Mayo

TOTE BAG AND PALLET BOX FILLER

SINGLE AND DOUBLE UNIT 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.

TOTE BAG AND PALLET BOX FILLER

WARRANTY REGISTRATION FORM & INSPECTION REPORT

WARRANTY REGISTRATION

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 _____

Address _____

City, State/Prov., Code _____

Phone Number (_____) _____

Dealer's Name _____

Address _____

City, State/Prov., Code _____

Scooper Hog Model _____

Serial Number _____

Delivery Date _____

DEALER INSPECTION REPORT

_____ Frame Pivot Turns Freely
_____ Inspect Electrical System
_____ Oil Reservoir Filled
_____ Hydraulic Hoses Free
_____ Hydraulic Fittings Tight
_____ Lubricate Machine
_____ Conveyor Tensioned and Aligned

SAFETY

_____ All Safety Signs Installed and Legible
_____ 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.

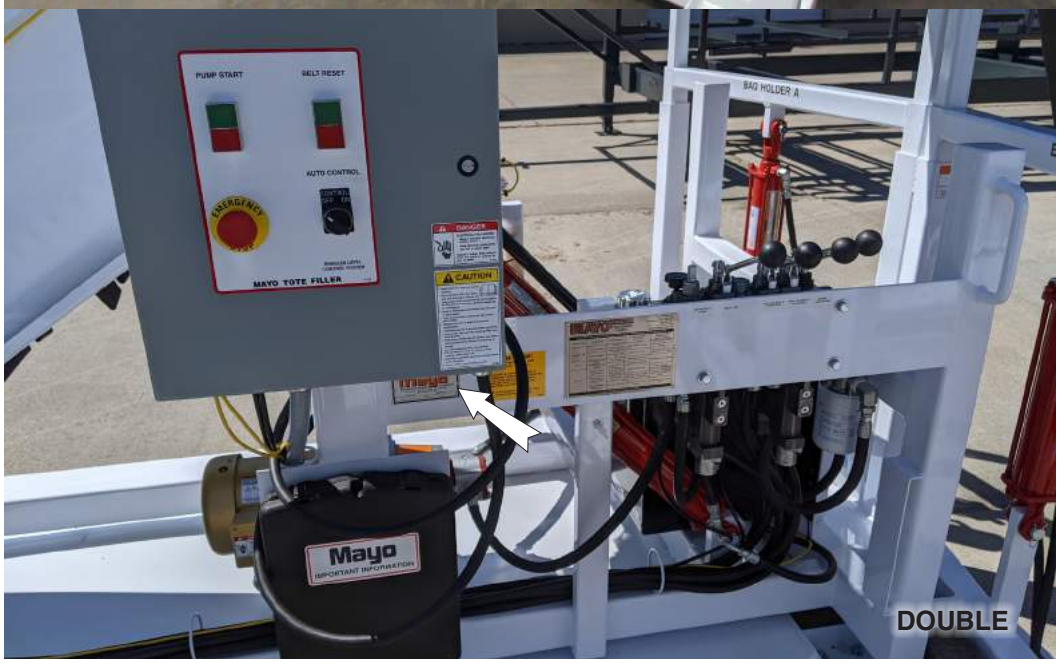
Date _____ Owner's Signature _____

WHITE	YELLOW	PINK
MAYO MFG., INC.	DEALER	CUSTOMER

SERIAL NUMBER LOCATION

Always give your dealer the serial number of your Mayo Tote Bag and Pallet Box Filler 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 Number _____

Serial Number _____

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1 INTRODUCTION

Congratulations on your choice of a Mayo Tote Bag and Pallet Box Filler 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 Tote Bag and Pallet Box Filler requires that you, and anyone else who will be operating or maintaining the Tote Bag and Pallet Box Filler, read, understand and practice ALL of the Safety, Operation, Maintenance and Trouble Shooting recommendations contained within this Operator's Manual.

Single Unit

Double Unit

This manual applies to the single and double bag Tote Bag and Pallet Box Filler manufactured by Mayo. Certain options may be available to specifically tailor the Filler 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 Tote Bag and Pallet Box Filler is the front. All electrical and hydraulic 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 Tote Bag and Pallet Box Filler 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:

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. www.mayomfg.com

SAFETY

YOU are responsible for the **SAFE** operation and maintenance of your Mayo Tote Bag and Pallet Box Filler. **YOU** must ensure that you and anyone else who is going to operate, maintain or work around the Tote Bag and Pallet Box Filler 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 Tote Bag and Pallet Box Filler.

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 Tote Bag and Pallet Box Filler.

- Tote Bag and Pallet Box Filler owners must give operating instructions to operators or employees before allowing them to operate the Tote Bag and Pallet Box Filler, 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.

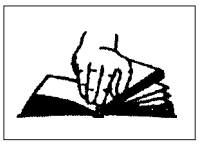
- A person who has not read and understood all operating and safety instructions is not qualified to operate this machine. An untrained operator exposes himself and bystanders to possible serious injury or death.

- 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 Tote Bag and Pallet Box Filler.



2. Only trained, competent persons shall operate the Tote Bag and Pallet Box Filler. 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 Tote Bag and Pallet Box Filler 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 Tote Bag and Pallet Box Filler.

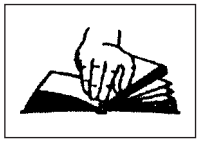
6. Lock out power by turning off master control panel or junction box and padlocking the door shut to prevent electrocution or unauthorized start up of the Tote Bag and Pallet Box Filler.

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 washers, 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 part numbers in the lower right corner. Use this part number when ordering replacement parts.

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 Tote Bag and Pallet Box Filler 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 Tote Bag and Pallet Box Filler 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 jewellery 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 Tote Bag and Pallet Box Filler 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 connecting to other equipment.

5. Make certain that sufficient amperage, at the proper voltage and frequency (60Hz) is available before connecting power. All wiring should comply with ANSI/NFPA 70 electrical requirements. Follow local, stae/provincial and federal electrical codes. If you are uncertain, have a licensed electrician provide power to the machine.

6. If using Tote Bag and Pallet Box Filler 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 Tote Bag and Pallet Box Filler.

3. Provide tags at the work site and a sign-up sheet to record tag out details.

4. Do not climb in 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 Tote Bag and Pallet Box Filler. Also read and follow the instructions in the manuals of the other equipment used in the system.

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. 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 or working around loading/unloading equipment.

4. Install and properly secure all guards and shields before operating.

5. Keep hands, feet, hair and clothing away from all moving parts.

6. Clear the area of bystanders, especially small children, before starting.

7. Make sure all control switches are in the off position before connecting power supply.

8. Keep all electrical components tight, dry and in good repair.

9. Make certain that sufficient amperage, at the proper voltage and frequency (60Hz) is available before connecting power. All wiring should comply with ANSI/NFPA 70 electrical requirements. Follow local, stae/provincial and federal electrical codes. If you are uncertain, have a licensed electrician provide power to the machine.

10. Before applying pressure to the hydraulic system, make sure all components are tight and that all steel lines, hoses and couplings are not damaged.

11. Keep the working area clean and dry.

12. 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), relieve hydraulic pressure and wait for all moving parts to stop before servicing, adjusting, maintaining or repairing.**

3. Follow good shop practices:

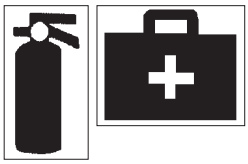
   - Keep service area clean and dry.
   - Be sure electrical outlets and tools are properly grounded.
   - Use adequate light for the job at hand.

