

CONVEY-ALL[®]

1600 Series • 2200 Series

SELF-PROPELLED BIN FILL CONVEYOR
with optional Swing-Out



convey-all.com/bin-fill-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 _____

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Section 1: INTRODUCTION

Thank you for choosing a Convey-All® self-propelled bin fill conveyor.

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

Keep this manual for future reference. Call your dealer, distributor, or Meridian, if you need assistance, information, additional/replacement copies, or a digital version 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 drivers' seat and facing the direction of travel. The hopper is the front of the conveyor.

SERIAL NUMBER LOCATION

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

- Use the space provided for easy reference:

Conveyor Model No: _____

Conveyor Serial No: _____

Engine Model No: _____

Engine Serial No: _____



Fig 1 - Serial number location



Meridian Manufacturing Inc. continuously enhances its product offering through product improvements and new product innovations. Marketplace feedback, technological innovation, new materials and manufacturing methods, and a philosophy of continuous improvement constantly challenge the company to develop new and better ways of addressing market needs. Meridian is committed to innovation and reinvestment and as a result, the company maintains a portfolio of patents and intellectual property. For more information on our patents please see our website:

www.convey-all.com/patents

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:



ATTENTION!
BECOME ALERT!
YOUR SAFETY IS INVOLVED!

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® 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 person 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.

- Convey-All logo on sides of tube at discharge.
- Red reflectors: on discharge spout, and discharge-side of axle.
- Amber reflectors: on sides of hopper, at less than 15 ft intervals along tube, and on hopper-side of axle.

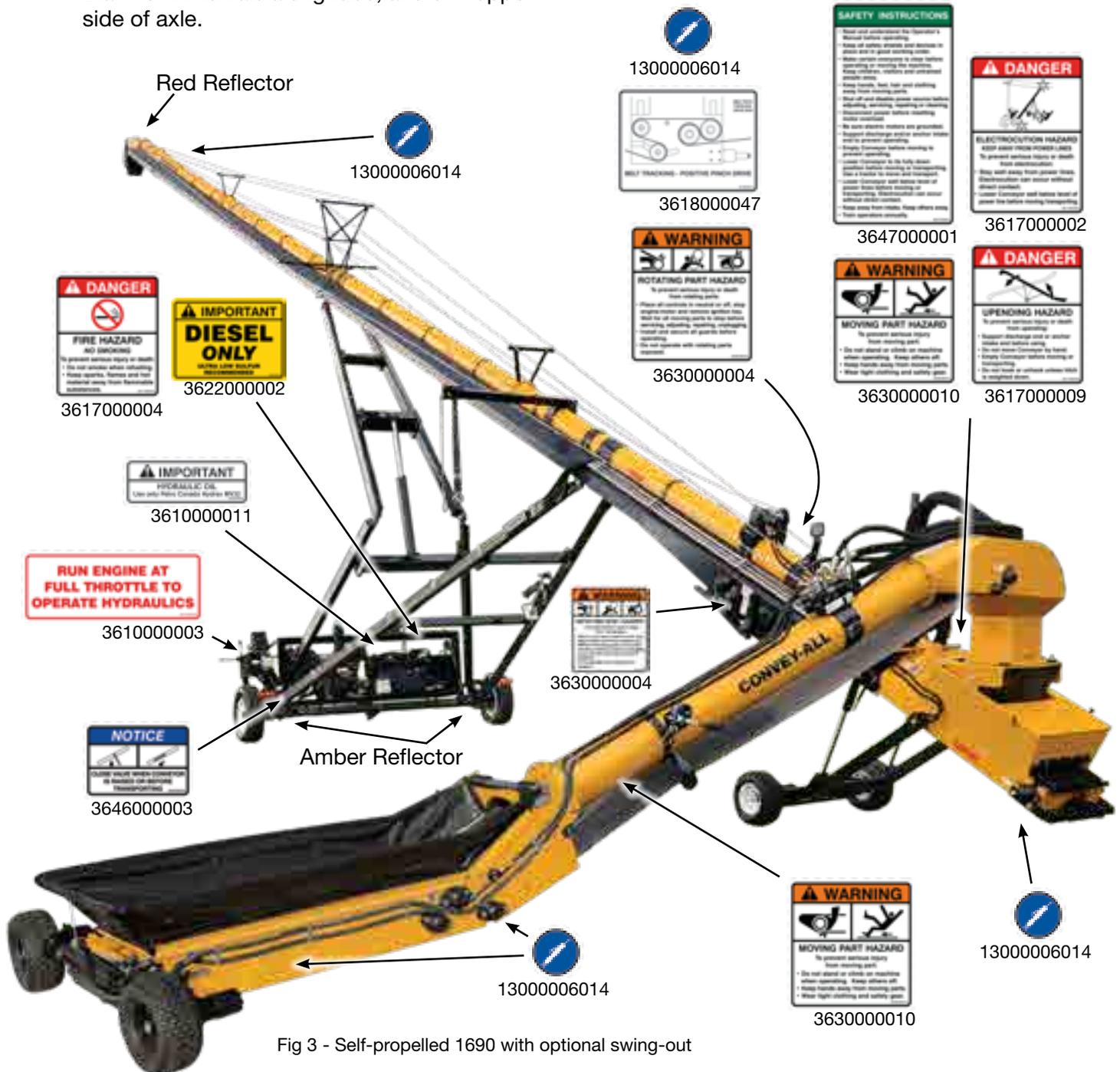


Fig 3 - Self-propelled 1690 with optional swing-out

2.6 WORK PREPARATION

- Never operate the conveyor and its engine 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

- Stay away from overhead power lines when operating or moving the conveyor. Electrocutation can occur without direct contact.
- Keep conveyor as low as possible.
- Chock conveyor wheels before operating.
- Position conveyor providing enough space for trucks to load or 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.
- Place stands or blocks under the frame before working beneath the machine.
- 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 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.
- 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.
- 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.
 
- Stay away from overhead obstructions and power lines during operation and transporting. Electrocutation can occur without direct contact.
- Do not operate the conveyor when any guards are removed.
- Chock wheels of conveyor before starting.

- Be sure that conveyor tube is empty before raising or lowering.
- Close hydraulic lift ball valve when machine is in working position or before transporting.
- High winds may overturn conveyor. To avoid damage to structures and equipment, do not raise conveyor fully in windy conditions.
 - Do not leave conveyor raised, when not in use.

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

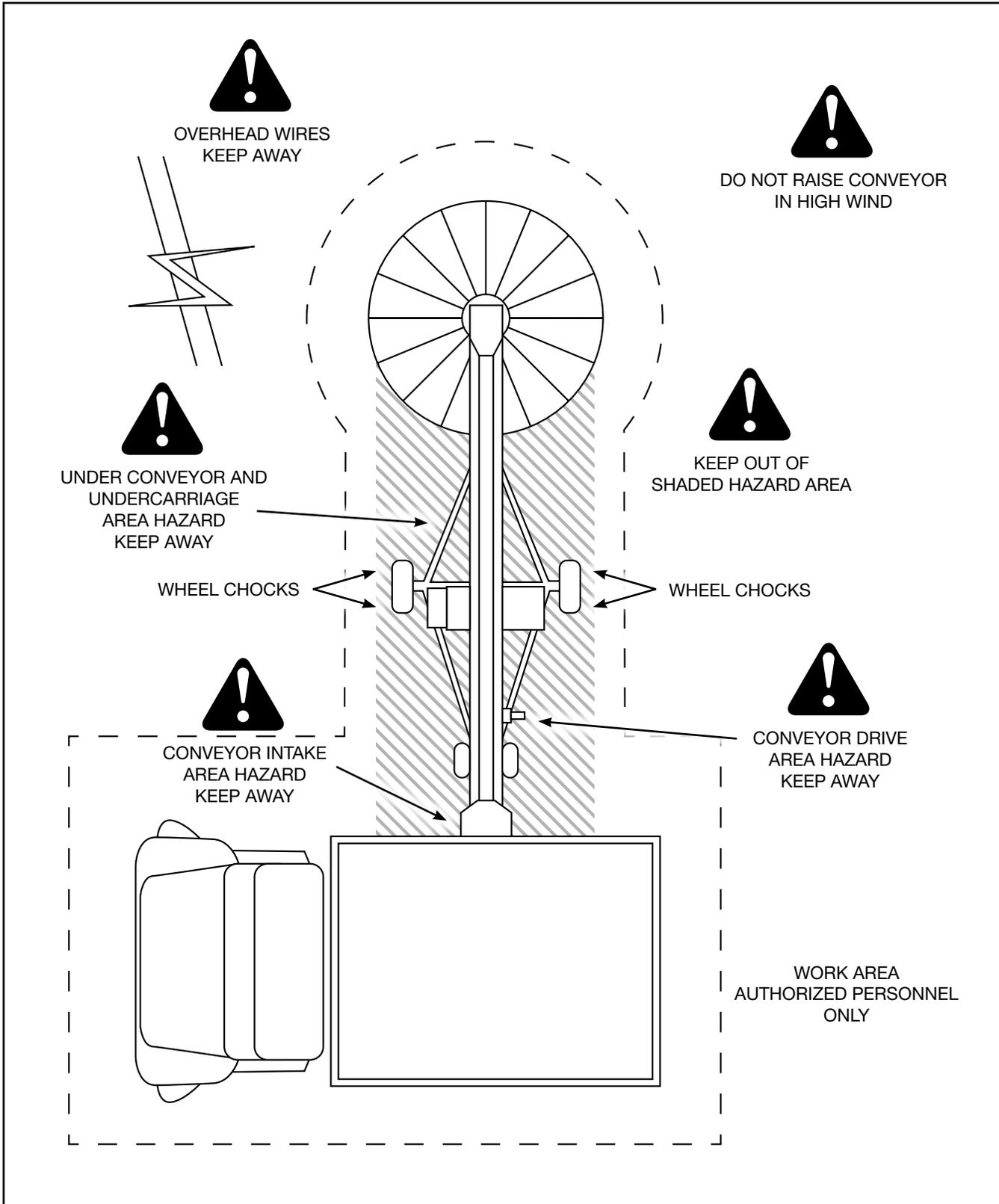


Fig 4 - Workplace hazard area

2.16 TRANSPORT SAFETY

- The conveyor belt must be empty before raising or lowering the tube.
- Always transport conveyor fully lowered.
- Ensure all lights, reflectors, other lighting requirements are installed and in good condition.
- Never allow riders on the conveyor.
- 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.
- 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 driving near or crossing roadways.

2.17 STORAGE SAFETY

- Store the conveyor on a firm, level surface.
- Store in an area away from human activity.
- If required, make sure the unit is solidly blocked up.
- Remove the battery and store in dry location. Do not sit battery 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 machinery.

