

TerraFlex™ 3020
Auger Header

SERVICE MANUAL

Part number 47627573

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Contents

INTRODUCTION

Main gearbox and drive	14
[14.100] Main gearbox and drive	14.1
Clutch	18
[18.112] Slip clutch or flywheel damper	18.1
Hydraulic systems.....	35
[35.000] Hydraulic systems.....	35.1
[35.420] Reel vertical positioning system.....	35.2
[35.430] Reel fore-and-aft positioning system.....	35.3
Electrical systems.....	55
[55.000] Electrical system	55.1
[55.036] Hydraulic system control	55.2
[55.100] Harnesses and connectors.....	55.3
[55.404] External lighting	55.4
[55.421] Feeding control system	55.5
[55.661] Cab header controls.....	55.6
[55.675] Reel speed and position control.....	55.7
Attachments/Headers.....	58
[58.101] Attachment/Header reel.....	58.1
[58.105] Attachment/Header reel control system.....	58.2
[58.110] Attachment/Header cutting mechanism	58.3
[58.120] Attachment/Header feed auger	58.4
[58.130] Attachment/Header frame.....	58.5
Platform, cab, bodywork, and decals.....	90
[90.105] Machine shields and guards	90.1
[90.108] Decals and plates	90.2

[90.116] Fenders and guards 90.3



INTRODUCTION

Contents

INTRODUCTION

Basic instructions - Important notice regarding equipment servicing	3
Personal safety	4
Safety rules - Ecology and the environment	7
Safety rules	8
Safety rules - Precautionary statements	9
Safety signs - Single drive	12
Safety signs - Double drive	20
Personal safety	28
Basic instructions - Shop and assembly	29
Torque - Minimum tightening torques for normal assembly	31
Torque - Standard torque data for hydraulics	36
Basic instructions - Chain Wear Tables - Roller Chains	38
General specification - General Welding	40
General specification - Machine specifications	41
Product identification	44
Frame - Product identification	45

3020, 3000 Series Grain Header

Personal safety

Your machine may be equipped with special guarding or other devices in compliance with local legislation. Some of these require active use by the operator.

Therefore, check local legislation on the usage of this machine.

Hydraulic system safety

- Hydraulic oil leaking under pressure can penetrate the skin and cause infection or other injury. To prevent personal injury:
 - Relieve all pressure before disconnecting fluid lines.
 - Before applying pressure, make sure all connections are tight and 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, seek medical attention immediately.
- The hydraulic hoses and fittings on your machine meet engineering specifications for the particular function. When replacing damaged, blown or worn hoses or fittings, use only manufacture authorized service parts.
- Care in hydraulic hose installation is a must:
 - Make sure pressure is relieved before starting installation procedure.
 - DO NOT kink or twist a hose, failure may occur.
 - Properly route the hose.
 - Have a certified hydraulic technician install the hose.
 - Remove air from the hydraulic system after installing any hydraulic component.
- Periodically check hydraulic system for leaks or damage. check for:
 - Leaks at hose fitting or in hose.
 - Damaged hoses and/or fittings.
 - Kinked, crushed, flattened, hard blistered, heat cracked, charred, twisted, soft or loose covered hoses.
 - Corroded or damaged fittings.
 - Leaking ports.
 - Excessive dirt and debris around hoses and/or fittings.
 - Damaged or missing hose retaining clamps, guards, shields, etc.
- DO NOT stand on or use a hose as a step. DO NOT pull or apply external forces to the hose. The hose may fail and cause injury.
- Keep all persons away from the working area. Mechanisms controlled by fluid power can become hazardous if a hose fails. Lifted mechanisms can fall to the ground, machine steering may fail, etc.
- Stay clear of a pressurized hose assembly that has blown apart. Hose fittings can be thrown off at high speed and a loose hose can whip around with great force.
- Hydraulic fluid can reach high temperatures. Allow fluid to cool before servicing the system.
- Escaping fluid under pressure may form a mist or fine spray which can flash or explode upon contact with an ignition source.
- Vibration can reduce hose service life. Make sure all retaining clamps and/or devices are secured.
- Environmental conditions can cause hose and fittings to deteriorate. Inspect hydraulic hoses periodically. Replace worn or damaged hoses and fittings.

