

CONVEY-ALL™



COMMERCIAL SEED TENDER

Model: CST-1550

OPERATOR'S MANUAL

LIMITED WARRANTY

Convey-All™ warrants to the buyer that the new machinery is free from defects in material and workmanship.

This warranty is only effective as to any new machinery which has not been altered, changed, repaired or treated since its delivery to the buyer, other than by Convey-All™ or its authorized dealers or employees, and does not apply to accessories, attachments, tools or parts, sold or operated with new machinery, if they have not been manufactured by Convey-All™.

Convey-All™ shall only be liable for defects in the materials or workmanship attributable to faulty material or bad workmanship that can be proved by the buyer, and specifically excludes liability for repairs arising as a result of normal wear and tear of the new machinery or in any other manner whatsoever, and without limiting the generality of the foregoing, excludes application or installation of parts not completed in accordance with Convey-All™ operator's manual, specifications, or printed instructions.

Written notice shall be given by registered mail, to Convey-All™ within seven (7) days after the defect shall have become apparent or the repairs shall have become necessary, addressed as follows:

**Convey-All Industries Inc.
130 Canada Street
Winkler, Manitoba R6W 0J3
Canada**

This warranty shall expire one (1) year after the date of delivery of the new machinery.

If these conditions are fulfilled, Convey-All™ shall at its own cost and at its own option either repair or replace any defective parts provided that the buyer shall be responsible for all expenses incurred as a result of repairs, labor, parts, transportation or any other work, unless Convey-All™ has authorized such expenses in advance.

The warranty shall not extend to any repairs, changes, alterations, or replacements made to the new equipment other than by Convey-All™ or its authorized dealers or employees.

This warranty extends only to the original owner of the new equipment.

This warranty is limited to the terms stated herein and is in lieu of any other warranties whether expressed or implied, and without limiting the generality of the foregoing, excluded all warranties, expressed or implied or conditions whether statutory or otherwise as to quality and fitness for any purpose of the new equipment. Convey-All™ disclaims all liability for incidental or consequential damages.

This machine is subject to design changes and Convey-All™ shall not be required to retrofit or exchange items on previously sold units except at its own option.

WARRANTY VOID IF NOT REGISTERED

CONVEY-ALL™

WARRANTY REGISTRATION FORM and INSPECTION REPORT

CONVEY-ALL INDUSTRIES INC.
130 CANADA STREET
WINKLER, MANITOBA R6W 0B3
TF: (800) 418-9461 FX: (204) 325-8116
www.convey-all.com

The Dealer must fill out this form. It is to be signed by both the Dealer and Buyer at the time of delivery. Scan or photograph the completed form (be sure it is legible). Email it to: register@convey-all.com
A copy of this form may also be mailed to Convey-All Industries Inc, at the above address.

Buyer's Name _____	Dealer's Name _____
Address _____	Address _____
City _____	City _____
Province/State _____	Province/State _____
Postal Code/Zip Code _____	Postal Code/Zip Code _____
Country _____	Country _____
Phone Number _____	Phone Number _____
Unit's Model Number _____	Unit's Serial Number _____
Delivery Date _____	General Purpose: <input type="checkbox"/> Private <input type="checkbox"/> Commercial

UNIT INSPECTION

- All Fasteners Tight
- Drive Belts Aligned and Tensioned
- Driveline Secured to Machine
- Hydraulic Hoses Free and Fittings Tight
- Conveyor Belts Move Freely
- Conveyor Belts Aligned and Tensioned
- Rear Conveyor Swings and Moves Freely
- Checked Engine Fluid Levels
- Lubricated Machine

SAFETY INSPECTION

- All Guards, Shields Installed and Secured
- All Safety Decals Installed and Legible
- Reflectors, Slow Moving Vehicle (SMV) Clean
- All Lights Clean and Working
- Reviewed Operating and Safety Instructions

I have thoroughly instructed the buyer on the above described equipment. The review included the content of the Operator's Manual, equipment care, adjustments, safe operation and the applicable warranty policy.

Date _____ Dealer's Signature _____

The above equipment and Operator's Manual have been received by me. I have been thoroughly instructed as to care, adjustments, safe operation and applicable warranty policy.

Date _____ Buyer's Signature _____

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Section 1: INTRODUCTION

Congratulations on your choice of a Convey-All™ Commercial Seed Tender (CST) to complement your seed delivery system in your agricultural operation. This equipment has been designed and manufactured to exceed the exacting standards for such equipment in the agricultural industry and will keep your seed delivery operation working at optimum efficiency.

The tender is shown mounted onto a trailer. The CST and trailer are separate equipment. There is no information referring to the trailer in this document.

Keep this manual handy for frequent reference. Pass it on to new operators or owners. Call your dealer, distributor or Convey-All Industries Inc., for assistance, information, additional/replacement copies, or a digital copy.

Information provided herein is of a descriptive nature. Convey-All Industries Inc. reserves the right to modify the machinery design and specifications provided herein without any preliminary notice.

Performance quality may depend on the material being handled, weather conditions and other factors.

1.1 OPERATOR ORIENTATION

The directions; left, right, front and rear, as mentioned throughout this manual, are as seen from the truck driver's seat and facing the direction of travel.

1.2 SERIAL NUMBER LOCATION

Always give your dealer the serial number of your bean tender when ordering parts or requesting service or other information.

The tender's serial number is located near the front landing gear, and on the rear support.

Write the numbers in the below for easy reference.

CST Serial No: _____

Engine Model No: _____

Engine Serial No: _____

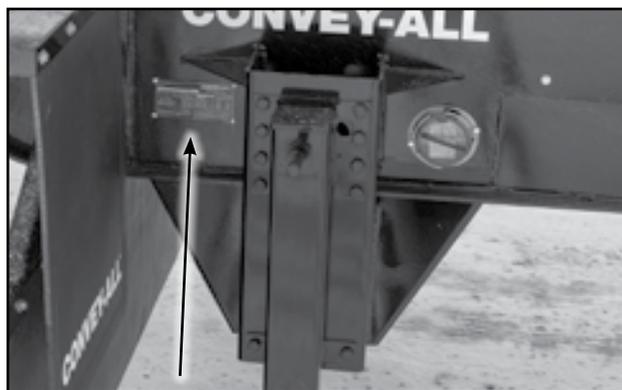


Fig 1 - VIN plate next to front, left-side landing gear



Fig 2 - Serial # on rear, left-side, vertical beam

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Section 2: SAFETY



The following signal words are used in this manual to express the degree of hazard for areas of personal safety.

When you see the symbol and/or the signal words described below, obey the accompanying message to avoid possible injury or death.

- DANGER** - Indicates an imminently hazardous situation. If not avoided, it will result in death or serious injury. This signal word is to be limited to the most extreme situations typically for machine components which, for functional purposes, cannot be guarded.
- WARNING** - Indicates a potentially hazardous situation. If not avoided, it could result in death or serious injury. This word identifies hazards that are exposed when guards are removed. It may be used to alert against unsafe practices.
- CAUTION** - Indicates a potentially hazardous situation. If not avoided, it may result in minor or moderate injury. It may be used to alert against unsafe practices.
- NOTICE** - Indicates practices or situations which may result in the malfunction of, or damage to equipment.

2.1 SAFETY ORIENTATION

YOU are responsible for the SAFE operation and maintenance of your Convey-All™ Commercial Seed Tender (CST). Be sure that you and anyone else who will operate, maintain or work around the CST be familiar with the safety, operating and maintenance procedures.

This manual will take you step-by-step through your working day and alerts you to all good safety practices that should be adhered to while operating the CST.

Remember, you are the key to safety. Good safety practices not only protect you but also the people around you. Make these practices a working part of your workday. Be certain that all operators of this equipment follow these procedures.

Most accidents can be prevented. Do not risk injury or death by ignoring good safety practices.

- CST owners must give operating instructions to operators or employees before allowing them to operate the machine.

Procedures must be reviewed annually thereafter per OSHA (Occupational Safety and Health Administration) regulation 1928.57.

- The most important safety device on this equipment is a SAFE operator. It is the operator's responsibility to understand all safety and operating instructions in the document, and to follow them.
- An untrained operator exposes himself and bystanders to possible serious injury and death.
- Think SAFETY! Work SAFELY!

2.2 GENERAL SAFETY

- Read and understand the Operator's Manual and all safety signs before operating, maintaining, adjusting or unplugging the CST.



- Only trained competent persons shall operate the unit. An untrained operator is not qualified to operate the machine.

- Have a first-aid kit available for use should the need arise and know how to use it.



- Provide a fire extinguisher for use in case of an accident. Store in a highly visible place.



- Do not allow riders.

- Do not allow children, spectators or bystanders within hazard area of machine.

- Wear appropriate protective gear. This list includes but is not limited to:

- Hard hat
- Protective shoes with slip resistant soles
- Eye protection
- Heavy gloves
- Hearing protection
- Respirator or filter mask
- Hi-Visibility safety vest



- Never use alcoholic beverages or drugs which can hinder alertness or coordination while operating this equipment.

Consult your doctor about operating this machine while taking prescription medications.

- If the elderly are assisting with farm work, their physical limitations need to be recognized and accommodated.

- Review safety related items annually with all personnel who will be operating or maintaining the CST.

2.3 EQUIPMENT SAFETY GUIDELINES

- Safety of the operator and bystanders is one of the main concerns in designing and developing equipment. However, every year many accidents occur which could have been avoided by a few seconds of thought and a more careful approach to handling equipment.
- Do not allow persons to operate this unit until they have been trained. They must know all safety precautions.

Review the safety instructions with all users annually.

- In order to provide a better view, some images in this manual may show an assembly with a safety shield removed.



Equipment should never be operated in this condition. Keep all guards in place. If removal becomes necessary for repairs, replace the shield prior to use.

- This equipment is dangerous to children and persons unfamiliar with its operation.

The operator should be responsible, properly trained and physically able. You should be familiar with farm machinery in general.

- Never exceed the limits of a piece of machinery. If its ability to do a job, or to do so safely, is in question - DON'T TRY IT.
- Do not modify the equipment in any way. Unauthorized modification result in serious injury or death and may impair the function and life of the equipment.
- The design and configuration of this conveyor includes safety decals and equipment. They need to be clean, readable and in good condition.

2.4 SAFETY DECALS

- Keep signage clean and legible at all times.
- Replace safety decals that are missing or have become illegible.
- If an original part which contained a safety decal, has been replaced by a new part; it show also display the decal.
- All safety decals have a part number in the lower right hand corner. Use this part number when ordering replacements.
- Decals are available from your authorized distributor, dealer's parts department or from Convey-All Industries Inc.