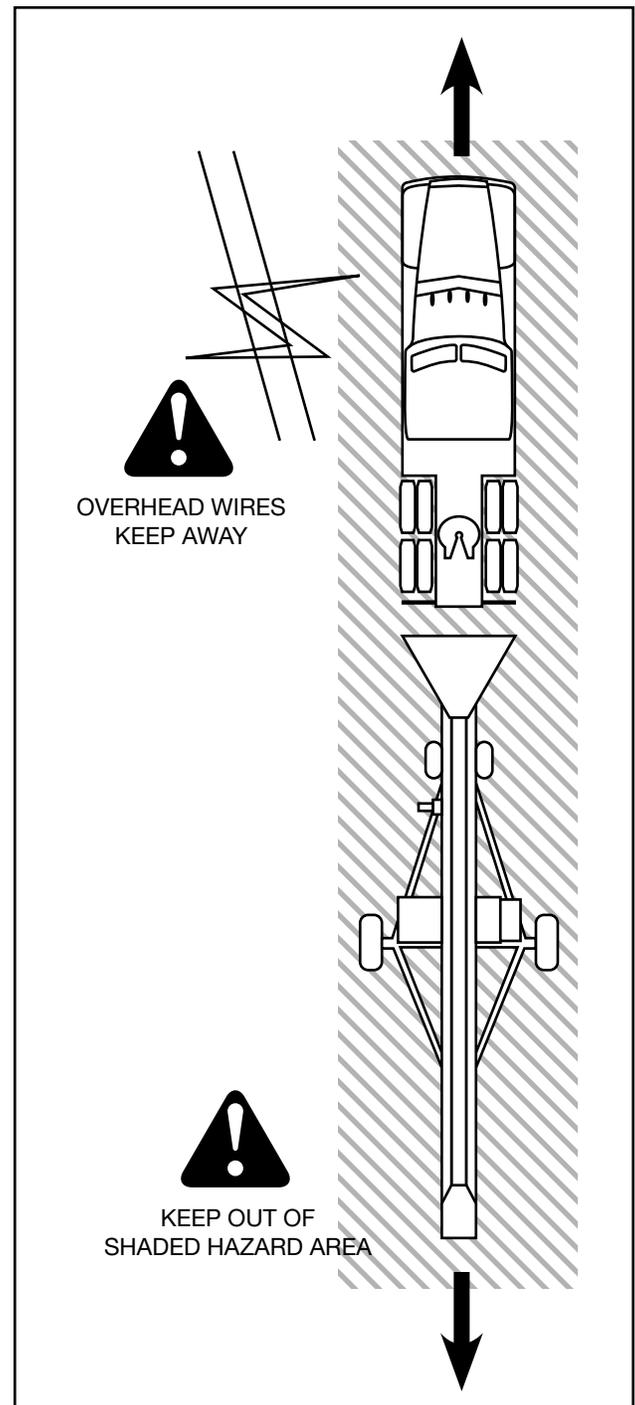


Fig 5 - Transporting hazard area

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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 mover kit.
- Stay away from overhead obstructions and power lines during operation. Electrocutation can occur without direct contact.
- Do not operate conveyor with guards removed.
- Chock wheels of conveyor before starting.
- 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® bin fill 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 diesel engine supplies power to the hydraulics making this conveyor a self-contained, self-propelled unit.

A hydraulic cylinder is used to lower the steering wheels when driving the unit. Another cylinder raises and lowers the tube.

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

The main components are listed below:

- a. Main Conveyor Tube
- b. Standard Intake Hopper
- c. Swing-Out Hopper
- d. Discharge Spout
- e. Engine Cradle including Hydraulic Reservoir and Fuel Tank
- f. Hydraulics, Engine and Electrical Controls
- g. Drive Box with Tension Springs
- h. Hydraulic Motor
- i. Drive Wheels
- j. Steering Wheel
- k. Working Lights
- l. Electric Actuator
- m. Drawbar and Jack Storage Plate
- n. Document Holder
- o. Swing-Out Conveyor (Optional)

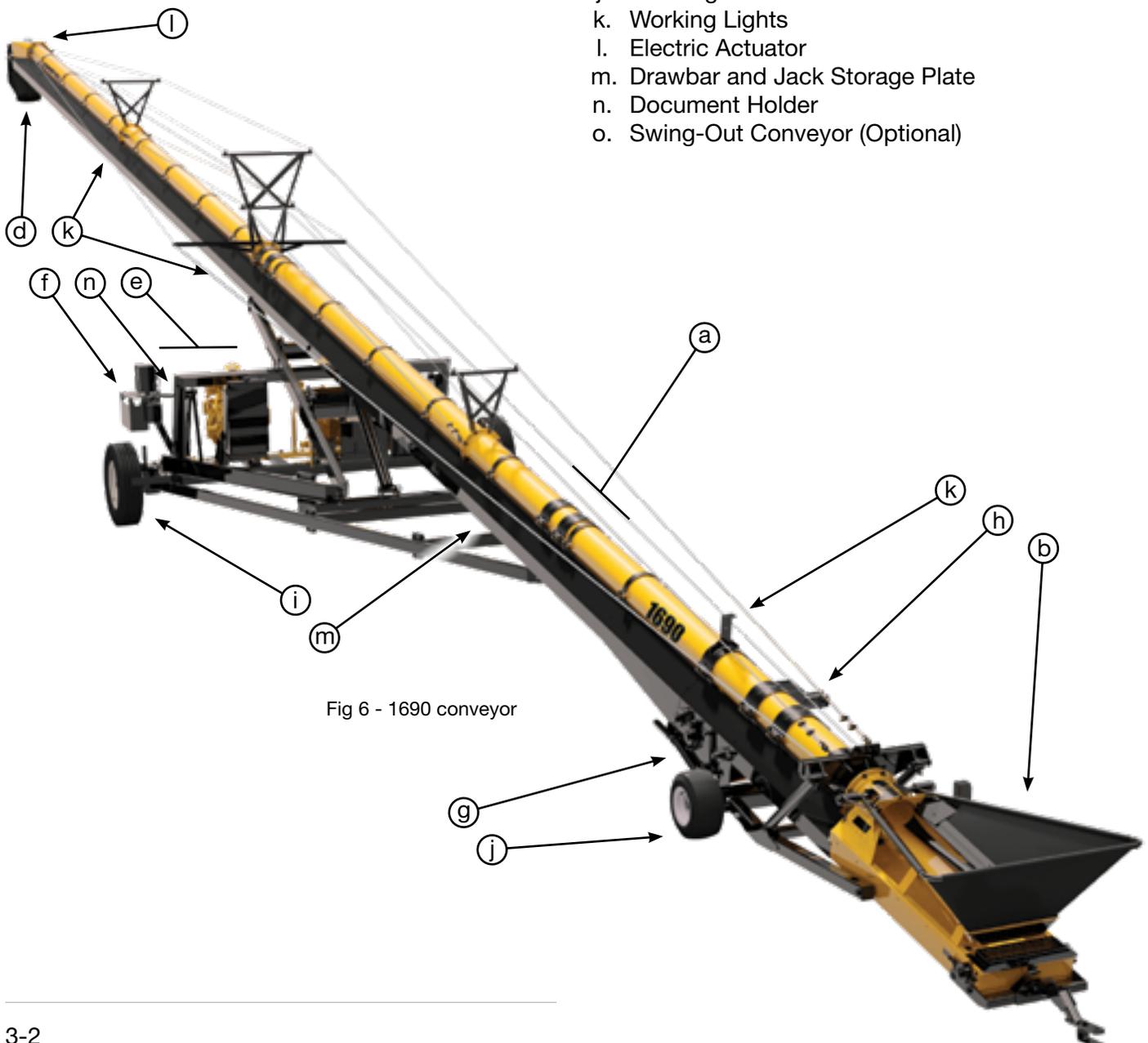


Fig 6 - 1690 conveyor

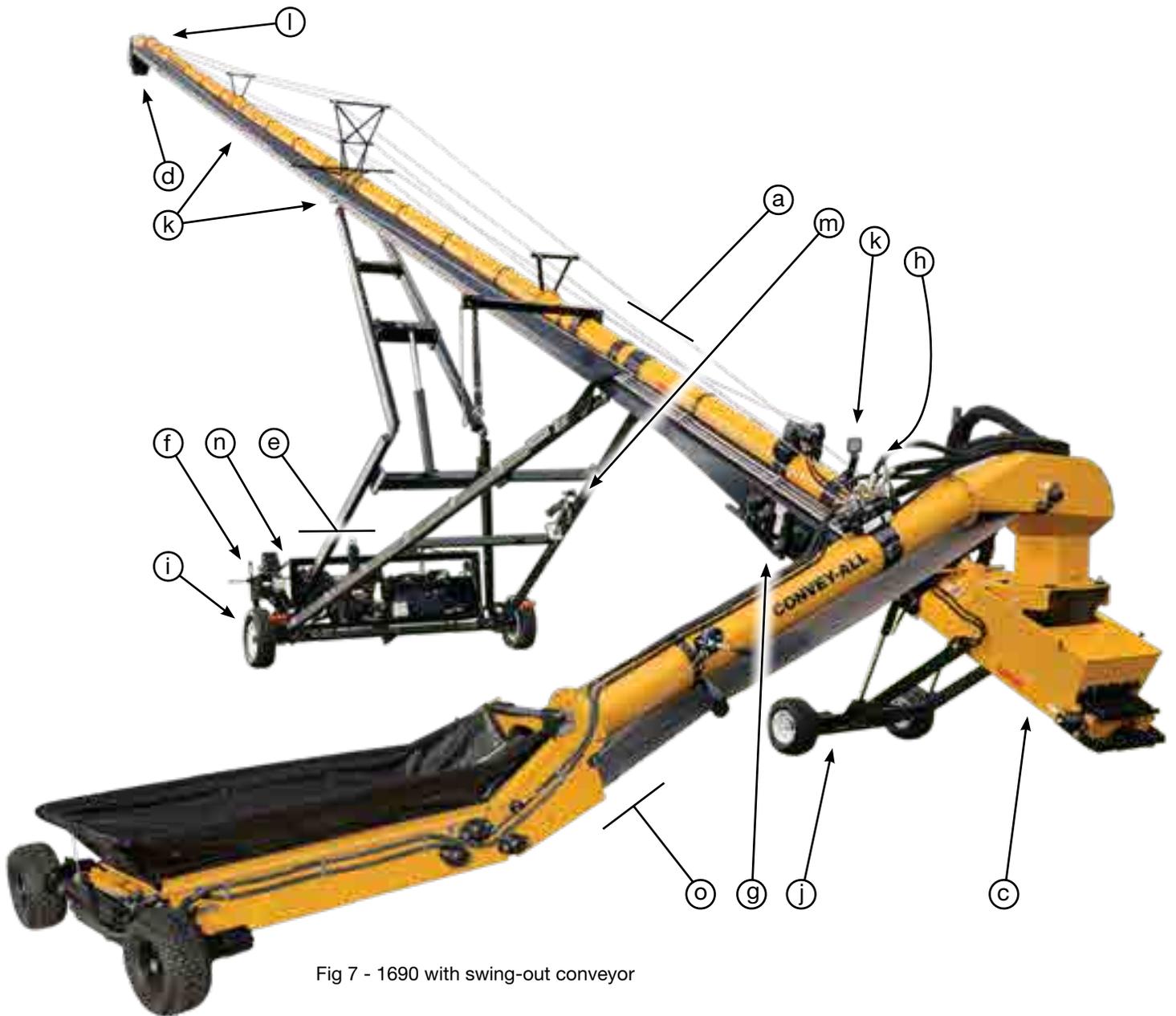


Fig 7 - 1690 with swing-out conveyor

3.2 COMPONENTS AND CONTROLS

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

Options and locations may change without notice.

Refer to the engine manufacturer's manual for more detailed information.

- Engine controls may vary depending on model.

Diesel Engine:

The ignition switch is in the control box above the hydraulic valve table. Turn the key to start the engine.

Use the buttons in the control box to control the engine speed.

- Read the engine manual for more information.

IMPORTANT:

Always run at maximum engine speed when operating the conveyor belt.

