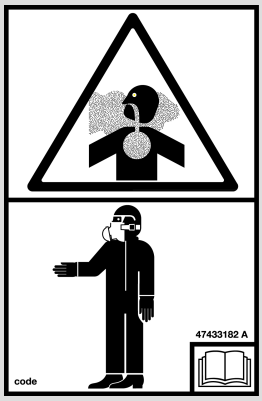
On platform handrail at top of ladder **(2)**.



SAIL15SE00396AA 8

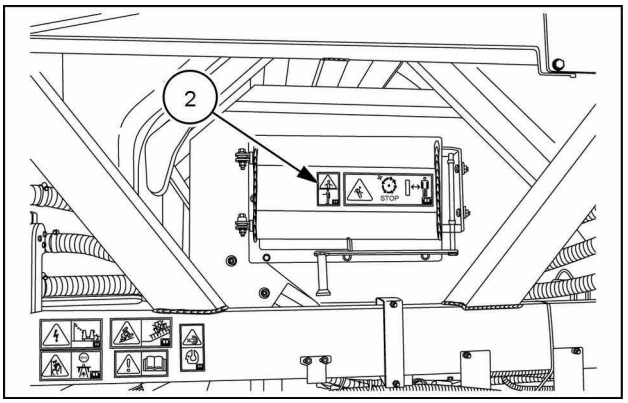
Auxiliary tank models

WARNING
Stop fan before opening lid. Do not operate fan with lid open. Avoid exposure to airborne chemicals. Dust and fumes will be exhausted if fan is operated with tank lid open. Chemicals may cause eye, skin or breathing problems. Wear face mask, gloves and goggles. Read and follow chemical suppliers safety instructions. Failure to comply could result in death or serious injury.
Quantity: 2 on auxiliary tank
Part number: 47433182



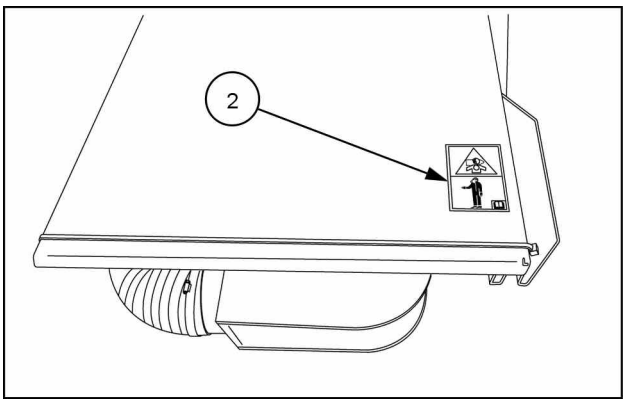
47433182 9

On auxiliary tank door **(2)**.



SAIL16SE00049AA 10

On auxiliary tank fill lid **(2)**.

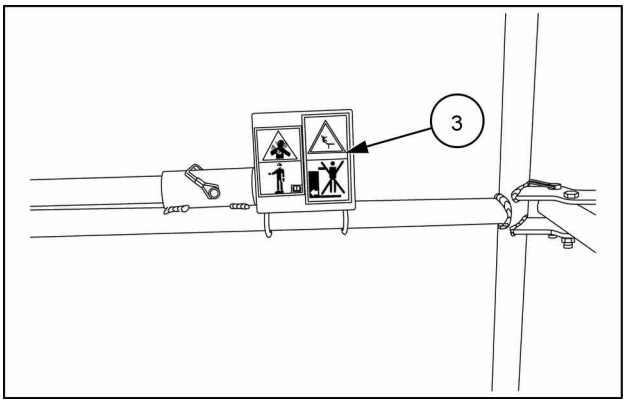


SAIL16SE00080AA 11

WARNING
Do not ride on machine. Do not stand on tank. Failure to comply could result in death or serious injury.
Quantity: 1
Part number: 84004732

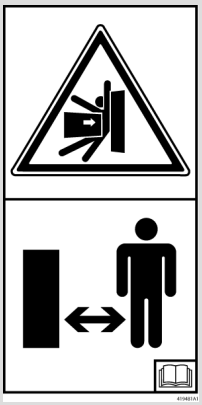
84004732A 12

On platform handrail at top of ladder **(3)**.



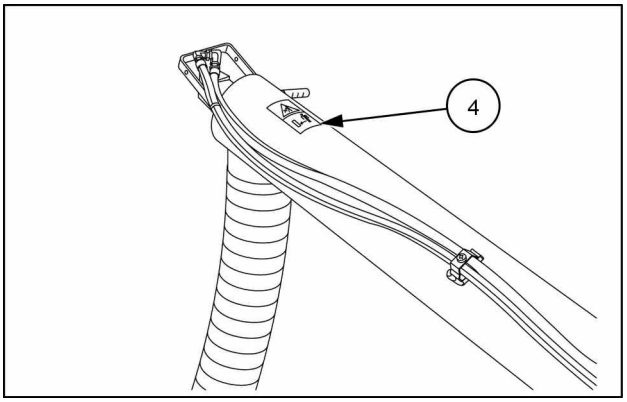
SAIL15SE00396AA 13

DANGER
Crush hazard. Exercise caution when manipulating auger, be aware of your surroundings and potential pinch points.
Failure to comply will result in death or serious injury.
Quantity: 1
Part number: 419481A1



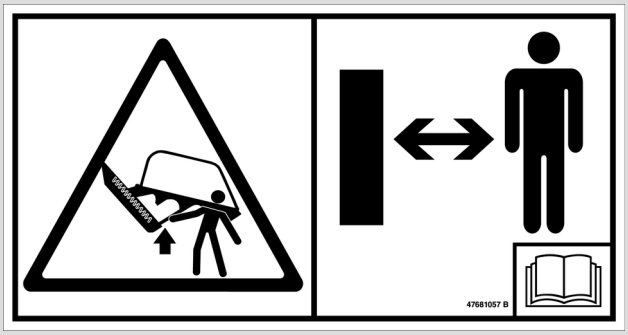
419481A1 14

On top of auger **(4)**.



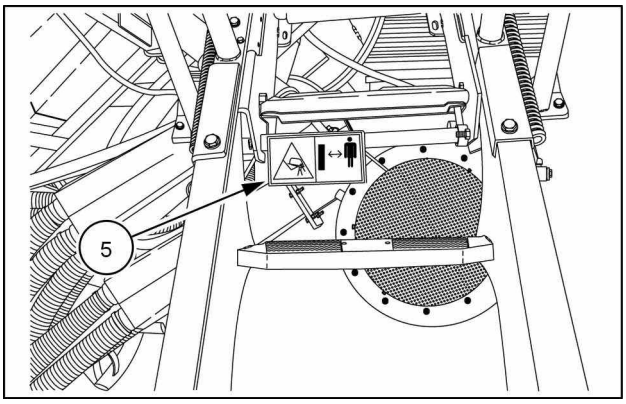
SAIL15SE00398AA 15

CAUTION
Lower ladder may swing upwards rapidly. See operator's manual for setting spring tension. Failure to comply may result in minor or moderate injury.
Quantity: 1
Part number: 47681057



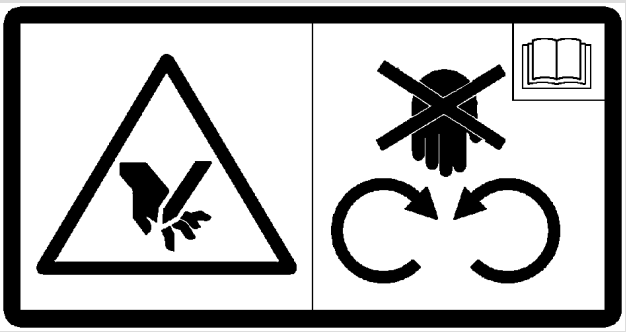
47681057 16

On ladder **(5)**.



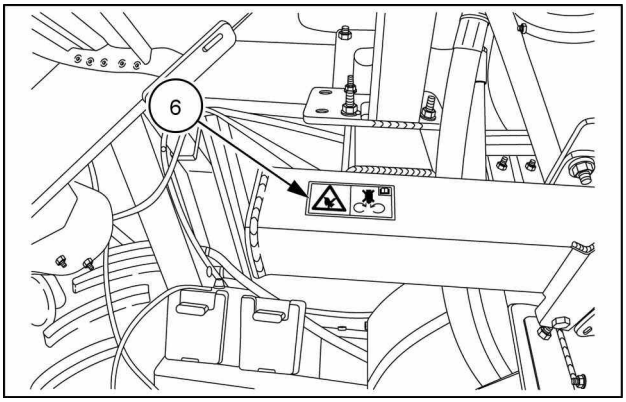
SAIL15SE00392AA 17

WARNING
Rotating parts (fan and alternator drive)
Before removing any guards stop tractor and remove key. Use lock-out tags/procedures as required to prevent unanticipated machine operation. Do not operate with guards removed.
Failure to comply could result in death or serious injury.
Quantity: 1
Part number: 87757489



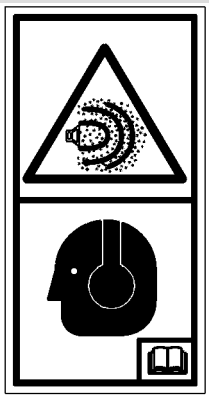
87757489 18

On fan mount **(6)**.



