

Mayo



TARE AND HD TARE ELEVATING CONVEYOR OPERATORS MANUAL

MAYO MANUFACTURING, INC. LIMITED WARRANTY

THE FOLLOWING WARRANTIES FOR MACHINERY, EQUIPMENT OR PARTS SOLD BY MAYO MANUFACTURING, INC. ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, OR THOSE WARRANTIES IMPOSED BY STATUE, INCLUDING, BUT NOT LIMITED TO ANY AND ALL IMPLIED WARRANTIES OR MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE AND OF ANY AND ALL OTHER WARRANTY OBLIGATIONS ON THE PART OF MAYO MANUFACTURING, INC. (The Company).

The Company warrants the machinery, equipment or parts delivered against faulty workmanship or the use of parts delivered against faulty workmanship or the use of defective materials for a period of one (1) year from the date of shipment.

The Company's warranties set forth above are the only warranties made by the Company and shall not be enlarged, diminished or affected by, and no obligation or liability shall arise out of the Company's rendering technical or other advice or service in connection with the machinery, equipment or parts.

Parts or components furnished to the Company by third persons are guaranteed only to the extent of the original manufacturer's guarantee to the Company, a copy of which will be supplied to the Purchaser upon written request to the Company.

LIABILITY

THE COMPANY'S SOLE AND EXCLUSIVE MAXIMUM LIABILITY, AND PURCHASER'S SOLE AND EXCLUSIVE REMEDY under the above warranty shall be, at the Company's option, the repair, or replacement of the machine, equipment or part which is found to be defective due to faulty workmanship or defective materials, and is returned by the Purchaser to the Company within the warranty period. Shipment both ways and in transit damage shall be at the purchaser's risk and expense. If the Company elects to repair or replace the machine, equipment, or part, the Company will have a reasonable time within which to do so.

The remedies set forth above are available upon the following conditions:

1. Purchaser has promptly notified Company upon discovery that the machinery, equipment, or parts are defective due to faulty workmanship or defective materials; and
2. Purchaser provides Company with a detailed description of the deficiencies; and
3. Company's examination discloses that the alleged deficiencies exist and were not caused by accident, fire, misuse, neglect, alteration, or any other hazard or by Purchaser's improper installation, use or maintenance.

Such repair or replacement shall constitute fulfilment of all Company's liability to Purchaser, whether based on contract or tort.

This warranty does not apply to any machine that has been altered outside the factory in any way so as, in the judgement of Mayo, to affect its operation, reliability or safety, or which has been subject to misuse, neglect or accident.

In the event the Company breach any other provisions of the Purchase Agreement, the Company's EXCLUSIVE MAXIMUM LIABILITY AND PURCHASER'S EXCLUSIVE REMEDY, whether in contract or tort, otherwise shall not in any event exceed the contract price for the particular machine, piece of equipment or parts involved.

IN NO EVENT SHALL COMPANY BE LIABLE TO ANYONE FOR SPECIAL, COLLATERAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES FOR BREACH OF ANY PROVISIONS OF THIS CONTRACT OR WARRANTY. SUCH EXCLUDE DAMAGES INCLUDE, BUT ARE NOT LIMITED TO, costs of REMOVAL AND REINSTALLATION OF ITEMS, Loss of GOODWILL, LOSS OF PROFITS, LOSS OF USE OR INTERRUPTION OF BUSINESS.

WARRANTY VOID IF NOT REGISTERED

MAYO MANUFACTURING, INC.

TARE and HD TARE ELEVATING CONVEYOR 6000 SERIES

WARRANTY REGISTRATION FORM & INSPECTION REPORT

WARRANTY REGISTRATION (Please Print)

This form must be filled out by the dealer and signed by both the dealer and the customer at the time of delivery.

Customer's Name _____

Dealer's Name _____

Address _____

Address _____

City, State/Prov., Code _____

City, State/Prov., Code _____

Phone Number (_____) _____

Contact Name _____

Conveyor Model _____

Serial Number _____

Delivery Date _____

DEALER INSPECTION REPORT

- _____ Tire Pressure Checked
- _____ Wheel Bolts Torqued
- _____ Inspect Electrical System
- _____ Lubricate Machine
- _____ Conveyor Tensioned and Aligned
- _____ Speed Reducer Gearbox Oil Level Checked

SAFETY

- _____ All Decals Installed
- _____ Lights, Reflectors and SMV Clean
- _____ Review Operating and Safety Instructions

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

Date _____

Dealer's Rep. Signature _____

Signature _____

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

Date _____

Owner's Signature _____

WHITE	YELLOW	PINK
MAYO MFG., INC.	DEALER	CUSTOMER

SERIAL NUMBER LOCATION

Always give your dealer the serial number of your Mayo Tare and HD Tare Elevating Conveyor when ordering parts or requesting service or other information.

The serial number plate is located where indicated. Please mark the number in the space provided for easy reference.



SERIAL NUMBER LOCATION

Model _____

Serial Number _____

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1 INTRODUCTION

Congratulations on your choice of a Mayo 6000 Series Tare and HD Tare Elevating Conveyor and welcome to Mayo's quality line of potato handling equipment. This equipment is designed and manufactured to meet the needs of a discriminating buyer in the agricultural industry for the loading, unloading, processing and storing of harvest yields.

Safe, efficient and trouble free operation of your new Mayo Tare and HD Tare Elevating Conveyor requires that you, and anyone else who will be operating or maintaining the Tare and HD Tare Elevating Conveyor, read, understand and practice ALL of the Safety, Operation, Maintenance and Trouble Shooting recommendations contained within this Operator's Manual.



This manual applies to the Tare and HD Tare Elevating Conveyor Model 6000 manufactured by Mayo. Certain options may be available to specifically tailor the Conveyor to your operation and may not be included in this manual. Please contact the manufacturer regarding additional information about these options. Use the Table of Contents and Index as a guide to find specific information.

Keep this manual handy for frequent reference and so that it will be passed on to new operators or owners. Call your Mayo dealer if you need assistance, information or additional copies of this manual.

MACHINE ORIENTATION - The hopper end of the Tare and HD Tare Elevating Conveyor is the front. All electrical controls are on the left side.

2 SAFETY

SAFETY ALERT SYMBOL

This Safety Alert symbol means
ATTENTION! BECOME ALERT!
YOUR SAFETY IS INVOLVED!



The Safety Alert symbol identifies important safety messages on your Mayo Tare and HD Tare Elevating Conveyor and in the manual. When you see this symbol, be alert to the possibility of personal injury or death. Follow the instructions in the safety message.

Why is SAFETY important to you?

3 Big Reasons

Accidents Disable and Kill
Accidents Cost You Money
Accidents Can Be Avoided

SIGNAL WORDS:

Note the use of the signal words **DANGER**, **WARNING** and **CAUTION** with the safety messages. The appropriate signal word for each message has been selected using the following guide-lines:

**A AIGUIEN QUE SI LO LEA PARA
QUE LE TRADUZCA LAS MIDIDAS DE
SEGURIDAD.**

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

WARNING - Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.

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

If you have any questions not answered in this manual or require additional copies or the manual is damaged, please contact your dealer or Mayo, P.O. Box 497, Bus Highway 2, East Grand Forks, Minnesota, 56721. (Telephone) 218-773-1234, (FAX) 218-773-6693 or toll free at 1-800-223-5873.



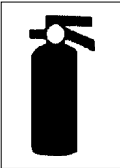

SAFETY

YOU are responsible for the **SAFE** operation and maintenance of your Mayo Tare and HD Tare Elevating Conveyor. **YOU** must ensure that you and anyone else who is going to operate, maintain or work around the Conveyor be familiar with the operating and maintenance procedures and related **SAFETY** information contained in this manual. This manual will take you step-by-step through your working day and alerts you to all good safety practices 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 working part of your safety program. Be certain that **EVERYONE** operating this machine is familiar with the procedures recommended and follows safety precautions. Remember, most accidents can be prevented. Do not risk injury or death by ignoring good safety practices.