Safety requirements for fluid power systems and components - hydraulics (EUROPEAN STANDARD PR EN 982)

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

- Do not weld hydraulic piping.
- When flexible hoses or piping are damaged, replace them immediately.
- It is forbidden to modify a hydraulic accumulator by machining, welding or any other means.
- Before removing hydraulic accumulators for servicing, the liquid pressure in the accumulator must be reduced to zero.
- Pressure check on hydraulic accumulators shall be carried out by method recommended by the accumulator manufacturer.
- Care must be taken not to exceed the maximum allowable pressure of the accumulator. After any check of adjustment there must be no leakage of gas.

Safety precautions

Farm accidents can be prevented with your help.

No accident prevention program can be successful without the wholehearted cooperation of the person who is directly responsible for the operation of the equipment.

To read accident reports from all over the country is to be convinced that a large number of accidents can be prevented only by the operator anticipating the result before the accident is caused and doing something about it.

It is said that "The best kind of safety device is a careful operator who with care and mature consideration can save more lives and limbs than any accident prevention program which is not adhered to".

Further in this chapter you will find a list of the most important safety precautions.

Take time to read and follow the instructions and furthermore, be careful!

Some pictures in this manual may show the safety guarding open or removed to better illustrate a particular feature or adjustment.

Ensure to close or replace all guards before operating the machine.

General and operating safety

Most farm machinery accidents can be avoided by the observance of a few simple safety precautions.

- The machine must only be used by a skilled operator familiar with all the controls and harvesting techniques on cultivated land with slopes up to maximum **26 % (15 °)** uphill and downhill.
- Keep children away from and off the machine at all times.
- When driving on public roads, observe traffic regulations, adapt your speed to road and traffic conditions and ensure that all lights and other safety mechanisms on the machine (if they are required) are fitted and work properly.
- Before operating the machine ensure that all safety guards are installed.
- Do not enter the grain tank while the machine engine is running. With engine stopped, use a wooden clearing club should the grain tank unloading auger become bridged. Take utmost care not to be pulled into the grain tank in case unbridging is required.
- Do not attempt to clean, lubricate or carry out any adjustments on the machine while it is in motion or while the engine is running.
- Never leave the operator's platform without first disengaging the machine drive mechanism, lowering the header, stopping the engine, applying the park brake and removing the ignition key.
- Do not work under the machine header unless it is securely blocked and/or the header safety latch is engaged.
- Do not work around the machine in loose clothing that might catch in any of the moving parts.
- Keep hands away from moving parts of the machine.
- Keep the fire extinguisher within easy reach of the operator. Ensure to replace it by a similar type of extinguisher or have it checked or refilled after every usage and/or date of expiry.

Danger of death by electrocution!

Pay special attention to the overhead power lines. Make sure the machine has sufficient clearance to pass in all directions (also with raised or opened machine components). Also think of the radio aerial(s) or any other factory-fitted accessory or parts which may have been added afterwards.

Should a contact between the machine and an electric power line occur, then the following precautions must be taken: Stop the machine movement immediately, stop the engine and apply the hand brake.

Check if you can safely leave the cab or your actual position without direct contact with electric wires. If not, stay in your position and call for help. If you can leave your position without touching the lines, jump off the last step or support position to ensure that there is no contact between any part of your body and the ground at any time. Do not touch the machine afterwards until power to the lines has been shut off. When people approach the machine, warn them not to touch the machine but to ask the electric power supply company to shut off the power to the lines.