5. Make sure all guards and doors are in place and properly secured when operating the Tote Bag and Pallet Box Filler.

6. Always use personal protection devices such as eye, hand and hearing protectors, when performing any service or maintenance.

7. Where replacement parts are necessary for periodic maintenance and servicing, genuine factory replacement parts must be used to restore your equipment to original specifications. The manufacturer will not be responsible for injuries or damages caused by use of unapproved parts and/or accessories.

8. A fire extinguisher and first aid kit should be kept readily accessible while performing maintenance on this equipment.



9. Periodically tighten all bolts, nuts and screws and check that all cotter pins are properly installed to ensure unit is in a safe condition.

10. When completing a maintenance or service function, make sure all safety shields and devices are installed before placing unit in service.

11. **Do not work on Tote Bag and Pallet Box Filler. 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 HYDRAULIC SAFETY

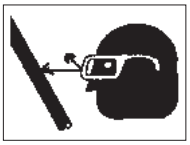
1. Make sure that all the components in the pump system are kept in good condition and are clean.

2. Before applying pressure to the system, make sure all components are tight, and that lines, hoses and couplings are not damaged.

3. Do not attempt any makeshift repairs to the hydraulic lines, fittings or hoses by using tapes, clamps or cements. The hydraulic system operates under extremely high pressure. Such repairs will fail suddenly and create a hazardous and unsafe condition.

4. Wear proper hand and eye protection when searching for a high pressure hydraulic leak. Use a piece of wood or cardboard as a backstop instead of hands to isolate and identify a leak.

5. 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.



2.12 ELECTRICAL SAFETY

1. Make certain that sufficient amperage, at the proper voltage and frequency (60Hz) is available before connecting power. All wiring should comply with ANSI/NFPA 70 electrical requirements. Follow local, stae/provincial and federal electrical codes. If you are uncertain, have a licensed electrician provide power to the machine.

2. Make certain that the Tote Bag and Pallet Box Filler is properly grounded at the power source.

3. Make certain that all electrical switches are in the OFF position before plugging the Tote Bag and Pallet Box Filler 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 Tote Bag and Pallet Box Filler electrical system unless the power cord is unplugged or the power supply is locked-out tagged-out.

2.13 EMPLOYEE SIGN-OFF FORM

Mayo Manufacturing, Inc. follows the general Safety Standards specified by the American Society of Agricultural and Biological Engineers (ASABE) and the Occupational Safety and Health Administration (OSHA). Anyone who will be operating and/or maintaining a Mayo built machine must read and clearly understand ALL Safety, Operating and Maintenance information presented in this manual.

Do not operate or allow anyone else to operate this equipment until such information has been reviewed. Annually review this information before the season start-up.

Make these periodic reviews of SAFETY and OPERATION a standard practice for all of your equipment. We feel that an untrained operator is unqualified to operate this machine.

A sign-off sheet is provided for your record keeping to show that all personnel who will be working with the equipment have read and understand the information in the Operator's Manual and have been instructed in the operation of the equipment.

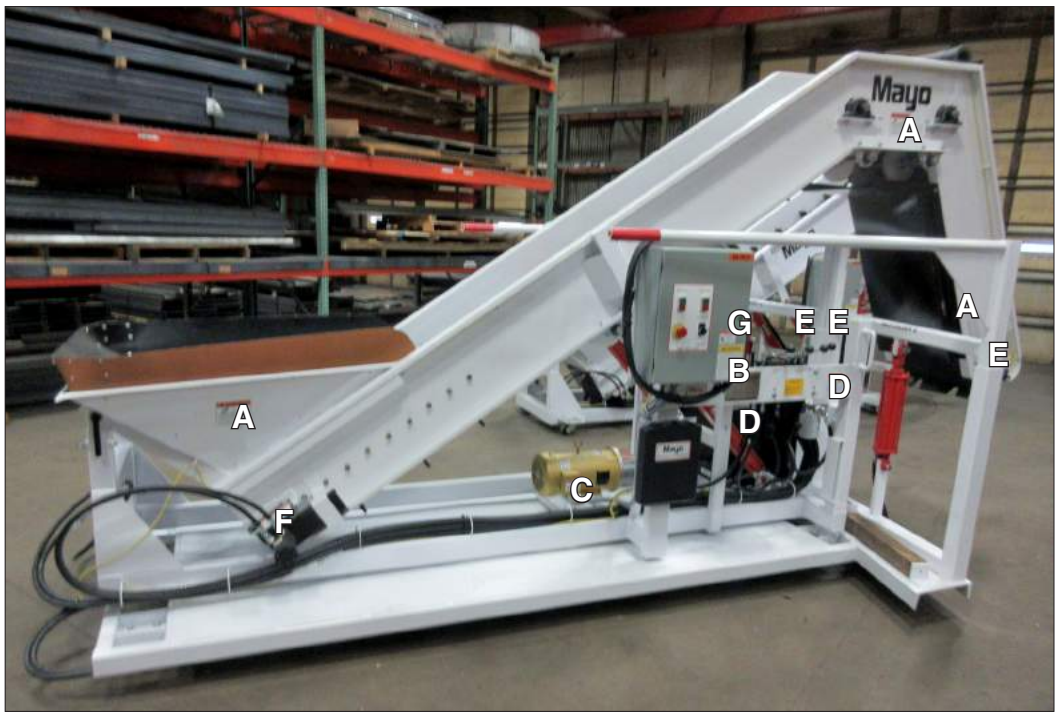
SIGN-OFF FORM

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!



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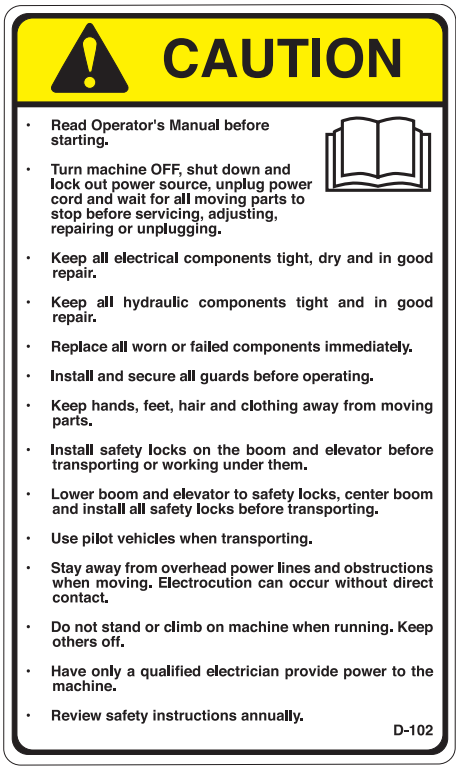

REMEMBER - If Safety Signs have been damaged, removed, become illegible or parts replaced without safety signs, new signs must be applied. New safety signs are available from your authorized dealer.

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.