2.4.1 How to Install Safety Signs:

1. Be sure that the area is clean and dry. Preferably, apply the decals inside.
2. Ensure temperature is above 10°C (50°F).
3. Remove all dirt, grease, wax from the surface.
4. Clean with a non-ammonia based cleaner.
5. Wipe the clean surface with isopropyl alcohol on paper towel, and allow to dry.
6. Determine exact position before you remove the backing paper.
7. Peel the smallest portion of the split backing paper.
8. Align the decal over the specified area. Use a squeegee to carefully press the small portion, with the exposed adhesive backing, into place.
9. Slowly peel back the remaining paper and carefully smooth the remaining portion of the decal into place.
10. Small air pockets can be pierced with a pin and smoothed out using the squeegee, or a piece of sign backing paper.

2.5 WORK PREPARATION

- Never operate the engine and CST until you have read this manual, and comprehend the information.

Also, read the engine operator's Manual.

Be familiar with the safety messages found on the decal around the unit.

- Personal protective equipment including:

- hard hat
- safety glasses
- safety shoes
- gloves



are recommended during operation, adjustment, maintaining, repairing, removal, or moving the implement.



- Do not allow long hair, loose fitting clothing or jewelry to be around equipment.
- **PROLONGED EXPOSURE TO LOUD NOISE MAY CAUSE PERMANENT HEARING LOSS!**

Agricultural equipment can often be noisy enough to cause permanent, partial hearing loss. We recommend that hearing protection be worn on a full-time basis if the noise in the operator's position exceeds 80db.



Noise over 85db on a long-term basis can cause severe hearing loss.

Noise over 90db adjacent to the operator over a long-term basis may cause permanent, total hearing loss.

Note:

Hearing loss from loud noise (tractors, chain saws, radios, etc.) is cumulative over a lifetime without hope of natural recovery.

- Clear working area of stones, branches or hidden obstacles that might be hooked or snagged, causing injury or damage.

- Operate only in daylight or good artificial light.
- Be sure machine is in a stable position, is adjusted and in good operating condition.
- Ensure that all safety shielding and safety decals are properly installed and in good condition.
- Before starting, inspect the unit for any loose bolts, worn parts, cracks, leaks and/or frayed belts. Make the necessary repairs.

Always follow maintenance instructions.

2.6 PLACEMENT SAFETY

- Stay away from overhead power lines when moving the tender. Electrocutation can occur without direct contact. 
 - Locate unit to provide ample space for loading or unloading.
 - Store rear conveyor long passenger-side of tender when moving. Swing the conveyor towards the back only when ready to unload.
 - Be familiar with the machine's hazard zones. If anyone enters the hazard area, shut down machine immediately.
- Clear the area before restarting.
- Operate the tender on level ground free of debris.

2.7 MAINTENANCE SAFETY

- Review the Operator's Manual and all safety items before working with and maintaining the tender. 
- Place all controls in neutral or off, stop engine, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.
- Follow good shop practices:
 - Keep service area clean and dry.
 - Be sure electrical outlets and tools are properly grounded.
 - Use adequate light for the job.
- Before applying pressure to a hydraulic system, make sure all components are tight and that hoses and couplings are in good condition. 
- Relieve pressure from hydraulic circuit before servicing.
- Keep hands, feet, hair and clothing away from all moving and/or rotating parts. 
- Replace parts with genuine factory replacement parts to restore your equipment to original specifications.

Convey-All Industries Inc. will not be responsible for injuries or damages caused by use of unapproved parts and/or accessories.

- Make sure there is plenty of ventilation. Never operate the engine in a closed building.

The exhaust fumes may cause asphyxiation.

- Clear the area of bystanders, especially children, when carrying out any maintenance and repairs or making any adjustments.
- Before resuming work, install and secure all guards when maintenance work is completed.
- Keep safety decals clean. Replace any signage that is damaged or not clearly visible.

2.8 TIRE SAFETY

- Failure to follow procedure when mounting a tire on a wheel or rim can produce an explosion and may result in serious injury or death. 
 - Do not attempt to mount a tire unless you have the proper equipment and experience to do the job.
 - Have a qualified tire dealer or repair service perform required tire maintenance.
 - When replacing worn tires, make sure they meet the original tire specifications.
- Never undersize.
- Reference the tire side wall for information on the maximum cold tire pressure (PSI). Keep the tires inflated to this specified amount.

2.9 BATTERY SAFETY

- Keep all sparks and flames away from batteries, as gas given off by electrolyte is explosive. 
- Avoid contact with battery electrolyte: wash off any spilled electrolyte immediately.
- Wear safety glasses when working near batteries. 
- Do not tip batteries more than 45 degrees, to avoid electrolyte loss.
- To avoid injury from spark or short circuit, disconnect battery ground cable before servicing any part of electrical system.
- Boosting the engine through the battery, or recharging the battery, will cause a short in the remote control system, killing it.

To boost the engine:

- Remove the fuse from the remote control receiver box
- Boost the engine
- Reinstall the fuse

To recharge the battery:

- Disconnect the battery cables
- Recharge the battery
- Reconnect the cables



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- Before using the battery, after it has been in storage, be sure it has the optimal charge.

2.10 HYDRAULIC SAFETY

- Always place all hydraulic controls in neutral before disconnecting and working on hydraulic systems.
- Relieve pressure in hydraulic system before maintaining or working on machine.
- Make sure that all components in the hydraulic system are kept in good condition and are clean.
- Replace any worn, cut, abraded, flattened or crimped hoses.
- Do not attempt any makeshift repairs to the hydraulic fittings or hoses by using tape, clamps or cements. The hydraulic system operates under extremely high-pressure. Such repairs will fail suddenly and create a hazardous and unsafe condition.
- Wear proper hand and eye protection when searching for a high-pressure hydraulic leak. Use a piece of wood or cardboard as a backstop instead of hands to isolate and identify a leak. 
- If injured by a concentrated high-pressure stream of hydraulic fluid, seek medical attention immediately. Serious infection or toxic reaction can develop from hydraulic fluid piercing the skin surface. 

2.11 OPERATING SAFETY

- Please remember it is important that you read and heed the safety messages on the CST. Clean or replace all decals that cannot be clearly read and understood. They are there for your safety, as well as the safety of others.

- Ensure that everyone operating the CST, working on, or around it, reads and understands all the information in the operator's manual.



Review the safety, operating and maintenance instructions annually.

- Keep all bystanders, especially children, away from the machine when loading or unloading. Only authorized personnel should be in the area when carrying out maintenance work.

- Do not place hands, arms or body between trailer and rear conveyor frame to prevent pinching or crushing. Components can move unexpectedly.



- Use care when climbing on frame or ladder to prevent slipping or falling.



- Establish a lock-out, tag-out policy for the work site. Be sure all personnel are trained in and follow all procedures. Lock-out, tag-out all power sources before servicing the unit or working around loading/unloading equipment.

- Stop the engine. Place all controls in neutral, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.

- Be familiar with machine hazard areas. If anyone enters these spaces, shut down machine immediately. Clear the area before restarting.

- Keep hands, feet, hair and clothing away from all moving and/or rotating parts.



- Do not allow riders on the tender when transporting.

- Keep working area clean and free of debris to prevent slipping or tripping.



- Stay away from overhead obstructions and power lines during operation and transporting. Electrocutation can occur without direct contact.

- Do not operate machine when any guards are removed.

- Set park brake on tractor before starting.

- Be sure that conveyor is empty before raising/lowering, swinging or shuttling.

- The rear conveyor is 26 feet long. It needs a 26 feet radius of clear work area around the passenger-side and behind to move the conveyor into work position.

2.12 LOCK-OUT TAG-OUT SAFETY

- Establish a formal Lock-Out, Tag-Out program for your operation.

- Train all operators and service personnel before allowing them to work around the equipment.

- Provide tags on the machine and a sign-up sheet to record tag out details.

2.13 WORKPLACE HAZARD AREA

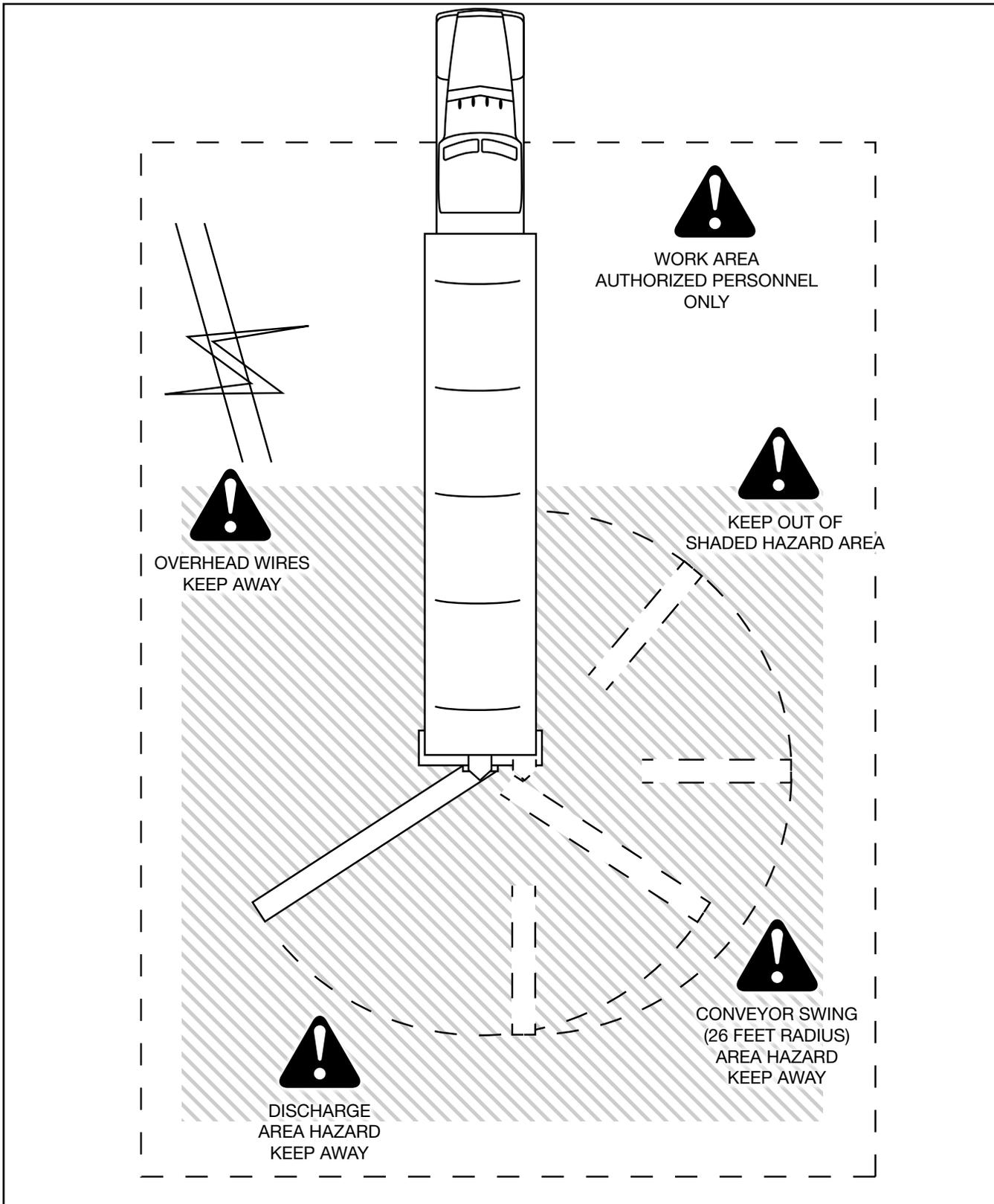


Fig 3 - Workplace Hazard Area

2.14 TRANSPORT SAFETY

- Close valves in hydraulic line before transporting.
- Check that all the lights, reflectors and other lighting requirements are installed and in good working condition.
- Be sure that the trailer is equipped with brakes that are in good working order. Be familiar with their operation.
- Always engage the Rear Conveyor transport lock before transporting.
- Never allow riders on the trailer.
- Comply with all local laws governing safety and transporting of equipment on public roads.
- Do not exceed a safe travel speed. Slow down for rough terrain and when cornering.
- Stay away from overhead power lines. Electrocutation can occur without direct contact.
- Plan your route to avoid heavy traffic.
- Do not drink and drive.
- Be a safe and courteous driver. Always yield to oncoming traffic in all situations, including narrow bridges, intersections, etc. Watch for traffic when operating near or crossing roadways.



