

CONVEY-ALL[®]

2228

DRIVE-OVER CONVEYOR
with optional Self-Propulsion



convey-all.com/drive-over-conveyors



OPERATOR'S MANUAL

**PRODUCT REGISTRATION FORM
and INSPECTION REPORT**

CONVEY-ALL®

The Dealer must fill out this form, and be signed by both the Dealer and Buyer at the time of delivery. Scan or photograph the completed form (must be legible), and email it to: register@convey-all.com A copy of this form may also be mailed to: Box 760, 275 Hespler Ave, Winkler Manitoba R6W 4A8.

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

UNIT INSPECTION

- All Fasteners Tight
- Engine/Hydraulic Fluid Levels Checked
- Hydraulic Hoses Good, Fittings Tight
- Machine and All Bearings Lubricated
- Conveyor Belt Aligned and Tensioned
- Conveyor Belt Moves Freely
- Conveyor Tube Raises and Lowers Smoothly
- Unit Steers and Drives Smoothly
- Tire Pressure Checked

SAFETY INSPECTION

- All Guards/Shields Installed and Secured
- All Safety Decals Clear and Legible
- Reflectors, Slow Moving Vehicle Sign are Clean
- All Lights are Clean and Working
- Safety Chain on Hitch
- 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 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 _____

This page intentionally left blank

TABLE OF CONTENTS

DESCRIPTION	PAGE
Section 1: INTRODUCTION	1-1
Section 2: SAFETY	2-1
2.1 Safety Orientation	2-2
2.2 General Safety	2-2
2.3 Equipment Safety Guidelines	2-3
2.4 Safety Decals	2-3
2.4.1 Applying Decals	2-3
2.5 Decal Location	2-4
2.6 Work Preparation	2-6
2.7 Placement Safety	2-6
2.8 Lock-Out Tag-Out Safety	2-6
2.9 Maintenance Safety	2-7
2.10 Tire Safety	2-7
2.11 Battery Safety	2-7
2.12 Engine Safety	2-8
2.13 Operating Safety	2-9
2.14 Hydraulic Safety	2-9
2.15 Workplace Hazard Area	2-10
2.16 Electrical Safety	2-10
2.17 Transport Safety	2-11
2.18 Storage Safety	2-11
Section 3: OPERATION	3-1
3.1 Machine Components	3-2
3.2 Components and Controls	3-3
3.2.1 Self-Propelled Mover Kit (if equipped)	3-6
3.3 Machine Break-In	3-8
3.4 Pre-Operation Checklist	3-8
3.5 Attaching Tow Vehicle	3-9
3.6 Conveyor Placement	3-10
3.7 Operating Conveyor	3-11
3.7.1 Starting Conveyor	3-11
3.7.2 Stopping Conveyor	3-12
3.7.3 Emergency Stopping	3-12
3.7.4 Restarting after Emergency Stop	3-12
3.7.5 Unplugging Conveyor	3-12

continued on next page

TABLE OF CONTENTS

DESCRIPTION	PAGE
3.8 Operating Hints	3-13
3.9 Sand Drive-Over Conveyor	3-14
3.10 Transportation	3-15
3.11 Storage.	3-16
Section 4: SERVICE AND MAINTENANCE	4-1
4.1 Fluids And Lubricants	4-1
4.1.1 Greasing:	4-2
4.2 Servicing Intervals	4-3
4.2.1 Every 10 Hours or Daily	4-3
4.2.2 Every 50 Hours or Weekly	4-4
4.2.3 Every 100 Hours or Monthly	4-5
4.2.4 Every 200 Hours or Annually	4-5
4.3 Maintenance Procedures	4-6
4.3.1 Conveying Belt Tension	4-6
4.3.2 Conveyor Belt Tracking	4-7
4.3.3 Belt with Alligator® Lacing Replacement	4-8
4.3.4 Belt with Super-Screw® Lacing Replace.	4-9
4.3.5 Drive Belt Tension	4-11
4.3.6 Check Pulley Alignment	4-12
4.3.7 Drive Belt Replacement	4-12
4.3.8 Change Hydraulic Oil	4-13
4.3.9 Change Hydraulic Oil Filter	4-13
4.4 Service Record.	4-15
4.5 Ordering Parts	4-16
Section 5: TROUBLESHOOTING.	5-1
Section 6: REFERENCE.	6-1
6.1 Bolt Torque.	6-2
How to Install Your Super-Screw® Lacing	6-3
Warranty Statement	

Section 1: INTRODUCTION

Thank you for choosing a Convey-All® drive-over conveyor.

Convey-All® products are built by Meridian Manufacturing Inc. The equipment we design and manufacture meet the exacting standards of the agriculture industry.

Keep this manual for future reference. Call your dealer, distributor or our office, if you need assistance, information, additional/replacement copies, or a digital copy of this document.

Information provided herein is of a descriptive nature. Meridian Manufacturing Inc. reserves the right to modify the machinery design and specifications without any preliminary notice.

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

Disclaimer:

Conveying potash, urea or other granular fertilizer in high-humidity situations requires more frequent cleaning.

Standard conveyors are not rated to move canola or other oilseed products.

OPERATOR ORIENTATION

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

SERIAL NUMBER

Always give your dealer the serial number when ordering parts, requesting service or asking for other information. The conveyor's serial number is located above the transition.

- Use the space provided for easy reference.

Conveyor Model No: _____

Conveyor Serial No: _____

Engine Model No: _____

Engine Serial No: _____



Fig 1 - Serial number location

This page intentionally left blank

Section 2: SAFETY

3 Big Reasons why safety is important to you:

- Accidents Disable and Kill
- Accidents Cost
- Accidents Can Be Avoided

The Safety Alert Symbol means:

The Safety Alert Symbol identifies important safety messages on the conveyor and in this manual.

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.



Indicates a hazardous situation that, if not avoided, will result in death or serious injury. This signal word is limited to the most extreme situations. Typically for machine components which, for functional purposes, cannot be guarded.



Indicates a hazardous situation, if not avoided, 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.



Indicates a hazardous situation, if not avoided, could result in minor or moderate injury. It may be used to alert against unsafe practices.



Indicates practices or situations which may result in the malfunction of, or damage to equipment.



Safety instructions (or equivalent) signs indicate specific safety-related instructions or procedures.

2.1 SAFETY ORIENTATION

YOU are responsible for the SAFE operation and maintenance of your Convey-All® drive-over conveyor. Be sure that everyone who will operate, maintain or work around it, is familiar with the safety, operating and maintenance procedures.

This manual will take you step-by-step through your working day. It will alert you to all the safe practices that should be adhered to while operating the conveyor.

Remember, you are the key to safety. Good safety practices not only protect you but also the people around you. Make these practices a regular part of your safety program. Be certain that everyone who will work with this equipment follows these procedures.

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

- Conveyor owners must give operating instructions to operators or employees before allowing them to operate the machine.
 - Procedures must be reviewed annually thereafter, as per OSHA (Occupational Safety and Health Administration) regulation 1928.57.
 - The operator must be responsible, properly trained and physically able. You should be familiar with farm machinery in general.
- Think SAFETY! Work SAFELY!

2.2 GENERAL SAFETY

- Read and understand the Operator's Manual and all safety decals before operating, maintaining, adjusting or unplugging the conveyor. 
- Only trained competent persons shall operate the conveyor. An untrained operator is not qualified to operate the machine.
- Have a first-aid kit available for use should the need arise. 
- 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 around the machine.
- Wear personal protective equipment (PPE). This list may include but is not limited to:
 - Hard hat 
 - Protective shoes with slip resistant soles 
 - Eye protection 
 - Work 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 conveyor.

2.3 EQUIPMENT SAFETY GUIDELINES

- Safety of the operator and bystanders is one of the main concerns when designing and developing this conveyor. 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.
- In order to provide a better view, certain images in this manual may show an assembly with safety guards removed.
 - Equipment should never be operated in this condition. All guards must be in place. If removal becomes necessary for repairs, replace the guard prior to use.
- This equipment is dangerous to children and persons unfamiliar with its operation.
- Never exceed the limits of a piece of machinery. If its ability to do a job, or to do so safely, is in question - DO NOT 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 safety decals clean and legible at all times.
- Replace safety decals that are missing or have become illegible.
- Replaced parts must display the same decal(s) as the original parts.
- All safety decals have a part number in the lower right hand corner. Use this part number when ordering replacements.
- Safety decals are available from your authorized distributor, dealer's parts department or from Meridian Manufacturing Inc.

2.4.1 Applying Decals:

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

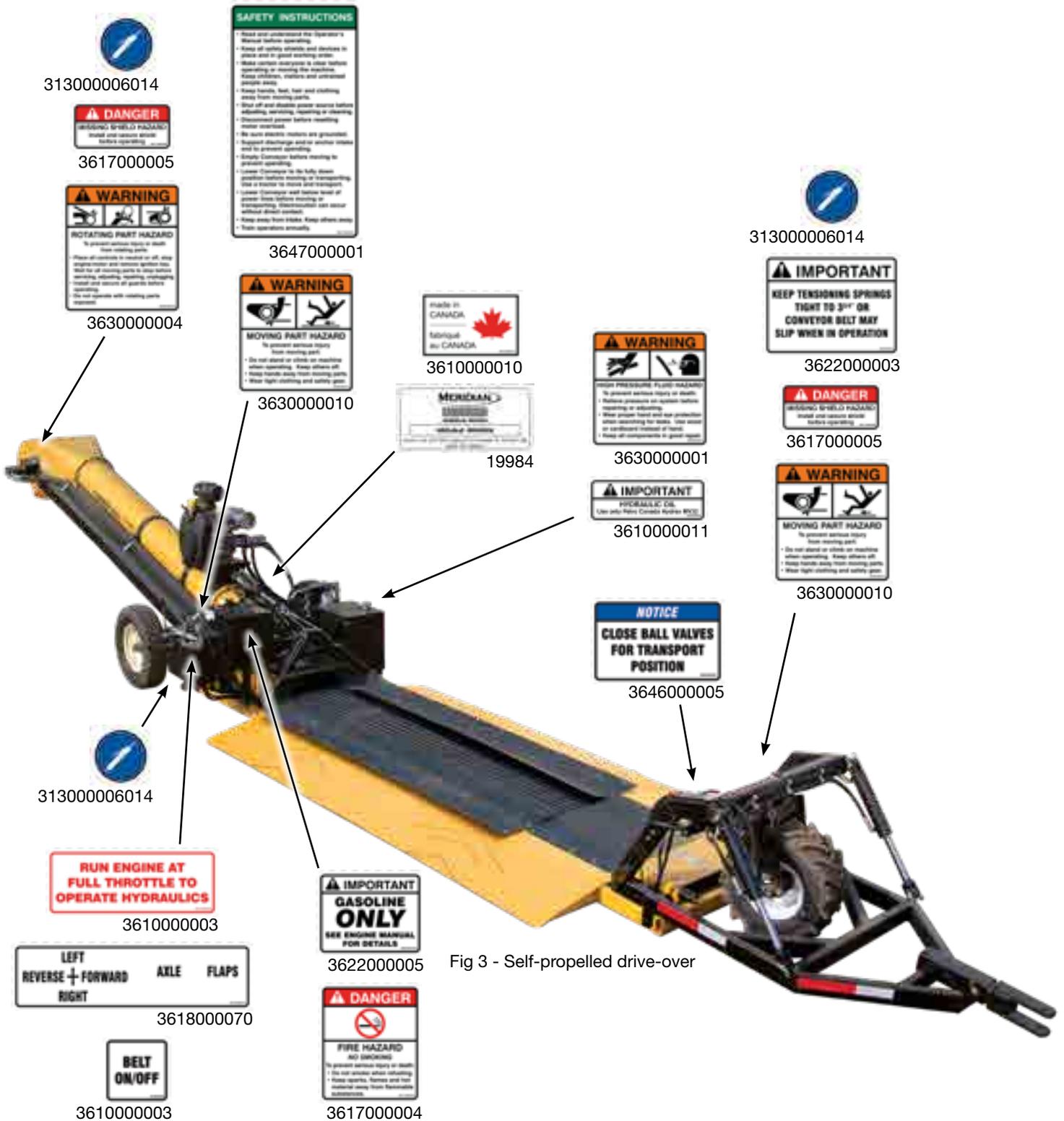


Fig 3 - Self-propelled drive-over

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.