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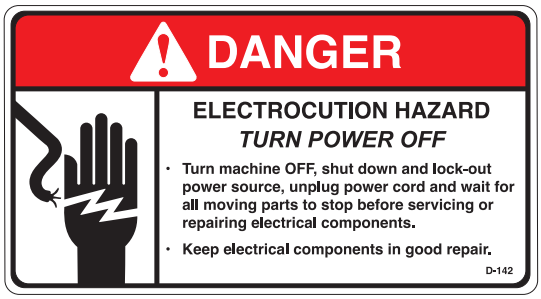

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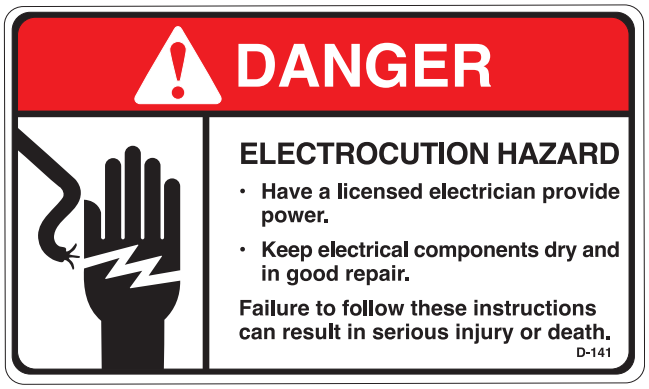


REMEMBER - If Safety Signs have been damaged, removed, become illegible or parts replaced without safety signs, new signs must be applied. New safety signs are available from your authorized dealer.

4 OPERATION

OPERATING SAFETY

- Read and understand the Operator's Manual and all safety signs before operating, maintaining, adjusting or repairing the Tote Bag and Pallet Box Filler. Also read and follow the instructions in the manuals of the other equipment used in the system.
- 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.
- 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 or working around loading/unloading equipment.
- 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.
- Keep all electrical components tight, dry and in good repair.
- Make certain that sufficient amperage, at the proper voltage and frequency (60Hz) is available before connecting power. All wiring should comply with ANSI/NFPA 70 electrical requirements. Follow local, stae/provincial and federal electrical codes. If you are uncertain, have a licensed electrician provide power to the machine.
- Before applying pressure to the hydraulic system, make sure all components are tight and that all steel lines, hoses and couplings are not damaged.
- Keep the working area clean and dry.
- Review safety instructions annually.

4.1 TO THE NEW OPERATOR OR OWNER

The Mayo Manufacturing Tote Bag and Pallet Box Filler is designed as a conveyor to load or fill tote bags and pallet boxes from graders, pilers, conveyors or other auxiliary equipment. 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 Tote Bag and Pallet Box Filler will provide many years of trouble-free service.

4.2 MACHINE COMPONENTS

The Mayo Manufacturing Tote Bag and Pallet Box Filler is a conveyor that moves product into tote bags or pallet boxes. The intake hopper/elevator can move up or down to minimize the drop height from the adjacent auxiliary conveying equipment. The boom moves up or down to minimize drop height in the bag or box as it fills. An automatic or manual system can be used to control the boom height.

An electric motor drives a hydraulic pump that provides oil to power the conveyor and move the cylinders. All controls are located on the left side of the machine.

The machines are available to fill a single or a double bag or pallet box. Arms on an adjustable frame are used to mount bags for filling. A hydraulic cylinder at the bottom of the frame moves it up or down to minimize drop heaight.

A Hopper
B Intake Elevator
C Boom
D Electrical Controls
E Hydraulic Controls
F Drive Motor
G Hydraulic Pump
H Hydraulic Reservoir
J Boom Height Sensor
K Bag Mounting Arms
L Arm Raising Cylinder
M Boom CYlinder
N Bag
O Box

FIG. 1 MACHINE COMPONENTS

4.3 MACHINE ASSEMBLY

Each Bagger is shipped from the factory in a blocked up way tp prevent frame movement and configured to minimize shipped space. When arriving at the destination these items must be done prior to operating and using:

1. Remove the shipping tie-downs that secure the Bagger to the truck.

2. Use a forklift with appropriate lift capacity to lift the Bagger from the truck and move it to the assembly area.

3. Review the placard on the frame next to the hydraulic controls and check the tightness of all fasteners and screws before start-up.

FIG. 2 PLACARD

4. The boom height is controlled by a proximity sensor mounted on the right hand boom height cylinder. As a collar mounted on a position rod attached to the cylinder moves next to the proximity sensor, the cylinder is stopped. By moving the collar, the boom height can be changed. The collar is set from the factory so the bottom of the boom clears the bag arms when they are at their highest position. Loosen setscrew through the collar and move to the required position. Tighten setscrew.

NOTE

In facilities with a low ceiling, it may be necessary to lower boom height to prevent contact with the ceiling.

a. Proximity Sensor b. Position Rod
c. Collar

FIG. 3 BOOM HEIGHT

5. On the dual model:

   a. Remove the bag arms from the elevator.

   b. Mount them on the centre arm mounting frames.

Shipping

Installed

FIG. 4 BAG ARMS

6. The hopper end of the frame can be adjusted up or down as required to match the hopper height to the height of the adjacent machine loading the hopper to minimize drop height.

   Two anchor bolts on each of the front frame members secure the frame members together. Loosen anchor bolts, move frame to required position and tighten anchor bolts.

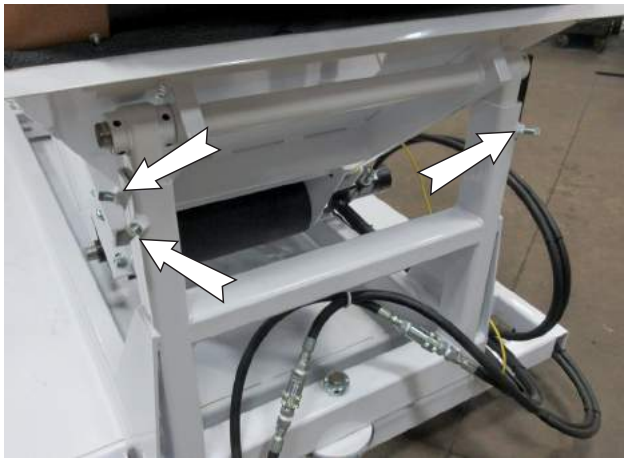


FIG. 5 HOPPER HEIGHT

7. Remove the wooden blocks in the dual model swing wheel channel that prevents movement during shipping.

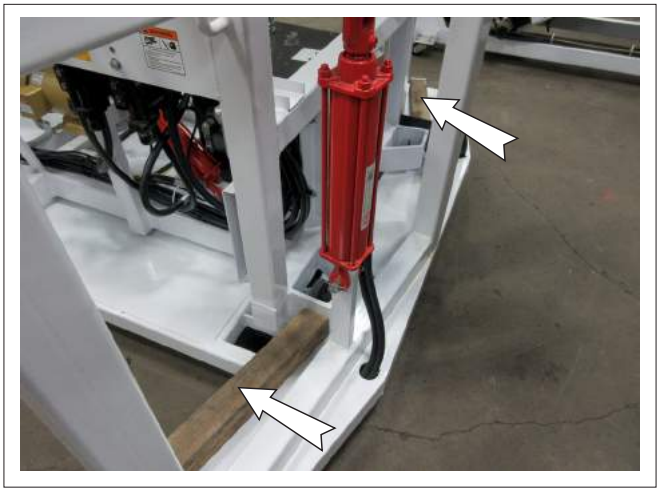


FIG. 6 WOODEN BLOCKS

4.4 MACHINE BREAK-IN

Although there are no operational restrictions on the Tote Bag and Pallet Box Filler 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. **Hydraulic System Bump Test:**
When the Tote Filler is connected to a new power source, it is recommended to perform a bump test to determine the direction of rotation of the pump. Remove the cover over the electric motor output frame. Momentarily bump the pump control to turn the motor. Verify the rotation is clockwise. If it isn't, reverse the electrical leads. The fan end of the electric motor should turn clockwise.