2.15 STORAGE SAFETY

- Store the CST on a firm, level surface.
- Store in an area away from human activity.
- Make certain all mechanical locks are safely and positively connected before storing.
- Remove the battery. Be sure it is fully charged. Store it inside. Do not sit the battery on a cold concrete floor.
- Do not permit children to play on or around the stored machine.

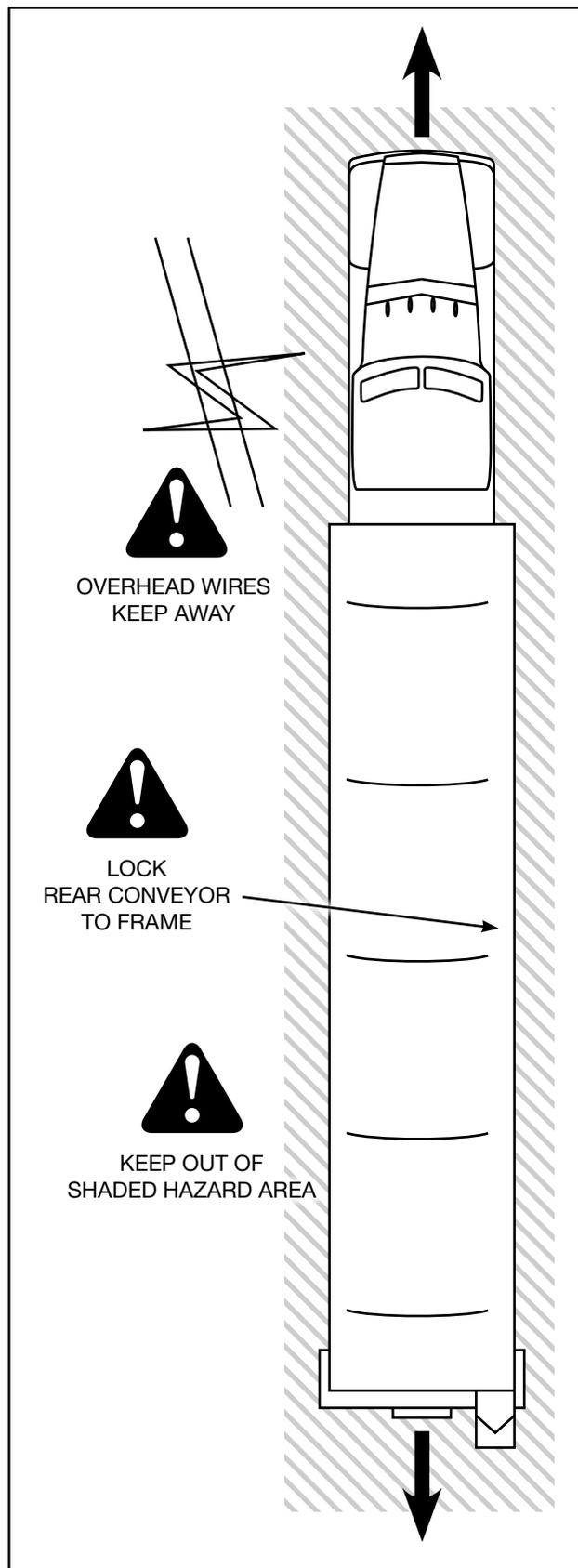


Fig 4 - Transporting Hazard Area

2.16 SAFETY DECAL LOCATION

The following illustrations show the general location of decals on this conveyor. The position of decals may vary depending on the machine's options. Decals are not shown at actual size.

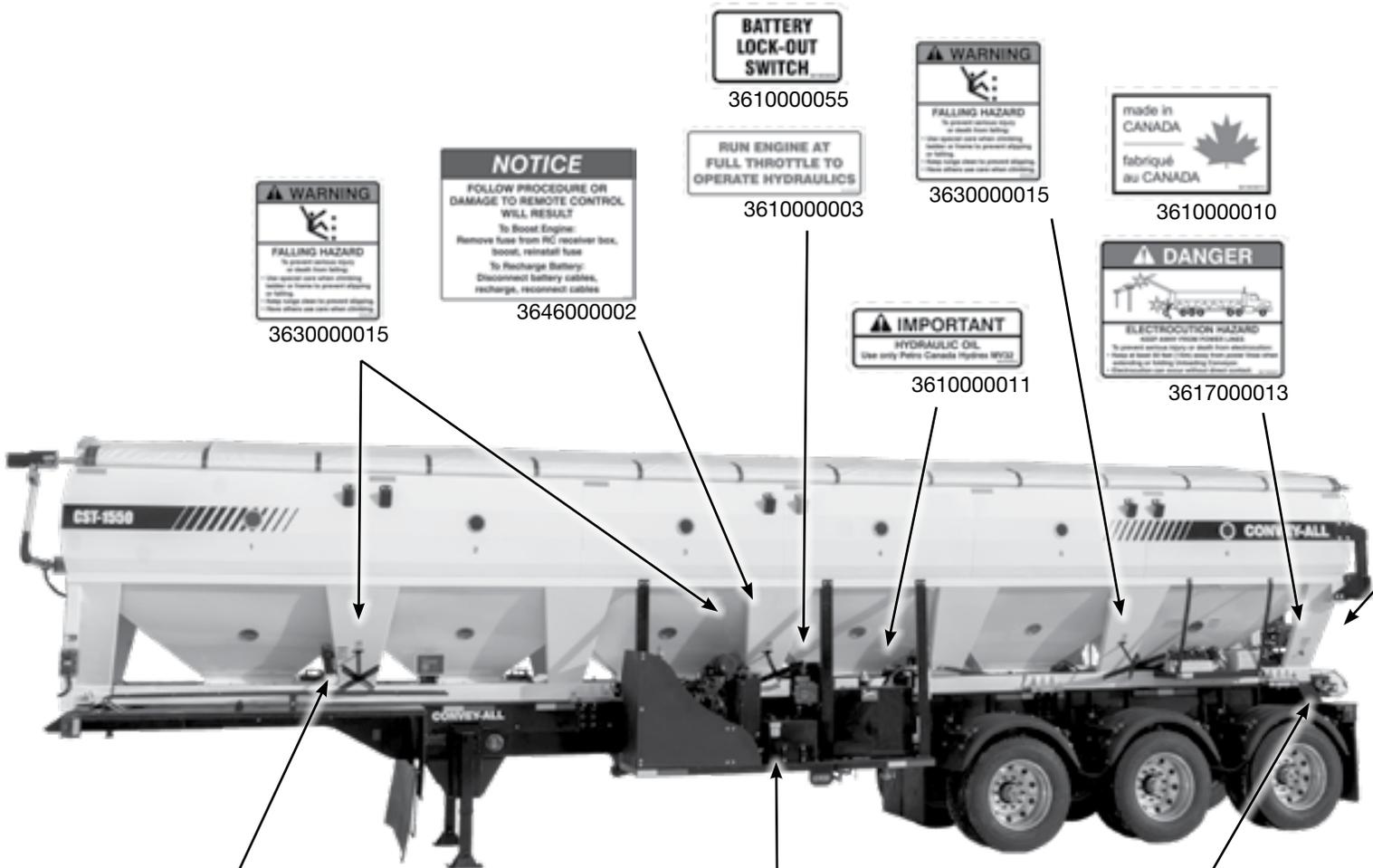


Fig 5 - Driver's side of CST-1550



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3617000005



3630000004



3617000005



3630000004



3630000014



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Fig 6 - Passenger's side of CST-1550



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REMEMBER - If safety decals have been damaged, removed, become illegible, or parts were replaced without signage, new ones must be applied. New decals are available from your authorized dealer.

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Section 3: OPERATION



Operating Safety

- Read and understand the Operator's Manual, and all safety decals, before using. Review safety related items annually.
- Place all controls in neutral, stop the engine, remove ignition key. Wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.
- Clear the area of bystanders, especially children, before starting. If anyone enters hazard areas, shut down machine immediately. Clear the area before restarting.
- Install and secure all guards before starting. Do not operate machine when any guards are removed.
- Use care when climbing on frame or ladder to prevent slipping or falling.
- Do not allow riders on the CST when transporting.
- Stay away from overhead obstructions and power lines during operation. Electrocutation can occur without direct contact.
- Keep hands, feet, hair and clothing away from all moving and/or rotating parts.
- Do not place hands, arms or body between the trailer and rear conveyor frame to prevent pinching or crushing. Components can move unexpectedly.
- Keep hydraulic components in good condition.
- Keep working area clean and free of debris to prevent slipping or tripping.
- Establish a lock-out, tag-out policy for the work site. Train all personnel in, and follow all procedures. Lock-out, tag-out all power sources before servicing the unit or working around loading/unloading equipment.

The Convey-All™ Commercial Seed Tender is designed to be used year-round. Weigh and transport seed to your air seeder in spring. Receive grain from the combine in autumn and haul product to market any time.

It is the responsibility of the owner, and operators to become familiar with the operating procedures in this section. Follow the instructions safely. It is everyone's business to provide a safe working environment for their co-workers.

The design and configuration of this tender includes safety decals and equipment. Hazard controls and accident prevention depend on the personnel operating and maintaining the equipment. Their concern, attentiveness and proper training are crucial.

Many features incorporated into this machine are the result of suggestions made by customers like you. Read this manual carefully for instructions on how to set it, to provide maximum efficiency.

By following these procedures, in conjunction with a good maintenance program, your CST will provide many years of trouble free service.