Power Shut-Off Switch (Optional):

The red switch between the engine and hydraulic reservoir, controls the electricity. Turn on before starting the engine. Turn off when the conveyor will not be used for extended periods.

Fuel Tank:

The tank sits between the engine and hydraulic oil reservoir. Fuel cap has a level gauge incorporated in it.

- Standard tank: 57 Litre (15 US Gallon)
- 2290-22120 use a larger tank: 195 L (51 US G)



Fig 8 - Engine cradle



Fig 9 - Power shut-off switch



Fig 10 - Engine control



Fig 11 - 1600 Fuel tank and hydraulic reservoir

Hydraulic Oil Reservoir:

The 95 Litre (25 Gallon) reservoir sits in the corner of the engine cradle. There is a combination thermometer and level gauge mounted on the side.

- An oil filter is connected to the rear.

Hydraulic Oil Cooler:

The cooler is standard feature to keep down the operational temperature of the oil.

Hydraulic Controls:

The hydraulic valve bank is beside the engine. There are two gauges on the valve bank, one to monitor the moving/lifting circuit, and one for the conveyor belt circuit.

a. Mover Kit Lever:

This 4 position, spring-loaded lever controls the movement of the conveyor. It drives the wheels forward and reverse, and also swivels the steering wheels for turning left or right.

b. Conveyor Lift:

This lever raises and lowers the conveyor tube.

Note:

A ball valve is located on the lift arm.
Open, to raise or lower conveyor.
Close, to lock in position. See Figure 15

c. Hopper Lift:

This lever controls the height of the steering wheels, which in turn moves the hopper.

- Lower the wheels, to raise the hopper when driving the unit.
- Raise the wheels, lowering the hopper into position for unloading.



Fig 12 - 22110 fuel tank and hydraulic reservoir

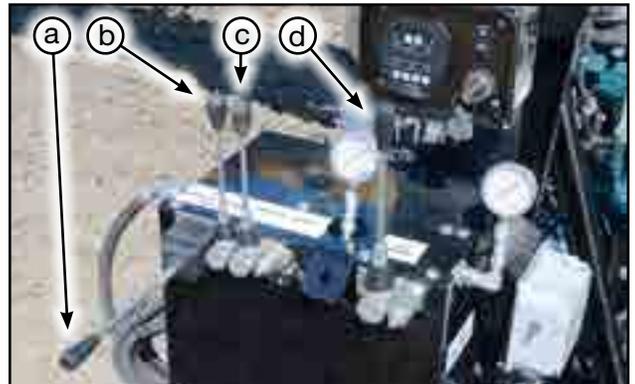


Fig 13 - Hydraulic levers

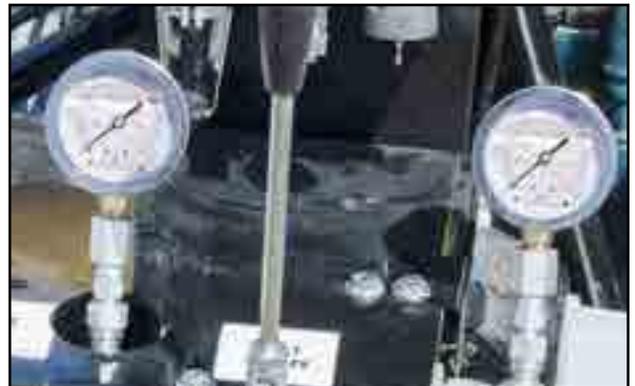


Fig 14 - Hydraulic pressure gauges

d. Conveyor Belt Control:

The hydraulic motor controlling the conveyor belt is turned on and off with this lever.

Note:

If the unit includes a swing-out conveyor, both belts will be controlled with this lever.

Conveyor Tube Lift Cylinder and Ball Valve:

The hydraulic cylinder raises/lowers the tube and the ball valve locks the cylinder in place.

IMPORTANT:

Ball valve must be fully opened prior to raising/lowering conveyor.

Always close valve fully when conveyor is to remain in fixed position. This will prevent ram from creeping downward during operation.



Fig 15 - Hydraulic ball valve to the lift cylinder

Drive Box and the Hydraulic Motor:

The conveyor belt winds through the Positive Pinch Drive Box, and is driven by hydraulics.

NOTICE**EQUIPMENT DAMAGE LIKELY**

Always disengage both drive wheels before towing. Hydraulic motors will be damage if driven at highway speeds.



Fig 16 - Drive box with hydraulic motor

Drive Wheels:

The drive wheels have a lever to manually engage or disengage the hydraulic drive mechanism.

- Always disengaged, and securing with the retaining clip, before transporting the conveyor.



Fig 17 - Drive wheel and engagement lever

Drive Wheel Cushion Block:

There is a cushion block on the axle, located between the engine and wheel.

- The cushion block allows the conveyor to have a soft start and stop while driving.
- If the conveyor is not driving smoothly, contact your authorized dealer, distributor or Meridian Manufacturing Inc for assistance.



Fig 18 - Cushion block on axle, below engine

Steering Wheels:

Hydraulic cylinders raise and lower the wheels below the hopper.

- A Double Pilot-Operated (PO) Check Valve is located on the Cylinder Mount, above the steering wheels.
- It is used to lock the wheels in position, whether they are raised or lowered.
- Use the mover kit levers on the hydraulic valve bank to raise and lower, and turn the wheels when driving the conveyor.



Fig 19 - Steering wheels. Check valve on cylinder mount

Standard Collapsible Hopper:

The hopper is designed with a spring-loaded canvas frame. This allows the truck box to push the frame down.

- The hopper have rubber flashing to seal the junction between the belt and the sides of the hopper.
- **Note:** If equipped with a swing-out conveyor, a swing-out hopper will replace this collapsible hopper.



Fig 20 - Standard collapsible hopper

⚠ WARNING

UNEXPECTED MOVEMENT HAZARD
Control the hopper frame at all times.
Sudden release can cause serious injury.

• **Hopper Clip:**

The standard hopper come with a clip on the frame to hold the canvas sides down when required.



Fig 21 - Hopper clip

Chevron Belt with Alligator® Lacing:

Convey-All® conveyors use a 2 ply, 220 weight, chevron belt with Alligator® Lacing.

- If equipped with a swing-out conveyor, it uses a 2 ply, 150 weight, chevron belt with Alligator® Lacing. The belt is skived, to remove the rubber cleats from along the edges for a tight seal between the belt and hopper flashing.



Fig 22 - Chevron belt with Alligator® lacing

Discharge Spout:

The discharge spout can be repositioned.

- Manually tilt the spout into one of six settings if the product needs to be directed further back rather than straight down.
- Remove the positioning bracket and flip the hood back to throw the product as far as possible. This configuration works well when making piles or inside buildings.



Fig 23 - Discharge spout

Electric Actuator on Discharge (Optional):

A 12 volt DC electric actuator is available. It will reposition the spout, tilting it for precise control over product output.

- It is controlled by a toggle switch on the control box mounted to the side of the valve table.



Fig 24 - Electric actuator

Working Lights (Optional):

Working lights are installed to illuminate the hopper and discharge ends of the machine. The 12 volt DC working lights make operating the conveyor at any time safe and convenient.

- The light switch is in the control box next to the hydraulic valves.



Fig 25 - Discharge and hopper working lights

Transport Light Package (Optional):

A 12 volt DC transport light package is available. The wiring harness would plug into a truck.

Electric Switches (for Optional Equipment):

On the side of the valve table, is a control box where the electrical switches are located.

- Left switch works the lights.
- Right-side toggle switch controls the actuator on the discharge spout.

Hydraulic Hitch (2200 Series):

The hydraulic hitch is standard equipment on the 2200 Series conveyors.



Fig 26 - 2200 series hydraulic hitch

Swing-Out Conveyor (Optional):

A swing-out conveyor is available for convenient unloading. Refer to Section 3.3.

- If equipped, the main conveyor would have a swing-out hopper instead of the collapsible.
- Swing-Out Remote Control (Optional)
Refer to Section 3.4



Fig 27 - Optional swing-out

Oil Reservoir Heater (Optional):

This is an electric heater patch, which is glued to the bottom of the Hydraulic Reservoir.



Fig 28 - Oil reservoir heater

Block Heater (Optional):

This is an electric heater patch, which is glued to the bottom of the engine block.

Document Holder:

The document holder is located between the engine and the hydraulic valve table.



Fig 29 - Document holder

NOTICE**AXLE FAILURE HAZARD**

Always retract axles for transportation.

Axle Adjustment (2200 Series):

2200 series conveyors, 85 feet and longer, are equipped with an adjustable axle.

- The undercarriage is designed with an axle that is 12 feet wide. The wheel extensions can bring the width to 14 feet or 16 feet for more stability.
- Always retract the axle extensions when preparing to move or transport the conveyor.



Fig 30 - Axle adjustment

Drawbar and Jack Storage Plate:

This plate is mounted on the undercarriage. Store both here when they are not in use.

3.3 SWING-OUT CONVEYOR (OPTIONAL)

The swing-out conveyor is an extension of the main tube conveyor. The discharge spout of the swing-out is attached to the main conveyor at the hopper. The swing-out can swivel 270°, placing its hopper in a convenient position for unloading.

This swing-out conveyor is available as:

- a manual unit, where it is pushed around the main conveyor.
- a hydraulic drive unit, which is driven

Open Transition Hopper:

The hopper is designed with spring loaded canvas frame. This allows the truck box to push the frame down.

- The hopper has a patent pending flashing kit to seal the junction between the belt and the sides of the hopper.
 - Refer to Section 4.2.2 for flashing adjustment information.
- The hopper is also available in stainless steel.



Fig 31 - Swing-out conveyor (optional)



Fig 32 - Swing-out hopper

⚠ WARNING

UNEXPECTED MOVEMENT HAZARD

Do not release hopper winch handle when ratchet lever is unlocked with load on winch. The handle could spin violently causing serious injury.

Hopper Winch:

The winch is located on the side of the tube just above the hopper. It is used to lower the canvas frame.



Fig 33 - Swing-out hopper wheels

Hopper Wheels, Mover Kit (Optional):

Wheels are attached to the front end of the hopper.

- Hydraulic valves controlling the mover kit would be located on the swing-out's tube.

Discharge Spout:

The swing-out's discharge spout is attached above the main conveyor's hopper. The spout can tilt and rotate as needed with the movement of the swing-out. Use the removable cover, to access the main belt.

⚠ WARNING

ROTATING BELT HAZARD
Be sure the cover is in place before running the belt.

Hydraulic Motor:

The swing-out conveyor belt is run by hydraulics.

- The main conveyor belt and swing-out belt are run with the same valve.
- The belts are timed, using a Hydraulic Oil Flow Regulator, so the main belt will not be overfed.

Swing-Out Winch:

A manual or hydraulic winch is used to lower the swing-out. The cable is routed through the hoist and attached by a hook to the swing-out.

If equipped with a hydraulic winch. The valve, controlling the winch may be located at the corner of the main conveyor, or on the swing-out tube.

Winch/Transport Hooks:

Use the winch hook (a) to raise the swing-out off the ground. Attach both transport hooks (b) to relieve pressure from the winch.

- **IMPORTANT:** On 2200 Series, careful not to damage the main conveyor when lifting the swing-out. Use the inside loop for on-site transport. Use the centre loop for road transport.