- Read and understand the Operator's Manual and all safety signs before supplying power to, operating, maintaining or adjusting the Conveyor.
- Conveyor owners must give operating instructions to operators or employees before allowing them to operate the Conveyor, and at least annually thereafter.
- The most important safety device on this equipment is a SAFE operator. It is the operator's responsibility to read and understand ALL Safety and Operating instructions in the manual and to follow these. Most accidents can be avoided.
- A person who has not read and understood all operating and safety instructions is not qualified to operate this machine. An untrained operator exposes himself and bystanders to possible serious injury or death.
- Do not modify the equipment in any way. Unauthorized modification may impair the function and/or safety and could affect the life of the equipment.
- Think SAFETY! Work SAFELY!

2.1 GENERAL SAFETY

1. Read and understand the Operator's Manual and all safety signs before supplying power to, operating, maintaining or adjusting the Conveyor. 
2. Only trained, competent persons shall operate the Conveyor. An untrained operator is not qualified to operate this machine.
3. Provide a first-aid kit for use in case of an accident. Store in a highly visible place. 
4. Provide a fire extinguisher for use in case of an accident. Store in a highly visible place. 
5. Install and properly secure all guards and shields before operating.
6. Wear appropriate protective gear. This list includes but is not limited to:
 - Protective shoes with slip resistant soles
 - Protective glasses or goggles
 - Heavy gloves
 - Hearing protection
7. Turn machine OFF, shut down and lockout power supply, relieve hydraulic pressure and wait for all moving parts to stop before servicing, adjusting, maintaining, repairing or cleaning. (Safety lockout devices are available through your Mayo dealer parts department).
8. Know the emergency medical center number for your area.
9. Review safety related items with all operators annually.

2.2 EQUIPMENT SAFETY GUIDELINES


1. Safety of the operator and bystanders is one of the main concerns in designing and developing a machine. 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. You, the operator, can avoid many accidents by observing the following precautions in this section. To avoid personal injury or death, study the following precautions and insist those working with you, or for you, follow them.
2. In order to provide a better view, certain photographs or illustrations in this manual may show an assembly with a safety shield removed. However, equipment should never be operated in this condition. Keep all shields in place. If shield removal becomes necessary for repairs, replace the shield prior to use.
3. Replace any safety sign or instruction sign that is not readable or is missing. Location of such safety signs is indicated in this manual.
4. 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.
5. **Under no circumstances should young children be allowed to work with this equipment. Do not allow persons to operate or assemble this unit until they have read this manual and have developed a thorough understanding of the safety precautions and of how it works.** Review the safety instructions with all users annually.
6. This equipment is dangerous to children and persons unfamiliar with its operation. The operator should be a responsible, properly trained and physically able person familiar with farm machinery and trained in this equipment's operations. If the elderly are assisting with farm work, their physical limitations need to be recognized and accommodated.
7. Never exceed the limits of a piece of machinery. If its ability to do a job, or to do so safely, is in question - **DON'T TRY IT.**
8. 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.

9. In addition to the design and configuration of this implement, including Safety Signs and Safety Equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence, and proper training of personnel involved in the operation, transport, maintenance, and storage of the machine. Refer also to Safety Messages and operation instruction in each of the appropriate sections of the auxiliary equipment and machine Manuals. Pay close attention to the Safety Signs affixed to the auxiliary equipment and the machine.

2.3 STORAGE SAFETY

1. Store the Elevating Conveyor on a firm level surface.
2. If required, make sure the unit is firmly blocked up.
3. Make certain that all mechanical locks are safely and positively connected before storing.
4. Store away from areas of human activity.
5. Do not allow children to play on or around the stored Elevating Conveyor.
6. Lock out power by turning off master control panel or junction box and padlocking the door shut to prevent electrocution or unauthorized start up of the Elevating Conveyor.

2.4 SAFETY TRAINING

1. Safety is a primary concern in the design and manufacture of our products. Unfortunately, our efforts to provide safe equipment can be wiped out by a single careless act of an operator or bystander.
2. In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence and proper training of personnel involved in the operation, transport, maintenance and storage of this equipment.
3. It has been said, "The best safety feature is an informed, careful operator." We ask you to be that kind of an operator. It is the operator's responsibility to read and understand ALL Safety and Operating instructions in the manual and to follow these. Accidents can be avoided.

4. **Working with unfamiliar equipment can lead to careless injuries. Read this manual, and the manual for your auxiliary equipment, before assembly or operating, to acquaint yourself with the machines. If this machine is used by any person other than yourself. It is the machine owner's responsibility to make certain that the operator, prior to operating:**
 - a. **Reads and understands the operator's manuals.**
 - b. **Is instructed in safe and proper use.**
5. Know your controls and how to stop piers, clod hoppers, conveyors and any other auxiliary equipment quickly in an emergency. Read this manual and the one provided with your other equipment.
6. Train all new personnel and review instructions frequently with existing workers. Be certain only a properly trained and physically able person will operate the machinery. A person who has not read and understood all operating and safety instructions is not qualified to operate the machine. An untrained operator exposes himself and bystanders to possible serious injury or death. If the elderly are assisting with farm work, their physical limitations need to be recognized and accommodated.

2.5 SAFETY SIGNS

1. Keep safety signs clean and legible at all times.
2. Replace safety signs that are missing or have become illegible.
3. Replaced parts that displayed a safety sign should also display the current sign.
4. Safety signs displayed in section 3 each have a part number in the lower right corner. Use this part number when ordering replacement safety signs.
5. Safety signs are available from your authorized Distributor or Dealer Parts Department or the factory.

How to Install Safety Signs:

- Be sure that the installation area is clean and dry.
- Be sure temperature is above 50°F (10°C).
- Determine exact position before you remove the backing paper. (See Section 3).
- Remove the smallest portion of the split backing paper.
- Align the sign over the specified area and carefully press the small portion with the exposed sticky backing in place.
- Slowly peel back the remaining paper and carefully smooth the remaining portion of the sign in place.
- Small air pockets can be pierced with a pin and smoothed out using the piece of sign backing paper.

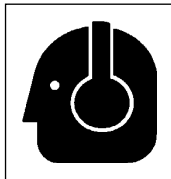
2.6 PREPARATION

1. Never operate the Tare and HD Tare Elevating Conveyor and auxiliary equipment until you have read and completely understand this manual, the auxiliary equipment Operator's Manual, and each of the Safety Messages found on the safety signs on the Conveyor and auxiliary equipment.

2. Personal protection equipment including hard hat, safety glasses, safety shoes, and gloves are recommended during assembly, installation, operation, adjustment, maintaining, repairing, removal, or moving the implement. Do not allow long hair, loose fitting clothing or jewelry to be around equipment.



3. **PROLONGED EXPOSURE TO LOUD NOISE MAY CAUSE PERMANENT HEARING LOSS!** Motors or equipment attached 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 80db. Noise over 85db on a long-term basis can cause severe hearing loss. Noise over 90db adjacent to the Operator over a long-term basis may cause permanent, total hearing loss. **NOTE:** Hearing loss from loud noise (from tractors, chain saws, radios, and other such sources close to the ear) is cumulative over a lifetime without hope of natural recovery.
4. Clear working area of debris, trash or hidden obstacles that might be hooked or snagged, causing injury, damage or tripping.
 5. Operate only in daylight or good artificial light.
 6. Be sure machine is properly anchored, adjusted and in good operating condition.
 7. Ensure that all safety shielding and safety signs are properly installed and in good condition.
 8. Before starting, give the machine a "once over" for any loose bolts, worn parts, cracks, leaks, frayed belts and make necessary repairs. Always follow maintenance instructions.



