

SERVICE MANUAL

CR9090

EU built combine for NA - Series [1940 -] /

CX8080 Elevation / CX8090 Elevation

Tier 4A

Combine

Part number 47695751

1st edition English
March 2014



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INTRODUCTION

Foreword

CX8000 Elevation series	NA
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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 NEW HOLLAND 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

CR Series Tier IV	NA
CX8000 Elevation series	NA

PRECAUTIONARY STATEMENTS

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 injury or death.

Throughout this manual and on machine decals, you will find precautionary statements ("DANGER", "WARNING", and "CAUTION") followed by specific instructions. These precautions are intended for the personal safety of you and those working with you. Please take the time to read them.



DANGER



DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury. The color associated with Danger is RED.

M1169A



WARNING



WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury. The color associated with Warning is ORANGE.

M1170A



CAUTION



CAUTION, used with the safety alert symbol, indicates a hazardous situation which, if not avoided, could result in minor or moderate injury. The color associated with Caution is YELLOW.

M1171A

FAILURE TO FOLLOW "DANGER", "WARNING", AND "CAUTION" INSTRUCTIONS MAY RESULT IN SERIOUS BODILY INJURY, DAMAGE TO HEALTH OR DEATH.

NOTICE: Install new decals if the old decals are destroyed, lost painted over or cannot be read. When parts are replaced that have decals make sure you install a new decal with each new part.

MACHINE SAFETY

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

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

INFORMATION

NOTE: Instructions used to identify and present supplementary information.

LEGAL OBLIGATIONS

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

ACCIDENT PREVENTION

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

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



Shut down the machine, remove key, be sure all moving parts have stopped and all pressure in the systems is relieved before cleaning, adjusting or lubricating the equipment. Failure to comply will result in death or serious injury.

M871

SAFETY REQUIREMENTS FOR FLUID POWER SYSTEMS AND COMPONENTS - HYDRAULICS (EUROPEAN STANDARD EN982)

- Flexible hose assemblies must not be constructed from hoses which have been previously used as part of a hose assembly.
- Do not weld hydraulic pipes: when flexible hoses or piping are damaged, replace them immediately.
- It is forbidden to modify a hydraulic accumulator by machining, welding or any other way.
- Before removing hydraulic accumulators for servicing, the liquid pressure in the accumulators must be reduced to zero.
- Pressure check on hydraulic accumulators must be carried out by a method recommended by the accumulator manufacturer.
- Take care not to exceed the maximum allowed pressure of the accumulator. After any check or adjustment, check for leakages or gas in the hoses or pipes.

SAFETY RULES

General guidelines

- Carefully follow specified repair and maintenance procedures.
- When appropriate, use P.P.E (Personal Protective Equipment)
- Do not wear rings, wristwatches, jewellery, unbuttoned or loose articles of clothing such as: ties, torn clothing, scarves, open jackets or shirts with open zips that may remain entangled in moving parts. It is advised to wear approved safety clothing, e.g.: non-slip footwear, gloves, safety goggles, helmets, etc.
- Do not carry out repair operations with someone sitting in the driver's seat, unless the person is a trained technician who is assisting with the operation in question.
- 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.
- Bring all hydraulic cylinders to the home positions (down, retracted, etc.) before engine shut down.
- Stop the engine and check that the hydraulic circuits are pressure-free before removing caps, covers, valves, etc.
- All repair and maintenance operations must be carried out using extreme care and attention.
- Service steps and platforms used in the workshop or elsewhere should be built according to the applicable standards and legislation.
- Disconnect the power take off (p.t.o). and label the 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 secure 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.