Fire and explosion prevention

- Due to the flammable nature of the crop materials encountered, fire risks are high. This risk can be minimized by frequent removal of accumulated crop material from the machine and checking for overheated machine components. If oil leaks appear, re-torque bolts or replace gaskets as necessary.
- Remove all trash or debris from the machine each day. Especially check the engine area and exhaust system.
- Sparks or flame can cause the hydrogen gas in a battery to explode. To prevent an explosion do the following:
 - Do not weld, grind or smoke near a battery.
- Sparks from the electrical system or engine exhaust can cause an explosion and fire. Before you operate this machine in an area with flammable dust or vapors, use good ventilation to remove the flammable dust or vapors.
- Use nonflammable cleaning solvent to clean parts.
- A fire can cause death or injury. Always have fire extinguisher near or on the machine. Make sure the fire extinguishers are serviced according to the manufacturers instructions.
- If a fire extinguisher has been used, always recharge or replace the fire extinguisher before operating the machine.
- Make sure that you DO NOT store oily rags or other flammable materials on the machine.
- If the machine has an oil, fuel or hydraulic leak, always repair the leak and clean the area before operating.
- Check the electrical system for loose connections or frayed insulation. Repair or replace the loose or damaged parts.
- Before welding or using a torch on the machine, clean the area to be repaired.

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.

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 - Precautionary statements

Accident prevention

▲ WARNING

Avoid injury!

1. Disengage all drives.
 2. Engage parking brake.
 3. Lower all attachments to the ground, or raise and engage all safety locks.
 4. Shut off engine.
 5. Remove key from key switch.
 6. Wait for all machine movement to stop.
- Failure to comply could result in death or serious injury.

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Most accidents or injuries that occur in workshops are the result of a non compliance to simple and fundamental safety regulations. For this reason, IN MOST CASES THESE ACCIDENTS CAN BE AVOIDED by foreseeing possible causes and consequently acting with the necessary caution and care.

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

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

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

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

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

Do not weld hydraulic piping.

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

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

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

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

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

Safety rules

General guidelines

- Carefully follow specified repair and maintenance procedures.
- Do not wear rings, wrist watches, jewelry, unbuttoned or loose articles of clothing such as: ties, torn clothing, scarves, open jackets or shirts with open zips which may remain entangled in moving parts. It is advised to wear approved safety clothing. For example: non-slip footwear, gloves, safety goggles, helmets, etc.
- Do not carry out repair operations with someone sitting in the driver's seat, unless the person is a trained technician who is assisting with the operation in question.
- Do not operate the machine or use any of the implements from different positions, other than the driver's seat.
- Do not carry out operations on the machine with the engine running, unless specifically indicated.
- Stop the engine and bleed off residual hydraulic pressure before removing components, caps, valves, covers or etc.
- All repair and maintenance operations must be carried out using extreme care and attention.
- Service steps and platforms used in the workshop or elsewhere should be built according to standard accident prevention regulations.