2.7 INSTALLATION SAFETY

1. Disconnect and remove all mechanical locks, anchor chains and any other transport devices that would hinder or prohibit the normal functioning of the Elevating Conveyor upon start up. Serious damage to the machine and/or personal injury to the operator and bystanders may result from attempting to operate the machine while mechanical locking devices are still attached.
2. Position the machine on firm, level ground before operating.
3. Block up machine to level the frame before using. Use a level to be sure.
4. Have at least one extra person available to assist when elevating, moving or positioning to other equipment.
5. Make certain that sufficient amperage, at the proper voltage and frequency (60Hz) is available before connecting power. If you are uncertain, have a licensed electrician provide power to the machine by following ANSI/NFPA 70 Wiring Standard.
6. If using the Elevating Conveyor as part of material handling system, anchor securely to other equipment before starting.

2.8 LOCK-OUT TAG-OUT SAFETY

1. Establish a formal Lock-Out Tag-Out program for your operation.
2. Train all operators and service personnel before allowing them to work around the Tare and HD Tare Elevating Conveyor.
3. Provide tags at the work site and a sign-up sheet to record tag out details.
4. Do not climb on unit unless motors are OFF and the power locked out at the master panel. Never perform any maintenance or service work while power is connected. Keep others away.

2.9 OPERATING SAFETY

1. Read and understand the Operator's Manual and all safety signs before operating, maintaining, adjusting or repairing the Elevating Conveyor.
2. Turn machine OFF, shut down and lock out power supply (safety lockout devices are available through your Mayo dealer parts department), relieve hydraulic pressure and wait for all moving parts to stop before servicing, adjusting, maintaining or repairing.
3. Install and properly secure all guards and shields before operating.
4. Keep hands, feet, hair and clothing away from all moving parts.
5. Clear the area of bystanders, especially small children, before starting.
6. Make sure all control switches are in the off position before connecting power supply.
7. Establish a formal lock-out tag-out program for your operation.
8. Before supplying electrical power to the machine, be sure that you have adequate amperage at the proper phase and voltage to run it by following ANSI/NFPA 70 Wiring Standard. If you do not know or are unsure, consult a licensed electrician.
9. Stay away from overhead obstructions and power lines when raising the discharge end. Electrocution can occur without direct contact. Post an observer at the discharge end to guide the operator.
10. Do not stand between the frame and other structures or machines when raising the Elevating Conveyor. Keep others away.
11. Keep the working area clean and dry.
12. Contact Mayo at (218) 773-1234 or 1 (800) 223-5873 if you have any questions.
13. Review safety instructions annually.

2.10 MAINTENANCE SAFETY

1. Read and understand all the information contained in the Operator's Manual regarding operating, servicing, adjusting, maintaining and repairing.
2. Turn machine OFF, shut down and lock out power supply (safety lockout devices are available through your Mayo dealer parts department) and wait for all moving parts to stop before servicing, adjusting, maintaining or repairing.
3. Exercise extreme caution when working around, or with, high-pressure hydraulic systems. Depressurize the system before working on it.
4. 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.
5. Wear heavy gloves and eye protection when searching for suspected hydraulic leaks. Use a piece of wood or cardboard as a backstop instead of hand to isolate and identify a leak. A high pressure concentrated stream of hydraulic fluid can pierce the skin. If such happens, seek immediate medical attention as infection and toxic reaction could develop.
6. Make sure all guards and doors are in place and properly secured when operating the Elevating Conveyor.
7. Do not work on the Elevating Conveyor electrical system unless the power cord is unplugged or the power supply is locked out. Lock-out tag-out power source before performing any maintenance work.



2.11 ELECTRICAL SAFETY

1. Have only a qualified licensed electrician supply power by following the ANSI/NFPA 70 Wiring Standard.
2. Make certain that the Elevating Conveyor is properly grounded at the power source.
3. Make certain that all electrical switches are in the OFF position before plugging the Elevating Conveyor in.
4. **Turn machine OFF, shut down and lock out power supply (safety lockout devices are available through your Mayo dealer parts department), relieve hydraulic pressure and wait for all moving parts to stop before servicing, adjusting, maintaining or repairing.**
5. Disconnect power before resetting any motor or breaker overload.
6. Replace any damaged electrical plugs, cords, switches and components immediately.
7. Do not work on the Elevating Conveyor electrical system unless the power cord is unplugged or the power supply is locked-out tagged-out.

2.12 TIRE SAFETY

1. Inflate tires to proper pressure as specified on the side wall of each tire. Do not overinflate or underinflate.
2. Failure to follow proper procedures when mounting a tire on a wheel or rim can produce an explosion which may result in serious injury or death.
3. Do not attempt to mount a tire unless you have the proper equipment and experience to do the job.
4. Have a qualified tire dealer or repair service perform required tire maintenance.

2.13 TRANSPORT SAFETY

1. Make certain that you are in compliance with local, state/provincial and federal regulations regarding transporting agricultural equipment on public roadways. Install auxiliary light bar on rear of frame and turn lights on before moving.
2. Use pilot vehicles ahead of and behind the unit when transporting on a public highway.
3. Make certain that all wheels and tires are in good repair and that tires are inflated to proper pressure. Do not under-inflate or overinflate.
4. Fully retract all telescoping conveyor sections and secure before transporting.
5. Make certain that all mechanical locks and integral anchor chains are safely and positively connected before loading or transporting.
6. Raise and secure both jack stands.
7. Lower Conveyor to the fully down position before moving or transporting.
8. Wrap up and bind to the frame all loose hydraulic and electrical ends.
9. Be sure that any necessary SMV (slow moving vehicle) signs, reflectors and lights required by law are in proper place and are clearly visible to oncoming and overtaking traffic.
10. Be sure that the Elevating Conveyor is positively hitched to the towing vehicle. Use a proper safety chain to assure a safe hitch hook-up when transporting.
11. Adhere to local regulations regarding maximum weight, width and length.
12. Do not exceed 20 MPH (32 Km/H). Reduce speed on rough roads and surfaces.
13. Do not allow anyone to ride on the Elevating Conveyor or towing vehicle during transport.
14. Always use hazard flashers on the towing vehicle when transporting.

2.14

DATE	EMPLOYEE'S SIGNATURE	EMPLOYER'S SIGNATURE

3 SAFETY SIGN LOCATIONS

The types of safety signs and locations on the equipment are shown in the illustrations that follow. Good safety requires that you familiarize yourself with the various Safety Signs, the type of warning and the area, or particular function related to that area, that requires your SAFETY AWARENESS.

- Think SAFETY! Work SAFELY!



B

A



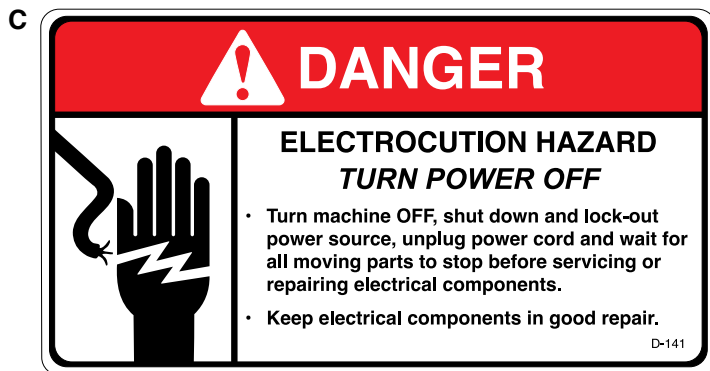
CAUTION

- Read Operator's Manual before starting.
- Turn machine OFF, shut down and lock out power source, unplug power cord and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.
- Keep all electrical components tight, dry and in good repair.
- Keep all hydraulic components tight and in good repair.
- Replace all worn or failed components immediately.
- Install and secure all guards before operating.
- Keep hands, feet, hair and clothing away from moving parts.
- Install safety locks on the boom and elevator before transporting or working under them.
- Lower boom and elevator to safety locks, center boom and install all safety locks before transporting.
- Use pilot vehicles when transporting.
- Stay away from overhead power lines and obstructions when moving. Electrocutation can occur without direct contact.
- Do not stand or climb on machine when running. Keep others off.
- Have only a qualified electrician provide power to the machine.