Fig 34 - Discharge of swing-out with manual winch



Fig 35 - Hydraulic winch

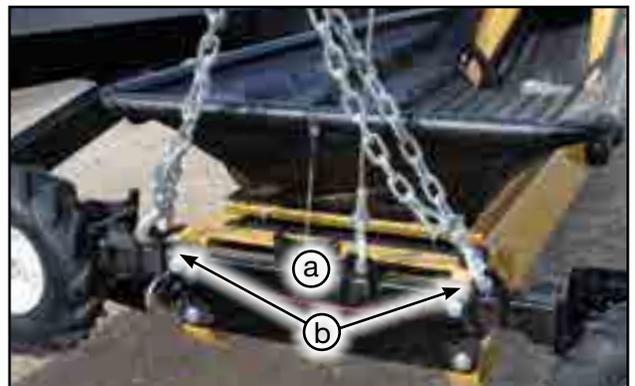


Fig 36 - 1600 series: Winch hook (a), transport hook (b)

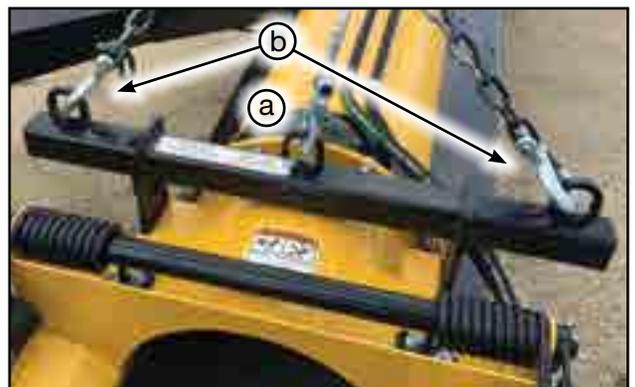


Fig 37 - 2200 series: Winch hook (a), transport hook (b)

Electric Mover Kit (Optional):

This electric mover kit is available.

The receiver box is mounted on the swing-out tube.

- A key fob remote controller drives the unit.
- There are manual buttons which will operate the mover. They are located on the receiver box.



Fig 38 - Swing-out with electric mover kit



Fig 39 - Auger Jogger receiver box



Fig 40 - Auger Jogger key fob

Hydraulic Valve Bank (Optional):

Depending on the option included, a set of 1 to 3 hydraulic valves would be located on the swing-out tube. They operate the following movements:

- a. Drives the wheels, moving the swing-out around the main conveyor.
- b. Swing-out winch valve raises/lowers the conveyor.
- c. Conveyor belt control includes detent to keep the belt rotating in only one direction. This valve controls both the swing-out and main conveyor belts.

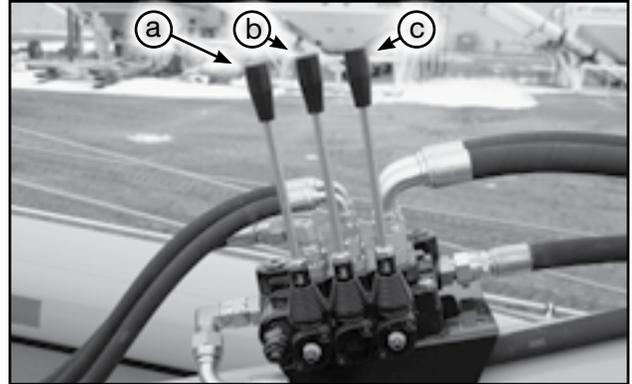


Fig 41 - Hydraulic valves

Valve Settings:

- d. The speed of the swing-out's mover kit can be adjusted. Use the set screw with lock nut below the valve.

There is another set screw on the rear of the drive valve, which must also be adjusted.

- Twist set screw "IN" to give less play to the handle, so the wheels don't turn too fast.
- Twist it "OUT" giving more play in the handle, to speed up the wheels.

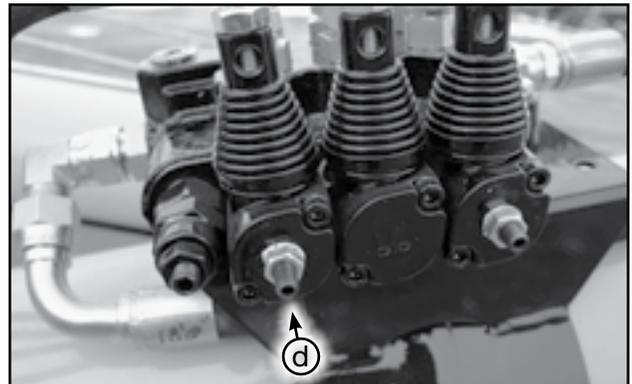


Fig 42 - (d) Mover kit set screw

Hydraulic Oil Flow Regulator:

If equipped with a swing-out, a regulator is added to divide the hydraulic oil flow between main conveyor and swing-out. It has been preset by the factory for both the mover kit and belt speed.

- Adjust the flow regulator, as needed, to optimize the conveyor's performance.
 - Move the lever to position #10 to give full flow to drive the conveyor.
 - Move the lever to #0, to move the swing-out into place.
 - Leave the lever at #0 to operate the conveyor belt.



Fig 43 - Hydraulic oil flow regulator

3.4 SWING-OUT REMOTE CONTROL (OPTIONAL)

There is an optional remote control package for the swing-out conveyor.

Hydraulic Valves:

The valves functions can be operated using the remote control hand set or manually.

- Remotely, use the buttons on the handset.
- Manually, lift or lower the top of the valve.

- The first valve drives the mover kit wheels forward or reverse.
- This valve operates the winch which raises/ lowers the swing-out below the hoist.
- The manual valve on the far right, operates the conveyor belt.
 - The belt on the swing-out and the main conveyor belt are timed correctly so the swing-out will not overfeed the second.



Fig 44 - Remote control valve table

Remote Control Handset:

The handset is stored in the document holder, which is attached to the Engine Cradle.

It has a power button, and two LEDs:

- The first indicates when battery level is low.
- The second shows when you have wireless connection to the bank of valves.

There are two sets of red and green buttons, and an oval blue button:

- The blue button, at the bottom, must be pressed at the same time as the other function buttons.
- The top buttons drive the swing-out wheels.
- The second set of buttons operate the winch to raise/lower the swing-out hopper.

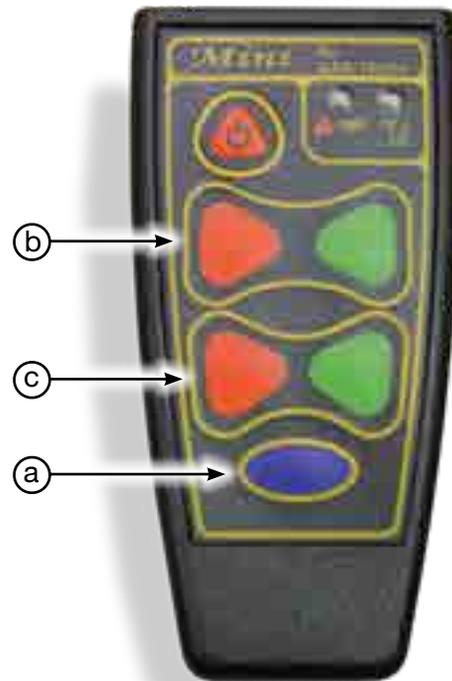


Fig 45 - Remote control handset

3.5 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 hopper flashing. 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 the wheel bolts.
4. Check fuel, engine oil and hydraulic oil levels.
5. During the conveyors first few minutes of operation, check belt tension and alignment to ensure the factory preset does not vary under loaded conditions.
6. Check the flashing seal on the hopper. If any product comes out of the hopper around the flashing; stop the belt, loosen flashing mounting screws and adjust. Retighten anchor screws and try again. Repeat until no product is lost.
7. Check the 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.

3.6 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. Be sure that the battery is fully charged. If needed, charge the battery before connecting it with the battery cables.
3. Lubricate and service the machine as per the schedule outlined in the Section 4.2.
4. Check that all guards are installed, secured and functioning as intended. Do not operate with missing or damaged shields.
5. Check that the belt is properly tensioned and aligned. Ensure it is not frayed or damaged. Refer to Section 4.3.1 and 4.3.2
6. Be sure conveyor wheels are chocked.
7. Check that discharge and intake areas are free of obstructions.

NOTICE

UPENDING HAZARD

Anchor or support conveyor during operation. When lower half empties of material, the weight balance transfers to the discharge end of the machine, which can cause upending.

3.7 ATTACHING TO TOW VEHICLE

⚠ DANGER

ELECTROCUTION HAZARD

Ensure enough clearance from overhead obstructions, power lines, other equipment.

1. Clear the working area of bystanders, especially small children.
2. If the conveyor is above a storage facility:
 - a. Raise the conveyor tube so the discharge spout clears the structure.
 - b. Drive the conveyor away.
 - c. Lower the tube to its transport position.
3. Ensure that there is sufficient room and clearance to back up to the conveyor.

NOTICE

UPENDING HAZARD

The machine is closely balanced. Do not lift unless there is downward weight on the hopper end to prevent upending.

4. 2200 Series: Insert the transport pins to secure the hydraulic hitch in place.
5. Insert the drawbar into the conveyor's hitch.
 - Secure with the anchor pin.
6. Align the tow vehicle's hitch with the drawbar of the conveyor while backing up.
7. Set park brake before dismounting tow vehicle.
8. Install the pin with its retainer clip, to connect the tow vehicle.
 - Secure the safety chain.



Fig 46 - Jack



Fig 47 - Drawbar



Fig 48 - Safety chain secured

9. Raise the steering wheels.
10. Remove and store the jack.
11. Close hydraulic valves and turn off engine.

The conveyor is ready for transport.

3.8 CONVEYOR PLACEMENT

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

- Conveying potash, urea or other granular fertilizer in high-humidity situations requires more frequent cleaning.
1. Clear the area of bystanders, especially small children, before starting.
 2. Start the conveyor's engine, then lower the steering wheels.
 - or -
 - Attach the jack, raise and support the hopper.
 3. Detach the conveyor from the tow vehicle.

CAUTION

SAFETY HAZARD

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

4. Remove and store the drawbar.

DANGER

ELECTROCUTION HAZARD

Ensure enough clearance from overhead obstructions, power lines or other equipment.

5. Remove the retainer clips. Manually engage drive wheels on the conveyor's mover kit.
6. Drive the conveyor to the working area while it is in its lowered configuration.

NOTICE

DAMAGE TO EQUIPMENT HAZARD

Swing-out conveyor must be lowered and swung around the hopper, to be in-line with the main conveyor before raising the tube.



Fig 49 - Hydraulic hitch



Fig 50 - Start engine



Fig 51 - Engage drive wheels

7. 2200 Series: Remove the hitch bracket from the rod of the cylinder before operating the hydraulic hitch.

NOTICE

HIGH WIND HAZARD

Do not operate or leave conveyor fully raised, in high winds. It may blow over, damaging structures and equipment.

8. **IMPORTANT** - If equipped with a swing-out, before raising the conveyor tube, lower the swing-out, and rotate it around the hopper.
 - The swing-out can then follow the main conveyor as it is positioned over the bin.
9. Use the hydraulics to raise the main conveyor tube to working height.
10. Advance until the conveyor is in position above the storage bin.

IMPORTANT:

To prevent damage to the conveyor tube and belt, be sure it does not rest on any structure.

NOTICE**UPENDING HAZARD**

Always check the weight of the hopper end to prevent upending.