INTRODUCTION

- Disconnect the Power Take Off (PTO) from the machine, and label all controls to indicate that the machine is being serviced. Any parts that are to be raised must be locked in position.
- Brakes are inoperative when manually released for repair or maintenance purposes. Use blocks or similar devices to control the machine in these conditions.
- Only use specified towing points for towing the machine. Connect parts carefully. Make sure that all pins and/or locks are secured in position before applying traction. Never remain near the towing bars, cables or chains that are operating under load.
- When loading or unloading the machine from the trailer (or other means of transport), select a flat area capable of sustaining the trailer or truck wheels. Firmly secure the machine to the truck or trailer and lock the wheels in the position used by the carrier.
- Electric heaters, battery-chargers and similar equipment must be powered only by auxiliary power supplies with efficient ground insulation to avoid electrical shock hazards.
- Always use suitable hoisting or lifting devices when raising or moving heavy parts.
- Take extra care if bystanders are present.
- Never use gasoline, diesel oil or other flammable liquids as cleaning agents. Use non-flammable, non-toxic commercially available solvents.
- Wear safety goggles with side guards when cleaning parts with compressed air.
- Reduce tire air pressure according to the local regulations in force.
- Do not run the engine in confined spaces without suitable ventilation.
- Never use open flames for lighting when working on the machine or checking for leaks.
- All movements must be carried out carefully when working under, on or near the machine. Wear protective equipment: helmets, goggles and special footwear.
- When carrying out checks with the engine running, request the assistance of an operator in the driver's seat. The operator must maintain visual contact with the service technician at all times.
- If operating outside the workshop, position the machine on a flat surface and lock in position. If working on a slope, lock the machine in position. Move to a flat area as soon as is safely possible.
- Damaged or bent chains or cables are unreliable. Do not use them for lifting or towing. Always use suitable protective gloves when handling chains or cables.
- Chains should always be safely secured. Make sure that the hitch-up point is capable of sustaining the load in question. Keep the area near the hitch-up point, chains or cables free of all bystanders.
- Maintenance and repair operations must be carried out in a CLEAN and DRY area. Eliminate any water or oil spillage immediately.
- Do not create piles of oil or grease-soaked rags as they represent a serious fire hazard. Always store rags in a closed metal container.
- Before engaging the machine, make sure that there are no persons within the machine or implement range of action.
- Empty your pockets of all objects that may fall accidentally unobserved into the machine inner compartments.
- In the presence of protruding metal parts, use protective goggles or goggles with side guards, helmets, special footwear and gloves.
- When welding, use protective safety devices: tinted safety goggles, helmets, special overalls, gloves and footwear. All persons present in the area where welding is taking place must wear tinted goggles. **NEVER LOOK DIRECTLY AT THE WELDING ARC WITHOUT SUITABLE EYE PROTECTION.**
- If welding in close proximity to a computer module, then the battery should be disconnected, and also the module should be removed from the machine.
- Metal cables tend to fray with repeated use. Always use suitable protective devices (gloves, goggles, etc.) when handling cables.
- Handle all parts carefully. Do not put your hands or fingers between moving parts. Wear suitable safety clothing - safety goggles, gloves and shoes.

Machine Start Up

- Never run the engine in confined spaces that are not equipped with adequate ventilation for exhaust gas extraction.

INTRODUCTION

- Never place the head, body, limbs, feet, hands, fingers or clothing near rotating and moving parts.

Hydraulic systems

- A liquid leaking from a tiny hole may be almost invisible but, at the same time, be powerful enough to penetrate the skin. Therefore, NEVER USE HANDS TO CHECK FOR LEAKS but use a piece of cardboard or wood for this purpose. If any liquid penetrates skin tissue, call for medical aid immediately. Failure to treat this condition with correct medical procedure may result in serious infection or death.
- In order to check the pressure in the system use suitable instruments.

Wheels and Tires

- Make sure that the tires are correctly inflated at the pressure specified by the manufacturer. Periodically check the rims and tires for damage.
- Stand away from (at the side of) the tire when checking inflation pressure.
- Do not use parts of recovered wheels as incorrect welding brazing or heating may weaken and eventually cause damage to the wheel.
- Never cut or weld a rim mounted with an inflated tire.
- To remove the wheels, lock all wheels. After having raised the machine, position supports underneath, according to regulations in force.
- Deflate the tire before removing any objects that may be jammed in the tire tread.
- Never inflate tires using flammable gases, as this may result in explosions and injury to bystanders.

Removal and Installation

- Lift and handle all heavy parts using suitable hoisting equipment. Make sure that parts are sustained by appropriate hooks and slings. Use the hoisting eyebolts for lifting operations. Extra care should be taken if persons are present near the load to be lifted.
- Handle all parts carefully. Do not put your hands or fingers between parts. Wear suitable safety clothing - safety goggles, gloves and shoes.
- Avoid twisting chains or metal cables. Always wear safety gloves when handling cables or chains.