2.6 WORK PREPARATION

- Never operate the conveyor until you have read this manual, and understand the information.
- Be familiar with the safety messages found on the decals around this unit.
- Personal protective equipment (PPE) include:
 - Hard hat
 - Eye protection
 - Protective shoes
 - Work gloves



They are recommended during installation, placement, operation, maintenance and removal of the equipment.

- 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 you wear hearing protection on a full-time basis if the noise in the Operator's position exceeds 80 db.



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

Noise over 90 db 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 guards and safety decals are properly installed and in good condition.
- Before starting, inspect the unit for any loose bolts, worn parts, cracks, leaks or frayed belts. Make the necessary repairs.

Always follow the maintenance instructions.

2.7 PLACEMENT SAFETY

- Move only with a tractor. Never move by hand.
- Locate conveyor providing enough space for trucks to drive over the deck and unload.
- Operate conveyor on level ground, free of debris.

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

2.9 MAINTENANCE SAFETY

- Review Section 4: Service and Maintenance, before maintaining or operating the conveyor.
- 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.
- Place all controls in neutral or off. Stop engine, and remove ignition key. Wait for all moving parts to stop before servicing, adjusting, repairing.
- Relieve pressure from hydraulic circuit before servicing.
- Before applying pressure to a hydraulic system, ensure all components are tight and that hoses and couplings are in good condition.
- Keep hands, feet, hair, and clothing away from all moving/rotating parts.
- Replace parts with genuine factory replacements parts to restore your equipment to original specifications.
 - Meridian Manufacturing Inc. will not be responsible for injuries or damages caused by using 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.
- Replace damaged or not clearly visible decals.



2.10 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 proper equipment and training to do the job.
- Have a qualified tire dealer or repair service perform required tire maintenance.
- When replacing worn tires, make sure they meet 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 setting.



2.11 BATTERY SAFETY

- Keep all sparks and flames away from battery, as the 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.
- When storing conveyor for an extended period:
 - Remove the battery.
 - Be sure it is fully charged.
 - Store it inside.
 - Do not sit battery on a cold, concrete floor.
- Before using the battery, after it has been in storage, be sure it is charged.



2.12 ENGINE SAFETY

- Read and understand the operating manual provided with the engine. 
- Use proper tools to service engine.
- Do not run engine in an enclosed area. Exhaust gases contain carbon monoxide, an odorless and deadly poison.
- Store fuel in approved safety containers.
- Do not store fuel near open flame.
 - Appliances such as a stove, furnace, or water heater use a pilot light which can create a spark. 
- No smoking when filling fuel tank. 
- Do not remove fuel cap while engine is running.
- Do not refuel indoors where area is not well ventilated. Outdoor refueling is preferred.
- Do not refuel while engine is running. Allow engine to cool for 5 minutes before proceeding.
- Use fresh fuel. Stale fuel can gum carburetor and cause leakage.
- Check fuel lines and fittings frequently for cracks or leaks. Replace if necessary.
- Do not operate engine if fuel has spilled. Move machine away. Avoid creating any ignition until the fuel has evaporated.
- Do not run engine above rated speeds. This may result in damage and injury.
- Do not tamper with the engine speed selected by the original equipment manufacturer.
- Do not operate engine with grass, leaves, dirt or other combustible materials in muffler area.
- Do not operate engine without muffler.

- Do not tamper with governor springs, governor links or other parts which may increase the governed engine speed.
- Do not strike flywheel with hard object or metal tool. This may cause it to shatter in operation.
- Keep cylinder fins/governor parts free of grass and other debris which can affect engine speed.

⚠ WARNING**HOT EQUIPMENT HAZARD**

Do not touch muffler, cylinder or fins while engine is running. Contact will cause burns.

- Do not use this engine on any forest covered, brush covered, or grass covered unimproved land, unless a spark arrester is installed on muffler. The arrester must be maintained in effective working order by operator.

In the State of California the above is required by law (Section 4442 of the California Public Resources Code). Other states may have similar laws. Federal laws apply on federal lands.

- Inspect the muffler periodically. Replace it when necessary.

If engine is equipped with a muffler deflector, inspect periodically. Replace with correct part.

- Do not check for spark, or crank engine with spark plug or spark plug wire removed.
- Do not run engine with air filter or its cover removed.

NOTICE**POSSIBLE ENGINE DAMAGE**

Decelerate engine slowly to stop. Avoid choking the carburetor to stop engine. Choke only for an emergency stop.

2.13 OPERATING SAFETY

- Anyone who will be operating this conveyor, or working around it, must read this manual. They must know operating, maintenance, safety info. 
 - Review the manual annually.
- Clean or replace all safety decals if they cannot be clearly read and understood.
- The conveyor contains a long, exposed section of conveyor belt. Use extreme caution when operating. 
- Place all controls in neutral, and stop the engine. Remove the ignition key. Wait for all moving parts to stop before adjusting, repairing or unplugging.
- Keep all bystanders, especially children, away from the machine when running.
 - Also, when authorized personnel are carrying out maintenance work.
- 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 equipment.
- Be familiar with machine hazard area. If anyone enters hazard areas, shut down machine immediately. Clear the area before restarting.
- Keep hands, feet, hair and clothing away from all moving/rotating parts. 
- Do not allow riders on the conveyor when moving or transporting it.
- Keep working area clean and free of debris to prevent slipping/tripping. 
- Do not operate the when guards are removed.

2.14 HYDRAULIC SAFETY

- Always place hydraulic controls in neutral. Then relieve pressure in hydraulic system before maintaining or working on machine.
- Be 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 backstop instead of hand to isolate/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. 

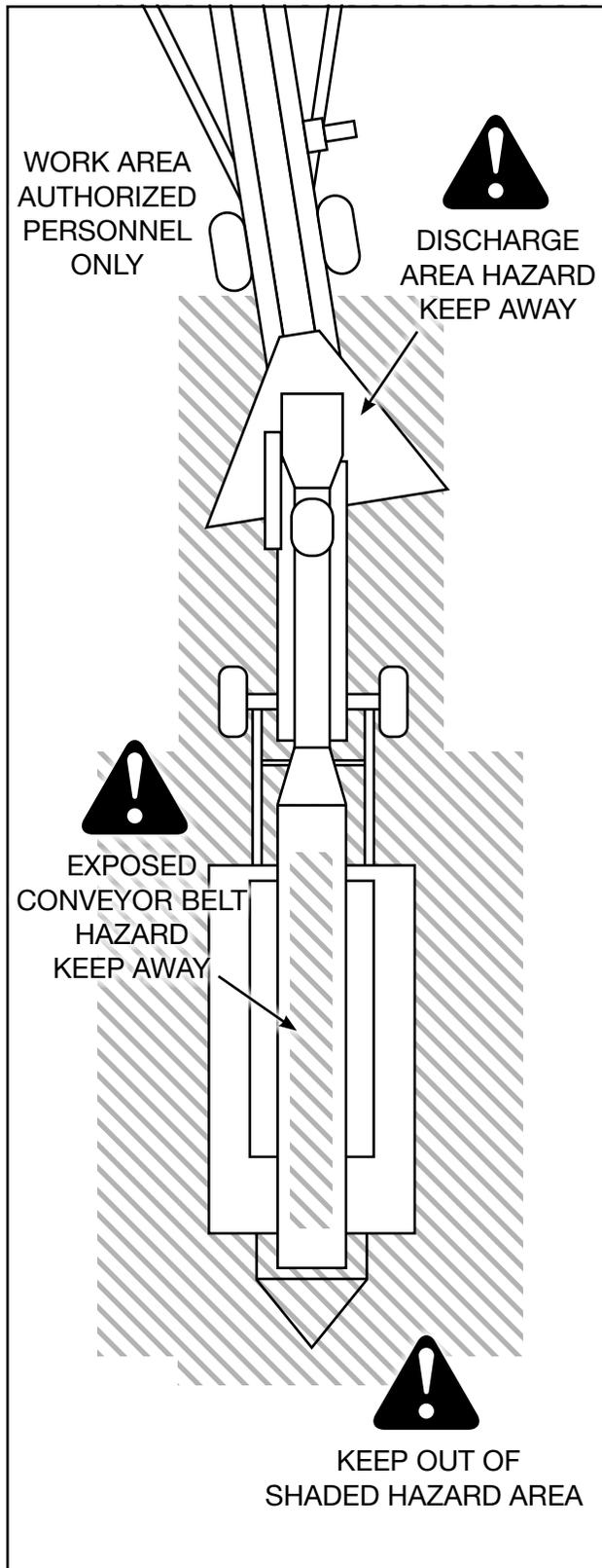
2.15 WORKPLACE HAZARD AREA

Fig 4 - Workplace hazard area

2.16 ELECTRICAL SAFETY

- Have only a qualified electrician supply power. All wiring should comply with the ANSI/NFPA 70 electrical requirements. 
- Make certain that the conveyor motor is properly grounded at the power source.
- Make certain that all electrical switches are in the OFF position before plugging the conveyor in.
- Turn machine OFF, shut down and lock out power supply (safety lock-out devices are available through your Convey-All® dealer parts department) and wait for all moving parts to stop before assembling, servicing, adjusting, maintaining or repairing.
- Disconnect power before resetting any motor.
- Replace any damaged electrical plugs, cords, switches and components immediately.
- Do not work on the conveyor's electrical system unless the power cord is unplugged or the power supply is locked out.

2.17 TRANSPORT SAFETY

- If transporting on a trailer, be sure that it is equipped with brakes that are in good working order. Be familiar with their operation.
- Check that all the lights, reflectors and other lighting requirements are installed and in good working condition. 
- Never allow riders on the conveyor.
- Do not use the drive-over deck to carry product or equipment.
- Comply with all local laws governing safety and transporting equipment on public roads.
- Do not exceed a safe travel speed. Slow down for rough terrain and when cornering.
- 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.

2.18 STORAGE SAFETY

- Store in an area away from human activity.
- If required, make sure the unit is solidly blocked up.
- Remove the battery and store it in a dry location. Do not sit it on a cold concrete floor.
- Make certain all mechanical locks are safely and positively connected before storing.
- Do not permit children to play on or around the stored machine.