11. Stake or weigh down the hopper end to prevent upending when the machine is emptying.
12. Close hydraulic ball valve, to lock the conveyor tube in position.
13. Chock the drive wheels.
14. If equipped with swing-out conveyor:
 - Now, the swing-out conveyor may be rotated around the main conveyor and into position.

IMPORTANT:

When removing the conveyor from a work location, move the swing-out conveyor to directly in front of the main tube. Then, drive the main conveyor straight back from the bin, the swing-out will be pushed ahead.

Lower the conveyor before storing swing-out.



Fig 52 - Working height



Fig 53 - Hydraulic ball valve to tube lift cylinder



Fig 54 - Chocked wheels

3.9 OPERATING ON SITE

When operating the conveyor, follow this procedure:

1. Clear the area of bystanders, especially small children, before starting.
2. Review the Pre-Operation Checklist before starting. Refer to Section 3.6
3. Review the Workplace Hazards illustration and use extra care when inside the hazard area. Keep all spectators and bystanders out of this area.

Should anyone enter the hazard area, stop the machine immediately.

4. Check that all guards are in place and working as intended.
5. Back the truck/tender into position for unloading into the conveyor's (or swing-out) hopper.

NOTICE

HIGH WIND HAZARD

Do not operate or leave conveyor fully raised in high winds. Avoid damage to structures and equipment, by always lowering conveyor.

3.9.1 Starting Conveyor:

1. Turn the red, Power Shut-Off switch "ON".
2. Start the engine.
3. Run for 2-3 minutes to allow engine to warm.
4. Increase engine speed to full throttle.

IMPORTANT:

Always run at maximum engine RPM when operating the conveyor belt.

5. Start the conveyor belt by using the hydraulic valve lever.
6. Begin the flow of product and unload into the hopper.

3.9.2 Stopping Conveyor:

7. Stop unloading. Wait for conveyor belt to empty completely.
8. Stop the conveyor belt.
9. Move the throttle to idle position.
10. Turn off engine and remove ignition key.

3.9.3 Emergency Stopping:

Although it is recommended that the tube be emptied before stopping, in an emergency situation, stop the engine immediately.

See to the emergency.

Correct the situation before resuming work.

3.9.4 Restarting after Emergency Stop:

When the conveyor 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 engine.

Since start-up torque loads are much higher than normal when the belt is full, restart at a low engine speed. The RPM can be increased to full throttle, when the belt is empty.

Now product can again be unloaded into the conveyor hopper.

3.9.5 Unplugging:

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

1. Stop the conveyor belt.
2. Throttle down. Then, stop the engine.
3. Lock-out, tag-out the controls.
4. Remove product from the discharge and hopper area.
5. Reposition the conveyor if discharge area plugs due to lack of clearance.
6. Restart using the same procedure as if after an emergency stop. Refer to Section 3.9.4



Fig 55 - Trailer unloading into swing-out conveyor

3.10 OPERATING HINTS

- Keep the hopper full for maximum capacity. Most efficient results will be obtained when flow of incoming product is directed to the top of the hopper (closer to the tube).
- 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 support discharge end directly on the storage facility.
- Stake the hopper or weigh it down to prevent upending.
- For better performance, (if not equipped with a swing-out conveyor) use a transfer or drive-over conveyor, to move product from the truck or trailer to conveyor hopper.
- The hopper is designed with flashing to seal the junction between the belt and the sides of the hopper. It must be kept in good condition to prevent product from "leaking" out of the hopper. Replace the flashing if leakage occurs.

- **Belt Speed:**
The best results are obtained when the drive is set to provide a belt speed of 600 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.

- **Operating Angle:**
The hydraulic lift can set the tube angle at any position up to 27° when operating. Because the belt does not have roll-back barriers, the product will roll-back if the angle is too steep. Do not position at more than 27°.

Note:

The lower the angle, the greater the capacity.



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Fig 56 - Angle of Operation decal



Fig 57 - CST unloading into conveyor

3.11 TRANSPORTATION

Convey-All® self-propelled bin fill conveyors are designed to be conveniently transported from place to place.

1. Refer to Section 3.7: Attaching to Tow Vehicle.

NOTICE

EQUIPMENT DAMAGE LIKELY

Always disengage drive wheels before transport. Hydraulic motors will be damaged if driven at highway speeds.

2. 2200 Series - adjustable axles:
 - Move them into their narrowest position.
3. 2200 Series - Hydraulic hitch:
 - Insert the two transport pins to lock the hitch in place.
4. Ensure the conveyor is ready for transport:
 - It is in its fully lowered position.
 - Swing-out (if equipped) is stowed securely.
 - Drive wheels are disengaged, and retainer clip is fastened in place.
 - Hydraulic lines are closed.
 - Drawbar is attached using anchor pin, retainer and safety chain.
5. Be sure all bystanders are clear of the machine.
6. Conveyor is attached to the tow vehicle and safety chains are secured.
7. Jack is raised, removed and store it.
8. Chocks are remove from around the conveyor's wheels.
9. If equipped with transport lights, connect the wiring harness across the hitch.
 - Secure with clips, zip ties or tape. Provide slack for turning.
10. 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.
11. Do not allow riders on the conveyor.
12. Slowly pull away from the working area.
 - Be sure everything is connected and nothing is hanging.
13. 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.
14. Never travel across slopes of more than 20°. It is better to go straight up and down.
15. It is not recommended that the machine be transported faster than 80km/h (50mph).
16. During periods of limited visibility, use pilot vehicles or add extra lights to the machine.
17. Always use hazard flashers on the tow vehicle when transporting unless prohibited by law.



Fig 58 - Drive wheel

3.12 STORAGE

After the season's use, or when the conveyor will not be used for an extended period of time, it should be 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.
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. Remove the battery.
 - Be sure it is fully charged.
 - Store it inside.
 - Do not sit the battery on a cold, concrete floor.
8. Touch up all paint nicks and scratches to prevent rusting.
9. Select an area that is dry, level and free of debris.

If the machine cannot be placed inside, cover the engine with a waterproof tarpaulin and tie securely in place.
10. Remove the ignition key.
 - Store in a memorable location.
11. Do not allow children to play on or around the conveyor.

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 59 - Conveyor in storage

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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.
- Place stands or blocks under frame before working beneath the unit.
- 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:

Refer to the engine's operator manual for specific information.

- Fuel tank capacity is 57 Litres (15 US Gal.)

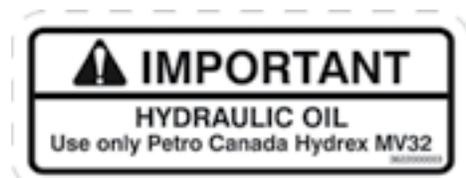
Grease:

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 32 hydraulic oil for all operating conditions (Hydrex MV32 or comparable).

- Oil reservoir holds: 95 Litres (25 US Gal.)



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Fig 60 - Hydraulic oil decal

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. Repair or replace 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 61 - Lubricate decal

4.2 SERVICING INTERVALS

Use the Service Record provided on page 4-21, to keep a record of all scheduled maintenance.

The conveyor belt tracking/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.
 - Add as required.
2. Check oil level in hydraulic reservoir.
 - 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 tracking frequently during the first 10 hours of operation until it seats itself. Refer to Section 4.3.3
6. Inspect all rollers and bearings for play and wear.
 - Replace if necessary.



Fig 62 - Hydraulic oil reservoir and fuel tank



Fig 63 - Alligator® Lacing



Fig 64 - Hopper roller bearings

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 might stretch. Refer to Section 4.3.1
 - **Note:** A properly tensioned belt will not slip when in operation.

8. Check the conveyor belt tracking.
 - How the belt is aligned to the rollers must be checked at the hopper, transition, in the drive box and at the 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 4.3.3

9. Check the condition of the rubber, hopper flashing. Be sure it still seals the hopper to prevent leaking.
 - If any product leaks out of the hopper around the flashing, loosen flashing mounting screws and adjust. Retighten anchor screws and try running the conveyor again. Repeat until no product is lost.
 - If the flashing is stuck to the belt, manually peel the flashing up and off the hopper. Replace it if necessary.

If equipped with a Swing-Out:

The swing-out's open transition hopper has a patent pending flashing. Be sure it seals the hopper to prevent leaking.

- If any product comes out of the hopper around the flashing, loosen flashing mounting screws and adjust the stainless steel Hold-Down Strip Plate.
- Lower the plates using the slotted bolt holes until it presses the flashing against the belt.
- Adjust 1/4" at a time, then test run belt.
- **Note:** Too much pressure will cause excess friction and belt wear.
- Retighten anchor screws and try running the conveyor again. Repeat until no product is lost.



Fig 65 - Drive box



Fig 66 - Collapsible main conveyor hopper



Fig 67 - Swing-out hopper

10. Inspect the sprockets on the drive wheels, for wearing teeth.
11. Inspect the hydraulic drive for wear.

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 hopper roller bearings.



Fig 68 - Adjustment bolts on side of hopper

13. Grease drive box assembly bearings.



Fig 69 - Positive pinch drive tension bolts

14. Grease discharge roller bearings.



Fig 70 - discharge roller bearing

15. Grease swing-out conveyor roller bearings.



Fig 71 - Swing-out conveyor

4.2.4 Every 200 hours or Annually:

16. Refer to the engine manual for specific service and maintenance schedules.
17. Take a hydraulic oil sample and send it to a lab for particle count analysis.
 - Change oil if necessary.
18. Change the hydraulic oil filter.
19. Check that the battery retains its maximum charge.
20. Grease the steering wheel axle bushings and cylinder.



Fig 72 - Hydraulic oil filter



Fig 73 - Steering axle bushing

21. Grease the steering wheel lift cylinders.



Fig 74 - Steering wheel lift cylinder

22. Grease the conveyor tube lift cylinder(s).



Fig 75 - Conveyor tube lift cylinder

23. Check the tube's straightness, horizontally and vertically.

- If adjustment is necessary:
- Take tension off the cables by supporting the tube.
 - **Note:** A thin strap can be fed between the tube and windguard, around the bottom of the tube and out the other side. Then, it can be supported by a winch or forklift.
- Adjust eyebolts at the hopper end.
- Remove support from the tube to view the result of the adjustment.
- Repeat process until the tube is straight.

24. **Units with Side-Bridging:**

Check that the tube is straight horizontally.

- Adjust eyebolts at the hopper end.
- Adjust the cable clamps at the bridging yoke.

25. **Units with Under-Bridging:**

Note: Some conveyors have turnbuckles, other have a solid lower section.

Use the turnbuckle to adjust the tension on the lower section of the conveyor.

- DO NOT overtighten!
- Hand-tighten turnbuckle, then give one more turn.

All Conveyors:

26. Repack the wheel bearings.

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



Fig 76 - Eyebolts and cable bridging



Fig 77 - Side-bridging yoke



Fig 78 - Under-bridging turnbuckle on some units



Fig 79 - Clean conveyor

4.3 MAINTENANCE PROCEDURES

Note:

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

4.3.1 Main Conveyor Belt Tension:

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

⚠ 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.



Fig 80 - Tension Bolt

This conveyor has a Positive Pinch Drive.

When loading on the belt gets heavier, the pinch roller tightens against the drive roller in proportion. This provides more torque.

Tighten the tension bolts completely.

When the conveyor belt is tensioned correctly, the arm at the end of the spring should sit vertical. It can also be angled back, away from the tension bolt by as much as 2 inches. This indicates that the belt is a well adjusted, and is a good length.