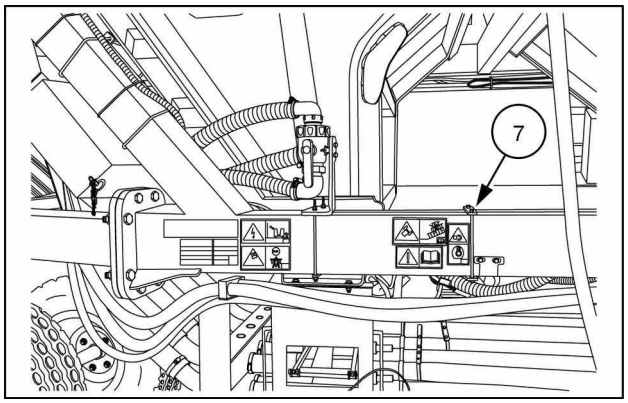
SAIL15SE00402AA 19

CAUTION
Avoid hearing loss, wear hearing protection when fans are operating. Failure to comply could result in minor to moderate injury.
Quantity: 1
Part number: 47405861



47405861A 20

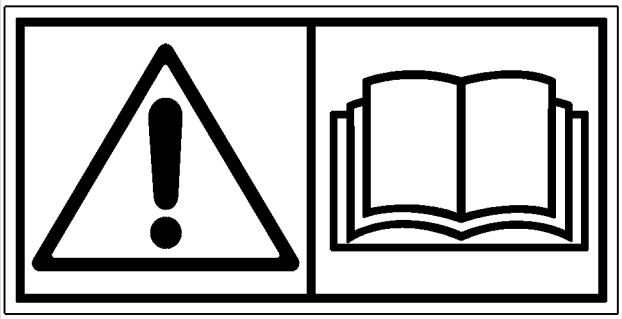
On left side of frame **(7)**.



SAIL15SE00415AA 21

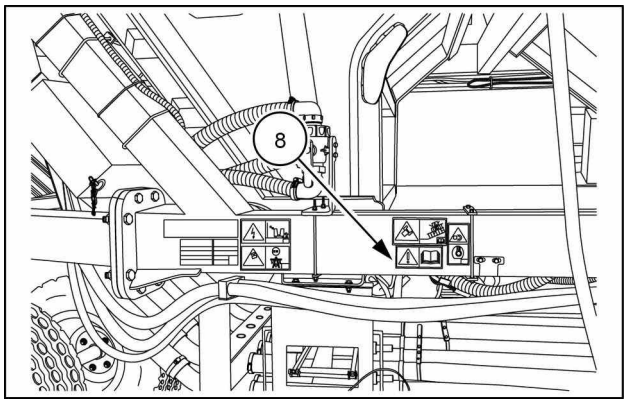
All models

CAUTION
Avoid injury!
Read and follow the instructions in this manual. Failure to comply could result in minor or moderate injury
Quantity: 1
Part number: 47358801



47358801A 22

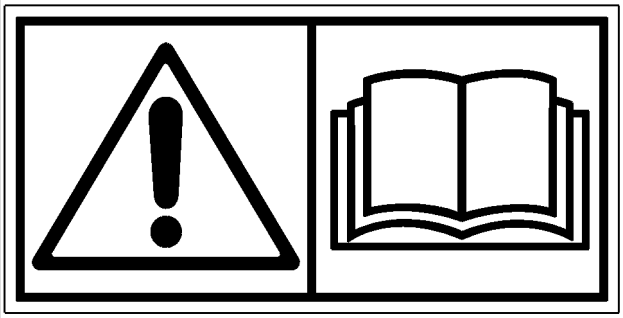
On left side of frame **(8)**.



SAIL15SE00415AA 23

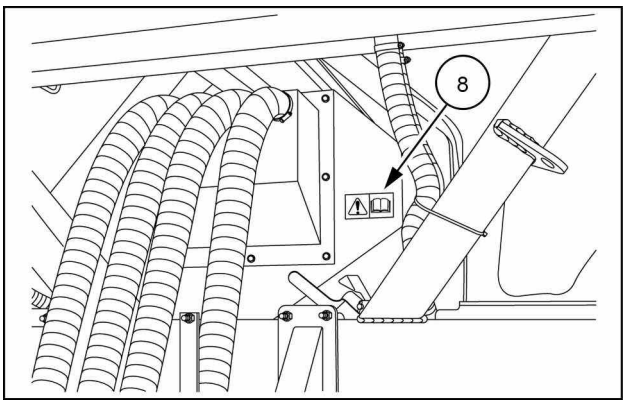
Auxiliary tank models

CAUTION
Avoid injury!
Read and follow the instructions in this manual.
Failure to comply could result in minor or moderate injury
Quantity: 1
2 (auxiliary tank equipped)
Part number: 47358801



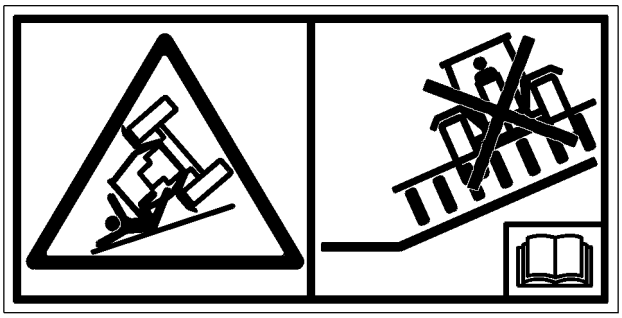
47358801A 24

On auxiliary tank door **(8)** (left side).



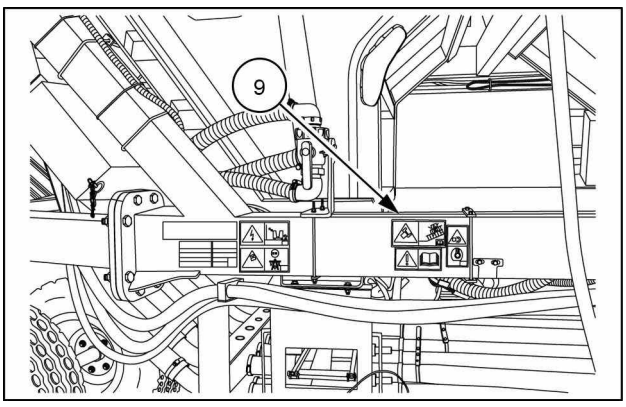
SAIL16SE00079AA 25

WARNING
Loss of control hazard! Do not operate on steep slopes.
Failure to comply could result in death or serious injury.
Quantity: 1
Part number: 47405862



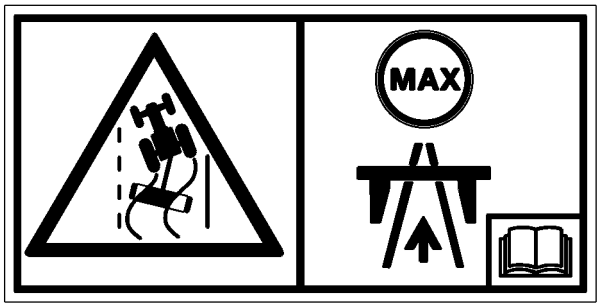
47405862A 26

On left side of frame **(9)**.