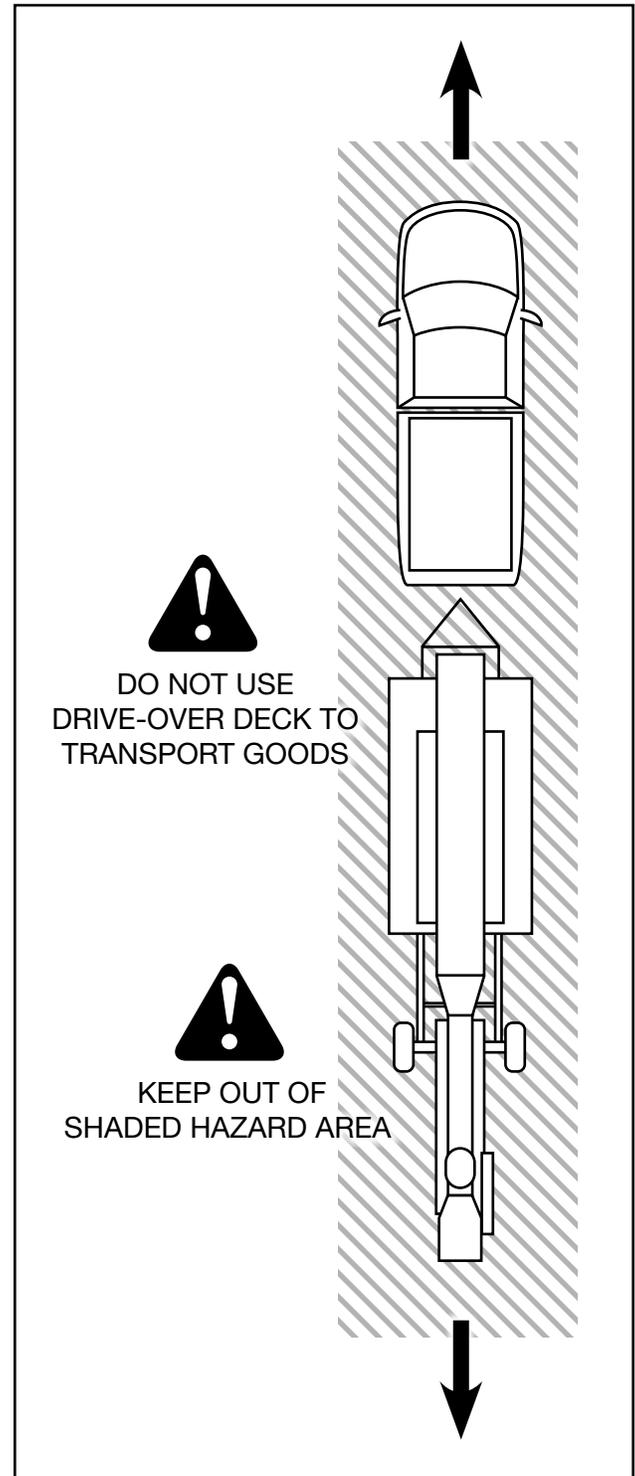


Fig 5 - Transporting hazard area

This page intentionally left blank

Section 3: OPERATION

WARNING

- Read and understand the Operator's Manual, and all safety decals, before using.
- Stop the engine. Place all controls in neutral, remove ignition key and wait for all moving parts to stop before servicing, adjusting, or repairing or unplugging.
- Clear the area of bystanders, especially children, before starting.
- Keep working area clean and free of debris to prevent slipping or tripping.
- Keep hands, feet, hair and clothing away from all moving and/or rotating parts.
- Do not allow riders on the conveyor when driving the mover kit or transporting.
- Do not operate conveyor with guards removed.
- Be familiar with machine hazard area. If anyone enters hazard areas, shut down machine immediately. Clear area before restarting.
- 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.

The Convey-All® drive-over conveyor has many features incorporated into it as a result of suggestions made by customers like you.

Hazard controls and accident prevention are dependent upon the personnel operating and maintaining it. Their awareness, concern, prudence and proper training are crucial.

It is the responsibility of the owner and operators to read this manual and to train all personnel before they start working with the machine. By following recommended procedure, a safe working environment is provided for the operator, co-workers and bystanders in the area around the work site.

By following the operating instructions, in conjunction with a good maintenance program, your conveyor will provide many years of trouble free service.

3.1 MACHINE COMPONENTS

A gas engine, electric or hydraulic motor can supply power to the drive located at the discharge.

Hydraulic cylinders on the wheel axles raise and lower the drive-over deck.

Components may vary, and their positions may change depending on the options contained on the conveyor.

The main components, are listed below:

- a. Tube
- b. Discharge Spout
- c. Engine/Motor Mount with Drive Belts
- d. Hydraulic Drive
- e. Drive-Over Deck
- f. Containment Flaps
- g. Containment Flap Winch
- h. Wheel Axle with Hydraulic Lift
- i. Hydraulic Controls
- j. Hitch Assembly
- k. Jack Location
- l. Document Holder
- m. Self-propelled Drive Wheel
- n. Self-propelled Drive System
- o. Self-propelled Ball Valves for Transport



Fig 6 - Components of a standard drive-over

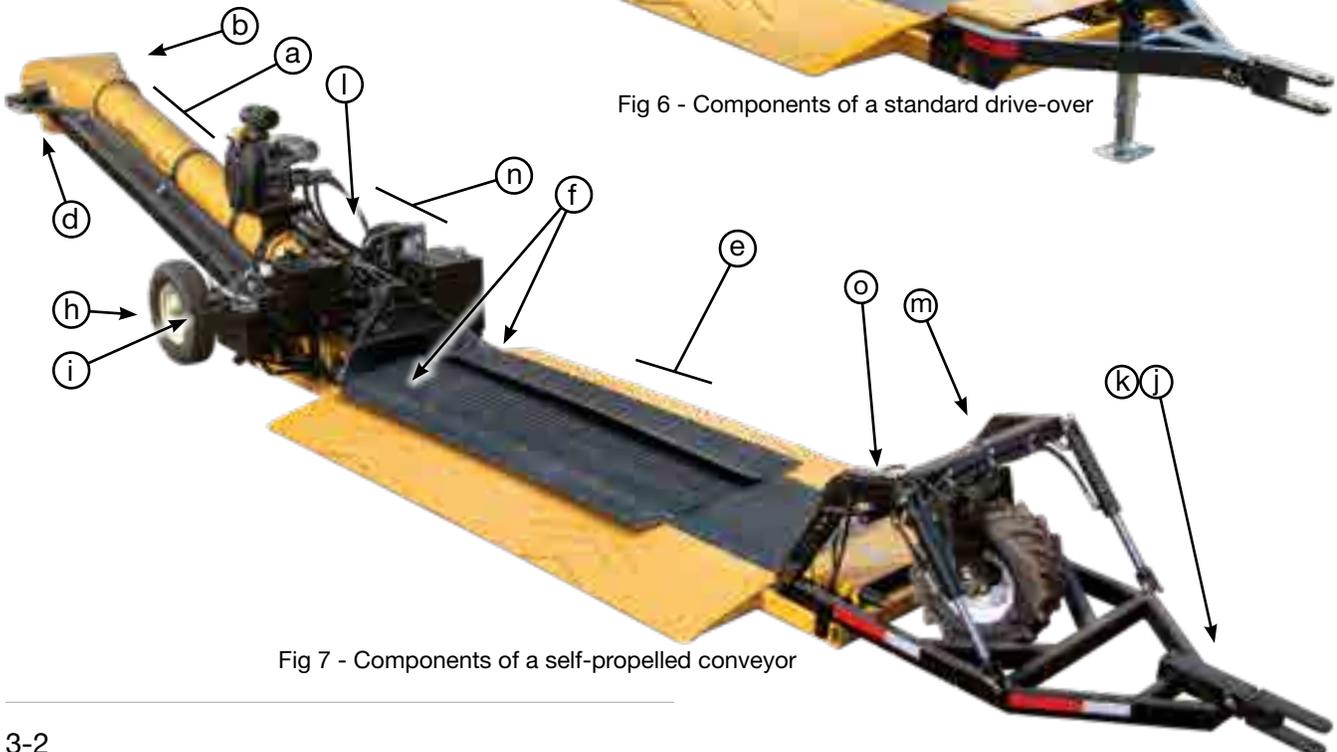


Fig 7 - Components of a self-propelled conveyor

3.2 COMPONENTS AND CONTROLS

Before starting to work, all operators should familiarize themselves with the location and function of the components and controls on their specific unit.

Options and their locations may vary depending on model.

Gas Engine (Optional):

A gas engine is one of the available drive options. Refer to the engine manufacturer's manual for more detailed information.

Engine controls may vary depending on model.

- a. Ignition Switch:
Insert the key to operate.
- b. Choke:
Choke the valve for starting when the engine is cold. Slide to the left to open the choke as the engine warms.
- c. Throttle:
This lever controls the engine RPM.

IMPORTANT:

Always run at maximum engine speed, which is 3600 RPM when operating the conveyor belt.

- d. Engine Mount Lever:
Move the lever to slide the engine mount which engages or disengaging the drive belt.

IMPORTANT:

Always disengage drive belt before starting or stopping engine.



Fig 8 - Gas engine mounted on tube



Fig 9 - Gas engine



Fig 10 - Gas engine

Electric Motor (Optional):

For all conveyors with the electric power option, the dealer and customer must select the motor with the appropriate horsepower. Hire a licensed electrician to provide power, as per the National Electrical Code ANSI/NFPA 70 and local codes.

A variety of switches can be used. Install an ON/OFF switch next to the motor for the convenience of the operator.

Table 1 - Minimum Power Requirements

MODEL	HORSE POWER	RPM
DOH-1426	20hp	1800
DOSNH-1426	15hp	1800

Hydraulic Motor (Optional):

If a hydraulic motor is used to operate the conveyor belt, hoses are run down from the motor and hung on the valve stand.

Hydraulic Valves:

An external hydraulic power source may be needed to run the hydraulics:

- By default, there is at least one valve, located on the stand at the conveyor's transition. This valve is required to function the axle lift cylinders.
- If the conveyor is powered by a hydraulic motor, a second valve will be added to the stand.
- There will be more valves if the conveyor is self-propelled.

Hydraulic Lift for the Axle:

Hydraulic cylinders on the axle raise and lower the wheels. A valve is located on the valve stand.

Axle Locking Pin:

There are locking pins beside both wheels, to secure the axle in place for driving and towing.



Fig 11 - Electric motor



Fig 12 - Hydraulic motor



Fig 13 - Hydraulic valves



Fig 14 - Hydraulic cylinder on axle, and locking pin

Discharge:

The discharge spout is designed with brackets that allow it to tilt or be removed. This will facilitate throwing product at different angles.

⚠ WARNING**MOVING BELT HAZARD**

Never walk on the exposed belt.
It may inadvertently be turned on.



Fig 15 - Discharge spout

Chevron Belt with Alligator® Lacing:

Standard drive-over conveyors use a 2 ply, 220 weight, chevron belt with Alligator® Lacing.

Chevron Belt with Super Screw® Lacing (Optional):

The use of Super Screw® lacing is an option.



Fig 16 - Chevron belt with Alligator® or Super Screw® lacing

Containment Flaps:

- Standard conveyors have a hand winch to raise the containment flaps.
- A hydraulic cylinder is an option.

NOTICE**TRIPPING HAZARD**

Remove hitch from conveyor to prevent interference and clear a tripping hazard.