3.1 MACHINE COMPONENTS

The main components of are listed below:

- a. 6 Compartments
- b. Compartment gate
- c. Slave conveyor
- d. Slave conveyor hydraulic motor
- e. Slave conveyor discharge spout
- f. Rear conveyor (hydraulic motor at discharge)
- g. Engine
- h. Fuel tank, hydraulic oil reservoir and battery
- i. Manual hydraulic controls
- j. Remote control handset
- k. Wireless remote control box
- l. Weigh scale control panel
- m. Weigh scale junction boxes (one per side)
- n. Weigh scale cell (5 per side)
- o. Ladder (storage location)
- p. Ladder mount brackets, top/bottom (3 locations)
- q. Canvas tarp
- r. Tarp controls
- s. Gate indicator LEDs
- t. Document container

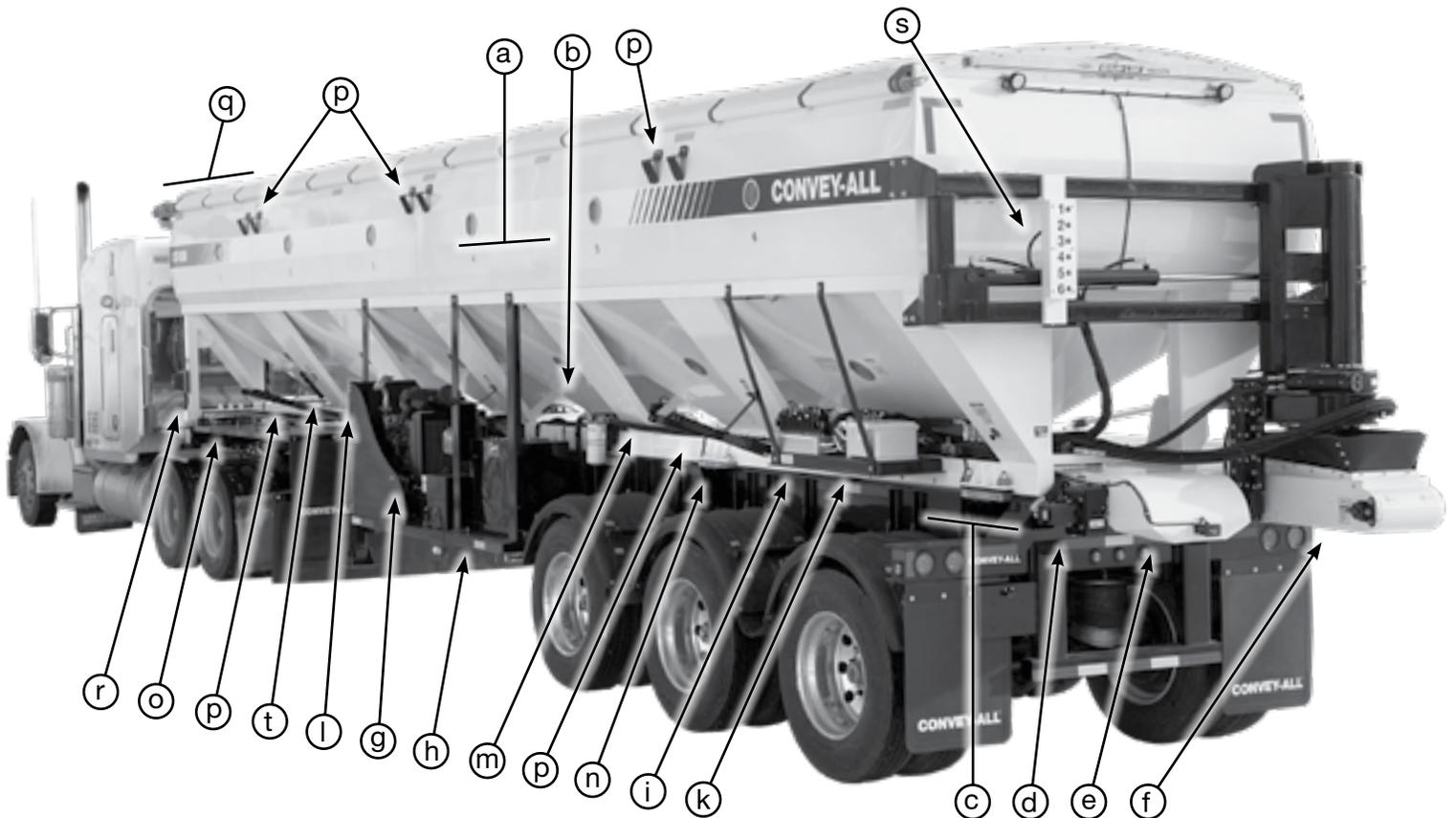


Fig 7 - Left side of CST-1550, remote control above

3.2 COMPONENTS AND CONTROLS

Before starting to work, all operators must familiarize themselves with the location and function of the components and controls on the tender.

There is an engine shield in front of the engine, facing the driving direction, for protection.

Diesel Engine:

Read the engine manufacturer's instruction manual before starting for more detailed instructions.

- a. **Battery Lock-Out Switch:**
Turn the switch clockwise to give battery power to entire CST.
- b. **Ignition Switch:**
This key operated switch controls the electric power to the engine.

Off - Turn key to the vertical position to stop the electrical system power and turn the engine off.

Run - Turn clockwise to the run position. This is the position where the engine will continue to run.

Start - Turn the key clockwise to engage the starter solenoid and start the engine.

Meters and Warning Lights:

The ignition box contains a display of all the engine functions.

IMPORTANT:

Always operate at full throttle to allow the hydraulics to operate at maximum performance.

Fuel Tank, Hydraulic Reservoir and Battery:

The fuel tank has a capacity of 57 Litres (15 US Gal.). The hydraulic oil reservoir's capacity is: 189 Litres (50 US Gal.). The battery is behind the fuel tank.

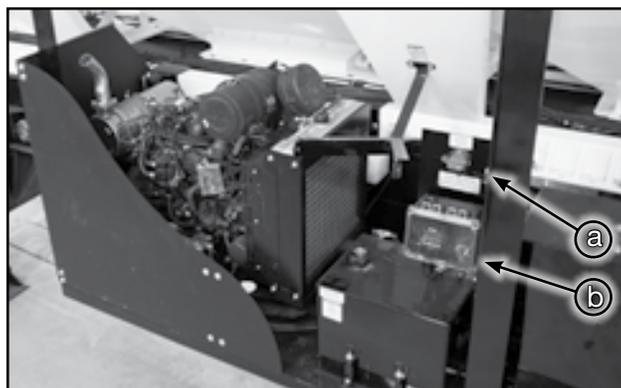


Fig 8 - Diesel engine

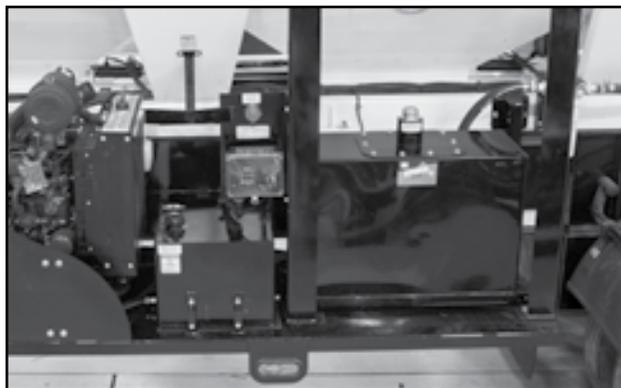


Fig 9 - Fuel tank and hydraulic oil reservoir

Hydraulic Valve Bank:

The functions of this tender are mainly operated using the remote control handset. Refer to page 3-5.

All tender functions can be manually controlled by the bank of hydraulic valves mounted on the rear, left frame. Each valve is designed with a flow control as part of the base.

The functions can also be manually operated at the valve:

- a. Shuttle Rear Conveyor:
 - Pull up the top of this valve to move the conveyor left, horizontally along the rear frame.
 - Push valve down, to move the conveyor right.
- b. Swing Rear Conveyor:
 - Pull up the top of this valve to swing the conveyor around to the left.
 - Push valve down, to swing it right.
- c. Raise/Lower Rear Conveyor Discharge:
 - Pull up the top of this valve to raise the discharge.
 - Push valve down, to lower it.
- d. Drop/Lift Rear Conveyor Hopper:
 - Pull up the top of this valve to drop the conveyor, lower than the slave conveyor. Then it can be shuttled into working position
 - Push valve down, to lift the conveyor. Then it can be swung into transport position.
- e. Gate Valves:

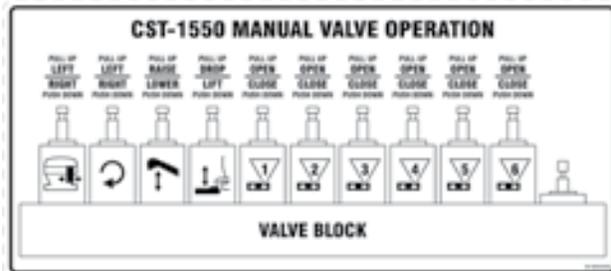
Each of the next six valves, control one of the compartment gates.

 - Pull up the top of the valve to open the gate.
 - Push valve down, to close the same gate.
- f. Conveyor Motors:
 - Pull the valve button up to turn on the conveyor motors.
 - Push down to turn off the motors.

Note:

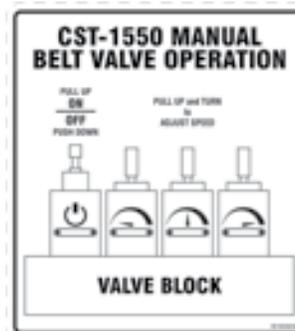
Slave and rear conveyor motors are connected and run by the same valve.

- g. Conveyor Belt Speed:
 - There are three valves that control the belt speed; slow, medium, fast. Pull and turn one of the three valves to run at that speed.



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Fig 10 - Valves bank decal



3618000067

Fig 11 - Belt valve decal

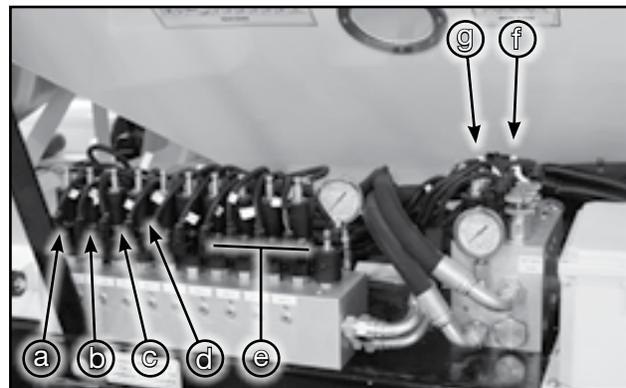


Fig 12 - Valve blocks

Remote Control:

The remote control functions correspond to the valve bank on the left side, at the rear of the CST. The Remote control receiver box is mounted beside the manual valve blocks.

Refer to the remote control's manual for specific setup instructions.

Slave Conveyor and its Discharge Spout:

The slave conveyor uses a PVC, smooth belt. It has a spout to discharge product directly, without using the rear conveyor.

Rear Conveyor:

The rear conveyor uses a rubber, paddle belt. It is stored along the side of the tender and is 26' long. It needs a 26' radius to swing around, and be positioned below the slave conveyor discharge to move product.