REMEMBER - If Safety Signs have been damaged, removed, become illegible or parts replaced without safety signs, new signs must be applied. New safety signs are available from your authorized dealer.

The types of safety signs and locations on the equipment are shown in the illustrations that follow. Good safety requires that you familiarize yourself with the various Safety Signs, the type of warning and the area, or particular function related to that area, that requires your SAFETY AWARENESS.

- Think SAFETY! Work SAFELY!



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- Think SAFETY! Work SAFELY!



E



F



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- Think SAFETY! Work SAFELY!



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4 OPERATION



OPERATING SAFETY

- Read and understand the Operator's Manual and all safety signs before operating, maintaining, adjusting or repairing the Elevating Conveyor.
- Turn machine OFF, shut down and lock out power supply (safety lockout devices are available through your Mayo dealer parts department), relieve hydraulic pressure and wait for all moving parts to stop before servicing, adjusting, maintaining or repairing.
- Install and properly secure all guards and shields before operating.
- Keep hands, feet, hair and clothing away from all moving parts.
- Clear the area of bystanders, especially small children, before starting.
- Make sure all control switches are in the off position before connecting power supply.
- Establish a formal lock-out tag-out program for your operation.
- Before supplying electrical power to the machine, be sure that you have adequate amperage at the proper phase and voltage to run it by following ANSI/NFPA 70 Wiring Standard. If you do not know or are unsure, consult a licensed electrician.
- Stay away from overhead obstructions and power lines when raising the discharge end. Electrocution can occur without direct contact. Post an observer at the discharge end to guide the operator.
- Do not stand between the frame and other structures or machines when raising the Elevating Conveyor. Keep others away.
- Keep the working area clean and dry.
- Contact Mayo at (218) 773-1234 or 1 (800) 223-5873 if you have any questions.
- Review safety instructions annually.

4.1 TO THE NEW OPERATOR OR OWNER

The Mayo Manufacturing Tare and HD Tare Elevating Conveyor is designed to move harvest from one elevation to another in a conveying system. Be familiar with the machine before starting.

In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence and proper training of personnel involved in the operation, transport, maintenance and storage of this equipment. It is the responsibility of the owner or operator to read this manual and to train all other operators before they start working with the machine.

Follow all safety instructions exactly. Safety is everyone's business. By following recommended procedures, a safe working environment is provided for the operator, bystanders and the area around the worksite. Untrained operators are not qualified to operate the machine.

Many features incorporated into this machine are the result of suggestions made by customers like you. Read this manual carefully to learn how to operate the machine safely and how to set it to provide maximum efficiency. By following the operating instructions in conjunction with a good maintenance program, your Elevating Conveyor will provide many years of trouble-free service.

4.2 MACHINE COMPONENTS

The Mayo Manufacturing Tare and HD Tare Elevating Conveyor consists of a hopper, elevator and optional short boom assembly for conveying produce from one elevation to another. The frame can raise or lower for exact placement of produce where required. An electric motor and speed reducer powers the conveyor.

A manual winch sets the height of the machine. The electrical controls are mounted on a control panel on the left side. The elevator height winch and jack are located at the lower end of the elevator.

Additional optional features can be incorporated into the Elevating Conveyor per customer requirements.



FIG. 1 MACHINE COMPONENTS

4.3 GENERAL OPERATION THEORY

The Mayo Tare and HD Tare Elevating Conveyor is typically utilized in a warehouse or plant setting to lift harvest yields from one elevation to a higher elevation or to remove debris from cleaning equipment.

Potatoes (or any other product or trash) are discharged into the elevating conveyor's hopper from a seed cutter, holding hopper, cull conveyor, clod hopper or any number of other conveying machines. Once in the hopper the material is carried by flighted belting to the desired elevation where they are discharged into the hopper of a transport truck or some other conveying machine.

The elevating conveyor may be used to convey culls from a potato grading machine into the hopper of a cull transport truck. It may be used to convey seed potatoes from a seed cutting machine into the hopper of a seed transport truck. It may be used to convey trash and dirt from a clod hopper or other cleaning equipment into a truck to remove it from the working area.

Whatever the application, the elevating conveyor efficiently elevates your product to the desired height.



Tare Elevator



HD Tare Elevator

FIG. 2 TYPICAL APPLICATION

4.4 MACHINE BREAK-IN

Although there are no operational restrictions on the Elevating Conveyor when used for the first time, it is recommended that the following mechanical items be checked:

- A. Read Conveyor and auxiliary equipment manuals before starting.
- B. **After operating for 1/2 hour:**
 - 1. Retorque all wheel bolts and fasteners.
 - 2. Check that all electrical connections are tight and cords are routed out of the way or protected. Replace any damaged components.
 - 3. Check the alignment and tension of the conveyor belt. Realign or tighten as required.
 - 4. Check oil level in each speed reduction gearbox for each drive. Top up as required.
 - 5. Lubricate all grease fittings.
- C. **After 2, 5 and 10 hours of operation:**
 - 1. Retorque all wheel bolts and fasteners.
 - 2. Check that all electrical connections are tight and cords are routed out of the way or protected. Replace any damaged components.
 - 3. Check the alignment and tension of the conveyor belt. Realign or tighten as required.
 - 4. Check oil level in each speed reduction gearbox for each drive. Top up as required.
 - 5. Lubricate all grease fittings.
 - 6. Go to regular servicing and maintenance schedule as defined in the Maintenance Section.

4.5 PRE-OPERATION CHECKLIST

Safe and efficient operation of your new Elevating Conveyor requires that each operator reads and follows all safety precautions and operating procedures contained in this section. Performing the following pre-operation checklist is important for personal safety as well as for continued mechanical soundness and longevity of your new Mayo conveyor. The checklist should be performed before operating the conveyor and prior to each operation thereafter.

- 1. Lubricate the machine according to the schedule prescribed in the "Maintenance Section".
- 2. Insure that proper protective gear is in good repair and available for use by each operator. Make certain that each operator uses the protective gear. Protective gear includes but, is not limited to:

- Leather gloves
- Safety glasses or face shield
- Full length protective clothing
- Steel toed boots with slip resistant soles.



- 3. Insure that all safety guards and shields are in good repair and securely in place.
- 4. Check that the conveyor belt is centered on the head and tail rollers. Adjust if necessary as outlined in the "Maintenance Section".
- 5. Make sure that all electrical switches are in the OFF position before supplying power.
- 6. Check that all electrical connections are tight and cords are routed out of the way or protected.
- 7. Be sure the working area is clean and dry to prevent tripping or slipping.

4.6 CONTROLS

It is recommended that all operators review this section of the manual to familiarize themselves with the location and function of all machine controls before starting. Some machines may vary slightly due to custom features but they are similar and all controls are labelled.

1. Conveyor Electrical Controls:

a. On/Off Switch:

This two-position rotary switch controls the power to the conveying belt drive motor. Turn clockwise to turn ON and counter-clockwise to turn OFF.

b. Emergency Stop:

This red button is the emergency STOP control for the machine and stops all electrical functions including. Push the control in for emergency STOP. Place all the individual controls in their OFF position. Turn the control clockwise to release the button and it will pop out. Before the machine can be restarted, the Emergency STOP button must be pulled out.