Fig 17 - Containment flaps and winch

Hitch Assembly:

The hitch assembly consists of:

- Hitch frame
- Drawbar insert
- Jack

The hitch frame is secured with pins to the front end of the deck. Then secure the drawbar insert and jack.



Fig 18 - Removable hitch and jack

3.2.1 Self-Propelled Mover Kit (if equipped):

The conveyor is available as a self-contained, self-propelled unit including a gas engine which powers the hydraulics valves.

These are the controls for the self-propelled unit
- See Figure 20:

- a. Conveyor Belt Lever:
The hydraulic motor controlling the conveyor belt is turned on and off with this lever.
- b. Mover Kit Lever:
The 4 position, spring-loaded lever controls the movement of the conveyor. It drives the wheels forward and reverse, and also swivels the steering wheel.

IMPORTANT:

Engage drive wheels before driving.
Disengage drive wheels for towing.

- c. Axle Raise/Lower Lever:
This lever moves the drive axle and steering wheel together, which raises/lowers the drive-over deck.
 - **Remember:** Insert the Axle Locking Pin before driving or towing the conveyor.
 - Remove the pin to lower the deck.
 - See Figure 14
- d. Containment Flap Raise/Lower Lever:
Raises and lowers the containment flaps with this lever.
- e. Ball valves at the steering wheel:
 - Leave the valves open for normal on-site operation the conveyor.
 - Close the valves to lock the steering wheel in raised position for towing behind a vehicle.



Fig 19 - Mover kit engine, drive wheels and hydraulics



Fig 20 - Controls for self-propelled conveyor



Fig 21 - Ball valves for transport

NOTICE

EQUIPMENT DAMAGE LIKELY
Always disengage both drive wheels before towing. Hydraulic motors will be damaged if driven at highway speeds.

Mover Kit Drive Assemblies:

The drive wheels have an assembly with a handle. Use it to manually engage or disengage the hydraulic drive mechanism.

- There are two different styles of mechanisms.
- The second version has a retaining clip. When disengaged insert the clip to secure the handle.



Fig 22 - Mover kit drive assembly - version 1



Fig 23 - Mover kit drive assembly - version 2

3.3 MACHINE BREAK-IN

There is no operational restrictions on the conveyor when used for the first time.

The conveyor belt alignment is set at the factory, to track correctly without carrying a load.

Before Starting Work:

1. Read conveyor and engine operator manuals.
2. Run the unit for half an hour to seat the conveyor belt and flashing around the intake. It is normal for rubber from the flashing to be expelled out the discharge and form a pattern on the belt.

After Operating or Transporting for 1/2 hour:

3. Re-torque all wheel bolts and fasteners.
4. Check fuel, engine oil, and hydraulic oil level.
5. During the conveyors first few minutes of operation, check belt alignment to ensure preset alignment and tension does not vary under loaded conditions.
6. Check the flashing seal at the transition. If any product comes out around the flashing; stop the belt, and replace the rubber flashing.
7. Check condition of all hydraulic lines, hoses and connections. Repair or replace any damaged system components.
8. Check that all guards are installed and working as intended.

After Operating For 5 Hours and 10 Hours:

Repeat steps 1 through 8 above.

Service and maintain the conveyor as defined in Section 4: Service and Maintenance.

3.4 PRE-OPERATION CHECKLIST

Efficient and safe operation of the conveyor requires that each operator knows the operating procedures.

It is important for both the personal safety and maintaining the good mechanical condition of the machine that this checklist is followed.

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

1. Check worksite. Clean up working area to prevent slipping or tripping.
2. Lubricate and service the machine as per the schedule outlined in the Section 4.2.
3. Check that all guards are installed, secured and functioning as intended. Do not operate with missing or damaged shields.
4. Check that the drive and conveyor belts are properly tensioned and aligned.
 - Ensure they are not frayed or damaged.
5. Check that discharge and intake areas are free of obstructions.

3.5 ATTACHING TOW VEHICLE

The Drive-Over Conveyor weighs a minimum of 1450 lb at the hitch. It is recommended that the conveyor be towed only short distances.

NOTICE

FRAME DAMAGE HAZARD

Because of its weight, the conveyor should be placed on a trailer, and tied down, for transportation over long distances.

1. Clear work area of bystanders and children.
2. Attach the hitch assembly.
 - Use the jack to raise the hitch and drawbar.
3. Lower the drive wheel axle, raising the deck.
 - Install the axle locking pins into the frame beside each drive wheel to secure it for transport.
4. **Gas Engine Units:**
Retract engine mount to disengage drive belt.

Electric Motor Units:

Unplug the power cord, wrap it around frame and secure it to prevent dragging.

Hydraulic Hoses:

Secure hydraulic hoses to prevent dragging.

Self-Propelled Mover Kits:

- a. Open both ball valves at the hitch.
- b. Use the Axle lever to lower the drive wheel axle and steering wheel, raising the deck and hitch.
- c. Attach the hitch to the tow vehicle.
 - Secure safety chain around drawbar cage to prevent unexpected separation.
- d. Using the Axle lever, raise the steering wheel (also raising drive axle, lowering the deck).



Fig 24 - Hitch anchor pins



Fig 25 - Disengage drive wheel handle



Fig 26 - Axle locking pin

- e. Close the ball valves to lock the steering wheel in the raise position.
- f. Lower the drive wheels.
 - Install the axle locking pins.
- g. Disengage the drive wheels from the hydraulic motors (fasten retainer clips).
- h. The conveyor is ready for towing.

3.6 CONVEYOR PLACEMENT

Once the conveyor has been transported to the work site, it can be moved into working position.

- Conveying potash, urea or other granular fertilizer in high-humidity situations requires more frequent cleaning.
- Standard conveyors are not rated to move canola or other oilseed products.

1. Clear the area of bystanders, especially small children, before starting.
2. Be sure there is enough clearance from other equipment to move the conveyor into its working position.

IMPORTANT: The discharge spout must not rest on the receiving intake hopper.

3. **Self-Propelled Mover Kit:**
 - a. Start the engine.
 - b. Lower the drive wheel axle and steering wheel.
 - c. Engage the drive wheels.
 - d. When in position, use hydraulics to raise the wheels, so the deck rests flat on the ground.

Electric Motor Unit:

- a. Have a certified electrician provide power to the machine.
- b. Provide convenient shutdown switches and comply with local electrical codes.
- c. Use a totally enclosed electric motor. Be sure electric motor is properly grounded.

Hydraulic Drive Unit:

- a. Position the power unit next to the conveyor.
- b. Chocks the wheels of the power unit.
- c. Connect hydraulic hoses to the couplers.

4. Detach the hitch and jack to remove them as tripping hazards.



Fig 27 - Drive the conveyor into position



Fig 28 - Drive-over ready for work



Fig 29 - Drive-over ready to work



Fig 30 - Hitch and jack

3.7 OPERATING CONVEYOR

3.7.1 Starting Conveyor:

Gas Engine Unit:

1. Use the motor mount lever to retract the engine disengaging the drive belt(s).
2. Move the engine throttle to its 1/4 position for starting.
3. Close the choke if the engine is cold.
4. Start the engine.
 - Run until it warms and the choke is opened.
5. Use the lever on the motor mount to engage drive belt(s).
6. Increase engine speed to full throttle.
7. Start the flow of product.



Fig 31 - Gas engine



Fig 32 - Electric motor

Electric Motor Unit:

1. Turn the electric motor ON.
2. Start the flow of product and unload.

Hydraulic Drive Unit:

1. Place all controls in neutral.
2. Start tractor engine and run at low idle.
3. Place hydraulic lever in detent.
4. Increase engine speed to rated RPM.
5. Begin unloading product onto the conveyor belt.



Fig 33 - Hydraulic drive

3.7.2 Stopping Conveyor:

Gas Engine Unit:

1. Run until conveyor belt is empty.
2. Reduce speed to low idle.
3. Move the motor mount to disengage drive belt(s).
4. Shut off engine.

Electric Motor Unit:

1. Run until the conveyor belt is empty.
2. Turn off motor and lock out power source.

Hydraulic Drive Unit:

1. Run until the conveyor belt is empty.
2. Reduce tractor engine speed to low idle.
3. Place hydraulic lever in neutral.
4. Shut off engine.

3.7.3 Emergency Stopping:

Although it is recommended that the conveyor belt be emptied before stopping, in an emergency situation, stop or shut-down the power source immediately.

See to the emergency.

Correct the situation before resuming work.

3.7.4 Restarting after Emergency Stop:

When the machine is shut down inadvertently or in an emergency, the conveyor belt will still be covered with product.

Remove as much product from the hopper as possible, before restarting the power source.

Since start-up torque loads are much higher than normal when the belt is full, restart at a low speed. It may be necessary to tighten the drive belt(s) slightly to handle the heavier than normal loads.

3.7.5 Unplugging Conveyor:

In unusual moisture, crop or product conditions, the machine can plug. When unplugging, follow this procedure:

1. Stop the conveyor belt.
2. Place all controls in neutral or off, stop the engine or motor and disable power source.
3. Remove product from the discharge and hopper area.
4. Reposition the unit if discharge area plugs due to lack of clearance.



Fig 34 - Feeding the conveyor belt

3.8 OPERATING HINTS

- Keep the hopper full for maximum capacity.
- Always listen for any unusual sounds or noises. If any are heard, stop the machine and determine the source. Correct the problem before resuming work.
- Do not run the machine for long periods of time with no product on the belt. This will increase the wear. Try to run only when moving product.
- Do not position discharge end so it touches the receiving equipment.
- The drive-over deck is designed with flashing to seal the junction of the belt with the sides, and in the transition. It must be kept in good condition to prevent product from “leaking” out. Replace the flashing if leakage occurs.
- Belt Speed:
The best results are obtained when the drive is set to provide a conveyor belt speed of 400 to 500 ft/min.

Count the number of belt revolutions per unit time to determine belt speed. Use the belt lacing as a reference when counting belt revolutions.

Contact your dealer or the factory for the appropriate drive components to give the recommended belt speed.

- Belt Tension:
There may be a rapid decrease in belt tension during the first few hours of operation until the belt has worn in.

The correct operating tension is the lowest tension at which the belt will not slip under peak load conditions.

⚠ WARNING

EQUIPMENT FAILURE HAZARD
Keep cross-over pad in good condition.
Do not stand on it for long periods of time.

- This conveyor is designed with a rubber cross-over pad to facilitate stepping over the moving conveyor belt.

The pad is not meant to be used as a fixed standing location. Too much weight will wear out both the conveyor belt and the pad.



Fig 35 - Cross-over pad

3.9 SAND DRIVE-OVER CONVEYOR

The Sand Series drive-over conveyor is unique in a few important ways.

- It contains a hold-down wheel transition, instead of the “s-neck transition”. The wheels assist in the belt’s transition between the horizontal and incline portions of the unit.
- The tail roller is six (6) inches in diameter, instead of a three (3) inch roller on agriculture units.
- The conveyor belt is attached with Super Screw® lacing. This is a strong, durable connect, which is perfect for the added weight of moving sand.