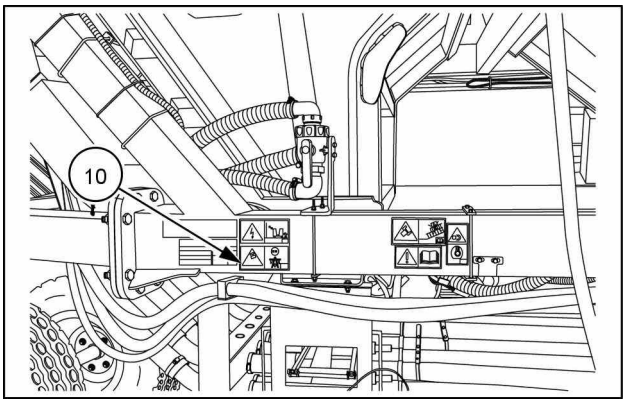
SAIL15SE00415AA 27

WARNING
Loss of control hazard!
Drive within the limits of road conditions and machine loading.
Never exceed 32 km/h (20 mph) when towing the machine.
Failure to comply could result in death or serious injury.
Quantity: 1
Part number: 47403730



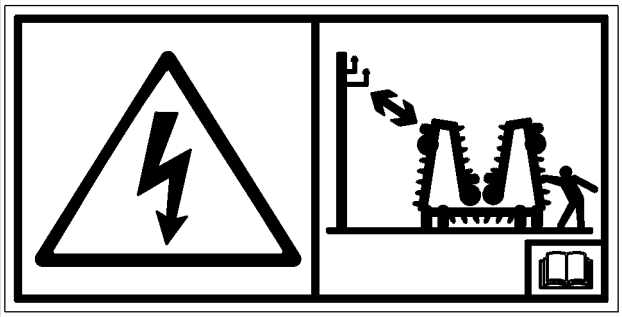
47403730A 28

On left side of frame **(10)**.



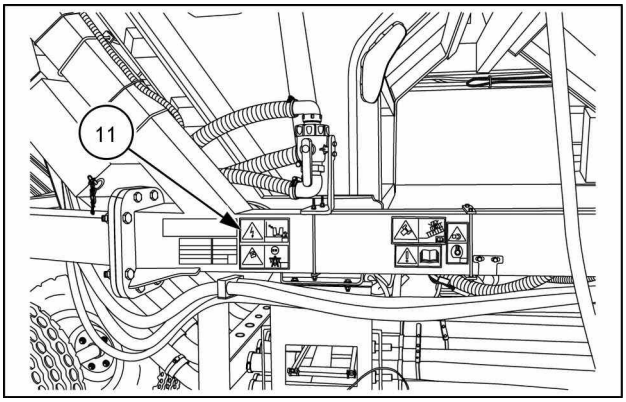
SAIL15SE00415AA 29

WARNING
Electrocution hazard!
Contact with overhead power lines can cause severe electrical burns or death from electrocution. Make sure there is enough clearance between equipment and overhead power lines.
Failure to comply could result in death or serious injury.
Quantity: 1
Part number: 47405863



47405863 30

On left side of frame **(11)**.

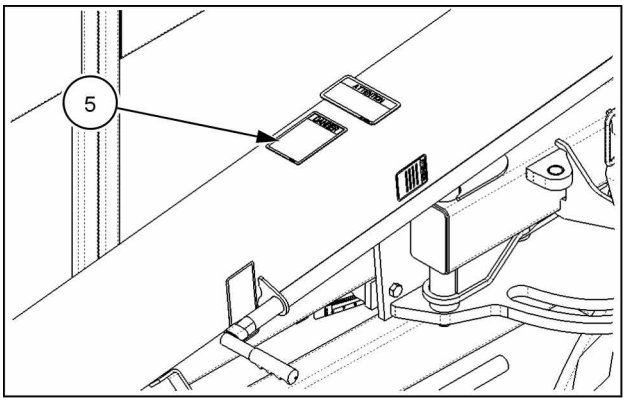


SAIL15SE00415AA 31

DANGER
1. Stay away from intake end. Keep others away.
2. Keep all shields in place.
3. Keep hands, feet, hair and clothing away from flighting.
Failure to comply will result in death or serious injury.
Quantity: 1
English: GD-500.80
French Canadian: 425209A1
Russian: GD-500.80RU

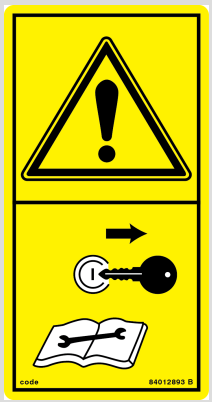
GD50080 32

On auger tube **(12)**.



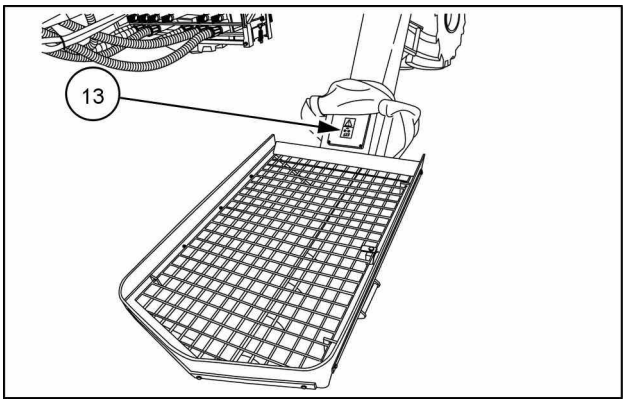
SAPE12SE0141AA 33

WARNING
Before servicing stop the tractor and remove key, read the service specifications at the back of this manual. Use lock-out tags/procedures as required to prevent unanticipated machine operation. Do not operate with guard removed. Failure to comply could result in death or serious injury.
Quantity: 1
Part number: 84012893



84012893_B 34

On auger tube near the hopper **(13)**.



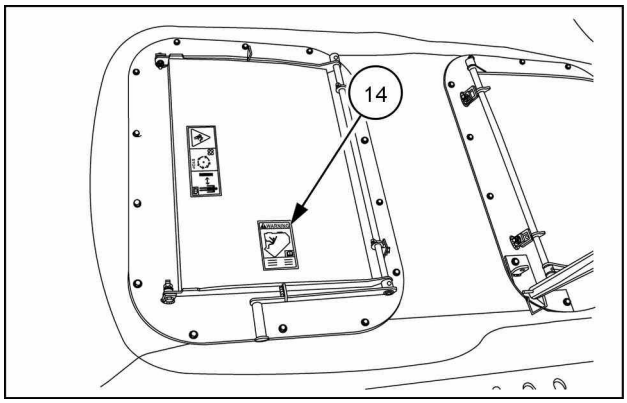
SAIL15SE00904AA 35

4660, 5560, 9560 only

WARNING
ENTRY HAZARD
NO LADDER THIS HATCH
DO NOT ENTER.
Failure to comply could result in death or serious injury.
Quantity: 2
Part number:
English: 84316465
French–Canadian: 84316466

84316465 36

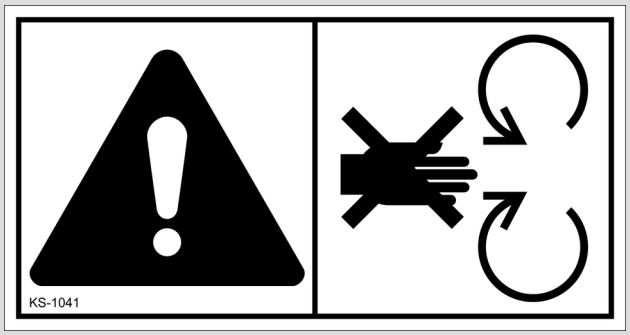
(14) on rear tank lids on tanks that have two lids.



SAIL15SE01220AA 37

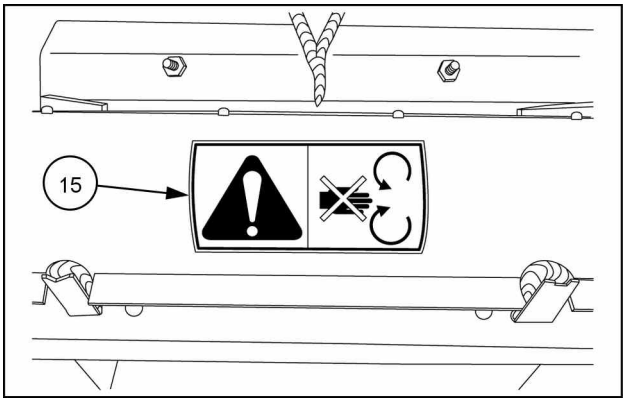
Conveyor only

WARNING
Rotating parts (conveyor belts)
Before removing any guards stop tractor and remove key. Use lock-out tags/procedures as required to prevent unanticipated machine operation. Do not operate with guards removed.
Failure to comply could result in death or serious injury.
Quantity: 2
Part number: KS-1041

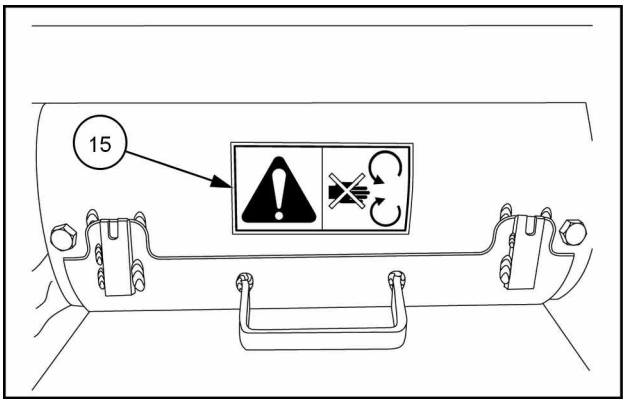


KS-1041 38

(15) on conveyor access doors — 2 locations.