INTRODUCTION

- 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 only be powered by auxiliary power supplies with efficient ground insulation to avoid electrical shock hazards.
- Always use suitable hoisting or lifting devices when raising or moving heavy parts.
- Keep bystanders away.
- Never use gasoline, diesel oil or other inflammable liquids as cleaning agents. Use non-inflammable, non toxic commercially available solvents.
- Wear safety goggles with side guards when cleaning parts with compressed air.
- Do not run the engine in enclosed spaces without suitable ventilation or exhaust extraction.
- 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 personal protective equipment (P.P.E.): 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. Clean up 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.
- When metal parts are sticking out, 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.
- Always disconnect battery ground terminal when welding.
- Metal cables tend to fray with repeated use. Always use suitable protective devices (gloves, goggles, etc.) when handling cables.



SERVICE MANUAL

Engine

**CR9090 MY14 ZED built combine for NA [1940 -]
CX8080 Elevation
CX8090 Elevation**

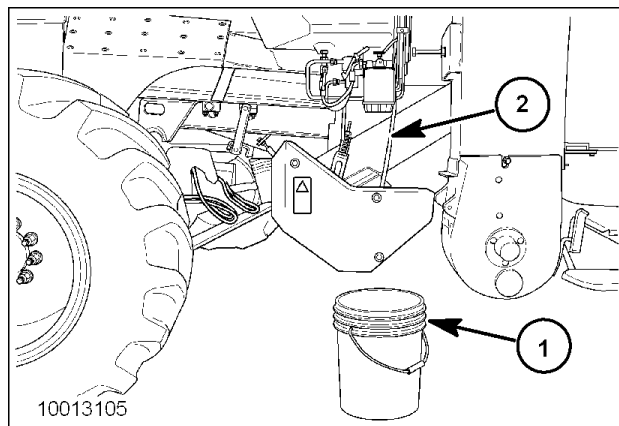
Engine - Remove

CR Series Tier IV	NA
CX8000 Elevation series	NA

NOTE: The engine and cooling system used in the combine is designed to be removed as a modular unit. The following engine removal procedure demonstrates the removal of the engine only from the module. This procedure takes into consideration the possible unavailability of proper, or sufficient lifting equipment for complete module removal. When possible, remove the engine and cooling system module as designed.

1. Remove the gearbox and hydraulic pumps from the engine. (Refer to **Main gearbox and drive - Remove (14.100)**)
Place a suitable container (1) below the coolant drain hose (2).

NOTE: Depending on model, the cooling system has a coolant capacity between **50 - 60 l (13.2 - 15.9 US gal)**. Be sure to use clean containers with adequate capacity when draining the cooling system.

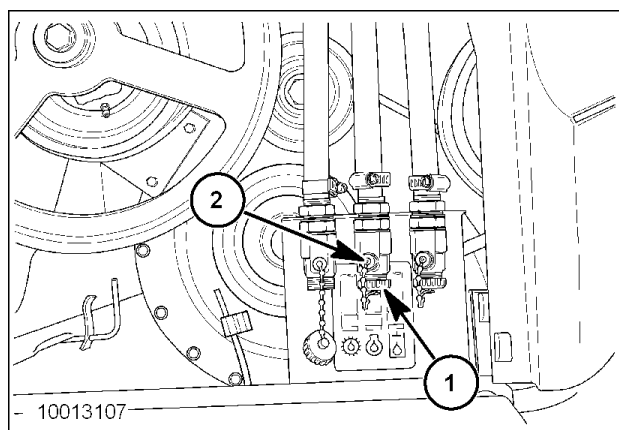


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2. Refer to **Expansion tank - Remove (10.400)** for the coolant fluid drain and removal of the engine coolant reservoir.

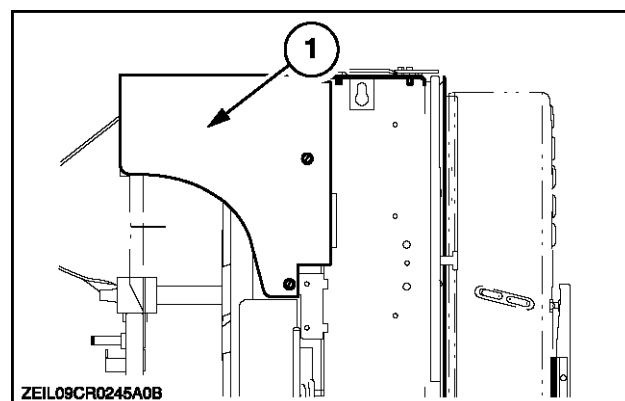
NOTE: Depending on the model, the combine engine has an oil capacity between **29 - 35 l (7.7 - 9.2 US gal)**. Be sure to use clean containers with adequate capacity when draining the engine oil.