Fig 36 - Hold-down wheel transition

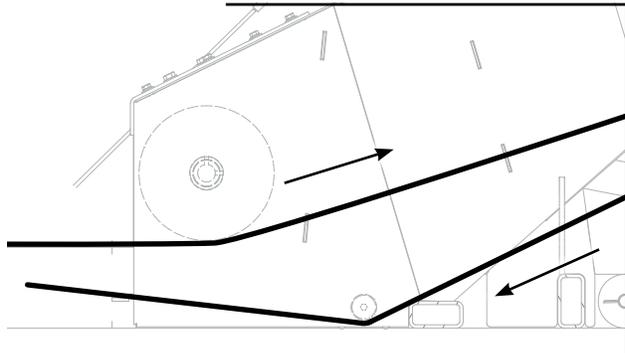


Fig 37 - Transition between horizontal and incline



Fig 38 - Six Inch tail roller



Fig 39 - Super screw® lacing

3.10 TRANSPORTATION**NOTICE****FRAME DAMAGE HAZARD**

Because of its weight, the conveyor should be placed on a trailer, and tied down, for transportation over long distances.

Drive-over conveyors are heavy (1450 lb) and not designed to be towed long distances at highway speeds. Place it on a trailer, secure it, then tow it to the new location.

1. Refer to Section 3.5 to attach the conveyor to a tow vehicle.
2. Ensure the conveyor is ready for transport:
 - Electrical cords and hydraulic hoses are rolled up and secured to prevent dragging.
 - Axle locking pins are installed to secure the drive wheel.
 - Drive wheels are disengaged, and the retainer clips are fastened in place.
 - **Self-Propelled Mover Kit:** Steering wheel is raised and ball valves are closed.
 - Hitch and drawbar are attached using anchor pin, retainer.
 - Conveyor is hitched to tow vehicle and safety chains are secured.
 - Jack is raised, removed and stored.
3. Do not allow riders on the conveyor.

NOTICE**FRAME DAMAGE HAZARD**

Do not transport product or equipment on the drive-over deck.

4. Do not carry anything on the drive-over deck.

5. Ensure the SMV (Slow Moving Vehicle) emblem, all lights and reflectors required by local highway and transport authorities are in place.
 - They must be clean and clearly visible by all overtaking and oncoming traffic.
6. Slowly pull away from the working area.
7. Keep to the right and yield the right-of-way to allow faster traffic to pass. Drive on the road shoulder, if permitted by law.
8. It is not recommended that the machine be transported faster than 32km/h (20mph).

ROAD SPEED	Weight of fully equipped or loaded implement(s) relative to weight of towing machine
up to 32km/h (20mph)	1 to 1, or less
up to 16km/h (10mph)	2 to 1, or less
Do not tow	More than 2 to 1

9. During periods of limited visibility, use pilot vehicles or add extra lights to the machine.
10. Always use hazard flashers on the tractor when transporting unless prohibited by law.



Fig 40 - Drive-over on a trailer

3.11 STORAGE

After the season's use, or when the conveyor will not be used for an extended period of time, it should be thoroughly inspected and prepared for storage.

Repair or replace any worn or damaged components to prevent unnecessary down-time next season.

For a long, trouble-free life, this procedure should be followed when preparing the machine for storage:

1. Remove all left over product or residue from the hopper and inside tube.
 - **IMPORTANT:** Oilseed products leave residue on the rollers - clean well.
2. Inspect all moving or rotating parts and remove anything which has become entangled.
3. Wash the entire machine thoroughly using a water hose or pressure washer to remove all dirt, mud, debris or residue.
 - **Note:** Granular fertilizer (e.g., potash, urea) can cake onto components - clean well.
 - Wash on top and under the belt.
 - Clean inside the tube.
4. Inspect all hydraulic hoses, fittings, lines, couplers and valves.
 - Tighten any loose fittings.
 - Replace any hose that is badly cut, nicked or abraded or is separating from the crimped end of the fitting.
5. Lubricate all grease fittings.
Refer to Section 4.2
 - Ensure all grease cavities have been filled with grease to remove any water residue from having been washing.
6. Check the condition of the conveyor belt. Replace if necessary.
7. Touch up all paint nicks and scratches to prevent rusting.
8. **Gas Engine with Battery:**
Remove the battery.
 - Be sure it is fully charged.
 - Store it inside.
 - Do not sit the battery on a cold, concrete floor.
9. Select a area that is dry, level and free of debris.
 - If the machine cannot be placed inside, cover the gas engine or electric motor with a water proof tarpaulin and tie securely in place.
10. Set the deck on the ground to relieve the weight of the frame off the wheels.
11. Do not allow children to play on or around the stored machine.

IMPORTANT:

If conveyor has been stored for over 6 months, run engine for 2-3 minutes. Then, change oil, while still warm, to remove any condensation.



Fig 41 - Conveyor being stored

Section 4: SERVICE AND MAINTENANCE

WARNING

- Review the Operator's Manual and all safety items before maintaining the conveyor.
- Clear the area of bystanders, especially children, before repairing or adjusting.
- Before servicing, repairing or unplugging; place controls in neutral, stop engine, remove ignition key and wait for moving parts to stop.
- 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.
- Relieve pressure from the hydraulic circuit before servicing.
- Before applying pressure to a hydraulic system, make sure all components are tight, hoses and couplings are in good condition.
- Keep hands, feet, hair and clothing away from all 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.
- When maintenance is complete, before resuming work, install and secure all guards.
- Keep decals clean, replace if not readable.

By following the operating instructions, in conjunction with a good maintenance program, your conveyor will provide many years of trouble free service.

4.1 FLUIDS AND LUBRICANTS

Fuel and Engine Oil:

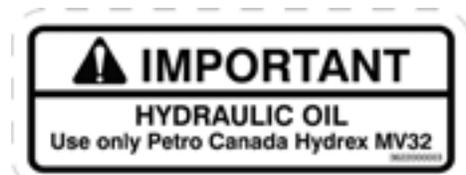
If equipped with an engine, refer to the operator's manual for specific information.

Grease:

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

Hydraulic Oil:

If equipped with self-contained hydraulics, use an ISO grade 32 hydraulic oil for all operating conditions (Hydrex MV32 or comparable).



3622000003

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:**NOTICE****GREASING HAZARD**

Too much grease causes excessive overheating. Under-greasing accelerates equipment wear.

No grease should be seen around bearings. If there is, too much grease was applied and the seal has ruptured!

IMPORTANT:

Grease bearings only one pump per month under normal usage conditions.

Bearing greasing frequency should be determined by usage and conditions.

1. Use a hand-held grease gun for all greasing.
2. Wipe grease fitting with a clean cloth before greasing, to avoid injecting dirt and grit.
3. All bearings are greasable, but require only minimal grease.

Recommended greasing is one small stroke every month. 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.



1300006014

Fig 42 - Lubricate decal



Fig 43 - Drive-over conveyor

4.2 SERVICING INTERVALS

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

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.

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

Schedules may vary depending on options and engine model contained in your equipment.

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 (if equipped with engine).
 - Add as required.
2. Check oil level in hydraulic reservoir (if equipped).
 - Add as required.
3. Inspect conveyor belt lacing for wear.
4. Check the conveyor belt tension daily while breaking-in the conveyor.
 - Refer to Section 4.3.1
5. Check the conveyor belt alignment frequently during the first 10 hours of operation until it seats itself. Refer to Section 4.3.2
6. Inspect all rollers and bearings:
 - Check for play and wear.
 - Replace if necessary.



Fig 46 - Drive-over conveyor



Fig 44 - Gas engine



Fig 45 - Discharge spout with hydraulic drive

4.2.2 Every 50 Hours or Weekly:

7. Check the conveyor belt tension.

Watch the tension more often while breaking-in the conveyor, because the belt may stretch. Refer to Section 4.3.1

Note:

A properly tensioned belt will not slip when in operation.



Fig 47 - Tension bolts

8. Check the conveyor belt alignment.

- How the belt is aligned to the rollers must be checked at tail roller, transition, and discharge.

Watch the alignment more frequently during the first 10 hours of operation. It usually seats itself and can be checked weekly after that. Refer to Section 4.3.2



Fig 48 - Drive belt

9. **Units with Drive Belts:**

- Check V-belts for wear.
- Check drive belt tension.
- Check pulley alignment.
- Check and lubricate countershaft.

10. **Units with Hydraulic Drive:**

- Inspect the coupler in the hydraulic motor for wear.
- Oil hydraulic drive coupler or chain.



Fig 49 - Hopper flashing

11. **All Conveyors:**

Check the condition of the rubber flashing along the deck bed and in the transition. Be sure it still seals to prevent leaking.

If any product comes out around the flashing, remove and replace it.

If the flashing is stuck to the belt, manually peel the flashing off. Replace it if necessary.



Fig 50 - Hydraulic drive

4.2.3 Every 100 Hours or Monthly:

Note:

Recommended greasing is one small stroke every month. Be careful not to over grease as this may push the seal out.

12. Grease tail roller bearings.
13. Grease transition roller bearings.
14. Grease discharge roller bearings.
15. Grease countershaft bearings (if equipped).

4.2.4 Every 200 hours or Annually:

16. Refer to the engine manual for specific service and maintenance schedules.

17. Units with Self-Contained Hydraulics:

- Take a hydraulic oil sample and send it to a lab for particle count analysis.
- Change oil if necessary.
- Change the hydraulic oil filter.

18. Units with a Battery:

- Check that it retains its maximum charge.

19. Grease wheel axle cylinders.

20. Units with Self-Propelled Mover Kit:

- Inspect the sprockets on the drive wheels, for wearing teeth.
- Grease steering wheel swivel cylinder.
- Grease steering wheel lift cylinders

21. Repack the wheel bearings.

22. Wash the entire machine thoroughly using a water hose or pressure washer to remove all dirt, mud, debris or residue.

- Wash the outside.
- Wash around the deck.
- Leave the belt running while washing inside the tube and around the belt.



Fig 51 - Tail roller bearing

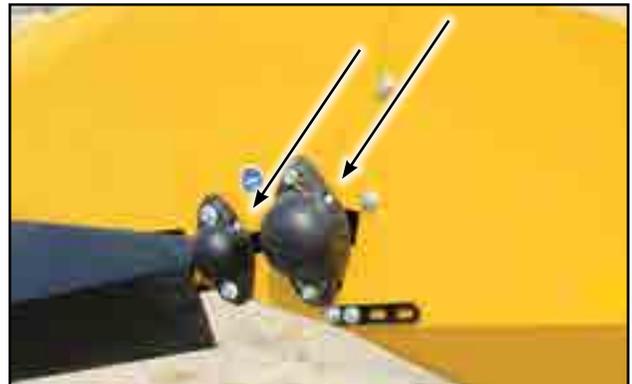


Fig 52 - Discharge roller bearings grease zerks



Fig 53 - wheel axle lift cylinders



Fig 54 - Self-propelled mover kit steering wheel

4.3 MAINTENANCE PROCEDURES

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

Note:

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

⚠ WARNING

ROTATING BELT HAZARD

Turn off engine, lock-out power and wait for all components to stop moving before adjusting the belt.

To check belt position, idle the engine, then rotate the belt slowly.

4.3.1 Conveying Belt Tension:

The tension of the belt should be checked weekly, or more often if required. Be sure that it does not slip under load.

1. Loosen the tail roller bearing anchor bolts.
2. Rotate the tension bolts to set the tension of the belt.

Note:

A properly tensioned belt will not slip on its drive and tail rollers during operation.



Fig 55 - Tail roller bearing anchor bolts



Fig 56 - Tail roller tension bolt

4.3.2 Conveyor Belt Tracking:**NOTICE****BELT DAMAGE HAZARD**

Alignment of the belt must be checked at the tail transition and discharge. Inspect weekly. Unaligned belt will cause damage and void warranty.