SAIL15SE01089AA 39



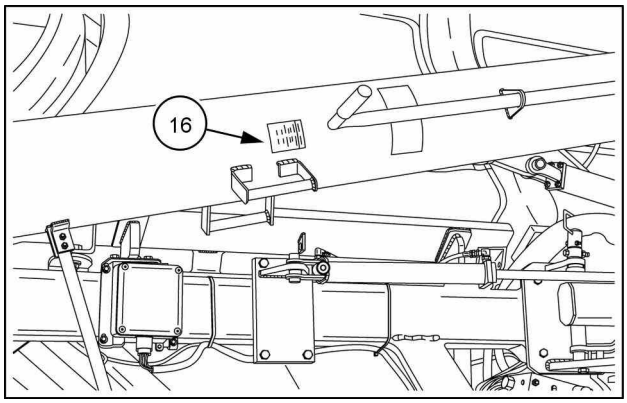
SAIL15SE01090AA 40

Safety signs

ATTENTION
Auger must be locked in transport position. Failure to do so may result in implement damage.
Quantity: 1
English: GD-500.06
French-Canadian: 425129A1

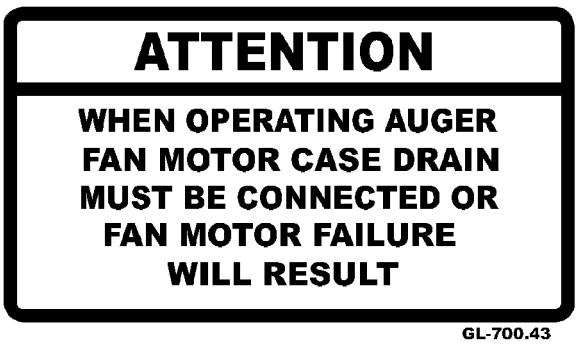
GD-500-06 1

On auger tube **(16)** near transport lock.



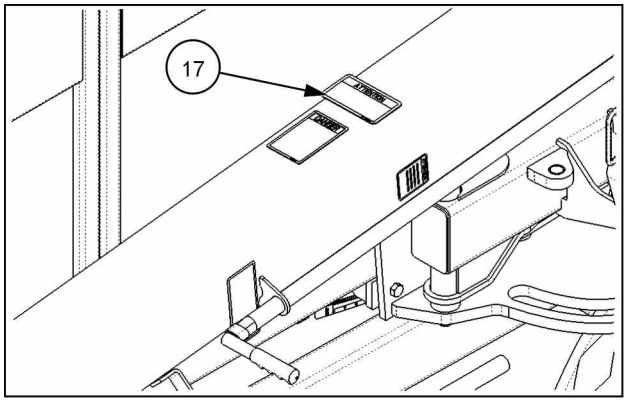
SAIL15SE00401AA 2

ATTENTION
When operating auger fan motor case drain must be connected or fan motor failure will result.
Quantity: 1
English: GL-700.43
French Canadian: 425240A1



GL70043 3

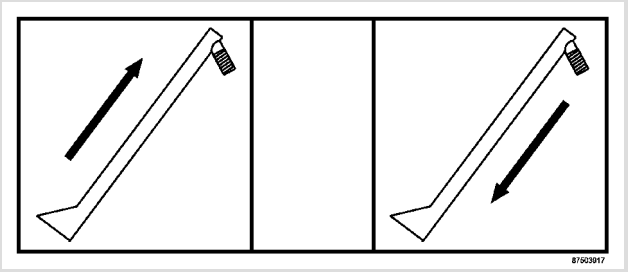
On auger tube near operating lever **(17)**.



SAPE12SE0141AA 4

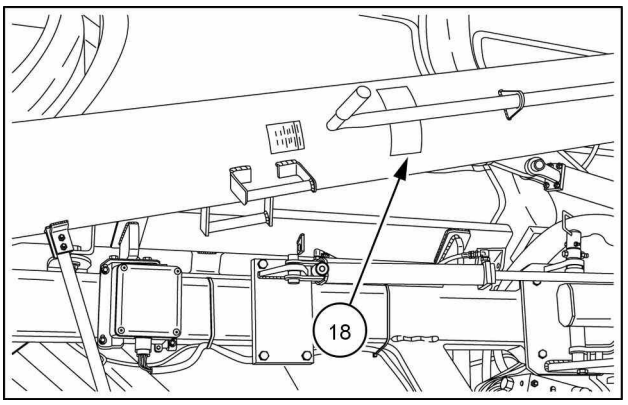
Auger only

Auger motor operation guide, when operating the auger turn handle up to convey product up the tube (towards tanks), and down to convey product down the tube (to the hopper)
Quantity: 1
Part number: 87503917



87503917 5

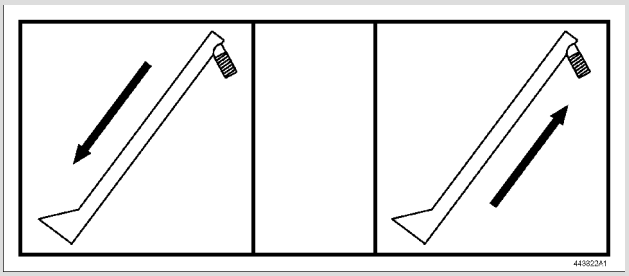
On auger tube **(18)**



SAIL15SE00401AA 6

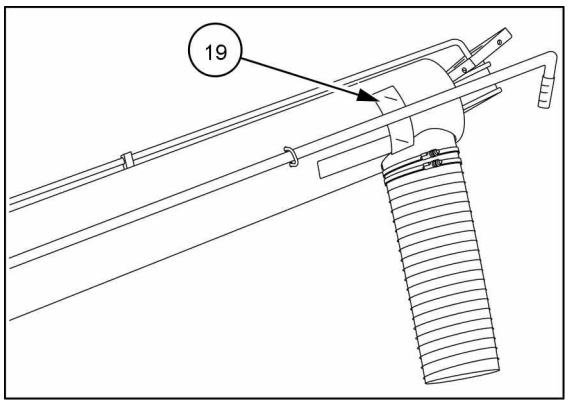
Auger only

Auger motor operation guide, when operating the auger turn handle down to convey product up the tube (towards tanks), and up to convey product down the tube (to the hopper).
Quantity: 1
Part number: 443822A1



443822A1 7

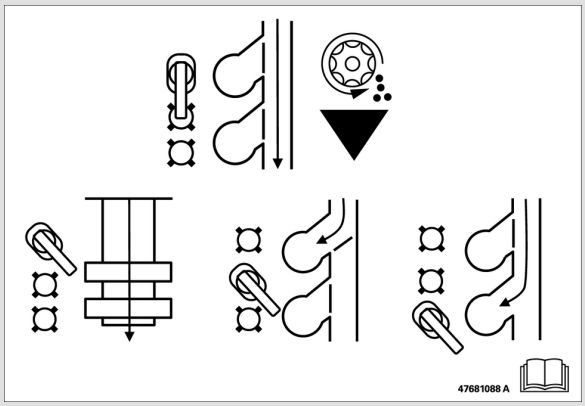
Top of auger tube **(19)**.



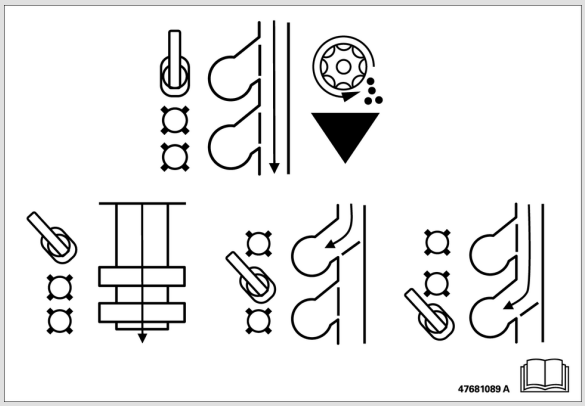
111080S 8

Operation of meter control handles. Note that meter handle should be placed in storage position when tank is not in use.
Quantity: 1 per meter bank
Part number: 47681087
47681088
47681089
47681090

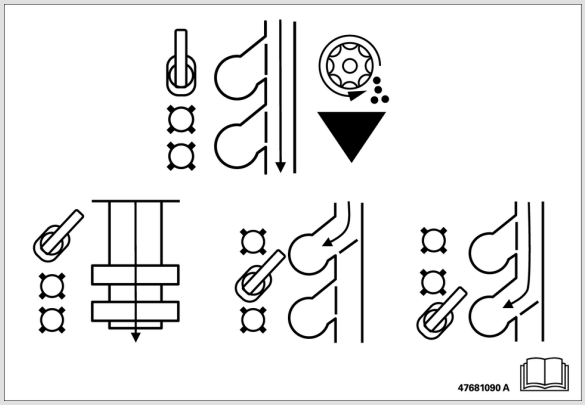
NOTE: The decal in a particular location shows the correct handle orientation.