3. Remove the cap (1) and turn the engine oil drain valve (2), to the open position. Drain all of the engine oil into suitable containers.



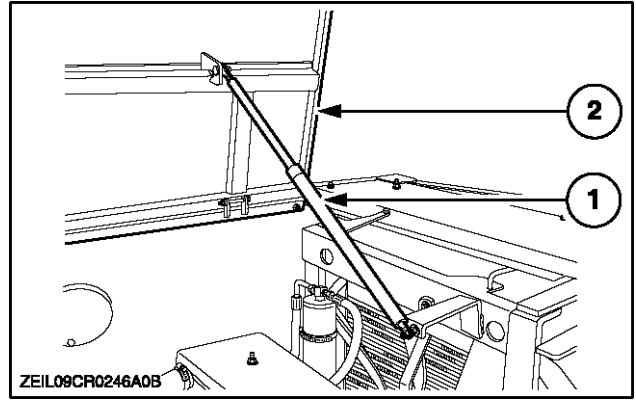
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4. Loosen and remove the mounting hardware from the protection cover (1).
Remove the cover (1) from the engine compartment.



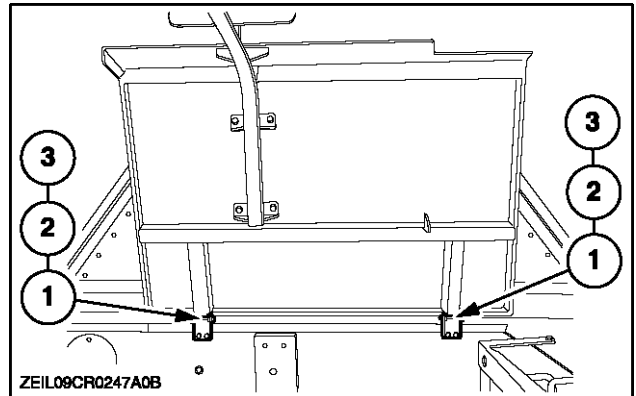
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5. Secure the engine cover with an adequate rope. Attach the rope to a lifting device, able to carry the engine cover and stair assembly. Disconnect the shock absorber (1) from the engine cover (2).



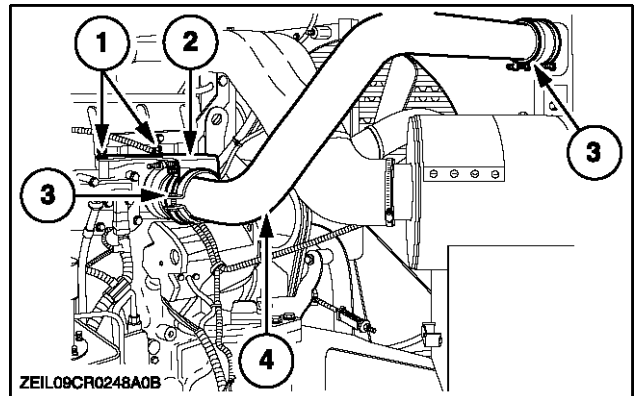
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6. Remove the two retaining rings (1), washers (2) and hinge pins (3) from the engine cover. Remove the engine cover from the combine.