FIG. 7 HYDRAULIC PUMP

C. **After operating for 1/2 hour:**

1. Retorque all fasteners.
2. Check that all electrical connections are tight and cords are routed out of the way or protected.
3. Check for leaks in hydraulic system. Retorque fittings that leak.
4. Check that no hydraulic lines are being pinched or crimped. Reroute as required.
5. Check oil level in hydraulic reservoir. Top up as required.
6. Check the alignment and tension of the conveyor belt. Realign or tighten as required.
7. Lubricate all grease fittings.

D. **After 2, 5 and 10 hours of operation:**

1. Retorque all fasteners.
2. Check that all electrical connections are tight and cords are routed out of the way or protected.
3. Check for leaks in hydraulic system. Retorque fittings that leak.
4. Check that no hydraulic lines are being pinched or crimped. Reroute as required.
5. Check oil level in hydraulic reservoir. Top up as required.
6. Check the alignment and tension of the conveyor belt. Realign or tighten as required.
7. Lubricate all grease fittings.

4.5 PRE-OPERATION CHECKLIST

Safe and efficient operation of your new Tote Bag and Pallet Box Filler 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. Check the oil level in the hydraulic reservoir as prescribed in the "Maintenance Section".

4. Check for hydraulic leaks. Tighten fittings or reroute hoses as required to maintain a leak-free system.

5. Insure that all safety guards and shields are in good repair and securely in place.

6. Check that the conveyor belt is centered on the head and tail rollers. Adjust if necessary as outlined in the "Maintenance Section".

7. Make sure that all electrical switches are in the OFF position before supplying power.

8. Check that all electrical connections are tight and cords are routed out of the way or protected.

9. 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. **Master Control Panel:**

   a. **Hydraulic Pump OFF/ON:**
   This 2 position push button switch controls the power to the pump that powers the hydraulic system. Depress the push button to turn the system ON and release the button to turn OFF.

   b. **Belt Restart:**
   This 2 position push button switch controls the flow of oil to the belt drive motor. Depress the top green portion of the switch to turn the belt on. Depress the bottom red portion of the switch to turn off.

   c. **Emergency Stop:**
   This red two position push/pull switch controls the power to the machine. Depress the switch and all power will be disconnected. Pull the switch out to connect the electrical power again. This switch must be pulled out for the unit to operate. Use this switch as an emergency stop switch as it disconnects the electrical power and all systems will stop.

   d. **Auto Control:**
   This 2 position rotary switch controls the function of the proximity sensor on the bottom of the boom. Turn the switch clockwise to the on position and the proximity sensor on the boom will keep the boom 4 to 6 inches (100 to 150 mm) above the pile. Turn counterclockwise to turn the system off and the operator will have to move the boom up and down as required to maintain the appropriate drop height.

FIG. 8 CONTROL PANEL

2. **Hydraulic Controls:**

   a. **Pressure Gauge:**
   This gauge displays the pressure in the hydraulic system. The system relief pressure is set at 2500 psi from the factory but seldom reaches that level during normal operation.

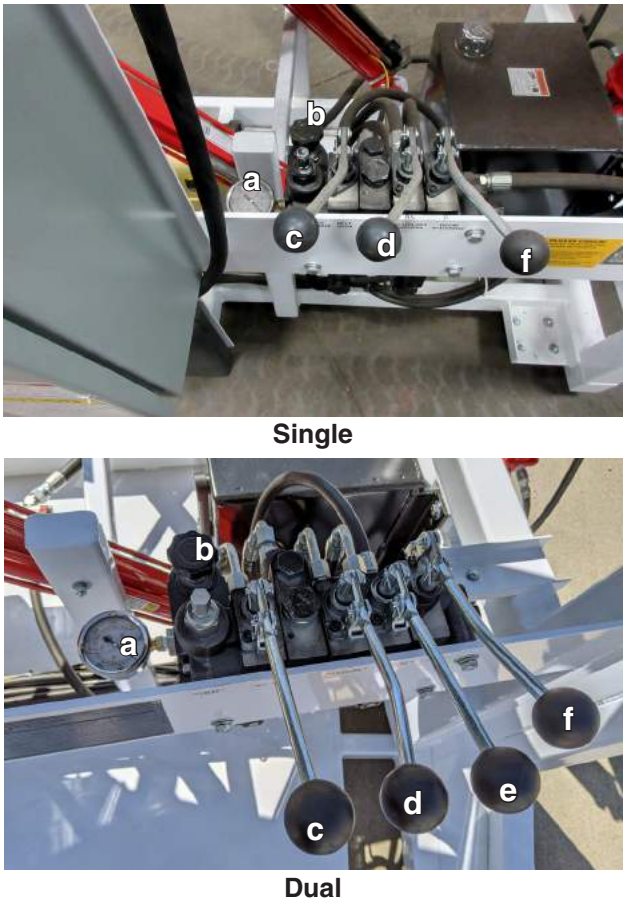
   b. **Boom Belt Speed:**
   This rotary knob controls the volume of oil flowing to the belt drive motor. Loosen set screw at the base of the knob (9/16") prior to adjustment. Turn clockwise to reduce the belt speed. Turn counterclockwise to increase the belt speed. Set the belt speed appropriate for the application. Retighten set screw after adjustment.

   c. **Belt Jog:**
   This 2 position spring-loaded-to-off hydraulic control lever controls the flow of oil to the belt drive motor. Push the control lever down momentarily to move the belt a small amount to empty the hopper or belt as appropriate for the application. Generally this is used to top up a bag or box after the belt has been turned off. Release the lever and the internal spring will return it to its off position.

   d. **Bag Holder A:**
   This 3 position spring-loaded-to-neutral-center is used to raise or lower bag holder frame A up and down. Lift and hold the control lever to raise the arm holder of bag A. Release the lever and it will return to its neutral centre position. Lower and hold the lever to lower the bag holder arms. Release the lever to stop the bag frame from moving.

   e. **Bag Holder B:**
   This 3 position spring-loaded-to-neutral-center is used to raise or lower bag holder frame B up and down. Lift and hold the control lever to raise the arm holder of bag B. Release the lever and it will return to its neutral centre position. Lower and hold the lever to lower the bag holder arms. Release the lever to stop the bag frame from moving.

   f. **Boom Position:**
   This 3 position spring-loaded-to-neutral-center is used to raise or lower the position of the boom discharge. Lift and hold the control lever to raise the height of the boom discharge. Release the lever and it will return to its neutral centre position. Lower and hold the lever to lower the boom position. Release the lever to stop the boom from moving.



Single

Dual

FIG. 9 HYDRAULIC CONTROLS

4.7 MACHINE PREPARATION

The machine must be properly prepared and set prior to use. Be sure that the following items have been done.

1. **Electrical:**
   Make certain that sufficient amperage, at the proper voltage and frequency (60Hz) is available before connecting power. All wiring should comply with ANSI/NFPA 70 electrical requirements. Follow local, state/provincial and federal electrical codes. If you are uncertain, have a licensed electrician provide power to the machine.