Reel

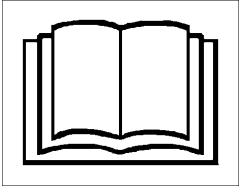
- Make sure to use safety locks whenever working under or around the reel. Raise reel up and apply safety locks on lifting cylinders. Hydraulic failure could cause the reel to come down and cause injury.

Safety signs - Single drive

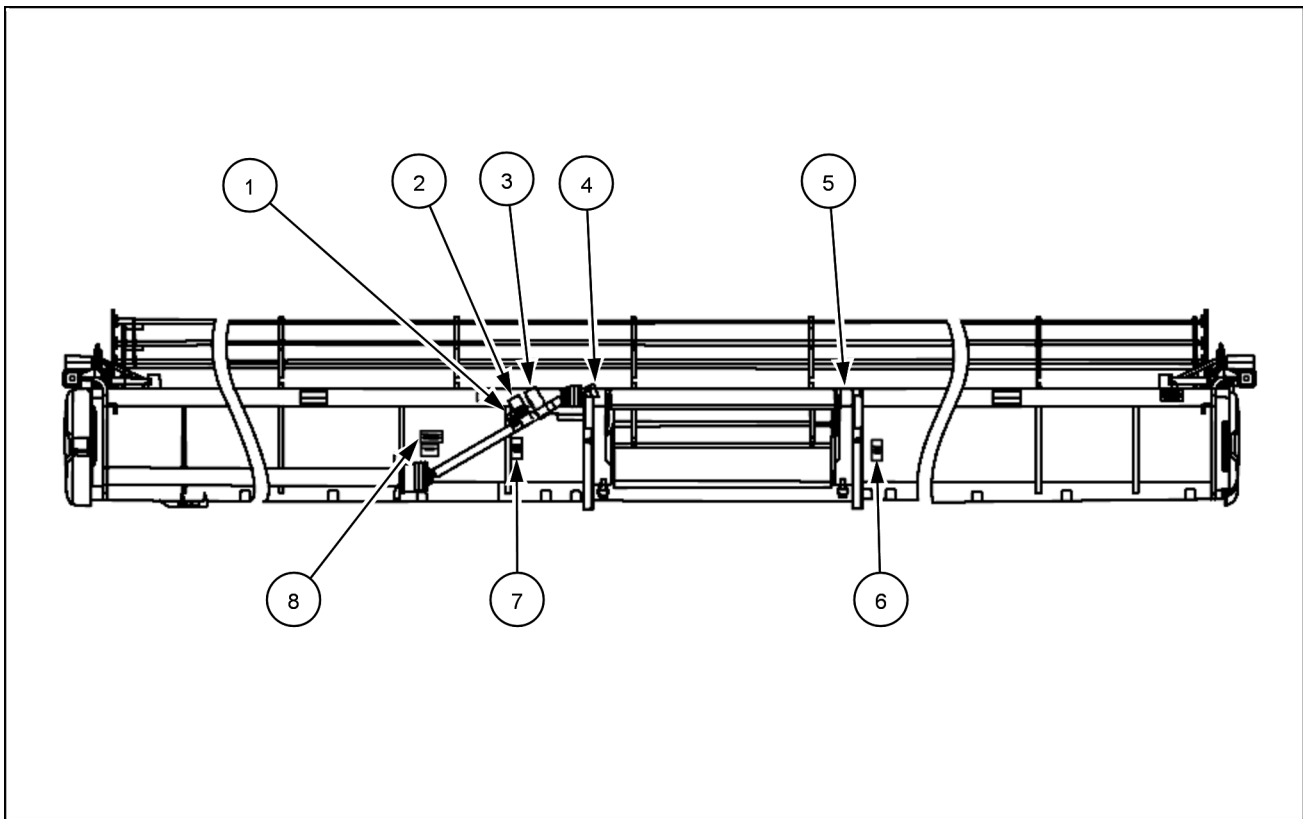
The following safety signs are placed on your machine as a guide for your safety and for those working with you. Walk around the machine and note the content and location of these safety signs before operating your machine.