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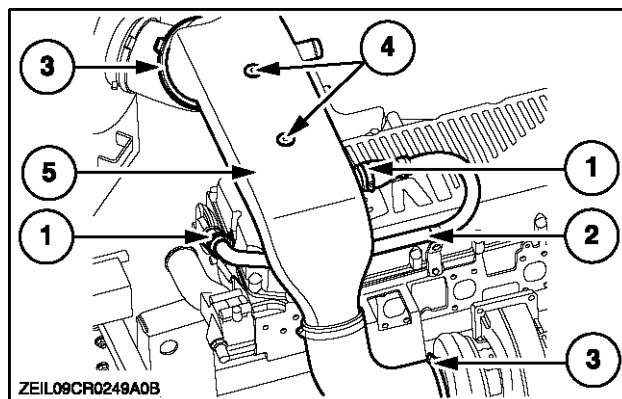
7. Refer to **Exhaust muffler - Remove (10.254)** for removal of the exhaust pipe.
8. Loosen the hardware (1) and remove the support (2).
9. Loosen the clamps (3) from the air inlet pipe (4). Remove the air inlet pipe (4).



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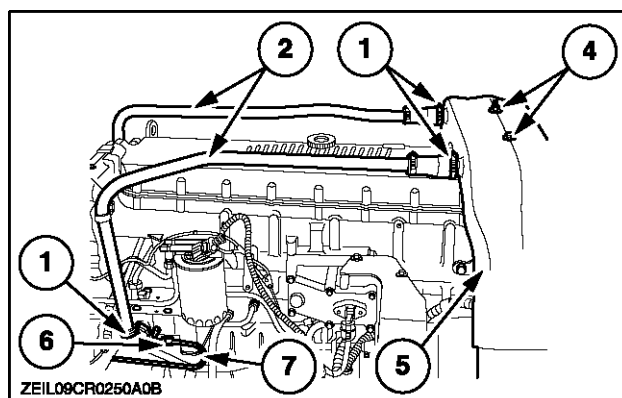
10. Remove the air cleaner assembly, if necessary, refer to **Air cleaner - Remove (10.202)**.

11. Loosen the clamps (1) and remove the air lines (2).
Loosen the clamps (3).
Loosen and remove the hardware (4) and remove the air duct (5) from the combine.



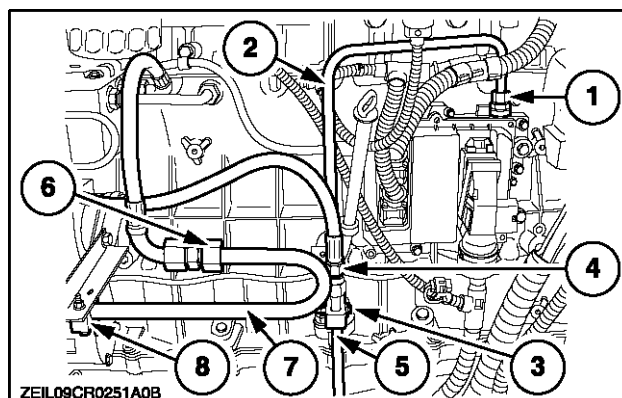
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Depending on model/options, an additional air tube (7) needs to be removed/disconnected, loosen the coupler (6) from the air compressor.



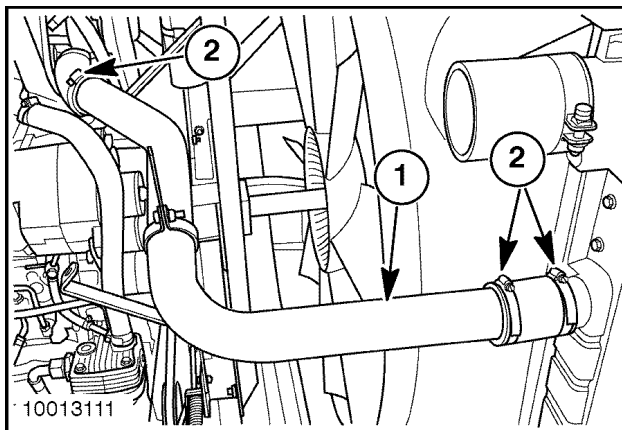
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12. Loosen the coupler (1) and disconnect the fuel line (2) from the ECU cooler.
Loosen the coupler (4) and disconnect the fuel hose towards the injection pump from the fuel line (5).
Loosen and remove the clamp (3).
13. Loosen and disconnect the compressed air tube (7) at the connector (6).
Loosen and remove the clamp (8).