2. Jack:

This jack sets the height of the frame and hopper. Turn the handle clockwise to raise the frame and counterclockwise to lower.

3. Winch:

This winch controls and sets the height and angle of the elevator. A sliding ratchet dog locks the winch in position when it is not being used. To operate the winch, follow this procedure:

a. To Raise:

Grasp the winch handle firmly and turn the handle clockwise to raise the conveyor. Be sure that you hear the clicking sound of the ratcheting dog when turning the handle. If you do not hear the clicking, ratchet dog is not in its proper position. Properly position the ratchet dog before proceeding.

b. To Lower:

- Grasp the winch handle firmly to prevent unwinding when the ratchet dog is released.
- Push the lock away from you and turn it down so that it is parallel with the base.
- Turn the handle counterclockwise to lower the conveyor to the desired height.



Control Panel (Typical)



Winch

FIG. 3 CONTROLS

- Push the lock away from you and turn it up as far as it will go (90° to the base). Be sure the dog is locked into its vertical position.
- c. **Brake:**
The winch is designed with a brake on the handle shaft. Depress the lever to stop the handle and stop the winch from turning.

4.7 MACHINE INSTALLATION AND PREPARATION

The machine must be properly prepared prior to using. Before starting machine, be sure that the following items are appropriate for your machine and operating requirements:

1. Power:

Have a licensed electrician provide power at the required voltage, phase and amperage for your machine by following ANSI/NFPA 70 Wiring Standard. An improper source of power will cause damage to electrical components and could create an electrical hazard to the operator, worker or bystanders.

Be sure to use an extension cord of the correct specifications for the power being carried. Route the cord so that it does not interfere with the working area. Provide appropriate protection when people or equipment must go over the cord. Inspect the cord occasionally to be sure it is not damaged. Replace immediately if it is damaged.

2. Hitch:

If the transport hitch was used to move the machine, it can be removed if required prior to use to prevent interference with other equipment. Remove the hitch anchor bolt from each side of the hitch and slide the assembly out of the tubes. Install and secure before transporting.

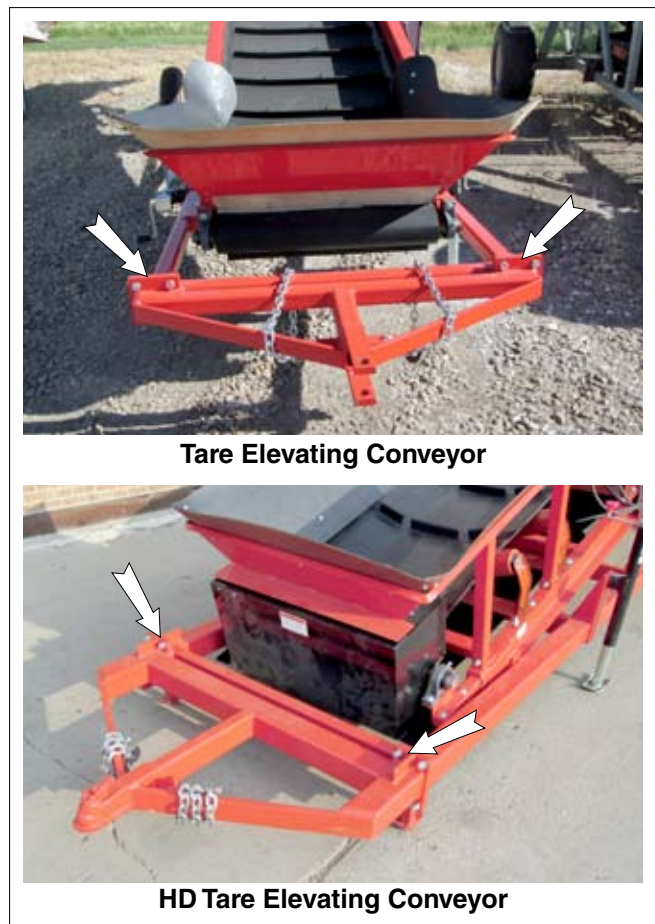


FIG. 4 HITCH REMOVAL - BOLTS

3. **Machine Position:**

The Elevating Conveyor is normally used as a component in a conveying system and raises the potatoes or trash from one level to another. Determine the height and location of the equipment moving material to and from the Elevating Conveyor. Both hopper intake and discharge (short boom) must be located to be an integral component in the conveying system.

- a. Use two or more people to maneuver the machine into the required position.
- b. Use the front stands or jacks to set the height of the hopper.
- c. Use the winch to set the height of the discharge.
- d. Set the drop height at the hopper and discharge as small as possible to minimize bruising if conveying potatoes.
- e. Block the transport wheels when positioned to prevent movement.
- f. Attach and secure to adjacent equipment to prevent movement.

4. **Training:**

Establish a lock-out tag-out policy for your worksite and train all everyone in how it is implemented. Do not allow anyone to operate the machine on the worksite unless they follow the lock-out tag-out policy.



Trash Removal



HD Tare Elevating Conveyor

FIG. 5 POSITIONING

4.8 OPERATING



OPERATING SAFETY

- Read and understand the Operator's Manual and all safety signs before operating, maintaining, adjusting or repairing the Elevating Conveyor.
- Turn machine OFF, shut down and lock out power supply (safety lockout devices are available through your Mayo dealer parts department), relieve hydraulic pressure and wait for all moving parts to stop before servicing, adjusting, maintaining or repairing.
- Install and properly secure all guards and shields before operating.
- Keep hands, feet, hair and clothing away from all moving parts.
- Clear the area of bystanders, especially small children, before starting.
- Make sure all control switches are in the off position before connecting power supply.
- Establish a formal lock-out tag-out program for your operation.
- Before supplying electrical power to the machine, be sure that you have adequate amperage at the proper phase and voltage to run it by following ANSI/NFPA 70 Wiring Standard. If you do not know or are unsure, consult a licensed electrician.
- Stay away from overhead obstructions and power lines when raising the discharge end. Electrocutation can occur without direct contact. Post an observer at the discharge end to guide the operator.
- Do not stand between the frame and other structures or machines when raising the Elevating Conveyor. Keep others away.
- Keep the working area clean and dry.
- Contact Mayo at (218) 773-1234 or 1 (800) 223-5873 if you have any questions.
- Review safety instructions annually.

Follow this procedure when using the Tare and HD Tare Elevating Conveyor:

1. Review Section 4.6 Machine Preparation and follow all the instructions.
2. Review and follow the pre-operation checklist (See Section 4.4).
3. Review the location and function of all controls (See Section 4.5).
4. Move the machine into its operating position with the discharge end over the planter hopper or other equipment appropriate to the application.



FIG. 6 POSITIONED

5. Starting Conveyor:

- a. Clear the area of bystanders. Know where everyone is before starting.
- b. Place all controls in the OFF or neutral position.
- c. Turn the power to the machine ON at the master panel if connected to a hard wired power source.
- f. Turn the Elevating Conveyor ON.
- h. Turn the equipment ON that moves material to the Conveyor.

6. Stopping Conveyor:

- a. Turn OFF the equipment that brings material to the Conveyor.
- b. Wait until the material has moved off the end of the conveyor.
- c. Turn the Elevating Conveyor OFF.
- d. Turn the equipment OFF that takes the material away from the conveyor.

An alternative is to depress the red Master STOP button on the control panel but then all controls must be turned OFF before restarting.

7. Emergency STOP:

Depress the large red STOP button on the control panel. This will stop the conveyor. Release STOP button before restarting.