When the conveyor frame is centred below the slave conveyor's discharge, the conveyor can swing in a 114° arc. At a 40° angle, its discharge height is 17' 4".

There are 5 limit switches to control its movements:

Switch 1 - is activated when the conveyor frame is shuttled to centre.

Switch 2 - is activated when the conveyor frame is shuttled to the passenger-side corner.

Switch 3 - is activated when the conveyor is swung 180°, and is centred, pointing straight back from the tender. LED on rear of tender will light.

Switch 4 - is activated when the conveyor hopper has dropped fully.

Switch 5 - is activated when conveyor discharge is raised to its limit.

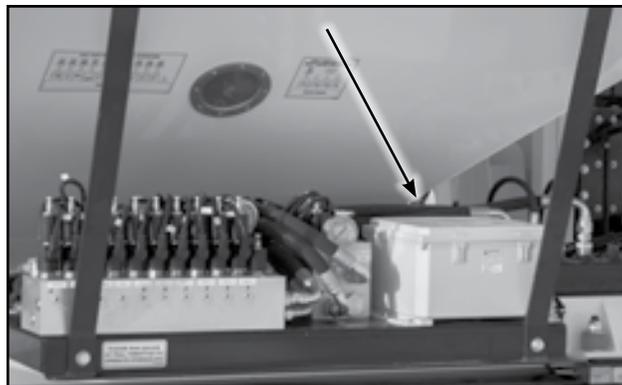


Fig 16 - Remote control receiver box



Fig 13 - Slave discharge spout



Fig 14 - Rear conveyor movement frame



Fig 15 - Rear conveyor paddle belt

Weight Scale:

The tender comes with a scale package which weighs all the compartments together.

There are 5 load cells on each side, sandwiched between the trailer and tender frame.

There are 2 junction boxes, one per side, attached to the frame under compartment number four. Each junction box connects the five load cells on its side.

The information collected by the load cells, is displayed on the control panel and remote control handset.



Fig 17 - Weight scale control panel



Fig 18 - (a) Load Cell, (b) weigh scale junction box

Cameras:

A camera is mounted on the discharge of the slave conveyor, and the rear conveyor.

The cables for the cameras monitor screen are routed to the front of the tender by the factory. From there, the owner can hook up the screen to the truck cab, or another location.



Fig 19 - Camera and light on rear conveyor discharge

Working Lights:

There are 2 lights mounted at the top, rear of the unit. Another light is situated at the end of the rear conveyor discharge spout.

There are three smaller lights located:

- above the engine
- above the fuel tank and hydraulic reservoir
- above the hydraulic valve bank

The lights are controlled from the remote control handset.



Fig 20 - Working lights

Electric Roll-Top Tarp:

This set of switches is on the frame at the front, left side. It controls the electric motor on the Roll-Top Tarp covering the top of the CST.

1. Press and hold the left switch (O) to open the roll-top cover.
2. Press and hold the right switch (C) to close the roll-top cover.
3. Release the switch and the motor will stop.



Fig 21 - Roll-top tarp controls

Compartment Inner Ladder Rungs:

Each compartment is designed with an inner ladder rungs to provide access to the inside of each compartment.



Fig 22 - Compartment ladder rungs

Exterior Ladder:

An exterior ladder is stored at the front, driver-side of the tender.

There are 3 sets of ladder mount brackets along the top, driver-side to hang the ladder from. At shoulder height, below the mount brackets, are ladder braces to secure the ladder to.



Fig 23 - Stored exterior ladder

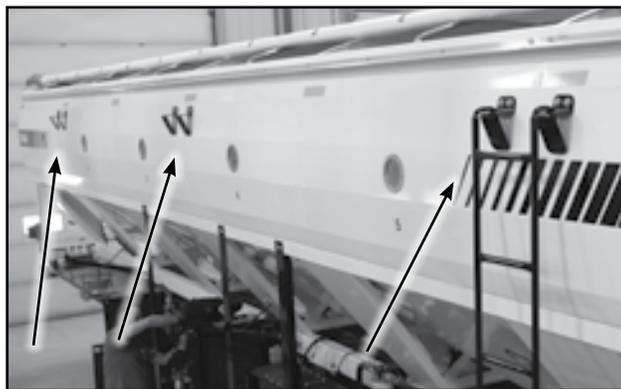


Fig 24 - Exterior ladder brackets

Gate Status Lights:

A panel of lights on the rear of the frame indicates which compartment gate is open.

When the light is illuminated, the gate is open.

Be sure to depress the button on the remote control until the light goes OFF and the gate is completely closed.

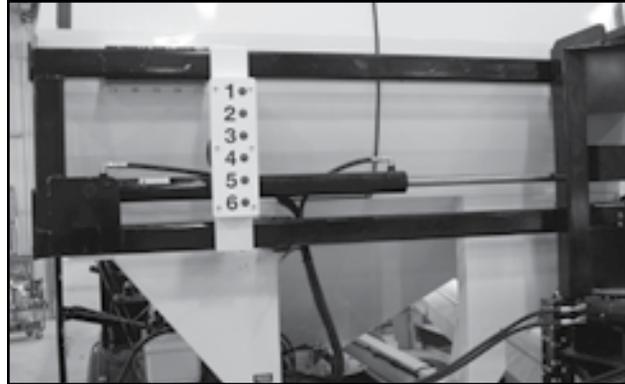


Fig 25 - Gate Status Indicator LEDs

Sight Glass:

Each compartment in the tender is designed with an upper and lower sight glass to allow the operator to monitor the amount of material in the compartment.

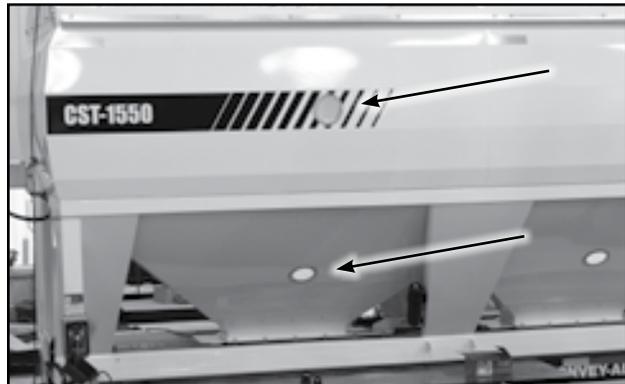


Fig 26 - Sight glasses

Air-Ride Suspension:

This tender sits on axles with air-ride suspension.



Fig 27 - Air-ride suspension

Document Holder:

A document holder is secured to the front, driver-side compartment support, above the fender.



Fig 28 - Document holder

3.3 MACHINE BREAK-IN

There are no operational restrictions on the tender when used for the first time.

The conveyor belt's alignment is set at the factory, to track correctly without carrying a load. It is important to check alignment and make adjustments, if required, during the first few minutes of operation.

It is recommended that the following procedural and mechanical items be checked:

Before Starting:

1. Read the engine, and CST operator's manuals.
2. Review the Pre-Operation Checklist before starting machine.

After Operating 1/2, 5, 10 Hours:

3. Lubricate the points defined in Section 4: Service and Maintenance.
4. Check the tension and alignment of the conveyor drive systems. Adjust as required.
5. Check the conveyor belt's tension and alignment.
6. Check hardware and fasteners. Tighten to their specified torque.
7. Check the remote control. Be sure that it functions properly.
8. Check that the trailer air brakes are functioning as required.
9. Check engine and hydraulic fluid levels.

After 10 Hours:

Go to the service schedule as defined in Section 4.2 Servicing Intervals.

3.4 PRE-TRIP INSPECTION

Efficient and safe operation of the CST requires that each operator reads the operating procedures. They should also understand all related safety precautions outlined in this manual. This pre-trip inspection (similar to what is required for commercial tractor trailers) is provided for the operator. It is important for both personal safety and to maintain the good mechanical condition of your tender.

Before operating the unit and each time thereafter, the following areas should be checked:

1. Inspect the trailer/tender for damage or leaks.
2. Inspect suspension system and air brakes.
 - No air leaks. No wear on hoses and cables.
 - Refer to Section 4.2.4
3. Lights and reflectors must be clean, undamaged and operational.
4. Check tire pressure, treads and sidewalls.
5. Check wheel hubs are tight. Hub oil level is high.
6. Rear conveyor must be locked in transport position, when not in use.
7. Check engine, fuel and hydraulic oil levels.
8. Be sure the battery has optimal charge. If needed, charge the battery before connecting it with the battery cables.
9. Lubricate the machine per the schedule outlined in the Maintenance section.

3.5 PRE-OPERATION INSPECTION

10. Check that the rear conveyor can swing, shuttle and raise/lower freely.
11. Check that the conveyor belts are aligned and tensioned properly.
12. Remove any entangled material.

3.6 REMOTE CONTROL FUNCTIONS

The remote control functions correspond to the manual valve on the tender. The following are explanations of each button and its function:

SETUP SETUP Button:
Refer to Remote Control's manual for handset default settings and functions.

0 ZERO Button:
Resets the scale, when no load applied.

ON/OFF ON/OFF Button (Red):
Turns the remote control on and off.

G/N GROSS / NET Button:
- Press to view Gross weight for entire unit.
- Press again to show Net weight.

TARE TARE Button:
Press to enter weight of the empty tender.

LIGHTS LIGHTS Button:
Turns CST's working lights on and off.

Extract Rear Conveyor - for work:
1 SWING Button:
Swing rear conveyor around 180° from storage to "rotation centre". It will point directly back from the tender.

2 DROP Button:
Drop hopper of the rear conveyor fully. It will sit below the height of the slave conveyor discharge.

In the same function, the discharge will rise to its limit. Hold down button until both movements are complete.

3 SHUTTLE Button:
Shuttle rear conveyor frame until it's hopper is below the slave conveyor discharge.

Once the rear conveyor is positioned below the slave conveyor, discharge can be swung, raised and lowered for work. The rear conveyor belt will now run.



BELT POWER Button:
Turns both belts on and off.

BELT SPEED Button:
There are three speeds, press button a fourth time to return to the slowest speed.

SELECT GATE Button:
Press to choose a compartment gate. An LED on the back of the tender will identify the open gate.

OPEN GATE Button:
Opens selected compartment gate.

CLOSE GATE Button:
Closes selected compartment gate.

Stow Rear Conveyor - for transport:
1 SHUTTLE Button:
Shuttle the rear conveyor frame back to the passenger-side corner of tender.

2 LIFT HOPPER Button:
Lift the rear conveyor, to transport height.

In the same function, the discharge will lower to horizontal. Hold down button until both movements are complete.

3 SWING Button:
Swing the rear conveyor around until it lays long the side of the tender.



Fig 29 - Remote control handset, not to scale

3.7 REAR CONVEYOR OPERATION

The rear conveyor must be stored and locked in transport position whenever it is not in use.

To Extract the Rear Conveyor

1. Unlatch the rear conveyor from its storage bracket.

Note:

Be sure the remote control handset's battery is fully charged.