The arm should never be angled towards the tension bolt. This indicates the belt is too long. Measure the angle. If the belt angles 2 inches away from vertical, cut and re-lace the belt 4 inches shorter.

If the arm touches the far edge (away from the tension bolt), the belt is too short. Remove and replace with longer belt.



Fig 81 - Belt length indicator

4.3.2 Swing-Out Conveyor Belt Tension (if equipped):

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

⚠ WARNING**ROTATING BELT HAZARD**

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

1. Loosen the hopper idler roller bearing housings on both sides, then adjust.
2. Rotate the adjustment bolts to move the housings, to tension the belt.

IMPORTANT:

Adjust both sides equally to maintain the belt alignment.

3. Tighten the idler roller bearing housing.



Fig 82 - Swing-out hopper idler roller and adjustment bolt

4.3.3 Main Conveyor Belt Tracking:**NOTICE****BELT DAMAGE HAZARD**

Alignment of the belt must be checked at the hopper, drive box 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 alignment. Turn off engine when adjusting rollers.

Belt Tracking at Hopper Idler Roller:

1. Rotate the conveyor belt slowly, and check the position of the belt on the tail roller.

Note:

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

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



Fig 83 - Adjustment bolt on side of hopper

Belt Tracking inside Drive Box:

Aligning the belt, so it tracks down the centre of the drive roller, is counter-intuitive! It is opposite from aligning the end rollers.

This time you must “loosen the loose side”.

This is because the first roller to have contact with the belt is the pinch roller, but the drive roller (second in line) is the only one which can be adjusted.

7. Loosen the drive roller bearing housing on the loose side of the belt.
8. **1600 series Drive Box:** Use the adjustment bolts at the front of the drive box to move the brackets connected to the drive roller.
9. The misaligned belt will travel towards the loose side of the roller.
 - Loosen the loose side, more.
10. Tighten the bearing housing.
11. Run the belt to check it's alignment.
 - Repeat steps if necessary.
12. Replace the housing guard.

Belt Tracking at Discharge Roller:

13. Stop the belt and turn off the engine.
14. If necessary, remove the discharge spout to view the roller.

Note:

If belt is out of alignment,
it will move to the loose side.

Tighten loose side or loosen tight side.

15. Loosen the bearing housing.
 - Adjust one side of roller at a time.

16. Tighten the discharge roller bearing housing.
17. Run the belt a couple of revolutions and check the alignment.
 - Repeat steps until the belt runs centred.
18. Replace bearing guard.

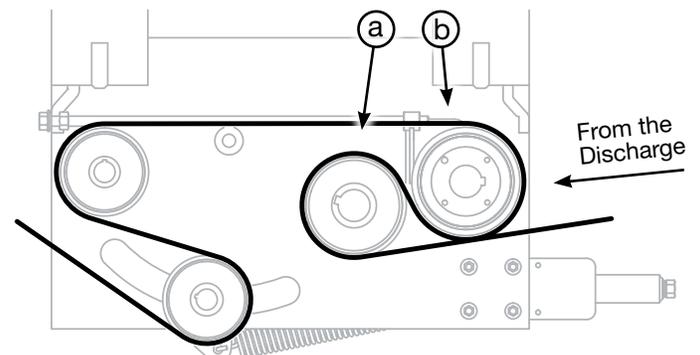


Fig 84 - Drive box, pinch roller (a) & drive roller (b)

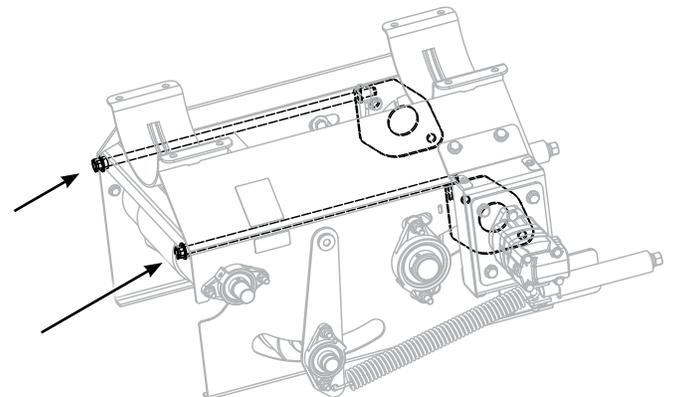


Fig 85 - Adjustment bolts and brackets inside 1600 drive box. 2200 series drive boxes do not have adjustment bolts.

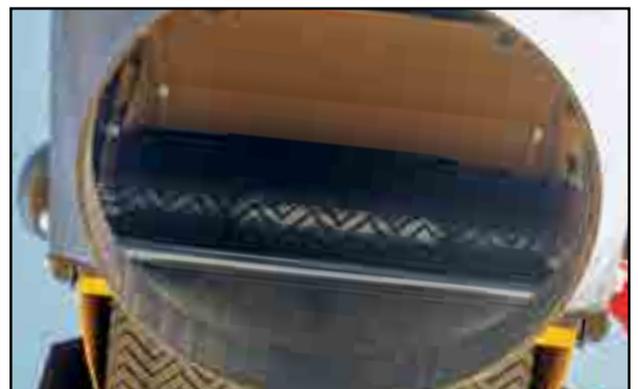


Fig 86 - Inside discharge spout

4.3.4 Swing-Out Conveyor Belt Tracking (if equipped):**NOTICE****BELT DAMAGE HAZARD**

Alignment of the belt must be checked at the hopper, 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. As with tensioning, the alignment should be checked weekly, or when necessary.

⚠ WARNING**ROTATING BELT HAZARD**

Idle the engine, then rotate the belt slowly when checking alignment. Turn off engine when adjusting rollers.

1. Run the conveyor belt slowly, and check the position of the belt at the hopper, transition and discharge.

Note:

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

2. Loosen the misaligned roller bearing housing.
 - Adjust one side of roller at a time.
3. Tighten the roller bearing housing.
4. Rotate the conveyor belt slowly, and check the position of the belt on each roller.
 - Repeat steps until the belt is centred.
5. Replace the housing guard.
6. Continue the process to check and adjust the other rollers.



Fig 87 - Swing-out hopper idler roller and adjustment bolt

4.3.5 Main Conveyor Belt Replacement:

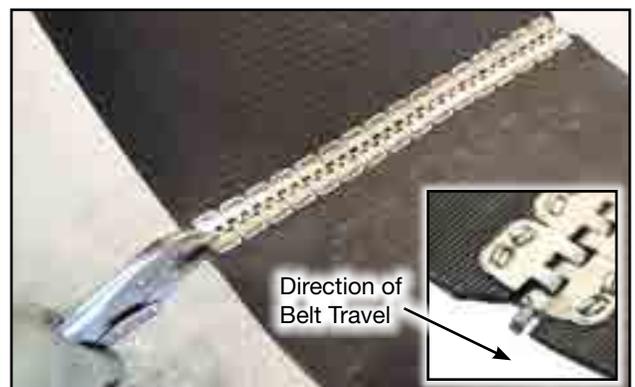
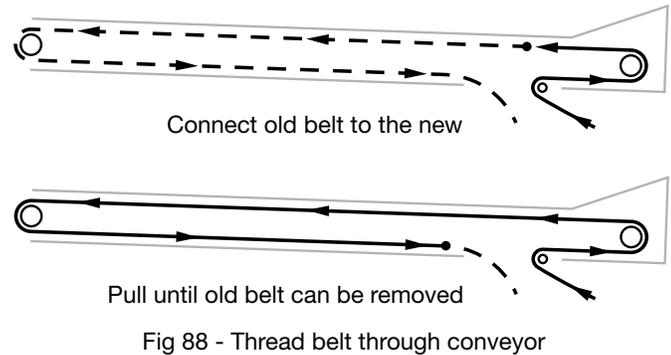
1. Rotate the conveyor belt until the Alligator® Lacing is positioned under the tube, inside the wind guard, and is accessible.
2. Loosen the tension bolts at the drive box completely to release pressure on the springs connected to the slack-eliminator roller.
3. Pull all the slack to the lacing area.
4. Remove the lacing cable and open the belt.
5. Attach the new belt to the lacing end of the old belt which is hanging closest to the hopper.
6. Pull the end of the old belt which is coming from the direction of the discharge spout.
 - The new belt will follow and be threaded around the drive rollers, and into place.
7. Disconnect the old belt.
8. Link the ends of the new belt lacing.
9. Push the lacing cable through the lacing to fasten the belt.
10. Cut off excess cable.
11. Crimp lacing at one end to lock the cable in place.
12. Cut and taper the corners of the trailing end of the belt.

Note:

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

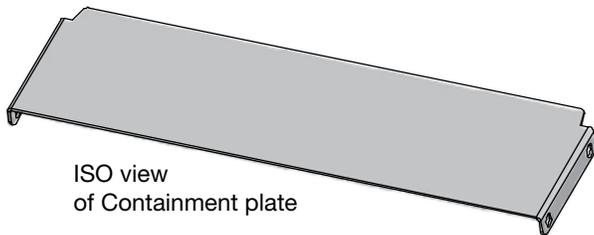
IMPORTANT:
Taper the belt corners,
so they don't catch when rotating.

13. Set belt tension. Refer to Sections 4.3.1
14. Align the belt tracking.
Refer to Section 4.3.3

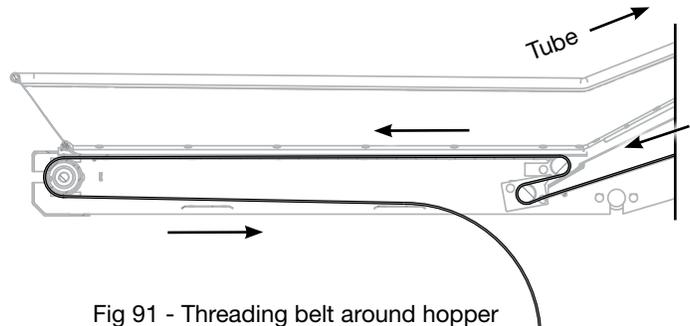


4.3.6 Swing-Out Belt Replacement (if equipped):

1. Loosen the tail end bearing housing.
2. Rotate the conveyor belt until the Alligator® lacing is accessible.
3. Pull all the slack to the lacing area.
4. Remove the lacing pin and open the belt.
5. Loosen the belt from below the transition.
6. Remove the containment plate from underneath the transition rollers.
 - This will help when threading the new belt.



7. Attach the new belt to the end of the old belt which is hanging closest to the hopper.
8. Pull the end of the old belt which is coming from the direction of the discharge spout. The new belt will follow and be threaded into place.
9. **IMPORTANT:** Reinstall the containment plate once the new belt is through the transition and around tail roller.
 - Leave the belt hanging below transition.
 - Do not fasten the belt lacing yet.
10. The Containment Plate will fit between the two weldments below the second transition roller.
 - **Note:** The tongue of the plate will sit on top of the angle iron.
11. Insert the bolts from inside.
 - The washers and nuts are fastened from the outside of the hopper.



12. Link the ends of the new belt lacing.
13. Push the lacing cable through the lacing to fasten belt.

Note:

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

14. Cut off excess cable.
15. Crimp lacing at one end to lock cable in place.
16. Cut and taper the corners of the trailing end of the belt.