47681088 9



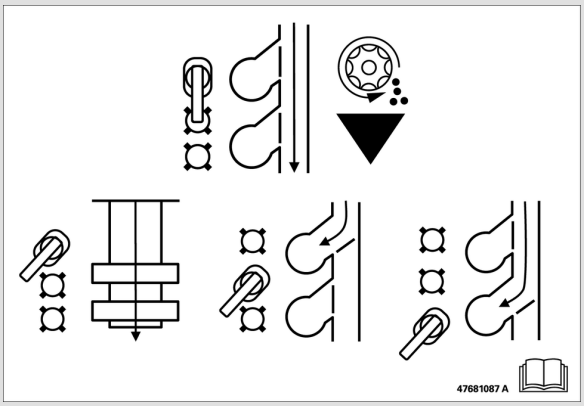
47681089 10



47681090 11

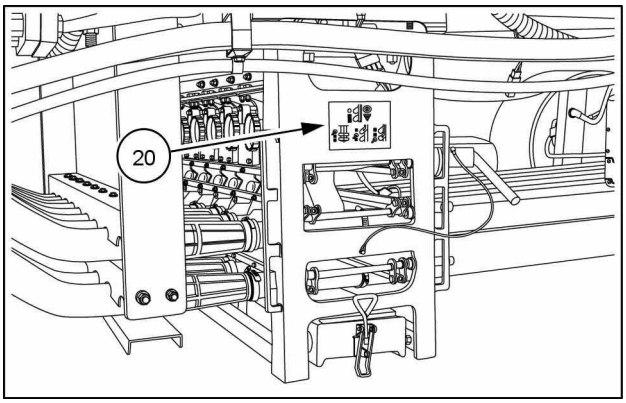
Operation of meter control handles. Note that meter handle should be placed in storage position when tank is not in use.
Quantity: 1 per meter bank
Part number: 47681087
47681088
47681089
47681090

NOTE: The decal in a particular location shows the correct handle orientation.



47681087 12

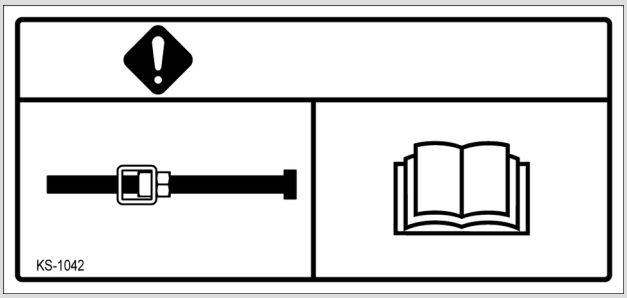
On the side of each meter bank **(20)**.



SAIL15SE00405AA 13

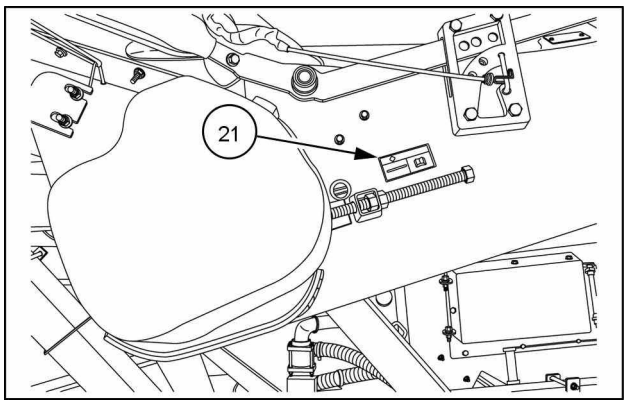
Conveyor only

IMPORTANT
Belt alignment and belt tension should be checked periodically.
Belt damage will occur if alignment or tension has not been maintained.
Belt tension should be 31 N·m (23 lb ft) of torque on adjustment bolts.
Belt should be tracked to be centered on the idle and drive roller.
Part number : KS-1042
Quantity: 1



KS-1042 14

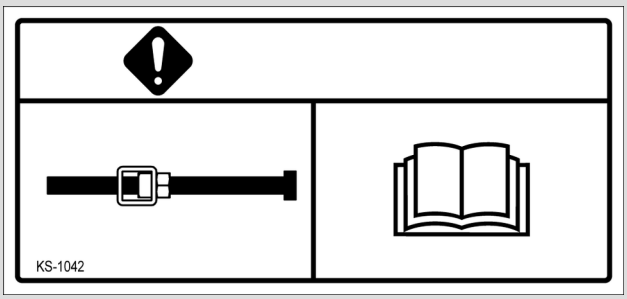
Conveyor tube **(21)**.



SAIL15SE00428AA 15

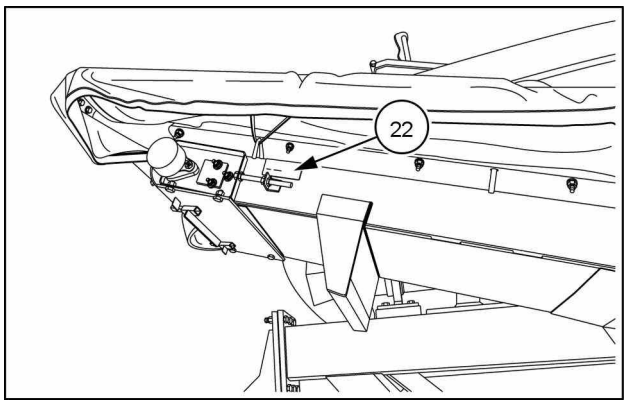
Conveyor only

IMPORTANT
Belt alignment and belt tension should be checked periodically.
Belt damage will occur if alignment or tension has not been maintained.
Belt tension should be 5.6 N·m (50 lb in) on the adjustment bolts, or until the center of the hopper belt rises off the support beneath it.
Belt should be tracked to be centered on the idle and drive roller.
Part number : KS-1042
Quantity: 1



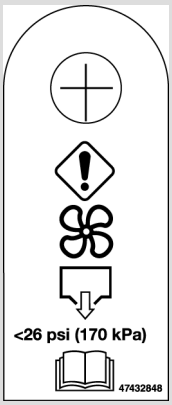
KS-1042 16

Conveyor hopper **(22)**.



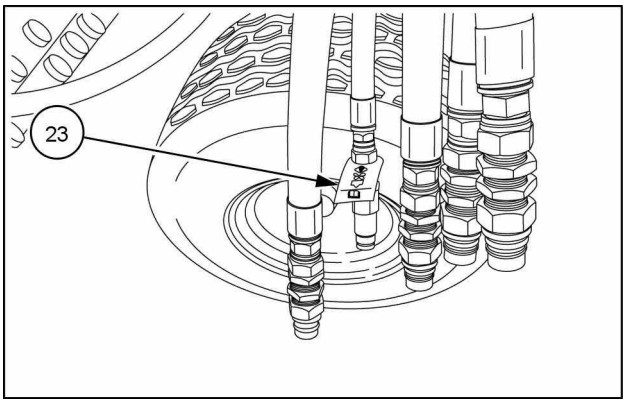
SAIL15SE00431AA 17

NOTICE
Fan motor case drain line
Failure to connect this line to a case drain port with less than 170 kPa (26 psi) back pressure will result in motor failure and the voiding of warranty.
Quantity: 1
Part number: 47432848



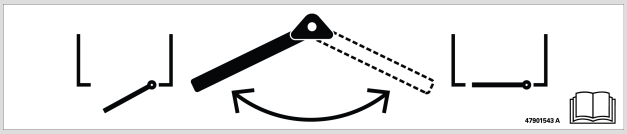
47432848 18

On the case drain line near the coupler **(23)**.



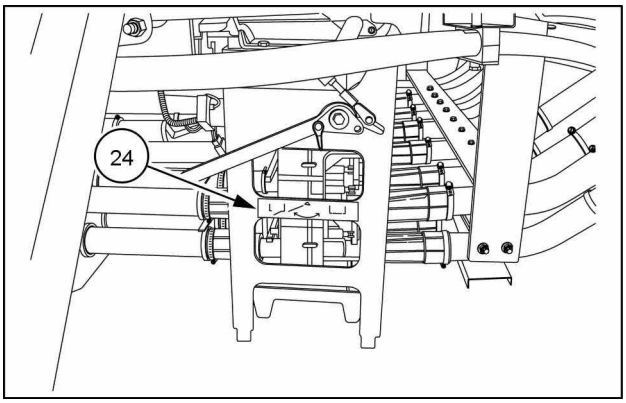
SAIL15SE00395AA 19

Tank shut-off position.
Quantity: 1 per meter bank
Part number: 47901543



47901543 20

On the right side of each meter bank. **(24)**.