8. Equipment Attachment:

The elevating conveyor is normally used as a component in a conveying system. After the unit is placed in its operating position and the required height of each end is set, it is recommended that the unit be securely attached to the adjacent equipment. This will prevent movement and separation during normal operation.



FIG. 7 CONTROL PANEL (TYPICAL)

9. **Moving:**

In many instances the machine can be manually moved by 2 men if it is on a level hard surface. Always place in its lowest position before moving. Stay away from overhead power lines and obstructions.

Install and secure the hitch before transporting (Refer to Section 4.9).



Tare Elevating Conveyor



Hitch

FIG. 8 MOVING



10. **Drop Height:**

Potatoes are sensitive to bruising during the harvesting, transporting and conveying phases of your operation. Bruising is kept to a minimum by maintaining a full flow of potatoes through each machine and minimizing all drop heights. Bruising during the conveying phase can be minimized by keeping the drop height between each piece of equipment as small as possible.

Use the jack(s), stand(s) and/or winch to set the intake and discharge drop heights at a minimum.



Tare Elevating Conveyor



HD Tare Elevating Conveyor

FIG. 9 DROP HEIGHT

11. Frame height:

Use the winch on the left side of the frame to raise and lower the frame. Use it to set the discharge and drop height.



FIG. 10 WINCH (TYPICAL)

12. Operating hints:

- a. Be sure that all workers and operators are supplied with and use the required safety gear.
- b. Keep the working area clean and dry to prevent slipping and tripping.
- c. Train all operators before starting. An untrained operator is not qualified to operate this machine and exposes himself and others to needless hazards.
- d. Establish a Lock-out Tag-out program for your operation and require all employees to follow it.



Clod Hopper



Surge Hopper

FIG. 11 OPERATING

4.9 TRANSPORT

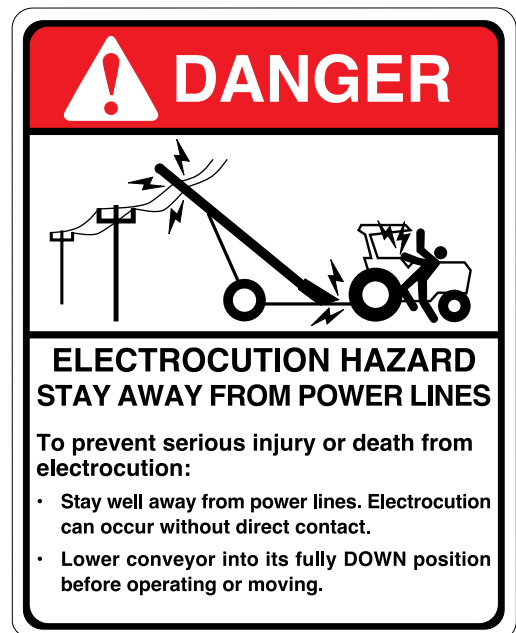


TRANSPORT SAFETY

- Make certain that you are in compliance with local, state/provincial and federal regulations regarding transporting agricultural equipment on public roadways. Install auxiliary light bar on rear of frame and turn lights on before moving.
- Use pilot vehicles ahead of and behind the unit when transporting on a public highway.
- Make certain that all wheels and tires are in good repair and that tires are inflated to proper pressure. Do not under-inflate or overinflate.
- Fully retract all telescoping conveyor sections and secure before transporting.
- Make certain that all mechanical locks and integral anchor chains are safely and positively connected before loading or transporting.
- Raise and secure both jack stands.
- Lower Conveyor to the fully down position before moving or transporting.
- Wrap up and bind to the frame all loose hydraulic and electrical ends.
- Be sure that any necessary SMV (slow moving vehicle) signs, reflectors and lights required by law are in proper place and are clearly visible to oncoming and overtaking traffic.
- Be sure that the Elevating Conveyor is positively hitched to the towing vehicle. Use a proper safety chain to assure a safe hitch hook-up when transporting.
- Adhere to local regulations regarding maximum weight, width and length.
- Do not exceed 20 MPH (32 Km/H). Reduce speed on rough roads and surfaces.
- Do not allow anyone to ride on the Elevating Conveyor or towing vehicle during transport.
- Always use hazard flashers on the towing vehicle when transporting.

Mayo Elevating Conveyors are designed to be easily and conveniently moved from location to location. Transporting is used to describe when the machine is being towed by a tractor or other power unit. When transporting, follow this procedure:

1. Disconnect and remove all auxiliary equipment from the Conveyor and position so the tow unit can back up to the front of the machine.
2. Stay away from overhead power lines. Electrocutation can occur without direct contact.



3. Lower the boom into its lowest position.
4. Use the jack to attach to the tow vehicle.
5. Raise and stow the jacks.
6. Turn the power OFF at the master panel and lock-out tag-out.
7. Unplug and stow the power cord.
8. Attach to the tow unit and lock the pintle hitch jaws closed or install the drawbar pin and retainer. Attach a safety chain.
9. Connect wiring harness.
10. Install an SMV on the rear frame.
11. Use pilot vehicles and install auxiliary lights on the machine when transporting.
12. Clean all the reflectors.
13. Be sure all bystanders are clear of the machine.
14. 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.
15. Make sure the SMV (Slow Moving Vehicle) emblem and all the lights and reflectors that are required by the local highway and transport authorities are in place, are clean and can be seen clearly by all overtaking and oncoming traffic.
16. It is not recommended that the machine be transported faster than 15 mph (25 km/hr). Table 1 gives the acceptable transport speed as the ratio of tractor weight to Conveyor weight.
17. Do not allow riders on the machine or tractor.
18. Always use hazard flashers on the tractor when transporting unless prohibited by law.



Ball Hitch



Clevis Hitch

FIG. 12 TRANSPORTING

Table 1 Travel Speed vs Weight Ratio

Road Speed	Weight of fully equipped or loaded implement(s) relative to weight of tow vehicle.
Up to 15 mph (25 kph)	1 to 1 or less
Up to 10 mph (16 kph)	2 to 1 or less
Do not tow	More than 2 to 1

4.10 STORAGE



STORAGE SAFETY

- Store the Elevating Conveyor on a firm level surface.
 - If required, make sure the unit is firmly blocked up.
 - Make certain that all mechanical locks are safely and positively connected before storing.
 - Store away from areas of human activity.
 - Do not allow children to play on or around the stored Elevating Conveyor.
 - Lock out power by turning off master control panel or junction box and padlocking the door shut to prevent electrocution or unauthorized start up of the Elevating Conveyor.
8. Check all rotating parts for entangled material. Remove.
 9. Touch up all paint nicks and scratches to prevent rusting.
 10. Select a storage area that is dry, level and free of debris.

4.10.1 PLACING IN STORAGE

At the end of the season, the machine should be thoroughly inspected and prepared for storage. Repair or replace any worn or damaged components to prevent any unnecessary down time at the beginning of the next season. Follow this procedure:

1. Inspect the conveyor belt. Realign if the belt is not tracking in the center of the frame. Replace if the edges are damaged from rubbing on the frame. Properly tension the belt.
2. Turn the power OFF at the master electrical panel and lock out.
3. Unplug and remove power cord from machine.
4. Lock out power by shutting control panel or junction box and padlocking the door shut to prevent electrocution or unauthorized start-up of the conveyor.
5. Thoroughly wash the machine using a pressure washer to remove all dirt, mud, debris or residue.
6. Lubricate all grease fittings. Make sure all grease cavities have been filled with grease to remove any water residue from the washing.
7. Inspect all the electrical cords, lines, junction boxes and motors. Tighten any loose connections. Replace any cord that is badly cut, nicked or abraded. Replace any damaged components.