Keep safety signs clean and legible. Clean safety signs with a soft cloth, water, and a gentle detergent. 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 that is replaced, make sure the safety sign is installed on the new part. See your dealer for replacement safety signs.



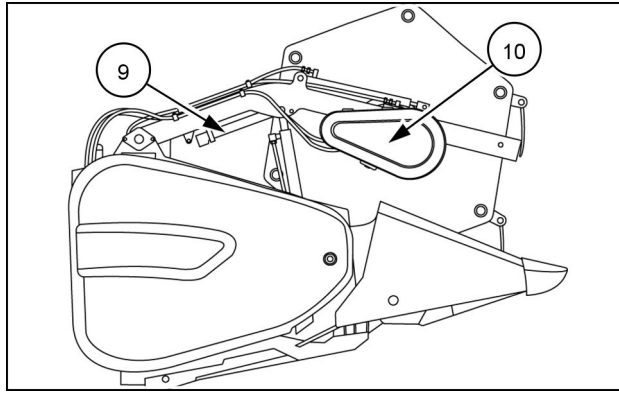
Safety signs that display the "Read Operator's Manual" symbol are intended to direct the operator to the operator's manual for further information regarding maintenance, adjustments, or procedures for particular areas of the machine. When a safety sign displays this symbol, refer to the appropriate page of the operator's manual.



93103407A 1

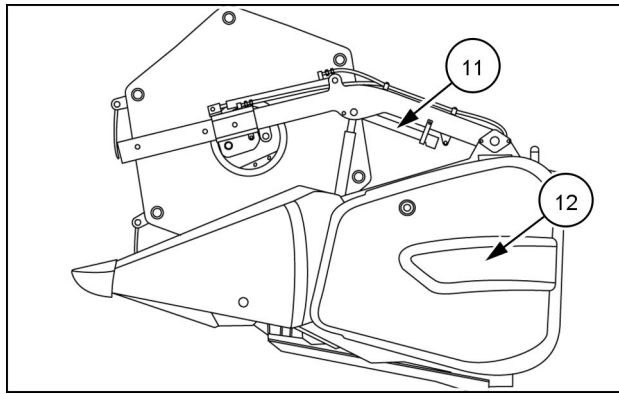
Rear

INTRODUCTION



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Right



93103467 3

Left

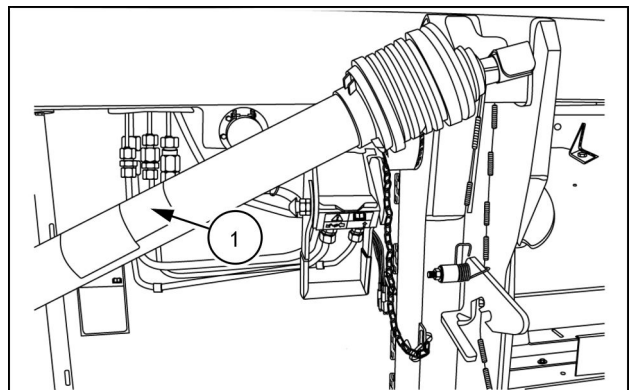
DANGER
Shield missing do not operate.
Replace shield before operating.
Failure to comply will result in death or serious injury.

Quantity: 1
849472



849472_H 4

(1) On the PTO shaft under the safety cover.



93103409A 5

DANGER

Rotating drive line

Do not operate without:

All drive line, tractor and equipment shields in place.

Drive lines securely attached at both ends.

Drive line shields that turn freely on drive line.