2. **Training:**
   Establish a lock-out tag-out policy for your work site and train everyone in how it is implemented. Do not allow anyone to operate the machine or the work site unless they follow the tag-out lock-out policy.

3. **Bags and Boxes:**
   Have a supply of bags and/or boxes available appropriate for the application.

4. **Storage:**
   Have a space to move the filled containers after filling. It is recommended that it be close to minimize moving time and improve efficiency.

5. **Tote Bag and Box Pallets:**
   Always provide pallets to support the bottom of the bags when filled. Use a forklift to lift and move the bags.

6. **Position:**
   Always provide sufficient space for forklifts to approach the discharge end and auxiliary equipment to be connected to the intake end. Secure auxiliary equipment to Tote Bag and Pallet Box Filler before starting.

Bags

Boxes

FIG. 10 PALLETS (TYPICAL)

4.8 OPERATING

OPERATING SAFETY

- Read and understand the Operator's Manual and all safety signs before operating, maintaining, adjusting or repairing the Tote Bag and Pallet Box Filler. Also read and follow the instructions in the manuals of the other equipment used in the system.
- 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.
- 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 or working around loading/unloading equipment.
- 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.
- Keep all electrical components tight, dry and in good repair.
- Make certain that sufficient amperage, at the proper voltage and frequency (60Hz) is available before connecting power. All wiring should comply with ANSI/NFPA 70 electrical requirements. Follow local, state/provincial and federal electrical codes. If you are uncertain, have a licensed electrician provide power to the machine.
- Before applying pressure to the hydraulic system, make sure all components are tight and that all steel lines, hoses and couplings are not damaged.
- Keep the working area clean and dry.
- Review safety instructions annually.

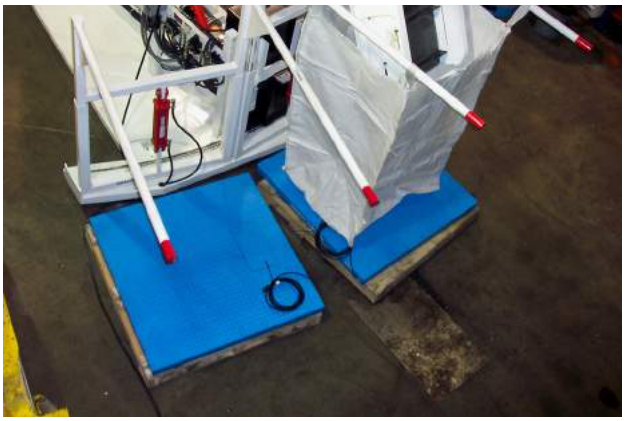
Follow this procedure when using the Tote Bag and Pallet Box Filler:

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. Be sure the Tote Bag and Pallet Box Filler is securely anchored or attached to the auxiliary equipment that brings product to the unit.

FIG. 11 EQUIPMENT (TYPICAL)

5. **Tote Bags and Boxes:**
   Move the pallets with tote bags under the boom and slide the bags on the position arms. Use a forklift to move the pallet with the box under the boom.

Single



Double

Boxes

FIG. 12 TOTE BAGS AND BOXES

6. **Starting:**

   a. Turn the red emergency switch 1/4 turn to release it.

   b. Depress the green portion of the pump start switch to turn the hydraulic pump on at the control panel that supplies oil to the cylinders and the conveyor.

   c. Select the manual or automatic boom height control mode.

NOTE

If the automatic mode is selected, the boom will automatically raise or lower to keep the discharge height with 4 to 6 inch drop height.

If manual mode is selected, someone will have to monitor the height of the boom over the pile in the tote bag or box and raise or lower as required to maintain an acceptable drop height.

   d. Install the bag on the support arms.

   e. Move the boom over the bag or box.

   f. For the box, lower the boom until it is 4 to 6" (100 to 150mm) above the bottom of the box.

   g. For the bag, position the boom over the bag and raise the bag into its fully up position so the bag is not resting on the pallet.

   h. Start the belt.

   i. Turn on auxiliary equipment to bring product to the filler.

   j. Raise or lower the boom as required to match height of the tote bag or box and minimize drop height.

   k. Monitor the status of the loading/filling process and adjust conveyor speed and heights as required.

a. Electric b. Hydraulic

FIG. 13 CONTROL PANEL

7. **Stopping:**

   a. Turn the loading equipment off and wait for the elevator and boom to empty.

   b. Turn pump off to stop conveyor.

   c. Turn power off at master panel and lock-out tag-out power if performing any service or maintenance work.

8. **Emergency Stopping:**
Depress the red emergency stop switch to disconnect power to machine and turn the entire machine off.

FIG. 14 STOPPING

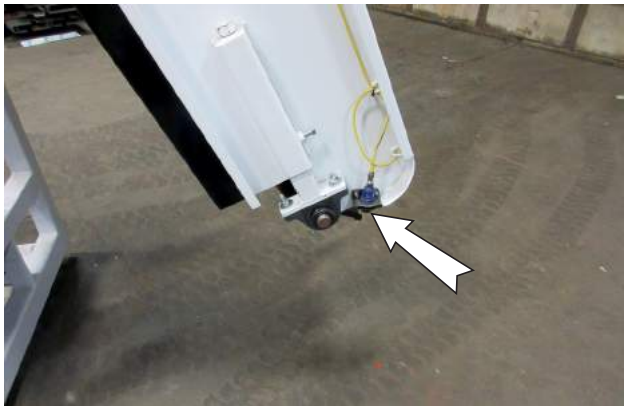
9. **Drop Height:**
Product quality is dependent upon the drop height in the Tote Bag or Pallet Box and the loading and unloading systems. Always set and/or operate the machine to keep the drop height between 4 and 6 inches (100 to 150 mm) at each junction.

   a. The use of the automatic boom height control is recommended for all operating conditions. The sensor is positioned at the optimum location at the end of the boom.

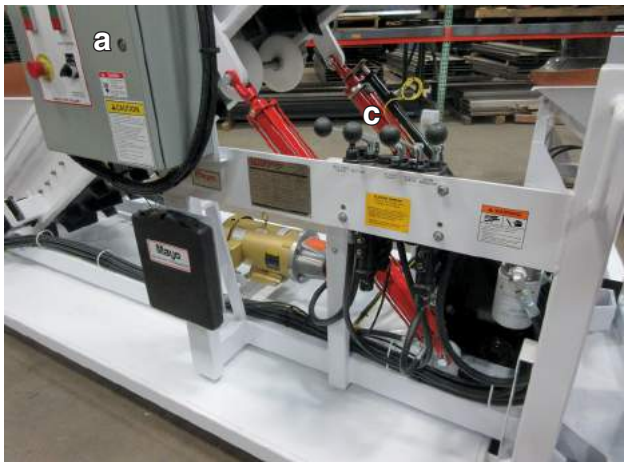
   b. The automatic system will maintain the height of the boom between 4 and 6" (100 to 150mm) above the potatoes in the bag or box to minimize bruising.

   c. Use the hydraulic valve to manually set the height of the boom while filling the bag or box when operating in the manual mode.

   d. Set the height of the elevator to minimize the drop height between the auxiliary conveyor when loading the hopper.



Sensor



Control Valve

Tote Bag

Box

FIG. 15 DROP HEIGHT

10. **System Pressure:**
Each machine is designed with a gauge in the hydraulic circuit to allow an operator to monitor the circuit pressure. It should not exceed 2250 psi during normal operation.