NOTICE**BEARING FAILURE**

If a roller is replaced, ensure both ends are evenly aligned with the frame before running. If not, bearing failure may occur.

The belt is properly aligned when it runs in the centre of all rollers.

Check frequently during the first few minutes of operation with a new belt, and then several times during the first 10 hours.

The new belt normally seats itself during the first 10 hours of operation and can be checked weekly after that.

⚠ WARNING**ROTATING BELT HAZARD**

Idle the engine,
then rotate the belt slowly when checking
the alignment.

Turn off engine when adjusting rollers.

Note:

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

Belt Tracking at Tail Roller:

1. Rotate the conveyor belt slowly, and check the position of the belt on the tail roller.
2. Adjust one side of roller at a time.
 - Loosen bearing housing, then adjust the tension bolt.
3. Tighten the tail roller bearing housing.
4. Rotate the conveyor belt slowly, and check the position of the belt on the hopper roller.
 - Repeat steps until the belt is centred.
5. Replace housing guard.

Belt Tracking at Transition:

6. Adjust only the top roller, the lower one won't make a difference.
 - Adjust one side of roller at a time.
 - Loosen bearing housing and adjust.
7. Tighten the housing.
8. Rotate the conveyor belt slowly, and check the position of the belt.
 - Repeat steps until the belt is centred.
9. Replace housing guard.

Belt Tracking at Discharge Roller:

10. If necessary, remove the discharge spout to view the roller.
11. Adjust one side of roller at a time.
 - Loosen the bearing housing, then adjust.
12. Tighten the discharge roller bearing housing.
13. Run the belt a couple of revolutions and check the alignment.
 - Repeat steps until the belt runs centred.
14. Replace the bearing housing guard.

4.3.3 Belt with Alligator® Lacing**Replacement:**

1. Rotate the belt until the lacing is positioned on the deck so it can be worked on easily.
2. Adjust the tension bolt at the tail roller to its loosest position.
3. Remove the rubber flashing from deck.
4. Pull all the slack to the lacing area.
5. Remove the lacing cable and open the belt.
6. Attach one end of the new belt to the end of the existing belt (to be removed).
7. Pull the end of the old belt; the new belt will follow and be threaded into place.
8. Disconnect the old belt.
9. Link the ends of the new belt lacing.
10. Push the lacing cable through the lacing.

Note:

Cordless drill can be used to thread cable.
Proceed slowly.

11. Cut off excess cable.
12. Crimp lacing at one end to lock the cable in place.
13. Cut and taper the corners of the trailing end of the belt.

IMPORTANT:

Taper the trailing belt corners,
so they don't catch when rotating.

14. Reattach the flashing around the deck.
15. Set the belt tension and alignment.



Fig 57 - Alligator® lacing

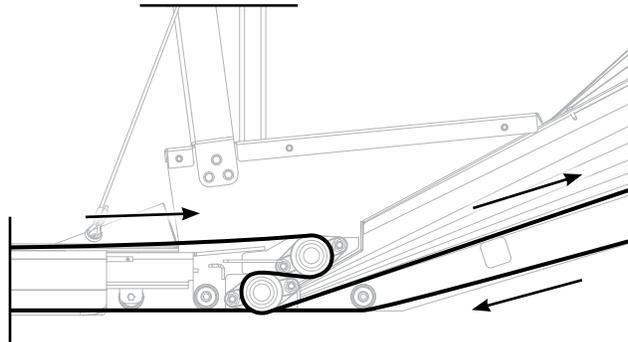


Fig 58 - S-neck transition

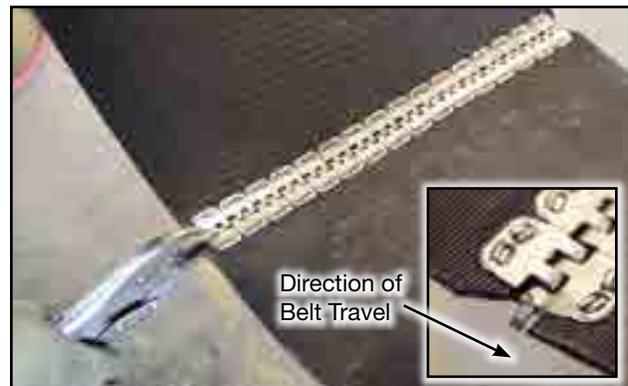


Fig 59 - Crimp lacing and tapered corners

4.3.4 Belt with Super-Screw[®] Lacing Replacement:

Refer to the document from Minet Lacing Technology (MLT), in the Reference Section for exact instructions on installing Super-Screw[®] lacing.

1. Rotate the belt until the lacing is accessible on the deck so it can be worked on easily.
2. Move the tensioning bolts to their loosest positions.
3. Remove the rubber flashing from deck.
4. Pull the slack to the lacing area.
5. Disconnect the belt by removing the screws from one side of the lacing.
6. Attach the new belt to the end of the existing belt (which will be removed).
7. Pull the end of the old belt; the new belt will follow and be threaded into place.
8. Disconnect the old belt when both ends of the new belt are accessible.

Note:

Normally, the belt is cut to exact length, and lacing attached to the trailing end, by the factory before shipping.

9. If necessary, use the reference document from Minet Lacing Technology to cut and prepare the ends of the belt.
10. Use a piece of wood as backing, where the screws will be drilled into the lacing.

The screws are long enough to protrude through the belt.



Fig 62 - Super-screw[®] lacing

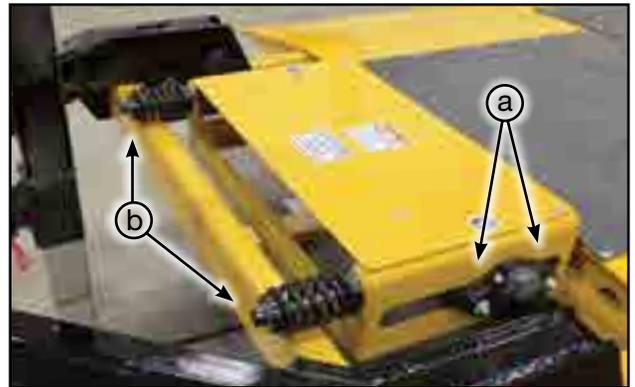


Fig 60 - Anchor bolts (a), tension bolts (b)

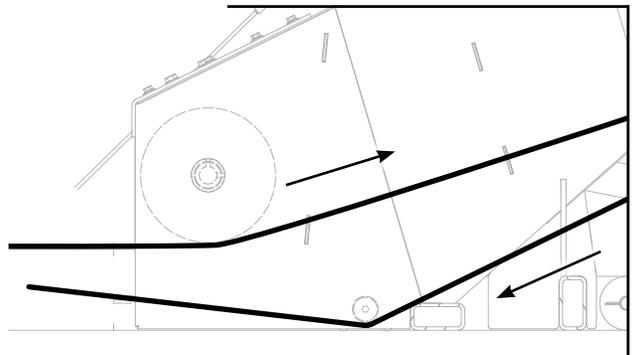


Fig 61 - Hold down wheel belt transition

11. Remove the centre spacers from the lacing, so the trailing edge and leading edge of belt touch inside lacing.
12. Join the two ends of the new belt.
 - Ensure that the belt ends touch inside the Super-Screw® lacing.

Important:

Do not use Impact Drill to insert screws.
Cordless drill works best;
it stops immediately on release of trigger.

13. Use a PZ2 drill bit.

IMPORTANT:

Insert screws from the back of belt.

14. Drill screws in from the back of the belt, so the tips face the front, chevron side.
 - The head of the screws should be slightly counter-sunk.
15. Begin in the middle of lacing, and work towards the edges.
16. Grind down the protruding points of the screws on the top of the belt.
17. Tighten the tensioning bolts at the tail.
 - Secure the roller bearing housings.
18. Set the belt tension and alignment.
 - Refer to Sections 4.3.1 and 4.3.2.
19. Check the tension and alignment of the conveyor belt frequently during the first 10 hours of operation and set as required.

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



Fig 63 - Super-screw® lacing



Fig 64 - PZ2 bit and screw

4.3.5 Drive Belt Tension:

Always adjust the belt tension on the drive-side first.

⚠ WARNING

ROTATING PART HAZARD

Turn off engine or motor, remove power supply and wait for all belts to stop rotating.

Countershaft-to-Drive Belt Tension:

1. Open the guard to the V-belt pulleys.
2. Loosen countershaft bearing mount anchor bolts and jam nuts.
3. Use bearing mount position bolts to adjust countershaft position and set belt tension.

Calculate the tension, see Figure 69:

- Measure the length of span between pulleys.
- Allow 1/64" of deflection per inch of span.

4. Tighten bearing mount anchor bolts.
5. Tighten the adjusting bolts and lock nuts.
6. Close and secure guard over pulleys.

Engine-to-Countershaft Belt Tension:

7. Open the guard to the V-belt pulleys.
8. Loosen the motor mount.
9. Use motor mount bolts to set belt tension.

Calculate the tension (See Figure 69):

- Measure the length of span between pulleys.
- Allow 1/64" of deflection per inch of span.

10. Tighten motor mount anchor bolts.
11. Close and secure guard over pulleys.



Fig 65 - Countershaft to belt roller belt



Fig 66 - Engine to countershaft

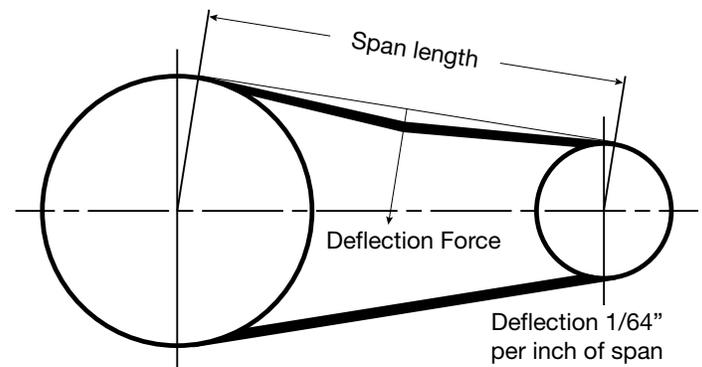


Fig 67 - Tension calculation



Fig 68 - Motor mount

4.3.6 Check Pulley Alignment:

1. Use a straight edge across both drive and driven pulleys to check alignment.
2. Use the tapered lock hub in the centre of the pulley to adjust the position of a pulley if required.
3. Move a pulley to align if there is more than a 1/32 inch gap between the edge of the pulley and the straight edge.



Fig 69 - Pulley alignment

4.3.7 Drive Belt Replacement:

1. Move the drive to loosen the belt.
2. Remove old belt.
3. Install replacement belt.
4. Set the belt tension.
Refer to Sections 4.3.5.
5. Set the pulley alignment.
Refer to Section 4.3.6.