2. Swing the conveyor around 180° from storage to "rotation centre", placing it straight out the back of the tender.



- Green LED on rear of tender will light indicating the conveyor is swung to centre.

Note: Conveyor must be centred to operate the following movements:

- Drop conveyor hopper.
- Shuttle conveyor frame sideways.

3. Drop the hopper fully, to sit below the slave discharge.



In the same function, the discharge will rise to its limit. Hold down the button until both movements are complete.

Note: To drop the hopper:

- Conveyor must be at rotation centre.
- Conveyor frame must be at passenger-side corner.

4. Shuttle the conveyor frame to left, to position its hopper below the slave discharge.



Note: To shuttle sideways:

- Conveyor must be at rotation centre.
- Conveyor hopper must be dropped fully.
- Conveyor discharge must be raised completely.

5. The conveyor is now in working position. It can be swung left to right, in a 114° arc. The discharge can be raised (to a maximum of 17' 4") or lowered into the unloading position.

To Stow the Rear Conveyor

6. Swing the conveyor back to "rotation centre", so it points directly back from the tender. Green LED will light.



7. Raise the conveyor discharge to its limit.



8. Shuttle the conveyor frame back to the passenger-side (right) corner.



Note: To shuttle:

- Conveyor must be at rotation centre.
- Conveyor hopper must be dropped completely.
- Conveyor discharge must be raised fully.

9. Lift the conveyor hopper into stow position.



In the same function, the discharge will lower. Hold down button until both movements are complete.

- Conveyor will now be horizontal.

Note: To lift the hopper:

- Conveyor must be at rotation centre.
- Conveyor frame must be at passenger-side corner.

10. Swing the conveyor back around to sit on the storage bracket along the side of the tender.



Note: To swing the conveyor for storage:

- Conveyor frame must be at the corner.
- Conveyor hopper must be lifted completely (conveyor will be horizontal).

11. Use the latch on the storage bracket to lock the conveyor in place.

3.8 OPERATING ON SITE

The Convey-All™ CST is designed to handle any kind of seed, or granular chemical. Use the unit to transport it to or from the field as required. The tender can also be used to transport product to market.

Inspect the machine at the start of each day to be sure it is in good mechanical condition.

1. Perform Pre-Trip and Pre-Operation Inspections. Refer to Section 3.4
2. Attach the CST trailer to the towing truck.
3. Transport to the working location.
4. Set truck park brake and remove ignition key.
5. Disengage Battery Lock-Out Switch, to give battery power to the tarp controls.
6. Open roll top cover.
7. Fill the compartment(s).
8. Close the roll-top cover.
9. Engage the Battery Lock-Out Switch.
10. Transport to the unloading area.



Fig 30 - Transport to the location



Fig 31 - Battery Lock-out



Fig 32 - Open roll top



Fig 33 - Transporting CST to site



WARNING - Strangulation Hazard:
Careful the remote control handset does not become caught in running machinery, while hanging from the neck.

11. Disengage the Battery Lock-Out Switch
12. Start engine.

13. Refer to page 3-4 for hydraulic valves.
Refer to Section 3.6 for an explanation of remote control function.
14. If the rear conveyor is to be used for unloading, refer to Section 3.7 to move rear conveyor into working position.

Note:

The conveyor will need a 26' radius of open space around the tender to swing.

IMPORTANT:

Always lower conveyor to run at 40° or less.
Capacity will be drastically reduced at steeper angle.

15. Move the rear conveyor into position.
16. The rear conveyor can be swung through a 114° arc, and raised to a 40° angle, to allow it to fill more than one compartment in your planter, drill, distributor or spreader.
17. Start the conveyor belt(s).

Note:

Rear conveyor hopper must be below slave discharge for rear belt to run.

Both belts are operated with one switch.
They have preset speed differences to prevent plugging.

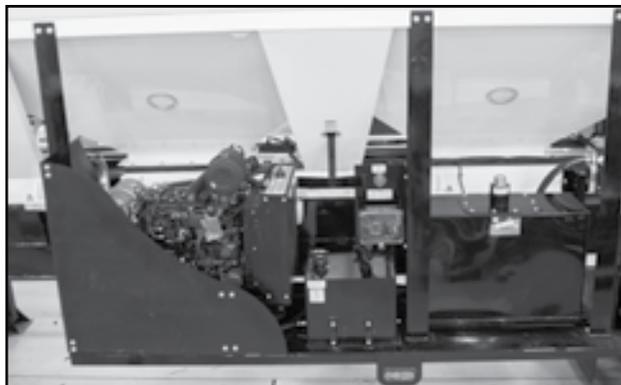


Fig 34 - Engine



Fig 35 - CST-1550

18. Select a compartment to unload from.



Fig 36 - Remote control

19. Open the gate under the selected compartment to empty.



Fig 37 - Compartment gate cylinder

NOTICE - Plugging Hazard:

Open one compartment gate at a time to minimize the chance of plugging the unit.

20. Close the gate to the empty compartment, before opening the next one.



Fig 38 - Filling seeder

21. Be sure the gates to close all compartments when finished.
22. Turn off the conveyor belts.



Fig 39 - Hydraulic valve block

23. Swing the rear conveyor around to the side of the conveyor.



Fig 40 - Rear conveyor

24. Lock in storage position.



Fig 41 - Rear conveyor latch

25. Reduce engine speed to low idle.
26. Turn the engine OFF. Remove the ignition key.
27. Place remote control in a secure location for storage.

Continue on with your work day.



Fig 42 - Diesel engine

3.9 STORAGE

After the season's use, or when the CST will not be used for a period of time, completely inspect and clean every part of the tender.

Replace or repair any worn or damaged components to prevent any unnecessary down time at the beginning of the next season.

Follow these procedures before storing:

1. Remove all the left over product from inside the compartments, also on and around both conveyor belts.
2. Thoroughly wash the unit to remove all dirt, mud, debris and residue.
 - Wash inside the compartments and around the gates.
 - Wash the top and under the belts.
 - Clean inside the rear conveyor tube.
3. Inspect all rotating parts for entanglements. Remove anything caught in the mechanisms.
4. Check the condition of the components in the hydraulic system. Repair, replace or adjust as required.
5. Check the condition of the slave and rear conveyor belts. Replace any damaged belts.
6. Lubricate all fittings and fill grease cavities.
7. Touch up all paint nicks and scratches to prevent rusting.
8. Remove the battery.
 - Be sure it is fully charged.
 - Store it inside.
 - Do not sit the battery on a cold, concrete floor.
9. It is best to store the machine inside.

If that is not possible, cover with a waterproof tarpaulin and tie down securely.
10. Store in an area away from human activity.
11. Do not allow children to climb on or play around the stored tender.

3.10 REMOVING FROM STORAGE

When removing the machine from storage, follow the Pre-Operation Checklist in Section 3.5.



Fig 43 - Tender in storage

Section 4: SERVICE AND MAINTENANCE



Servicing Safety

- Review the Operator's Manual and all safety items before working with, maintaining the machine.
- Place all controls in neutral, stop engine, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.
- Follow good shop practices:
 - Keep service area clean and dry.
 - Be sure electrical outlets and tools are properly grounded.
 - Use adequate light for the job at hand.
- Before applying pressure to the hydraulic system, make sure all components are tight and that all hoses and coupling are in good condition.
- Always use personal protective devices such as safety glasses, gloves and hearing protection, when performing any service or maintenance.
- Relieve pressure from hydraulic circuits before servicing or repairing.
- Keep hands, feet, hair and clothing away from moving and/or rotating parts.
- Make sure there is plenty of ventilation. Never operate the engine in a closed building. The exhaust fumes may cause asphyxiation.
- A fire extinguisher and first aid kit should be kept readily accessible while performing maintenance on this equipment.
- Periodically tighten all bolts, nuts and screws and check that all cotter pins are properly installed to ensure unit is in a safe condition.
- Keep safety signs clean. Replace any sign that is damaged or not clearly visible.

4.1 FUELS, FLUIDS AND LUBRICANTS

Fuel & Engine Oil:

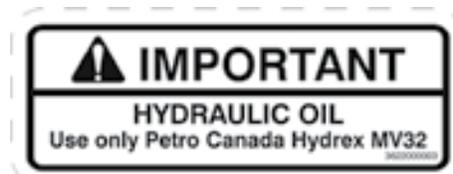
Refer to the engine manual, for specific instructions. The fuel tank capacity is 57 Litres (15 US Gal.)

Grease:

Use an SAE multipurpose high temperature grease with extreme pressure (EP) performance. Also acceptable, SAE multipurpose lithium based grease.

Hydraulic Oil:

Use an ISO grade 36 hydraulic oil for all operating conditions (Hydrex MV36 or comparable). The Oil Reservoir capacity is: 189 Litres (50 US Gal.)



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Storing Lubricants:

Your machine can operate at top efficiency only if clean lubricants are used. Use clean containers to handle all lubricants. Store them in an area protected from dust, moisture and other contaminants.

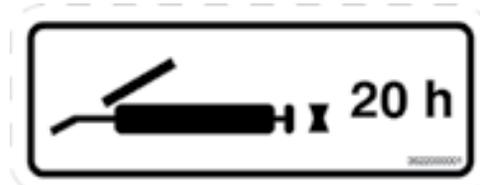
4.1.1 Greasing

Use the Service Record provided on page 4-15 to keep a record of all scheduled maintenance.

1. Use only a hand-held grease gun for all greasing. An air-powered greasing system can damage the seals on bearings and lead to early failures.
2. Wipe grease fitting with a clean cloth before greasing to avoid injecting dirt and grit.
3. All bearings are sealed and greasable. They require minimal lubricant.

Recommended greasing is 1 small stroke every 2 weeks. Be careful not to over-grease, as this may push the seal out.

4. Replace and repair broken fittings immediately.
5. If fittings will not take grease, remove and clean thoroughly. Also clean lubricant passageway. Replace fitting if necessary.



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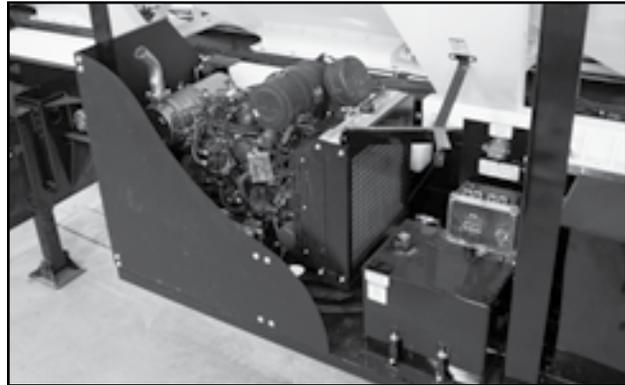


Fig 44 - Diesel engine

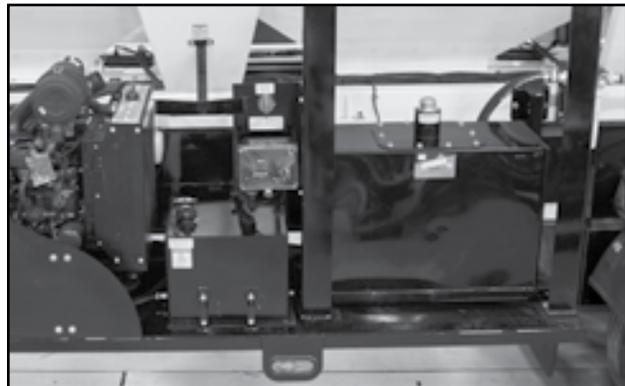


Fig 45 - Fuel tank and hydraulic oil reservoir

4.2 SERVICING INTERVALS

The following recommended periods are based on normal operating conditions. Severe or unusual conditions may require more frequent lubrication and servicing.