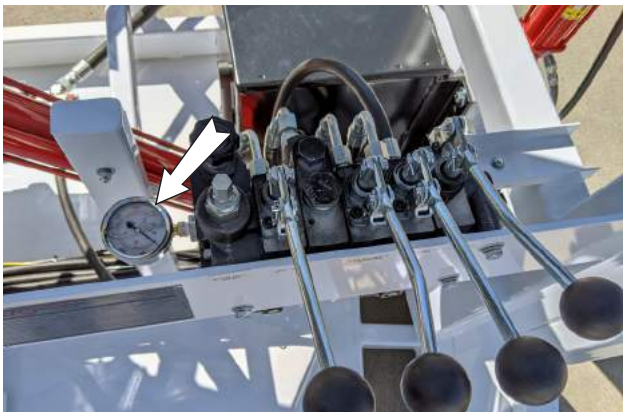
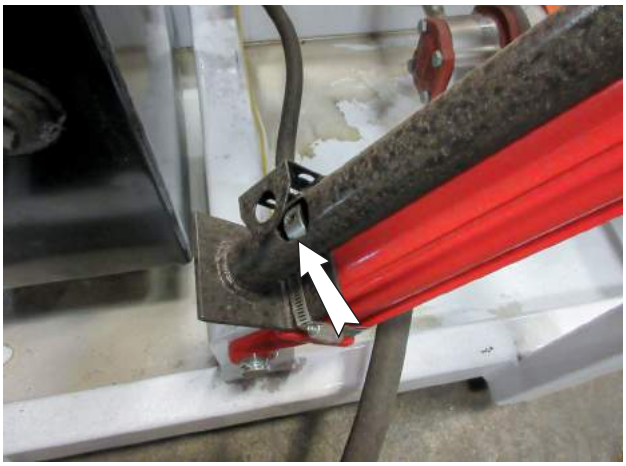


FIG. 16 SYSTEM PRESSURE GAUGE (TYPICAL)

11. **Boom Frame Height Limiter:**

a. **Cylinder Sensor:**
The boom height cylinder is equipped with a tracking shaft inside a tube and designed with 2 set collars. The end collar on the tracking shaft stabilizes the shaft inside the tube and the other collar is positioned to activate the sensor to stop the elevator motion. Always use 2 personnel when adjusting the position of the collar.



Collar

Cylinder Sensor

FIG. 17 CYLINDER SENSOR (TYPICAL)

12. **Tote Bag Moving:**
Each bag should be placed on a pallet to allow moving by a forklift. A full bag weighs about 2000 lbs. Always position the filler to provide access space for the forklift to lift and move the bag or box.

Bags

Boxes

FIG. 18 TOTE BAGS AND BOXES

13. **Transporting:**
Always load the filler on a truck and tie down securely when moving or transporting unit.

14. **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 policy for your operation. Require all operators to use and follow all procedure when using the machine.

e. Always secure the Tote Bag and Pallet Box Filler to the adjacent auxiliary equipment to prevent movement.

Bags

Boxes

FIG. 19 AUXILLIARY EQUIPMENT

f. Set the boom position to minimize drop height. Using the automatic height system gives the best results. The position sensor is mounted on the end of the boom discharge frame.

FIG. 20 BOOM DROP HEIGHT SENSOR

g. Use the boom frame cylinder height sensor to set the maximum operating height for the frame.

FIG. 21 BOOM FRAME SENSOR (TYPICAL)

4.9 STORAGE

STORAGE SAFETY

- Store the Tote Bag and Pallet Box Filler 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 Tote Bag and Pallet Box Filler.
- 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 Tote Bag and Pallet Box Filler.

4.8.1 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. Start the hydraulic pump and run for 10 minutes to bring the oil to operating temperature. Change the hydraulic filter. Change the hydraulic oil if appropriate as specified in the Maintenance Section.

2. 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.

3. **If plugged into hard wiring:**

    a. Turn the power OFF at the master electrical panel and lock out.

    b. Unplug and remove power cord from machine.

4. Thoroughly wash the machine using a pressure washer to remove all dirt, mud, debris or residue.

5. Lubricate all grease fittings. Make sure all grease cavities have been filled with grease to remove any water residue from the washing.

6. Inspect all the hydraulic hoses, lines, fittings and cylinders. Tighten any loose fittings. Replace any hose that is badly cut, nicked, abraded or separating from a fitting. Replace any damaged components.

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.

8. Inspect the conveyor drive system.

9. Check all rotating parts for entangled material. Remove.

10. Touch up all paint nicks and scratches to prevent rusting.

11. Select a storage area that is dry, level and free of debris.

4.8.2 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. Hydraulic tank oil level.

    b. Hydraulic and electrical systems and components.

    c. Conveyor belt and drive system.

    d. All hardware. Tighten as required.

4. Replace any defective components.

5. Go through the pre-operation checklist (Section 4.5) 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), relieve hydraulic pressure 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 Tote Bag and Pallet Box Filler.
- Do not work on Tote Bag and Pallet Box Filler 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 rating meeting or exceeding the NLGI #2 rating for all requirements per ISO 32, Food Grade, NSF-H1.

2. **Hydraulic Oil:**
   Use - Mobil DTE FM32 Hydraulic Oil or equivalent. Refer to lubricant table in Section 7.2

   Specifications.

   Reservoir Capacity: (15 US gals, 55 liters). Refer to lubricant table in Section 7.2

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 provided 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.).

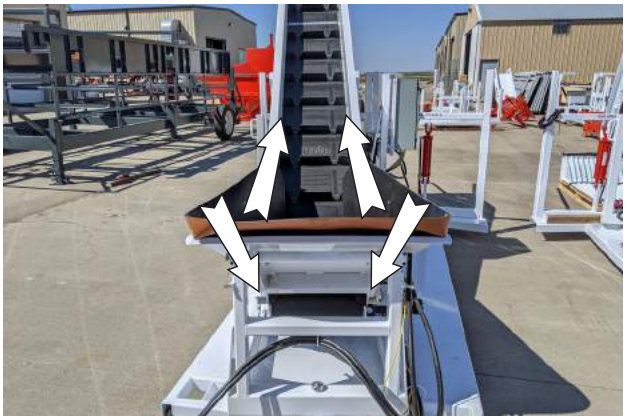
5.1.3 SERVICING INTERVALS

8 Hours or Daily

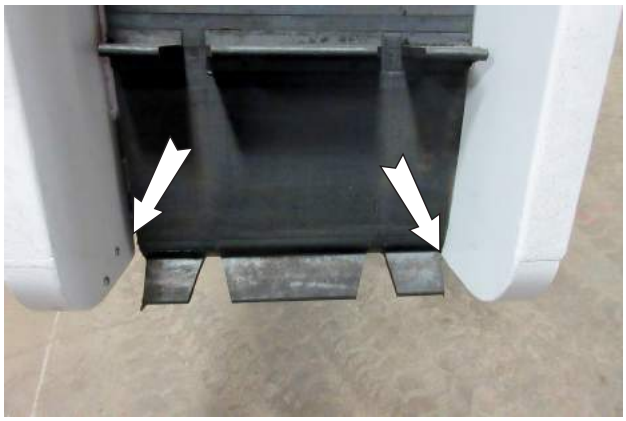
1. Inspect hydraulic system and all components.
2. Inspect electrical system and all components.
3. Check the conveyor tension and alignment. Tension or align as required.