Table 2 - Belt Deflection Force

CROSS SECTION	Smallest Sheave Diameter Range	RPM Range	Belt Deflection (Force Pounds)			
			Uncogged Hy-T® Belts and Uncogged Hy-T® Torque Team®		Cogged Torque Flex® and Machined Edge Torque Team® Belts	
			USED BELT	NEW BELT	USED BELT	NEW BELT
A, AX	3.0 - 3.6	1000-2500 2501-4000	3.7 2.8	5.5 4.2	4.1 3.4	6.1 5.0
	3.8 - 4.8	1000-2500 2501-4000	4.5 3.8	6.8 5.7	5.0 4.3	7.4 6.4
	5.0 - 7.0	1000-2500 2501-4000	5.4 4.7	8.0 7.0	5.7 5.1	9.4 7.6
B, BX	3.4 - 4.2	860-2500 2501-4000	n/a	n/a	4.9 4.2	7.2 6.2
	4.4 - 5.6	860-2500 2501-4000	5.3 4.5	7.9 6.7	7.1 6.2	10.5 9.1
	5.8 - 8.6	860-2500 2501-4000	6.3 6.0	9.4 8.9	8.5 7.3	12.6 10.9
C, CX	7.0 - 9.0	500-1740 1741-3000	11.5 9.4	17.0 13.8	14.7 11.9	21.8 17.5
	9.5 - 16.0	500-1740 1741-3000	14.1 12.5	21.0 18.5	15.9 14.6	23.5 21.6
D	12.0 - 16.0	200-850 851-1500	24.9 21.2	37.0 31.3	n/a	n/a
	18.0 - 20.0	200-850 851-1500	30.4 25.6	45.2 38.0	n/a	n/a
			Uncogged Hy-T® Wedge Belts and Uncogged Hy-T® Wedge Torque Team®		Cogged Hy-T® Wedge Belts and Hy-T® Wedge Machine Edge Torque Team®	
			USED BELT	NEW BELT	USED BELT	NEW BELT
5V	4.4 - 6.7	500-1749 1750-3000 3001-4000	n/a	n/a	10.2 8.8 5.6	15.2 13.2 8.5
	7.1 - 10.9	500-1740 1741-3000	12.7 11.2	18.9 16.7	14.8 13.7	22.1 20.1
	11.8 - 16.0	500-1740 1741-3000	15.5 14.6	23.4 21.8	17.1 16.8	25.5 25.0

4.3.8 Change Hydraulic Oil:

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

⚠ WARNING

HOT LIQUID HAZARD

Engine and hydraulics must cool before changing the oil. Hot oil can cause burns if it contacts exposed skin.

IMPORTANT:

Annually, have an oil sample tested for particle count.

Change oil only if necessary.

2. Allow the hydraulics to cool slightly before changing oil.

Note:

It is best to change oil while the engine is warm (not hot) to keep contaminants in suspension.

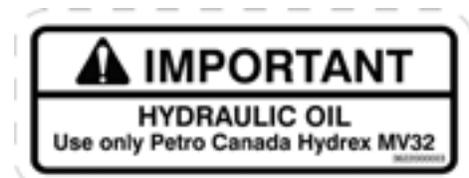
3. Place a large pan or pail under the drain plug. - Reservoir capacity is 95 Litre (25 US Gal).
4. Remove drain plug and allow to drain for ten minutes.
5. Install and tighten the drain plug.
6. Dispose of the used oil in an approved container and manner.
7. Fill the reservoir with specified oil.

4.3.9 Change Hydraulic Oil Filter:

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



Fig 70 - Hydraulic oil filter



3622000003

Fig 71 - Hydraulic oil decal

This page intentionally left blank

4.4 SERVICE RECORD

See Section 4.2 for service intervals. This section is only a general guide under good conditions. Under extreme, or unusual circumstances adjust service timing accordingly.

For more detailed schedule pertaining to the specific engine model, consult its Operator Manual.

Copy this page to continue record.

Maintenance	Hours																		
	Serviced By																		
10 Hours or Daily																			
Check Fuel Level																			
Check Hydraulic Oil Level																			
Inspect Conveyor Belt Lacing																			
Inspect Rollers and Bearings																			
50 Hours or Weekly																			
Check Conveyor Belt Tension																			
Check Conveyor Belt Alignment																			
Inspect Drive System																			
Inspect Hydraulic Drive Coupler/Chain																			
Oil Hydraulic Drive Coupler/Chain																			
Check Deck Hopper Belt Flashing																			
100 Hours or Monthly																			
Grease Tail Roller Bearings																			
Grease Transition Roller Bearings																			
Grease Discharge Roller Bearings																			
Grease Countershaft bearings																			
200 Hours or Annually																			
Change Hydraulic System Oil and Filter																			
Check the Battery																			
Grease Wheel Axle Cylinders																			
Grease Mover Kit Cylinders																			
Repack Wheel Bearings																			
Wash Conveyor																			

4.5 ORDERING PARTS

Always give the Model Number and Serial Number when ordering parts.

To get your parts promptly the following information will be required:

- The part name and number
- Your Name, Address, Town, Province/State, Country
- Complete information for shipping

Confirm all phoned in orders in writing. If Purchase Orders are required please note the number on the written order.

Unless claims for shortages or errors are made immediately upon receipt of goods, they will not be considered.

Inspect all goods received immediately upon receipt. When damaged goods are received, insist that a full description of the damage is made with the carrier against the freight bill. If this is insisted upon, full damage can be collected from the transport company.

No responsibility is assumed for delay or damage to merchandise while in transit. Dealers responsibility ceases upon delivery or pickup of shipment from or to the transportation company. Any freight damage claims must be made with the transportation company, not with the dealer.

Section 5: TROUBLESHOOTING

This section contains a list of common problems, causes and offers quick solutions to those issues.

If problems are confronted which are difficult to solve, even after having read through this section, please contact your authorized dealer, distributor or Meridian Manufacturing Inc. Before you call, please have this Operator's Manual and the unit's serial number ready.

Problem

Possible Cause	Possible Solution
-----------------------	--------------------------

Engine/Motor won't start

Low battery	Recharge or replace
No fuel	Refuel
Air cleaner dirty	Clean the air cleaner, and/or replace the air filter

Hydraulic system - No hydraulic flow

Flow valve closed or plugged	Open flow circuit valve
	Replace plugged hydraulic filter

Engine/Motor labouring

Belt is sticky on the back side, because of oily product or wet/snowy conditions	Clean the belt
Hopper flashing too tight	Adjust to loosen the flashing

Conveyor belt doesn't turn or is slipping

Hopper flashing may be stuck to belt, because it is running dry and rubber is heating up	Turn off unit! Manually peel flashing up and off hopper. Then run dry product through to create barrier between flashing and belt
Belt loose	Tighten and align
Conveyor belt loose because it has stretched	Shorten belt
Belt frozen to tube from operating in high humidity conditions in extreme cold	Remove conveyor from area of high humidity and continue to run empty so the belt dries prior to freezing.
Drive belt loose	Tighten drive belt
No power	Start engine, increase speed to maximum RPM

continued on next page

Conveyor belt doesn't turn or is slipping - cont'd

Gas/Electric system - Drive roller is slipping	Replace V-belt
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.
Seized bearing	Check all bearings, Replace any that are rough or seized
Belt/roller is jammed	Check for sticks, stones, other objects jammed in belt drive area and remove.

Conveyor belt doesn't track correctly

Roller lagging may be worn	Replace roller or have it relagged
----------------------------	------------------------------------

Conveyor Belt Fraying

Belt not aligned	Align and adjust tension
------------------	--------------------------

Product leakage

Product may be getting under the belt at the hopper, traveling up inside the belt and leaking off discharge end	Replace hopper flashing
---	-------------------------

Low conveying capacity

Gas/Electric system - drive roller is slipping	Replace V-belt
Conveyor belt slipping	Tighten and align

Section 6: REFERENCE

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

Specifications subject to change without notice.

Table 3 - Specifications

MODEL	CENTRE OF DISCHARGE TO GROUND	DECK HEIGHT	OVERALL LENGTH	DECK HOPPER LENGTH	DECK WIDTH	TUBE DIAMETER	BELT WIDTH
2228 2228-SC	3' 8"	5"	36' 6"	10' 4"	12'	14"	22"

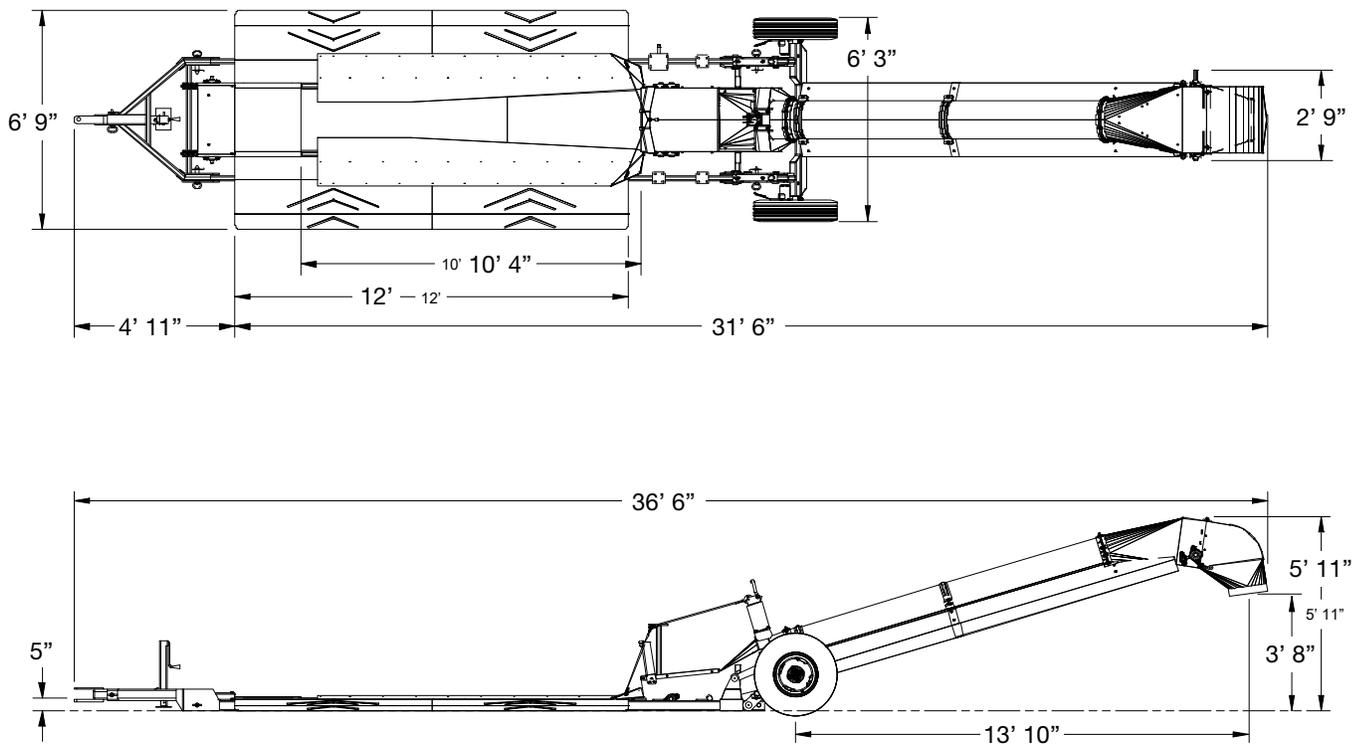


Fig 72 - Conveyor measurements

6.1 BOLT TORQUE

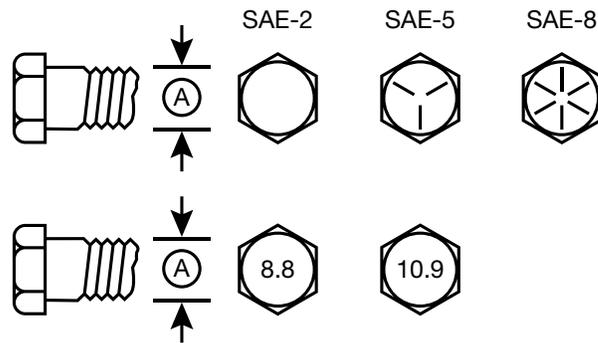
The tables shown below give correct torque values for various bolts and capscrews. Tighten all bolts to the torques specified in chart unless otherwise noted. Check tightness of bolts periodically, using bolt torque chart as a guide. Replace hardware with the same strength bolt.