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14. Loosen the hose clamps (1) and remove the top coolant pipe (2) from the engine and radiator neck.



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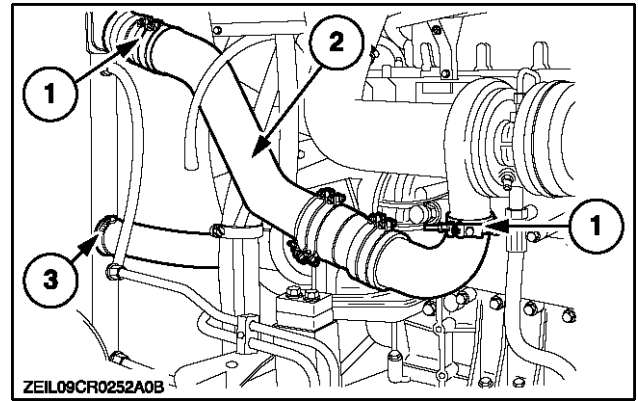
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15. Loosen the clamps (1) and remove the air pipe (2).
16. Loosen the clamp (3) and disconnect the water hose from the cooling system.

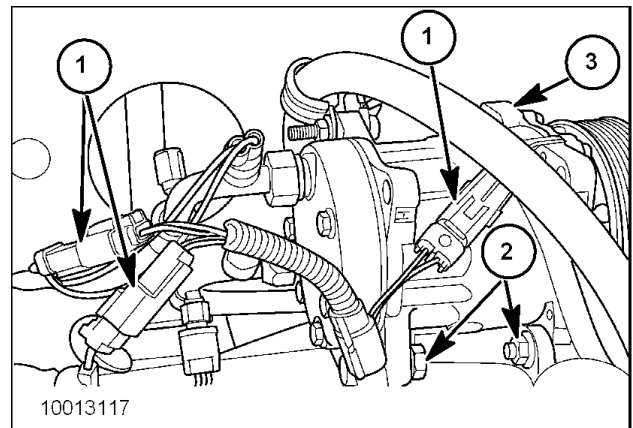


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17. Remove the main drive belt (1) from the engine.
18. Disconnect the electrical connectors (1).

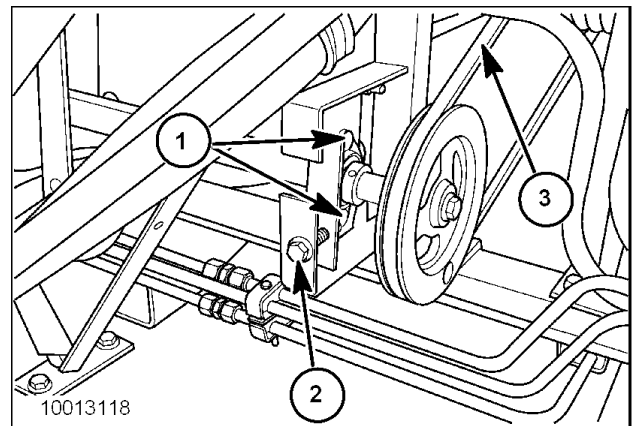
ATTENTION: Do not disconnect any of the air conditioning lines or hoses during compressor removal, as serious injury could result.

19. Remove the mounting bolts and nuts (2) from the air conditioning compressor (3). Remove the compressor from the engine and tie the assembly out of the way.



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20. From inside the grain tank, loosen the mounting nuts on the carriage bolts (1) and turn the rotary screen drive pulley adjusting bolt (2) counter clockwise, to release the tension on the drive belt (3). Remove the drive belt.



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