NOTE

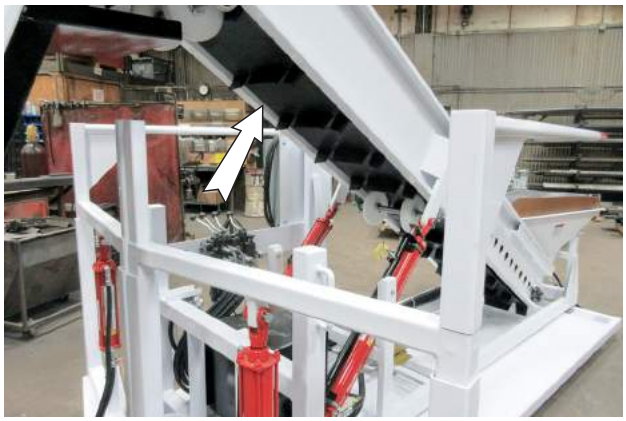
The conveyor is properly tensioned when it is 1 inch (25 mm) inside elevator frame bottom when not in operation.



Elevator Alignment



Discharge Alignment



Conveyor Tension

FIG. 22 CONVEYOR TENSION/ALIGNMENT

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. Tail Shaft (2 locations).

b. Pivot shafts (2 locations each shaft).

c. Drive shaft (2 locations).

Right Side

Left Side

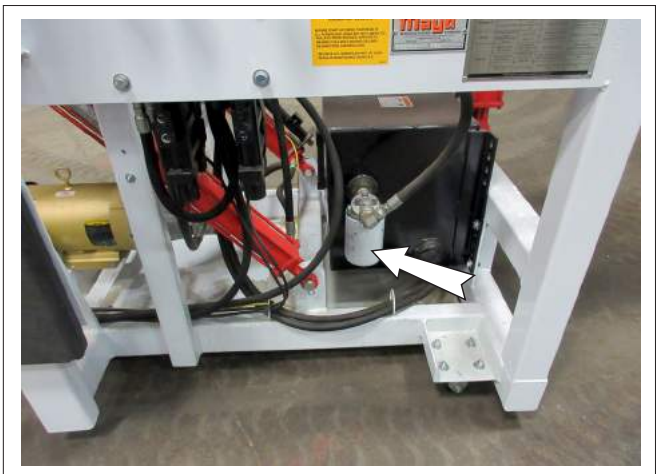
FIG. 23 ELEVATOR/BOOM CONVEYOR SHAFTS

2. Check oil level in the hydraulic reservoir.

FIG. 24 OIL LEVEL (TYPICAL)

100 Hours or Annually

1. Change the hydraulic filter.



Single

Dual

FIG. 25 HYDRAULIC FILTER

500 Hours or Annually:

1. Change the oil in the hydraulic system.

Single

Dual

FIG. 26 HYDRAULIC RESERVOIR

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 Hydraulic System and Components																							
IN Electrical System and Components																							
50 Hours or Weekly																							
LU Conveyor Shaft Bearings																							
CK Oil Level in Hydraulic Reservoir																							
100 hours or Annually																							
CK Hydraulic Filters (2)																							
500 Hours or Annually																							
CH Hydraulic System Oil																							

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 HYDRAULIC MAINTENANCE

A hydraulic system provides power to raise or lower the frame members and drive the conveyor belt. The system consists of an electrically powered pump, reservoir, lines, hoses, solenoid valves, directional valves, motors and cylinders. To maintain the integrity of the system and provide a safe working environment for the operator, it is important that a daily inspection be done to make sure that the entire system and all components are in good working condition.

When inspecting the hydraulic 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.

3. Inspect all hydraulic components looking for:

    a. Leaks.

    b. Damaged hoses or lines.

    c. Damaged or leaking cylinders.

    d. Leaking motors or fittings.

    e. Damaged or leaking solenoid and directional valves.

    f. Leaking pump or fittings.

4. Tighten any leaking fittings and replace any damaged components.

5. Change the hydraulic oil and filter every 500 hours or annually per the Service schedule. Change more frequently if operating in harsh conditions such as extreme heat or cold, extreme dust or dirt, and/or extreme humidity.

5.2.2 ELECTRICAL SYSTEM INSPECTION

Electricity provides power to the motor driving the hydraulic pump. To maintain the integrity of the 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.

5.2.3 CHANGING HYDRAULIC OIL & FILTER

Every 500 operating hours or annually, whichever comes first, the oil in the hydraulic system and filter should be changed. To change the oil and filter, follow this procedure:

1. Run the hydraulic pump until the oil is warm. Warm freshly agitated oil removes more contaminants when drained than cold stagnate oil.

2. Stop the pump and place all controls in their OFF or neutral position.

3. Turn the power OFF at the master panel and lock-out.

4. Place a container under the drain plug.

5. Remove the drain plug and allow the system to drain for 10 minutes.

IMPORTANT

The reservoirs contain 15 gallons of oil. Be sure to have several containers to hold the oil from each tank when draining.

6. Install and tighten the drain plug. Use teflon tape or pipe sealant compound on the plug to prevent leaking.

7. Dispose of the used oil in an environmentally safe manner.

8. Fill with Mobil DTE FM 32 Hydraulic Oil or equivalent.

9. Add oil until the sight glass is 1/2 filled with oil.

10. Install the fill cap.

11. Remove the filter canister and dispose in an environmentally safe manner.

12. Apply a light coat of oil to the seal on the top of replacement filter.

13. Install and tighten filter by hand.

14. Start and run the system and check for leaks.

15. Tighten any fitting that leaks.

Hydraulic Resrvoir (Typical)

Filter - Single

Filter - Dual

FIG. 27 HYDRAULIC SYSTEM

5.2.4 CONVEYOR BELT TENSION/ ALIGNMENT OR REPLACEMENT

A rubber belt is used to convey potatoes with the Tote Bag and Pallet Box Filler. The tension and alignment of the conveyors should be checked daily to insure proper function. Replace the conveyor belt when damaged or badly worn. To maintain conveyor, 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:**
   It is tensioned correctly when the belt stays about 1" (25mm) above the bottom of the conveyor frame. Tighten the belt if it sags below the frame when not being operated.

FIG. 28 BELT SAG (TYPICAL)

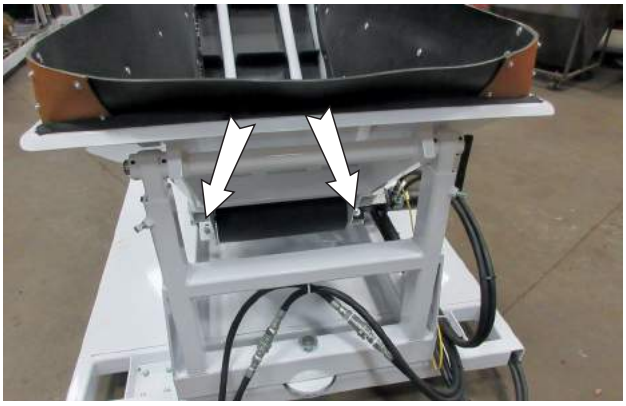
4. **Tensioning:**
   Both the drive end and the tail end of the conveyor belt can be used to adjust and set the tension of the conveyor. Loosen the belt bearing housing position mount set screws, turn the adjusting bolt to position bearing and shaft and retighten set screws. Run the conveyor a complete cycle several times to determine the tension. Readjust as required.