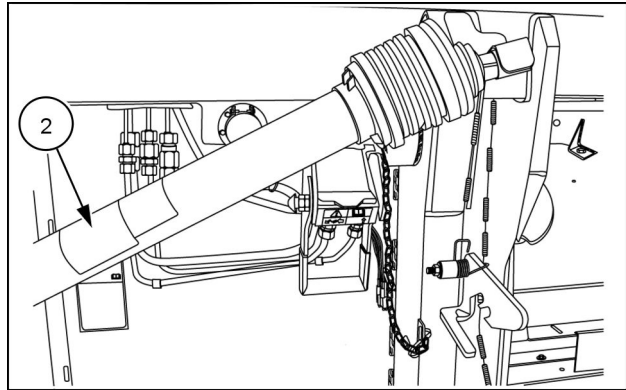
Failure to comply will result in death or serious injury.

Quantity: 1
849471



849471_E 6

(2) On the Power Take-Off (PTO) shaft safety cover.



93103409A 7

DANGER

Rotating drive line

Do not operate without:

All drive line, tractor and equipment shields in place.

Drive lines securely attached at both ends.

Drive line shields that turn freely on drive line.

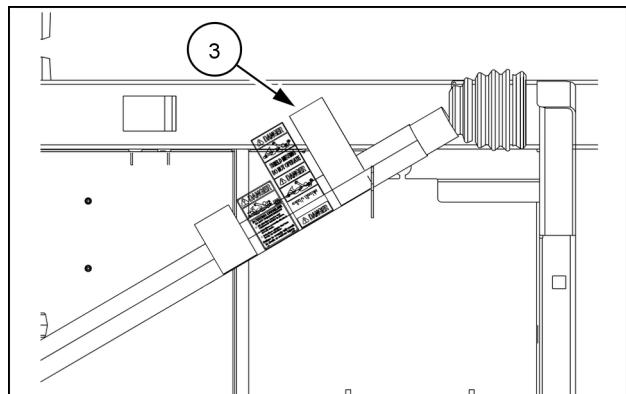
Failure to comply will result in death or serious injury.

Quantity: 1
399CEE051



87586694 8

(3) On the PTO shaft under the safety cover.

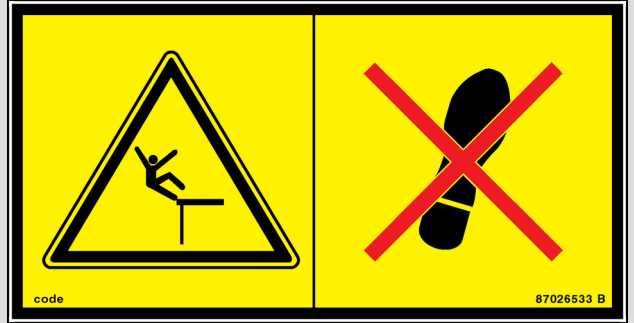


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INTRODUCTION

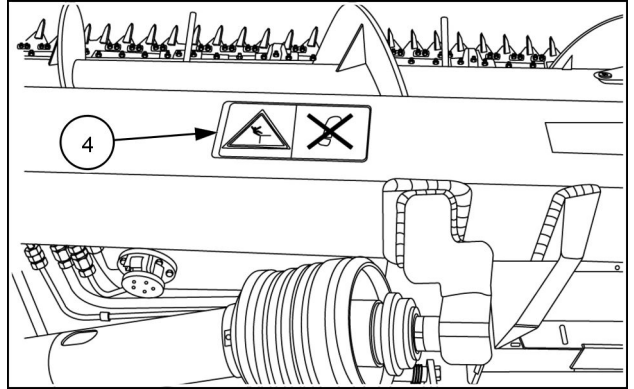
WARNING
Slippery surface.
Do not use this area as a step or platform.
Failure to comply could result in death or serious injury.