4.10.2 REMOVING FROM STORAGE

When preparing to use the machine at the start of the season, follow this procedure:

1. Transport or move to the working area.
2. Check
 - a. Conveyor belt and drive system.
 - b. All hardware. Tighten as required.
 - c. Air pressure in tires. Add as required.
 - d. Electrical systems and components.
3. Replace any defective components.
4. Go through the pre-operation checklist (Section 4.4) before starting.

5 SERVICE AND MAINTENANCE



MAINTENANCE SAFETY

- Read and understand all the information contained in the Operator's Manual regarding operating, servicing, adjusting, maintaining and repairing.
- Turn machine OFF, shut down and lock out power supply (safety lockout devices are available through your Mayo dealer parts department) and wait for all moving parts to stop before servicing, adjusting, maintaining or repairing.
- Exercise extreme caution when working around, or with, high-pressure hydraulic systems. Depressurize the system before working on it.
- 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.
- Wear heavy gloves and eye protection when searching for suspected hydraulic leaks. Use a piece of wood or cardboard as a backstop instead of hand to isolate and identify a leak. A high pressure concentrated stream of hydraulic fluid can pierce the skin. If such happens, seek immediate medical attention as infection and toxic reaction could develop.
- Make sure all guards and doors are in place and properly secured when operating the Elevating Conveyor.
- Do not work on the Elevating Conveyor electrical system unless the power cord is unplugged or the power supply is locked out. Lock-out tag-out power source before performing any maintenance work.

5.1 SERVICE

5.1.1 FLUIDS AND LUBRICANTS

1. **Grease:**
Use an SAE multi-purpose high temperature grease with extreme pressure (EP) performance meeting or exceeding the NLGI #2 rating for all requirements.
2. **Speed Reducer Gear Box Lubricant:**
Use a Browning Worm Gear high-temperature GL32HT lubricant (AGMA Comp. #8) or equivalent.

Capacities: 1 qt (1 liter) each gear box.
3. **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.

5.1.2 GREASING

Refer to Section 5.1.1 for recommended grease. Use the Maintenance Checklist provide to keep a record of all scheduled maintenance.

1. Use only a hand-held grease gun for all greasing. Air powered greasing systems can damage the seals on bearings and lead to early bearing failure.
2. Wipe grease fitting with a clean cloth before greasing to avoid injecting dirt and grit.
3. Replace and repair broken fittings immediately.
4. If a fitting will not take grease, remove and clean thoroughly. Also clean lubricant passageway. Replace fitting if necessary.
5. **Conveyor Bearings:**
Only sealed bearings are used on the conveyor bearings. Sealed bearings should never be greased more often than weekly or every 50 hours. Do not over-grease. Do not give bearing more than 1 shot of grease each time it is greased. Once the bearing seal is broken, the bearing must be greased each day or the bearing will fail.

5.1.3 SERVICING INTERVALS

8 Hours or Daily

1. Check the conveyor tension and alignment.
Tension or align as required.



Tare Elevating Conveyor



HD Tare Elevating Conveyor

FIG. 13 CONVEYOR TENSION/ALIGNMENT

2. Inspect electrical system and all components.

Weekly or 50 Hours

1. Grease conveyor shaft bearings with 1 shot of grease.

IMPORTANT

Only sealed bearings are used on the conveyor bearings. Sealed bearings should never be greased more often than weekly or every 50 hours. Do not over-grease. Do not give bearing more than 1 shot of grease each time it is greased. Once the bearing seal is broken, the bearing must be greased each day or the bearing will fail.

- a. Drive.
- b. Dogleg.
- c. Driven.
- d. Return Idler (HD Tare only).



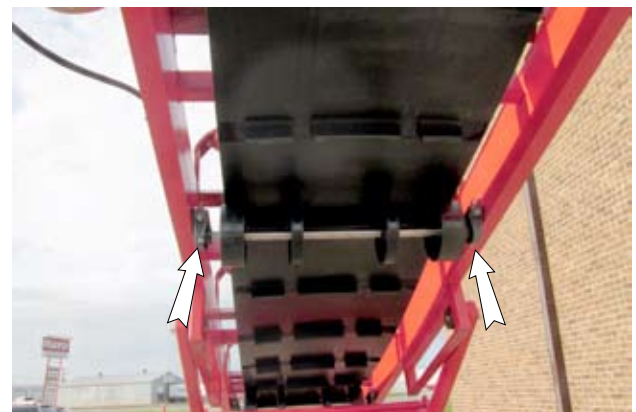
Drive (Typical)



Dogleg (Typical)



Driven (Typical)



Return Idler (HD Tare only)

FIG. 14 SHAFTS (TYPICAL)

100 Hours or Annually

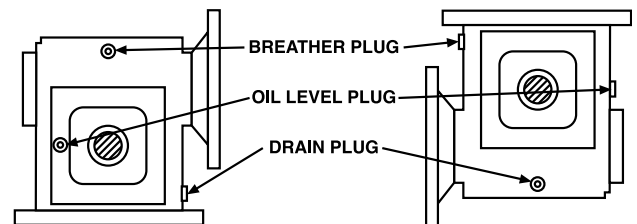
1. Check the oil level in the speed reducing gear box in the drive system.



Tare Elevating Conveyor



HD Tare Elevating Conveyor



Schematic

FIG. 15 GEARBOXES (TYPICAL)

500 Hours or Annually:

1. Repack each wheel bearing.



Tare Elevating Conveyor



HD Tare Elevating Conveyor

FIG. 16 WHEELS (TYPICAL)

2. Clean machine.

5.1.4 SERVICE RECORD

See Lubrication and Maintenance sections for details of service. Copy this page to continue record.

ACTION CODE: CK CHECK CH CHANGE CL CLEAN
 LU LUBRICATE RE REPACK IN INSPECT

Maintenance

Hours																		
Serviced by																		
8 Hours or Daily																		
CK Conveyor Tension and Alignment																		
IN Electrical System and Components																		
50 Hours or Weekly																		
LU Shaft Bearings																		
100 hours or Annually																		
CK Gearbox Oil Level																		
500 Hours or Annually																		
RE Wheel Bearings																		
CL Machine																		

5.2 MAINTENANCE

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

5.2.1 ELECTRICAL SYSTEM INSPECTION

Electricity provides power to all systems on the Elevating Conveyor. To maintain the integrity of each system and provide a safe working environment for the operator, it is important that a daily inspection be done to make sure that all systems and components are in good working condition. To provide a safe working environment, have a licensed electrician provide power to the machine.

When inspecting the electrical system and components, follow this procedure:

1. Place all controls in the OFF or neutral position.
2. Turn power OFF at the master panel and lock-out before starting the inspection.

IMPORTANT

Do not operate the machine unless the master panel is equipped with a lock-out device. Always engage lock-out device before performing any maintenance work. Lock-out devices are available from your dealer or the factory.

3. Inspect all electrical components looking for:
 - a. Damaged plugs.
 - b. Frayed wires.
 - c. Cut or cracked insulation.
4. Replace any damaged components immediately.
5. Be sure all components are grounded.
6. Be sure there is no water or moisture in any junction box or enclosure. Dry the components before turning power on. Be sure that all compartments seal properly when closed.

5.2.2 ELECTRIC MOTOR RESTART

A magnetic starting system is used on the Elevating Conveyor and the restart procedure is covered in this section. It is recommended that only a licensed electrician perform maintenance work on the electrical system.

1. Magnetic Starter:

All electric motors are supplied with power through an individual circuit that includes a circuit breaker, switch, contactor and overload relay that are all incorporated into a single electrical component inside the control panel. The contactor is the main connecting device for power to the motor. If the current is greater than the adjustable dial of the relay, the relay will trip and cut off power to the coil of the contactor. When this happens, the contactor dial will move to a new position and indicate the cause of the overload. It must be reset before the motor can be restarted.