SAIL15SE01139AA 21

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 Flexi-Coil 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 Flexi-Coil 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.

⚠ 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

Special tools

The special tools that Flexi-Coil suggests and illustrate in this manual have been specifically researched and designed for use with Flexi-Coil 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

Liquid fertilizer system - Torque - Fasteners

60 Series Air Carts	

Society of Automotive Engineers (SAE) fastener torque

Use these torques, unless special torques are specified. Values are for Unified Coarse (UNC) and Unified Fine (UNF) thread fasteners, plated or unplated, as received from supplier. Fasteners can be dry or lubricated with normal engine oil. Values do not apply if graphite, molydisulphide or other extreme pressure lubricant is used.

SAE Grade No.	2				5				8 (See Note below.)			
Bolt Head Identification (See Note below.)	 RH04H171 1				 RH04H175 2				 RH04H176 3			
Bolt Size	LB FT		Nm		LB FT		Nm		LB FT		Nm	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
1/4	5	6	7	8	9	11	12	15	12	15	16	20
5/16	10	12	14	16	17	20.5	23	28	24	29	33	39
3/8	20	23	27	31	35	42	48	57	45	54	61	73
7/16	30	35	41	47	54	64	73	87	70	84	95	114
1/2	45	52	61	70	80	96	109	130	110	132	149	179
9/16	65	75	88	102	110	132	149	179	160	192	217	260
5/8	95	105	129	142	150	180	203	244	220	264	298	358
3/4	150	185	203	251	270	324	366	439	380	456	515	618
7/8	160	200	217	271	400	480	542	651	600	720	814	976
1	250	300	339	406	580	696	787	944	900	1080	1220	1464
1-1/8					800	880	1085	1193	1280	1440	1736	1953
1-1/4					1120	1240	1519	1681	1820	2000	2468	2712
1-3/8					1460	1680	1980	2278	2380	2720	3227	3688
1-1/2					1940	2200	2631	2983	3160	3560	4285	4827

NOTE: *Bolt head identification marks as per grade. Manufacturing marks will vary.*

NOTE: *Thick nuts must be used with Grade 8 bolts.*

Metric International Standards Organization (ISO) fastener torque

Use these torques, unless special torques are specified. Values are for coarse thread fasteners, plated or unplated, as received from supplier. Fasteners can be dry or lubricated with normal engine oil. Values do not apply if graphite, molydisulphide or other extreme pressure lubricant is used.

ISO Class No.	8.8				10.9				12.9			
Bolt Head Identification (See Note below.)	 RH04H178 4				 RH04H179 5				 RH04H180 6			
Bolt Size	Nm		LB FT		Nm		LB FT		Nm		LB FT	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
M4	3	4	2	3	4	5	3	4	Because of the low ductility of these fasteners, the torque range is to be determined individually for each application. As a general rule, the torque ranges specified for Grade 10.9 fasteners can be used satisfactorily on 12.9 fasteners.			
M5	6.5	8	5	6	9.5	11	7	8				
M6	10.5	12	8	9	15	17.5	11	13				
M8	26	31	19	23	37	43	27	32				
M10	52	61	38	45	73	87	54	64				
M12	90	107	66	79	125	150	93	112				
*M14	144	172	106	127	200	245	149	179				
M16	217	271	160	200	310	380	230	280				
M20	434	515	320	380	610	730	450	540				
M24	675	815	500	600	1050	1275	780	940				
M30	1250	1500	920	1100	2000	2400	1470	1770				
M36	2175	2600	1600	1950	3500	4200	2580	3090				

NOTE: *Bolt head identification marks as per grade. Manufacturing marks will vary.*

Torque - Hydraulic tubes and fittings

60 Series Air Carts	

NOTICE: *The torque values given are for DRY TORQUES.*

Standard torque data for hydraulic tubes and fittings

Hoses / Tubes to Steel Fittings 37° Flared Fittings							
Size	Tubing OD		Thread Size	Nm		LB FT	
	Inches	mm		Min	Max	Min	Max
2	1/8	3.2	5/16-24	10	11	7	8
3	3/16	4.8	3/8-24	13	14	10	11
4	1/4	6.4	7/16-20	18	19	13	14
5	5/16	7.9	1/2-20	23	25	17	18
6	3/8	9.5	9/16-18	29	34	22	24
8	1/2	12.7	3/4-18	59	64	43	47
10	5/8	15.9	7/8-14	92	102	68	76
12	3/4	19.1	1-1/6-12	128	143	95	106
14	7/8	22.2	1-3/16-12	152	169	113	124
16	1	25.4	1-5/16-12	176	185	130	136
20	1-1/4	31.8	1-5/8-12	206	217	152	160
24	1-1/2	38.1	1-7/8-12	258	270	190	200
32	2	50.8	2-1/2-12	398	420	294	310

Fittings into steel / forged cylinder spuds, steel bodies, cast iron bodies O-ring Boss							
Size	Tubing OD		Thread Size	Nm		LB FT	
	Inches	mm		Min	Max	Min	Max
4	1/4	6.4	7/16-20	18	20	13	15
5	5/16	7.9	1/2-20	23	26	17	19
6	3/8	9.5	9/16-18	29	33	22	24
8	1/2	12.7	3/4-18	49	53	40	43
10	5/8	15.9	7/8-14	59	64	43	48
12	3/4	19.1	1-1/6-12	93	102	68	75
14	7/8	22.2	1-3/16-12	122	134	90	99
16	1	25.4	1-5/16-12	151	166	112	123
20	1-1/4	31.8	1-5/8-12	198	218	146	161
24	1-1/2	38.1	1-7/8-12	209	231	154	170

Fittings into aluminum bodies O-ring Boss							
Size	Tubing OD		Thread Size	Nm		LB FT	
	Inches	mm		Min	Max	Min	Max
4	1/4	6.4	7/16-20	9	15	7	11
6	3/8	9.5	9/16-18	23	34	17	25
8	1/2	12.7	3/4-18	34	54	25	40
10	5/8	15.9	7/8-14	41	75	30	55
12	3/4	19.1	1-1/6-12	75	108	55	80
14	7/8	22.2	1-3/16-12	108	129	80	95
16	1	25.4	1-5/16-12	115	163	85	120
20	1-1/4	31.8	1-5/8-12	163	224	120	165
24	1-1/2	38.1	1-7/8-12	183	258	135	190

Basic instructions - Measuring voltages

Tools for electronics system troubleshooting

For diagnosing problems with the electronics system you may use one or all of these tools.

1. The monitor diagnostic screens show sensor and system voltages.
2. A standard multimeter.
3. The **DATAR** diagnostic tool available from parts.

HOW TO MEASURE VOLTAGES IN THE ELECTRONICS SYSTEM

When asked to measure a voltage, the voltage being measured is always at one point with respect to (relative to) the voltage at another point.

Example: To measure the voltage at point A with respect to point B, place one meter probe (typically red in color, and connected to the meter connector labeled “V“). Place the other meter probe (typically black in color, and connected to the meter connector labeled “COM“).

If the units of voltage are specified as “volts dc”, be sure your meter is set to “dc”. If the units of voltage are specified as “volts ac”, be sure your meter is set to “ac”.

North American automotive electrical systems often use the chassis (metal frame) of the automobile as the return path (often referred to as ground) for electrical current. The electronics system does not use the chassis for a return path, and no voltage measurements should be made with respect to the chassis. All components in the electronics system should be considered to be electrically isolated from the chassis, although at the tractor the electronics system return is connected to the battery negative terminal which is in turn connected to the tractor chassis.

NOTE: *On VR air carts with a battery and a hydraulic motor driven alternator, the air cart battery negative terminal is electrically isolated from the air cart chassis.*

ELECTRICAL ISOLATION

Two points are electrically isolated when the resistance between them is “infinite” (very large, greater than **10,000,000 ohms**). To verify two points are electrically isolated.

1. Set your meter to measure resistance (usually labeled with the ohm symbol).
2. Hold the two probes apart from each other in the air. The meter must indicate infinite resistance (usually indicated by the infinity symbol or on digital multimeters, “++++” or “0L” for overload).
3. Hold the two probes together. The meter must indicate a very low resistance, less than **1.0 ohms**. The resistance measured will vary depending on what scale the meter is set to.
4. Place one probe on one point and the other probe on the other point. It does not matter which probe is placed on which point when measuring resistance. The meter must indicate infinite resistance as it did in 2 above for the two points to be electrically isolated.