The conveyor belt alignment is preset to run true under a condition of no load. It is important to check alignment and make adjustments, if required, during the initial few minutes of loaded operation.

Check bearings for wear daily.

IMPORTANT:

For engine servicing and maintenance, refer to it's manual for complete details.

4.2.1 Every 10 Hours or Daily:

1. Check fuel level.
 - Add as required.
2. Check hydraulic oil level.
 - Add as required.

4.2.2 Every 50 Hours or Weekly:

3. Grease the slave conveyor roller bearings.
 - Tail end
 - Drive and discharge rollers
4. Oil couplers on hydraulic drives.
 - At discharge of slave conveyor
 - At discharge of rear conveyor
5. Grease the rear conveyor roller bearings.
 - Tail end
 - Drive and discharge rollers
6. Grease rear conveyor movement points.
 - a. Grease shuttle point.
 - b. Grease swing points.
 - c. Grease conveyor raise cylinder points.
 - d. Grease conveyor drop cylinder points.



Fig 46 - Slave conveyor drive



Fig 47 - Rear conveyor drive

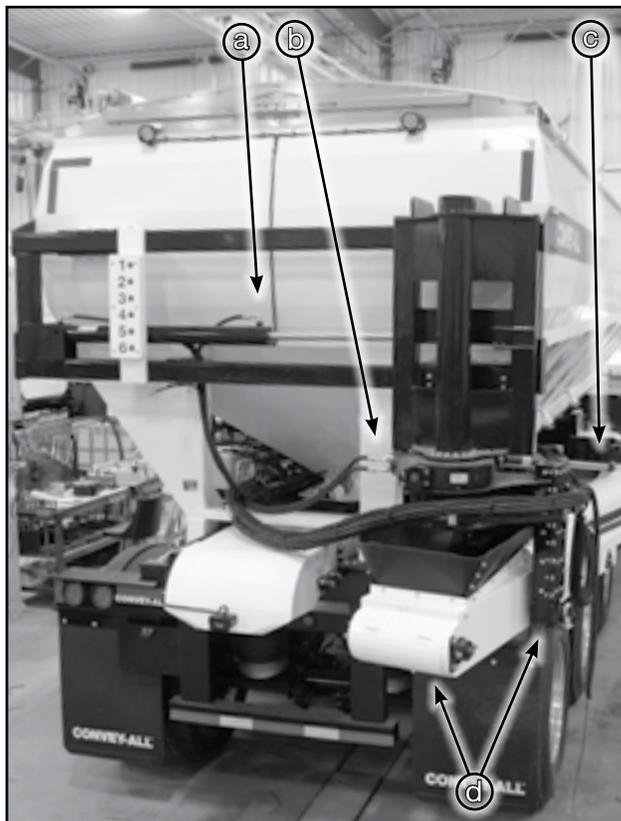


Fig 48 - Rear conveyor movement points

7. Grease the gate cylinder and bushings, below each compartment.



Fig 49 - Gate cylinder

8. Check the tension and alignment of the slave and rear conveyors.
Refer to Sections 4.3.2 and 4.3.3

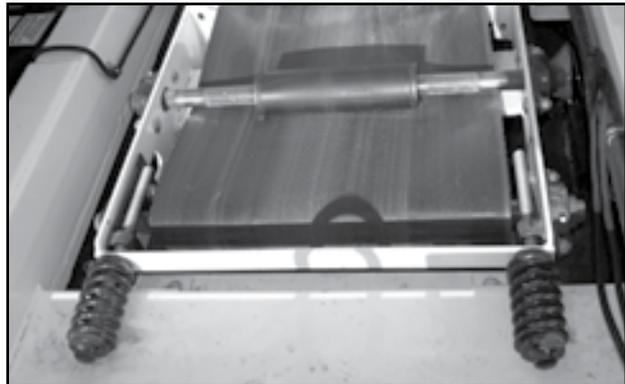


Fig 50 - Slave conveyor tension bolts, cover removed

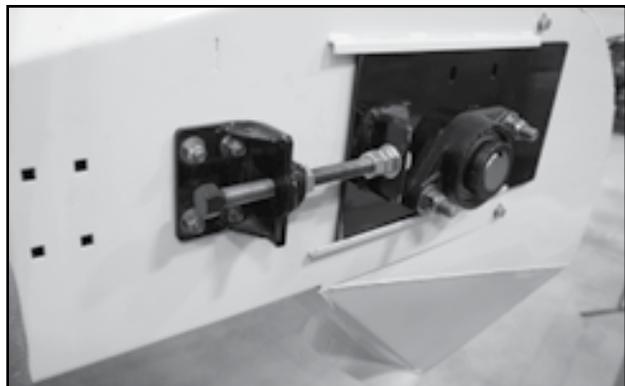


Fig 51 - Adjustment bolt, rear conveyor discharge

4.2.3 Every 200 Hours or Annually:

IMPORTANT:

Refer to engine manual for complete details on service and maintenance.

Refer to this link for axle maintenance:
<http://www.dexteraxle.com/resources/manuals/-in-tags/tags/Heavy-Duty>

9. Take hydraulic oil sample and send to lab for particle count analysis. Change oil if necessary.
10. Change the hydraulic filter. Refer to Section 4.3.4
11. Check and clean suspension air tank.
 - Drain moisture from tank.
12. Inspect air lines to suspension and brakes, for wear and leaks.
 - Be sure they are secure, not kinked, and have clearance from moving parts.
13. Inspect suspension for missing or broken fasteners or spring leaf.
 - Check components for wear, leaks and other deterioration.
14. Inspect the brake system for wear, cracks, etc.
15. Adjust brakes. Refer to online instructions.
16. Check axle alignment.
17. Check oil level in wheel hubs.
 - Inspect hubs for leaks.
18. Lubricate and repack wheel bearings.
19. Inspect tires for wear and check pressure.
20. Re-torque wheel nuts.
21. Ensure reflectors, transport lights and work lights are clean and operational.
 - **Note:** The transport light harness has a lifetime manufacturer warranty.
22. Wash tender.
 - Refer to Section 3.9 for thorough cleaning instructions.

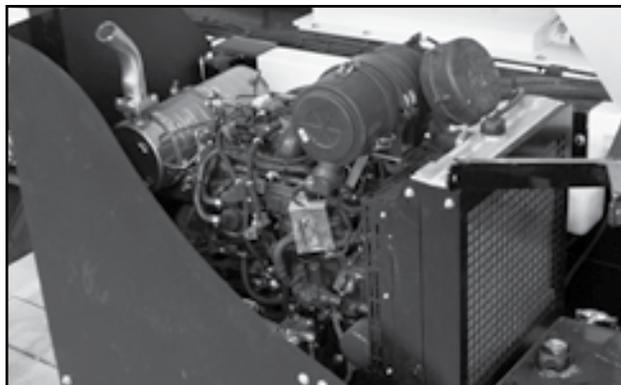


Fig 52 - Diesel engine



Fig 53 - Hydraulic system oil filter



Fig 54 - Air-ride suspension



Fig 55 - Clean tender

4.3 MAINTENANCE PROCEDURES

By following a careful service and maintenance program for your tender, you will enjoy many years of trouble-free service.

Note:

Refer to the engine manual for complete details on your particular model.



WARNING: Rotating Part Hazard
Turn off engine. Wait for belt and rollers to stop moving, before working on the belt.

4.3.1 Conveyor Belt Tension:

The tension of both the slave and rear conveyor belts should be checked daily to insure proper function.

Note:

Belt is tensioned correctly when it does not slip on the drive roller when loaded.

Belt Tension of Slave Conveyor

1. Loosen the roller bearing housings at the tail.
2. The tension is set and controlled by the springs on both sides of the slave conveyor belt.

Tighten, or loosen the tension bolts, so the springs have a measurement of 3-3/4" (95 mm).

3. Tighten the roller bearing housing.
4. Measure the spring lengths to be equal.

Belt Tension of Rear Conveyor

5. Loosen the roller bearing housings at the rear conveyor discharge.
6. Tighten or loosen the adjustment bolts for correct tension of the paddle belt.
7. Tighten the roller bearing housings.



Fig 56 - Slave conveyor tension bolt and springs



Fig 57 - Adjustment bolts on rear conveyor

4.3.2 Conveyor Belt Alignment:

The belt is properly aligned when it runs in the centre of the frame and the roller shafts.

Be sure to run the conveyor a full revolution to check the entire belt.

The belt can move from side-to-side while it is turning as long as it does not contact the sides. If it touches the sides, it must be aligned.



WARNING: Rotating Part Hazard
Turn off engine. Wait for belt and rollers to stop moving, before working on the belt.

Note:

If belt is out of alignment,
it will move to the loose side.
Tighten loose side or loosen tight side.

Belt Adjustment of Slave Conveyor

1. Loosen the roller bearing housing on the side to be adjusted.
2. Align by loosening or tightening the shaft bearing assemblies at the tail and discharge rollers.
3. Align the bearing assemblies on either the drive, or driven shaft end of the drive roller.
4. Tighten all the roller bearing housings.
5. Test the belt by running the conveyor belt.
6. Repeat this process until the belt tracks correctly.

Belt Adjustment of Rear Conveyor

7. Loosening or tightening the shaft bearing assemblies at the tail and discharge rollers.
8. Align the bearing assemblies on either the drive, or driven shaft end of the drive roller.
9. Tighten all the roller bearing housings.
10. Test the belt by running the conveyor belt.
11. Repeat this process until the belt tracks correctly.