Drive Roller

Tail Roller

FIG. 29 DRIVEN

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.



Drive

Tail

FIG. 30 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.

FIG. 31 BELT CONNECTOR (TYPICAL)

5.2.5 ELEVATOR CYLINDER SENSOR POSITION ADJUSTMENT

Tote Bag and Pallet Box Fillers are designed with a cylindrical tube with a shaft inside it that is linked to the discharge frame lift cylinder. As the lift cylinder extends/retracts, the shaft moves with it. Each shaft is designed with 2 set collars. The top set collar stabilizes the shaft inside the tube and the lower one is used to activate the proximity switch when it passes the proximity switch as the shaft moves. The proximity switchbody is threaded which allows it to move in its mounting frame as required to control the gap between the set collars and proximity switch. As a general rule, the best results are obtained when this gap is set to about the thickness of a nickel.

FIG. 32 PROXIMITY SWITCH

The system is designed to activate the proximity switch to stop the elevator lift function when the set collar moves in front of the proximity switch. To adjust the high limit position, follow this procedure:

1. Use 2 personnel when adjusting the high limit position.

2. Place one person at the hydraulic valve bank to control the height of the discharge frame.

3. Move the discharge frame to position the lower set collar into the tube cut-out and stop.

4. Use an Allen wrench to loosen the set screw on the collar.

5. Raise or lower the elevator SLOWLY until you get to the desired position.

NOTE

Be sure to move the set collar along to the new tube cut-out position as the shaft moves.

6. Tighten the set screw to secure the set collar in its new position.

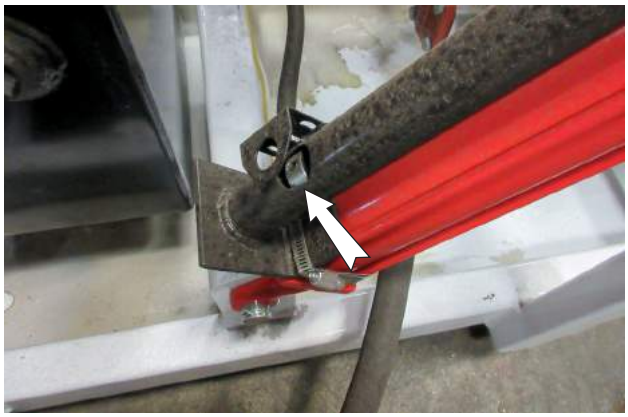


FIG. 33 COLLAR SET SCREW

6 TROUBLE SHOOTING

The Mayo Tote Bag and Pallet Box Filler uses an elevator and moveable discharge frame to convey potatoes into a Tote Bag or Pallet Box. 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
Filler won't run.	No power.	Turn power ON at master panel.
	Tripped overload on starter.	Reset starter.
Conveyor won't run.	Emergency Stop Switch depressed.	Pull Stop Switch out.
	No power.	Turn conveyor ON.
	Binding.	Align conveyor.
	Debris on conveyor.	Clean conveyor.
	Low oil.	Add oil to hydraulic reservoir.
	Oil filter plugged.	Replace oil filter.

7 SPECIFICATIONS

7.1 MECHANICAL

- Fills tote bags and cardboard bins
- Variable speed hydraulic drive
- Adjustable bag holder arms
- Hydraulic up/down
- 18" wide cleated belt
- Caster wheels and intake hopper
- Optional automatic sensor
- Optional deck scale

7.2 LUBRICANTS

MAYO MFG. RECOMMENDS THE FOLLOWING MOBIL PRODUCTS OR THEIR EQUIVALENTS				
Lubricant Type	**Component**	**Specification**	**Recommended Lubricant**	**Recommended Temperature / Service Interval**
Hydraulic Oil	Hydraulic Reservoir	ISO 32, Synthetic Food Grade, NSF-H1	Mobil SHC Cibus 32	All Temperatures/Oil sample guidance or 12 months
	Hydraulic Reservoir	ISO 32, Food Grade, NSF-H1	Mobil DTE FM 32	10F to 140F/Oil sample guidance or 12 months
Grease	Greased Bearings/ Points	Food Grade	Mobilgrease FM 222	All/Weekly or as needed
	Greased Bearings/ Points	Non-Food	Mobilgrease XHP 222	
Gear Oil	Winsmith Worm Gear Reducer	Poly Alkylene Glycol (PAG) ISO 460 NSF H1	Mobil Glygoyle 460	All/See Manual Note: Do not Substitute
	Browning Helical Gear Reducer	Synthetic, PAO Type ISO 220 NSF H1	Mobil SHC 630 or Mobil SHC Cibus 220 (NSF H1)	All/Change Every Two Years
	Auburn Planetary Wheel Drives	SAE GL-5 75w90	Mobil Delvac Synthetic 75w90	All/Change Every Two Years

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

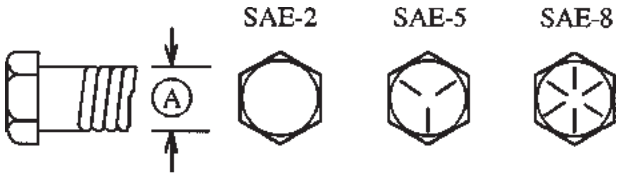
7.3 BOLT TORQUE

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.

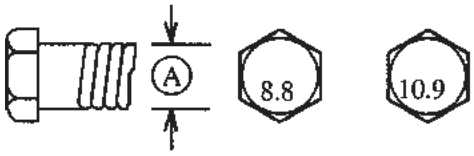
ENGLISH TORQUE SPECIFICATIONS

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



METRIC TORQUE SPECIFICATIONS

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

7.4 HYDRAULIC FITTING TORQUE

TIGHTENING O-RING FITTINGS *

1. Inspect O-ring and seat for dirt or obvious defects.
2. On angle fittings, back the lock nut off until washer bottoms out at top of groove.
3. Hand tighten fitting until back-up washer or washer face (if straight fitting) bottoms on face and O-ring is seated.
4. Position angle fittings by unscrewing no more than one turn.
5. Tighten straight fittings to torque shown.
6. Tighten while holding body of fitting with a wrench.

* The torque values shown are based on lubricated connections as in reassembly.

Tube Size OD (in.)	Nut Size Across Flats (in.)	Torque Value* (N.m)	(lb-ft)	Recommended Turns To Tighten (After Finger Tightening) (Flats)	(Turn)
3/8	1/2	8	6	2	1/3
7/16	9/16	12	9	2	1/3
1/2	5/8	16	12	2	1/3
9/16	11/16	24	18	2	1/3
3/4	7/8	46	34	2	1/3
7/8	1	62	46	1-1/2	1/4
1-1/16	1-1/4	102	75	1	1/6
1-3/16	1-3/8	122	90	1	1/6
1-5/16	1-1/2	142	105	3/4	1/8
1-5/8	1-7/8	190	140	3/4	1/8
1-7/8	2-1/8	217	160	1/2	1/12

7.5 ELECTRICAL SCHEMATIC

Line phasing, line voltage, control voltage, and accessory options can vary for each machine. Please contact factory at 1-800-223-5873 for your machine's specific electrical layout.

7.6 HYDRAULIC SCHEMATIC

Please contact factory at 1-800-223-5873 for your machine's specific hydraulic layout.

8 INDEX

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