IMPORTANT:

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

17. Set belt tension. Refer to Sections 4.3.2
18. Align the belt tracking. Refer to Section 4.3.4



Fig 94 - Thread lacing cable

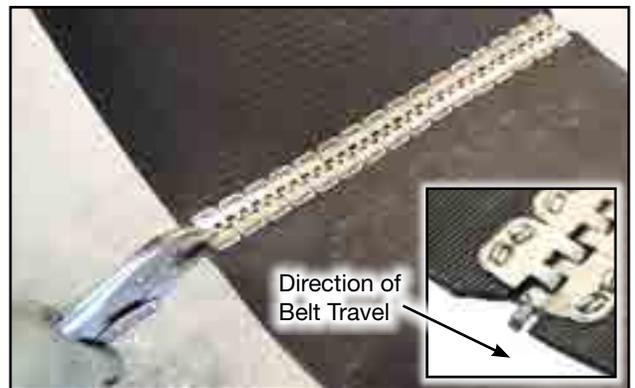


Fig 95 - Crimp lacing and taper belt corners

4.3.7 Change Hydraulic Oil:

Use an ISO grade 32 hydraulic oil for all operating conditions (Hydrex MV32 or comparable).

Oil reservoir capacity is: 95 Litres (25 US Gal).

⚠ WARNING**HOT LIQUID HAZARD**

Allow hydraulics to cool before changing oil.
Hot oil will burn if it contacts exposed skin.

IMPORTANT:

Annually, have an oil sample tested for particle count.

Change oil only if necessary.

1. 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.

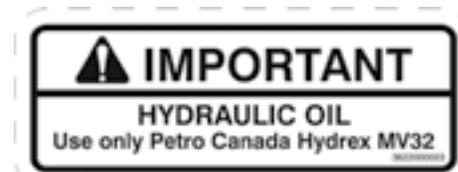
2. Place a large pan or pail under the drain plug. The reservoir capacity is 95 Litre (25 US Gallons).
3. Remove drain plug and allow to drain for 10 min.
4. Install and tighten the drain plug.
5. Dispose of the used oil in an approved container and manner.
6. Fill the reservoir with specified oil.

4.3.8 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 96 - Hydraulic oil filter



3622000003

Fig 97 - Hydraulic oil decal

4.3.9 Main Conveyor Collapsible Hopper Flashing Replacement:

Note:

Figure 98 is an image of the collapsible hopper without the conveyor belt installed.



Fig 98 - Collapsible hopper before belt is installed

1. Install the Hopper Tail Flashing onto the front of the hopper, first.



Fig 99 - New tail flashing

2. The Hopper Side Flashing must be placed over top the Tail Flashing.



Fig 100 - New side flashing

3. When the conveyor belt is threaded through the tube and hopper, be sure to lift the flashing. The belt must lay underneath the Side and Tail Flashing.

IMPORTANT:

The hopper flashing must sit on top of the conveyor belt, to work correctly sealing the hopper.



Fig 101 - Completed hopper with belt

4.3.10 Swing-Out Open Transition Hopper Flashing Kit Replacement:

16 inch Flashing Kit Part #650506196

22 inch Flashing Kit Part #650505795

- Patent pending

⚠ WARNING**HIGH SPRING TENSION**

There is high spring tension on Hopper Hoop.
Hold hoop securely before working
on Hopper Canvas.

Sudden release of hoop will cause injury.
Keep Winch locked, and cable connected.

1. Securely, strap hopper hoop to the frame.
2. Remove the existing rubber flashing from the hopper and transition.
3. Move transition rollers as far apart as possible.
4. Tension the belt and adjust its tracking.
5. Lay the rubber side flashing down on the angled side bracket of the hopper.
 - The end with the large hole, will lay under the tail flashing.
6. Place tail flashing on top of the side flashing.
7. Insert the elevator bolts:
 - First, through the flat bar inside the canvas.
 - Second, through the tail flashing.
 - Third, through the large hole in the side flashing.
 - Fourth, fasten to the tail bracket on the frame.
8. Lay the transition, corner flashing in place.
 - **IMPORTANT:** Work flashing around the roller, inside the transition, to cup it well.
9. Lay the end of the side flashing over the transition flashing.

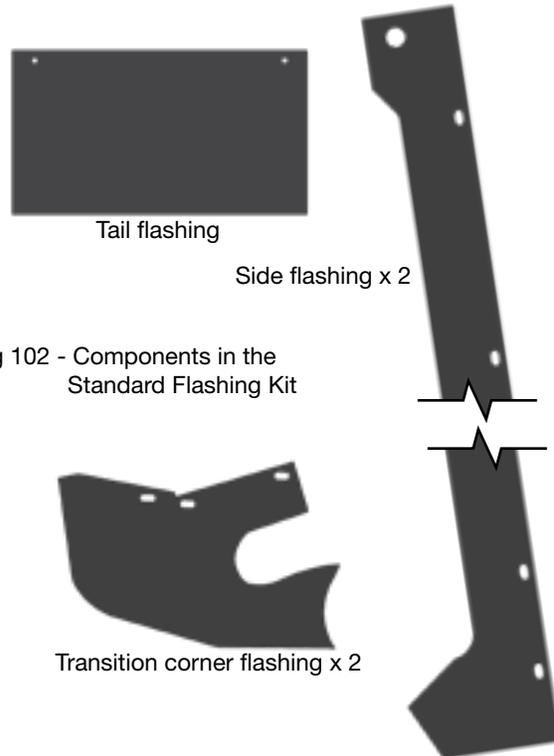


Fig 102 - Components in the Standard Flashing Kit



Fig 103 - Tail flashing on top of side flashing



Fig 104 - Transition corner flashing in place

10. Insert elevator bolt through the flat bar inside the canvas, and the rubber side and transition flashing pieces
 - Fasten to the hopper frame.
 - Do not tighten the bolts yet.
11. Fasten the rest of the canvas at the transition.
12. **Note:** The rubber side flashing should lay flush along the outside metal brackets on the hopper.
13. Reuse the stainless steel Hold-Down Strip Plate, inserting it from outside the hopper.
 - The bend in the plate stays outside, to grab for easier adjusting.

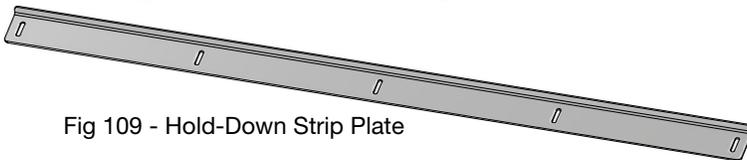


Fig 109 - Hold-Down Strip Plate

14. Sandwich the stainless steel Hold-Down Strip Plates between the canvas and the side flashing.
 - Align the bolt holes with the flashing and the flat bar inside the canvas.
 - Start at the centre, inserting elevator bolts and fastening them to the hopper frame.
15. Push the Hold-Down Plates up, so they are behind the canvas, so the bolts are at the bottom of the slots.
 - **Note:** As the side flashing wears from use, lower the Hold-Down Plate a 1/4" at a time to push the flashing tight against the belt.
16. Install the rest of the flashing on both sides.
 - Do not tighten the bolts yet.
17. **IMPORTANT:** Be sure the corner flashing fits tightly around the roller and deep into the transition.
 - It must cup the belt, tightly.
18. Reuse the Flashing Clamps to hold corner flashing in place.
 - Use self-tapping screws to fasten them.
19. Finally, tighten all the bolts and nuts.



Fig 105 - Stainless steel Hold-Down Strip Plates



Fig 106 - Corner flashing must fit tight around the belt



Fig 107 - Fasten flashing clamp



Fig 108 - Hopper is complete

4.3.11 Drive Wheel Gear Adjustment:

There must be good engagement between the drive motor pinion gear and the wheel rim ring gear. Both should be parallel with each other and 90° to the conveyor axle.

- The pinion gear is 3/8" wider than the ring gear.
- When installing, the drive gear surface should be offset from the wheel gear by 3/16" on each side.

To adjust the gears:

1. Use the lever to bring the pinion gear close to the ring gear but not touching.
2. Rotate the conveyor wheel to find the deepest spot where the pinion gear contacts.
3. Adjust the position of the pinion gear.
4. The pinion gear should engage as equally around the ring as possible.
 - The gear must not "bottom out" and engage too tightly.

If more engagement is required, the outer 1/2" flange nut can be loosened at the bottom of the handle. The 1" slot in the bottom of the handle will allow the handle to be lifted up which will mesh the drive pinion gear deeper into the ring gear.

Retighten the hardware by holding the pivot bolt secure with a wrench.

- Tighten the inner 1/2" flange nut against the three stacked washers and then back off 1/2" turn to allow free play of pivot bolt in the over-centre bracket.
- Tighten the outer 1/2" flange nut against the handle.

IMPORTANT:

Check to ensure the pivot bolt moves freely in the over-centre bracket.



Fig 110 - Bin fill conveyor drive wheel



Fig 111 - Bin fill conveyor drive gears

4.3.12 Hydraulic Drive Motor Replacement:

1. Remove the wheel from the axle.
 - Disconnect the hydraulic hoses to the motor.
 - Take off the pinion gear.
 - Remove the used motor.
2. Bolt on the new hydraulic motor using the existing motor mount.
3. Push the pinion gear onto the shaft.
 - Align the hole in the gear with the shaft.
 - Insert the roll pin to fasten them together.

Note:

If needed, remove assembly components, apply anti-seize lubricant between the parts.

4. Be sure all bolts on the drive assembly are tight.
5. Bolt the wheel back onto the axle.
6. Work the handle up and down.
 - Make sure that there is good contact between motor pinion gear and wheel gear.
 - Both should be parallel with each other and 90° to the conveyor axle.
 - The pinion gear is 3/8" wider than the wheel gear. When installing, the drive gear surface should offset from the wheel gear by 3/16" on each side.
7. The only adjustment possible is to fine-tune the position of the 4" bolt.
 - Loose if the handle movement is too tight.
 - Tighten if the handle has too much play.