When a motor will not start:

- a. Depress the OFF button.
- b. Depress the ON button.
- c. If the motor will not start, turn machine OFF and lock out power at the master control panel before opening the control panel.
- d. Fully rotate the contactor dial counterclockwise to reset and then, turn dial clockwise to the ON contactor open position.
- e. Close and secure the panel door and turn the power to the machine ON.
- f. If the motor still will not start you have one of the following conditions:
 - i. The motor is hot and must cool a period of time before attempting to restart.

NOTE

If your conveyor utilizes single phase motors, chances are good that the motor has a thermal overload located on the electrical junction box of the motor itself. If this is the case then, fully depress the reset button to make certain that the overload circuit is closed.

- ii. The overload is adjusted incorrectly for the amperage of the motor and must be properly adjusted.



FIG. 17 CONTROL BOX (TYPICAL)

- iii. The overload and/or contactor has fulfilled its service life and is in need of replacement.
- iv. The motor is bad and needs replacing.
- v. An electrical short exists somewhere in the circuit.

5.2.3 SPEED REDUCER GEARBOX OIL

The conveyor is driven by an electric motor that is attached to a high ratio speed reducing gearbox to give the required operating speed. The gearbox is equipped with a drain, level and fill plug. Every 100 hours, the oil level should be checked. Every 500 operating hours or annually, whichever comes first, the oil should be replaced. Check more frequently if there are leaks around any of the plugs or shaft seals. When checking oil level or changing oil, follow this procedure.

1. Run the conveyor until the gearbox is warm. Warm oil will remove more contaminants than cold stagnate oil.
2. Stop the conveyor.
3. Place all controls in their OFF or neutral position.
4. Turn the power OFF at the master panel and lock-out.
5. **Checking oil level:**
 - a. When the gearbox is cold, remove the level plug from the side of the gearbox.
 - b. When the oil just fills the threads of the level plug, it is at the correct level.
 - c. Add oil through the fill plug as required.
 - d. Install and tighten level and fill plugs.

NOTE

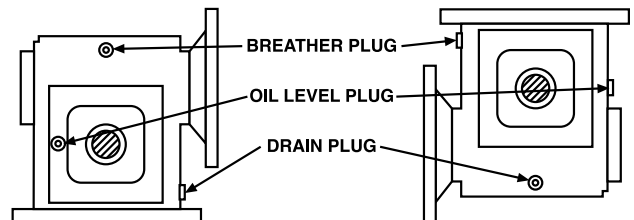
The gearbox is filled at the factory and hermetically sealed. It normally will not need oil added unless it is leaking.



Tare Elevating Conveyor



HD Tare Elevating Conveyor



Schematic

FIG. 18 GEARBOXES (TYPICAL)

5.2.4 CONVEYOR BELT TENSION / ALIGNMENT OR REPLACEMENT

Rubber belts are used to convey material with the Elevating Conveyor. The tension and alignment of the conveyor should be checked daily to insure proper function. Replace the conveyor belt when damaged or badly worn.

To maintain the conveyor belt, follow this procedure:

1. Place all controls in their OFF or neutral position.
2. Turn the power OFF at the master panel and lock-out.
3. **Tension:**
 - a. **Tare Elevating Conveyor:**
The belt is properly tensioned when the return side of the belt sags 1/2" (12 mm) below the bottom of the frame between guide rollers.
 - b. **HD Tare Elevating Conveyor:**
The belt is properly tensioned when the return side of the belt sags 2" (50 mm) between the guide rollers on the bottom of the frame.
4. **Tension Adjustment:**
Use the mechanism on each shaft bearing to move the bearing/shaft to set or adjust the belt tension.
 - a. Loosen lock bolt on tube holding conveyor.
 - b. Use position bolt to move the bearing mount.
 - c. Check belt tension.
 - d. Re-adjust as required.
 - e. Tighten lock bolt to its specified torque.



Tare Elevating Conveyor



HD Tare Elevating Conveyor

FIG. 19 BELT TENSION - SAG



Tare Elevating Conveyor



HD Tare Elevating Conveyor

FIG. 20 TENSION ADJUSTMENT (TYPICAL)

5. **Alignment:**

It is properly aligned when the belt runs in the center of the frame panels and the shafts. Be sure to run the conveyor a full revolution to check the entire belt. The belt can move from side-to-side while it is turning as long as it doesn't contact the sides. If it contacts the sides, it must be aligned. Align by loosening the shaft bearing assembly on the tight side or tightening the bearing assembly on the loose side. Move the bearing assemblies on either the drive or driven shafts to align the conveyor but always maintain the proper tension.



Tare Elevating Conveyor



HD Tare Elevating Conveyor

FIG. 21 CONVEYOR ALIGNMENT (TYPICAL)

6. **Replacement:**

- a. Move one or both of the shafts into their loosest position.
- b. Open the conveyor by removing the connecting rod on the belt lacing.
- c. Attach the replacement conveyor to the end of the old conveyor.
- d. Slowly pull the old conveyor out of the machine and thread the new one into position.
- e. Disconnect the old conveyor and connect the ends of the new one together.
- f. Move the shaft into position to set the tension of the conveyor and secure the bearing assemblies.
- g. Check the tension and alignment of the conveyor frequently during the first 10 hours of operation and set as required. Then, go to the regular maintenance schedule. Normally a conveyor will seat itself during the first 10 hours of operation and then require less adjustment.



Tare Elevating Conveyor



HD Tare Elevating Conveyor

FIG. 22 BELT CONNECTOR (TYPICAL)

6 TROUBLE SHOOTING

The Mayo Tare and HD Tare Elevating Conveyor uses an elevator and extendable boom to convey material into a storage facility, truck or planter. It is a simple and reliable system that requires minimum maintenance.

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

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

PROBLEM	CAUSE	SOLUTION
Conveyor won't run.	No power.	Turn power ON at master panel.
	Tripped overload on starter.	Reset starter.
	Binding.	Align conveyor.

7 SPECIFICATIONS

7.1 MECHANICAL

DIMENSIONS		
	Length:	
	Width:	8'
	Height:	Frame Up
		Frame Down
POWER		
	Type	Tare
		HD Tare
	Elevator	
TIRES		
	Tires	15 Ribbed Implement, 4-ply Rating
	Pressure	

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

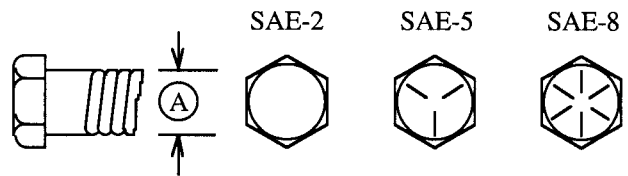
7.2 BOLT TORQUE

CHECKING BOLT TORQUE

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

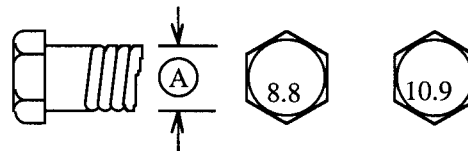
ENGLISH TORQUE SPECIFICATIONS

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



METRIC TORQUE SPECIFICATIONS

Bolt Diameter "A"	Bolt Torque			
	8.8		10.9	
	(N.m.)	(lb-ft)	(N.m.)	(lb-ft)
M3	.5	.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.

73 ELECTRICAL SCHEMATIC

73.1 SINGLE PHASE

73.2 THREE PHASE

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MAYO MANUFACTURING CO.

**BUS HIGHWAY 2 BOX 497
EAST GRAND FORKS, MN 56721**

**PHONE (218) 773-1234
TOLL FREE (800) 223-5873
FAX (218) 773-6693**