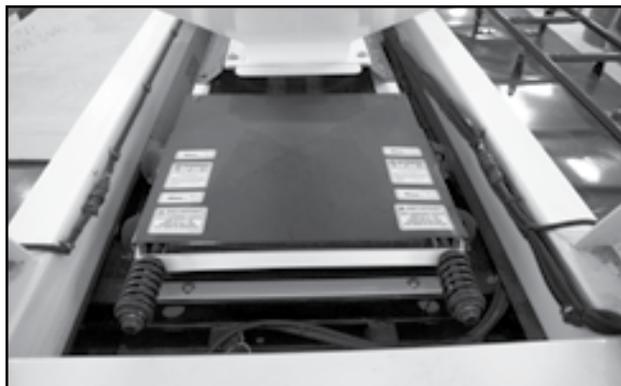


Fig 58 - Slave conveyor tension bolt and springs

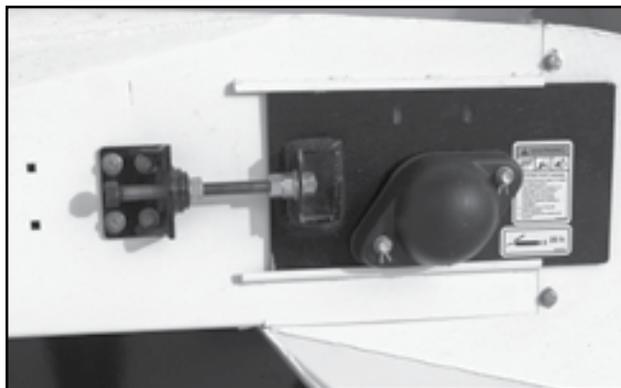


Fig 59 - Adjustment bolts on rear conveyor

4.3.3 Conveyor Belt Replacement:**Slave Conveyor Belt Replacement**

1. Remove the discharge hood from slave conveyor.
2. Rotate the belt until the lacing is accessible at the discharge.
3. Loosen the belt tension.
4. Disconnect the conveyor belt by removing the connecting rod in the lacing.
5. Attach the new belt to the end of the existing belt.
6. Pull the old belt out of the machine.
 - The new one will thread into position.
7. Disconnect the old belt and connect the ends of the new one together.
8. Tension and align the new conveyor belt.



Fig 60 - Slave conveyor discharge hood

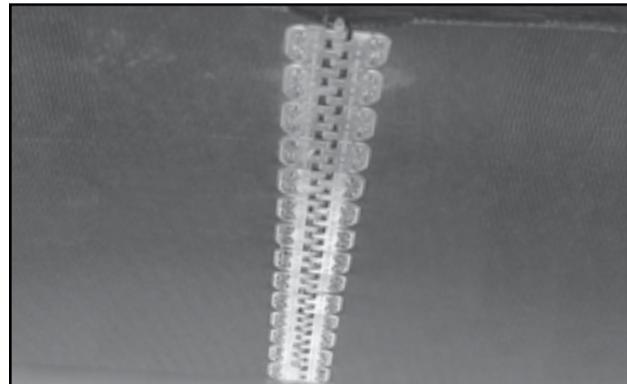


Fig 61 - Alligator lacing on slave conveyor belt

Rear Conveyor Belt Replacement

9. Remove the access panel in the rear conveyor.
10. Rotate the belt until the lacing is accessible.
11. Loosen the belt tension.
12. Disconnect the conveyor belt by removing the connecting rod in the lacing.
13. Attach the new belt to the end of the existing belt.
14. Pull the old belt out of the machine.
 - The new one will thread into position.
15. Disconnect the old belt and connect the ends of the new one together.
16. Tension and align the new conveyor belt.



Fig 62 - Rear conveyor, access panel removed



Fig 63 - Alligator lacing on rear conveyor paddle belt

Check the tension and alignment of the conveyor belt frequently during the first 10 hours of operation. Adjust as required. Then, go to the regular service schedule.

Normally a conveyor belt will seat itself during the first 10 hours of operation and then require less or no adjustment.

4.3.4 Changing Hydraulic Filter and Oil:

1. Place all controls in neutral, stop engine and remove ignition key before maintaining.



WARNING: Hot Liquid
Hydraulics must be cool before changing the oil. Hot oil can cause burns if it contacts exposed skin.

IMPORTANT:

Annually, have an hydraulic oil sample tested for particle count.

Hydraulic Filter Replacement

2. Place pan under the filter to catch any spilled oil.
3. Remove hydraulic oil filter, and dispose of it.
4. Fill the new filter with hydraulic oil.
5. Apply a light coat of oil to the O-ring and install the replacement filter. Snug up by hand and then tighten another 1/2 turn.
6. Run engine and hydraulic for 1-2 minutes. Check for oil leaks.
 - If a leak is found around the filter, tighten slightly.

Hydraulic Oil Replacement

7. Test the hydraulic oil annually for particle count.
 - Only if necessary, change the oil.
8. Hydraulic oil reservoir contains 189 Litres (50 US Gallons).
 - Place a large container, or tank under drain plug.
9. Remove the plug, and drain the oil to until empty.
10. Install and tighten the drain plug.
11. Dispose of the used oil in an approved container.
12. Fill the reservoir with specified oil.
13. Run engine and hydraulic for 1-2 minutes. Check for oil leaks.
 - If a leak is found, tighten fitting slightly.



Fig 64 - Hydraulic reservoir and filter

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Section 5: TROUBLESHOOTING

In the following troubleshooting section, we have listed many of the problems, causes and solutions to the problems which you may encounter.

If you encounter a problem that is difficult to solve, even after having read through this troubleshooting section, please contact your authorized dealer, distributor or the factory. Before you call, please have this Operator’s Manual and the serial number from your machine ready.

Problem

Possible Cause	Possible Solution
<i>Rear Conveyor Hopper Does Not Drop/Lift</i>	
Rear conveyor may not be in “rotation centre” (limit switch is not activated)	Swing conveyor 180° from stow position. Green LED will light when centred.
<i>Rear Conveyor Does Not Shuttle Sideways</i>	
Rear conveyor may not be in “rotation centre” (limit switch is not activated)	Swing conveyor 180° from stow position, green LED will light when centred (limit switch must activate).
Rear conveyor hopper may not have dropped fully (limit switch is not activated)	Drop the hopper completely (limit switch must activate)
Rear conveyor discharge may not be raised fully (limit switch is not activated)	Raise the discharge completely (limit switch must activate)
<i>Rear Conveyor Does Not Swing. Discharge Does Not Raise/Lower.</i>	
Conveyor hopper may not be positioned directly below the slave discharge	Swing conveyor 180° from stow position, green LED will light when centred. Drop the hopper and raise discharge completely. Shuttle the conveyor frame to centre (limit switches must activate).
<i>Rear Conveyor Belt Does Not Run</i>	
Rear conveyor belt will operate only when its hopper is directly below the slave discharge	Swing conveyor 180° from stow position, green LED will light when centred. Drop the hopper completely. Shuttle the conveyor frame to centre (limit switches must activate).
<i>Engine Labouring</i>	
Belt is sticky on the back side, because of oily product or wet/snowy conditions	Clean the belt
Air cleaner dirty	Clean the air cleaner, and/or replace the air filter

continued on next page

Problem

Possible Cause	Possible Solution
<i>Belt Does Not Track Correctly</i>	
Roller lagging may be worn	Replace roller or have it re-lagged
<i>Conveyor Belt Will Not Run</i>	
No power	Start engine, increase speed to maximum RPM
<i>Low Capacity</i>	
Hydraulic system - valve, pump or motor could be malfunctioning	Check and adjust pressure set screw on valve. Test flow from pump. Check for oil leaks under motor. Replace what is needed.
<i>Remote Control Not Functioning</i>	
Batteries may have died during storage	Ensure batteries are good
Batteries replaced, but still won't work	Need to synchronize Remote Control to Receiver
<i>Charging Battery Will Short Remote Control Electrical System</i>	
Boosting current will short electrical system	If boosting to start engine, remove fuse from receiver box If recharging battery, disconnect from CST.
<i>No Hydraulic Flow</i>	
Flow valve closed	Open flow circuit valve
Hydraulic filter plugged	Replace plugged hydraulic filter

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Section 7: REFERENCE

For information not included here, or for a digital copy of this manual, please call your dealer or Convey-All Industries Inc. directly for assistance (1-800-418-9461).

7.1 SPECIFICATIONS

Model	Length	Width	Height	Discharge Heights Min/Max	Conveyor Swing Diameter	Weight Empty	# of Comp. x ft ³ (Total)	Units / Comp. * (Total)	Bushels / Comp. (Total)	Comp. Capacity ** Imp (Metric)	Total Capacity ** Imp (Metric)
CST-1550	43' 10"	8' 5"	11' 6"	7' 11" @15° 17' 4" @ 40°	38' 9" @ 30°	25,060 lb	6 x 258.5 (1551)	320 ea. (1920)	208 ea. (1248)	8 Ton ea. 7.3 MT ea.	48 Ton 43.6 MT

* Units based on 50 lb/unit. ** Capacity based on 62 lb/ft³.

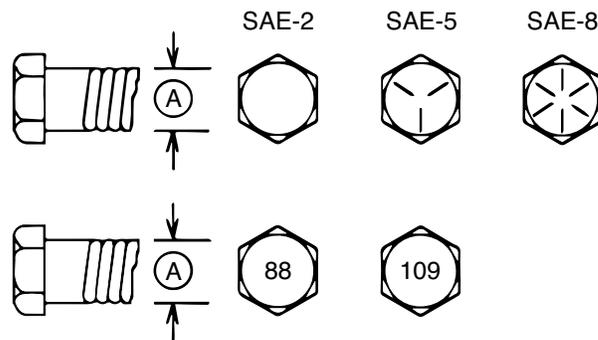
Table is base on liquid measurements, and does not account for piling above the side walls.

7.2 BOLT TORQUE

The tables shown below give correct torque values for various bolts and capscrews. Tighten all bolts to the torques specified in chart unless otherwise noted. Check tightness of bolts periodically, using bolt torque chart as a guide. Replace hardware with the same strength bolt.

ENGLISH TORQUE SPECIFICATIONS						
Bolt Diameter "A"	Bolt Torque*					
	SAE 2 (N.m) (lb-ft)		SAE 5 (N.m) (lb-ft)		SAE 8 (N.m) (lb-ft)	
1/4"	8	6	12	9	17	12
5/16"	13	10	25	19	36	27
3/8"	27	20	45	33	63	45
7/16"	41	30	72	53	100	75
1/2"	61	45	110	80	155	115
9/16"	95	60	155	115	220	165
5/8"	128	95	215	160	305	220
3/4"	225	165	390	290	540	400
7/8"	230	170	570	420	880	650
1"	345	225	850	630	1320	970

METRIC TORQUE SPECIFICATIONS				
Bolt Diameter "A"	Bolt Torque*			
	8.8 (N.m) (lb-ft)		10.9 (N.m) (lb-ft)	
M3	0.5	0.4	1.8	1.3
M4	3	2.2	4.5	3.3
M5	6	4	9	7
M6	10	7	15	11
M8	25	18	35	26
M10	50	37	70	52
M12	90	66	125	92
M14	140	103	200	148
M16	225	166	310	229
M20	435	321	610	450
M24	750	553	1050	774
M30	1495	1103	2100	1550
M36	2600	1917	3675	2710



Torque figures indicated above are valid for non-greased or non-oiled threads and heads unless otherwise specified. Therefore, do not grease or oil bolts or capscrews unless otherwise specified in this manual. When using locking elements, increase torque values by 5%.

* Torque value for bolts and capscrews are identified by their head markings.

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