ELECTRICAL CONTINUITY

Two points have electrical continuity when the resistance between them is very small, less than **0.1 ohms** . To verify two points have electrical continuity

1. Set your meter to measure resistance (usually labeled with the ohm symbol).
2. Since we are expecting to measure a resistance of **0 ohms**, set the scale to the lowest available.
3. Hold the two probes apart from each other in the air. The meter must indicate infinite resistance (usually indicated by the infinity symbol or on digital multimeters, “++++” or “0L” for overload).
4. Hold the two probes together. The meter must indicate a very low resistance, less than **1.0 ohms**. Record or memorize this resistance. This is the probe resistance.
5. Place one probe on one point and the other probe on the other point. It does not matter which probe is placed on which point when measuring resistance. Subtract the probe resistance measured in 4 above from the meter reading. If the meter reading minus the probe resistance is less than **0.1 ohms**, the two points have electrical continuity.

RESISTANCE

To measure the resistance between two points.

1. Set your meter to measure resistance (usually labeled with the ohm symbol).
2. Hold the two probes apart from each other in the air. The meter must indicate infinite resistance (usually indicated by the infinity symbol or on digital multimeters, “++++” or “0L” for overload).
3. Hold the two probes together. The meter must indicate a very low resistance, less than **1.0 ohms**. The resistance measured will vary depending on what scale the meter is set to
4. If the expected resistance is less than **20.0 ohms** ohms, go to 6.
5. Place one probe on one point and the other probe on the other point. It does not matter which probe is placed on which point when measuring resistance. Read the resistance indicated in the meter
6. Since we are expecting to measure a resistance less than **20.0 ohms**, set the meter to an appropriate scale, likely the lowest available.
7. Hold the two probes together. The meter must indicate a very low resistance, less than **1.0 ohms**. Record or memorize this resistance. This is the probe resistance.
8. Place one probe on one point and the other probe on the other point. It does not matter which probe is placed on which point when measuring resistance. Subtract the probe resistance measured in 7 above from the meter reading. The meter reading minus the probe resistance is the resistance between the two points.

Basic instructions - Electrical testing - Connector inspection

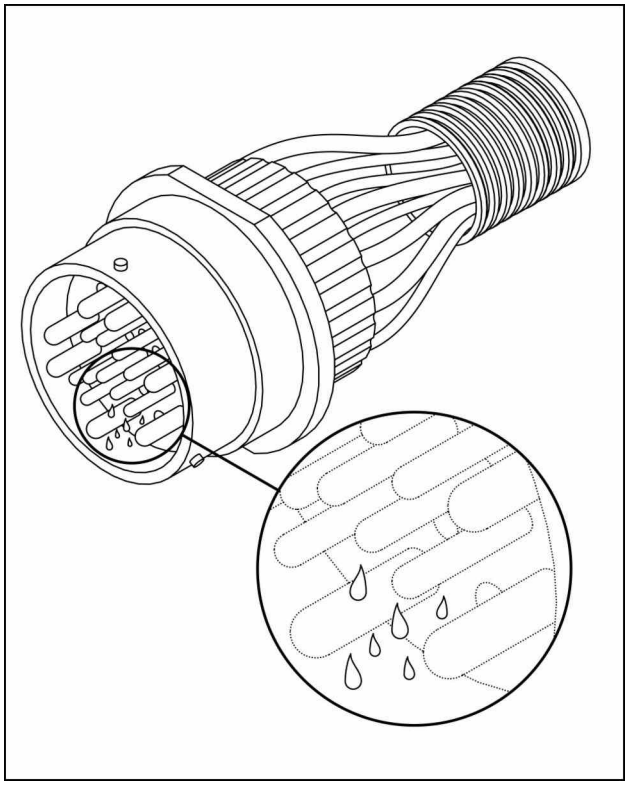
During troubleshooting, always inspect the condition of the pins and cavities on the mating male and female connectors:

- 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.*



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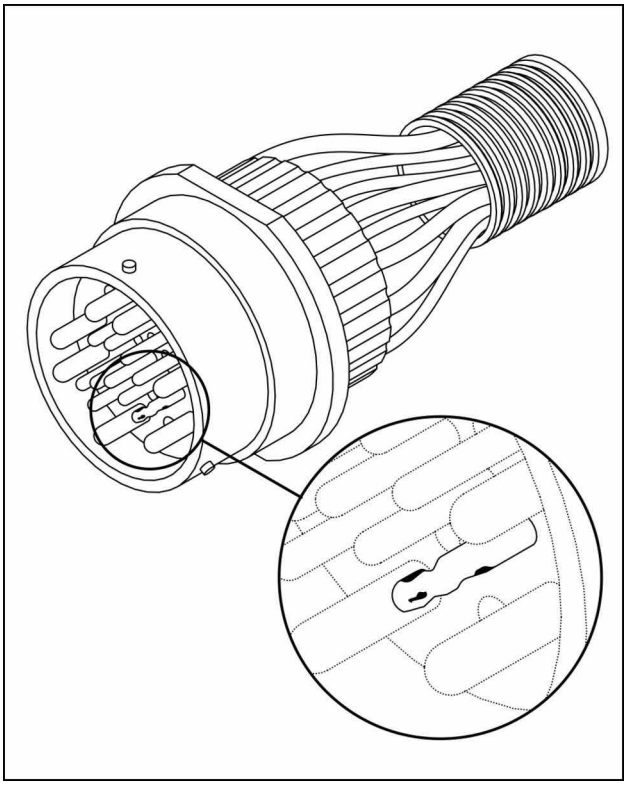
Corroded pins or cavities

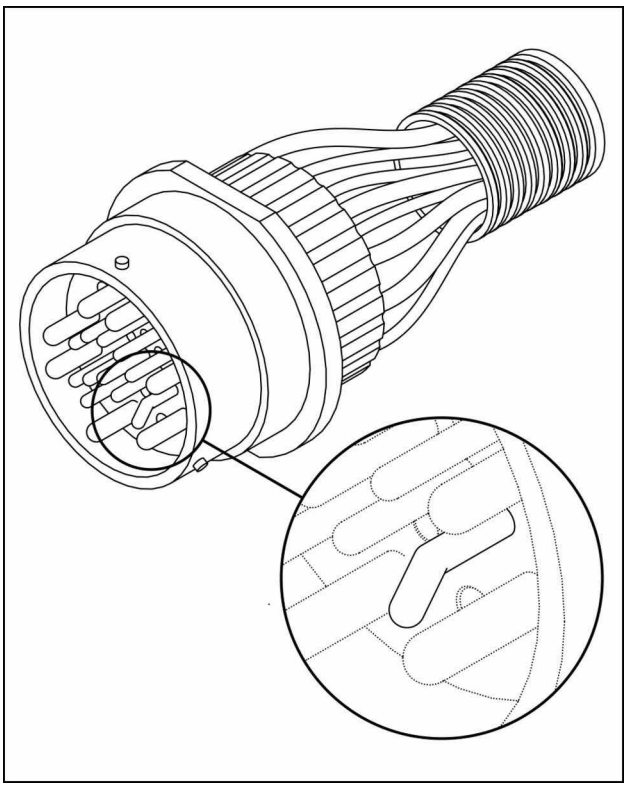
Inspect the pins and cavities for corrosion which can cause a weak electrical connection between the mating connectors. If corrosion is present, replace the affected pins and cavities.



RCIL06PTR105BAA 2

Bent pin

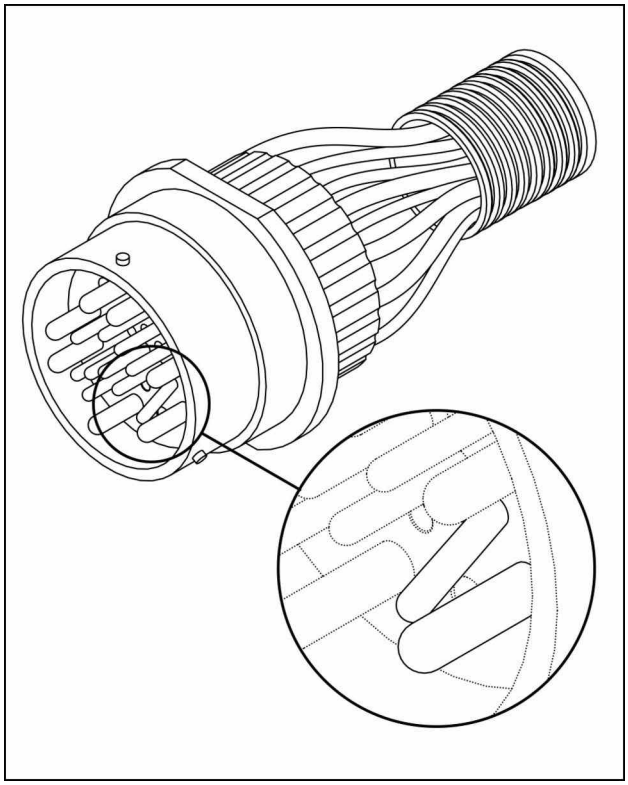
Inspect the pins on the male connector. If a pin is bent and will not properly mate with its cavity in the female connector, replace the pin.