Fig 112 - Pinion gear



Fig 113 - Wheel ring gear and drive motor



Fig 114 - Adjustment bolt

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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																			
Check Hopper Flashing																			
Inspect Drive Wheels Sprockets																			
Inspect Hydraulic Drive Coupler/Chain																			
Oil Hydraulic Drive Coupler/Chain																			
100 Hours or Monthly																			
Grease Hopper & Transition Roller Bearings																			
Grease Drive Box Roller Bearings																			
Grease Discharge Roller Bearings																			
Grease Swing-Out Roller Bearings																			
200 Hours or Annually																			
Change Hydraulic System Oil and Filter																			
Check the Battery																			
Grease Steering Wheel Axel Bushings																			
Grease Steering Wheel Lift Cylinders																			
Grease Conveyor Tube Lift Cylinder																			
Check Tube Straightness																			
Repack Wheel Bearings																			
Wash Entire 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 won't start

No electrical charge to starter	Turn Power Shut-Off switch "ON"
Low battery	Recharge or replace
No fuel	Refuel
Plugged fuel filter	Replace fuel filter
Cold engine	Open choke
Air filter dirty	Clean or replace the air filter

Electrical components do not function

Fuse may have blown	Replace a fuse. Check inside the junction box beside valve table. A fuse is connected to electrical cables between the engine and valve table. Another fuse is in the junction box by the swing-out RC receiver
---------------------	---

Engine bogs down or labours while running

Not enough power	Open the gate to unload more product. This allows the governor to torque and engage
Belt is sticky on the back side, because of oily product or wet/snowy conditions	Clean the belt
Hopper flashing too tight	It will wear in. Adjust to loosen the flashing if still tight after the conveyor has been broken-in

continued on next page

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
Conveyor belt loose	Tighten and align
Conveyor belt loose because it has stretched	Shorten belt
Conveyor belt frozen to tube from operating in high humidity conditions in extreme cold	Remove conveyor from area of high humidity. Continue to run empty to dry belt prior to freezing
No power	Start engine, increase speed to maximum RPM
Seized bearing	Check all bearings, Replace any that are rough or seized
Belt or roller is jammed	Check for sticks, stones, other objects jammed in belt drive area and remove
Set screw (relief valve) on Detent on pressure relief valve on belt drive valve isn't set correctly	IMPORTANT: Do not run hydraulic motor during this adjustment. Sweet spot is to turn the set screw all the way in, then turn back 1-1/2 turns. Turning back/out increases volume of flow, turning in increases pressure
Hydraulic motor on drive roller may be damaged	Hydraulic motor may need to be replaced

Conveyor belt won't track correctly

Roller lagging may be worn	Replace roller or have it re-lagged
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Conveyor belt fraying

Belt not tracking correctly	Align and adjust tension
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Product leakage

	
Corner Flashing on the swing-out may not be cupping the roller tight enough	Loosen the Flashing Clamp, then adjust the rubber flashing so it is tight around the roller
Product may be getting under the belt at the hopper, traveling up inside the belt and leaking off delivery end	Replace hopper flashing

continued on next page

Low conveying capacity

Conveyor belt not tight enough	Tighten conveyor belt
Roller lagging is worn out	Replace roller or have it relagged
Conveyor belt not pinched enough	Inside drive box there is a drive roller and pinch roller. Be sure the belt is snug between both rollers
Conveyor angle exceeds 30 degrees	Reposition with a lower tube slope

Belt is slowing down

Problem with 2 stage pump	Check flow of the pumps. Replacement of entire pump may be needed
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No hydraulic flow

Hydraulic valve closed or plugged	Open hydraulic valve
	Check hydraulic pressures
	Clean or replace hydraulic valve
Hydraulic pressure may be low, check gauge. - It should be 1000 - 1200 lb when running empty - and 2000 lb range when loaded	Check hydraulic pump. Replace if necessary
Hydraulic pump may be damaged	Check hydraulic pump. Replace if necessary
Hydraulic motor on drive roller may be damaged	Replace motor

Drive wheels don't work

Wheels may not be engaged	Remove retainer clip and engage drive mechanism
Adjust the drive wheel cushion block	<p>If driving over rough terrain, through mud or snow, or up an incline; adjust the cushion block lever to lessen the cushion, and increase the driving force:</p> <ul style="list-style-type: none"> • Close the block 1/4 turn. • Always return to factory setting when done: <ol style="list-style-type: none"> 1. Close block - turn lever all the way in. 2. Then open - turn lever 1/2 rotation back out.

Steering wheel axle keeps sinking to the ground

Double pilot-operated (PO) check valve may be malfunctioning	Replace the check valve
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Swing-Out mover kit drives too fast/too slow

Hydraulic valve adjustment incorrectly set	Twist set screw IN to slow down wheels. Twist set screw OUT to speed up
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Swing-Out electric mover kit does not drive

Fuse may be need to be replaced	Fuse box is located to the side of Controller Box, on the Swing-Out tube. Check/Replace the fuse
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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: (800) 665-7259.

Specifications and measurements are subject to change without notice.

Table 1 - Specifications

MODEL	TYPE OF UNDER-CARRIAGE	TUBE DIAMETER	BELT WIDTH	AXLE WIDTH	TRANSPORT HEIGHT	TRANSPORT LENGTH
1685	Scissor Lift	10"	16"	12' 6"	11' 7"	91' 1"
1690	Scissor Lift	10"	16"	12' 6"	12' 2"	96'
1695	Scissor Lift	10"	16"	12' 6"	12' 9"	100' 11"
16100	Scissor Lift	10"	16"	13' 6"	14' 7"	105' 10"
2285	Scissor Lift	14"	22"	13' 6"	12' 4"	89'
2290	Scissor Lift	14"	22"	13' 6"	13' 1"	93' 11"
22100	Scissor Lift	14"	22"	13' 6"	14'	103' 11"
22110	Scissor Lift	14"	22"	13' 6"	14' 6"	108' 11"
22120	Scissor Lift	14"	22"	13' 11"	15'	124'

Transport lengths measured from end to end
 Transport height uses 19" hitch height

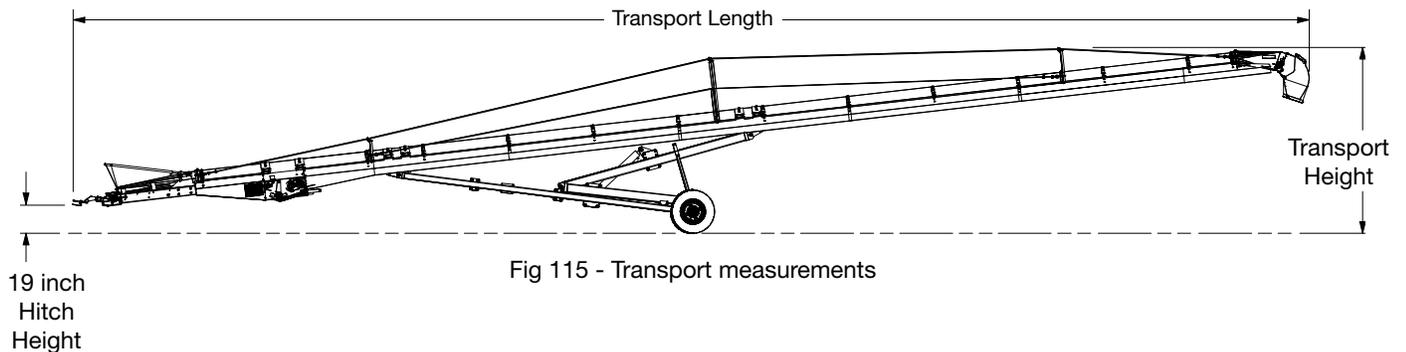


Fig 115 - Transport measurements

Table 2 - Working Measurements

MODEL	15°			20°			25°			30°		
	HEIGHT	LENGTH	TIRE TO DISCHARGE	HEIGHT	LENGTH	TIRE TO DISCHARGE	HEIGHT	LENGTH	TIRE TO DISCHARGE	HEIGHT	LENGTH	TIRE TO DISCHARGE
1685	21' 5"	84' 2"	45' 4"	28' 9"	82' 3"	43' 11"	35' 11"	79' 8"	42' 2"	42' 9"	76' 6"	40'
1690	22' 7"	89'	50'	30' 4"	86' 11"	48' 7"	37' 11"	84' 2"	46' 9"	45' 3"	80' 10"	44' 5"
1695	Measurements pending											
16100	25' 3"	98' 8"	55' 3"	33' 10"	96' 4"	53' 4"	42' 2"	93' 3"	50' 11"	50' 2"	89' 6"	48'
2285	20' 9"	82' 4"	37' 5"	27' 10"	80' 5"	36' 1"	34' 8"	77' 11"	34' 4"	41' 3"	74' 10"	32' 3"
2290	22' 1"	87' 2"	42' 3"	29' 7"	85' 2"	40' 10"	36' 10"	82' 5"	38' 11"	43' 9"	79' 2"	36' 7"
22100	24' 8"	96' 10"	51' 11"	33' 0"	94' 6"	50' 2"	41' 0"	91' 6"	48'	48' 9"	87' 10"	45' 3"
22110	27' 3"	101' 8"	61' 7"	36' 5"	99' 3"	59' 7"	45' 3"	96'	57'	53' 9"	92' 9"	53' 11"
22120	29' 10"	116' 2"	57' 8"	39' 10"	113' 4"	55' 9"	49' 6"	109' 8"	53' 5"	58' 9"	105' 2"	50' 7"

Working lengths measured from centre of hopper to centre of discharge
 Tire to Discharge length is measured from rear edge to centre of discharge

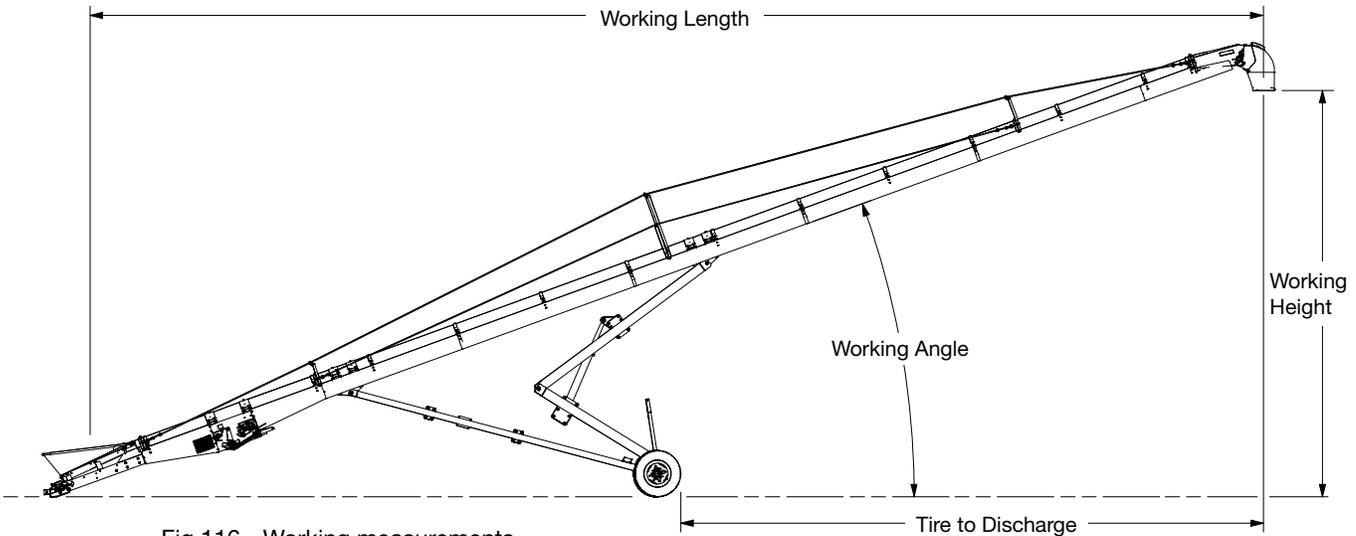


Fig 116 - Working measurements

6.1 BOLT TORQUE

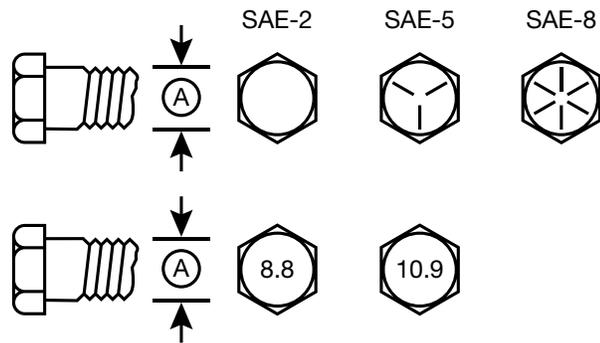
The tables shown below give correct torque values for various bolts and capscrews. Tighten all bolts to the torques specified in chart unless otherwise noted. Check tightness of bolts periodically, using bolt torque chart as a guide. Replace hardware with the same strength bolt.

Table 3 - 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 4 - 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.

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.

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