Quantity: 2
87026533



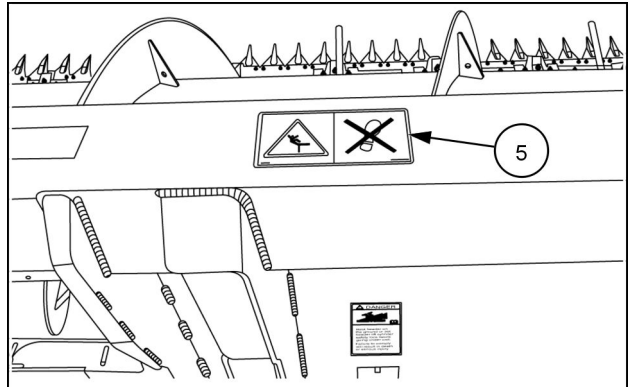
87026533_B 10

(4) Left-hand side of the feeder opening, on the top beam.



93103410 11

(5) Right-hand side of the feeder opening, on the top beam.



93103411 12

INTRODUCTION

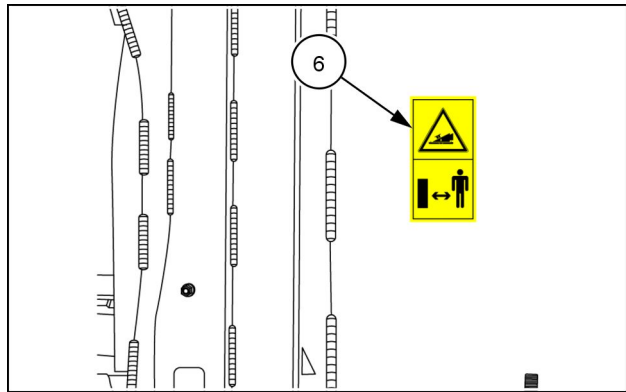
WARNING
Crush Hazard.
Engage safety latch before working under machine.
Failure to comply could cause death or serious injury.

Quantity: 2
87027712



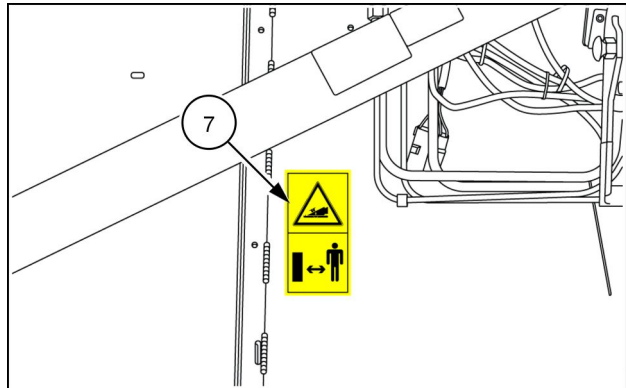
87027712A 13

(6) Right-hand side rear panel.



23118593 14

(7) Left-hand side rear panel.



23118594 15

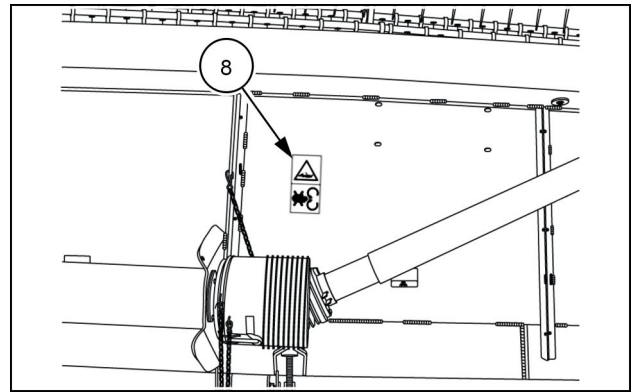
WARNING
Shield is open.
Stand clear.
Replace or close shield before operating machine.
Failure to comply could cause death or serious injury.

Quantity: 1
86999254



86999254 16

(8) Left-hand side rear panel.



23118585 17

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