RCIL06PTR103BAA 3

Touching pins

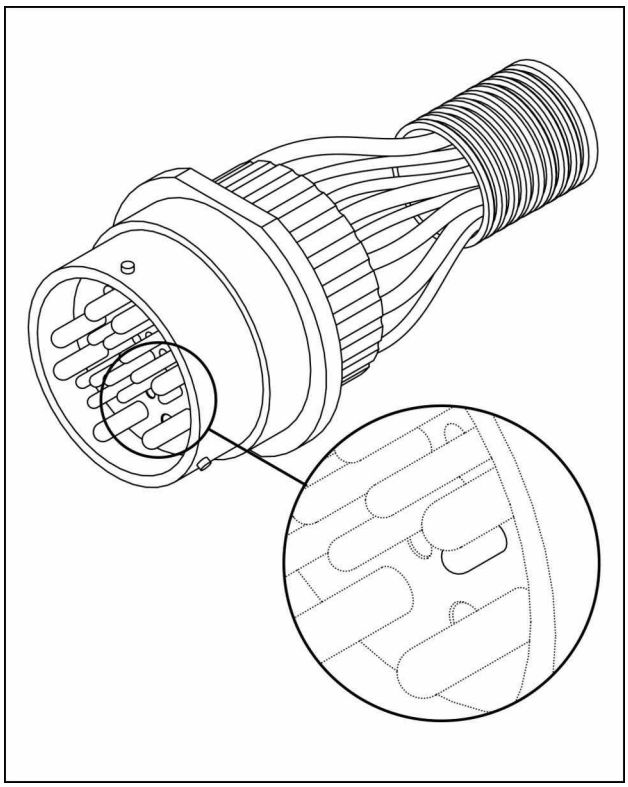
Inspect the pins on the male connector. If a pin is bent to the point where it is shorted to another pin within the connector, replace the pin.



RCIL06PTR104BAA 4

Recessed pin

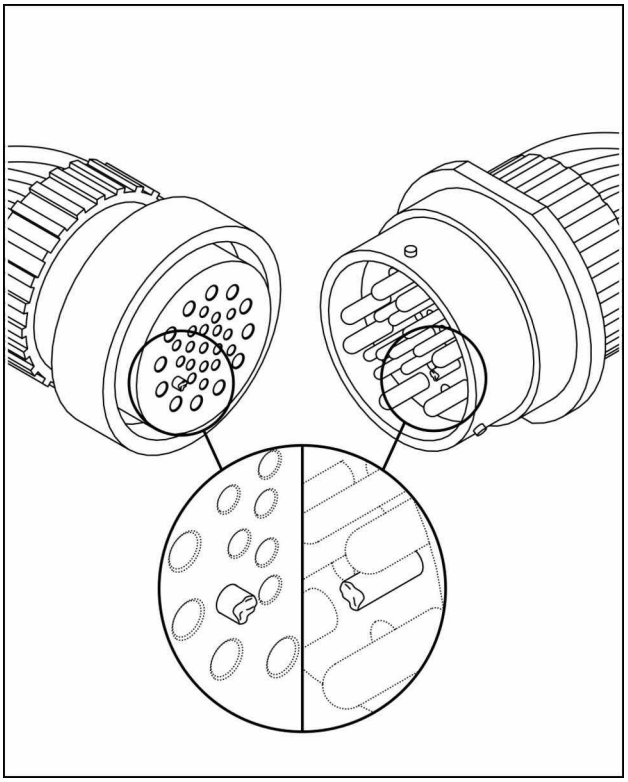
Inspect the male connector for recessed pins, where the pin is pushed back into the connector body, providing minimal contact when the two connectors are joined. If a pin is recessed, push the pin into the connector body from the back of the connector. Join and male and female connectors and reinspect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



RCIL06PTR106BAA 5

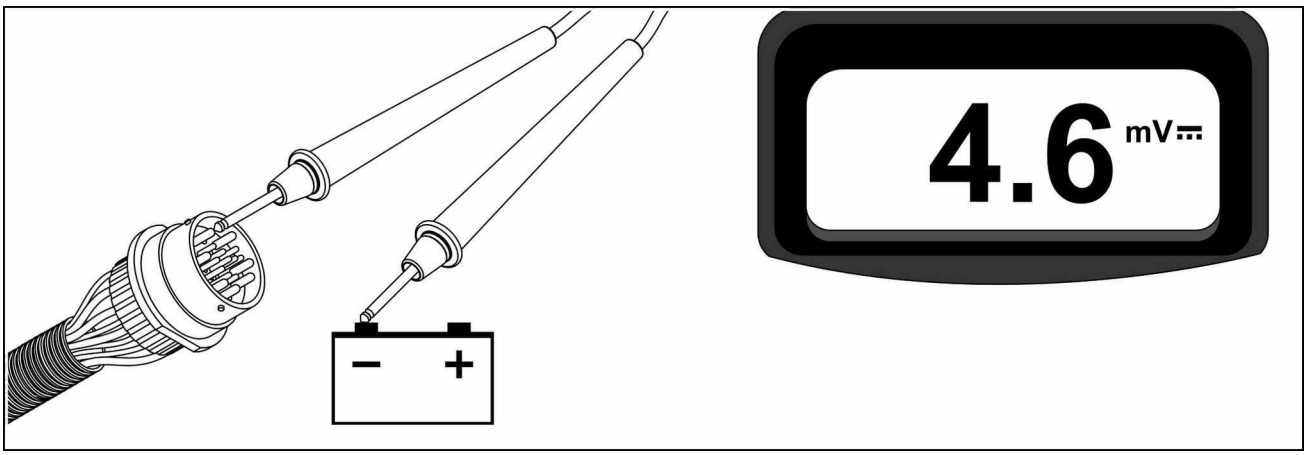
Broken pin

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

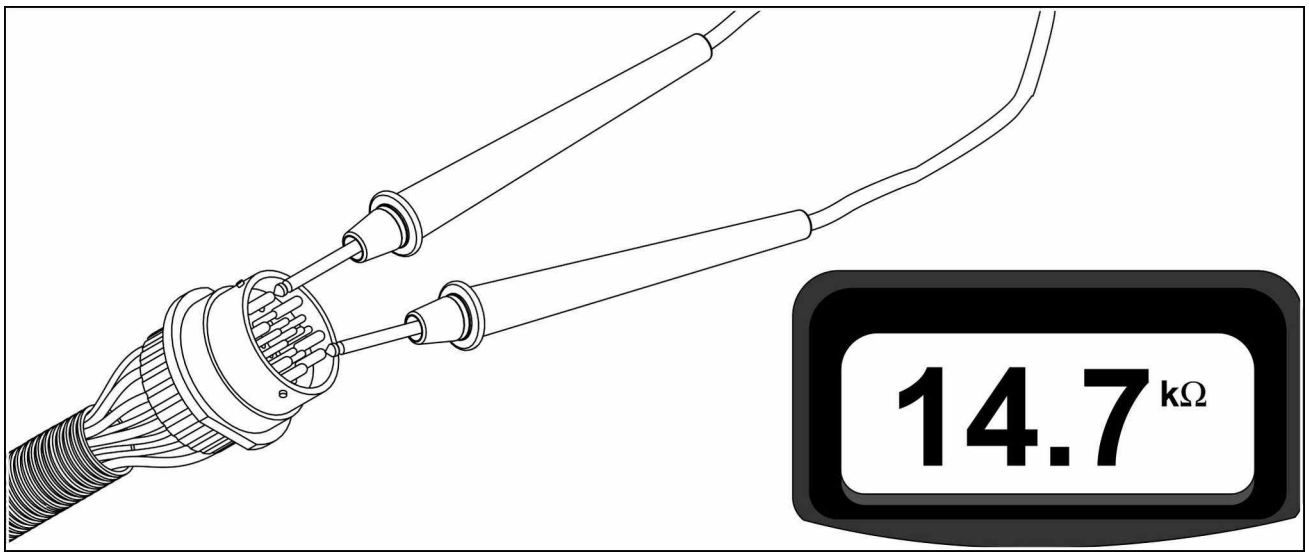
Basic instructions - Electrical testing - Measuring voltage



RCIL06PTR019CAA 1

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.

Basic instructions - Electrical testing - Measuring resistance



RCIL06PTR018CAA 1

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.