Table 4 - English Torque Specifications

BOLT DIA. "A"	BOLT TORQUE*					
	SAE 2 (NM) (FT-LB)		SAE 5 (NM) (FT-LB)		SAE 8 (NM) (FT-LB)	
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

Table 5 - Metric Torque Specifications

BOLT DIA. "A"	BOLT TORQUE*			
	8.8 (NM) (FT-LB)		10.9 (NM) (FT-LB)	
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.

HOW TO INSTALL YOUR SUPER-SCREW® ?

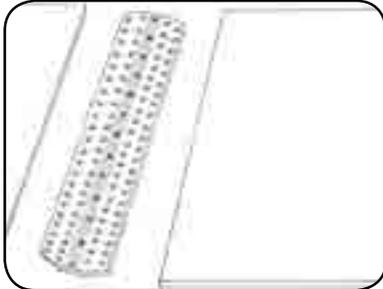
WARNING

- SKIVE OR GRIND THE BELT TO INBED THE SUPER-SCREW® SPLICE AND AVOID SOME OVERTHICKNESS
- DO NOT USE AN IMPACT WRENCH TOOL
- SLIDE UNDERNEATH THE SUPER-SCREW® A THICK WOOD BOARD
- DO NOT SCREW ON A DRUM
- TAKE APPROPRIATE SAFETY GEAR : PPE

- a Super-Screw® appropriate and assembled
- a MLT PZ bit
- a ruler
- a marking pen
- a cutter
- a powerful electric drill or 18 V or 24 V battery
- the quantity of screws needed
- the MLT skiver

Equipment requested

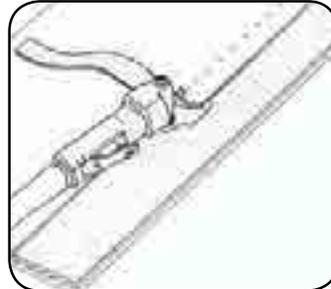
Areas already screwed are shown in grey



Measure the thickness of the carcass or the belt to choose the correct screw length and the right kind of Super-Screw®. For a better passage over the rollers and the scrapers, provide a bias installation.



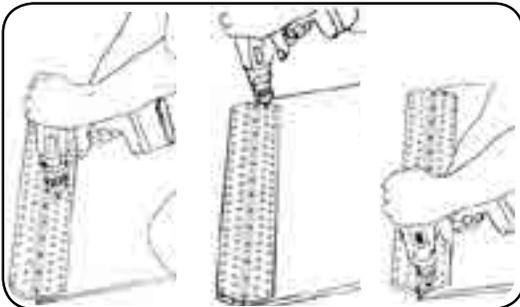
Cut your belt with a 1/3 bias (or 10% min of the width of the belt). The other side of the belt should be cut with a bias in the opposite direction.



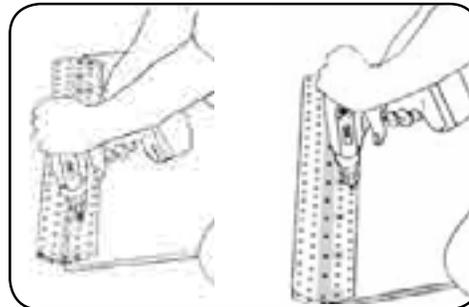
Skive down both top and bottom belt rubber covers with the MLT skiver.



Chamfer the end of the belt top and bottom as shown. Position Super-Screw® against the belt, ensuring that Super-Screw® is resting against the central spacers.



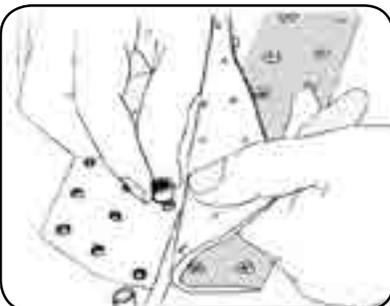
Start screwing by the center, continue by one end, then the other end without twisting Super-Screw®. Keep screwing until the screw catches the underneath thread, and avoid as this stage to compress strongly the belt. NOTE : Screw on a flat and hard thick wooden board.



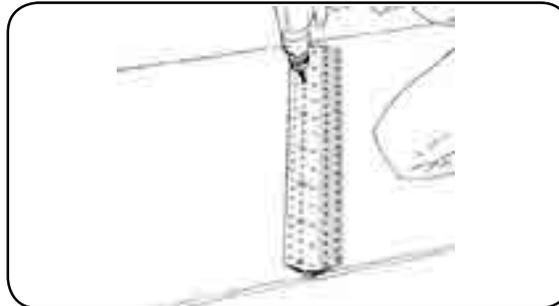
Spread the screwing process over the whole of the surface, by first screwing one hole over four along the row. Repeat the operation over the other(s) row(s).



Screw one hole over two and achieve the operation.



In order to get into contact both belt ends, unscrew the center part and disassemble the thickness and alignment spacers.



Get into contact the belt end, while ensuring the belt alignment, and resume screwing again the other half of Super-Screw® as shown previously. Exercise a general control of the screws tips to ensure that they do not protrude. In the contrary, adjust the clamping (by screwing or unscrewing).



Cut the belt end (opposed to the trailing edge) as shown.

Your Super-Screw® is installed!

The thin rubber cover over the top metallic inserts will be erased after a short while, allowing a visual control of a correct tightening and positioning, the state and conditions of performance. This has no consequence related to the-Super Screw® resistance.



More information ?
Please check our website

www.mlt-lacing.com



LIMITED WARRANTY

for Convey-All Conveyors and Tenders

Meridian Manufacturing Inc, hereafter referred to as Meridian®, warrants each new product (the "Goods") to be free from defects in material and workmanship under normal use and service for a period of one (1) year or six (6) months in the case of commercial use, from the shipment date, from the Meridian dealer (FCA).

1. This warranty does not apply to:
 - a. To any merchandise or components thereof, which in the sole and unfettered opinion of Meridian, have been subject to misuse, unauthorized modifications, alteration, accident, negligence, product abuse or lack of required maintenance.
 - b. If repairs have been made with parts or by persons other than those parts or persons approved by Meridian.
 - c. To parts and accessories not manufactured by Meridian including, but not limited to, engines, batteries, tires, belts, PTO shafts or other trade accessories. Such parts shall be covered by the warranty given by the actual manufacturer, if any.
 - d. To failure of parts; or failure of parts to perform due to wear under normal or excessive service conditions; or to failure due to use by the Purchaser for purposes other than originally intended at time of manufacture, including without limitation using the Goods for mixing fertilizer, etc.; or used in excess of the built specifications.
 - e. To Goods used in areas exposed to corrosive or aggressive conditions including, but not limited to, salt water from either inside or outside the Goods.
 - f. To failures or defects arising out of damage during shipment or during storage.
 - g. To materials replaced or repaired under this warranty, except to the extent of the remainder of the applicable warranty.
2. The obligation of Meridian under this warranty shall not arise unless Meridian is notified and this warranty is presented together with a written statement specifying the claim or defect within thirty (30) days after the failure is first detected or made known to the Purchaser and within one (1) year, or six (6) months in the case of commercial use, from the shipment date, from the Meridian dealer (FCA). Meridian in its sole and unfettered discretion shall determine if the claim is valid and whether correction of the defect or failure shall be made by repair or replacement of the materials.
3. Title to any replaced materials Meridian wishes to have pass to it, shall pass to Meridian.
4. The obligation of Meridian hereunder extends only to the original Purchaser or Buyer to whom the Goods were initially sold. This warranty shall not be subject to any assignment or transfer without the written consent of Meridian.
5. The purchaser acknowledges that it has made its own independent decision to approve the use of the Goods and also the specific fabrication and construction procedures utilized to complete the Goods, and has satisfied itself as to the suitability of these products for its use.

6. This warranty is subject to the following limitations, provisions and conditions:
 - a. Meridian shall have no liability hereunder for any claims, including field re-work.
 - b. Meridian shall not be liable for any incidental loss or damage, however caused, including, without limitation, normal wear and tear.
 - c. Meridian makes no express or implied warranties of any nature whatsoever except for such express warranties as set out herein. The warranty provided herein is in lieu of and excludes all other warranties, guarantees or conditions pertaining to the Goods, written or oral, statutory, express or implied, (except the warranty as to title) including any warranty as to the merchantability or fitness for any particular purpose. Meridian expressly disclaims all other representations, conditions or warranties, expressed or implied, statutory or otherwise and any representations, warranties or conditions that may arise from a course of dealing or usage of trade. The warranty provided herein shall constitute Meridian's sole obligation and liability and the Purchaser's sole remedy for breach of warranty. No other warranty has been made by any employee, agent, or representative of Meridian and any statements contained in any other printed material of Meridian is expressly excluded here from. Meridian shall not be responsible for any warranty offered by the Purchaser to its customers with respect to the Goods and the Purchaser shall indemnify Meridian with respect to same if any of those customers makes a claim against Meridian relating to any such warranty.
 - d. Subject to Meridian's obligations contained in paragraph 1 herein, none of Meridian, its officers, directors, servants or agents shall be liable, or responsible for any loss or damage (including strict liability and liability for loss or damage due to items which the manufacturing processes are designed to identify) whether such loss or damage is caused by negligence in any manner whatsoever (including gross negligence, error, misrepresentation, misstatement, imprudence, lack of skill or lack of judgement).
7. The sole financial obligation of Meridian under this warranty shall be limited to the repair or replacement of the Goods as originally supplied and in no event shall they exceed the original cost of the Goods supplied.
8. Meridian shall not have any obligation under any warranty herein until all accounts have been paid in full by the Purchaser.
9. The construction and interpretation of this Warranty shall be governed by the laws of the Province of Manitoba.

Register your product at: www.meridianmfg.com
For warranty information send an email to: warranty@meridianmfg.com

WARRANTY REQUEST PROCEDURE

- The product must be registered with Meridian Manufacturing Inc.
- The purchaser must contact the dealer, from where the unit was purchased, immediately upon discovery of any defects.
- A completed Warranty Request (Claim) Form must be submitted by the dealer to Meridian's warranty representative for review and any subsequent course of action.
 - Warranty requests must be completed with ALL required information in order it to be considered for approval.
 - Send photographs of the entire piece of equipment, and of the specific area of concern.
- Warranty repair work will only be performed by Meridian or an approved representative of Meridian. Warranty work completed prior to Meridian's approval will NOT be honoured. Failure to follow this procedure may affect any or all of this warranty.
- All warranty requests will be adjudicated at the sole discretion of Meridian and in accordance with the terms and conditions of the warranty.

CONVEY-ALL®

(800) 665-7259 | www.convey-all.com | conveyors@convey-all.com